Full wwPDB EM Validation Report

Aug 24, 2026 – 11:29 AM EDT

PDB ID	:	9EBB / pdb_00009ebb
EMDB ID	:	EMD-47876
Title	:	Cryo-EM structure of the MPY and ribosome-tunnel occluding hibernation factors bound to the Mycobacterium tuberculosis C- 70S ribosome
Authors	:	Majumdar, S.; Ojha, A.K.; Agrawal, R.K.
Deposited on	:	2024-11-12
Resolution	:	2.70 Å(reported)
Based on initial model	:	7MT7

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 (i) 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 (i)) were used in the production of this report:

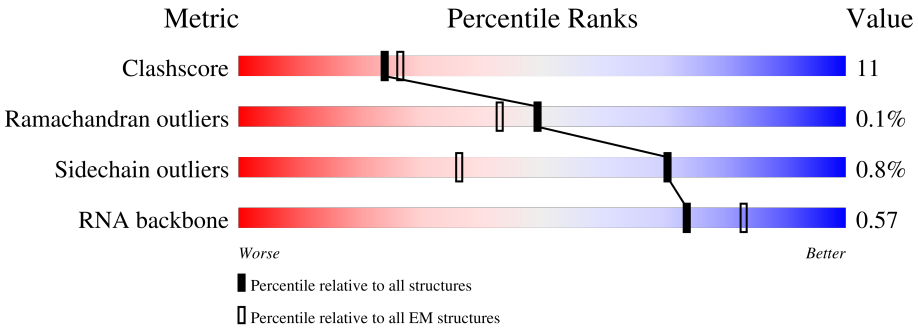
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh &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

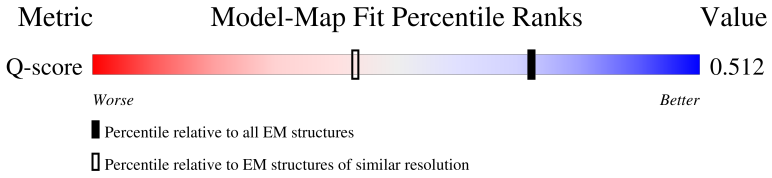
1 Overall quality at a glance

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

The reported resolution of this entry is 2.70 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	10327 (2.20 - 3.20)

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

Mol	Chain	Length	Quality of chain
1	b	54	41% 41% 9% 9%
2	1	62	68% 15% 18%
3	0	57	61% 30% • 7%

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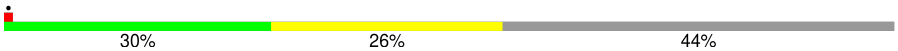
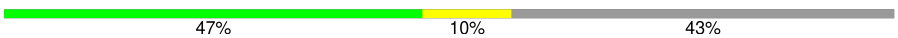
Mol	Chain	Length	Quality of chain
4	2	47	
5	3	64	
6	4	37	
7	6	80	
8	I	3138	
9	B	115	
10	C	280	
11	D	217	
12	E	223	
13	F	187	
14	G	179	
15	H	152	
16	J	195	
17	K	122	
18	L	146	
19	M	138	
20	N	180	
21	O	122	
22	P	113	
23	Q	129	
24	R	104	
25	S	197	
26	T	100	
27	U	105	
28	V	215	

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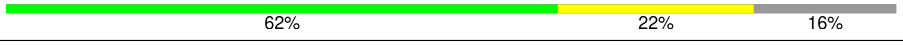
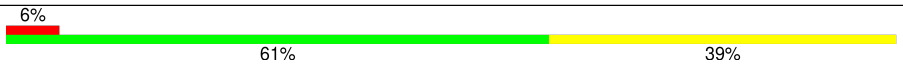
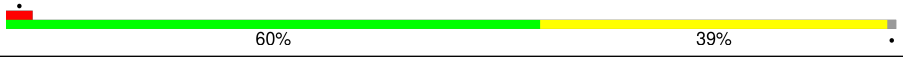
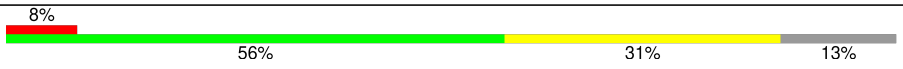
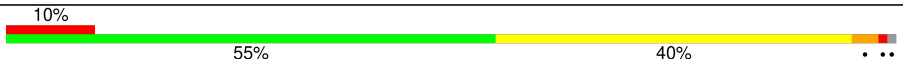
Mol	Chain	Length	Quality of chain
29	W	86	
30	Y	77	
31	Z	65	
32	a	1537	
33	c	274	
34	d	201	
35	e	220	
36	f	96	
37	g	156	
38	h	132	
39	i	151	
40	j	101	
41	k	139	
42	l	124	
43	m	124	
44	o	89	
45	p	162	
46	q	135	
47	s	93	
48	t	86	
49	x	33	
50	A	214	
51	r	88	
52	9	101	
53	y	78	

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Mol	Chain	Length	Quality of chain
54	7	24	

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 145491 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Large ribosomal subunit protein bL33.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
1	b	49	424	263	89	72	0	0

- Molecule 2 is a protein called DUF5302 domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	51	395	231	87	76	1	0	0

- Molecule 3 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	0	53	421	262	93	66	0	0

- Molecule 4 is a protein called 50S ribosomal protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	2	42	358	212	94	51	1	0	0

- Molecule 5 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
5	3	62	494	298	112	84	0	0

- Molecule 6 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	4	37	294	179	63	47	5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	45	Total	C	N	O	S	0	0
			345	214	60	66	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	3118	Total	C	N	O	P	0	0
			66956	29845	12340	21653	3118		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	B	115	Total	C	N	O	P	0	0
			2458	1097	456	790	115		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	C	272	Total	C	N	O	S	0	0
			2088	1277	437	369	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	D	213	Total	C	N	O	S	0	0
			1590	985	307	292	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	E	207	Total	C	N	O	S	0	0
			1552	958	303	289	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	F	170	Total	C	N	O	S	0	0
			1335	834	254	242	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	G	174	Total	C	N	O	S	0	0
			1330	836	249	244	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	H	47	Total	C	N	O	S	0	0
			350	220	64	65	1		

- Molecule 16 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	J	146	Total	C	N	O	S	0	0
			1143	724	217	199	3		

- Molecule 17 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	K	121	Total	C	N	O	S	0	0
			934	585	179	168	2		

- Molecule 18 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	L	142	Total	C	N	O	S	0	0
			1060	656	215	187	2		

- Molecule 19 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	M	134	Total	C	N	O	S	0	0
			1072	679	215	177	1		

- Molecule 20 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	N	116	Total	C	N	O	S	0	0
			908	574	175	158	1		

- Molecule 21 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	O	116	Total 886	C 541	N 188	O 157	0	0

- Molecule 22 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	P	112	Total 907	C 573	N 174	O 159	S 1	0	0

- Molecule 23 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	Q	122	Total 980	C 608	N 205	O 167	0	0

- Molecule 24 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	R	98	Total 742	C 472	N 136	O 134	0	0

- Molecule 25 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	S	113	Total 860	C 533	N 178	O 149	0	0

- Molecule 26 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	T	95	Total 741	C 469	N 138	O 134	0	0

- Molecule 27 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	U	90	Total 699	C 430	N 138	O 129	S 2	0	0

- Molecule 28 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	V	177	Total 1319	C 822	N 243	O 254	0	0

- Molecule 29 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	W	74	Total 546	C 336	N 111	O 99	0	0

- Molecule 30 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Y	65	Total 541	C 331	N 106	O 103	S 1	0	0

- Molecule 31 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	Z	59	Total 476	C 293	N 101	O 82	0	0

- Molecule 32 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	a	1519	Total 32610	C 14525	N 5961	O 10605	P 1519	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
33	c	207	Total 1654	C 1030	N 322	O 298	S 4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
34	d	201	Total 1658	C 1041	N 317	O 297	S 3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
35	e	160	Total	C	N	O	S	0	0
			1149	726	214	206	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
36	f	95	Total	C	N	O	S	0	0
			757	480	133	141	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
37	g	152	Total	C	N	O	S	0	0
			1193	742	234	215	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
38	h	130	Total	C	N	O	S	0	0
			999	627	187	184	1		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
39	i	127	Total	C	N	O	0	0
			993	628	195	170		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
40	j	99	Total	C	N	O	S	0	0
			789	496	146	144	3		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
41	k	117	Total	C	N	O	0	0
			873	540	175	158		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
42	l	123	Total 967	C 599	N 198	O 167	S 3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
43	m	113	Total 919	C 562	N 190	O 164	S 3	0	0

- Molecule 44 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms				AltConf	Trace
44	o	87	Total 718	C 449	N 144	O 125	0	0

- Molecule 45 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	p	85	Total 688	C 438	N 130	O 119	S 1	0	0

- Molecule 46 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	q	94	Total 763	C 477	N 151	O 132	S 3	0	0

- Molecule 47 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	s	81	Total 657	C 421	N 123	O 112	S 1	0	0

- Molecule 48 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	t	82	Total 631	C 381	N 137	O 113	0	0

- Molecule 49 is a protein called Mitochondrial domain of uncharacterized function (DUF1713).

Mol	Chain	Residues	Atoms					AltConf	Trace
49	x	29	Total	C	N	O	S	0	0
			237	146	57	33	1		

- Molecule 50 is a protein called Ribosome hibernation promoting factor.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	A	102	Total	C	N	O	S	0	0
			852	529	173	148	2		

- Molecule 51 is a protein called Small ribosomal subunit protein bS18.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	r	71	Total	C	N	O	S	0	0
			560	345	110	104	1		

- Molecule 52 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms				AltConf	Trace
52	9	100	Total	C	N	O	0	0
			798	484	181	133		

- Molecule 53 is a protein called Large ribosomal subunit protein bL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	y	78	Total	C	N	O	S	0	0
			636	386	143	106	1		

- Molecule 54 is a protein called 50S ribosomal protein bL37.

Mol	Chain	Residues	Atoms				AltConf	Trace
54	7	22	Total	C	N	O	0	0
			186	111	47	28		

3 Residue-property plots (i)

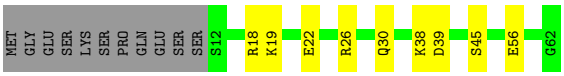
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: Large ribosomal subunit protein bL33

Chain b:

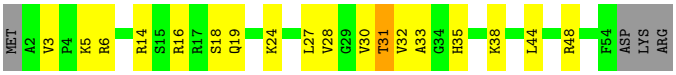
• Molecule 2: DUF5302 domain-containing protein

Chain 1:



• Molecule 3: 50S ribosomal protein L32

Chain 0:



• Molecule 4: 50S ribosomal protein bL34

Chain 2:

• Molecule 5: 50S ribosomal protein L35

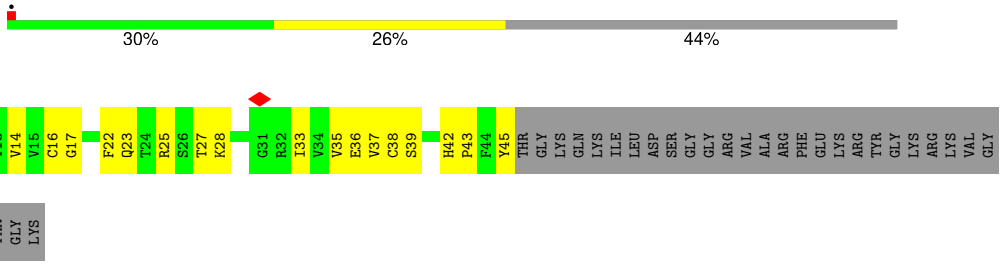
Chain 3:

• Molecule 6: 50S ribosomal protein L36

Chain 4:

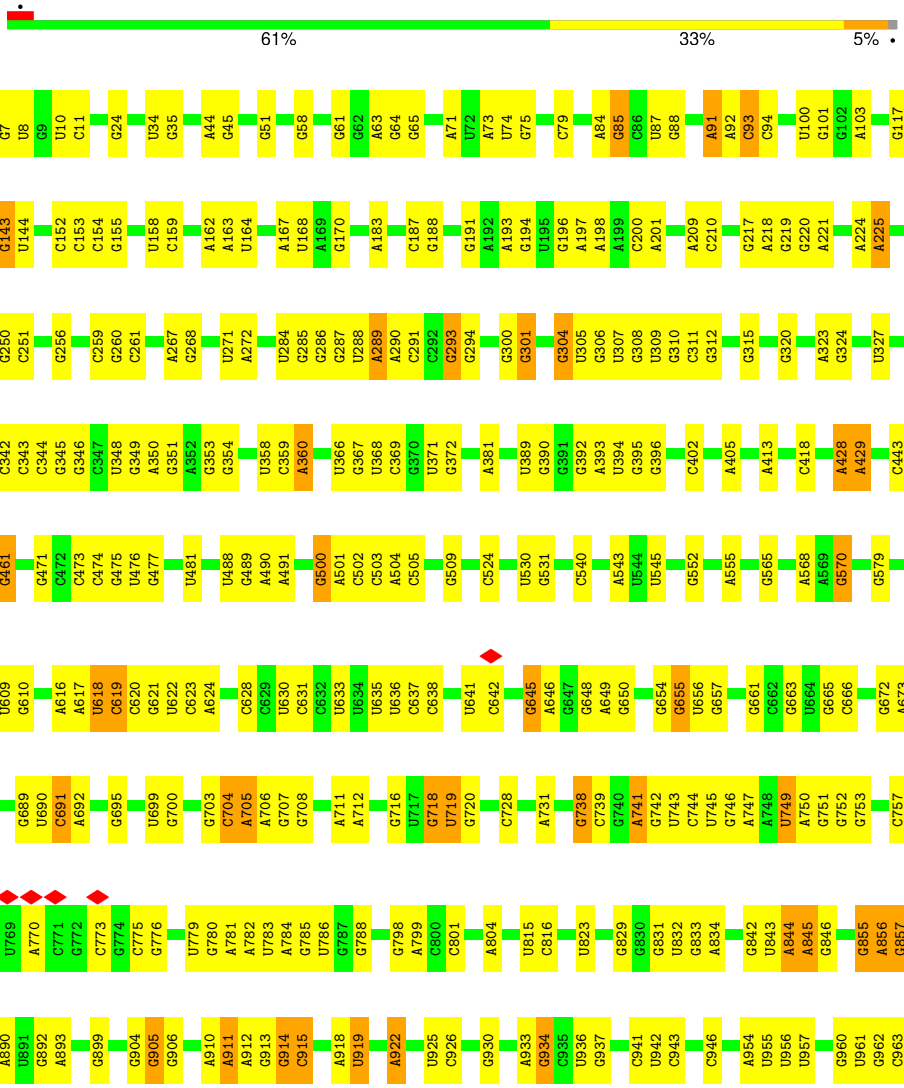
• Molecule 7: 50S ribosomal protein L31

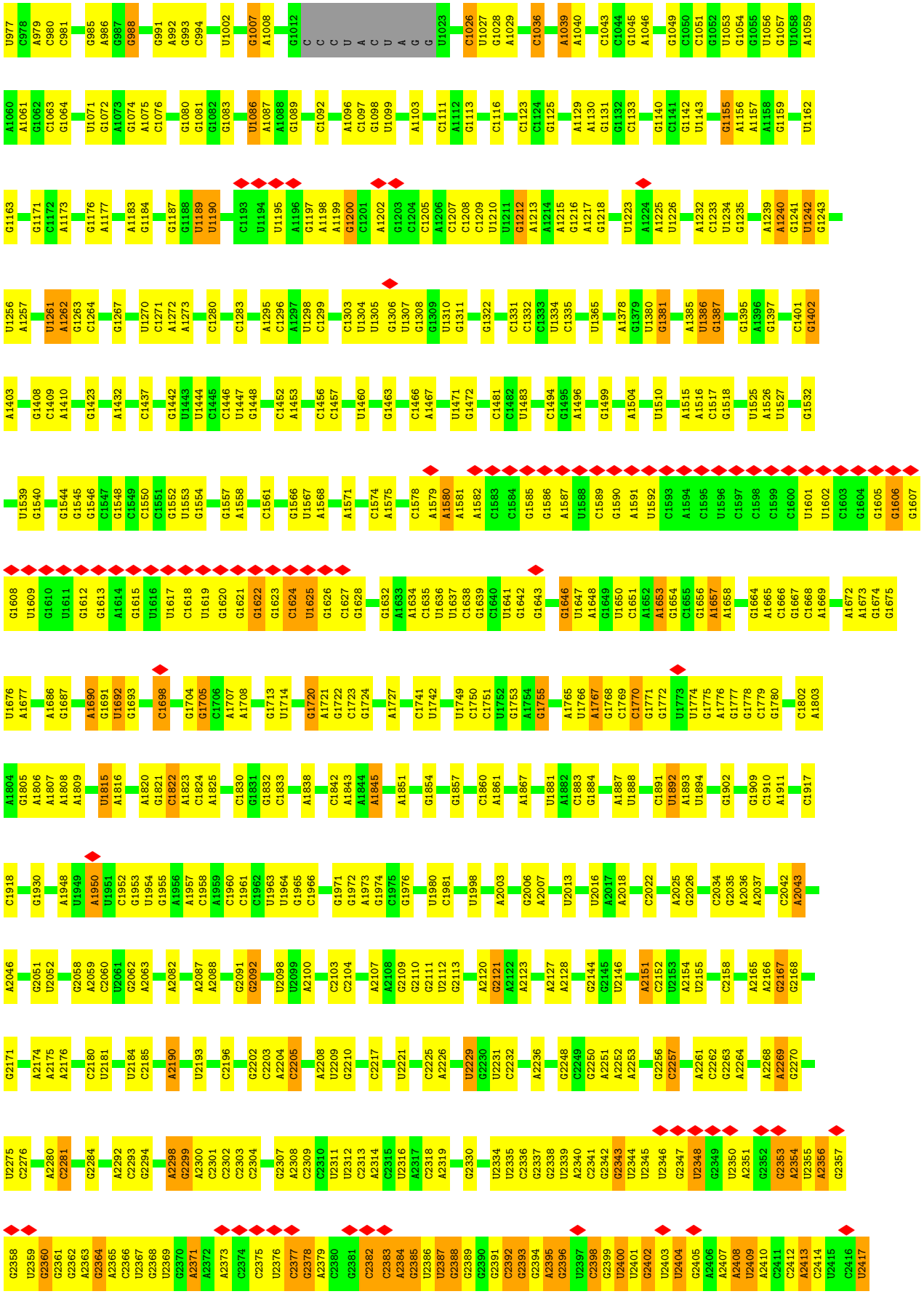
Chain 6:

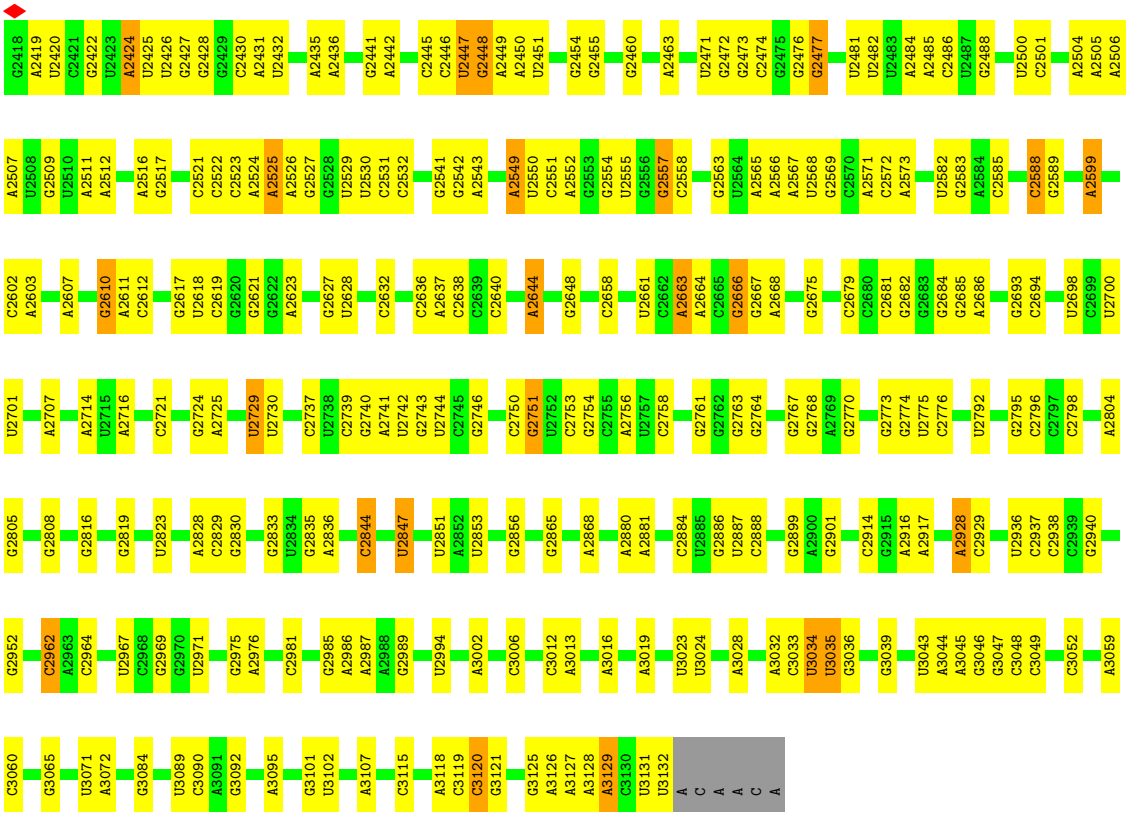


• Molecule 8: 23S ribosomal RNA

Chain I:

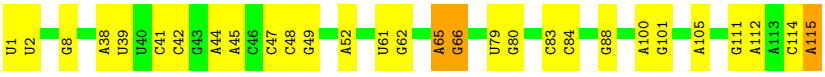






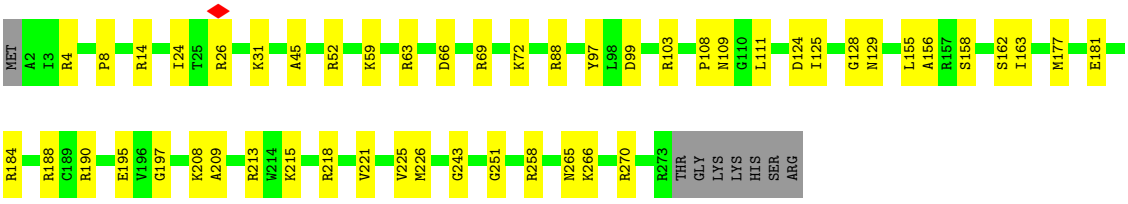
• Molecule 9: 5S ribosomal RNA

Chain B:



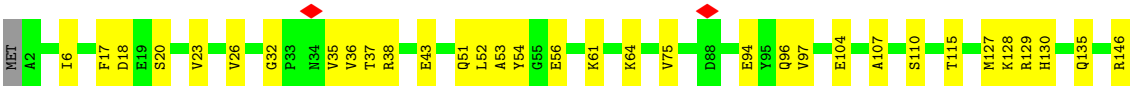
• Molecule 10: 50S ribosomal protein L2

Chain C:



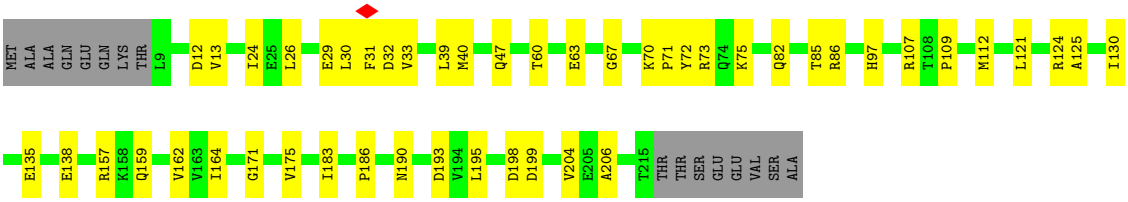
• Molecule 11: 50S ribosomal protein L3

Chain D:



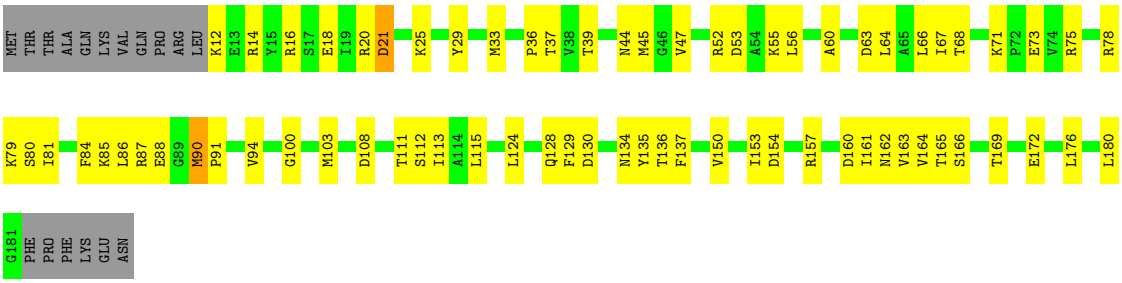
• Molecule 12: 50S ribosomal protein L4

Chain E:



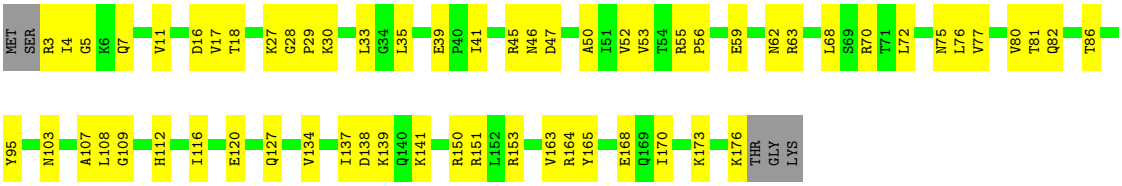
• Molecule 13: 50S ribosomal protein L5

Chain F:



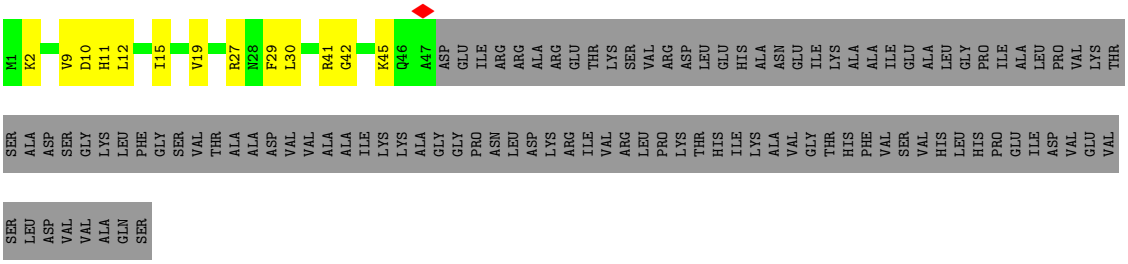
• Molecule 14: 50S ribosomal protein L6

Chain G:



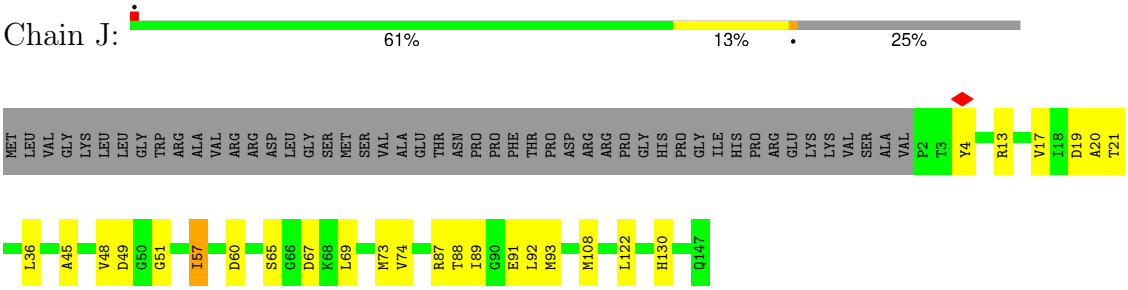
• Molecule 15: 50S ribosomal protein L9

Chain H:



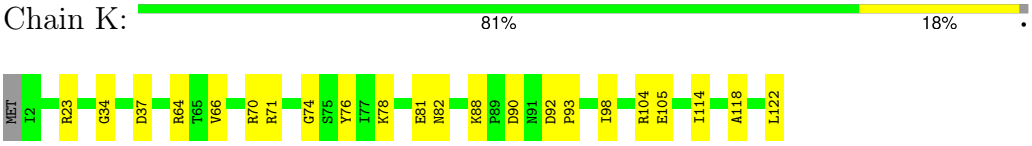
• Molecule 16: 50S ribosomal protein L13

Chain J:



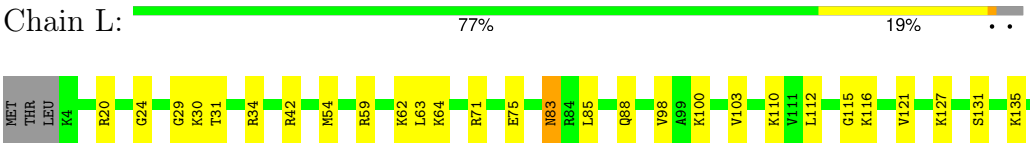
• Molecule 17: Large ribosomal subunit protein uL14

Chain K:



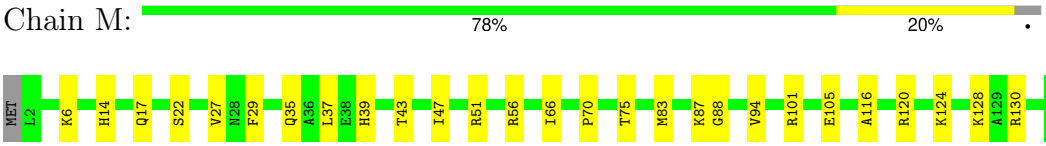
• Molecule 18: 50S ribosomal protein L15

Chain L:



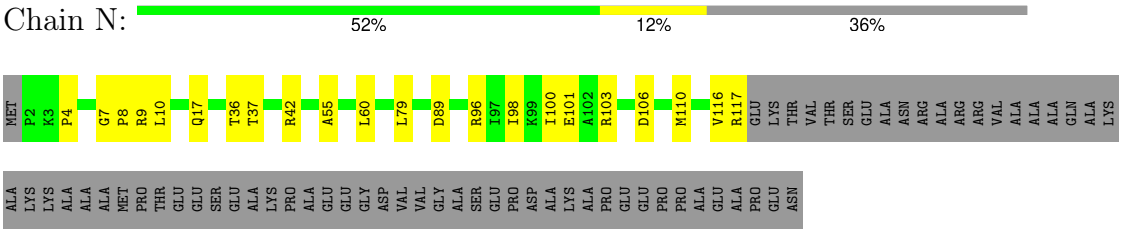
• Molecule 19: 50S ribosomal protein L16

Chain M:



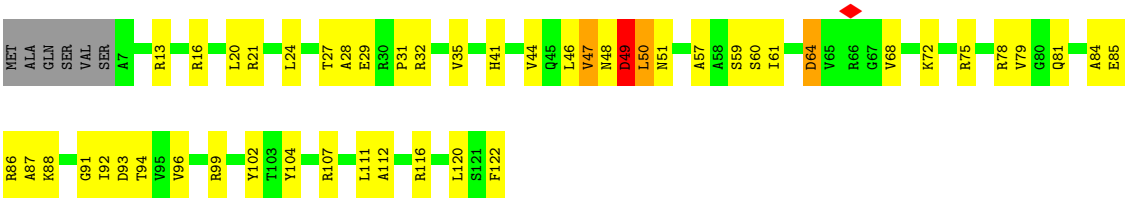
• Molecule 20: 50S ribosomal protein L17

Chain N:



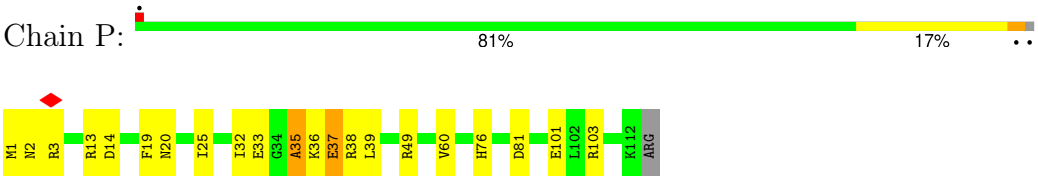
• Molecule 21: 50S ribosomal protein L18

Chain O:



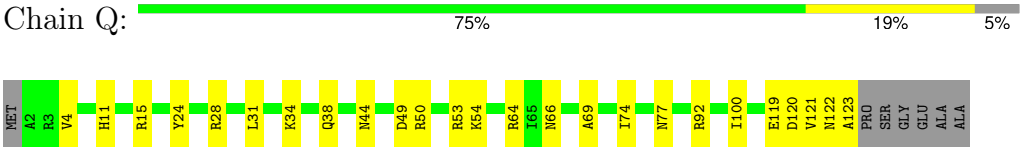
• Molecule 22: 50S ribosomal protein L19

Chain P:



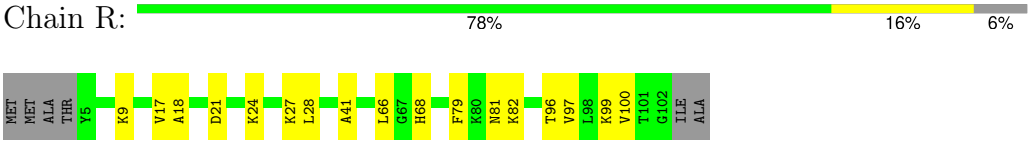
• Molecule 23: 50S ribosomal protein L20

Chain Q:



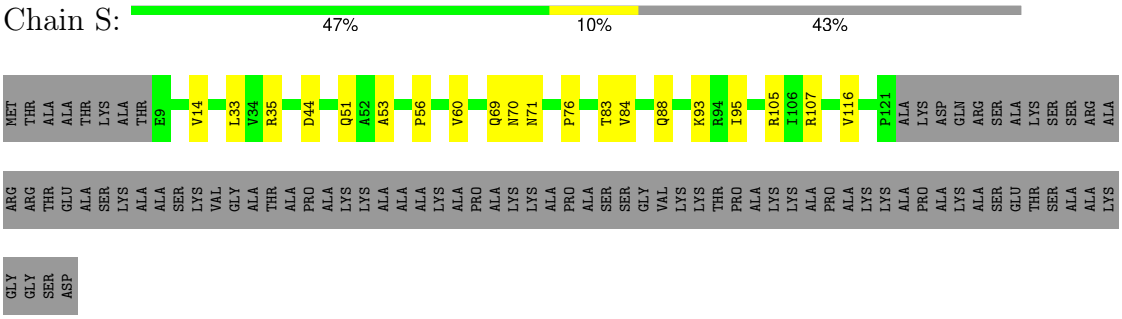
• Molecule 24: Large ribosomal subunit protein bL21

Chain R:



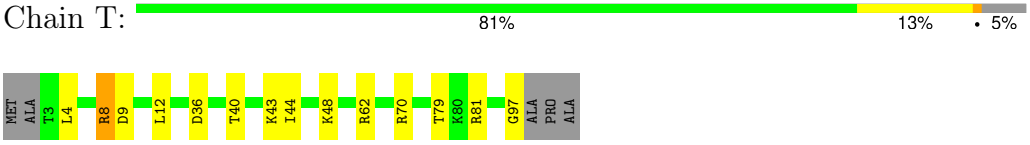
• Molecule 25: 50S ribosomal protein L22

Chain S:



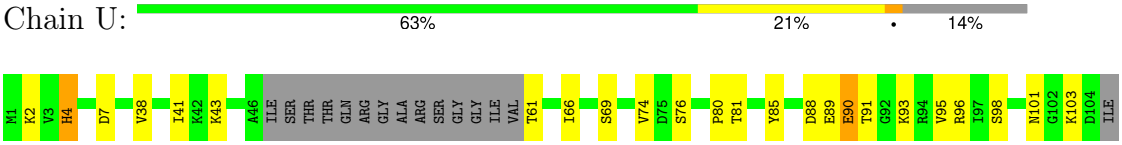
• Molecule 26: 50S ribosomal protein L23

Chain T:



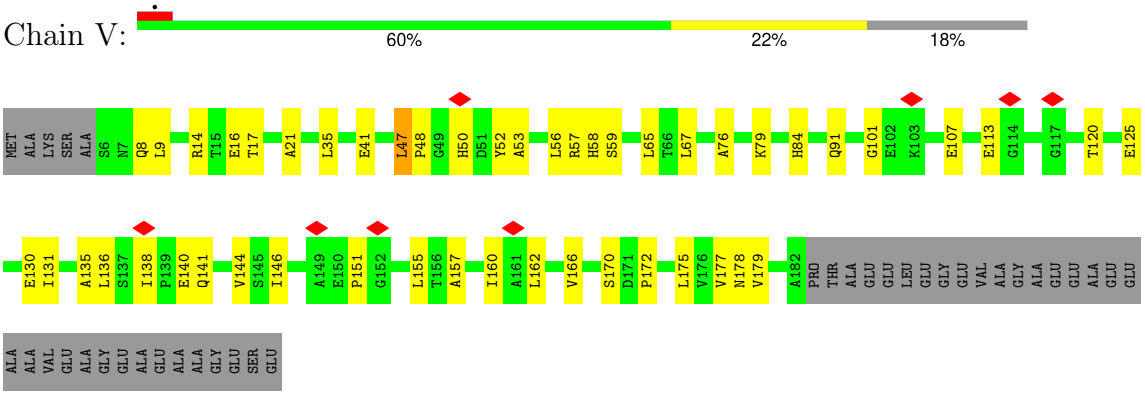
• Molecule 27: 50S ribosomal protein L24

Chain U:



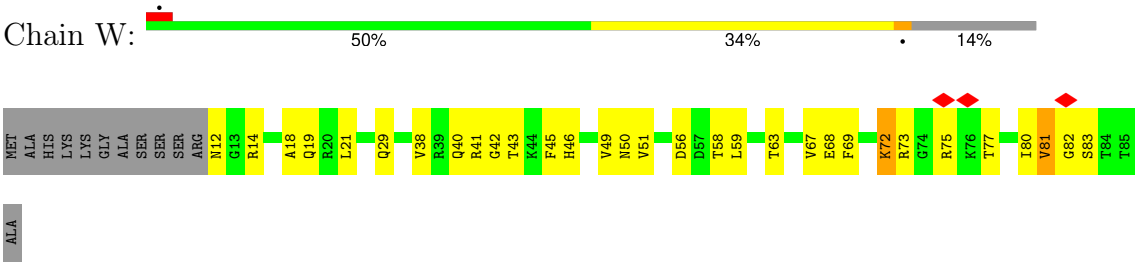
• Molecule 28: 50S ribosomal protein L25

Chain V:



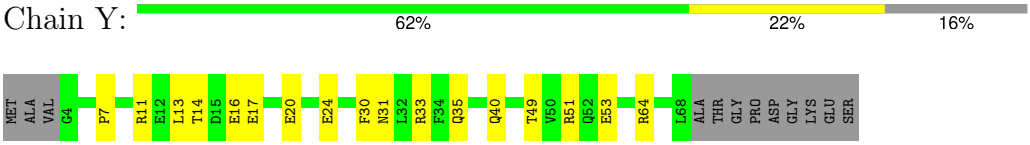
• Molecule 29: 50S ribosomal protein L27

Chain W:



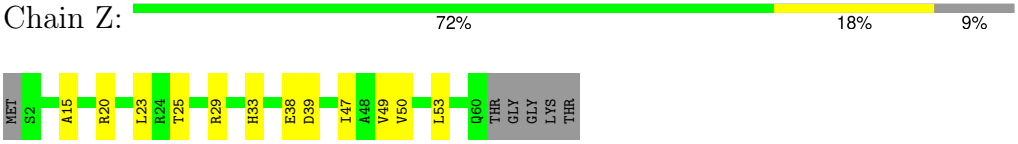
• Molecule 30: 50S ribosomal protein L29

Chain Y:



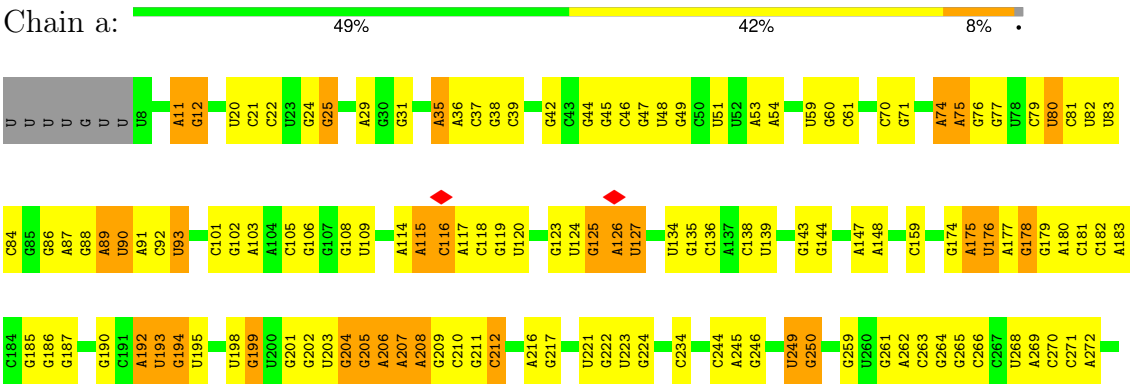
• Molecule 31: 50S ribosomal protein L30

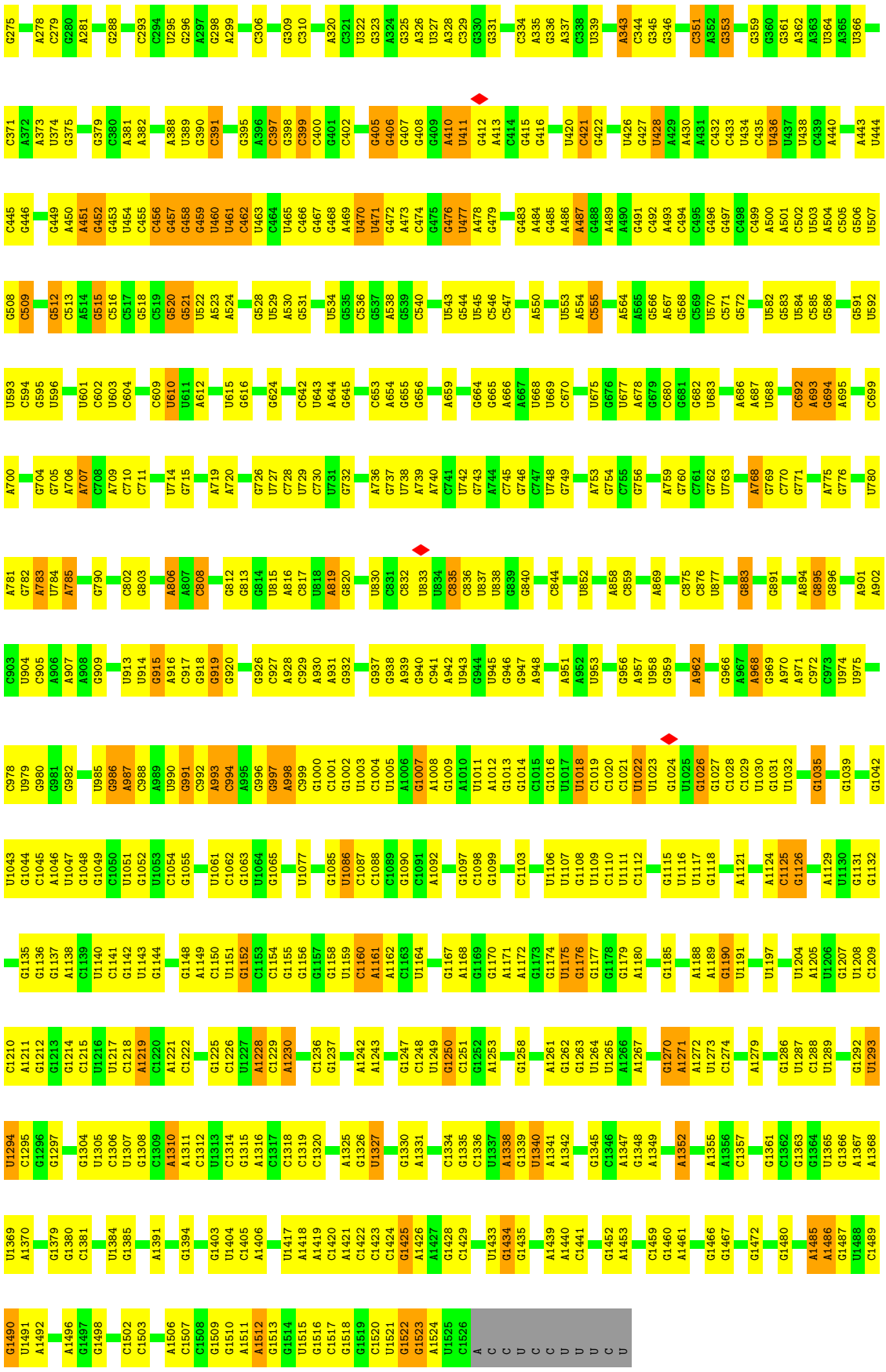
Chain Z:



• Molecule 32: 16S ribosomal RNA

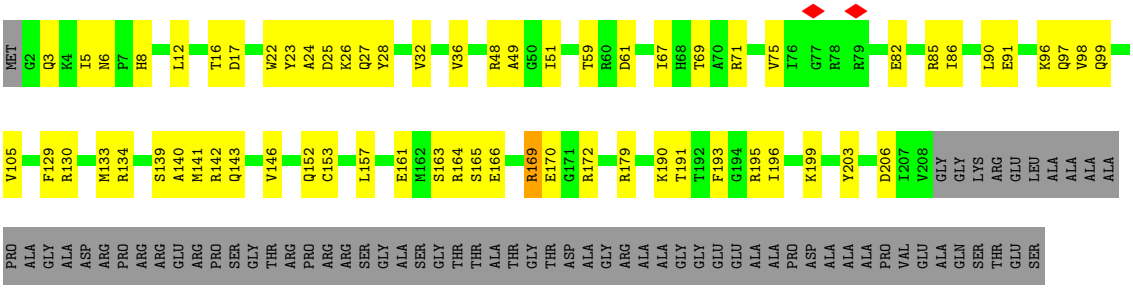
Chain a:





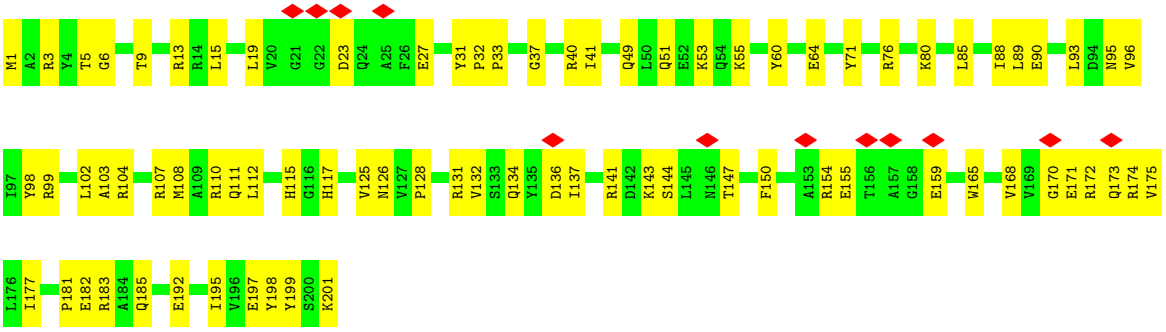
• Molecule 33: 30S ribosomal protein S3

Chain c:



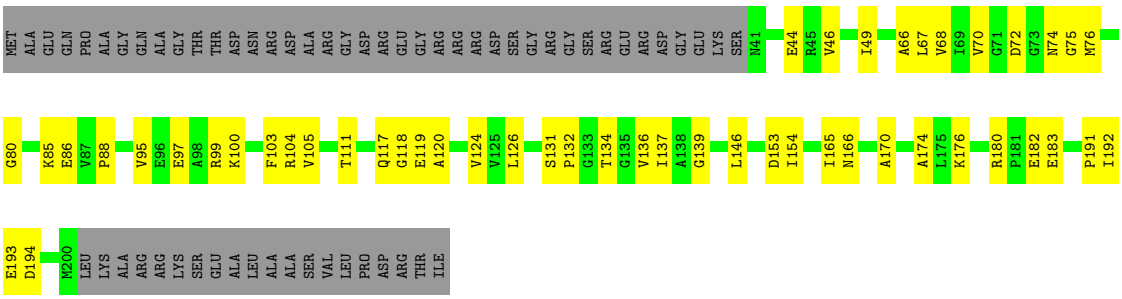
• Molecule 34: 30S ribosomal protein S4

Chain d:



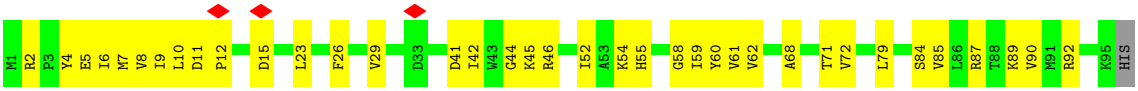
• Molecule 35: 30S ribosomal protein S5

Chain e:



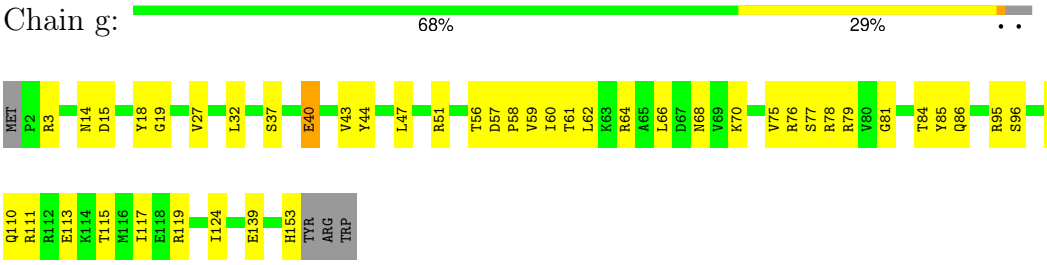
• Molecule 36: 30S ribosomal protein S6

Chain f:



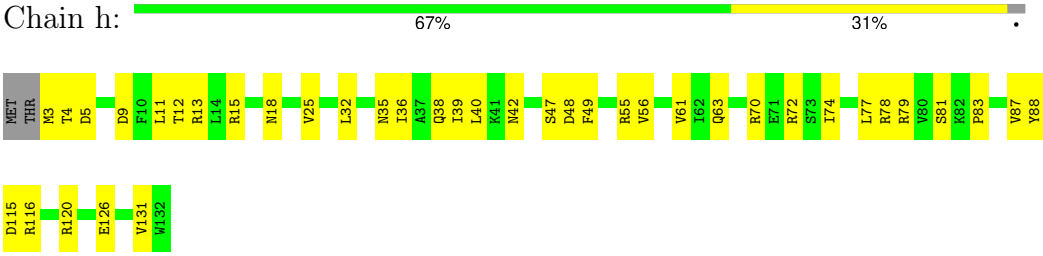
• Molecule 37: 30S ribosomal protein S7

Chain g:



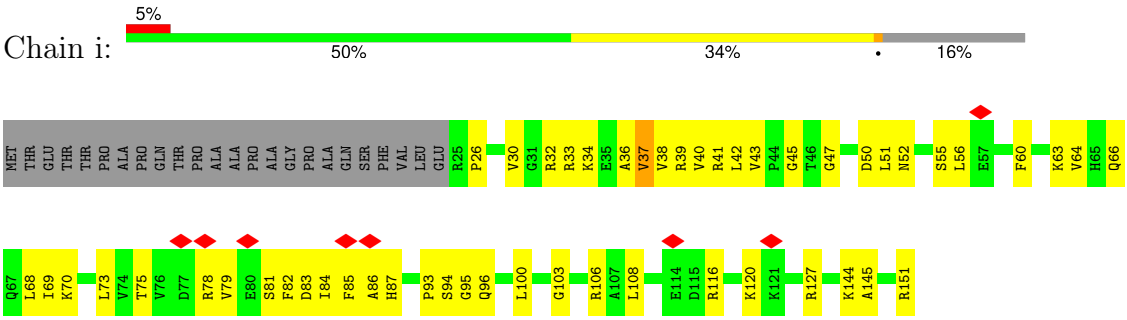
• Molecule 38: 30S ribosomal protein S8

Chain h:



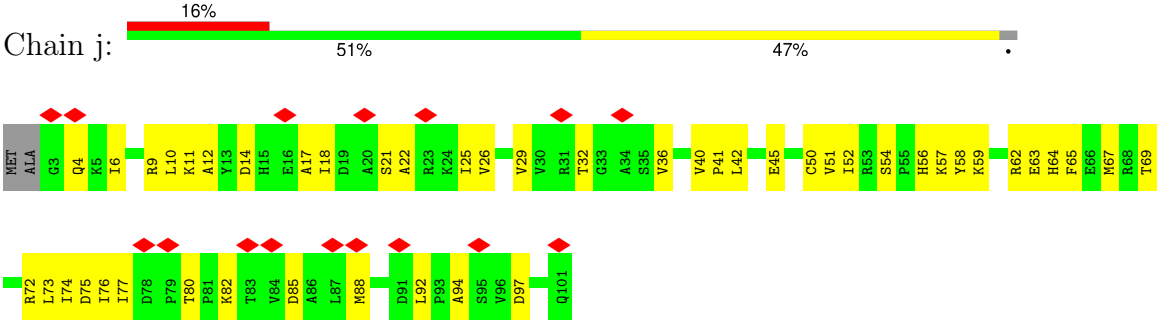
• Molecule 39: 30S ribosomal protein S9

Chain i:



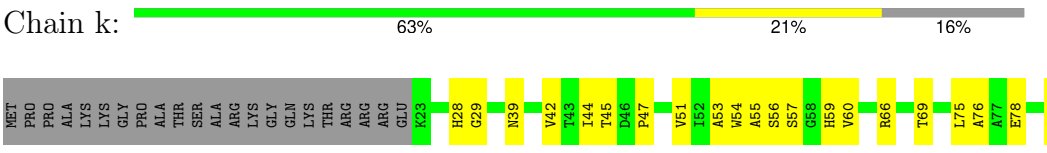
• Molecule 40: 30S ribosomal protein S10

Chain j:



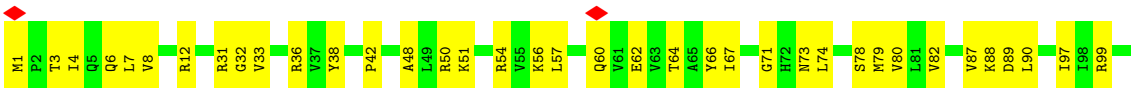
• Molecule 41: 30S ribosomal protein S11

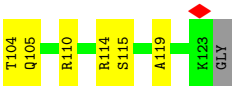
Chain k:



• Molecule 42: 30S ribosomal protein S12

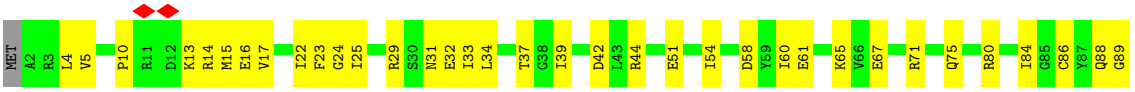
Chain l:

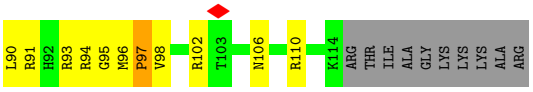




• Molecule 43: 30S ribosomal protein S13

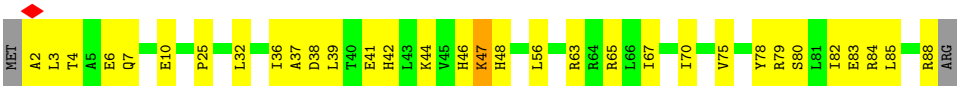
Chain m:





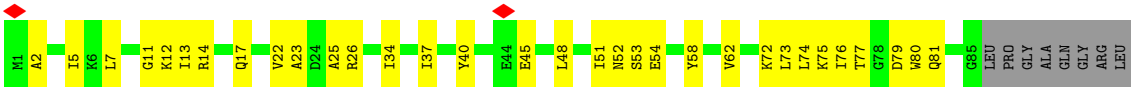
• Molecule 44: 30S ribosomal protein S15

Chain o:



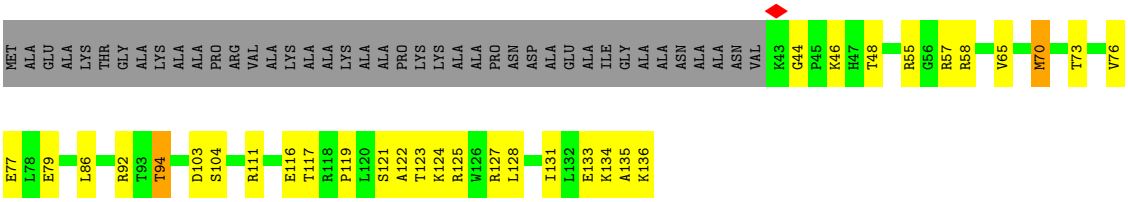
• Molecule 45: 30S ribosomal protein S16

Chain p:



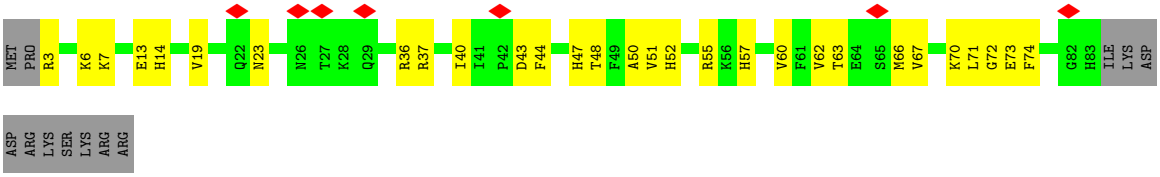
• Molecule 46: 30S ribosomal protein S17

Chain q:



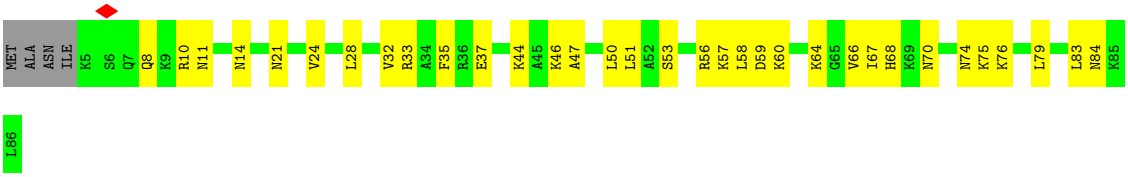
• Molecule 47: 30S ribosomal protein S19

Chain s:



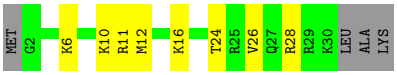
• Molecule 48: 30S ribosomal protein S20

Chain t:



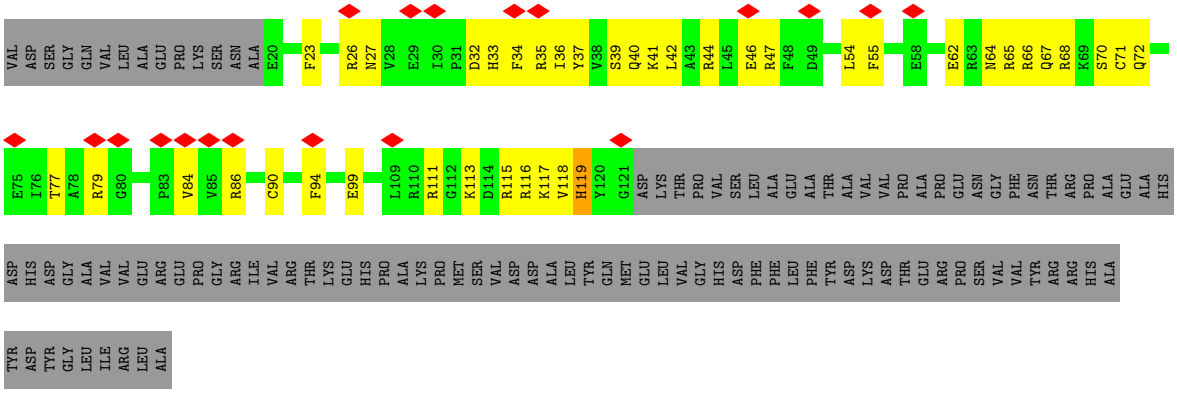
• Molecule 49: Mitochondrial domain of uncharacterized function (DUF1713)

Chain x:



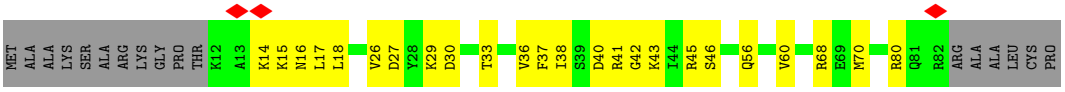
• Molecule 50: Ribosome hibernation promoting factor

Chain A:



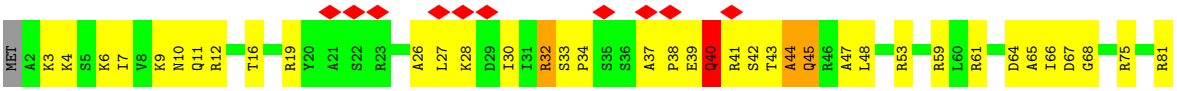
• Molecule 51: Small ribosomal subunit protein bS18

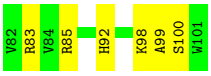
Chain r:



• Molecule 52: Small ribosomal subunit protein uS14

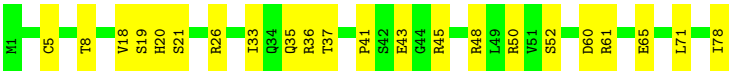
Chain 9:





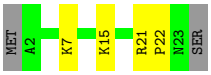
• Molecule 53: Large ribosomal subunit protein bL28

Chain y:



• Molecule 54: 50S ribosomal protein bL37

Chain 7:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	25583	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50.75	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	64000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.346	Depositor
Minimum map value	-0.487	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.060	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	429.19998, 429.19998, 429.19998	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.073, 1.073, 1.073	Depositor

5 Model quality

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	b	1.22	0/431	1.15	1/578 (0.2%)
2	1	0.21	0/399	0.50	0/522
3	0	0.67	1/427 (0.2%)	0.63	0/570
4	2	0.25	0/361	0.38	0/473
5	3	0.24	0/499	0.41	0/664
6	4	0.84	0/298	0.66	0/395
7	6	0.23	0/353	0.65	0/478
8	I	0.23	0/74973	0.28	0/116979
9	B	0.19	0/2749	0.24	0/4284
10	C	0.26	0/2129	0.44	0/2861
11	D	0.27	0/1613	0.50	0/2174
12	E	0.25	0/1575	0.46	0/2129
13	F	0.25	0/1352	0.57	2/1817 (0.1%)
14	G	0.22	0/1351	0.49	0/1824
15	H	0.24	0/353	0.52	0/474
16	J	0.24	0/1170	0.38	0/1584
17	K	0.25	0/944	0.41	0/1268
18	L	0.25	0/1073	0.40	0/1432
19	M	0.41	0/1098	0.49	0/1481
20	N	0.25	0/925	0.41	0/1242
21	O	0.38	0/895	0.59	1/1202 (0.1%)
22	P	0.35	0/922	0.51	1/1236 (0.1%)
23	Q	0.25	0/992	0.39	0/1329
24	R	0.25	0/751	0.35	0/1009
25	S	0.24	0/874	0.39	0/1186
26	T	0.32	0/751	0.42	0/1012
27	U	0.30	0/705	0.55	0/941
28	V	0.20	0/1336	0.50	0/1820
29	W	0.30	0/551	0.70	1/735 (0.1%)
30	Y	0.19	0/544	0.35	0/727
31	Z	0.27	0/480	0.51	0/645
32	a	0.18	0/36501	0.27	0/56956
33	c	0.17	0/1678	0.42	0/2254
34	d	0.22	0/1691	0.48	0/2279

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	e	0.24	0/1165	0.52	0/1578
36	f	0.24	0/767	0.57	0/1036
37	g	0.20	0/1210	0.50	1/1631 (0.1%)
38	h	0.24	0/1014	0.49	0/1369
39	i	0.25	0/1011	0.52	0/1356
40	j	0.21	0/803	0.55	0/1086
41	k	0.23	0/891	0.47	0/1204
42	l	0.24	0/978	0.60	0/1306
43	m	0.26	0/927	0.66	1/1239 (0.1%)
44	o	0.21	0/727	0.47	0/973
45	p	0.25	0/701	0.51	0/944
46	q	0.23	0/775	0.65	2/1035 (0.2%)
47	s	0.16	0/674	0.40	0/906
48	t	0.21	0/633	0.42	0/838
49	x	0.59	0/237	0.57	0/307
50	A	0.16	0/865	0.43	0/1155
51	r	0.21	0/564	0.51	0/755
52	9	0.28	0/810	0.56	1/1083 (0.1%)
53	y	0.24	0/646	0.42	0/864
54	7	0.26	0/188	0.30	0/243
All	All	0.24	1/158330 (0.0%)	0.35	11/237468 (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
12	E	0	1
29	W	0	1
50	A	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	0	30	VAL	CA-C	-6.72	1.47	1.52

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
43	m	97	PRO	CA-N-CD	-9.39	98.85	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
21	O	49	ASP	N-CA-C	-8.70	92.27	110.80
37	g	40	GLU	CA-CB-CG	7.16	128.42	114.10
13	F	90	MET	CA-C-N	-7.03	112.41	119.93
13	F	90	MET	C-N-CA	-7.03	112.41	119.93
29	W	72	LYS	CA-CB-CG	5.96	126.03	114.10
52	9	44	ALA	N-CA-C	-5.90	105.79	112.87
1	b	25	LYS	N-CA-C	5.68	117.70	109.07
46	q	122	ALA	CA-C-N	5.26	131.60	121.54
46	q	122	ALA	C-N-CA	5.26	131.60	121.54
22	P	35	ALA	N-CA-C	-5.08	103.97	110.53

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
50	A	119	HIS	Peptide
12	E	13	VAL	Peptide
29	W	81	VAL	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	b	424	0	442	35	0
2	1	395	0	389	10	0
3	0	421	0	461	18	0
4	2	358	0	390	2	0
5	3	494	0	533	7	0
6	4	294	0	315	6	0
7	6	345	0	332	20	0
8	I	66956	0	33720	795	0
9	B	2458	0	1253	16	0
10	C	2088	0	2123	41	0
11	D	1590	0	1633	41	0
12	E	1552	0	1593	35	0
13	F	1335	0	1372	75	0
14	G	1330	0	1390	56	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	H	350	0	367	9	0
16	J	1143	0	1173	21	0
17	K	934	0	993	17	0
18	L	1060	0	1119	25	0
19	M	1072	0	1115	22	0
20	N	908	0	956	15	0
21	O	886	0	924	34	0
22	P	907	0	947	17	0
23	Q	980	0	1028	25	0
24	R	742	0	799	9	0
25	S	860	0	903	13	0
26	T	741	0	792	12	0
27	U	699	0	738	17	0
28	V	1319	0	1365	35	0
29	W	546	0	567	34	0
30	Y	541	0	551	13	0
31	Z	476	0	509	8	0
32	a	32610	0	16406	653	0
33	c	1654	0	1694	55	0
34	d	1658	0	1683	58	0
35	e	1149	0	1207	33	0
36	f	757	0	796	36	0
37	g	1193	0	1256	38	0
38	h	999	0	1034	31	0
39	i	993	0	1052	58	0
40	j	789	0	821	57	0
41	k	873	0	887	22	0
42	l	967	0	1056	40	0
43	m	919	0	961	40	0
44	o	718	0	760	26	0
45	p	688	0	726	27	0
46	q	763	0	824	34	0
47	s	657	0	671	28	0
48	t	631	0	681	33	0
49	x	237	0	271	7	0
50	A	852	0	865	41	0
51	r	560	0	588	19	0
52	9	798	0	845	51	0
53	y	636	0	659	15	0
54	7	186	0	202	4	0
All	All	145491	0	96737	2547	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 11.

All (2547) 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)
32:a:77:G:H1	32:a:91:A:N6	1.44	1.14
52:9:34:PRO:HG2	52:9:37:ALA:HB2	1.44	0.96
33:c:22:TRP:HD1	33:c:24:ALA:H	1.13	0.94
32:a:457:G:H1	32:a:465:U:H3	1.09	0.93
52:9:43:THR:HA	52:9:45:GLN:HE21	1.31	0.92
52:9:28:LYS:HD2	52:9:48:LEU:HB3	1.49	0.91
42:l:54:ARG:HD2	42:l:62:GLU:HG2	1.51	0.91
32:a:830:U:H3	32:a:840:G:H1	1.16	0.89
32:a:966:G:H4'	40:j:57:LYS:HB2	1.54	0.89
39:i:93:PRO:HD2	39:i:96:GLN:HE22	1.37	0.89
32:a:1435:G:H1	32:a:1453:A:H61	1.14	0.88
8:I:1770:C:H42	8:I:1777:G:H1	1.20	0.87
32:a:655:G:H22	32:a:732:G:H1	1.19	0.87
36:f:10:LEU:HB3	36:f:59:ILE:HD11	1.56	0.87
32:a:76:G:O6	32:a:89:A:N1	2.06	0.86
32:a:454:U:H3	32:a:468:G:H22	1.20	0.85
8:I:2541:G:H21	13:F:136:THR:HG21	1.41	0.85
32:a:998:A:H4'	32:a:1029:C:H1'	1.57	0.83
8:I:975:G:H4'	8:I:976:U:H5	1.43	0.83
32:a:808:C:H5	32:a:1522:G:H1	1.27	0.82
40:j:54:SER:O	52:9:81:ARG:NH2	2.11	0.82
32:a:77:G:N2	32:a:91:A:N1	2.26	0.82
39:i:60:PHE:HB2	39:i:66:GLN:HE22	1.44	0.82
8:I:2729:U:H5'	8:I:2808:G:H5"	1.60	0.81
38:h:15:ARG:NH1	38:h:77:LEU:O	2.13	0.81
1:b:5:ILE:HD11	8:I:2522:C:OP1	1.80	0.81
8:I:1159:G:OP2	19:M:128:LYS:NZ	2.12	0.81
32:a:76:G:O6	32:a:89:A:C6	2.33	0.81
34:d:15:LEU:HD13	34:d:55:LYS:HG2	1.63	0.81
8:I:2551:C:O2'	13:F:162:ASN:ND2	2.14	0.81
38:h:5:ASP:HB2	38:h:83:PRO:HG3	1.63	0.80
16:J:57:ILE:HD11	16:J:130:HIS:HD2	1.45	0.80
32:a:179:G:N2	32:a:223:U:O5'	2.14	0.80
34:d:49:GLN:HB3	34:d:198:TYR:HB2	1.63	0.80
42:l:73:ASN:ND2	42:l:105:GLN:OE1	2.14	0.80
8:I:2337:G:H1	8:I:2426:U:H3	1.26	0.79
8:I:2006:G:H1	8:I:2217:C:H5	1.30	0.79
8:I:2339:U:O2	8:I:2424:A:N6	2.16	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:F:84:PHE:HB2	13:F:87:ARG:HH21	1.48	0.79
8:I:2174:A:H2	8:I:2181:U:H3	1.28	0.78
32:a:645:G:H1	32:a:745:C:H5	1.29	0.78
8:I:2356:A:N6	8:I:2404:U:C2	2.52	0.78
8:I:2336:C:H2'	8:I:2337:G:H8	1.47	0.78
13:F:29:TYR:OH	13:F:172:GLU:OE2	2.01	0.78
32:a:1197:U:H4'	33:c:195:ARG:HE	1.47	0.78
14:G:46:ASN:OD1	14:G:47:ASP:N	2.17	0.78
27:U:7:ASP:OD1	27:U:96:ARG:NH2	2.17	0.77
32:a:1179:G:N3	52:9:100:SER:OG	2.17	0.77
8:I:633:U:H3	8:I:650:G:H1	1.30	0.77
32:a:990:U:O2	32:a:1035:G:O6	2.03	0.77
52:9:39:GLU:HA	52:9:42:SER:HB2	1.66	0.77
8:I:3052:C:OP1	20:N:42:ARG:NH2	2.17	0.77
10:C:24:ILE:HG22	10:C:26:ARG:H	1.50	0.77
32:a:206:A:H2'	32:a:207:A:H5'	1.65	0.77
32:a:1339:G:O6	39:i:34:LYS:NZ	2.17	0.77
32:a:185:G:H1	32:a:198:U:H3	0.83	0.77
40:j:45:GLU:HB2	40:j:69:THR:HB	1.65	0.76
32:a:956:G:H21	40:j:56:HIS:HE1	1.33	0.76
8:I:1176:G:O2'	8:I:1239:A:N6	2.19	0.76
44:o:44:LYS:O	44:o:47:LYS:NZ	2.19	0.76
32:a:1007:G:H5'	47:s:14:HIS:HD2	1.49	0.76
47:s:23:ASN:ND2	47:s:43:ASP:OD2	2.19	0.75
7:6:16:CYS:SG	7:6:17:GLY:N	2.60	0.75
32:a:986:G:O2'	32:a:987:A:N7	2.20	0.75
10:C:155:LEU:HD13	10:C:177:MET:HE1	1.66	0.75
32:a:664:G:H2'	32:a:665:G:C8	2.22	0.74
32:a:1340:U:O2	32:a:1367:A:N7	2.19	0.74
8:I:2236:A:OP2	11:D:146:ARG:NH2	2.21	0.74
30:Y:14:THR:O	30:Y:64:ARG:NH1	2.19	0.74
8:I:1953:G:H22	8:I:1976:G:H1	1.36	0.74
25:S:70:ASN:ND2	25:S:71:ASN:OD1	2.20	0.74
32:a:1312:C:O2	47:s:36:ARG:NH1	2.21	0.74
15:H:27:ARG:NH1	53:y:60:ASP:OD2	2.20	0.73
39:i:51:LEU:HB2	39:i:85:PHE:HB3	1.68	0.73
11:D:36:VAL:HG21	11:D:75:VAL:HG11	1.70	0.73
34:d:168:VAL:HG22	34:d:175:VAL:HG22	1.69	0.73
32:a:883:G:OP2	49:x:10:LYS:NZ	2.19	0.73
27:U:90:GLU:CD	27:U:90:GLU:H	1.97	0.73
8:I:761:C:H1'	8:I:779:U:H3	1.52	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:g:40:GLU:HA	37:g:43:VAL:HG12	1.71	0.73
13:F:73:GLU:OE1	13:F:75:ARG:NH1	2.22	0.73
13:F:80:SER:HA	13:F:87:ARG:HB2	1.71	0.73
13:F:78:ARG:HG2	13:F:79:LYS:H	1.54	0.72
32:a:1435:G:N2	32:a:1453:A:N1	2.29	0.72
52:9:3:LYS:HD2	52:9:6:LYS:HE3	1.71	0.72
33:c:59:THR:HG22	40:j:94:ALA:HB2	1.71	0.72
46:q:116:GLU:OE1	46:q:125:ARG:NH1	2.22	0.72
8:I:1842:C:N4	8:I:1857:G:OP2	2.22	0.72
8:I:2051:G:OP1	10:C:88:ARG:NH2	2.23	0.72
14:G:112:HIS:ND1	14:G:112:HIS:O	2.23	0.72
39:i:40:VAL:HB	39:i:87:HIS:H	1.54	0.72
13:F:85:LYS:HZ3	13:F:86:LEU:HB3	1.54	0.72
29:W:72:LYS:HD3	29:W:73:ARG:N	2.05	0.72
32:a:453:G:H22	32:a:469:A:H8	1.36	0.72
32:a:1156:G:H1	32:a:1164:U:H3	1.38	0.71
47:s:23:ASN:OD1	47:s:47:HIS:NE2	2.19	0.71
32:a:175:A:H4'	32:a:176:U:H5'	1.71	0.71
32:a:704:G:H2'	32:a:705:G:C8	2.26	0.71
8:I:2013:U:OP2	8:I:2018:A:N6	2.22	0.71
38:h:55:ARG:HG3	38:h:56:VAL:HG13	1.72	0.71
39:i:30:VAL:HA	39:i:39:ARG:HE	1.55	0.71
32:a:470:U:O2'	32:a:472:G:OP2	2.03	0.71
33:c:141:MET:HE2	33:c:170:GLU:HG3	1.72	0.71
37:g:115:THR:HG22	37:g:117:ILE:H	1.54	0.71
34:d:147:THR:H	34:d:150:PHE:HE2	1.38	0.71
21:O:49:ASP:HB3	21:O:51:ASN:OD1	1.91	0.71
8:I:191:G:OP2	53:y:26:ARG:NH1	2.20	0.70
8:I:2408:A:OP1	8:I:2410:A:N6	2.24	0.70
8:I:1953:G:N2	8:I:1976:G:H22	1.89	0.70
14:G:27:LYS:NZ	14:G:30:LYS:O	2.24	0.70
32:a:178:G:N1	32:a:205:G:N7	2.39	0.70
33:c:22:TRP:CD1	33:c:24:ALA:H	2.03	0.70
8:I:338:G:N2	8:I:338:G:OP2	2.24	0.70
8:I:2751:G:OP1	11:D:165:ARG:NH1	2.25	0.70
22:P:32:ILE:HG12	22:P:37:GLU:HG2	1.72	0.70
27:U:101:ASN:O	27:U:103:LYS:NZ	2.23	0.70
45:p:13:ILE:HG22	45:p:14:ARG:HD2	1.71	0.70
8:I:856:A:OP1	8:I:1669:A:O2'	2.08	0.70
21:O:47:VAL:HG22	21:O:48:ASN:H	1.56	0.70
22:P:1:MET:SD	22:P:2:ASN:N	2.58	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:t:70:ASN:O	48:t:74:ASN:ND2	2.25	0.70
5:3:25:GLN:HE22	18:L:64:LYS:HG2	1.57	0.70
43:m:23:PHE:HB3	43:m:67:GLU:HB3	1.74	0.70
8:I:2373:A:N6	8:I:2392:C:O2'	2.25	0.70
8:I:2962:C:OP1	11:D:128:LYS:NZ	2.24	0.70
8:I:2151:A:N6	50:A:99:GLU:OE1	2.25	0.69
32:a:391:C:H5'	45:p:13:ILE:HG23	1.74	0.69
47:s:50:ALA:HB1	47:s:57:HIS:HB3	1.73	0.69
44:o:4:THR:OG1	44:o:6:GLU:OE2	2.09	0.69
7:6:37:VAL:HB	7:6:42:HIS:HB2	1.72	0.69
8:I:1952:C:H2'	8:I:1953:G:H8	1.57	0.69
32:a:705:G:H2'	32:a:706:A:C8	2.28	0.69
8:I:2989:G:H4'	14:G:4:ILE:HG12	1.73	0.69
39:i:26:PRO:O	39:i:41:ARG:NH1	2.26	0.69
39:i:79:VAL:HG21	39:i:108:LEU:HD11	1.74	0.69
8:I:2427:G:H2'	8:I:2428:G:H8	1.57	0.69
47:s:6:LYS:HE3	47:s:7:LYS:HE3	1.73	0.69
52:9:28:LYS:CD	52:9:48:LEU:HB3	2.22	0.69
32:a:421:C:O2'	32:a:422:G:N2	2.26	0.69
8:I:324:G:H1	8:I:452:A:H61	1.41	0.69
13:F:12:LYS:HB3	13:F:14:ARG:HG2	1.75	0.69
29:W:12:ASN:HB3	29:W:14:ARG:HH12	1.58	0.69
32:a:221:U:H2'	32:a:222:G:H8	1.57	0.69
32:a:1172:A:N3	39:i:127:ARG:NH2	2.41	0.69
8:I:673:A:O2'	8:I:675:G:OP2	2.10	0.69
32:a:1352:A:OP2	52:9:75:ARG:NH2	2.26	0.69
12:E:39:LEU:HD11	12:E:112:MET:HB3	1.75	0.68
39:i:151:ARG:HE	50:A:84:VAL:H	1.39	0.68
8:I:749:U:O2	8:I:750:A:N6	2.26	0.68
46:q:134:LYS:NZ	46:q:135:ALA:O	2.25	0.68
3:0:14:ARG:NH1	8:I:606:G:OP2	2.25	0.68
5:3:28:ASN:O	5:3:36:LYS:NZ	2.22	0.68
8:I:1234:U:H2'	8:I:1235:G:H8	1.57	0.68
44:o:63:ARG:O	44:o:67:ILE:HG13	1.94	0.68
1:b:34:LEU:HD22	1:b:36:LEU:HG	1.75	0.68
8:I:1123:C:OP1	23:Q:53:ARG:NH2	2.27	0.68
32:a:730:C:HO2'	44:o:42:HIS:HD1	1.41	0.68
8:I:1902:G:O2'	8:I:2229:U:O4	2.11	0.68
8:I:1198:A:N1	8:I:1225:A:H4'	2.09	0.68
32:a:1420:C:H2'	32:a:1421:A:H8	1.59	0.68
34:d:103:ALA:HB1	34:d:108:MET:HB3	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:j:52:ILE:O	52:9:81:ARG:NH1	2.26	0.67
5:3:12:LYS:NZ	8:I:251:C:O2	2.27	0.67
8:I:946:C:H5	8:I:1322:G:H1	1.40	0.67
8:I:2309:C:H5	8:I:2675:G:H1	1.42	0.67
18:L:88:GLN:OE1	18:L:88:GLN:N	2.24	0.67
28:V:113:GLU:HB2	28:V:146:ILE:HG13	1.75	0.67
8:I:1930:G:N7	10:C:14:ARG:NH2	2.43	0.67
8:I:2336:C:H2'	8:I:2337:G:C8	2.29	0.67
32:a:937:G:N1	32:a:1330:G:OP2	2.24	0.67
32:a:1294:U:H3	43:m:14:ARG:HD3	1.58	0.67
38:h:79:ARG:NH1	38:h:81:SER:O	2.27	0.67
8:I:1953:G:H22	8:I:1976:G:H22	1.41	0.67
32:a:572:G:OP1	44:o:65:ARG:NH2	2.26	0.67
7:6:28:LYS:HE3	13:F:66:LEU:HA	1.76	0.67
32:a:1108:G:H21	39:i:127:ARG:HH22	1.42	0.67
8:I:2566:A:H2'	8:I:2567:A:C8	2.30	0.67
8:I:2721:C:N3	19:M:124:LYS:NZ	2.42	0.67
11:D:128:LYS:HG2	11:D:170:MET:HE1	1.75	0.67
14:G:59:GLU:OE1	14:G:59:GLU:N	2.27	0.67
32:a:1065:G:OP1	35:e:100:LYS:NZ	2.28	0.67
37:g:77:SER:HA	37:g:86:GLN:HA	1.76	0.67
8:I:2371:A:N6	8:I:2393:G:O2'	2.27	0.67
27:U:41:ILE:O	27:U:61:THR:N	2.28	0.67
6:4:9:PRO:HD3	6:4:16:LEU:HD11	1.75	0.67
24:R:27:LYS:HA	24:R:96:THR:HG23	1.77	0.67
23:Q:28:ARG:NH1	23:Q:38:GLN:OE1	2.28	0.67
32:a:706:A:H2'	32:a:707:A:C8	2.30	0.67
39:i:45:GLY:O	39:i:81:SER:OG	2.13	0.67
48:t:59:ASP:OD1	48:t:76:LYS:NZ	2.28	0.67
8:I:381:A:N3	8:I:402:C:O2'	2.28	0.66
8:I:1585:G:H2'	8:I:1586:G:H8	1.59	0.66
1:b:8:ILE:HD13	8:I:2658:C:H5"	1.75	0.66
11:D:35:VAL:HA	11:D:53:ALA:O	1.94	0.66
32:a:1210:C:H2'	32:a:1211:A:C8	2.30	0.66
32:a:1271:A:OP1	40:j:9:ARG:NH1	2.28	0.66
8:I:1171:G:H1	8:I:1242:U:H3	1.42	0.66
12:E:109:PRO:HD2	12:E:112:MET:HE2	1.77	0.66
50:A:54:LEU:HB3	50:A:79:ARG:HB2	1.77	0.66
8:I:844:A:O2'	8:I:845:A:OP1	2.14	0.66
12:E:26:LEU:HD22	12:E:30:LEU:HD23	1.77	0.66
32:a:77:G:H1	32:a:91:A:H61	0.72	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:l:87:VAL:HG23	42:l:89:ASP:H	1.60	0.66
8:I:2337:G:H2'	8:I:2338:G:H8	1.61	0.66
32:a:452:G:H2'	32:a:453:G:C8	2.31	0.66
8:I:1955:G:N2	8:I:1974:G:H1	1.93	0.66
14:G:41:ILE:HD13	14:G:55:ARG:HB2	1.77	0.66
32:a:665:G:H2'	32:a:666:A:H8	1.60	0.66
33:c:203:TYR:OH	33:c:206:ASP:OD2	2.14	0.66
36:f:42:ILE:HG22	36:f:44:GLY:H	1.61	0.66
28:V:16:GLU:HG3	28:V:21:ALA:HB2	1.78	0.66
41:k:44:ILE:HB	41:k:53:ALA:HB3	1.76	0.66
32:a:402:C:H5"	34:d:128:PRO:HD2	1.77	0.66
37:g:40:GLU:O	37:g:44:TYR:HD1	1.78	0.66
44:o:32:LEU:O	44:o:36:ILE:HG12	1.95	0.66
8:I:1173:A:O2'	8:I:1240:A:N1	2.27	0.65
19:M:43:THR:HG22	19:M:94:VAL:HG12	1.78	0.65
32:a:680:C:OP1	41:k:39:ASN:ND2	2.27	0.65
13:F:84:PHE:HB2	13:F:87:ARG:NH2	2.12	0.65
11:D:212:ILE:O	11:D:214:ARG:NH1	2.29	0.65
32:a:869:A:H1'	38:h:12:THR:HG21	1.78	0.65
32:a:875:C:N4	42:l:1:MET:SD	2.69	0.65
39:i:34:LYS:HG2	39:i:96:GLN:HB2	1.77	0.65
32:a:467:G:H2'	32:a:468:G:C8	2.32	0.65
32:a:1342:A:OP1	39:i:144:LYS:NZ	2.28	0.65
4:2:14:ARG:NH2	8:I:899:G:OP2	2.30	0.65
8:I:2387:U:O2'	8:I:2388:G:O4'	2.12	0.65
8:I:2551:C:H2'	8:I:2552:A:H8	1.60	0.65
32:a:174:G:O2'	32:a:175:A:OP1	2.13	0.65
32:a:1062:C:H2'	32:a:1063:G:H8	1.62	0.65
37:g:78:ARG:O	37:g:84:THR:OG1	2.13	0.65
32:a:221:U:H2'	32:a:222:G:C8	2.31	0.65
21:O:35:VAL:HG12	21:O:44:VAL:HG22	1.79	0.65
22:P:1:MET:HE2	22:P:1:MET:HA	1.78	0.65
29:W:72:LYS:HD3	29:W:73:ARG:H	1.59	0.65
47:s:37:ARG:O	47:s:70:LYS:NZ	2.22	0.65
50:A:44:ARG:NH1	50:A:44:ARG:O	2.29	0.65
1:b:8:ILE:HA	1:b:24:ARG:HD3	1.78	0.65
8:I:1641:U:H2'	8:I:1642:G:C8	2.32	0.65
32:a:990:U:O2	32:a:1035:G:C6	2.49	0.65
35:e:194:ASP:HA	38:h:116:ARG:HH12	1.62	0.65
40:j:22:ALA:O	40:j:26:VAL:HG12	1.96	0.65
42:l:33:VAL:HB	42:l:56:LYS:HB3	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:9:27:LEU:HD23	52:9:30:ILE:HD12	1.78	0.65
8:I:2171:G:H5"	49:x:26:VAL:HG11	1.79	0.65
8:I:2661:U:H1'	8:I:2663:A:C5	2.32	0.65
32:a:22:C:OP1	35:e:166:ASN:ND2	2.30	0.65
44:o:38:ASP:OD2	44:o:39:LEU:N	2.30	0.65
45:p:54:GLU:OE1	45:p:54:GLU:N	2.30	0.64
8:I:3028:A:H1'	8:I:3127:A:H2	1.62	0.64
40:j:41:PRO:HA	40:j:72:ARG:HB2	1.78	0.64
8:I:2100:A:N6	8:I:2113:G:O2'	2.31	0.64
32:a:1115:G:O2'	32:a:1137:G:O6	2.14	0.64
40:j:51:VAL:HG23	52:9:81:ARG:HB2	1.79	0.64
32:a:668:U:H1'	41:k:131:VAL:HG21	1.78	0.64
40:j:64:HIS:HB3	52:9:99:ALA:HB3	1.79	0.64
15:H:10:ASP:OD2	15:H:11:HIS:ND1	2.26	0.64
21:O:68:VAL:HG21	21:O:75:ARG:HG2	1.79	0.64
39:i:26:PRO:HB2	39:i:41:ARG:HB3	1.80	0.64
45:p:77:THR:HG23	45:p:79:ASP:OD2	1.97	0.64
34:d:6:GLY:O	34:d:107:ARG:NH1	2.25	0.64
38:h:32:LEU:O	38:h:36:ILE:HG13	1.98	0.64
40:j:21:SER:HB2	40:j:92:LEU:HD22	1.79	0.64
3:0:6:ARG:HE	8:I:2257:C:H41	1.46	0.64
8:I:1223:U:N3	8:I:1226:U:OP2	2.30	0.64
14:G:127:GLN:OE1	14:G:127:GLN:N	2.30	0.64
32:a:455:C:H2'	32:a:456:C:C6	2.33	0.64
8:I:3084:G:O2'	8:I:3101:G:N2	2.31	0.64
32:a:408:G:H5"	34:d:23:ASP:HB2	1.79	0.64
48:t:46:LYS:O	48:t:50:LEU:HG	1.98	0.64
8:I:289:A:N1	8:I:300:G:N2	2.45	0.64
8:I:846:G:OP2	44:o:88:ARG:NH1	2.30	0.64
8:I:3033:C:H2'	8:I:3034:U:H2'	1.80	0.64
32:a:616:G:H4'	45:p:17:GLN:NE2	2.13	0.64
32:a:806:A:N1	32:a:1502:C:O2'	2.25	0.64
32:a:1210:C:H2'	32:a:1211:A:H8	1.61	0.64
8:I:1215:A:O2'	8:I:1232:A:N6	2.31	0.63
8:I:3092:G:N2	8:I:3095:A:OP2	2.27	0.63
29:W:49:VAL:HG22	29:W:82:GLY:HA2	1.80	0.63
38:h:116:ARG:O	38:h:120:ARG:HG2	1.98	0.63
44:o:80:SER:O	44:o:84:ARG:HG2	1.98	0.63
46:q:121:SER:HB2	46:q:124:LYS:HG3	1.80	0.63
32:a:942:A:OP2	43:m:106:ASN:ND2	2.26	0.63
32:a:1051:U:OP1	52:9:85:ARG:NH2	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:d:40:ARG:HE	34:d:41:ILE:H	1.45	0.63
45:p:74:LEU:HB3	45:p:80:TRP:HB2	1.80	0.63
3:0:24:LYS:NZ	25:S:33:LEU:O	2.32	0.63
8:I:1612:G:H2'	8:I:1613:G:H8	1.62	0.63
32:a:125:G:H1'	32:a:194:G:H4'	1.78	0.63
32:a:296:G:N2	32:a:299:A:OP2	2.28	0.63
32:a:1138:A:O2'	39:i:41:ARG:NE	2.28	0.63
45:p:5:ILE:HG12	45:p:22:VAL:HG22	1.80	0.63
1:b:44:ARG:O	1:b:45:ARG:HG3	1.98	0.63
32:a:1466:G:H2'	32:a:1467:G:C8	2.34	0.63
42:l:82:VAL:HG12	42:l:97:ILE:HG22	1.80	0.63
12:E:31:PHE:O	12:E:33:VAL:N	2.31	0.63
2:1:56:GLU:OE2	8:I:2847:U:O2'	2.15	0.63
8:I:3023:U:H2'	8:I:3024:U:H6	1.63	0.63
17:K:93:PRO:HG3	17:K:114:ILE:HG12	1.81	0.63
43:m:89:GLY:O	43:m:93:ARG:HG3	1.98	0.63
8:I:309:U:H2'	8:I:310:G:H8	1.62	0.63
8:I:746:G:N2	8:I:749:U:O5'	2.31	0.63
8:I:2337:G:H2'	8:I:2338:G:C8	2.34	0.63
8:I:3065:G:OP1	11:D:61:LYS:NZ	2.31	0.63
32:a:361:G:N2	32:a:364:U:OP2	2.29	0.63
32:a:1434:G:H3'	32:a:1435:G:H8	1.63	0.63
38:h:48:ASP:OD1	38:h:49:PHE:N	2.31	0.63
32:a:675:U:O2'	41:k:51:VAL:O	2.17	0.63
8:I:1675:G:HO2'	8:I:1755:G:HO2'	1.44	0.63
32:a:492:C:H2'	32:a:493:A:H8	1.64	0.63
33:c:191:THR:HG23	33:c:193:PHE:H	1.64	0.63
32:a:268:U:H2'	32:a:269:A:C8	2.34	0.62
32:a:492:C:H2'	32:a:493:A:C8	2.34	0.62
35:e:44:GLU:HG3	35:e:70:VAL:HG23	1.81	0.62
8:I:691:C:H2'	8:I:692:A:H8	1.64	0.62
13:F:85:LYS:NZ	13:F:86:LEU:HB3	2.13	0.62
35:e:182:GLU:OE1	35:e:182:GLU:N	2.23	0.62
41:k:78:GLU:O	41:k:82:ARG:HG2	1.98	0.62
43:m:15:MET:HE1	43:m:34:LEU:HD22	1.81	0.62
40:j:58:TYR:CZ	40:j:59:LYS:HE3	2.34	0.62
8:I:1380:U:H4'	23:Q:4:VAL:HG21	1.81	0.62
8:I:2022:C:H5"	10:C:225:VAL:HG11	1.82	0.62
32:a:74:A:H2'	32:a:75:A:H5"	1.81	0.62
40:j:25:ILE:O	40:j:29:VAL:HG23	2.00	0.62
32:a:483:G:H2'	32:a:484:A:C8	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:668:U:H3	32:a:704:G:H22	1.47	0.62
7:6:22:PHE:HE2	13:F:112:SER:HG	1.48	0.62
8:I:293:G:H8	8:I:338:G:H2'	1.65	0.62
32:a:204:G:H5"	48:t:56:ARG:HA	1.80	0.62
15:H:15:ILE:HD12	15:H:15:ILE:H	1.63	0.62
32:a:336:G:H2'	32:a:337:A:H8	1.64	0.62
36:f:9:ILE:HG12	36:f:46:ARG:HH22	1.64	0.62
52:9:43:THR:HA	52:9:45:GLN:NE2	2.11	0.62
8:I:1707:A:H2'	8:I:1708:A:C8	2.34	0.62
8:I:2386:U:O2'	8:I:2387:U:O4'	2.18	0.62
32:a:185:G:O6	32:a:198:U:O4	2.17	0.62
38:h:9:ASP:O	38:h:13:ARG:HG3	2.00	0.62
8:I:661:G:N2	23:Q:49:ASP:OD1	2.33	0.62
8:I:2471:U:H2'	8:I:2472:G:H8	1.64	0.62
8:I:2569:G:O2'	29:W:42:GLY:O	2.11	0.62
32:a:555:C:OP1	42:l:12:ARG:NH1	2.33	0.62
40:j:42:LEU:H	40:j:72:ARG:HA	1.64	0.62
8:I:284:U:O2	8:I:304:G:O6	2.17	0.62
8:I:1546:G:H1	8:I:1822:C:H42	1.47	0.62
32:a:192:A:H62	46:q:55:ARG:NH2	1.98	0.62
32:a:1029:C:H2'	32:a:1030:U:C6	2.35	0.62
8:I:565:G:N1	8:I:568:A:OP2	2.33	0.61
32:a:391:C:HO2'	32:a:474:C:HO2'	1.45	0.61
32:a:400:C:O2'	32:a:612:A:N3	2.32	0.61
32:a:1340:U:H3	32:a:1367:A:H8	1.45	0.61
32:a:362:A:OP2	42:l:31:ARG:NH1	2.33	0.61
1:b:8:ILE:HG13	1:b:24:ARG:NH1	2.15	0.61
12:E:24:ILE:HD11	12:E:204:VAL:HG13	1.81	0.61
13:F:150:VAL:HA	13:F:153:ILE:HD12	1.82	0.61
41:k:66:ARG:O	41:k:69:THR:OG1	2.17	0.61
3:0:31:THR:HA	3:0:35:HIS:O	2.00	0.61
39:i:42:LEU:HD11	39:i:82:PHE:HB3	1.81	0.61
40:j:57:LYS:HG2	52:9:81:ARG:HH21	1.65	0.61
8:I:345:G:H2'	8:I:346:G:H8	1.66	0.61
8:I:738:G:O6	18:L:71:ARG:NH2	2.34	0.61
28:V:107:GLU:HG3	28:V:130:GLU:HB3	1.81	0.61
32:a:1452:G:H2'	32:a:1453:A:H8	1.65	0.61
8:I:1516:A:O2'	8:I:1527:U:O2	2.19	0.61
8:I:2052:U:H5'	10:C:158:SER:HB3	1.82	0.61
32:a:1167:G:H2'	32:a:1168:A:H8	1.65	0.61
43:m:91:ARG:HH11	43:m:96:MET:HG2	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:5:A:H61	8:I:3132:U:H3	1.47	0.61
8:I:3043:U:O2	8:I:3127:A:N6	2.34	0.61
32:a:207:A:O3'	32:a:208:A:H2'	2.00	0.61
8:I:2436:A:O2'	53:y:36:ARG:NH1	2.34	0.61
32:a:108:G:H1'	32:a:353:G:H5'	1.82	0.61
32:a:939:A:H2'	32:a:940:G:C8	2.36	0.61
8:I:1771:G:H1	8:I:1776:A:H61	1.48	0.61
8:I:2190:A:N3	8:I:2798:C:O2'	2.30	0.61
32:a:452:G:C6	32:a:453:G:C6	2.89	0.61
32:a:530:A:H2'	32:a:531:G:C8	2.35	0.61
32:a:1141:C:H2'	32:a:1142:G:C8	2.35	0.61
46:q:134:LYS:HZ3	46:q:135:ALA:HB3	1.65	0.61
8:I:1008:A:N6	8:I:1028:G:O4'	2.34	0.60
8:I:1802:C:OP1	10:C:4:ARG:NH2	2.34	0.60
8:I:2761:G:HO2'	8:I:3002:A:HO2'	1.49	0.60
14:G:138:ASP:HB3	14:G:141:LYS:HB2	1.83	0.60
22:P:103:ARG:NH1	32:a:1424:C:OP1	2.34	0.60
36:f:12:PRO:HD3	36:f:58:GLY:HA2	1.81	0.60
32:a:530:A:H2'	32:a:531:G:H8	1.67	0.60
32:a:943:U:OP2	43:m:102:ARG:NH1	2.31	0.60
8:I:309:U:H2'	8:I:310:G:C8	2.37	0.60
14:G:120:GLU:OE2	14:G:120:GLU:N	2.31	0.60
32:a:81:C:H2'	32:a:82:U:O4'	2.01	0.60
46:q:128:LEU:HD21	46:q:131:ILE:HD11	1.83	0.60
32:a:1428:G:H2'	32:a:1429:C:C6	2.37	0.60
36:f:15:ASP:HB2	36:f:59:ILE:HD13	1.83	0.60
24:R:18:ALA:N	24:R:21:ASP:OD2	2.27	0.60
32:a:1012:A:H3'	32:a:1013:G:H21	1.66	0.60
32:a:1097:G:O2'	33:c:169:ARG:NH1	2.33	0.60
8:I:1057:G:H21	31:Z:25:THR:HG22	1.66	0.60
32:a:466:C:H2'	32:a:467:G:H8	1.67	0.60
32:a:1330:G:H2'	32:a:1331:A:C8	2.37	0.60
35:e:86:GLU:HG2	35:e:88:PRO:HD2	1.84	0.60
38:h:11:LEU:HD22	38:h:77:LEU:HD13	1.82	0.60
8:I:2360:G:N2	8:I:2407:A:O2'	2.34	0.60
33:c:27:GLN:OE1	33:c:27:GLN:N	2.35	0.60
50:A:72:GLN:OE1	50:A:94:PHE:N	2.34	0.60
8:I:617:A:H3'	8:I:618:U:C5	2.37	0.60
32:a:86:G:H2'	32:a:87:A:H8	1.67	0.60
39:i:66:GLN:O	39:i:70:LYS:HG2	2.02	0.60
8:I:2263:G:H2'	8:I:2264:A:C8	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:E:175:VAL:HG23	12:E:183:ILE:HD11	1.82	0.60
14:G:109:GLY:HA3	14:G:153:ARG:HH21	1.66	0.60
32:a:653:C:H2'	32:a:654:A:C8	2.37	0.60
43:m:4:LEU:HD23	43:m:5:VAL:HG23	1.83	0.60
52:9:32:ARG:HH22	52:9:44:ALA:HB3	1.66	0.60
8:I:1200:G:O6	8:I:1218:G:H2'	2.01	0.59
13:F:87:ARG:HA	13:F:90:MET:HE2	1.84	0.59
32:a:998:A:H3'	32:a:999:C:C6	2.37	0.59
32:a:1047:U:H2'	32:a:1048:G:H8	1.66	0.59
40:j:54:SER:O	40:j:57:LYS:HG2	2.02	0.59
45:p:45:GLU:HB3	45:p:48:LEU:HB2	1.83	0.59
51:r:36:VAL:O	51:r:45:ARG:NH1	2.34	0.59
28:V:157:ALA:HB3	28:V:172:PRO:HA	1.84	0.59
32:a:1420:C:H2'	32:a:1421:A:C8	2.37	0.59
33:c:23:TYR:HB3	40:j:97:ASP:HB2	1.83	0.59
23:Q:50:ARG:O	23:Q:54:LYS:NZ	2.35	0.59
32:a:24:G:H2'	32:a:25:G:C8	2.37	0.59
32:a:1304:G:H8	47:s:3:ARG:HH21	1.50	0.59
34:d:32:PRO:HA	34:d:37:GLY:HA3	1.84	0.59
40:j:36:VAL:HG22	40:j:77:ILE:HG12	1.84	0.59
5:3:45:ASP:OD2	5:3:46:GLY:N	2.35	0.59
8:I:1307:U:H3'	8:I:1308:G:H8	1.68	0.59
21:O:64:ASP:HB2	21:O:78:ARG:HG2	1.84	0.59
22:P:33:GLU:CD	22:P:38:ARG:HH21	2.11	0.59
32:a:234:C:H5'	46:q:125:ARG:HD3	1.85	0.59
32:a:406:G:H1	32:a:434:U:H3	1.50	0.59
37:g:62:LEU:HG	37:g:124:ILE:HD13	1.84	0.59
8:I:503:C:H2'	8:I:504:A:H8	1.66	0.59
23:Q:122:ASN:OD1	23:Q:123:ALA:N	2.35	0.59
25:S:56:PRO:O	25:S:60:VAL:HG23	2.02	0.59
26:T:8:ARG:HG2	30:Y:30:PHE:CD1	2.37	0.59
32:a:454:U:H3	32:a:468:G:N2	1.97	0.59
46:q:103:ASP:OD2	46:q:104:SER:N	2.36	0.59
8:I:2386:U:O2'	8:I:2387:U:O5'	2.20	0.59
19:M:83:MET:HE2	19:M:83:MET:HA	1.85	0.59
32:a:379:G:N2	32:a:382:A:OP2	2.32	0.59
42:l:80:VAL:HG11	42:l:97:ILE:HD12	1.84	0.59
8:I:919:U:O4	12:E:73:ARG:NH1	2.36	0.59
8:I:1283:C:OP1	23:Q:92:ARG:NH2	2.30	0.59
8:I:1620:G:H2'	8:I:1621:G:H8	1.66	0.59
8:I:1707:A:H2'	8:I:1708:A:H8	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:411:U:H3	32:a:430:A:H61	1.51	0.59
39:i:75:THR:H	39:i:78:ARG:HB3	1.67	0.59
45:p:2:ALA:O	45:p:25:ALA:N	2.31	0.59
10:C:258:ARG:NH1	10:C:265:ASN:OD1	2.36	0.59
8:I:682:C:H4'	23:Q:31:LEU:HD13	1.83	0.59
21:O:29:GLU:OE2	21:O:29:GLU:N	2.24	0.59
36:f:10:LEU:HD12	36:f:11:ASP:H	1.68	0.59
8:I:1658:A:H61	8:I:1815:U:H3	1.51	0.59
28:V:59:SER:OG	28:V:140:GLU:OE1	2.15	0.59
7:6:43:PRO:HB2	7:6:45:TYR:CE1	2.38	0.58
8:I:1805:G:OP2	10:C:63:ARG:NH2	2.35	0.58
8:I:2343:G:H2'	8:I:2344:U:C6	2.38	0.58
32:a:143:G:H2'	32:a:144:G:C8	2.38	0.58
32:a:515:G:H2'	32:a:516:C:C6	2.37	0.58
32:a:1211:A:H2'	32:a:1212:G:C8	2.38	0.58
36:f:9:ILE:HG12	36:f:46:ARG:NH2	2.18	0.58
51:r:26:VAL:HG21	51:r:60:VAL:HG12	1.83	0.58
7:6:5:ILE:HG23	13:F:71:LYS:HD3	1.83	0.58
8:I:1653:A:H2	8:I:1822:C:H1'	1.67	0.58
42:l:87:VAL:HG21	42:l:90:LEU:HD12	1.84	0.58
8:I:3028:A:H1'	8:I:3127:A:C2	2.38	0.58
32:a:47:G:H1	32:a:397:C:H5	1.50	0.58
32:a:453:G:H2'	32:a:454:U:H6	1.67	0.58
32:a:895:G:H2'	32:a:896:G:H8	1.68	0.58
8:I:622:U:H2'	8:I:623:C:C6	2.39	0.58
20:N:10:LEU:HB2	20:N:17:GLN:HG3	1.85	0.58
30:Y:49:THR:O	30:Y:53:GLU:HG3	2.02	0.58
32:a:114:A:H5"	32:a:116:C:H42	1.68	0.58
32:a:336:G:H2'	32:a:337:A:C8	2.38	0.58
8:I:3023:U:H2'	8:I:3024:U:C6	2.38	0.58
32:a:407:G:O3'	34:d:104:ARG:HG2	2.04	0.58
8:I:691:C:H2'	8:I:692:A:C8	2.39	0.58
14:G:77:VAL:O	14:G:81:THR:HG23	2.03	0.58
30:Y:14:THR:N	30:Y:17:GLU:OE1	2.37	0.58
32:a:466:C:H2'	32:a:467:G:C8	2.39	0.58
44:o:75:VAL:HG12	44:o:79:ARG:NE	2.18	0.58
8:I:1200:G:H4'	8:I:1205:C:H42	1.67	0.58
16:J:57:ILE:HD11	16:J:130:HIS:CD2	2.33	0.58
19:M:51:ARG:HD3	19:M:66:ILE:HD11	1.86	0.58
30:Y:13:LEU:HB3	30:Y:17:GLU:HB2	1.84	0.58
37:g:40:GLU:HB2	37:g:44:TYR:CE1	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:28:ARG:HA	1:b:28:ARG:HE	1.69	0.58
8:I:1953:G:H22	8:I:1976:G:N2	2.01	0.58
8:I:2338:G:C2	8:I:2426:U:O2	2.56	0.58
8:I:2542:G:H22	8:I:2550:U:H3	1.52	0.58
8:I:2558:C:N4	8:I:2571:A:O2'	2.33	0.58
16:J:74:VAL:HG21	16:J:92:LEU:HD12	1.85	0.58
32:a:727:U:H2'	32:a:728:C:C6	2.38	0.58
8:I:1303:C:H41	8:I:1305:U:H4'	1.69	0.58
32:a:334:C:H2'	32:a:335:A:H8	1.69	0.58
33:c:61:ASP:HA	33:c:96:LYS:HD2	1.85	0.58
8:I:1952:C:H2'	8:I:1953:G:C8	2.37	0.58
18:L:54:MET:O	18:L:59:ARG:NH1	2.36	0.58
32:a:478:A:H3'	32:a:479:G:H8	1.69	0.58
35:e:103:PHE:CE2	35:e:176:LYS:HD3	2.38	0.58
39:i:56:LEU:O	39:i:66:GLN:NE2	2.37	0.58
1:b:6:ARG:CZ	8:I:2523:C:C5	2.87	0.57
8:I:2292:A:H5"	8:I:2293:C:H5"	1.86	0.57
8:I:2302:C:H2'	8:I:2303:C:C6	2.38	0.57
8:I:2399:G:H4'	8:I:2408:A:H5"	1.86	0.57
8:I:2427:G:H2'	8:I:2428:G:C8	2.39	0.57
8:I:3043:U:H2'	8:I:3044:A:H8	1.68	0.57
9:B:100:A:OP1	28:V:79:LYS:NZ	2.37	0.57
34:d:51:GLN:O	34:d:55:LYS:HG3	2.04	0.57
46:q:121:SER:O	46:q:123:THR:N	2.36	0.57
52:9:39:GLU:CA	52:9:42:SER:HB2	2.33	0.57
8:I:1958:C:N3	8:I:1971:G:N2	2.52	0.57
8:I:2936:U:H2'	8:I:2937:C:C6	2.39	0.57
33:c:69:THR:HG21	33:c:75:VAL:HG21	1.86	0.57
48:t:51:LEU:HD11	48:t:83:LEU:HD23	1.85	0.57
8:I:677:A:OP2	8:I:2737:C:O2'	2.23	0.57
8:I:1948:A:N3	8:I:1950:A:O2'	2.36	0.57
13:F:63:ASP:O	13:F:67:ILE:HG13	2.04	0.57
13:F:80:SER:OG	13:F:88:GLU:HG3	2.04	0.57
21:O:57:ALA:O	21:O:86:ARG:NH1	2.36	0.57
32:a:504:A:H2'	32:a:505:C:C6	2.38	0.57
32:a:958:U:H1'	32:a:962:A:C4	2.40	0.57
42:l:3:THR:HG22	42:l:6:GLN:H	1.69	0.57
8:I:728:C:O2'	8:I:786:U:OP1	2.21	0.57
8:I:2914:C:H42	8:I:2969:G:H1	1.51	0.57
12:E:72:TYR:OH	12:E:82:GLN:NE2	2.37	0.57
29:W:59:LEU:HD21	29:W:80:ILE:HG13	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:832:C:H2'	32:a:835:C:C4	2.39	0.57
32:a:1047:U:H5"	33:c:163:SER:HB3	1.86	0.57
32:a:1136:G:N2	32:a:1138:A:H62	2.03	0.57
36:f:4:TYR:CD2	36:f:72:VAL:HG21	2.40	0.57
39:i:30:VAL:HG22	39:i:39:ARG:HH21	1.69	0.57
40:j:58:TYR:CE1	40:j:59:LYS:HE3	2.39	0.57
28:V:130:GLU:OE1	28:V:130:GLU:N	2.31	0.57
32:a:127:U:H1'	32:a:261:G:H21	1.69	0.57
32:a:926:G:N7	37:g:3:ARG:NH1	2.52	0.57
8:I:775:C:N4	8:I:776:G:O6	2.37	0.57
8:I:992:A:OP1	19:M:22:SER:OG	2.18	0.57
8:I:1212:G:N2	8:I:1215:A:C5	2.72	0.57
8:I:1641:U:H2'	8:I:1642:G:H8	1.70	0.57
8:I:1887:A:C6	20:N:8:PRO:HG2	2.40	0.57
32:a:1348:G:H2'	32:a:1349:A:C8	2.40	0.57
48:t:60:LYS:O	48:t:64:LYS:HG3	2.03	0.57
8:I:193:A:H2'	8:I:194:G:C8	2.39	0.57
8:I:289:A:H62	8:I:301:G:H8	1.50	0.57
35:e:74:ASN:O	35:e:104:ARG:NH1	2.38	0.57
8:I:1083:G:OP1	19:M:87:LYS:NZ	2.38	0.57
8:I:1638:C:H2'	8:I:1639:G:H8	1.69	0.57
8:I:3084:G:C6	8:I:3102:U:O2	2.58	0.57
10:C:124:ASP:OD1	10:C:125:ILE:N	2.38	0.57
32:a:259:G:OP1	48:t:75:LYS:NZ	2.38	0.57
32:a:1116:U:H2'	32:a:1117:U:H2'	1.85	0.57
45:p:51:ILE:HG12	45:p:53:SER:OG	2.04	0.57
8:I:552:G:N2	8:I:555:A:OP2	2.33	0.57
8:I:731:A:N6	18:L:112:LEU:HD13	2.19	0.57
28:V:8:GLN:OE1	28:V:8:GLN:N	2.38	0.57
3:0:5:LYS:HE2	8:I:2292:A:H2'	1.87	0.57
8:I:975:G:H4'	8:I:976:U:C5	2.33	0.57
8:I:1457:C:HO2'	8:I:2248:G:HO2'	1.53	0.57
28:V:131:ILE:HD12	28:V:166:VAL:HB	1.86	0.57
29:W:38:VAL:HG11	29:W:45:PHE:HD2	1.70	0.57
32:a:664:G:H2'	32:a:665:G:H8	1.70	0.57
32:a:736:A:H2'	32:a:737:G:H8	1.70	0.57
32:a:1315:G:H2'	32:a:1316:A:C8	2.40	0.57
36:f:52:ILE:C	36:f:54:LYS:H	2.13	0.57
8:I:220:G:H22	8:I:237:U:H4'	1.70	0.56
8:I:418:C:O2	27:U:69:SER:OG	2.18	0.56
8:I:619:C:OP2	8:I:663:G:N2	2.34	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:1036:C:O2'	19:M:101:ARG:NH2	2.38	0.56
8:I:2013:U:H5	8:I:2018:A:N7	2.03	0.56
8:I:2262:C:H2'	8:I:2263:G:H8	1.70	0.56
8:I:2529:U:H2'	8:I:2530:U:C6	2.40	0.56
14:G:52:VAL:HA	14:G:70:ARG:HH12	1.69	0.56
19:M:37:LEU:HD11	19:M:130:ARG:HG3	1.87	0.56
21:O:28:ALA:HB2	21:O:49:ASP:OD2	2.04	0.56
32:a:298:G:H2'	32:a:299:A:C8	2.40	0.56
32:a:986:G:H2'	32:a:988:C:H41	1.70	0.56
32:a:1214:G:OP2	32:a:1314:C:N4	2.35	0.56
32:a:1271:A:O2'	32:a:1274:C:N4	2.37	0.56
2:1:39:ASP:HA	8:I:1453:A:H1'	1.86	0.56
8:I:3035:U:H3'	8:I:3036:G:H8	1.69	0.56
13:F:135:TYR:CE1	13:F:163:VAL:HB	2.39	0.56
29:W:21:LEU:HD21	29:W:41:ARG:HH21	1.68	0.56
32:a:325:G:N2	45:p:26:ARG:HH12	2.02	0.56
45:p:53:SER:HB3	45:p:79:ASP:OD1	2.05	0.56
48:t:68:HIS:O	48:t:68:HIS:ND1	2.38	0.56
52:9:45:GLN:O	52:9:48:LEU:HD23	2.05	0.56
8:I:117:G:OP2	8:I:119:A:O2'	2.20	0.56
8:I:443:C:H2'	8:I:444:C:C6	2.40	0.56
8:I:979:A:H62	8:I:1056:U:H3	1.51	0.56
8:I:1580:A:H3'	8:I:1623:G:H21	1.69	0.56
10:C:124:ASP:O	10:C:129:ASN:ND2	2.28	0.56
11:D:32:GLY:HA3	11:D:54:TYR:HE1	1.69	0.56
13:F:37:THR:N	13:F:166:SER:OG	2.37	0.56
33:c:97:GLN:HE22	33:c:99:GLN:HB2	1.70	0.56
33:c:133:MET:HE2	33:c:153:CYS:SG	2.45	0.56
34:d:80:LYS:HA	35:e:134:THR:HG21	1.87	0.56
41:k:29:GLY:HA2	41:k:47:PRO:HD3	1.86	0.56
8:I:3033:C:N4	8:I:3035:U:H5"	2.21	0.56
13:F:135:TYR:HE2	13:F:137:PHE:CE2	2.24	0.56
32:a:89:A:H4'	32:a:90:U:H5'	1.88	0.56
32:a:643:U:O4	32:a:743:G:O2'	2.18	0.56
32:a:1142:G:H21	40:j:41:PRO:HD2	1.71	0.56
43:m:25:ILE:HG23	43:m:29:ARG:HB2	1.87	0.56
8:I:225:A:O2'	8:I:509:G:N3	2.37	0.56
15:H:9:VAL:HB	15:H:12:LEU:HB2	1.87	0.56
32:a:175:A:H1'	32:a:176:U:H3'	1.88	0.56
33:c:161:GLU:OE1	50:A:66:ARG:NH2	2.39	0.56
47:s:71:LEU:H	47:s:71:LEU:HD12	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:12:ARG:O	1:b:49:PHE:HA	2.05	0.56
8:I:1955:G:H22	8:I:1974:G:H1	1.53	0.56
8:I:2829:C:H2'	8:I:2830:G:H8	1.70	0.56
32:a:1347:A:H2'	32:a:1348:G:H8	1.69	0.56
8:I:1504:A:H5'	8:I:2450:A:H1'	1.88	0.56
8:I:1566:G:H1	8:I:1637:U:H3	1.54	0.56
13:F:18:GLU:N	13:F:18:GLU:OE1	2.38	0.56
18:L:115:GLY:O	18:L:135:LYS:NZ	2.37	0.56
32:a:90:U:H2'	32:a:91:A:C8	2.41	0.56
32:a:453:G:H2'	32:a:454:U:C6	2.40	0.56
32:a:1049:G:OP1	33:c:199:LYS:NZ	2.38	0.56
34:d:112:LEU:HG	34:d:117:HIS:HB2	1.86	0.56
43:m:86:CYS:HB3	47:s:73:GLU:HB3	1.88	0.56
46:q:117:THR:O	46:q:125:ARG:NH2	2.36	0.56
13:F:136:THR:HG22	13:F:162:ASN:OD1	2.06	0.56
31:Z:23:LEU:HD21	31:Z:50:VAL:HG11	1.86	0.56
32:a:451:A:C5	32:a:471:U:C4	2.94	0.56
34:d:172:ARG:HB2	34:d:174:ARG:HG2	1.87	0.56
8:I:904:G:H5'	8:I:906:G:H1'	1.86	0.56
8:I:1189:U:H4'	8:I:1190:U:H5"	1.87	0.56
32:a:31:G:O2'	32:a:295:U:OP1	2.23	0.56
32:a:736:A:OP1	32:a:844:C:O2'	2.24	0.56
8:I:1155:G:OP2	8:I:1263:G:O2'	2.22	0.56
8:I:2899:G:O6	14:G:176:LYS:NZ	2.32	0.56
10:C:184:ARG:NH2	10:C:266:LYS:O	2.37	0.56
21:O:47:VAL:HG22	21:O:48:ASN:N	2.21	0.56
34:d:104:ARG:NH2	34:d:159:GLU:OE1	2.39	0.56
39:i:43:VAL:HG12	39:i:84:ILE:HG13	1.88	0.56
8:I:285:G:O2'	8:I:289:A:OP1	2.24	0.55
8:I:1672:A:H2'	8:I:1673:A:C8	2.41	0.55
8:I:2481:U:H2'	8:I:2482:U:C6	2.41	0.55
44:o:46:HIS:O	44:o:48:HIS:N	2.39	0.55
48:t:33:ARG:O	48:t:37:GLU:HG2	2.05	0.55
1:b:12:ARG:HG2	1:b:13:SER:H	1.70	0.55
8:I:305:U:H2'	8:I:306:G:C8	2.41	0.55
22:P:19:PHE:O	22:P:49:ARG:NH1	2.39	0.55
32:a:1143:U:H4'	40:j:72:ARG:HE	1.71	0.55
32:a:1365:U:H5"	39:i:95:GLY:HA3	1.86	0.55
50:A:36:ILE:O	50:A:39:SER:OG	2.22	0.55
8:I:1156:A:H61	8:I:1256:U:H5	1.53	0.55
8:I:1184:G:O2'	8:I:1213:A:N6	2.30	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:2447:U:O2'	8:I:2448:G:O5'	2.23	0.55
10:C:66:ASP:OD2	10:C:103:ARG:NH1	2.40	0.55
24:R:24:LYS:HG2	24:R:97:VAL:HG22	1.88	0.55
32:a:186:G:H2'	32:a:187:G:H8	1.71	0.55
32:a:435:C:H2'	32:a:436:U:C6	2.42	0.55
32:a:505:C:H2'	32:a:506:G:H8	1.71	0.55
32:a:945:U:H2'	32:a:946:G:H8	1.70	0.55
53:y:71:LEU:HB3	53:y:78:ILE:HG13	1.87	0.55
8:I:503:C:H2'	8:I:504:A:C8	2.41	0.55
12:E:159:GLN:HB2	12:E:198:ASP:H	1.71	0.55
21:O:116:ARG:HD3	21:O:122:PHE:HA	1.88	0.55
32:a:748:U:OP1	32:a:813:G:O2'	2.23	0.55
44:o:6:GLU:H	44:o:6:GLU:CD	2.14	0.55
50:A:32:ASP:HA	50:A:35:ARG:HG3	1.88	0.55
50:A:113:LYS:O	50:A:117:LYS:HG2	2.06	0.55
32:a:727:U:H2'	32:a:728:C:H6	1.71	0.55
32:a:1340:U:C2	32:a:1367:A:N7	2.75	0.55
35:e:49:ILE:H	35:e:49:ILE:HD12	1.71	0.55
8:I:765:C:H2'	8:I:766:G:C8	2.42	0.55
9:B:65:A:H4'	9:B:66:G:H5'	1.89	0.55
17:K:71:ARG:HH22	17:K:122:LEU:HD11	1.72	0.55
32:a:59:U:H2'	32:a:60:G:C8	2.42	0.55
32:a:432:C:H2'	32:a:433:C:C6	2.41	0.55
52:9:26:ALA:O	52:9:30:ILE:HG13	2.07	0.55
8:I:645:G:N2	8:I:646:A:H62	2.04	0.55
8:I:679:G:O2'	8:I:1385:A:OP1	2.25	0.55
8:I:2753:C:H2'	8:I:2754:G:H8	1.72	0.55
21:O:21:ARG:NH1	21:O:24:LEU:O	2.40	0.55
32:a:665:G:H2'	32:a:666:A:C8	2.41	0.55
32:a:1211:A:H2'	32:a:1212:G:H8	1.70	0.55
40:j:80:THR:HG22	40:j:82:LYS:HG2	1.88	0.55
52:9:10:ASN:ND2	52:9:61:ARG:O	2.39	0.55
8:I:974:G:OP2	8:I:974:G:N2	2.23	0.55
8:I:2087:A:H2'	8:I:2088:A:C8	2.42	0.55
8:I:2364:G:O2'	8:I:2365:A:O4'	2.25	0.55
12:E:31:PHE:HD1	12:E:32:ASP:H	1.54	0.55
32:a:202:G:H2'	32:a:203:U:O4'	2.07	0.55
32:a:405:G:H3'	32:a:406:G:H5"	1.87	0.55
33:c:22:TRP:HA	40:j:94:ALA:HB1	1.88	0.55
8:I:925:U:H2'	8:I:926:C:C6	2.41	0.55
33:c:48:ARG:O	33:c:71:ARG:NH1	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h:115:ASP:N	38:h:115:ASP:OD1	2.38	0.55
2:1:45:SER:HB2	25:S:95:ILE:HD12	1.88	0.55
36:f:46:ARG:HD3	36:f:60:TYR:HB2	1.89	0.55
39:i:33:ARG:HE	39:i:37:VAL:HB	1.71	0.55
8:I:2384:A:O2'	8:I:2385:G:O4'	2.18	0.54
20:N:100:ILE:HG22	20:N:101:GLU:H	1.72	0.54
30:Y:20:GLU:O	30:Y:24:GLU:HG2	2.07	0.54
8:I:871:U:H2'	8:I:872:A:C8	2.41	0.54
8:I:1307:U:H3'	8:I:1308:G:C8	2.41	0.54
32:a:555:C:C4	46:q:86:LEU:HD11	2.42	0.54
32:a:1306:C:H2'	32:a:1307:U:C6	2.42	0.54
34:d:132:VAL:HG13	34:d:136:ASP:HB3	1.89	0.54
41:k:123:VAL:HG12	51:r:80:ARG:HG3	1.89	0.54
8:I:768:A:O2'	8:I:770:A:N7	2.36	0.54
8:I:1769:C:H42	8:I:1778:G:H1	1.55	0.54
8:I:2770:G:N2	8:I:2901:G:O2'	2.40	0.54
25:S:69:GLN:HG3	25:S:76:PRO:HG3	1.88	0.54
32:a:48:U:H2'	32:a:49:G:C8	2.42	0.54
8:I:872:A:O2'	8:I:1894:U:OP1	2.24	0.54
13:F:85:LYS:HB3	13:F:87:ARG:CZ	2.37	0.54
16:J:45:ALA:HB3	16:J:48:VAL:HG22	1.89	0.54
32:a:504:A:H2'	32:a:505:C:H6	1.72	0.54
32:a:998:A:H3'	32:a:999:C:H6	1.73	0.54
32:a:1339:G:N2	32:a:1340:U:O4	2.29	0.54
44:o:2:ALA:HB3	44:o:7:GLN:HE22	1.72	0.54
49:x:12:MET:O	49:x:16:LYS:HG2	2.07	0.54
8:I:2042:C:O2'	8:I:2043:A:O4'	2.26	0.54
8:I:2338:G:H1	8:I:2425:U:H3	1.55	0.54
32:a:268:U:H2'	32:a:269:A:H8	1.71	0.54
39:i:40:VAL:HG12	39:i:86:ALA:HA	1.89	0.54
43:m:22:ILE:HD12	43:m:23:PHE:H	1.73	0.54
8:I:746:G:H1'	8:I:749:U:H5	1.71	0.54
8:I:1397:G:O2'	8:I:2250:G:O6	2.25	0.54
8:I:2098:U:OP1	8:I:2648:G:O2'	2.24	0.54
21:O:59:SER:OG	21:O:61:ILE:HG12	2.07	0.54
32:a:1027:G:H2'	32:a:1028:C:O4'	2.08	0.54
32:a:1340:U:H2'	32:a:1341:A:C8	2.43	0.54
41:k:82:ARG:HH11	41:k:82:ARG:HG3	1.73	0.54
43:m:34:LEU:HD11	43:m:39:ILE:HB	1.89	0.54
51:r:30:ASP:CG	51:r:33:THR:HG22	2.33	0.54
2:1:22:GLU:OE1	2:1:26:ARG:NH2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:914:G:H2'	8:I:915:C:C6	2.42	0.54
20:N:116:VAL:HG12	20:N:117:ARG:HG2	1.90	0.54
32:a:1001:C:H2'	32:a:1002:G:C8	2.43	0.54
32:a:1116:U:C6	40:j:40:VAL:HG11	2.43	0.54
32:a:1405:C:H2'	32:a:1406:A:C8	2.43	0.54
32:a:1506:A:H2'	32:a:1507:C:C6	2.42	0.54
33:c:5:ILE:HD11	52:9:98:LYS:HD2	1.90	0.54
35:e:119:GLU:HG2	35:e:124:VAL:HG22	1.88	0.54
43:m:88:GLN:HG3	43:m:98:VAL:HG21	1.90	0.54
8:I:689:G:H22	18:L:34:ARG:NE	2.06	0.54
9:B:1:U:H2'	9:B:2:U:C6	2.43	0.54
14:G:11:VAL:HG23	14:G:50:ALA:HA	1.89	0.54
34:d:137:ILE:HD12	34:d:137:ILE:H	1.72	0.54
37:g:76:ARG:HG3	37:g:78:ARG:HH21	1.73	0.54
38:h:40:LEU:HD11	38:h:131:VAL:HG21	1.89	0.54
40:j:41:PRO:HA	40:j:73:LEU:H	1.73	0.54
44:o:75:VAL:HG23	46:q:136:LYS:HD2	1.89	0.54
21:O:31:PRO:HB2	21:O:46:LEU:HG	1.90	0.54
32:a:1171:A:OP2	39:i:116:ARG:NH2	2.41	0.54
41:k:45:THR:HG22	41:k:51:VAL:HG22	1.90	0.54
52:9:45:GLN:HA	52:9:48:LEU:CD2	2.37	0.54
8:I:61:G:OP2	30:Y:51:ARG:NH2	2.32	0.54
8:I:823:U:OP1	10:C:59:LYS:NZ	2.41	0.54
34:d:13:ARG:NH2	34:d:32:PRO:O	2.41	0.54
8:I:500:G:OP2	8:I:2644:A:O2'	2.21	0.53
8:I:761:C:H2'	8:I:762:A:H8	1.72	0.53
8:I:858:G:C5	10:C:208:LYS:HB2	2.44	0.53
8:I:911:A:C2	10:C:226:MET:HG2	2.43	0.53
8:I:1553:U:H2'	8:I:1554:G:C8	2.43	0.53
8:I:1672:A:H2'	8:I:1673:A:H8	1.73	0.53
8:I:1953:G:H1	8:I:1976:G:H1	1.56	0.53
32:a:174:G:OP1	48:t:56:ARG:NH2	2.41	0.53
33:c:139:SER:HA	33:c:142:ARG:HH11	1.72	0.53
8:I:746:G:H1'	8:I:749:U:C5	2.43	0.53
8:I:1242:U:OP1	14:G:3:ARG:NH1	2.41	0.53
8:I:2602:C:HO2'	29:W:58:THR:HG1	1.57	0.53
32:a:1152:G:O6	32:a:1174:G:O6	2.26	0.53
33:c:152:GLN:NE2	33:c:165:SER:OG	2.35	0.53
53:y:41:PRO:HD2	53:y:65:GLU:OE2	2.07	0.53
10:C:72:LYS:NZ	10:C:190:ARG:HG2	2.23	0.53
13:F:52:ARG:HD3	13:F:85:LYS:HE3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:G:46:ASN:N	14:G:50:ALA:O	2.37	0.53
32:a:322:U:H1'	48:t:14:ASN:ND2	2.22	0.53
32:a:1288:C:H4'	32:a:1294:U:O4	2.09	0.53
37:g:51:ARG:HB2	37:g:58:PRO:HG3	1.90	0.53
43:m:96:MET:HG3	43:m:97:PRO:CD	2.39	0.53
8:I:345:G:H2'	8:I:346:G:C8	2.43	0.53
8:I:961:U:H2'	8:I:962:G:C8	2.44	0.53
8:I:1619:U:H2'	8:I:1620:G:C8	2.43	0.53
8:I:2916:A:H2'	8:I:2917:A:C8	2.42	0.53
25:S:83:THR:HB	25:S:116:VAL:HB	1.91	0.53
32:a:398:G:H2'	32:a:399:C:C6	2.44	0.53
33:c:49:ALA:HB1	33:c:75:VAL:HG22	1.91	0.53
37:g:64:ARG:O	37:g:68:ASN:ND2	2.41	0.53
37:g:113:GLU:HB2	37:g:119:ARG:HG3	1.88	0.53
50:A:36:ILE:O	50:A:40:GLN:HG3	2.08	0.53
8:I:24:G:O2'	25:S:88:GLN:O	2.27	0.53
8:I:689:G:H22	18:L:34:ARG:CZ	2.22	0.53
8:I:2383:C:H4'	8:I:2384:A:H2	1.73	0.53
32:a:11:A:N6	34:d:197:GLU:O	2.42	0.53
32:a:20:U:H2'	32:a:21:C:C6	2.42	0.53
32:a:582:U:H2'	32:a:583:G:H8	1.74	0.53
42:l:74:LEU:HD21	42:l:104:THR:HG22	1.88	0.53
43:m:10:PRO:HB2	43:m:13:LYS:HB2	1.90	0.53
32:a:263:C:O2'	46:q:119:PRO:O	2.22	0.53
34:d:53:LYS:HD3	34:d:198:TYR:CE2	2.44	0.53
35:e:76:MET:HA	35:e:103:PHE:O	2.08	0.53
8:I:461:G:H5"	53:y:61:ARG:HH21	1.73	0.53
8:I:1805:G:H4'	10:C:59:LYS:HB3	1.90	0.53
8:I:2509:G:OP1	29:W:18:ALA:HB1	2.09	0.53
8:I:3084:G:O6	8:I:3102:U:C2	2.61	0.53
17:K:64:ARG:NH1	17:K:81:GLU:OE1	2.42	0.53
32:a:118:C:OP1	32:a:310:C:O2'	2.27	0.53
32:a:1007:G:H5'	47:s:14:HIS:CD2	2.39	0.53
32:a:1143:U:O2'	40:j:72:ARG:NH2	2.38	0.53
32:a:1490:G:H1'	32:a:1511:A:H2	1.72	0.53
34:d:192:GLU:O	34:d:195:ILE:HG12	2.08	0.53
41:k:57:SER:C	41:k:59:HIS:H	2.17	0.53
8:I:1637:U:H2'	8:I:1638:C:C6	2.43	0.53
11:D:107:ALA:O	11:D:110:SER:OG	2.21	0.53
28:V:35:LEU:HB3	28:V:41:GLU:HG2	1.89	0.53
28:V:140:GLU:HG3	28:V:141:GLN:OE1	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:W:68:GLU:H	29:W:81:VAL:HG23	1.74	0.53
29:W:69:PHE:HA	29:W:80:ILE:O	2.08	0.53
32:a:939:A:H2'	32:a:940:G:H8	1.74	0.53
8:I:1176:G:HO2'	8:I:1239:A:H61	1.57	0.53
8:I:2003:A:O2'	8:I:2196:C:OP1	2.25	0.53
13:F:85:LYS:HD2	13:F:86:LEU:H	1.74	0.53
32:a:941:C:H2'	32:a:942:A:H8	1.73	0.53
32:a:1051:U:H2'	32:a:1052:G:H8	1.74	0.53
32:a:1118:G:H22	32:a:1137:G:H1	1.57	0.53
32:a:1212:G:P	52:9:53:ARG:HH12	2.31	0.53
34:d:40:ARG:HH21	34:d:41:ILE:HG22	1.72	0.53
39:i:60:PHE:HB2	39:i:66:GLN:NE2	2.18	0.53
8:I:2348:U:H5	8:I:2382:C:H42	1.56	0.52
16:J:60:ASP:OD2	16:J:60:ASP:N	2.40	0.52
32:a:87:A:H2'	32:a:88:G:C8	2.44	0.52
32:a:450:A:C4	32:a:451:A:C6	2.97	0.52
32:a:760:G:H4'	32:a:1506:A:H4'	1.89	0.52
32:a:780:U:OP1	50:A:119:HIS:NE2	2.42	0.52
40:j:52:ILE:HD11	40:j:57:LYS:HD3	1.91	0.52
52:9:30:ILE:O	52:9:34:PRO:HD2	2.08	0.52
2:1:19:LYS:HA	2:1:22:GLU:OE2	2.09	0.52
8:I:2256:G:O2'	23:Q:34:LYS:HE3	2.09	0.52
8:I:2356:A:C6	8:I:2404:U:N3	2.78	0.52
8:I:2557:G:N3	8:I:2558:C:N4	2.56	0.52
13:F:169:THR:OG1	13:F:172:GLU:HG3	2.09	0.52
18:L:85:LEU:HD13	18:L:100:LYS:HB3	1.90	0.52
32:a:1191:U:H4'	40:j:56:HIS:CD2	2.44	0.52
46:q:117:THR:HG21	46:q:127:ARG:HB3	1.91	0.52
50:A:77:THR:HG23	50:A:86:ARG:HB3	1.91	0.52
8:I:630:U:H2'	8:I:631:C:C6	2.45	0.52
8:I:1578:C:H2'	8:I:1579:A:H8	1.74	0.52
8:I:2251:A:H5'	25:S:107:ARG:HH21	1.74	0.52
8:I:2551:C:O4'	13:F:44:ASN:ND2	2.42	0.52
11:D:38:ARG:HA	11:D:97:VAL:HG22	1.92	0.52
13:F:81:ILE:HG12	13:F:87:ARG:HG3	1.91	0.52
32:a:968:A:H8	32:a:1349:A:HO2'	1.53	0.52
34:d:3:ARG:HH12	34:d:110:ARG:HB3	1.74	0.52
8:I:911:A:N1	10:C:226:MET:HE2	2.25	0.52
8:I:1637:U:H2'	8:I:1638:C:H6	1.73	0.52
19:M:47:ILE:HD12	19:M:70:PRO:HG3	1.90	0.52
21:O:47:VAL:HG13	21:O:48:ASN:HB2	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:V:120:THR:HG21	28:V:151:PRO:HD3	1.90	0.52
29:W:41:ARG:NH1	29:W:41:ARG:HB3	2.24	0.52
32:a:136:C:H5'	46:q:44:GLY:O	2.09	0.52
32:a:395:G:O2'	32:a:397:C:OP1	2.25	0.52
32:a:451:A:C6	32:a:471:U:C4	2.98	0.52
32:a:452:G:C5	32:a:471:U:N3	2.77	0.52
32:a:470:U:H4'	32:a:471:U:OP1	2.09	0.52
32:a:529:U:H2'	32:a:530:A:H8	1.74	0.52
32:a:1031:G:H2'	32:a:1032:U:C6	2.45	0.52
8:I:2341:C:H2'	8:I:2342:G:C8	2.44	0.52
8:I:2856:G:H21	11:D:160:VAL:HG21	1.75	0.52
27:U:81:THR:HG21	27:U:98:SER:HB2	1.92	0.52
32:a:1452:G:H2'	32:a:1453:A:C8	2.45	0.52
37:g:47:LEU:HD21	37:g:62:LEU:HD12	1.92	0.52
43:m:91:ARG:NH1	43:m:96:MET:HG2	2.24	0.52
1:b:37:ARG:NH2	8:I:2610:G:O2'	2.42	0.52
8:I:1409:C:H2'	8:I:1410:A:H8	1.75	0.52
8:I:2409:U:H3	8:I:2413:A:H61	1.55	0.52
13:F:130:ASP:OD2	13:F:134:ASN:ND2	2.28	0.52
27:U:74:VAL:HG22	27:U:76:SER:H	1.73	0.52
38:h:70:ARG:HA	38:h:70:ARG:HE	1.75	0.52
43:m:97:PRO:HD2	43:m:97:PRO:O	2.10	0.52
2:1:18:ARG:O	2:1:22:GLU:HG3	2.10	0.52
8:I:1494:C:O2'	8:I:2043:A:N3	2.38	0.52
8:I:2632:C:H5"	18:L:62:LYS:HD3	1.92	0.52
30:Y:16:GLU:OE1	30:Y:16:GLU:N	2.31	0.52
33:c:157:LEU:HD23	33:c:196:ILE:HD13	1.91	0.52
35:e:95:VAL:O	35:e:99:ARG:HG2	2.09	0.52
35:e:180:ARG:HB2	35:e:183:GLU:HG2	1.92	0.52
46:q:121:SER:CB	46:q:124:LYS:HG3	2.39	0.52
48:t:44:LYS:HG3	48:t:83:LEU:HD11	1.91	0.52
3:0:6:ARG:NE	8:I:2257:C:H41	2.07	0.52
8:I:704:C:HO2'	8:I:705:A:H8	1.58	0.52
8:I:1578:C:H2'	8:I:1579:A:C8	2.45	0.52
8:I:1638:C:H2'	8:I:1639:G:C8	2.44	0.52
32:a:123:G:O2'	46:q:58:ARG:NH1	2.43	0.52
32:a:1523:G:H2'	32:a:1524:A:H8	1.74	0.52
42:l:4:ILE:O	42:l:8:VAL:HG13	2.10	0.52
8:I:1200:G:H4'	8:I:1205:C:N4	2.25	0.52
8:I:1808:A:H2'	8:I:1809:A:C8	2.45	0.52
8:I:2602:C:O2'	29:W:58:THR:OG1	2.24	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:E:162:VAL:HG12	12:E:164:ILE:HG23	1.92	0.52
13:F:90:MET:O	13:F:91:PRO:C	2.51	0.52
32:a:37:C:H2'	32:a:38:G:H8	1.73	0.52
32:a:512:G:N7	42:l:50:ARG:NH1	2.58	0.52
32:a:1308:G:N2	32:a:1310:A:H3'	2.25	0.52
42:l:32:GLY:O	42:l:79:MET:HA	2.08	0.52
44:o:84:ARG:HB2	44:o:85:LEU:HD22	1.92	0.52
8:I:307:U:H2'	8:I:308:G:C8	2.45	0.52
8:I:2477:G:H5'	10:C:251:GLY:HA3	1.90	0.52
23:Q:119:GLU:OE1	23:Q:119:GLU:N	2.43	0.52
29:W:43:THR:HG22	29:W:43:THR:O	2.09	0.52
32:a:692:C:OP1	32:a:693:A:O2'	2.25	0.52
32:a:938:G:C2	32:a:939:A:C8	2.98	0.52
32:a:947:G:H21	32:a:1219:A:N6	2.07	0.52
32:a:1000:G:H2'	32:a:1001:C:H6	1.74	0.52
32:a:1109:U:H1'	32:a:1171:A:C5	2.45	0.52
8:I:2829:C:H2'	8:I:2830:G:C8	2.45	0.51
11:D:127:MET:SD	11:D:146:ARG:HA	2.50	0.51
32:a:1022:U:H5"	32:a:1026:G:N7	2.25	0.51
32:a:1306:C:H2'	32:a:1307:U:H6	1.75	0.51
46:q:117:THR:N	46:q:125:ARG:O	2.43	0.51
47:s:19:VAL:HG11	47:s:44:PHE:CD1	2.45	0.51
8:I:804:A:N3	8:I:2681:C:O2'	2.40	0.51
8:I:993:G:H2'	8:I:994:C:H6	1.76	0.51
8:I:1195:U:N3	8:I:1198:A:OP2	2.43	0.51
8:I:1199:A:N7	8:I:1225:A:O2'	2.44	0.51
8:I:2740:G:H5"	8:I:2741:A:H5"	1.92	0.51
18:L:83:ASN:C	18:L:83:ASN:HD22	2.18	0.51
25:S:35:ARG:NH1	25:S:84:VAL:O	2.43	0.51
26:T:79:THR:OG1	26:T:81:ARG:NH1	2.44	0.51
27:U:85:TYR:HE1	27:U:96:ARG:HG3	1.76	0.51
32:a:125:G:H2'	32:a:193:U:C5	2.45	0.51
32:a:389:U:H2'	32:a:390:G:C8	2.44	0.51
32:a:415:G:H2'	32:a:416:G:H8	1.76	0.51
32:a:450:A:C6	32:a:472:G:C5	2.98	0.51
39:i:64:VAL:O	39:i:68:LEU:HG	2.10	0.51
52:9:16:THR:HA	52:9:19:ARG:HG2	1.92	0.51
52:9:64:ASP:HB3	52:9:68:GLY:H	1.74	0.51
1:b:6:ARG:HA	1:b:25:LYS:O	2.10	0.51
8:I:682:C:H2'	8:I:683:C:C6	2.46	0.51
8:I:2025:A:N6	8:I:2062:G:O2'	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:2424:A:H2'	8:I:2425:U:O4'	2.10	0.51
8:I:2430:C:H2'	8:I:2431:A:H8	1.75	0.51
9:B:111:G:H2'	9:B:112:A:C8	2.46	0.51
13:F:44:ASN:OD1	13:F:45:MET:N	2.43	0.51
32:a:449:G:H5"	32:a:450:A:H2'	1.91	0.51
35:e:111:THR:HB	35:e:153:ASP:HB2	1.92	0.51
37:g:81:GLY:H	37:g:84:THR:HG21	1.75	0.51
40:j:12:ALA:HB3	40:j:18:ILE:HD12	1.91	0.51
7:6:27:THR:OG1	7:6:28:LYS:N	2.41	0.51
8:I:293:G:H2'	8:I:294:G:C8	2.45	0.51
8:I:353:G:H2'	8:I:354:G:C8	2.45	0.51
27:U:2:LYS:O	27:U:96:ARG:NH1	2.44	0.51
28:V:175:LEU:HD21	28:V:178:ASN:HB2	1.91	0.51
29:W:81:VAL:HG13	29:W:83:SER:N	2.26	0.51
32:a:115:A:H4'	32:a:116:C:C5	2.46	0.51
32:a:343:A:H5"	32:a:344:C:H5	1.75	0.51
8:I:1133:C:H2'	8:I:1140:G:H2'	1.93	0.51
8:I:2549:A:O2'	8:I:2550:U:O4'	2.28	0.51
8:I:3084:G:O6	8:I:3102:U:O2	2.29	0.51
12:E:47:GLN:NE2	12:E:190:ASN:HD22	2.09	0.51
21:O:75:ARG:O	21:O:79:VAL:HG23	2.11	0.51
22:P:35:ALA:O	22:P:36:LYS:HB2	2.10	0.51
23:Q:64:ARG:HD3	23:Q:100:ILE:HD11	1.93	0.51
32:a:546:C:H2'	32:a:547:C:C6	2.46	0.51
32:a:1109:U:OP1	39:i:32:ARG:NH1	2.43	0.51
32:a:1236:C:H2'	32:a:1237:G:H8	1.76	0.51
38:h:18:ASN:HD21	38:h:74:ILE:HB	1.76	0.51
51:r:38:ILE:HD11	51:r:42:GLY:HA2	1.93	0.51
8:I:942:U:H2'	8:I:943:C:C6	2.45	0.51
8:I:1749:U:H2'	8:I:1750:C:C6	2.46	0.51
8:I:2338:G:H2'	8:I:2339:U:H6	1.75	0.51
19:M:116:ALA:O	19:M:120:ARG:HG2	2.11	0.51
32:a:570:U:H2'	32:a:571:C:C6	2.45	0.51
34:d:15:LEU:HD12	34:d:19:LEU:HD11	1.93	0.51
8:I:340:U:H2'	8:I:341:A:C8	2.46	0.51
8:I:2302:C:H2'	8:I:2303:C:H6	1.76	0.51
9:B:114:C:N3	9:B:115:A:O2'	2.43	0.51
17:K:88:LYS:HD3	17:K:92:ASP:OD1	2.10	0.51
30:Y:7:PRO:O	30:Y:11:ARG:HG3	2.10	0.51
32:a:427:G:H4'	32:a:428:U:OP1	2.09	0.51
32:a:1172:A:H1'	39:i:127:ARG:CZ	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:1157:A:N3	8:I:2724:G:O2'	2.40	0.51
13:F:16:ARG:HA	13:F:20:ARG:HH11	1.75	0.51
16:J:13:ARG:NH2	16:J:49:ASP:O	2.38	0.51
34:d:170:GLY:H	34:d:173:GLN:HA	1.76	0.51
35:e:72:ASP:CG	35:e:76:MET:HB2	2.35	0.51
37:g:75:VAL:HB	37:g:86:GLN:HB3	1.91	0.51
39:i:38:VAL:HG11	39:i:100:LEU:HD23	1.92	0.51
8:I:635:U:H3	8:I:648:G:H1	1.58	0.51
8:I:648:G:H2'	8:I:649:A:H8	1.74	0.51
8:I:1190:U:H4'	8:I:1199:A:H1'	1.91	0.51
8:I:1832:G:H5"	8:I:1833:C:H5'	1.93	0.51
8:I:1953:G:N2	8:I:1976:G:H1	2.04	0.51
10:C:72:LYS:HZ1	10:C:190:ARG:HG2	1.74	0.51
12:E:71:PRO:HG3	12:E:85:THR:HG23	1.93	0.51
13:F:25:LYS:HD3	13:F:25:LYS:N	2.25	0.51
16:J:36:LEU:HD11	16:J:122:LEU:HB2	1.93	0.51
32:a:543:U:H2'	32:a:544:G:H8	1.75	0.51
32:a:997:G:H2'	32:a:998:A:C8	2.45	0.51
8:I:1650:U:H2'	8:I:1651:C:C6	2.45	0.51
14:G:75:ASN:HD21	14:G:139:LYS:HD3	1.76	0.51
26:T:8:ARG:HG2	30:Y:30:PHE:CG	2.46	0.51
32:a:59:U:H2'	32:a:60:G:H8	1.74	0.51
32:a:719:A:H2'	32:a:720:A:C8	2.46	0.51
35:e:131:SER:HB2	35:e:132:PRO:HD3	1.93	0.51
36:f:44:GLY:O	36:f:59:ILE:HA	2.11	0.51
42:l:36:ARG:HB3	42:l:38:TYR:CZ	2.46	0.51
48:t:68:HIS:O	48:t:68:HIS:CG	2.64	0.51
8:I:904:G:H4'	8:I:905:G:H5'	1.93	0.50
8:I:1195:U:O2'	8:I:1197:G:N7	2.35	0.50
8:I:1957:A:N6	8:I:1972:G:H1'	2.26	0.50
8:I:2627:G:H5"	8:I:2628:U:O4'	2.11	0.50
14:G:27:LYS:HD2	14:G:28:GLY:N	2.26	0.50
18:L:75:GLU:HB3	18:L:103:VAL:HG23	1.91	0.50
24:R:81:ASN:HB3	24:R:82:LYS:HG3	1.92	0.50
32:a:819:A:H2'	32:a:820:G:O4'	2.12	0.50
32:a:1435:G:H1	32:a:1453:A:N6	1.96	0.50
36:f:10:LEU:HD12	36:f:11:ASP:N	2.26	0.50
39:i:73:LEU:HD12	39:i:73:LEU:H	1.76	0.50
8:I:1824:C:H2'	8:I:1825:A:H8	1.76	0.50
28:V:125:GLU:OE1	28:V:125:GLU:N	2.44	0.50
32:a:192:A:N6	46:q:55:ARG:HB2	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:1019:C:N4	32:a:1027:G:N3	2.59	0.50
32:a:1051:U:O2'	40:j:59:LYS:NZ	2.44	0.50
34:d:165:TRP:CD1	34:d:165:TRP:H	2.28	0.50
36:f:41:ASP:OD2	36:f:42:ILE:N	2.44	0.50
8:I:690:U:H1'	12:E:97:HIS:HB3	1.93	0.50
8:I:1620:G:H2'	8:I:1621:G:C8	2.46	0.50
8:I:2338:G:H2'	8:I:2339:U:C6	2.46	0.50
8:I:3032:A:H2'	8:I:3033:C:C6	2.46	0.50
9:B:111:G:H2'	9:B:112:A:H8	1.73	0.50
12:E:190:ASN:OD1	12:E:190:ASN:N	2.44	0.50
14:G:81:THR:OG1	14:G:82:GLN:N	2.45	0.50
17:K:34:GLY:N	17:K:37:ASP:OD2	2.38	0.50
19:M:75:THR:HG21	19:M:87:LYS:HE3	1.94	0.50
23:Q:24:TYR:HB3	23:Q:28:ARG:HB2	1.94	0.50
23:Q:77:ASN:OD1	23:Q:77:ASN:N	2.44	0.50
32:a:206:A:C5	32:a:207:A:C5	2.98	0.50
32:a:1167:G:H2'	32:a:1168:A:C8	2.45	0.50
33:c:24:ALA:HB1	33:c:27:GLN:HG2	1.93	0.50
34:d:134:GLN:OE1	34:d:134:GLN:N	2.36	0.50
42:l:73:ASN:N	42:l:73:ASN:OD1	2.42	0.50
45:p:23:ALA:HA	45:p:34:ILE:HG13	1.92	0.50
45:p:75:LYS:O	45:p:81:GLN:NE2	2.41	0.50
8:I:2353:G:N1	8:I:2398:C:OP1	2.42	0.50
8:I:2378:G:H2'	8:I:2379:A:O4'	2.11	0.50
21:O:44:VAL:HG21	21:O:111:LEU:HD11	1.94	0.50
32:a:334:C:H2'	32:a:335:A:C8	2.46	0.50
32:a:609:C:O2	45:p:12:LYS:NZ	2.43	0.50
32:a:1149:A:N7	32:a:1172:A:N6	2.59	0.50
32:a:1379:G:H2'	32:a:1380:G:H8	1.76	0.50
36:f:6:ILE:O	36:f:62:VAL:HA	2.10	0.50
40:j:52:ILE:HD11	40:j:57:LYS:HB3	1.94	0.50
42:l:78:SER:O	42:l:78:SER:OG	2.21	0.50
8:I:910:A:OP1	10:C:218:ARG:NH2	2.39	0.50
14:G:55:ARG:HD2	14:G:56:PRO:HD2	1.94	0.50
17:K:105:GLU:OE2	17:K:105:GLU:N	2.39	0.50
29:W:68:GLU:HG3	29:W:81:VAL:HG23	1.93	0.50
32:a:126:A:H5"	32:a:127:U:H5'	1.93	0.50
32:a:999:C:H2'	32:a:1000:G:C8	2.46	0.50
32:a:1197:U:O3'	33:c:195:ARG:NH2	2.44	0.50
32:a:1347:A:H2'	32:a:1348:G:C8	2.46	0.50
44:o:78:TYR:CZ	44:o:82:ILE:HD11	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:9:44:ALA:O	52:9:47:ALA:HB3	2.12	0.50
3:0:31:THR:O	3:0:32:VAL:C	2.53	0.50
8:I:8:U:H3	8:I:3129:A:H62	1.59	0.50
8:I:152:C:H2'	8:I:153:C:C6	2.47	0.50
8:I:197:A:H61	8:I:200:C:H3'	1.75	0.50
8:I:746:G:H21	8:I:749:U:H6	1.58	0.50
8:I:1656:G:O2'	8:I:1816:A:N6	2.45	0.50
8:I:2036:A:H2'	8:I:2037:A:C8	2.46	0.50
8:I:2816:G:H21	11:D:135:GLN:HE21	1.59	0.50
14:G:39:GLU:OE1	14:G:39:GLU:N	2.33	0.50
16:J:19:ASP:OD2	16:J:21:THR:OG1	2.26	0.50
32:a:458:G:C6	32:a:459:G:H1'	2.47	0.50
32:a:496:G:H2'	32:a:497:G:C8	2.46	0.50
32:a:706:A:H2'	32:a:707:A:H8	1.75	0.50
32:a:1498:G:N3	32:a:1498:G:H2'	2.25	0.50
45:p:73:LEU:O	45:p:77:THR:HG22	2.12	0.50
53:y:19:SER:OG	53:y:20:HIS:N	2.44	0.50
8:I:1704:G:H5"	8:I:1705:G:H5"	1.94	0.50
8:I:2225:C:H2'	8:I:2226:A:H8	1.76	0.50
32:a:592:U:H2'	32:a:593:U:C6	2.47	0.50
32:a:1062:C:H2'	32:a:1063:G:C8	2.46	0.50
32:a:1108:G:N2	39:i:127:ARG:HH22	2.08	0.50
40:j:50:CYS:SG	40:j:62:ARG:HD2	2.51	0.50
45:p:51:ILE:HG12	45:p:53:SER:HG	1.76	0.50
46:q:79:GLU:OE2	46:q:92:ARG:NH1	2.45	0.50
8:I:656:U:H2'	8:I:657:G:O4'	2.11	0.50
8:I:804:A:OP1	12:E:70:LYS:NZ	2.42	0.50
14:G:103:ASN:HB2	14:G:116:ILE:O	2.12	0.50
14:G:150:ARG:NH1	14:G:163:VAL:O	2.45	0.50
32:a:79:C:H2'	32:a:80:U:C6	2.47	0.50
32:a:181:C:N3	32:a:204:G:N2	2.60	0.50
32:a:1141:C:H2'	32:a:1142:G:H8	1.76	0.50
32:a:1312:C:O2	47:s:72:GLY:HA3	2.12	0.50
34:d:31:TYR:O	34:d:33:PRO:HD3	2.11	0.50
35:e:117:GLN:OE1	35:e:126:LEU:HB2	2.12	0.50
37:g:18:TYR:CD1	37:g:59:VAL:HG21	2.47	0.50
37:g:37:SER:HA	37:g:40:GLU:OE2	2.12	0.50
38:h:18:ASN:ND2	38:h:74:ILE:HB	2.27	0.50
42:l:71:GLY:O	42:l:99:ARG:NH1	2.42	0.50
8:I:2746:G:O2'	8:I:2792:U:O2'	2.26	0.50
11:D:56:GLU:OE1	11:D:56:GLU:HA	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:V:130:GLU:OE2	28:V:170:SER:HB3	2.12	0.50
28:V:136:LEU:O	28:V:138:ILE:N	2.45	0.50
32:a:444:U:H2'	32:a:445:C:C6	2.46	0.50
32:a:939:A:O2'	32:a:1325:A:N3	2.41	0.50
32:a:1111:U:H2'	32:a:1112:C:H6	1.77	0.50
33:c:71:ARG:O	33:c:75:VAL:HG23	2.12	0.50
33:c:130:ARG:HB3	33:c:134:ARG:NH1	2.27	0.50
36:f:41:ASP:HB3	36:f:62:VAL:HG22	1.94	0.50
39:i:93:PRO:HD2	39:i:96:GLN:NE2	2.16	0.50
8:I:1198:A:N6	8:I:1202:A:OP1	2.42	0.49
8:I:2338:G:N1	8:I:2426:U:C2	2.80	0.49
8:I:2460:G:H5'	10:C:188:ARG:HH22	1.77	0.49
32:a:178:G:H1'	32:a:179:G:N7	2.27	0.49
32:a:204:G:H4'	48:t:59:ASP:HB2	1.93	0.49
47:s:63:THR:HG22	47:s:66:MET:HG2	1.94	0.49
8:I:167:A:H2'	8:I:168:U:C6	2.47	0.49
8:I:1548:G:O2'	8:I:1820:A:N1	2.45	0.49
8:I:1606:G:H2'	8:I:1607:G:C8	2.46	0.49
14:G:27:LYS:HD2	14:G:28:GLY:H	1.76	0.49
32:a:183:A:O2'	48:t:84:ASN:OD1	2.25	0.49
32:a:381:A:H2'	32:a:382:A:C8	2.47	0.49
32:a:742:U:H2'	32:a:743:G:O4'	2.12	0.49
32:a:815:U:H2'	32:a:816:A:H8	1.78	0.49
32:a:1403:G:H2'	32:a:1404:U:C6	2.47	0.49
7:6:25:ARG:HH21	13:F:108:ASP:CG	2.20	0.49
8:I:2366:C:H2'	8:I:2367:U:C6	2.47	0.49
8:I:2387:U:H2'	8:I:2388:G:C4	2.47	0.49
8:I:2828:A:H2'	8:I:2829:C:H6	1.77	0.49
19:M:87:LYS:HG2	19:M:88:GLY:N	2.27	0.49
32:a:509:C:C4	32:a:520:G:H3'	2.47	0.49
2:1:26:ARG:NH1	30:Y:40:GLN:OE1	2.44	0.49
8:I:366:U:H2'	8:I:367:G:H8	1.77	0.49
8:I:395:G:H2'	8:I:396:G:H8	1.78	0.49
8:I:635:U:H2'	8:I:636:U:C6	2.47	0.49
8:I:1295:A:H2'	8:I:1296:C:C6	2.48	0.49
8:I:1676:U:H2'	8:I:1677:A:H8	1.77	0.49
28:V:151:PRO:HB3	28:V:179:VAL:HG12	1.95	0.49
32:a:205:G:O3'	32:a:206:A:O4'	2.29	0.49
32:a:428:U:OP1	34:d:9:THR:OG1	2.12	0.49
32:a:493:A:P	42:l:115:SER:HG	2.35	0.49
33:c:161:GLU:HB2	50:A:66:ARG:HH12	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h:3:MET:SD	38:h:4:THR:N	2.84	0.49
7:6:43:PRO:HB2	7:6:45:TYR:HE1	1.77	0.49
14:G:33:LEU:HD21	14:G:137:ILE:HD12	1.94	0.49
22:P:14:ASP:OD2	22:P:14:ASP:N	2.44	0.49
32:a:38:G:H2'	32:a:39:C:C6	2.48	0.49
32:a:82:U:H2'	32:a:83:U:C5	2.46	0.49
34:d:98:TYR:OH	34:d:104:ARG:O	2.30	0.49
52:9:9:LYS:HD2	52:9:12:ARG:HD3	1.95	0.49
1:b:15:ALA:HB1	1:b:43:LEU:HD11	1.94	0.49
8:I:1053:U:H2'	8:I:1054:G:H8	1.78	0.49
43:m:4:LEU:HD11	43:m:60:ILE:HD12	1.94	0.49
1:b:26:ASN:ND2	1:b:28:ARG:H	2.11	0.49
8:I:654:G:H2'	8:I:655:G:H5"	1.94	0.49
10:C:8:PRO:HB3	10:C:14:ARG:HG2	1.95	0.49
10:C:69:ARG:NH2	10:C:128:GLY:O	2.37	0.49
20:N:7:GLY:O	20:N:9:ARG:NH1	2.45	0.49
32:a:76:G:H22	32:a:93:U:H1'	1.77	0.49
32:a:406:G:OP1	34:d:5:THR:HA	2.13	0.49
32:a:783:A:H1'	32:a:785:A:N7	2.28	0.49
36:f:10:LEU:H	36:f:59:ILE:HG12	1.77	0.49
40:j:56:HIS:ND1	40:j:56:HIS:O	2.46	0.49
8:I:1723:C:H2'	8:I:1724:G:H8	1.78	0.49
8:I:2356:A:N6	8:I:2404:U:N3	2.61	0.49
28:V:101:GLY:HA2	28:V:135:ALA:HA	1.95	0.49
32:a:322:U:H2'	32:a:323:G:O4'	2.13	0.49
32:a:736:A:H2'	32:a:737:G:C8	2.48	0.49
35:e:104:ARG:HG3	35:e:180:ARG:HH22	1.77	0.49
38:h:81:SER:OG	38:h:126:GLU:OE2	2.24	0.49
40:j:4:GLN:HB3	40:j:76:ILE:HG21	1.94	0.49
40:j:29:VAL:O	40:j:32:THR:OG1	2.27	0.49
47:s:13:GLU:HG3	47:s:14:HIS:N	2.27	0.49
8:I:154:C:H2'	8:I:155:G:H8	1.77	0.49
8:I:765:C:H2'	8:I:766:G:H8	1.76	0.49
8:I:1627:C:H2'	8:I:1628:G:H8	1.78	0.49
8:I:2316:U:O3'	53:y:21:SER:OG	2.28	0.49
8:I:2471:U:H2'	8:I:2472:G:C8	2.47	0.49
10:C:108:PRO:HD2	10:C:111:LEU:HD12	1.95	0.49
14:G:164:ARG:HG2	14:G:170:ILE:HD11	1.94	0.49
32:a:491:G:H2'	32:a:492:C:C6	2.47	0.49
32:a:615:U:H2'	32:a:616:G:H8	1.78	0.49
32:a:802:C:O2'	32:a:894:A:N1	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:915:G:H2'	32:a:916:A:C8	2.48	0.49
32:a:998:A:H2'	32:a:999:C:O4'	2.13	0.49
8:I:637:C:H2'	8:I:638:C:C6	2.48	0.49
8:I:1267:G:N2	16:J:108:MET:HE2	2.28	0.49
8:I:2529:U:OP1	8:I:2618:U:O2'	2.31	0.49
19:M:27:VAL:HG13	19:M:105:GLU:HG2	1.94	0.49
25:S:93:LYS:HB3	25:S:105:ARG:HD2	1.93	0.49
32:a:711:C:H5"	51:r:46:SER:HA	1.95	0.49
32:a:1513:G:OP2	49:x:11:ARG:NH2	2.46	0.49
51:r:27:ASP:OD1	51:r:29:LYS:HB2	2.13	0.49
8:I:471:G:H22	8:I:481:U:H3	1.61	0.48
8:I:2551:C:OP1	13:F:75:ARG:NE	2.46	0.48
24:R:17:VAL:HB	24:R:100:VAL:HG21	1.95	0.48
32:a:1262:G:H2'	32:a:1263:G:H8	1.78	0.48
39:i:56:LEU:HB3	39:i:66:GLN:HE21	1.76	0.48
39:i:151:ARG:OXT	50:A:79:ARG:NH1	2.41	0.48
42:l:3:THR:O	42:l:6:GLN:N	2.46	0.48
51:r:17:LEU:HB2	51:r:37:PHE:HE1	1.78	0.48
3:0:27:LEU:C	3:0:27:LEU:HD12	2.38	0.48
8:I:616:A:C2	8:I:2281:C:H5'	2.48	0.48
8:I:718:G:H5'	8:I:719:U:C2	2.47	0.48
8:I:1039:A:H2'	8:I:1040:A:C8	2.48	0.48
8:I:3047:G:H2'	8:I:3048:C:C6	2.49	0.48
14:G:5:GLY:O	14:G:70:ARG:NH2	2.44	0.48
32:a:461:U:H3'	32:a:462:C:C6	2.49	0.48
32:a:830:U:O4	32:a:840:G:O6	2.32	0.48
32:a:1335:G:H4'	39:i:145:ALA:HB3	1.95	0.48
32:a:1434:G:H5"	32:a:1435:G:C8	2.48	0.48
36:f:5:GLU:OE1	51:r:29:LYS:NZ	2.35	0.48
41:k:88:GLY:HA2	41:k:90:ARG:NH2	2.27	0.48
43:m:42:ASP:OD1	43:m:44:ARG:NH1	2.46	0.48
8:I:334:C:H2'	8:I:335:A:H8	1.78	0.48
8:I:1657:A:H4'	8:I:1658:A:H5'	1.96	0.48
8:I:2356:A:C6	8:I:2404:U:C2	3.01	0.48
14:G:165:TYR:HB2	14:G:168:GLU:HG2	1.96	0.48
32:a:11:A:C6	34:d:201:LYS:HB3	2.48	0.48
41:k:60:VAL:HG11	41:k:75:LEU:HB3	1.95	0.48
43:m:33:ILE:O	43:m:37:THR:HG23	2.13	0.48
44:o:36:ILE:HG23	44:o:56:LEU:HD11	1.95	0.48
44:o:80:SER:O	44:o:83:GLU:HG3	2.13	0.48
1:b:13:SER:C	1:b:15:ALA:H	2.21	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:19:TYR:CE1	1:b:41:PRO:CG	2.96	0.48
8:I:170:G:O2'	8:I:2446:C:O2'	2.31	0.48
8:I:342:C:H2'	8:I:343:C:C6	2.49	0.48
8:I:861:C:H2'	8:I:862:G:O4'	2.14	0.48
8:I:1618:C:H2'	8:I:1619:U:O4'	2.14	0.48
8:I:2636:C:H2'	8:I:2637:A:H8	1.78	0.48
8:I:2750:C:H2'	8:I:2751:G:O4'	2.13	0.48
14:G:150:ARG:HG3	14:G:151:ARG:H	1.78	0.48
16:J:88:THR:OG1	16:J:91:GLU:HG3	2.13	0.48
32:a:186:G:H2'	32:a:187:G:C8	2.48	0.48
32:a:210:C:H2'	32:a:211:G:O4'	2.14	0.48
32:a:1097:G:H5"	33:c:172:ARG:HG2	1.96	0.48
53:y:5:CYS:SG	53:y:8:THR:OG1	2.65	0.48
4:2:5:LYS:HG2	8:I:1854:G:N3	2.29	0.48
8:I:1442:G:H21	8:I:1838:A:H62	1.61	0.48
32:a:48:U:OP1	32:a:306:C:O2'	2.25	0.48
32:a:971:A:C4	32:a:1311:A:C2	3.02	0.48
32:a:1247:G:H3'	32:a:1271:A:H61	1.79	0.48
50:A:79:ARG:HD3	50:A:84:VAL:HG11	1.94	0.48
8:I:311:C:H2'	8:I:312:G:H8	1.79	0.48
8:I:1063:C:H2'	8:I:1064:G:H8	1.79	0.48
8:I:1232:A:H5"	8:I:1233:C:H5	1.77	0.48
8:I:1581:A:OP2	8:I:1622:G:N2	2.46	0.48
8:I:2373:A:N6	8:I:2392:C:O2	2.46	0.48
12:E:26:LEU:HB3	12:E:30:LEU:HB3	1.95	0.48
28:V:14:ARG:NH1	28:V:17:THR:HG22	2.28	0.48
28:V:84:HIS:HD2	28:V:91:GLN:NE2	2.12	0.48
29:W:41:ARG:HB3	29:W:41:ARG:CZ	2.43	0.48
32:a:334:C:O2'	32:a:1426:A:N3	2.38	0.48
32:a:389:U:H2'	32:a:390:G:H8	1.77	0.48
34:d:126:ASN:N	34:d:126:ASN:OD1	2.45	0.48
1:b:6:ARG:CZ	8:I:2523:C:H5	2.26	0.48
8:I:366:U:H2'	8:I:367:G:C8	2.49	0.48
8:I:446:A:O2'	8:I:447:G:O4'	2.26	0.48
8:I:451:C:H2'	8:I:452:A:C8	2.48	0.48
8:I:1177:A:H61	14:G:3:ARG:HH22	1.61	0.48
8:I:1980:U:H2'	8:I:1981:C:C6	2.49	0.48
21:O:112:ALA:O	21:O:116:ARG:HG3	2.14	0.48
32:a:139:U:H4'	32:a:207:A:C8	2.47	0.48
32:a:615:U:H4'	45:p:11:GLY:HA2	1.96	0.48
32:a:1523:G:H2'	32:a:1524:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:j:88:MET:C	40:j:88:MET:HE2	2.39	0.48
42:l:42:PRO:HD2	42:l:48:ALA:O	2.13	0.48
48:t:24:VAL:HG11	48:t:66:VAL:HG21	1.95	0.48
8:I:196:G:H2'	8:I:197:A:O4'	2.14	0.48
8:I:2557:G:H1'	8:I:2558:C:C5	2.48	0.48
12:E:60:THR:HG22	12:E:63:GLU:HG3	1.95	0.48
27:U:88:ASP:HB3	27:U:93:LYS:O	2.12	0.48
32:a:457:G:N2	32:a:465:U:O2	2.35	0.48
32:a:705:G:H2'	32:a:706:A:H8	1.78	0.48
43:m:91:ARG:HB3	43:m:96:MET:O	2.13	0.48
45:p:37:ILE:HG23	45:p:52:ASN:HB2	1.96	0.48
50:A:70:SER:HB2	50:A:90:CYS:HB2	1.95	0.48
3:0:3:VAL:HG12	8:I:2253:A:C2	2.49	0.48
6:4:19:ARG:NE	8:I:2994:U:OP2	2.46	0.48
8:I:2338:G:C2	8:I:2426:U:C2	3.02	0.48
14:G:112:HIS:O	14:G:112:HIS:CG	2.67	0.48
16:J:73:MET:SD	16:J:88:THR:HG22	2.54	0.48
32:a:271:C:H2'	32:a:272:A:H8	1.79	0.48
35:e:120:ALA:HB2	35:e:170:ALA:HA	1.95	0.48
39:i:42:LEU:HD21	39:i:82:PHE:CG	2.48	0.48
39:i:69:ILE:HG12	39:i:100:LEU:HD11	1.96	0.48
52:9:64:ASP:HB3	52:9:68:GLY:N	2.29	0.48
8:I:570:G:OP2	27:U:43:LYS:HG2	2.14	0.48
8:I:588:G:N1	8:I:591:A:OP2	2.47	0.48
8:I:829:G:O2'	8:I:1867:A:N3	2.43	0.48
8:I:1447:U:H2'	8:I:1448:G:H8	1.79	0.48
8:I:2335:U:H2'	8:I:2336:C:C6	2.49	0.48
8:I:2346:U:O4	8:I:2417:U:O2'	2.29	0.48
9:B:48:C:H2'	9:B:49:G:C8	2.48	0.48
10:C:162:SER:HB3	10:C:195:GLU:HB3	1.95	0.48
23:Q:120:ASP:CG	23:Q:121:VAL:H	2.22	0.48
26:T:48:LYS:O	26:T:48:LYS:HD3	2.14	0.48
32:a:381:A:H2'	32:a:382:A:H8	1.79	0.48
32:a:748:U:H2'	32:a:749:G:O4'	2.13	0.48
32:a:1043:U:O2'	32:a:1046:A:OP2	2.30	0.48
34:d:182:GLU:HB3	34:d:185:GLN:HG2	1.96	0.48
3:0:28:VAL:HG22	3:0:38:LYS:HE3	1.96	0.47
8:I:617:A:H3'	8:I:618:U:C6	2.48	0.47
8:I:761:C:O2	8:I:779:U:N3	2.47	0.47
8:I:1409:C:H2'	8:I:1410:A:C8	2.49	0.47
8:I:1446:C:H2'	8:I:1447:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:1607:G:H2'	8:I:1608:G:C8	2.49	0.47
8:I:2016:U:O2'	8:I:2847:U:H5'	2.13	0.47
8:I:2339:U:C2	8:I:2340:A:C8	3.02	0.47
8:I:2376:U:O2'	8:I:2377:C:O4'	2.32	0.47
19:M:17:GLN:HG2	19:M:39:HIS:HB3	1.95	0.47
19:M:35:GLN:OE1	19:M:130:ARG:NH2	2.34	0.47
21:O:104:TYR:OH	21:O:116:ARG:NH2	2.47	0.47
32:a:208:A:H1'	32:a:209:G:H1'	1.96	0.47
32:a:323:G:N1	32:a:326:A:OP2	2.46	0.47
32:a:492:C:OP1	42:l:114:ARG:NH1	2.37	0.47
32:a:738:U:H2'	32:a:739:A:O4'	2.14	0.47
32:a:1517:C:H2'	32:a:1518:G:C8	2.48	0.47
40:j:22:ALA:HA	40:j:25:ILE:HG22	1.96	0.47
8:I:2795:G:H2'	8:I:2796:C:C6	2.49	0.47
8:I:2819:G:N2	8:I:2819:G:OP2	2.47	0.47
8:I:3071:U:H2'	8:I:3072:A:C8	2.49	0.47
32:a:44:G:H2'	32:a:45:G:C8	2.49	0.47
32:a:179:G:H3'	32:a:180:A:H8	1.78	0.47
32:a:1185:G:O6	33:c:3:GLN:NE2	2.47	0.47
32:a:1489:C:OP1	50:A:47:ARG:NH1	2.48	0.47
47:s:48:THR:HA	47:s:60:VAL:O	2.13	0.47
49:x:24:THR:O	49:x:28:ARG:HG3	2.14	0.47
8:I:84:A:N7	8:I:100:U:N3	2.63	0.47
8:I:293:G:O5'	8:I:338:G:O2'	2.23	0.47
8:I:1298:U:H2'	8:I:1299:C:C6	2.49	0.47
8:I:2700:U:H2'	8:I:2701:U:C6	2.49	0.47
29:W:56:ASP:HB3	29:W:58:THR:HG23	1.96	0.47
32:a:29:A:H2	34:d:201:LYS:HE2	1.79	0.47
32:a:44:G:H2'	32:a:45:G:H8	1.79	0.47
32:a:1154:C:H2'	32:a:1155:G:C8	2.49	0.47
1:b:26:ASN:HD22	1:b:28:ARG:H	1.62	0.47
8:I:2363:A:C6	8:I:2400:U:H1'	2.49	0.47
11:D:94:GLU:H	11:D:94:GLU:CD	2.22	0.47
24:R:9:LYS:HD2	24:R:41:ALA:HB2	1.96	0.47
29:W:59:LEU:CD2	29:W:80:ILE:HG13	2.45	0.47
32:a:1339:G:HO2'	32:a:1366:G:H1	1.55	0.47
32:a:1503:C:OP1	49:x:11:ARG:HB2	2.15	0.47
32:a:1515:U:H2'	32:a:1516:G:H8	1.79	0.47
34:d:144:SER:O	34:d:147:THR:OG1	2.31	0.47
37:g:56:THR:OG1	37:g:57:ASP:N	2.47	0.47
8:I:58:G:O2'	8:I:73:A:N1	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:845:A:OP2	44:o:88:ARG:HD2	2.14	0.47
8:I:1270:U:O2	8:I:1272:A:N6	2.48	0.47
13:F:45:MET:HE2	13:F:64:LEU:HG	1.95	0.47
32:a:1004:C:H2'	32:a:1005:U:C6	2.50	0.47
37:g:57:ASP:HB3	37:g:60:ILE:HG12	1.96	0.47
46:q:124:LYS:HB3	46:q:124:LYS:HE2	1.66	0.47
48:t:28:LEU:HD21	48:t:58:LEU:HD12	1.96	0.47
8:I:247:G:N2	8:I:473:C:O2'	2.33	0.47
12:E:12:ASP:OD1	12:E:12:ASP:N	2.46	0.47
13:F:112:SER:OG	13:F:113:ILE:HG23	2.14	0.47
20:N:89:ASP:N	20:N:89:ASP:OD1	2.46	0.47
32:a:108:G:H2'	32:a:109:U:C6	2.50	0.47
32:a:262:A:H2'	32:a:263:C:C6	2.50	0.47
32:a:496:G:H2'	32:a:497:G:H8	1.80	0.47
32:a:728:C:H2'	32:a:729:U:H6	1.78	0.47
32:a:1225:G:H2'	32:a:1226:C:C6	2.50	0.47
32:a:1369:U:H2'	32:a:1370:A:C8	2.50	0.47
38:h:35:ASN:O	38:h:39:ILE:HG22	2.15	0.47
39:i:51:LEU:HG	39:i:52:ASN:ND2	2.30	0.47
8:I:162:A:OP2	8:I:167:A:N6	2.47	0.47
8:I:540:C:N4	8:I:543:A:OP2	2.34	0.47
8:I:1261:U:H2'	8:I:1262:A:C8	2.50	0.47
8:I:1381:G:N7	18:L:20:ARG:NH2	2.44	0.47
8:I:1553:U:H2'	8:I:1554:G:H8	1.78	0.47
8:I:1750:C:H2'	8:I:1751:C:C6	2.50	0.47
8:I:2036:A:H2'	8:I:2037:A:H8	1.79	0.47
8:I:2485:A:H2'	8:I:2486:C:H6	1.78	0.47
9:B:44:A:C4	9:B:45:A:C8	3.03	0.47
12:E:67:GLY:HA3	12:E:86:ARG:HG2	1.97	0.47
23:Q:44:ASN:HD21	24:R:79:PHE:HB3	1.78	0.47
28:V:50:HIS:HA	28:V:53:ALA:HB3	1.96	0.47
32:a:454:U:C4	32:a:455:C:C2	3.03	0.47
32:a:1294:U:C6	43:m:17:VAL:HG21	2.50	0.47
32:a:1417:U:H2'	32:a:1418:A:C8	2.50	0.47
33:c:190:LYS:HG3	33:c:195:ARG:NH1	2.29	0.47
35:e:46:VAL:HG22	35:e:68:VAL:HG23	1.96	0.47
40:j:57:LYS:HD3	52:9:81:ARG:HE	1.79	0.47
40:j:75:ASP:OD1	40:j:75:ASP:N	2.48	0.47
43:m:31:ASN:OD1	43:m:32:GLU:N	2.48	0.47
43:m:51:GLU:O	43:m:54:ILE:HG22	2.14	0.47
8:I:152:C:H2'	8:I:153:C:H6	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:219:G:H2'	8:I:220:G:C8	2.50	0.47
8:I:247:G:H21	8:I:473:C:HO2'	1.57	0.47
8:I:334:C:H2'	8:I:335:A:C8	2.49	0.47
8:I:1331:C:H2'	8:I:1332:C:H6	1.80	0.47
8:I:1446:C:H2'	8:I:1447:U:H6	1.80	0.47
8:I:1954:U:C2	8:I:1955:G:C8	3.03	0.47
8:I:2151:A:H62	50:A:41:LYS:NZ	2.12	0.47
31:Z:50:VAL:HG13	31:Z:53:LEU:HD12	1.96	0.47
32:a:124:U:P	46:q:58:ARG:HH12	2.37	0.47
32:a:179:G:H21	32:a:223:U:C5'	2.27	0.47
32:a:426:U:OP2	32:a:427:G:O2'	2.27	0.47
32:a:659:A:O2'	44:o:46:HIS:HB3	2.14	0.47
32:a:699:C:H2'	32:a:700:A:H8	1.80	0.47
33:c:12:LEU:HA	33:c:16:THR:HG23	1.96	0.47
40:j:65:PHE:HD1	52:9:98:LYS:HA	1.79	0.47
8:I:1140:G:OP2	23:Q:66:ASN:ND2	2.46	0.47
8:I:1771:G:H1	8:I:1776:A:N6	2.12	0.47
8:I:2768:G:N7	14:G:173:LYS:NZ	2.63	0.47
8:I:2865:G:O2'	8:I:3019:A:N1	2.44	0.47
12:E:171:GLY:O	12:E:175:VAL:HG22	2.15	0.47
13:F:81:ILE:H	13:F:87:ARG:CG	2.27	0.47
29:W:21:LEU:HD22	29:W:40:GLN:HA	1.97	0.47
29:W:50:ASN:HB3	29:W:63:THR:HG22	1.97	0.47
32:a:406:G:O6	32:a:434:U:O4	2.33	0.47
32:a:1111:U:H2'	32:a:1112:C:C6	2.49	0.47
32:a:1161:A:H2'	32:a:1162:A:C8	2.50	0.47
39:i:34:LYS:HB2	39:i:96:GLN:HG3	1.97	0.47
50:A:23:PHE:CE1	50:A:35:ARG:HD3	2.49	0.47
8:I:340:U:H2'	8:I:341:A:H8	1.79	0.47
8:I:683:C:H2'	8:I:684:U:C6	2.50	0.47
8:I:718:G:H5'	8:I:719:U:N3	2.29	0.47
8:I:2368:G:H5'	8:I:2395:A:C5	2.50	0.47
8:I:2383:C:O2'	8:I:2385:G:O6	2.23	0.47
8:I:3006:C:H4'	16:J:87:ARG:HH12	1.79	0.47
8:I:3102:U:O4	22:P:20:ASN:ND2	2.42	0.47
11:D:115:THR:HG23	11:D:207:MET:HB3	1.97	0.47
32:a:521:G:H4'	50:A:65:ARG:HH12	1.80	0.47
32:a:1008:A:H2'	32:a:1009:G:C8	2.50	0.47
32:a:1142:G:N2	40:j:41:PRO:HD2	2.29	0.47
32:a:1365:U:H2'	32:a:1366:G:O4'	2.15	0.47
40:j:85:ASP:HA	40:j:88:MET:SD	2.55	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:m:58:ASP:OD2	43:m:58:ASP:N	2.46	0.47
53:y:37:THR:HA	53:y:48:ARG:HA	1.96	0.47
7:6:38:CYS:SG	7:6:39:SER:N	2.88	0.46
8:I:672:G:H2'	8:I:2268:A:N7	2.30	0.46
8:I:855:G:HO2'	8:I:856:A:H8	1.62	0.46
8:I:961:U:H2'	8:I:962:G:H8	1.80	0.46
8:I:2127:A:H2'	8:I:2128:A:C8	2.50	0.46
13:F:64:LEU:HD23	13:F:64:LEU:HA	1.74	0.46
32:a:135:G:O2'	46:q:46:LYS:O	2.30	0.46
32:a:275:G:H5'	46:q:70:MET:SD	2.55	0.46
32:a:1047:U:H5"	33:c:163:SER:CB	2.44	0.46
32:a:1305:U:H2'	32:a:1306:C:C6	2.49	0.46
33:c:51:ILE:HD12	33:c:67:ILE:HG22	1.97	0.46
36:f:10:LEU:HD13	36:f:84:SER:O	2.15	0.46
44:o:6:GLU:O	44:o:10:GLU:HG3	2.15	0.46
1:b:34:LEU:CD2	1:b:36:LEU:HG	2.43	0.46
3:0:16:ARG:NH2	8:I:1395:G:OP1	2.43	0.46
8:I:592:G:N2	8:I:1365:U:H4'	2.31	0.46
8:I:1129:A:H2'	8:I:1130:A:C8	2.50	0.46
8:I:1303:C:N4	8:I:1305:U:H4'	2.30	0.46
8:I:2636:C:H2'	8:I:2637:A:C8	2.50	0.46
13:F:128:GLN:HA	13:F:135:TYR:HB3	1.96	0.46
32:a:493:A:OP1	42:l:115:SER:OG	2.31	0.46
32:a:585:C:H2'	32:a:586:G:O4'	2.16	0.46
32:a:945:U:H2'	32:a:946:G:C8	2.50	0.46
36:f:6:ILE:HA	36:f:89:LYS:O	2.16	0.46
38:h:81:SER:HA	38:h:87:VAL:HG12	1.96	0.46
42:l:50:ARG:HG3	42:l:66:TYR:HE2	1.81	0.46
42:l:67:ILE:HD11	42:l:74:LEU:HD12	1.98	0.46
1:b:28:ARG:HA	1:b:28:ARG:NE	2.30	0.46
8:I:680:A:OP1	8:I:1386:U:O2'	2.25	0.46
8:I:1713:G:O2'	8:I:1753:G:O6	2.22	0.46
8:I:1808:A:H2'	8:I:1809:A:H8	1.80	0.46
8:I:1917:C:H2'	8:I:1918:C:C6	2.51	0.46
8:I:2151:A:H4'	8:I:2152:C:H5"	1.97	0.46
8:I:2334:U:H2'	8:I:2335:U:C6	2.51	0.46
8:I:2746:G:HO2'	8:I:2792:U:HO2'	1.56	0.46
13:F:124:LEU:HD13	13:F:137:PHE:CE2	2.50	0.46
16:J:36:LEU:O	16:J:51:GLY:HA3	2.16	0.46
29:W:68:GLU:H	29:W:81:VAL:CG2	2.27	0.46
32:a:615:U:H2'	32:a:616:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:769:G:H2'	32:a:770:C:C6	2.51	0.46
32:a:909:G:O3'	49:x:6:LYS:NZ	2.43	0.46
32:a:929:C:C2	32:a:930:A:C8	3.03	0.46
32:a:978:C:H2'	32:a:979:U:C6	2.49	0.46
32:a:1319:C:H2'	32:a:1320:C:C6	2.50	0.46
37:g:27:VAL:HG22	37:g:43:VAL:HG11	1.96	0.46
43:m:96:MET:HG3	43:m:97:PRO:HD3	1.97	0.46
48:t:60:LYS:HG2	48:t:64:LYS:HE2	1.98	0.46
51:r:15:LYS:O	51:r:15:LYS:HG2	2.15	0.46
1:b:27:ARG:HH11	1:b:28:ARG:NH2	2.14	0.46
8:I:87:U:H5"	8:I:88:G:H5'	1.97	0.46
8:I:1958:C:C4	8:I:1971:G:N2	2.84	0.46
8:I:2707:A:O2'	19:M:56:ARG:NH1	2.44	0.46
11:D:36:VAL:O	11:D:52:LEU:HA	2.15	0.46
32:a:182:C:H2'	32:a:183:A:C8	2.51	0.46
32:a:463:U:H5"	45:p:80:TRP:HZ3	1.80	0.46
32:a:1125:C:H3'	32:a:1126:G:H8	1.80	0.46
44:o:37:ALA:O	44:o:41:GLU:HG2	2.15	0.46
48:t:35:PHE:CE2	48:t:79:LEU:HD22	2.50	0.46
8:I:1626:G:H2'	8:I:1627:C:C6	2.51	0.46
8:I:1634:A:H3'	8:I:1635:C:H6	1.80	0.46
9:B:48:C:H2'	9:B:49:G:H8	1.80	0.46
9:B:83:C:H2'	9:B:84:C:O4'	2.16	0.46
19:M:6:LYS:HB2	19:M:6:LYS:NZ	2.31	0.46
32:a:35:A:H2'	32:a:36:A:C8	2.51	0.46
32:a:503:U:H2'	32:a:504:A:C8	2.50	0.46
32:a:529:U:H2'	32:a:530:A:C8	2.50	0.46
32:a:602:C:C2	32:a:603:U:C5	3.04	0.46
32:a:1242:A:H2'	32:a:1243:A:C8	2.51	0.46
36:f:68:ALA:HB3	36:f:71:THR:HG23	1.97	0.46
37:g:40:GLU:HB2	37:g:44:TYR:HE1	1.81	0.46
41:k:66:ARG:NH1	41:k:66:ARG:HB2	2.31	0.46
44:o:25:PRO:HB2	44:o:70:ILE:HD11	1.97	0.46
8:I:992:A:H2'	8:I:993:G:C8	2.51	0.46
8:I:2092:G:H2'	8:I:2121:G:N2	2.30	0.46
8:I:2262:C:H2'	8:I:2263:G:C8	2.48	0.46
13:F:20:ARG:NH2	13:F:37:THR:HG23	2.31	0.46
32:a:913:U:H2'	32:a:914:U:C6	2.51	0.46
32:a:1097:G:H2'	32:a:1098:C:C6	2.51	0.46
32:a:1424:C:H2'	32:a:1425:G:O4'	2.16	0.46
32:a:1485:A:H2'	32:a:1486:A:C4'	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h:74:ILE:HG21	38:h:77:LEU:HD23	1.98	0.46
45:p:58:TYR:O	45:p:62:VAL:HG22	2.16	0.46
2:1:19:LYS:HB3	26:T:97:GLY:HA2	1.97	0.46
6:4:2:LYS:NZ	6:4:31:ARG:O	2.49	0.46
8:I:289:A:N6	8:I:301:G:H1'	2.31	0.46
8:I:305:U:H2'	8:I:306:G:H8	1.78	0.46
8:I:1621:G:H2'	8:I:1622:G:C8	2.51	0.46
8:I:2166:A:H2'	8:I:2167:G:O4'	2.15	0.46
8:I:2484:A:H2'	8:I:2485:A:C8	2.51	0.46
8:I:2886:G:H2'	8:I:2887:U:C6	2.51	0.46
21:O:13:ARG:HD2	21:O:102:TYR:CE1	2.51	0.46
32:a:730:C:O2'	44:o:42:HIS:ND1	2.41	0.46
32:a:1061:U:H2'	32:a:1062:C:H6	1.81	0.46
32:a:1509:G:N1	32:a:1512:A:OP2	2.48	0.46
36:f:46:ARG:NH2	36:f:59:ILE:O	2.49	0.46
43:m:90:LEU:HG	43:m:94:ARG:HH12	1.80	0.46
51:r:18:LEU:HD21	51:r:26:VAL:HG23	1.97	0.46
1:b:6:ARG:NH2	8:I:2523:C:C5	2.83	0.46
8:I:221:A:N3	8:I:236:U:O2'	2.35	0.46
8:I:1177:A:C8	8:I:1240:A:C6	3.04	0.46
8:I:2637:A:H2'	8:I:2638:C:C6	2.51	0.46
8:I:3047:G:H2'	8:I:3048:C:H6	1.81	0.46
11:D:37:THR:HA	11:D:51:GLN:O	2.15	0.46
14:G:4:ILE:O	14:G:7:GLN:HG2	2.15	0.46
32:a:727:U:O2'	36:f:90:VAL:O	2.32	0.46
32:a:1121:A:H62	32:a:1136:G:H1'	1.79	0.46
32:a:1159:U:H4'	32:a:1160:C:C5	2.51	0.46
51:r:80:ARG:HD3	51:r:80:ARG:HA	1.77	0.46
8:I:763:C:N4	8:I:764:G:O6	2.49	0.46
8:I:1621:G:C6	8:I:1622:G:C6	3.04	0.46
8:I:1767:A:H2'	8:I:1768:G:O4'	2.16	0.46
8:I:2275:U:H2'	8:I:2276:C:C6	2.51	0.46
8:I:2344:U:H2'	8:I:2345:U:C6	2.51	0.46
8:I:2835:G:H5"	10:C:243:GLY:HA3	1.98	0.46
8:I:3071:U:H2'	8:I:3072:A:H8	1.81	0.46
13:F:21:ASP:HB3	13:F:25:LYS:NZ	2.30	0.46
13:F:52:ARG:HG3	13:F:85:LYS:HE3	1.97	0.46
14:G:35:LEU:HD11	14:G:72:LEU:HB3	1.98	0.46
14:G:55:ARG:HE	14:G:62:ASN:CG	2.24	0.46
18:L:110:LYS:HE2	18:L:127:LYS:HG2	1.98	0.46
32:a:48:U:H2'	32:a:49:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:728:C:H2'	32:a:729:U:C6	2.51	0.46
32:a:1334:C:H2'	32:a:1335:G:C8	2.51	0.46
35:e:75:GLY:O	35:e:105:VAL:N	2.45	0.46
40:j:14:ASP:CG	40:j:17:ALA:HB3	2.41	0.46
8:I:749:U:O2'	8:I:751:G:N7	2.48	0.46
8:I:2303:C:H2'	8:I:2304:C:H6	1.80	0.46
8:I:3048:C:H2'	8:I:3049:C:H6	1.81	0.46
11:D:129:ARG:HD3	11:D:130:HIS:NE2	2.30	0.46
14:G:55:ARG:HG2	14:G:62:ASN:HB3	1.98	0.46
32:a:1520:C:H2'	32:a:1521:U:C6	2.51	0.46
37:g:95:ARG:HH11	37:g:99:LEU:HD11	1.81	0.46
52:9:43:THR:C	52:9:45:GLN:N	2.71	0.46
1:b:33:ARG:HD2	1:b:51:GLU:O	2.16	0.45
8:I:635:U:H2'	8:I:636:U:H6	1.81	0.45
8:I:752:G:H2'	8:I:753:G:H8	1.80	0.45
8:I:761:C:H2'	8:I:762:A:C8	2.50	0.45
8:I:1635:C:H2'	8:I:1636:U:C6	2.51	0.45
8:I:2617:G:H2'	8:I:2618:U:C6	2.51	0.45
11:D:130:HIS:CD2	11:D:165:ARG:HB3	2.52	0.45
13:F:53:ASP:O	13:F:55:LYS:N	2.50	0.45
27:U:89:GLU:O	27:U:90:GLU:C	2.57	0.45
32:a:1489:C:H2'	32:a:1490:G:O4'	2.15	0.45
33:c:25:ASP:OD1	33:c:26:LYS:N	2.49	0.45
35:e:49:ILE:HG23	35:e:66:ALA:HB2	1.99	0.45
39:i:47:GLY:N	39:i:83:ASP:OD2	2.46	0.45
39:i:50:ASP:OD2	39:i:55:SER:HA	2.15	0.45
43:m:80:ARG:O	43:m:84:ILE:HD12	2.17	0.45
46:q:58:ARG:HD2	46:q:116:GLU:O	2.16	0.45
46:q:70:MET:HE3	46:q:73:THR:OG1	2.16	0.45
6:4:33:LYS:NZ	8:I:2981:C:OP1	2.41	0.45
8:I:140:G:H21	8:I:1540:G:H1'	1.81	0.45
8:I:1075:A:H2'	8:I:1076:C:C6	2.51	0.45
8:I:1111:C:N3	54:7:21:ARG:NH2	2.61	0.45
8:I:1116:C:O2'	8:I:1129:A:N3	2.44	0.45
8:I:2566:A:H2'	8:I:2567:A:H8	1.81	0.45
17:K:70:ARG:HB2	17:K:76:TYR:CE2	2.52	0.45
32:a:212:C:H1'	32:a:216:A:N1	2.31	0.45
32:a:677:U:O4	32:a:694:G:O2'	2.26	0.45
32:a:1421:A:H2'	32:a:1422:C:C6	2.52	0.45
33:c:23:TYR:O	33:c:23:TYR:HD1	1.98	0.45
38:h:38:GLN:OE1	38:h:42:ASN:ND2	2.44	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:9:67:ASP:OD2	52:9:83:ARG:NE	2.50	0.45
7:6:28:LYS:HE3	13:F:66:LEU:CA	2.44	0.45
8:I:93:C:H2'	8:I:94:C:O4'	2.16	0.45
8:I:638:C:N4	8:I:641:U:O4	2.49	0.45
8:I:690:U:H2'	8:I:691:C:C6	2.51	0.45
8:I:1544:G:H2'	8:I:1545:G:C8	2.52	0.45
8:I:2532:C:OP1	21:O:99:ARG:NH2	2.47	0.45
12:E:125:ALA:HB2	12:E:130:ILE:HD12	1.99	0.45
32:a:12:G:H5'	35:e:139:GLY:HA3	1.98	0.45
32:a:1004:C:H2'	32:a:1005:U:H6	1.80	0.45
32:a:1140:U:H5"	39:i:39:ARG:NH1	2.31	0.45
32:a:1171:A:O2'	39:i:127:ARG:HG3	2.16	0.45
42:l:87:VAL:O	42:l:88:LYS:HG2	2.16	0.45
45:p:40:TYR:HB2	45:p:73:LEU:HD21	1.98	0.45
48:t:32:VAL:HG13	48:t:79:LEU:HD11	1.98	0.45
50:A:26:ARG:O	50:A:27:ASN:ND2	2.48	0.45
50:A:116:ARG:O	50:A:118:VAL:N	2.49	0.45
52:9:92:HIS:CD2	52:9:92:HIS:N	2.84	0.45
1:b:7:PRO:HD2	1:b:25:LYS:O	2.17	0.45
8:I:993:G:H2'	8:I:994:C:C6	2.51	0.45
8:I:1307:U:H2'	8:I:1308:G:O4'	2.17	0.45
8:I:1322:G:OP1	18:L:31:THR:OG1	2.33	0.45
8:I:1472:G:OP2	8:I:1525:U:O2'	2.25	0.45
8:I:1750:C:H2'	8:I:1751:C:H6	1.81	0.45
11:D:104:GLU:OE1	11:D:104:GLU:N	2.41	0.45
12:E:30:LEU:HD12	12:E:121:LEU:HB3	1.98	0.45
21:O:48:ASN:O	21:O:49:ASP:HB2	2.17	0.45
27:U:89:GLU:CD	27:U:90:GLU:N	2.74	0.45
28:V:141:GLN:H	28:V:141:GLN:CD	2.24	0.45
32:a:593:U:H2'	32:a:594:C:C6	2.50	0.45
32:a:858:A:H2'	32:a:859:C:C6	2.52	0.45
37:g:79:ARG:HD2	37:g:79:ARG:HA	1.70	0.45
8:I:350:A:H2'	8:I:351:G:H8	1.82	0.45
8:I:502:C:H2'	8:I:503:C:H6	1.82	0.45
8:I:831:G:H2'	8:I:832:U:H6	1.82	0.45
8:I:1954:U:H2'	8:I:1955:G:C8	2.52	0.45
13:F:86:LEU:HD11	13:F:88:GLU:OE2	2.17	0.45
14:G:4:ILE:O	14:G:70:ARG:HG2	2.17	0.45
18:L:24:GLY:O	18:L:29:GLY:HA2	2.15	0.45
30:Y:31:ASN:O	30:Y:35:GLN:HG3	2.17	0.45
32:a:224:G:N2	46:q:48:THR:OG1	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:261:G:H2'	32:a:262:A:H8	1.81	0.45
32:a:1338:A:N1	32:a:1367:A:H5"	2.31	0.45
36:f:11:ASP:OD1	36:f:12:PRO:HD2	2.16	0.45
39:i:60:PHE:HE1	39:i:94:SER:HA	1.80	0.45
43:m:13:LYS:H	43:m:44:ARG:HG3	1.81	0.45
50:A:42:LEU:O	50:A:46:GLU:HG3	2.16	0.45
6:4:4:ASN:OD1	6:4:4:ASN:N	2.48	0.45
8:I:91:A:H5'	8:I:91:A:C8	2.51	0.45
8:I:776:G:H5'	18:L:116:LYS:CE	2.47	0.45
8:I:1049:G:H21	8:I:2507:A:H8	1.63	0.45
8:I:2338:G:N1	8:I:2426:U:N3	2.65	0.45
11:D:37:THR:OG1	11:D:96:GLN:O	2.34	0.45
14:G:55:ARG:NH1	14:G:56:PRO:HD2	2.31	0.45
32:a:269:A:H2'	32:a:270:C:C6	2.51	0.45
32:a:582:U:H2'	32:a:583:G:C8	2.51	0.45
32:a:1011:U:H2'	32:a:1012:A:C8	2.52	0.45
32:a:1190:G:H2'	32:a:1191:U:C6	2.51	0.45
33:c:82:GLU:O	33:c:86:ILE:HG23	2.17	0.45
33:c:90:LEU:HD12	33:c:90:LEU:HA	1.85	0.45
52:9:39:GLU:O	52:9:41:ARG:N	2.49	0.45
8:I:308:G:H2'	8:I:309:U:C6	2.51	0.45
8:I:738:G:H2'	8:I:739:C:C6	2.52	0.45
8:I:798:G:C2	8:I:930:G:C2	3.04	0.45
8:I:988:G:O2'	8:I:1045:G:O6	2.32	0.45
8:I:2554:G:H2'	8:I:2555:U:C6	2.52	0.45
10:C:156:ALA:HB2	10:C:163:ILE:HG13	1.98	0.45
10:C:209:ALA:O	10:C:213:ARG:HG2	2.17	0.45
32:a:388:A:H3'	32:a:389:U:H6	1.82	0.45
32:a:966:G:O3'	40:j:57:LYS:HD2	2.16	0.45
32:a:974:U:H2'	32:a:975:U:C5	2.52	0.45
34:d:1:MET:O	34:d:1:MET:HG2	2.16	0.45
36:f:8:VAL:HG13	36:f:85:VAL:HG13	1.99	0.45
37:g:66:LEU:O	37:g:70:LYS:HB2	2.16	0.45
7:6:23:GLN:O	7:6:25:ARG:HD2	2.17	0.45
8:I:331:U:C4	8:I:444:C:H2'	2.52	0.45
8:I:1634:A:H3'	8:I:1635:C:C6	2.50	0.45
8:I:2425:U:H2'	8:I:2426:U:O4'	2.17	0.45
10:C:109:ASN:HA	10:C:197:GLY:HA2	1.99	0.45
20:N:103:ARG:HG3	20:N:110:MET:SD	2.56	0.45
28:V:47:LEU:H	28:V:48:PRO:HD2	1.82	0.45
32:a:460:U:P	32:a:462:C:H42	2.40	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:726:G:H2'	32:a:727:U:C6	2.52	0.45
32:a:1047:U:H2'	32:a:1048:G:C8	2.49	0.45
32:a:1264:U:H2'	32:a:1265:U:C6	2.52	0.45
38:h:15:ARG:HH12	38:h:78:ARG:HA	1.82	0.45
38:h:70:ARG:HA	38:h:70:ARG:NE	2.31	0.45
52:9:27:LEU:O	52:9:30:ILE:HB	2.17	0.45
1:b:36:LEU:HD11	8:I:2524:A:C2	2.51	0.45
8:I:134:A:H2'	8:I:135:C:C6	2.52	0.45
8:I:163:A:OP2	8:I:164:U:O2'	2.30	0.45
8:I:616:A:C2	8:I:2280:A:H2'	2.51	0.45
8:I:703:G:H1'	12:E:112:MET:SD	2.57	0.45
8:I:911:A:N7	10:C:221:VAL:HG21	2.32	0.45
8:I:936:U:O2'	8:I:2298:A:N1	2.43	0.45
8:I:992:A:H2'	8:I:993:G:H8	1.81	0.45
8:I:1860:C:H2'	8:I:1861:A:O4'	2.17	0.45
8:I:2154:A:H2'	8:I:2155:U:O4'	2.16	0.45
11:D:18:ASP:C	11:D:18:ASP:OD1	2.60	0.45
11:D:23:VAL:HG21	17:K:74:GLY:HA3	1.99	0.45
24:R:68:HIS:ND1	24:R:96:THR:HG22	2.31	0.45
32:a:756:G:N1	32:a:803:G:O2'	2.41	0.45
32:a:1230:A:OP1	32:a:1327:U:O2'	2.25	0.45
32:a:1421:A:H2'	32:a:1422:C:H6	1.82	0.45
34:d:177:ILE:HD12	34:d:177:ILE:N	2.32	0.45
36:f:2:ARG:HD3	36:f:92:ARG:NH2	2.32	0.45
40:j:52:ILE:CD1	40:j:57:LYS:HB3	2.47	0.45
41:k:56:SER:O	41:k:76:ALA:HB1	2.17	0.45
41:k:81:ALA:O	41:k:85:GLN:HG3	2.17	0.45
47:s:44:PHE:HB2	47:s:62:VAL:HG11	1.98	0.45
7:6:14:VAL:HB	7:6:22:PHE:HB2	1.98	0.45
8:I:842:G:H2'	8:I:843:U:C6	2.52	0.45
8:I:914:G:H2'	8:I:915:C:H6	1.82	0.45
8:I:2299:G:OP1	12:E:75:LYS:NZ	2.33	0.45
23:Q:69:ALA:HB1	23:Q:74:ILE:HG23	1.98	0.45
32:a:269:A:H2'	32:a:270:C:H6	1.79	0.45
32:a:445:C:H2'	32:a:446:G:O4'	2.17	0.45
32:a:583:G:H2'	32:a:584:U:H6	1.81	0.45
32:a:993:A:H2'	32:a:994:C:C6	2.51	0.45
32:a:1002:G:C2	32:a:1014:G:C2	3.05	0.45
32:a:1144:G:O4'	40:j:72:ARG:NH2	2.50	0.45
35:e:67:LEU:HD22	35:e:165:ILE:HD12	1.98	0.45
37:g:57:ASP:O	37:g:61:THR:HG22	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h:47:SER:HB3	38:h:63:GLN:HB2	1.99	0.45
41:k:82:ARG:HG3	41:k:82:ARG:NH1	2.32	0.45
8:I:91:A:H5'	8:I:91:A:H8	1.82	0.44
8:I:1585:G:H2'	8:I:1586:G:C8	2.45	0.44
8:I:1617:U:H2'	8:I:1618:C:C6	2.52	0.44
8:I:1675:G:H2'	8:I:1676:U:C6	2.53	0.44
8:I:2473:G:H2'	8:I:2474:C:C6	2.52	0.44
8:I:2693:G:H2'	8:I:2694:C:C6	2.52	0.44
13:F:56:LEU:H	13:F:56:LEU:HD12	1.82	0.44
14:G:75:ASN:ND2	14:G:139:LYS:HD3	2.32	0.44
32:a:491:G:H2'	32:a:492:C:H6	1.82	0.44
32:a:781:A:N7	50:A:113:LYS:NZ	2.64	0.44
32:a:958:U:OP1	32:a:1190:G:H5"	2.16	0.44
7:6:35:VAL:O	7:6:36:GLU:HG3	2.17	0.44
8:I:977:U:C2	8:I:1061:A:H8	2.34	0.44
8:I:2454:G:H2'	8:I:2455:G:H8	1.82	0.44
8:I:2583:G:N3	8:I:2619:C:H2'	2.32	0.44
8:I:2936:U:H2'	8:I:2937:C:H6	1.81	0.44
8:I:3089:U:H2'	8:I:3090:C:C6	2.51	0.44
11:D:186:ASP:OD1	11:D:189:ASN:ND2	2.47	0.44
12:E:29:GLU:HG3	12:E:30:LEU:N	2.32	0.44
32:a:1190:G:H1'	40:j:58:TYR:CE1	2.52	0.44
32:a:1310:A:H1'	47:s:37:ARG:HH12	1.82	0.44
32:a:1311:A:C8	32:a:1315:G:C6	3.06	0.44
40:j:65:PHE:HE1	52:9:98:LYS:HG2	1.82	0.44
48:t:8:GLN:OE1	48:t:11:ASN:ND2	2.50	0.44
3:0:44:LEU:HD23	8:I:3119:C:H2'	1.99	0.44
8:I:260:G:H2'	8:I:261:C:H6	1.82	0.44
8:I:889:G:H2'	8:I:890:A:O4'	2.18	0.44
13:F:20:ARG:HH21	13:F:37:THR:HG23	1.81	0.44
13:F:39:THR:OG1	13:F:164:VAL:O	2.33	0.44
14:G:53:VAL:O	14:G:70:ARG:NH2	2.50	0.44
21:O:41:HIS:ND1	21:O:60:SER:O	2.49	0.44
22:P:2:ASN:CG	22:P:3:ARG:H	2.24	0.44
27:U:74:VAL:HA	27:U:80:PRO:HA	1.99	0.44
29:W:81:VAL:HG13	29:W:83:SER:H	1.82	0.44
32:a:60:G:H2'	32:a:61:C:C6	2.53	0.44
32:a:513:C:OP2	42:l:66:TYR:OH	2.34	0.44
32:a:1228:A:H2'	32:a:1229:C:C6	2.53	0.44
36:f:10:LEU:O	36:f:59:ILE:HG12	2.18	0.44
48:t:53:SER:O	48:t:57:LYS:HG2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:9:28:LYS:HB2	52:9:48:LEU:HD13	1.99	0.44
8:I:704:C:O2'	8:I:705:A:O5'	2.36	0.44
8:I:1471:U:OP2	26:T:62:ARG:NH2	2.51	0.44
8:I:1647:U:C2	8:I:1648:A:C8	3.05	0.44
9:B:79:U:H2'	9:B:80:G:H8	1.83	0.44
11:D:17:PHE:CE1	11:D:23:VAL:HG22	2.53	0.44
13:F:33:MET:HA	13:F:33:MET:HE2	1.98	0.44
17:K:104:ARG:HB2	17:K:122:LEU:HD13	1.99	0.44
21:O:59:SER:OG	21:O:60:SER:N	2.51	0.44
32:a:115:A:O2'	32:a:117:A:N7	2.50	0.44
32:a:123:G:H5"	46:q:57:ARG:H	1.83	0.44
32:a:753:A:H2'	32:a:754:G:C8	2.52	0.44
32:a:1000:G:H2'	32:a:1001:C:C6	2.52	0.44
32:a:1026:G:C6	32:a:1027:G:C5	3.06	0.44
32:a:1106:U:H2'	32:a:1107:U:C6	2.52	0.44
32:a:1487:G:H8	32:a:1487:G:OP2	2.00	0.44
34:d:90:GLU:HG3	34:d:183:ARG:HB2	1.99	0.44
46:q:104:SER:O	46:q:104:SER:OG	2.29	0.44
8:I:744:C:H2'	8:I:745:U:C6	2.53	0.44
8:I:957:U:H4'	8:I:960:G:N1	2.32	0.44
8:I:1517:C:H5	8:I:1532:G:H1	1.64	0.44
8:I:1606:G:H2'	8:I:1607:G:H8	1.83	0.44
8:I:1686:A:H62	8:I:1698:C:N4	2.15	0.44
8:I:2120:A:H2'	8:I:2121:G:O4'	2.18	0.44
10:C:99:ASP:C	10:C:99:ASP:OD1	2.60	0.44
17:K:71:ARG:HH12	17:K:122:LEU:HD11	1.81	0.44
32:a:263:C:H2'	32:a:264:G:O4'	2.17	0.44
32:a:454:U:H2'	32:a:455:C:O4'	2.16	0.44
32:a:545:U:H2'	32:a:546:C:C6	2.53	0.44
32:a:610:U:H1'	34:d:125:VAL:HG12	2.00	0.44
32:a:918:G:C2	32:a:920:G:C8	3.05	0.44
32:a:972:C:OP1	32:a:1215:C:N4	2.51	0.44
32:a:1286:G:H2'	32:a:1287:U:C6	2.52	0.44
38:h:18:ASN:ND2	38:h:72:ARG:HD3	2.32	0.44
43:m:24:GLY:O	43:m:25:ILE:HD13	2.17	0.44
1:b:37:ARG:O	8:I:2582:U:H3'	2.18	0.44
8:I:79:C:O2'	8:I:429:A:H8	2.01	0.44
8:I:716:G:N2	8:I:719:U:O2	2.40	0.44
8:I:1098:G:H2'	8:I:1099:U:C6	2.52	0.44
8:I:1386:U:H5"	8:I:1387:G:H5"	2.00	0.44
8:I:2588:C:H2'	8:I:2589:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:D:26:VAL:HG11	11:D:193:LEU:HB3	2.00	0.44
11:D:64:LYS:HE2	11:D:64:LYS:HB3	1.69	0.44
11:D:185:VAL:HG22	11:D:192:LEU:HD23	2.00	0.44
13:F:154:ASP:OD1	13:F:154:ASP:N	2.50	0.44
22:P:35:ALA:O	22:P:36:LYS:CB	2.66	0.44
32:a:181:C:C2	32:a:204:G:N2	2.86	0.44
32:a:293:C:OP1	32:a:601:U:O2'	2.29	0.44
32:a:1087:C:H2'	32:a:1088:C:H6	1.83	0.44
32:a:1440:A:P	32:a:1441:C:H41	2.41	0.44
34:d:95:ASN:O	34:d:99:ARG:HG3	2.17	0.44
50:A:111:ARG:O	50:A:115:ARG:HG3	2.18	0.44
7:6:25:ARG:NH2	13:F:108:ASP:OD2	2.48	0.44
8:I:504:A:H2'	8:I:505:C:C6	2.53	0.44
8:I:609:U:H2'	8:I:610:G:C8	2.53	0.44
8:I:678:U:H2'	8:I:679:G:C8	2.53	0.44
8:I:762:A:H2'	8:I:763:C:C6	2.53	0.44
8:I:1667:G:H2'	8:I:1668:C:C6	2.52	0.44
8:I:2565:A:H2'	8:I:2566:A:C8	2.51	0.44
11:D:129:ARG:HA	11:D:170:MET:HE2	1.98	0.44
13:F:100:GLY:H	13:F:103:MET:HE2	1.82	0.44
21:O:84:ALA:O	21:O:88:LYS:HG3	2.18	0.44
26:T:12:LEU:HA	30:Y:33:ARG:HH11	1.81	0.44
32:a:179:G:C4	32:a:180:A:C8	3.05	0.44
32:a:1250:G:H2'	32:a:1251:C:H6	1.82	0.44
33:c:91:GLU:HG2	33:c:98:VAL:HG13	2.00	0.44
33:c:129:PHE:CD1	33:c:157:LEU:HB3	2.53	0.44
7:6:33:ILE:HG23	7:6:33:ILE:O	2.18	0.44
8:I:10:U:H2'	8:I:11:C:O4'	2.17	0.44
8:I:788:G:H4'	12:E:107:ARG:O	2.18	0.44
8:I:798:G:N2	8:I:801:C:OP1	2.51	0.44
8:I:937:G:O6	18:L:42:ARG:NH1	2.49	0.44
8:I:1310:U:H2'	8:I:1311:G:H8	1.83	0.44
8:I:1334:U:H2'	8:I:1335:C:C6	2.52	0.44
8:I:1741:C:H2'	8:I:1742:U:H6	1.83	0.44
8:I:1884:G:O2'	20:N:106:ASP:OD1	2.29	0.44
8:I:1891:C:H2'	8:I:1892:U:H6	1.82	0.44
8:I:2365:A:H1'	8:I:2410:A:O2'	2.18	0.44
10:C:181:GLU:HG3	10:C:270:ARG:O	2.18	0.44
13:F:160:ASP:C	13:F:161:ILE:HD13	2.43	0.44
15:H:45:LYS:HD2	15:H:45:LYS:HA	1.80	0.44
32:a:175:A:C4'	32:a:176:U:H5'	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:180:A:H61	32:a:204:G:H1	1.66	0.44
32:a:245:A:C2	32:a:281:A:C5	3.05	0.44
32:a:769:G:H2'	32:a:770:C:H6	1.83	0.44
32:a:1019:C:N4	32:a:1026:G:H1	2.16	0.44
32:a:1109:U:H2'	32:a:1110:C:C6	2.52	0.44
34:d:102:LEU:HD13	34:d:173:GLN:OE1	2.17	0.44
37:g:139:GLU:HA	37:g:139:GLU:OE2	2.17	0.44
52:9:38:PRO:HB2	52:9:42:SER:OG	2.17	0.44
8:I:323:A:H2'	8:I:324:G:O4'	2.18	0.44
8:I:474:C:O2'	8:I:477:G:N2	2.50	0.44
8:I:1026:C:C4	8:I:1027:U:H5	2.36	0.44
8:I:1298:U:H2'	8:I:1299:C:H6	1.83	0.44
8:I:1401:C:H5"	8:I:1402:G:H5'	1.99	0.44
8:I:1517:C:H2'	8:I:1518:G:C8	2.53	0.44
8:I:2303:C:H2'	8:I:2304:C:C6	2.53	0.44
8:I:2354:A:P	8:I:2402:G:H22	2.40	0.44
8:I:2511:A:H2'	8:I:2512:A:C8	2.53	0.44
11:D:32:GLY:HA3	11:D:54:TYR:CE1	2.51	0.44
22:P:13:ARG:HD3	22:P:76:HIS:HA	1.99	0.44
23:Q:28:ARG:H	23:Q:28:ARG:HG2	1.62	0.44
32:a:677:U:H4'	41:k:54:TRP:CG	2.53	0.44
32:a:947:G:H2'	32:a:948:A:C8	2.53	0.44
32:a:1434:G:C5	32:a:1435:G:H1'	2.53	0.44
51:r:14:LYS:C	51:r:16:ASN:H	2.26	0.44
6:4:1:MET:N	8:I:2764:G:O2'	2.48	0.43
8:I:187:C:H2'	8:I:188:G:H8	1.83	0.43
8:I:389:U:H2'	8:I:390:G:O4'	2.18	0.43
8:I:390:G:N2	8:I:392:G:H3'	2.33	0.43
8:I:1234:U:H2'	8:I:1235:G:C8	2.44	0.43
8:I:1775:G:H2'	8:I:1776:A:O4'	2.18	0.43
8:I:1964:U:OP1	8:I:1965:G:N2	2.51	0.43
8:I:2307:G:H2'	8:I:2308:A:C8	2.53	0.43
8:I:2337:G:O6	8:I:2426:U:O4	2.35	0.43
8:I:2408:A:H5'	8:I:2410:A:N1	2.33	0.43
8:I:2693:G:H2'	8:I:2694:C:H6	1.82	0.43
8:I:3033:C:H42	8:I:3036:G:P	2.41	0.43
11:D:151:ILE:HD13	11:D:151:ILE:HA	1.88	0.43
13:F:45:MET:HE3	13:F:60:ALA:HB1	2.00	0.43
32:a:451:A:C5	32:a:471:U:N3	2.86	0.43
32:a:555:C:C5	46:q:86:LEU:HD11	2.53	0.43
32:a:1307:U:H2'	32:a:1308:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:d:141:ARG:NH1	34:d:143:LYS:HD3	2.32	0.43
36:f:7:MET:HA	36:f:61:VAL:O	2.18	0.43
38:h:39:ILE:HD11	38:h:114:THR:HG23	2.00	0.43
40:j:88:MET:HE2	40:j:88:MET:O	2.17	0.43
48:t:21:ASN:OD1	48:t:66:VAL:HG22	2.18	0.43
50:A:44:ARG:HH11	50:A:44:ARG:C	2.24	0.43
50:A:68:ARG:HA	50:A:71:CYS:HB3	2.00	0.43
53:y:35:GLN:HE22	53:y:50:ARG:NH1	2.16	0.43
5:3:25:GLN:HG3	18:L:63:LEU:HD23	1.99	0.43
8:I:259:C:H2'	8:I:260:G:O4'	2.18	0.43
8:I:843:U:HO2'	8:I:845:A:H62	1.63	0.43
8:I:1113:G:H2'	54:7:22:PRO:HG3	1.99	0.43
8:I:1466:C:H2'	8:I:1467:A:C8	2.53	0.43
8:I:2042:C:O2'	8:I:2043:A:O5'	2.37	0.43
16:J:17:VAL:HG13	16:J:57:ILE:HD12	2.00	0.43
18:L:98:VAL:HG12	18:L:103:VAL:HG13	2.01	0.43
26:T:36:ASP:C	26:T:36:ASP:OD2	2.62	0.43
29:W:38:VAL:HB	29:W:59:LEU:HD23	2.00	0.43
32:a:1026:G:H2'	32:a:1026:G:N3	2.33	0.43
32:a:1293:U:H3'	32:a:1294:U:H5"	2.00	0.43
32:a:1418:A:H2'	32:a:1419:A:O4'	2.19	0.43
34:d:154:ARG:NH2	34:d:155:GLU:HA	2.33	0.43
36:f:54:LYS:HB2	36:f:55:HIS:CD2	2.53	0.43
37:g:40:GLU:O	37:g:44:TYR:CD1	2.65	0.43
37:g:78:ARG:NH1	37:g:153:HIS:HB2	2.33	0.43
43:m:58:ASP:HA	43:m:61:GLU:OE2	2.18	0.43
46:q:77:GLU:HG3	46:q:94:THR:HG23	2.00	0.43
52:9:38:PRO:C	52:9:40:GLN:N	2.76	0.43
1:b:38:LYS:HB3	1:b:38:LYS:HE3	1.78	0.43
3:0:14:ARG:O	3:0:18:SER:OG	2.29	0.43
8:I:154:C:H2'	8:I:155:G:C8	2.54	0.43
8:I:784:A:H4'	8:I:785:G:H5'	2.00	0.43
8:I:1331:C:H2'	8:I:1332:C:C6	2.53	0.43
11:D:6:ILE:HG13	11:D:35:VAL:HG21	1.99	0.43
14:G:7:GLN:HG3	14:G:7:GLN:O	2.18	0.43
14:G:29:PRO:HD2	14:G:81:THR:HA	1.99	0.43
16:J:4:TYR:HB2	23:Q:100:ILE:HG21	2.00	0.43
16:J:92:LEU:HD23	16:J:92:LEU:HA	1.84	0.43
28:V:14:ARG:HH12	28:V:17:THR:HA	1.83	0.43
29:W:51:VAL:HG21	29:W:81:VAL:HG12	2.00	0.43
32:a:449:G:OP2	32:a:450:A:O2'	2.30	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:484:A:H2'	32:a:485:G:C8	2.53	0.43
32:a:591:G:H2'	32:a:592:U:C6	2.52	0.43
32:a:806:A:C8	32:a:1520:C:H1'	2.53	0.43
32:a:1288:C:H4'	32:a:1294:U:C4	2.53	0.43
34:d:88:ILE:HG23	34:d:131:ARG:CZ	2.48	0.43
38:h:88:TYR:CE1	38:h:126:GLU:HB2	2.53	0.43
44:o:3:LEU:HD12	44:o:3:LEU:O	2.18	0.43
47:s:63:THR:HG22	47:s:66:MET:HE3	2.00	0.43
8:I:1771:G:C2	8:I:1772:G:H1'	2.53	0.43
8:I:2058:G:OP1	10:C:52:ARG:HD3	2.19	0.43
8:I:2500:U:H2'	8:I:2501:C:H6	1.83	0.43
8:I:2504:A:H4'	8:I:2505:A:N3	2.34	0.43
17:K:64:ARG:O	17:K:82:ASN:HA	2.18	0.43
32:a:374:U:H5"	45:p:7:LEU:HD12	2.00	0.43
32:a:891:G:N2	32:a:894:A:OP2	2.47	0.43
32:a:1142:G:H2'	32:a:1143:U:O4'	2.17	0.43
32:a:1305:U:H2'	32:a:1306:C:H6	1.82	0.43
39:i:63:LYS:HA	39:i:66:GLN:HB2	2.00	0.43
43:m:71:ARG:O	43:m:75:GLN:HG2	2.18	0.43
45:p:74:LEU:HA	45:p:77:THR:HG22	2.00	0.43
52:9:38:PRO:O	52:9:39:GLU:C	2.61	0.43
8:I:350:A:H2'	8:I:351:G:C8	2.53	0.43
8:I:390:G:N1	8:I:393:A:OP2	2.45	0.43
8:I:1051:C:O2'	29:W:29:GLN:OE1	2.20	0.43
8:I:2531:C:H5"	21:O:99:ARG:NH1	2.33	0.43
8:I:2880:A:H2'	8:I:2881:A:H8	1.83	0.43
9:B:38:A:H2'	9:B:39:U:C6	2.54	0.43
12:E:124:ARG:NH2	12:E:195:LEU:O	2.51	0.43
17:K:71:ARG:NH2	17:K:122:LEU:HD11	2.32	0.43
17:K:90:ASP:OD2	17:K:90:ASP:C	2.62	0.43
28:V:47:LEU:O	28:V:52:TYR:HB3	2.18	0.43
32:a:147:A:C5	32:a:148:A:C8	3.06	0.43
32:a:500:A:N3	32:a:534:U:O2'	2.48	0.43
32:a:503:U:H2'	32:a:504:A:H8	1.82	0.43
32:a:516:C:OP1	42:l:88:LYS:HD2	2.19	0.43
32:a:592:U:H2'	32:a:593:U:H6	1.81	0.43
32:a:876:C:O2'	32:a:877:U:H5'	2.17	0.43
32:a:919:G:H2'	32:a:1498:G:C8	2.53	0.43
32:a:940:G:H2'	32:a:941:C:C6	2.53	0.43
32:a:1490:G:OP2	50:A:44:ARG:NH2	2.50	0.43
48:t:35:PHE:CD2	48:t:79:LEU:HD22	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:682:C:H5”	23:Q:34:LYS:NZ	2.34	0.43
8:I:1408:G:H2’	8:I:1409:C:C6	2.54	0.43
8:I:1642:G:H2’	8:I:1643:G:O4’	2.18	0.43
9:B:61:U:H2’	9:B:62:G:H8	1.83	0.43
32:a:351:C:H4’	32:a:353:G:OP1	2.19	0.43
32:a:462:C:H2’	32:a:463:U:O4’	2.18	0.43
32:a:508:G:N2	32:a:521:G:O5’	2.45	0.43
32:a:1103:C:O2	33:c:179:ARG:HG2	2.19	0.43
32:a:1124:A:H2’	32:a:1125:C:O4’	2.19	0.43
32:a:1158:G:N1	32:a:1161:A:OP1	2.52	0.43
32:a:1304:G:C2	32:a:1318:C:C2	3.07	0.43
32:a:1459:C:H2’	32:a:1460:G:O4’	2.19	0.43
32:a:1506:A:H2’	32:a:1507:C:H6	1.82	0.43
33:c:140:ALA:O	33:c:143:GLN:HB2	2.19	0.43
50:A:62:GLU:OE2	50:A:64:ASN:HB3	2.18	0.43
8:I:530:U:H2’	8:I:531:G:C8	2.54	0.43
8:I:2937:C:H2’	8:I:2938:C:H6	1.84	0.43
8:I:3059:A:H3’	8:I:3060:C:O2	2.19	0.43
10:C:215:LYS:HB3	10:C:215:LYS:HE2	1.84	0.43
19:M:29:PHE:HB2	19:M:105:GLU:OE1	2.19	0.43
21:O:27:THR:HG22	21:O:50:LEU:HD21	2.01	0.43
32:a:261:G:H2’	32:a:262:A:C8	2.53	0.43
32:a:406:G:C6	32:a:435:C:C4	3.06	0.43
32:a:946:G:H2’	32:a:947:G:C8	2.54	0.43
32:a:1086:U:OP1	32:a:1099:G:N1	2.40	0.43
32:a:1384:U:H2’	32:a:1385:G:C8	2.54	0.43
35:e:180:ARG:HD2	35:e:183:GLU:HG2	2.01	0.43
37:g:14:ASN:HB2	37:g:19:GLY:HA2	2.01	0.43
37:g:32:LEU:HD23	37:g:32:LEU:HA	1.87	0.43
37:g:78:ARG:HD3	37:g:78:ARG:HA	1.84	0.43
48:t:57:LYS:HB3	48:t:57:LYS:HE2	1.86	0.43
50:A:34:PHE:HA	50:A:37:TYR:CD1	2.54	0.43
3:0:48:ARG:HD3	8:I:3120:C:N4	2.33	0.43
8:I:359:C:H4’	8:I:360:A:H5”	2.01	0.43
8:I:1779:C:H2’	8:I:1780:G:O4’	2.19	0.43
8:I:2928:A:N7	20:N:4:PRO:HA	2.33	0.43
32:a:682:G:H2’	32:a:683:U:C6	2.54	0.43
32:a:782:G:N1	32:a:1491:U:OP1	2.47	0.43
32:a:931:A:N3	32:a:1369:U:O2’	2.39	0.43
32:a:1380:G:H2’	32:a:1381:C:C6	2.53	0.43
35:e:103:PHE:HD1	35:e:104:ARG:H	1.65	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:s:52:HIS:HB2	47:s:57:HIS:CE1	2.54	0.43
1:b:36:LEU:HD11	8:I:2524:A:N1	2.33	0.43
8:I:84:A:C2	8:I:103:A:C5	3.07	0.43
8:I:832:U:H2'	8:I:833:G:O4'	2.19	0.43
8:I:2006:G:N1	8:I:2217:C:H5	2.08	0.43
11:D:43:GLU:OE2	11:D:43:GLU:N	2.45	0.43
12:E:40:MET:HE3	12:E:195:LEU:HD11	2.01	0.43
13:F:53:ASP:O	13:F:55:LYS:HE2	2.19	0.43
22:P:25:ILE:HD11	22:P:60:VAL:HG11	2.00	0.43
29:W:56:ASP:OD1	29:W:56:ASP:O	2.37	0.43
29:W:67:VAL:HA	29:W:81:VAL:HG21	2.00	0.43
32:a:46:C:OP1	45:p:14:ARG:HG2	2.18	0.43
32:a:1174:G:H4'	32:a:1175:U:H5'	2.01	0.43
34:d:165:TRP:CH2	34:d:181:PRO:HB3	2.54	0.43
35:e:146:LEU:HD13	35:e:154:ILE:HG21	2.01	0.43
37:g:15:ASP:HB3	37:g:18:TYR:O	2.17	0.43
48:t:66:VAL:HG12	48:t:67:ILE:HG23	1.99	0.43
1:b:6:ARG:O	1:b:24:ARG:HD2	2.18	0.43
8:I:682:C:H2'	8:I:683:C:H6	1.83	0.43
8:I:1053:U:H2'	8:I:1054:G:C8	2.54	0.43
8:I:1539:U:H2'	8:I:1540:G:H8	1.84	0.43
8:I:1741:C:H2'	8:I:1742:U:C6	2.54	0.43
8:I:2103:C:H2'	8:I:2104:C:C6	2.54	0.43
11:D:156:THR:HB	11:D:157:PRO:HD3	2.01	0.43
13:F:108:ASP:O	13:F:112:SER:HB3	2.19	0.43
32:a:134:U:H2'	32:a:135:G:C8	2.54	0.43
32:a:1310:A:O2'	47:s:37:ARG:NH1	2.51	0.43
32:a:1325:A:H2'	32:a:1326:G:O4'	2.19	0.43
34:d:71:TYR:HA	34:d:85:LEU:HD21	2.00	0.43
34:d:111:GLN:OE1	34:d:115:HIS:CD2	2.72	0.43
46:q:134:LYS:HD2	46:q:135:ALA:H	1.84	0.43
53:y:43:GLU:OE1	53:y:45:ARG:HD3	2.19	0.43
2:1:38:LYS:HG2	8:I:1453:A:C5	2.54	0.42
5:3:25:GLN:NE2	18:L:64:LYS:HG2	2.29	0.42
8:I:143:G:H5'	8:I:144:U:OP2	2.19	0.42
8:I:209:A:H2'	8:I:210:C:O4'	2.19	0.42
8:I:284:U:C2	8:I:304:G:O6	2.72	0.42
8:I:311:C:H2'	8:I:312:G:C8	2.54	0.42
8:I:428:A:H1'	8:I:429:A:H2	1.83	0.42
8:I:592:G:H21	8:I:1365:U:H4'	1.83	0.42
8:I:1447:U:H2'	8:I:1448:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:1673:A:H2'	8:I:1674:G:C8	2.54	0.42
8:I:2987:A:H4'	14:G:63:ARG:HB3	2.01	0.42
11:D:154:CYS:O	11:D:157:PRO:HD2	2.19	0.42
12:E:71:PRO:HG2	12:E:82:GLN:HG3	2.01	0.42
13:F:52:ARG:CD	13:F:85:LYS:HE3	2.49	0.42
13:F:78:ARG:O	13:F:79:LYS:C	2.62	0.42
32:a:20:U:H2'	32:a:21:C:H6	1.83	0.42
32:a:343:A:H5"	32:a:344:C:C5	2.54	0.42
32:a:1334:C:H2'	32:a:1335:G:H8	1.83	0.42
32:a:1394:G:O6	50:A:111:ARG:NH2	2.52	0.42
32:a:1485:A:H2'	32:a:1486:A:O4'	2.19	0.42
33:c:164:ARG:NH1	33:c:166:GLU:OE2	2.49	0.42
37:g:84:THR:C	37:g:85:TYR:HD1	2.27	0.42
38:h:32:LEU:HD12	38:h:32:LEU:HA	1.88	0.42
39:i:30:VAL:HA	39:i:39:ARG:HH21	1.83	0.42
42:l:114:ARG:HA	42:l:119:ALA:HB3	2.00	0.42
43:m:95:GLY:O	43:m:110:ARG:HG3	2.18	0.42
50:A:33:HIS:HA	50:A:36:ILE:HD12	2.01	0.42
8:I:622:U:H2'	8:I:623:C:H6	1.82	0.42
8:I:703:G:N2	8:I:708:G:O3'	2.52	0.42
8:I:925:U:H2'	8:I:926:C:H6	1.83	0.42
8:I:2059:A:H2'	8:I:2060:C:C6	2.55	0.42
8:I:2430:C:H2'	8:I:2431:A:C8	2.54	0.42
19:M:87:LYS:HG2	19:M:88:GLY:H	1.84	0.42
20:N:96:ARG:HD2	20:N:98:ILE:HD11	2.01	0.42
21:O:48:ASN:OD1	21:O:50:LEU:N	2.52	0.42
25:S:44:ASP:N	25:S:44:ASP:OD2	2.51	0.42
27:U:88:ASP:CG	27:U:89:GLU:H	2.27	0.42
32:a:473:A:H2'	32:a:474:C:O4'	2.18	0.42
32:a:571:C:H2'	32:a:572:G:O4'	2.19	0.42
32:a:583:G:H2'	32:a:584:U:C6	2.54	0.42
32:a:929:C:C4	32:a:930:A:N7	2.88	0.42
32:a:997:G:C6	32:a:1018:U:H5'	2.54	0.42
32:a:1425:G:O2'	32:a:1461:A:N6	2.52	0.42
36:f:23:LEU:HD11	36:f:61:VAL:HG11	2.00	0.42
36:f:42:ILE:CG2	36:f:44:GLY:H	2.30	0.42
36:f:45:LYS:HB2	36:f:45:LYS:HE3	1.87	0.42
37:g:115:THR:HG22	37:g:117:ILE:N	2.29	0.42
39:i:116:ARG:O	39:i:120:LYS:HB2	2.18	0.42
50:A:62:GLU:OE2	50:A:67:GLN:HB2	2.18	0.42
1:b:8:ILE:HG13	1:b:24:ARG:CZ	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:30:ASP:OD1	8:I:2524:A:H2'	2.19	0.42
7:6:2:LYS:HG2	9:B:42:C:OP1	2.20	0.42
8:I:358:U:H3'	8:I:359:C:C6	2.54	0.42
8:I:446:A:H3'	8:I:446:A:OP1	2.20	0.42
8:I:675:G:O2'	8:I:677:A:OP1	2.28	0.42
8:I:731:A:H62	18:L:112:LEU:HD13	1.85	0.42
8:I:1574:C:H2'	8:I:1575:A:H8	1.82	0.42
8:I:1892:U:H2'	8:I:1893:A:H8	1.84	0.42
8:I:2345:U:O4	8:I:2417:U:H2'	2.19	0.42
13:F:12:LYS:HG3	13:F:14:ARG:NH1	2.33	0.42
27:U:38:VAL:HG11	27:U:66:ILE:HD13	2.01	0.42
32:a:570:U:H2'	32:a:571:C:H6	1.85	0.42
32:a:584:U:H2'	32:a:585:C:H6	1.84	0.42
32:a:1087:C:H2'	32:a:1088:C:C6	2.54	0.42
42:l:57:LEU:HD21	42:l:82:VAL:HG21	2.01	0.42
45:p:34:ILE:HG13	45:p:34:ILE:H	1.62	0.42
50:A:42:LEU:HD13	50:A:55:PHE:CG	2.54	0.42
8:I:272:A:OP2	8:I:315:G:N1	2.33	0.42
8:I:858:G:C6	10:C:208:LYS:HB2	2.55	0.42
8:I:858:G:O2'	8:I:892:G:H4'	2.19	0.42
8:I:1007:G:O2'	8:I:1029:A:N6	2.52	0.42
8:I:1624:C:O2'	8:I:1625:U:OP1	2.34	0.42
8:I:2318:C:H2'	8:I:2319:A:H8	1.84	0.42
8:I:2371:A:N6	8:I:2393:G:HO2'	2.15	0.42
8:I:2682:G:OP2	12:E:75:LYS:HE3	2.19	0.42
12:E:186:PRO:HG3	12:E:206:ALA:HB1	2.01	0.42
16:J:69:LEU:HD23	16:J:89:ILE:HG22	2.01	0.42
21:O:93:ASP:OD2	21:O:94:THR:HG23	2.19	0.42
29:W:73:ARG:HD2	29:W:77:THR:HG21	2.01	0.42
32:a:450:A:C4	32:a:451:A:C5	3.07	0.42
32:a:932:G:N3	32:a:1368:A:H2	2.17	0.42
32:a:1062:C:H5"	35:e:85:LYS:NZ	2.33	0.42
32:a:1258:G:N2	32:a:1261:A:OP2	2.33	0.42
34:d:64:GLU:OE2	34:d:199:TYR:OH	2.29	0.42
34:d:93:LEU:O	34:d:96:VAL:HG22	2.19	0.42
34:d:171:GLU:HG3	34:d:172:ARG:HD2	2.01	0.42
39:i:151:ARG:NE	50:A:84:VAL:H	2.11	0.42
40:j:52:ILE:HG22	40:j:62:ARG:NE	2.34	0.42
42:l:7:LEU:HD23	42:l:7:LEU:HA	1.85	0.42
48:t:10:ARG:HD3	48:t:10:ARG:HA	1.85	0.42
52:9:42:SER:O	52:9:43:THR:C	2.63	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:6:ARG:NH1	1:b:26:ASN:HB2	2.34	0.42
3:0:31:THR:O	3:0:33:ALA:N	2.52	0.42
8:I:7:G:H2'	8:I:8:U:H6	1.85	0.42
8:I:85:G:OP1	27:U:4:HIS:HB3	2.18	0.42
8:I:743:U:H2'	8:I:744:C:C6	2.53	0.42
8:I:980:C:H5"	31:Z:49:VAL:HG21	2.00	0.42
8:I:1071:U:H2'	8:I:1072:G:O4'	2.20	0.42
8:I:1571:A:OP2	8:I:1632:G:N1	2.51	0.42
8:I:2311:U:H2'	8:I:2312:U:C6	2.54	0.42
8:I:2530:U:H2'	8:I:2531:C:C6	2.53	0.42
8:I:2541:G:H4'	13:F:129:PHE:HB2	2.01	0.42
8:I:2684:G:N7	8:I:2739:C:O2'	2.52	0.42
9:B:61:U:H2'	9:B:62:G:C8	2.54	0.42
13:F:111:THR:HA	13:F:115:LEU:HD12	2.01	0.42
17:K:104:ARG:HE	17:K:122:LEU:HD22	1.84	0.42
18:L:121:VAL:O	18:L:141:GLY:HA3	2.20	0.42
20:N:36:THR:OG1	20:N:37:THR:N	2.53	0.42
22:P:101:GLU:O	22:P:103:ARG:N	2.48	0.42
32:a:119:G:H2'	32:a:120:U:C6	2.54	0.42
32:a:1253:A:C8	32:a:1267:A:C6	3.07	0.42
32:a:1403:G:H2'	32:a:1404:U:H6	1.84	0.42
33:c:6:ASN:OD1	33:c:8:HIS:N	2.52	0.42
40:j:63:GLU:OE2	52:9:85:ARG:HG3	2.20	0.42
43:m:58:ASP:HA	43:m:61:GLU:HG2	2.02	0.42
46:q:111:ARG:HG3	46:q:133:GLU:OE1	2.19	0.42
48:t:35:PHE:CE1	48:t:51:LEU:HD21	2.55	0.42
8:I:368:U:H2'	8:I:369:C:C6	2.54	0.42
8:I:488:U:H2'	8:I:489:G:O4'	2.18	0.42
8:I:2091:G:H2'	8:I:2092:G:O4'	2.19	0.42
8:I:2151:A:C8	32:a:1487:G:H4'	2.55	0.42
8:I:3048:C:H2'	8:I:3049:C:C6	2.55	0.42
14:G:55:ARG:HH11	14:G:56:PRO:HD2	1.85	0.42
14:G:86:THR:HB	14:G:134:VAL:HG22	2.02	0.42
22:P:39:LEU:HD11	22:P:81:ASP:HB2	2.01	0.42
32:a:522:U:H5	50:A:65:ARG:HD2	1.84	0.42
32:a:642:C:H2'	32:a:643:U:C6	2.55	0.42
32:a:1098:C:C4	32:a:1099:G:C8	3.08	0.42
32:a:1108:G:H21	39:i:127:ARG:NH2	2.14	0.42
32:a:1109:U:H5"	39:i:32:ARG:HD3	2.00	0.42
32:a:1236:C:H2'	32:a:1237:G:C8	2.52	0.42
32:a:1434:G:H3'	32:a:1435:G:C8	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:d:27:GLU:H	34:d:27:GLU:CD	2.27	0.42
39:i:30:VAL:HB	39:i:106:ARG:HG2	2.00	0.42
45:p:72:LYS:O	45:p:76:ILE:HG22	2.20	0.42
48:t:35:PHE:CE1	48:t:47:ALA:HB1	2.54	0.42
50:A:34:PHE:HA	50:A:37:TYR:CE1	2.54	0.42
52:9:27:LEU:HD23	52:9:27:LEU:HA	1.91	0.42
3:0:19:GLN:HG3	8:I:2284:G:H4'	2.02	0.42
8:I:1216:G:O2'	8:I:1218:G:H5'	2.19	0.42
8:I:1656:G:H2'	8:I:1657:A:C2	2.55	0.42
8:I:2112:U:H2'	8:I:2113:G:O4'	2.19	0.42
8:I:2412:C:O2'	8:I:2413:A:H5'	2.20	0.42
8:I:2447:U:HO2'	8:I:2448:G:P	2.43	0.42
8:I:2775:U:H2'	8:I:2776:C:C6	2.54	0.42
8:I:2828:A:H2'	8:I:2829:C:C6	2.54	0.42
9:B:47:C:H2'	9:B:48:C:C6	2.55	0.42
10:C:97:TYR:C	10:C:99:ASP:H	2.27	0.42
13:F:44:ASN:OD1	13:F:44:ASN:C	2.62	0.42
13:F:64:LEU:O	13:F:68:THR:HG23	2.19	0.42
24:R:66:LEU:HD11	24:R:99:LYS:HB2	2.01	0.42
25:S:51:GLN:C	25:S:53:ALA:H	2.28	0.42
28:V:57:ARG:HE	28:V:58:HIS:CE1	2.37	0.42
32:a:198:U:H2'	32:a:199:G:C8	2.55	0.42
32:a:904:U:H2'	32:a:905:C:C6	2.55	0.42
32:a:991:G:H2'	32:a:992:C:C6	2.54	0.42
32:a:1061:U:H2'	32:a:1062:C:C6	2.54	0.42
41:k:28:HIS:CD2	41:k:91:LYS:HD3	2.54	0.42
52:9:7:ILE:O	52:9:11:GLN:HG2	2.19	0.42
8:I:704:C:O2'	8:I:705:A:H8	2.02	0.42
8:I:1580:A:H3'	8:I:1623:G:N2	2.34	0.42
8:I:2448:G:H8	8:I:2448:G:OP1	2.02	0.42
8:I:2611:A:H2'	8:I:2612:C:C6	2.55	0.42
8:I:2985:G:O2'	14:G:68:LEU:HD12	2.20	0.42
13:F:64:LEU:HD12	13:F:94:VAL:HG23	2.00	0.42
14:G:33:LEU:HB3	14:G:76:LEU:HD11	2.01	0.42
26:T:4:LEU:HD22	26:T:4:LEU:N	2.34	0.42
28:V:67:LEU:HD11	28:V:76:ALA:HB3	2.00	0.42
28:V:155:LEU:HB2	28:V:177:VAL:HB	2.02	0.42
32:a:391:C:O2'	32:a:474:C:O2'	2.22	0.42
32:a:444:U:H2'	32:a:445:C:H6	1.84	0.42
32:a:452:G:C5	32:a:471:U:C2	3.07	0.42
32:a:775:A:H2'	32:a:776:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:901:A:H2'	32:a:902:A:H8	1.85	0.42
33:c:69:THR:O	33:c:105:VAL:HG22	2.20	0.42
34:d:90:GLU:HA	34:d:95:ASN:ND2	2.35	0.42
37:g:79:ARG:HA	37:g:84:THR:OG1	2.18	0.42
8:I:2602:C:H2'	8:I:2603:A:O4'	2.20	0.42
14:G:16:ASP:O	14:G:18:THR:HG23	2.20	0.42
14:G:30:LYS:H	14:G:30:LYS:HG2	1.67	0.42
32:a:916:A:H2'	32:a:917:C:C6	2.55	0.42
32:a:972:C:O2	52:9:59:ARG:HG2	2.20	0.42
39:i:33:ARG:HG3	39:i:36:ALA:O	2.20	0.42
7:6:1:MET:SD	7:6:1:MET:N	2.81	0.42
8:I:44:A:H2'	8:I:45:G:O4'	2.20	0.42
8:I:1280:C:H5"	23:Q:123:ALA:HB3	2.02	0.42
8:I:1504:A:C5'	8:I:2450:A:H1'	2.49	0.42
20:N:55:ALA:HB2	20:N:79:LEU:HG	2.01	0.42
21:O:16:ARG:O	21:O:20:LEU:HG	2.20	0.42
28:V:107:GLU:HA	28:V:130:GLU:HA	2.02	0.42
29:W:75:ARG:O	29:W:77:THR:N	2.53	0.42
32:a:105:C:H2'	32:a:106:G:O4'	2.20	0.42
32:a:472:G:O2'	32:a:474:C:N4	2.53	0.42
32:a:485:G:O2'	32:a:487:A:H1'	2.20	0.42
32:a:609:C:N4	32:a:612:A:OP2	2.45	0.42
32:a:668:U:O2	32:a:768:A:O2'	2.37	0.42
43:m:22:ILE:HD12	43:m:23:PHE:N	2.34	0.42
51:r:15:LYS:HE2	51:r:15:LYS:HB3	1.83	0.42
5:3:24:ARG:NH2	8:I:2599:A:OP2	2.50	0.41
8:I:343:C:H2'	8:I:344:C:O4'	2.20	0.41
8:I:747:A:N1	8:I:2607:A:O2'	2.50	0.41
8:I:2343:G:N2	8:I:2420:U:O2	2.50	0.41
11:D:157:PRO:O	11:D:159:ARG:N	2.46	0.41
16:J:73:MET:HE3	16:J:73:MET:HB3	1.88	0.41
32:a:38:G:H2'	32:a:39:C:H6	1.85	0.41
32:a:101:C:H2'	32:a:102:G:O4'	2.20	0.41
32:a:374:U:C2	32:a:375:G:C8	3.08	0.41
32:a:452:G:C6	32:a:471:U:C4	3.07	0.41
32:a:477:U:H6	32:a:477:U:P	2.43	0.41
32:a:726:G:H2'	32:a:727:U:H6	1.85	0.41
32:a:1404:U:H2'	32:a:1405:C:C6	2.54	0.41
33:c:141:MET:HA	33:c:146:VAL:HG21	2.01	0.41
40:j:14:ASP:OD2	40:j:17:ALA:HB3	2.20	0.41
42:l:82:VAL:HA	42:l:97:ILE:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:1263:G:OP2	54:7:7:LYS:HE3	2.20	0.41
8:I:1749:U:H2'	8:I:1750:C:H6	1.84	0.41
8:I:2887:U:H2'	8:I:2888:C:C6	2.55	0.41
13:F:78:ARG:CG	13:F:79:LYS:H	2.29	0.41
28:V:107:GLU:OE1	28:V:107:GLU:N	2.53	0.41
28:V:162:LEU:HB3	28:V:166:VAL:HG23	2.03	0.41
32:a:398:G:H2'	32:a:399:C:H6	1.85	0.41
32:a:493:A:H2'	32:a:494:C:C6	2.55	0.41
32:a:1039:G:OP1	52:9:4:LYS:HG2	2.20	0.41
32:a:1197:U:H4'	33:c:195:ARG:NE	2.26	0.41
33:c:36:VAL:HG11	52:9:66:ILE:HG12	2.02	0.41
39:i:51:LEU:HG	39:i:52:ASN:CG	2.44	0.41
48:t:35:PHE:CD2	48:t:35:PHE:C	2.98	0.41
52:9:64:ASP:OD1	52:9:65:ALA:N	2.53	0.41
8:I:1046:A:H5"	8:I:2506:A:H61	1.85	0.41
8:I:1957:A:H1'	8:I:1973:A:C2	2.54	0.41
8:I:1973:A:H2'	8:I:1974:G:C8	2.55	0.41
8:I:2567:A:H2'	8:I:2568:U:C6	2.56	0.41
17:K:66:VAL:O	17:K:78:LYS:HG3	2.19	0.41
28:V:47:LEU:HD23	28:V:52:TYR:HB2	2.02	0.41
29:W:49:VAL:HG22	29:W:82:GLY:CA	2.48	0.41
32:a:86:G:H2'	32:a:87:A:C8	2.51	0.41
32:a:331:G:O2'	48:t:11:ASN:OD1	2.33	0.41
32:a:426:U:OP1	34:d:13:ARG:NH1	2.53	0.41
32:a:522:U:C5	50:A:65:ARG:HD2	2.55	0.41
32:a:687:A:H2'	32:a:688:U:H6	1.85	0.41
32:a:815:U:H2'	32:a:816:A:C8	2.55	0.41
32:a:982:G:O6	32:a:1209:C:N4	2.53	0.41
32:a:1012:A:H2'	32:a:1013:G:N3	2.36	0.41
32:a:1054:C:OP2	32:a:1055:G:O2'	2.28	0.41
33:c:23:TYR:CZ	40:j:11:LYS:HB3	2.55	0.41
7:6:16:CYS:SG	7:6:35:VAL:HA	2.61	0.41
8:I:336:G:H2'	8:I:337:C:C6	2.55	0.41
8:I:503:C:H1'	8:I:2098:U:H1'	2.02	0.41
8:I:857:G:OP2	8:I:857:G:H8	2.03	0.41
8:I:1131:G:H5"	54:7:15:LYS:HG3	2.02	0.41
8:I:1557:G:O6	8:I:1646:G:O2'	2.33	0.41
8:I:1690:A:C4	8:I:2940:G:C8	3.09	0.41
8:I:1722:G:H2'	8:I:1723:C:C6	2.56	0.41
8:I:2263:G:H2'	8:I:2264:A:H8	1.85	0.41
8:I:2975:G:H2'	8:I:2976:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:3028:A:P	8:I:3028:A:H8	2.44	0.41
12:E:135:GLU:OE1	12:E:138:GLU:HA	2.21	0.41
12:E:157:ARG:HG3	12:E:199:ASP:OD2	2.20	0.41
16:J:65:SER:OG	16:J:67:ASP:OD1	2.29	0.41
21:O:91:GLY:C	21:O:92:ILE:HD13	2.45	0.41
28:V:52:TYR:CE1	28:V:56:LEU:HD12	2.55	0.41
32:a:135:G:C6	32:a:224:G:C6	3.08	0.41
32:a:203:U:O2	32:a:204:G:N2	2.54	0.41
32:a:374:U:H2'	32:a:375:G:H8	1.85	0.41
32:a:595:G:H2'	32:a:596:U:O4'	2.20	0.41
32:a:1109:U:H2'	32:a:1110:C:H6	1.85	0.41
32:a:1140:U:H2'	32:a:1141:C:O4'	2.21	0.41
34:d:31:TYR:N	34:d:32:PRO:HD3	2.36	0.41
35:e:80:GLY:HA2	35:e:97:GLU:HG2	2.02	0.41
35:e:191:PRO:C	35:e:193:GLU:H	2.27	0.41
38:h:25:VAL:O	38:h:61:VAL:HA	2.20	0.41
43:m:96:MET:HE2	43:m:96:MET:HB2	1.50	0.41
8:I:741:A:OP2	18:L:112:LEU:HB2	2.21	0.41
8:I:798:G:C5	8:I:930:G:C6	3.09	0.41
8:I:858:G:H5'	8:I:859:C:H5"	2.03	0.41
8:I:905:G:N7	8:I:922:A:O2'	2.51	0.41
8:I:1517:C:H2'	8:I:1518:G:H8	1.85	0.41
8:I:1720:G:C2	8:I:1721:A:C5	3.09	0.41
8:I:2367:U:H1'	8:I:2396:G:N7	2.35	0.41
14:G:17:VAL:HB	14:G:45:ARG:HH22	1.85	0.41
32:a:816:A:H2'	32:a:817:C:C6	2.56	0.41
32:a:951:A:C6	47:s:55:ARG:HB2	2.56	0.41
32:a:1176:G:C2	32:a:1177:G:C8	3.09	0.41
32:a:1248:C:N4	32:a:1270:G:OP2	2.54	0.41
33:c:28:TYR:O	33:c:32:VAL:HG13	2.20	0.41
37:g:70:LYS:HG2	37:g:96:SER:HB2	2.02	0.41
42:l:50:ARG:CG	42:l:66:TYR:HE2	2.34	0.41
46:q:65:VAL:HG22	46:q:76:VAL:HG22	2.03	0.41
47:s:62:VAL:HA	47:s:66:MET:SD	2.60	0.41
3:0:31:THR:O	3:0:31:THR:OG1	2.30	0.41
3:0:31:THR:C	3:0:33:ALA:N	2.77	0.41
8:I:158:U:H2'	8:I:159:C:C6	2.55	0.41
8:I:666:C:N4	8:I:675:G:OP1	2.48	0.41
8:I:954:A:H2'	8:I:955:U:O4'	2.20	0.41
8:I:1887:A:C5	20:N:8:PRO:HG2	2.55	0.41
8:I:2773:G:H2'	8:I:2774:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:G:7:GLN:O	14:G:70:ARG:NH1	2.54	0.41
21:O:87:ALA:HB3	21:O:120:LEU:HD21	2.01	0.41
29:W:29:GLN:HE21	29:W:29:GLN:HB3	1.58	0.41
32:a:70:C:H2'	32:a:71:G:C8	2.56	0.41
32:a:103:A:C2	48:t:10:ARG:HG3	2.54	0.41
32:a:528:G:H5"	42:l:110:ARG:HH12	1.84	0.41
32:a:759:A:H4'	32:a:1516:G:N2	2.35	0.41
32:a:1335:G:H2'	32:a:1336:C:C6	2.55	0.41
33:c:6:ASN:OD1	33:c:6:ASN:C	2.63	0.41
40:j:6:ILE:HB	40:j:77:ILE:HB	2.03	0.41
42:l:56:LYS:NZ	42:l:60:GLN:HA	2.36	0.41
1:b:9:VAL:HG13	1:b:51:GLU:HG3	2.02	0.41
8:I:153:C:H2'	8:I:154:C:H6	1.85	0.41
8:I:490:A:H2'	8:I:491:A:C8	2.55	0.41
8:I:1624:C:H2'	8:I:1625:U:O4'	2.21	0.41
8:I:1892:U:OP1	11:D:146:ARG:HB2	2.21	0.41
8:I:2707:A:OP1	19:M:120:ARG:NH1	2.51	0.41
8:I:2816:G:H21	11:D:135:GLN:NE2	2.18	0.41
13:F:52:ARG:CG	13:F:85:LYS:HE3	2.49	0.41
15:H:41:ARG:NE	15:H:41:ARG:HA	2.35	0.41
16:J:19:ASP:OD2	16:J:20:ALA:N	2.53	0.41
17:K:98:ILE:HD11	17:K:118:ALA:HA	2.02	0.41
18:L:30:LYS:HE3	18:L:31:THR:HG23	2.03	0.41
28:V:9:LEU:HD11	28:V:65:LEU:HD13	2.02	0.41
32:a:249:U:H4'	32:a:250:G:O5'	2.19	0.41
32:a:678:A:C2	32:a:695:A:C5	3.08	0.41
32:a:775:A:H2'	32:a:776:G:H8	1.86	0.41
32:a:958:U:H1'	32:a:962:A:C5	2.56	0.41
32:a:1042:G:H2'	32:a:1043:U:C6	2.56	0.41
32:a:1230:A:C8	32:a:1295:C:H1'	2.55	0.41
32:a:1406:A:H2	32:a:1480:G:H22	1.67	0.41
33:c:23:TYR:O	33:c:23:TYR:CD1	2.74	0.41
39:i:151:ARG:HB3	50:A:84:VAL:HB	2.03	0.41
47:s:71:LEU:HA	47:s:74:PHE:HD2	1.86	0.41
48:t:56:ARG:O	48:t:60:LYS:HB2	2.21	0.41
50:A:71:CYS:SG	50:A:72:GLN:HG3	2.61	0.41
8:I:244:G:O2'	8:I:256:G:O6	2.27	0.41
8:I:502:C:H2'	8:I:503:C:C6	2.56	0.41
8:I:545:U:OP1	26:T:70:ARG:NH2	2.54	0.41
8:I:699:U:H2'	8:I:700:G:C8	2.56	0.41
8:I:1086:U:H5"	19:M:14:HIS:CE1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:1765:A:O2'	8:I:1766:U:H5'	2.21	0.41
8:I:2184:U:H2'	8:I:2185:C:C6	2.55	0.41
8:I:2221:U:H4'	8:I:2844:C:H4'	2.01	0.41
8:I:2309:C:H5	8:I:2675:G:N1	2.13	0.41
8:I:2541:G:H4'	13:F:129:PHE:CB	2.51	0.41
13:F:47:VAL:CG1	13:F:157:ARG:HD2	2.50	0.41
21:O:72:LYS:HB3	21:O:107:ARG:HD3	2.03	0.41
31:Z:15:ALA:O	31:Z:20:ARG:NH1	2.54	0.41
32:a:476:G:H3'	32:a:477:U:C5'	2.51	0.41
32:a:553:U:H1'	42:l:12:ARG:HB3	2.02	0.41
36:f:2:ARG:HH11	36:f:92:ARG:NH2	2.19	0.41
40:j:10:LEU:H	40:j:74:ILE:HD12	1.85	0.41
51:r:40:ASP:OD2	51:r:41:ARG:N	2.54	0.41
51:r:42:GLY:O	51:r:68:ARG:NH2	2.51	0.41
53:y:5:CYS:SG	53:y:52:SER:OG	2.68	0.41
1:b:17:THR:HG21	1:b:43:LEU:HG	2.02	0.41
8:I:191:G:OP1	53:y:26:ARG:HD3	2.21	0.41
8:I:711:A:H2'	8:I:712:A:C8	2.55	0.41
8:I:858:G:C8	10:C:208:LYS:HD2	2.56	0.41
8:I:955:U:H5'	8:I:2666:G:O2'	2.21	0.41
8:I:963:C:H2'	8:I:964:A:H8	1.85	0.41
8:I:980:C:H2'	8:I:981:C:C6	2.56	0.41
8:I:1143:U:H1'	23:Q:121:VAL:HG21	2.02	0.41
8:I:1692:U:O2'	20:N:60:LEU:HD13	2.21	0.41
8:I:1832:G:OP2	26:T:43:LYS:NZ	2.52	0.41
8:I:2025:A:C8	8:I:2026:G:C8	3.08	0.41
8:I:2202:G:O2'	8:I:2205:C:OP1	2.38	0.41
13:F:176:LEU:O	13:F:180:LEU:HG	2.20	0.41
14:G:52:VAL:HA	14:G:70:ARG:NH1	2.33	0.41
14:G:76:LEU:HD12	14:G:76:LEU:HA	1.88	0.41
14:G:95:TYR:HA	14:G:107:ALA:O	2.20	0.41
15:H:42:GLY:HA2	15:H:45:LYS:HB2	2.02	0.41
23:Q:120:ASP:CG	23:Q:121:VAL:N	2.79	0.41
31:Z:38:GLU:HG3	31:Z:39:ASP:H	1.86	0.41
32:a:80:U:H2'	32:a:81:C:C6	2.55	0.41
32:a:271:C:C2	32:a:272:A:C8	3.09	0.41
32:a:443:A:H2'	32:a:444:U:C6	2.55	0.41
32:a:492:C:H1'	32:a:540:C:H1'	2.03	0.41
32:a:506:G:H2'	32:a:507:U:H6	1.86	0.41
32:a:1148:G:HO2'	32:a:1172:A:H61	1.64	0.41
32:a:1221:A:H2'	32:a:1222:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:1489:C:H5”	50:A:47:ARG:HH12	1.86	0.41
32:a:1517:C:H2’	32:a:1518:G:H8	1.84	0.41
33:c:16:THR:OG1	33:c:17:ASP:N	2.54	0.41
39:i:30:VAL:O	39:i:103:GLY:HA2	2.20	0.41
43:m:16:GLU:OE1	43:m:34:LEU:HD22	2.21	0.41
47:s:51:VAL:HG21	47:s:71:LEU:HB3	2.02	0.41
47:s:70:LYS:O	47:s:73:GLU:N	2.53	0.41
52:9:33:SER:HB3	52:9:34:PRO:HD3	2.03	0.41
2:1:26:ARG:O	2:1:30:GLN:HG2	2.21	0.41
8:I:655:G:H2’	8:I:656:U:O4’	2.21	0.41
8:I:1395:G:H2’	8:I:2252:A:N6	2.36	0.41
8:I:1545:G:H22	8:I:1823:A:H2	1.67	0.41
8:I:2046:A:O2’	10:C:45:ALA:N	2.52	0.41
8:I:2269:A:N3	8:I:2693:G:O2’	2.36	0.41
8:I:2354:A:C2	8:I:2407:A:H5”	2.56	0.41
8:I:2445:C:H2’	8:I:2446:C:C6	2.56	0.41
8:I:2448:G:H5”	8:I:2450:A:OP2	2.21	0.41
8:I:2525:A:C5	8:I:2527:G:C8	3.09	0.41
8:I:2637:A:H2’	8:I:2638:C:H6	1.86	0.41
8:I:2833:G:N2	8:I:2836:A:OP2	2.41	0.41
15:H:12:LEU:HD22	15:H:19:VAL:HG21	2.03	0.41
22:P:38:ARG:HG2	22:P:39:LEU:H	1.86	0.41
31:Z:29:ARG:HG3	31:Z:33:HIS:CE1	2.56	0.41
32:a:37:C:H2’	32:a:38:G:C8	2.54	0.41
32:a:270:C:H2’	32:a:271:C:H6	1.86	0.41
32:a:1086:U:H2’	32:a:1087:C:C6	2.56	0.41
36:f:26:PHE:O	36:f:29:VAL:HG22	2.20	0.41
37:g:110:GLN:O	37:g:111:ARG:HB2	2.21	0.41
53:y:33:ILE:HA	53:y:52:SER:HA	2.02	0.41
8:I:855:G:O2’	8:I:856:A:H8	2.04	0.40
8:I:1209:C:H2’	8:I:1210:U:O4’	2.21	0.40
8:I:1664:G:N7	10:C:31:LYS:NZ	2.68	0.40
8:I:2375:C:C4	8:I:2376:U:C4	3.10	0.40
8:I:2431:A:H2’	8:I:2432:U:C6	2.56	0.40
8:I:3012:C:H2’	8:I:3013:A:O4’	2.21	0.40
13:F:36:PRO:HB2	13:F:176:LEU:HD22	2.04	0.40
14:G:77:VAL:O	14:G:80:VAL:HG12	2.21	0.40
15:H:29:PHE:HD2	15:H:30:LEU:HD23	1.86	0.40
16:J:93:MET:HE3	16:J:93:MET:HB3	1.98	0.40
21:O:32:ARG:HA	21:O:96:VAL:HG23	2.03	0.40
22:P:2:ASN:OD1	22:P:3:ARG:N	2.47	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:T:40:THR:O	26:T:44:ILE:HG13	2.21	0.40
28:V:144:VAL:HG12	28:V:160:ILE:HG12	2.03	0.40
31:Z:47:ILE:O	31:Z:50:VAL:C	2.64	0.40
32:a:753:A:H2'	32:a:754:G:H8	1.86	0.40
32:a:762:G:H2'	32:a:763:U:C6	2.56	0.40
32:a:1020:C:O2	32:a:1026:G:C6	2.74	0.40
32:a:1029:C:H2'	32:a:1030:U:H6	1.84	0.40
32:a:1294:U:C5	43:m:17:VAL:HG21	2.55	0.40
34:d:60:TYR:CE2	34:d:89:LEU:HB3	2.56	0.40
35:e:136:VAL:HG13	35:e:154:ILE:CG2	2.50	0.40
36:f:87:ARG:O	51:r:70:MET:HE1	2.21	0.40
40:j:67:MET:HE3	40:j:67:MET:C	2.46	0.40
41:k:57:SER:C	41:k:59:HIS:N	2.78	0.40
44:o:38:ASP:OD2	44:o:38:ASP:C	2.63	0.40
47:s:40:ILE:HG22	47:s:67:VAL:HA	2.03	0.40
8:I:306:G:H2'	8:I:307:U:C6	2.57	0.40
8:I:332:C:H2'	8:I:333:U:C6	2.57	0.40
8:I:682:C:OP1	23:Q:34:LYS:NZ	2.49	0.40
8:I:985:G:H2'	8:I:986:A:C8	2.56	0.40
8:I:991:G:H2'	8:I:992:A:O4'	2.21	0.40
8:I:1092:C:O2'	8:I:2511:A:N3	2.40	0.40
8:I:1183:A:H2'	8:I:1184:G:H8	1.86	0.40
8:I:1232:A:H5"	8:I:1233:C:C5	2.56	0.40
8:I:1444:U:H2'	8:I:1845:A:C2	2.57	0.40
8:I:1673:A:H2'	8:I:1674:G:H8	1.85	0.40
8:I:3045:A:H2'	8:I:3046:G:O4'	2.20	0.40
29:W:46:HIS:ND1	29:W:77:THR:HG23	2.37	0.40
32:a:53:A:O2'	32:a:359:G:N2	2.54	0.40
32:a:512:G:OP2	42:l:51:LYS:HE3	2.22	0.40
32:a:554:A:H2	42:l:12:ARG:HH21	1.68	0.40
32:a:584:U:H2'	32:a:585:C:C6	2.56	0.40
32:a:604:C:OP1	34:d:76:ARG:HG3	2.21	0.40
32:a:664:G:O3'	36:f:87:ARG:NH2	2.54	0.40
32:a:1116:U:N3	32:a:1118:G:C8	2.89	0.40
32:a:1143:U:H2'	32:a:1144:G:N7	2.36	0.40
32:a:1490:G:H1'	32:a:1511:A:C2	2.53	0.40
35:e:118:GLY:HA3	35:e:174:ALA:HB2	2.03	0.40
36:f:79:LEU:HD23	36:f:79:LEU:HA	1.94	0.40
37:g:107:TYR:O	37:g:110:GLN:C	2.64	0.40
38:h:36:ILE:HG23	38:h:105:ILE:HD13	2.04	0.40
42:l:54:ARG:HH21	42:l:64:THR:HG1	1.63	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:s:43:ASP:OD2	47:s:43:ASP:C	2.63	0.40
7:6:12:THR:HG23	7:6:27:THR:H	1.86	0.40
8:I:637:C:H2'	8:I:638:C:H6	1.85	0.40
8:I:871:U:H2'	8:I:872:A:H8	1.83	0.40
8:I:1586:G:H2'	8:I:1587:A:H8	1.85	0.40
8:I:2341:C:H2'	8:I:2342:G:H8	1.84	0.40
8:I:2454:G:H2'	8:I:2455:G:C8	2.56	0.40
8:I:2529:U:H2'	8:I:2530:U:H6	1.83	0.40
11:D:18:ASP:OD1	11:D:20:SER:N	2.49	0.40
13:F:80:SER:OG	13:F:88:GLU:N	2.55	0.40
14:G:53:VAL:HG12	14:G:70:ARG:NE	2.37	0.40
32:a:118:C:H5"	32:a:310:C:O2'	2.22	0.40
32:a:948:A:H1'	32:a:1219:A:H61	1.86	0.40
32:a:956:G:C2	32:a:957:A:C8	3.10	0.40
32:a:1248:C:H2'	32:a:1270:G:C6	2.56	0.40
33:c:85:ARG:O	33:c:85:ARG:HD2	2.20	0.40
39:i:30:VAL:HA	39:i:39:ARG:NE	2.29	0.40
41:k:129:ASN:OD1	41:k:129:ASN:N	2.54	0.40
43:m:54:ILE:HD12	43:m:54:ILE:HA	1.82	0.40
1:b:13:SER:C	1:b:15:ALA:N	2.79	0.40
8:I:64:G:H2'	8:I:65:G:H8	1.86	0.40
8:I:348:U:H2'	8:I:349:G:C8	2.57	0.40
8:I:942:U:H2'	8:I:943:C:H6	1.86	0.40
12:E:190:ASN:ND2	12:E:193:ASP:OD2	2.54	0.40
13:F:135:TYR:CE2	13:F:137:PHE:CE2	3.08	0.40
23:Q:11:HIS:O	23:Q:15:ARG:HG3	2.21	0.40
25:S:14:VAL:HG13	25:S:116:VAL:HG22	2.03	0.40
32:a:710:C:O2'	51:r:43:LYS:HB3	2.22	0.40
32:a:770:C:H2'	32:a:771:G:O4'	2.22	0.40
32:a:1077:U:H3	32:a:1090:G:H22	1.70	0.40
32:a:1208:U:H2'	32:a:1209:C:C6	2.57	0.40
8:I:834:A:N6	8:I:855:G:H1'	2.36	0.40
8:I:933:A:H5"	8:I:934:G:OP1	2.20	0.40
8:I:2110:G:H2'	8:I:2111:G:H8	1.86	0.40
8:I:2203:C:H2'	8:I:2204:A:C2	2.57	0.40
8:I:2351:A:N6	8:I:2356:A:H62	2.19	0.40
8:I:2431:A:H2'	8:I:2432:U:H6	1.86	0.40
8:I:2530:U:H2'	8:I:2531:C:H6	1.86	0.40
17:K:23:ARG:HD2	17:K:23:ARG:HA	1.87	0.40
21:O:81:GLN:O	21:O:85:GLU:HG3	2.21	0.40
32:a:24:G:H2'	32:a:25:G:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:206:A:C6	32:a:207:A:C5	3.09	0.40
32:a:410:A:H4'	32:a:411:U:C5	2.57	0.40
32:a:669:U:H2'	32:a:670:C:H6	1.85	0.40
32:a:1170:G:N2	32:a:1172:A:H3'	2.36	0.40
32:a:1179:G:H2'	32:a:1180:A:H8	1.86	0.40
41:k:42:VAL:O	41:k:55:ALA:HA	2.22	0.40
43:m:31:ASN:OD1	43:m:31:ASN:C	2.64	0.40
51:r:40:ASP:OD2	51:r:41:ARG:HG3	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	b	47/54 (87%)	45 (96%)	2 (4%)	0	100	100
2	1	49/62 (79%)	45 (92%)	4 (8%)	0	100	100
3	0	51/57 (90%)	45 (88%)	6 (12%)	0	100	100
4	2	40/47 (85%)	35 (88%)	5 (12%)	0	100	100
5	3	60/64 (94%)	56 (93%)	4 (7%)	0	100	100
6	4	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
7	6	43/80 (54%)	34 (79%)	9 (21%)	0	100	100
10	C	270/280 (96%)	252 (93%)	18 (7%)	0	100	100
11	D	211/217 (97%)	194 (92%)	17 (8%)	0	100	100
12	E	205/223 (92%)	191 (93%)	14 (7%)	0	100	100
13	F	168/187 (90%)	152 (90%)	16 (10%)	0	100	100
14	G	172/179 (96%)	159 (92%)	13 (8%)	0	100	100
15	H	45/152 (30%)	43 (96%)	2 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	J	144/195 (74%)	141 (98%)	3 (2%)	0	100	100
17	K	119/122 (98%)	116 (98%)	3 (2%)	0	100	100
18	L	140/146 (96%)	134 (96%)	6 (4%)	0	100	100
19	M	132/138 (96%)	125 (95%)	7 (5%)	0	100	100
20	N	114/180 (63%)	107 (94%)	7 (6%)	0	100	100
21	O	114/122 (93%)	102 (90%)	11 (10%)	1 (1%)	14	35
22	P	110/113 (97%)	102 (93%)	8 (7%)	0	100	100
23	Q	120/129 (93%)	115 (96%)	5 (4%)	0	100	100
24	R	96/104 (92%)	94 (98%)	2 (2%)	0	100	100
25	S	111/197 (56%)	108 (97%)	3 (3%)	0	100	100
26	T	93/100 (93%)	91 (98%)	2 (2%)	0	100	100
27	U	86/105 (82%)	75 (87%)	10 (12%)	1 (1%)	10	27
28	V	175/215 (81%)	153 (87%)	21 (12%)	1 (1%)	21	44
29	W	72/86 (84%)	62 (86%)	10 (14%)	0	100	100
30	Y	63/77 (82%)	60 (95%)	3 (5%)	0	100	100
31	Z	57/65 (88%)	50 (88%)	7 (12%)	0	100	100
33	c	205/274 (75%)	196 (96%)	9 (4%)	0	100	100
34	d	199/201 (99%)	180 (90%)	19 (10%)	0	100	100
35	e	158/220 (72%)	138 (87%)	19 (12%)	1 (1%)	21	44
36	f	93/96 (97%)	81 (87%)	12 (13%)	0	100	100
37	g	150/156 (96%)	141 (94%)	9 (6%)	0	100	100
38	h	128/132 (97%)	117 (91%)	11 (9%)	0	100	100
39	i	125/151 (83%)	105 (84%)	20 (16%)	0	100	100
40	j	97/101 (96%)	91 (94%)	6 (6%)	0	100	100
41	k	115/139 (83%)	104 (90%)	11 (10%)	0	100	100
42	l	121/124 (98%)	100 (83%)	21 (17%)	0	100	100
43	m	111/124 (90%)	104 (94%)	7 (6%)	0	100	100
44	o	85/89 (96%)	78 (92%)	6 (7%)	1 (1%)	10	27
45	p	83/162 (51%)	77 (93%)	6 (7%)	0	100	100
46	q	92/135 (68%)	82 (89%)	10 (11%)	0	100	100
47	s	79/93 (85%)	74 (94%)	5 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
48	t	80/86 (93%)	76 (95%)	4 (5%)	0	100 100
49	x	27/33 (82%)	27 (100%)	0	0	100 100
50	A	100/214 (47%)	91 (91%)	9 (9%)	0	100 100
51	r	69/88 (78%)	65 (94%)	4 (6%)	0	100 100
52	9	98/101 (97%)	91 (93%)	6 (6%)	1 (1%)	12 32
53	y	76/78 (97%)	74 (97%)	1 (1%)	1 (1%)	9 25
54	7	20/24 (83%)	20 (100%)	0	0	100 100
All	All	5453/6554 (83%)	5032 (92%)	414 (8%)	7 (0%)	49 73

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
21	O	49	ASP
44	o	47	LYS
27	U	95	VAL
28	V	47	LEU
53	y	18	VAL
52	9	40	GLN
35	e	192	ILE

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	b	46/50 (92%)	42 (91%)	4 (9%)	9 24
2	1	40/50 (80%)	40 (100%)	0	100 100
3	0	43/47 (92%)	42 (98%)	1 (2%)	44 73
4	2	36/40 (90%)	36 (100%)	0	100 100
5	3	53/54 (98%)	53 (100%)	0	100 100
6	4	34/35 (97%)	32 (94%)	2 (6%)	18 42
7	6	40/66 (61%)	40 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
10	C	212/219 (97%)	212 (100%)	0	100	100
11	D	163/166 (98%)	163 (100%)	0	100	100
12	E	159/172 (92%)	159 (100%)	0	100	100
13	F	139/155 (90%)	137 (99%)	2 (1%)	59	82
14	G	143/147 (97%)	142 (99%)	1 (1%)	76	90
15	H	36/121 (30%)	35 (97%)	1 (3%)	38	68
16	J	120/161 (74%)	119 (99%)	1 (1%)	73	88
17	K	100/101 (99%)	100 (100%)	0	100	100
18	L	106/110 (96%)	104 (98%)	2 (2%)	50	77
19	M	110/114 (96%)	110 (100%)	0	100	100
20	N	94/139 (68%)	94 (100%)	0	100	100
21	O	88/93 (95%)	85 (97%)	3 (3%)	32	62
22	P	98/99 (99%)	97 (99%)	1 (1%)	68	86
23	Q	95/99 (96%)	95 (100%)	0	100	100
24	R	79/83 (95%)	78 (99%)	1 (1%)	61	83
25	S	87/140 (62%)	87 (100%)	0	100	100
26	T	81/83 (98%)	79 (98%)	2 (2%)	42	71
27	U	77/88 (88%)	74 (96%)	3 (4%)	28	57
28	V	142/164 (87%)	142 (100%)	0	100	100
29	W	54/62 (87%)	53 (98%)	1 (2%)	50	77
30	Y	58/66 (88%)	58 (100%)	0	100	100
31	Z	51/55 (93%)	51 (100%)	0	100	100
33	c	170/210 (81%)	169 (99%)	1 (1%)	78	91
34	d	177/177 (100%)	177 (100%)	0	100	100
35	e	114/159 (72%)	113 (99%)	1 (1%)	70	87
36	f	84/85 (99%)	84 (100%)	0	100	100
37	g	127/131 (97%)	127 (100%)	0	100	100
38	h	106/108 (98%)	106 (100%)	0	100	100
39	i	102/120 (85%)	101 (99%)	1 (1%)	68	86
40	j	89/90 (99%)	89 (100%)	0	100	100
41	k	90/107 (84%)	90 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
42	l	105/105 (100%)	105 (100%)	0	100 100
43	m	96/104 (92%)	95 (99%)	1 (1%)	68 86
44	o	77/79 (98%)	77 (100%)	0	100 100
45	p	72/125 (58%)	72 (100%)	0	100 100
46	q	84/105 (80%)	82 (98%)	2 (2%)	43 72
47	s	73/85 (86%)	73 (100%)	0	100 100
48	t	62/65 (95%)	62 (100%)	0	100 100
49	x	24/31 (77%)	24 (100%)	0	100 100
50	A	89/182 (49%)	89 (100%)	0	100 100
51	r	60/71 (84%)	59 (98%)	1 (2%)	53 79
52	9	81/82 (99%)	78 (96%)	3 (4%)	30 59
53	y	67/68 (98%)	67 (100%)	0	100 100
54	7	18/20 (90%)	18 (100%)	0	100 100
All	All	4551/5288 (86%)	4516 (99%)	35 (1%)	70 88

All (35) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	8	ILE
1	b	26	ASN
1	b	28	ARG
1	b	34	LEU
3	0	31	THR
6	4	1	MET
6	4	4	ASN
13	F	21	ASP
13	F	165	THR
14	G	108	LEU
15	H	2	LYS
16	J	57	ILE
18	L	83	ASN
18	L	131	SER
21	O	47	VAL
21	O	50	LEU
21	O	64	ASP
22	P	37	GLU
24	R	28	LEU

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Mol	Chain	Res	Type
26	T	8	ARG
26	T	9	ASP
27	U	4	HIS
27	U	90	GLU
27	U	91	THR
29	W	19	GLN
33	c	169	ARG
35	e	137	ILE
39	i	37	VAL
43	m	65	LYS
46	q	70	MET
46	q	94	THR
51	r	56	GLN
52	9	32	ARG
52	9	40	GLN
52	9	45	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (44) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	26	ASN
1	b	29	ASN
5	3	25	GLN
12	E	47	GLN
12	E	82	GLN
12	E	106	GLN
13	F	62	ASN
13	F	162	ASN
14	G	82	GLN
16	J	130	HIS
20	N	62	ASN
23	Q	44	ASN
26	T	63	GLN
28	V	82	HIS
28	V	91	GLN
30	Y	35	GLN
33	c	113	GLN
33	c	122	GLN
33	c	152	GLN
34	d	115	HIS
34	d	119	ASN
34	d	124	HIS

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Mol	Chain	Res	Type
34	d	167	GLN
35	e	152	HIS
36	f	28	ASN
36	f	55	HIS
36	f	78	GLN
37	g	49	GLN
37	g	68	ASN
37	g	153	HIS
38	h	117	GLN
39	i	52	ASN
39	i	66	GLN
40	j	56	HIS
43	m	55	HIS
44	o	48	HIS
45	p	17	GLN
45	p	57	GLN
48	t	40	HIS
49	x	27	GLN
51	r	16	ASN
51	r	57	GLN
52	9	45	GLN
54	7	18	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
32	a	1518/1537 (98%)	242 (15%)	0
8	I	3116/3138 (99%)	423 (13%)	12 (0%)
9	B	114/115 (99%)	9 (7%)	0
All	All	4748/4790 (99%)	674 (14%)	12 (0%)

All (674) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
8	I	34	U
8	I	35	G
8	I	51	G
8	I	63	A
8	I	71	A
8	I	74	U
8	I	75	G

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Mol	Chain	Res	Type
8	I	85	G
8	I	91	A
8	I	92	A
8	I	93	C
8	I	101	G
8	I	118	A
8	I	119	A
8	I	120	U
8	I	131	A
8	I	143	G
8	I	183	A
8	I	198	A
8	I	201	A
8	I	217	G
8	I	218	A
8	I	224	A
8	I	225	A
8	I	231	U
8	I	232	G
8	I	235	A
8	I	250	G
8	I	267	A
8	I	268	G
8	I	271	U
8	I	286	G
8	I	287	G
8	I	288	U
8	I	289	A
8	I	290	A
8	I	291	C
8	I	293	G
8	I	301	G
8	I	304	G
8	I	320	G
8	I	327	U
8	I	332	C
8	I	360	A
8	I	371	U
8	I	372	G
8	I	394	U
8	I	405	A
8	I	413	A

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Mol	Chain	Res	Type
8	I	428	A
8	I	429	A
8	I	445	U
8	I	446	A
8	I	447	G
8	I	448	U
8	I	454	U
8	I	461	G
8	I	475	G
8	I	476	U
8	I	500	G
8	I	501	A
8	I	524	C
8	I	570	G
8	I	579	G
8	I	593	A
8	I	596	A
8	I	597	C
8	I	606	G
8	I	618	U
8	I	619	C
8	I	620	C
8	I	621	G
8	I	624	A
8	I	628	C
8	I	642	C
8	I	645	G
8	I	655	G
8	I	665	G
8	I	674	A
8	I	675	G
8	I	677	A
8	I	691	C
8	I	695	G
8	I	704	C
8	I	705	A
8	I	706	A
8	I	707	G
8	I	718	G
8	I	719	U
8	I	720	G
8	I	738	G

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Mol	Chain	Res	Type
8	I	741	A
8	I	742	G
8	I	749	U
8	I	757	C
8	I	758	C
8	I	760	A
8	I	764	G
8	I	773	C
8	I	780	G
8	I	781	A
8	I	782	A
8	I	783	U
8	I	799	A
8	I	815	U
8	I	816	C
8	I	845	A
8	I	856	A
8	I	857	G
8	I	859	C
8	I	876	U
8	I	893	A
8	I	905	G
8	I	911	A
8	I	912	A
8	I	913	G
8	I	914	G
8	I	915	C
8	I	918	A
8	I	919	U
8	I	922	A
8	I	934	G
8	I	941	C
8	I	956	U
8	I	975	G
8	I	976	U
8	I	988	G
8	I	1002	U
8	I	1007	G
8	I	1026	C
8	I	1036	C
8	I	1039	A
8	I	1043	C

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Mol	Chain	Res	Type
8	I	1059	A
8	I	1074	G
8	I	1080	G
8	I	1081	G
8	I	1086	U
8	I	1087	A
8	I	1089	G
8	I	1096	A
8	I	1097	C
8	I	1103	A
8	I	1125	G
8	I	1142	G
8	I	1155	G
8	I	1162	U
8	I	1163	G
8	I	1187	G
8	I	1189	U
8	I	1190	U
8	I	1200	G
8	I	1207	C
8	I	1208	C
8	I	1212	G
8	I	1217	A
8	I	1240	A
8	I	1241	G
8	I	1242	U
8	I	1243	G
8	I	1257	A
8	I	1261	U
8	I	1262	A
8	I	1264	C
8	I	1271	C
8	I	1273	A
8	I	1304	U
8	I	1306	G
8	I	1378	A
8	I	1381	G
8	I	1386	U
8	I	1387	G
8	I	1402	G
8	I	1403	A
8	I	1423	G

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Mol	Chain	Res	Type
8	I	1432	A
8	I	1437	C
8	I	1452	C
8	I	1456	C
8	I	1460	U
8	I	1463	G
8	I	1481	C
8	I	1483	U
8	I	1496	A
8	I	1499	G
8	I	1510	U
8	I	1515	A
8	I	1526	A
8	I	1550	C
8	I	1552	G
8	I	1558	A
8	I	1561	C
8	I	1567	U
8	I	1568	A
8	I	1580	A
8	I	1582	A
8	I	1589	C
8	I	1590	G
8	I	1591	A
8	I	1592	U
8	I	1601	U
8	I	1602	U
8	I	1606	G
8	I	1609	U
8	I	1615	G
8	I	1622	G
8	I	1625	U
8	I	1646	G
8	I	1653	A
8	I	1654	G
8	I	1657	A
8	I	1665	A
8	I	1666	C
8	I	1687	G
8	I	1690	A
8	I	1691	G
8	I	1692	U

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Mol	Chain	Res	Type
8	I	1693	G
8	I	1698	C
8	I	1705	G
8	I	1714	U
8	I	1720	G
8	I	1727	A
8	I	1755	G
8	I	1767	A
8	I	1770	C
8	I	1774	U
8	I	1803	A
8	I	1806	A
8	I	1807	A
8	I	1815	U
8	I	1821	G
8	I	1822	C
8	I	1830	C
8	I	1843	A
8	I	1845	A
8	I	1851	A
8	I	1881	U
8	I	1883	C
8	I	1888	U
8	I	1892	U
8	I	1909	G
8	I	1910	C
8	I	1911	A
8	I	1950	A
8	I	1960	C
8	I	1961	C
8	I	1963	U
8	I	1966	C
8	I	1998	U
8	I	2007	A
8	I	2034	C
8	I	2035	G
8	I	2043	A
8	I	2063	A
8	I	2082	A
8	I	2092	G
8	I	2107	A
8	I	2109	G

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Mol	Chain	Res	Type
8	I	2121	G
8	I	2123	A
8	I	2144	G
8	I	2146	U
8	I	2151	A
8	I	2158	C
8	I	2165	A
8	I	2167	G
8	I	2168	G
8	I	2175	A
8	I	2176	A
8	I	2180	C
8	I	2190	A
8	I	2193	U
8	I	2205	C
8	I	2208	A
8	I	2209	U
8	I	2210	G
8	I	2229	U
8	I	2231	U
8	I	2232	C
8	I	2257	C
8	I	2261	A
8	I	2269	A
8	I	2270	G
8	I	2281	C
8	I	2294	G
8	I	2298	A
8	I	2299	G
8	I	2300	A
8	I	2301	C
8	I	2313	C
8	I	2314	A
8	I	2330	G
8	I	2343	G
8	I	2347	G
8	I	2348	U
8	I	2350	U
8	I	2353	G
8	I	2354	A
8	I	2355	U
8	I	2356	A

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Mol	Chain	Res	Type
8	I	2357	G
8	I	2358	G
8	I	2359	U
8	I	2360	G
8	I	2361	G
8	I	2362	G
8	I	2364	G
8	I	2369	U
8	I	2371	A
8	I	2377	C
8	I	2378	G
8	I	2382	C
8	I	2383	C
8	I	2384	A
8	I	2385	G
8	I	2387	U
8	I	2388	G
8	I	2389	G
8	I	2391	G
8	I	2392	C
8	I	2393	G
8	I	2394	G
8	I	2395	A
8	I	2396	G
8	I	2398	C
8	I	2400	U
8	I	2401	U
8	I	2402	G
8	I	2403	U
8	I	2404	U
8	I	2405	G
8	I	2408	A
8	I	2409	U
8	I	2413	A
8	I	2414	C
8	I	2417	U
8	I	2419	A
8	I	2422	G
8	I	2424	A
8	I	2435	A
8	I	2441	G
8	I	2442	A

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Mol	Chain	Res	Type
8	I	2447	U
8	I	2448	G
8	I	2449	A
8	I	2451	U
8	I	2463	A
8	I	2476	G
8	I	2477	G
8	I	2488	G
8	I	2516	A
8	I	2517	G
8	I	2521	C
8	I	2525	A
8	I	2526	A
8	I	2543	A
8	I	2549	A
8	I	2557	G
8	I	2563	G
8	I	2572	C
8	I	2573	A
8	I	2585	C
8	I	2588	C
8	I	2599	A
8	I	2610	G
8	I	2621	G
8	I	2623	A
8	I	2640	C
8	I	2644	A
8	I	2663	A
8	I	2664	A
8	I	2666	G
8	I	2667	G
8	I	2668	A
8	I	2679	C
8	I	2685	G
8	I	2686	A
8	I	2698	U
8	I	2714	A
8	I	2716	A
8	I	2725	A
8	I	2729	U
8	I	2730	U
8	I	2742	U

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Mol	Chain	Res	Type
8	I	2743	G
8	I	2744	U
8	I	2751	G
8	I	2756	A
8	I	2758	C
8	I	2763	G
8	I	2767	G
8	I	2804	A
8	I	2805	G
8	I	2823	U
8	I	2844	C
8	I	2847	U
8	I	2851	U
8	I	2853	U
8	I	2868	A
8	I	2884	C
8	I	2928	A
8	I	2929	C
8	I	2952	G
8	I	2962	C
8	I	2964	C
8	I	2967	U
8	I	2971	U
8	I	2986	A
8	I	3016	A
8	I	3034	U
8	I	3035	U
8	I	3039	G
8	I	3107	A
8	I	3115	C
8	I	3118	A
8	I	3120	C
8	I	3121	G
8	I	3125	G
8	I	3126	A
8	I	3128	A
8	I	3129	A
8	I	3131	U
9	B	8	G
9	B	41	C
9	B	52	A
9	B	65	A

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Mol	Chain	Res	Type
9	B	66	G
9	B	88	G
9	B	101	G
9	B	105	A
9	B	115	A
32	a	11	A
32	a	12	G
32	a	25	G
32	a	35	A
32	a	42	G
32	a	51	U
32	a	54	A
32	a	74	A
32	a	75	A
32	a	80	U
32	a	84	C
32	a	89	A
32	a	90	U
32	a	92	C
32	a	93	U
32	a	115	A
32	a	116	C
32	a	125	G
32	a	126	A
32	a	127	U
32	a	138	C
32	a	159	C
32	a	175	A
32	a	176	U
32	a	177	A
32	a	178	G
32	a	190	G
32	a	192	A
32	a	193	U
32	a	194	G
32	a	195	U
32	a	199	G
32	a	201	G
32	a	204	G
32	a	205	G
32	a	206	A
32	a	207	A

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Mol	Chain	Res	Type
32	a	208	A
32	a	212	C
32	a	217	G
32	a	244	C
32	a	246	G
32	a	249	U
32	a	250	G
32	a	265	G
32	a	266	C
32	a	278	A
32	a	279	C
32	a	288	G
32	a	309	G
32	a	320	A
32	a	327	U
32	a	328	A
32	a	329	C
32	a	339	U
32	a	343	A
32	a	345	G
32	a	346	G
32	a	351	C
32	a	353	G
32	a	366	U
32	a	371	C
32	a	373	A
32	a	391	C
32	a	397	C
32	a	399	C
32	a	405	G
32	a	406	G
32	a	410	A
32	a	411	U
32	a	412	G
32	a	413	A
32	a	420	U
32	a	421	C
32	a	428	U
32	a	436	U
32	a	438	U
32	a	440	A
32	a	451	A

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Mol	Chain	Res	Type
32	a	452	G
32	a	456	C
32	a	457	G
32	a	458	G
32	a	459	G
32	a	460	U
32	a	461	U
32	a	462	C
32	a	470	U
32	a	471	U
32	a	476	G
32	a	477	U
32	a	486	A
32	a	487	A
32	a	489	A
32	a	499	C
32	a	501	A
32	a	502	C
32	a	509	C
32	a	512	G
32	a	515	G
32	a	518	G
32	a	520	G
32	a	521	G
32	a	523	A
32	a	524	A
32	a	536	C
32	a	538	A
32	a	550	A
32	a	555	C
32	a	564	A
32	a	566	G
32	a	567	A
32	a	568	G
32	a	610	U
32	a	624	G
32	a	644	A
32	a	656	G
32	a	686	A
32	a	692	C
32	a	693	A
32	a	694	G

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Mol	Chain	Res	Type
32	a	707	A
32	a	709	A
32	a	714	U
32	a	715	G
32	a	740	A
32	a	746	G
32	a	768	A
32	a	783	A
32	a	784	U
32	a	785	A
32	a	790	G
32	a	806	A
32	a	808	C
32	a	812	G
32	a	819	A
32	a	833	U
32	a	835	C
32	a	836	C
32	a	837	U
32	a	838	U
32	a	852	U
32	a	883	G
32	a	895	G
32	a	907	A
32	a	915	G
32	a	919	G
32	a	927	C
32	a	928	A
32	a	953	U
32	a	959	G
32	a	962	A
32	a	968	A
32	a	969	G
32	a	970	A
32	a	980	G
32	a	985	U
32	a	986	G
32	a	987	A
32	a	991	G
32	a	993	A
32	a	994	C
32	a	996	G

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Mol	Chain	Res	Type
32	a	997	G
32	a	998	A
32	a	1003	U
32	a	1007	G
32	a	1016	G
32	a	1018	U
32	a	1021	C
32	a	1022	U
32	a	1023	U
32	a	1024	G
32	a	1026	G
32	a	1035	G
32	a	1044	G
32	a	1045	C
32	a	1085	G
32	a	1086	U
32	a	1092	A
32	a	1125	C
32	a	1126	G
32	a	1129	A
32	a	1131	G
32	a	1132	G
32	a	1135	G
32	a	1150	C
32	a	1151	U
32	a	1152	G
32	a	1160	C
32	a	1161	A
32	a	1175	U
32	a	1176	G
32	a	1188	A
32	a	1189	A
32	a	1190	G
32	a	1204	U
32	a	1205	A
32	a	1207	G
32	a	1217	U
32	a	1218	C
32	a	1219	A
32	a	1228	A
32	a	1230	A
32	a	1249	U

Continued on next page...

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Mol	Chain	Res	Type
32	a	1250	G
32	a	1270	G
32	a	1271	A
32	a	1272	A
32	a	1273	U
32	a	1279	A
32	a	1289	U
32	a	1292	G
32	a	1293	U
32	a	1294	U
32	a	1297	G
32	a	1310	A
32	a	1327	U
32	a	1338	A
32	a	1340	U
32	a	1345	G
32	a	1352	A
32	a	1355	A
32	a	1357	C
32	a	1361	G
32	a	1363	G
32	a	1391	A
32	a	1423	C
32	a	1425	G
32	a	1433	U
32	a	1434	G
32	a	1439	A
32	a	1472	G
32	a	1485	A
32	a	1486	A
32	a	1490	G
32	a	1492	A
32	a	1496	A
32	a	1510	G
32	a	1512	A
32	a	1522	G
32	a	1523	G

All (12) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
8	I	91	A

Continued on next page...

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Mol	Chain	Res	Type
8	I	844	A
8	I	855	G
8	I	913	G
8	I	914	G
8	I	1086	U
8	I	1567	U
8	I	1605	G
8	I	1624	C
8	I	1653	A
8	I	2447	U
8	I	2666	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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

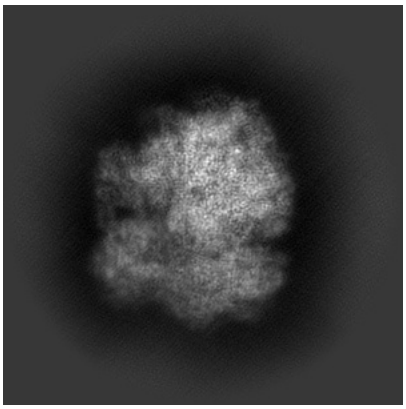
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-47876. These allow visual inspection of the internal detail of the map and identification of artifacts.

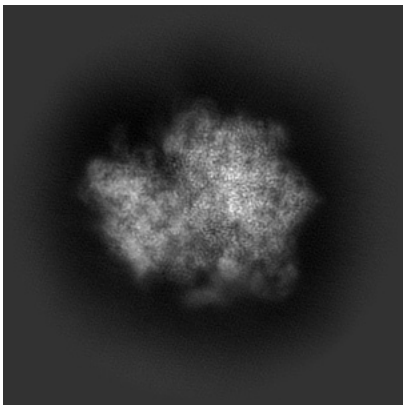
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

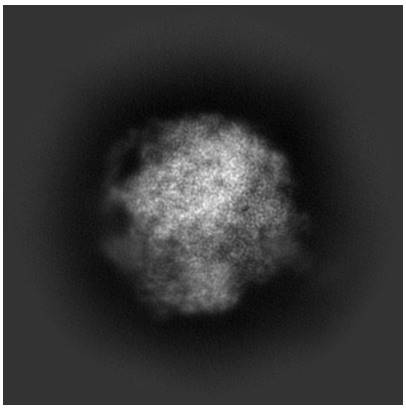
6.1.1 Primary map



X

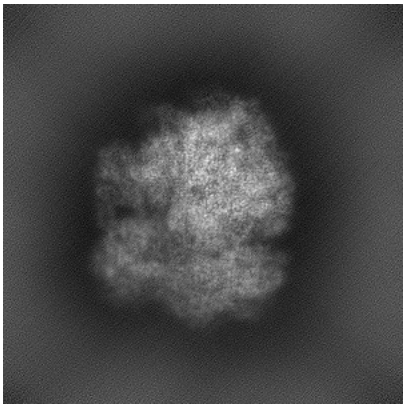


Y

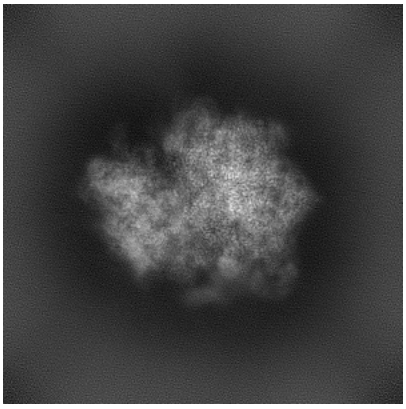


Z

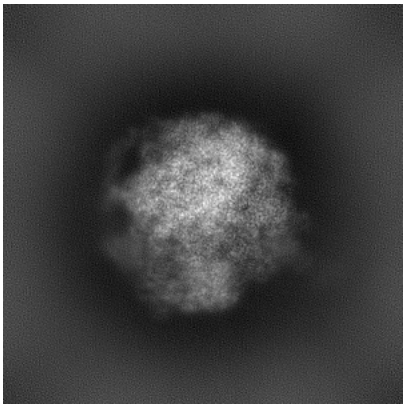
6.1.2 Raw map



X



Y

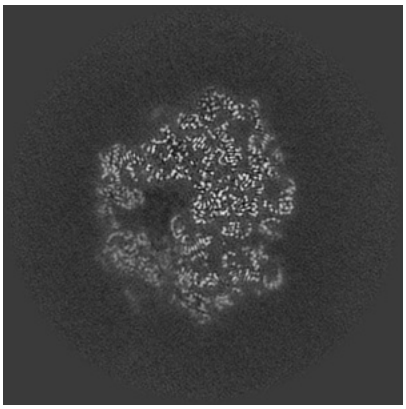


Z

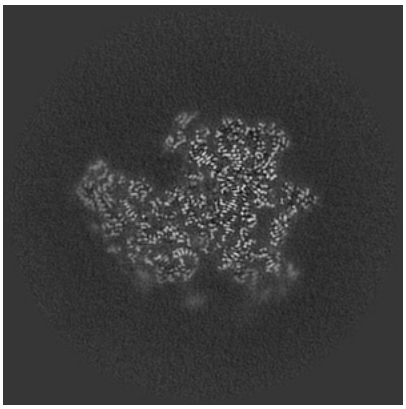
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

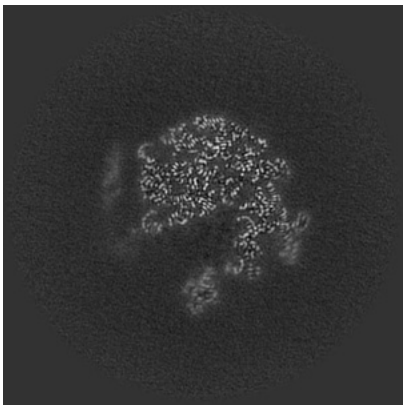
6.2.1 Primary map



X Index: 200

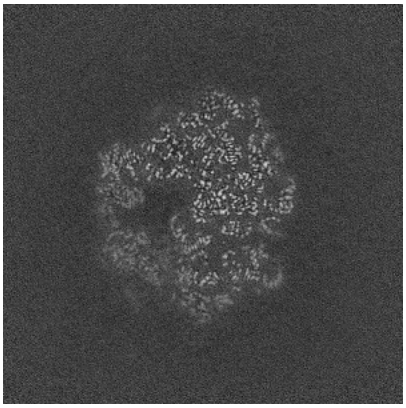


Y Index: 200

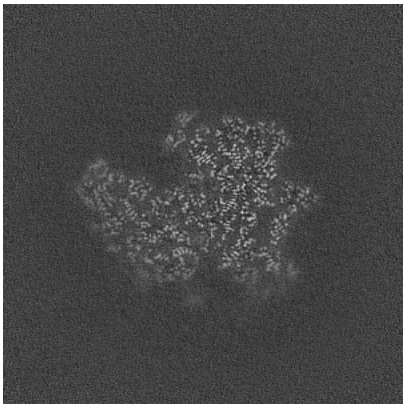


Z Index: 200

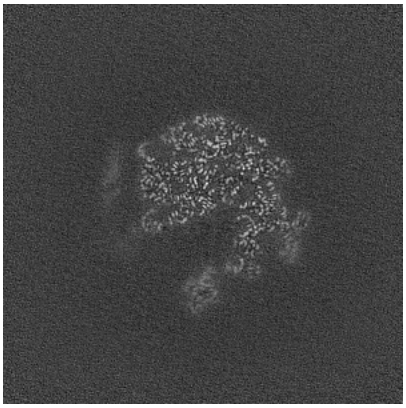
6.2.2 Raw map



X Index: 200



Y Index: 200

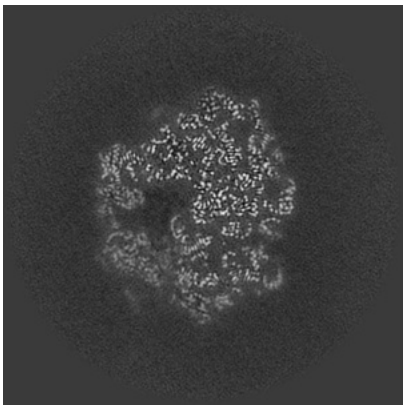


Z Index: 200

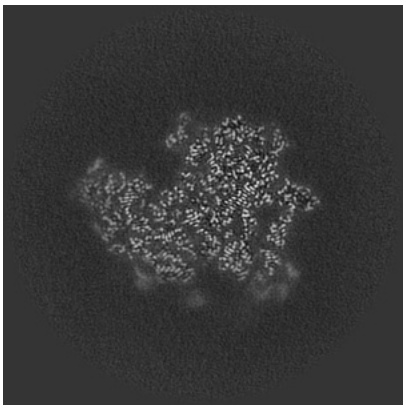
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

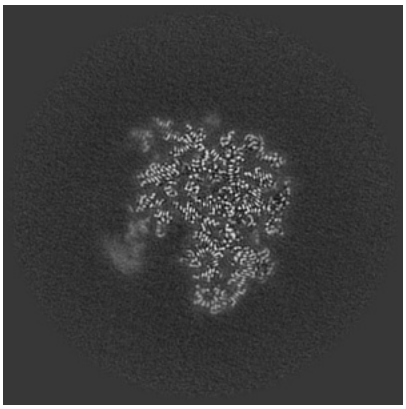
6.3.1 Primary map



X Index: 200

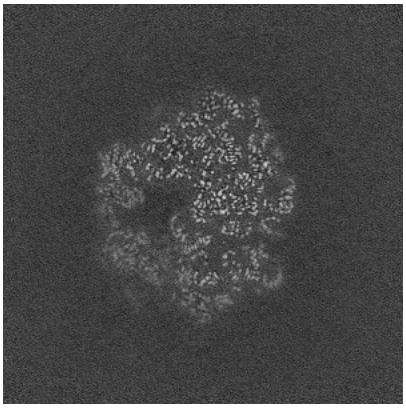


Y Index: 203

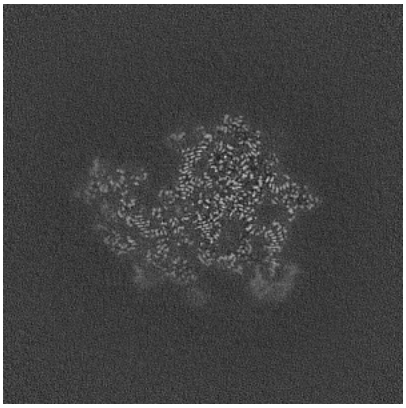


Z Index: 229

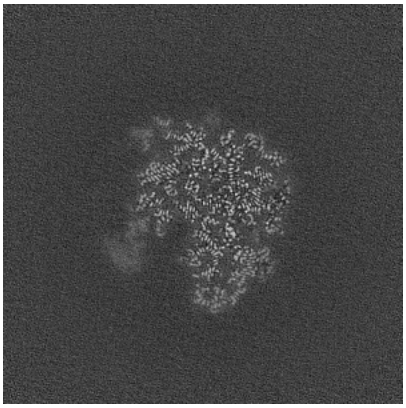
6.3.2 Raw map



X Index: 200



Y Index: 207

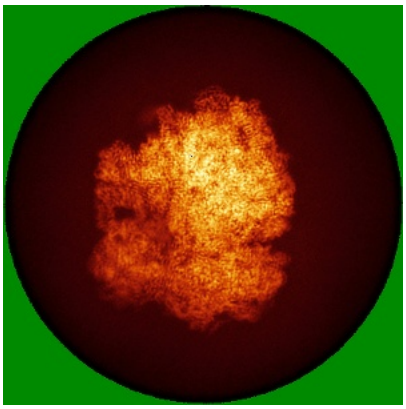


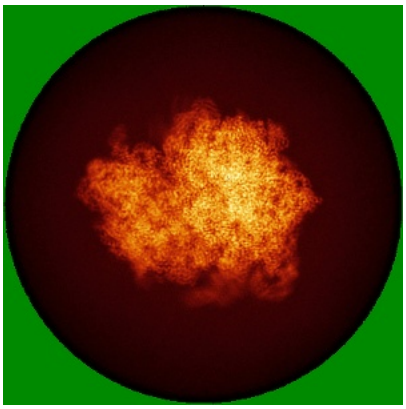
Z Index: 229

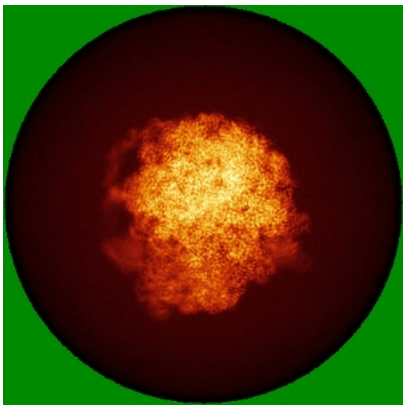
The images above show the largest variance slices of the map in three orthogonal directions.

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

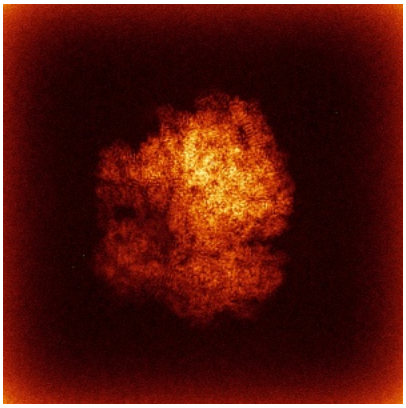
6.4.1 Primary map

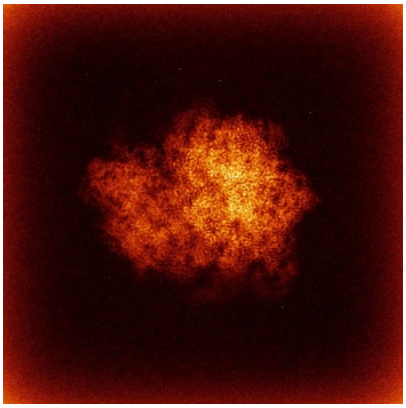

X

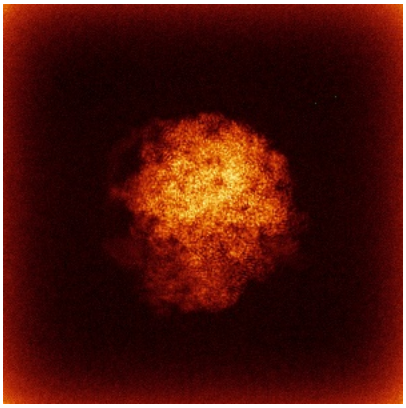

Y


Z

6.4.2 Raw map


X


Y


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

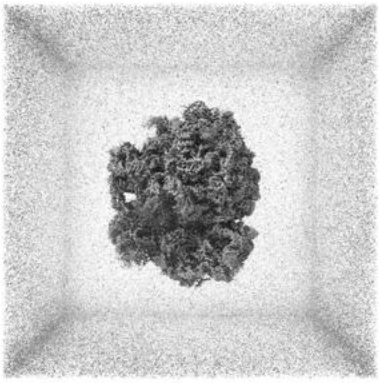
X

Y

Z

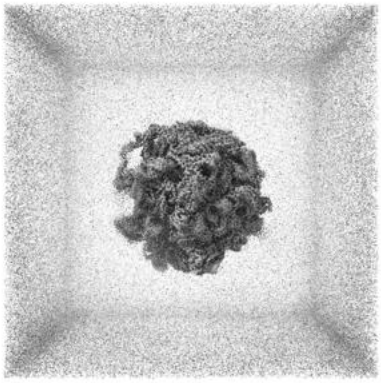
The images above show the 3D surface view of the map at the recommended contour level 0.12. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X

Y



Z

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

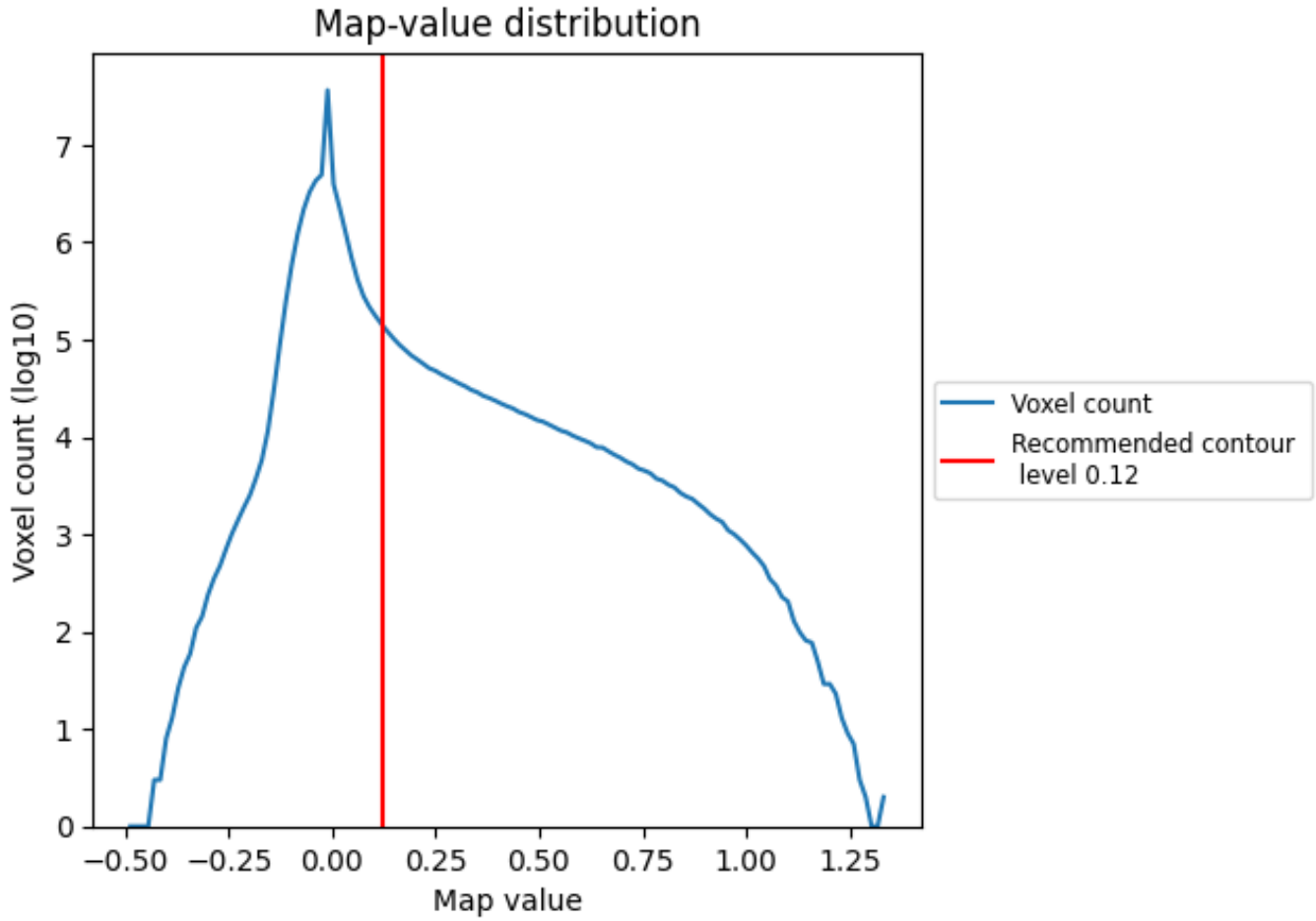
6.6 Mask visualisation (i)

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

7 Map analysis

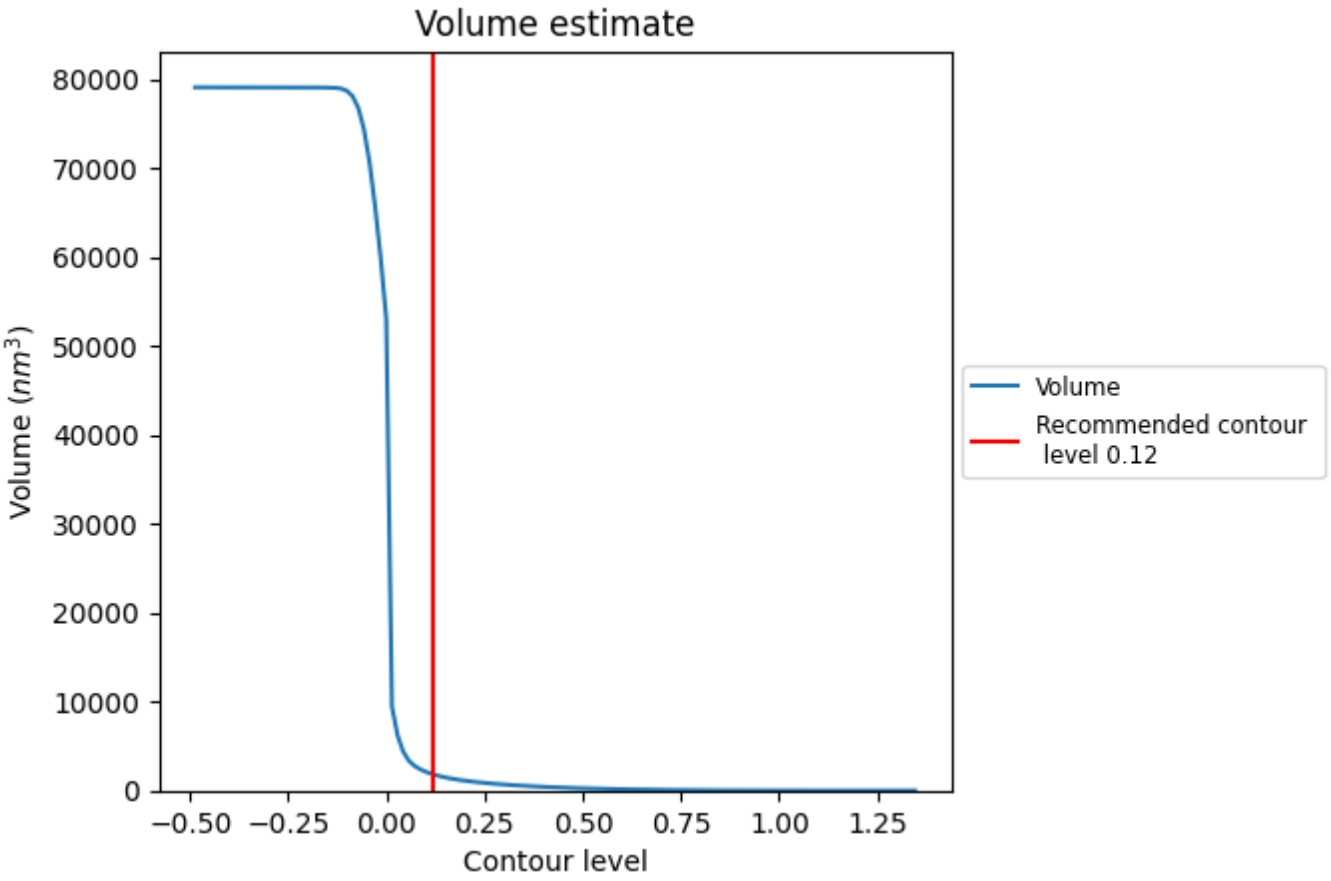
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

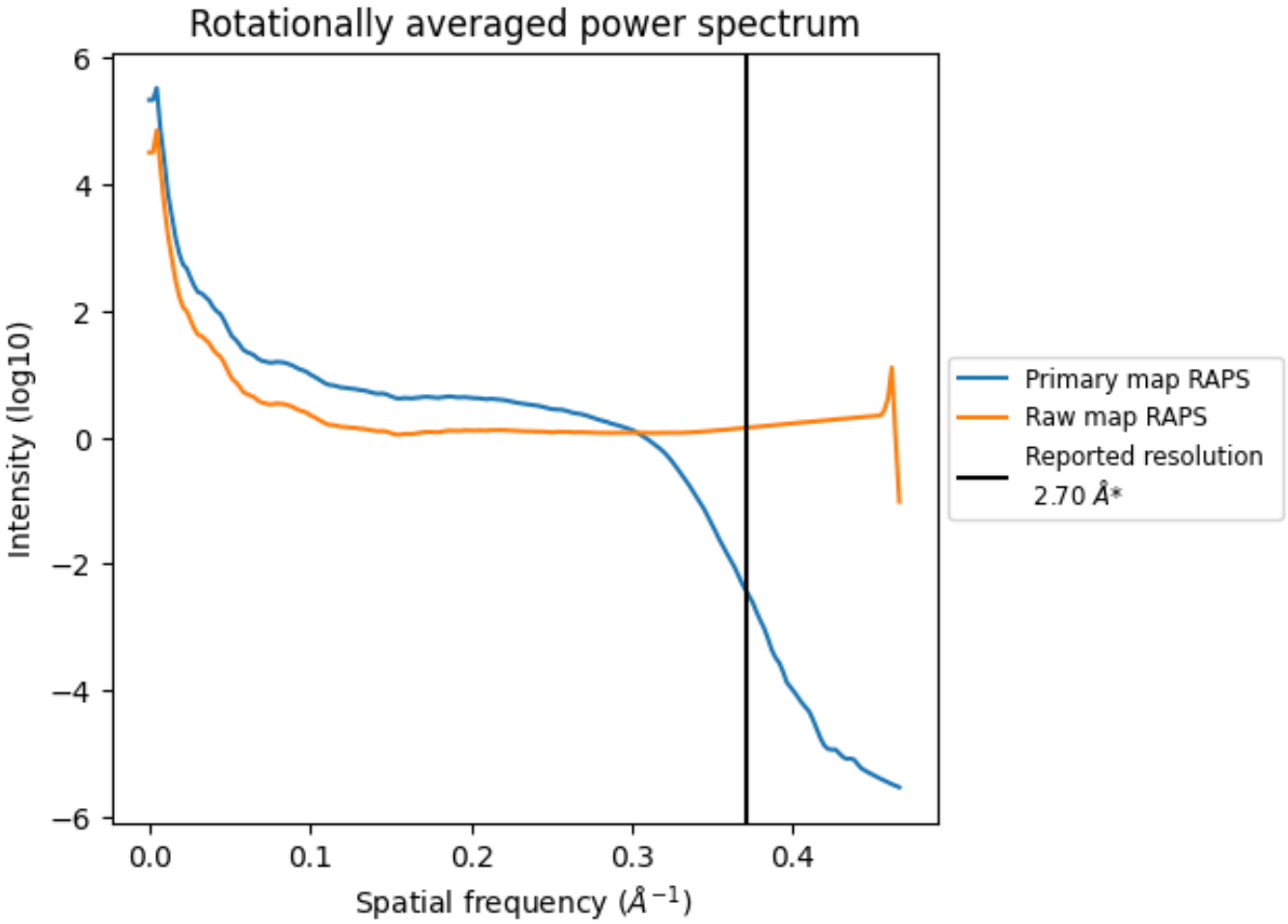
7.2 Volume estimate



The volume at the recommended contour level is 1814 nm^3; this corresponds to an approximate mass of 1638 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)

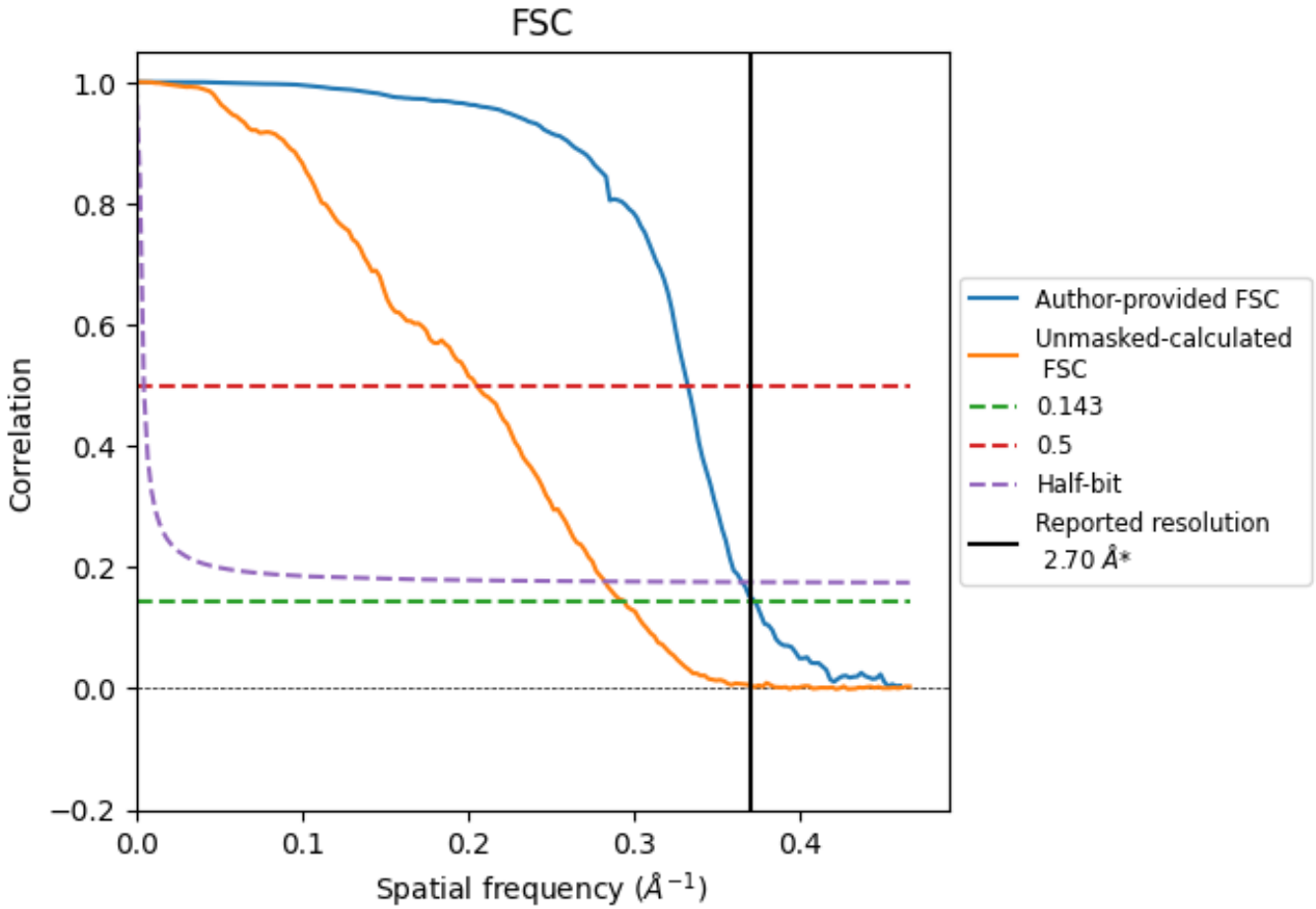


*Reported resolution corresponds to spatial frequency of 0.370 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.370 Å^{-1}

8.2 Resolution estimates (i)

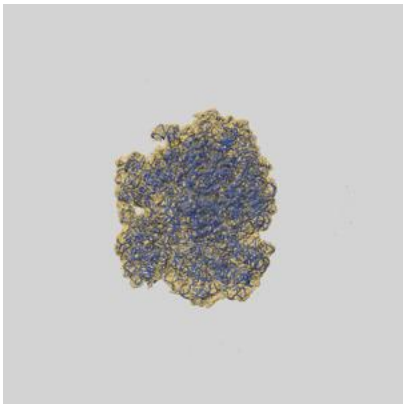
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	2.68	3.01	2.74
Unmasked-calculated*	3.40	4.88	3.54

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.40 differs from the reported value 2.7 by more than 10 %

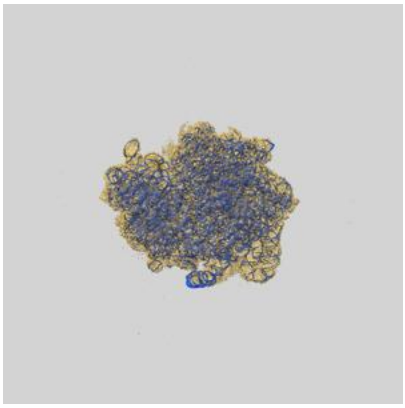
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-47876 and PDB model 9EBB. Per-residue inclusion information can be found in section 3 on page 14.

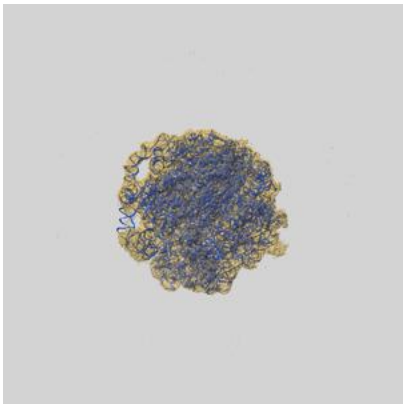
9.1 Map-model overlay



X



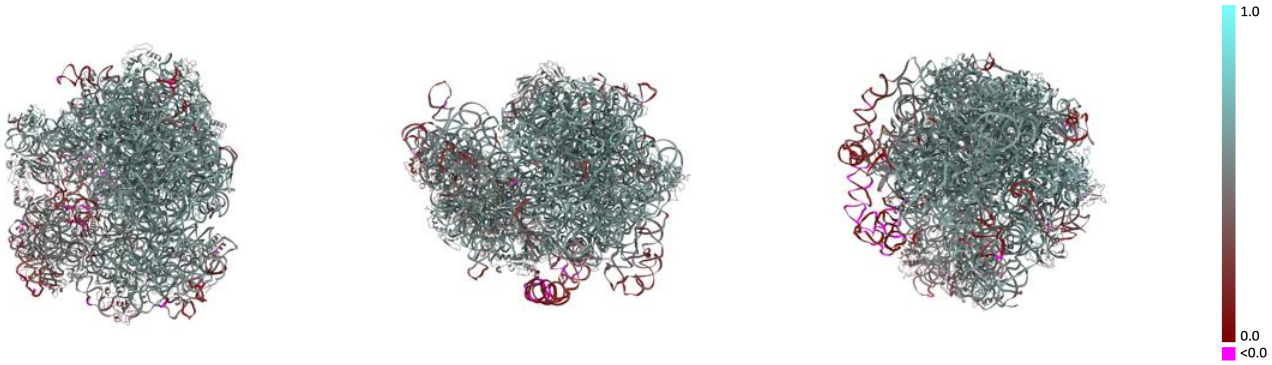
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

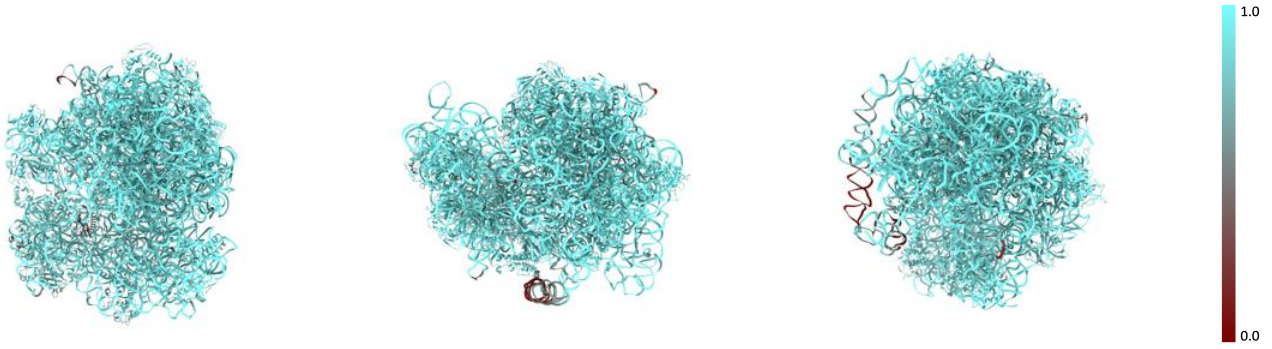
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

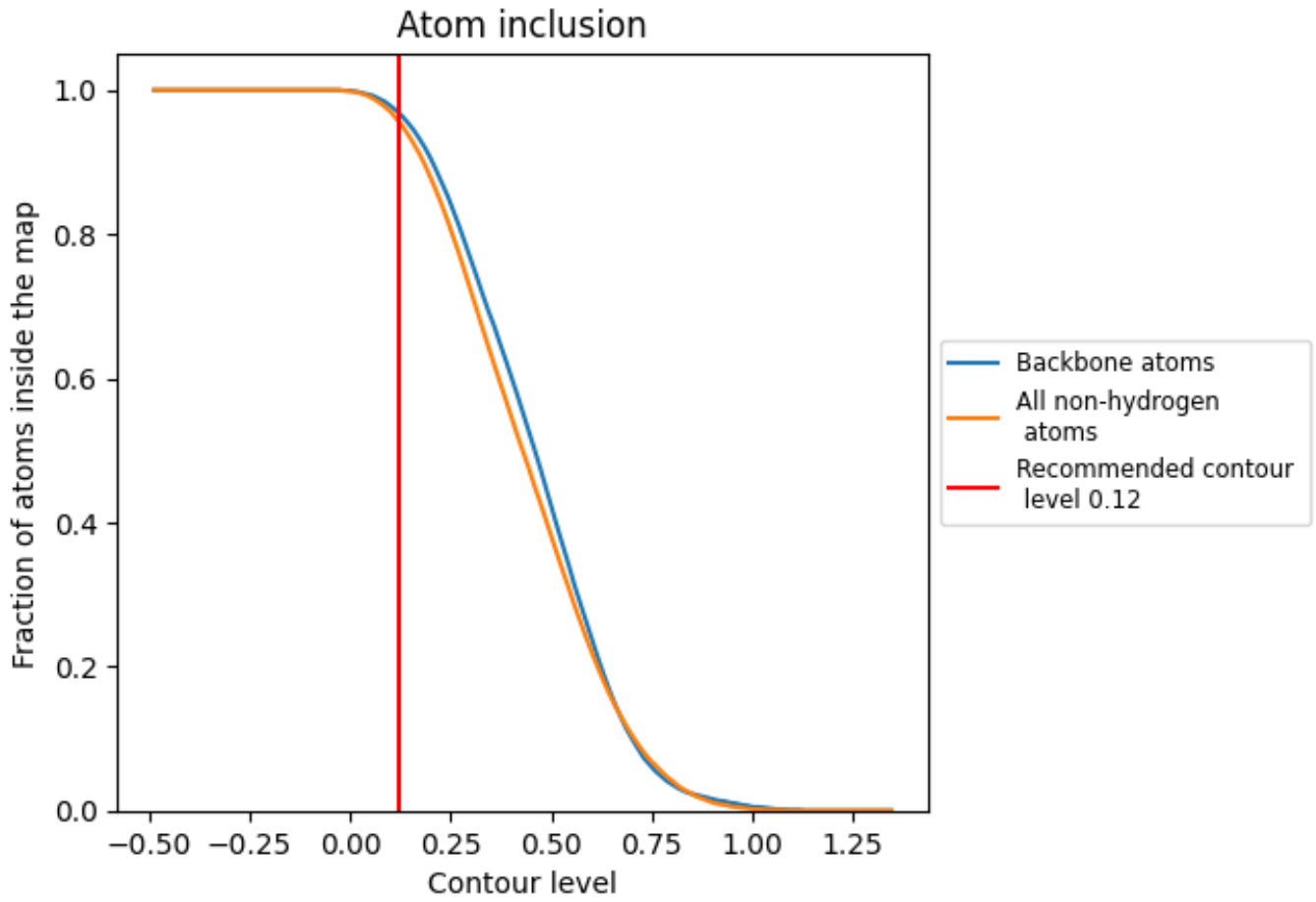
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.12).

9.4 Atom inclusion (i)



At the recommended contour level, 97% of all backbone atoms, 96% 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 (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9570	0.5120
0	0.9780	0.5720
1	0.9660	0.5290
2	0.9880	0.5920
3	0.9980	0.6060
4	0.9930	0.5930
6	0.8730	0.4320
7	0.9940	0.6210
9	0.8120	0.4210
A	0.6240	0.3540
B	0.9970	0.5350
C	0.9860	0.5950
D	0.9790	0.5810
E	0.9670	0.5720
F	0.9330	0.4730
G	0.9490	0.4990
H	0.9560	0.5110
I	0.9560	0.5180
J	0.9800	0.5850
K	0.9930	0.5960
L	0.9920	0.5900
M	0.9920	0.5900
N	0.9940	0.6000
O	0.9680	0.5430
P	0.9730	0.5840
Q	0.9920	0.5920
R	0.9840	0.6010
S	0.9960	0.6010
T	0.9920	0.5840
U	0.9470	0.5170
V	0.8790	0.4520
W	0.9430	0.5380
Y	0.9690	0.5440
Z	0.9740	0.5560
a	0.9850	0.5050

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
b	0.9700	0.5560
c	0.8860	0.4600
d	0.8550	0.3540
e	0.9630	0.5090
f	0.8890	0.4370
g	0.9290	0.4480
h	0.9760	0.5330
i	0.8330	0.2770
j	0.7440	0.2660
k	0.9650	0.5110
l	0.9100	0.4680
m	0.8700	0.3640
o	0.9570	0.5060
p	0.9460	0.4550
q	0.9330	0.4660
r	0.9390	0.5020
s	0.8160	0.2980
t	0.9130	0.4320
x	0.9870	0.5730
y	0.9880	0.5730