Full wwPDB EM Validation Report ⓘ

Jun 3, 2024 – 02:44 PM JST

PDB ID	:	7F0D
EMDB ID	:	EMD-31398
Title	:	Cryo-EM structure of Mycobacterium tuberculosis 50S ribosome subunit bound with clarithromycin
Authors	:	Zhang, W.; Sun, Y.; Gao, N.; Li, Z.
Deposited on	:	2021-06-03
Resolution	:	3.30 Å(reported)
Based on initial model	:	5V7Q

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references ⓘ) were used in the production of this report:

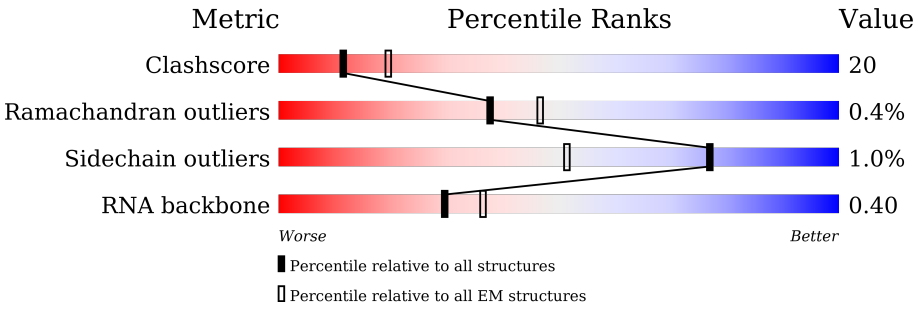
EMDB validation analysis	:	0.0.1.dev92
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

1 Overall quality at a glance

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

The reported resolution of this entry is 3.30 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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

Mol	Chain	Length	Quality of chain
1	0	57	12% 40% 49% • 7%
2	1	55	45% 47% 40% 13%
3	2	47	55% 32% • 11%
4	3	64	11% 59% 36% • •
5	4	37	35% 46% 54%
6	6	80	56% 32% 24% 44%
7	A	3138	17% 28% 50% 20% ••

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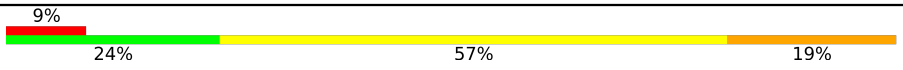
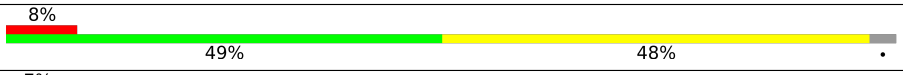
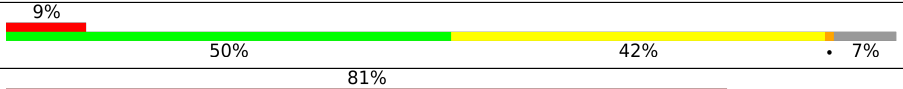
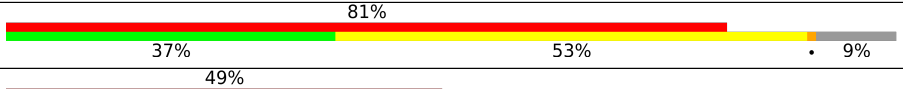
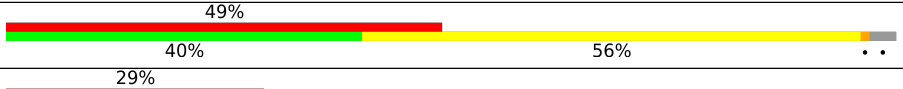
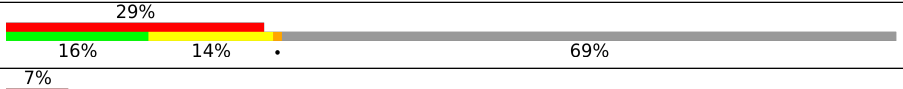
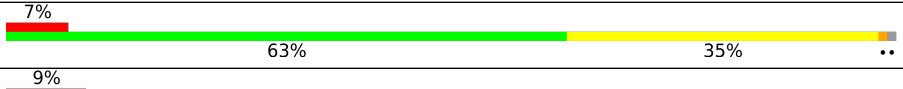
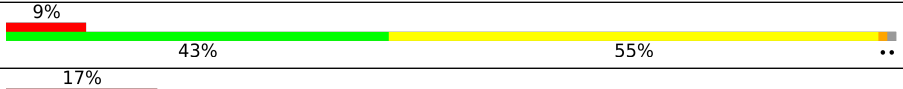
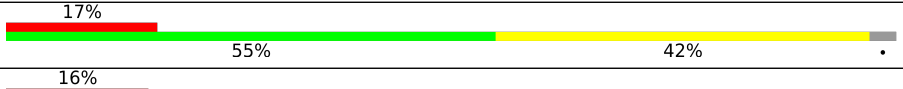
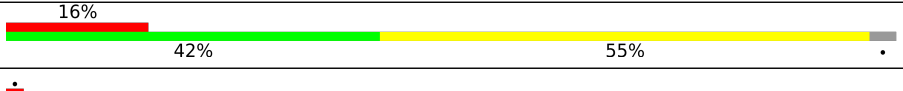
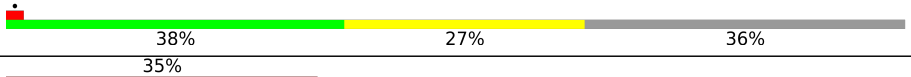
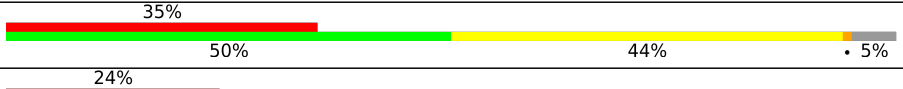
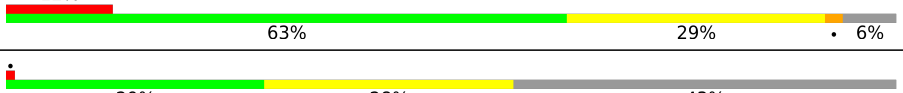
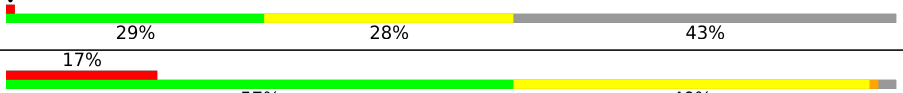
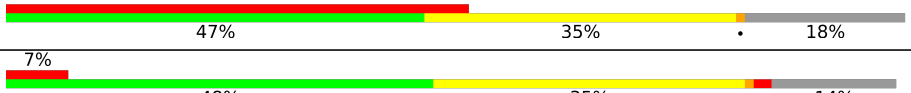
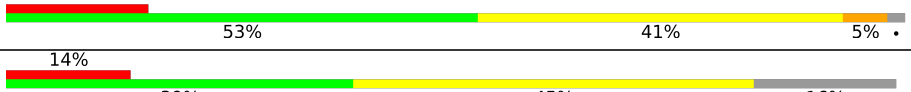
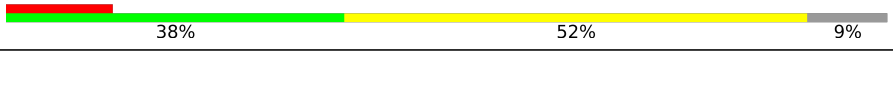
Mol	Chain	Length	Quality of chain
8	B	115	
9	C	280	
10	D	217	
11	E	223	
12	F	187	
13	G	179	
14	H	152	
15	J	147	
16	K	122	
17	L	146	
18	M	138	
19	N	180	
20	O	122	
21	P	113	
22	Q	129	
23	R	104	
24	S	197	
25	T	100	
26	U	105	
27	V	215	
28	W	86	
29	X	64	
30	Y	77	
31	Z	65	

2 Entry composition

There are 34 unique types of molecules in this entry. The entry contains 94362 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
1	0	53	421	262	93	66	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	48	400	245	84	67	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	42	358	212	94	51	1	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	3	62	494	298	112	84	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	37	299	182	66	47	4	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
4	1	VAL	-	expression tag	UNP A0A3E0V5U0

- Molecule 6 is a protein called 50S ribosomal protein L31.

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

- Molecule 7 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	3118	Total	C	N	O	P	1	0
			66978	29855	12345	21659	3119		

- Molecule 8 is a RNA chain called 5S ribosomal RNA.

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

- Molecule 9 is a protein called 50S ribosomal protein L2.

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

- Molecule 10 is a protein called 50S ribosomal protein L3.

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

- Molecule 11 is a protein called 50S ribosomal protein L4.

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

- Molecule 12 is a protein called 50S ribosomal protein L5.

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

- Molecule 13 is a protein called 50S ribosomal protein L6.

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

- Molecule 14 is a protein called 50S ribosomal protein L9.

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

- Molecule 15 is a protein called 50S ribosomal protein L13.

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

- Molecule 16 is a protein called 50S ribosomal protein L14.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
K	1	VAL	-	expression tag	UNP A0A045HTP7

- Molecule 17 is a protein called 50S ribosomal protein L15.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L	1	VAL	-	expression tag	UNP A0A654TTE7

- Molecule 18 is a protein called 50S ribosomal protein L16.

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

- Molecule 19 is a protein called 50S ribosomal protein L17.

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

- Molecule 20 is a protein called 50S ribosomal protein L18.

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

- Molecule 21 is a protein called 50S ribosomal protein L19.

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

- Molecule 22 is a protein called 50S ribosomal protein L20.

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

- Molecule 23 is a protein called 50S ribosomal protein L21.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	1	MET	-	initiating methionine	UNP P9WHC3

- Molecule 24 is a protein called 50S ribosomal protein L22.

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

- Molecule 25 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	T	98	Total	C	N	O	0	0
			759	480	141	138		

- Molecule 26 is a protein called 50S ribosomal protein L24.

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

- Molecule 27 is a protein called 50S ribosomal protein L25.

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

- Molecule 28 is a protein called 50S ribosomal protein L27.

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

- Molecule 29 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	X	63	Total	C	N	O	S	0	0
			476	289	101	81	5		

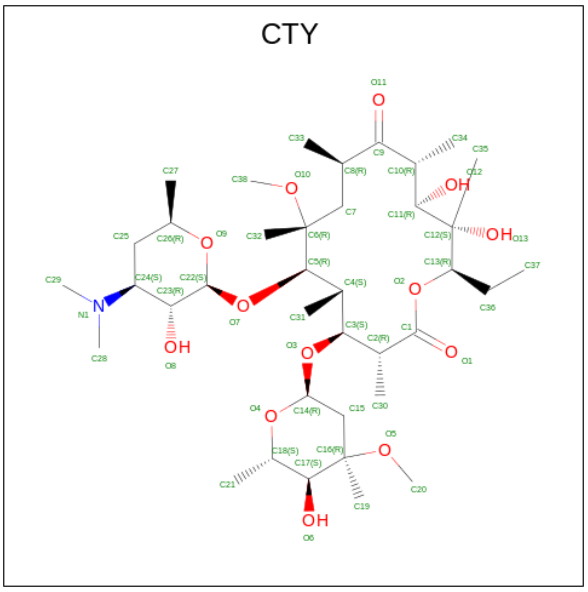
- Molecule 30 is a protein called 50S ribosomal protein L29.

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

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

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

- Molecule 32 is CLARITHROMYCIN (three-letter code: CTY) (formula: $C_{38}H_{69}NO_{13}$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
32	A	1	Total	C	N	O	0
			52	38	1	13	

- Molecule 33 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
33	A	1	Total	Mg	0
			1	1	

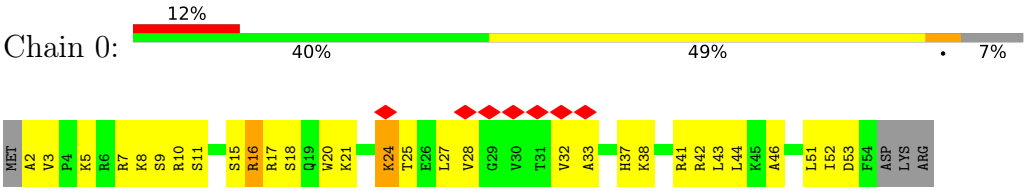
- Molecule 34 is water.

Mol	Chain	Residues	Atoms		AltConf
34	A	3	Total	O	0
			3	3	

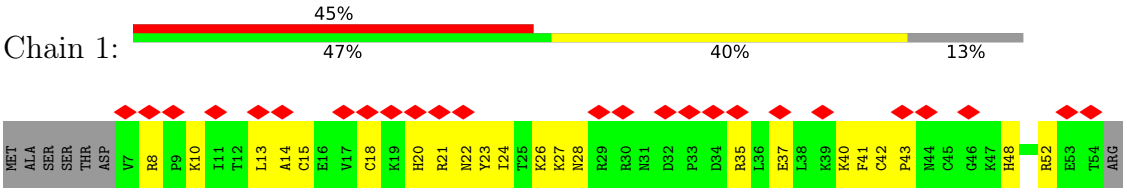
3 Residue-property plots (i)

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

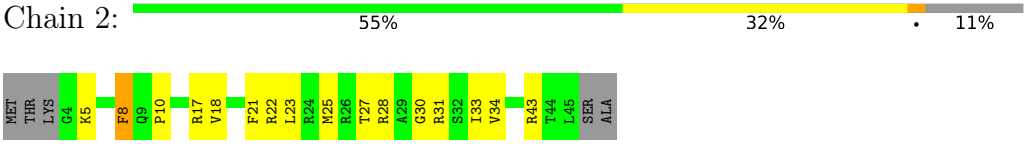
• Molecule 1: 50S ribosomal protein L32



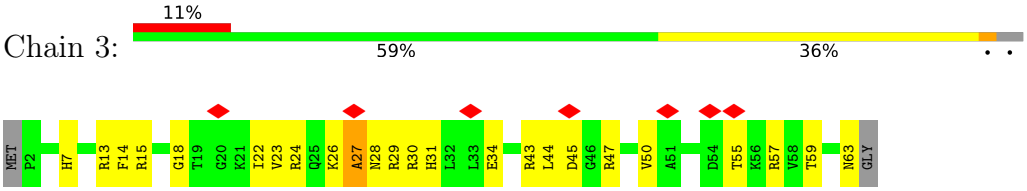
• Molecule 2: 50S ribosomal protein L33



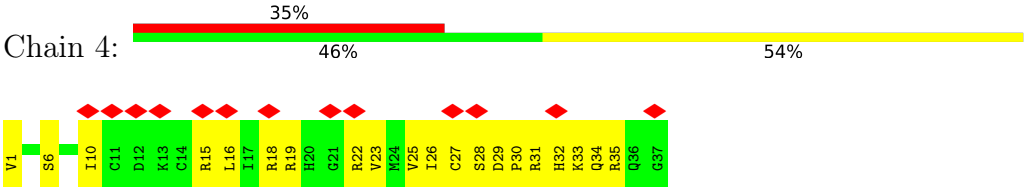
• Molecule 3: 50S ribosomal protein L34



• Molecule 4: 50S ribosomal protein L35

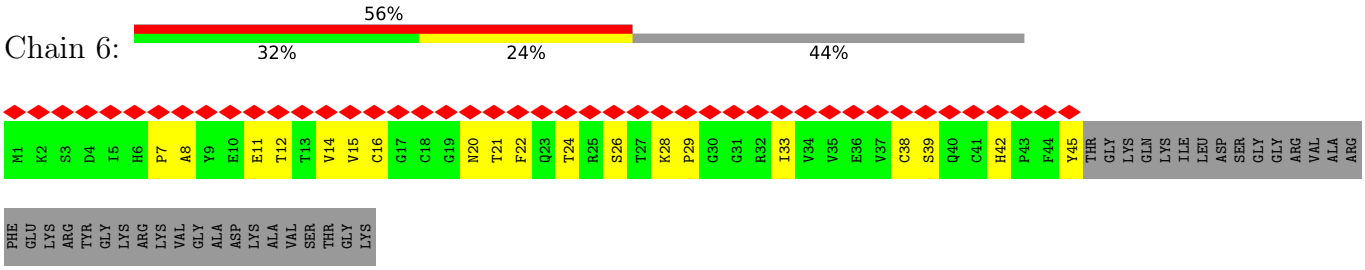


• Molecule 5: 50S ribosomal protein L36



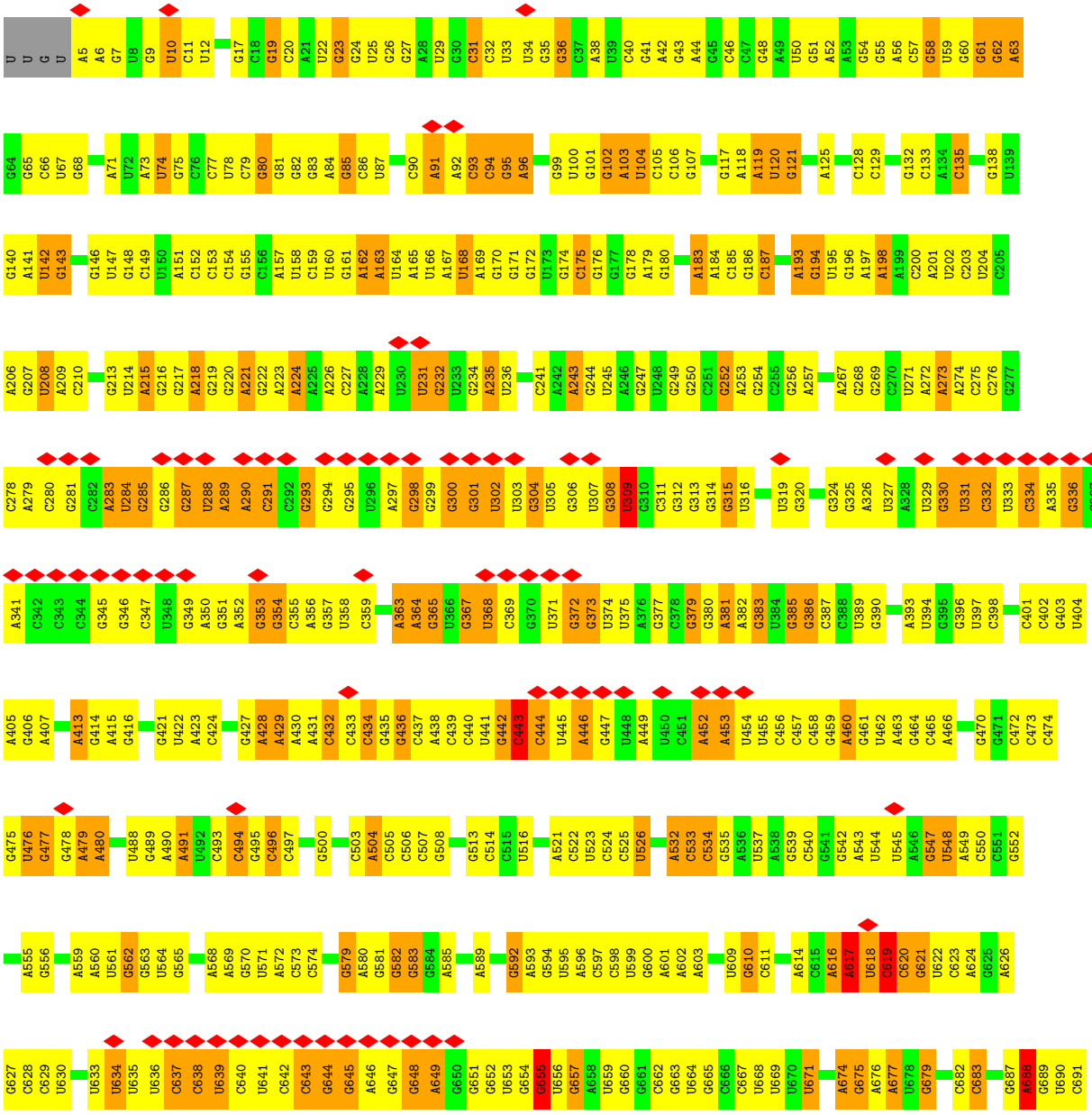
• Molecule 6: 50S ribosomal protein L31

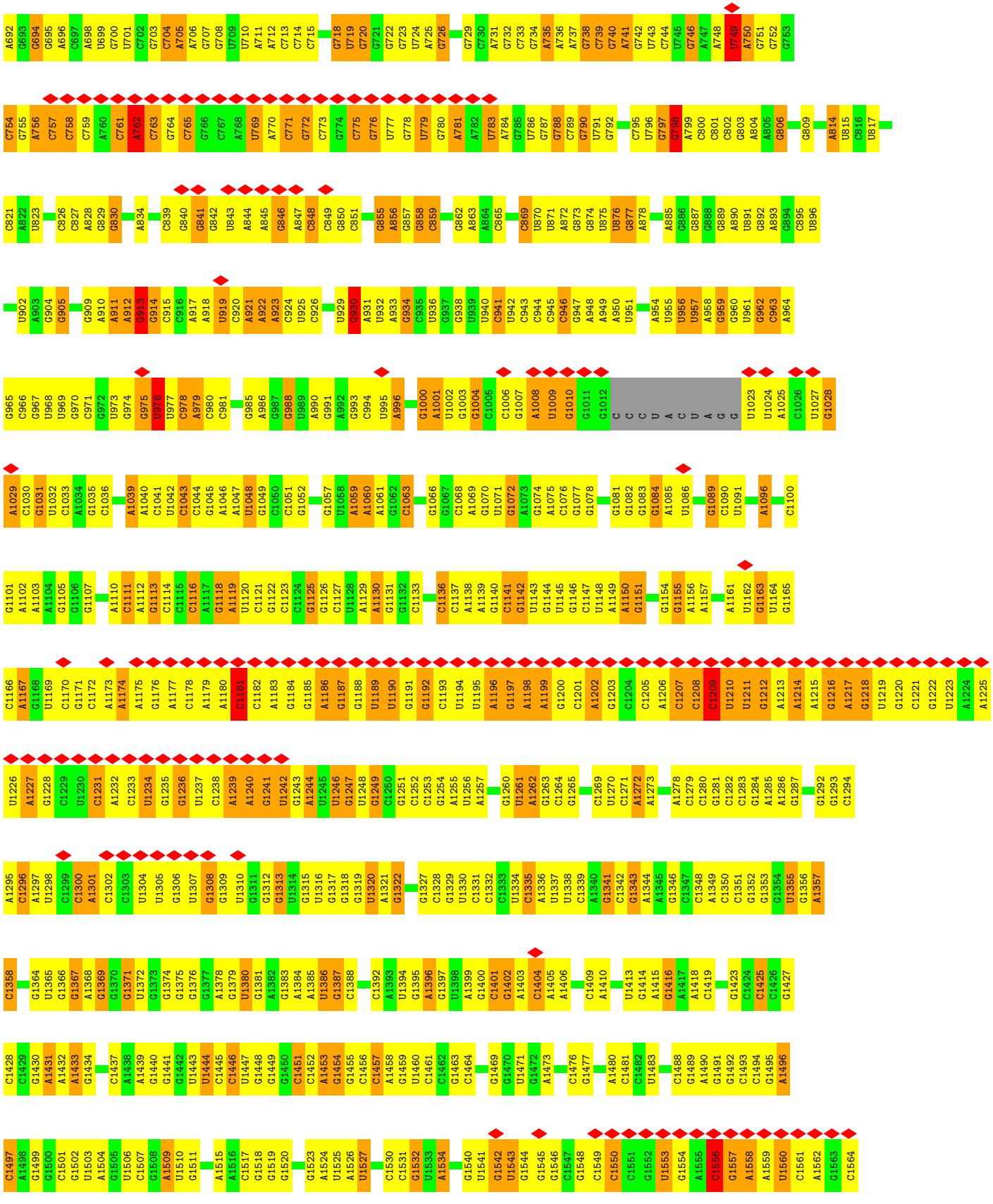
Chain 6:

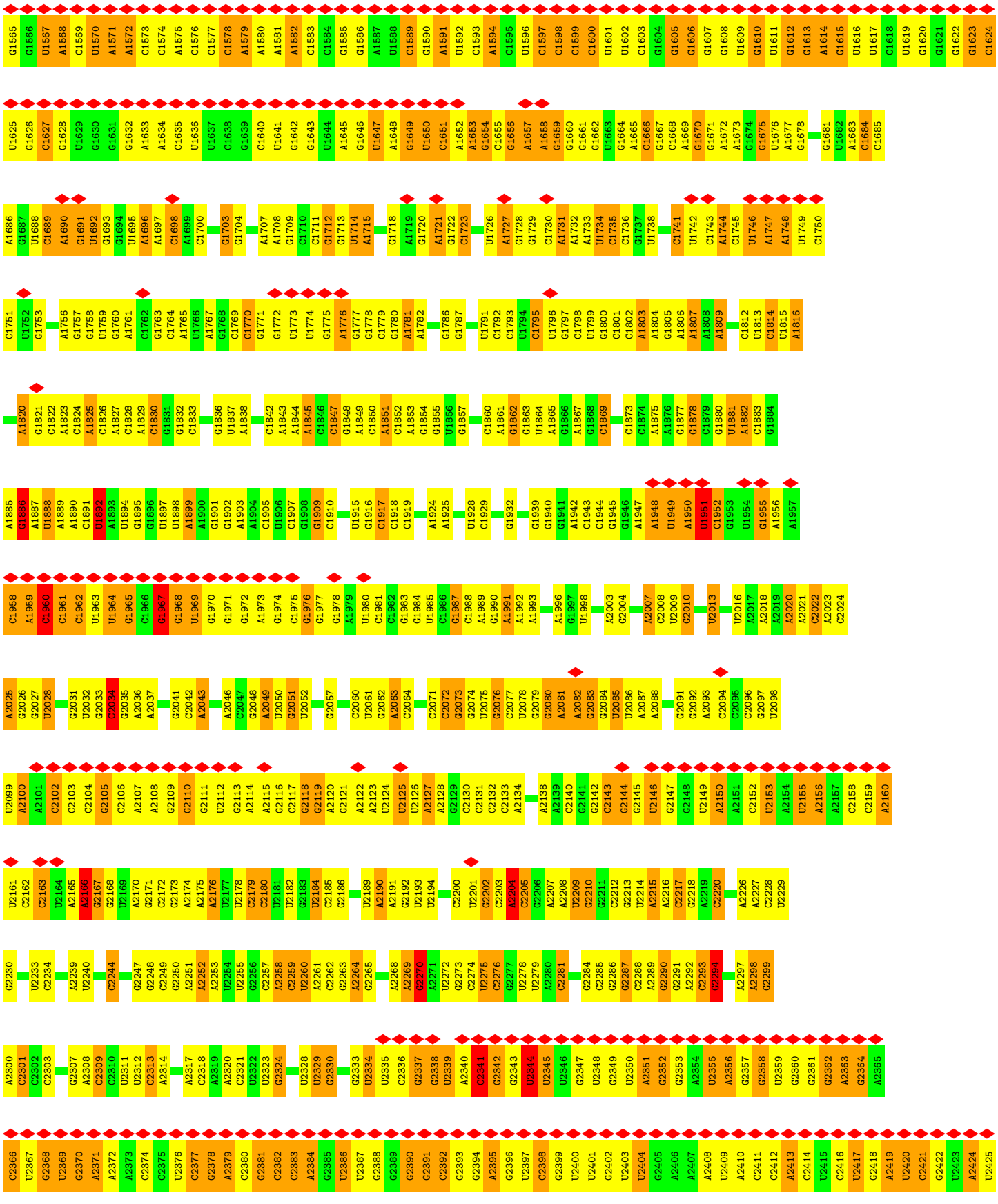


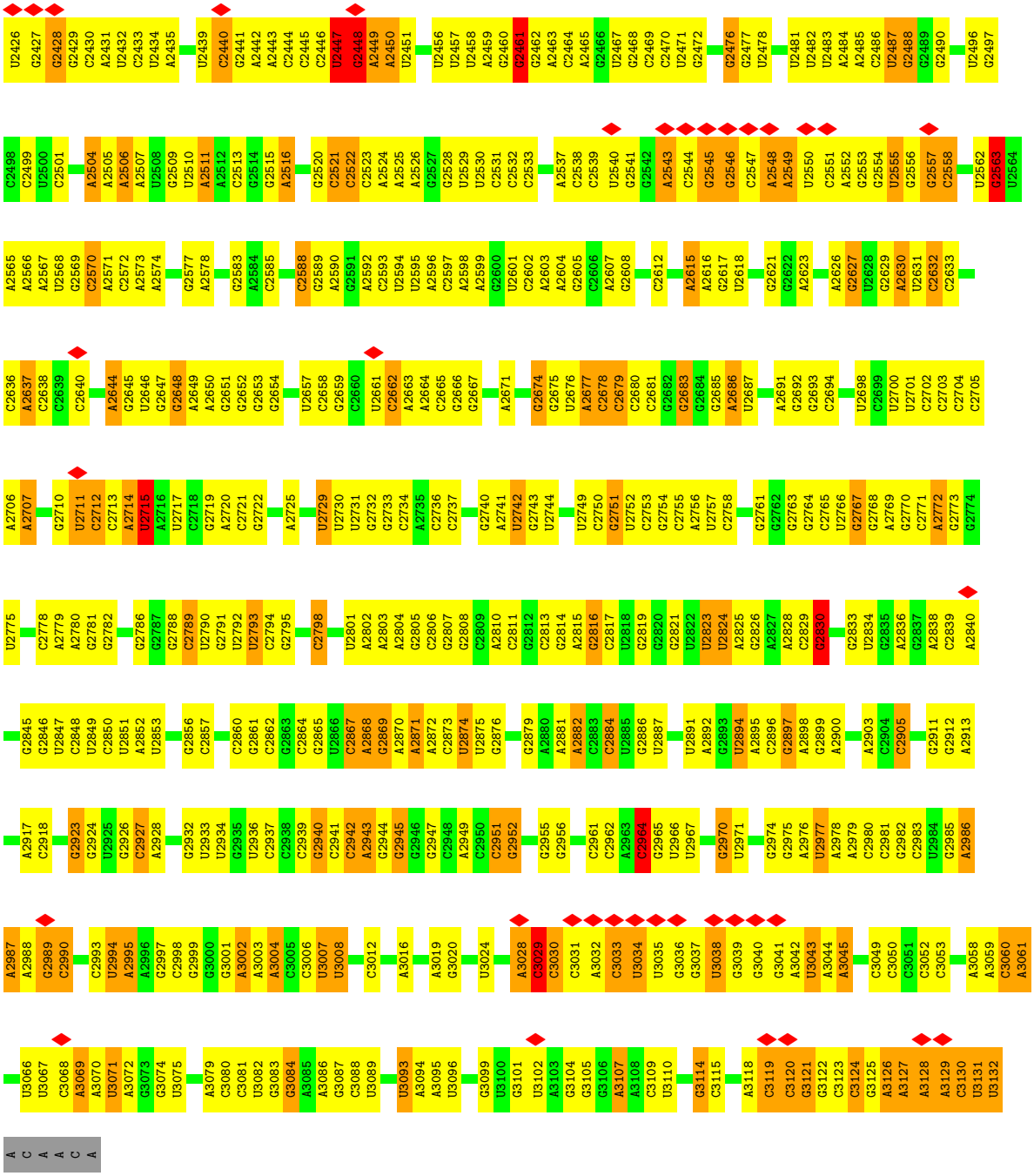
• Molecule 7: 23S rRNA

Chain A:

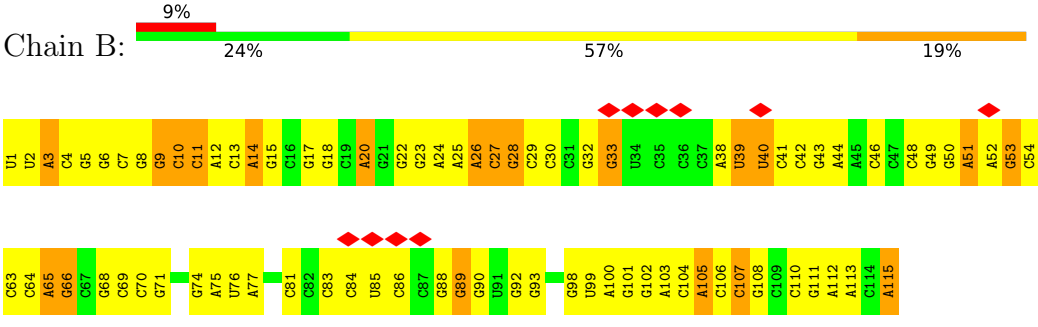




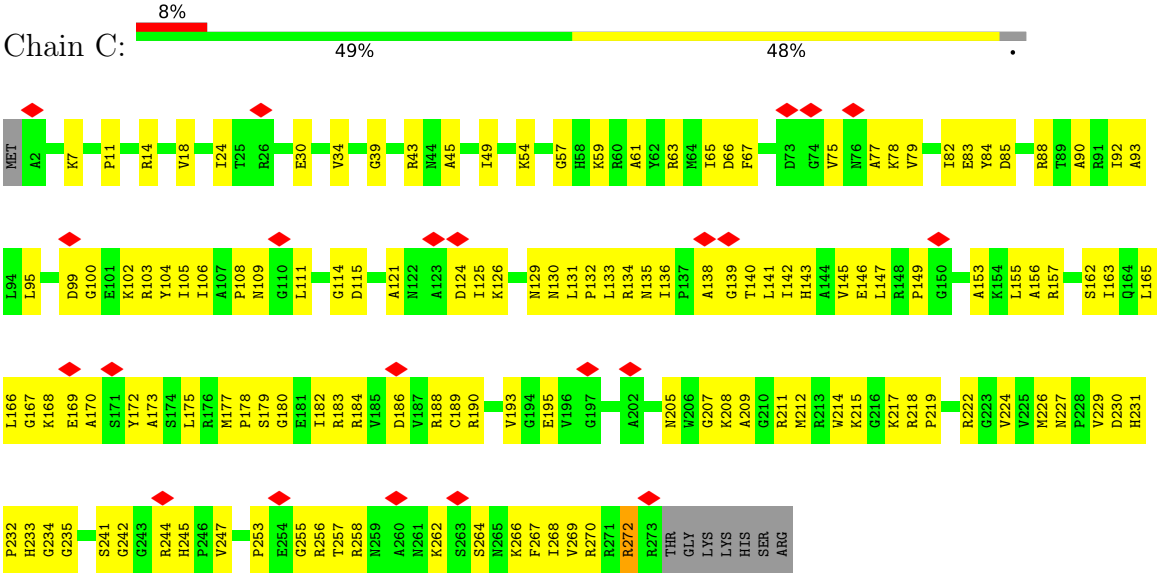




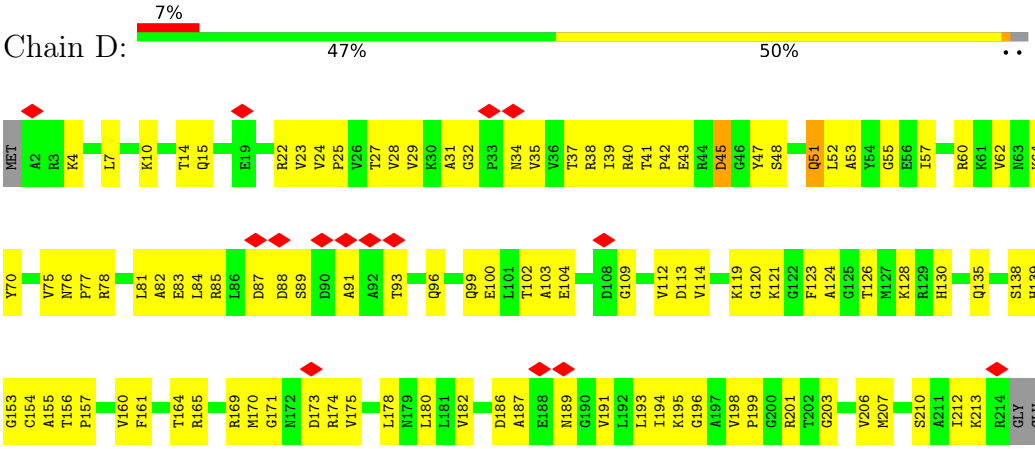
• Molecule 8: 5S ribosomal RNA



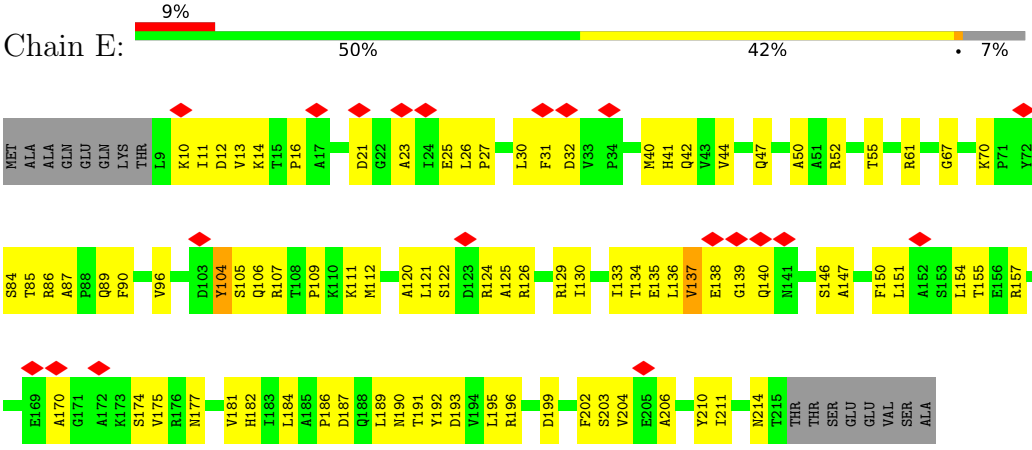
• Molecule 9: 50S ribosomal protein L2



• Molecule 10: 50S ribosomal protein L3

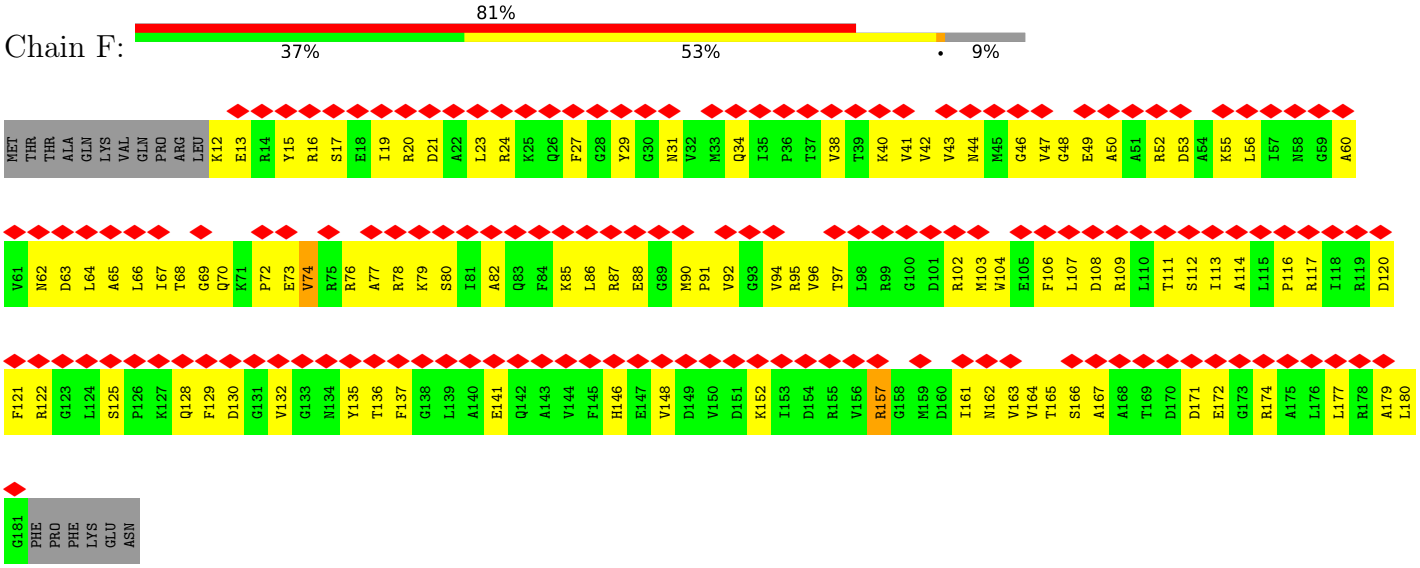


• Molecule 11: 50S ribosomal protein L4



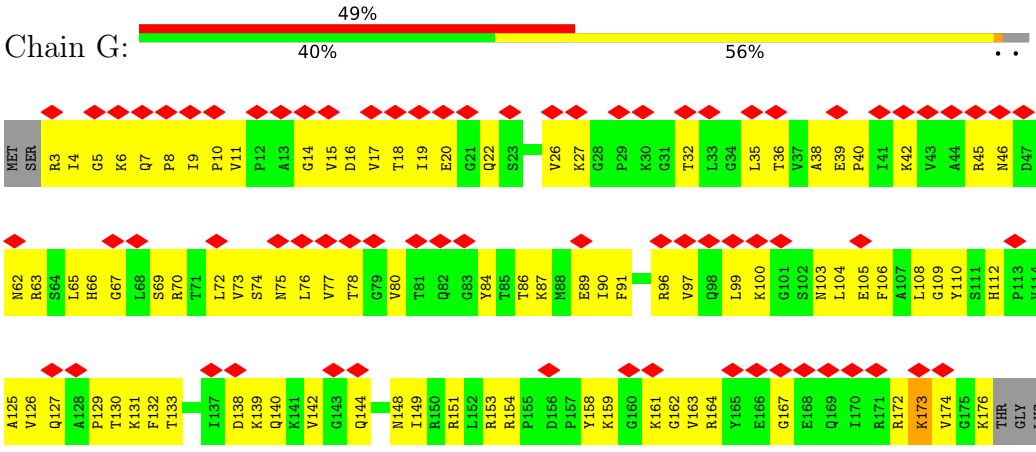
• Molecule 12: 50S ribosomal protein L5

Chain F:



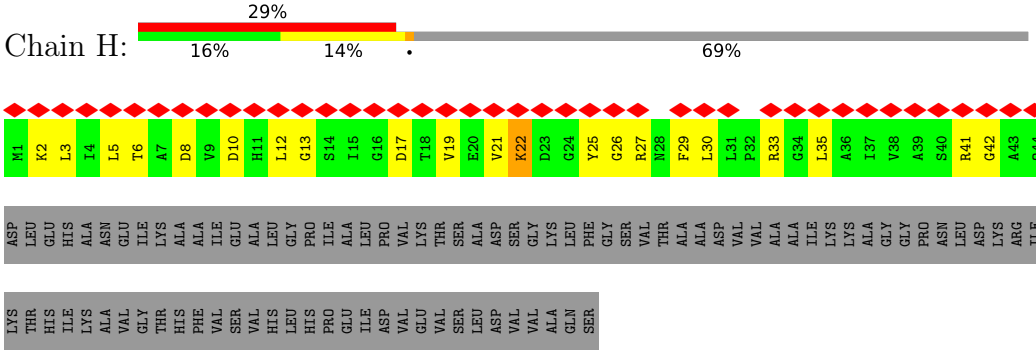
• Molecule 13: 50S ribosomal protein L6

Chain G:



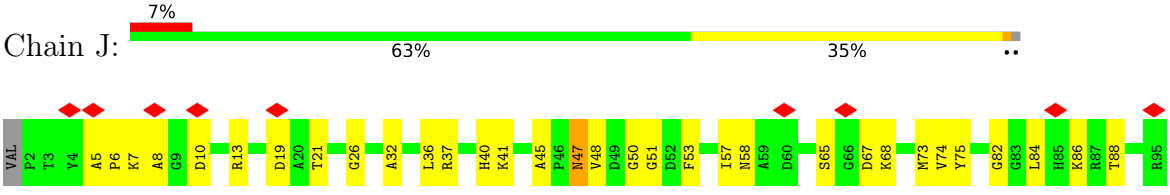
• Molecule 14: 50S ribosomal protein L9

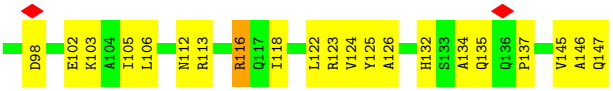
Chain H:



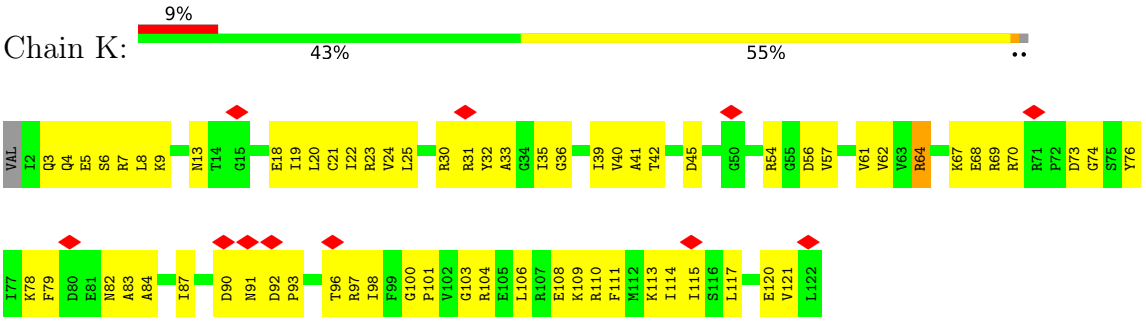
• Molecule 15: 50S ribosomal protein L13

Chain J:

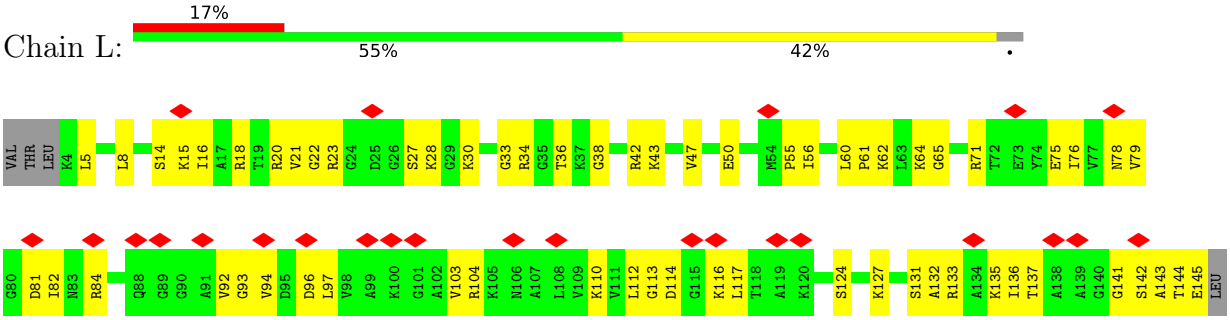




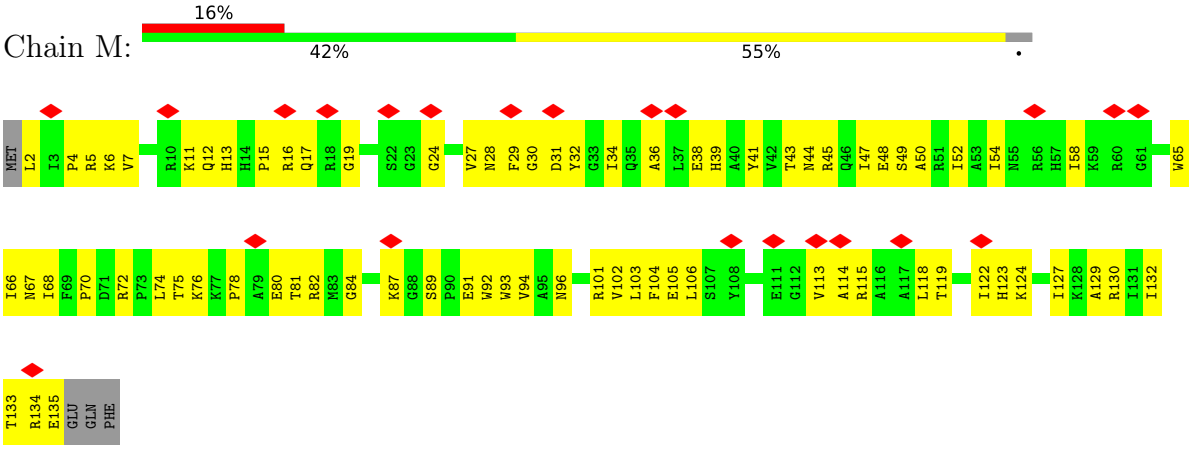
• Molecule 16: 50S ribosomal protein L14



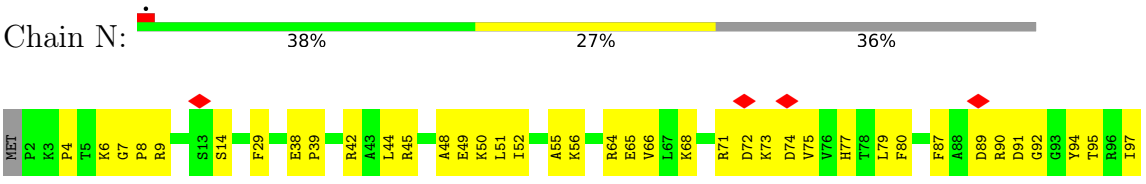
• Molecule 17: 50S ribosomal protein L15

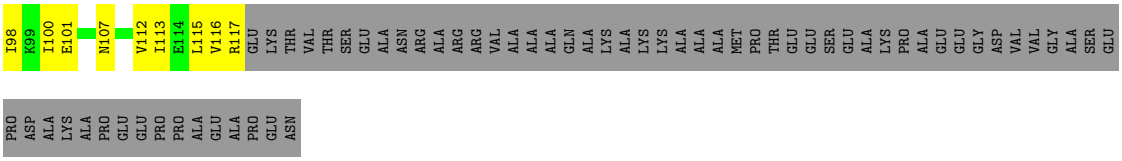


• Molecule 18: 50S ribosomal protein L16



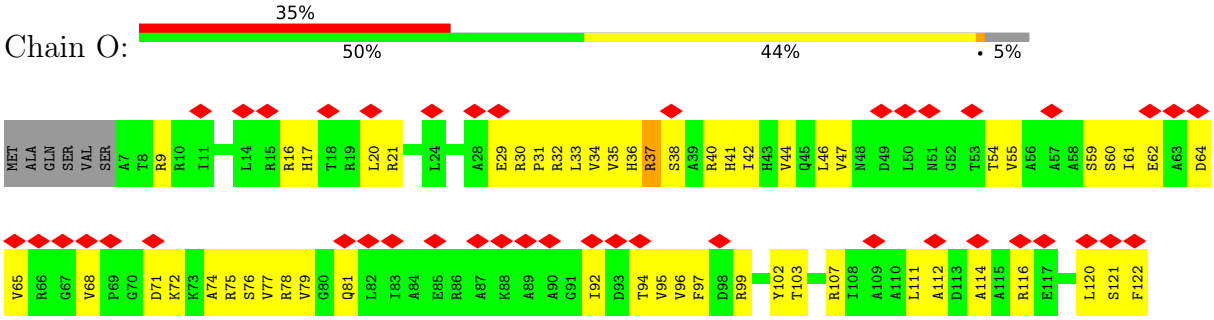
• Molecule 19: 50S ribosomal protein L17





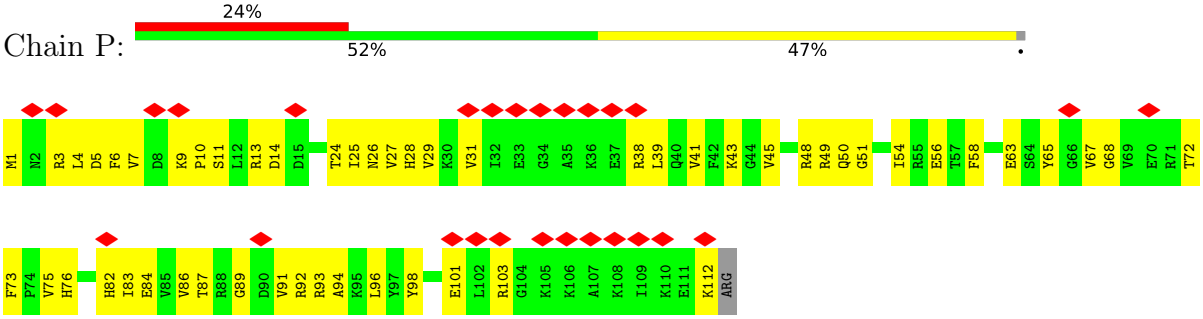
• Molecule 20: 50S ribosomal protein L18

Chain O:



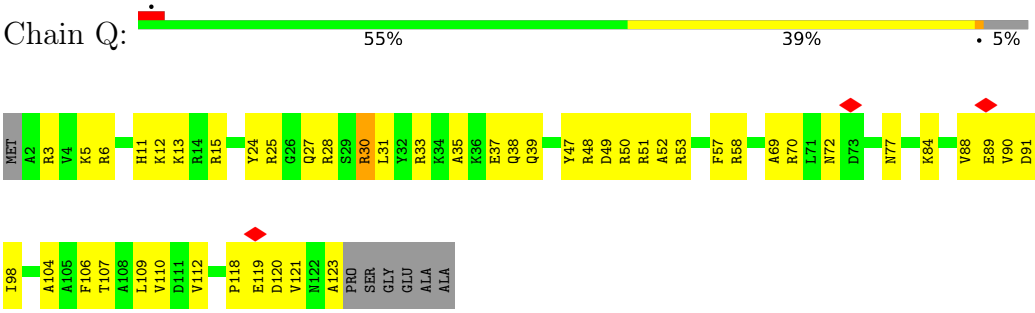
• Molecule 21: 50S ribosomal protein L19

Chain P:



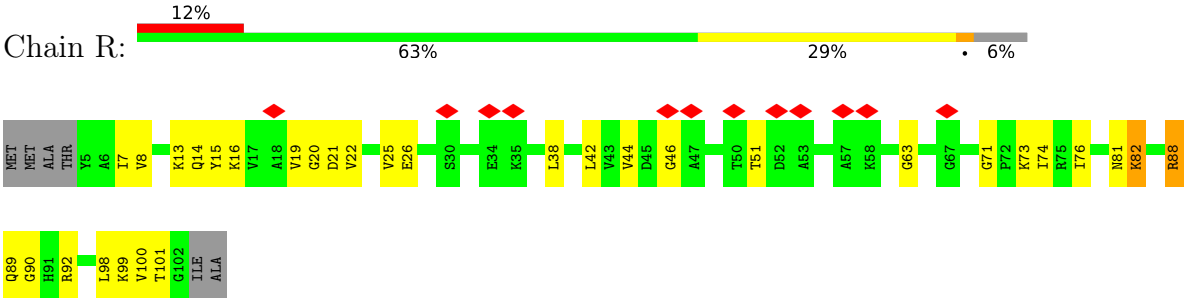
• Molecule 22: 50S ribosomal protein L20

Chain Q:



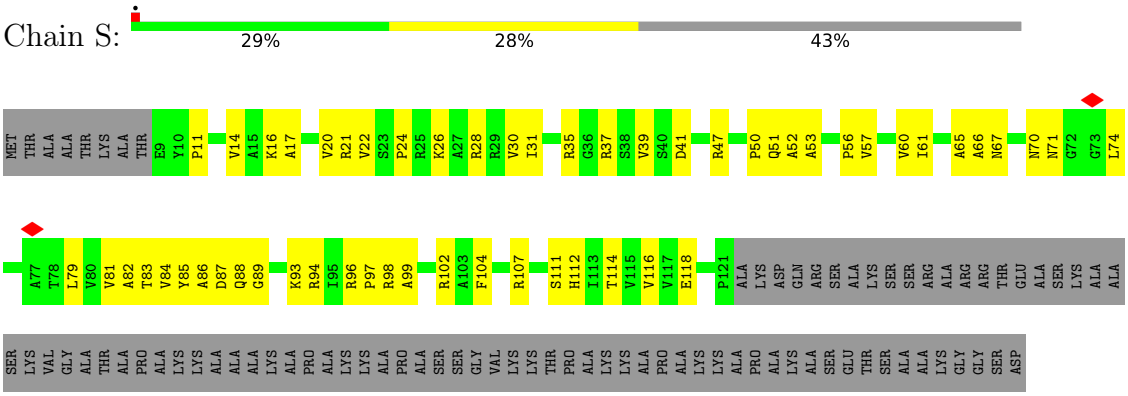
• Molecule 23: 50S ribosomal protein L21

Chain R:



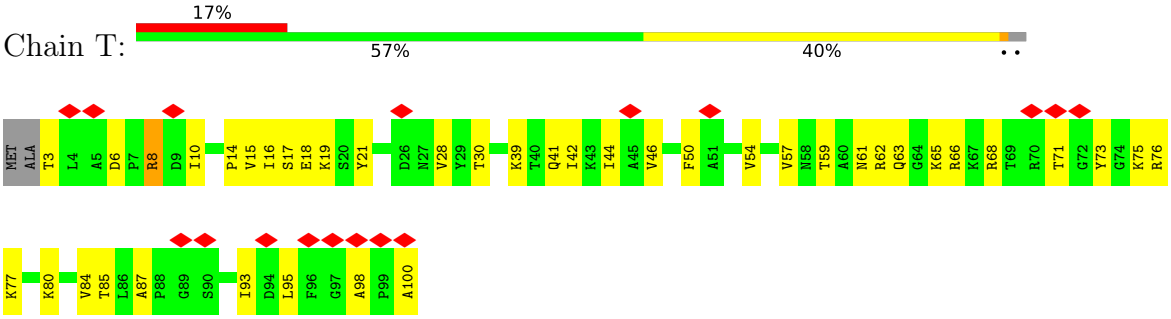
• Molecule 24: 50S ribosomal protein L22

Chain S:



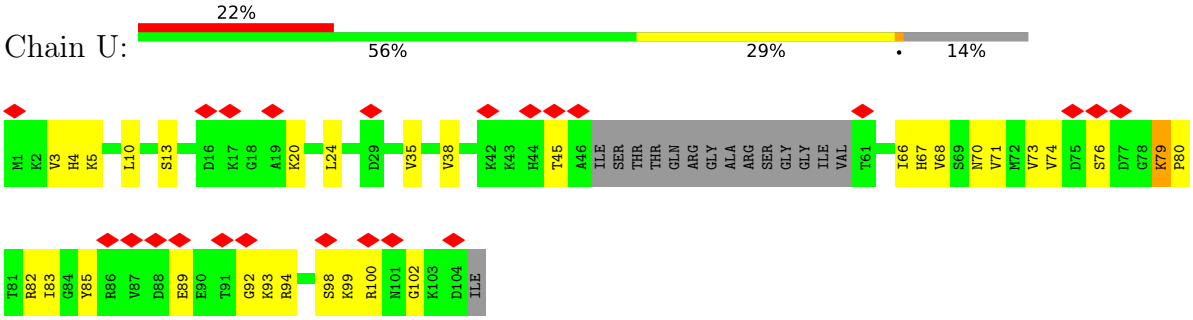
• Molecule 25: 50S ribosomal protein L23

Chain T:



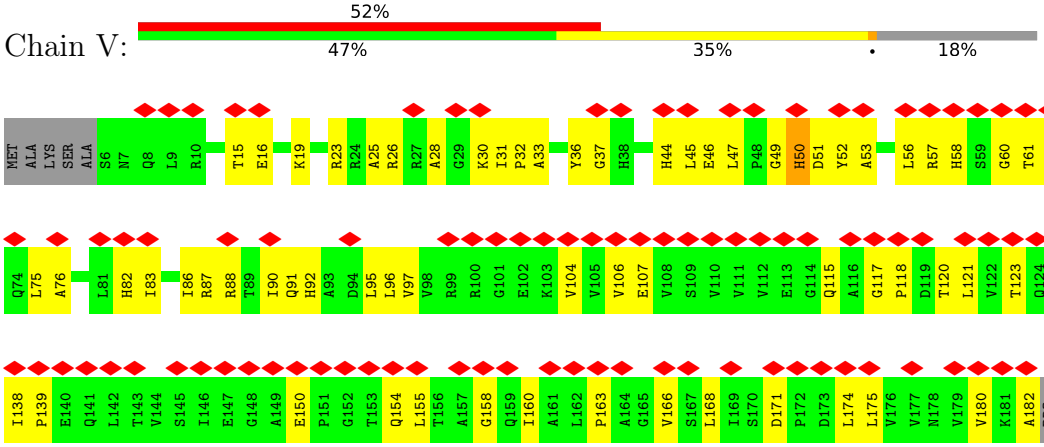
• Molecule 26: 50S ribosomal protein L24

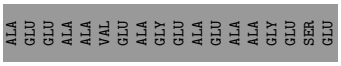
Chain U:



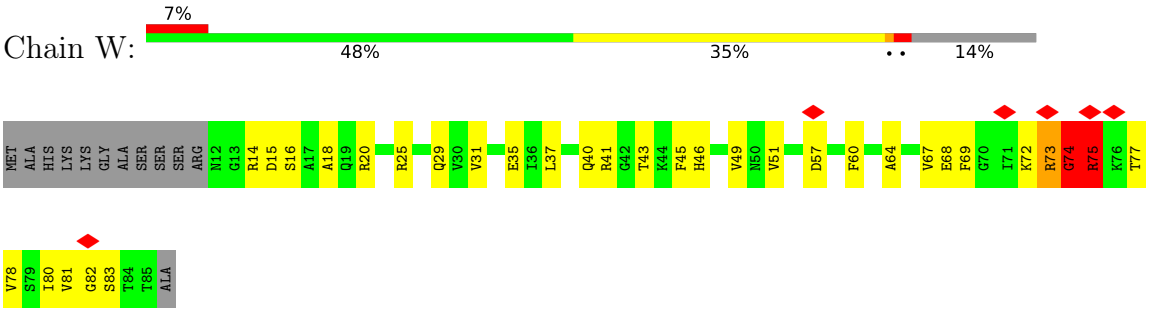
• Molecule 27: 50S ribosomal protein L25

Chain V:

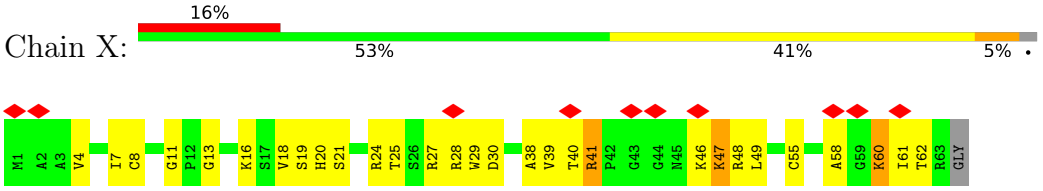




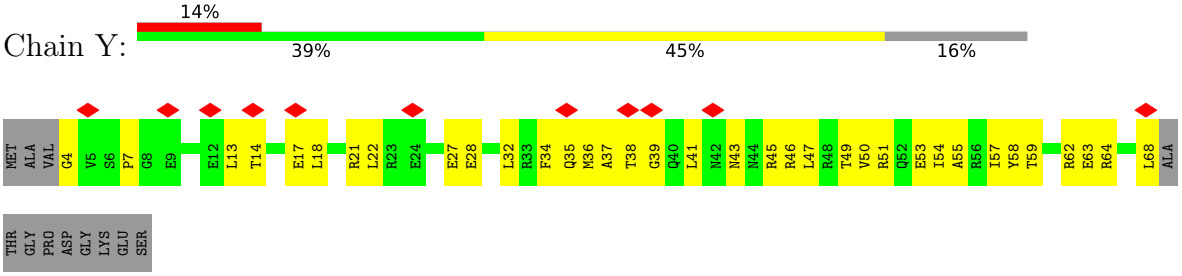
• Molecule 28: 50S ribosomal protein L27



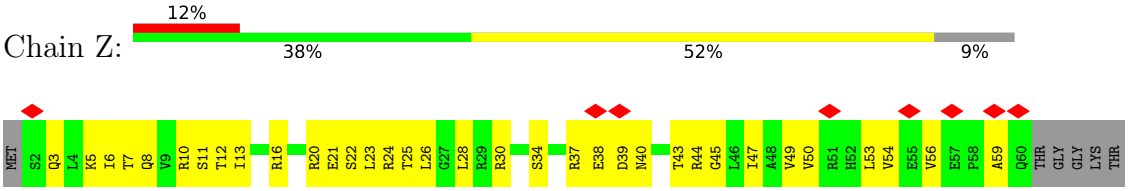
• Molecule 29: 50S ribosomal protein L28



• Molecule 30: 50S ribosomal protein L29



• Molecule 31: 50S ribosomal protein L30



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	34912	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 IS (4k x 4k)	Depositor
Maximum map value	0.099	Depositor
Minimum map value	-0.061	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.015	Depositor
Map size (Å)	374.4, 374.4, 374.4	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.04, 1.04, 1.04	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: CTY, MG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	0	0.57	0/427	0.65	0/570
2	1	0.41	0/407	0.59	0/543
3	2	0.53	0/361	0.63	0/473
4	3	0.48	0/499	0.60	0/664
5	4	0.40	0/303	0.55	0/402
6	6	0.30	0/353	0.55	0/478
7	A	1.07	12/74998 (0.0%)	1.13	220/117018 (0.2%)
8	B	0.78	0/2749	1.04	1/4284 (0.0%)
9	C	0.57	1/2129 (0.0%)	0.66	0/2861
10	D	0.58	0/1613	0.65	0/2174
11	E	0.49	0/1575	0.60	0/2129
12	F	0.32	0/1352	0.55	0/1817
13	G	0.39	0/1351	0.62	1/1824 (0.1%)
14	H	0.31	0/353	0.57	0/474
15	J	0.56	0/1170	0.60	0/1584
16	K	0.49	0/944	0.64	0/1268
17	L	0.50	0/1073	0.61	0/1432
18	M	0.51	0/1098	0.56	0/1481
19	N	0.55	0/925	0.58	0/1242
20	O	0.40	0/895	0.56	0/1202
21	P	0.55	0/922	0.57	0/1236
22	Q	0.67	0/992	0.60	0/1329
23	R	0.54	0/751	0.59	0/1009
24	S	0.56	0/874	0.58	0/1186
25	T	0.46	0/770	0.61	0/1038
26	U	0.44	0/705	0.58	0/941
27	V	0.36	0/1336	0.60	0/1820
28	W	0.55	0/551	0.66	0/735
29	X	0.54	0/484	0.61	0/648
30	Y	0.47	0/544	0.55	0/727
31	Z	0.50	0/480	0.63	0/645
All	All	0.95	13/102984 (0.0%)	1.04	222/155234 (0.1%)

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
1	0	0	1
3	2	0	1
4	3	0	1
11	E	0	2
13	G	0	1
14	H	0	1
16	K	0	1
25	T	0	1
27	V	0	2
28	W	0	3
All	All	0	14

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	683	C	N1-C6	-5.82	1.33	1.37
7	A	1357	A	N9-C4	-5.69	1.34	1.37
7	A	2034	C	N1-C6	-5.63	1.33	1.37
7	A	688	A	N9-C4	-5.60	1.34	1.37
7	A	2166	A	N7-C5	-5.58	1.35	1.39
7	A	963	C	N1-C6	-5.56	1.33	1.37
9	C	34	VAL	C-N	-5.52	1.21	1.34
7	A	31	C	N1-C6	-5.52	1.33	1.37
7	A	2838	A	N9-C4	-5.47	1.34	1.37
7	A	1116	C	N1-C6	-5.45	1.33	1.37
7	A	912	A	N9-C4	-5.36	1.34	1.37
7	A	930	G	C5-C4	-5.27	1.34	1.38
7	A	1809	A	N9-C4	-5.10	1.34	1.37

All (222) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	739	C	N3-C2-O2	-11.96	113.53	121.90
7	A	444	C	N3-C2-O2	-10.69	114.42	121.90
7	A	739	C	C6-N1-C2	-10.63	116.05	120.30
7	A	739	C	N1-C2-O2	10.52	125.21	118.90
7	A	444	C	C6-N1-C2	-9.70	116.42	120.30
7	A	443	C	N1-C2-O2	9.43	124.56	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1961	C	N3-C2-O2	-9.33	115.37	121.90
7	A	1961	C	N1-C2-O2	8.66	124.10	118.90
7	A	739	C	C2-N1-C1'	8.64	128.31	118.80
7	A	1967	G	N9-C4-C5	-8.49	102.00	105.40
7	A	1960	C	N1-C2-O2	8.31	123.89	118.90
7	A	444	C	N1-C2-O2	8.30	123.88	118.90
7	A	1967	G	N3-C4-N9	8.27	130.96	126.00
7	A	739	C	N3-C4-C5	-8.06	118.67	121.90
7	A	1967	G	C8-N9-C1'	-7.93	116.69	127.00
7	A	194	G	C5-N7-C8	-7.82	100.39	104.30
7	A	1967	G	C4-C5-N7	7.73	113.89	110.80
7	A	2448	G	O5'-P-OP2	7.72	119.96	110.70
7	A	2341	C	C2-N1-C1'	7.65	127.21	118.80
7	A	1967	G	C6-C5-N7	-7.60	125.84	130.40
7	A	1425	C	C5-C6-N1	7.52	124.76	121.00
7	A	32	C	C2-N1-C1'	7.51	127.06	118.80
7	A	1181	C	N1-C2-O2	7.47	123.38	118.90
7	A	655	G	C4-C5-N7	7.39	113.76	110.80
7	A	749	U	C5-C6-N1	7.38	126.39	122.70
7	A	194	G	N7-C8-N9	7.37	116.79	113.10
7	A	1967	G	C4-N9-C1'	7.36	136.07	126.50
7	A	1208	C	C2-N1-C1'	7.33	126.86	118.80
7	A	443	C	C2-N1-C1'	7.28	126.81	118.80
7	A	1425	C	C2-N1-C1'	7.22	126.75	118.80
7	A	1854	G	C4-C5-N7	7.10	113.64	110.80
7	A	655	G	C5-C6-O6	-7.10	124.34	128.60
7	A	746	G	N1-C2-N2	-7.06	109.85	116.20
7	A	2159	C	N3-C2-O2	-6.93	117.05	121.90
7	A	848	C	N1-C2-O2	6.92	123.05	118.90
7	A	976	U	C2-N1-C1'	6.92	126.01	117.70
7	A	848	C	C2-N1-C1'	6.92	126.41	118.80
7	A	443	C	C5-C6-N1	6.90	124.45	121.00
7	A	2823	U	N1-C2-O2	6.89	127.63	122.80
7	A	2013	U	C5-C6-N1	-6.82	119.29	122.70
7	A	2217	C	C6-N1-C2	-6.78	117.59	120.30
7	A	194	G	C4-C5-N7	6.76	113.50	110.80
7	A	1960	C	C2-N1-C1'	6.70	126.17	118.80
7	A	2166	A	N7-C8-N9	6.68	117.14	113.80
7	A	617	A	N1-C6-N6	-6.65	114.61	118.60
7	A	718	G	C8-N9-C4	6.62	109.05	106.40
7	A	2990	C	C2-N1-C1'	6.56	126.02	118.80
7	A	689	G	N3-C4-C5	6.55	131.88	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	135	C	C2-N1-C1'	6.50	125.95	118.80
7	A	2309	C	N3-C2-O2	-6.50	117.35	121.90
7	A	2159	C	N1-C2-O2	6.50	122.80	118.90
7	A	354	G	N1-C2-N2	-6.48	110.37	116.20
7	A	2823	U	C2-N1-C1'	6.41	125.40	117.70
7	A	32	C	C6-N1-C1'	-6.40	113.12	120.80
7	A	746	G	N3-C2-N2	6.36	124.35	119.90
7	A	2166	A	C6-C5-N7	-6.35	127.85	132.30
7	A	2398	C	C2-N1-C1'	6.33	125.77	118.80
7	A	2964	C	C6-N1-C2	6.28	122.81	120.30
7	A	2341	C	N1-C2-O2	6.26	122.66	118.90
7	A	353	G	N3-C4-N9	6.26	129.75	126.00
7	A	2309	C	C2-N1-C1'	6.25	125.67	118.80
7	A	739	C	C4-C5-C6	6.23	120.52	117.40
7	A	1728	G	N3-C4-N9	-6.23	122.26	126.00
7	A	2257	C	C2-N1-C1'	6.22	125.64	118.80
7	A	616	A	C2-N3-C4	-6.22	107.49	110.60
7	A	2341	C	C6-N1-C1'	-6.22	113.34	120.80
7	A	761	C	N1-C2-O2	6.21	122.63	118.90
7	A	194	G	C8-N9-C4	-6.20	103.92	106.40
7	A	976	U	N3-C2-O2	-6.19	117.87	122.20
7	A	848	C	C5-C6-N1	6.13	124.06	121.00
7	A	1967	G	N3-C2-N2	6.12	124.19	119.90
7	A	655	G	N1-C6-O6	6.11	123.56	119.90
7	A	746	G	N3-C4-N9	6.09	129.65	126.00
7	A	2398	C	N1-C2-O2	6.07	122.54	118.90
7	A	50	U	N1-C2-O2	6.06	127.04	122.80
7	A	1209	C	N1-C2-O2	6.05	122.53	118.90
7	A	746	G	C6-C5-N7	-6.03	126.78	130.40
7	A	1454	G	C4-N9-C1'	6.01	134.32	126.50
7	A	2166	A	C8-N9-C4	-5.97	103.41	105.80
7	A	1209	C	N3-C2-O2	-5.96	117.73	121.90
7	A	946	C	C2-N1-C1'	5.92	125.31	118.80
7	A	762	A	N9-C4-C5	-5.92	103.43	105.80
7	A	1072	G	N3-C4-N9	-5.89	122.47	126.00
7	A	2990	C	C5-C6-N1	5.89	123.94	121.00
7	A	1556	C	C2-N1-C1'	5.88	125.27	118.80
7	A	548	U	C2-N1-C1'	5.88	124.76	117.70
7	A	946	C	N3-C2-O2	-5.88	117.79	121.90
7	A	1960	C	N3-C2-O2	-5.87	117.79	121.90
7	A	2257	C	C6-N1-C1'	-5.86	113.77	120.80
7	A	443	C	N3-C2-O2	-5.85	117.81	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1063	C	N3-C2-O2	-5.84	117.81	121.90
7	A	1072	G	N3-C4-C5	5.84	131.52	128.60
7	A	619	C	N1-C2-O2	-5.83	115.40	118.90
7	A	2823	U	N3-C2-O2	-5.83	118.12	122.20
7	A	1735	C	C2-N1-C1'	5.83	125.21	118.80
7	A	50	U	C2-N1-C1'	5.82	124.68	117.70
7	A	309	U	C2-N1-C1'	5.82	124.68	117.70
7	A	740	G	C4-N9-C1'	5.81	134.05	126.50
7	A	1454	G	C6-C5-N7	-5.78	126.93	130.40
13	G	76	LEU	CA-CB-CG	5.77	128.57	115.30
7	A	946	C	C6-N1-C2	-5.76	118.00	120.30
7	A	2085	U	C5-C6-N1	5.76	125.58	122.70
7	A	1949	U	C5-C6-N1	5.75	125.57	122.70
7	A	655	G	N9-C4-C5	-5.74	103.10	105.40
7	A	976	U	N1-C2-O2	5.74	126.82	122.80
7	A	762	A	N3-C4-N9	5.74	131.99	127.40
7	A	1968	G	N1-C2-N2	-5.73	111.05	116.20
7	A	354	G	N7-C8-N9	5.72	115.96	113.10
7	A	798	G	C4-N9-C1'	5.69	133.90	126.50
7	A	2826	G	C4-C5-N7	5.69	113.08	110.80
7	A	2244	C	N1-C2-O2	5.69	122.31	118.90
7	A	50	U	N3-C2-O2	-5.67	118.23	122.20
7	A	2715	U	N1-C2-O2	-5.67	118.83	122.80
7	A	2217	C	N3-C2-O2	-5.67	117.93	121.90
7	A	1600	C	C5-C6-N1	5.66	123.83	121.00
7	A	36	G	C4-C5-N7	5.63	113.05	110.80
7	A	2076	G	C8-N9-C4	-5.60	104.16	106.40
7	A	1527	U	N1-C2-O2	5.60	126.72	122.80
7	A	2204	A	N7-C8-N9	5.59	116.59	113.80
7	A	1886	G	C8-N9-C1'	-5.59	119.74	127.00
7	A	194	G	C6-C5-N7	-5.58	127.05	130.40
7	A	1208	C	C5-C6-N1	5.56	123.78	121.00
7	A	2398	C	N3-C2-O2	-5.54	118.02	121.90
7	A	1208	C	C6-N1-C2	-5.52	118.09	120.30
7	A	353	G	C4-C5-N7	5.52	113.01	110.80
7	A	762	A	C6-C5-N7	-5.52	128.44	132.30
7	A	1741	C	N1-C2-O2	5.52	122.21	118.90
7	A	2826	G	N9-C4-C5	-5.51	103.19	105.40
7	A	1425	C	C6-N1-C2	-5.50	118.10	120.30
7	A	444	C	C5-C6-N1	5.48	123.74	121.00
7	A	769	U	C2-N1-C1'	5.47	124.27	117.70
7	A	443	C	C6-N1-C1'	-5.47	114.24	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1951	U	N1-C2-O2	5.47	126.63	122.80
7	A	354	G	N3-C2-N2	5.46	123.72	119.90
7	A	746	G	C4-N9-C1'	5.46	133.59	126.50
7	A	1454	G	C8-N9-C1'	-5.45	119.91	127.00
7	A	1647	U	N1-C2-O2	5.44	126.61	122.80
7	A	689	G	N3-C4-N9	-5.44	122.73	126.00
7	A	740	G	C8-N9-C1'	-5.44	119.93	127.00
7	A	746	G	N3-C4-C5	-5.42	125.89	128.60
7	A	2204	A	C5-N7-C8	-5.42	101.19	103.90
7	A	2461	G	C4-N9-C1'	5.41	133.53	126.50
7	A	3131	U	C2-N1-C1'	5.41	124.19	117.70
7	A	694	G	C4-N9-C1'	5.40	133.52	126.50
7	A	2102	C	N1-C2-O2	5.39	122.14	118.90
7	A	762	A	C4-N9-C1'	5.38	135.99	126.30
7	A	1236	G	N3-C2-N2	5.38	123.67	119.90
7	A	798	G	C8-N9-C1'	-5.38	120.01	127.00
7	A	762	A	C8-N9-C1'	-5.37	118.04	127.70
7	A	788	G	N1-C6-O6	-5.36	116.69	119.90
7	A	1556	C	N1-C2-O2	5.35	122.11	118.90
7	A	2217	C	C2-N1-C1'	5.35	124.68	118.80
7	A	2964	C	N3-C4-C5	5.35	124.04	121.90
7	A	3131	U	N3-C2-O2	-5.35	118.45	122.20
7	A	2461	G	N3-C4-N9	5.35	129.21	126.00
7	A	619	C	C2-N1-C1'	-5.33	112.94	118.80
7	A	2220	C	C4-C5-C6	-5.33	114.74	117.40
7	A	1236	G	N3-C4-N9	5.32	129.19	126.00
7	A	2447	U	P-O3'-C3'	-5.31	113.33	119.70
7	A	2166	A	N1-C6-N6	5.31	121.78	118.60
7	A	848	C	C6-N1-C1'	-5.29	114.45	120.80
7	A	2488	G	C4-C5-N7	5.29	112.92	110.80
7	A	1961	C	C5-C6-N1	5.29	123.65	121.00
7	A	1578	C	N1-C2-O2	5.29	122.08	118.90
7	A	1949	U	C2-N1-C1'	5.29	124.05	117.70
7	A	3060	C	C2-N1-C1'	5.28	124.61	118.80
7	A	2461	G	C8-N9-C1'	-5.28	120.14	127.00
7	A	353	G	N9-C4-C5	-5.26	103.30	105.40
7	A	2076	G	C4-N9-C1'	5.26	133.34	126.50
7	A	2990	C	N1-C2-O2	5.26	122.06	118.90
7	A	1814	C	N3-C2-O2	-5.25	118.22	121.90
7	A	1886	G	C4-N9-C1'	5.25	133.32	126.50
7	A	1130	A	N1-C2-N3	5.22	131.91	129.30
7	A	2506	A	C8-N9-C4	-5.22	103.71	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1857	G	C4-C5-N7	5.22	112.89	110.80
7	A	311	C	N1-C2-O2	5.22	122.03	118.90
7	A	2076	G	N7-C8-N9	5.21	115.71	113.10
7	A	2448	G	O5'-P-OP1	-5.21	101.01	105.70
7	A	196	G	C4-N9-C1'	5.21	133.28	126.50
7	A	3131	U	N1-C2-O2	5.21	126.44	122.80
7	A	2990	C	C6-N1-C1'	-5.20	114.56	120.80
7	A	368	U	C5-C6-N1	5.20	125.30	122.70
7	A	2867	C	N1-C2-O2	5.19	122.02	118.90
7	A	1892	U	C5-C6-N1	5.18	125.29	122.70
7	A	2274	C	C5-C6-N1	5.18	123.59	121.00
7	A	434	C	C2-N1-C1'	5.17	124.48	118.80
7	A	1741	C	N3-C2-O2	-5.16	118.29	121.90
7	A	1353	G	C4-C5-N7	5.16	112.86	110.80
8	B	9	G	N9-C4-C5	-5.16	103.34	105.40
7	A	2294	G	N3-C4-C5	5.15	131.18	128.60
7	A	2782	G	C4-N9-C1'	5.14	133.19	126.50
7	A	548	U	C6-N1-C1'	-5.14	114.00	121.20
7	A	1602	U	C2-N1-C1'	5.14	123.87	117.70
7	A	135	C	C6-N1-C1'	-5.14	114.64	120.80
7	A	2166	A	C4-C5-C6	5.12	119.56	117.00
7	A	2270	G	O4'-C1'-N9	5.12	112.30	108.20
7	A	2127	A	N1-C6-N6	-5.12	115.53	118.60
7	A	2951	C	C6-N1-C2	5.11	122.34	120.30
7	A	196	G	N3-C4-N9	5.10	129.06	126.00
7	A	1814	C	C6-N1-C2	-5.10	118.26	120.30
7	A	1072	G	C2-N3-C4	-5.09	109.35	111.90
7	A	2563	G	N3-C4-C5	5.09	131.15	128.60
7	A	1961	C	C6-N1-C2	-5.09	118.27	120.30
7	A	1322	G	C4-C5-N7	5.08	112.83	110.80
7	A	2563	G	N3-C4-N9	-5.08	122.95	126.00
7	A	865	C	C5-C6-N1	5.07	123.54	121.00
7	A	644	G	N3-C4-N9	-5.07	122.96	126.00
7	A	2830	G	N3-C4-N9	5.07	129.04	126.00
7	A	689	G	C2-N3-C4	-5.07	109.37	111.90
7	A	2264	A	C8-N9-C4	5.07	107.83	105.80
7	A	2884	C	C5-C6-N1	5.07	123.53	121.00
7	A	913	G	P-O3'-C3'	5.05	125.76	119.70
7	A	1269	C	N1-C2-O2	5.05	121.93	118.90
7	A	1105	G	C4-C5-N7	5.04	112.82	110.80
7	A	196	G	N3-C4-C5	-5.04	126.08	128.60
7	A	1703	G	C4-N9-C1'	5.04	133.05	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	830	G	C4-N9-C1'	5.03	133.04	126.50
7	A	1600	C	C6-N1-C2	-5.03	118.29	120.30
7	A	3066	U	C2-N1-C1'	-5.03	111.67	117.70
7	A	2344	U	C5-C6-N1	5.02	125.21	122.70
7	A	3029	C	O4'-C1'-N1	5.01	112.21	108.20
7	A	749	U	C6-N1-C2	-5.01	118.00	121.00

There are no chirality outliers.

All (14) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	16	ARG	Peptide
3	2	43	ARG	Peptide
4	3	27	ALA	Peptide
11	E	11	ILE	Peptide
11	E	137	VAL	Peptide
13	G	173	LYS	Peptide
14	H	22	LYS	Peptide
16	K	110	ARG	Peptide
25	T	87	ALA	Peptide
27	V	136	LEU	Peptide
27	V	50	HIS	Peptide
28	W	73	ARG	Peptide
28	W	74	GLY	Peptide
28	W	75	ARG	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	421	0	461	35	0
2	1	400	0	413	27	0
3	2	358	0	390	15	0
4	3	494	0	533	28	0
5	4	299	0	326	18	0
6	6	345	0	332	14	0
7	A	66978	0	33731	1890	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	B	2458	0	1253	86	0
9	C	2088	0	2122	135	0
10	D	1590	0	1633	96	0
11	E	1552	0	1593	92	0
12	F	1335	0	1372	96	0
13	G	1330	0	1390	93	0
14	H	350	0	367	22	0
15	J	1143	0	1173	43	0
16	K	934	0	993	62	0
17	L	1060	0	1119	77	0
18	M	1072	0	1115	70	0
19	N	908	0	956	50	0
20	O	886	0	924	55	0
21	P	907	0	947	41	0
22	Q	980	0	1028	50	0
23	R	742	0	799	31	0
24	S	860	0	903	44	0
25	T	759	0	809	35	0
26	U	699	0	738	25	0
27	V	1319	0	1365	55	0
28	W	546	0	567	32	0
29	X	476	0	496	31	0
30	Y	541	0	551	28	0
31	Z	476	0	509	31	0
32	A	52	0	69	9	0
33	A	1	0	0	0	0
34	A	3	0	0	0	0
All	All	94362	0	60977	3003	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 20.

All (3003) 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)
7:A:1222:G:H21	7:A:1227:A:N6	1.30	1.29
7:A:842:G:H21	7:A:847:A:N6	1.32	1.27
7:A:842:G:N2	7:A:847:A:H62	1.35	1.24
7:A:1222:G:N2	7:A:1227:A:H62	1.35	1.23
7:A:1185:G:N2	7:A:1232:A:H62	1.37	1.20
7:A:1185:G:H21	7:A:1232:A:N6	1.41	1.17

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1557:G:H21	7:A:1648:A:N6	1.56	1.04
7:A:2913:A:H61	7:A:2970:G:H1	1.01	1.00
31:Z:7:THR:HG1	31:Z:34:SER:HG	1.06	0.94
9:C:121:ALA:HB1	9:C:135:ASN:HD22	1.32	0.93
7:A:533:C:OP1	11:E:52:ARG:NH2	2.02	0.93
28:W:68:GLU:HG3	28:W:81:VAL:HG23	1.51	0.93
7:A:2334:U:H3	7:A:2429:G:H1	1.18	0.92
4:3:27:ALA:HB3	17:L:61:PRO:HG3	1.52	0.92
7:A:2740:G:H5"	7:A:2741:A:H5"	1.51	0.92
7:A:2987:A:H4'	13:G:63:ARG:HB3	1.50	0.91
13:G:42:LYS:HB3	13:G:54:THR:O	1.70	0.91
17:L:78:ASN:HB3	17:L:81:ASP:HB2	1.49	0.89
7:A:1958:C:O2	7:A:1971:G:N2	2.04	0.89
9:C:66:ASP:OD1	9:C:103:ARG:NH1	2.04	0.89
3:2:5:LYS:HE2	7:A:1855:G:H5'	1.55	0.88
18:M:65:TRP:HB2	18:M:105:GLU:HB3	1.55	0.88
7:A:2913:A:N6	7:A:2970:G:H1	1.71	0.88
7:A:1557:G:N2	7:A:1648:A:H62	1.72	0.87
8:B:66:G:N7	8:B:104:C:N4	2.23	0.87
7:A:2313:C:OP2	7:A:2476:G:N2	2.07	0.87
7:A:1136:C:OP1	15:J:37:ARG:NH1	2.08	0.86
7:A:3019:A:H5"	7:A:3020:G:H5'	1.56	0.86
17:L:78:ASN:HA	17:L:112:LEU:HG	1.56	0.85
1:0:16:ARG:HH12	7:A:1396:A:H3'	1.42	0.85
7:A:281:G:H1	7:A:307:U:H3	1.24	0.85
7:A:974:G:N7	7:A:1060:A:N6	2.24	0.85
9:C:233:HIS:HE1	9:C:247:VAL:H	1.25	0.85
18:M:2:LEU:N	18:M:48:GLU:OE1	2.10	0.84
7:A:788:G:OP1	11:E:107:ARG:NH2	2.09	0.84
7:A:2189:U:OP1	16:K:54:ARG:NH2	2.11	0.84
24:S:17:ALA:HB2	24:S:60:VAL:HG11	1.57	0.84
1:0:16:ARG:NH2	7:A:1395:G:OP1	2.11	0.84
7:A:583:G:N3	24:S:71:ASN:ND2	2.24	0.83
8:B:106:C:N4	8:B:107:C:H41	1.76	0.83
27:V:50:HIS:H	27:V:53:ALA:HB3	1.43	0.83
7:A:1960:C:H2'	7:A:1961:C:C6	2.14	0.83
7:A:25:U:O2	7:A:603:A:N6	2.11	0.83
18:M:41:TYR:HB3	18:M:94:VAL:HG21	1.60	0.83
26:U:79:LYS:HZ1	26:U:100:ARG:HB2	1.42	0.83
1:0:16:ARG:HB3	7:A:2284:G:H5"	1.61	0.83
7:A:1517:C:H5	7:A:1532:G:H1	1.26	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Z:8:GLN:HE21	31:Z:23:LEU:HD13	1.42	0.83
7:A:2033:G:H22	7:A:2052:U:HO2'	1.24	0.83
7:A:1585:G:H1	7:A:1619:U:H3	0.88	0.83
7:A:2033:G:N2	7:A:2052:U:O2'	2.13	0.82
4:3:43:ARG:NH2	7:A:2601:U:OP2	2.11	0.82
7:A:2080:G:N1	7:A:2132:C:N3	2.27	0.82
7:A:1469:G:N7	25:T:65:LYS:NZ	2.27	0.82
12:F:76:ARG:HA	12:F:91:PRO:HB3	1.62	0.82
11:E:32:ASP:HA	11:E:126:ARG:HH12	1.45	0.82
12:F:40:LYS:HB3	12:F:164:VAL:HB	1.59	0.81
7:A:1721:A:H2'	7:A:1722:G:H8	1.43	0.81
27:V:15:THR:OG1	27:V:16:GLU:OE2	1.98	0.81
17:L:112:LEU:HD12	17:L:114:ASP:H	1.44	0.81
7:A:345:G:N2	7:A:346:G:O6	2.13	0.81
7:A:703:G:N2	7:A:708:G:O3'	2.14	0.81
1:0:10:ARG:HH22	22:Q:30:ARG:HH21	1.28	0.81
7:A:2358:G:H1	7:A:2413:A:H1'	1.44	0.81
7:A:1557:G:N2	7:A:1648:A:N6	2.27	0.81
1:0:5:LYS:NZ	7:A:2293:C:OP1	2.11	0.80
7:A:1404:C:N4	7:A:2240:U:O2	2.15	0.80
7:A:1086:U:O2	18:M:17:GLN:NE2	2.14	0.80
25:T:63:GLN:HE21	25:T:75:LYS:HE3	1.47	0.80
7:A:2978:A:OP2	7:A:3001:G:N1	2.11	0.80
15:J:13:ARG:NH1	15:J:50:GLY:O	2.15	0.80
7:A:330:G:H4'	7:A:446:A:H8	1.46	0.80
17:L:81:ASP:HA	17:L:84:ARG:HG3	1.63	0.79
7:A:1581:A:H2'	7:A:1582:A:H8	1.48	0.79
7:A:1916:G:OP2	7:A:1991:A:N6	2.14	0.79
22:Q:28:ARG:NH1	22:Q:38:GLN:OE1	2.14	0.79
7:A:141:A:N6	7:A:1830:C:O2'	2.11	0.79
13:G:103:ASN:ND2	13:G:116:ILE:O	2.12	0.79
7:A:2994:U:H1'	7:A:2995:A:H5"	1.64	0.79
7:A:933:A:OP1	17:L:43:LYS:NZ	2.14	0.79
7:A:1186:A:N6	7:A:1210:U:O2	2.15	0.79
11:E:31:PHE:O	11:E:126:ARG:NH1	2.16	0.79
7:A:1473:A:OP1	25:T:39:LYS:NZ	2.15	0.79
23:R:22:VAL:HA	23:R:98:LEU:O	1.82	0.79
7:A:1164:U:O2	7:A:1249:G:O6	2.02	0.78
7:A:429:A:H3'	7:A:430:A:H8	1.46	0.78
11:E:67:GLY:HA3	11:E:86:ARG:HG2	1.65	0.78
7:A:1700:C:HO2'	7:A:2940:G:HO2'	1.27	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:B:106:C:N4	8:B:107:C:N4	2.31	0.78
4:3:24:ARG:NH2	7:A:2599:A:OP2	2.17	0.78
7:A:691:C:H2'	7:A:692:A:H8	1.47	0.78
7:A:2629:G:O2'	7:A:2662:C:N4	2.17	0.77
7:A:842:G:N2	7:A:847:A:N6	2.10	0.77
7:A:675:G:OP2	23:R:82:LYS:NZ	2.17	0.77
7:A:683:C:H5'	22:Q:31:LEU:HD12	1.66	0.77
7:A:856:A:OP1	7:A:1669:A:O2'	2.02	0.77
17:L:78:ASN:O	17:L:82:ILE:N	2.17	0.77
29:X:28:ARG:NH1	29:X:30:ASP:OD2	2.18	0.77
7:A:87:U:O2	30:Y:45:ARG:NH2	2.18	0.77
20:O:37:ARG:HA	20:O:42:ILE:HG22	1.65	0.77
24:S:66:ALA:O	24:S:70:ASN:ND2	2.17	0.77
30:Y:22:LEU:HB2	30:Y:57:ILE:HG21	1.65	0.77
7:A:353:G:H2'	7:A:354:G:C8	2.19	0.77
7:A:2079:G:OP1	9:C:256:ARG:NH1	2.18	0.77
9:C:232:PRO:HB3	9:C:244:ARG:HH22	1.50	0.77
7:A:980:C:H5"	31:Z:49:VAL:HG21	1.68	0.76
7:A:1684:C:OP2	7:A:1698:C:N4	2.18	0.76
8:B:8:G:OP1	20:O:21:ARG:NH1	2.19	0.76
7:A:1556:C:N4	7:A:1647:U:OP2	2.18	0.76
7:A:2987:A:OP2	7:A:2988:A:O2'	2.03	0.76
7:A:1721:A:H2'	7:A:1722:G:C8	2.19	0.76
7:A:1988:C:OP1	21:P:93:ARG:NH1	2.18	0.76
7:A:59:U:H3	7:A:68:G:H1	1.34	0.76
7:A:155:G:O6	7:A:175:C:N4	2.18	0.76
7:A:403:G:N2	11:E:177:ASN:O	2.18	0.76
7:A:1148:U:OP1	7:A:1164:U:O2'	2.03	0.76
7:A:2033:G:N7	9:C:179:SER:OG	2.18	0.76
7:A:2116:G:H2'	7:A:2117:C:H6	1.50	0.76
7:A:1960:C:H2'	7:A:1961:C:H6	1.51	0.76
7:A:83:G:N2	7:A:103:A:OP2	2.17	0.76
7:A:324:G:H1	7:A:453:A:H2	1.34	0.76
7:A:2706:A:OP2	7:A:2714:A:N6	2.18	0.76
7:A:3035:U:H3'	7:A:3036:G:H8	1.50	0.76
12:F:117:ARG:HH12	12:F:146:HIS:HB3	1.51	0.76
7:A:2033:G:O2'	9:C:183:ARG:NH1	2.18	0.76
8:B:112:A:H2'	8:B:113:A:H8	1.49	0.76
27:V:67:LEU:HB2	27:V:69:ILE:HG12	1.67	0.76
7:A:1138:A:N3	7:A:1283:C:O2'	2.18	0.75
7:A:2683:G:OP1	11:E:81:ARG:NH1	2.19	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C:177:MET:SD	9:C:183:ARG:NH2	2.59	0.75
29:X:7:ILE:HD11	29:X:55:CYS:HB3	1.68	0.75
7:A:1397:G:N2	7:A:2251:A:OP2	2.17	0.75
19:N:56:LYS:NZ	19:N:90:ARG:O	2.18	0.75
7:A:708:G:N3	7:A:786:U:O2'	2.20	0.75
7:A:1143:U:H1'	22:Q:121:VAL:HG21	1.67	0.75
9:C:61:ALA:O	9:C:63:ARG:NH1	2.20	0.75
7:A:1490:A:OP2	7:A:1502:G:N1	2.15	0.75
7:A:1156:A:H61	7:A:1256:U:H5	1.34	0.75
7:A:545:U:H5	25:T:71:THR:HB	1.51	0.75
7:A:1141:C:OP1	22:Q:70:ARG:NH2	2.18	0.75
9:C:109:ASN:HB3	9:C:111:LEU:HG	1.65	0.75
7:A:452:A:N6	7:A:454:U:O4	2.20	0.75
7:A:1572:A:H61	7:A:1632:G:H1'	1.51	0.74
7:A:2140:C:O2'	9:C:244:ARG:O	2.05	0.74
7:A:2178:U:O2	7:A:2180:C:N4	2.19	0.74
7:A:738:G:O6	17:L:71:ARG:NH2	2.19	0.74
27:V:47:LEU:O	27:V:49:GLY:N	2.20	0.74
31:Z:40:ASN:HB3	31:Z:44:ARG:HG3	1.67	0.74
1:0:16:ARG:NH1	7:A:1397:G:OP2	2.20	0.74
7:A:357:G:N2	7:A:363:A:N6	2.35	0.74
7:A:636:U:O4	7:A:646:A:N6	2.20	0.74
7:A:1185:G:N2	7:A:1232:A:N6	2.11	0.74
8:B:81:C:OP1	31:Z:16:ARG:NH1	2.20	0.74
7:A:357:G:N1	7:A:441:U:N3	2.35	0.74
7:A:2923:G:OP1	21:P:48:ARG:NH1	2.21	0.74
7:A:479:A:H4'	7:A:480:A:H5'	1.70	0.74
7:A:67:U:N3	7:A:74:U:O4	2.16	0.74
7:A:61:G:OP2	30:Y:51:ARG:NH2	2.20	0.73
7:A:1676:U:H2'	7:A:1677:A:H8	1.52	0.73
7:A:2865:G:O2'	7:A:3019:A:N1	2.19	0.73
9:C:258:ARG:HH21	9:C:262:LYS:HG2	1.53	0.73
10:D:41:THR:HG22	10:D:43:GLU:H	1.53	0.73
7:A:1027:U:O2'	7:A:1028:G:O4'	2.05	0.73
7:A:2713:C:H42	7:A:2767:G:H22	1.33	0.73
7:A:167:A:H2'	7:A:168:U:C6	2.23	0.73
7:A:430:A:H2'	7:A:431:A:H8	1.53	0.73
7:A:2545:G:H22	7:A:2549:A:H2'	1.53	0.73
7:A:1562:A:N6	7:A:1642:G:O6	2.22	0.73
7:A:2722:G:OP1	18:M:45:ARG:NH1	2.21	0.73
8:B:49:G:H5"	20:O:71:ASP:HB2	1.70	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:X:18:VAL:HG12	29:X:24:ARG:HB3	1.70	0.73
9:C:78:LYS:HE3	9:C:114:GLY:HA2	1.71	0.72
10:D:45:ASP:N	10:D:45:ASP:OD1	2.19	0.72
7:A:2677:A:H4'	7:A:2678:C:H5"	1.69	0.72
5:4:1:VAL:N	7:A:2764:G:O2'	2.22	0.72
7:A:2729:U:H5'	7:A:2808:G:H5"	1.71	0.72
7:A:298:G:O6	7:A:340:U:O4	2.07	0.72
7:A:2540:U:O2'	12:F:129:PHE:O	2.07	0.72
7:A:2541:G:H21	12:F:136:THR:HG21	1.53	0.72
20:O:40:ARG:O	20:O:72:LYS:NZ	2.23	0.72
7:A:910:A:OP1	9:C:218:ARG:NH2	2.21	0.72
11:E:13:VAL:HG12	11:E:14:LYS:H	1.55	0.72
7:A:243:A:H61	7:A:257:A:H5"	1.53	0.72
7:A:635:U:H3	7:A:648:G:H1	1.35	0.72
13:G:7:GLN:HE22	13:G:9:ILE:HD13	1.55	0.72
7:A:611:C:O2	7:A:656:U:O2'	2.07	0.72
7:A:1392:C:OP2	24:S:93:LYS:NZ	2.18	0.72
7:A:1004:G:O6	7:A:1032:U:O2	2.06	0.71
7:A:2440:C:H5"	7:A:2441:G:H5"	1.71	0.71
7:A:1585:G:O6	7:A:1619:U:O4	2.08	0.71
7:A:2031:G:O2'	9:C:257:THR:OG1	2.08	0.71
7:A:2087:A:H2'	7:A:2088:A:C8	2.25	0.71
7:A:556:G:O2'	7:A:925:U:O2'	2.08	0.71
7:A:842:G:N2	7:A:847:A:C5	2.59	0.71
7:A:1284:G:OP2	22:Q:58:ARG:NH1	2.23	0.71
7:A:1803:A:OP1	9:C:211:ARG:NH2	2.23	0.71
19:N:116:VAL:HG12	19:N:117:ARG:HD2	1.73	0.71
7:A:738:G:C5	7:A:739:C:H5	2.09	0.71
7:A:788:G:N2	11:E:42:GLN:OE1	2.24	0.71
9:C:166:LEU:HD11	9:C:182:ILE:HD12	1.73	0.71
26:U:82:ARG:O	26:U:99:LYS:NZ	2.21	0.71
7:A:691:C:OP2	17:L:18:ARG:NH2	2.23	0.71
12:F:125:SER:HB3	12:F:137:PHE:CE2	2.25	0.71
31:Z:3:GLN:NE2	31:Z:38:GLU:OE2	2.21	0.71
7:A:1001:A:OP1	18:M:5:ARG:N	2.24	0.71
7:A:877:G:OP2	24:S:98:ARG:NH2	2.24	0.71
7:A:1206:A:OP2	7:A:1207:C:N4	2.24	0.71
7:A:2792:U:H2'	7:A:2793:U:C5	2.26	0.71
7:A:272:A:H62	7:A:316:U:H3	1.37	0.71
18:M:135:GLU:O	27:V:88:ARG:NH2	2.24	0.71
28:W:40:GLN:NE2	28:W:57:ASP:O	2.22	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:638:C:O2	7:A:640:C:N4	2.24	0.70
7:A:790:G:H21	17:L:16:ILE:HG13	1.55	0.70
8:B:84:C:O2	8:B:88:G:N2	2.23	0.70
13:G:9:ILE:HB	13:G:51:ILE:HB	1.71	0.70
7:A:1123:C:OP1	22:Q:53:ARG:NH2	2.24	0.70
7:A:1656:G:H5'	7:A:1657:A:H2	1.53	0.70
7:A:1959:A:N7	7:A:1970:G:N2	2.39	0.70
7:A:2768:G:H22	13:G:154:ARG:HH12	1.37	0.70
7:A:1169:U:O2'	27:V:57:ARG:NH2	2.23	0.70
7:A:1239:A:O4'	13:G:3:ARG:NH2	2.24	0.70
9:C:182:ILE:HB	9:C:269:VAL:HB	1.72	0.70
12:F:50:ALA:HB2	12:F:56:LEU:HB3	1.74	0.70
7:A:829:G:O2'	7:A:1867:A:N3	2.22	0.70
7:A:2033:G:H1'	9:C:183:ARG:HH22	1.56	0.70
7:A:3110:U:O2'	21:P:1:MET:N	2.24	0.70
7:A:404:U:O2'	7:A:423:A:N3	2.24	0.70
7:A:1222:G:H21	7:A:1227:A:H62	0.72	0.70
7:A:300:G:H2'	7:A:301:G:H4'	1.72	0.70
7:A:1564:C:H2'	7:A:1565:G:H8	1.57	0.70
8:B:46:C:OP1	20:O:9:ARG:NH1	2.23	0.70
7:A:368:U:O2	7:A:436:G:O6	2.08	0.70
7:A:1492:G:H2'	7:A:1493:C:C6	2.27	0.70
7:A:1567:U:O2	7:A:1569:C:N4	2.24	0.70
9:C:108:PRO:HB3	9:C:143:HIS:CE1	2.26	0.70
7:A:1571:A:OP2	7:A:1632:G:N2	2.25	0.70
29:X:47:LYS:HG3	29:X:48:ARG:H	1.56	0.70
7:A:1614:A:H2'	7:A:1615:G:C8	2.26	0.70
7:A:2833:G:N2	7:A:2836:A:OP2	2.24	0.70
12:F:16:ARG:HH21	12:F:38:VAL:HG22	1.56	0.70
7:A:748:A:H2'	7:A:749:U:C6	2.27	0.69
31:Z:6:ILE:O	31:Z:34:SER:HA	1.91	0.69
31:Z:21:GLU:OE1	31:Z:24:ARG:NH1	2.25	0.69
7:A:789:C:H5"	11:E:106:GLN:HG2	1.74	0.69
7:A:1176:G:O2'	7:A:1238:C:N4	2.24	0.69
27:V:136:LEU:O	27:V:138:ILE:N	2.25	0.69
7:A:682:C:OP1	22:Q:33:ARG:NH2	2.26	0.69
7:A:2249:C:OP2	24:S:26:LYS:NZ	2.22	0.69
9:C:169:GLU:HG3	9:C:170:ALA:H	1.56	0.69
20:O:41:HIS:HA	20:O:107:ARG:HH22	1.56	0.69
27:V:104:VAL:HB	27:V:133:ALA:HB3	1.74	0.69
29:X:58:ALA:HA	29:X:61:ILE:HD11	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:27:LYS:HE3	7:A:2524:A:H5”	1.74	0.69
7:A:749:U:N3	7:A:751:G:N7	2.39	0.69
7:A:1374:G:N2	17:L:5:LEU:O	2.25	0.69
7:A:241:C:HO2’	7:A:726:G:HO2’	1.39	0.69
7:A:688:A:N1	7:A:938:G:O2’	2.24	0.69
7:A:1434:G:HO2’	7:A:1877:G:HO2’	1.31	0.69
7:A:2698:U:O2	7:A:2730:U:N3	2.19	0.69
8:B:55:U:H4’	8:B:56:A:H5’	1.73	0.69
11:E:12:ASP:HB3	11:E:23:ALA:H	1.57	0.69
11:E:133:ILE:HD11	11:E:136:LEU:HB2	1.75	0.69
13:G:112:HIS:ND1	13:G:112:HIS:O	2.26	0.69
7:A:2551:C:H2’	7:A:2552:A:C8	2.28	0.69
7:A:945:C:OP1	7:A:1317:G:O2’	2.09	0.69
7:A:964:A:H62	7:A:1072:G:H21	1.40	0.68
7:A:2179:C:O2’	7:A:2180:C:OP1	2.11	0.68
13:G:5:GLY:HA2	13:G:70:ARG:HH22	1.57	0.68
20:O:92:ILE:HG23	20:O:120:LEU:HD11	1.74	0.68
7:A:1456:C:O2	24:S:96:ARG:NH1	2.26	0.68
7:A:855:G:O2’	7:A:856:A:O5’	2.12	0.68
30:Y:13:LEU:HB3	30:Y:17:GLU:HG3	1.74	0.68
6:6:38:CYS:SG	6:6:39:SER:N	2.66	0.68
7:A:704:C:HO2’	7:A:705:A:H8	1.42	0.68
7:A:1553:U:H2’	7:A:1554:G:H8	1.57	0.68
7:A:2566:A:H2’	7:A:2567:A:C8	2.28	0.68
25:T:66:ARG:HG2	25:T:73:TYR:HD1	1.59	0.68
1:0:42:ARG:NH2	19:N:38:GLU:OE1	2.27	0.68
7:A:599:U:O2’	7:A:1346:G:N2	2.27	0.68
7:A:842:G:N2	7:A:847:A:C6	2.62	0.68
7:A:2894:U:O2	7:A:2903:A:N7	2.26	0.68
7:A:2945:G:H4’	19:N:68:LYS:HE2	1.75	0.68
9:C:241:SER:OG	9:C:242:GLY:N	2.25	0.68
13:G:4:ILE:O	13:G:70:ARG:NH2	2.26	0.68
7:A:1939:G:H2’	7:A:1940:G:H8	1.57	0.68
12:F:66:LEU:HD12	12:F:67:ILE:HG23	1.75	0.68
7:A:2088:A:O2’	7:A:2470:C:O2’	2.12	0.68
7:A:2364:G:H5’	7:A:2399:G:H21	1.59	0.68
11:E:150:PHE:O	11:E:154:LEU:HB2	1.93	0.68
13:G:125:ALA:HB3	13:G:133:THR:HG23	1.76	0.68
16:K:19:ILE:HB	16:K:41:ALA:HB1	1.76	0.68
28:W:80:ILE:HG22	28:W:81:VAL:HG12	1.76	0.68
7:A:2051:G:OP2	9:C:157:ARG:NH2	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2173:G:H1'	7:A:2202:G:N2	2.08	0.68
7:A:2412:C:OP2	7:A:2413:A:N6	2.25	0.68
7:A:2771:C:C2	7:A:2772:A:H1'	2.29	0.68
8:B:29:C:H1'	8:B:56:A:H61	1.59	0.68
20:O:65:VAL:HA	20:O:75:ARG:HH12	1.59	0.68
7:A:871:U:H2'	7:A:872:A:C8	2.29	0.67
7:A:1714:U:H2'	7:A:1715:A:C8	2.29	0.67
12:F:67:ILE:O	12:F:109:ARG:NH2	2.27	0.67
18:M:2:LEU:HD12	18:M:70:PRO:HD2	1.75	0.67
7:A:834:A:N6	7:A:855:G:H1'	2.09	0.67
7:A:947:G:N1	7:A:1320:U:OP2	2.18	0.67
7:A:216:G:O2'	7:A:218:A:O2'	2.07	0.67
7:A:279:A:H2'	7:A:280:C:C6	2.30	0.67
7:A:1083:G:H2'	7:A:1084:G:H5"	1.76	0.67
7:A:1611:U:H2'	7:A:1612:G:C8	2.28	0.67
7:A:2778:C:O2'	7:A:2978:A:N3	2.25	0.67
7:A:397:U:H2'	7:A:398:C:C6	2.30	0.67
31:Z:40:ASN:O	31:Z:44:ARG:NH1	2.28	0.67
7:A:193:A:H2'	7:A:194:G:C8	2.29	0.67
7:A:1140:G:N3	15:J:147:GLN:NE2	2.43	0.67
7:A:1886:G:H4'	19:N:39:PRO:HG2	1.76	0.67
11:E:203:SER:O	11:E:206:ALA:N	2.28	0.67
13:G:4:ILE:HG13	13:G:70:ARG:HH21	1.60	0.67
7:A:974:G:N2	7:A:974:G:OP2	2.24	0.67
9:C:65:ILE:HD11	9:C:92:ILE:HG22	1.76	0.67
7:A:24:G:O2'	24:S:88:GLN:O	2.13	0.67
7:A:1051:C:O2'	28:W:29:GLN:NE2	2.27	0.67
7:A:1116:C:O2'	7:A:1129:A:N3	2.24	0.67
7:A:1222:G:N2	7:A:1227:A:N6	2.10	0.67
7:A:2933:U:O2	7:A:2952:G:O6	2.13	0.67
8:B:1:U:N3	8:B:115:A:O2'	2.21	0.67
7:A:1029:A:C5	7:A:1030:C:H1'	2.30	0.66
7:A:1308:G:H2'	7:A:1309:G:H8	1.60	0.66
7:A:2766:U:O2	7:A:2773:G:O6	2.13	0.66
11:E:67:GLY:O	11:E:84:SER:OG	2.12	0.66
16:K:76:TYR:HB2	21:P:72:THR:HB	1.77	0.66
17:L:50:GLU:HG3	17:L:55:PRO:HB3	1.77	0.66
18:M:15:PRO:HB2	18:M:96:ASN:HB2	1.76	0.66
9:C:108:PRO:HB3	9:C:143:HIS:HE1	1.58	0.66
9:C:162:SER:HB3	9:C:195:GLU:HA	1.77	0.66
13:G:97:VAL:HG21	13:G:126:VAL:HG21	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:J:65:SER:HB2	15:J:68:LYS:HD3	1.76	0.66
18:M:12:GLN:OE1	18:M:72:ARG:NH1	2.27	0.66
25:T:3:THR:N	30:Y:58:TYR:HH	1.93	0.66
7:A:732:G:N1	7:A:740:G:N7	2.42	0.66
7:A:1430:G:N1	7:A:1875:A:OP2	2.24	0.66
12:F:171:ASP:OD1	12:F:174:ARG:NH2	2.28	0.66
20:O:30:ARG:HG3	20:O:94:THR:HB	1.77	0.66
24:S:37:ARG:NH2	24:S:41:ASP:OD2	2.29	0.66
11:E:50:ALA:HA	11:E:105:SER:HB3	1.77	0.66
21:P:93:ARG:HG3	21:P:98:TYR:HE2	1.60	0.66
7:A:2239:A:OP1	19:N:9:ARG:NH2	2.26	0.66
7:A:2269:A:N3	7:A:2693:G:O2'	2.26	0.66
7:A:2458:U:H2'	7:A:2459:A:C8	2.31	0.66
7:A:2721:C:N3	18:M:124:LYS:NZ	2.44	0.66
13:G:109:GLY:HA3	13:G:153:ARG:HH12	1.60	0.66
7:A:107:G:H21	7:A:429:A:H62	1.44	0.66
7:A:2899:G:H2'	7:A:2900:A:C8	2.30	0.66
7:A:749:U:H1'	7:A:750:A:H5'	1.75	0.66
7:A:1397:G:O2'	7:A:2250:G:O6	2.12	0.66
7:A:1543:U:H2'	7:A:1544:G:C8	2.31	0.66
7:A:2364:G:O3'	7:A:2411:C:N4	2.29	0.66
7:A:2552:A:H2'	7:A:2553:G:C8	2.31	0.66
9:C:130:ASN:OD1	9:C:131:LEU:N	2.29	0.66
2:1:13:LEU:HB2	2:1:23:TYR:O	1.95	0.66
7:A:1199:A:N7	7:A:1226:U:O2'	2.26	0.66
7:A:2558:C:O2'	7:A:2571:A:N7	2.25	0.66
26:U:89:GLU:O	26:U:92:GLY:N	2.28	0.66
30:Y:63:GLU:HG3	30:Y:68:LEU:HB2	1.77	0.66
7:A:195:U:O4	7:A:204:U:N3	2.18	0.66
7:A:619:C:OP2	7:A:663:G:N2	2.28	0.66
7:A:2676:U:O2'	7:A:2678:C:OP1	2.14	0.66
7:A:2749:U:O2'	10:D:148:PRO:O	2.14	0.66
7:A:2856:G:H21	10:D:160:VAL:HG21	1.60	0.66
17:L:75:GLU:HB3	17:L:103:VAL:HG21	1.77	0.66
5:4:18:ARG:HD2	5:4:23:VAL:HG22	1.78	0.65
7:A:1581:A:N6	7:A:1623:G:O4'	2.28	0.65
8:B:65:A:H4'	8:B:66:G:H5'	1.79	0.65
12:F:19:ILE:HD12	12:F:179:ALA:HB1	1.77	0.65
7:A:2080:G:N2	7:A:2132:C:O2	2.20	0.65
7:A:2300[B]:A:N6	7:A:2741:A:N7	2.37	0.65
9:C:172:TYR:HA	9:C:186:ASP:HA	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:P:51:GLY:HA2	21:P:56:GLU:HG3	1.78	0.65
7:A:946:C:H5	7:A:1322:G:H1	1.44	0.65
7:A:1939:G:H2'	7:A:1940:G:C8	2.31	0.65
7:A:3052:C:OP1	19:N:42:ARG:NH2	2.29	0.65
7:A:2330:G:OP2	14:H:22:LYS:NZ	2.23	0.65
7:A:1173:A:O2'	7:A:1240:A:N6	2.22	0.65
7:A:1589:C:H2'	7:A:1590:G:C8	2.32	0.65
7:A:2032:U:OP2	9:C:272:ARG:NH1	2.27	0.65
7:A:627:G:H5'	15:J:8:ALA:HB2	1.78	0.65
7:A:1545:G:H2'	7:A:1546:G:H8	1.61	0.65
7:A:2786:G:O2'	16:K:4:GLN:OE1	2.14	0.65
8:B:48:C:OP2	20:O:37:ARG:NH2	2.20	0.65
7:A:48:G:N1	7:A:179:A:OP2	2.23	0.65
7:A:2133:C:H2'	7:A:2134:A:C8	2.32	0.65
7:A:2339:U:O4	7:A:2424:A:N6	2.27	0.65
7:A:1316:U:OP2	31:Z:30:ARG:NH2	2.29	0.65
7:A:2270:G:OP1	7:A:2692:G:O2'	2.10	0.65
7:A:357:G:C2	7:A:363:A:N6	2.65	0.65
7:A:711:A:OP2	7:A:723:G:N1	2.24	0.65
7:A:2034:C:OP1	9:C:258:ARG:NH2	2.30	0.65
8:B:1:U:H3	8:B:115:A:HO2'	1.35	0.65
11:E:170:ALA:O	11:E:174:SER:OG	2.15	0.65
14:H:17:ASP:OD1	14:H:17:ASP:N	2.28	0.65
7:A:731:A:H62	17:L:112:LEU:HD13	1.62	0.64
7:A:1905:C:O2	10:D:139:HIS:NE2	2.22	0.64
7:A:2084:G:H2'	7:A:2085:U:C6	2.32	0.64
7:A:2761:G:HO2'	7:A:3002:A:HO2'	1.43	0.64
7:A:1312:G:H2'	7:A:1313:G:C8	2.33	0.64
30:Y:14:THR:O	30:Y:64:ARG:NH1	2.30	0.64
32:A:3201:CTY:H151	32:A:3201:CTY:H302	1.79	0.64
7:A:357:G:N2	7:A:441:U:O2	2.31	0.64
30:Y:21:ARG:NH2	30:Y:53:GLU:OE2	2.30	0.64
7:A:160:U:O2	7:A:170:G:O6	2.15	0.64
7:A:429:A:H3'	7:A:430:A:C8	2.30	0.64
7:A:961:U:H2'	7:A:962:G:C8	2.33	0.64
7:A:1656:G:H5'	7:A:1657:A:C2	2.32	0.64
7:A:3035:U:H3'	7:A:3036:G:C8	2.30	0.64
8:B:102:G:H2'	8:B:103:A:C8	2.31	0.64
10:D:37:THR:OG1	10:D:96:GLN:O	2.16	0.64
10:D:201:ARG:NH2	10:D:203:GLY:O	2.30	0.64
10:D:212:ILE:HG13	10:D:213:LYS:HG3	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:57:ARG:HH22	17:L:50:GLU:HG2	1.62	0.64
7:A:1182:C:HO2'	7:A:1183:A:H8	1.44	0.64
7:A:1496:A:O2'	7:A:1497:C:O5'	2.14	0.64
7:A:1713:G:O2'	7:A:1714:U:OP2	2.13	0.64
7:A:2816:G:N2	10:D:135:GLN:OE1	2.27	0.64
3:2:28:ARG:NH2	7:A:213:G:OP2	2.26	0.64
7:A:1950:A:N6	7:A:1976:G:N7	2.46	0.64
7:A:2099:U:O2	7:A:2114:A:N6	2.31	0.64
13:G:17:VAL:HG12	13:G:26:VAL:HG12	1.80	0.64
7:A:733:C:O2	7:A:743:U:O2'	2.16	0.64
21:P:24:THR:OG1	21:P:87:THR:OG1	2.16	0.64
7:A:1582:A:H5"	7:A:1583:C:C5	2.33	0.64
7:A:1967:G:H2'	7:A:1968:G:C8	2.33	0.64
17:L:94:VAL:HA	17:L:97:LEU:HD12	1.79	0.64
7:A:2173:G:N2	7:A:2200:C:O2'	2.31	0.63
7:A:2244:C:O2'	7:A:3058:A:N3	2.30	0.63
7:A:2999:G:N2	13:G:151:ARG:HH12	1.97	0.63
17:L:21:VAL:O	17:L:23:ARG:N	2.30	0.63
4:3:18:GLY:N	7:A:733:C:OP1	2.31	0.63
7:A:493:C:H4'	7:A:494:C:H3'	1.80	0.63
7:A:1582:A:H5"	7:A:1583:C:H5	1.62	0.63
2:1:26:LYS:NZ	4:3:34:GLU:OE1	2.27	0.63
7:A:988:G:O2'	7:A:1045:G:O6	2.14	0.63
9:C:78:LYS:HG3	9:C:114:GLY:HA2	1.80	0.63
7:A:1734:U:H5'	7:A:1735:C:H5	1.62	0.63
7:A:2565:A:H2'	7:A:2566:A:C8	2.34	0.63
9:C:168:LYS:HA	9:C:173:ALA:HA	1.80	0.63
10:D:24:VAL:HG13	10:D:195:LYS:HG3	1.80	0.63
12:F:80:SER:OG	12:F:87:ARG:N	2.31	0.63
7:A:2233:U:O2	16:K:3:GLN:NE2	2.26	0.63
19:N:72:ASP:OD1	19:N:75:VAL:N	2.26	0.63
7:A:1180:A:H2'	7:A:1181:C:H5	1.62	0.63
7:A:1307:U:H5"	7:A:1308:G:C8	2.34	0.63
7:A:1656:G:O2'	7:A:1816:A:N6	2.31	0.63
7:A:1850:C:OP2	7:A:1852:C:N4	2.24	0.63
13:G:110:TYR:HE1	13:G:153:ARG:HD3	1.62	0.63
3:2:27:THR:HG23	3:2:30:GLY:H	1.62	0.63
7:A:397:U:H2'	7:A:398:C:H6	1.64	0.63
7:A:1471:U:OP2	25:T:62:ARG:NH2	2.32	0.63
7:A:1613:G:H2'	7:A:1614:A:C8	2.34	0.63
7:A:2371:A:N6	7:A:2392:C:OP2	2.25	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2541:G:O6	7:A:2552:A:N6	2.32	0.63
7:A:19:G:H1'	7:A:655:G:O2'	1.99	0.63
7:A:2379:A:N3	7:A:2418:G:N1	2.46	0.63
7:A:2836:A:H5"	9:C:235:GLY:HA3	1.79	0.63
12:F:41:VAL:HG21	12:F:107:LEU:HD11	1.80	0.63
17:L:92:VAL:HG12	17:L:93:GLY:H	1.64	0.63
21:P:1:MET:O	21:P:5:ASP:N	2.24	0.63
22:Q:89:GLU:O	23:R:14:GLN:NE2	2.28	0.63
24:S:30:VAL:HG21	24:S:53:ALA:HB3	1.81	0.63
4:3:47:ARG:NH2	7:A:735:A:OP1	2.27	0.63
7:A:2677:A:C8	7:A:2824:U:H4'	2.34	0.63
7:A:3071:U:H2'	7:A:3072:A:C8	2.33	0.63
8:B:7:C:H5"	20:O:34:VAL:HG11	1.79	0.63
8:B:13:C:OP2	8:B:69:C:O2'	2.16	0.63
7:A:1260:G:H4'	15:J:84:LEU:HD22	1.81	0.62
7:A:2259:C:O2'	7:A:2260:U:H5"	1.99	0.62
2:1:10:LYS:HA	2:1:26:LYS:HB3	1.79	0.62
7:A:1585:G:N2	7:A:1619:U:O2	2.25	0.62
8:B:83:C:O2'	8:B:84:C:O4'	2.15	0.62
26:U:10:LEU:HD13	26:U:80:PRO:HG3	1.81	0.62
27:V:76:ALA:HB1	27:V:95:LEU:HD22	1.80	0.62
7:A:1202:A:H4'	7:A:2712:C:H1'	1.80	0.62
7:A:1713:G:H22	7:A:1753:G:H3'	1.65	0.62
18:M:34:ILE:HG23	18:M:129:ALA:HB1	1.82	0.62
19:N:100:ILE:HD11	19:N:112:VAL:HG12	1.81	0.62
31:Z:7:THR:OG1	31:Z:34:SER:OG	1.99	0.62
7:A:428:A:H1'	7:A:429:A:H2	1.62	0.62
7:A:540:C:N4	7:A:543:A:OP2	2.20	0.62
9:C:92:ILE:HD12	9:C:104:TYR:CE1	2.34	0.62
7:A:1197:G:N3	7:A:1198:A:N6	2.47	0.62
7:A:1329:G:O2'	22:Q:12:LYS:NZ	2.32	0.62
7:A:1509:A:O2'	7:A:1511:G:N7	2.27	0.62
9:C:132:PRO:HA	9:C:190:ARG:HA	1.81	0.62
9:C:153:ALA:O	9:C:157:ARG:NH1	2.32	0.62
7:A:141:A:H2'	7:A:142:U:C6	2.35	0.62
7:A:293:G:H2'	7:A:294:G:H8	1.63	0.62
7:A:1383:G:N2	22:Q:37:GLU:OE2	2.26	0.62
7:A:2026:G:H5"	9:C:205:ASN:HB2	1.82	0.62
7:A:2529:U:O2'	7:A:2612:C:O2	2.16	0.62
10:D:76:ASN:O	10:D:78:ARG:NH1	2.33	0.62
7:A:708:G:H1'	7:A:786:U:H1'	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2300[B]:A:C6	32:A:3201:CTY:H273	2.34	0.62
7:A:2999:G:H21	13:G:151:ARG:HH12	1.46	0.62
9:C:65:ILE:HD13	9:C:104:TYR:HB3	1.81	0.62
9:C:79:VAL:HG23	9:C:93:ALA:HB1	1.80	0.62
21:P:27:VAL:HG12	21:P:29:VAL:HG13	1.82	0.62
7:A:247:G:N2	7:A:473:C:O2'	2.29	0.62
7:A:356:A:N1	7:A:357:G:C6	2.67	0.62
7:A:542:G:N2	7:A:547:G:OP2	2.33	0.62
7:A:751:G:H2'	7:A:752:G:O4'	2.00	0.62
7:A:2418:G:OP2	7:A:2419:A:N6	2.33	0.62
7:A:2577:G:H5'	12:F:76:ARG:HH22	1.65	0.62
7:A:2936:U:H2'	7:A:2937:C:C6	2.35	0.62
16:K:106:LEU:HD23	16:K:109:LYS:HD3	1.81	0.62
16:K:109:LYS:NZ	16:K:111:PHE:HB2	2.14	0.62
7:A:272:A:H2'	7:A:273:A:H5'	1.80	0.62
7:A:627:G:H2'	7:A:628:C:C6	2.35	0.62
8:B:14:A:H3'	8:B:15:G:H8	1.65	0.62
12:F:29:TYR:OH	12:F:172:GLU:OE2	2.16	0.62
7:A:107:G:H21	7:A:429:A:N6	1.97	0.62
7:A:739:C:O2'	7:A:743:U:OP1	2.16	0.62
7:A:1501:C:H2'	7:A:1502:G:O4'	2.00	0.62
13:G:108:LEU:HD21	13:G:161:LYS:HD2	1.81	0.62
7:A:950:A:N6	7:A:1101:G:O2'	2.30	0.61
7:A:1059:A:H1'	7:A:1060:A:H5'	1.82	0.61
6:6:11:GLU:HG2	6:6:24:THR:HG21	1.82	0.61
7:A:267:A:N1	7:A:516:U:O2'	2.28	0.61
7:A:298:G:H3'	7:A:299:G:H8	1.65	0.61
7:A:1525:U:H4'	7:A:1838:A:H4'	1.82	0.61
7:A:1543:U:H2'	7:A:1544:G:H8	1.64	0.61
7:A:1823:A:H2'	7:A:1824:C:O4'	2.00	0.61
7:A:2083:G:H2'	7:A:2084:G:C8	2.35	0.61
7:A:682:C:H2'	7:A:683:C:C6	2.35	0.61
7:A:1307:U:H5"	7:A:1308:G:N7	2.16	0.61
9:C:245:HIS:O	9:C:247:VAL:HG23	2.00	0.61
17:L:144:THR:HG22	17:L:145:GLU:H	1.63	0.61
7:A:980:C:H2'	7:A:981:C:C6	2.35	0.61
7:A:1049:G:H21	7:A:2507:A:H8	1.48	0.61
8:B:12:A:O2'	8:B:14:A:OP2	2.15	0.61
15:J:13:ARG:NH1	15:J:51:GLY:O	2.32	0.61
7:A:460:A:N6	7:A:491:A:OP2	2.33	0.61
7:A:2116:G:H2'	7:A:2117:C:C6	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2333:G:H2'	7:A:2334:U:C6	2.34	0.61
7:A:2470:C:OP2	29:X:27:ARG:NH2	2.32	0.61
9:C:163:ILE:HD13	9:C:178:PRO:HD3	1.82	0.61
16:K:115:ILE:HG23	16:K:121:VAL:HG11	1.82	0.61
23:R:44:VAL:HG12	23:R:46:GLY:H	1.66	0.61
1:0:51:LEU:HD13	19:N:112:VAL:HG11	1.80	0.61
7:A:1171:G:H2'	7:A:1172:C:C6	2.35	0.61
14:H:2:LYS:HA	14:H:19:VAL:HB	1.81	0.61
18:M:74:LEU:HB2	18:M:92:TRP:HB2	1.82	0.61
7:A:430:A:H2'	7:A:431:A:C8	2.35	0.61
7:A:1578:C:O2'	7:A:1627:C:N4	2.33	0.61
7:A:1812:C:H2'	7:A:1813:U:O4'	2.00	0.61
17:L:93:GLY:O	17:L:96:ASP:N	2.32	0.61
21:P:89:GLY:HA2	21:P:112:LYS:HB3	1.83	0.61
7:A:350:A:H2'	7:A:351:G:H8	1.66	0.61
7:A:583:G:O4'	24:S:67:ASN:ND2	2.34	0.61
7:A:2115:A:H3'	7:A:2116:G:H8	1.66	0.61
23:R:76:ILE:HB	23:R:89:GLN:O	2.01	0.61
7:A:272:A:H1'	7:A:459:G:C2	2.36	0.61
7:A:331:U:C6	7:A:445:U:H5'	2.36	0.61
7:A:545:U:C5	25:T:71:THR:HB	2.34	0.61
23:R:71:GLY:O	23:R:92:ARG:NE	2.32	0.61
7:A:2061:U:OP2	9:C:222:ARG:NH1	2.34	0.61
7:A:2550:U:O2	12:F:44:ASN:ND2	2.33	0.61
7:A:2593:C:H2'	7:A:2594:U:O4'	2.01	0.61
7:A:1216:G:O2'	7:A:1218:G:H4'	2.01	0.60
13:G:11:VAL:HG22	13:G:14:GLY:H	1.66	0.60
7:A:1614:A:H2'	7:A:1615:G:H8	1.63	0.60
7:A:1969:U:H3'	7:A:1970:G:C8	2.35	0.60
11:E:137:VAL:HA	11:E:170:ALA:HB3	1.83	0.60
20:O:116:ARG:HG2	20:O:122:PHE:H	1.65	0.60
26:U:89:GLU:O	26:U:93:LYS:N	2.30	0.60
7:A:823:U:OP1	9:C:59:LYS:NZ	2.34	0.60
7:A:1945:G:HO2'	7:A:3093:U:H3	1.49	0.60
7:A:1961:C:OP2	7:A:1962:C:N4	2.33	0.60
7:A:2284:G:H2'	7:A:2285:C:C6	2.37	0.60
7:A:2541:G:N2	12:F:162:ASN:HD21	1.99	0.60
18:M:118:LEU:O	18:M:122:ILE:HG23	2.01	0.60
7:A:368:U:O2	7:A:436:G:C6	2.54	0.60
7:A:654:G:H2'	7:A:655:G:H5"	1.84	0.60
7:A:1581:A:H2'	7:A:1582:A:C8	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1666:C:N4	7:A:1807:A:OP2	2.35	0.60
7:A:2710:G:N2	7:A:2717:U:O4	2.35	0.60
21:P:6:PHE:HD1	21:P:9:LYS:HE3	1.66	0.60
7:A:198:A:H62	7:A:960:G:H21	1.49	0.60
7:A:1047:A:N6	7:A:2506:A:OP2	2.33	0.60
7:A:1335:C:H5"	11:E:196:ARG:HG3	1.83	0.60
7:A:1653:A:H3'	7:A:1654:G:H8	1.66	0.60
7:A:2864:C:H2'	7:A:2865:G:C8	2.36	0.60
12:F:77:ALA:H	12:F:91:PRO:HA	1.66	0.60
7:A:675:G:N2	7:A:2269:A:OP1	2.34	0.60
7:A:677:A:OP2	7:A:2737:C:O2'	2.19	0.60
7:A:777:U:OP2	7:A:781:A:N6	2.28	0.60
7:A:1898:U:HO2'	7:A:1899:A:H8	1.47	0.60
7:A:2071:C:O2'	7:A:2165:A:H1'	2.02	0.60
7:A:2275:U:H2'	7:A:2276:C:C6	2.36	0.60
27:V:75:LEU:HD21	27:V:136:LEU:HD11	1.83	0.60
28:W:68:GLU:H	28:W:81:VAL:CG2	2.14	0.60
7:A:29:U:O2	7:A:1346:G:O2'	2.19	0.60
7:A:571:U:O2'	7:A:585:A:N1	2.28	0.60
7:A:1844:A:N7	7:A:1882:A:N6	2.50	0.60
7:A:2590:A:N6	7:A:2603:A:O2'	2.34	0.60
9:C:30:GLU:OE2	9:C:102:LYS:NZ	2.29	0.60
4:3:13:ARG:NH1	17:L:60:LEU:O	2.35	0.60
7:A:298:G:O6	7:A:340:U:C4	2.54	0.60
7:A:349:G:H2'	7:A:350:A:H8	1.66	0.60
7:A:1518:G:H5'	7:A:1707:A:H1'	1.84	0.60
7:A:2382:C:H2'	7:A:2384:A:C6	2.37	0.60
10:D:76:ASN:OD1	10:D:77:PRO:HD2	2.02	0.60
11:E:161:LEU:HD11	11:E:184:LEU:HD13	1.83	0.60
7:A:1605:G:H2'	7:A:1606:G:C8	2.37	0.60
7:A:1672:A:H2'	7:A:1673:A:H8	1.67	0.60
7:A:2248:G:H2'	7:A:2249:C:C6	2.37	0.60
12:F:16:ARG:HH21	12:F:38:VAL:H	1.49	0.60
19:N:49:GLU:OE1	19:N:94:TYR:N	2.31	0.60
20:O:112:ALA:O	20:O:116:ARG:HG3	2.02	0.60
4:3:29:ARG:NH1	4:3:45:ASP:OD2	2.27	0.60
6:6:8:ALA:O	6:6:29:PRO:HG3	2.01	0.60
8:B:55:U:H5'	8:B:56:A:H8	1.67	0.60
16:K:64:ARG:HG3	16:K:79:PHE:CD2	2.36	0.60
7:A:309:U:OP2	14:H:41:ARG:NH2	2.33	0.59
7:A:1139:A:HO2'	7:A:1282:C:HO2'	1.48	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2185:C:H2'	7:A:2186:G:H8	1.67	0.59
7:A:2753:C:H2'	7:A:2754:G:H8	1.67	0.59
9:C:227:ASN:O	9:C:229:VAL:N	2.35	0.59
13:G:35:LEU:HD11	13:G:72:LEU:HG	1.83	0.59
2:1:8:ARG:HH21	7:A:2521:C:H3'	1.66	0.59
7:A:858:G:C5	9:C:208:LYS:HB2	2.36	0.59
7:A:1428:C:HO2'	7:A:1433:A:H61	1.50	0.59
7:A:1945:G:O2'	7:A:3093:U:N3	2.33	0.59
7:A:2362:G:H2'	7:A:2363:A:H4'	1.84	0.59
7:A:2918:C:H5'	10:D:199:PRO:HA	1.83	0.59
10:D:99:GLN:HE21	10:D:100:GLU:H	1.49	0.59
3:2:27:THR:O	3:2:31:ARG:HG3	2.01	0.59
7:A:158:U:H2'	7:A:159:C:C6	2.37	0.59
7:A:2087:A:H2'	7:A:2088:A:H8	1.68	0.59
25:T:61:ASN:HA	25:T:80:LYS:HA	1.85	0.59
27:V:69:ILE:O	27:V:72:LYS:N	2.35	0.59
5:4:19:ARG:HD3	7:A:2993:C:C2	2.37	0.59
7:A:729:G:N7	17:L:104:ARG:NH2	2.50	0.59
7:A:872:A:O2'	7:A:1894:U:OP1	2.16	0.59
7:A:2086:U:O2	7:A:2127:A:N7	2.35	0.59
7:A:2801:U:O2'	7:A:2803:A:N7	2.32	0.59
11:E:10:LYS:HA	11:E:25:GLU:HA	1.84	0.59
22:Q:106:PHE:O	22:Q:110:VAL:HG23	2.02	0.59
7:A:2024:C:O2'	9:C:209:ALA:HB2	2.02	0.59
7:A:2646:U:H2'	7:A:2647:G:H8	1.67	0.59
7:A:3071:U:H2'	7:A:3072:A:H8	1.65	0.59
8:B:65:A:N6	8:B:104:C:O4'	2.35	0.59
9:C:85:ASP:OD2	9:C:88:ARG:NH1	2.31	0.59
17:L:116:LYS:HA	17:L:135:LYS:HD3	1.83	0.59
21:P:6:PHE:O	21:P:10:PRO:HD2	2.02	0.59
7:A:184:A:H2'	7:A:185:C:H6	1.67	0.59
7:A:749:U:O4	7:A:750:A:N6	2.35	0.59
14:H:3:LEU:HG	14:H:19:VAL:HG11	1.84	0.59
18:M:5:ARG:HG3	18:M:6:LYS:H	1.68	0.59
25:T:17:SER:OG	25:T:19:LYS:N	2.35	0.59
25:T:57:VAL:HG22	25:T:84:VAL:HG22	1.85	0.59
7:A:2061:U:H2'	7:A:2062:G:O4'	2.03	0.59
7:A:2270:G:H21	10:D:156:THR:HG23	1.67	0.59
10:D:113:ASP:HB2	10:D:178:LEU:HD23	1.83	0.59
7:A:24:G:H21	24:S:88:GLN:HG3	1.67	0.59
7:A:1198:A:H2	7:A:1226:U:H5'	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2496:U:O2'	7:A:2665:C:OP2	2.20	0.59
12:F:49:GLU:HB3	12:F:56:LEU:HB2	1.85	0.59
12:F:68:THR:HG21	12:F:96:VAL:HG11	1.84	0.59
15:J:113:ARG:HA	15:J:116:ARG:HE	1.67	0.59
20:O:35:VAL:HG22	20:O:44:VAL:HG12	1.84	0.59
7:A:10:U:H2'	7:A:11:C:O4'	2.02	0.59
7:A:626:A:H2'	7:A:627:G:O4'	2.03	0.59
7:A:1086:U:O4	18:M:41:TYR:N	2.35	0.59
9:C:175:LEU:O	9:C:182:ILE:HA	2.01	0.59
12:F:148:VAL:HG22	12:F:152:LYS:HE2	1.85	0.59
17:L:36:THR:HG23	17:L:38:GLY:H	1.68	0.59
26:U:3:VAL:HG12	26:U:73:VAL:HG23	1.85	0.59
7:A:775:C:H2'	7:A:776:G:C4	2.38	0.59
7:A:1579:A:OP1	9:C:168:LYS:NZ	2.31	0.59
7:A:2051:G:OP1	9:C:88:ARG:NH2	2.36	0.59
7:A:2364:G:N3	7:A:2364:G:H2'	2.18	0.59
16:K:19:ILE:HD11	16:K:84:ALA:HB3	1.84	0.59
21:P:31:VAL:O	21:P:38:ARG:HB3	2.03	0.59
29:X:48:ARG:O	29:X:49:LEU:HD23	2.02	0.59
7:A:271:U:C2	7:A:459:G:O6	2.56	0.58
7:A:357:G:N2	7:A:363:A:C6	2.71	0.58
7:A:626:A:N6	7:A:657:G:O2'	2.35	0.58
7:A:1672:A:H61	7:A:1795:C:H42	1.48	0.58
7:A:2566:A:H2'	7:A:2567:A:H8	1.68	0.58
14:H:25:TYR:O	14:H:29:PHE:HB3	2.03	0.58
7:A:413:A:H2	7:A:1341:G:HO2'	1.49	0.58
7:A:1553:U:H2'	7:A:1554:G:C8	2.37	0.58
7:A:2204:A:H8	7:A:2830:G:HO2'	1.50	0.58
7:A:2649:A:H2'	7:A:2650:A:C8	2.38	0.58
7:A:2678:C:H5'	7:A:2825:A:H4'	1.84	0.58
9:C:255:GLY:O	9:C:257:THR:HG23	2.03	0.58
27:V:139:PRO:HB3	27:V:166:VAL:HG21	1.85	0.58
9:C:142:ILE:HG13	9:C:163:ILE:HB	1.84	0.58
16:K:100:GLY:HA2	21:P:65:TYR:HB2	1.86	0.58
1:0:28:VAL:HG12	1:0:38:LYS:HD3	1.85	0.58
2:1:8:ARG:NE	7:A:2522:C:OP2	2.36	0.58
3:2:33:ILE:HD13	7:A:555:A:H4'	1.84	0.58
7:A:312:G:H2'	7:A:313:G:H8	1.68	0.58
7:A:1330:U:H5'	22:Q:12:LYS:HZ2	1.69	0.58
7:A:1917:C:H2'	7:A:1918:C:C6	2.38	0.58
7:A:2552:A:H2'	7:A:2553:G:H8	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:L:131:SER:OG	17:L:135:LYS:HE2	2.04	0.58
7:A:31:C:O2'	7:A:1369:G:OP1	2.21	0.58
7:A:802:C:OP1	11:E:61:ARG:NH1	2.33	0.58
7:A:991:G:O2'	8:B:77:A:N3	2.36	0.58
7:A:1977:G:H2'	7:A:1978:G:C8	2.39	0.58
7:A:209:A:H2'	7:A:210:C:O4'	2.04	0.58
7:A:1180:A:H2'	7:A:1181:C:C5	2.39	0.58
7:A:1495:G:O2'	7:A:2042:C:N4	2.32	0.58
7:A:2146:U:H3	7:A:2160:A:H61	1.51	0.58
9:C:184:ARG:NH1	9:C:266:LYS:O	2.36	0.58
13:G:158:TYR:HE1	13:G:174:VAL:H	1.51	0.58
19:N:7:GLY:O	19:N:9:ARG:NH1	2.36	0.58
1:0:5:LYS:HZ3	7:A:2294:G:H4'	1.69	0.58
5:4:19:ARG:NE	7:A:2994:U:OP2	2.33	0.58
7:A:84:A:N1	7:A:99:G:O2'	2.35	0.58
7:A:226:A:N6	7:A:508:G:O2'	2.33	0.58
7:A:2927:C:O2'	19:N:14:SER:HB3	2.03	0.58
7:A:2997:G:H21	13:G:140:GLN:HG3	1.68	0.58
2:1:14:ALA:N	2:1:52:ARG:O	2.37	0.58
7:A:184:A:H2'	7:A:185:C:C6	2.39	0.58
7:A:1085:A:H5'	18:M:76:LYS:HG2	1.84	0.58
11:E:31:PHE:O	11:E:122:SER:HB2	2.03	0.58
12:F:148:VAL:HG13	12:F:152:LYS:HB2	1.86	0.58
13:G:149:ILE:HG22	13:G:163:VAL:HG11	1.85	0.58
7:A:491:A:N3	7:A:495:G:O2'	2.35	0.58
7:A:1187:G:O6	7:A:1209:C:N4	2.37	0.58
7:A:1691:G:C4	19:N:77:HIS:HE1	2.22	0.58
7:A:2427:G:H2'	7:A:2428:G:O4'	2.03	0.58
21:P:43:LYS:HE2	21:P:86:VAL:HG21	1.85	0.58
7:A:729:G:O6	17:L:104:ARG:NE	2.36	0.58
7:A:855:G:HO2'	7:A:856:A:P	2.26	0.58
7:A:1208:C:H42	7:A:1217:A:H5'	1.68	0.58
7:A:1427:G:OP1	7:A:2947:G:O2'	2.17	0.58
7:A:1541:U:H2'	7:A:1542:G:C8	2.39	0.58
7:A:1786:G:O2'	7:A:1974:G:N2	2.36	0.58
9:C:173:ALA:O	9:C:184:ARG:HA	2.04	0.58
13:G:97:VAL:HG11	13:G:126:VAL:HG11	1.84	0.58
15:J:105:ILE:HG21	15:J:122:LEU:HD13	1.86	0.58
16:K:73:ASP:OD1	16:K:74:GLY:N	2.37	0.58
21:P:48:ARG:HE	21:P:50:GLN:HB2	1.69	0.58
7:A:92:A:O2'	7:A:93:C:O5'	2.19	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:556:G:OP2	7:A:556:G:H8	1.87	0.57
7:A:616:A:OP2	15:J:116:ARG:NH2	2.36	0.57
7:A:2309:C:H41	7:A:2675:G:H1	1.52	0.57
9:C:169:GLU:N	9:C:172:TYR:O	2.37	0.57
10:D:48:SER:OG	10:D:89:SER:O	2.15	0.57
10:D:57:ILE:HD11	10:D:62:VAL:HB	1.86	0.57
7:A:1119:A:O2'	7:A:1121:C:OP2	2.22	0.57
7:A:1889:A:N1	7:A:2286:G:O2'	2.37	0.57
7:A:2924:G:O4'	7:A:2964:C:N4	2.37	0.57
8:B:61:U:H2'	8:B:62:G:H8	1.68	0.57
12:F:12:LYS:HE3	12:F:107:LEU:HB3	1.85	0.57
24:S:31:ILE:HD12	24:S:86:ALA:HB2	1.86	0.57
4:3:7:HIS:NE2	7:A:253:A:OP1	2.37	0.57
7:A:272:A:OP2	7:A:315:G:N1	2.31	0.57
7:A:1122:G:N2	23:R:26:GLU:OE2	2.37	0.57
7:A:1150:A:H2'	7:A:1151:G:H4'	1.86	0.57
7:A:1647:U:H2'	7:A:1648:A:H8	1.69	0.57
7:A:1792:C:H2'	7:A:1793:C:C6	2.39	0.57
7:A:2026:G:O2'	7:A:2064:C:OP1	2.21	0.57
12:F:64:LEU:HA	12:F:67:ILE:HG12	1.86	0.57
16:K:68:GLU:HG3	16:K:78:LYS:HB2	1.86	0.57
2:1:28:ASN:HD21	7:A:2523:C:P	2.27	0.57
7:A:330:G:H4'	7:A:446:A:C8	2.33	0.57
7:A:460:A:H61	7:A:490:A:H3'	1.69	0.57
7:A:627:G:H2'	7:A:628:C:H6	1.69	0.57
7:A:936:U:H5	17:L:42:ARG:HH12	1.51	0.57
7:A:2166:A:H2'	7:A:2167:G:O4'	2.04	0.57
24:S:28:ARG:HA	24:S:31:ILE:HB	1.87	0.57
27:V:26:ARG:NE	27:V:91:GLN:OE1	2.37	0.57
31:Z:23:LEU:HD22	31:Z:28:LEU:HD12	1.86	0.57
6:6:42:HIS:CD2	6:6:45:TYR:HB2	2.40	0.57
7:A:455:U:H2'	7:A:456:C:C6	2.40	0.57
7:A:1133:C:H2'	7:A:1140:G:H2'	1.87	0.57
7:A:2212:C:H2'	7:A:2213:G:O4'	2.04	0.57
11:E:187:ASP:OD1	11:E:187:ASP:N	2.38	0.57
13:G:27:LYS:HG2	13:G:32:THR:HB	1.86	0.57
27:V:36:TYR:N	27:V:95:LEU:O	2.34	0.57
5:4:29:ASP:O	5:4:31:ARG:N	2.35	0.57
7:A:349:G:H2'	7:A:350:A:C8	2.39	0.57
7:A:635:U:O4	7:A:648:G:O6	2.22	0.57
7:A:2897:G:H22	7:A:2899:G:H3'	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:3029:C:O2'	7:A:3030:C:OP2	2.19	0.57
7:A:3042:A:H2'	7:A:3043:U:O4'	2.04	0.57
8:B:27:C:H2'	8:B:28:G:O4'	2.05	0.57
9:C:99:ASP:OD1	9:C:100:GLY:N	2.38	0.57
10:D:42:PRO:HB3	10:D:48:SER:HB2	1.86	0.57
10:D:121:LYS:HB2	10:D:170:MET:HG3	1.87	0.57
11:E:147:ALA:HB1	11:E:175:VAL:HG12	1.87	0.57
20:O:16:ARG:O	20:O:20:LEU:HG	2.05	0.57
21:P:38:ARG:NH1	21:P:39:LEU:O	2.38	0.57
4:3:30:ARG:HH21	17:L:61:PRO:HB2	1.68	0.57
5:4:30:PRO:HB2	7:A:2765:C:H5"	1.86	0.57
7:A:300:G:C8	7:A:302:U:H5"	2.39	0.57
7:A:461:G:O2'	7:A:489:G:O6	2.16	0.57
7:A:1090:C:H2'	7:A:1091:U:C6	2.39	0.57
7:A:1672:A:H2'	7:A:1673:A:C8	2.40	0.57
7:A:2127:A:H2'	7:A:2128:A:C8	2.40	0.57
17:L:79:VAL:HG22	17:L:117:LEU:HB2	1.87	0.57
17:L:117:LEU:HD23	17:L:136:ILE:HG22	1.85	0.57
7:A:1176:G:H1'	7:A:1239:A:N1	2.20	0.57
7:A:1282:C:OP1	22:Q:84:LYS:NZ	2.30	0.57
7:A:1903:A:O2'	7:A:1909:G:N7	2.29	0.57
7:A:2049:A:OP2	9:C:54:LYS:NZ	2.32	0.57
7:A:2293:C:O2'	7:A:2742:U:H5'	2.04	0.57
16:K:8:LEU:HB2	16:K:82:ASN:HB3	1.86	0.57
7:A:356:A:C6	7:A:442:G:C6	2.93	0.57
7:A:389:U:H2'	7:A:390:G:O4'	2.04	0.57
7:A:1683:A:N6	7:A:1704:G:O2'	2.38	0.57
7:A:2023:A:H2'	7:A:2024:C:O4'	2.04	0.57
10:D:32:GLY:O	10:D:34:ASN:N	2.35	0.57
7:A:560:A:H2'	7:A:561:U:O4'	2.04	0.57
7:A:1076:C:H1'	7:A:1113:G:C8	2.40	0.57
7:A:1233:C:H3'	7:A:1234:U:H5"	1.85	0.57
7:A:2333:G:H2'	7:A:2334:U:H6	1.70	0.57
7:A:3024:U:H1'	10:D:69:GLN:HE21	1.69	0.57
7:A:3028:A:H2'	7:A:3029:C:H2'	1.85	0.57
8:B:61:U:H2'	8:B:62:G:C8	2.40	0.57
9:C:24:ILE:HA	9:C:82:ILE:O	2.05	0.57
18:M:38:GLU:H	18:M:127:ILE:HD11	1.69	0.57
27:V:134:GLU:HG3	27:V:135:ALA:H	1.70	0.57
7:A:687:G:H1'	7:A:1385:A:H61	1.70	0.56
7:A:800:C:H2'	7:A:801:C:C6	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1192:G:N2	7:A:1205:C:H1'	2.20	0.56
7:A:1443:U:OP1	25:T:66:ARG:NH2	2.38	0.56
7:A:1494:C:H2'	7:A:1495:G:O4'	2.05	0.56
7:A:2103:C:H2'	7:A:2104:C:C6	2.39	0.56
7:A:2185:C:H2'	7:A:2186:G:C8	2.39	0.56
7:A:2961:C:OP1	10:D:119:LYS:NZ	2.31	0.56
10:D:45:ASP:HB2	10:D:47:TYR:CE1	2.40	0.56
10:D:138:SER:O	10:D:140:GLY:N	2.34	0.56
28:W:40:GLN:OE1	28:W:43:THR:N	2.38	0.56
7:A:437:C:H2'	7:A:438:A:C8	2.40	0.56
7:A:1047:A:H5"	8:B:93:G:O2'	2.05	0.56
7:A:1685:C:H2'	7:A:1686:A:C8	2.40	0.56
7:A:2482:U:H2'	7:A:2483:U:O4'	2.04	0.56
7:A:2814:G:O2'	7:A:2817:C:OP2	2.13	0.56
23:R:63:GLY:HA3	23:R:99:LYS:O	2.05	0.56
25:T:39:LYS:HG2	25:T:59:THR:HG23	1.87	0.56
29:X:19:SER:OG	29:X:20:HIS:N	2.36	0.56
7:A:91:A:H4'	7:A:92:A:H5'	1.85	0.56
7:A:281:G:C2	7:A:308:G:C6	2.93	0.56
7:A:1155:G:OP2	7:A:1263:G:O2'	2.17	0.56
7:A:1383:G:H1	22:Q:37:GLU:CG	2.18	0.56
7:A:1623:G:O2'	7:A:1624:C:O5'	2.22	0.56
7:A:2013:U:H5	7:A:2018:A:N7	2.03	0.56
7:A:2336:C:C4	7:A:2337:G:H1'	2.40	0.56
7:A:2341:C:H2'	7:A:2342:G:N7	2.19	0.56
7:A:2551:C:H5"	12:F:95:ARG:HH11	1.70	0.56
7:A:2898:A:H3'	7:A:2899:G:C8	2.41	0.56
7:A:2989:G:O6	13:G:3:ARG:NH1	2.38	0.56
8:B:26:A:H5'	20:O:61:ILE:HG21	1.87	0.56
9:C:66:ASP:OD2	9:C:103:ARG:HB3	2.05	0.56
10:D:180:LEU:HB3	10:D:194:ILE:HG23	1.87	0.56
11:E:133:ILE:O	11:E:204:VAL:HG23	2.06	0.56
12:F:41:VAL:HG13	12:F:163:VAL:HG12	1.86	0.56
24:S:35:ARG:NH2	24:S:84:VAL:O	2.38	0.56
29:X:7:ILE:HG13	29:X:8:CYS:N	2.20	0.56
7:A:828:A:H4'	7:A:1869:C:C4	2.41	0.56
7:A:1545:G:H2'	7:A:1546:G:C8	2.40	0.56
7:A:2420:U:H2'	7:A:2421:C:C5	2.40	0.56
8:B:69:C:H2'	8:B:70:C:C6	2.41	0.56
12:F:21:ASP:OD1	12:F:24:ARG:NH2	2.39	0.56
13:G:26:VAL:HG23	13:G:80:VAL:HG21	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:O:32:ARG:HE	20:O:47:VAL:HG21	1.71	0.56
25:T:8:ARG:HD2	30:Y:27:GLU:OE2	2.06	0.56
7:A:936:U:O2'	7:A:2298:A:N1	2.36	0.56
7:A:980:C:H2'	7:A:981:C:H6	1.70	0.56
7:A:1297:A:H2'	7:A:1298:U:C6	2.40	0.56
7:A:1558:A:H5'	7:A:1645:A:N6	2.20	0.56
7:A:1667:G:H2'	7:A:1668:C:H6	1.70	0.56
7:A:1798:C:H2'	7:A:1799:U:C6	2.41	0.56
7:A:2094:C:H41	7:A:2121:G:H21	1.53	0.56
9:C:79:VAL:HG12	9:C:115:ASP:O	2.05	0.56
7:A:763:C:H2'	7:A:764:G:N9	2.21	0.56
7:A:1140:G:OP1	22:Q:77:ASN:ND2	2.38	0.56
7:A:1261:U:O2'	7:A:1262:A:H5'	2.05	0.56
7:A:1328:C:HO2'	7:A:1358:C:HO2'	1.54	0.56
7:A:1494:C:O2	7:A:2043:A:H2	1.89	0.56
7:A:1787:G:H5'	7:A:1955:G:H21	1.71	0.56
7:A:1849:A:C6	24:S:97:PRO:HB3	2.41	0.56
7:A:2402:G:O4'	7:A:2408:A:N6	2.37	0.56
10:D:35:VAL:HA	10:D:53:ALA:O	2.05	0.56
18:M:76:LYS:HD3	18:M:91:GLU:HG2	1.86	0.56
18:M:80:GLU:O	18:M:81:THR:OG1	2.18	0.56
7:A:293:G:H2'	7:A:294:G:C8	2.40	0.56
7:A:735:A:H3'	7:A:736:A:C8	2.40	0.56
7:A:1174:A:H4'	7:A:1175:A:H5"	1.87	0.56
7:A:1676:U:H2'	7:A:1677:A:C8	2.38	0.56
7:A:2872:A:H2'	7:A:2873:C:C6	2.41	0.56
11:E:150:PHE:O	11:E:154:LEU:CB	2.53	0.56
15:J:75:TYR:HB3	15:J:84:LEU:HD11	1.88	0.56
21:P:28:HIS:ND1	21:P:82:HIS:HB3	2.21	0.56
30:Y:13:LEU:HA	30:Y:17:GLU:OE2	2.06	0.56
4:3:24:ARG:HB2	17:L:60:LEU:HD13	1.88	0.56
7:A:913:G:H5'	7:A:914:G:OP1	2.06	0.56
7:A:1506:U:O2'	7:A:1507:C:O5'	2.22	0.56
7:A:2768:G:H4'	7:A:2772:A:N6	2.20	0.56
11:E:21:ASP:OD1	11:E:21:ASP:N	2.37	0.56
20:O:42:ILE:HD12	20:O:111:LEU:HD22	1.88	0.56
31:Z:11:SER:OG	31:Z:12:THR:N	2.38	0.56
7:A:1179:A:H1'	7:A:2989:G:N2	2.20	0.56
7:A:2170:A:H2'	7:A:2171:G:O4'	2.06	0.56
7:A:2340:A:N6	7:A:2424:A:C6	2.73	0.56
7:A:2944:G:H2'	7:A:2945:G:O4'	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G:96:ARG:HG2	13:G:129:PRO:HB3	1.87	0.56
7:A:704:C:O2'	7:A:705:A:O5'	2.24	0.56
7:A:1732:A:H2'	7:A:1733:A:H8	1.71	0.56
7:A:2299:G:OP2	11:E:75:LYS:NZ	2.23	0.56
7:A:2343:G:O2'	7:A:2344:U:O5'	2.22	0.56
19:N:100:ILE:HD11	19:N:112:VAL:CG1	2.36	0.56
27:V:107:GLU:HA	27:V:130:GLU:HA	1.87	0.56
30:Y:13:LEU:O	30:Y:64:ARG:NH1	2.38	0.56
31:Z:6:ILE:HG12	31:Z:47:ILE:HD11	1.86	0.56
7:A:433:C:H2'	7:A:434:C:H6	1.71	0.55
7:A:461:G:C8	29:X:58:ALA:HB3	2.41	0.55
7:A:660:G:H5"	15:J:112:ASN:ND2	2.20	0.55
7:A:1147:C:O2'	7:A:1249:G:N2	2.39	0.55
7:A:1692:U:O2	19:N:64:ARG:NH1	2.39	0.55
7:A:1960:C:C4	7:A:1961:C:N4	2.75	0.55
7:A:2341:C:H2'	7:A:2342:G:C8	2.42	0.55
7:A:2770:G:O2'	7:A:2895:A:N1	2.32	0.55
7:A:2967:U:H5"	10:D:195:LYS:HE2	1.88	0.55
8:B:69:C:H2'	8:B:70:C:H6	1.70	0.55
25:T:16:ILE:HG22	25:T:100:ALA:HA	1.88	0.55
7:A:84:A:O2'	7:A:85:G:OP2	2.24	0.55
7:A:749:U:C2	7:A:750:A:C8	2.93	0.55
7:A:1315:G:H2'	7:A:1316:U:O4'	2.07	0.55
7:A:2378:G:N2	7:A:2379:A:H62	2.03	0.55
11:E:136:LEU:HD21	11:E:175:VAL:HG11	1.88	0.55
22:Q:11:HIS:HB3	22:Q:15:ARG:NH1	2.21	0.55
7:A:1902:G:N2	7:A:2230:G:OP2	2.33	0.55
7:A:2577:G:H5"	12:F:76:ARG:HH12	1.72	0.55
7:A:2577:G:H2'	7:A:2578:A:C8	2.42	0.55
7:A:2918:C:OP1	10:D:119:LYS:HG3	2.07	0.55
7:A:749:U:C4	7:A:750:A:N7	2.75	0.55
7:A:827:C:O2'	7:A:863:A:N6	2.39	0.55
7:A:1207:C:H4'	7:A:1208:C:C6	2.41	0.55
8:B:8:G:OP1	20:O:17:HIS:NE2	2.40	0.55
8:B:11:C:H5	28:W:74:GLY:HA2	1.72	0.55
9:C:90:ALA:HB1	9:C:106:ILE:HG23	1.88	0.55
20:O:64:ASP:OD1	20:O:64:ASP:N	2.37	0.55
27:V:60:GLY:O	27:V:62:ASN:N	2.34	0.55
4:3:15:ARG:HB3	4:3:23:VAL:HG23	1.87	0.55
7:A:35:G:H1'	7:A:543:A:C4	2.41	0.55
7:A:917:A:OP1	7:A:920:C:N4	2.29	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:962:G:H2'	7:A:963:C:C6	2.41	0.55
7:A:1161:A:H2	7:A:1251:G:H22	1.54	0.55
7:A:1798:C:H2'	7:A:1799:U:H6	1.71	0.55
7:A:1891:C:C2'	7:A:1892:U:H5'	2.37	0.55
7:A:2042:C:O2'	7:A:2043:A:O4'	2.24	0.55
7:A:2073:G:N3	7:A:2073:G:H2'	2.20	0.55
7:A:2630:A:N6	7:A:2662:C:O2	2.39	0.55
24:S:82:ALA:HB2	24:S:118:GLU:HG3	1.88	0.55
27:V:46:GLU:N	27:V:46:GLU:OE2	2.39	0.55
27:V:52:TYR:O	27:V:56:LEU:HB2	2.07	0.55
7:A:1564:C:H2'	7:A:1565:G:C8	2.39	0.55
7:A:2092:G:HO2'	7:A:2093:A:H8	1.53	0.55
7:A:2464:C:H2'	7:A:2465:A:C8	2.42	0.55
10:D:120:GLY:HA2	10:D:171:GLY:HA3	1.87	0.55
1:0:16:ARG:NH1	7:A:1396:A:H3'	2.17	0.55
7:A:433:C:H2'	7:A:434:C:C6	2.42	0.55
7:A:1327:G:O2'	7:A:1357:A:N1	2.33	0.55
7:A:1334:U:O2'	11:E:192:TYR:OH	2.11	0.55
7:A:1381:G:OP2	17:L:23:ARG:NH2	2.36	0.55
7:A:1572:A:N6	7:A:1632:G:N3	2.54	0.55
7:A:2343:G:H2'	7:A:2344:U:C6	2.41	0.55
7:A:2379:A:C2'	7:A:2418:G:H22	2.19	0.55
7:A:2442:A:H2'	7:A:2443:A:C8	2.42	0.55
7:A:3037:G:H2'	7:A:3038:U:H5'	1.88	0.55
28:W:67:VAL:HA	28:W:81:VAL:HG21	1.89	0.55
7:A:640:C:O2	7:A:643:C:N4	2.39	0.55
7:A:800:C:H5	17:L:34:ARG:HH11	1.54	0.55
7:A:1928:U:O4	7:A:2214:U:O2'	2.25	0.55
7:A:2144:G:OP2	7:A:2167:G:O2'	2.25	0.55
7:A:2982:G:H2'	7:A:2983:C:H6	1.72	0.55
10:D:99:GLN:HG3	10:D:100:GLU:N	2.21	0.55
15:J:40:HIS:CE1	15:J:41:LYS:HG3	2.42	0.55
25:T:18:GLU:OE1	25:T:18:GLU:N	2.39	0.55
7:A:2094:C:N4	7:A:2121:G:H21	2.04	0.55
7:A:2099:U:O2'	7:A:2100:A:H5"	2.07	0.55
7:A:2190:A:O2'	7:A:2191:A:O4'	2.25	0.55
8:B:10:C:H2'	8:B:11:C:C2	2.42	0.55
10:D:114:VAL:HG11	10:D:198:VAL:HG13	1.87	0.55
13:G:103:ASN:HB2	13:G:118:ALA:HB2	1.88	0.55
27:V:33:ALA:HB3	27:V:45:LEU:HD23	1.88	0.55
7:A:431:A:H2'	7:A:432:C:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:437:C:H2'	7:A:438:A:H8	1.72	0.55
7:A:2702:C:H2'	7:A:2703:C:O4'	2.07	0.55
12:F:13:GLU:HG3	12:F:104:TRP:HE3	1.70	0.55
7:A:651:G:H2'	7:A:652:G:H8	1.72	0.54
11:E:16:PRO:HD3	11:E:150:PHE:CE2	2.42	0.54
27:V:121:LEU:N	27:V:180:VAL:O	2.33	0.54
27:V:129:ILE:O	27:V:129:ILE:HG13	2.07	0.54
3:2:10:PRO:HB2	7:A:1440:G:H4'	1.87	0.54
7:A:1118:G:N7	31:Z:13:ILE:HD12	2.22	0.54
7:A:1549:C:H2'	7:A:1550:C:H5'	1.87	0.54
7:A:2300[B]:A:N7	7:A:2741:A:N6	2.54	0.54
7:A:2595:U:H2'	7:A:2597:C:OP2	2.07	0.54
15:J:102:GLU:O	15:J:106:LEU:HG	2.07	0.54
7:A:428:A:H1'	7:A:429:A:C2	2.41	0.54
7:A:778:G:O2'	7:A:779:U:H5'	2.08	0.54
7:A:1149:A:H4'	7:A:1150:A:H5'	1.89	0.54
7:A:2080:G:O6	7:A:2132:C:N4	2.33	0.54
7:A:2529:U:OP1	7:A:2618:U:O2'	2.22	0.54
12:F:47:VAL:HG12	12:F:56:LEU:HD22	1.89	0.54
24:S:11:PRO:HB2	24:S:74:LEU:HD11	1.88	0.54
1:0:20:TRP:HH2	24:S:26:LYS:HD3	1.71	0.54
7:A:858:G:N7	9:C:208:LYS:HB2	2.22	0.54
7:A:962:G:H2'	7:A:963:C:H6	1.72	0.54
7:A:1221:C:H2'	7:A:1222:G:C8	2.42	0.54
7:A:1597:C:H2'	7:A:1598:C:C4	2.43	0.54
7:A:2120:A:H2'	7:A:2121:G:O4'	2.07	0.54
7:A:2418:G:N3	7:A:2418:G:H2'	2.22	0.54
9:C:85:ASP:HB2	9:C:92:ILE:HG23	1.89	0.54
7:A:668:U:H2'	7:A:669:U:O4'	2.08	0.54
7:A:704:C:O2'	7:A:705:A:H8	1.90	0.54
12:F:109:ARG:HG3	12:F:113:ILE:HD11	1.89	0.54
31:Z:8:GLN:NE2	31:Z:23:LEU:HD13	2.17	0.54
7:A:1248:U:H2'	7:A:1249:G:H5'	1.90	0.54
7:A:1825:A:H2'	7:A:1826:C:O4'	2.06	0.54
7:A:2602:C:H2'	7:A:2603:A:O4'	2.08	0.54
7:A:2913:A:N1	7:A:2970:G:N2	2.48	0.54
18:M:72:ARG:O	18:M:94:VAL:HG12	2.08	0.54
25:T:14:PRO:HD2	30:Y:37:ALA:HB3	1.89	0.54
26:U:98:SER:O	26:U:102:GLY:HA2	2.08	0.54
27:V:26:ARG:NH2	27:V:91:GLN:O	2.40	0.54
31:Z:5:LYS:HB2	31:Z:59:ALA:HB2	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:671:U:H5”	7:A:950:A:C2	2.42	0.54
7:A:788:G:H21	11:E:42:GLN:CD	2.11	0.54
7:A:1558:A:H5’	7:A:1645:A:H61	1.73	0.54
7:A:1647:U:H2’	7:A:1648:A:C8	2.43	0.54
7:A:2098:U:OP1	7:A:2648:G:O2’	2.20	0.54
7:A:2207:A:HO2’	7:A:2210:G:HO2’	1.55	0.54
7:A:2982:G:H2’	7:A:2983:C:C6	2.43	0.54
9:C:11:PRO:HA	9:C:14:ARG:HD3	1.88	0.54
9:C:177:MET:O	9:C:180:GLY:N	2.37	0.54
2:1:27:LYS:HZ1	7:A:2524:A:H2’	1.72	0.54
7:A:462:U:H2’	7:A:463:A:H8	1.72	0.54
7:A:532:A:N7	11:E:52:ARG:HG2	2.22	0.54
7:A:1444:U:H5	7:A:1838:A:N1	2.06	0.54
19:N:65:GLU:OE1	19:N:68:LYS:HD2	2.07	0.54
7:A:1164:U:C2	7:A:1249:G:O6	2.61	0.54
7:A:1496:A:H4’	29:X:4:VAL:HG13	1.88	0.54
7:A:1774:U:H4’	7:A:1775:G:H5”	1.90	0.54
7:A:1781:A:H2’	7:A:1782:A:C8	2.42	0.54
10:D:96:GLN:HG2	10:D:99:GLN:HB2	1.90	0.54
13:G:138:ASP:O	13:G:142:VAL:HG23	2.07	0.54
24:S:83:THR:OG1	24:S:116:VAL:HB	2.07	0.54
7:A:533:C:N4	7:A:534:C:H41	2.06	0.54
7:A:964:A:C6	7:A:965:G:C5	2.95	0.54
7:A:1177:A:O2’	7:A:1241:G:N2	2.40	0.54
7:A:1541:U:H2’	7:A:1542:G:H8	1.73	0.54
7:A:1571:A:N7	7:A:1633:A:N6	2.54	0.54
7:A:2192:G:O2’	7:A:2194:U:O4	2.19	0.54
7:A:2286:G:H2’	7:A:2287:G:H5”	1.90	0.54
7:A:2377:C:OP1	7:A:2390:G:N1	2.35	0.54
7:A:2431:A:H2’	7:A:2432:U:C6	2.43	0.54
7:A:2544:C:N4	12:F:46:GLY:O	2.37	0.54
7:A:2886:G:H2’	7:A:2887:U:C6	2.43	0.54
7:A:2974:G:N2	7:A:3007:U:H1’	2.23	0.54
7:A:2987:A:H3’	7:A:2988:A:H2’	1.90	0.54
11:E:137:VAL:HG12	11:E:170:ALA:HB3	1.89	0.54
23:R:8:VAL:HG13	23:R:15:TYR:HB2	1.90	0.54
31:Z:45:GLY:O	31:Z:49:VAL:HG23	2.08	0.54
7:A:651:G:H2’	7:A:652:G:C8	2.43	0.53
7:A:964:A:N6	7:A:1072:G:H21	2.06	0.53
7:A:1260:G:OP1	15:J:82:GLY:N	2.38	0.53
7:A:2700:U:H2’	7:A:2701:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:M:7:VAL:HG21	18:M:93:TRP:HH2	1.72	0.53
5:4:10:ILE:HD12	7:A:2715:U:C5	2.42	0.53
7:A:289:A:C6	7:A:290:A:H2	2.26	0.53
7:A:430:A:C4	7:A:431:A:C8	2.96	0.53
7:A:2540:U:H2'	7:A:2541:G:H8	1.73	0.53
11:E:47:GLN:HE22	11:E:191:THR:H	1.56	0.53
17:L:137:THR:HG22	17:L:142:SER:HA	1.89	0.53
7:A:331:U:O2'	7:A:332:C:O5'	2.26	0.53
7:A:1254:G:OP2	7:A:1255:A:O2'	2.19	0.53
7:A:1691:G:O2'	7:A:1692:U:OP1	2.26	0.53
7:A:2284:G:H2'	7:A:2285:C:H6	1.73	0.53
7:A:2329:U:N3	7:A:2464:C:OP2	2.28	0.53
7:A:2875:U:H5"	10:D:85:ARG:NH1	2.23	0.53
9:C:207:GLY:H	9:C:211:ARG:HD3	1.73	0.53
12:F:165:THR:HG23	12:F:167:ALA:HB2	1.91	0.53
14:H:10:ASP:N	14:H:10:ASP:OD1	2.39	0.53
1:0:17:ARG:NH1	7:A:1394:U:OP1	2.30	0.53
7:A:229:A:C2	7:A:2645:G:H1'	2.43	0.53
7:A:1376:G:OP1	17:L:15:LYS:NZ	2.32	0.53
7:A:2338:G:N1	7:A:2427:G:N7	2.56	0.53
10:D:186:ASP:HB3	10:D:191:VAL:HG22	1.91	0.53
17:L:78:ASN:ND2	17:L:112:LEU:HD11	2.23	0.53
27:V:163:PRO:HG2	27:V:166:VAL:HB	1.91	0.53
7:A:1319:G:N2	7:A:1320:U:O4	2.41	0.53
7:A:2292:A:H5"	7:A:2293:C:H5"	1.89	0.53
7:A:2471:U:H2'	7:A:2472:G:C8	2.43	0.53
16:K:106:LEU:HB3	16:K:115:ILE:HD11	1.90	0.53
6:6:14:VAL:O	6:6:22:PHE:HB2	2.09	0.53
7:A:121:G:H4'	7:A:151:A:H5'	1.89	0.53
7:A:1001:A:H2	7:A:1035:G:H1	1.57	0.53
7:A:1194:U:H2'	7:A:1195:U:C6	2.43	0.53
7:A:1689:C:H4'	7:A:1690:A:N7	2.23	0.53
7:A:2072:C:O2'	7:A:2073:G:OP2	2.23	0.53
7:A:3083:G:C8	21:P:94:ALA:HB2	2.43	0.53
11:E:26:LEU:HD23	11:E:30:LEU:HD13	1.91	0.53
21:P:29:VAL:HG11	21:P:73:PHE:CE1	2.44	0.53
7:A:682:C:H2'	7:A:683:C:H6	1.74	0.53
7:A:1241:G:HO2'	7:A:1242:U:H6	1.57	0.53
7:A:2234:C:N4	16:K:32:TYR:OH	2.34	0.53
13:G:144:GLN:NE2	13:G:148:ASN:OD1	2.42	0.53
18:M:43:THR:HG22	18:M:45:ARG:H	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:W:31:VAL:HG13	28:W:35:GLU:HB3	1.91	0.53
7:A:423:A:H2'	7:A:424:C:O4'	2.07	0.53
7:A:1548:G:H5'	7:A:1653:A:OP1	2.09	0.53
11:E:10:LYS:HE2	11:E:25:GLU:OE1	2.09	0.53
15:J:19:ASP:HA	15:J:57:ILE:HG13	1.89	0.53
7:A:52:A:OP2	7:A:117:G:N1	2.41	0.53
7:A:1039:A:H2'	7:A:1040:A:C8	2.43	0.53
7:A:2127:A:O2'	7:A:2323:U:O2'	2.25	0.53
7:A:2140:C:H1'	9:C:245:HIS:CD2	2.43	0.53
7:A:2429:G:H2'	7:A:2430:C:O4'	2.09	0.53
24:S:14:VAL:HG23	24:S:116:VAL:HG22	1.89	0.53
1:0:41:ARG:HG2	7:A:3050:C:H1'	1.91	0.53
2:1:10:LYS:NZ	7:A:2659:G:OP1	2.41	0.53
7:A:154:C:H2'	7:A:155:G:O4'	2.08	0.53
7:A:1667:G:H2'	7:A:1668:C:C6	2.43	0.53
7:A:2179:C:HO2'	7:A:2180:C:P	2.32	0.53
7:A:2383:C:H4'	7:A:2384:A:N7	2.24	0.53
7:A:2509:G:H2'	7:A:2510:U:C6	2.43	0.53
7:A:2936:U:H2'	7:A:2937:C:H6	1.73	0.53
7:A:2951:C:H3'	7:A:2952:G:H5"	1.90	0.53
10:D:60:ARG:HD3	10:D:60:ARG:H	1.74	0.53
27:V:53:ALA:HA	27:V:56:LEU:HB2	1.90	0.53
30:Y:55:ALA:O	30:Y:59:THR:HG23	2.09	0.53
4:3:13:ARG:NH2	7:A:252:G:OP1	2.43	0.52
7:A:304:G:H2'	7:A:305:U:H5'	1.90	0.52
7:A:465:C:H2'	7:A:466:A:H8	1.75	0.52
7:A:2540:U:H2'	7:A:2541:G:C8	2.44	0.52
9:C:138:ALA:HB1	9:C:167:GLY:HA2	1.92	0.52
10:D:180:LEU:HD22	10:D:196:GLY:HA3	1.91	0.52
16:K:64:ARG:HB2	16:K:83:ALA:HB3	1.91	0.52
22:Q:35:ALA:O	22:Q:39:GLN:HG2	2.10	0.52
7:A:934:G:OP1	17:L:43:LYS:NZ	2.28	0.52
7:A:1270:U:H1'	7:A:1272:A:C6	2.44	0.52
7:A:2679:C:H2'	7:A:2680:C:C6	2.44	0.52
7:A:2897:G:O3'	13:G:176:LYS:NZ	2.42	0.52
12:F:43:VAL:HG13	12:F:161:ILE:HG12	1.91	0.52
13:G:164:ARG:HD3	13:G:167:GLY:HA2	1.91	0.52
2:1:41:PHE:HE1	2:1:43:PRO:HA	1.74	0.52
7:A:132:G:H2'	7:A:133:C:C6	2.43	0.52
7:A:407:A:N6	7:A:421:G:O2'	2.43	0.52
7:A:1211:U:H3'	7:A:1212:G:O4'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1947:A:C8	7:A:1948:A:H2'	2.44	0.52
8:B:111:G:H2'	8:B:112:A:C8	2.44	0.52
20:O:116:ARG:HD3	20:O:122:PHE:CG	2.44	0.52
27:V:154:GLN:HE22	27:V:175:LEU:HB3	1.73	0.52
1:0:16:ARG:CB	7:A:2284:G:H5"	2.37	0.52
7:A:374:U:H2'	7:A:375:U:C6	2.44	0.52
7:A:738:G:C5	7:A:739:C:C5	2.95	0.52
7:A:1150:A:H2'	7:A:1150:A:N3	2.24	0.52
7:A:1413:U:H2'	7:A:1414:G:O4'	2.10	0.52
7:A:2894:U:C2	7:A:2903:A:N7	2.77	0.52
7:A:2894:U:H3	7:A:2903:A:H8	1.52	0.52
10:D:114:VAL:HG13	10:D:206:VAL:HG13	1.91	0.52
19:N:45:ARG:HG3	19:N:97:ILE:HD11	1.90	0.52
20:O:30:ARG:HD2	20:O:96:VAL:HG23	1.92	0.52
23:R:19:VAL:HG23	23:R:101:THR:HA	1.91	0.52
26:U:89:GLU:HG2	26:U:92:GLY:H	1.73	0.52
27:V:19:LYS:HD2	27:V:23:ARG:NH2	2.25	0.52
1:0:46:ALA:HB2	19:N:98:ILE:HG22	1.91	0.52
7:A:59:U:O2'	7:A:74:U:OP2	2.19	0.52
7:A:363:A:H2'	7:A:364:A:C8	2.43	0.52
7:A:495:G:H2'	7:A:496:C:O4'	2.10	0.52
7:A:741:A:OP2	17:L:113:GLY:N	2.42	0.52
7:A:2897:G:O2'	13:G:176:LYS:NZ	2.41	0.52
13:G:87:LYS:HA	13:G:133:THR:HB	1.92	0.52
18:M:70:PRO:HB3	18:M:93:TRP:O	2.09	0.52
7:A:207:G:N2	7:A:208:U:O4	2.43	0.52
7:A:289:A:O2'	7:A:304:G:N3	2.43	0.52
7:A:993:G:H1'	7:A:996:A:N6	2.24	0.52
7:A:1252:C:H2'	7:A:1253:C:H6	1.74	0.52
7:A:1742:U:H2'	7:A:1743:C:C5	2.44	0.52
7:A:1943:C:H2'	7:A:1944:C:C6	2.44	0.52
7:A:2119:G:C6	7:A:2120:A:C6	2.97	0.52
8:B:29:C:H2'	8:B:30:C:H5'	1.90	0.52
30:Y:35:GLN:O	30:Y:41:LEU:N	2.40	0.52
2:1:18:CYS:HB2	2:1:20:HIS:ND1	2.24	0.52
7:A:1448:G:H2'	7:A:1449:G:H8	1.74	0.52
7:A:1664:G:O2'	7:A:1809:A:N6	2.35	0.52
7:A:1707:A:H2'	7:A:1708:A:H8	1.74	0.52
7:A:2033:G:C2'	9:C:183:ARG:HH12	2.20	0.52
7:A:2577:G:H2'	7:A:2578:A:H8	1.73	0.52
18:M:130:ARG:HH22	18:M:132:ILE:HD12	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:6:A:N6	7:A:7:G:O6	2.43	0.52
7:A:925:U:H2'	7:A:926:C:C6	2.45	0.52
7:A:1081:G:O2'	7:A:2504:A:OP1	2.23	0.52
7:A:1534:A:HO2'	7:A:1709:G:HO2'	1.55	0.52
7:A:2588:C:H2'	7:A:2589:G:O4'	2.10	0.52
7:A:2705:C:H4'	18:M:123:HIS:ND1	2.25	0.52
7:A:3036:G:H3'	7:A:3037:G:C8	2.45	0.52
20:O:59:SER:OG	20:O:60:SER:N	2.43	0.52
4:3:22:ILE:O	4:3:50:VAL:HG22	2.10	0.52
7:A:614:A:O2'	7:A:2281:C:O2	2.24	0.52
7:A:1184:G:H1	7:A:1233:C:H42	1.57	0.52
7:A:1337:U:O2	7:A:1371:G:O6	2.28	0.52
7:A:1910:C:N3	10:D:138:SER:OG	2.33	0.52
7:A:2309:C:H5	7:A:2675:G:H22	1.58	0.52
11:E:210:TYR:O	11:E:214:ASN:ND2	2.36	0.52
13:G:112:HIS:O	13:G:112:HIS:CG	2.63	0.52
27:V:25:ALA:HB1	27:V:44:HIS:HE1	1.75	0.52
7:A:1452:C:O2'	24:S:21:ARG:NH2	2.42	0.52
7:A:2252:A:H2'	7:A:2253:A:C8	2.45	0.52
7:A:2338:G:H2'	7:A:2339:U:C2	2.45	0.52
8:B:48:C:OP1	20:O:107:ARG:N	2.33	0.52
12:F:31:ASN:HD21	12:F:34:GLN:HG3	1.73	0.52
23:R:7:ILE:HD12	23:R:42:LEU:HB3	1.92	0.52
7:A:1496:A:HO2'	7:A:1497:C:P	2.31	0.51
7:A:1519:G:H2'	7:A:1520:G:H8	1.75	0.51
7:A:2022:C:OP1	9:C:222:ARG:NH2	2.43	0.51
9:C:43:ARG:HG3	9:C:49:ILE:HA	1.91	0.51
12:F:78:ARG:HG3	12:F:79:LYS:HG2	1.92	0.51
13:G:126:VAL:HA	13:G:132:PHE:HA	1.92	0.51
14:H:27:ARG:HD3	29:X:61:ILE:HG23	1.92	0.51
7:A:33:U:O4	7:A:535:G:O2'	2.24	0.51
7:A:497:C:O2	7:A:508:G:N2	2.39	0.51
7:A:842:G:H21	7:A:847:A:H62	0.60	0.51
7:A:1279:C:H2'	7:A:1280:C:H6	1.74	0.51
7:A:1993:A:O2'	7:A:2952:G:O2'	2.28	0.51
7:A:2036:A:OP2	7:A:2048:G:N1	2.34	0.51
7:A:2190:A:C2	16:K:22:ILE:HG23	2.45	0.51
7:A:2516:A:N6	28:W:14:ARG:O	2.43	0.51
9:C:145:VAL:O	9:C:155:LEU:HB3	2.11	0.51
10:D:104:GLU:HG2	10:D:187:ALA:HB2	1.93	0.51
10:D:161:PHE:O	10:D:164:THR:OG1	2.29	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G:159:LYS:O	13:G:172:ARG:NH1	2.43	0.51
22:Q:104:ALA:O	22:Q:107:THR:HG22	2.10	0.51
23:R:7:ILE:HA	23:R:15:TYR:O	2.09	0.51
5:4:26:ILE:HG22	5:4:28:SER:H	1.75	0.51
7:A:688:A:H5'	11:E:96:VAL:HG23	1.92	0.51
7:A:739:C:C2	7:A:740:G:C8	2.98	0.51
7:A:1187:G:H2'	7:A:1188:G:C8	2.46	0.51
7:A:1599:C:N4	7:A:1607:G:H22	2.08	0.51
7:A:1659:G:N2	7:A:1815:U:O2	2.42	0.51
7:A:2786:G:H1'	16:K:23:ARG:HH22	1.75	0.51
10:D:75:VAL:HB	10:D:78:ARG:HH12	1.75	0.51
13:G:42:LYS:CB	13:G:54:THR:O	2.53	0.51
17:L:137:THR:HA	17:L:141:GLY:O	2.11	0.51
28:W:75:ARG:O	28:W:77:THR:N	2.43	0.51
4:3:57:ARG:HH12	17:L:50:GLU:CD	2.13	0.51
7:A:847:A:OP2	7:A:848:C:N4	2.36	0.51
7:A:1222:G:H2'	7:A:1223:U:C5	2.46	0.51
7:A:1888:U:H5"	19:N:6:LYS:HB2	1.92	0.51
7:A:2192:G:C4	7:A:2789:C:H5"	2.44	0.51
7:A:2771:C:C4	7:A:2772:A:C4	2.99	0.51
7:A:2821:G:O5'	7:A:2821:G:H8	1.92	0.51
10:D:14:THR:HG22	10:D:15:GLN:H	1.74	0.51
10:D:189:ASN:HD21	21:P:3:ARG:NE	2.08	0.51
11:E:27:PRO:HG3	11:E:211:ILE:HG23	1.91	0.51
7:A:346:G:H2'	7:A:347:C:C6	2.45	0.51
7:A:1580:A:N6	7:A:1623:G:N7	2.58	0.51
7:A:2025:A:N6	7:A:2062:G:O2'	2.33	0.51
9:C:124:ASP:HB2	9:C:129:ASN:ND2	2.26	0.51
12:F:15:TYR:CE2	12:F:180:LEU:HD23	2.46	0.51
20:O:99:ARG:HB3	20:O:102:TYR:O	2.11	0.51
21:P:24:THR:HA	21:P:45:VAL:HA	1.93	0.51
7:A:379:G:H2'	7:A:380:G:O4'	2.09	0.51
7:A:960:G:H2'	7:A:961:U:O4'	2.10	0.51
7:A:1006:C:H42	7:A:1030:C:H42	1.57	0.51
7:A:1171:G:H2'	7:A:1172:C:H6	1.75	0.51
7:A:1453:A:N1	7:A:1464:C:O2'	2.40	0.51
7:A:1733:A:O2'	7:A:1814:C:O2'	2.24	0.51
8:B:24:A:C2	8:B:113:A:H1'	2.45	0.51
9:C:139:GLY:HA2	9:C:165:LEU:O	2.10	0.51
11:E:139:GLY:O	11:E:140:GLN:NE2	2.44	0.51
12:F:120:ASP:HA	12:F:122:ARG:NH2	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G:106:PHE:CZ	13:G:149:ILE:HG23	2.46	0.51
13:G:158:TYR:HD1	13:G:173:LYS:HB2	1.74	0.51
20:O:121:SER:O	20:O:121:SER:OG	2.26	0.51
7:A:90:C:H3'	7:A:91:A:H2'	1.93	0.51
7:A:105:C:H2'	7:A:106:C:H6	1.75	0.51
7:A:636:U:H2'	7:A:637:C:H5'	1.93	0.51
7:A:1164:U:O2	7:A:1249:G:C6	2.63	0.51
7:A:1381:G:N7	17:L:20:ARG:NH1	2.47	0.51
7:A:1689:C:H2'	7:A:1696:A:C2	2.46	0.51
8:B:39:U:O2'	8:B:40:U:OP1	2.29	0.51
10:D:124:ALA:HB1	10:D:128:LYS:HB3	1.91	0.51
6:6:12:THR:O	6:6:24:THR:OG1	2.19	0.51
7:A:988:G:N2	7:A:1046:A:OP2	2.29	0.51
7:A:1186:A:O2'	7:A:1187:G:O5'	2.24	0.51
7:A:1987:G:O2'	7:A:1989:A:N7	2.35	0.51
7:A:2657:U:H2'	7:A:2658:C:C6	2.46	0.51
7:A:83:G:C4	7:A:102:G:N2	2.79	0.51
7:A:221:A:N3	7:A:236:U:O2'	2.38	0.51
7:A:1281:G:H2'	7:A:1282:C:O4'	2.11	0.51
7:A:1726:U:HO2'	7:A:1727:A:H8	1.59	0.51
7:A:1917:C:H2'	7:A:1918:C:H6	1.76	0.51
7:A:1989:A:N6	7:A:2932:G:O2'	2.43	0.51
7:A:2884:C:H6	7:A:2884:C:O5'	1.94	0.51
22:Q:94:ASN:O	22:Q:98:ILE:HG12	2.11	0.51
2:1:22:ASN:ND2	2:1:43:PRO:HD2	2.26	0.51
7:A:140:G:H2'	7:A:141:A:C8	2.46	0.51
7:A:622:U:H2'	7:A:623:C:C6	2.46	0.51
7:A:749:U:N3	7:A:750:A:N7	2.59	0.51
7:A:1215:A:H2'	7:A:1216:G:H5"	1.93	0.51
7:A:1557:G:N2	7:A:1648:A:C6	2.77	0.51
7:A:1974:G:H2'	7:A:1975:C:O4'	2.10	0.51
7:A:2555:U:H2'	7:A:2556:G:H5'	1.93	0.51
7:A:2975:G:H2'	7:A:2976:A:C8	2.46	0.51
8:B:28:G:H2'	8:B:29:C:C6	2.45	0.51
12:F:47:VAL:HG22	12:F:48:GLY:H	1.76	0.51
7:A:624:A:H4'	22:Q:57:PHE:CZ	2.46	0.50
7:A:1351:C:H2'	7:A:1352:G:O4'	2.11	0.50
7:A:1980:U:H2'	7:A:1981:C:H6	1.76	0.50
7:A:2116:G:C4	7:A:2117:C:C5	2.99	0.50
7:A:2338:G:H4'	7:A:2339:U:OP1	2.11	0.50
7:A:3036:G:H3'	7:A:3037:G:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:3044:A:H2'	7:A:3045:A:C8	2.45	0.50
11:E:82:GLN:OE1	11:E:89:GLN:NE2	2.44	0.50
27:V:171:ASP:HB3	27:V:174:LEU:HD23	1.93	0.50
7:A:5:A:H2'	7:A:6:A:C8	2.46	0.50
7:A:82:G:H22	7:A:105:C:N4	2.09	0.50
7:A:350:A:H2'	7:A:351:G:C8	2.45	0.50
7:A:1129:A:OP2	7:A:1284:G:N1	2.33	0.50
7:A:1949:U:H3'	7:A:1951:U:OP1	2.11	0.50
7:A:2046:A:O2'	9:C:45:ALA:N	2.40	0.50
7:A:2442:A:H2'	7:A:2443:A:H8	1.76	0.50
7:A:2653:G:H2'	7:A:2654:G:H8	1.76	0.50
7:A:2813:C:H2'	7:A:2816:G:O6	2.11	0.50
9:C:121:ALA:HB1	9:C:135:ASN:ND2	2.14	0.50
11:E:184:LEU:HD23	11:E:189:LEU:HA	1.93	0.50
16:K:7:ARG:HG3	16:K:20:LEU:HD13	1.92	0.50
3:2:30:GLY:O	3:2:34:VAL:HG23	2.11	0.50
7:A:383:G:O2'	7:A:385:G:OP2	2.29	0.50
7:A:507:C:N4	7:A:508:G:O6	2.44	0.50
7:A:626:A:H4'	15:J:7:LYS:HA	1.93	0.50
7:A:660:G:OP1	15:J:112:ASN:HB2	2.11	0.50
7:A:720:G:O2'	11:E:187:ASP:O	2.30	0.50
7:A:946:C:H5	7:A:1322:G:H22	1.58	0.50
7:A:1195:U:O2'	7:A:1197:G:O6	2.26	0.50
7:A:1336:A:H2'	7:A:1337:U:O4'	2.12	0.50
7:A:1591:A:H62	7:A:2080:G:H2'	1.76	0.50
7:A:1771:G:C2	7:A:1772:G:H1'	2.46	0.50
7:A:1864:U:O4	7:A:1865:A:N6	2.45	0.50
7:A:2381:G:H4'	7:A:2382:C:C6	2.46	0.50
7:A:2730:U:H2'	7:A:2731:U:C6	2.46	0.50
7:A:3079:A:H2'	7:A:3080:C:O4'	2.11	0.50
8:B:22:G:N1	8:B:23:G:O6	2.44	0.50
13:G:65:LEU:O	13:G:69:SER:OG	2.23	0.50
28:W:49:VAL:O	28:W:82:GLY:HA2	2.11	0.50
7:A:203:C:H2'	7:A:204:U:O4'	2.11	0.50
7:A:244:G:O2'	7:A:256:G:O6	2.12	0.50
7:A:619:C:OP2	7:A:663:G:N1	2.43	0.50
7:A:986:A:H61	7:A:1049:G:H1	1.59	0.50
7:A:990:A:H2'	7:A:991:G:O4'	2.11	0.50
7:A:1169:U:HO2'	27:V:57:ARG:HH21	1.55	0.50
7:A:1330:U:H5'	22:Q:12:LYS:NZ	2.25	0.50
7:A:2020:A:O2'	7:A:2176:A:N6	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2513:C:O2'	18:M:84:GLY:O	2.25	0.50
7:A:2864:C:H2'	7:A:2865:G:H8	1.77	0.50
7:A:2917:A:H2'	7:A:2918:C:C6	2.46	0.50
7:A:3058:A:OP1	10:D:123:PHE:HB2	2.12	0.50
8:B:9:G:C6	8:B:10:C:C2	2.99	0.50
10:D:169:ARG:CZ	10:D:169:ARG:HB3	2.42	0.50
27:V:131:ILE:HG22	27:V:168:LEU:HA	1.94	0.50
7:A:961:U:H2'	7:A:962:G:H8	1.74	0.50
7:A:1156:A:N6	7:A:1256:U:H5	2.07	0.50
7:A:1189:U:O2'	7:A:1190:U:OP1	2.23	0.50
7:A:1331:C:H2'	7:A:1332:C:C6	2.47	0.50
7:A:1428:C:HO2'	7:A:1433:A:N6	2.09	0.50
7:A:2713:C:H42	7:A:2767:G:N2	2.05	0.50
12:F:13:GLU:O	12:F:17:SER:OG	2.22	0.50
19:N:44:LEU:HD23	19:N:113:ILE:HD13	1.93	0.50
3:2:8:PHE:O	7:A:1847:C:O2'	2.26	0.50
7:A:54:G:H2'	7:A:55:G:O4'	2.12	0.50
7:A:1202:A:H2'	7:A:1203:G:C8	2.46	0.50
8:B:112:A:H2'	8:B:113:A:C8	2.38	0.50
13:G:35:LEU:HD23	13:G:36:THR:N	2.26	0.50
20:O:46:LEU:HB3	20:O:55:VAL:HG13	1.92	0.50
22:Q:47:TYR:OH	22:Q:51:ARG:NH2	2.44	0.50
1:0:7:ARG:HB3	7:A:2255:U:O2	2.12	0.50
7:A:84:A:OP1	26:U:4:HIS:NE2	2.45	0.50
7:A:183:A:H1'	7:A:524:C:H5'	1.93	0.50
7:A:356:A:C6	7:A:357:G:C6	3.00	0.50
7:A:463:A:H2'	7:A:464:G:O4'	2.11	0.50
7:A:1329:G:H2'	7:A:1330:U:H6	1.76	0.50
7:A:2456:U:OP1	29:X:46:LYS:NZ	2.23	0.50
7:A:2651:G:H2'	7:A:2652:G:O4'	2.11	0.50
8:B:55:U:C4'	8:B:56:A:H5'	2.41	0.50
9:C:77:ALA:HB1	9:C:95:LEU:HG	1.93	0.50
12:F:103:MET:O	12:F:107:LEU:HG	2.12	0.50
18:M:44:ASN:HA	18:M:70:PRO:HG2	1.93	0.50
18:M:66:ILE:HG22	18:M:68:ILE:O	2.11	0.50
4:3:57:ARG:NH2	17:L:47:VAL:O	2.45	0.50
7:A:439:C:H2'	7:A:440:C:C6	2.47	0.50
7:A:573:C:H2'	7:A:574:C:C6	2.47	0.50
7:A:758:C:O5'	7:A:758:C:H6	1.95	0.50
7:A:919:U:H4'	7:A:920:C:OP2	2.11	0.50
7:A:1029:A:H3'	7:A:1030:C:H6	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1915:U:H2'	7:A:1916:G:H5'	1.93	0.50
7:A:2262:C:H2'	7:A:2263:G:H8	1.77	0.50
7:A:2291:G:H5'	10:D:154:CYS:O	2.12	0.50
7:A:2487:U:O2'	7:A:2490:G:OP2	2.29	0.50
7:A:2792:U:H2'	7:A:2793:U:H5	1.75	0.50
29:X:47:LYS:NZ	29:X:48:ARG:O	2.44	0.50
5:4:10:ILE:HG12	5:4:34:GLN:HE22	1.76	0.50
7:A:102:G:O2'	7:A:103:A:OP2	2.30	0.50
7:A:207:G:H1'	7:A:208:U:H5	1.77	0.50
7:A:436:G:H2'	7:A:437:C:C6	2.47	0.50
7:A:1860:C:H2'	7:A:1861:A:O4'	2.11	0.50
7:A:2078:U:H2'	7:A:2079:G:C8	2.47	0.50
7:A:3119:C:O5'	7:A:3119:C:H6	1.95	0.50
8:B:49:G:H2'	8:B:50:G:C8	2.47	0.50
11:E:70:LYS:HG3	11:E:83:GLY:HA2	1.94	0.50
20:O:65:VAL:HA	20:O:75:ARG:NH1	2.27	0.50
21:P:91:VAL:HG22	21:P:92:ARG:H	1.76	0.50
1:0:27:LEU:HD13	1:0:44:LEU:HD13	1.94	0.49
7:A:380:G:N1	7:A:422:U:OP2	2.38	0.49
7:A:1057:G:O2'	31:Z:25:THR:O	2.29	0.49
7:A:2300[B]:A:O2'	7:A:2301:C:H5'	2.11	0.49
7:A:2678:C:H3'	7:A:2679:C:H5"	1.94	0.49
7:A:2994:U:H4'	7:A:2995:A:OP1	2.11	0.49
10:D:38:ARG:O	10:D:51:GLN:HB3	2.13	0.49
11:E:137:VAL:HB	11:E:139:GLY:H	1.77	0.49
13:G:127:GLN:HB2	13:G:131:LYS:HG2	1.92	0.49
21:P:58:PHE:CE1	21:P:73:PHE:HB2	2.47	0.49
24:S:47:ARG:O	24:S:47:ARG:NH1	2.34	0.49
31:Z:22:SER:HA	31:Z:25:THR:HG22	1.94	0.49
1:0:3:VAL:HG12	7:A:2253:A:C2	2.47	0.49
5:4:6:SER:HB3	7:A:2704:C:H5"	1.94	0.49
7:A:667:C:H2'	7:A:668:U:C6	2.47	0.49
7:A:736:A:H2'	7:A:737:A:C8	2.47	0.49
7:A:757:C:H1'	7:A:758:C:C5	2.47	0.49
7:A:1309:G:C2	7:A:1310:U:C5	3.00	0.49
7:A:1380:U:C4	17:L:20:ARG:HD3	2.47	0.49
7:A:1531:C:H2'	7:A:1532:G:C8	2.47	0.49
7:A:1744:A:H3'	7:A:1745:C:C6	2.47	0.49
7:A:2004:G:H4'	7:A:2176:A:OP1	2.12	0.49
7:A:2074:G:H2'	7:A:2075:U:C6	2.47	0.49
7:A:2209:U:H1'	9:C:241:SER:HB2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2568:U:O2'	28:W:41:ARG:O	2.29	0.49
8:B:98:G:H2'	8:B:99:U:O4'	2.12	0.49
12:F:106:PHE:O	12:F:109:ARG:HB3	2.12	0.49
12:F:128:GLN:HG2	12:F:135:TYR:HD1	1.76	0.49
17:L:76:ILE:HA	17:L:110:LYS:O	2.11	0.49
17:L:78:ASN:HD21	17:L:114:ASP:HB3	1.77	0.49
19:N:45:ARG:O	19:N:49:GLU:HG3	2.12	0.49
30:Y:34:PHE:O	30:Y:38:THR:HG22	2.12	0.49
7:A:148:G:H2'	7:A:149:C:C6	2.47	0.49
7:A:293:G:H22	7:A:345:G:H1'	1.77	0.49
7:A:592:G:H21	7:A:1365:U:H4'	1.77	0.49
7:A:936:U:OP1	7:A:959:G:N2	2.45	0.49
7:A:1183:A:N6	7:A:1235:G:C2	2.80	0.49
7:A:1880:G:H5"	7:A:1881:U:H5"	1.93	0.49
7:A:2340:A:C6	7:A:2341:C:C2	3.01	0.49
7:A:2356:A:OP2	7:A:2386:U:N3	2.40	0.49
7:A:2460:G:H2'	7:A:2461:G:O4'	2.13	0.49
7:A:2481:U:H2'	7:A:2482:U:C6	2.47	0.49
25:T:42:ILE:O	25:T:46:VAL:HG12	2.13	0.49
27:V:25:ALA:HB1	27:V:44:HIS:CE1	2.47	0.49
7:A:27:G:N2	7:A:600:G:H1'	2.27	0.49
7:A:973:U:H3'	7:A:974:G:H21	1.77	0.49
7:A:1068:C:H2'	7:A:1069:A:O4'	2.13	0.49
7:A:1070:G:C6	7:A:1071:U:N3	2.80	0.49
7:A:1519:G:N2	7:A:1531:C:O2	2.45	0.49
7:A:1546:G:C2	7:A:1823:A:N1	2.80	0.49
9:C:146:GLU:HG3	9:C:189:CYS:HB3	1.95	0.49
9:C:233:HIS:CE1	9:C:247:VAL:H	2.16	0.49
19:N:55:ALA:HA	19:N:80:PHE:CE1	2.47	0.49
27:V:158:GLY:O	27:V:160:ILE:HG12	2.12	0.49
7:A:791:U:H2'	7:A:792:G:C8	2.47	0.49
7:A:1579:A:H2'	7:A:1580:A:C8	2.48	0.49
7:A:1775:G:C2	7:A:1776:A:N7	2.80	0.49
7:A:1985:U:HO2'	7:A:3096:U:HO2'	1.60	0.49
7:A:2733:G:OP1	18:M:82:ARG:NH1	2.46	0.49
7:A:3127:A:H4'	7:A:3128:A:N3	2.27	0.49
11:E:12:ASP:HB3	11:E:23:ALA:N	2.26	0.49
15:J:145:VAL:HG13	15:J:146:ALA:H	1.77	0.49
24:S:83:THR:HB	24:S:85:TYR:CE1	2.48	0.49
6:6:7:PRO:HB2	6:6:29:PRO:HG2	1.94	0.49
7:A:869:C:H5'	7:A:2018:A:C2'	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1040:A:H5”	7:A:1041:C:H5”	1.94	0.49
7:A:2594:U:O2’	28:W:20:ARG:HD2	2.13	0.49
7:A:2772:A:H2’	7:A:2773:G:O4’	2.13	0.49
18:M:36:ALA:HB1	18:M:127:ILE:HG12	1.95	0.49
18:M:106:LEU:HD22	18:M:118:LEU:HG	1.94	0.49
20:O:33:LEU:HD23	20:O:97:PHE:HD1	1.77	0.49
4:3:13:ARG:HG2	17:L:62:LYS:HA	1.94	0.49
7:A:118:A:C8	7:A:119:A:C8	3.00	0.49
7:A:159:C:H2’	7:A:160:U:O4’	2.13	0.49
7:A:298:G:C8	7:A:299:G:C8	3.01	0.49
7:A:609:U:H2’	7:A:610:G:C8	2.48	0.49
7:A:802:C:H4’	11:E:89:GLN:OE1	2.13	0.49
7:A:1760:G:H3’	7:A:1761:A:H2’	1.95	0.49
7:A:2352:G:H21	7:A:2404:U:H3	1.61	0.49
7:A:2366:C:OP1	7:A:2368:G:N2	2.46	0.49
7:A:2742:U:O2’	7:A:2810:A:N1	2.42	0.49
10:D:38:ARG:HB3	10:D:51:GLN:HB3	1.94	0.49
12:F:65:ALA:HA	12:F:72:PRO:HD3	1.94	0.49
13:G:72:LEU:O	13:G:75:ASN:HB3	2.13	0.49
14:H:5:LEU:HD21	14:H:12:LEU:HB3	1.93	0.49
20:O:77:VAL:HG13	20:O:114:ALA:HB2	1.94	0.49
25:T:6:ASP:N	25:T:6:ASP:OD1	2.46	0.49
7:A:763:C:H2’	7:A:764:G:C8	2.48	0.49
7:A:1161:A:O2’	7:A:1163:G:OP2	2.31	0.49
7:A:2091:G:N2	7:A:2124:U:O4	2.45	0.49
7:A:2829:C:H2’	7:A:2830:G:H8	1.76	0.49
7:A:3060:C:H2’	7:A:3061:A:O4’	2.13	0.49
8:B:74:G:N3	27:V:92:HIS:HE1	2.10	0.49
9:C:149:PRO:HG2	9:C:188:ARG:HB3	1.95	0.49
10:D:87:ASP:OD1	10:D:88:ASP:N	2.42	0.49
11:E:40:MET:O	11:E:44:VAL:HG12	2.12	0.49
13:G:4:ILE:HG13	13:G:70:ARG:NH2	2.26	0.49
13:G:9:ILE:HG13	13:G:73:VAL:HG13	1.93	0.49
19:N:45:ARG:HG2	19:N:95:THR:OG1	2.13	0.49
7:A:198:A:H62	7:A:960:G:N2	2.11	0.49
7:A:312:G:H2’	7:A:313:G:C8	2.47	0.49
7:A:331:U:H6	7:A:445:U:H5’	1.78	0.49
7:A:1559:A:P	7:A:1645:A:H62	2.35	0.49
7:A:1959:A:H2’	7:A:1959:A:N3	2.27	0.49
7:A:2155:U:H6	7:A:2156:A:C2	2.31	0.49
7:A:2309:C:H5	7:A:2675:G:H1	1.56	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2530:U:H2'	7:A:2531:C:C6	2.48	0.49
7:A:2860:C:O2'	7:A:3059:A:N6	2.46	0.49
12:F:13:GLU:HG3	12:F:104:TRP:CE3	2.47	0.49
15:J:73:MET:HE1	15:J:86:LYS:HD2	1.95	0.49
17:L:132:ALA:O	17:L:136:ILE:HG12	2.13	0.49
24:S:22:VAL:HG21	24:S:56:PRO:HG2	1.95	0.49
24:S:39:VAL:HG21	24:S:65:ALA:HB2	1.94	0.49
26:U:68:VAL:O	26:U:71:VAL:HG22	2.13	0.49
7:A:143:G:N1	25:T:44:ILE:HD11	2.28	0.49
7:A:895:C:H2'	7:A:896:U:O4'	2.13	0.49
7:A:1010:G:OP2	7:A:1010:G:H8	1.95	0.49
7:A:1089:G:H22	7:A:2268:A:P	2.35	0.49
7:A:1383:G:H1	22:Q:37:GLU:HG2	1.77	0.49
7:A:1677:A:H2'	7:A:1678:G:O4'	2.13	0.49
7:A:1764:C:H2'	7:A:1765:A:O4'	2.12	0.49
7:A:2252:A:P	24:S:107:ARG:HH22	2.36	0.49
7:A:2711:U:H2'	7:A:2712:C:C6	2.48	0.49
8:B:5:G:C6	8:B:111:G:C6	3.01	0.49
8:B:14:A:H3'	8:B:15:G:C8	2.45	0.49
13:G:74:SER:O	13:G:78:THR:OG1	2.27	0.49
13:G:90:ILE:HD13	13:G:163:VAL:HG22	1.94	0.49
25:T:28:VAL:HG13	25:T:85:THR:HG22	1.94	0.49
28:W:51:VAL:HG13	28:W:60:PHE:O	2.13	0.49
1:0:20:TRP:CH2	24:S:26:LYS:HD3	2.47	0.48
3:2:10:PRO:HG3	7:A:1847:C:H5'	1.94	0.48
7:A:219:G:H2'	7:A:220:G:C8	2.47	0.48
7:A:656:U:H2'	7:A:657:G:O4'	2.13	0.48
7:A:1130:A:OP1	31:Z:10:ARG:NH2	2.46	0.48
7:A:1216:G:H22	7:A:1218:G:H21	1.61	0.48
7:A:1448:G:H2'	7:A:1449:G:C8	2.48	0.48
7:A:1504:A:H5'	7:A:2450:A:H1'	1.95	0.48
7:A:2031:G:H3'	9:C:272:ARG:HH22	1.78	0.48
7:A:2468:G:H2'	7:A:2469:C:C6	2.48	0.48
7:A:3007:U:H2'	7:A:3008:U:H5'	1.94	0.48
13:G:89:GLU:HG2	13:G:91:PHE:CE1	2.48	0.48
18:M:36:ALA:HB2	18:M:103:LEU:HD11	1.94	0.48
22:Q:3:ARG:NH1	22:Q:5:LYS:HD3	2.28	0.48
27:V:82:HIS:CD2	27:V:83:ILE:H	2.31	0.48
1:0:43:LEU:HB3	1:0:52:ILE:HD11	1.94	0.48
7:A:703:G:H1'	11:E:112:MET:HG2	1.94	0.48
7:A:814:A:C8	7:A:902:U:C4	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1364:G:C6	7:A:1365:U:C4	3.01	0.48
7:A:2227:A:H8	7:A:2227:A:O5'	1.95	0.48
7:A:2338:G:N1	7:A:2427:G:C5	2.81	0.48
7:A:2792:U:H2'	7:A:2793:U:C6	2.47	0.48
8:B:55:U:H4'	8:B:56:A:C5'	2.43	0.48
9:C:172:TYR:HB3	9:C:184:ARG:HB2	1.95	0.48
10:D:4:LYS:HG3	10:D:210:SER:HB3	1.95	0.48
18:M:11:LYS:NZ	18:M:87:LYS:O	2.36	0.48
18:M:58:ILE:HD12	18:M:113:VAL:HG13	1.95	0.48
26:U:66:ILE:HG22	26:U:67:HIS:O	2.13	0.48
7:A:42:A:H2'	7:A:43:G:O4'	2.14	0.48
7:A:806:G:O2'	7:A:2307:G:O2'	1.99	0.48
7:A:1519:G:H2'	7:A:1520:G:C8	2.48	0.48
7:A:2192:G:N3	7:A:2789:C:H5"	2.28	0.48
7:A:2234:C:H5	16:K:32:TYR:HH	1.60	0.48
7:A:2464:C:H2'	7:A:2465:A:H8	1.78	0.48
8:B:106:C:C4	8:B:107:C:N4	2.81	0.48
12:F:42:VAL:HG12	12:F:97:THR:HG23	1.95	0.48
13:G:7:GLN:HB3	13:G:70:ARG:HD3	1.96	0.48
14:H:26:GLY:O	14:H:30:LEU:N	2.44	0.48
15:J:125:TYR:OH	15:J:132:HIS:HE1	1.97	0.48
23:R:25:VAL:HG12	23:R:26:GLU:H	1.78	0.48
23:R:88:ARG:HG2	23:R:88:ARG:HH11	1.77	0.48
7:A:152:C:H2'	7:A:153:C:C6	2.49	0.48
7:A:287:G:O2'	7:A:288:U:O2	2.25	0.48
7:A:356:A:C6	7:A:357:G:O6	2.67	0.48
7:A:1198:A:C2	7:A:1226:U:H5'	2.47	0.48
7:A:1348:C:H2'	7:A:1349:A:H8	1.78	0.48
7:A:2562:U:H3'	7:A:2563:G:H5"	1.94	0.48
7:A:2943:A:O2'	7:A:3087:G:OP1	2.16	0.48
9:C:130:ASN:O	9:C:131:LEU:HB3	2.13	0.48
9:C:232:PRO:HB3	9:C:244:ARG:NH2	2.24	0.48
15:J:36:LEU:HG	15:J:118:ILE:HG22	1.95	0.48
16:K:18:GLU:HB2	16:K:45:ASP:HB3	1.95	0.48
16:K:108:GLU:N	16:K:108:GLU:OE2	2.46	0.48
16:K:109:LYS:HZ1	16:K:111:PHE:HB2	1.78	0.48
18:M:29:PHE:HB2	18:M:105:GLU:OE2	2.14	0.48
24:S:57:VAL:O	24:S:61:ILE:HG13	2.13	0.48
24:S:87:ASP:HB2	24:S:112:HIS:HB2	1.95	0.48
1:0:32:VAL:HG22	1:0:33:ALA:H	1.79	0.48
7:A:356:A:N6	7:A:442:G:O6	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:472:C:H2'	7:A:474:C:C5	2.48	0.48
7:A:474:C:O2'	7:A:477:G:N2	2.47	0.48
7:A:687:G:H1'	7:A:1385:A:N6	2.28	0.48
7:A:2007:A:C8	7:A:2063:A:C8	3.01	0.48
7:A:2378:G:H21	7:A:2379:A:H62	1.60	0.48
7:A:3024:U:O2'	10:D:68:GLY:HA3	2.14	0.48
7:A:3074:G:O2'	19:N:92:GLY:HA2	2.12	0.48
8:B:25:A:O2'	8:B:112:A:O2'	2.24	0.48
31:Z:26:LEU:O	31:Z:37:ARG:NH2	2.38	0.48
7:A:846:G:H8	7:A:846:G:O5'	1.97	0.48
7:A:1654:G:H2'	7:A:1655:C:C6	2.49	0.48
7:A:1657:A:H4'	7:A:1658:A:H2	1.78	0.48
7:A:1769:C:H2'	7:A:1770:C:C6	2.48	0.48
7:A:2311:U:H2'	7:A:2312:U:C6	2.49	0.48
7:A:2520:G:H4'	7:A:2627:G:O2'	2.14	0.48
7:A:2769:A:H2	7:A:2896:C:O2	1.96	0.48
10:D:45:ASP:HB2	10:D:47:TYR:HE1	1.77	0.48
18:M:19:GLY:H	18:M:39:HIS:HE1	1.62	0.48
29:X:13:GLY:O	29:X:29:TRP:N	2.38	0.48
7:A:372:G:C2	7:A:373:G:C5	3.01	0.48
7:A:790:G:O2'	17:L:16:ILE:N	2.41	0.48
7:A:1129:A:N6	7:A:1285:A:C8	2.81	0.48
7:A:1246:U:H5"	7:A:1247:G:OP2	2.13	0.48
7:A:1358:C:OP1	22:Q:13:LYS:HB3	2.14	0.48
7:A:1805:G:H4'	9:C:59:LYS:HG2	1.95	0.48
7:A:2509:G:OP1	28:W:18:ALA:HB1	2.14	0.48
7:A:3030:C:C2	7:A:3041:G:N2	2.81	0.48
9:C:247:VAL:HG13	9:C:253:PRO:HA	1.96	0.48
12:F:166:SER:O	12:F:166:SER:OG	2.27	0.48
17:L:136:ILE:HD11	17:L:143:ALA:HB2	1.95	0.48
18:M:24:GLY:O	18:M:102:VAL:HG12	2.14	0.48
18:M:75:THR:HB	18:M:89:SER:H	1.77	0.48
25:T:95:LEU:HD23	25:T:95:LEU:H	1.79	0.48
7:A:65:G:O2'	7:A:545:U:O2	2.25	0.48
7:A:95:G:H3'	7:A:96:A:H8	1.79	0.48
7:A:128:C:H2'	7:A:129:C:C6	2.49	0.48
7:A:253:A:C5	7:A:254:G:H1'	2.49	0.48
7:A:1344:A:H4'	7:A:1369:G:H21	1.79	0.48
7:A:1593:C:H2'	7:A:1594:A:C8	2.48	0.48
7:A:2395:A:H2'	7:A:2395:A:N3	2.29	0.48
7:A:2616:A:O3'	20:O:30:ARG:NH1	2.42	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2986:A:H4'	13:G:67:GLY:HA3	1.96	0.48
32:A:3201:CTY:H312	32:A:3201:CTY:H2	1.67	0.48
15:J:13:ARG:HD2	15:J:53:PHE:CE1	2.49	0.48
18:M:106:LEU:HD23	18:M:114:ALA:HB1	1.95	0.48
20:O:33:LEU:HD13	20:O:46:LEU:HG	1.95	0.48
1:0:18:SER:O	1:0:21:LYS:HE3	2.14	0.48
2:1:15:CYS:N	2:1:20:HIS:O	2.47	0.48
4:3:28:ASN:O	4:3:44:LEU:HD13	2.13	0.48
7:A:472:C:H2'	7:A:474:C:H5	1.78	0.48
7:A:1714:U:H2'	7:A:1715:A:H8	1.77	0.48
7:A:3104:G:H2'	7:A:3105:G:C8	2.49	0.48
10:D:186:ASP:OD1	10:D:189:ASN:N	2.47	0.48
20:O:116:ARG:HA	20:O:120:LEU:O	2.12	0.48
25:T:15:VAL:HB	25:T:30:THR:HB	1.96	0.48
7:A:57:C:H2'	7:A:58:G:O4'	2.14	0.48
7:A:704:C:H4'	11:E:111:LYS:HD3	1.96	0.48
7:A:2551:C:H5"	12:F:95:ARG:HD3	1.95	0.48
7:A:2617:G:H8	7:A:2617:G:OP2	1.97	0.48
18:M:119:THR:O	18:M:122:ILE:HG12	2.14	0.48
25:T:21:TYR:HB2	25:T:100:ALA:OXT	2.14	0.48
25:T:21:TYR:N	25:T:100:ALA:O	2.47	0.48
7:A:54:G:O6	7:A:117:G:N2	2.46	0.47
7:A:194:G:H21	7:A:929:U:H5	1.62	0.47
7:A:659:U:O2'	15:J:47:ASN:O	2.29	0.47
7:A:2857:C:H4'	10:D:161:PHE:O	2.14	0.47
7:A:3107:A:H1'	19:N:4:PRO:HD3	1.95	0.47
11:E:165:GLY:HA2	11:E:186:PRO:HD3	1.95	0.47
12:F:47:VAL:HG22	12:F:48:GLY:N	2.29	0.47
17:L:21:VAL:HG12	17:L:28:LYS:HD2	1.94	0.47
25:T:54:VAL:HG13	25:T:84:VAL:HG13	1.95	0.47
7:A:349:G:C2	7:A:350:A:C5	3.02	0.47
7:A:385:G:H2'	7:A:386:G:H8	1.78	0.47
7:A:439:C:H2'	7:A:440:C:H6	1.78	0.47
7:A:660:G:H5"	15:J:112:ASN:HD22	1.77	0.47
7:A:956:U:H4'	7:A:957:U:C6	2.49	0.47
7:A:1167:A:C2	7:A:1247:G:N1	2.82	0.47
7:A:1308:G:N3	7:A:1309:G:C8	2.82	0.47
7:A:1802:C:H3'	9:C:18:VAL:HG21	1.96	0.47
7:A:2816:G:H21	10:D:135:GLN:CD	2.17	0.47
16:K:57:VAL:O	16:K:57:VAL:HG23	2.15	0.47
27:V:86:ILE:HG13	27:V:87:ARG:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:31:HIS:CE1	7:A:2659:G:N7	2.83	0.47
7:A:443:C:H3'	7:A:444:C:C5	2.48	0.47
7:A:700:G:N2	17:L:14:SER:OG	2.47	0.47
7:A:1185:G:N2	7:A:1233:C:N3	2.62	0.47
7:A:2042:C:O2'	7:A:2043:A:H8	1.97	0.47
7:A:2308:A:H2	7:A:2678:C:N4	2.11	0.47
7:A:2499:C:C5	28:W:16:SER:HB3	2.49	0.47
7:A:2539:C:C2	7:A:2554:G:N2	2.82	0.47
7:A:2707:A:N1	7:A:2719:G:O2'	2.46	0.47
8:B:50:G:H2'	8:B:51:A:C8	2.49	0.47
11:E:190:ASN:OD1	11:E:193:ASP:HB2	2.14	0.47
16:K:35:ILE:HG21	16:K:103:GLY:HA3	1.95	0.47
29:X:39:VAL:HG13	29:X:46:LYS:HB3	1.95	0.47
7:A:740:G:HO2'	7:A:741:A:P	2.37	0.47
7:A:1240:A:H4'	13:G:6:LYS:HZ1	1.80	0.47
7:A:1691:G:C4	19:N:77:HIS:CE1	3.03	0.47
7:A:2008:C:H4'	7:A:2217:C:H6	1.80	0.47
7:A:2084:G:H2'	7:A:2085:U:H6	1.77	0.47
7:A:2633:C:OP1	17:L:62:LYS:NZ	2.48	0.47
7:A:2750:C:H2'	7:A:2751:G:O4'	2.15	0.47
12:F:64:LEU:HB3	12:F:72:PRO:HB3	1.96	0.47
12:F:85:LYS:HE3	12:F:87:ARG:NH1	2.28	0.47
22:Q:27:GLN:HB3	22:Q:31:LEU:HD23	1.97	0.47
5:4:35:ARG:HH11	7:A:2980:C:P	2.37	0.47
7:A:568:A:H4'	7:A:569:A:O5'	2.14	0.47
7:A:754:C:H2'	7:A:755:G:H5'	1.96	0.47
7:A:847:A:C5	7:A:848:C:C5	3.01	0.47
7:A:1110:A:H8	7:A:1111:C:C5	2.32	0.47
7:A:1881:U:H4'	7:A:1882:A:O5'	2.14	0.47
7:A:2981:C:OP2	7:A:2993:C:N4	2.47	0.47
9:C:217:LYS:HE3	9:C:217:LYS:HB3	1.72	0.47
11:E:133:ILE:HG12	11:E:202:PHE:O	2.14	0.47
7:A:290:A:H1'	7:A:291:C:C6	2.49	0.47
7:A:1401:C:H5"	7:A:1402:G:H5'	1.95	0.47
7:A:1457:C:H2'	7:A:1458:A:C8	2.50	0.47
7:A:1544:G:O6	7:A:1824:C:N4	2.48	0.47
7:A:1712:G:H2'	7:A:1712:G:N3	2.30	0.47
7:A:1962:C:O2'	7:A:1964:U:OP2	2.26	0.47
7:A:2100:A:N6	7:A:2113:G:O2'	2.43	0.47
7:A:2204:A:H8	7:A:2830:G:O2'	1.97	0.47
7:A:2264:A:H2'	7:A:2265:G:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2700:U:O5'	7:A:2700:U:H6	1.97	0.47
7:A:2788:G:C2'	7:A:2789:C:H5'	2.45	0.47
7:A:3069:A:C6	7:A:3114:G:C8	3.03	0.47
9:C:183:ARG:HG3	9:C:267:PHE:O	2.14	0.47
12:F:125:SER:HB3	12:F:137:PHE:HE2	1.75	0.47
13:G:18:THR:OG1	13:G:45:ARG:NH1	2.46	0.47
27:V:31:ILE:HD11	27:V:90:ILE:HB	1.97	0.47
28:W:25:ARG:HD3	28:W:25:ARG:HA	1.67	0.47
5:4:15:ARG:HA	5:4:15:ARG:HD3	1.73	0.47
6:6:42:HIS:NE2	6:6:45:TYR:HB2	2.29	0.47
7:A:81:G:C2	7:A:106:C:C2	3.03	0.47
7:A:96:A:H4'	30:Y:43:ASN:HA	1.96	0.47
7:A:210:C:HO2'	7:A:809:G:HO2'	1.61	0.47
7:A:298:G:N1	7:A:340:U:N3	2.61	0.47
7:A:599:U:H2'	7:A:600:G:H5'	1.97	0.47
7:A:646:A:H2'	7:A:647:G:C8	2.50	0.47
7:A:1082:G:H5"	18:M:13:HIS:CE1	2.50	0.47
7:A:1173:A:H2'	7:A:1173:A:N3	2.29	0.47
7:A:1184:G:H1	7:A:1233:C:N4	2.13	0.47
7:A:1295:A:H2'	7:A:1296:C:C6	2.49	0.47
7:A:1308:G:C2	7:A:1309:G:C5	3.03	0.47
7:A:1409:C:H2'	7:A:1410:A:C8	2.50	0.47
7:A:1627:C:H5	9:C:134:ARG:HE	1.63	0.47
7:A:2104:C:H5	7:A:2105:G:H21	1.62	0.47
7:A:2214:U:O2'	7:A:2215:A:N7	2.39	0.47
7:A:2343:G:H2'	7:A:2344:U:C5	2.49	0.47
7:A:2501:C:H4'	7:A:2567:A:H4'	1.97	0.47
7:A:2532:C:P	20:O:99:ARG:HH22	2.38	0.47
7:A:3039:G:C4	7:A:3040:G:C8	3.03	0.47
8:B:6:G:H4'	20:O:36:HIS:CD2	2.50	0.47
13:G:7:GLN:HE22	13:G:9:ILE:HA	1.79	0.47
16:K:36:GLY:N	16:K:62:VAL:O	2.48	0.47
20:O:37:ARG:NH1	20:O:38:SER:O	2.48	0.47
27:V:28:ALA:O	27:V:30:LYS:HG2	2.14	0.47
29:X:40:THR:OG1	29:X:41:ARG:N	2.48	0.47
30:Y:46:ARG:HA	30:Y:49:THR:HG22	1.97	0.47
30:Y:50:VAL:O	30:Y:54:ILE:HD12	2.15	0.47
7:A:84:A:H5"	26:U:4:HIS:CE1	2.50	0.47
7:A:141:A:H2'	7:A:142:U:H6	1.80	0.47
7:A:298:G:H3'	7:A:299:G:C8	2.49	0.47
7:A:405:A:O5'	11:E:177:ASN:ND2	2.39	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1280:C:H5”	22:Q:123:ALA:HB3	1.95	0.47
7:A:1654:G:H2’	7:A:1655:C:H6	1.80	0.47
7:A:1756:A:C6	7:A:1757:G:N7	2.83	0.47
7:A:2142:G:N3	7:A:2166:A:H2	2.12	0.47
7:A:2207:A:O2’	7:A:2210:G:O2’	2.27	0.47
7:A:2626:A:N7	7:A:2627:G:C6	2.83	0.47
7:A:2845:G:H2’	7:A:2846:G:O4’	2.14	0.47
8:B:42:C:C2	12:F:97:THR:HB	2.50	0.47
12:F:70:GLN:NE2	12:F:97:THR:O	2.46	0.47
13:G:162:GLY:O	13:G:164:ARG:HG3	2.15	0.47
18:M:89:SER:O	18:M:91:GLU:N	2.48	0.47
31:Z:11:SER:OG	31:Z:13:ILE:HG12	2.15	0.47
1:0:2:ALA:HA	7:A:2294:G:N2	2.30	0.47
7:A:735:A:OP1	17:L:64:LYS:HE2	2.15	0.47
7:A:1385:A:H5”	7:A:1386:U:H5’	1.97	0.47
7:A:1428:C:O2’	7:A:1433:A:N6	2.43	0.47
7:A:1898:U:O2’	7:A:1899:A:H8	1.98	0.47
7:A:2042:C:HO2’	7:A:2043:A:H8	1.63	0.47
7:A:2103:C:H2’	7:A:2104:C:H6	1.78	0.47
7:A:2382:C:H2’	7:A:2384:A:N1	2.30	0.47
7:A:2533:C:OP1	20:O:16:ARG:NH1	2.48	0.47
7:A:2653:G:H2’	7:A:2654:G:C8	2.50	0.47
7:A:3012:C:OP1	10:D:174:ARG:NH1	2.48	0.47
10:D:75:VAL:HB	10:D:78:ARG:NH1	2.30	0.47
11:E:136:LEU:CD2	11:E:175:VAL:HG11	2.45	0.47
12:F:15:TYR:CD2	12:F:180:LEU:HD23	2.50	0.47
7:A:95:G:H3’	7:A:96:A:C8	2.50	0.47
7:A:273:A:H1’	7:A:458:C:H5’	1.97	0.47
7:A:1001:A:OP1	18:M:4:PRO:HA	2.15	0.47
7:A:1690:A:H4’	7:A:1691:G:C8	2.50	0.47
7:A:1916:G:H2’	7:A:1991:A:N1	2.29	0.47
7:A:2336:C:N3	7:A:2337:G:H1’	2.30	0.47
7:A:2815:A:H2’	7:A:2852:A:N6	2.29	0.47
12:F:16:ARG:HG3	12:F:104:TRP:CZ2	2.50	0.47
26:U:85:TYR:HD1	26:U:94:ARG:HG2	1.80	0.47
7:A:54:G:C6	7:A:117:G:N2	2.83	0.46
7:A:61:G:O2’	7:A:62:G:H5’	2.15	0.46
7:A:390:G:H22	7:A:393:A:P	2.37	0.46
7:A:572:A:O2’	26:U:45:THR:O	2.23	0.46
7:A:731:A:O3’	7:A:732:G:H8	1.97	0.46
7:A:1113:G:OP1	7:A:1114:C:N4	2.26	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1661:G:H2'	7:A:1662:G:H8	1.80	0.46
7:A:1690:A:H8	7:A:1690:A:O5'	1.98	0.46
7:A:1970:G:H2'	7:A:1971:G:C4	2.51	0.46
7:A:2150:A:N3	7:A:2150:A:H2'	2.30	0.46
7:A:2303:C:H1'	7:A:2687:U:N3	2.30	0.46
7:A:2764:G:H5'	7:A:2980:C:O2'	2.15	0.46
16:K:13:ASN:ND2	16:K:96:THR:OG1	2.44	0.46
18:M:30:GLY:HA2	18:M:134:ARG:HD3	1.97	0.46
20:O:42:ILE:HG23	20:O:107:ARG:NH2	2.30	0.46
27:V:53:ALA:O	27:V:56:LEU:N	2.40	0.46
4:3:28:ASN:OD1	7:A:2630:A:H5"	2.14	0.46
7:A:1003:G:C2	7:A:1004:G:C8	3.03	0.46
7:A:1576:C:H2'	7:A:1577:C:O4'	2.14	0.46
7:A:1924:A:H2'	7:A:1925:A:C8	2.50	0.46
7:A:2165:A:H2'	7:A:2166:A:C8	2.51	0.46
8:B:55:U:C5'	8:B:56:A:H8	2.28	0.46
10:D:23:VAL:HG11	16:K:70:ARG:HH21	1.80	0.46
18:M:49:SER:HA	18:M:52:ILE:HG12	1.98	0.46
18:M:81:THR:HG22	18:M:82:ARG:O	2.15	0.46
27:V:120:THR:HA	27:V:182:ALA:H	1.79	0.46
31:Z:37:ARG:HB3	31:Z:43:THR:HG21	1.96	0.46
2:1:37:GLU:HB2	2:1:52:ARG:HD3	1.97	0.46
7:A:381:A:C6	7:A:382:A:N1	2.84	0.46
7:A:739:C:O2	7:A:739:C:H2'	2.15	0.46
7:A:910:A:P	9:C:218:ARG:HH21	2.37	0.46
7:A:1125:G:OP1	23:R:13:LYS:HD2	2.15	0.46
7:A:1343:G:O2'	7:A:1367:G:N2	2.40	0.46
7:A:1488:C:H2'	7:A:1489:G:O4'	2.16	0.46
7:A:1851:A:H2	7:A:1882:A:C5	2.33	0.46
7:A:2402:G:H21	7:A:2404:U:H5'	1.81	0.46
7:A:2504:A:H4'	7:A:2505:A:O5'	2.15	0.46
7:A:2947:G:H4'	19:N:71:ARG:HH21	1.80	0.46
7:A:3075:U:P	19:N:50:LYS:HD3	2.55	0.46
32:A:3201:CTY:H4	32:A:3201:CTY:H71	1.43	0.46
8:B:74:G:H2'	8:B:75:A:C8	2.50	0.46
11:E:10:LYS:HB3	11:E:25:GLU:HG2	1.97	0.46
13:G:46:ASN:HB3	13:G:50:ALA:HB3	1.97	0.46
27:V:118:PRO:HB3	27:V:150:GLU:HG2	1.98	0.46
31:Z:12:THR:HB	31:Z:20:ARG:HG2	1.97	0.46
1:0:42:ARG:HG2	1:0:43:LEU:HD23	1.98	0.46
7:A:743:U:H2'	7:A:744:C:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1557:G:N2	7:A:1648:A:C5	2.83	0.46
7:A:1653:A:H3'	7:A:1654:G:C8	2.47	0.46
7:A:2979:A:H2'	7:A:2980:C:O4'	2.15	0.46
10:D:156:THR:OG1	10:D:157:PRO:HD3	2.16	0.46
11:E:133:ILE:HG21	11:E:154:LEU:HD21	1.97	0.46
14:H:12:LEU:HD11	14:H:21:VAL:HG13	1.98	0.46
15:J:5:ALA:HB3	15:J:6:PRO:HD3	1.97	0.46
15:J:58:ASN:HA	15:J:126:ALA:O	2.15	0.46
16:K:13:ASN:ND2	16:K:97:ARG:H	2.12	0.46
18:M:50:ALA:O	18:M:54:ILE:HG13	2.16	0.46
22:Q:49:ASP:HA	22:Q:52:ALA:HB3	1.97	0.46
23:R:98:LEU:HD12	23:R:98:LEU:HA	1.70	0.46
2:1:14:ALA:HA	2:1:21:ARG:HA	1.97	0.46
4:3:59:THR:O	4:3:63:ASN:ND2	2.49	0.46
6:6:28:LYS:NZ	12:F:69:GLY:HA2	2.31	0.46
7:A:186:G:H2'	7:A:187:C:C6	2.51	0.46
7:A:1077:G:C6	7:A:1078:G:N7	2.84	0.46
7:A:1125:G:O2'	22:Q:91:ASP:OD2	2.26	0.46
7:A:1898:U:C4	7:A:2230:G:C8	3.04	0.46
7:A:2484:A:H2'	7:A:2485:A:H8	1.80	0.46
9:C:269:VAL:HG12	9:C:270:ARG:HG3	1.97	0.46
10:D:109:GLY:H	10:D:182:VAL:HG23	1.80	0.46
11:E:182:HIS:HB2	11:E:196:ARG:HH22	1.79	0.46
13:G:8:PRO:HB2	13:G:51:ILE:O	2.15	0.46
16:K:24:VAL:HG13	16:K:33:ALA:HB2	1.98	0.46
18:M:34:ILE:O	18:M:102:VAL:HA	2.16	0.46
7:A:712:A:H2'	7:A:713:C:O4'	2.16	0.46
7:A:910:A:H2	7:A:2010:G:N3	2.13	0.46
7:A:1118:G:C8	31:Z:13:ILE:HD12	2.51	0.46
7:A:1329:G:H2'	7:A:1330:U:C6	2.50	0.46
7:A:2402:G:C1'	7:A:2408:A:H61	2.28	0.46
7:A:2497:G:C8	7:A:2665:C:C4	3.03	0.46
7:A:2766:U:O2	7:A:2773:G:C6	2.68	0.46
10:D:31:ALA:HB3	10:D:103:ALA:HB2	1.98	0.46
16:K:9:LYS:O	16:K:83:ALA:HA	2.15	0.46
16:K:91:ASN:HA	16:K:111:PHE:CZ	2.51	0.46
20:O:41:HIS:HA	20:O:107:ARG:NH2	2.28	0.46
30:Y:36:MET:O	30:Y:39:GLY:N	2.37	0.46
31:Z:6:ILE:HG13	31:Z:56:VAL:HG22	1.97	0.46
5:4:10:ILE:HG23	7:A:2715:U:H5	1.79	0.46
6:6:15:VAL:HG22	6:6:33:ILE:HG21	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:84:A:C2	7:A:103:A:C5	3.04	0.46
7:A:166:U:C5	7:A:167:A:C4	3.04	0.46
7:A:1003:G:C6	7:A:1004:G:N7	2.84	0.46
7:A:1648:A:H3'	7:A:1649:G:H8	1.80	0.46
7:A:1731:A:H8	7:A:1731:A:OP1	1.99	0.46
7:A:2303:C:H1'	7:A:2687:U:H3	1.80	0.46
7:A:2987:A:OP2	7:A:2987:A:H8	1.98	0.46
8:B:38:A:H2'	8:B:39:U:C4	2.50	0.46
10:D:40:ARG:HD3	10:D:47:TYR:CE1	2.51	0.46
16:K:113:LYS:O	16:K:117:LEU:HG	2.16	0.46
2:1:27:LYS:NZ	7:A:2524:A:H2'	2.30	0.46
2:1:27:LYS:CE	7:A:2524:A:H5"	2.46	0.46
7:A:41:G:O6	7:A:42:A:N6	2.49	0.46
7:A:162:A:N3	7:A:162:A:H2'	2.31	0.46
7:A:163:A:H5'	7:A:2445:C:H4'	1.98	0.46
7:A:184:A:N3	7:A:522:C:O2'	2.44	0.46
7:A:637:C:H2'	7:A:638:C:C6	2.51	0.46
7:A:795:C:H2'	7:A:796:U:C6	2.51	0.46
7:A:826:C:H2'	7:A:827:C:C6	2.51	0.46
7:A:950:A:H5"	7:A:951:U:C6	2.51	0.46
7:A:1090:C:H2'	7:A:1091:U:H6	1.79	0.46
7:A:1147:C:O3'	7:A:1249:G:N2	2.49	0.46
7:A:1243:G:H2'	7:A:1244:A:C8	2.50	0.46
7:A:1688:U:H2'	7:A:1689:C:O4'	2.16	0.46
7:A:1707:A:H2'	7:A:1708:A:C8	2.50	0.46
7:A:2604:A:H2'	7:A:2605:G:O4'	2.15	0.46
7:A:2637:A:H2'	7:A:2638:C:C6	2.51	0.46
8:B:2:U:O4	8:B:3:A:N6	2.49	0.46
13:G:7:GLN:NE2	13:G:9:ILE:HD13	2.27	0.46
7:A:978:C:H5"	7:A:1096:A:N6	2.31	0.46
7:A:1375:G:O2'	11:E:41:HIS:HE1	1.98	0.46
7:A:1495:G:O2'	7:A:2042:C:N3	2.43	0.46
8:B:5:G:H2'	8:B:6:G:C8	2.51	0.46
12:F:108:ASP:OD1	12:F:108:ASP:N	2.41	0.46
18:M:76:LYS:HD2	18:M:92:TRP:HE1	1.79	0.46
18:M:122:ILE:HB	18:M:129:ALA:HB3	1.97	0.46
22:Q:49:ASP:O	22:Q:53:ARG:HB3	2.15	0.46
22:Q:50:ARG:CZ	23:R:74:ILE:HG23	2.46	0.46
7:A:465:C:H2'	7:A:466:A:C8	2.51	0.46
7:A:719:U:H4'	7:A:720:G:H5'	1.97	0.46
7:A:788:G:H4'	11:E:107:ARG:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2447:U:C2	7:A:2450:A:N6	2.84	0.46
7:A:2484:A:H2'	7:A:2485:A:C8	2.51	0.46
18:M:16:ARG:H	18:M:16:ARG:HG3	1.57	0.46
20:O:92:ILE:HG13	20:O:94:THR:H	1.81	0.46
31:Z:12:THR:HG22	31:Z:53:LEU:HD13	1.98	0.46
7:A:346:G:H8	7:A:346:G:O5'	1.99	0.45
7:A:624:A:H4'	22:Q:57:PHE:CE2	2.51	0.45
7:A:761:C:H2'	7:A:762:A:O4'	2.16	0.45
7:A:1416:G:N2	7:A:1459:G:H5"	2.30	0.45
7:A:1627:C:H41	9:C:134:ARG:NE	2.12	0.45
7:A:2184:U:H2'	7:A:2185:C:C6	2.51	0.45
7:A:2355:U:H3'	7:A:2386:U:O4	2.16	0.45
7:A:2598:A:H2'	7:A:2599:A:O4'	2.16	0.45
7:A:2778:C:H2'	7:A:2779:A:O4'	2.16	0.45
7:A:2965:G:H2'	7:A:2966:U:C6	2.51	0.45
12:F:80:SER:HB2	12:F:88:GLU:H	1.81	0.45
13:G:59:GLU:OE2	13:G:61:ARG:HB2	2.16	0.45
16:K:91:ASN:HA	16:K:111:PHE:CE2	2.50	0.45
18:M:67:ASN:O	18:M:101:ARG:NH2	2.49	0.45
18:M:133:THR:HG22	18:M:134:ARG:H	1.80	0.45
24:S:17:ALA:HB2	24:S:60:VAL:CG1	2.37	0.45
25:T:50:PHE:CD2	25:T:93:ILE:HG23	2.51	0.45
26:U:13:SER:HB3	26:U:70:ASN:CG	2.37	0.45
26:U:35:VAL:HB	26:U:38:VAL:HG21	1.99	0.45
1:0:8:LYS:NZ	1:0:16:ARG:HH21	2.14	0.45
7:A:940:U:OP1	17:L:30:LYS:HG2	2.17	0.45
7:A:957:U:H2'	7:A:958:A:C8	2.51	0.45
7:A:1252:C:H2'	7:A:1253:C:C6	2.51	0.45
7:A:1454:G:H5'	24:S:94:ARG:HE	1.80	0.45
7:A:1489:G:H3'	7:A:1502:G:O6	2.17	0.45
7:A:1570:U:O2'	7:A:1634:A:N6	2.49	0.45
7:A:2083:G:H2'	7:A:2084:G:H8	1.79	0.45
7:A:2153:U:H3'	7:A:2153:U:OP2	2.16	0.45
9:C:139:GLY:HA2	9:C:165:LEU:C	2.37	0.45
10:D:7:LEU:HD23	10:D:7:LEU:HA	1.76	0.45
15:J:73:MET:HA	15:J:88:THR:HA	1.98	0.45
18:M:34:ILE:HA	18:M:130:ARG:O	2.16	0.45
29:X:38:ALA:HA	29:X:62:THR:OG1	2.16	0.45
7:A:19:G:H2'	7:A:20:C:C6	2.51	0.45
7:A:357:G:N1	7:A:441:U:C2	2.78	0.45
7:A:714:C:H2'	7:A:715:C:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:834:A:H61	7:A:855:G:H1'	1.78	0.45
7:A:942:U:H2'	7:A:943:C:C6	2.52	0.45
7:A:1000:G:C2	7:A:1001:A:H1'	2.52	0.45
7:A:1178:C:H2'	7:A:1179:A:O4'	2.17	0.45
7:A:1582:A:H5'	7:A:1583:C:OP2	2.17	0.45
7:A:1965:G:C2	7:A:1967:G:N7	2.85	0.45
7:A:2083:G:C2	7:A:2084:G:C5	3.05	0.45
7:A:2127:A:H2'	7:A:2128:A:H8	1.78	0.45
7:A:2458:U:H2'	7:A:2459:A:H8	1.79	0.45
7:A:3044:A:C6	7:A:3045:A:C6	3.05	0.45
8:B:9:G:N7	8:B:10:C:C4	2.85	0.45
11:E:87:ALA:HB3	11:E:90:PHE:CD1	2.50	0.45
12:F:64:LEU:O	12:F:68:THR:HG22	2.15	0.45
13:G:153:ARG:HA	13:G:153:ARG:HD2	1.65	0.45
15:J:98:ASP:HB2	15:J:124:VAL:HG13	1.98	0.45
15:J:123:ARG:HG2	15:J:132:HIS:CE1	2.51	0.45
17:L:21:VAL:HG23	17:L:22:GLY:H	1.81	0.45
21:P:48:ARG:HG2	21:P:49:ARG:N	2.30	0.45
22:Q:109:LEU:HD21	23:R:42:LEU:HD11	1.98	0.45
27:V:123:THR:OG1	27:V:125:GLU:OE2	2.35	0.45
31:Z:39:ASP:N	31:Z:39:ASP:OD1	2.49	0.45
2:1:22:ASN:ND2	2:1:42:CYS:SG	2.89	0.45
7:A:1318:G:H2'	7:A:1319:G:O4'	2.17	0.45
7:A:1660:G:O2'	7:A:1729:G:N3	2.49	0.45
7:A:2528:G:H2'	7:A:2529:U:C6	2.51	0.45
9:C:67:PHE:CD1	9:C:153:ALA:HB3	2.52	0.45
11:E:30:LEU:HD23	11:E:30:LEU:O	2.15	0.45
12:F:38:VAL:HA	12:F:165:THR:HB	1.98	0.45
12:F:67:ILE:HG13	12:F:68:THR:N	2.32	0.45
12:F:85:LYS:HE3	12:F:87:ARG:HH12	1.82	0.45
15:J:135:GLN:C	15:J:137:PRO:HD3	2.37	0.45
17:L:27:SER:OG	17:L:28:LYS:N	2.50	0.45
22:Q:69:ALA:O	22:Q:72:ASN:N	2.50	0.45
30:Y:47:LEU:O	30:Y:51:ARG:HG3	2.17	0.45
31:Z:6:ILE:HG12	31:Z:47:ILE:CD1	2.46	0.45
7:A:297:A:H61	7:A:341:A:H61	1.64	0.45
7:A:490:A:H2'	7:A:491:A:C8	2.51	0.45
7:A:621:G:OP1	22:Q:25:ARG:N	2.49	0.45
7:A:936:U:O2	11:E:81:ARG:NH2	2.48	0.45
7:A:1048:U:H2'	7:A:1049:G:O4'	2.17	0.45
7:A:1690:A:H5"	7:A:1691:G:O5'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1945:G:H4'	7:A:3093:U:O2	2.16	0.45
7:A:2364:G:H5'	7:A:2399:G:N2	2.27	0.45
7:A:2768:G:H4'	7:A:2772:A:H61	1.82	0.45
7:A:2933:U:H2'	7:A:2934:U:C6	2.52	0.45
7:A:2977:U:H2'	7:A:2978:A:H8	1.81	0.45
9:C:264:SER:O	9:C:268:ILE:HG12	2.17	0.45
10:D:23:VAL:HG13	10:D:25:PRO:HD3	1.98	0.45
12:F:114:ALA:HA	12:F:117:ARG:HB3	1.97	0.45
13:G:26:VAL:HG21	13:G:77:VAL:HA	1.99	0.45
16:K:64:ARG:HG3	16:K:79:PHE:CG	2.52	0.45
17:L:112:LEU:HD12	17:L:114:ASP:N	2.22	0.45
17:L:124:SER:HA	17:L:144:THR:HB	1.99	0.45
17:L:142:SER:OG	17:L:143:ALA:N	2.50	0.45
23:R:21:ASP:O	23:R:100:VAL:HG23	2.16	0.45
27:V:19:LYS:HD2	27:V:23:ARG:HH22	1.80	0.45
2:1:41:PHE:HA	2:1:48:HIS:HA	1.99	0.45
7:A:271:U:O2	7:A:459:G:O6	2.34	0.45
7:A:386:G:H2'	7:A:387:C:C6	2.51	0.45
7:A:549:A:H2'	7:A:550:C:O4'	2.15	0.45
7:A:633:U:H2'	7:A:634:U:C5	2.52	0.45
7:A:1060:A:H4'	7:A:1061:A:O5'	2.17	0.45
7:A:2300[A]:A:H61	32:A:3201:CTY:H382	1.81	0.45
7:A:2433:C:H2'	7:A:2434:U:C6	2.52	0.45
7:A:3115:C:H1'	19:N:92:GLY:O	2.17	0.45
8:B:41:C:H2'	8:B:42:C:C6	2.52	0.45
9:C:165:LEU:O	9:C:166:LEU:HD23	2.17	0.45
11:E:52:ARG:NH1	11:E:104:TYR:OH	2.49	0.45
12:F:62:ASN:O	12:F:66:LEU:HG	2.16	0.45
12:F:90:MET:HA	12:F:91:PRO:HD3	1.84	0.45
16:K:3:GLN:O	16:K:6:SER:OG	2.25	0.45
21:P:25:ILE:HD12	21:P:83:ILE:HG23	1.98	0.45
23:R:15:TYR:HE2	23:R:25:VAL:HG13	1.81	0.45
25:T:68:ARG:HB2	25:T:73:TYR:CE2	2.51	0.45
3:2:21:PHE:CZ	3:2:25:MET:HG3	2.51	0.45
7:A:63:A:H4'	25:T:76:ARG:HH12	1.82	0.45
7:A:334:C:H2'	7:A:335:A:H8	1.81	0.45
7:A:525:C:H2'	7:A:526:U:C6	2.51	0.45
7:A:620:C:OP1	7:A:663:G:N2	2.36	0.45
7:A:1002:U:H2'	7:A:1003:G:C8	2.52	0.45
7:A:1648:A:C8	7:A:1649:G:C8	3.05	0.45
7:A:1764:C:H2'	7:A:1765:A:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1885:A:H2'	7:A:1886:G:O4'	2.16	0.45
7:A:2096:C:H2'	7:A:2097:G:H8	1.82	0.45
7:A:2270:G:O6	7:A:2691:A:O2'	2.30	0.45
7:A:2849:U:H1'	32:A:3201:CTY:H351	1.99	0.45
9:C:95:LEU:HD13	9:C:105:ILE:HG12	1.99	0.45
9:C:140:THR:HB	9:C:141:LEU:H	1.67	0.45
10:D:39:ILE:HD11	10:D:96:GLN:HA	1.98	0.45
10:D:121:LYS:HB2	10:D:170:MET:CG	2.45	0.45
12:F:23:LEU:O	12:F:27:PHE:HB2	2.16	0.45
13:G:99:LEU:HA	13:G:103:ASN:O	2.16	0.45
16:K:61:VAL:HG23	16:K:87:ILE:HD13	1.98	0.45
22:Q:11:HIS:HB3	22:Q:15:ARG:CZ	2.47	0.45
22:Q:91:ASP:N	22:Q:91:ASP:OD1	2.49	0.45
29:X:39:VAL:CG1	29:X:46:LYS:HB3	2.47	0.45
7:A:9:G:H2'	7:A:2867:C:H41	1.80	0.45
7:A:283:A:H2'	7:A:284:U:O4'	2.17	0.45
7:A:548:U:O2	7:A:559:A:N7	2.49	0.45
7:A:646:A:H2'	7:A:647:G:H8	1.82	0.45
7:A:743:U:C2	7:A:744:C:C5	3.05	0.45
7:A:1009:U:H2'	7:A:1010:G:C8	2.52	0.45
7:A:1194:U:H2'	7:A:1195:U:H6	1.82	0.45
7:A:1218:G:N1	7:A:1220:G:O6	2.50	0.45
7:A:1355:U:O2'	23:R:90:GLY:N	2.38	0.45
7:A:1608:G:HO2'	7:A:1609:U:H6	1.65	0.45
7:A:1675:G:H2'	7:A:1676:U:C6	2.52	0.45
7:A:1887:A:C6	19:N:8:PRO:HG2	2.51	0.45
7:A:2097:G:O6	7:A:2118:G:C6	2.70	0.45
7:A:2162:C:H2'	7:A:2163:C:C6	2.51	0.45
9:C:143:HIS:HB2	9:C:156:ALA:O	2.17	0.45
25:T:14:PRO:HD3	30:Y:34:PHE:CD1	2.51	0.45
29:X:60:LYS:HD2	29:X:61:ILE:N	2.31	0.45
2:1:24:ILE:O	2:1:24:ILE:HG13	2.17	0.45
3:2:17:ARG:O	3:2:23:LEU:HD13	2.17	0.45
3:2:22:ARG:NH1	7:A:125:A:OP2	2.50	0.45
7:A:162:A:C6	7:A:163:A:C6	3.05	0.45
7:A:616:A:C8	7:A:616:A:H3'	2.51	0.45
7:A:858:G:H4'	7:A:892:G:H5'	1.99	0.45
7:A:970:G:H2'	7:A:971:C:C6	2.52	0.45
7:A:1008:A:C8	7:A:1029:A:C8	3.05	0.45
7:A:1207:C:H4'	7:A:1208:C:H6	1.82	0.45
7:A:1416:G:H21	7:A:1459:G:H5"	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1503:U:O2'	7:A:2450:A:N3	2.42	0.45
7:A:2028:U:H1'	7:A:2138:A:C2	2.52	0.45
7:A:2084:G:H2'	7:A:2085:U:O4'	2.17	0.45
7:A:2143:C:O2'	7:A:2167:G:H1'	2.15	0.45
7:A:2288:C:H2'	7:A:2289:A:O4'	2.17	0.45
7:A:2530:U:OP1	7:A:2616:A:N6	2.47	0.45
7:A:2829:C:H2'	7:A:2830:G:C8	2.51	0.45
7:A:3082:U:H2'	7:A:3083:G:O4'	2.17	0.45
8:B:13:C:H5'	8:B:70:C:H1'	1.98	0.45
10:D:84:LEU:HD12	10:D:207:MET:SD	2.57	0.45
11:E:184:LEU:HD22	11:E:189:LEU:HD12	1.99	0.45
2:1:27:LYS:HG2	2:1:28:ASN:HB2	1.99	0.45
7:A:241:C:O2'	7:A:726:G:O2'	2.16	0.45
7:A:755:G:O2'	7:A:756:A:P	2.75	0.45
7:A:847:A:H2'	7:A:847:A:N3	2.32	0.45
7:A:1300:C:H2'	7:A:1301:A:C8	2.52	0.45
7:A:1443:U:O2'	7:A:1445:C:N4	2.49	0.45
7:A:1567:U:H1'	7:A:1568:A:N7	2.32	0.45
7:A:1877:G:H2'	7:A:1878:G:O4'	2.16	0.45
7:A:2227:A:H2'	7:A:2228:C:O4'	2.16	0.45
7:A:2448:G:P	7:A:2449:A:H2'	2.57	0.45
7:A:2497:G:H1'	7:A:2665:C:C2	2.52	0.45
7:A:2706:A:C8	7:A:2714:A:N1	2.85	0.45
7:A:3080:C:H2'	7:A:3081:C:H6	1.81	0.45
8:B:53:G:H2'	8:B:54:C:O4'	2.16	0.45
9:C:231:HIS:O	9:C:234:GLY:N	2.48	0.45
9:C:232:PRO:HB3	9:C:244:ARG:HH12	1.82	0.45
10:D:14:THR:HG22	10:D:15:GLN:N	2.32	0.45
10:D:113:ASP:HB2	10:D:178:LEU:HA	1.98	0.45
13:G:103:ASN:HD22	13:G:118:ALA:HB2	1.83	0.45
16:K:13:ASN:HD21	16:K:97:ARG:H	1.65	0.45
19:N:95:THR:HG22	19:N:115:LEU:HD23	1.99	0.45
19:N:98:ILE:HB	19:N:112:VAL:HG13	1.99	0.45
21:P:91:VAL:HG11	21:P:96:LEU:HD11	1.99	0.45
30:Y:64:ARG:HG3	30:Y:68:LEU:HD23	1.99	0.45
7:A:271:U:O2	7:A:459:G:C6	2.70	0.44
7:A:339:C:H2'	7:A:340:U:C5	2.52	0.44
7:A:628:C:N3	7:A:655:G:O6	2.50	0.44
7:A:704:C:O2'	7:A:705:A:P	2.76	0.44
7:A:862:G:O6	7:A:890:A:C8	2.69	0.44
7:A:948:A:C8	7:A:1320:U:N3	2.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1008:A:H8	7:A:1029:A:N9	2.16	0.44
7:A:1029:A:H3'	7:A:1030:C:C6	2.53	0.44
7:A:1075:A:N3	7:A:1113:G:H8	2.15	0.44
7:A:1523:G:H2'	7:A:1524:A:C8	2.52	0.44
7:A:1544:G:H2'	7:A:1545:G:C8	2.52	0.44
7:A:1579:A:O2'	9:C:170:ALA:HA	2.17	0.44
7:A:2328:U:C5	7:A:2329:U:H2'	2.52	0.44
7:A:2358:G:N1	7:A:2413:A:H1'	2.23	0.44
7:A:2443:A:H2'	7:A:2444:C:C6	2.52	0.44
7:A:3083:G:HO2'	7:A:3084:G:H8	1.65	0.44
11:E:41:HIS:HB2	17:L:8:LEU:HD22	1.99	0.44
13:G:15:VAL:HG12	13:G:16:ASP:OD1	2.17	0.44
15:J:145:VAL:HG13	15:J:146:ALA:N	2.32	0.44
19:N:66:VAL:HG11	19:N:79:LEU:HD23	1.98	0.44
3:2:18:VAL:O	3:2:23:LEU:HD22	2.17	0.44
4:3:34:GLU:HB2	7:A:2658:C:OP1	2.16	0.44
7:A:94:C:H2'	7:A:95:G:O4'	2.16	0.44
7:A:162:A:C5	7:A:169:A:C2	3.05	0.44
7:A:562:G:H2'	7:A:563:G:H5'	1.99	0.44
7:A:789:C:H5"	11:E:106:GLN:HB3	2.00	0.44
7:A:1540:G:H2'	7:A:1541:U:C6	2.51	0.44
7:A:1722:G:H2'	7:A:1723:C:C6	2.53	0.44
7:A:1822:C:H2'	7:A:1823:A:C8	2.52	0.44
7:A:1827:A:H2'	7:A:1828:C:C6	2.52	0.44
7:A:2063:A:H3'	7:A:2064:C:H6	1.81	0.44
7:A:2615:A:OP2	7:A:2615:A:H8	1.99	0.44
7:A:2788:G:C6	7:A:2789:C:N4	2.85	0.44
7:A:2815:A:H2'	7:A:2852:A:H62	1.82	0.44
7:A:2886:G:H2'	7:A:2887:U:H6	1.82	0.44
11:E:133:ILE:O	11:E:203:SER:HA	2.17	0.44
27:V:136:LEU:O	27:V:138:ILE:HG12	2.17	0.44
7:A:83:G:N1	7:A:102:G:O2'	2.48	0.44
7:A:138:G:O5'	7:A:138:G:H8	2.00	0.44
7:A:283:A:N3	7:A:284:U:H1'	2.33	0.44
7:A:403:G:H21	11:E:177:ASN:HB3	1.82	0.44
7:A:777:U:H3'	7:A:778:G:H5"	1.97	0.44
7:A:970:G:H2'	7:A:971:C:H6	1.82	0.44
7:A:1185:G:H2'	7:A:1216:G:O6	2.17	0.44
7:A:1236:G:C5	7:A:1237:U:C4	3.05	0.44
7:A:1401:C:C5'	7:A:1402:G:H5'	2.47	0.44
7:A:1540:G:H2'	7:A:1541:U:H6	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1891:C:O2'	7:A:1892:U:H5'	2.18	0.44
7:A:3031:C:H2'	7:A:3032:A:C8	2.51	0.44
8:B:100:A:H4'	27:V:96:LEU:HD21	1.97	0.44
12:F:42:VAL:HG22	12:F:162:ASN:HB2	1.98	0.44
12:F:50:ALA:N	12:F:56:LEU:HB3	2.32	0.44
13:G:3:ARG:HG2	13:G:6:LYS:NZ	2.32	0.44
14:H:6:THR:HB	14:H:35:LEU:HA	1.99	0.44
16:K:104:ARG:C	16:K:106:LEU:H	2.21	0.44
5:4:16:LEU:HD13	5:4:25:VAL:HG12	1.99	0.44
7:A:357:G:H4'	7:A:358:U:H5'	1.99	0.44
7:A:804:A:N3	7:A:2681:C:O2'	2.37	0.44
7:A:840:G:C4	7:A:841:G:H1'	2.52	0.44
7:A:2752:U:H2'	7:A:2753:C:C6	2.53	0.44
7:A:2989:G:N3	7:A:2989:G:H5"	2.33	0.44
7:A:3120:C:H5"	7:A:3121:G:O5'	2.18	0.44
23:R:88:ARG:HG2	23:R:88:ARG:NH1	2.32	0.44
7:A:224:A:N6	7:A:234:G:H1'	2.33	0.44
7:A:390:G:H21	7:A:413:A:H62	1.65	0.44
7:A:524:C:H2'	7:A:525:C:H5'	2.00	0.44
7:A:610:G:O2'	7:A:629:C:H1'	2.18	0.44
7:A:923:A:H2'	7:A:924:C:C6	2.53	0.44
7:A:2810:A:H8	7:A:2810:A:OP2	2.00	0.44
32:A:3201:CTY:H283	32:A:3201:CTY:H252	1.73	0.44
11:E:44:VAL:HG23	11:E:192:TYR:HB2	1.99	0.44
11:E:155:THR:HB	11:E:199:ASP:OD2	2.17	0.44
12:F:63:ASP:O	12:F:67:ILE:HG12	2.17	0.44
13:G:60:ARG:HA	13:G:63:ARG:HD2	2.00	0.44
18:M:58:ILE:HD12	18:M:113:VAL:HG22	1.99	0.44
21:P:26:ASN:N	21:P:84:GLU:O	2.51	0.44
7:A:22:U:H2'	7:A:23:G:O4'	2.18	0.44
7:A:78:U:H2'	7:A:79:C:O4'	2.17	0.44
7:A:297:A:H2'	7:A:298:G:O4'	2.17	0.44
7:A:2189:U:O2'	7:A:2191:A:N7	2.38	0.44
7:A:2233:U:OP2	7:A:2234:C:O2'	2.27	0.44
7:A:2607:A:H2'	7:A:2608:G:C8	2.53	0.44
7:A:2875:U:H5'	10:D:47:TYR:CD2	2.52	0.44
7:A:2894:U:N3	7:A:2903:A:C8	2.73	0.44
7:A:3007:U:C4	7:A:3008:U:C6	3.05	0.44
10:D:22:ARG:HA	16:K:73:ASP:HA	2.00	0.44
14:H:42:GLY:O	14:H:46:GLN:HB3	2.18	0.44
16:K:8:LEU:HB2	16:K:82:ASN:CB	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:M:78:PRO:HG2	18:M:81:THR:OG1	2.17	0.44
21:P:11:SER:O	21:P:54:ILE:HD12	2.17	0.44
28:W:69:PHE:HA	28:W:80:ILE:O	2.18	0.44
6:6:15:VAL:HG12	6:6:21:THR:OG1	2.18	0.44
6:6:26:SER:O	6:6:26:SER:OG	2.30	0.44
7:A:390:G:H21	7:A:413:A:N6	2.16	0.44
7:A:674:A:H2'	7:A:675:G:O4'	2.18	0.44
7:A:694:G:O2'	7:A:788:G:OP1	2.35	0.44
7:A:1399:A:H2'	7:A:1400:G:O4'	2.17	0.44
7:A:2342:G:H2'	7:A:2342:G:N3	2.33	0.44
7:A:2543:A:N3	12:F:141:GLU:HG2	2.33	0.44
7:A:2714:A:OP2	7:A:2714:A:H4'	2.18	0.44
10:D:40:ARG:NE	10:D:83:GLU:OE2	2.49	0.44
10:D:41:THR:HG22	10:D:43:GLU:N	2.27	0.44
10:D:70:TYR:HB3	10:D:75:VAL:O	2.18	0.44
10:D:123:PHE:HA	10:D:169:ARG:HA	1.99	0.44
10:D:173:ASP:O	10:D:175:VAL:HG23	2.18	0.44
16:K:21:CYS:SG	16:K:39:ILE:HD12	2.58	0.44
16:K:42:THR:HA	16:K:56:ASP:O	2.18	0.44
19:N:72:ASP:OD1	19:N:74:ASP:N	2.50	0.44
20:O:59:SER:OG	20:O:61:ILE:HG12	2.18	0.44
24:S:85:TYR:HB2	24:S:114:THR:HB	1.99	0.44
28:W:15:ASP:OD1	28:W:16:SER:N	2.50	0.44
7:A:274:A:H62	7:A:314:G:N2	2.15	0.44
7:A:1107:G:O4'	7:A:1130:A:H2	2.00	0.44
7:A:1216:G:C6	7:A:1231:C:N4	2.85	0.44
7:A:1656:G:H3'	7:A:1657:A:C2	2.53	0.44
7:A:2027:G:O2'	7:A:2138:A:N1	2.43	0.44
7:A:2096:C:H2'	7:A:2097:G:C8	2.53	0.44
7:A:2351:A:H2'	7:A:2404:U:O2	2.18	0.44
7:A:2391:G:H2'	7:A:2391:G:N3	2.32	0.44
8:B:20:A:C6	8:B:62:G:C6	3.05	0.44
9:C:177:MET:HE3	9:C:177:MET:HB2	1.89	0.44
9:C:226:MET:SD	9:C:231:HIS:HB2	2.57	0.44
12:F:77:ALA:HB2	12:F:92:VAL:HG22	1.99	0.44
12:F:114:ALA:O	12:F:117:ARG:HB3	2.18	0.44
13:G:172:ARG:HD3	13:G:172:ARG:HA	1.73	0.44
16:K:69:ARG:HD2	16:K:69:ARG:HA	1.68	0.44
18:M:29:PHE:N	18:M:105:GLU:OE2	2.51	0.44
19:N:94:TYR:O	19:N:116:VAL:HG23	2.18	0.44
20:O:99:ARG:NH1	20:O:103:THR:HA	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:W:81:VAL:HG22	28:W:83:SER:N	2.32	0.44
28:W:82:GLY:O	28:W:83:SER:C	2.56	0.44
3:2:22:ARG:HD3	7:A:125:A:OP2	2.18	0.44
7:A:662:C:O2'	22:Q:48:ARG:NH1	2.51	0.44
7:A:858:G:H5'	7:A:859:C:H5"	2.00	0.44
7:A:1127:C:P	22:Q:92:ARG:HH12	2.40	0.44
7:A:1165:G:H2'	7:A:1166:C:O4'	2.18	0.44
7:A:1444:U:H5'	7:A:1445:C:OP2	2.18	0.44
7:A:1451:C:N4	7:A:1461:C:OP2	2.44	0.44
7:A:1642:G:H2'	7:A:1643:G:C8	2.53	0.44
7:A:2130:C:H2'	7:A:2131:C:C6	2.53	0.44
7:A:2510:U:H5"	7:A:2511:A:OP1	2.17	0.44
7:A:2594:U:H2'	7:A:2595:U:O4'	2.18	0.44
7:A:2807:G:C2	7:A:2808:G:C8	3.06	0.44
7:A:3034:U:H1'	7:A:3036:G:O6	2.18	0.44
12:F:52:ARG:HB3	12:F:85:LYS:NZ	2.33	0.44
13:G:122:ILE:HG13	13:G:123:THR:H	1.83	0.44
16:K:93:PRO:HG3	16:K:114:ILE:HG13	2.00	0.44
18:M:31:ASP:OD2	18:M:32:TYR:HD1	2.01	0.44
7:A:503:C:H2'	7:A:504:A:C8	2.53	0.43
7:A:676:A:O4'	7:A:2293:C:H5'	2.17	0.43
7:A:749:U:C2	7:A:750:A:N7	2.86	0.43
7:A:975:G:O2'	7:A:976:U:OP2	2.31	0.43
7:A:976:U:H2'	7:A:976:U:O2	2.16	0.43
7:A:1196:A:H3'	7:A:1197:G:C8	2.52	0.43
7:A:1980:U:H2'	7:A:1981:C:C6	2.52	0.43
7:A:2082:A:N6	7:A:2083:G:N3	2.66	0.43
7:A:2170:A:H3'	7:A:2171:G:H8	1.83	0.43
7:A:2646:U:C2	7:A:2647:G:N7	2.86	0.43
7:A:2717:U:H5"	7:A:2775:U:O2'	2.18	0.43
7:A:2881:A:C2'	7:A:2882:A:H5'	2.48	0.43
7:A:2905:C:O2	13:G:110:TYR:HB2	2.18	0.43
9:C:57:GLY:HA2	9:C:214:TRP:O	2.18	0.43
10:D:10:LYS:HA	10:D:29:VAL:HA	2.00	0.43
10:D:91:ALA:O	10:D:93:THR:N	2.51	0.43
11:E:129:ARG:HH22	11:E:157:ARG:NE	2.16	0.43
13:G:84:TYR:CE2	13:G:139:LYS:HB2	2.53	0.43
15:J:45:ALA:HB3	15:J:48:VAL:HG22	2.00	0.43
16:K:31:ARG:HE	16:K:31:ARG:HB2	1.69	0.43
19:N:56:LYS:NZ	19:N:87:PHE:O	2.42	0.43
21:P:86:VAL:HG23	21:P:87:THR:H	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:S:79:LEU:HA	24:S:118:GLU:O	2.18	0.43
24:S:85:TYR:N	24:S:85:TYR:CD1	2.85	0.43
28:W:31:VAL:HG11	28:W:37:LEU:HD21	1.99	0.43
7:A:789:C:H5"	11:E:106:GLN:CG	2.45	0.43
7:A:876:U:OP2	7:A:2850:C:H5'	2.18	0.43
7:A:1140:G:H21	15:J:147:GLN:NE2	2.16	0.43
7:A:1308:G:C4	7:A:1309:G:C8	3.06	0.43
7:A:1444:U:H2'	7:A:1845:A:C2	2.52	0.43
7:A:1608:G:C4	7:A:1609:U:H5	2.35	0.43
7:A:2076:G:H3'	7:A:2077:C:H6	1.83	0.43
7:A:2369:U:H1'	7:A:2370:G:H21	1.83	0.43
11:E:136:LEU:HD21	11:E:151:LEU:HD11	1.99	0.43
12:F:174:ARG:O	12:F:177:LEU:HB3	2.18	0.43
16:K:54:ARG:HE	16:K:54:ARG:HB3	1.59	0.43
16:K:64:ARG:HH12	21:P:67:VAL:HG11	1.83	0.43
19:N:29:PHE:HE2	19:N:51:LEU:HD13	1.83	0.43
20:O:31:PRO:HD2	20:O:94:THR:O	2.19	0.43
20:O:76:SER:HA	20:O:79:VAL:HG12	1.99	0.43
22:Q:112:VAL:HG21	23:R:51:THR:HG21	2.00	0.43
28:W:46:HIS:O	28:W:80:ILE:N	2.50	0.43
1:0:24:LYS:O	1:0:25:THR:OG1	2.29	0.43
7:A:355:C:N3	7:A:443:C:N4	2.66	0.43
7:A:513:G:H2'	7:A:514:C:O4'	2.18	0.43
7:A:679:G:O2'	7:A:1385:A:OP1	2.36	0.43
7:A:764:G:H5"	7:A:765:C:OP2	2.18	0.43
7:A:1447:U:N3	7:A:1448:G:N7	2.66	0.43
7:A:2190:A:H5"	16:K:42:THR:OG1	2.18	0.43
7:A:2377:C:H1'	7:A:2381:G:N2	2.32	0.43
7:A:2819:G:N3	7:A:2819:G:H2'	2.32	0.43
8:B:29:C:H1'	8:B:56:A:N6	2.30	0.43
8:B:76:U:H2'	8:B:77:A:O4'	2.18	0.43
10:D:7:LEU:HD11	10:D:82:ALA:HB3	2.00	0.43
11:E:160:VAL:HB	11:E:181:VAL:HG22	2.00	0.43
12:F:111:THR:OG1	12:F:112:SER:N	2.49	0.43
22:Q:88:VAL:O	22:Q:90:VAL:N	2.41	0.43
27:V:53:ALA:O	27:V:58:HIS:HD2	2.02	0.43
27:V:67:LEU:HB2	27:V:69:ILE:CG1	2.43	0.43
2:1:27:LYS:HE3	7:A:2524:A:H8	1.84	0.43
7:A:231:U:H2'	7:A:232:G:H4'	1.99	0.43
7:A:335:A:H2'	7:A:336:G:H8	1.82	0.43
7:A:401:C:H2'	7:A:402:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:503:C:O2'	7:A:2098:U:H1'	2.19	0.43
7:A:748:A:H2'	7:A:749:U:H6	1.79	0.43
7:A:757:C:H1'	7:A:758:C:H5	1.83	0.43
7:A:771:C:O2'	7:A:772:G:OP1	2.30	0.43
7:A:996:A:C6	7:A:1043:C:C5	3.06	0.43
7:A:1100:C:O2'	7:A:1112:A:N3	2.45	0.43
7:A:1223:U:N3	7:A:1226:U:OP2	2.46	0.43
7:A:1829:A:H2'	7:A:1830:C:O4'	2.18	0.43
7:A:1932:G:H4'	7:A:2216:A:H5"	1.99	0.43
7:A:2499:C:C6	28:W:16:SER:HB3	2.53	0.43
7:A:2862:C:H6	7:A:2862:C:O5'	2.00	0.43
7:A:2951:C:H3'	7:A:2952:G:C5'	2.48	0.43
10:D:130:HIS:CD2	10:D:165:ARG:HB3	2.53	0.43
12:F:15:TYR:O	12:F:19:ILE:HG12	2.19	0.43
21:P:63:GLU:HA	21:P:68:GLY:HA2	1.99	0.43
22:Q:97:ASP:CG	23:R:16:LYS:HE2	2.38	0.43
4:3:14:PHE:HD2	4:3:22:ILE:CG2	2.31	0.43
7:A:128:C:H2'	7:A:129:C:H6	1.81	0.43
7:A:293:G:N7	7:A:338:G:C8	2.86	0.43
7:A:307:U:H2'	7:A:308:G:C8	2.54	0.43
7:A:334:C:C2	7:A:335:A:C8	3.06	0.43
7:A:600:G:H5'	7:A:1346:G:H21	1.84	0.43
7:A:617:A:H3'	7:A:618:U:C6	2.54	0.43
7:A:798:G:N3	7:A:798:G:H2'	2.34	0.43
7:A:2088:A:HO2'	7:A:2470:C:HO2'	1.57	0.43
7:A:2825:A:N6	7:A:2846:G:O2'	2.46	0.43
7:A:3088:C:C4	7:A:3089:U:C4	3.06	0.43
7:A:3125:G:H8	7:A:3125:G:OP2	2.02	0.43
9:C:140:THR:O	9:C:141:LEU:HG	2.19	0.43
13:G:89:GLU:HG3	13:G:130:THR:O	2.18	0.43
27:V:30:LYS:HB2	27:V:44:HIS:CE1	2.53	0.43
27:V:62:ASN:CG	27:V:106:VAL:HG11	2.39	0.43
7:A:171:G:C2	7:A:172:G:N7	2.87	0.43
7:A:218:A:C5	7:A:521:A:C2	3.07	0.43
7:A:740:G:N3	7:A:740:G:H2'	2.33	0.43
7:A:1129:A:H2'	7:A:1130:A:C8	2.53	0.43
7:A:1615:G:N2	7:A:1616:U:O2	2.52	0.43
7:A:1712:G:C2	7:A:1756:A:N1	2.86	0.43
7:A:1731:A:H2'	7:A:1732:A:H8	1.84	0.43
7:A:2034:C:H3'	9:C:147:LEU:HD12	1.99	0.43
7:A:2411:C:N3	7:A:2412:C:N4	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2607:A:H2'	7:A:2608:G:H8	1.83	0.43
7:A:3074:G:N2	19:N:91:ASP:O	2.33	0.43
32:A:3201:CTY:H383	32:A:3201:CTY:H5	1.71	0.43
10:D:64:LYS:HB2	10:D:65:PRO:HD3	2.00	0.43
11:E:120:ALA:O	11:E:124:ARG:HG2	2.19	0.43
13:G:86:THR:O	13:G:133:THR:OG1	2.22	0.43
26:U:89:GLU:HG2	26:U:92:GLY:N	2.34	0.43
30:Y:13:LEU:HB2	30:Y:18:LEU:HD12	2.00	0.43
2:1:23:TYR:CE2	2:1:40:LYS:HB3	2.53	0.43
6:6:16:CYS:HB2	6:6:20:ASN:O	2.19	0.43
7:A:648:G:H2'	7:A:649:A:C8	2.54	0.43
7:A:648:G:C2	7:A:649:A:N7	2.87	0.43
7:A:814:A:C8	7:A:902:U:O4	2.71	0.43
7:A:1144:G:H2'	7:A:1145:U:C6	2.53	0.43
7:A:1446:C:C2	7:A:1469:G:N2	2.87	0.43
7:A:2644:A:OP2	7:A:2644:A:H2'	2.19	0.43
7:A:2674:G:N3	7:A:2836:A:H2	2.16	0.43
9:C:139:GLY:H	9:C:165:LEU:HB2	1.84	0.43
12:F:42:VAL:HG12	12:F:97:THR:HA	2.00	0.43
13:G:62:ASN:O	13:G:66:HIS:HB2	2.19	0.43
18:M:28:ASN:HB3	18:M:105:GLU:OE1	2.19	0.43
21:P:13:ARG:HG3	21:P:14:ASP:H	1.84	0.43
7:A:166:U:H5"	7:A:167:A:OP2	2.19	0.43
7:A:272:A:C2'	7:A:273:A:H5'	2.46	0.43
7:A:367:G:H3'	7:A:368:U:C6	2.53	0.43
7:A:806:G:H8	7:A:806:G:OP2	2.02	0.43
7:A:877:G:C8	24:S:99:ALA:HB1	2.53	0.43
7:A:1190:U:O2'	7:A:1199:A:N3	2.44	0.43
7:A:1542:G:H2'	7:A:1543:U:C6	2.53	0.43
7:A:1735:C:C2	7:A:1736:C:C5	3.07	0.43
7:A:1924:A:H2'	7:A:1925:A:H8	1.84	0.43
7:A:2145:G:C6	7:A:2162:C:C4	3.07	0.43
7:A:2309:C:N4	7:A:2675:G:H1	2.15	0.43
7:A:2379:A:O2'	7:A:2418:G:N2	2.47	0.43
7:A:2485:A:H2'	7:A:2486:C:H6	1.84	0.43
7:A:2790:U:C2	7:A:2792:U:H5"	2.54	0.43
7:A:3003:A:H2	7:A:3004:A:O4'	2.01	0.43
8:B:11:C:C5	28:W:74:GLY:HA2	2.52	0.43
8:B:89:G:H2'	8:B:90:G:H8	1.82	0.43
9:C:83:GLU:HB2	9:C:92:ILE:HG13	2.01	0.43
9:C:146:GLU:CG	9:C:189:CYS:HB3	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:299:G:N2	7:A:339:C:C4	2.86	0.43
7:A:1321:A:H2'	7:A:1322:G:O4'	2.18	0.43
7:A:1396:A:N6	7:A:2252:A:OP2	2.50	0.43
7:A:1616:U:H2'	7:A:1617:U:C5	2.53	0.43
7:A:1650:U:H2'	7:A:1651:C:O4'	2.18	0.43
7:A:1775:G:N1	7:A:1776:A:N7	2.66	0.43
7:A:2132:C:H2'	7:A:2133:C:H6	1.83	0.43
7:A:2420:U:H2'	7:A:2421:C:H5	1.84	0.43
7:A:2939:C:O2'	19:N:73:LYS:HE2	2.19	0.43
7:A:3034:U:P	7:A:3034:U:H3'	2.58	0.43
10:D:51:GLN:HG3	10:D:81:LEU:HD11	2.00	0.43
12:F:60:ALA:HB1	12:F:94:VAL:HG11	1.99	0.43
12:F:130:ASP:O	12:F:132:VAL:N	2.50	0.43
13:G:9:ILE:HG22	13:G:10:PRO:O	2.19	0.43
20:O:29:GLU:O	20:O:94:THR:OG1	2.34	0.43
23:R:38:LEU:HD11	23:R:98:LEU:HD21	2.00	0.43
24:S:50:PRO:O	24:S:52:ALA:N	2.51	0.43
24:S:98:ARG:HG3	24:S:104:PHE:CD2	2.53	0.43
27:V:32:PRO:O	27:V:92:HIS:HD2	2.01	0.43
28:W:41:ARG:HA	28:W:41:ARG:HD3	1.55	0.43
2:1:28:ASN:ND2	7:A:2523:C:OP2	2.51	0.43
7:A:6:A:H1'	15:J:134:ALA:HB2	2.00	0.43
7:A:38:A:H1'	11:E:55:THR:HB	2.00	0.43
7:A:55:G:C2	7:A:56:A:C5	3.07	0.43
7:A:86:C:O2'	7:A:104:U:O2'	2.17	0.43
7:A:271:U:H1'	7:A:513:G:N2	2.34	0.43
7:A:619:C:OP2	7:A:663:G:C2	2.72	0.43
7:A:669:U:H6	7:A:669:U:O5'	2.02	0.43
7:A:934:G:N2	7:A:958:A:OP1	2.52	0.43
7:A:942:U:H5"	23:R:88:ARG:NH1	2.33	0.43
7:A:1032:U:H2'	7:A:1033:C:C6	2.54	0.43
7:A:1215:A:H2'	7:A:1215:A:N3	2.34	0.43
7:A:1446:C:O2'	7:A:1523:G:H1'	2.19	0.43
7:A:1750:C:O2'	7:A:1751:C:H5'	2.19	0.43
7:A:2082:A:N6	7:A:2083:G:C2	2.87	0.43
7:A:2399:G:C8	7:A:2400:U:H2'	2.54	0.43
7:A:2997:G:N2	13:G:140:GLN:HG3	2.32	0.43
9:C:226:MET:HB3	9:C:230:ASP:HB2	2.00	0.43
13:G:104:LEU:HD23	13:G:105:GLU:N	2.34	0.43
18:M:34:ILE:HD12	18:M:104:PHE:CD2	2.54	0.43
19:N:48:ALA:O	19:N:52:ILE:HG13	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:155:LEU:HD23	27:V:155:LEU:HA	1.70	0.43
7:A:922:A:H8	7:A:922:A:O5'	2.02	0.42
7:A:1069:A:O2'	7:A:1322:G:O3'	2.33	0.42
7:A:1071:U:H2'	7:A:1072:G:O4'	2.19	0.42
7:A:1242:U:H2'	7:A:1243:G:C8	2.54	0.42
7:A:1455:G:C4	7:A:1459:G:O6	2.72	0.42
7:A:1960:C:N3	7:A:1961:C:C4	2.87	0.42
7:A:2248:G:H2'	7:A:2249:C:H6	1.81	0.42
7:A:2704:C:H2'	7:A:2705:C:H6	1.84	0.42
10:D:28:VAL:HG11	21:P:7:VAL:HG21	2.01	0.42
11:E:13:VAL:HG12	11:E:14:LYS:N	2.29	0.42
11:E:134:THR:O	11:E:135:GLU:HG2	2.18	0.42
11:E:182:HIS:HB2	11:E:196:ARG:NH2	2.34	0.42
14:H:8:ASP:HA	14:H:13:GLY:O	2.19	0.42
16:K:61:VAL:O	16:K:84:ALA:HA	2.19	0.42
18:M:29:PHE:CD1	18:M:31:ASP:HB3	2.53	0.42
18:M:44:ASN:HA	18:M:47:ILE:HG22	2.01	0.42
26:U:85:TYR:CD1	26:U:94:ARG:HG2	2.53	0.42
28:W:45:PHE:HA	28:W:78:VAL:HG23	2.01	0.42
29:X:28:ARG:HD2	29:X:30:ASP:OD1	2.19	0.42
1:0:41:ARG:NH1	7:A:3121:G:H1'	2.34	0.42
7:A:51:G:H1'	7:A:118:A:N6	2.34	0.42
7:A:77:C:H5"	30:Y:7:PRO:HG3	2.01	0.42
7:A:377:G:O6	7:A:427:G:N2	2.52	0.42
7:A:385:G:H2'	7:A:386:G:C8	2.53	0.42
7:A:827:C:O3'	7:A:863:A:N6	2.52	0.42
7:A:965:G:H2'	7:A:966:C:H6	1.85	0.42
7:A:1110:A:H3'	7:A:1111:C:C6	2.55	0.42
7:A:1400:G:C2'	7:A:1401:C:H5'	2.49	0.42
7:A:1622:G:H2'	7:A:1623:G:C2	2.54	0.42
7:A:1745:C:H5"	7:A:1746:U:H5	1.83	0.42
7:A:2754:G:H2'	7:A:2755:C:C6	2.53	0.42
7:A:2810:A:N7	10:D:155:ALA:HB2	2.34	0.42
9:C:7:LYS:HD3	9:C:7:LYS:HA	1.89	0.42
13:G:110:TYR:CE1	13:G:153:ARG:HD3	2.49	0.42
13:G:164:ARG:HH22	13:G:172:ARG:NH2	2.17	0.42
14:H:3:LEU:HG	14:H:19:VAL:HG21	2.01	0.42
18:M:27:VAL:HB	18:M:134:ARG:HD2	2.01	0.42
27:V:49:GLY:C	27:V:51:ASP:H	2.22	0.42
1:0:16:ARG:HB3	7:A:2284:G:C5'	2.41	0.42
7:A:285:G:N2	7:A:287:G:C8	2.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:306:G:H2'	7:A:307:U:O4'	2.18	0.42
7:A:582:G:H4'	24:S:16:LYS:HG3	2.00	0.42
7:A:921:A:C8	7:A:2678:C:O2	2.72	0.42
7:A:1207:C:H4'	7:A:1208:C:C5	2.54	0.42
7:A:1757:G:H2'	7:A:1758:G:H8	1.85	0.42
7:A:1848:G:O6	7:A:1852:C:H2'	2.19	0.42
7:A:1983:G:H2'	7:A:1984:G:C8	2.54	0.42
7:A:1984:G:N3	7:A:3095:A:H2	2.16	0.42
7:A:2042:C:O2'	7:A:2043:A:P	2.77	0.42
7:A:2545:G:O4'	7:A:2546:G:C2	2.73	0.42
7:A:2629:G:N2	7:A:2663:A:OP1	2.43	0.42
14:H:12:LEU:HD11	14:H:21:VAL:CG1	2.50	0.42
15:J:65:SER:HB3	15:J:67:ASP:OD1	2.19	0.42
24:S:51:GLN:O	24:S:53:ALA:N	2.52	0.42
29:X:60:LYS:HD3	29:X:62:THR:HG23	2.01	0.42
4:3:55:THR:O	4:3:59:THR:HG23	2.19	0.42
7:A:120:U:H4'	7:A:121:G:H5"	2.00	0.42
7:A:274:A:H1'	7:A:457:C:H1'	2.01	0.42
7:A:307:U:H5"	14:H:41:ARG:HD2	2.02	0.42
7:A:504:A:H2'	7:A:505:C:C6	2.55	0.42
7:A:603:A:H1'	7:A:683:C:H1'	2.01	0.42
7:A:611:C:H4'	7:A:628:C:O2	2.19	0.42
7:A:783:U:HO2'	7:A:784:A:H8	1.67	0.42
7:A:931:A:H2'	7:A:932:U:O4'	2.19	0.42
7:A:1237:U:H2'	7:A:1238:C:O4'	2.19	0.42
7:A:1409:C:H2'	7:A:1410:A:H8	1.84	0.42
7:A:2240:U:OP1	19:N:8:PRO:HA	2.20	0.42
7:A:2290:G:O2'	10:D:153:GLY:O	2.37	0.42
7:A:2323:U:H2'	7:A:2324:G:O4'	2.20	0.42
7:A:2657:U:H2'	7:A:2658:C:H6	1.83	0.42
7:A:2961:C:H2'	7:A:2962:C:O4'	2.18	0.42
8:B:25:A:HO2'	8:B:112:A:HO2'	1.56	0.42
8:B:55:U:H5'	8:B:56:A:C8	2.51	0.42
12:F:52:ARG:HG3	12:F:55:LYS:NZ	2.34	0.42
13:G:7:GLN:O	13:G:70:ARG:NH1	2.46	0.42
14:H:12:LEU:HD21	14:H:25:TYR:HE2	1.84	0.42
16:K:24:VAL:HG12	16:K:30:ARG:HD3	2.01	0.42
16:K:90:ASP:OD1	16:K:92:ASP:HB3	2.19	0.42
23:R:92:ARG:HA	23:R:92:ARG:HD2	1.79	0.42
5:4:27:CYS:SG	5:4:32:HIS:CE1	3.12	0.42
7:A:184:A:C4	7:A:185:C:C5	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:463:A:C6	7:A:490:A:C8	3.07	0.42
7:A:525:C:H2'	7:A:526:U:H6	1.84	0.42
7:A:2671:A:C2	29:X:21:SER:HB2	2.53	0.42
7:A:2791:G:C2	7:A:2792:U:H1'	2.55	0.42
7:A:3104:G:H2'	7:A:3105:G:H8	1.83	0.42
8:B:32:G:O2'	8:B:33:G:H5'	2.19	0.42
9:C:163:ILE:HD12	9:C:163:ILE:HG23	1.62	0.42
22:Q:28:ARG:HD3	22:Q:38:GLN:OE1	2.19	0.42
25:T:10:ILE:HG12	25:T:41:GLN:NE2	2.34	0.42
4:3:28:ASN:CG	7:A:2630:A:H5"	2.40	0.42
7:A:630:U:H1'	7:A:654:G:N2	2.35	0.42
7:A:735:A:C6	7:A:2654:G:H1'	2.54	0.42
7:A:800:C:H5	17:L:34:ARG:NH1	2.16	0.42
7:A:974:G:O2'	7:A:975:G:O5'	2.34	0.42
7:A:1170:C:N3	7:A:1244:A:C2	2.87	0.42
7:A:1415:A:OP1	7:A:1415:A:H8	2.03	0.42
7:A:1549:C:C2'	7:A:1550:C:H5'	2.49	0.42
7:A:1689:C:H2'	7:A:1696:A:N1	2.35	0.42
7:A:1747:A:HO2'	7:A:1748:A:H8	1.67	0.42
7:A:1797:G:C6	7:A:1798:C:C5	3.07	0.42
7:A:1890:A:H3'	7:A:1891:C:C6	2.54	0.42
7:A:2057:G:OP1	9:C:54:LYS:HD3	2.19	0.42
7:A:2218:G:C2	7:A:2220:C:C4	3.07	0.42
7:A:2546:G:H8	7:A:2548:A:OP2	2.03	0.42
7:A:2569:G:H2'	7:A:2570:C:O4'	2.19	0.42
7:A:2771:C:N4	7:A:2772:A:C4	2.87	0.42
10:D:35:VAL:CG1	10:D:52:LEU:HB3	2.49	0.42
17:L:79:VAL:CG1	17:L:113:GLY:HA2	2.49	0.42
22:Q:33:ARG:O	22:Q:37:GLU:HG3	2.19	0.42
22:Q:94:ASN:ND2	23:R:14:GLN:HB2	2.34	0.42
25:T:46:VAL:HG13	25:T:54:VAL:HG21	2.00	0.42
25:T:66:ARG:HG2	25:T:73:TYR:CD1	2.47	0.42
4:3:24:ARG:NH1	4:3:26:LYS:HA	2.35	0.42
7:A:461:G:H1'	7:A:462:U:H5	1.84	0.42
7:A:722:G:H2'	7:A:723:G:H5'	2.01	0.42
7:A:1144:G:C6	7:A:1278:A:C6	3.07	0.42
7:A:2338:G:N2	7:A:2427:G:C8	2.87	0.42
7:A:2636:C:H2'	7:A:2637:A:C8	2.54	0.42
7:A:2755:C:C2	7:A:2780:A:N6	2.88	0.42
7:A:2875:U:C2	7:A:3020:G:C2	3.08	0.42
7:A:3043:U:O2	7:A:3044:A:C8	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:A:3201:CTY:H8	32:A:3201:CTY:H321	1.88	0.42
10:D:66:LEU:HD23	10:D:66:LEU:HA	1.86	0.42
11:E:52:ARG:CZ	11:E:104:TYR:OH	2.67	0.42
17:L:110:LYS:HG2	17:L:127:LYS:O	2.19	0.42
7:A:157:A:H2'	7:A:158:U:C6	2.55	0.42
7:A:365:G:H2'	7:A:365:G:N3	2.34	0.42
7:A:817:U:H1'	7:A:915:C:O2'	2.20	0.42
7:A:1052:G:O4'	28:W:29:GLN:NE2	2.53	0.42
7:A:1322:G:H5"	17:L:33:GLY:HA2	2.01	0.42
7:A:1338:U:H2'	7:A:1339:C:H6	1.85	0.42
7:A:1544:G:C6	7:A:1825:A:N1	2.88	0.42
7:A:1967:G:C6	7:A:1968:G:O6	2.73	0.42
7:A:2202:G:O2'	7:A:2205:C:OP1	2.24	0.42
7:A:2335:U:H3	7:A:2428:G:H1	1.67	0.42
7:A:2551:C:H2'	7:A:2552:A:H8	1.80	0.42
7:A:3049:C:C4	7:A:3050:C:C5	3.08	0.42
10:D:28:VAL:HG22	10:D:193:LEU:HD22	2.01	0.42
18:M:19:GLY:H	18:M:39:HIS:CE1	2.38	0.42
19:N:51:LEU:HD23	19:N:66:VAL:HG22	2.02	0.42
23:R:20:GLY:N	23:R:100:VAL:O	2.43	0.42
27:V:115:GLN:OE1	27:V:117:GLY:N	2.52	0.42
29:X:7:ILE:HG13	29:X:8:CYS:H	1.85	0.42
7:A:249:G:N2	7:A:252:G:H3'	2.34	0.42
7:A:733:C:H1'	7:A:743:U:H1'	2.02	0.42
7:A:800:C:C5	17:L:34:ARG:NH1	2.85	0.42
7:A:849:C:C2	7:A:850:G:C8	3.08	0.42
7:A:1430:G:H5"	7:A:1431:A:H5'	2.02	0.42
7:A:1440:G:H2'	7:A:1441:G:O4'	2.19	0.42
7:A:1610:G:H2'	7:A:1611:U:C6	2.55	0.42
7:A:1731:A:H2'	7:A:1732:A:C8	2.54	0.42
7:A:2530:U:H2'	7:A:2531:C:H6	1.85	0.42
7:A:2926:G:H3'	7:A:2927:C:H5"	2.00	0.42
8:B:49:G:C6	8:B:50:G:C6	3.07	0.42
8:B:62:G:H2'	8:B:63:C:H6	1.84	0.42
7:A:146:G:C6	7:A:147:U:C4	3.08	0.42
7:A:463:A:C4	7:A:464:G:C8	3.07	0.42
7:A:470:G:OP1	29:X:24:ARG:NH1	2.53	0.42
7:A:675:G:N1	7:A:2269:A:OP1	2.52	0.42
7:A:691:C:C2	7:A:692:A:N7	2.88	0.42
7:A:876:U:O2'	24:S:102:ARG:HD2	2.20	0.42
7:A:969:U:H2'	7:A:970:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:994:C:O2'	7:A:995:U:H5"	2.20	0.42
7:A:1236:G:H2'	7:A:1237:U:C6	2.55	0.42
7:A:1895:G:C2	7:A:2239:A:C2	3.08	0.42
7:A:2234:C:H41	16:K:32:TYR:HH	1.63	0.42
7:A:2443:A:H2'	7:A:2444:C:H6	1.85	0.42
7:A:2617:G:H2'	7:A:2618:U:C6	2.55	0.42
7:A:2631:U:H2'	7:A:2632:C:O4'	2.20	0.42
7:A:3123:C:H2'	7:A:3124:C:C6	2.55	0.42
7:A:3132:U:H1'	15:J:134:ALA:O	2.20	0.42
12:F:116:PRO:HA	12:F:121:PHE:CD2	2.55	0.42
13:G:100:LYS:HD2	13:G:105:GLU:CD	2.40	0.42
13:G:115:VAL:HG13	13:G:115:VAL:O	2.20	0.42
15:J:74:VAL:HG13	15:J:103:LYS:NZ	2.34	0.42
17:L:133:ARG:O	17:L:137:THR:OG1	2.27	0.42
18:M:32:TYR:HE2	18:M:115:ARG:HH21	1.67	0.42
20:O:95:VAL:HG23	20:O:120:LEU:HD12	2.02	0.42
21:P:1:MET:O	21:P:4:LEU:N	2.53	0.42
26:U:74:VAL:C	26:U:76:SER:H	2.23	0.42
1:0:9:SER:O	1:0:11:SER:N	2.53	0.41
7:A:171:G:C2	7:A:172:G:C8	3.09	0.41
7:A:186:G:H2'	7:A:187:C:H6	1.84	0.41
7:A:271:U:C2	7:A:272:A:C8	3.08	0.41
7:A:555:A:H2	7:A:924:C:O2	2.02	0.41
7:A:1139:A:O2'	7:A:1282:C:O2'	2.23	0.41
7:A:1182:C:O2'	7:A:1183:A:H8	2.01	0.41
7:A:2377:C:H1'	7:A:2381:G:H21	1.85	0.41
7:A:2556:G:H2'	7:A:2557:G:H5"	2.01	0.41
7:A:2646:U:N3	7:A:2647:G:N7	2.68	0.41
7:A:2881:A:H2'	7:A:2882:A:O4'	2.19	0.41
7:A:2941:C:C2	7:A:2942:C:C5	3.08	0.41
9:C:24:ILE:CD1	9:C:84:TYR:HB2	2.49	0.41
9:C:65:ILE:HG13	9:C:88:ARG:CZ	2.49	0.41
12:F:50:ALA:CB	12:F:56:LEU:HB3	2.44	0.41
13:G:39:GLU:HB3	13:G:40:PRO:HD3	2.01	0.41
14:H:29:PHE:O	14:H:33:ARG:HG2	2.20	0.41
16:K:25:LEU:HG	16:K:40:VAL:HG23	2.02	0.41
16:K:67:LYS:HD2	16:K:67:LYS:HA	1.89	0.41
17:L:92:VAL:HG12	17:L:93:GLY:N	2.33	0.41
20:O:78:ARG:HA	20:O:81:GLN:OE1	2.20	0.41
7:A:354:G:H2'	7:A:355:C:O4'	2.20	0.41
7:A:941:C:H5	17:L:23:ARG:HB3	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:949:A:N3	7:A:1071:U:H4'	2.35	0.41
7:A:1570:U:O4	7:A:1632:G:H3'	2.20	0.41
7:A:1578:C:H1'	9:C:134:ARG:NH2	2.35	0.41
7:A:2033:G:H1'	9:C:183:ARG:NH2	2.31	0.41
7:A:2074:G:H2'	7:A:2075:U:H6	1.84	0.41
7:A:2081:A:O2'	7:A:2082:A:OP2	2.33	0.41
9:C:92:ILE:HB	9:C:104:TYR:CD1	2.55	0.41
9:C:155:LEU:HD21	9:C:177:MET:HG2	2.02	0.41
10:D:112:VAL:HG22	10:D:180:LEU:O	2.21	0.41
11:E:30:LEU:O	11:E:122:SER:HA	2.19	0.41
11:E:125:ALA:HB2	11:E:130:ILE:HD12	2.03	0.41
11:E:138:GLU:HG3	11:E:146:SER:OG	2.19	0.41
12:F:19:ILE:O	12:F:23:LEU:HG	2.20	0.41
26:U:5:LYS:HG2	26:U:5:LYS:O	2.20	0.41
26:U:73:VAL:HB	26:U:83:ILE:HD11	2.01	0.41
1:0:8:LYS:HE3	1:0:8:LYS:HB2	1.92	0.41
5:4:16:LEU:HD12	7:A:1161:A:H4'	2.02	0.41
6:6:20:ASN:CG	6:6:21:THR:H	2.23	0.41
7:A:9:G:N2	7:A:3129:A:C6	2.88	0.41
7:A:406:G:C6	7:A:416:G:C5	3.08	0.41
7:A:432:C:H2'	7:A:433:C:O4'	2.21	0.41
7:A:735:A:N3	7:A:2653:G:O2'	2.41	0.41
7:A:910:A:C8	9:C:219:PRO:HG2	2.56	0.41
7:A:1083:G:C2'	7:A:1084:G:H5"	2.47	0.41
7:A:1319:G:O5'	7:A:1319:G:H8	2.03	0.41
7:A:1455:G:H1'	7:A:1851:A:N6	2.34	0.41
7:A:1585:G:N2	7:A:1620:G:C4	2.88	0.41
7:A:1671:G:C4	7:A:1672:A:C8	3.08	0.41
7:A:1942:A:H2'	7:A:1943:C:H6	1.85	0.41
7:A:2124:U:C2'	7:A:2125:U:H5'	2.50	0.41
7:A:2399:G:H2'	7:A:2400:U:C6	2.56	0.41
7:A:2433:C:H2'	7:A:2434:U:H6	1.84	0.41
7:A:2868:A:H2'	7:A:2869:G:C8	2.54	0.41
8:B:14:A:N3	8:B:105:A:C6	2.88	0.41
8:B:15:G:N3	8:B:15:G:H2'	2.35	0.41
10:D:102:THR:HG22	10:D:103:ALA:N	2.35	0.41
12:F:56:LEU:CD1	12:F:157:ARG:HG3	2.51	0.41
16:K:4:GLN:O	16:K:5:GLU:HB2	2.21	0.41
21:P:51:GLY:HA2	21:P:56:GLU:CG	2.46	0.41
21:P:65:TYR:O	21:P:67:VAL:HG12	2.21	0.41
24:S:24:PRO:HG3	24:S:111:SER:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:W:80:ILE:HD12	28:W:80:ILE:HG23	1.79	0.41
7:A:27:G:C2	7:A:600:G:N3	2.89	0.41
7:A:714:C:H2'	7:A:715:C:C6	2.56	0.41
7:A:839:C:N3	7:A:840:G:N7	2.68	0.41
7:A:964:A:C5	7:A:965:G:N7	2.88	0.41
7:A:1120:U:OP2	7:A:1318:G:H5'	2.20	0.41
7:A:1142:G:H2'	7:A:1143:U:C6	2.56	0.41
7:A:1447:U:C2	7:A:1448:G:C8	3.08	0.41
7:A:1570:U:N3	7:A:1633:A:OP2	2.41	0.41
7:A:1578:C:H1'	9:C:134:ARG:CZ	2.50	0.41
7:A:1820:A:H4'	7:A:1821:G:O5'	2.21	0.41
7:A:1888:U:C6	19:N:6:LYS:HD3	2.56	0.41
7:A:2083:G:C2	7:A:2084:G:C4	3.08	0.41
7:A:2496:U:O2'	7:A:2664:A:H4'	2.19	0.41
7:A:2891:U:H3'	7:A:2892:A:H2'	2.01	0.41
7:A:3040:G:H2'	7:A:3041:G:C8	2.55	0.41
11:E:133:ILE:O	11:E:204:VAL:N	2.46	0.41
12:F:20:ARG:HH22	12:F:104:TRP:HH2	1.67	0.41
13:G:19:ILE:H	13:G:19:ILE:HD12	1.85	0.41
13:G:99:LEU:HD11	13:G:126:VAL:HG23	2.02	0.41
13:G:164:ARG:HB2	13:G:167:GLY:H	1.85	0.41
18:M:76:LYS:HB2	18:M:91:GLU:HB3	2.03	0.41
21:P:13:ARG:HB2	21:P:76:HIS:HA	2.01	0.41
23:R:73:LYS:HD3	23:R:92:ARG:HD3	2.03	0.41
24:S:37:ARG:O	24:S:81:VAL:HG23	2.21	0.41
1:0:11:SER:O	1:0:15:SER:HB2	2.20	0.41
7:A:306:G:H21	14:H:45:LYS:HE3	1.86	0.41
7:A:743:U:H2'	7:A:744:C:H6	1.86	0.41
7:A:873:G:H2'	7:A:874:G:O4'	2.19	0.41
7:A:1506:U:O5'	7:A:1506:U:H6	2.04	0.41
7:A:1844:A:HO2'	7:A:1845:A:P	2.43	0.41
7:A:2060:C:OP1	9:C:224:VAL:HG13	2.20	0.41
7:A:2985:G:O6	7:A:2993:C:H5"	2.19	0.41
7:A:3131:U:O2	7:A:3131:U:H2'	2.19	0.41
8:B:84:C:C2	8:B:88:G:N2	2.88	0.41
9:C:79:VAL:O	9:C:79:VAL:HG13	2.20	0.41
12:F:82:ALA:HA	12:F:86:LEU:HD23	2.01	0.41
15:J:32:ALA:O	15:J:36:LEU:HB2	2.21	0.41
20:O:47:VAL:HA	20:O:54:THR:HA	2.02	0.41
27:V:60:GLY:C	27:V:62:ASN:H	2.20	0.41
29:X:7:ILE:HD13	29:X:60:LYS:HB2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:20:HIS:HB3	2:1:22:ASN:OD1	2.20	0.41
3:2:28:ARG:HH22	7:A:213:G:P	2.40	0.41
7:A:79:C:C4	7:A:80:G:N7	2.89	0.41
7:A:157:A:C4	7:A:174:G:N2	2.89	0.41
7:A:241:C:H1'	7:A:725:A:H2	1.85	0.41
7:A:293:G:N3	7:A:294:G:C8	2.88	0.41
7:A:763:C:H3'	7:A:763:C:OP2	2.20	0.41
7:A:855:G:H5"	7:A:1670:G:H1'	2.03	0.41
7:A:1157:A:N6	7:A:1254:G:H2'	2.36	0.41
7:A:1714:U:O2'	7:A:1715:A:H5'	2.20	0.41
7:A:1771:G:N1	7:A:1772:G:H1'	2.36	0.41
7:A:1951:U:H3'	7:A:1952:C:C5	2.56	0.41
7:A:2096:C:C2	7:A:2119:G:C2	3.08	0.41
7:A:2110:G:C2	7:A:2111:G:C5	3.09	0.41
7:A:2179:C:N4	7:A:2203:C:O4'	2.53	0.41
7:A:2189:U:N3	7:A:2192:G:OP2	2.48	0.41
7:A:2278:U:H2'	7:A:2279:U:O4'	2.20	0.41
7:A:2897:G:N2	7:A:2899:G:H3'	2.35	0.41
7:A:2945:G:O2'	19:N:68:LYS:HG2	2.20	0.41
7:A:3080:C:C2	7:A:3081:C:C5	3.08	0.41
8:B:14:A:N3	8:B:105:A:N6	2.68	0.41
8:B:92:G:C6	8:B:93:G:N7	2.88	0.41
11:E:121:LEU:HD23	11:E:121:LEU:HA	1.76	0.41
12:F:53:ASP:HB3	12:F:55:LYS:NZ	2.35	0.41
14:H:12:LEU:HD12	14:H:19:VAL:HG13	2.03	0.41
19:N:52:ILE:O	19:N:56:LYS:HG2	2.20	0.41
20:O:62:GLU:O	20:O:65:VAL:HG23	2.21	0.41
22:Q:119:GLU:OE1	22:Q:120:ASP:HB2	2.21	0.41
29:X:16:LYS:HG3	29:X:24:ARG:CZ	2.50	0.41
1:0:9:SER:OG	7:A:2258:A:H3'	2.21	0.41
7:A:9:G:N2	7:A:3129:A:C5	2.88	0.41
7:A:406:G:C5	7:A:416:G:C8	3.09	0.41
7:A:580:A:H2'	7:A:581:G:O4'	2.20	0.41
7:A:943:C:H2'	7:A:944:C:H6	1.85	0.41
7:A:1144:G:O6	7:A:1278:A:N6	2.54	0.41
7:A:1185:G:O2'	7:A:1216:G:N7	2.40	0.41
7:A:2009:U:O4	7:A:2023:A:H2	2.03	0.41
7:A:2537:A:H2'	7:A:2538:C:H6	1.85	0.41
8:B:70:C:H2'	8:B:71:G:H5'	2.03	0.41
9:C:108:PRO:HD2	9:C:111:LEU:HD12	2.03	0.41
11:E:195:LEU:HA	11:E:195:LEU:HD23	1.75	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:M:5:ARG:HG3	18:M:6:LYS:N	2.35	0.41
18:M:6:LYS:HD2	18:M:6:LYS:HA	1.85	0.41
22:Q:28:ARG:O	22:Q:35:ALA:HB2	2.20	0.41
7:A:159:C:C4	7:A:160:U:C5	3.09	0.41
7:A:197:A:H5"	7:A:198:A:O5'	2.20	0.41
7:A:540:C:H2'	7:A:542:G:N7	2.36	0.41
7:A:786:U:H2'	7:A:787:G:C8	2.55	0.41
7:A:821:C:H4'	9:C:39:GLY:O	2.20	0.41
7:A:1071:U:OP1	17:L:36:THR:HB	2.20	0.41
7:A:1208:C:H2'	7:A:1209:C:H5	1.85	0.41
7:A:1657:A:H4'	7:A:1658:A:C2	2.55	0.41
7:A:2100:A:C8	7:A:2114:A:C5	3.09	0.41
7:A:2104:C:C2	7:A:2110:G:N2	2.89	0.41
7:A:2412:C:H6	7:A:2412:C:H2'	1.67	0.41
7:A:2434:U:C2	7:A:2462:G:N2	2.88	0.41
7:A:2646:U:H2'	7:A:2647:G:C8	2.50	0.41
7:A:2732:G:N3	7:A:2732:G:H2'	2.36	0.41
7:A:2788:G:C6	7:A:2789:C:C4	3.09	0.41
7:A:2955:G:H21	7:A:3083:G:P	2.44	0.41
7:A:3006:C:H2'	7:A:3007:U:O4'	2.21	0.41
7:A:3129:A:N3	7:A:3129:A:H3'	2.36	0.41
7:A:3129:A:N6	7:A:3130:C:C4	2.89	0.41
8:B:62:G:O2'	8:B:63:C:H5'	2.21	0.41
10:D:23:VAL:HG11	16:K:70:ARG:NH2	2.36	0.41
12:F:49:GLU:O	12:F:55:LYS:HE2	2.20	0.41
13:G:3:ARG:HG2	13:G:6:LYS:HZ1	1.85	0.41
15:J:47:ASN:OD1	15:J:47:ASN:N	2.54	0.41
16:K:13:ASN:HD21	16:K:97:ARG:N	2.19	0.41
21:P:41:VAL:O	21:P:41:VAL:HG13	2.19	0.41
1:0:32:VAL:CG1	1:0:37:HIS:HD2	2.33	0.41
7:A:25:U:H4'	24:S:89:GLY:O	2.21	0.41
7:A:381:A:N6	7:A:382:A:N1	2.69	0.41
7:A:406:G:C4	7:A:416:G:C8	3.08	0.41
7:A:434:C:H2'	7:A:435:G:O4'	2.21	0.41
7:A:463:A:C5	7:A:464:G:C8	3.08	0.41
7:A:507:C:H2'	7:A:508:G:C8	2.56	0.41
7:A:564:U:H2'	7:A:565:G:O4'	2.21	0.41
7:A:579:G:H2'	7:A:580:A:C8	2.56	0.41
7:A:645:G:H2'	7:A:646:A:C8	2.56	0.41
7:A:698:A:H2'	7:A:699:U:O4'	2.21	0.41
7:A:701:U:H1'	17:L:14:SER:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:710:U:OP1	11:E:109:PRO:HA	2.21	0.41
7:A:724:U:H4'	7:A:725:A:O5'	2.20	0.41
7:A:735:A:H1'	17:L:65:GLY:HA3	2.03	0.41
7:A:858:G:O2'	7:A:892:G:H4'	2.21	0.41
7:A:870:U:H2'	7:A:871:U:O4'	2.20	0.41
7:A:964:A:C4	7:A:965:G:C8	3.09	0.41
7:A:978:C:H2'	7:A:979:A:H5"	2.02	0.41
7:A:1008:A:H8	7:A:1029:A:C4	2.39	0.41
7:A:1040:A:H2	7:A:2515:G:N3	2.18	0.41
7:A:1071:U:P	17:L:36:THR:HB	2.61	0.41
7:A:1090:C:H4'	7:A:2734:C:O2'	2.21	0.41
7:A:1172:C:C4	7:A:1173:A:C8	3.09	0.41
7:A:1220:G:C6	7:A:1221:C:C4	3.08	0.41
7:A:1671:G:H2'	7:A:1672:A:O4'	2.21	0.41
7:A:1675:G:H2'	7:A:1676:U:H6	1.84	0.41
7:A:1832:G:H5"	7:A:1833:C:H5'	2.02	0.41
7:A:1836:G:H2'	7:A:1837:U:O4'	2.20	0.41
7:A:1918:C:H2'	7:A:1919:C:O4'	2.21	0.41
7:A:2247:G:H1'	19:N:107:ASN:HB2	2.02	0.41
7:A:2258:A:OP1	22:Q:27:GLN:HG3	2.21	0.41
7:A:2532:C:OP1	20:O:16:ARG:HD2	2.20	0.41
7:A:2546:G:H2'	7:A:2547:C:H3'	2.02	0.41
7:A:2646:U:C2	7:A:2647:G:C8	3.09	0.41
7:A:2828:A:H2'	7:A:2829:C:C6	2.56	0.41
7:A:2872:A:H2'	7:A:2873:C:H6	1.85	0.41
7:A:3081:C:H2'	7:A:3082:U:O4'	2.21	0.41
7:A:3126:A:H3'	7:A:3127:A:C8	2.56	0.41
8:B:49:G:P	20:O:72:LYS:HB2	2.61	0.41
9:C:125:ILE:HD12	9:C:125:ILE:HG23	1.84	0.41
9:C:168:LYS:HE2	9:C:168:LYS:HB2	1.93	0.41
10:D:27:THR:OG1	10:D:196:GLY:O	2.35	0.41
10:D:55:GLY:O	10:D:78:ARG:HG3	2.20	0.41
10:D:76:ASN:O	10:D:78:ARG:HD2	2.21	0.41
12:F:65:ALA:HB2	12:F:72:PRO:HG3	2.02	0.41
12:F:73:GLU:HG2	12:F:74:VAL:N	2.36	0.41
12:F:165:THR:OG1	12:F:166:SER:N	2.54	0.41
16:K:98:ILE:HD13	16:K:114:ILE:HG23	2.03	0.41
16:K:101:PRO:HA	16:K:120:GLU:O	2.20	0.41
17:L:79:VAL:HG22	17:L:117:LEU:CB	2.49	0.41
21:P:101:GLU:C	21:P:103:ARG:H	2.24	0.41
26:U:5:LYS:NZ	26:U:24:LEU:O	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:U:10:LEU:HG	26:U:20:LYS:HE3	2.03	0.41
30:Y:4:GLY:HA3	30:Y:53:GLU:OE1	2.20	0.41
31:Z:50:VAL:O	31:Z:54:VAL:HG22	2.21	0.41
2:1:35:ARG:HB2	2:1:52:ARG:NH1	2.36	0.41
7:A:200:C:O2'	7:A:201:A:H5'	2.21	0.41
7:A:621:G:H5'	22:Q:24:TYR:CD1	2.54	0.41
7:A:940:U:H2'	17:L:23:ARG:HA	2.03	0.41
7:A:1077:G:N1	7:A:1078:G:N7	2.69	0.41
7:A:1364:G:C5	7:A:1365:U:C5	3.09	0.41
7:A:1890:A:C2	7:A:2287:G:H4'	2.56	0.41
7:A:1944:C:H2'	7:A:1945:G:O4'	2.21	0.41
7:A:2082:A:N6	7:A:2083:G:C4	2.89	0.41
7:A:2176:A:C6	7:A:2828:A:H1'	2.56	0.41
7:A:2190:A:C5	16:K:22:ILE:HG12	2.56	0.41
7:A:2342:G:C5	7:A:2422:G:N2	2.89	0.41
7:A:2448:G:OP2	7:A:2449:A:H2'	2.21	0.41
7:A:2757:U:C4	7:A:2780:A:C5	3.09	0.41
8:B:41:C:O4'	12:F:73:GLU:HB2	2.20	0.41
9:C:212:MET:HE2	9:C:215:LYS:HB3	2.03	0.41
18:M:75:THR:HB	18:M:89:SER:N	2.36	0.41
19:N:89:ASP:OD1	19:N:90:ARG:N	2.50	0.41
26:U:24:LEU:HD23	26:U:24:LEU:HA	1.97	0.41
28:W:25:ARG:HG3	28:W:31:VAL:HG22	2.03	0.41
29:X:7:ILE:HD13	29:X:60:LYS:CB	2.51	0.41
1:0:53:ASP:N	1:0:53:ASP:OD1	2.53	0.40
7:A:396:G:C5	7:A:397:U:C4	3.08	0.40
7:A:633:U:H1'	7:A:651:G:H22	1.85	0.40
7:A:675:G:C6	7:A:2268:A:H2'	2.56	0.40
7:A:1208:C:H2'	7:A:1209:C:C5	2.57	0.40
7:A:1308:G:C4	7:A:1309:G:N7	2.89	0.40
7:A:1457:C:H4'	7:A:2249:C:H1'	2.03	0.40
7:A:1800:G:O2'	7:A:1801:C:H5'	2.21	0.40
7:A:1862:G:O2'	7:A:1863:G:H5'	2.22	0.40
7:A:2098:U:O5'	7:A:2098:U:H6	2.04	0.40
8:B:33:G:O2'	8:B:43:G:N7	2.42	0.40
13:G:20:GLU:O	13:G:20:GLU:HG2	2.20	0.40
15:J:8:ALA:O	15:J:10:ASP:N	2.54	0.40
19:N:100:ILE:HG22	19:N:101:GLU:H	1.86	0.40
20:O:33:LEU:N	20:O:96:VAL:O	2.53	0.40
20:O:72:LYS:C	20:O:74:ALA:H	2.24	0.40
21:P:58:PHE:HD2	21:P:75:VAL:HG22	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:T:77:LYS:HB3	25:T:77:LYS:HE2	1.82	0.40
25:T:95:LEU:CD1	25:T:98:ALA:HB3	2.52	0.40
28:W:31:VAL:O	28:W:64:ALA:HA	2.21	0.40
5:4:30:PRO:HB3	5:4:33:LYS:HE2	2.03	0.40
7:A:332:C:C4	7:A:352:A:C2	3.09	0.40
7:A:357:G:O6	7:A:441:U:O4	2.38	0.40
7:A:954:A:H2'	7:A:955:U:O4'	2.21	0.40
7:A:1030:C:H2'	7:A:1031:G:C8	2.55	0.40
7:A:1182:C:H2'	7:A:1183:A:C8	2.57	0.40
7:A:1208:C:H42	7:A:1217:A:C5'	2.32	0.40
7:A:1560:U:H6	7:A:1560:U:O5'	2.04	0.40
7:A:1613:G:O2'	7:A:1614:A:O4'	2.22	0.40
7:A:1771:G:N2	7:A:1776:A:H61	2.19	0.40
7:A:2345:U:N3	7:A:2417:U:C2	2.89	0.40
7:A:2686:A:HO2'	7:A:2687:U:H5	1.69	0.40
9:C:133:LEU:HA	9:C:136:ILE:HD12	2.02	0.40
15:J:19:ASP:HB2	15:J:21:THR:HG23	2.02	0.40
20:O:68:VAL:HG22	20:O:75:ARG:HD3	2.01	0.40
30:Y:62:ARG:HA	30:Y:62:ARG:HD2	1.77	0.40
7:A:222:G:N3	7:A:235:A:H2	2.19	0.40
7:A:275:C:H2'	7:A:276:C:C6	2.56	0.40
7:A:638:C:H3'	7:A:639:U:H5"	2.03	0.40
7:A:798:G:C2	7:A:930:G:O6	2.74	0.40
7:A:941:C:C5	17:L:23:ARG:HB3	2.57	0.40
7:A:1131:G:H8	7:A:1131:G:O5'	2.04	0.40
7:A:1182:C:N4	7:A:1236:G:O6	2.53	0.40
7:A:1349:A:H2'	7:A:1350:C:C6	2.56	0.40
7:A:1781:A:H2'	7:A:1782:A:H8	1.83	0.40
7:A:1873:C:O3'	7:A:2947:G:N2	2.54	0.40
7:A:2425:U:H3'	7:A:2426:U:C6	2.56	0.40
7:A:2675:G:H2'	7:A:2676:U:O4'	2.22	0.40
7:A:2871:A:H2'	7:A:2872:A:C8	2.57	0.40
7:A:3067:U:H4'	7:A:3068:C:H5"	2.04	0.40
8:B:14:A:H5"	8:B:15:G:C8	2.56	0.40
9:C:142:ILE:HG22	9:C:193:VAL:HA	2.02	0.40
12:F:70:GLN:HB3	12:F:102:ARG:HD2	2.03	0.40
13:G:104:LEU:HD22	13:G:106:PHE:CE2	2.57	0.40
13:G:176:LYS:HE2	13:G:176:LYS:HB3	1.82	0.40
27:V:37:GLY:HA2	27:V:97:VAL:HG22	2.04	0.40
30:Y:54:ILE:O	30:Y:58:TYR:HD2	2.04	0.40
5:4:6:SER:CB	7:A:2704:C:H5"	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:118:A:H2'	7:A:120:U:O4	2.20	0.40
7:A:214:U:O2'	7:A:215:A:O4'	2.31	0.40
7:A:272:A:H1'	7:A:459:G:N2	2.35	0.40
7:A:308:G:OP1	14:H:41:ARG:NE	2.55	0.40
7:A:374:U:H2'	7:A:375:U:H6	1.85	0.40
7:A:797:G:H2'	7:A:799:A:H62	1.86	0.40
7:A:905:G:N1	7:A:2309:C:H5"	2.36	0.40
7:A:909:G:H2'	7:A:911:A:N7	2.35	0.40
7:A:1023:U:H2'	7:A:1024:U:C6	2.56	0.40
7:A:1183:A:C6	7:A:1184:G:C8	3.09	0.40
7:A:1338:U:H2'	7:A:1339:C:C6	2.56	0.40
7:A:1387:G:N2	11:E:89:GLN:O	2.46	0.40
7:A:1779:C:H2'	7:A:1780:G:O4'	2.22	0.40
7:A:2102:C:N4	7:A:2112:U:O4	2.55	0.40
7:A:2162:C:C4	7:A:2163:C:N4	2.90	0.40
7:A:2165:A:H2'	7:A:2166:A:N7	2.36	0.40
7:A:2320:A:H2'	7:A:2321:C:C6	2.56	0.40
7:A:2873:C:H2'	7:A:2874:U:O4'	2.22	0.40
7:A:3074:G:N3	19:N:92:GLY:HA3	2.37	0.40
17:L:56:ILE:HG12	17:L:56:ILE:O	2.21	0.40
17:L:79:VAL:O	17:L:82:ILE:HG22	2.20	0.40
26:U:89:GLU:HA	26:U:93:LYS:C	2.42	0.40
29:X:4:VAL:HG12	29:X:11:GLY:HA2	2.04	0.40
4:3:57:ARG:HD2	7:A:963:C:H5'	2.03	0.40
7:A:65:G:H2'	7:A:66:C:H6	1.86	0.40
7:A:403:G:H4'	7:A:405:A:N7	2.36	0.40
7:A:476:U:H4'	7:A:477:G:O5'	2.21	0.40
7:A:889:G:H4'	7:A:2010:G:OP1	2.21	0.40
7:A:942:U:O3'	23:R:88:ARG:NH1	2.54	0.40
7:A:1214:A:C4	7:A:1215:A:C8	3.10	0.40
7:A:1273:A:H61	15:J:26:GLY:HA3	1.86	0.40
7:A:1279:C:H2'	7:A:1280:C:C6	2.56	0.40
7:A:1308:G:H2'	7:A:1309:G:C8	2.48	0.40
7:A:1365:U:H2'	7:A:1366:G:O4'	2.22	0.40
7:A:2049:A:O4'	7:A:2051:G:H1'	2.22	0.40
7:A:2190:A:H1'	7:A:2798:C:O2'	2.21	0.40
7:A:2318:C:H4'	29:X:25:THR:HG21	2.04	0.40
7:A:3033:C:H3'	7:A:3035:U:OP2	2.21	0.40
9:C:126:LYS:HB3	9:C:126:LYS:HE2	1.85	0.40
11:E:162:VAL:HG12	11:E:164:ILE:HG12	2.03	0.40
13:G:22:GLN:NE2	13:G:38:ALA:O	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G:99:LEU:HA	13:G:99:LEU:HD23	1.89	0.40
20:O:92:ILE:HD12	20:O:92:ILE:HA	1.93	0.40
29:X:27:ARG:NH1	29:X:29:TRP:CE2	2.89	0.40
30:Y:28:GLU:O	30:Y:32:LEU:HG	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	0	51/57 (90%)	38 (74%)	13 (26%)	0	100	100
2	1	46/55 (84%)	35 (76%)	11 (24%)	0	100	100
3	2	40/47 (85%)	32 (80%)	8 (20%)	0	100	100
4	3	60/64 (94%)	50 (83%)	10 (17%)	0	100	100
5	4	35/37 (95%)	27 (77%)	8 (23%)	0	100	100
6	6	43/80 (54%)	31 (72%)	12 (28%)	0	100	100
9	C	270/280 (96%)	207 (77%)	63 (23%)	0	100	100
10	D	211/217 (97%)	160 (76%)	51 (24%)	0	100	100
11	E	205/223 (92%)	166 (81%)	38 (18%)	1 (0%)	29	61
12	F	168/187 (90%)	133 (79%)	35 (21%)	0	100	100
13	G	172/179 (96%)	131 (76%)	41 (24%)	0	100	100
14	H	45/152 (30%)	37 (82%)	8 (18%)	0	100	100
15	J	144/147 (98%)	125 (87%)	19 (13%)	0	100	100
16	K	119/122 (98%)	93 (78%)	26 (22%)	0	100	100
17	L	140/146 (96%)	107 (76%)	33 (24%)	0	100	100
18	M	132/138 (96%)	109 (83%)	23 (17%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
19	N	114/180 (63%)	103 (90%)	11 (10%)	0	100 100
20	O	114/122 (93%)	93 (82%)	21 (18%)	0	100 100
21	P	110/113 (97%)	80 (73%)	30 (27%)	0	100 100
22	Q	120/129 (93%)	106 (88%)	12 (10%)	2 (2%)	9 35
23	R	96/104 (92%)	82 (85%)	12 (12%)	2 (2%)	7 31
24	S	111/197 (56%)	93 (84%)	18 (16%)	0	100 100
25	T	96/100 (96%)	81 (84%)	15 (16%)	0	100 100
26	U	86/105 (82%)	62 (72%)	24 (28%)	0	100 100
27	V	175/215 (81%)	124 (71%)	49 (28%)	2 (1%)	14 45
28	W	72/86 (84%)	51 (71%)	17 (24%)	4 (6%)	2 11
29	X	61/64 (95%)	43 (70%)	17 (28%)	1 (2%)	9 36
30	Y	63/77 (82%)	57 (90%)	6 (10%)	0	100 100
31	Z	57/65 (88%)	41 (72%)	16 (28%)	0	100 100
All	All	3156/3688 (86%)	2497 (79%)	647 (20%)	12 (0%)	38 66

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
28	W	73	ARG
28	W	74	GLY
22	Q	118	PRO
23	R	82	LYS
27	V	137	SER
28	W	72	LYS
22	Q	6	ARG
27	V	61	THR
29	X	47	LYS
11	E	73	ARG
23	R	81	ASN
28	W	75	ARG

5.3.2 Protein sidechains (i)

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

The Analysed column shows the number of residues for which the sidechain conformation was

analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	43/47 (92%)	42 (98%)	1 (2%)	50	73
2	1	45/51 (88%)	45 (100%)	0	100	100
3	2	36/40 (90%)	35 (97%)	1 (3%)	43	70
4	3	53/54 (98%)	53 (100%)	0	100	100
5	4	35/35 (100%)	34 (97%)	1 (3%)	42	69
6	6	40/66 (61%)	40 (100%)	0	100	100
9	C	212/219 (97%)	210 (99%)	2 (1%)	78	87
10	D	163/166 (98%)	160 (98%)	3 (2%)	59	78
11	E	159/172 (92%)	157 (99%)	2 (1%)	69	82
12	F	139/155 (90%)	137 (99%)	2 (1%)	67	82
13	G	143/147 (97%)	142 (99%)	1 (1%)	84	90
14	H	36/121 (30%)	36 (100%)	0	100	100
15	J	120/121 (99%)	118 (98%)	2 (2%)	60	78
16	K	100/101 (99%)	99 (99%)	1 (1%)	76	86
17	L	106/110 (96%)	106 (100%)	0	100	100
18	M	110/114 (96%)	110 (100%)	0	100	100
19	N	94/139 (68%)	94 (100%)	0	100	100
20	O	88/93 (95%)	87 (99%)	1 (1%)	73	85
21	P	98/99 (99%)	98 (100%)	0	100	100
22	Q	95/99 (96%)	94 (99%)	1 (1%)	73	85
23	R	79/83 (95%)	78 (99%)	1 (1%)	69	82
24	S	87/140 (62%)	86 (99%)	1 (1%)	73	85
25	T	82/83 (99%)	81 (99%)	1 (1%)	71	83
26	U	77/88 (88%)	76 (99%)	1 (1%)	69	82
27	V	142/164 (87%)	142 (100%)	0	100	100
28	W	54/62 (87%)	53 (98%)	1 (2%)	57	77
29	X	52/52 (100%)	50 (96%)	2 (4%)	33	62
30	Y	58/66 (88%)	58 (100%)	0	100	100
31	Z	51/55 (93%)	51 (100%)	0	100	100
All	All	2597/2942 (88%)	2572 (99%)	25 (1%)	77	86

All (25) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	24	LYS
3	2	8	PHE
5	4	22	ARG
9	C	75	VAL
9	C	272	ARG
10	D	45	ASP
10	D	51	GLN
10	D	126	THR
11	E	85	THR
11	E	104	TYR
12	F	74	VAL
12	F	157	ARG
13	G	55	ARG
15	J	47	ASN
15	J	116	ARG
16	K	64	ARG
20	O	37	ARG
22	Q	30	ARG
23	R	88	ARG
24	S	20	VAL
25	T	8	ARG
26	U	79	LYS
28	W	75	ARG
29	X	41	ARG
29	X	60	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (49) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	37	HIS
2	1	22	ASN
2	1	31	ASN
4	3	63	ASN
6	6	40	GLN
9	C	38	HIS
9	C	109	ASN
9	C	135	ASN
9	C	143	HIS
9	C	164	GLN
9	C	198	ASN
9	C	205	ASN

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Mol	Chain	Res	Type
9	C	233	HIS
9	C	245	HIS
10	D	69	GLN
10	D	99	GLN
10	D	183	HIS
10	D	189	ASN
11	E	41	HIS
11	E	47	GLN
11	E	140	GLN
12	F	26	GLN
12	F	31	ASN
12	F	34	GLN
12	F	58	ASN
12	F	83	GLN
12	F	162	ASN
13	G	7	GLN
13	G	127	GLN
14	H	44	GLN
15	J	40	HIS
15	J	132	HIS
15	J	147	GLN
16	K	91	ASN
17	L	6	HIS
17	L	88	GLN
18	M	96	ASN
19	N	77	HIS
20	O	45	GLN
22	Q	66	ASN
22	Q	72	ASN
23	R	77	HIS
25	T	63	GLN
26	U	70	ASN
27	V	44	HIS
27	V	58	HIS
27	V	82	HIS
28	W	12	ASN
28	W	29	GLN

5.3.3 RNA (i)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
7	A	3115/3138 (99%)	965 (30%)	15 (0%)
8	B	114/115 (99%)	33 (28%)	1 (0%)
All	All	3229/3253 (99%)	998 (30%)	16 (0%)

All (998) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
7	A	10	U
7	A	12	U
7	A	17	G
7	A	19	G
7	A	23	G
7	A	26	G
7	A	34	U
7	A	36	G
7	A	40	C
7	A	44	A
7	A	46	C
7	A	58	G
7	A	60	G
7	A	61	G
7	A	62	G
7	A	63	A
7	A	71	A
7	A	73	A
7	A	74	U
7	A	75	G
7	A	80	G
7	A	85	G
7	A	91	A
7	A	93	C
7	A	94	C
7	A	95	G
7	A	96	A
7	A	100	U
7	A	101	G
7	A	102	G
7	A	103	A
7	A	104	U
7	A	119	A
7	A	120	U

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Mol	Chain	Res	Type
7	A	121	G
7	A	135	C
7	A	142	U
7	A	143	G
7	A	161	G
7	A	162	A
7	A	163	A
7	A	164	U
7	A	165	A
7	A	168	U
7	A	176	G
7	A	178	G
7	A	180	G
7	A	183	A
7	A	187	C
7	A	193	A
7	A	198	A
7	A	202	U
7	A	206	A
7	A	208	U
7	A	215	A
7	A	217	G
7	A	218	A
7	A	221	A
7	A	223	A
7	A	224	A
7	A	227	C
7	A	231	U
7	A	232	G
7	A	235	A
7	A	243	A
7	A	245	U
7	A	250	G
7	A	252	G
7	A	268	G
7	A	269	G
7	A	273	A
7	A	278	C
7	A	283	A
7	A	284	U
7	A	285	G
7	A	286	G

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Mol	Chain	Res	Type
7	A	287	G
7	A	288	U
7	A	289	A
7	A	290	A
7	A	291	C
7	A	293	G
7	A	295	G
7	A	298	G
7	A	300	G
7	A	301	G
7	A	302	U
7	A	303	U
7	A	304	G
7	A	308	G
7	A	309	U
7	A	315	G
7	A	319	U
7	A	320	G
7	A	325	G
7	A	326	A
7	A	327	U
7	A	329	U
7	A	330	G
7	A	331	U
7	A	332	C
7	A	333	U
7	A	334	C
7	A	336	G
7	A	338	G
7	A	339	C
7	A	359	C
7	A	363	A
7	A	364	A
7	A	365	G
7	A	367	G
7	A	369	C
7	A	371	U
7	A	372	G
7	A	373	G
7	A	379	G
7	A	381	A
7	A	383	G

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Mol	Chain	Res	Type
7	A	385	G
7	A	386	G
7	A	394	U
7	A	413	A
7	A	414	G
7	A	415	A
7	A	428	A
7	A	429	A
7	A	432	C
7	A	436	G
7	A	442	G
7	A	443	C
7	A	446	A
7	A	447	G
7	A	449	A
7	A	452	A
7	A	453	A
7	A	460	A
7	A	475	G
7	A	476	U
7	A	477	G
7	A	478	G
7	A	479	A
7	A	480	A
7	A	488	U
7	A	491	A
7	A	494	C
7	A	496	C
7	A	500	G
7	A	504	A
7	A	506	C
7	A	523	U
7	A	526	U
7	A	532	A
7	A	533	C
7	A	534	C
7	A	537	U
7	A	539	G
7	A	544	U
7	A	547	G
7	A	552	G
7	A	562	G

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Mol	Chain	Res	Type
7	A	570	G
7	A	579	G
7	A	582	G
7	A	583	G
7	A	589	A
7	A	592	G
7	A	593	A
7	A	594	G
7	A	595	U
7	A	596	A
7	A	597	C
7	A	598	C
7	A	601	A
7	A	602	A
7	A	610	G
7	A	617	A
7	A	618	U
7	A	619	C
7	A	620	C
7	A	621	G
7	A	634	U
7	A	637	C
7	A	638	C
7	A	639	U
7	A	641	U
7	A	642	C
7	A	643	C
7	A	644	G
7	A	645	G
7	A	648	G
7	A	649	A
7	A	653	U
7	A	655	G
7	A	657	G
7	A	664	U
7	A	665	G
7	A	671	U
7	A	674	A
7	A	675	G
7	A	677	A
7	A	679	G
7	A	688	A

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Mol	Chain	Res	Type
7	A	690	U
7	A	695	G
7	A	696	A
7	A	704	C
7	A	705	A
7	A	706	A
7	A	707	G
7	A	718	G
7	A	719	U
7	A	720	G
7	A	726	G
7	A	734	G
7	A	735	A
7	A	738	G
7	A	741	A
7	A	742	G
7	A	746	G
7	A	749	U
7	A	750	A
7	A	754	C
7	A	756	A
7	A	757	C
7	A	758	C
7	A	759	C
7	A	762	A
7	A	763	C
7	A	765	C
7	A	769	U
7	A	770	A
7	A	771	C
7	A	772	G
7	A	773	C
7	A	775	C
7	A	776	G
7	A	779	U
7	A	780	G
7	A	781	A
7	A	783	U
7	A	790	G
7	A	797	G
7	A	798	G
7	A	803	G

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Mol	Chain	Res	Type
7	A	806	G
7	A	814	A
7	A	815	U
7	A	830	G
7	A	841	G
7	A	843	U
7	A	844	A
7	A	845	A
7	A	846	G
7	A	851	C
7	A	856	A
7	A	857	G
7	A	858	G
7	A	859	C
7	A	869	C
7	A	875	U
7	A	876	U
7	A	877	G
7	A	878	A
7	A	885	A
7	A	887	G
7	A	891	U
7	A	893	A
7	A	904	G
7	A	905	G
7	A	911	A
7	A	912	A
7	A	913	G
7	A	914	G
7	A	918	A
7	A	919	U
7	A	921	A
7	A	922	A
7	A	923	A
7	A	930	G
7	A	934	G
7	A	941	C
7	A	956	U
7	A	957	U
7	A	959	G
7	A	962	G
7	A	967	G

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Mol	Chain	Res	Type
7	A	968	U
7	A	975	G
7	A	976	U
7	A	977	U
7	A	978	C
7	A	979	A
7	A	985	G
7	A	988	G
7	A	996	A
7	A	1000	G
7	A	1001	A
7	A	1004	G
7	A	1007	G
7	A	1008	A
7	A	1009	U
7	A	1010	G
7	A	1025	A
7	A	1028	G
7	A	1029	A
7	A	1031	G
7	A	1036	C
7	A	1039	A
7	A	1043	C
7	A	1044	C
7	A	1048	U
7	A	1059	A
7	A	1060	A
7	A	1063	C
7	A	1066	G
7	A	1074	G
7	A	1084	G
7	A	1089	G
7	A	1096	A
7	A	1102	A
7	A	1103	A
7	A	1111	C
7	A	1113	G
7	A	1118	G
7	A	1119	A
7	A	1125	G
7	A	1126	G
7	A	1136	C

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Mol	Chain	Res	Type
7	A	1137	C
7	A	1141	C
7	A	1142	G
7	A	1146	G
7	A	1150	A
7	A	1151	G
7	A	1154	G
7	A	1155	G
7	A	1162	U
7	A	1163	G
7	A	1167	A
7	A	1174	A
7	A	1181	C
7	A	1186	A
7	A	1187	G
7	A	1189	U
7	A	1190	U
7	A	1191	G
7	A	1192	G
7	A	1193	C
7	A	1196	A
7	A	1197	G
7	A	1198	A
7	A	1199	A
7	A	1200	G
7	A	1201	C
7	A	1202	A
7	A	1207	C
7	A	1209	C
7	A	1210	U
7	A	1211	U
7	A	1212	G
7	A	1213	A
7	A	1214	A
7	A	1216	G
7	A	1217	A
7	A	1218	G
7	A	1219	U
7	A	1225	A
7	A	1227	A
7	A	1228	G
7	A	1231	C

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Mol	Chain	Res	Type
7	A	1234	U
7	A	1239	A
7	A	1240	A
7	A	1241	G
7	A	1242	U
7	A	1244	A
7	A	1246	U
7	A	1247	G
7	A	1249	G
7	A	1257	A
7	A	1261	U
7	A	1262	A
7	A	1264	C
7	A	1265	G
7	A	1271	C
7	A	1272	A
7	A	1286	A
7	A	1287	G
7	A	1292	G
7	A	1293	G
7	A	1294	C
7	A	1296	C
7	A	1300	C
7	A	1301	A
7	A	1302	C
7	A	1304	U
7	A	1305	U
7	A	1306	G
7	A	1308	G
7	A	1313	G
7	A	1320	U
7	A	1335	C
7	A	1341	G
7	A	1342	C
7	A	1343	G
7	A	1355	U
7	A	1356	G
7	A	1358	C
7	A	1367	G
7	A	1368	A
7	A	1369	G
7	A	1371	G

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Mol	Chain	Res	Type
7	A	1372	U
7	A	1378	A
7	A	1379	G
7	A	1380	U
7	A	1384	A
7	A	1386	U
7	A	1387	G
7	A	1388	C
7	A	1396	A
7	A	1401	C
7	A	1402	G
7	A	1403	A
7	A	1404	C
7	A	1405	A
7	A	1406	A
7	A	1416	G
7	A	1418	A
7	A	1419	C
7	A	1423	G
7	A	1425	C
7	A	1431	A
7	A	1432	A
7	A	1433	A
7	A	1437	C
7	A	1439	A
7	A	1444	U
7	A	1446	C
7	A	1451	C
7	A	1453	A
7	A	1457	C
7	A	1460	U
7	A	1463	G
7	A	1476	C
7	A	1477	G
7	A	1480	A
7	A	1481	C
7	A	1483	U
7	A	1491	G
7	A	1496	A
7	A	1497	C
7	A	1499	G
7	A	1509	A

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Mol	Chain	Res	Type
7	A	1510	U
7	A	1515	A
7	A	1526	A
7	A	1527	U
7	A	1530	C
7	A	1532	G
7	A	1534	A
7	A	1542	G
7	A	1543	U
7	A	1550	C
7	A	1553	U
7	A	1556	C
7	A	1557	G
7	A	1558	A
7	A	1560	U
7	A	1561	C
7	A	1568	A
7	A	1570	U
7	A	1571	A
7	A	1572	A
7	A	1573	C
7	A	1574	C
7	A	1575	A
7	A	1579	A
7	A	1582	A
7	A	1586	G
7	A	1589	C
7	A	1591	A
7	A	1592	U
7	A	1594	A
7	A	1596	U
7	A	1597	C
7	A	1598	C
7	A	1599	C
7	A	1600	C
7	A	1601	U
7	A	1603	C
7	A	1605	G
7	A	1606	G
7	A	1610	G
7	A	1612	G
7	A	1613	G

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Mol	Chain	Res	Type
7	A	1614	A
7	A	1615	G
7	A	1623	G
7	A	1624	C
7	A	1625	U
7	A	1626	G
7	A	1627	C
7	A	1628	G
7	A	1635	C
7	A	1636	U
7	A	1640	C
7	A	1641	U
7	A	1646	G
7	A	1649	G
7	A	1650	U
7	A	1651	C
7	A	1652	A
7	A	1653	A
7	A	1654	G
7	A	1656	G
7	A	1657	A
7	A	1658	A
7	A	1659	G
7	A	1665	A
7	A	1666	C
7	A	1670	G
7	A	1675	G
7	A	1681	G
7	A	1684	C
7	A	1689	C
7	A	1690	A
7	A	1691	G
7	A	1692	U
7	A	1693	G
7	A	1695	U
7	A	1696	A
7	A	1697	A
7	A	1698	C
7	A	1703	G
7	A	1711	C
7	A	1712	G
7	A	1714	U

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Mol	Chain	Res	Type
7	A	1715	A
7	A	1718	G
7	A	1720	G
7	A	1721	A
7	A	1723	C
7	A	1727	A
7	A	1730	C
7	A	1731	A
7	A	1734	U
7	A	1738	U
7	A	1741	C
7	A	1744	A
7	A	1746	U
7	A	1747	A
7	A	1748	A
7	A	1749	U
7	A	1759	U
7	A	1763	G
7	A	1767	A
7	A	1770	C
7	A	1773	U
7	A	1776	A
7	A	1777	G
7	A	1778	G
7	A	1781	A
7	A	1791	U
7	A	1796	U
7	A	1803	A
7	A	1804	A
7	A	1806	A
7	A	1807	A
7	A	1816	A
7	A	1820	A
7	A	1825	A
7	A	1830	C
7	A	1842	C
7	A	1843	A
7	A	1845	A
7	A	1847	C
7	A	1851	A
7	A	1853	A
7	A	1862	G

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Mol	Chain	Res	Type
7	A	1869	C
7	A	1878	G
7	A	1881	U
7	A	1882	A
7	A	1883	C
7	A	1886	G
7	A	1888	U
7	A	1892	U
7	A	1897	U
7	A	1899	A
7	A	1901	G
7	A	1907	C
7	A	1909	G
7	A	1917	C
7	A	1929	C
7	A	1948	A
7	A	1950	A
7	A	1951	U
7	A	1952	C
7	A	1955	G
7	A	1956	A
7	A	1959	A
7	A	1960	C
7	A	1962	C
7	A	1963	U
7	A	1964	U
7	A	1965	G
7	A	1967	G
7	A	1969	U
7	A	1972	G
7	A	1973	A
7	A	1976	G
7	A	1987	G
7	A	1990	G
7	A	1991	A
7	A	1992	A
7	A	1996	A
7	A	1998	U
7	A	2003	A
7	A	2007	A
7	A	2010	G
7	A	2016	U

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Mol	Chain	Res	Type
7	A	2020	A
7	A	2021	A
7	A	2022	C
7	A	2025	A
7	A	2028	U
7	A	2034	C
7	A	2035	G
7	A	2037	A
7	A	2041	G
7	A	2043	A
7	A	2049	A
7	A	2050	U
7	A	2051	G
7	A	2063	A
7	A	2072	C
7	A	2073	G
7	A	2080	G
7	A	2081	A
7	A	2082	A
7	A	2083	G
7	A	2100	A
7	A	2105	G
7	A	2106	C
7	A	2107	A
7	A	2108	A
7	A	2109	G
7	A	2110	G
7	A	2118	G
7	A	2119	G
7	A	2122	A
7	A	2123	A
7	A	2125	U
7	A	2126	U
7	A	2143	C
7	A	2144	G
7	A	2146	U
7	A	2147	G
7	A	2149	U
7	A	2150	A
7	A	2152	C
7	A	2153	U
7	A	2155	U

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Mol	Chain	Res	Type
7	A	2156	A
7	A	2158	C
7	A	2160	A
7	A	2161	U
7	A	2163	C
7	A	2166	A
7	A	2167	G
7	A	2168	G
7	A	2172	C
7	A	2174	A
7	A	2175	A
7	A	2176	A
7	A	2179	C
7	A	2180	C
7	A	2182	U
7	A	2184	U
7	A	2190	A
7	A	2193	U
7	A	2201	U
7	A	2202	G
7	A	2204	A
7	A	2205	C
7	A	2208	A
7	A	2209	U
7	A	2210	G
7	A	2215	A
7	A	2226	A
7	A	2229	U
7	A	2252	A
7	A	2258	A
7	A	2259	C
7	A	2260	U
7	A	2261	A
7	A	2269	A
7	A	2270	G
7	A	2272	U
7	A	2273	G
7	A	2275	U
7	A	2276	C
7	A	2281	C
7	A	2287	G
7	A	2290	G

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Mol	Chain	Res	Type
7	A	2293	C
7	A	2294	G
7	A	2297	A
7	A	2298	A
7	A	2299	G
7	A	2301	C
7	A	2313	C
7	A	2314	A
7	A	2317	A
7	A	2324	G
7	A	2329	U
7	A	2330	G
7	A	2334	U
7	A	2337	G
7	A	2338	G
7	A	2339	U
7	A	2341	C
7	A	2342	G
7	A	2344	U
7	A	2345	U
7	A	2347	G
7	A	2348	U
7	A	2349	G
7	A	2350	U
7	A	2351	A
7	A	2352	G
7	A	2353	G
7	A	2355	U
7	A	2356	A
7	A	2357	G
7	A	2358	G
7	A	2359	U
7	A	2360	G
7	A	2361	G
7	A	2362	G
7	A	2363	A
7	A	2364	G
7	A	2366	C
7	A	2367	U
7	A	2368	G
7	A	2369	U
7	A	2370	G

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Mol	Chain	Res	Type
7	A	2371	A
7	A	2372	A
7	A	2374	C
7	A	2376	U
7	A	2377	C
7	A	2378	G
7	A	2379	A
7	A	2380	C
7	A	2381	G
7	A	2382	C
7	A	2383	C
7	A	2384	A
7	A	2386	U
7	A	2387	U
7	A	2388	G
7	A	2390	G
7	A	2391	G
7	A	2392	C
7	A	2393	G
7	A	2394	G
7	A	2395	A
7	A	2396	G
7	A	2397	U
7	A	2398	C
7	A	2401	U
7	A	2403	U
7	A	2404	U
7	A	2409	U
7	A	2410	A
7	A	2413	A
7	A	2414	C
7	A	2416	C
7	A	2417	U
7	A	2419	A
7	A	2420	U
7	A	2421	C
7	A	2424	A
7	A	2428	G
7	A	2435	A
7	A	2439	U
7	A	2440	C
7	A	2446	C

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Mol	Chain	Res	Type
7	A	2447	U
7	A	2448	G
7	A	2449	A
7	A	2450	A
7	A	2451	U
7	A	2457	U
7	A	2461	G
7	A	2463	A
7	A	2467	U
7	A	2476	G
7	A	2477	G
7	A	2478	U
7	A	2487	U
7	A	2488	G
7	A	2504	A
7	A	2511	A
7	A	2516	A
7	A	2521	C
7	A	2522	C
7	A	2525	A
7	A	2526	A
7	A	2543	A
7	A	2545	G
7	A	2546	G
7	A	2548	A
7	A	2549	A
7	A	2555	U
7	A	2557	G
7	A	2558	C
7	A	2563	G
7	A	2570	C
7	A	2572	C
7	A	2573	A
7	A	2574	A
7	A	2583	G
7	A	2585	C
7	A	2588	C
7	A	2592	A
7	A	2596	A
7	A	2615	A
7	A	2621	G
7	A	2623	A

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Mol	Chain	Res	Type
7	A	2627	G
7	A	2630	A
7	A	2632	C
7	A	2637	A
7	A	2640	C
7	A	2644	A
7	A	2648	G
7	A	2661	U
7	A	2662	C
7	A	2666	G
7	A	2667	G
7	A	2674	G
7	A	2677	A
7	A	2678	C
7	A	2679	C
7	A	2683	G
7	A	2685	G
7	A	2686	A
7	A	2694	C
7	A	2707	A
7	A	2711	U
7	A	2712	C
7	A	2714	A
7	A	2715	U
7	A	2720	A
7	A	2725	A
7	A	2729	U
7	A	2736	C
7	A	2742	U
7	A	2743	G
7	A	2744	U
7	A	2751	G
7	A	2756	A
7	A	2758	C
7	A	2763	G
7	A	2767	G
7	A	2772	A
7	A	2781	G
7	A	2789	C
7	A	2793	U
7	A	2794	C
7	A	2795	G

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Mol	Chain	Res	Type
7	A	2798	C
7	A	2802	A
7	A	2804	A
7	A	2805	G
7	A	2806	C
7	A	2811	C
7	A	2816	G
7	A	2823	U
7	A	2824	U
7	A	2830	G
7	A	2834	U
7	A	2839	C
7	A	2840	A
7	A	2847	U
7	A	2848	C
7	A	2851	U
7	A	2853	U
7	A	2861	G
7	A	2868	A
7	A	2869	G
7	A	2870	A
7	A	2871	A
7	A	2874	U
7	A	2876	G
7	A	2879	G
7	A	2882	A
7	A	2894	U
7	A	2897	G
7	A	2905	C
7	A	2911	G
7	A	2912	G
7	A	2923	G
7	A	2927	C
7	A	2928	A
7	A	2940	G
7	A	2942	C
7	A	2943	A
7	A	2945	G
7	A	2949	A
7	A	2952	G
7	A	2956	G
7	A	2964	C

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Mol	Chain	Res	Type
7	A	2970	G
7	A	2971	U
7	A	2977	U
7	A	2986	A
7	A	2987	A
7	A	2989	G
7	A	2990	C
7	A	2995	A
7	A	2998	C
7	A	3002	A
7	A	3004	A
7	A	3007	U
7	A	3008	U
7	A	3016	A
7	A	3028	A
7	A	3029	C
7	A	3030	C
7	A	3033	C
7	A	3034	U
7	A	3038	U
7	A	3043	U
7	A	3045	A
7	A	3053	C
7	A	3061	A
7	A	3069	A
7	A	3070	A
7	A	3071	U
7	A	3084	G
7	A	3086	A
7	A	3093	U
7	A	3094	A
7	A	3099	G
7	A	3101	G
7	A	3102	U
7	A	3107	A
7	A	3109	C
7	A	3114	G
7	A	3118	A
7	A	3119	C
7	A	3120	C
7	A	3121	G
7	A	3122	G

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Mol	Chain	Res	Type
7	A	3124	C
7	A	3126	A
7	A	3127	A
7	A	3128	A
7	A	3129	A
7	A	3130	C
7	A	3132	U
8	B	3	A
8	B	4	C
8	B	10	C
8	B	11	C
8	B	14	A
8	B	17	G
8	B	18	G
8	B	20	A
8	B	26	A
8	B	28	G
8	B	33	G
8	B	39	U
8	B	40	U
8	B	44	A
8	B	51	A
8	B	52	A
8	B	53	G
8	B	56	A
8	B	60	C
8	B	62	G
8	B	64	C
8	B	65	A
8	B	66	G
8	B	68	G
8	B	85	U
8	B	86	C
8	B	89	G
8	B	101	G
8	B	105	A
8	B	107	C
8	B	108	G
8	B	110	C
8	B	115	A

All (16) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
7	A	175	C
7	A	301	G
7	A	771	C
7	A	855	G
7	A	975	G
7	A	1042	U
7	A	1496	A
7	A	1567	U
7	A	1605	G
7	A	1623	G
7	A	1795	C
7	A	1958	C
7	A	2179	C
7	A	2338	G
7	A	2994	U
8	B	27	C

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
32	CTY	A	3201	-	54,54,54	2.07	18 (33%)	83,83,83	2.05	20 (24%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
32	CTY	A	3201	-	-	35/75/110/110	0/3/3/3

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
32	A	3201	CTY	O9-C26	5.55	1.55	1.44
32	A	3201	CTY	O2-C1	4.64	1.45	1.34
32	A	3201	CTY	O4-C18	4.57	1.55	1.44
32	A	3201	CTY	C25-C24	-3.98	1.45	1.53
32	A	3201	CTY	C21-C18	-3.93	1.42	1.51
32	A	3201	CTY	C19-C16	3.29	1.59	1.52
32	A	3201	CTY	O13-C12	-3.01	1.39	1.44
32	A	3201	CTY	C23-C24	-2.89	1.47	1.53
32	A	3201	CTY	C27-C26	-2.82	1.39	1.51
32	A	3201	CTY	C15-C14	-2.81	1.45	1.51
32	A	3201	CTY	C15-C16	-2.75	1.46	1.52
32	A	3201	CTY	O10-C6	-2.56	1.39	1.44
32	A	3201	CTY	O3-C3	-2.49	1.37	1.43
32	A	3201	CTY	C10-C11	-2.33	1.51	1.54
32	A	3201	CTY	O2-C13	-2.28	1.42	1.46
32	A	3201	CTY	O4-C14	2.27	1.48	1.42
32	A	3201	CTY	C24-N1	2.10	1.52	1.48
32	A	3201	CTY	C16-C17	-2.06	1.48	1.53

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
32	A	3201	CTY	O5-C16-C17	7.37	114.73	103.81
32	A	3201	CTY	C19-C16-C15	-5.43	100.79	110.49
32	A	3201	CTY	C15-C16-C17	4.60	115.91	107.67
32	A	3201	CTY	C36-C13-C12	-4.28	107.08	115.20
32	A	3201	CTY	C6-C5-C4	-4.16	107.23	113.61
32	A	3201	CTY	O5-C16-C19	-3.95	104.34	110.92
32	A	3201	CTY	C12-C11-C10	-3.65	111.86	116.43
32	A	3201	CTY	C16-C17-C18	3.64	116.71	111.14
32	A	3201	CTY	C34-C10-C11	-3.60	109.89	114.38
32	A	3201	CTY	C32-C6-C7	-3.54	105.54	111.12
32	A	3201	CTY	C21-C18-C17	-3.22	107.08	112.57
32	A	3201	CTY	C7-C8-C9	-3.05	108.09	113.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
32	A	3201	CTY	O2-C1-C2	2.74	117.57	111.56
32	A	3201	CTY	O2-C13-C12	2.59	111.51	107.29
32	A	3201	CTY	C6-C7-C8	-2.56	111.76	116.11
32	A	3201	CTY	C22-O9-C26	2.56	116.96	112.91
32	A	3201	CTY	C19-C16-C17	-2.33	106.47	111.24
32	A	3201	CTY	C20-O5-C16	2.31	122.37	117.55
32	A	3201	CTY	C31-C4-C5	-2.04	108.14	112.55
32	A	3201	CTY	C26-C25-C24	-2.02	106.92	110.46

There are no chirality outliers.

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
32	A	3201	CTY	C9-C10-C11-C12
32	A	3201	CTY	C9-C10-C11-O12
32	A	3201	CTY	C34-C10-C11-C12
32	A	3201	CTY	C34-C10-C11-O12
32	A	3201	CTY	C10-C11-C12-C35
32	A	3201	CTY	C10-C11-C12-O13
32	A	3201	CTY	O13-C12-C13-O2
32	A	3201	CTY	O13-C12-C13-C36
32	A	3201	CTY	O2-C13-C36-C37
32	A	3201	CTY	C4-C5-C6-C7
32	A	3201	CTY	C4-C5-C6-O10
32	A	3201	CTY	O7-C5-C6-C32
32	A	3201	CTY	C15-C14-O3-C3
32	A	3201	CTY	O4-C14-O3-C3
32	A	3201	CTY	C17-C16-O5-C20
32	A	3201	CTY	C19-C16-O5-C20
32	A	3201	CTY	O1-C1-O2-C13
32	A	3201	CTY	C2-C1-O2-C13
32	A	3201	CTY	C36-C13-O2-C1
32	A	3201	CTY	C12-C13-O2-C1
32	A	3201	CTY	O9-C22-O7-C5
32	A	3201	CTY	C12-C13-C36-C37
32	A	3201	CTY	C35-C12-C13-O2
32	A	3201	CTY	C35-C12-C13-C36
32	A	3201	CTY	C11-C12-C13-O2
32	A	3201	CTY	C11-C12-C13-C36
32	A	3201	CTY	C33-C8-C9-O11
32	A	3201	CTY	O12-C11-C12-O13
32	A	3201	CTY	O12-C11-C12-C13

Continued on next page...

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Mol	Chain	Res	Type	Atoms
32	A	3201	CTY	O7-C5-C6-C7
32	A	3201	CTY	C33-C8-C9-C10
32	A	3201	CTY	C15-C16-O5-C20
32	A	3201	CTY	C23-C22-O7-C5
32	A	3201	CTY	C34-C10-C9-C8
32	A	3201	CTY	C7-C8-C9-O11

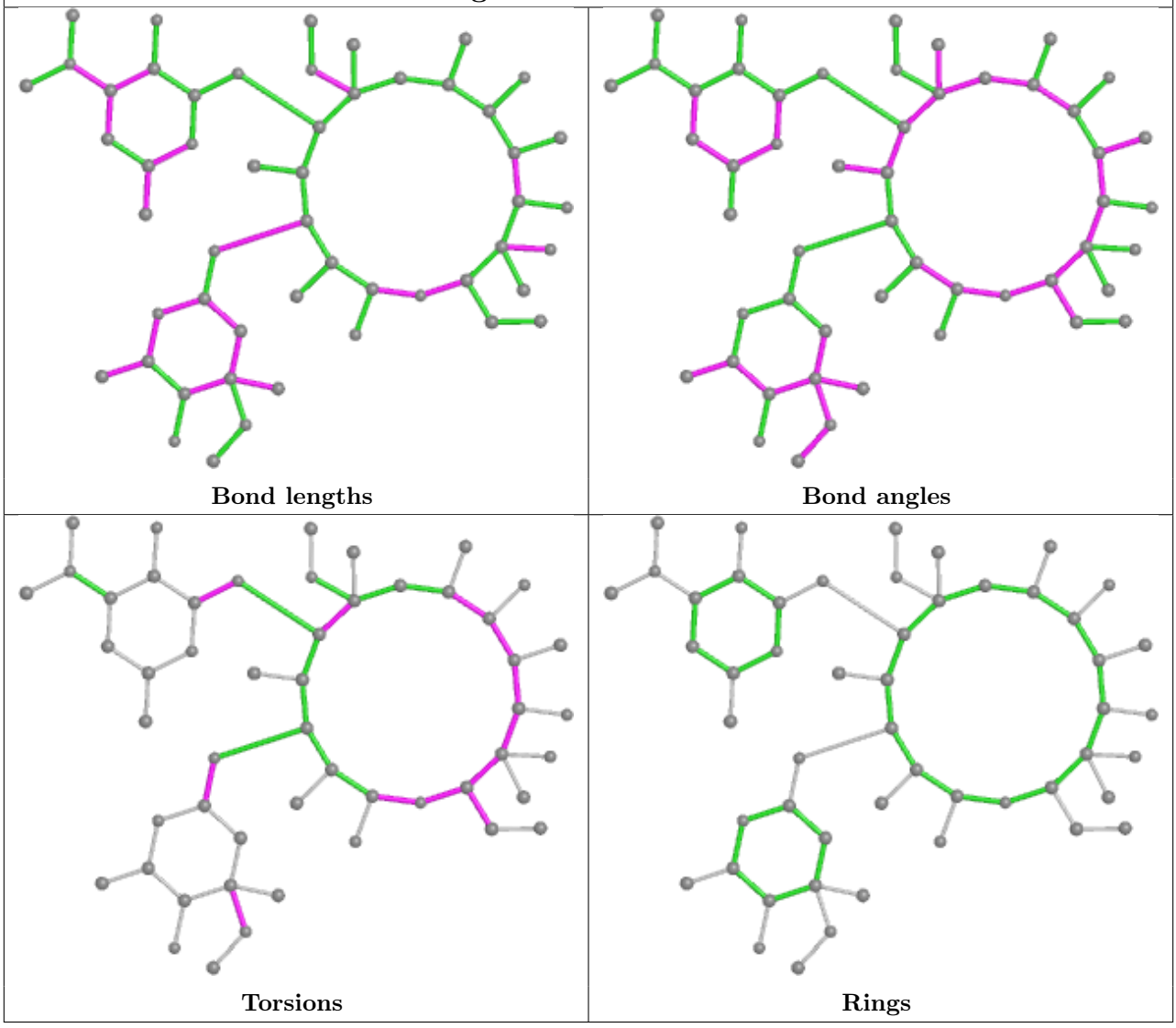
There are no ring outliers.

1 monomer is involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
32	A	3201	CTY	9	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand CTY A 3201



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.

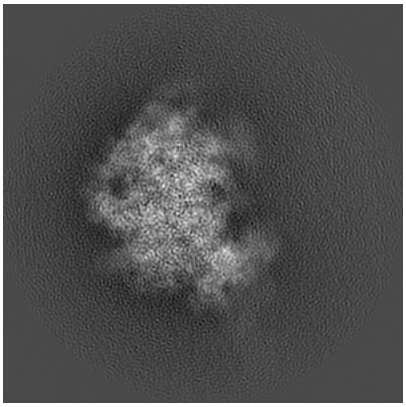
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-31398. These allow visual inspection of the internal detail of the map and identification of artifacts.

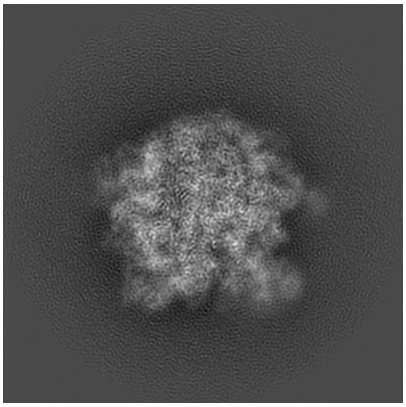
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

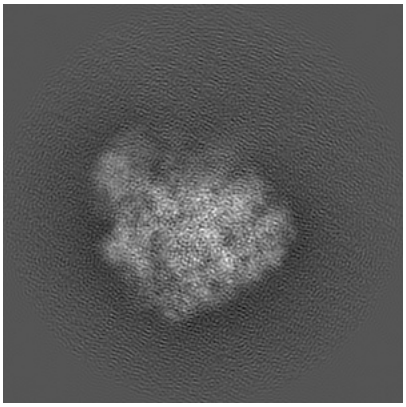
6.1.1 Primary map



X



Y

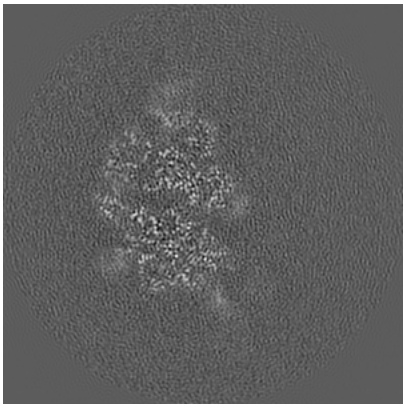


Z

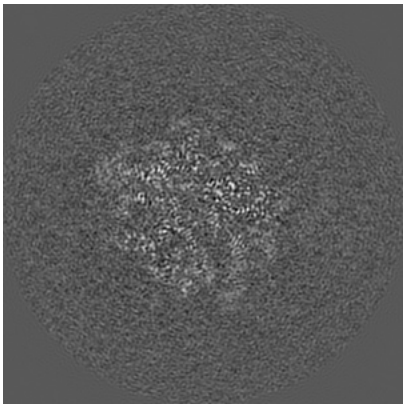
The images above show the map projected in three orthogonal directions.

6.2 Central slices

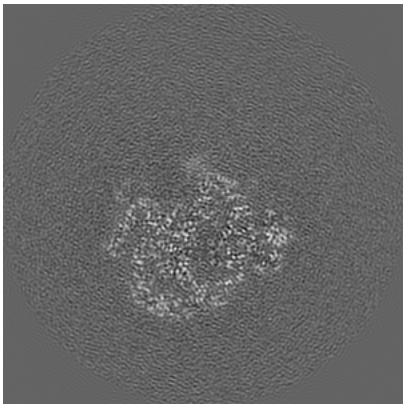
6.2.1 Primary map



X Index: 180



Y Index: 180

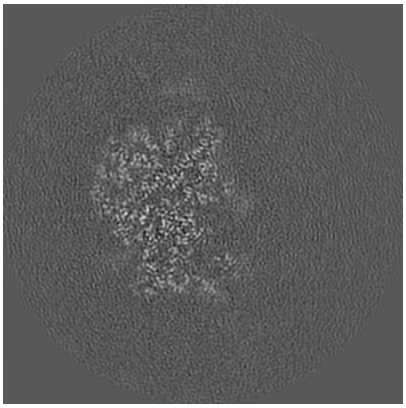


Z Index: 180

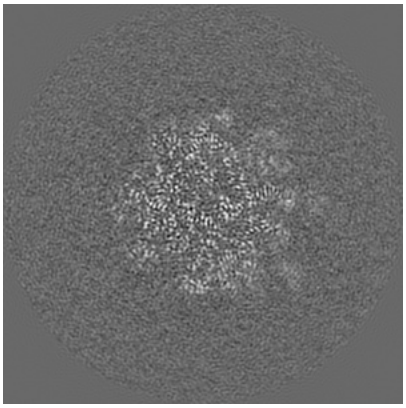
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

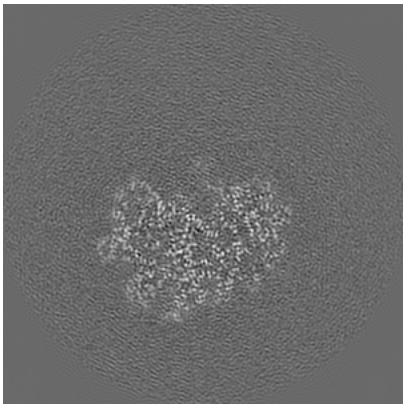
6.3.1 Primary map



X Index: 172



Y Index: 156

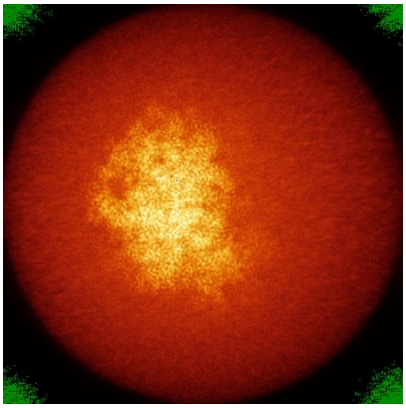


Z Index: 169

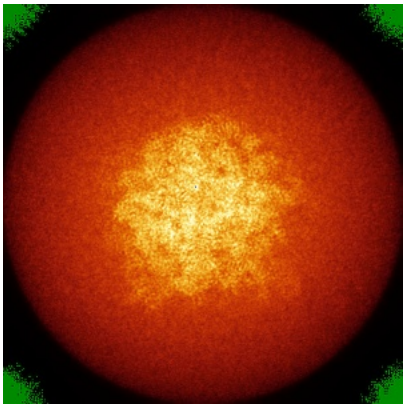
The images above show the largest variance slices of the map in three orthogonal directions.

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

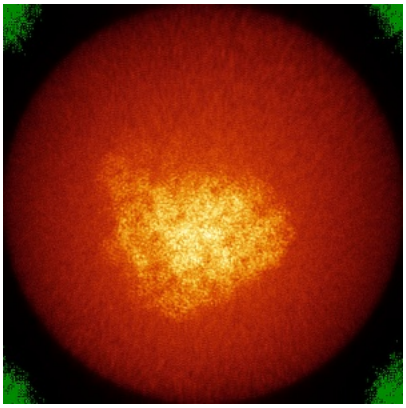
6.4.1 Primary map



X



Y

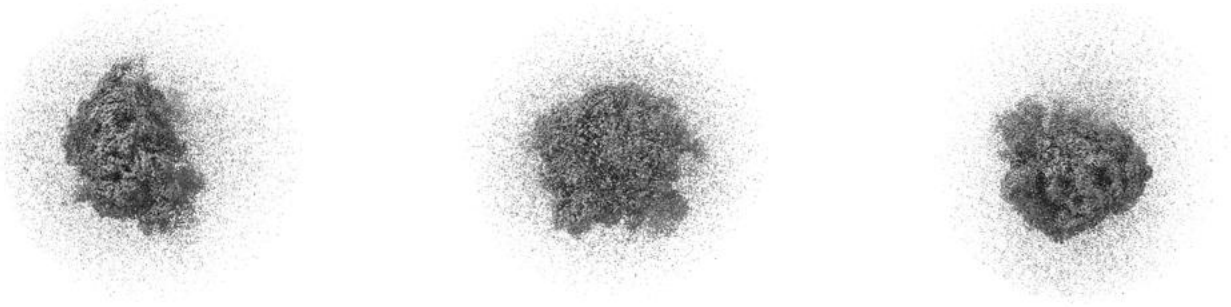


Z

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 0.015. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

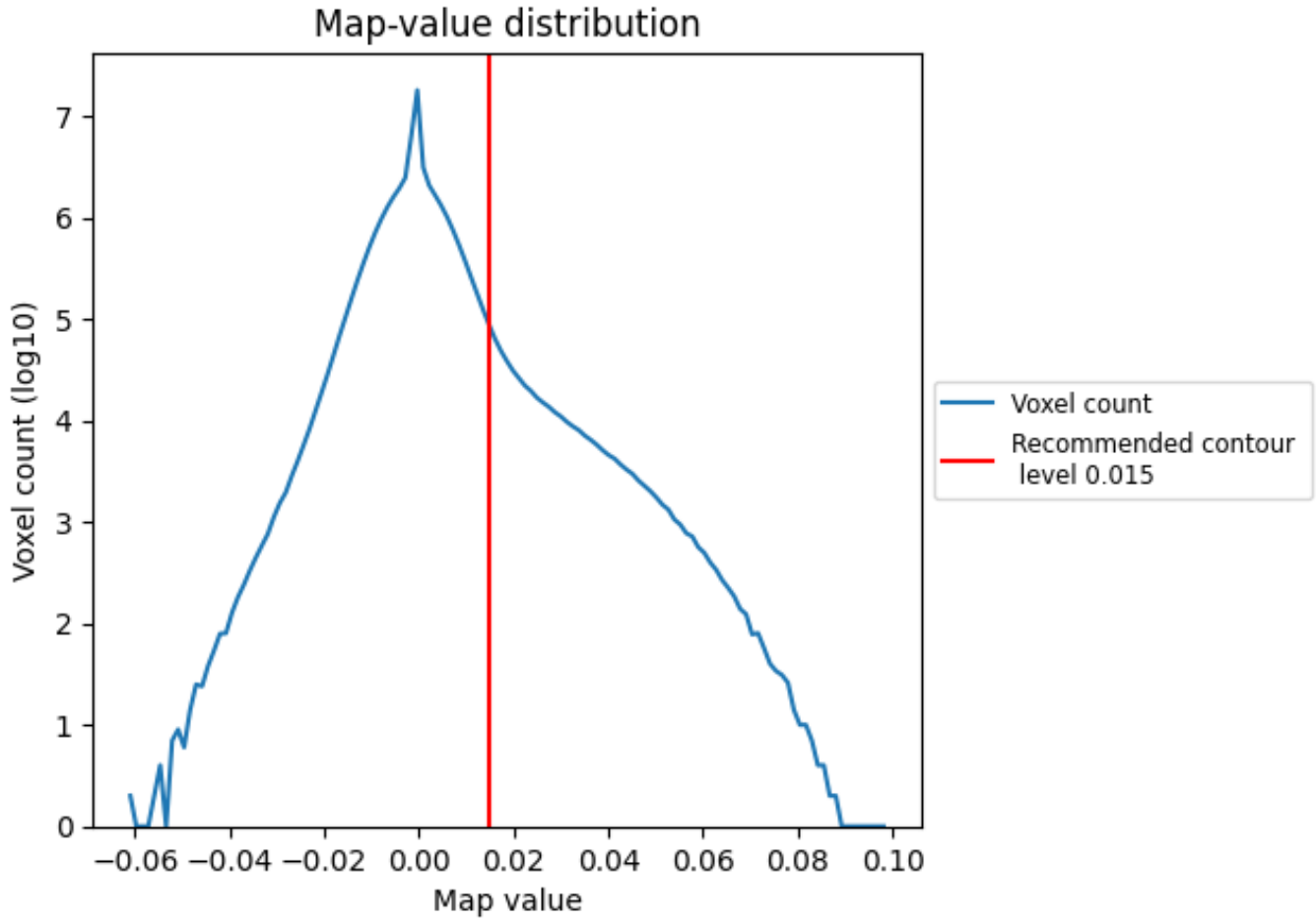
6.6 Mask visualisation (i)

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

7 Map analysis

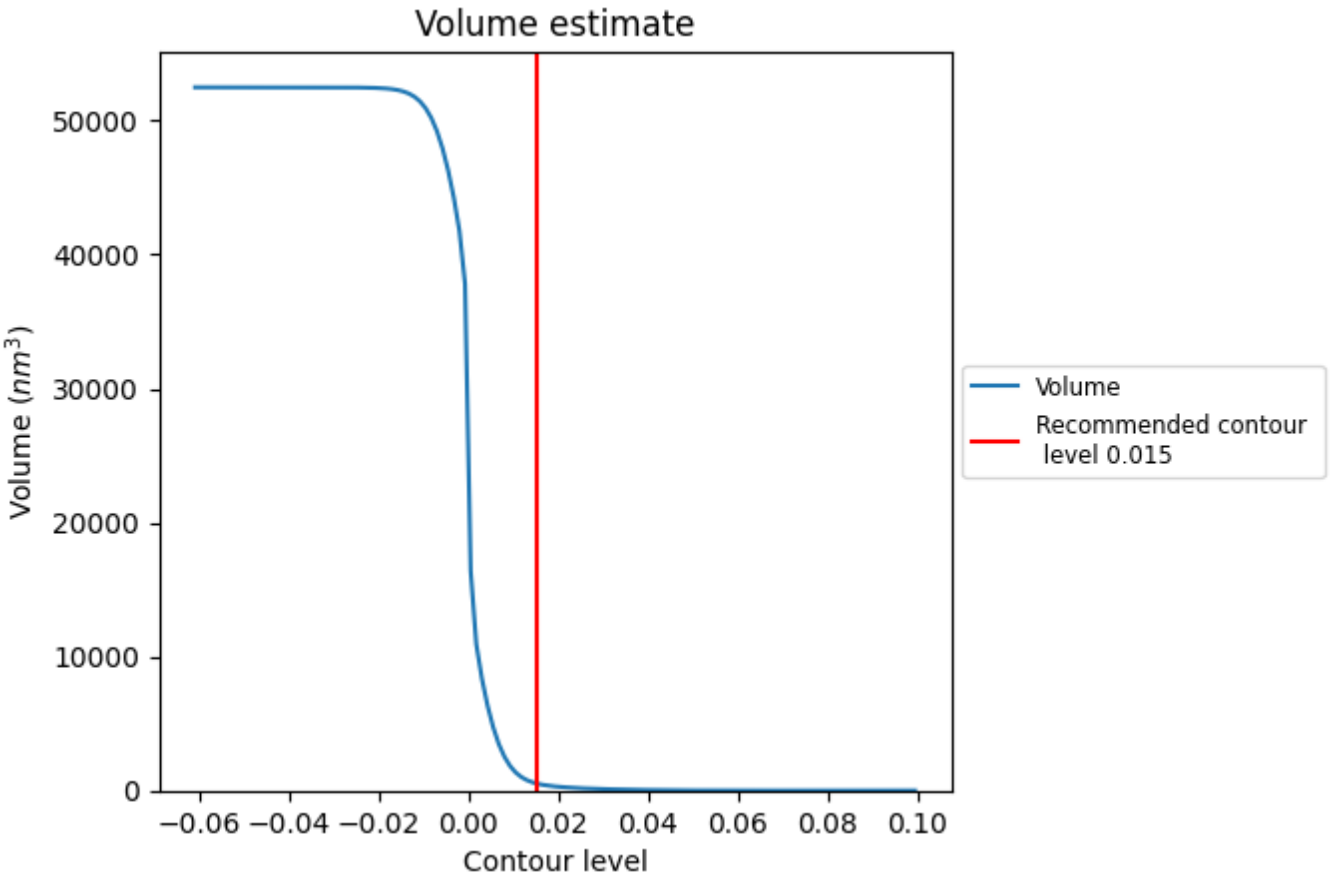
This section contains the results of statistical analysis of the map.

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.

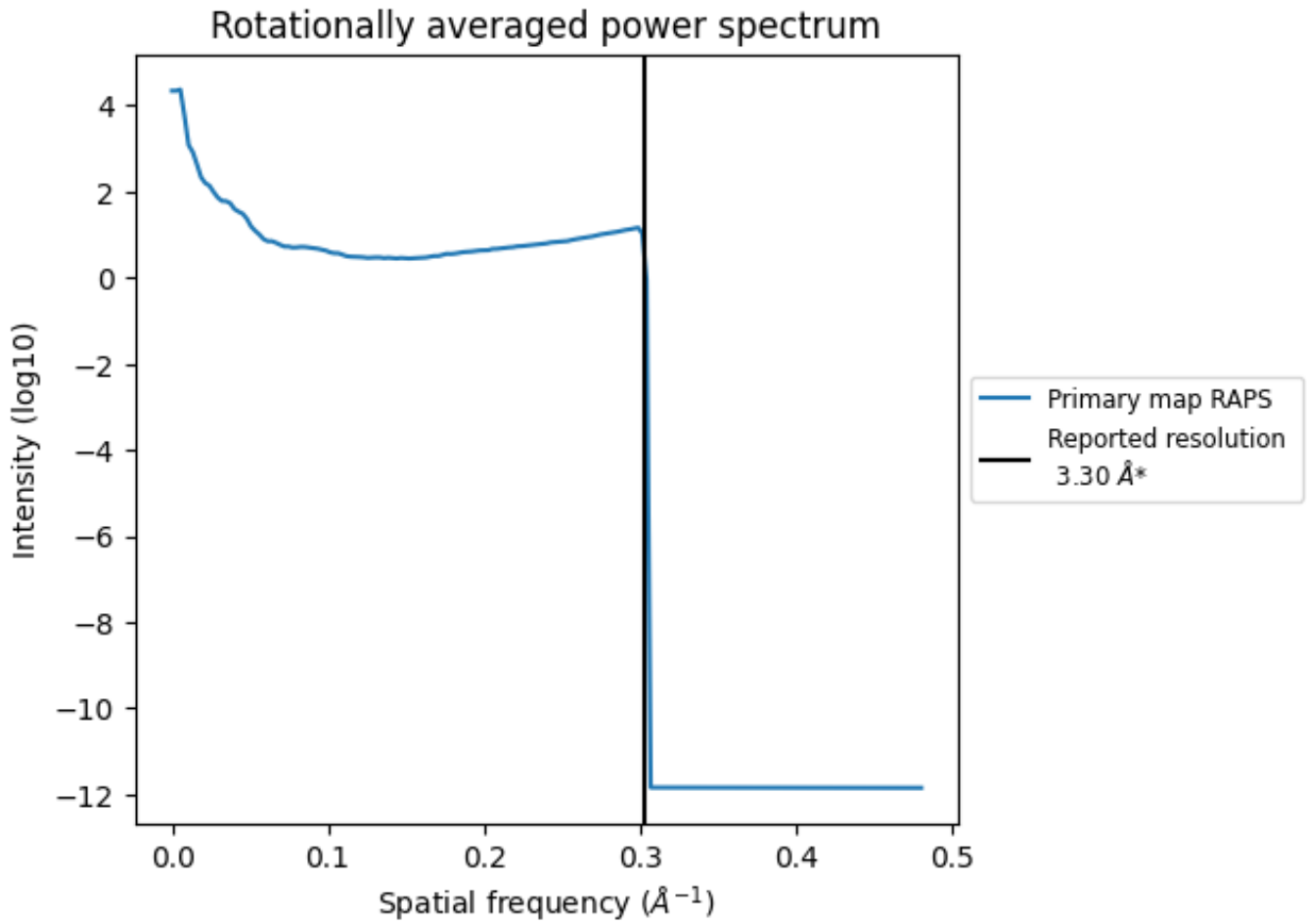
7.2 Volume estimate



The volume at the recommended contour level is 540 nm^3; this corresponds to an approximate mass of 488 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 0.303 Å^{-1}

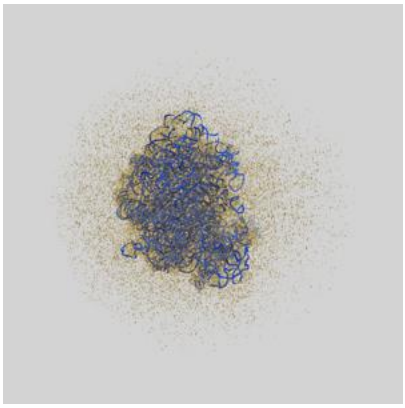
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

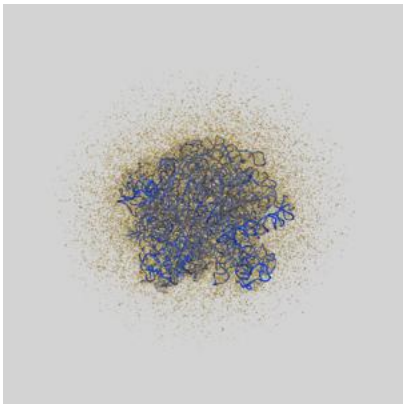
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-31398 and PDB model 7F0D. Per-residue inclusion information can be found in section 3 on page 10.

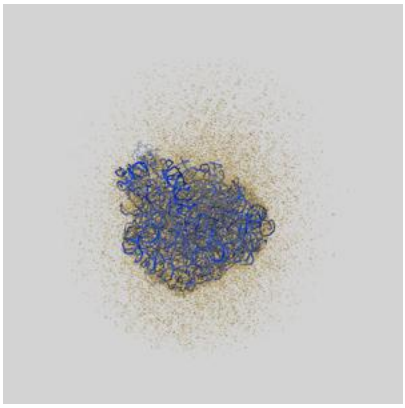
9.1 Map-model overlay



X



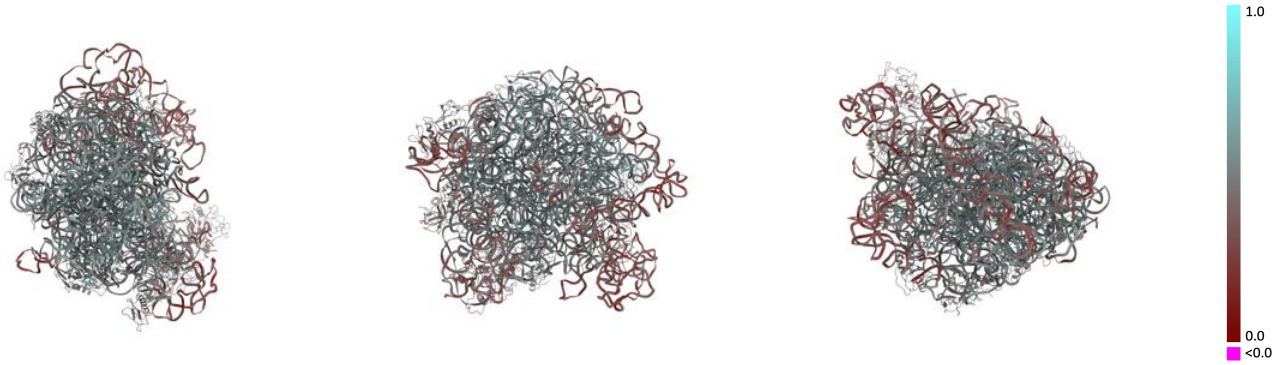
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.015 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.

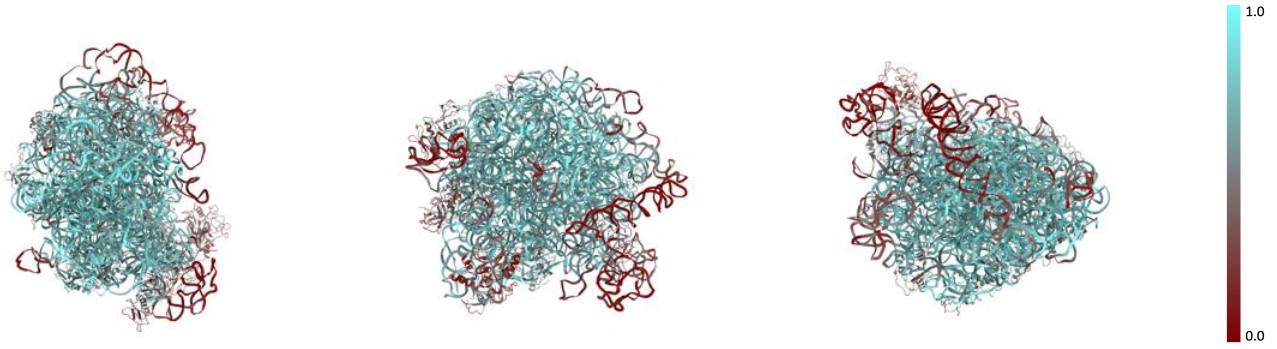
9.2 Q-score mapped to coordinate model (i)



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.

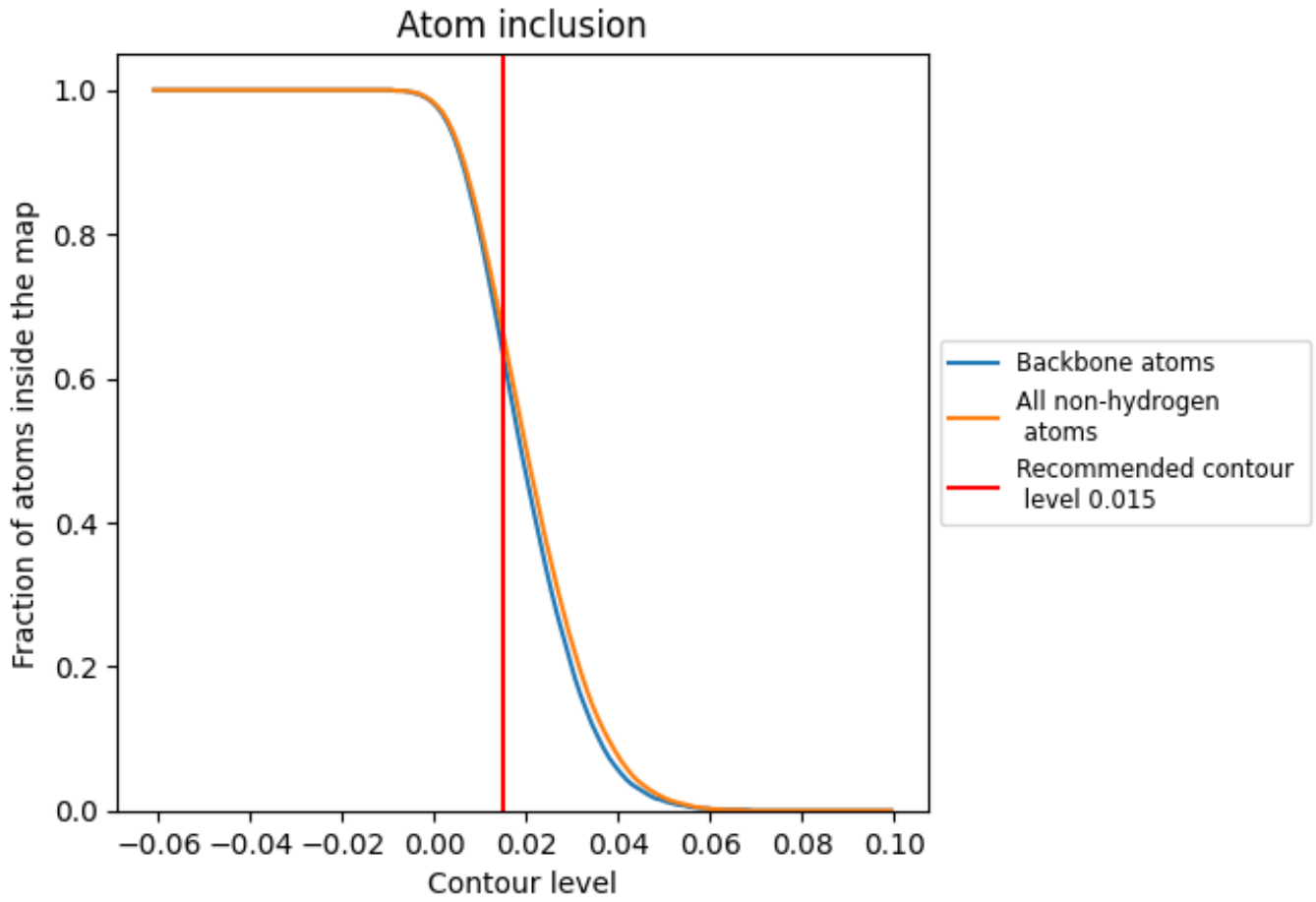
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.015).

9.4 Atom inclusion (i)



At the recommended contour level, 63% of all backbone atoms, 66% 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 (0.015) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6590	0.4730
0	0.6690	0.5050
1	0.4240	0.4770
2	0.8020	0.5440
3	0.7030	0.5260
4	0.4910	0.5000
6	0.0210	0.3140
A	0.6920	0.4670
B	0.6430	0.4180
C	0.7070	0.5280
D	0.6960	0.5250
E	0.6670	0.5160
F	0.1740	0.3720
G	0.4060	0.4200
H	0.1110	0.4110
J	0.6880	0.5270
K	0.6580	0.5160
L	0.6390	0.5100
M	0.6130	0.5030
N	0.7420	0.5420
O	0.5220	0.4550
P	0.5640	0.4960
Q	0.7610	0.5390
R	0.6860	0.5240
S	0.7270	0.5380
T	0.6300	0.5130
U	0.5840	0.4850
V	0.3410	0.4230
W	0.6860	0.5230
X	0.6810	0.5110
Y	0.6250	0.4870
Z	0.6660	0.5160