



Full wwPDB EM Validation Report ⓘ

Oct 8, 2022 – 07:49 pm BST

PDB ID : 7PAU
EMDB ID : EMD-13286
Title : free 50S in complex with ribosome recycling factor in untreated Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 8.30 Å (reported)
Based on initial models : 7OOD, 1EH1

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.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

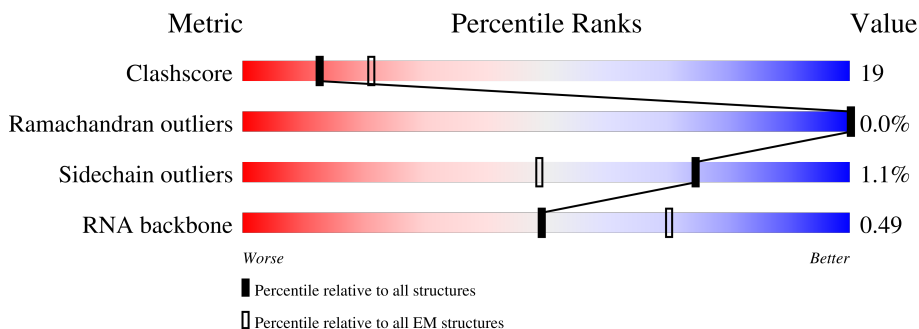
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 8.30 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)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	0	48	42% (green), 56% (yellow), . (grey)
2	1	59	76% (green), 24% (yellow)
3	2	37	54% (green), 46% (yellow)
4	7	184	39% (red), 57% (green), 41% (yellow), .. (grey)
5	a	287	. (red), 99% (green), . (grey)
6	b	287	. (red), 79% (green), . (yellow), 20% (grey)
7	c	212	. (red), 99% (green), . (grey)

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Mol	Chain	Length	Quality of chain
8	d	180	9% 97% ..
9	e	184	8% 96% .
10	f	149	42% 97% ..
11	g	161	23% 72% 6% 22%
12	h	137	45% 93% 7%
13	i	146	98% ..
14	j	122	100%
15	k	151	98% .
16	l	139	98% .
17	m	124	95% ..
18	n	116	96% ..
19	o	119	97% .
20	p	127	90% 10%
21	q	100	97% ..
22	r	159	87% 13%
23	s	237	39% 61%
24	t	111	11% 100%
25	u	104	83% 17%
26	v	65	97% .
27	w	111	89% 10%
28	x	97	7% 45% 55%
29	y	57	91% 7% .
30	z	53	92% 6%
31	3	2907	27% 55% 16% .
32	4	108	38% 44% 16% .

2 Entry composition

There are 32 unique types of molecules in this entry. The entry contains 92803 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L34.

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

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

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

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

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

- Molecule 4 is a protein called Ribosome-recycling factor.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	7	182	1510	960	262	283	5	0	0

- Molecule 5 is a protein called 50S ribosomal protein L2.

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

- Molecule 6 is a protein called 50S ribosomal protein L3.

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

- Molecule 7 is a protein called 50S ribosomal protein L4.

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

- Molecule 8 is a protein called 50S ribosomal protein L5.

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

- Molecule 9 is a protein called 50S ribosomal protein L6.

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

- Molecule 10 is a protein called 50S ribosomal protein L9.

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

- Molecule 11 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	g	126	Total	C	N	O	S	0	0
			960	612	167	178	3		

- Molecule 12 is a protein called 50S ribosomal protein L11.

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

- Molecule 13 is a protein called 50S ribosomal protein L13.

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

- Molecule 14 is a protein called 50S ribosomal protein L14.

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

- Molecule 15 is a protein called 50S ribosomal protein L15.

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

- Molecule 16 is a protein called 50S ribosomal protein L16.

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

- Molecule 17 is a protein called 50S ribosomal protein L17.

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

- Molecule 18 is a protein called 50S ribosomal protein L18.

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

- Molecule 19 is a protein called 50S ribosomal protein L19.

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

- Molecule 20 is a protein called 50S ribosomal protein L20.

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

- Molecule 21 is a protein called 50S ribosomal protein L21.

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

- Molecule 22 is a protein called 50S ribosomal protein L22.

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

- Molecule 23 is a protein called 50S ribosomal protein L23.

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

- Molecule 24 is a protein called 50S ribosomal protein L24.

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

- Molecule 25 is a protein called 50S ribosomal protein L27.

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

- Molecule 26 is a protein called 50S ribosomal protein L28.

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

- Molecule 27 is a protein called 50S ribosomal protein L29.

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

- Molecule 28 is a protein called 50S ribosomal protein L31.

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

- Molecule 29 is a protein called 50S ribosomal protein L32.

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

- Molecule 30 is a protein called 50S ribosomal protein L33 1.

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

- Molecule 31 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

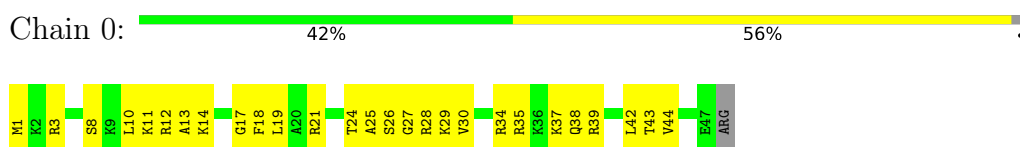
- Molecule 32 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

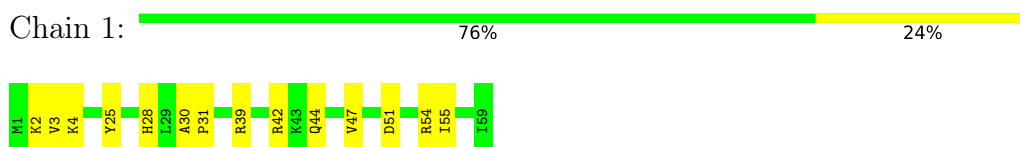
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

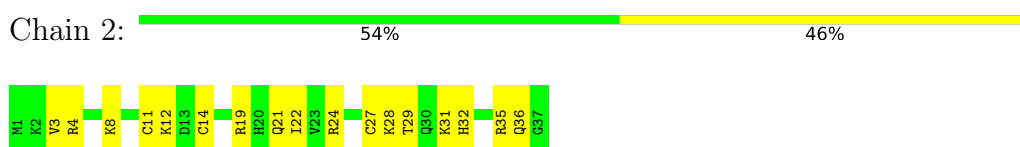
- Molecule 1: 50S ribosomal protein L34



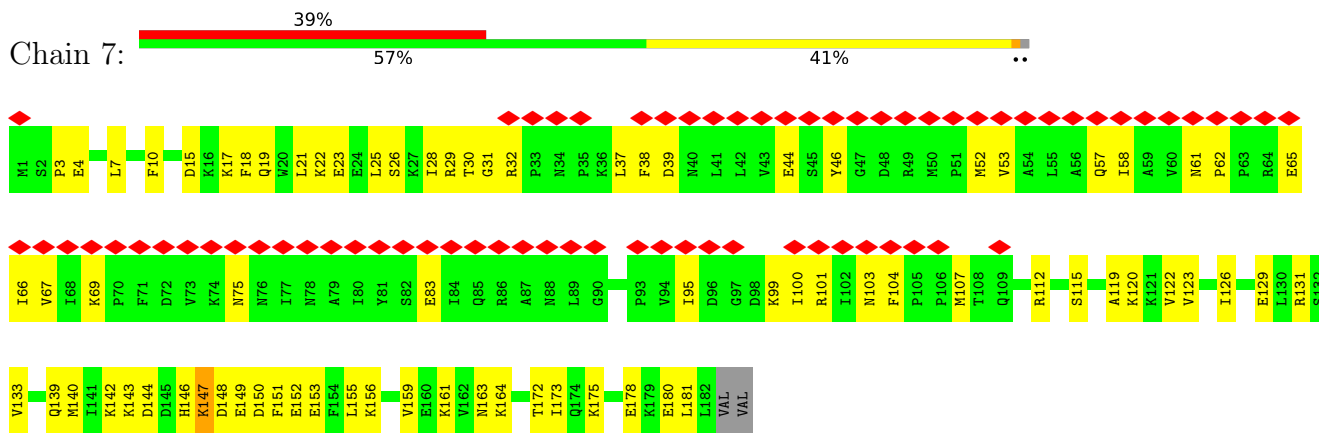
- Molecule 2: 50S ribosomal protein L35



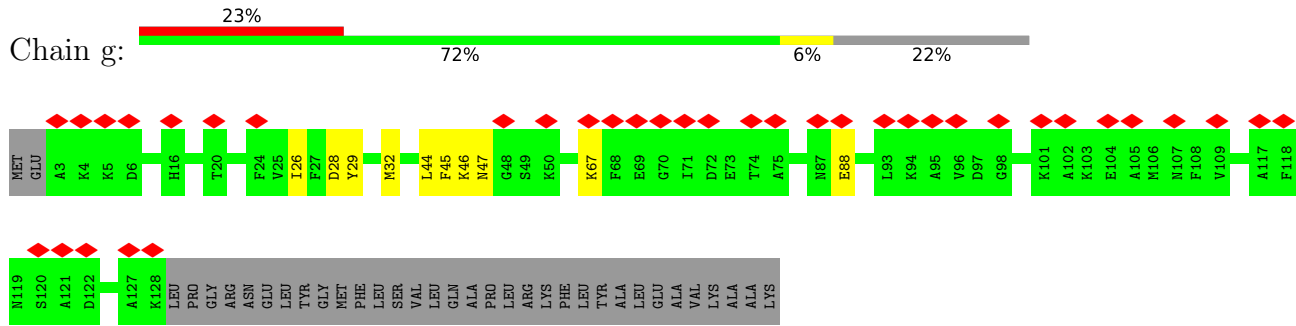
- Molecule 3: 50S ribosomal protein L36



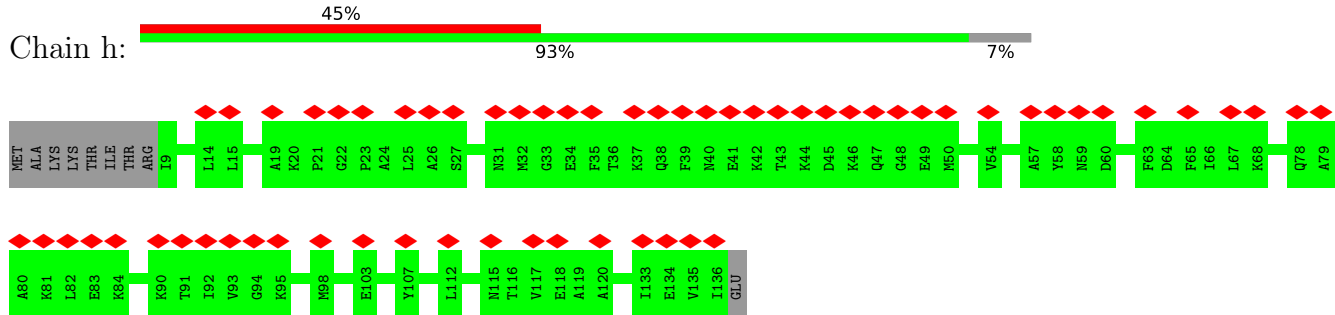
- Molecule 4: Ribosome-recycling factor



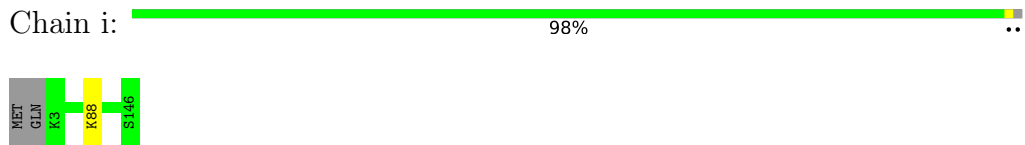
- Molecule 5: 50S ribosomal protein L2



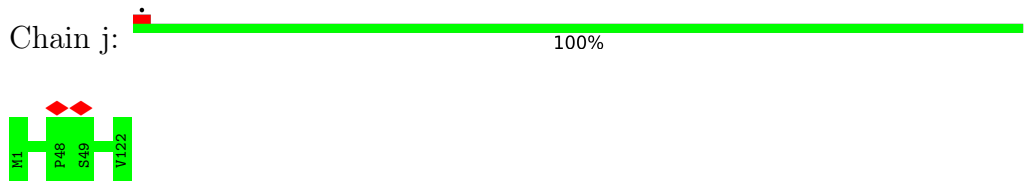
- Molecule 12: 50S ribosomal protein L11



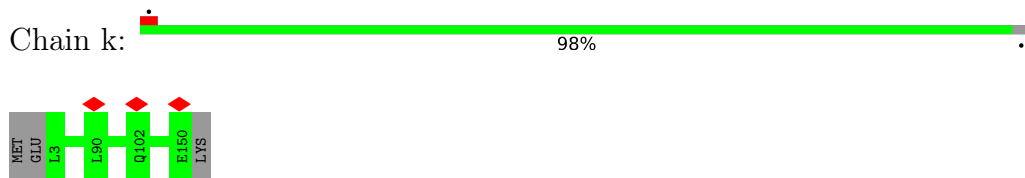
- Molecule 13: 50S ribosomal protein L13



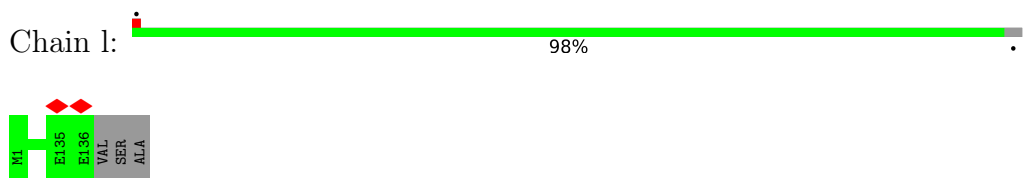
- Molecule 14: 50S ribosomal protein L14



- Molecule 15: 50S ribosomal protein L15

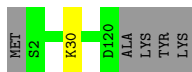


- Molecule 16: 50S ribosomal protein L16



- Molecule 17: 50S ribosomal protein L17

Chain m:  95%



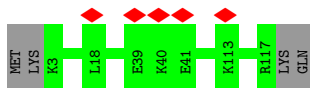
- Molecule 18: 50S ribosomal protein L18

Chain n:  96%




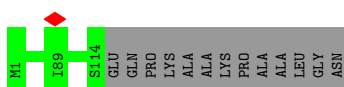
- Molecule 19: 50S ribosomal protein L19

Chain o:  97%



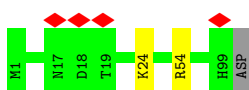
- Molecule 20: 50S ribosomal protein L20

Chain p:  90% 10%




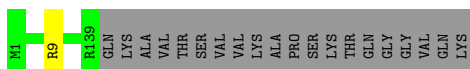
- Molecule 21: 50S ribosomal protein L21

Chain q:  97%



- Molecule 22: 50S ribosomal protein L22

Chain r:  87% 13%



- Molecule 23: 50S ribosomal protein L23

Chain s:  39% 61%

4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	8203	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.619	Depositor
Minimum map value	-0.546	Depositor
Average map value	0.016	Depositor
Map value standard deviation	0.104	Depositor
Recommended contour level	0.46	Depositor
Map size (\AA)	480.00003, 480.00003, 480.00003	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	2.4, 2.4, 2.4	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	0	0.22	0/383	0.43	0/504
2	1	0.23	0/484	0.41	0/637
3	2	0.23	0/306	0.46	0/401
4	7	0.26	0/1535	0.43	0/2061
5	a	0.24	0/2267	0.45	0/3044
6	b	0.25	0/1795	0.47	0/2412
7	c	0.25	0/1671	0.47	0/2246
8	d	0.24	0/1409	0.45	0/1894
9	e	0.25	0/1420	0.47	0/1912
10	f	0.24	0/1183	0.47	0/1587
11	g	0.38	0/969	0.57	0/1295
12	h	0.24	0/968	0.46	0/1298
13	i	0.24	0/1186	0.43	0/1592
14	j	0.25	0/953	0.46	0/1275
15	k	0.23	0/1170	0.43	0/1559
16	l	0.24	0/1104	0.44	0/1481
17	m	0.23	0/973	0.43	0/1309
18	n	0.23	0/897	0.44	0/1198
19	o	0.24	0/948	0.46	0/1262
20	p	0.23	0/961	0.39	0/1278
21	q	0.25	0/828	0.46	0/1111
22	r	0.25	0/1077	0.46	0/1441
23	s	0.24	0/732	0.46	0/988
24	t	0.24	0/879	0.44	0/1165
25	u	0.25	0/665	0.47	0/884
26	v	0.22	0/519	0.49	0/695
27	w	0.22	0/826	0.40	0/1104
28	x	0.25	0/353	0.45	0/474
29	y	0.29	0/457	0.54	0/601
30	z	0.23	0/412	0.43	0/547
31	3	0.19	0/69073	0.78	31/107710 (0.0%)
32	4	0.18	0/2505	0.77	0/3902
All	All	0.21	0/100908	0.71	31/150867 (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
10	f	0	1

There are no bond length outliers.

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
31	3	545	C	N1-C2-O2	8.87	124.22	118.90
31	3	440	C	N1-C2-O2	8.73	124.14	118.90
31	3	440	C	C2-N1-C1'	8.04	127.65	118.80
31	3	1341	U	C2-N1-C1'	7.91	127.19	117.70
31	3	1786	U	C2-N1-C1'	7.66	126.90	117.70
31	3	1341	U	N1-C2-O2	7.42	128.00	122.80
31	3	545	C	N3-C2-O2	-7.26	116.82	121.90
31	3	1786	U	N1-C2-O2	7.22	127.86	122.80
31	3	1341	U	N3-C2-O2	-7.15	117.19	122.20
31	3	440	C	N3-C2-O2	-7.15	116.89	121.90
31	3	1786	U	N3-C2-O2	-6.78	117.45	122.20
31	3	659	C	N1-C2-O2	6.75	122.95	118.90
31	3	1247	C	N3-C2-O2	-6.57	117.30	121.90
31	3	1507	G	O4'-C1'-N9	6.56	113.45	108.20
31	3	659	C	N3-C2-O2	-6.55	117.31	121.90
31	3	445	C	N3-C2-O2	-6.33	117.47	121.90
31	3	144	C	N3-C2-O2	-6.31	117.48	121.90
31	3	2604	U	P-O3'-C3'	6.07	126.99	119.70
31	3	440	C	C6-N1-C2	-5.70	118.02	120.30
31	3	440	C	C6-N1-C1'	-5.39	114.33	120.80
31	3	469	C	N3-C2-O2	-5.37	118.14	121.90
31	3	1262	G	N3-C4-N9	5.31	129.18	126.00
31	3	1659	C	N1-C2-O2	5.28	122.07	118.90
31	3	2070	C	N1-C2-O2	5.13	121.98	118.90
31	3	1924	U	C2-N1-C1'	5.11	123.84	117.70
31	3	1010	G	O4'-C1'-N9	5.08	112.26	108.20
31	3	144	C	N1-C2-O2	5.06	121.94	118.90
31	3	426	U	C2-N1-C1'	5.04	123.74	117.70
31	3	98	C	N1-C2-O2	5.02	121.91	118.90
31	3	1924	U	N1-C2-O2	5.01	126.31	122.80
31	3	1659	C	C2-N1-C1'	5.00	124.31	118.80

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
10	f	11	ASN	Peptide

5.2 Too-close contacts [\(i\)](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	25	0
2	1	477	0	530	12	0
3	2	304	0	350	18	0
4	7	1510	0	1553	60	0
5	a	2225	0	2301	0	0
6	b	1762	0	1808	0	0
7	c	1644	0	1731	0	0
8	d	1388	0	1469	0	0
9	e	1396	0	1481	0	0
10	f	1160	0	1172	0	0
11	g	960	0	1014	0	0
12	h	959	0	1039	0	0
13	i	1164	0	1192	0	0
14	j	944	0	1019	0	0
15	k	1153	0	1256	0	0
16	l	1079	0	1134	0	0
17	m	958	0	1011	0	0
18	n	889	0	952	0	0
19	o	938	0	1008	0	0
20	p	947	0	1028	0	0
21	q	811	0	858	0	0
22	r	1068	0	1150	0	0
23	s	720	0	803	0	0
24	t	872	0	972	0	0
25	u	657	0	695	0	0
26	v	513	0	560	0	0
27	w	818	0	870	0	0
28	x	344	0	333	0	0
29	y	452	0	472	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
30	z	408	0	440	0	0
31	3	61664	0	30954	1703	0
32	4	2239	0	1137	52	0
All	All	92803	0	62721	1839	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 19.

All (1839) 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)
31:3:900:G:N2	31:3:903:A:H61	1.58	1.01
31:3:1807:C:H42	31:3:1824:G:N2	1.57	1.01
31:3:2299:U:H3	31:3:2349:G:H1	1.03	1.00
31:3:1746:U:H3	31:3:1753:G:H1	1.04	1.00
31:3:1807:C:N4	31:3:1824:G:H22	1.59	0.99
31:3:2143:G:H1	31:3:2162:U:H3	1.01	0.96
31:3:61:U:H3	31:3:70:G:H1	1.02	0.96
31:3:2409:U:H3	31:3:2423:G:H1	1.06	0.96
31:3:1027:U:H3	31:3:1198:G:H1	1.08	0.95
31:3:1803:U:H3	31:3:1830:G:H1	1.10	0.94
31:3:989:G:H1	31:3:1000:U:H3	1.13	0.94
31:3:2123:A:H62	31:3:2173:G:H21	1.14	0.94
31:3:137:U:H3	31:3:146:G:H1	0.94	0.93
31:3:2059:G:H1	31:3:2625:U:H3	1.10	0.93
31:3:990:G:H1	31:3:999:U:H3	0.99	0.92
31:3:2465:U:H3	31:3:2502:G:H1	1.13	0.92
31:3:1245:G:H1	31:3:1264:U:H3	1.09	0.92
31:3:629:G:H1	31:3:696:U:H3	0.96	0.91
31:3:1914:G:H1	31:3:1930:U:H3	1.00	0.91
31:3:1807:C:H42	31:3:1824:G:H22	0.95	0.90
31:3:569:U:H3	31:3:592:G:H1	1.12	0.90
31:3:748:G:H21	31:3:753:A:H62	1.21	0.88
31:3:900:G:H21	31:3:903:A:H61	1.18	0.88
31:3:29:G:H1	31:3:547:G:HO2'	0.88	0.88
31:3:900:G:H21	31:3:903:A:N6	1.72	0.87
31:3:2483:C:H42	31:3:2537:G:H22	1.18	0.86
31:3:305:U:H3	31:3:399:G:H1	1.21	0.86
31:3:2090:G:H1	31:3:2244:U:H3	1.21	0.86
31:3:1772:G:H1	31:3:1994:U:H3	1.23	0.86
31:3:1942:G:H1	31:3:1969:C:HO2'	1.21	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:329:G:H1	31:3:377:U:H3	0.85	0.84
31:3:742:G:H1	31:3:759:U:H3	0.87	0.84
31:3:144:C:H2'	31:3:145:A:H8	1.43	0.83
31:3:633:G:H1	31:3:692:U:H3	1.25	0.83
31:3:1504:G:H1	31:3:1539:U:H3	1.24	0.83
31:3:2667:G:H2'	31:3:2668:A:H3'	1.61	0.82
31:3:17:G:H1	31:3:560:U:H3	1.24	0.82
31:3:2151:G:H1'	31:3:2154:A:H61	1.45	0.82
31:3:641:U:O2	31:3:657:A:N7	2.13	0.81
31:3:89:U:H5''	31:3:90:G:H5''	1.62	0.81
31:3:1743:U:O2	31:3:2863:G:N2	2.14	0.80
31:3:230:G:O6	31:3:454:G:N2	2.15	0.79
31:3:712:A:H61	31:3:835:U:H3	1.28	0.79
1:0:34:ARG:HE	1:0:42:LEU:HA	1.48	0.79
31:3:297:G:H1	31:3:440:C:HO2'	1.30	0.79
31:3:2110:U:H3	31:3:2194:G:H1	1.30	0.79
31:3:1054:U:O2'	31:3:1056:A:N7	2.16	0.79
31:3:2547:C:H2'	31:3:2548:G:H8	1.47	0.78
31:3:534:U:H3	31:3:538:A:H62	1.31	0.78
31:3:1111:C:N4	31:3:1112:A:N6	2.32	0.78
31:3:730:G:H1	31:3:802:U:H3	1.29	0.78
31:3:2132:G:H21	31:3:2181:A:H62	1.31	0.78
31:3:2458:A:N6	31:3:2509:C:O2	2.17	0.77
31:3:2536:U:H3	31:3:2543:G:H1	1.32	0.77
31:3:906:G:H1	31:3:945:U:H3	1.31	0.77
31:3:325:G:H1	31:3:383:U:H3	1.33	0.76
31:3:1457:A:H61	31:3:1598:U:H3	1.34	0.76
31:3:2603:G:N2	31:3:2606:A:OP2	2.17	0.76
31:3:313:G:N1	31:3:394:C:N3	2.34	0.76
31:3:2303:U:H3	31:3:2345:G:H1	1.34	0.76
31:3:200:A:H61	31:3:866:G:N2	1.83	0.75
31:3:748:G:H21	31:3:753:A:N6	1.83	0.75
31:3:2145:A:N6	31:3:2161:G:O6	2.18	0.75
31:3:748:G:N2	31:3:753:A:H62	1.84	0.75
3:2:8:LYS:NZ	31:3:2475:C:OP1	2.19	0.75
31:3:313:G:N2	31:3:394:C:O2	2.20	0.75
31:3:1040:U:H1'	31:3:1046:A:H2'	1.67	0.75
31:3:2736:U:HO2'	31:3:2737:G:H8	1.32	0.75
31:3:1252:C:N3	31:3:1257:G:N1	2.33	0.74
31:3:1807:C:N3	31:3:1824:G:N1	2.30	0.74
31:3:1446:G:O2'	31:3:1613:A:N6	2.21	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:63:U:H3	31:3:97:A:H1'	1.52	0.74
31:3:1354:U:O2'	31:3:2017:G:O2'	2.03	0.74
4:7:21:LEU:HD13	4:7:126:ILE:HG13	1.68	0.74
31:3:2549:A:O2'	31:3:2773:A:N1	2.19	0.74
31:3:1071:G:H1	31:3:1154:U:H3	1.34	0.74
31:3:1111:C:N4	31:3:1112:A:H62	1.84	0.74
31:3:2092:U:H3	31:3:2242:G:H1	1.36	0.73
32:4:28:C:H1'	32:4:55:A:H61	1.53	0.73
31:3:418:G:H1	31:3:430:U:H3	1.36	0.73
31:3:47:G:H5''	31:3:48:G:H5'	1.71	0.73
31:3:1067:A:H2	31:3:1157:G:H1	1.34	0.73
31:3:2458:A:N6	31:3:2509:C:C2	2.57	0.73
31:3:2483:C:N4	31:3:2537:G:H22	1.87	0.73
31:3:2291:U:O2	31:3:2333:G:O6	2.07	0.72
32:4:31:G:O6	32:4:48:A:N6	2.21	0.72
31:3:2321:C:H2'	31:3:2322:G:H8	1.55	0.72
31:3:513:A:H2'	31:3:514:A:C8	2.23	0.72
31:3:2141:A:OP2	31:3:2164:G:N2	2.22	0.72
31:3:2820:G:N3	31:3:2887:A:O2'	2.23	0.72
31:3:1414:C:H2'	31:3:1415:A:H8	1.55	0.72
31:3:1252:C:O2	31:3:1257:G:N2	2.20	0.72
3:2:36:GLN:OE1	31:3:1159:C:O2'	2.07	0.72
31:3:725:G:N2	31:3:807:U:O2	2.23	0.72
31:3:250:U:H3	31:3:256:G:H1	1.38	0.71
31:3:2807:G:O2'	31:3:2809:A:N6	2.21	0.71
31:3:107:C:O2	31:3:328:A:O2'	2.07	0.71
31:3:2483:C:H42	31:3:2537:G:N2	1.89	0.71
31:3:518:A:O2'	31:3:532:A:N1	2.24	0.71
31:3:2140:G:O2'	31:3:2165:A:N6	2.24	0.71
31:3:2696:G:OP1	31:3:2721:C:N4	2.24	0.71
31:3:1067:A:N1	31:3:1157:G:O6	2.23	0.70
31:3:1702:A:N3	31:3:1704:C:N4	2.38	0.70
31:3:2106:G:H22	31:3:2198:G:H1	1.37	0.70
31:3:2299:U:H1'	31:3:2382:A:H1'	1.74	0.70
31:3:849:C:H2'	31:3:850:G:H8	1.56	0.70
32:4:8:C:H42	32:4:100:G:H1	1.38	0.70
4:7:69:LYS:HD3	4:7:99:LYS:HB3	1.73	0.70
31:3:293:G:H2'	31:3:294:G:C4	2.27	0.70
31:3:856:A:H61	31:3:1008:A:H2'	1.57	0.69
31:3:618:G:H3'	31:3:1281:A:H61	1.58	0.69
31:3:1699:A:H2'	31:3:1700:G:H8	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1558:A:H5''	31:3:1570:A:H61	1.57	0.69
31:3:587:U:H2'	31:3:588:G:C8	2.27	0.69
31:3:2026:A:H61	31:3:2042:A:H61	1.39	0.69
31:3:2129:U:H2'	31:3:2130:A:H8	1.58	0.69
31:3:514:A:H61	31:3:535:G:HO2'	1.41	0.68
31:3:306:G:N2	31:3:398:C:O2	2.18	0.68
31:3:2299:U:O2'	31:3:2382:A:N3	2.27	0.68
31:3:2852:G:O2'	31:3:2871:G:N2	2.27	0.68
31:3:1670:U:H1'	31:3:1768:G:H21	1.58	0.68
3:2:11:CYS:SG	3:2:12:LYS:N	2.67	0.68
31:3:2306:A:N6	31:3:2326:G:O2'	2.27	0.68
31:3:2533:A:HO2'	31:3:2750:A:HO2'	1.37	0.68
31:3:1020:G:H5''	31:3:1021:C:H5	1.57	0.68
31:3:1976:A:H2'	31:3:1979:G:H21	1.59	0.68
31:3:1414:C:H2'	31:3:1415:A:C8	2.29	0.68
31:3:864:A:N7	31:3:2255:A:O2'	2.27	0.67
31:3:200:A:N6	31:3:866:G:N2	2.42	0.67
31:3:585:U:H2'	31:3:586:G:H8	1.60	0.67
31:3:665:C:O2'	31:3:675:U:O2	2.12	0.67
31:3:1328:A:N7	31:3:1660:A:O2'	2.27	0.67
31:3:1446:G:H22	31:3:1612:U:H3'	1.59	0.67
4:7:17:LYS:NZ	4:7:129:GLU:OE2	2.27	0.67
31:3:1137:C:H2'	31:3:1138:A:H8	1.59	0.67
31:3:1422:U:H5''	31:3:1637:A:H4'	1.76	0.67
31:3:2143:G:O6	31:3:2162:U:O4	2.12	0.67
31:3:210:U:H2'	31:3:211:A:H8	1.59	0.67
31:3:1264:U:H3'	31:3:1265:G:H8	1.58	0.67
4:7:18:PHE:HZ	4:7:173:ILE:HG13	1.60	0.67
4:7:31:GLY:H	4:7:181:LEU:HA	1.58	0.67
31:3:733:C:O2'	31:3:769:A:N6	2.28	0.67
3:2:19:ARG:HA	31:3:2764:U:H5''	1.76	0.67
31:3:2747:U:O2	31:3:2772:A:N7	2.28	0.67
31:3:1099:C:N4	31:3:1105:A:OP1	2.28	0.67
31:3:1092:A:OP2	31:3:1124:G:N2	2.28	0.66
31:3:1200:U:H2'	31:3:1201:A:H8	1.59	0.66
31:3:306:G:N1	31:3:398:C:N3	2.33	0.66
31:3:1206:U:O2	31:3:1210:A:N6	2.28	0.66
31:3:1807:C:O2	31:3:1824:G:O6	2.13	0.66
31:3:2122:G:O2'	31:3:2175:U:O2	2.12	0.66
31:3:1942:G:N2	31:3:1971:G:OP1	2.28	0.66
31:3:2007:U:O2	31:3:2697:C:N4	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2104:A:H2'	31:3:2105:G:H8	1.60	0.66
31:3:2810:A:H62	31:3:2896:G:H1	1.41	0.66
31:3:984:C:O2	31:3:1020:G:O2'	2.14	0.66
31:3:1836:A:N6	31:3:1983:U:O2'	2.28	0.66
31:3:625:G:H1	31:3:700:U:H3	1.44	0.66
31:3:909:U:H2'	31:3:910:G:H8	1.61	0.66
31:3:1801:U:H3	31:3:1832:G:H1	1.44	0.66
2:1:39:ARG:NH2	31:3:2359:G:O6	2.28	0.66
31:3:139:G:O6	31:3:145:A:N6	2.28	0.66
31:3:1261:U:H2'	31:3:1262:G:H8	1.60	0.66
31:3:1164:A:N6	31:3:2499:U:OP1	2.29	0.65
1:0:39:ARG:NH2	31:3:504:G:O6	2.30	0.65
31:3:300:G:H2'	31:3:301:G:H8	1.60	0.65
31:3:519:A:OP2	31:3:520:C:N4	2.26	0.65
31:3:572:G:N2	31:3:588:G:O2'	2.23	0.65
31:3:615:G:H2'	31:3:616:G:C8	2.31	0.65
31:3:694:U:H2'	31:3:695:G:H8	1.61	0.65
31:3:1039:G:N2	31:3:1046:A:O2'	2.30	0.65
31:3:2849:G:H1	31:3:2875:U:H3	1.42	0.65
31:3:1166:G:HO2'	31:3:2032:G:HO2'	1.42	0.65
31:3:1536:C:H2'	31:3:1537:A:H8	1.61	0.65
31:3:2376:C:H2'	31:3:2377:A:H8	1.62	0.65
31:3:2867:U:H2'	31:3:2868:G:C8	2.31	0.65
31:3:1442:G:H1	31:3:1622:C:H42	1.45	0.65
31:3:1487:U:O2'	31:3:2710:G:N2	2.30	0.65
31:3:2521:A:H2'	31:3:2522:U:C6	2.32	0.65
31:3:812:G:H2'	31:3:813:G:H8	1.62	0.65
31:3:165:U:O2'	31:3:168:A:N6	2.29	0.65
31:3:1023:C:O2'	31:3:1036:A:N3	2.28	0.65
31:3:2383:G:N2	31:3:2386:A:OP2	2.30	0.64
31:3:259:A:O2'	31:3:422:A:OP1	2.14	0.64
31:3:2305:C:H3'	31:3:2326:G:H22	1.63	0.64
31:3:2580:A:H5''	31:3:2582:G:H4'	1.79	0.64
31:3:80:U:H3	31:3:109:G:H1	0.78	0.64
31:3:413:G:H1	31:3:435:U:H3	1.45	0.64
31:3:482:G:H21	31:3:490:A:N6	1.96	0.64
31:3:1027:U:O4	31:3:1198:G:O6	2.14	0.64
31:3:1063:A:OP2	31:3:1161:A:N6	2.30	0.64
31:3:865:A:N1	31:3:2453:G:O2'	2.29	0.64
31:3:1306:G:H2'	31:3:1307:G:H8	1.61	0.64
31:3:2764:U:H1'	31:3:2765:A:H5''	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:272:C:N4	31:3:295:U:O2'	2.31	0.64
31:3:641:U:C2	31:3:657:A:N7	2.66	0.64
31:3:2057:C:H2'	31:3:2058:G:C8	2.32	0.64
31:3:2829:G:N2	31:3:2829:G:OP2	2.30	0.64
31:3:2879:U:H2'	31:3:2880:A:C8	2.33	0.64
31:3:2259:G:N1	31:3:2458:A:O2'	2.31	0.64
31:3:1070:U:O2	31:3:1155:G:O6	2.16	0.64
31:3:2321:C:H2'	31:3:2322:G:C8	2.33	0.64
31:3:1495:A:OP2	31:3:1548:A:N6	2.31	0.63
31:3:1999:G:N2	31:3:2003:C:O2'	2.31	0.63
31:3:50:G:H1	31:3:179:A:H5''	1.63	0.63
31:3:2104:A:H2'	31:3:2105:G:C8	2.33	0.63
31:3:2655:U:O2	31:3:2681:G:O6	2.15	0.63
31:3:433:A:O2'	31:3:2238:G:N2	2.31	0.63
31:3:793:C:H2'	31:3:794:G:H8	1.62	0.63
4:7:30:THR:O	4:7:32:ARG:NH1	2.32	0.63
4:7:65:GLU:HG2	4:7:103:ASN:HA	1.79	0.63
31:3:450:C:H2'	31:3:451:A:H8	1.62	0.63
31:3:603:G:H1'	31:3:1019:A:N6	2.13	0.63
31:3:609:U:H2'	31:3:610:G:H8	1.64	0.63
31:3:2205:U:O2'	31:3:2207:A:OP2	2.15	0.63
3:2:29:THR:HG22	3:2:31:LYS:H	1.63	0.63
31:3:662:U:H5''	31:3:663:A:H5''	1.79	0.63
31:3:1592:A:H4'	31:3:1593:U:H3'	1.81	0.63
31:3:1754:U:H2'	31:3:1755:A:H8	1.64	0.63
31:3:900:G:N2	31:3:903:A:N6	2.34	0.63
31:3:1009:A:O2'	31:3:1217:G:N2	2.32	0.63
31:3:2103:C:H2'	31:3:2104:A:H8	1.64	0.63
31:3:609:U:H2'	31:3:610:G:C8	2.34	0.63
31:3:1697:C:H4'	31:3:2694:A:H4'	1.82	0.62
31:3:1786:U:OP2	31:3:1791:A:N6	2.32	0.62
31:3:2068:G:H4'	31:3:2069:A:H5'	1.80	0.62
1:0:37:LYS:HD3	1:0:39:ARG:HD3	1.80	0.62
31:3:2700:C:O2	31:3:2851:U:O2'	2.15	0.62
31:3:200:A:N6	31:3:866:G:H21	1.96	0.62
31:3:453:U:H2'	31:3:454:G:H8	1.65	0.62
31:3:515:A:H4'	31:3:516:A:H5'	1.80	0.62
31:3:535:G:N1	31:3:538:A:OP2	2.25	0.62
31:3:892:G:H2'	31:3:893:A:C8	2.35	0.62
31:3:383:U:H2'	31:3:384:G:H8	1.63	0.62
31:3:1981:U:H2'	31:3:1982:G:C8	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:253:C:OP2	31:3:2402:C:O2'	2.17	0.62
31:3:1171:G:O2'	31:3:2045:C:O2'	2.17	0.62
31:3:2481:U:OP1	31:3:2483:C:N4	2.33	0.62
31:3:454:G:H2'	31:3:455:G:C8	2.35	0.62
31:3:2168:C:O2'	31:3:2170:A:O2'	2.17	0.62
31:3:133:G:H1	31:3:150:U:H3	1.48	0.62
31:3:489:A:N3	31:3:493:A:O2'	2.33	0.61
31:3:622:U:H2'	31:3:623:A:H8	1.65	0.61
31:3:862:U:O2'	31:3:2075:U:N3	2.33	0.61
31:3:1723:A:H2'	31:3:1724:A:H8	1.63	0.61
32:4:6:U:H2'	32:4:7:G:H8	1.64	0.61
31:3:742:G:N2	31:3:759:U:O2	2.33	0.61
31:3:1803:U:H2'	31:3:1804:A:C8	2.34	0.61
31:3:1803:U:O2	31:3:1830:G:N2	2.28	0.61
31:3:1818:G:H2'	31:3:1819:G:H8	1.65	0.61
31:3:1981:U:H2'	31:3:1982:G:H8	1.65	0.61
31:3:2614:U:H2'	31:3:2615:G:C8	2.36	0.61
4:7:29:ARG:O	4:7:115:SER:OG	2.12	0.61
31:3:534:U:O4	31:3:538:A:N7	2.33	0.61
31:3:1508:G:OP2	31:3:1508:G:H4'	1.98	0.61
31:3:2100:G:H2'	31:3:2101:A:H8	1.64	0.61
31:3:1245:G:O6	31:3:1264:U:O4	2.17	0.61
31:3:1776:G:O2'	31:3:1965:C:OP1	2.18	0.61
31:3:2013:C:O2'	31:3:2827:A:N3	2.32	0.61
31:3:2547:C:H2'	31:3:2548:G:C8	2.33	0.61
32:4:104:C:H2'	32:4:105:A:H8	1.66	0.61
31:3:599:U:H4'	31:3:844:G:OP1	2.00	0.61
31:3:1463:G:H2'	31:3:1464:G:C8	2.35	0.61
31:3:1113:U:O2'	31:3:1123:A:OP1	2.17	0.61
31:3:1536:C:H2'	31:3:1537:A:C8	2.35	0.61
31:3:1845:C:H4'	31:3:1846:A:H5'	1.82	0.61
31:3:2704:U:H2'	31:3:2705:G:C8	2.35	0.61
31:3:2160:U:H2'	31:3:2161:G:H8	1.66	0.60
32:4:6:U:H3	32:4:102:A:H61	1.48	0.60
31:3:802:U:H2'	31:3:803:G:H8	1.65	0.60
31:3:2604:U:O2'	31:3:2605:G:O5'	2.17	0.60
31:3:569:U:O4	31:3:592:G:O6	2.18	0.60
31:3:2297:G:N2	31:3:2354:A:OP1	2.33	0.60
31:3:2567:C:H2'	31:3:2568:G:H8	1.66	0.60
31:3:2634:C:H2'	31:3:2635:G:H8	1.67	0.60
31:3:18:G:H2'	31:3:19:G:H8	1.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:450:C:H2'	31:3:451:A:C8	2.35	0.60
31:3:219:G:H21	31:3:220:A:H1'	1.67	0.60
31:3:1806:G:N1	31:3:1826:A:OP2	2.30	0.60
31:3:1789:C:O2	31:3:2616:G:O2'	2.19	0.60
1:0:24:THR:HG23	1:0:27:GLY:H	1.66	0.60
31:3:828:A:OP1	31:3:2078:A:O2'	2.20	0.60
31:3:2032:G:H2'	31:3:2033:G:H8	1.65	0.60
31:3:515:A:H1'	31:3:517:G:H5''	1.84	0.60
31:3:632:A:H2'	31:3:633:G:H8	1.66	0.60
1:0:12:ARG:HB2	31:3:721:G:H1	1.67	0.60
31:3:450:C:O2'	31:3:1871:U:O2	2.20	0.60
31:3:578:A:H1'	31:3:579:U:H5	1.67	0.60
31:3:612:G:O2'	31:3:2026:A:OP1	2.20	0.60
31:3:2084:A:N3	31:3:2442:A:O2'	2.35	0.60
31:3:2132:G:N2	31:3:2181:A:H62	2.00	0.60
31:3:2299:U:H2'	31:3:2300:A:C8	2.36	0.60
31:3:2504:C:OP2	31:3:2505:A:N6	2.35	0.60
31:3:591:G:H2'	31:3:592:G:H8	1.67	0.59
31:3:2759:G:OP2	31:3:2759:G:N2	2.31	0.59
31:3:2849:G:H2'	31:3:2850:G:H8	1.67	0.59
31:3:2190:G:H2'	31:3:2191:G:C8	2.37	0.59
31:3:2745:G:H2'	31:3:2746:A:C8	2.37	0.59
1:0:35:ARG:HG3	1:0:42:LEU:HD11	1.84	0.59
31:3:1623:U:H2'	31:3:1624:A:H8	1.67	0.59
31:3:629:G:O6	31:3:696:U:O4	2.21	0.59
31:3:1558:A:OP2	31:3:1570:A:N6	2.36	0.59
31:3:2195:U:H2'	31:3:2196:G:H8	1.67	0.59
4:7:17:LYS:HE2	31:3:1923:A:H1'	1.85	0.59
4:7:17:LYS:HD2	4:7:126:ILE:HG23	1.84	0.59
31:3:774:A:H1'	31:3:775:C:H5	1.68	0.59
31:3:915:A:N6	31:3:936:G:O2'	2.35	0.59
31:3:1344:U:H2'	31:3:1345:G:H8	1.68	0.59
31:3:2036:G:N1	31:3:2040:A:OP2	2.22	0.59
31:3:1743:U:O2'	31:3:2863:G:N3	2.33	0.59
31:3:35:U:O4	31:3:482:G:O2'	2.21	0.59
31:3:2514:U:OP2	31:3:2584:G:N1	2.35	0.59
31:3:2552:G:H1'	31:3:2654:U:H4'	1.84	0.59
31:3:2664:U:H2'	31:3:2665:A:H8	1.67	0.59
31:3:408:G:OP1	31:3:440:C:N4	2.35	0.58
31:3:892:G:H2'	31:3:893:A:H8	1.67	0.58
31:3:945:U:H2'	31:3:946:A:C8	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2100:G:H2'	31:3:2101:A:C8	2.38	0.58
2:1:28:HIS:NE2	31:3:2430:C:OP2	2.36	0.58
31:3:229:C:H3'	31:3:230:G:H8	1.68	0.58
31:3:1262:G:H2'	31:3:1263:G:C8	2.37	0.58
31:3:1950:U:H4'	31:3:1951:A:H2'	1.86	0.58
31:3:1923:A:OP2	31:3:1925:A:N6	2.36	0.58
31:3:2189:U:H2'	31:3:2190:G:C8	2.37	0.58
31:3:2266:C:O2'	31:3:2435:C:OP2	2.21	0.58
31:3:566:G:OP1	31:3:594:G:N2	2.36	0.58
31:3:697:U:H2'	31:3:698:A:C8	2.39	0.58
31:3:697:U:H2'	31:3:698:A:H8	1.69	0.58
31:3:1123:A:H4'	31:3:1124:G:H8	1.68	0.58
31:3:1572:U:H2'	31:3:1573:A:H8	1.68	0.58
31:3:2538:A:OP2	31:3:2543:G:N2	2.36	0.58
31:3:2879:U:H2'	31:3:2880:A:H8	1.68	0.58
31:3:54:A:OP2	31:3:118:G:N1	2.37	0.58
31:3:300:G:H2'	31:3:301:G:C8	2.38	0.58
31:3:313:G:O6	31:3:394:C:N4	2.37	0.58
31:3:1691:U:O4	31:3:1692:A:N6	2.36	0.58
32:4:60:C:H2'	32:4:61:A:H8	1.68	0.58
31:3:2190:G:H2'	31:3:2191:G:H8	1.69	0.58
31:3:2863:G:H2'	31:3:2864:A:C8	2.38	0.58
32:4:93:U:H2'	32:4:94:A:H8	1.67	0.58
4:7:62:PRO:HG2	4:7:65:GLU:HB2	1.84	0.58
31:3:517:G:O6	31:3:544:U:O4	2.21	0.58
31:3:1777:G:H1	31:3:1989:U:H3	1.51	0.58
31:3:2197:U:H2'	31:3:2198:G:C8	2.38	0.58
31:3:112:A:H2'	31:3:113:U:C6	2.39	0.58
31:3:1297:U:H2'	31:3:1298:A:C8	2.38	0.58
31:3:1837:C:H2'	31:3:1838:A:H8	1.67	0.58
31:3:2654:U:OP2	31:3:2773:A:O2'	2.22	0.58
31:3:603:G:H1'	31:3:1019:A:H61	1.69	0.57
31:3:1885:G:H2'	31:3:1886:C:C6	2.39	0.57
31:3:2865:U:H2'	31:3:2866:A:H8	1.69	0.57
31:3:161:U:H3	31:3:171:G:H1	1.52	0.57
31:3:998:C:O2'	31:3:2505:A:OP1	2.19	0.57
31:3:2229:C:H2'	31:3:2230:A:H8	1.68	0.57
31:3:2862:U:O2'	31:3:2863:G:OP1	2.21	0.57
31:3:270:G:O2'	31:3:315:A:N6	2.37	0.57
31:3:812:G:H2'	31:3:813:G:C8	2.40	0.57
31:3:963:U:H2'	31:3:964:A:H8	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2533:A:H2'	31:3:2534:G:H8	1.70	0.57
31:3:622:U:H2'	31:3:623:A:C8	2.40	0.57
31:3:1460:G:H2'	31:3:1461:A:C8	2.40	0.57
31:3:1475:C:O2'	31:3:1577:A:N3	2.36	0.57
31:3:2336:A:H2'	31:3:2337:U:C6	2.39	0.57
31:3:2471:U:H2'	31:3:2472:G:H8	1.69	0.57
31:3:1265:G:H2'	31:3:1266:G:C4	2.40	0.57
31:3:2216:U:H2'	31:3:2217:G:C8	2.39	0.57
32:4:4:G:OP1	32:4:58:C:O2'	2.22	0.57
1:0:13:ALA:HA	1:0:44:VAL:HG21	1.86	0.57
31:3:632:A:H2'	31:3:633:G:C8	2.39	0.57
31:3:641:U:O2	31:3:657:A:C5	2.58	0.57
31:3:2093:U:H2'	31:3:2094:A:H8	1.69	0.57
31:3:2451:C:H2'	31:3:2452:G:C8	2.39	0.57
31:3:2828:C:O5'	31:3:2829:G:N2	2.38	0.57
31:3:42:U:H2'	31:3:43:A:C8	2.40	0.57
31:3:144:C:H2'	31:3:145:A:C8	2.32	0.57
31:3:174:A:H2'	31:3:175:A:H8	1.69	0.57
31:3:762:A:OP1	31:3:1459:A:O2'	2.19	0.57
31:3:914:G:N2	31:3:937:A:OP2	2.34	0.57
31:3:2458:A:H2'	31:3:2459:A:H8	1.68	0.57
31:3:2469:A:H1'	31:3:2500:U:C2	2.40	0.57
31:3:2587:U:H2'	31:3:2588:U:C6	2.40	0.57
31:3:12:A:H5''	31:3:13:C:H5	1.69	0.57
31:3:1531:C:H2'	31:3:1532:A:H4'	1.85	0.57
31:3:1947:U:H1'	31:3:1949:C:N4	2.20	0.57
31:3:2451:C:H2'	31:3:2452:G:H8	1.70	0.57
31:3:2740:U:H5''	31:3:2741:A:C8	2.40	0.57
32:4:58:C:H2'	32:4:59:A:C8	2.40	0.57
32:4:79:U:O2	32:4:86:G:N2	2.36	0.57
31:3:229:C:H3'	31:3:230:G:C8	2.40	0.57
31:3:752:C:H3'	31:3:753:A:H8	1.70	0.57
31:3:928:G:H2'	31:3:929:G:C8	2.39	0.57
31:3:1633:C:H2'	31:3:1634:A:H8	1.69	0.57
31:3:1960:A:O2'	31:3:2567:C:O2	2.23	0.57
3:2:24:ARG:HG2	3:2:35:ARG:HG3	1.86	0.56
31:3:291:G:C2	31:3:292:G:N7	2.73	0.56
31:3:524:G:N2	31:3:527:A:OP2	2.33	0.56
31:3:1504:G:N2	31:3:1539:U:O2	2.30	0.56
32:4:31:G:H2'	32:4:32:G:C8	2.40	0.56
4:7:18:PHE:CZ	4:7:173:ILE:HG13	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:627:U:H2'	31:3:628:A:H8	1.70	0.56
31:3:982:G:H2'	31:3:983:A:C8	2.40	0.56
31:3:982:G:H2'	31:3:983:A:H8	1.70	0.56
31:3:1653:C:H2'	31:3:1654:G:C8	2.41	0.56
31:3:1715:A:H4'	31:3:1733:G:H1	1.69	0.56
31:3:2589:G:OP2	31:3:2589:G:N2	2.28	0.56
32:4:60:C:H2'	32:4:61:A:C8	2.39	0.56
4:7:120:LYS:HD3	31:3:1953:U:H4'	1.87	0.56
4:7:152:GLU:O	4:7:156:LYS:HG3	2.04	0.56
31:3:190:G:H2'	31:3:191:G:H8	1.69	0.56
31:3:1588:A:O2'	31:3:1589:A:OP1	2.21	0.56
31:3:2793:U:H2'	31:3:2794:U:H6	1.70	0.56
31:3:822:C:H5''	31:3:823:A:H5'	1.87	0.56
31:3:1175:C:HO2'	31:3:1177:A:H8	1.54	0.56
31:3:1803:U:H2'	31:3:1804:A:H8	1.70	0.56
31:3:2118:U:OP2	31:3:2152:C:N4	2.33	0.56
31:3:80:U:O4	31:3:109:G:O6	2.22	0.56
31:3:243:U:H3	31:3:262:G:H1	1.53	0.56
31:3:329:G:O6	31:3:377:U:O4	2.24	0.56
31:3:1723:A:OP2	31:3:1732:A:N6	2.35	0.56
31:3:2269:C:H1'	31:3:2396:A:H1'	1.87	0.56
31:3:2584:G:OP1	31:3:2584:G:N2	2.38	0.56
31:3:1350:A:N1	31:3:1361:U:O2'	2.37	0.56
31:3:1446:G:N2	31:3:1613:A:OP2	2.39	0.56
31:3:2436:G:O2'	31:3:2437:G:N7	2.37	0.56
31:3:2473:C:H2'	31:3:2474:C:C6	2.41	0.56
31:3:2840:U:H2'	31:3:2841:A:C8	2.41	0.56
32:4:3:U:OP1	32:4:59:A:O2'	2.22	0.56
31:3:1942:G:N1	31:3:1969:C:O2'	2.32	0.56
31:3:2646:G:H1	31:3:2783:A:H2'	1.71	0.56
4:7:46:TYR:OH	4:7:75:ASN:O	2.21	0.56
31:3:700:U:H2'	31:3:701:A:H8	1.69	0.56
31:3:756:A:H2'	31:3:757:A:C8	2.40	0.56
31:3:1888:U:H2'	31:3:1889:U:C6	2.41	0.56
31:3:1961:A:O2'	31:3:1963:U:O4	2.19	0.56
31:3:559:C:O2'	31:3:589:A:OP1	2.23	0.56
31:3:1020:G:H5''	31:3:1021:C:C5	2.39	0.56
31:3:1932:C:O2	31:3:1936:G:O6	2.24	0.56
32:4:22:G:H2'	32:4:25:A:H62	1.71	0.56
31:3:678:U:N3	31:3:681:A:OP2	2.38	0.56
31:3:1583:G:O2'	31:3:1584:U:OP1	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2706:U:O4	31:3:2707:A:N6	2.39	0.56
31:3:134:U:H2'	31:3:135:A:C8	2.41	0.55
31:3:289:U:H2'	31:3:290:A:C8	2.41	0.55
31:3:2572:A:N6	31:3:2655:U:O2'	2.39	0.55
31:3:2646:G:H22	31:3:2783:A:H2'	1.71	0.55
31:3:2829:G:H3'	31:3:2830:A:H8	1.71	0.55
31:3:2847:C:H2'	31:3:2848:A:H8	1.70	0.55
31:3:597:C:H2'	31:3:598:G:C8	2.41	0.55
31:3:1077:G:N7	31:3:1149:G:N1	2.54	0.55
31:3:2126:A:H61	31:3:2176:G:H1'	1.72	0.55
31:3:2205:U:H2'	31:3:2232:G:H1	1.70	0.55
31:3:2819:C:H2'	31:3:2820:G:H8	1.71	0.55
31:3:899:A:H2'	31:3:900:G:C8	2.41	0.55
31:3:631:A:H2'	31:3:632:A:H8	1.72	0.55
31:3:683:G:H2'	31:3:684:A:H8	1.72	0.55
31:3:2195:U:H2'	31:3:2196:G:C8	2.42	0.55
31:3:2323:U:H2'	31:3:2324:A:H8	1.71	0.55
31:3:1296:G:N2	31:3:2020:A:OP2	2.29	0.55
31:3:2054:C:H2'	31:3:2055:A:H8	1.70	0.55
31:3:2231:A:H3'	31:3:2232:G:H8	1.72	0.55
31:3:341:G:N1	31:3:344:A:OP2	2.28	0.55
31:3:742:G:O6	31:3:759:U:O4	2.24	0.55
31:3:1623:U:H2'	31:3:1624:A:C8	2.42	0.55
31:3:2093:U:H2'	31:3:2094:A:C8	2.41	0.55
3:2:11:CYS:N	3:2:14:CYS:SG	2.72	0.55
31:3:597:C:H2'	31:3:598:G:H8	1.71	0.55
31:3:759:U:H3'	31:3:760:G:H8	1.72	0.55
31:3:1487:U:H2'	31:3:1488:U:C6	2.41	0.55
31:3:1527:U:H2'	31:3:1528:G:H8	1.72	0.55
31:3:2274:A:N6	31:3:2281:A:OP2	2.40	0.55
31:3:2701:A:H2'	31:3:2702:G:C8	2.41	0.55
32:4:104:C:H2'	32:4:105:A:C8	2.42	0.55
31:3:155:A:H2'	31:3:156:A:H8	1.71	0.55
31:3:173:C:H2'	31:3:174:A:C8	2.42	0.55
31:3:306:G:H2'	31:3:307:C:C6	2.42	0.55
4:7:95:ILE:HG12	4:7:100:ILE:HG12	1.88	0.55
31:3:890:U:H2'	31:3:891:G:H8	1.72	0.55
31:3:2852:G:HO2'	31:3:2871:G:N2	2.05	0.55
1:0:30:VAL:O	1:0:34:ARG:HG3	2.06	0.55
3:2:21:GLN:NE2	31:3:2765:A:OP2	2.40	0.55
31:3:614:C:H2'	31:3:615:G:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1164:A:O2'	31:3:2523:C:O2	2.19	0.55
31:3:406:C:H2'	31:3:407:U:C6	2.41	0.54
31:3:598:G:H1	31:3:609:U:H3	1.54	0.54
31:3:1619:A:H2'	31:3:1620:A:C8	2.42	0.54
31:3:2072:C:H2'	31:3:2073:C:C6	2.42	0.54
31:3:2156:G:H2'	31:3:2157:A:C8	2.42	0.54
31:3:2157:A:H2'	31:3:2158:C:C6	2.42	0.54
31:3:2254:G:H2'	31:3:2255:A:C8	2.42	0.54
31:3:522:C:H2'	31:3:523:A:H8	1.72	0.54
31:3:597:C:HO2'	31:3:1283:A:H61	1.53	0.54
1:0:25:ALA:HA	1:0:28:ARG:HG3	1.88	0.54
31:3:337:U:H2'	31:3:338:G:C8	2.42	0.54
31:3:793:C:H2'	31:3:794:G:C8	2.41	0.54
31:3:840:G:N3	31:3:866:G:H1'	2.23	0.54
31:3:50:G:H22	31:3:179:A:H5''	1.72	0.54
31:3:234:G:H2'	31:3:235:U:C6	2.42	0.54
31:3:1089:A:H2'	31:3:1090:G:C8	2.43	0.54
31:3:2117:G:OP1	31:3:2150:C:O2'	2.19	0.54
31:3:2174:G:H2'	31:3:2175:U:C6	2.43	0.54
31:3:2555:U:OP2	31:3:2574:A:O2'	2.22	0.54
31:3:2645:U:H3'	31:3:2646:G:H8	1.73	0.54
31:3:631:A:H2'	31:3:632:A:C8	2.42	0.54
31:3:984:C:H2'	31:3:985:A:H8	1.72	0.54
31:3:1198:G:H2'	31:3:1199:A:H8	1.73	0.54
31:3:2155:G:H2'	31:3:2156:G:H8	1.70	0.54
31:3:2794:U:H2'	31:3:2795:C:H6	1.72	0.54
31:3:2823:A:O2'	31:3:2825:A:OP2	2.26	0.54
31:3:227:A:O2'	31:3:456:G:N3	2.39	0.54
31:3:1307:G:H2'	31:3:1308:A:C8	2.42	0.54
31:3:1398:C:H2'	31:3:1399:G:O4'	2.07	0.54
31:3:1507:G:O2'	31:3:1508:G:OP1	2.25	0.54
31:3:1526:U:H2'	31:3:1527:U:C6	2.43	0.54
31:3:2032:G:H2'	31:3:2033:G:C8	2.42	0.54
31:3:2808:A:OP2	31:3:2811:G:N1	2.34	0.54
31:3:1140:U:H2'	31:3:1141:U:H6	1.72	0.54
31:3:1416:G:H2'	31:3:1417:G:C8	2.43	0.54
31:3:1454:G:N2	31:3:1607:G:O6	2.40	0.54
31:3:2306:A:OP2	31:3:2326:G:N2	2.39	0.54
31:3:2828:C:H3'	31:3:2829:G:H21	1.73	0.54
1:0:8:SER:OG	31:3:721:G:N2	2.40	0.54
31:3:578:A:O2'	31:3:581:A:N6	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1529:U:H2'	31:3:1530:G:H8	1.73	0.54
31:3:152:A:H2'	31:3:153:U:C6	2.43	0.54
31:3:674:G:H2'	31:3:675:U:H6	1.73	0.54
31:3:1020:G:N2	31:3:1020:G:OP2	2.41	0.54
31:3:1818:G:H2'	31:3:1819:G:C8	2.43	0.54
31:3:1994:U:H2'	31:3:1995:G:C8	2.43	0.54
31:3:2880:A:H2'	31:3:2881:A:C8	2.43	0.54
31:3:605:A:H61	31:3:2036:G:H21	1.56	0.54
31:3:714:G:H2'	31:3:715:G:C8	2.42	0.54
31:3:725:G:C2	31:3:807:U:O2	2.60	0.54
31:3:1114:C:N4	31:3:1115:G:O6	2.41	0.54
31:3:1230:U:H2'	31:3:1231:G:C8	2.42	0.54
31:3:1816:A:H2'	31:3:1817:A:C8	2.43	0.54
31:3:2094:A:H2'	31:3:2095:A:C8	2.43	0.54
31:3:387:U:H2'	31:3:388:U:C6	2.43	0.53
31:3:674:G:H2'	31:3:675:U:C6	2.43	0.53
31:3:761:G:H5''	31:3:1460:G:H1'	1.90	0.53
3:2:22:ILE:HG21	3:2:35:ARG:HE	1.74	0.53
31:3:29:G:O2'	31:3:547:G:N2	2.42	0.53
31:3:540:A:HO2'	31:3:544:U:HO2'	1.55	0.53
31:3:2170:A:H5''	31:3:2173:G:H1	1.74	0.53
31:3:190:G:H2'	31:3:191:G:C8	2.43	0.53
31:3:349:G:H2'	31:3:350:C:C6	2.44	0.53
31:3:1268:U:H2'	31:3:1269:C:O4'	2.09	0.53
31:3:2725:G:H2'	31:3:2726:G:O4'	2.07	0.53
31:3:40:A:H2'	31:3:41:C:O4'	2.09	0.53
31:3:141:A:H2'	31:3:142:A:C4	2.43	0.53
31:3:173:C:H2'	31:3:174:A:H8	1.73	0.53
31:3:1488:U:H2'	31:3:1489:G:C8	2.42	0.53
31:3:1994:U:H2'	31:3:1995:G:H8	1.73	0.53
31:3:2031:C:H2'	31:3:2032:G:C8	2.43	0.53
31:3:2867:U:H2'	31:3:2868:G:H8	1.73	0.53
31:3:816:A:H2'	31:3:1784:U:H1'	1.91	0.53
31:3:1236:G:H2'	31:3:1237:G:C8	2.43	0.53
31:3:1848:U:H2'	31:3:1849:G:H8	1.73	0.53
32:4:78:C:H5	32:4:79:U:H3	1.56	0.53
31:3:1063:A:N6	31:3:1161:A:OP1	2.41	0.53
31:3:1305:G:H2'	31:3:1306:G:H8	1.74	0.53
31:3:1754:U:H2'	31:3:1755:A:C8	2.43	0.53
31:3:345:A:N6	31:3:363:G:OP1	2.41	0.53
31:3:410:G:H4'	31:3:411:U:O5'	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1589:A:H2'	31:3:1590:U:C6	2.44	0.53
31:3:2103:C:H2'	31:3:2104:A:C8	2.44	0.53
31:3:2278:G:H3'	31:3:2279:G:H8	1.74	0.53
31:3:2664:U:H2'	31:3:2665:A:C8	2.44	0.53
31:3:2797:C:H4'	31:3:2813:A:C6	2.44	0.53
31:3:2825:A:H2	31:3:2830:A:H61	1.55	0.53
31:3:2849:G:H2'	31:3:2850:G:C8	2.43	0.53
4:7:62:PRO:HG3	4:7:101:ARG:HH12	1.73	0.53
31:3:355:A:C5	31:3:375:U:H4'	2.43	0.53
31:3:487:C:N4	31:3:490:A:OP2	2.35	0.53
31:3:1490:G:H2'	31:3:1491:G:C8	2.44	0.53
31:3:2436:G:H4'	31:3:2437:G:C4	2.44	0.53
31:3:427:A:H1'	31:3:447:G:H1'	1.91	0.53
31:3:442:G:H2'	31:3:443:C:C6	2.44	0.53
31:3:443:C:H2'	31:3:444:C:C6	2.43	0.53
31:3:904:C:N3	31:3:949:C:O2'	2.34	0.53
4:7:139:GLN:O	4:7:142:LYS:HG2	2.09	0.53
31:3:215:A:H2'	31:3:216:C:C6	2.44	0.53
31:3:450:C:O3'	31:3:1885:G:N2	2.39	0.53
31:3:714:G:H2'	31:3:715:G:H8	1.74	0.53
31:3:774:A:N3	31:3:775:C:N4	2.55	0.53
31:3:2220:A:O2'	31:3:2222:C:N4	2.32	0.53
31:3:2334:U:H3	31:3:2397:G:H1	1.54	0.53
31:3:2495:A:H2'	31:3:2496:G:H8	1.74	0.53
32:4:3:U:H2'	32:4:4:G:H8	1.73	0.53
31:3:482:G:H21	31:3:490:A:H61	1.55	0.52
31:3:918:G:O6	31:3:932:U:O2'	2.27	0.52
31:3:990:G:O6	31:3:999:U:O4	2.27	0.52
31:3:1307:G:H2'	31:3:1308:A:H8	1.75	0.52
31:3:1851:U:H2'	31:3:1852:G:H8	1.74	0.52
31:3:2635:G:H22	31:3:2785:G:P	2.32	0.52
31:3:2700:C:O2'	31:3:2851:U:O2	2.27	0.52
3:2:31:LYS:HE3	31:3:2536:U:H4'	1.92	0.52
31:3:226:A:N6	31:3:236:G:H1'	2.25	0.52
31:3:606:G:O2'	31:3:608:A:OP1	2.27	0.52
31:3:2683:G:H2'	31:3:2684:G:C8	2.44	0.52
31:3:2736:U:O2'	31:3:2737:G:H8	1.92	0.52
4:7:172:THR:HA	4:7:175:LYS:HD2	1.92	0.52
31:3:911:U:H2'	31:3:912:A:H8	1.74	0.52
31:3:1306:G:H2'	31:3:1307:G:C8	2.42	0.52
31:3:1451:A:H2'	31:3:1452:G:H8	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1459:A:H61	31:3:1596:U:H3	1.56	0.52
31:3:1466:U:H3'	31:3:1467:U:H5''	1.92	0.52
31:3:2094:A:H2'	31:3:2095:A:H8	1.74	0.52
31:3:2425:C:H2'	31:3:2426:A:H8	1.75	0.52
31:3:2551:G:H2'	31:3:2552:G:C8	2.44	0.52
31:3:189:U:H2'	31:3:190:G:C8	2.45	0.52
31:3:534:U:H2'	31:3:535:G:O4'	2.08	0.52
31:3:576:A:H2'	31:3:577:C:O4'	2.10	0.52
31:3:639:G:H2'	31:3:640:U:O4'	2.10	0.52
31:3:1229:U:H2'	31:3:1230:U:H6	1.74	0.52
31:3:2468:U:H2'	31:3:2469:A:H8	1.74	0.52
31:3:2751:C:OP2	31:3:2763:C:N4	2.43	0.52
31:3:1456:C:N4	31:3:1604:A:OP2	2.32	0.52
31:3:1772:G:N2	31:3:1994:U:O2	2.28	0.52
31:3:2404:G:H2'	31:3:2405:G:H8	1.75	0.52
4:7:30:THR:HG22	4:7:181:LEU:HD12	1.92	0.52
31:3:2310:C:H2'	31:3:2311:G:C8	2.44	0.52
31:3:289:U:H2'	31:3:290:A:H8	1.74	0.52
31:3:642:A:OP2	31:3:655:G:N2	2.36	0.52
31:3:790:U:H2'	31:3:791:A:H8	1.74	0.52
31:3:2071:C:H2'	31:3:2072:C:H6	1.74	0.52
31:3:2854:A:OP2	31:3:2870:U:N3	2.43	0.52
32:4:11:A:H4'	32:4:13:G:C8	2.44	0.52
31:3:42:U:H2'	31:3:43:A:H8	1.74	0.52
31:3:188:G:H2'	31:3:189:U:C6	2.45	0.52
31:3:276:A:O2'	31:3:405:C:O2	2.19	0.52
31:3:532:A:H2'	31:3:533:G:H8	1.74	0.52
31:3:701:A:H2'	31:3:702:U:C6	2.45	0.52
31:3:1198:G:H2'	31:3:1199:A:C8	2.44	0.52
31:3:1633:C:H2'	31:3:1634:A:C8	2.45	0.52
31:3:2115:A:O2'	31:3:2149:U:O2	2.24	0.52
32:4:12:U:O2'	32:4:97:A:O2'	2.27	0.52
31:3:155:A:H2'	31:3:156:A:C8	2.44	0.52
31:3:425:U:H4'	31:3:426:U:OP2	2.10	0.52
31:3:730:G:H2'	31:3:731:A:H8	1.75	0.52
31:3:869:U:C2	31:3:870:A:C8	2.98	0.52
31:3:2146:A:H2'	31:3:2147:G:C8	2.45	0.52
31:3:2300:A:H5''	31:3:2386:A:H61	1.75	0.52
31:3:2684:G:H2'	31:3:2685:A:C8	2.44	0.52
31:3:195:A:H2'	31:3:196:G:C8	2.45	0.52
31:3:713:C:H2'	31:3:714:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:829:A:H2'	31:3:830:A:C8	2.45	0.52
31:3:984:C:H2'	31:3:985:A:C8	2.45	0.52
31:3:1229:U:H2'	31:3:1230:U:C6	2.45	0.52
31:3:1830:G:H2'	31:3:1831:G:H8	1.75	0.52
31:3:1881:C:H2'	31:3:1882:G:O4'	2.10	0.52
31:3:1945:A:C6	31:3:2598:C:H1'	2.45	0.52
31:3:2141:A:N6	31:3:2163:U:O2'	2.43	0.52
31:3:2144:C:N4	31:3:2145:A:H62	2.08	0.52
31:3:2259:G:C5	31:3:2458:A:H4'	2.45	0.52
31:3:2644:U:H2'	31:3:2645:U:C6	2.44	0.52
2:1:42:ARG:O	2:1:44:GLN:NE2	2.43	0.51
31:3:69:U:H2'	31:3:70:G:H8	1.74	0.51
31:3:343:A:N3	31:3:363:G:O2'	2.42	0.51
31:3:389:C:H2'	31:3:390:A:C8	2.45	0.51
31:3:393:C:H2'	31:3:394:C:C6	2.45	0.51
31:3:428:U:H2'	31:3:429:U:C6	2.44	0.51
31:3:1187:C:H2'	31:3:1188:C:H6	1.74	0.51
31:3:1755:A:H2'	31:3:1756:A:H8	1.74	0.51
31:3:2135:C:H2'	31:3:2136:A:C8	2.44	0.51
31:3:2323:U:H2'	31:3:2324:A:C8	2.44	0.51
4:7:44:GLU:H	4:7:83:GLU:HG3	1.75	0.51
31:3:70:G:H21	31:3:76:A:H5''	1.75	0.51
31:3:539:U:O2'	31:3:1265:G:OP1	2.28	0.51
31:3:891:G:H2'	31:3:892:G:H8	1.75	0.51
31:3:606:G:N2	31:3:2038:A:OP1	2.43	0.51
31:3:663:A:O2'	31:3:672:G:N2	2.36	0.51
31:3:997:G:N2	31:3:2037:A:OP2	2.42	0.51
31:3:2072:C:H2'	31:3:2073:C:H6	1.74	0.51
31:3:1325:C:H2'	31:3:1326:C:C6	2.45	0.51
31:3:1924:U:H3'	31:3:1925:A:C8	2.45	0.51
31:3:2495:A:H2'	31:3:2496:G:C8	2.46	0.51
31:3:2645:U:H3'	31:3:2646:G:C8	2.45	0.51
31:3:509:G:H2'	31:3:510:G:C8	2.46	0.51
31:3:511:U:H2'	31:3:512:G:O4'	2.10	0.51
31:3:1149:G:H2'	31:3:1150:U:C6	2.44	0.51
31:3:1297:U:H2'	31:3:1298:A:H8	1.75	0.51
31:3:2380:U:H2'	31:3:2381:G:C8	2.45	0.51
31:3:2750:A:H2'	31:3:2751:C:C6	2.46	0.51
32:4:4:G:H2'	32:4:5:G:C8	2.46	0.51
2:1:2:LYS:HA	31:3:246:G:H2'	1.91	0.51
31:3:444:C:N3	31:3:456:G:N1	2.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:513:A:N6	31:3:536:A:N7	2.59	0.51
31:3:684:A:H2'	31:3:685:G:H8	1.76	0.51
31:3:746:G:H2'	31:3:747:A:H8	1.76	0.51
31:3:1007:C:H2'	31:3:1008:A:O4'	2.10	0.51
31:3:1264:U:H3'	31:3:1265:G:C8	2.43	0.51
31:3:2697:C:OP2	31:3:2876:G:N1	2.38	0.51
31:3:78:C:H2'	31:3:79:U:H6	1.76	0.51
31:3:614:C:H2'	31:3:615:G:C8	2.45	0.51
31:3:802:U:H2'	31:3:803:G:C8	2.46	0.51
31:3:1311:G:N1	31:3:1314:A:OP2	2.43	0.51
31:3:1385:U:H3	31:3:1402:G:H1	1.57	0.51
31:3:1443:A:O2'	31:3:1445:U:OP2	2.19	0.51
31:3:1848:U:H2'	31:3:1849:G:C8	2.46	0.51
31:3:2264:G:H2'	31:3:2265:U:C6	2.46	0.51
31:3:142:A:O2'	31:3:143:A:O4'	2.28	0.51
31:3:484:U:H3	31:3:616:G:H1'	1.76	0.51
31:3:823:A:OP1	31:3:826:C:N4	2.27	0.51
31:3:1050:A:N6	31:3:1183:A:H61	2.08	0.51
31:3:1293:U:H3'	31:3:1294:G:C8	2.46	0.51
31:3:1861:A:H4'	31:3:2241:A:H4'	1.93	0.51
31:3:2078:A:H2'	31:3:2079:G:C8	2.46	0.51
31:3:2567:C:H2'	31:3:2568:G:C8	2.45	0.51
4:7:3:PRO:O	4:7:7:LEU:HG	2.11	0.51
31:3:62:G:H1'	31:3:64:U:C4	2.46	0.51
31:3:546:U:H3'	31:3:547:G:C8	2.46	0.51
31:3:1868:A:H2'	31:3:1869:G:C8	2.46	0.51
31:3:2694:A:H2'	31:3:2695:U:C6	2.46	0.51
31:3:2861:G:N2	31:3:2864:A:OP2	2.29	0.51
31:3:660:U:N3	31:3:661:G:O6	2.43	0.51
31:3:805:G:H2'	31:3:806:A:H8	1.76	0.51
31:3:1621:U:H2'	31:3:1622:C:H6	1.76	0.51
31:3:2189:U:H2'	31:3:2190:G:H8	1.75	0.51
31:3:2205:U:N3	31:3:2233:A:N7	2.58	0.51
31:3:2384:A:H2'	31:3:2385:A:O4'	2.10	0.51
31:3:2743:U:H2'	31:3:2744:A:H8	1.76	0.51
31:3:2840:U:H2'	31:3:2841:A:H8	1.76	0.51
31:3:142:A:H2	31:3:1628:G:H21	1.57	0.50
31:3:453:U:H2'	31:3:454:G:C8	2.46	0.50
31:3:684:A:H2'	31:3:685:G:C8	2.46	0.50
31:3:1645:C:H2'	31:3:1646:G:C8	2.46	0.50
31:3:1851:U:H2'	31:3:1852:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2376:C:H2'	31:3:2377:A:C8	2.43	0.50
3:2:27:CYS:SG	3:2:28:LYS:N	2.83	0.50
31:3:359:G:H2'	31:3:360:G:H8	1.76	0.50
31:3:418:G:N2	31:3:430:U:O2	2.36	0.50
31:3:675:U:H3	31:3:685:G:H1	1.58	0.50
31:3:1072:A:H2'	31:3:1073:A:H8	1.76	0.50
31:3:633:G:O6	31:3:692:U:O4	2.28	0.50
31:3:877:G:H2'	31:3:878:A:C8	2.45	0.50
31:3:1554:A:N6	31:3:1576:G:O2'	2.44	0.50
31:3:299:A:H2'	31:3:300:G:C8	2.46	0.50
31:3:720:A:H1'	31:3:724:A:N6	2.27	0.50
31:3:2705:G:H2'	31:3:2706:U:C6	2.47	0.50
4:7:57:GLN:NE2	4:7:58:ILE:O	2.45	0.50
31:3:529:G:H2'	31:3:530:G:H8	1.75	0.50
31:3:1026:A:H5''	31:3:1192:U:H5''	1.93	0.50
31:3:1581:U:H2'	31:3:1582:G:C8	2.47	0.50
31:3:1868:A:H2'	31:3:1869:G:H8	1.76	0.50
4:7:23:GLU:O	4:7:26:SER:OG	2.30	0.50
31:3:174:A:H2'	31:3:175:A:C8	2.46	0.50
31:3:297:G:N1	31:3:440:C:O2'	2.28	0.50
31:3:1111:C:C4	31:3:1112:A:N6	2.80	0.50
31:3:1494:U:H3	31:3:1550:G:H1	1.59	0.50
31:3:2425:C:H2'	31:3:2426:A:C8	2.45	0.50
31:3:2599:C:N4	31:3:2600:G:O6	2.44	0.50
31:3:863:U:H4'	31:3:866:G:C6	2.47	0.50
31:3:1317:C:H2'	31:3:1318:U:C6	2.47	0.50
31:3:1777:G:H2'	31:3:1778:G:C8	2.46	0.50
31:3:1914:G:O6	31:3:1930:U:O4	2.30	0.50
31:3:2374:A:H3'	31:3:2375:A:H8	1.75	0.50
31:3:2709:C:P	31:3:2710:G:H5''	2.51	0.50
31:3:512:G:H1'	31:3:516:A:H61	1.77	0.50
31:3:1983:U:HO2'	31:3:1984:A:H8	1.57	0.50
31:3:2820:G:H2'	31:3:2821:U:C6	2.46	0.50
32:4:59:A:O2'	32:4:60:C:OP1	2.30	0.50
4:7:25:LEU:HA	4:7:28:ILE:HD12	1.94	0.50
31:3:512:G:H21	31:3:514:A:H8	1.60	0.50
31:3:820:U:H2'	31:3:821:C:C6	2.47	0.50
31:3:993:A:H61	31:3:2466:G:H4'	1.77	0.50
31:3:1111:C:H42	31:3:1112:A:N6	2.10	0.50
31:3:1270:C:H2'	31:3:1271:A:H8	1.77	0.50
31:3:1451:A:H2'	31:3:1452:G:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2249:A:H2'	31:3:2250:G:C8	2.47	0.50
31:3:2315:G:H4'	31:3:2316:G:O4'	2.12	0.50
31:3:2528:C:H2'	31:3:2529:C:C6	2.47	0.50
31:3:769:A:H3'	31:3:770:A:H8	1.77	0.49
31:3:1529:U:H2'	31:3:1530:G:C8	2.47	0.49
31:3:1723:A:H2'	31:3:1724:A:C8	2.44	0.49
31:3:2033:G:H2'	31:3:2034:G:C8	2.47	0.49
31:3:2539:A:H61	31:3:2670:A:H61	1.59	0.49
31:3:2587:U:H2'	31:3:2588:U:H6	1.75	0.49
32:4:4:G:O6	32:4:105:A:N6	2.44	0.49
4:7:139:GLN:O	4:7:143:LYS:HG2	2.12	0.49
31:3:235:U:H2'	31:3:236:G:O4'	2.12	0.49
31:3:340:U:H2'	31:3:341:G:O4'	2.12	0.49
31:3:1837:C:H2'	31:3:1838:A:C8	2.46	0.49
31:3:2421:U:H2'	31:3:2422:G:H8	1.77	0.49
31:3:2752:G:H1	31:3:2768:U:H3	1.60	0.49
31:3:2814:A:H2'	31:3:2815:G:O4'	2.12	0.49
1:0:1:MET:N	31:3:1653:C:O2	2.45	0.49
4:7:107:MET:H	4:7:112:ARG:NH2	2.10	0.49
31:3:29:G:H1'	31:3:30:A:C8	2.46	0.49
31:3:690:U:O2'	31:3:691:G:O4'	2.27	0.49
31:3:729:U:H3	31:3:803:G:H1	1.60	0.49
31:3:730:G:H2'	31:3:731:A:C8	2.47	0.49
31:3:1019:A:H2'	31:3:1020:G:C4	2.47	0.49
31:3:1069:G:H2'	31:3:1070:U:O4'	2.13	0.49
31:3:1073:A:H2'	31:3:1074:A:C8	2.47	0.49
31:3:1439:U:H2'	31:3:1440:U:C6	2.47	0.49
31:3:1473:C:H2'	31:3:1474:C:H6	1.77	0.49
31:3:1829:U:H2'	31:3:1830:G:H8	1.76	0.49
31:3:2363:C:H2'	31:3:2364:A:C8	2.47	0.49
31:3:2554:U:O2'	31:3:2574:A:N3	2.38	0.49
31:3:130:C:H2'	31:3:131:C:C6	2.47	0.49
31:3:455:G:H2'	31:3:456:G:C8	2.47	0.49
31:3:627:U:H2'	31:3:628:A:C8	2.48	0.49
31:3:755:C:H2'	31:3:756:A:C8	2.47	0.49
31:3:1007:C:O2'	31:3:1019:A:N3	2.36	0.49
31:3:2034:G:H2'	31:3:2035:U:C6	2.47	0.49
31:3:2242:G:H2'	31:3:2243:G:H8	1.78	0.49
31:3:1158:C:H2'	31:3:1159:C:H6	1.78	0.49
31:3:1440:U:H2'	31:3:1441:A:C8	2.48	0.49
31:3:2099:U:N3	31:3:2234:C:OP2	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2893:C:H2'	31:3:2894:G:O4'	2.13	0.49
31:3:294:G:O2'	31:3:295:U:O4'	2.17	0.49
31:3:385:U:H2'	31:3:386:U:H6	1.77	0.49
31:3:389:C:H2'	31:3:390:A:H8	1.77	0.49
31:3:585:U:H2'	31:3:586:G:C8	2.45	0.49
31:3:868:C:H2'	31:3:869:U:H6	1.76	0.49
31:3:1010:G:H22	31:3:1025:G:H1'	1.78	0.49
31:3:2522:U:H2'	31:3:2523:C:C6	2.47	0.49
31:3:634:C:H2'	31:3:635:G:O4'	2.12	0.49
31:3:840:G:OP2	31:3:841:C:N4	2.44	0.49
31:3:1344:U:H2'	31:3:1345:G:C8	2.46	0.49
31:3:1414:C:O2'	31:3:1495:A:N3	2.35	0.49
31:3:2825:A:H3'	31:3:2826:G:H8	1.78	0.49
31:3:189:U:H2'	31:3:190:G:H8	1.77	0.49
31:3:522:C:H2'	31:3:523:A:C8	2.47	0.49
31:3:1543:U:H2'	31:3:1544:G:C8	2.47	0.49
31:3:1700:G:H3'	31:3:1701:G:C8	2.48	0.49
31:3:2088:U:H2'	31:3:2089:A:H8	1.78	0.49
31:3:2244:U:H2'	31:3:2245:G:O4'	2.13	0.49
4:7:61:ASN:HB3	4:7:62:PRO:HD3	1.95	0.49
31:3:121:U:H5''	31:3:123:G:OP2	2.13	0.49
31:3:784:A:H61	31:3:788:G:H21	1.61	0.49
31:3:1801:U:H2'	31:3:1802:C:H6	1.78	0.49
31:3:2005:G:H2'	31:3:2006:C:C6	2.48	0.49
31:3:2328:A:H5''	31:3:2329:G:C6	2.47	0.49
31:3:2392:U:H5''	31:3:2394:A:OP1	2.12	0.49
32:4:59:A:H2'	32:4:60:C:C6	2.48	0.49
32:4:75:U:H2'	32:4:76:A:H8	1.78	0.49
31:3:225:A:C4	31:3:237:A:H1'	2.47	0.49
31:3:269:A:N6	31:3:315:A:O4'	2.46	0.49
31:3:874:U:H2'	31:3:875:G:C8	2.47	0.49
31:3:1409:G:O6	31:3:1410:A:N6	2.46	0.49
31:3:2025:C:H2'	31:3:2026:A:H8	1.78	0.49
31:3:2154:A:H2'	31:3:2155:G:H8	1.77	0.49
31:3:2820:G:H2'	31:3:2821:U:H6	1.78	0.49
31:3:2851:U:H3	31:3:2873:G:H1	1.59	0.49
32:4:42:G:H1'	32:4:45:C:H42	1.77	0.49
4:7:151:PHE:O	4:7:155:LEU:HG	2.12	0.48
31:3:352:C:H2'	31:3:353:G:C8	2.47	0.48
31:3:640:U:O2	31:3:658:G:O6	2.31	0.48
31:3:756:A:H2'	31:3:757:A:H8	1.76	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:805:G:H2'	31:3:806:A:C8	2.48	0.48
31:3:1085:A:H1'	31:3:2759:G:C2	2.48	0.48
31:3:2053:G:H1	31:3:2630:U:H3	1.60	0.48
31:3:2458:A:N7	31:3:2509:C:C4	2.81	0.48
31:3:2701:A:H2'	31:3:2702:G:H8	1.77	0.48
32:4:29:C:O2'	32:4:51:A:N1	2.43	0.48
31:3:177:U:H2'	31:3:178:A:C8	2.47	0.48
31:3:358:A:N6	31:3:373:U:O4'	2.46	0.48
31:3:1049:U:H2'	31:3:1050:A:C8	2.47	0.48
31:3:1305:G:H2'	31:3:1306:G:C8	2.48	0.48
31:3:1587:U:H2'	31:3:1588:A:C8	2.48	0.48
31:3:1841:U:H5''	31:3:1842:G:H5'	1.94	0.48
31:3:2054:C:HO2'	31:3:2055:A:H5'	1.77	0.48
31:3:2223:C:H2'	31:3:2224:A:C8	2.47	0.48
31:3:2699:C:O2'	31:3:2875:U:O2'	2.24	0.48
31:3:2729:A:H2'	31:3:2730:G:O4'	2.13	0.48
31:3:2892:U:H2'	31:3:2893:C:C6	2.47	0.48
31:3:333:A:N6	31:3:356:A:O2'	2.41	0.48
31:3:464:A:H3'	31:3:465:A:C8	2.48	0.48
31:3:1045:A:H3'	31:3:1046:A:C8	2.48	0.48
31:3:1218:G:N2	31:3:1219:U:O4	2.46	0.48
31:3:1412:A:H1'	31:3:1433:U:H1'	1.95	0.48
31:3:1462:A:O2'	31:3:1463:G:O5'	2.20	0.48
31:3:2272:C:H2'	31:3:2273:U:O4'	2.13	0.48
31:3:2792:C:H2'	31:3:2793:U:C6	2.48	0.48
31:3:2851:U:H2'	31:3:2852:G:O4'	2.13	0.48
31:3:336:C:H2'	31:3:337:U:C6	2.48	0.48
31:3:337:U:H2'	31:3:338:G:H8	1.78	0.48
31:3:488:G:N2	31:3:493:A:H1'	2.27	0.48
31:3:517:G:H1	31:3:544:U:H3	1.56	0.48
31:3:1246:U:H2'	31:3:1247:C:C6	2.48	0.48
31:3:2054:C:H2'	31:3:2055:A:C8	2.47	0.48
31:3:2405:G:N2	31:3:2427:U:O2	2.43	0.48
31:3:2476:A:OP2	31:3:2484:A:N6	2.47	0.48
31:3:2560:U:C2	31:3:2562:U:H5''	2.48	0.48
31:3:195:A:H2	31:3:835:U:H5	1.61	0.48
31:3:494:G:H1'	31:3:495:U:H5	1.77	0.48
31:3:800:C:H2'	31:3:801:U:C6	2.49	0.48
31:3:1010:G:N2	31:3:1025:G:H1'	2.29	0.48
31:3:1248:A:O2'	31:3:1249:A:H5'	2.14	0.48
31:3:1476:C:H2'	31:3:1477:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1756:A:H2'	31:3:1757:G:C8	2.49	0.48
31:3:2536:U:OP2	31:3:2538:A:N6	2.46	0.48
31:3:155:A:N6	31:3:178:A:H61	2.12	0.48
31:3:1490:G:H2'	31:3:1491:G:H8	1.78	0.48
31:3:1692:A:H2'	31:3:1693:U:C6	2.48	0.48
31:3:2223:C:H2'	31:3:2224:A:H8	1.77	0.48
3:2:3:VAL:HG11	31:3:2547:C:H5'	1.95	0.48
31:3:766:C:H2'	31:3:767:C:H6	1.79	0.48
31:3:1459:A:H2'	31:3:1460:G:C8	2.49	0.48
31:3:1544:G:H2'	31:3:1545:A:H8	1.78	0.48
31:3:1617:U:H1'	31:3:1619:A:C6	2.48	0.48
31:3:1662:G:H2'	31:3:1663:G:H8	1.78	0.48
31:3:1871:U:H3	31:3:1885:G:H1	1.61	0.48
31:3:2159:U:H2'	31:3:2160:U:C6	2.49	0.48
31:3:2529:C:O2'	31:3:2572:A:N3	2.41	0.48
31:3:226:A:H61	31:3:236:G:H1'	1.77	0.48
31:3:562:C:N4	31:3:2787:U:OP2	2.42	0.48
31:3:629:G:N2	31:3:696:U:O2	2.41	0.48
31:3:1094:G:H2'	31:3:1095:U:C5	2.49	0.48
31:3:2045:C:N4	31:3:2046:G:O6	2.46	0.48
31:3:2420:A:H2'	31:3:2421:U:O4'	2.14	0.48
31:3:2794:U:H2'	31:3:2795:C:C6	2.49	0.48
32:4:95:G:H2'	32:4:96:G:C8	2.49	0.48
1:0:26:SER:O	1:0:29:LYS:HG2	2.14	0.48
31:3:500:U:O2'	31:3:501:G:OP1	2.31	0.48
31:3:1006:U:H2'	31:3:1007:C:C6	2.48	0.48
31:3:1085:A:H61	31:3:1143:U:H3	1.62	0.48
31:3:1158:C:H2'	31:3:1159:C:C6	2.48	0.48
31:3:1830:G:H2'	31:3:1831:G:C8	2.48	0.48
31:3:1861:A:N6	31:3:1895:G:H1'	2.28	0.48
31:3:2462:G:N2	31:3:2507:C:H41	2.12	0.48
31:3:2533:A:H2'	31:3:2534:G:C8	2.48	0.48
4:7:122:VAL:O	4:7:126:ILE:HG12	2.13	0.48
31:3:260:A:H2'	31:3:261:A:H8	1.79	0.48
31:3:529:G:H2'	31:3:530:G:C8	2.49	0.48
31:3:790:U:H2'	31:3:791:A:C8	2.49	0.48
31:3:897:A:N3	32:4:77:G:O2'	2.46	0.48
31:3:1166:G:O2'	31:3:2032:G:O2'	2.19	0.48
31:3:1230:U:H2'	31:3:1231:G:H8	1.77	0.48
31:3:1916:C:H2'	31:3:1917:G:C8	2.48	0.48
31:3:2543:G:H2'	31:3:2544:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2615:G:H2'	31:3:2616:G:O4'	2.13	0.48
3:2:4:ARG:NH1	31:3:2485:U:O2	2.45	0.47
3:2:27:CYS:HB3	3:2:32:HIS:HB3	1.96	0.47
3:2:31:LYS:HE2	31:3:2486:A:H5'	1.96	0.47
3:2:35:ARG:HG2	3:2:36:GLN:H	1.78	0.47
4:7:147:LYS:HZ3	31:3:2263:G:H5''	1.78	0.47
31:3:851:U:H2'	31:3:852:C:C6	2.48	0.47
31:3:2038:A:N3	31:3:2463:G:O2'	2.45	0.47
31:3:2126:A:N6	31:3:2176:G:H1'	2.28	0.47
31:3:2644:U:H2'	31:3:2645:U:H6	1.79	0.47
31:3:2718:C:H2'	31:3:2719:A:C8	2.49	0.47
31:3:59:C:H2'	31:3:60:G:C8	2.50	0.47
31:3:237:A:H2'	31:3:238:U:O4'	2.14	0.47
31:3:746:G:O6	31:3:756:A:N6	2.47	0.47
31:3:1010:G:O2'	31:3:1011:A:OP2	2.29	0.47
31:3:1393:A:H3'	31:3:1394:A:H8	1.79	0.47
31:3:1793:A:O2'	31:3:1945:A:N6	2.47	0.47
31:3:1979:G:H2'	31:3:1980:G:H8	1.79	0.47
31:3:2213:A:H2'	31:3:2214:A:H8	1.79	0.47
31:3:2576:A:H2'	31:3:2577:G:C8	2.50	0.47
31:3:2657:C:H2'	31:3:2658:U:C6	2.50	0.47
31:3:360:G:H2'	31:3:361:G:C8	2.49	0.47
31:3:562:C:N3	31:3:2787:U:H2'	2.29	0.47
31:3:719:G:O2'	31:3:823:A:N7	2.46	0.47
31:3:1416:G:H2'	31:3:1417:G:H8	1.79	0.47
31:3:1512:A:N6	31:3:1513:A:N6	2.62	0.47
31:3:1700:G:H3'	31:3:1701:G:H8	1.80	0.47
31:3:2097:A:N6	31:3:2238:G:O6	2.47	0.47
31:3:2757:A:OP2	31:3:2758:A:O2'	2.22	0.47
31:3:2822:C:H2'	31:3:2823:A:C8	2.49	0.47
32:4:77:G:C2	32:4:78:C:H1'	2.49	0.47
4:7:119:ALA:O	4:7:123:VAL:HG23	2.15	0.47
31:3:931:G:H2'	31:3:932:U:H4'	1.96	0.47
31:3:1304:U:H2'	31:3:1305:G:C8	2.50	0.47
31:3:1507:G:O2'	31:3:1508:G:P	2.73	0.47
31:3:1552:C:H2'	31:3:1553:G:O4'	2.14	0.47
31:3:1798:A:N6	31:3:1835:G:H1'	2.29	0.47
31:3:2598:C:H2'	31:3:2599:C:C6	2.49	0.47
31:3:2701:A:H4'	31:3:2852:G:H4'	1.97	0.47
32:4:58:C:H2'	32:4:59:A:H8	1.78	0.47
31:3:18:G:H2'	31:3:19:G:C8	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:694:U:H2'	31:3:695:G:C8	2.47	0.47
31:3:768:G:N2	31:3:769:A:N7	2.62	0.47
31:3:855:A:H2	31:3:979:U:H4'	1.79	0.47
31:3:889:G:H2'	31:3:890:U:C6	2.49	0.47
31:3:1888:U:H2'	31:3:1889:U:C5	2.50	0.47
31:3:2259:G:H1	31:3:2458:A:HO2'	1.51	0.47
31:3:2599:C:H2'	31:3:2600:G:C8	2.50	0.47
31:3:2865:U:H2'	31:3:2866:A:C8	2.49	0.47
31:3:660:U:H2'	31:3:661:G:C8	2.50	0.47
31:3:963:U:H2'	31:3:964:A:C8	2.48	0.47
31:3:1083:A:N1	31:3:1147:G:O2'	2.40	0.47
31:3:1284:A:H5''	31:3:1285:U:H5''	1.95	0.47
31:3:1415:A:H2'	31:3:1416:G:C8	2.49	0.47
31:3:2513:G:O2'	31:3:2514:U:O4'	2.33	0.47
31:3:2737:G:H2'	31:3:2738:U:H6	1.80	0.47
31:3:172:U:H2'	31:3:173:C:C6	2.49	0.47
31:3:243:U:H2'	31:3:244:G:O4'	2.15	0.47
31:3:263:C:H2'	31:3:264:G:C8	2.50	0.47
31:3:1025:G:H5''	31:3:1192:U:H4'	1.97	0.47
31:3:1137:C:H2'	31:3:1138:A:C8	2.45	0.47
31:3:1299:A:H61	31:3:2018:U:H3	1.61	0.47
31:3:1363:C:H2'	31:3:1364:A:H8	1.80	0.47
31:3:1638:C:H2'	31:3:1639:C:H6	1.80	0.47
31:3:1844:C:O2'	31:3:1934:A:N3	2.40	0.47
31:3:1886:C:H2'	31:3:1887:U:O4'	2.14	0.47
31:3:1916:C:H2'	31:3:1917:G:H8	1.80	0.47
31:3:2064:G:C2	31:3:2065:A:C8	3.03	0.47
31:3:2071:C:H2'	31:3:2072:C:C6	2.49	0.47
31:3:2124:A:H8	31:3:2124:A:OP2	1.98	0.47
31:3:2424:C:H2'	31:3:2425:C:C6	2.50	0.47
31:3:2474:C:H2'	31:3:2475:C:C6	2.49	0.47
31:3:2551:G:H4'	31:3:2653:G:C6	2.50	0.47
2:1:51:ASP:OD1	2:1:54:ARG:NH1	2.47	0.47
4:7:67:VAL:HG22	4:7:101:ARG:HG2	1.97	0.47
31:3:8:A:H5''	31:3:2790:A:H5''	1.97	0.47
31:3:293:G:H2'	31:3:294:G:C5	2.49	0.47
31:3:720:A:H1'	31:3:724:A:H61	1.80	0.47
31:3:333:A:H2'	31:3:334:A:C8	2.50	0.47
31:3:485:A:O2'	31:3:1278:G:N2	2.46	0.47
31:3:626:A:H2'	31:3:627:U:C6	2.50	0.47
31:3:747:A:H2'	31:3:748:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:767:C:H2'	31:3:768:G:O4'	2.15	0.47
31:3:1065:G:C6	31:3:1160:G:N2	2.83	0.47
31:3:1088:A:H61	31:3:1141:U:H3	1.63	0.47
31:3:1387:A:OP2	31:3:1399:G:N2	2.26	0.47
31:3:1925:A:H2	31:3:1926:A:H62	1.61	0.47
31:3:1954:C:H2'	31:3:1955:G:C8	2.49	0.47
31:3:2242:G:H2'	31:3:2243:G:C8	2.50	0.47
31:3:2737:G:H2'	31:3:2738:U:C6	2.50	0.47
31:3:2738:U:H2'	31:3:2739:C:C6	2.49	0.47
31:3:124:A:H3'	31:3:125:G:H8	1.80	0.47
31:3:251:G:OP1	31:3:424:G:O2'	2.32	0.47
31:3:329:G:N2	31:3:377:U:O2	2.34	0.47
31:3:340:U:H1'	31:3:1241:U:H5	1.79	0.47
31:3:371:C:H2'	31:3:372:G:O4'	2.15	0.47
31:3:886:U:H2'	31:3:887:A:C8	2.50	0.47
31:3:1677:G:H2'	31:3:1678:U:C6	2.50	0.47
31:3:2850:G:H2'	31:3:2851:U:C6	2.50	0.47
4:7:32:ARG:HH22	4:7:107:MET:HG2	1.79	0.46
31:3:154:U:H2'	31:3:155:A:C8	2.50	0.46
31:3:252:G:H5'	31:3:254:G:C5	2.50	0.46
31:3:658:G:H2'	31:3:659:C:C6	2.50	0.46
31:3:1162:A:O2'	31:3:2526:A:OP1	2.26	0.46
31:3:1263:G:C2	31:3:1264:U:C5	3.03	0.46
31:3:1730:C:H2'	31:3:1731:G:O4'	2.15	0.46
31:3:2380:U:H2'	31:3:2381:G:H8	1.81	0.46
2:1:30:ALA:HB2	31:3:2427:U:OP1	2.16	0.46
31:3:260:A:H2'	31:3:261:A:C8	2.50	0.46
31:3:385:U:H2'	31:3:386:U:C6	2.50	0.46
31:3:386:U:H2'	31:3:387:U:C6	2.50	0.46
31:3:696:U:H2'	31:3:697:U:C6	2.49	0.46
31:3:894:G:O2'	31:3:2276:A:H1'	2.14	0.46
31:3:1801:U:H2'	31:3:1802:C:C6	2.50	0.46
31:3:2015:C:H2'	31:3:2016:G:H8	1.79	0.46
31:3:2059:G:O6	31:3:2625:U:O4	2.33	0.46
31:3:2855:A:H3'	31:3:2856:G:H8	1.80	0.46
4:7:161:LYS:HA	4:7:164:LYS:HD2	1.98	0.46
31:3:86:A:H2	31:3:104:A:C5	2.33	0.46
31:3:444:C:H2'	31:3:445:C:C6	2.50	0.46
31:3:763:G:HO2'	31:3:765:A:H8	1.62	0.46
31:3:1499:C:H2'	31:3:1500:A:C8	2.50	0.46
31:3:1545:A:H2'	31:3:1546:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1638:C:H2'	31:3:1639:C:C6	2.51	0.46
31:3:1819:G:H2'	31:3:1820:U:C6	2.50	0.46
31:3:1828:A:H2'	31:3:1829:U:C6	2.49	0.46
31:3:2897:G:HO2'	31:3:2898:A:P	2.39	0.46
4:7:58:ILE:HD11	4:7:66:ILE:HG12	1.97	0.46
4:7:112:ARG:HD3	4:7:181:LEU:HD21	1.98	0.46
31:3:86:A:H2	31:3:104:A:C6	2.34	0.46
31:3:1231:G:H2'	31:3:1232:U:C6	2.50	0.46
31:3:1428:U:H2'	31:3:1429:G:C8	2.50	0.46
31:3:1605:A:H2'	31:3:1606:A:H8	1.81	0.46
31:3:1849:G:H2'	31:3:1850:C:H6	1.81	0.46
31:3:2539:A:N6	31:3:2670:A:H61	2.11	0.46
31:3:2678:A:H2'	31:3:2679:G:C8	2.51	0.46
31:3:31:U:C2	31:3:32:G:C8	3.03	0.46
31:3:282:C:C4	31:3:284:U:H5'	2.51	0.46
31:3:591:G:H2'	31:3:592:G:C8	2.49	0.46
31:3:902:U:N3	31:3:940:A:OP1	2.47	0.46
31:3:1433:U:H2'	31:3:1434:U:C6	2.50	0.46
31:3:1463:G:N1	31:3:1464:G:O6	2.48	0.46
31:3:1755:A:H2'	31:3:1756:A:C8	2.50	0.46
31:3:1820:U:O2'	31:3:1821:G:OP1	2.30	0.46
31:3:259:A:H3'	31:3:260:A:H8	1.80	0.46
31:3:360:G:H2'	31:3:361:G:H8	1.80	0.46
31:3:405:C:H2'	31:3:406:C:C6	2.51	0.46
31:3:561:A:O2'	31:3:2050:G:N3	2.40	0.46
31:3:758:C:H2'	31:3:759:U:H6	1.81	0.46
31:3:1408:G:H2'	31:3:1409:G:H8	1.81	0.46
31:3:1551:U:H2'	31:3:1552:C:C6	2.51	0.46
31:3:1624:A:H2'	31:3:1625:G:C8	2.51	0.46
31:3:1709:C:H3'	31:3:1710:A:H8	1.79	0.46
31:3:1913:G:O5'	31:3:1936:G:O2'	2.25	0.46
31:3:1961:A:H61	31:3:1993:U:H5''	1.81	0.46
1:0:3:ARG:NE	31:3:1646:G:H21	2.14	0.46
31:3:139:G:H2'	31:3:140:G:C8	2.51	0.46
31:3:639:G:N2	31:3:660:U:O2	2.48	0.46
31:3:645:C:H2'	31:3:646:A:C8	2.50	0.46
31:3:666:G:N2	31:3:668:A:H3'	2.30	0.46
31:3:1300:C:H42	31:3:2017:G:H1	1.64	0.46
31:3:1356:G:H2'	31:3:1358:C:C4	2.51	0.46
31:3:1721:G:H2'	31:3:1722:U:C6	2.51	0.46
31:3:1722:U:O2'	31:3:1734:A:N7	2.43	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1766:A:H2'	31:3:1767:A:C8	2.50	0.46
31:3:2025:C:H2'	31:3:2026:A:C8	2.51	0.46
31:3:2230:A:H2'	31:3:2231:A:C8	2.50	0.46
31:3:2310:C:H2'	31:3:2311:G:H8	1.80	0.46
31:3:2693:U:H2'	31:3:2694:A:C8	2.50	0.46
31:3:246:G:H22	31:3:258:G:H3'	1.79	0.46
31:3:333:A:H61	31:3:356:A:HO2'	1.62	0.46
31:3:338:G:H2'	31:3:339:U:C6	2.51	0.46
31:3:1237:G:H2'	31:3:1238:A:H8	1.81	0.46
31:3:1370:A:O2'	31:3:1372:U:OP1	2.33	0.46
31:3:1575:C:H2'	31:3:1576:G:O4'	2.14	0.46
31:3:1777:G:H2'	31:3:1778:G:H8	1.81	0.46
31:3:2076:G:H2'	31:3:2077:A:C8	2.51	0.46
31:3:2249:A:H2'	31:3:2250:G:H8	1.79	0.46
31:3:2422:G:C2	31:3:2423:G:C8	3.04	0.46
31:3:2551:G:H2'	31:3:2552:G:H8	1.79	0.46
31:3:2576:A:H2'	31:3:2577:G:H8	1.80	0.46
31:3:464:A:H2'	31:3:464:A:N3	2.31	0.46
31:3:869:U:O2'	31:3:2366:A:H1'	2.16	0.46
31:3:1804:A:H2'	31:3:1805:U:C6	2.51	0.46
31:3:2154:A:H2'	31:3:2155:G:C8	2.51	0.46
31:3:2358:U:H2'	31:3:2359:G:O4'	2.16	0.46
31:3:2863:G:O5'	31:3:2863:G:H8	1.99	0.46
4:7:17:LYS:HZ2	4:7:126:ILE:HD13	1.80	0.46
31:3:713:C:H2'	31:3:714:G:H8	1.81	0.46
31:3:1035:U:H5''	31:3:1189:G:O6	2.16	0.46
31:3:1355:C:H2'	31:3:1356:G:C4	2.51	0.46
31:3:1422:U:H2'	31:3:1423:A:O4'	2.16	0.46
31:3:1454:G:OP2	31:3:1455:A:O2'	2.27	0.46
31:3:1546:U:H3'	31:3:1547:G:H8	1.81	0.46
31:3:1610:U:H2'	31:3:1611:C:C6	2.51	0.46
31:3:1846:A:C4	31:3:1847:G:C8	3.03	0.46
31:3:2521:A:H2'	31:3:2522:U:H6	1.77	0.46
31:3:2663:G:H22	31:3:2673:A:P	2.39	0.46
31:3:2850:G:H2'	31:3:2851:U:H6	1.81	0.46
1:0:37:LYS:NZ	31:3:504:G:OP2	2.42	0.45
31:3:10:U:H2'	31:3:11:U:C6	2.51	0.45
31:3:117:C:O2'	31:3:127:A:H1'	2.17	0.45
31:3:192:U:H2'	31:3:193:G:O4'	2.16	0.45
31:3:219:G:N2	31:3:220:A:H1'	2.31	0.45
31:3:454:G:N1	31:3:455:G:C6	2.84	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:519:A:P	31:3:520:C:H41	2.37	0.45
31:3:682:A:N3	31:3:682:A:H2'	2.30	0.45
31:3:745:U:H2'	31:3:746:G:C8	2.51	0.45
31:3:880:C:O2'	31:3:881:A:N7	2.45	0.45
31:3:1389:G:H2'	31:3:1390:C:C6	2.50	0.45
31:3:1608:C:H2'	31:3:1609:U:C6	2.51	0.45
31:3:2372:C:H2'	31:3:2373:G:O4'	2.15	0.45
31:3:2477:A:H2'	31:3:2478:G:O4'	2.16	0.45
31:3:2516:G:H2'	31:3:2517:A:H8	1.81	0.45
31:3:2584:G:H3'	31:3:2584:G:N3	2.31	0.45
32:4:93:U:H2'	32:4:94:A:C8	2.48	0.45
31:3:336:C:H2'	31:3:337:U:H6	1.81	0.45
31:3:915:A:OP2	31:3:936:G:N2	2.49	0.45
31:3:1252:C:H2'	31:3:1253:G:O4'	2.17	0.45
31:3:1873:A:C6	31:3:1883:A:N7	2.84	0.45
31:3:2015:C:H2'	31:3:2016:G:C8	2.51	0.45
31:3:2076:G:H2'	31:3:2077:A:H8	1.81	0.45
31:3:2191:G:H2'	31:3:2192:U:O4'	2.16	0.45
31:3:2204:C:H2'	31:3:2205:U:C6	2.51	0.45
31:3:2483:C:O2	31:3:2537:G:O6	2.34	0.45
31:3:2684:G:H2'	31:3:2685:A:H8	1.80	0.45
31:3:2700:C:H2'	31:3:2701:A:H8	1.82	0.45
31:3:2825:A:H2'	31:3:2826:G:O4'	2.17	0.45
32:4:11:A:H61	32:4:67:G:HO2'	1.64	0.45
31:3:110:A:N6	31:3:111:G:O6	2.49	0.45
31:3:452:U:H3	31:3:2415:A:H61	1.64	0.45
31:3:683:G:H2'	31:3:684:A:C8	2.51	0.45
31:3:1257:G:H2'	31:3:1258:C:C6	2.51	0.45
31:3:1261:U:H2'	31:3:1262:G:C8	2.46	0.45
31:3:1389:G:H2'	31:3:1390:C:H6	1.81	0.45
31:3:1630:A:H2'	31:3:1631:A:H8	1.81	0.45
31:3:2194:G:C2	31:3:2195:U:C4	3.05	0.45
31:3:2695:U:H2'	31:3:2696:G:O4'	2.16	0.45
32:4:76:A:H1'	32:4:89:A:C6	2.51	0.45
31:3:307:C:H2'	31:3:308:A:H8	1.82	0.45
31:3:443:C:H2'	31:3:444:C:H6	1.81	0.45
31:3:482:G:N2	31:3:490:A:H61	2.13	0.45
31:3:532:A:H2'	31:3:533:G:C8	2.52	0.45
31:3:865:A:O2'	31:3:866:G:O4'	2.35	0.45
31:3:876:A:H2'	31:3:877:G:C8	2.52	0.45
31:3:1308:A:H2'	31:3:1309:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2221:U:H3'	31:3:2222:C:H5'	1.98	0.45
31:3:2228:U:H2'	31:3:2229:C:C6	2.51	0.45
31:3:2750:A:H2'	31:3:2751:C:H6	1.81	0.45
1:0:17:GLY:HA2	1:0:44:VAL:HG22	1.98	0.45
31:3:66:A:H2'	31:3:67:C:C6	2.52	0.45
31:3:851:U:H2'	31:3:852:C:H6	1.82	0.45
31:3:1308:A:H2'	31:3:1309:G:H8	1.81	0.45
31:3:1325:C:H2'	31:3:1326:C:H6	1.82	0.45
31:3:2037:A:N3	31:3:2507:C:H4'	2.31	0.45
31:3:2388:C:H2'	31:3:2389:A:C8	2.52	0.45
31:3:2548:G:H2'	31:3:2549:A:O4'	2.17	0.45
31:3:2568:G:H2'	31:3:2569:A:H8	1.82	0.45
31:3:2608:A:H2'	31:3:2609:C:C6	2.51	0.45
31:3:2862:U:HO2'	31:3:2863:G:P	2.40	0.45
4:7:178:GLU:O	4:7:181:LEU:HB3	2.17	0.45
31:3:204:U:H3	31:3:254:G:H1	1.64	0.45
31:3:228:A:H2'	31:3:229:C:O4'	2.17	0.45
31:3:263:C:H2'	31:3:264:G:H8	1.80	0.45
31:3:680:A:C2	31:3:2377:A:H1'	2.51	0.45
31:3:852:C:H2'	31:3:853:G:O4'	2.17	0.45
31:3:876:A:H2'	31:3:877:G:H8	1.81	0.45
31:3:2176:G:H2'	31:3:2178:A:OP2	2.17	0.45
31:3:2299:U:O2	31:3:2382:A:O2'	2.34	0.45
31:3:2332:U:O4	31:3:2339:G:O6	2.35	0.45
31:3:2400:A:N6	31:3:2432:C:O2	2.49	0.45
31:3:2572:A:N1	31:3:2655:U:H4'	2.31	0.45
1:0:21:ARG:O	1:0:27:GLY:HA3	2.17	0.45
4:7:28:ILE:HG21	4:7:119:ALA:HB2	1.98	0.45
31:3:26:G:H2'	31:3:27:U:H6	1.81	0.45
31:3:454:G:C6	31:3:455:G:C6	3.05	0.45
31:3:569:U:H2'	31:3:570:C:C6	2.52	0.45
31:3:659:C:H2'	31:3:660:U:C6	2.51	0.45
31:3:1806:G:O5'	31:3:1826:A:N6	2.49	0.45
31:3:2300:A:H2'	31:3:2301:C:C6	2.51	0.45
31:3:2308:U:C2	31:3:2309:A:C8	3.04	0.45
31:3:2496:G:H2'	31:3:2497:U:C6	2.52	0.45
31:3:2537:G:H5''	31:3:2538:A:H5''	1.97	0.45
31:3:2810:A:N6	31:3:2896:G:H1	2.12	0.45
2:1:30:ALA:N	2:1:31:PRO:HD2	2.32	0.45
31:3:217:A:H2'	31:3:218:G:C8	2.52	0.45
31:3:723:U:O2	31:3:821:C:O2'	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:804:U:H2'	31:3:805:G:C8	2.51	0.45
31:3:895:G:H1'	31:3:953:G:N1	2.31	0.45
31:3:975:G:H2'	31:3:976:C:C6	2.52	0.45
31:3:1297:U:HO2'	31:3:1298:A:P	2.38	0.45
31:3:1310:U:H3	31:3:1314:A:H62	1.64	0.45
31:3:1382:A:H8	31:3:1383:G:C8	2.35	0.45
31:3:1538:U:H2'	31:3:1539:U:C6	2.52	0.45
31:3:1649:C:OP2	31:3:1651:C:N4	2.30	0.45
31:3:2353:G:H1'	31:3:2389:A:H2'	1.99	0.45
31:3:2523:C:H2'	31:3:2524:U:C6	2.52	0.45
32:4:4:G:H2'	32:4:5:G:H8	1.81	0.45
31:3:202:C:O2'	31:3:203:A:H5'	2.17	0.45
31:3:359:G:H2'	31:3:360:G:C8	2.51	0.45
31:3:501:G:N2	31:3:719:G:H1'	2.32	0.45
31:3:1699:A:H2'	31:3:1700:G:C8	2.44	0.45
31:3:1849:G:H2'	31:3:1850:C:C6	2.52	0.45
31:3:2077:A:H2'	31:3:2078:A:C8	2.52	0.45
31:3:2305:C:H3'	31:3:2326:G:N2	2.31	0.45
31:3:31:U:O2	31:3:1245:G:O2'	2.35	0.45
31:3:164:A:OP2	31:3:164:A:H8	2.00	0.45
31:3:705:A:H4'	31:3:706:C:H5'	1.99	0.45
31:3:1274:A:H2'	31:3:1275:C:C6	2.52	0.45
31:3:1417:G:H2'	31:3:1418:U:C6	2.52	0.45
31:3:1473:C:H2'	31:3:1474:C:C6	2.51	0.45
31:3:2058:G:H2'	31:3:2622:A:N6	2.32	0.45
31:3:2512:U:H1'	31:3:2580:A:C2	2.51	0.45
31:3:2515:C:H2'	31:3:2516:G:O4'	2.16	0.45
31:3:2746:A:H3'	31:3:2747:U:H5''	1.98	0.45
32:4:74:G:H1	32:4:91:A:N6	2.14	0.45
2:1:4:LYS:HB3	2:1:4:LYS:HE3	1.76	0.44
31:3:90:G:H2'	31:3:91:G:H8	1.82	0.44
31:3:155:A:N1	31:3:178:A:N6	2.64	0.44
31:3:252:G:H1'	31:3:2439:U:O2'	2.17	0.44
31:3:386:U:H2'	31:3:387:U:H6	1.81	0.44
31:3:870:A:H2'	31:3:871:G:C8	2.52	0.44
31:3:1441:A:H2'	31:3:1442:G:C8	2.51	0.44
31:3:1798:A:H2'	31:3:1799:A:O4'	2.17	0.44
31:3:2255:A:H2'	31:3:2256:C:C6	2.52	0.44
31:3:2259:G:C4	31:3:2458:A:H4'	2.53	0.44
31:3:2388:C:H2'	31:3:2389:A:H8	1.83	0.44
31:3:2534:G:H2'	31:3:2535:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2764:U:H4'	31:3:2765:A:OP1	2.15	0.44
31:3:2814:A:N1	31:3:2894:G:O2'	2.38	0.44
4:7:153:GLU:OE2	4:7:156:LYS:NZ	2.38	0.44
31:3:234:G:H2'	31:3:235:U:H6	1.80	0.44
31:3:407:U:H3'	31:3:440:C:H42	1.82	0.44
31:3:582:A:H3'	31:3:582:A:N3	2.32	0.44
31:3:638:A:N6	31:3:639:G:O6	2.50	0.44
31:3:702:U:H2'	31:3:703:A:O4'	2.16	0.44
31:3:1012:G:H2'	31:3:1013:G:C8	2.51	0.44
31:3:1069:G:C6	31:3:1157:G:C5	3.06	0.44
31:3:1942:G:H1'	31:3:1971:G:N2	2.32	0.44
31:3:2424:C:C2	31:3:2425:C:C5	3.05	0.44
31:3:2656:G:H2'	31:3:2657:C:C6	2.52	0.44
31:3:2789:A:H5''	31:3:2790:A:H5'	1.99	0.44
32:4:3:U:H2'	32:4:4:G:C8	2.50	0.44
31:3:326:A:H2'	31:3:327:U:C6	2.52	0.44
31:3:448:A:H2	31:3:1888:U:H5'	1.82	0.44
31:3:465:A:H2'	31:3:466:A:C4	2.52	0.44
31:3:666:G:H22	31:3:668:A:H3'	1.81	0.44
31:3:830:A:H2'	31:3:831:U:C6	2.53	0.44
31:3:983:A:H2'	31:3:984:C:H6	1.82	0.44
31:3:1221:G:H2'	31:3:1222:A:H8	1.83	0.44
31:3:1381:A:H2'	31:3:1382:A:C8	2.52	0.44
31:3:178:A:H2'	31:3:179:A:C8	2.53	0.44
31:3:1248:A:H2'	31:3:1249:A:C8	2.52	0.44
31:3:1253:G:N1	31:3:1255:G:H3'	2.32	0.44
31:3:1326:C:H42	31:3:1677:G:H22	1.66	0.44
31:3:1415:A:H2'	31:3:1416:G:H8	1.82	0.44
31:3:2304:U:OP2	31:3:2342:U:N3	2.27	0.44
31:3:159:G:H2'	31:3:160:A:C8	2.53	0.44
31:3:178:A:C6	31:3:179:A:N6	2.85	0.44
31:3:205:C:O2'	31:3:424:G:O6	2.29	0.44
31:3:214:C:H2'	31:3:215:A:C8	2.51	0.44
31:3:1200:U:H2'	31:3:1201:A:C8	2.45	0.44
31:3:1299:A:O2'	31:3:1353:G:O6	2.30	0.44
31:3:1304:U:H2'	31:3:1305:G:H8	1.82	0.44
31:3:1488:U:H2'	31:3:1489:G:H8	1.81	0.44
31:3:1654:G:H2'	31:3:1655:U:C6	2.52	0.44
31:3:1672:C:H1'	31:3:2706:U:O2'	2.17	0.44
31:3:1920:A:H4'	31:3:1921:C:H5'	2.00	0.44
31:3:2231:A:H3'	31:3:2232:G:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2394:A:H2'	31:3:2395:U:C6	2.53	0.44
31:3:2478:G:O6	31:3:2484:A:O2'	2.28	0.44
31:3:2853:U:N3	31:3:2871:G:O4'	2.50	0.44
32:4:89:A:H2'	32:4:90:G:O4'	2.18	0.44
1:0:11:LYS:HA	1:0:14:LYS:HD2	2.00	0.44
31:3:219:G:H1'	31:3:220:A:H4'	1.99	0.44
31:3:799:A:N7	31:3:1783:G:H1'	2.33	0.44
31:3:1115:G:H2'	31:3:1116:U:C6	2.53	0.44
31:3:1335:A:OP2	31:3:1640:G:N1	2.42	0.44
31:3:1780:A:C4	31:3:1836:A:H1'	2.53	0.44
31:3:2054:C:O2'	31:3:2827:A:N1	2.50	0.44
31:3:2155:G:H2'	31:3:2156:G:C8	2.51	0.44
31:3:2291:U:OP2	31:3:2397:G:O2'	2.36	0.44
31:3:2505:A:H2	31:3:2506:C:H41	1.64	0.44
31:3:41:C:H2'	31:3:42:U:C6	2.53	0.44
31:3:158:U:H2'	31:3:159:G:C8	2.53	0.44
31:3:317:U:N3	31:3:392:A:N7	2.65	0.44
31:3:562:C:H42	31:3:2787:U:P	2.40	0.44
31:3:616:G:H2'	31:3:617:C:O4'	2.17	0.44
31:3:734:A:H2'	31:3:735:G:O4'	2.18	0.44
31:3:1301:G:O2'	31:3:1652:A:OP1	2.36	0.44
31:3:2039:G:OP1	31:3:2507:C:N4	2.51	0.44
31:3:59:C:H2'	31:3:60:G:H8	1.83	0.44
31:3:548:A:C4	31:3:549:A:C8	3.05	0.44
31:3:1217:G:H2'	31:3:1218:G:O4'	2.18	0.44
31:3:1326:C:H2'	31:3:1327:G:O4'	2.18	0.44
31:3:1449:G:H2'	31:3:1450:G:H8	1.82	0.44
31:3:1666:A:H2'	31:3:1667:G:C4	2.53	0.44
31:3:1738:G:H2'	31:3:1739:G:H8	1.83	0.44
31:3:1776:G:H2'	31:3:1777:G:H8	1.83	0.44
31:3:2090:G:O6	31:3:2244:U:O4	2.36	0.44
31:3:2106:G:N2	31:3:2198:G:H1	2.11	0.44
31:3:2325:U:H2'	31:3:2326:G:C8	2.53	0.44
31:3:2469:A:H2'	31:3:2470:C:C6	2.52	0.44
31:3:2488:C:H2'	31:3:2489:G:O4'	2.18	0.44
31:3:2643:A:H2'	31:3:2644:U:O4'	2.18	0.44
1:0:18:PHE:HB2	1:0:43:THR:HG21	1.99	0.44
31:3:26:G:H2'	31:3:27:U:C6	2.53	0.44
31:3:270:G:H2'	31:3:271:G:O4'	2.18	0.44
31:3:274:A:OP2	31:3:294:G:N1	2.50	0.44
31:3:370:C:H2'	31:3:371:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2161:G:C2	31:3:2162:U:C4	3.06	0.44
31:3:2201:G:H2'	31:3:2202:U:H5''	2.00	0.44
31:3:2308:U:H2'	31:3:2309:A:H8	1.82	0.44
32:4:69:C:O2	32:4:96:G:N1	2.51	0.44
2:1:47:VAL:HG21	2:1:55:ILE:HG13	2.00	0.43
31:3:143:A:N3	31:3:1436:C:H1'	2.33	0.43
31:3:451:A:H2'	31:3:452:U:C6	2.53	0.43
31:3:719:G:O3'	31:3:823:A:N6	2.50	0.43
31:3:761:G:O5'	31:3:1460:G:O2'	2.35	0.43
31:3:998:C:H2'	31:3:999:U:C6	2.53	0.43
31:3:1036:A:H2'	31:3:1037:A:C8	2.52	0.43
31:3:1821:G:OP2	31:3:1822:A:H3'	2.18	0.43
31:3:2158:C:H2'	31:3:2159:U:C6	2.53	0.43
31:3:2251:U:O2'	31:3:2442:A:N1	2.41	0.43
31:3:2473:C:H2'	31:3:2474:C:H6	1.83	0.43
31:3:170:A:C2	31:3:171:G:H1'	2.53	0.43
31:3:242:G:H2'	31:3:243:U:C6	2.53	0.43
31:3:440:C:H2'	31:3:440:C:O2	2.18	0.43
31:3:571:A:H2'	31:3:572:G:O4'	2.18	0.43
31:3:664:G:H2'	31:3:665:C:C6	2.53	0.43
31:3:806:A:HO2'	31:3:1383:G:HO2'	1.61	0.43
31:3:1446:G:N2	31:3:1612:U:H3'	2.32	0.43
31:3:1458:A:H2'	31:3:1459:A:H8	1.84	0.43
31:3:1756:A:H2'	31:3:1757:G:H8	1.82	0.43
31:3:2068:G:O4'	31:3:2511:A:N6	2.50	0.43
31:3:2137:A:H5''	31:3:2140:G:OP1	2.18	0.43
31:3:2562:U:H2'	31:3:2563:U:C5	2.54	0.43
31:3:2572:A:C6	31:3:2656:G:H5'	2.54	0.43
31:3:2604:U:HO2'	31:3:2605:G:P	2.41	0.43
32:4:8:C:C4	32:4:9:C:C4	3.06	0.43
4:7:103:ASN:OD1	4:7:104:PHE:N	2.51	0.43
31:3:69:U:H2'	31:3:70:G:C8	2.52	0.43
31:3:307:C:H2'	31:3:308:A:C8	2.53	0.43
31:3:509:G:H2'	31:3:510:G:H8	1.82	0.43
31:3:1037:A:H3'	31:3:1038:G:H8	1.82	0.43
31:3:1537:A:H2'	31:3:1538:U:O4'	2.18	0.43
31:3:1918:U:H2'	31:3:1919:A:H5''	2.00	0.43
31:3:2260:G:H2'	31:3:2261:G:C4	2.54	0.43
31:3:2528:C:H2'	31:3:2529:C:H6	1.83	0.43
31:3:2705:G:H2'	31:3:2706:U:H6	1.83	0.43
4:7:129:GLU:O	4:7:133:VAL:HG23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:698:A:H2'	31:3:699:U:C6	2.53	0.43
31:3:816:A:H5''	31:3:817:A:N7	2.33	0.43
31:3:868:C:H2'	31:3:869:U:C6	2.53	0.43
31:3:965:U:H2'	31:3:966:U:C6	2.53	0.43
31:3:1924:U:O2	31:3:1924:U:H2'	2.17	0.43
31:3:1986:C:H2'	31:3:1987:C:C6	2.53	0.43
31:3:2278:G:C2	31:3:2279:G:H1'	2.53	0.43
31:3:2486:A:C8	31:3:2537:G:C5	3.06	0.43
31:3:2604:U:H1'	31:3:2605:G:OP1	2.18	0.43
31:3:172:U:H2'	31:3:173:C:H6	1.83	0.43
31:3:188:G:C5	31:3:217:A:N6	2.87	0.43
31:3:586:G:C5	31:3:587:U:C4	3.06	0.43
31:3:746:G:H2'	31:3:747:A:C8	2.53	0.43
31:3:840:G:N2	31:3:864:A:OP1	2.51	0.43
31:3:937:A:H3'	31:3:938:A:H8	1.84	0.43
31:3:1070:U:H2'	31:3:1071:G:C8	2.53	0.43
31:3:1077:G:H2'	31:3:1078:C:C6	2.53	0.43
31:3:1089:A:H2'	31:3:1090:G:H8	1.82	0.43
31:3:1104:A:C4	31:3:1131:A:H5''	2.53	0.43
31:3:1287:C:H2'	31:3:1288:C:C6	2.54	0.43
31:3:1343:C:H2'	31:3:1344:U:C6	2.54	0.43
31:3:1457:A:H2'	31:3:1458:A:H8	1.83	0.43
31:3:1534:A:O2'	31:3:1535:A:H8	2.02	0.43
31:3:1947:U:H1'	31:3:1949:C:H41	1.83	0.43
31:3:2077:A:H2'	31:3:2078:A:H8	1.84	0.43
31:3:2217:G:OP2	31:3:2218:U:O2'	2.32	0.43
31:3:2424:C:H2'	31:3:2425:C:H6	1.84	0.43
31:3:2472:G:H2'	31:3:2473:C:H6	1.82	0.43
31:3:2856:G:H2'	31:3:2857:C:H6	1.83	0.43
1:0:34:ARG:O	1:0:38:GLN:N	2.51	0.43
2:1:25:TYR:HA	31:3:2400:A:H5''	2.00	0.43
31:3:512:G:N2	31:3:514:A:H8	2.16	0.43
31:3:1048:A:H2'	31:3:1049:U:H6	1.82	0.43
31:3:1140:U:H2'	31:3:1141:U:C6	2.51	0.43
31:3:1166:G:H1	31:3:2046:G:H21	1.65	0.43
31:3:1497:A:H2'	31:3:1498:U:C6	2.54	0.43
31:3:1850:C:H2'	31:3:1851:U:C6	2.53	0.43
31:3:2073:C:H2'	31:3:2074:G:C8	2.53	0.43
31:3:2341:G:OP2	31:3:2341:G:N2	2.52	0.43
31:3:2656:G:H2'	31:3:2657:C:H6	1.84	0.43
31:3:2696:G:N1	31:3:2728:U:OP2	2.39	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:90:G:H2'	31:3:91:G:C8	2.53	0.43
31:3:137:U:O4	31:3:146:G:O6	2.36	0.43
31:3:195:A:O2'	31:3:713:C:O2	2.27	0.43
31:3:230:G:H1'	31:3:232:A:H61	1.84	0.43
31:3:552:C:H2'	31:3:553:A:C8	2.54	0.43
31:3:683:G:O2'	31:3:2359:G:H4'	2.18	0.43
31:3:764:G:H8	31:3:799:A:H5''	1.84	0.43
31:3:829:A:H2'	31:3:830:A:H8	1.83	0.43
31:3:900:G:C2	31:3:903:A:N6	2.85	0.43
31:3:971:U:H2'	31:3:972:C:C6	2.53	0.43
31:3:1220:A:H3'	31:3:1221:G:H8	1.83	0.43
31:3:1297:U:O2'	31:3:1298:A:OP1	2.31	0.43
31:3:1843:C:H2'	31:3:1844:C:C6	2.54	0.43
31:3:1862:A:H2'	31:3:1863:G:H8	1.83	0.43
31:3:2196:G:H2'	31:3:2197:U:C6	2.54	0.43
31:3:2229:C:H2'	31:3:2230:A:C8	2.50	0.43
31:3:2462:G:H21	31:3:2507:C:H41	1.66	0.43
31:3:2472:G:H2'	31:3:2473:C:C6	2.54	0.43
31:3:2523:C:H2'	31:3:2524:U:H6	1.83	0.43
3:2:4:ARG:H	3:2:36:GLN:HB3	1.83	0.43
31:3:474:U:H2'	31:3:475:A:C8	2.54	0.43
31:3:720:A:C2	31:3:822:C:H1'	2.54	0.43
31:3:820:U:H4'	31:3:1786:U:H4'	2.00	0.43
31:3:952:U:H3'	31:3:953:G:H8	1.83	0.43
31:3:1086:G:O6	31:3:1143:U:C4	2.72	0.43
31:3:1136:U:H2'	31:3:1137:C:C6	2.54	0.43
31:3:1386:G:N1	31:3:1400:U:OP2	2.41	0.43
31:3:1883:A:C4	31:3:1884:A:C8	3.07	0.43
31:3:1923:A:C8	31:3:1924:U:H6	2.36	0.43
31:3:2000:U:H2'	31:3:2001:C:O4'	2.19	0.43
31:3:2117:G:O2'	31:3:2127:G:OP2	2.32	0.43
31:3:2379:G:H2'	31:3:2380:U:O4'	2.18	0.43
31:3:2647:A:H2'	31:3:2648:A:O4'	2.17	0.43
1:0:3:ARG:NH2	31:3:1647:A:H1'	2.34	0.43
4:7:19:GLN:HA	4:7:22:LYS:HE2	2.01	0.43
31:3:1176:U:O2	31:3:1177:A:N6	2.52	0.43
31:3:1187:C:H2'	31:3:1188:C:C6	2.53	0.43
31:3:1853:G:H2'	31:3:1854:A:C8	2.53	0.43
31:3:2328:A:H1'	31:3:2330:A:N7	2.34	0.43
31:3:2835:G:H2'	31:3:2888:U:OP1	2.19	0.43
32:4:59:A:H2'	32:4:60:C:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:7:131:ARG:HD3	31:3:1949:C:O2	2.19	0.43
31:3:196:G:H4'	31:3:712:A:H2	1.84	0.43
31:3:891:G:H2'	31:3:892:G:C8	2.54	0.43
31:3:896:U:C2	31:3:897:A:C8	3.06	0.43
31:3:1047:A:C6	31:3:1186:A:C5	3.07	0.43
31:3:1077:G:H2'	31:3:1078:C:H6	1.84	0.43
31:3:1664:A:H2'	31:3:1665:G:O4'	2.19	0.43
31:3:1870:G:H2'	31:3:1871:U:C6	2.54	0.43
31:3:2498:G:O3'	31:3:2499:U:H2'	2.18	0.43
31:3:2530:U:N3	31:3:2773:A:N7	2.66	0.43
31:3:2556:C:H2'	31:3:2557:G:H8	1.84	0.43
31:3:2666:C:H2'	31:3:2667:G:O4'	2.19	0.43
1:0:34:ARG:HB2	1:0:42:LEU:HG	2.01	0.42
2:1:4:LYS:NZ	31:3:255:A:OP1	2.43	0.42
4:7:107:MET:HG3	4:7:112:ARG:HH21	1.83	0.42
4:7:153:GLU:HA	4:7:156:LYS:HD2	2.00	0.42
31:3:12:A:H5''	31:3:13:C:C5	2.53	0.42
31:3:108:G:H2'	31:3:109:G:H8	1.84	0.42
31:3:158:U:H2'	31:3:159:G:H8	1.84	0.42
31:3:159:G:H2'	31:3:160:A:H8	1.84	0.42
31:3:971:U:H2'	31:3:972:C:H6	1.84	0.42
31:3:1196:U:H2'	31:3:1197:G:C8	2.54	0.42
31:3:1409:G:O2'	31:3:1455:A:OP1	2.33	0.42
31:3:1433:U:H2'	31:3:1434:U:H6	1.83	0.42
31:3:1758:C:O2'	31:3:2865:U:H4'	2.19	0.42
31:3:1907:A:O2'	31:3:1908:A:OP1	2.32	0.42
31:3:2048:U:H2'	31:3:2049:A:H8	1.84	0.42
31:3:2151:G:H1'	31:3:2154:A:N6	2.23	0.42
31:3:2218:U:H3	31:3:2220:A:HO2'	1.65	0.42
31:3:2254:G:H2'	31:3:2255:A:H8	1.84	0.42
31:3:2758:A:H1'	31:3:2760:C:H41	1.84	0.42
31:3:2885:U:H2'	31:3:2886:A:C8	2.53	0.42
32:4:11:A:N6	32:4:67:G:O2'	2.45	0.42
2:1:3:VAL:HG23	31:3:246:G:H3'	2.00	0.42
31:3:175:A:H2'	31:3:176:U:C6	2.55	0.42
31:3:573:A:N6	31:3:588:G:H1'	2.34	0.42
31:3:932:U:H2'	31:3:934:C:N4	2.35	0.42
31:3:1008:A:C8	31:3:1009:A:H2'	2.54	0.42
31:3:1073:A:H2'	31:3:1074:A:H8	1.84	0.42
31:3:1097:G:OP1	31:3:1105:A:H4'	2.19	0.42
31:3:1193:U:H2'	31:3:1194:U:H6	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1406:A:O2'	31:3:1408:G:N7	2.46	0.42
31:3:1524:C:C2	31:3:1525:G:C8	3.06	0.42
31:3:1692:A:H2'	31:3:1693:U:H6	1.83	0.42
31:3:2134:G:H2'	31:3:2135:C:C6	2.53	0.42
31:3:2421:U:H2'	31:3:2422:G:C8	2.54	0.42
31:3:2463:G:H2'	31:3:2464:C:C6	2.54	0.42
31:3:2536:U:O4	31:3:2543:G:O6	2.36	0.42
31:3:341:G:N2	31:3:343:A:H3'	2.34	0.42
31:3:615:G:H2'	31:3:616:G:H8	1.82	0.42
31:3:832:C:H2'	31:3:833:C:C6	2.54	0.42
31:3:1201:A:H2'	31:3:1202:A:H8	1.84	0.42
31:3:1397:G:H21	31:3:1817:A:H2	1.65	0.42
31:3:1711:A:H2'	31:3:1712:A:C8	2.54	0.42
31:3:2169:G:H1'	31:3:2173:G:N2	2.34	0.42
31:3:2524:U:H2'	31:3:2525:C:C6	2.53	0.42
31:3:2663:G:N2	31:3:2673:A:O5'	2.49	0.42
31:3:2681:G:H2'	31:3:2682:A:C8	2.54	0.42
32:4:8:C:N4	32:4:100:G:H1	2.11	0.42
31:3:240:C:H2'	31:3:241:C:H6	1.84	0.42
31:3:504:G:H2'	31:3:505:G:O4'	2.20	0.42
31:3:576:A:N1	31:3:586:G:C6	2.87	0.42
31:3:603:G:H1	31:3:2507:C:P	2.42	0.42
31:3:870:A:C6	31:3:871:G:C6	3.07	0.42
31:3:1067:A:N1	31:3:1157:G:C6	2.88	0.42
31:3:1441:A:H2'	31:3:1442:G:H8	1.83	0.42
31:3:1512:A:C6	31:3:1513:A:N6	2.88	0.42
31:3:2682:A:H2'	31:3:2683:G:C8	2.54	0.42
31:3:81:C:H2'	31:3:82:G:C8	2.54	0.42
31:3:704:G:N3	31:3:704:G:H2'	2.34	0.42
31:3:915:A:H8	31:3:936:G:H21	1.67	0.42
31:3:986:G:H1	31:3:1003:U:H3	1.67	0.42
31:3:998:C:H2'	31:3:999:U:H6	1.85	0.42
31:3:1021:C:H2'	31:3:1022:C:H6	1.84	0.42
31:3:1219:U:C2	31:3:1220:A:C8	3.07	0.42
31:3:1385:U:H2'	31:3:1386:G:C8	2.55	0.42
31:3:1458:A:H2'	31:3:1459:A:C8	2.55	0.42
31:3:1547:G:H3'	31:3:1548:A:H2'	2.02	0.42
31:3:1588:A:H2'	31:3:1589:A:C8	2.54	0.42
31:3:1591:C:H3'	31:3:1592:A:H2'	2.00	0.42
31:3:1959:A:H3'	31:3:1960:A:C8	2.54	0.42
31:3:2122:G:C6	31:3:2124:A:H2'	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2261:G:H2'	31:3:2262:C:C2	2.55	0.42
31:3:2463:G:H2'	31:3:2464:C:H6	1.83	0.42
31:3:2712:C:C2	31:3:2713:A:C8	3.07	0.42
4:7:4:GLU:HA	4:7:7:LEU:HD12	2.01	0.42
4:7:38:PHE:HB3	4:7:52:MET:HE1	2.02	0.42
31:3:82:G:N2	31:3:328:A:O2'	2.52	0.42
31:3:194:A:H5''	31:3:208:A:N1	2.34	0.42
31:3:199:A:H2'	31:3:202:C:N4	2.34	0.42
31:3:1309:G:H2'	31:3:1310:U:C6	2.54	0.42
31:3:1480:A:H3'	31:3:1481:U:H5''	2.02	0.42
31:3:2084:A:H2'	31:3:2085:C:C6	2.55	0.42
31:3:2117:G:P	31:3:2125:U:H3	2.42	0.42
31:3:2163:U:H2'	31:3:2164:G:C4	2.54	0.42
31:3:2366:A:H2'	31:3:2367:C:C6	2.55	0.42
31:3:2565:G:H2'	31:3:2566:C:H6	1.83	0.42
31:3:2667:G:H3'	31:3:2668:A:H5''	2.02	0.42
31:3:2819:C:H2'	31:3:2820:G:C8	2.53	0.42
31:3:2859:U:C2	31:3:2860:A:C8	3.06	0.42
31:3:61:U:O4	31:3:70:G:O6	2.37	0.42
31:3:156:A:H2'	31:3:157:U:C6	2.55	0.42
31:3:156:A:H2'	31:3:157:U:H6	1.85	0.42
31:3:728:A:N6	31:3:805:G:O6	2.52	0.42
31:3:985:A:N6	31:3:1005:G:O6	2.53	0.42
31:3:1877:C:H3'	31:3:1878:A:C2	2.54	0.42
31:3:2123:A:H5''	31:3:2124:A:OP2	2.20	0.42
31:3:2165:A:H4'	31:3:2166:U:H5'	2.00	0.42
31:3:2745:G:H2'	31:3:2746:A:H8	1.83	0.42
31:3:2752:G:H2'	31:3:2753:C:H6	1.84	0.42
31:3:344:A:H1'	31:3:346:G:N7	2.35	0.42
31:3:573:A:H2'	31:3:574:G:O4'	2.20	0.42
31:3:622:U:O2'	31:3:623:A:H5'	2.20	0.42
31:3:1538:U:H2'	31:3:1539:U:H6	1.85	0.42
31:3:2471:U:H2'	31:3:2472:G:C8	2.52	0.42
31:3:2617:U:O2'	31:3:2618:C:H5'	2.20	0.42
4:7:39:ASP:OD2	4:7:53:VAL:HG23	2.19	0.42
31:3:1228:G:H1'	31:3:1257:G:OP1	2.19	0.42
31:3:1239:G:O2'	31:3:1267:A:N1	2.38	0.42
31:3:1309:G:H2'	31:3:1310:U:H6	1.84	0.42
31:3:1856:G:H2'	31:3:1857:G:C8	2.55	0.42
31:3:2058:G:H8	31:3:2058:G:OP2	2.03	0.42
31:3:2099:U:OP2	31:3:2207:A:O2'	2.29	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2306:A:H8	31:3:2326:G:H21	1.67	0.42
31:3:2516:G:H2'	31:3:2517:A:C8	2.55	0.42
31:3:2709:C:O5'	31:3:2710:G:H5''	2.19	0.42
31:3:116:C:H2'	31:3:117:C:H6	1.84	0.42
31:3:231:A:N1	31:3:454:G:H1'	2.34	0.42
31:3:354:C:O2'	31:3:355:A:H5''	2.20	0.42
31:3:410:G:N2	31:3:437:A:OP2	2.50	0.42
31:3:909:U:H2'	31:3:910:G:C8	2.49	0.42
31:3:929:G:H2'	31:3:930:C:C6	2.55	0.42
31:3:972:C:H2'	31:3:973:U:C6	2.55	0.42
31:3:1212:C:H2'	31:3:1213:U:C6	2.55	0.42
31:3:1262:G:C6	31:3:1263:G:C6	3.07	0.42
31:3:1381:A:O2'	31:3:1382:A:O4'	2.28	0.42
31:3:1800:C:H2'	31:3:1801:U:H6	1.85	0.42
31:3:2679:G:H2'	31:3:2680:C:C6	2.54	0.42
31:3:2694:A:H2'	31:3:2695:U:H6	1.83	0.42
31:3:2857:C:H2'	31:3:2858:A:C8	2.55	0.42
31:3:2868:G:H2'	31:3:2869:U:O4'	2.19	0.42
1:0:19:LEU:HB2	31:3:126:C:H5''	2.02	0.41
31:3:53:G:N1	31:3:121:U:O2'	2.47	0.41
31:3:171:G:H2'	31:3:172:U:C6	2.55	0.41
31:3:299:A:N6	31:3:440:C:H2'	2.35	0.41
31:3:361:G:N1	31:3:370:C:N3	2.68	0.41
31:3:625:G:H2'	31:3:626:A:H8	1.84	0.41
31:3:856:A:N6	31:3:1008:A:H2'	2.31	0.41
31:3:1388:G:C5	31:3:1389:G:C8	3.07	0.41
31:3:1491:G:H2'	31:3:1492:G:O4'	2.20	0.41
31:3:1546:U:H3'	31:3:1547:G:C8	2.55	0.41
31:3:1642:G:N2	31:3:1644:A:H2'	2.34	0.41
31:3:1937:G:N2	31:3:1975:G:H2'	2.34	0.41
31:3:2305:C:N4	31:3:2326:G:H2'	2.35	0.41
31:3:2320:U:H2'	31:3:2321:C:C6	2.55	0.41
31:3:2425:C:C2	31:3:2426:A:C8	3.08	0.41
31:3:2476:A:H2	31:3:2489:G:H2'	1.85	0.41
31:3:2570:U:H2'	31:3:2571:U:C6	2.55	0.41
3:2:19:ARG:HE	31:3:2763:C:H3'	1.85	0.41
31:3:111:G:H2'	31:3:112:A:C8	2.55	0.41
31:3:444:C:H2'	31:3:445:C:O4'	2.19	0.41
31:3:498:C:H2'	31:3:499:G:C8	2.55	0.41
31:3:682:A:C4	31:3:683:G:C8	3.08	0.41
31:3:956:U:C2	31:3:957:G:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1456:C:N4	31:3:1603:A:H3'	2.34	0.41
31:3:1715:A:HO2'	31:3:1716:A:H8	1.67	0.41
31:3:2634:C:H2'	31:3:2635:G:C8	2.51	0.41
31:3:2695:U:H3	31:3:2730:G:H1	1.68	0.41
32:4:42:G:C1'	32:4:45:C:H42	2.32	0.41
4:7:10:PHE:HE2	4:7:163:ASN:HD21	1.68	0.41
31:3:506:A:H2'	31:3:507:A:C8	2.55	0.41
31:3:517:G:N1	31:3:544:U:N3	2.61	0.41
31:3:868:C:C2	31:3:869:U:C5	3.08	0.41
31:3:1057:G:H1'	31:3:1058:U:H5	1.85	0.41
31:3:1445:U:H2'	31:3:1446:G:O4'	2.20	0.41
31:3:1790:U:H1'	31:3:2615:G:H21	1.85	0.41
31:3:1980:G:H2'	31:3:1981:U:C6	2.56	0.41
31:3:2033:G:H2'	31:3:2034:G:H8	1.86	0.41
31:3:2048:U:H2'	31:3:2049:A:C8	2.55	0.41
31:3:2088:U:H2'	31:3:2089:A:C8	2.55	0.41
31:3:2132:G:H2'	31:3:2133:A:C2	2.54	0.41
31:3:2264:G:H2'	31:3:2265:U:H6	1.83	0.41
31:3:2575:G:H2'	31:3:2576:A:C8	2.55	0.41
31:3:2752:G:H2'	31:3:2753:C:C6	2.55	0.41
31:3:306:G:H2'	31:3:307:C:H6	1.83	0.41
31:3:335:G:C6	31:3:351:G:C6	3.08	0.41
31:3:440:C:H1'	31:3:442:G:C4	2.55	0.41
31:3:512:G:H1'	31:3:516:A:N6	2.35	0.41
31:3:632:A:O2'	31:3:633:G:H5'	2.20	0.41
31:3:675:U:H2'	31:3:676:U:C6	2.55	0.41
31:3:1104:A:O5'	31:3:1131:A:H4'	2.20	0.41
31:3:1464:G:N1	31:3:1591:C:O2	2.53	0.41
31:3:1518:C:H41	31:3:2219:U:H5'	1.85	0.41
31:3:1539:U:H2'	31:3:1540:G:C8	2.55	0.41
31:3:1903:A:H2'	31:3:1904:G:C8	2.55	0.41
31:3:2421:U:C2	31:3:2422:G:C8	3.09	0.41
31:3:2496:G:H2'	31:3:2497:U:H6	1.85	0.41
31:3:2589:G:N2	31:3:2618:C:H2'	2.36	0.41
31:3:2589:G:H8	31:3:2590:G:O6	2.04	0.41
31:3:79:U:C2	31:3:80:U:C5	3.08	0.41
31:3:180:A:H3'	31:3:181:G:H8	1.85	0.41
31:3:242:G:H2'	31:3:243:U:H6	1.85	0.41
31:3:597:C:O2'	31:3:1283:A:N6	2.37	0.41
31:3:886:U:H2'	31:3:887:A:H8	1.85	0.41
31:3:1333:C:H2'	31:3:1334:U:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1630:A:H2'	31:3:1631:A:C8	2.54	0.41
31:3:1645:C:H2'	31:3:1646:G:H8	1.85	0.41
31:3:2469:A:H1'	31:3:2500:U:N3	2.35	0.41
31:3:2598:C:H2'	31:3:2599:C:H6	1.86	0.41
31:3:2781:C:H2'	31:3:2782:A:C8	2.55	0.41
4:7:155:LEU:O	4:7:159:VAL:HG23	2.20	0.41
31:3:55:A:H62	31:3:118:G:H21	1.68	0.41
31:3:135:A:H2'	31:3:136:G:H8	1.85	0.41
31:3:387:U:H2'	31:3:388:U:H6	1.84	0.41
31:3:514:A:N1	31:3:535:G:H4'	2.36	0.41
31:3:518:A:N1	31:3:541:G:O2'	2.48	0.41
31:3:526:G:H2'	31:3:527:A:C8	2.56	0.41
31:3:696:U:H2'	31:3:697:U:H6	1.85	0.41
31:3:1237:G:H2'	31:3:1238:A:C8	2.56	0.41
31:3:1779:G:H2'	31:3:1780:A:O3'	2.21	0.41
31:3:2184:A:H2'	31:3:2185:C:C6	2.56	0.41
31:3:2213:A:H2'	31:3:2214:A:C8	2.54	0.41
31:3:2577:G:H2'	31:3:2578:A:C8	2.56	0.41
31:3:2582:G:H2'	31:3:2583:U:O4'	2.21	0.41
31:3:2619:C:H2'	31:3:2620:C:C6	2.56	0.41
4:7:140:MET:N	4:7:140:MET:SD	2.94	0.41
4:7:180:GLU:N	4:7:180:GLU:OE1	2.54	0.41
31:3:176:U:H2'	31:3:177:U:C6	2.56	0.41
31:3:244:G:H3'	31:3:245:U:H6	1.84	0.41
31:3:391:U:H2'	31:3:392:A:H8	1.86	0.41
31:3:589:A:H2'	31:3:590:U:O4'	2.20	0.41
31:3:755:C:H2'	31:3:756:A:H8	1.86	0.41
31:3:1507:G:H1'	31:3:1508:G:OP2	2.20	0.41
31:3:1624:A:H2'	31:3:1625:G:H8	1.86	0.41
31:3:1934:A:H2'	31:3:1935:A:C8	2.55	0.41
31:3:2134:G:H2'	31:3:2135:C:H6	1.86	0.41
31:3:2224:A:H2'	31:3:2225:G:H8	1.86	0.41
31:3:115:U:H2'	31:3:116:C:C6	2.56	0.41
31:3:409:A:H5''	31:3:459:A:C2	2.56	0.41
31:3:876:A:N6	31:3:974:C:N3	2.68	0.41
31:3:1363:C:H2'	31:3:1364:A:C8	2.55	0.41
31:3:1675:A:H2'	31:3:1676:G:O4'	2.21	0.41
31:3:1889:U:H2'	31:3:1890:U:C6	2.56	0.41
31:3:2357:G:H2'	31:3:2358:U:O4'	2.20	0.41
31:3:2486:A:H2'	31:3:2487:U:H5'	2.02	0.41
31:3:2541:C:H2'	31:3:2542:A:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2555:U:H2'	31:3:2556:C:C6	2.56	0.41
31:3:2568:G:H2'	31:3:2569:A:C8	2.55	0.41
31:3:2626:A:H2'	31:3:2627:U:O4'	2.20	0.41
31:3:2646:G:H1'	31:3:2786:A:N6	2.36	0.41
31:3:2753:C:H2'	31:3:2754:U:C6	2.56	0.41
32:4:5:G:H2'	32:4:6:U:O4'	2.20	0.41
32:4:45:C:H2'	32:4:46:C:C6	2.55	0.41
4:7:15:ASP:O	4:7:19:GLN:HG2	2.21	0.41
4:7:26:SER:O	4:7:37:LEU:HD12	2.21	0.41
31:3:27:U:H3	31:3:550:A:N6	2.19	0.41
31:3:37:G:H2'	31:3:38:G:H8	1.86	0.41
31:3:331:A:H2'	31:3:332:G:O4'	2.20	0.41
31:3:338:G:H2'	31:3:339:U:H6	1.86	0.41
31:3:363:G:H21	31:3:513:A:H2	1.69	0.41
31:3:417:G:N1	31:3:432:G:C6	2.89	0.41
31:3:625:G:H2'	31:3:626:A:C8	2.55	0.41
31:3:810:G:C6	31:3:829:A:C8	3.09	0.41
31:3:833:C:H2'	31:3:834:G:C8	2.56	0.41
31:3:1264:U:C2'	31:3:1265:G:H5'	2.51	0.41
31:3:1534:A:C4	31:3:1535:A:C8	3.08	0.41
31:3:1583:G:H2'	31:3:1584:U:C6	2.56	0.41
31:3:1588:A:HO2'	31:3:1589:A:P	2.43	0.41
31:3:1743:U:H2'	31:3:1744:U:C6	2.56	0.41
31:3:2007:U:H2'	31:3:2008:A:C8	2.56	0.41
31:3:2259:G:C2	31:3:2260:G:N7	2.89	0.41
31:3:2295:A:H1'	31:3:2296:A:H2'	2.03	0.41
31:3:2402:C:H2'	31:3:2403:C:O4'	2.20	0.41
31:3:2754:U:H2'	31:3:2755:G:O4'	2.20	0.41
31:3:2784:A:O2'	31:3:2790:A:N7	2.42	0.41
32:4:38:U:O2'	32:4:40:U:H2'	2.20	0.41
31:3:70:G:H2'	31:3:71:C:C6	2.56	0.41
31:3:608:A:H2'	31:3:609:U:C6	2.55	0.41
31:3:626:A:H2'	31:3:627:U:H6	1.86	0.41
31:3:775:C:H5'	31:3:1791:A:H2'	2.03	0.41
31:3:939:U:H2'	31:3:940:A:C8	2.56	0.41
31:3:1232:U:O4	31:3:1233:A:N6	2.54	0.41
31:3:1432:C:H2'	31:3:1433:U:C6	2.56	0.41
31:3:1456:C:C4	31:3:1603:A:H5''	2.56	0.41
31:3:1555:G:H2'	31:3:1556:U:C6	2.56	0.41
31:3:1584:U:H5''	31:3:1585:A:H2	1.86	0.41
31:3:1690:C:H2'	31:3:1691:U:H6	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1800:C:H2'	31:3:1801:U:C6	2.56	0.41
31:3:2162:U:H2'	31:3:2163:U:O4'	2.21	0.41
31:3:2185:C:H2'	31:3:2186:C:C6	2.56	0.41
31:3:2265:U:H2'	31:3:2266:C:C6	2.56	0.41
31:3:2589:G:H22	31:3:2618:C:H2'	1.86	0.41
31:3:2857:C:H2'	31:3:2858:A:H8	1.86	0.41
31:3:2861:G:N2	31:3:2863:G:H3'	2.35	0.41
31:3:2864:A:H8	31:3:2864:A:O5'	2.04	0.41
32:4:87:U:H3'	32:4:88:G:C8	2.56	0.41
31:3:333:A:C6	31:3:356:A:C4	3.09	0.40
31:3:342:G:H2'	31:3:343:A:O4'	2.21	0.40
31:3:499:G:N1	31:3:502:A:OP2	2.41	0.40
31:3:539:U:O2	31:3:1264:U:O2'	2.28	0.40
31:3:665:C:H2'	31:3:666:G:C8	2.56	0.40
31:3:699:U:H2'	31:3:700:U:C6	2.55	0.40
31:3:876:A:H61	31:3:973:U:H3	1.68	0.40
31:3:1286:G:H2'	31:3:1286:G:N3	2.36	0.40
31:3:1337:G:H2'	31:3:1338:G:C8	2.57	0.40
31:3:1667:G:N7	31:3:1669:A:N6	2.68	0.40
31:3:2062:C:O2	31:3:2580:A:N6	2.54	0.40
31:3:2104:A:C6	31:3:2201:G:N1	2.89	0.40
31:3:2204:C:H2'	31:3:2205:U:N1	2.36	0.40
31:3:2281:A:H2'	31:3:2282:A:C8	2.57	0.40
31:3:251:G:H2'	31:3:254:G:N7	2.36	0.40
31:3:549:A:C4	31:3:550:A:C8	3.09	0.40
31:3:947:A:H2	31:3:2272:C:O2	2.03	0.40
31:3:1362:C:H2'	31:3:1363:C:H6	1.86	0.40
31:3:1457:A:H2'	31:3:1458:A:C8	2.57	0.40
4:7:28:ILE:HD13	4:7:119:ALA:HA	2.04	0.40
4:7:107:MET:HB2	4:7:112:ARG:HE	1.85	0.40
4:7:147:LYS:HD2	4:7:147:LYS:HA	1.81	0.40
31:3:161:U:H2'	31:3:162:G:O4'	2.22	0.40
31:3:536:A:H2'	31:3:537:A:O4'	2.20	0.40
31:3:680:A:H2'	31:3:682:A:H8	1.86	0.40
31:3:788:G:H2'	31:3:789:A:H8	1.86	0.40
31:3:874:U:H3	31:3:975:G:H1	1.70	0.40
31:3:880:C:H4'	31:3:881:A:C4	2.57	0.40
31:3:1150:U:O2'	31:3:1151:U:H5'	2.20	0.40
31:3:1235:U:H3'	31:3:1236:G:H5''	2.03	0.40
31:3:1336:A:H2'	31:3:1337:G:O4'	2.21	0.40
31:3:1444:C:O2'	31:3:1445:U:O5'	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:1465:U:H5''	31:3:1466:U:OP1	2.21	0.40
31:3:1476:C:H4'	31:3:1554:A:H2	1.85	0.40
31:3:1550:G:H2'	31:3:1551:U:C6	2.57	0.40
31:3:1609:U:H2'	31:3:1610:U:O4'	2.20	0.40
31:3:1690:C:H2'	31:3:1691:U:C6	2.56	0.40
31:3:1899:C:H2'	31:3:1900:C:C6	2.56	0.40
31:3:1930:U:H2'	31:3:1931:C:C6	2.56	0.40
31:3:2239:U:H2'	31:3:2240:U:C6	2.56	0.40
31:3:2330:A:H2'	31:3:2331:G:O4'	2.21	0.40
31:3:2603:G:N2	31:3:2605:G:H8	2.19	0.40
31:3:2665:A:H1'	31:3:2673:A:N6	2.36	0.40
31:3:2687:A:H2'	31:3:2688:C:C6	2.56	0.40
32:4:7:G:C2	32:4:8:C:C5	3.09	0.40
32:4:76:A:C2	32:4:77:G:H1'	2.56	0.40
32:4:91:A:C4	32:4:92:A:C8	3.10	0.40
1:0:3:ARG:HH21	31:3:1647:A:H1'	1.87	0.40
31:3:44:A:H2'	31:3:45:U:H6	1.86	0.40
31:3:116:C:H2'	31:3:117:C:C6	2.56	0.40
31:3:556:U:C2	31:3:557:G:C8	3.09	0.40
31:3:692:U:H2'	31:3:693:U:C6	2.56	0.40
31:3:890:U:H2'	31:3:891:G:C8	2.54	0.40
31:3:1337:G:H1	31:3:1639:C:H42	1.69	0.40
31:3:1589:A:H2'	31:3:1590:U:H6	1.86	0.40
31:3:1698:A:H2'	31:3:1699:A:C8	2.56	0.40
31:3:1867:G:H2'	31:3:1868:A:H8	1.86	0.40
31:3:2552:G:H2'	31:3:2553:G:C8	2.56	0.40
31:3:2693:U:N3	31:3:2733:A:N1	2.69	0.40
31:3:2755:G:N2	31:3:2756:A:H62	2.19	0.40
1:0:10:LEU:O	1:0:14:LYS:HG3	2.22	0.40
1:0:34:ARG:NH1	31:3:502:A:OP1	2.55	0.40
4:7:38:PHE:HB3	4:7:52:MET:CE	2.52	0.40
31:3:33:C:H2'	31:3:34:C:C6	2.56	0.40
31:3:448:A:H2'	31:3:449:C:O4'	2.20	0.40
31:3:650:G:H2'	31:3:651:A:C8	2.57	0.40
31:3:816:A:H5''	31:3:817:A:C8	2.56	0.40
31:3:1056:A:H2'	31:3:1057:G:H4'	2.02	0.40
31:3:1343:C:H2'	31:3:1344:U:H6	1.87	0.40
31:3:1620:A:H2'	31:3:1621:U:N1	2.37	0.40
31:3:1820:U:HO2'	31:3:1821:G:P	2.44	0.40
31:3:1873:A:H2'	31:3:1874:G:O4'	2.21	0.40
31:3:2055:A:O4'	31:3:2827:A:N6	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:3:2274:A:H4'	31:3:2275:A:N3	2.36	0.40
31:3:2353:G:O2'	31:3:2389:A:N3	2.37	0.40
31:3:2404:G:H2'	31:3:2405:G:C8	2.56	0.40
31:3:2677:A:H2'	31:3:2678:A:H8	1.87	0.40
32:4:76:A:H1'	32:4:89:A:N6	2.37	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	44 (98%)	1 (2%)	0	100	100
2	1	57/59 (97%)	55 (96%)	2 (4%)	0	100	100
3	2	35/37 (95%)	32 (91%)	3 (9%)	0	100	100
4	7	180/184 (98%)	168 (93%)	12 (7%)	0	100	100
5	a	283/287 (99%)	266 (94%)	17 (6%)	0	100	100
6	b	227/287 (79%)	209 (92%)	18 (8%)	0	100	100
7	c	208/212 (98%)	196 (94%)	12 (6%)	0	100	100
8	d	173/180 (96%)	163 (94%)	10 (6%)	0	100	100
9	e	174/184 (95%)	167 (96%)	7 (4%)	0	100	100
10	f	143/149 (96%)	130 (91%)	13 (9%)	0	100	100
11	g	124/161 (77%)	109 (88%)	14 (11%)	1 (1%)	19	60
12	h	126/137 (92%)	118 (94%)	8 (6%)	0	100	100
13	i	142/146 (97%)	135 (95%)	7 (5%)	0	100	100
14	j	120/122 (98%)	118 (98%)	2 (2%)	0	100	100
15	k	146/151 (97%)	137 (94%)	9 (6%)	0	100	100
16	l	134/139 (96%)	126 (94%)	8 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	m	117/124 (94%)	109 (93%)	8 (7%)	0	100	100
18	n	108/116 (93%)	98 (91%)	10 (9%)	0	100	100
19	o	113/119 (95%)	102 (90%)	11 (10%)	0	100	100
20	p	112/127 (88%)	109 (97%)	3 (3%)	0	100	100
21	q	97/100 (97%)	86 (89%)	11 (11%)	0	100	100
22	r	137/159 (86%)	126 (92%)	11 (8%)	0	100	100
23	s	90/237 (38%)	84 (93%)	6 (7%)	0	100	100
24	t	109/111 (98%)	102 (94%)	7 (6%)	0	100	100
25	u	84/104 (81%)	79 (94%)	5 (6%)	0	100	100
26	v	61/65 (94%)	57 (93%)	4 (7%)	0	100	100
27	w	96/111 (86%)	92 (96%)	4 (4%)	0	100	100
28	x	42/97 (43%)	34 (81%)	8 (19%)	0	100	100
29	y	54/57 (95%)	49 (91%)	5 (9%)	0	100	100
30	z	48/53 (91%)	47 (98%)	1 (2%)	0	100	100
All	All	3585/4063 (88%)	3347 (93%)	237 (7%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
11	g	45	PHE

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	7	170/172 (99%)	164 (96%)	6 (4%)	36	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	a	241/243 (99%)	240 (100%)	1 (0%)	91	94
6	b	186/233 (80%)	183 (98%)	3 (2%)	62	79
7	c	182/184 (99%)	181 (100%)	1 (0%)	88	93
8	d	150/154 (97%)	149 (99%)	1 (1%)	84	90
9	e	153/159 (96%)	153 (100%)	0	100	100
10	f	123/134 (92%)	123 (100%)	0	100	100
11	g	101/129 (78%)	92 (91%)	9 (9%)	9	30
12	h	102/110 (93%)	102 (100%)	0	100	100
13	i	126/128 (98%)	125 (99%)	1 (1%)	81	89
14	j	103/103 (100%)	103 (100%)	0	100	100
15	k	123/126 (98%)	123 (100%)	0	100	100
16	l	113/115 (98%)	113 (100%)	0	100	100
17	m	105/109 (96%)	104 (99%)	1 (1%)	76	86
18	n	96/99 (97%)	95 (99%)	1 (1%)	76	86
19	o	101/105 (96%)	101 (100%)	0	100	100
20	p	100/108 (93%)	100 (100%)	0	100	100
21	q	90/91 (99%)	88 (98%)	2 (2%)	52	71
22	r	116/132 (88%)	115 (99%)	1 (1%)	78	87
23	s	82/208 (39%)	82 (100%)	0	100	100
24	t	96/96 (100%)	96 (100%)	0	100	100
25	u	69/85 (81%)	69 (100%)	0	100	100
26	v	58/60 (97%)	58 (100%)	0	100	100
27	w	87/98 (89%)	86 (99%)	1 (1%)	73	84
28	x	41/86 (48%)	41 (100%)	0	100	100
29	y	48/49 (98%)	44 (92%)	4 (8%)	11	34
30	z	47/50 (94%)	46 (98%)	1 (2%)	53	72
All	All	3135/3493 (90%)	3102 (99%)	33 (1%)	74	84

All (33) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	7	144	ASP
4	7	146	HIS

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Mol	Chain	Res	Type
4	7	147	LYS
4	7	148	ASP
4	7	149	GLU
4	7	150	ASP
5	a	24	LYS
6	b	117	ARG
6	b	173	LYS
6	b	180	ARG
7	c	19	LYS
8	d	80	ARG
11	g	26	ILE
11	g	28	ASP
11	g	29	TYR
11	g	32	MET
11	g	44	LEU
11	g	46	LYS
11	g	47	ASN
11	g	67	LYS
11	g	88	GLU
13	i	88	LYS
17	m	30	LYS
18	n	17	LYS
21	q	24	LYS
21	q	54	ARG
22	r	9	ARG
27	w	61	ARG
29	y	37	LYS
29	y	47	MET
29	y	51	LEU
29	y	52	ARG
30	z	23	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
5	a	240	HIS
6	b	35	GLN
7	c	156	ASN
7	c	177	ASN
17	m	81	HIS
18	n	37	ASN
25	u	26	ASN

5.3.3 RNA 

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
31	3	2875/2907 (98%)	790 (27%)	28 (0%)
32	4	103/108 (95%)	25 (24%)	4 (3%)
All	All	2978/3015 (98%)	815 (27%)	32 (1%)

All (815) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
31	3	10	U
31	3	15	A
31	3	28	G
31	3	37	G
31	3	38	G
31	3	41	C
31	3	42	U
31	3	44	A
31	3	48	G
31	3	52	U
31	3	53	G
31	3	57	G
31	3	64	U
31	3	65	A
31	3	73	A
31	3	75	A
31	3	77	G
31	3	82	G
31	3	86	A
31	3	87	G
31	3	90	G
31	3	94	A
31	3	98	C
31	3	102	A
31	3	103	G
31	3	112	A
31	3	115	U
31	3	116	C
31	3	120	A
31	3	121	U
31	3	122	G
31	3	126	C
31	3	132	G
31	3	134	U

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Mol	Chain	Res	Type
31	3	146	G
31	3	163	A
31	3	164	A
31	3	165	U
31	3	166	A
31	3	169	U
31	3	172	U
31	3	176	U
31	3	178	A
31	3	179	A
31	3	181	G
31	3	184	A
31	3	188	G
31	3	200	A
31	3	201	A
31	3	210	U
31	3	215	A
31	3	218	G
31	3	219	G
31	3	220	A
31	3	226	A
31	3	227	A
31	3	229	C
31	3	232	A
31	3	233	U
31	3	234	G
31	3	237	A
31	3	245	U
31	3	246	G
31	3	247	U
31	3	251	G
31	3	252	G
31	3	254	G
31	3	261	A
31	3	262	G
31	3	270	G
31	3	276	A
31	3	277	C
31	3	283	A
31	3	284	U
31	3	285	U
31	3	286	A

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Mol	Chain	Res	Type
31	3	287	G
31	3	293	G
31	3	294	G
31	3	295	U
31	3	296	U
31	3	297	G
31	3	298	U
31	3	299	A
31	3	306	G
31	3	309	A
31	3	310	U
31	3	311	G
31	3	312	U
31	3	314	G
31	3	315	A
31	3	316	C
31	3	319	G
31	3	320	A
31	3	325	G
31	3	333	A
31	3	336	C
31	3	345	A
31	3	351	G
31	3	354	C
31	3	357	A
31	3	358	A
31	3	363	G
31	3	364	A
31	3	377	U
31	3	393	C
31	3	399	G
31	3	402	A
31	3	404	C
31	3	408	G
31	3	409	A
31	3	410	G
31	3	411	U
31	3	414	C
31	3	418	G
31	3	422	A
31	3	424	G
31	3	425	U

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Mol	Chain	Res	Type
31	3	426	U
31	3	432	G
31	3	437	A
31	3	440	C
31	3	441	U
31	3	442	G
31	3	447	G
31	3	448	A
31	3	456	G
31	3	460	G
31	3	465	A
31	3	466	A
31	3	470	U
31	3	479	A
31	3	482	G
31	3	483	A
31	3	484	U
31	3	487	C
31	3	491	A
31	3	492	C
31	3	493	A
31	3	500	U
31	3	501	G
31	3	509	G
31	3	511	U
31	3	513	A
31	3	514	A
31	3	515	A
31	3	517	G
31	3	520	C
31	3	531	G
31	3	532	A
31	3	539	U
31	3	543	U
31	3	544	U
31	3	545	C
31	3	553	A
31	3	554	U
31	3	562	C
31	3	563	A
31	3	565	C
31	3	566	G

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Mol	Chain	Res	Type
31	3	567	U
31	3	568	G
31	3	571	A
31	3	581	A
31	3	583	U
31	3	584	G
31	3	587	U
31	3	589	A
31	3	596	G
31	3	603	G
31	3	605	A
31	3	606	G
31	3	607	U
31	3	608	A
31	3	609	U
31	3	620	G
31	3	623	A
31	3	633	G
31	3	636	U
31	3	637	U
31	3	650	G
31	3	656	G
31	3	657	A
31	3	661	G
31	3	663	A
31	3	673	A
31	3	674	G
31	3	681	A
31	3	682	A
31	3	689	U
31	3	691	G
31	3	703	A
31	3	705	A
31	3	706	C
31	3	707	C
31	3	712	A
31	3	716	G
31	3	719	G
31	3	721	G
31	3	722	C
31	3	723	U
31	3	725	G

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Mol	Chain	Res	Type
31	3	730	G
31	3	732	G
31	3	734	A
31	3	738	U
31	3	740	A
31	3	752	C
31	3	760	G
31	3	761	G
31	3	763	G
31	3	764	G
31	3	765	A
31	3	775	C
31	3	781	U
31	3	782	U
31	3	797	U
31	3	799	A
31	3	800	C
31	3	803	G
31	3	810	G
31	3	811	G
31	3	817	A
31	3	818	A
31	3	819	U
31	3	820	U
31	3	824	A
31	3	825	U
31	3	827	G
31	3	828	A
31	3	836	G
31	3	837	A
31	3	840	G
31	3	841	C
31	3	842	U
31	3	847	C
31	3	854	A
31	3	862	U
31	3	864	A
31	3	865	A
31	3	866	G
31	3	871	G
31	3	873	G
31	3	881	A

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Mol	Chain	Res	Type
31	3	882	C
31	3	883	A
31	3	885	A
31	3	886	U
31	3	896	U
31	3	902	U
31	3	903	A
31	3	906	G
31	3	908	A
31	3	917	G
31	3	931	G
31	3	932	U
31	3	933	A
31	3	934	C
31	3	936	G
31	3	944	U
31	3	945	U
31	3	947	A
31	3	949	C
31	3	951	C
31	3	952	U
31	3	953	G
31	3	954	A
31	3	958	C
31	3	968	U
31	3	970	U
31	3	977	A
31	3	981	A
31	3	982	G
31	3	989	G
31	3	993	A
31	3	994	U
31	3	995	A
31	3	997	G
31	3	1001	C
31	3	1009	A
31	3	1011	A
31	3	1016	A
31	3	1019	A
31	3	1021	C
31	3	1026	A
31	3	1027	U

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Mol	Chain	Res	Type
31	3	1029	A
31	3	1031	U
31	3	1032	A
31	3	1035	U
31	3	1047	A
31	3	1048	A
31	3	1049	U
31	3	1052	A
31	3	1055	A
31	3	1057	G
31	3	1061	A
31	3	1068	U
31	3	1075	G
31	3	1081	A
31	3	1082	A
31	3	1086	G
31	3	1095	U
31	3	1097	G
31	3	1100	U
31	3	1102	A
31	3	1104	A
31	3	1105	A
31	3	1106	G
31	3	1112	A
31	3	1123	A
31	3	1125	U
31	3	1126	G
31	3	1131	A
31	3	1132	C
31	3	1146	A
31	3	1147	G
31	3	1151	U
31	3	1157	G
31	3	1163	G
31	3	1165	U
31	3	1167	U
31	3	1168	A
31	3	1170	C
31	3	1176	U
31	3	1177	A
31	3	1178	A
31	3	1179	G

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Mol	Chain	Res	Type
31	3	1183	A
31	3	1186	A
31	3	1189	G
31	3	1191	A
31	3	1203	G
31	3	1204	A
31	3	1209	U
31	3	1210	A
31	3	1215	G
31	3	1217	G
31	3	1234	U
31	3	1235	U
31	3	1236	G
31	3	1243	A
31	3	1249	A
31	3	1250	A
31	3	1251	G
31	3	1253	G
31	3	1255	G
31	3	1257	G
31	3	1259	A
31	3	1265	G
31	3	1266	G
31	3	1268	U
31	3	1278	G
31	3	1279	U
31	3	1281	A
31	3	1283	A
31	3	1285	U
31	3	1286	G
31	3	1287	C
31	3	1292	A
31	3	1295	A
31	3	1297	U
31	3	1298	A
31	3	1301	G
31	3	1302	C
31	3	1303	U
31	3	1304	U
31	3	1308	A
31	3	1315	A
31	3	1317	C

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Mol	Chain	Res	Type
31	3	1322	A
31	3	1328	A
31	3	1329	U
31	3	1330	U
31	3	1331	G
31	3	1342	C
31	3	1353	G
31	3	1356	G
31	3	1357	U
31	3	1360	U
31	3	1361	U
31	3	1369	U
31	3	1371	G
31	3	1376	G
31	3	1380	U
31	3	1393	A
31	3	1402	G
31	3	1406	A
31	3	1407	U
31	3	1412	A
31	3	1414	C
31	3	1422	U
31	3	1423	A
31	3	1424	U
31	3	1426	C
31	3	1431	A
31	3	1435	A
31	3	1439	U
31	3	1444	C
31	3	1445	U
31	3	1456	C
31	3	1463	G
31	3	1466	U
31	3	1467	U
31	3	1479	A
31	3	1480	A
31	3	1481	U
31	3	1483	G
31	3	1486	U
31	3	1487	U
31	3	1493	A
31	3	1495	A

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Mol	Chain	Res	Type
31	3	1502	A
31	3	1507	G
31	3	1508	G
31	3	1510	A
31	3	1518	C
31	3	1523	C
31	3	1526	U
31	3	1532	A
31	3	1533	U
31	3	1534	A
31	3	1541	A
31	3	1543	U
31	3	1546	U
31	3	1548	A
31	3	1550	G
31	3	1555	G
31	3	1558	A
31	3	1571	G
31	3	1579	G
31	3	1581	U
31	3	1584	U
31	3	1585	A
31	3	1587	U
31	3	1588	A
31	3	1589	A
31	3	1594	G
31	3	1600	A
31	3	1601	A
31	3	1603	A
31	3	1612	U
31	3	1615	G
31	3	1618	U
31	3	1619	A
31	3	1636	U
31	3	1641	A
31	3	1642	G
31	3	1643	A
31	3	1644	A
31	3	1647	A
31	3	1648	A
31	3	1650	A
31	3	1651	C

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Mol	Chain	Res	Type
31	3	1652	A
31	3	1668	G
31	3	1679	U
31	3	1680	A
31	3	1681	G
31	3	1682	C
31	3	1683	G
31	3	1694	A
31	3	1695	G
31	3	1698	A
31	3	1701	G
31	3	1707	U
31	3	1708	G
31	3	1715	A
31	3	1716	A
31	3	1721	G
31	3	1727	U
31	3	1728	A
31	3	1736	G
31	3	1747	G
31	3	1748	U
31	3	1751	A
31	3	1759	C
31	3	1761	C
31	3	1763	G
31	3	1764	U
31	3	1765	G
31	3	1767	A
31	3	1768	G
31	3	1769	A
31	3	1770	A
31	3	1771	C
31	3	1780	A
31	3	1784	U
31	3	1789	C
31	3	1791	A
31	3	1794	A
31	3	1807	C
31	3	1809	A
31	3	1812	C
31	3	1821	G
31	3	1822	A

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Mol	Chain	Res	Type
31	3	1823	U
31	3	1828	A
31	3	1832	G
31	3	1835	G
31	3	1836	A
31	3	1842	G
31	3	1843	C
31	3	1849	G
31	3	1855	A
31	3	1856	G
31	3	1865	A
31	3	1871	U
31	3	1876	G
31	3	1889	U
31	3	1890	U
31	3	1891	A
31	3	1907	A
31	3	1910	G
31	3	1913	G
31	3	1919	A
31	3	1920	A
31	3	1921	C
31	3	1925	A
31	3	1926	A
31	3	1934	A
31	3	1936	G
31	3	1937	G
31	3	1938	U
31	3	1943	A
31	3	1944	A
31	3	1945	A
31	3	1951	A
31	3	1952	G
31	3	1953	U
31	3	1962	U
31	3	1969	C
31	3	1971	G
31	3	1974	U
31	3	1977	A
31	3	1978	U
31	3	1979	G
31	3	1982	G

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Mol	Chain	Res	Type
31	3	1984	A
31	3	1988	A
31	3	1989	U
31	3	1998	U
31	3	1999	G
31	3	2000	U
31	3	2004	G
31	3	2009	U
31	3	2011	G
31	3	2020	A
31	3	2025	C
31	3	2028	G
31	3	2030	A
31	3	2037	A
31	3	2038	A
31	3	2040	A
31	3	2041	C
31	3	2046	G
31	3	2050	G
31	3	2055	A
31	3	2057	C
31	3	2059	G
31	3	2062	C
31	3	2063	G
31	3	2067	A
31	3	2068	G
31	3	2069	A
31	3	2070	C
31	3	2071	C
31	3	2075	U
31	3	2076	G
31	3	2083	U
31	3	2084	A
31	3	2099	U
31	3	2100	G
31	3	2106	G
31	3	2107	A
31	3	2109	A
31	3	2110	U
31	3	2111	U
31	3	2112	A
31	3	2114	C

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Mol	Chain	Res	Type
31	3	2115	A
31	3	2117	G
31	3	2123	A
31	3	2124	A
31	3	2125	U
31	3	2127	G
31	3	2131	G
31	3	2132	G
31	3	2133	A
31	3	2139	C
31	3	2145	A
31	3	2153	U
31	3	2154	A
31	3	2167	G
31	3	2171	A
31	3	2173	G
31	3	2180	U
31	3	2183	U
31	3	2184	A
31	3	2193	U
31	3	2194	G
31	3	2195	U
31	3	2198	G
31	3	2199	C
31	3	2200	U
31	3	2202	U
31	3	2203	U
31	3	2205	U
31	3	2206	A
31	3	2207	A
31	3	2211	G
31	3	2212	U
31	3	2220	A
31	3	2222	C
31	3	2231	A
31	3	2232	G
31	3	2233	A
31	3	2246	G
31	3	2247	G
31	3	2257	U
31	3	2258	G
31	3	2260	G

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Mol	Chain	Res	Type
31	3	2261	G
31	3	2276	A
31	3	2280	U
31	3	2281	A
31	3	2286	A
31	3	2290	G
31	3	2291	U
31	3	2294	A
31	3	2295	A
31	3	2296	A
31	3	2297	G
31	3	2305	C
31	3	2310	C
31	3	2313	U
31	3	2316	G
31	3	2317	A
31	3	2319	A
31	3	2322	G
31	3	2327	U
31	3	2328	A
31	3	2331	G
31	3	2333	G
31	3	2334	U
31	3	2335	A
31	3	2338	G
31	3	2341	G
31	3	2342	U
31	3	2343	A
31	3	2353	G
31	3	2355	C
31	3	2358	U
31	3	2362	A
31	3	2364	A
31	3	2365	U
31	3	2369	G
31	3	2380	U
31	3	2391	G
31	3	2393	C
31	3	2396	A
31	3	2399	G
31	3	2401	U
31	3	2410	C

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Mol	Chain	Res	Type
31	3	2414	U
31	3	2415	A
31	3	2418	G
31	3	2431	U
31	3	2435	C
31	3	2436	G
31	3	2437	G
31	3	2438	A
31	3	2439	U
31	3	2443	A
31	3	2448	C
31	3	2449	U
31	3	2455	G
31	3	2456	A
31	3	2457	U
31	3	2458	A
31	3	2459	A
31	3	2477	A
31	3	2481	U
31	3	2483	C
31	3	2484	A
31	3	2487	U
31	3	2495	A
31	3	2499	U
31	3	2500	U
31	3	2503	G
31	3	2505	A
31	3	2506	C
31	3	2507	C
31	3	2509	C
31	3	2510	G
31	3	2511	A
31	3	2512	U
31	3	2513	G
31	3	2521	A
31	3	2526	A
31	3	2528	C
31	3	2538	A
31	3	2539	A
31	3	2543	G
31	3	2550	A
31	3	2562	U

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Mol	Chain	Res	Type
31	3	2563	U
31	3	2571	U
31	3	2572	A
31	3	2574	A
31	3	2575	G
31	3	2576	A
31	3	2580	A
31	3	2581	C
31	3	2584	G
31	3	2586	G
31	3	2589	G
31	3	2590	G
31	3	2593	U
31	3	2604	U
31	3	2605	G
31	3	2606	A
31	3	2608	A
31	3	2610	A
31	3	2611	G
31	3	2618	C
31	3	2619	C
31	3	2622	A
31	3	2636	U
31	3	2637	A
31	3	2638	G
31	3	2647	A
31	3	2649	G
31	3	2653	G
31	3	2654	U
31	3	2663	G
31	3	2664	U
31	3	2668	A
31	3	2669	G
31	3	2681	G
31	3	2695	U
31	3	2697	C
31	3	2698	U
31	3	2704	U
31	3	2722	G
31	3	2732	A
31	3	2734	C
31	3	2735	G

Continued on next page...

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Mol	Chain	Res	Type
31	3	2737	G
31	3	2740	U
31	3	2741	A
31	3	2747	U
31	3	2752	G
31	3	2756	A
31	3	2759	G
31	3	2765	A
31	3	2772	A
31	3	2774	A
31	3	2777	A
31	3	2785	G
31	3	2786	A
31	3	2788	U
31	3	2798	A
31	3	2799	U
31	3	2801	U
31	3	2805	A
31	3	2806	A
31	3	2807	G
31	3	2812	U
31	3	2813	A
31	3	2814	A
31	3	2822	C
31	3	2823	A
31	3	2825	A
31	3	2827	A
31	3	2835	G
31	3	2837	U
31	3	2838	G
31	3	2853	U
31	3	2863	G
31	3	2871	G
31	3	2876	G
31	3	2883	A
31	3	2884	C
31	3	2887	A
31	3	2888	U
31	3	2890	G
31	3	2897	G
31	3	2898	A
31	3	2899	C

Continued on next page...

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Mol	Chain	Res	Type
32	4	9	C
32	4	11	A
32	4	12	U
32	4	22	G
32	4	23	A
32	4	25	A
32	4	26	C
32	4	28	C
32	4	33	U
32	4	40	U
32	4	41	C
32	4	42	G
32	4	46	C
32	4	48	A
32	4	55	A
32	4	56	A
32	4	60	C
32	4	78	C
32	4	80	G
32	4	88	G
32	4	89	A
32	4	99	A
32	4	102	A
32	4	106	A
32	4	108	C

All (32) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
31	3	295	U
31	3	296	U
31	3	311	G
31	3	315	A
31	3	410	G
31	3	425	U
31	3	500	U
31	3	508	A
31	3	513	A
31	3	881	A
31	3	1048	A
31	3	1209	U
31	3	1216	U

Continued on next page...

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Mol	Chain	Res	Type
31	3	1297	U
31	3	1507	G
31	3	1583	G
31	3	1587	U
31	3	1588	A
31	3	1820	U
31	3	2333	G
31	3	2482	U
31	3	2504	C
31	3	2604	U
31	3	2668	A
31	3	2764	U
31	3	2862	U
31	3	2889	U
31	3	2897	G
32	4	10	C
32	4	54	U
32	4	59	A
32	4	107	G

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides 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.

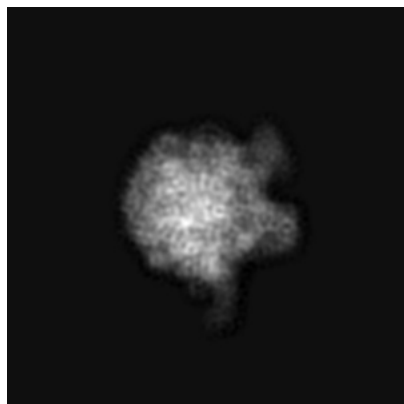
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13286. These allow visual inspection of the internal detail of the map and identification of artifacts.

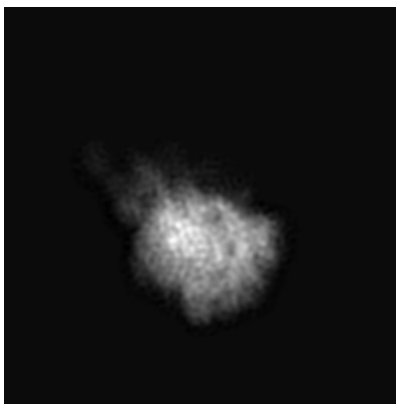
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

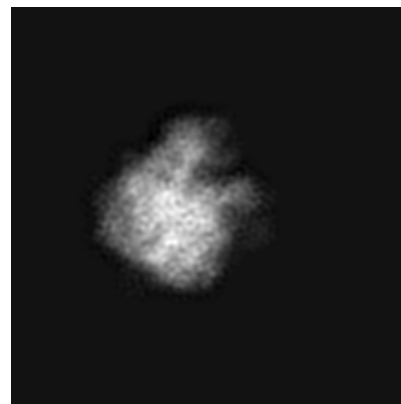
6.1.1 Primary map



X

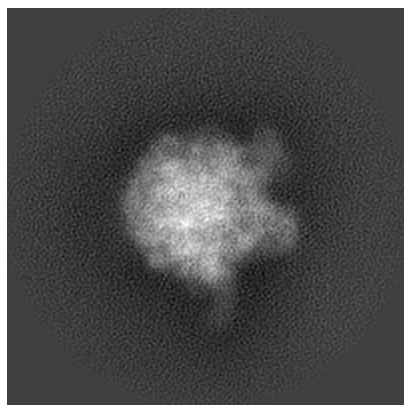


Y

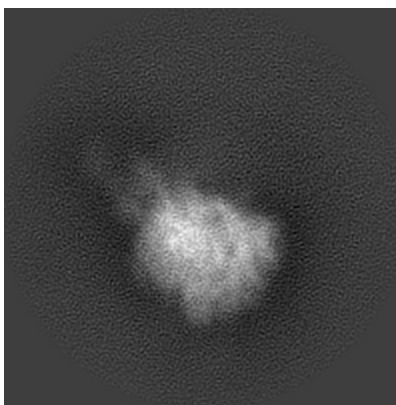


Z

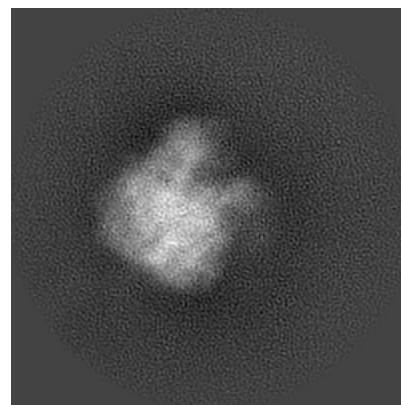
6.1.2 Raw map



X



Y

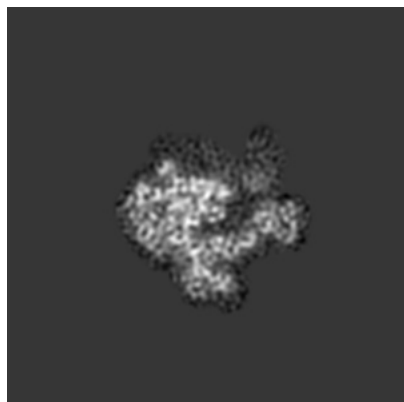


Z

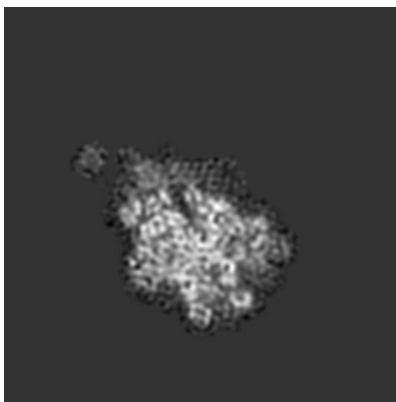
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

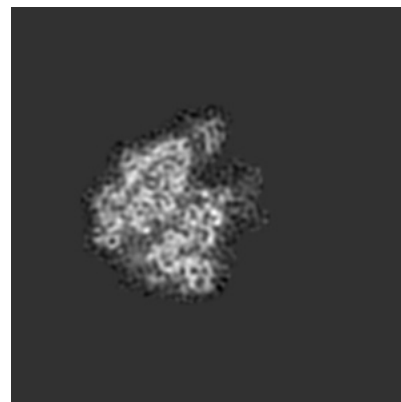
6.2.1 Primary map



X Index: 100

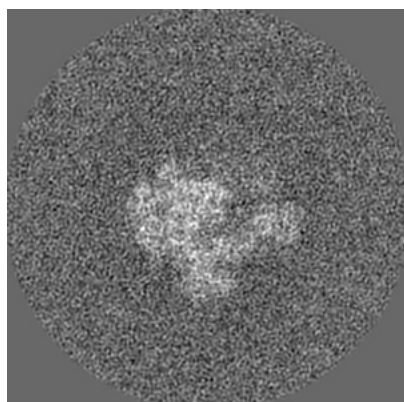


Y Index: 100

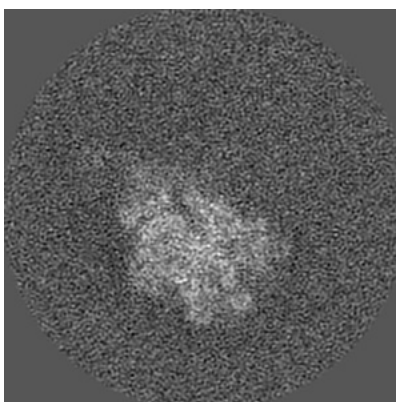


Z Index: 100

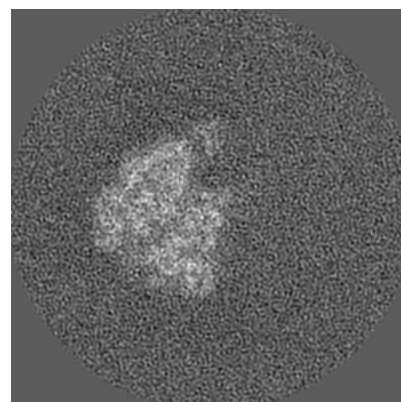
6.2.2 Raw map



X Index: 100



Y Index: 100

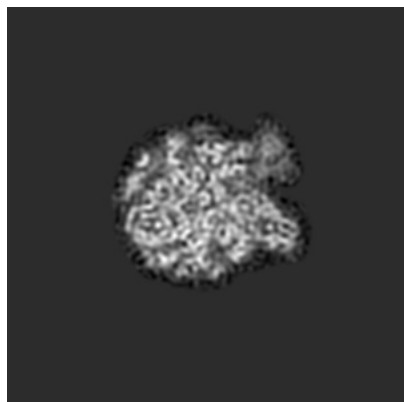


Z Index: 100

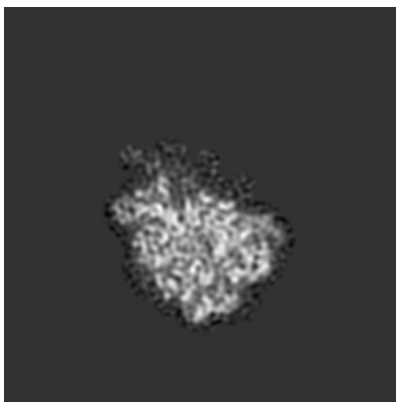
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

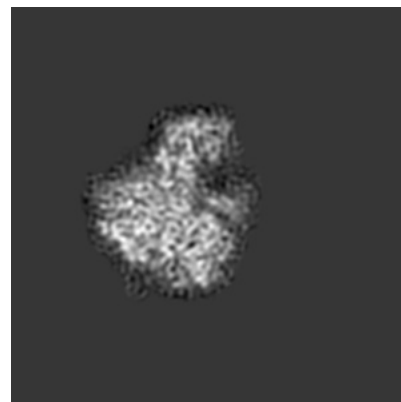
6.3.1 Primary map



X Index: 83

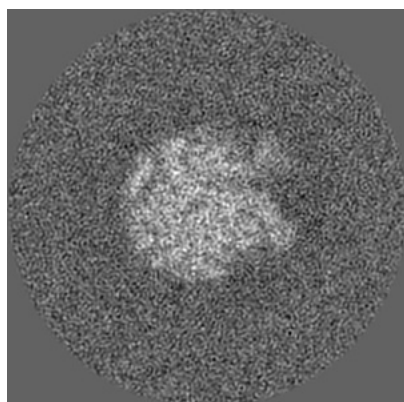


Y Index: 93

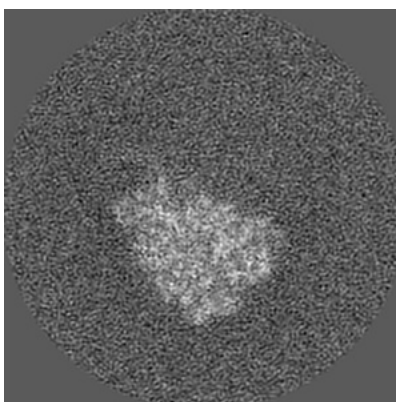


Z Index: 93

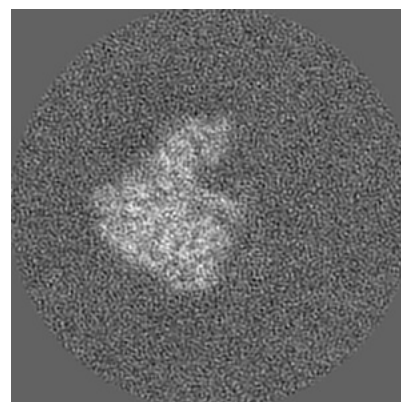
6.3.2 Raw map



X Index: 80



Y Index: 93

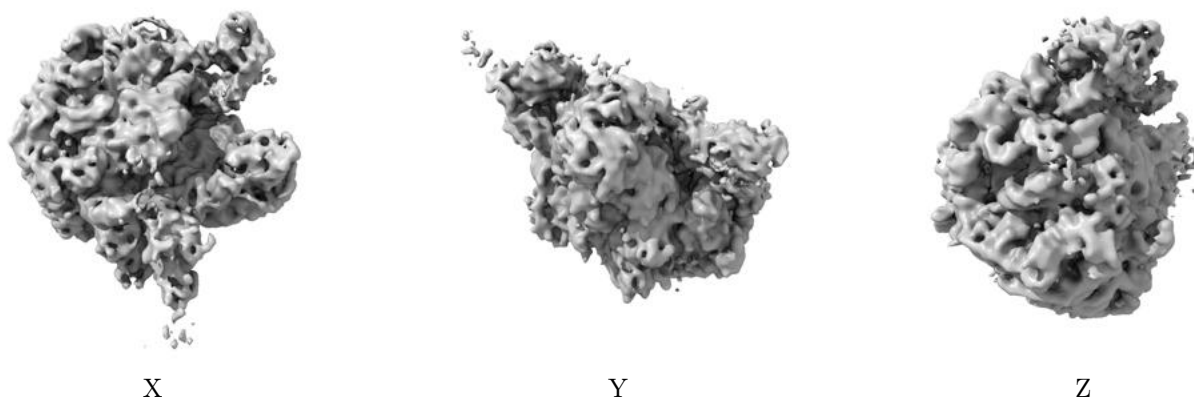


Z Index: 94

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

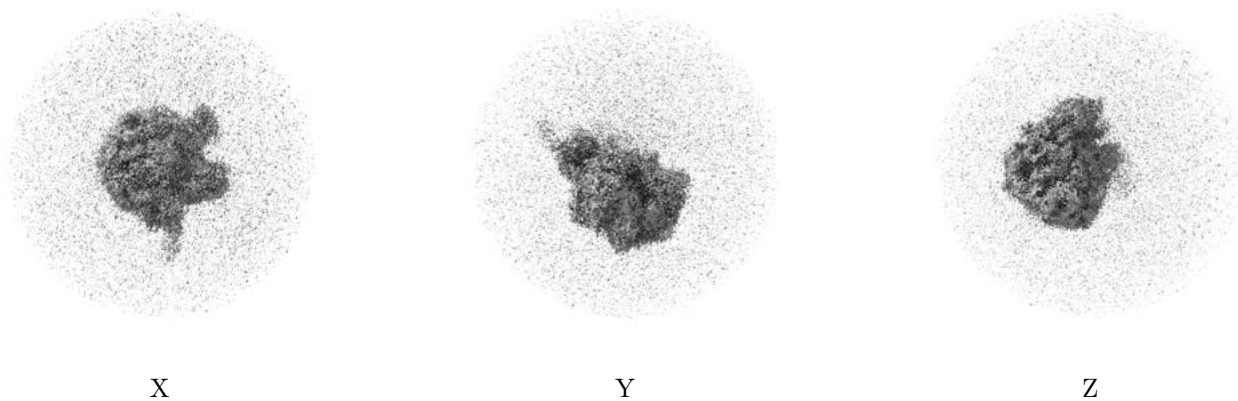
6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.46. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 Raw map



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.

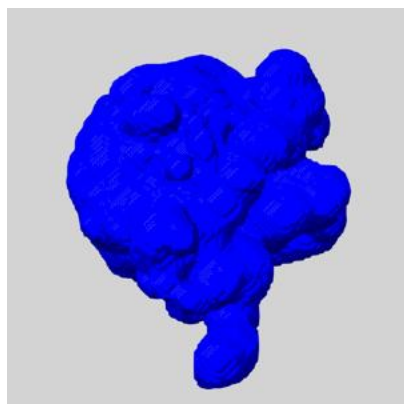
6.5 Mask visualisation [i](#)

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

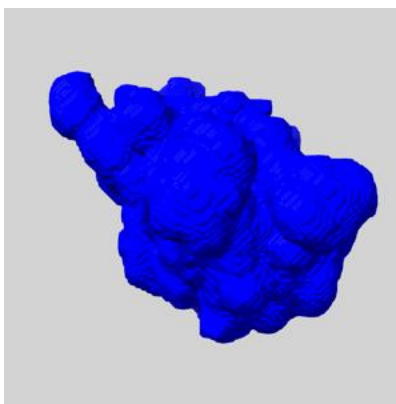
A mask typically either:

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

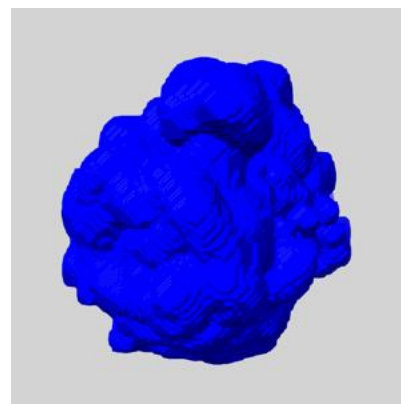
6.5.1 emd_13286_msk_1.map [i](#)



X



Y

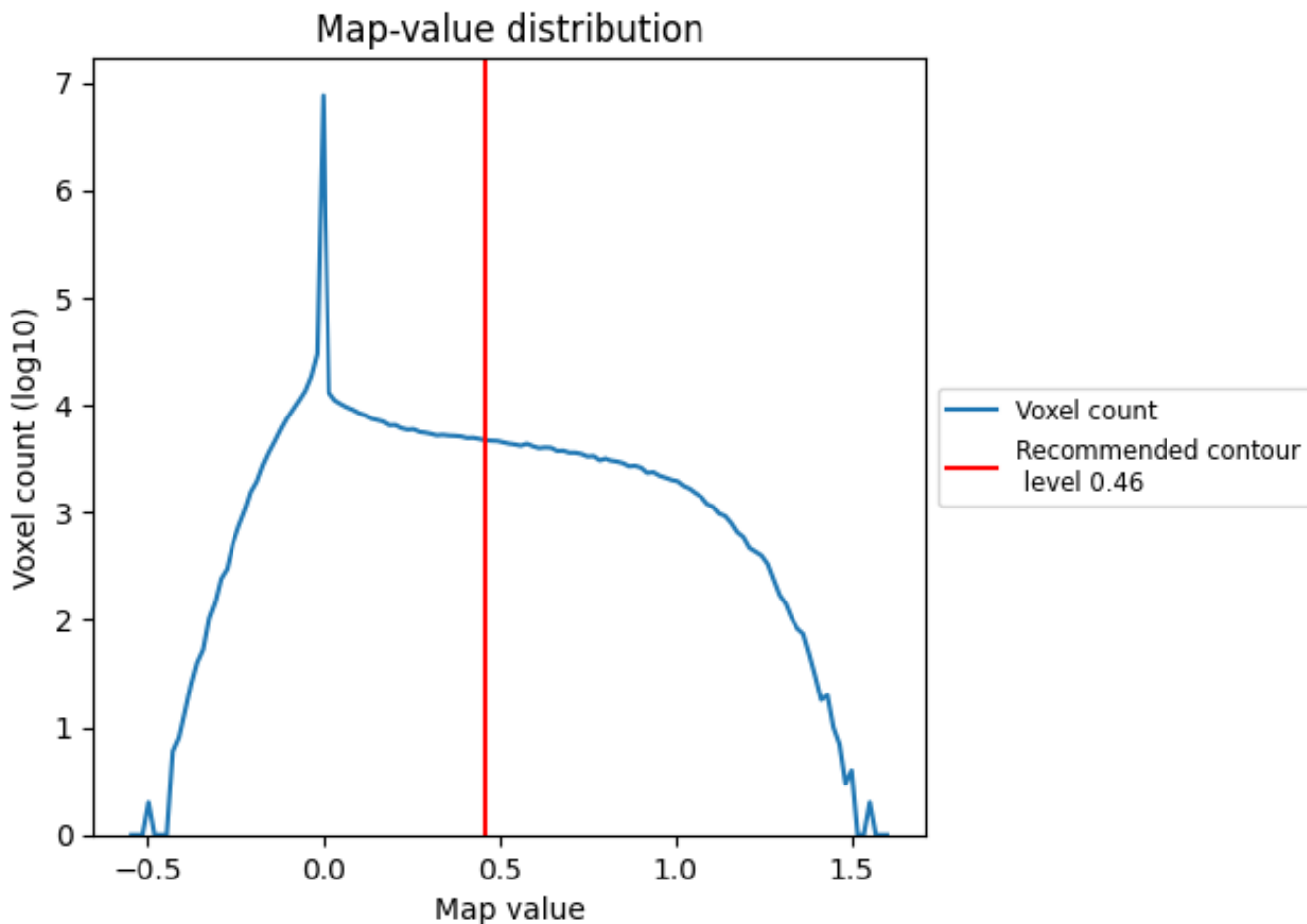


Z

7 Map analysis [i](#)

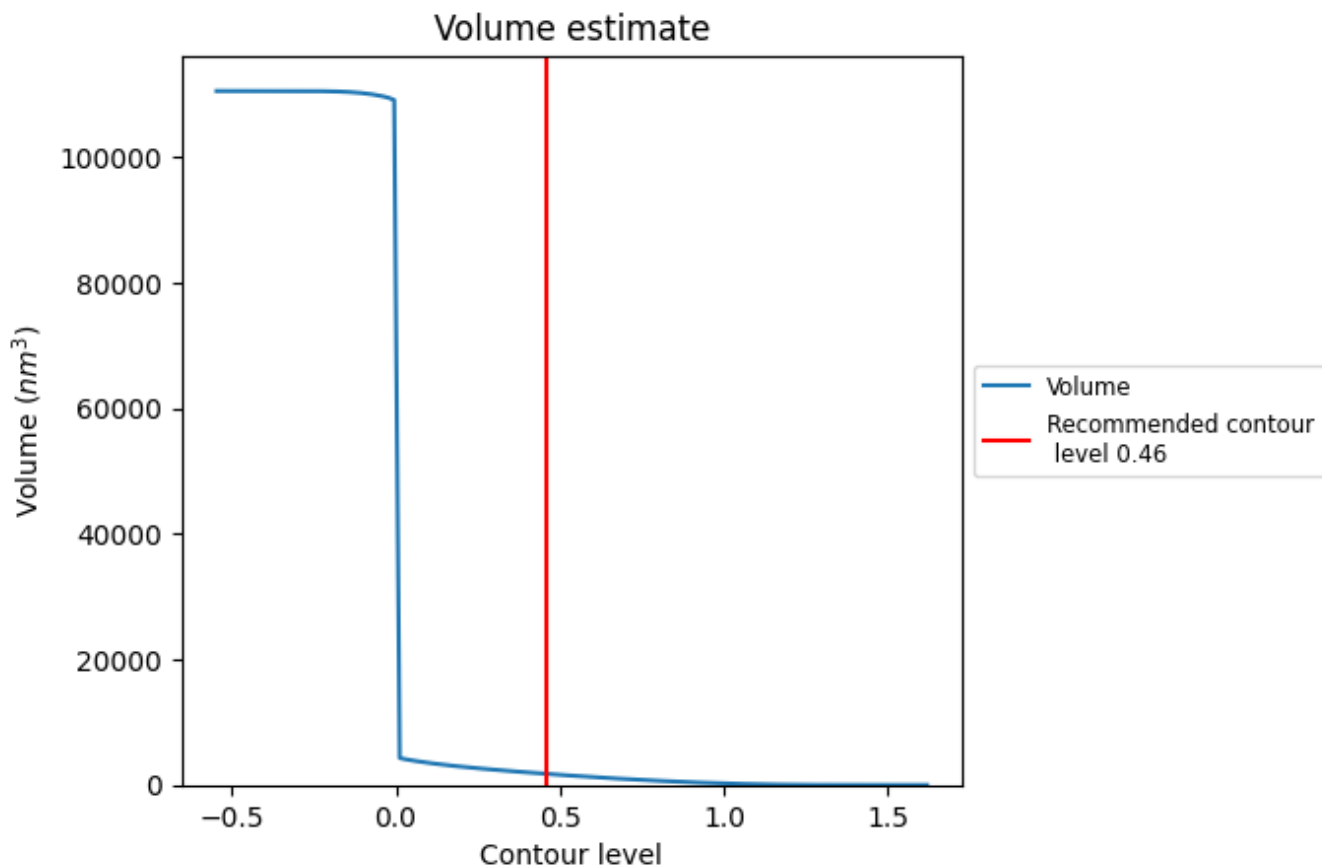
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

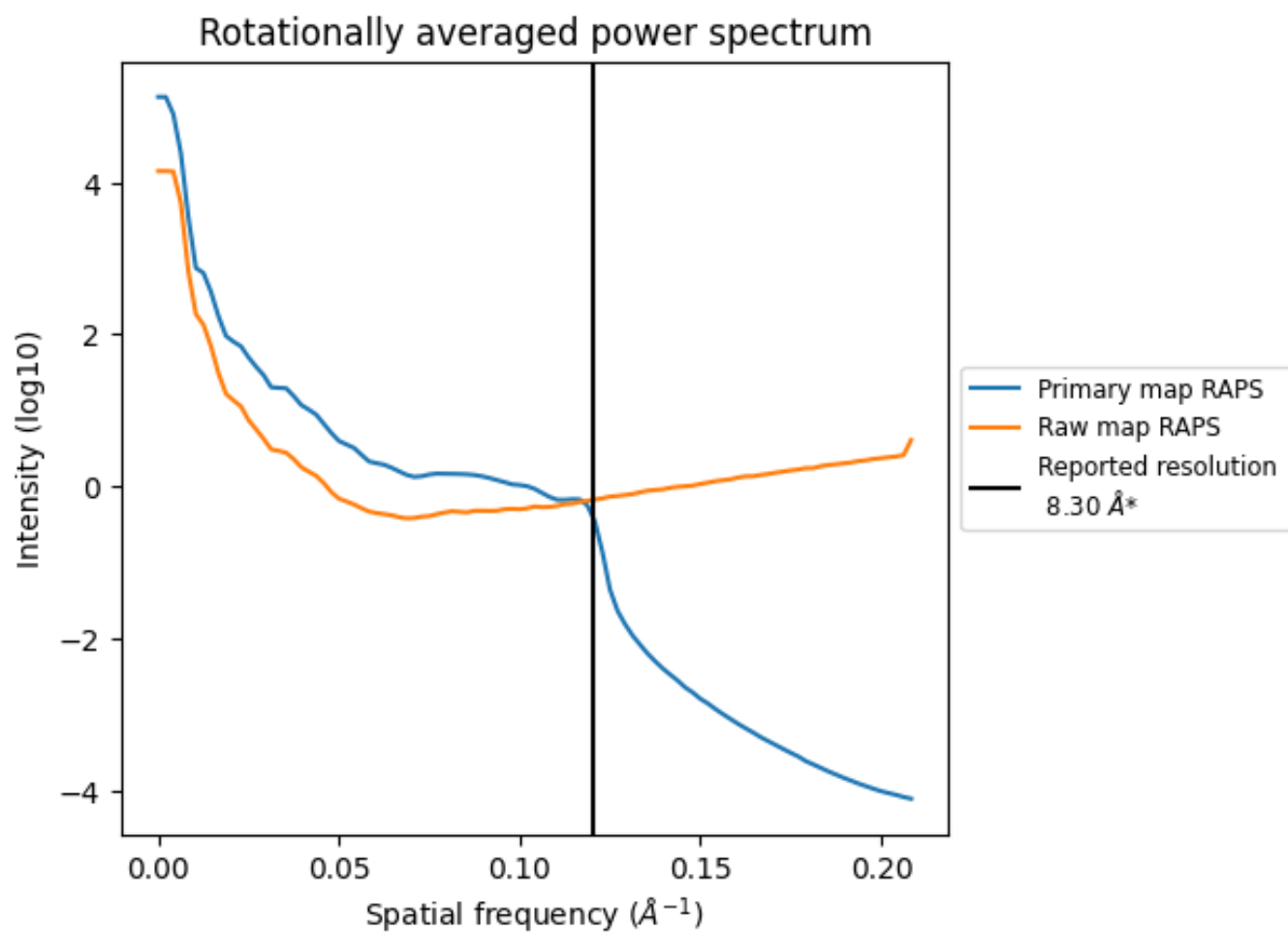
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 1764 nm³; this corresponds to an approximate mass of 1593 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](#)

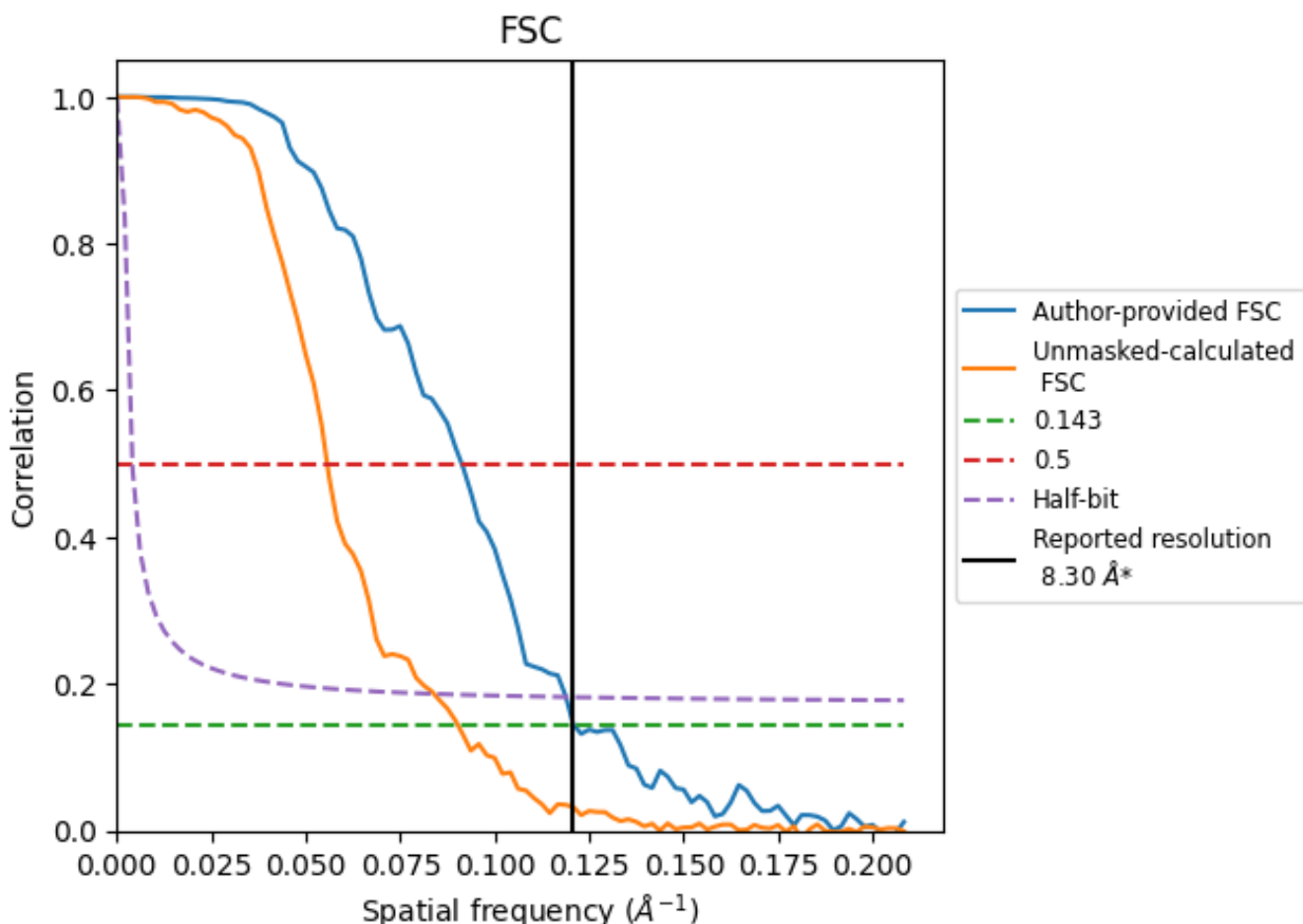


*Reported resolution corresponds to spatial frequency of 0.120 Å⁻¹

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.120 Å⁻¹

8.2 Resolution estimates [i](#)

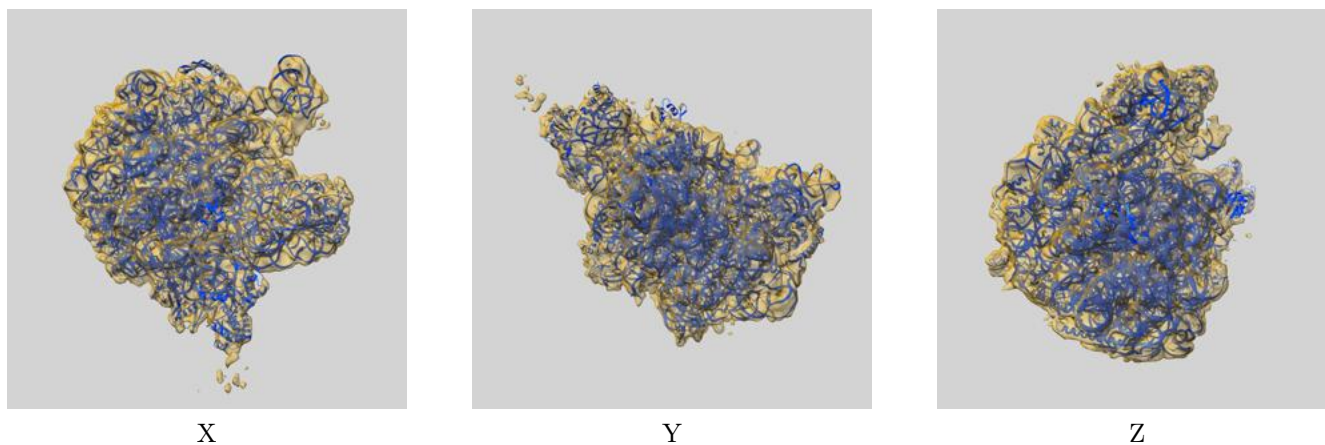
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	8.30	-	-
Author-provided FSC curve	8.26	10.96	8.42
Unmasked-calculated*	11.07	17.95	11.90

*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 11.07 differs from the reported value 8.3 by more than 10 %

9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13286 and PDB model 7PAU. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay [i](#)



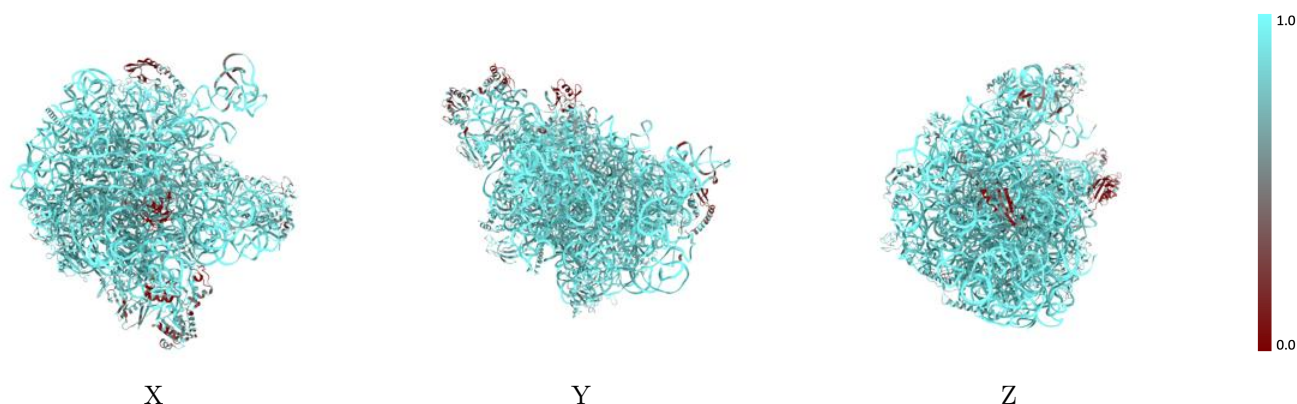
The images above show the 3D surface view of the map at the recommended contour level 0.46 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



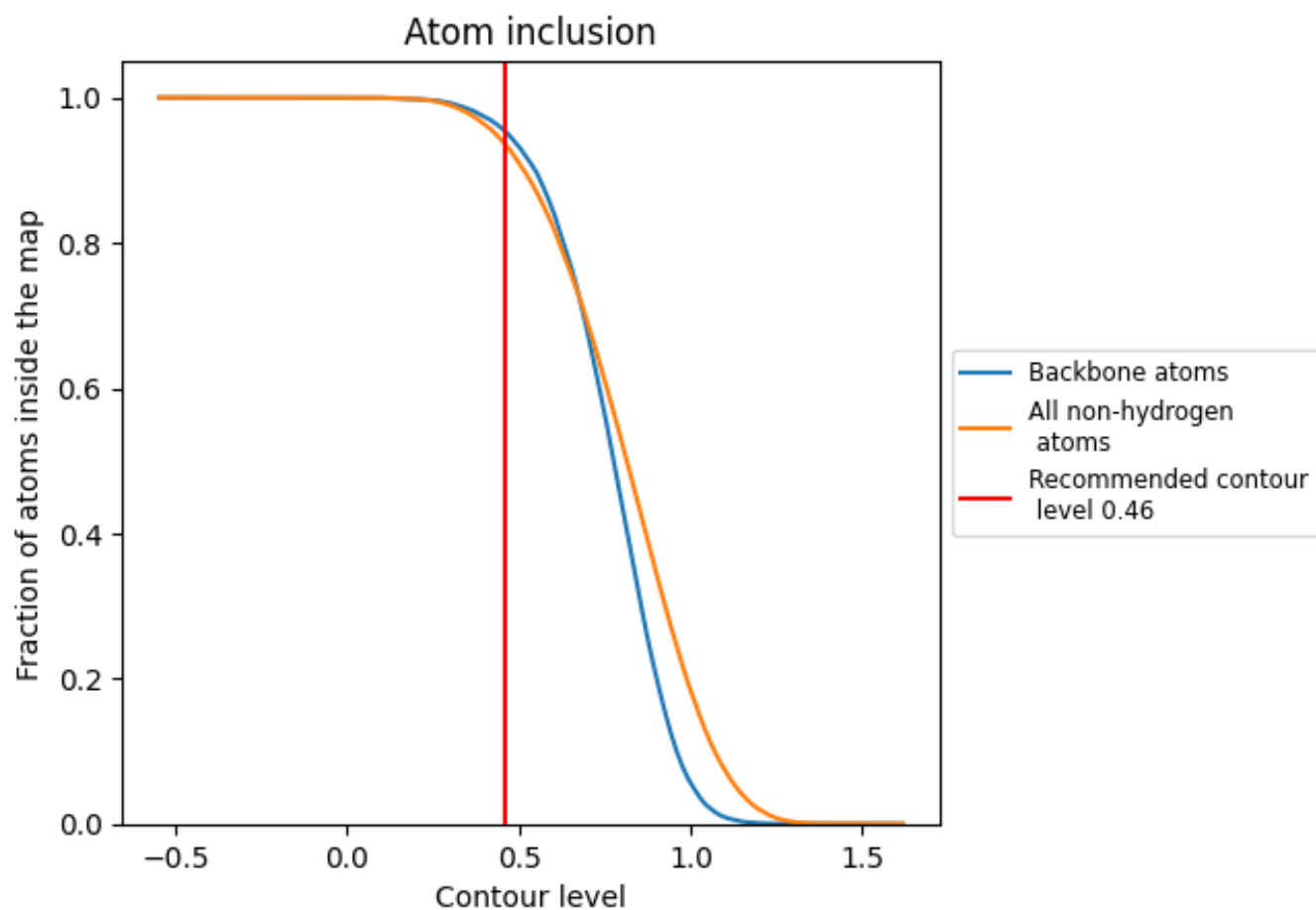
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.46).



































































9.4 Atom inclusion [i](#)



At the recommended contour level, 95% 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 (0.46) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9365	 0.1700
0	 0.9836	 0.1250
1	 0.9721	 0.1360
2	 0.9324	 0.0950
3	 0.9858	 0.1820
4	 0.9808	 0.1820
7	 0.5421	 0.1310
a	 0.9373	 0.1320
b	 0.8980	 0.1330
c	 0.8784	 0.1540
d	 0.7636	 0.1510
e	 0.7427	 0.1610
f	 0.4952	 0.1440
g	 0.5821	 0.1350
h	 0.4556	 0.1170
i	 0.9369	 0.1510
j	 0.8902	 0.1390
k	 0.9011	 0.1450
l	 0.9213	 0.1460
m	 0.9252	 0.1480
n	 0.8431	 0.1510
o	 0.8551	 0.1580
p	 0.9191	 0.1360
q	 0.8523	 0.1370
r	 0.9542	 0.1610
s	 0.9365	 0.1520
t	 0.7654	 0.1330
u	 0.9422	 0.1330
v	 0.9616	 0.1290
w	 0.8477	 0.1880
x	 0.6297	 0.1540
y	 0.9493	 0.1370
z	 0.9496	 0.1610

