Full wwPDB EM Validation Report ⓘ

Jun 30, 2025 – 12:32 PM JST

PDB ID	:	9K10 / pdb_00009k10
EMDB ID	:	EMD-61960
Title	:	EF-G2 bound 50S ribosome subunit complex of M. smegmatis
Authors	:	Sengupta, J.; Baid, P.
Deposited on	:	2024-10-16
Resolution	:	3.60 Å(reported)
Based on initial model	:	7XAM

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:

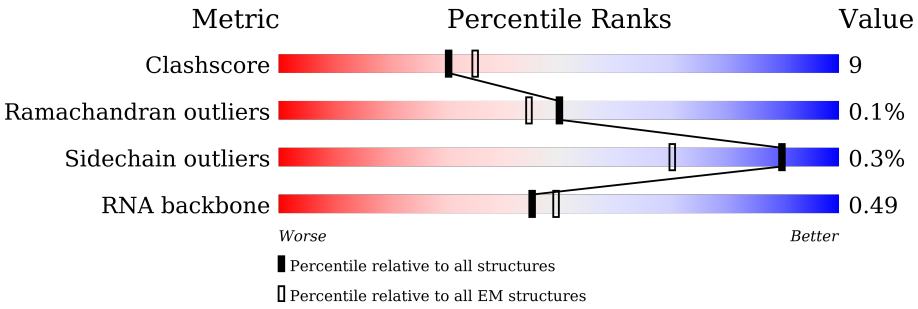
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.60 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	3	24	79% 17% .
2	5	709	11% 68% 31% .
2	6	709	31% 70% 29%
3	B	118	63% 33% .
4	C	278	73% 26% .
5	D	217	84% 14% .
6	E	215	86% 11% .

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Mol	Chain	Length	Quality of chain
7	F	187	52% 45%
8	G	179	70% 28%
9	H	151	83% 17%
10	I	175	48% 23% 28%
11	J	142	70% 24% 6%
12	K	147	80% 20%
13	L	122	76% 24%
14	M	147	82% 16%
15	N	138	72% 26%
16	O	199	46% 13% 41%
17	P	127	78% 21%
18	Q	113	81% 19%
19	R	129	81% 15%
20	S	103	81% 17%
21	T	153	62% 12% 25%
22	U	100	78% 19%
23	V	105	69% 24% 8%
24	W	215	76% 13% 11%
25	X	88	72% 18% 10%
26	Y	64	72% 27%
27	Z	77	64% 19% 17%
28	a	61	89% 8%
29	b	57	75% 19% 5%
30	c	55	67% 22% 11%
31	d	47	85% 13%

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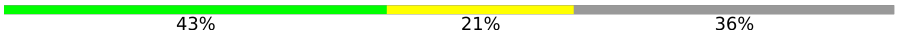
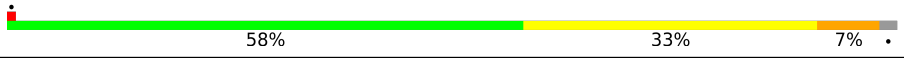
Mol	Chain	Length	Quality of chain
32	e	64	
33	f	37	
34	g	75	
35	A	3127	

2 Entry composition (i)

There are 38 unique types of molecules in this entry. The entry contains 107523 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 bL37.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	3	23	Total	C	N	O	0	0
			189	111	50	28		

- Molecule 2 is a protein called Translation elongation factor EF-G.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	5	709	Total	C	N	O	S	0	0
			5299	3311	931	1039	18		
2	6	709	Total	C	N	O	S	0	0
			5299	3311	931	1039	18		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	B	118	Total	C	N	O	P	0	0
			2522	1126	468	810	118		

- Molecule 4 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	C	275	Total	C	N	O	S	0	0
			2110	1298	438	370	4		

- Molecule 5 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	D	214	Total	C	N	O	S	0	0
			1587	982	310	290	5		

- Molecule 6 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	E	209	Total	C	N	O	S	0	0
			1569	969	295	303	2		

- Molecule 7 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	F	182	Total	C	N	O	S	0	0
			1445	907	271	261	6		

- Molecule 8 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	G	176	Total	C	N	O	S	0	0
			1348	845	249	253	1		

- Molecule 9 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	H	151	Total	C	N	O	S	0	0
			1018	635	188	194	1		

- Molecule 10 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	I	126	Total	C	N	O	S	0	0
			918	580	156	180	2		

- Molecule 11 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	J	133	Total	C	N	O	S	0	0
			990	625	175	187	3		

- Molecule 12 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	K	146	Total	C	N	O	S	0	0
			1130	722	207	200	1		

- Molecule 13 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	L	122	Total	C	N	O	S	0	0
			938	586	179	170	3		

- Molecule 14 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	M	145	Total	C	N	O	S	0	0
			1078	676	205	194	3		

- Molecule 15 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	N	136	Total	C	N	O	S	0	0
			1092	690	213	187	2		

- Molecule 16 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	O	118	Total	C	N	O	S	0	0
			928	583	180	163	2		

- Molecule 17 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	P	126	Total	C	N	O	0	0
			956	586	199	171		

- Molecule 18 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Q	113	Total	C	N	O	S	0	0
			907	570	171	165	1		

- Molecule 19 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	R	124	Total	C	N	O	0	0
			988	613	203	172		

- Molecule 20 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	S	100	Total 754	C 478	N 137	O 139	0	0

- Molecule 21 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	T	114	Total 873	C 543	N 171	O 159	0	0

- Molecule 22 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	U	97	Total 756	C 479	N 138	O 139	0	0

- Molecule 23 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	V	97	Total 732	C 456	N 137	O 137	S 2	0	0

- Molecule 24 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	W	192	Total 1428	C 881	N 255	O 292	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
25	X	79	Total 586	C 361	N 123	O 102	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Y	63	Total 470	C 283	N 103	O 80	S 4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Z	64	Total	C	N	O	S	0	0
			531	324	103	103	1		

- Molecule 28 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	a	59	Total	C	N	O	0	0
			474	292	95	87		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
29	b	54	Total	C	N	O	S	0	0
			423	260	93	69	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	c	49	Total	C	N	O	S	0	0
			405	248	82	71	4		

- Molecule 31 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	d	46	Total	C	N	O	S	0	0
			377	225	97	54	1		

- Molecule 32 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	e	63	Total	C	N	O	0	0
			502	302	115	85		

- Molecule 33 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	f	37	Total	C	N	O	S	0	0
			299	181	66	47	5		

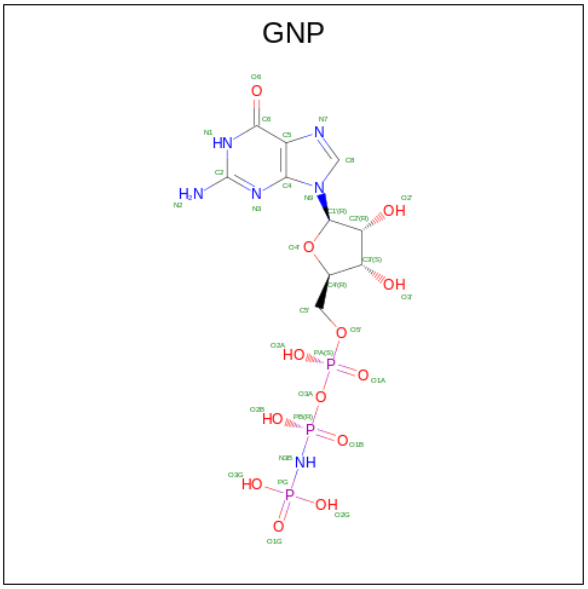
- Molecule 34 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	g	48	Total	C	N	O	S	0	0
			364	225	63	71	5		

- Molecule 35 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	A	3062	Total	C	N	O	P	0	0
			65763	29311	12094	21296	3062		

- Molecule 36 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (CCD ID: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
36	5	1	Total	C	N	O	P	0
			32	10	6	13	3	
36	6	1	Total	C	N	O	P	0
			32	10	6	13	3	

- Molecule 37 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
37	B	9	Total	Mg	0
			9	9	
37	C	5	Total	Mg	0
			5	5	
37	D	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms	AltConf
37	F	1	Total Mg 1 1	0
37	N	1	Total Mg 1 1	0
37	T	1	Total Mg 1 1	0
37	X	1	Total Mg 1 1	0
37	A	388	Total Mg 388 388	0

- Molecule 38 is ZINC ION (CCD ID: ZN) (formula: Zn).

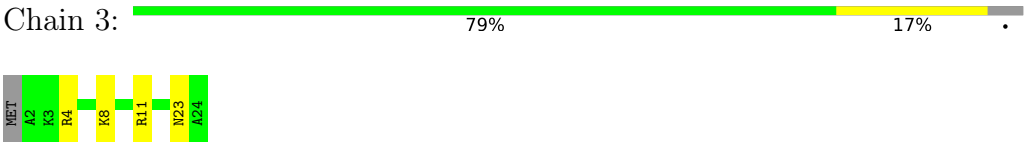
Mol	Chain	Residues	Atoms	AltConf
38	Y	1	Total Zn 1 1	0
38	c	1	Total Zn 1 1	0
38	f	1	Total Zn 1 1	0
38	g	1	Total Zn 1 1	0

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.

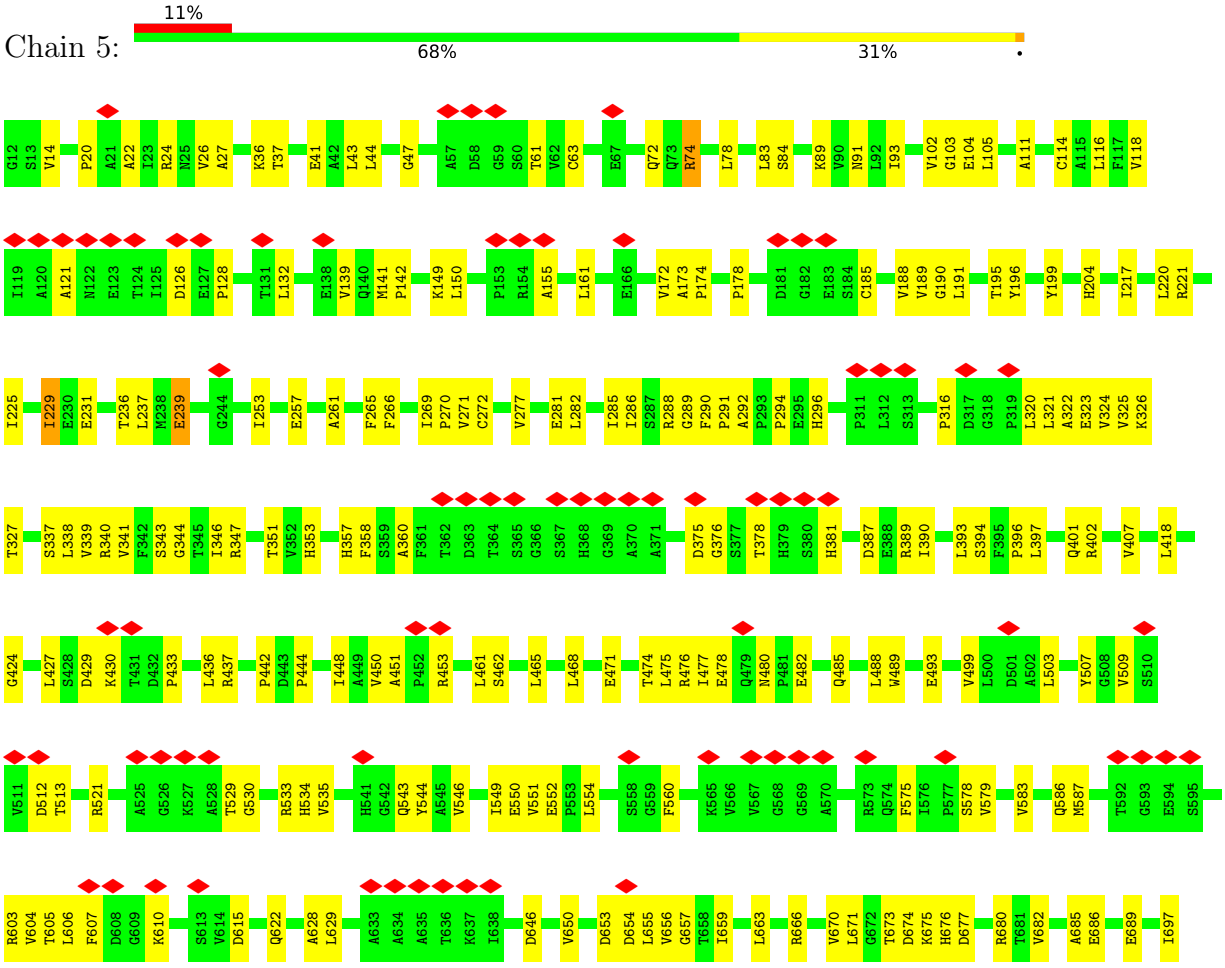
- Molecule 1: 50S ribosomal protein bL37

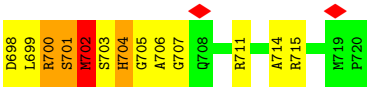
Chain 3:



- Molecule 2: Translation elongation factor EF-G

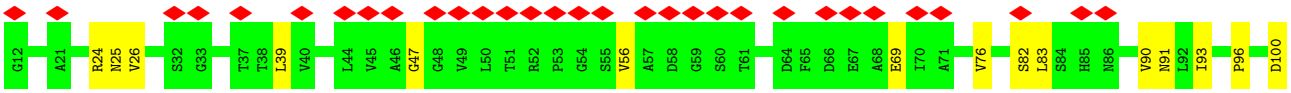
Chain 5:

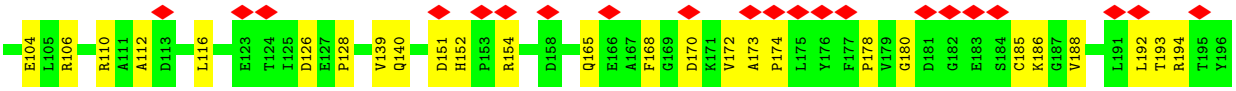


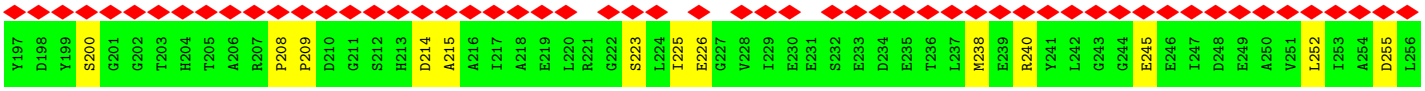


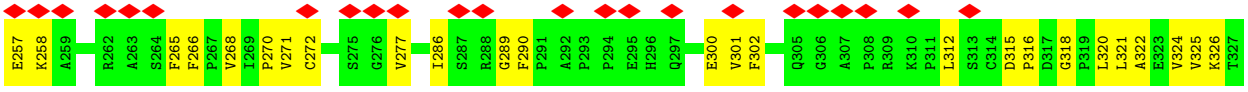
• Molecule 2: Translation elongation factor EF-G

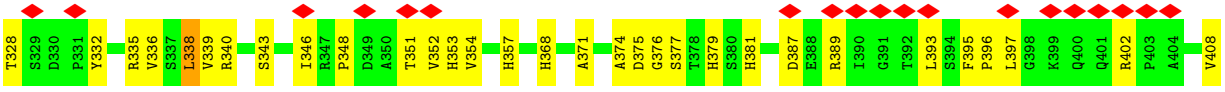
Chain 6:

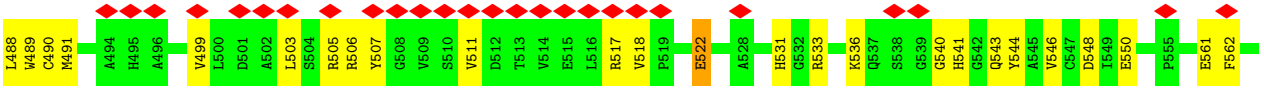


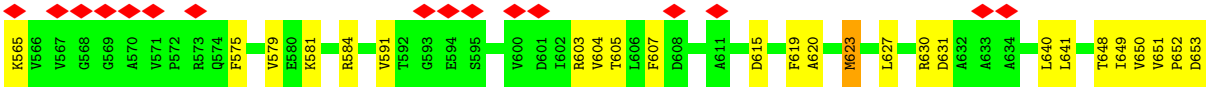


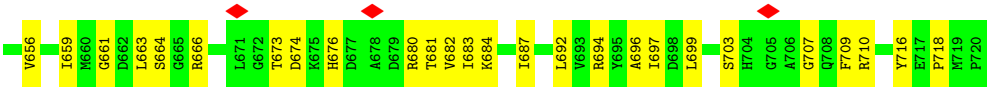






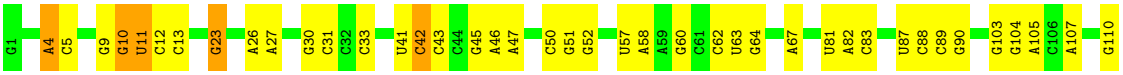


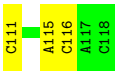




• Molecule 3: 5S ribosomal RNA

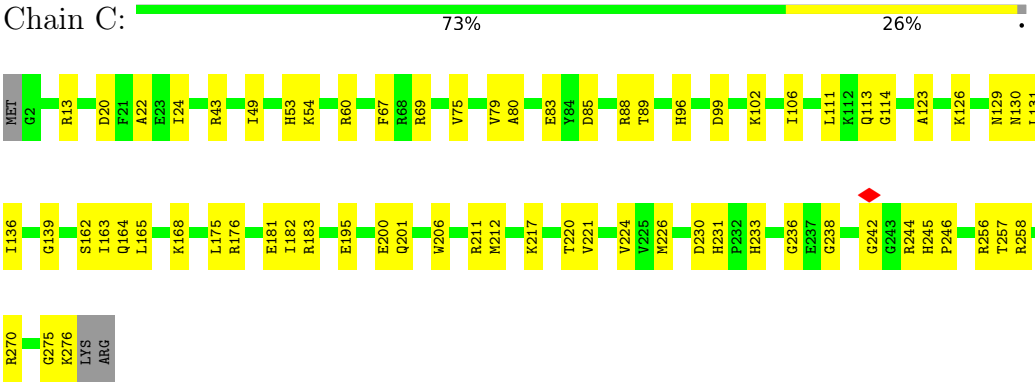
Chain B:





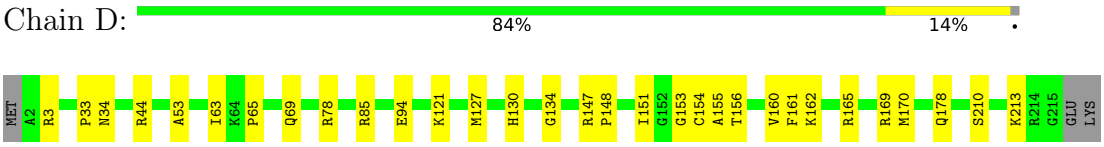
• Molecule 4: 50S ribosomal protein L2

Chain C:



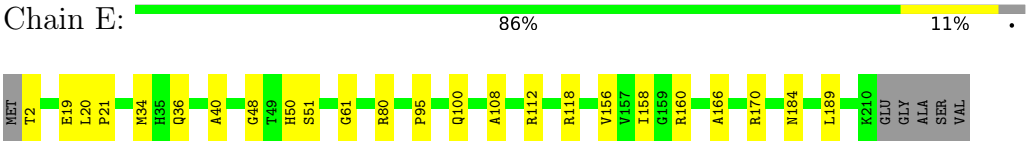
• Molecule 5: 50S ribosomal protein L3

Chain D:



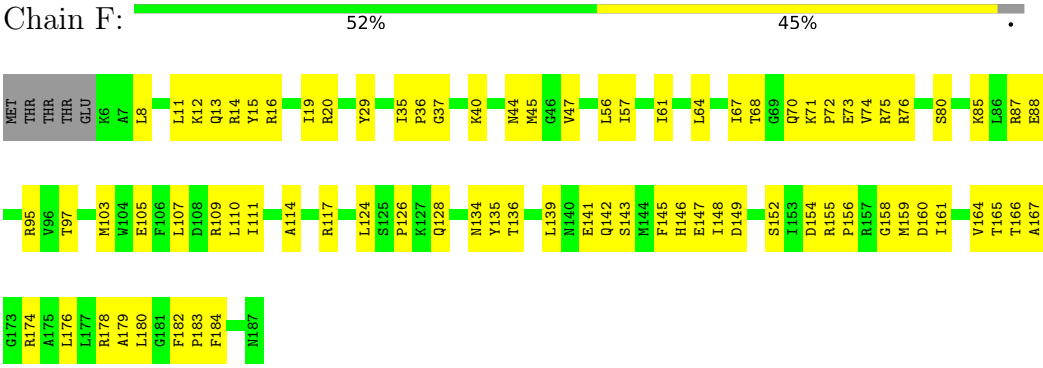
• Molecule 6: 50S ribosomal protein L4

Chain E:



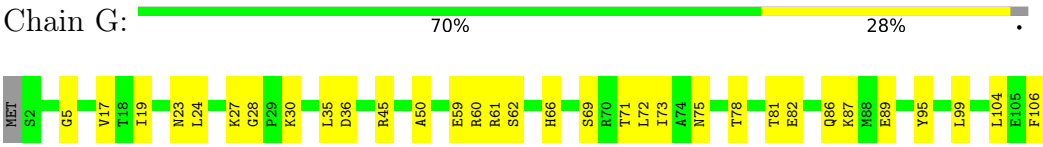
• Molecule 7: 50S ribosomal protein L5

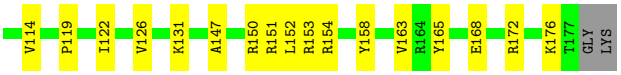
Chain F:



• Molecule 8: 50S ribosomal protein L6

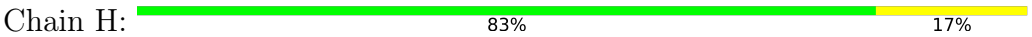
Chain G:

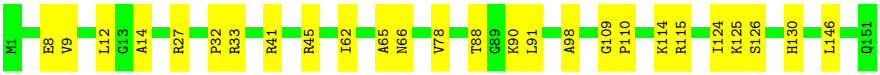




• Molecule 9: 50S ribosomal protein L9

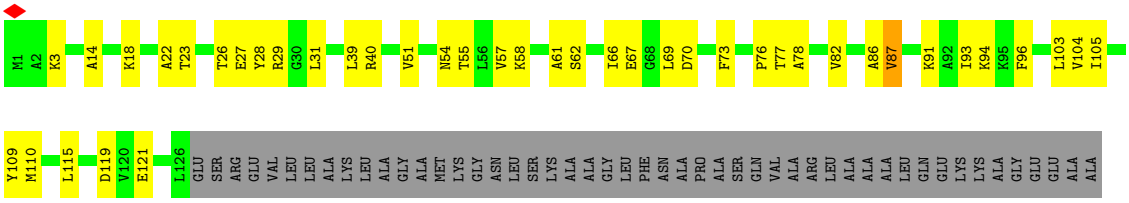
Chain H:





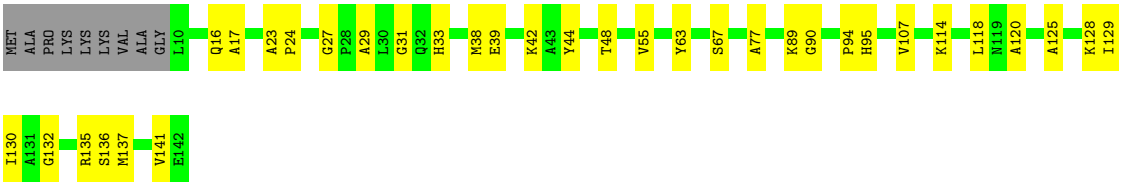
• Molecule 10: 50S ribosomal protein L10

Chain I:



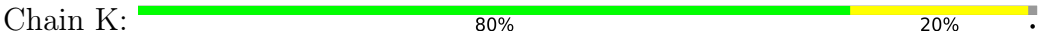
• Molecule 11: 50S ribosomal protein L11

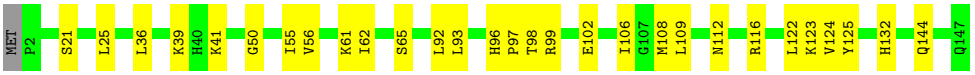
Chain J:



• Molecule 12: 50S ribosomal protein L13

Chain K:



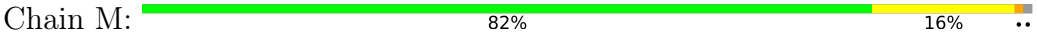


• Molecule 13: 50S ribosomal protein L14

Chain L:

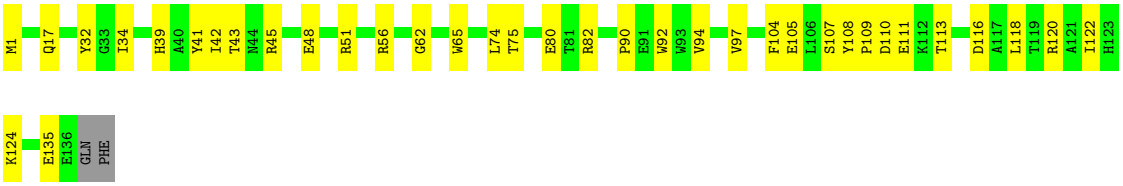
• Molecule 14: 50S ribosomal protein L15

Chain M:



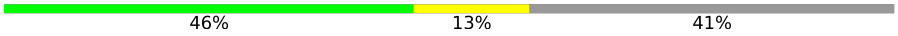
• Molecule 15: 50S ribosomal protein L16

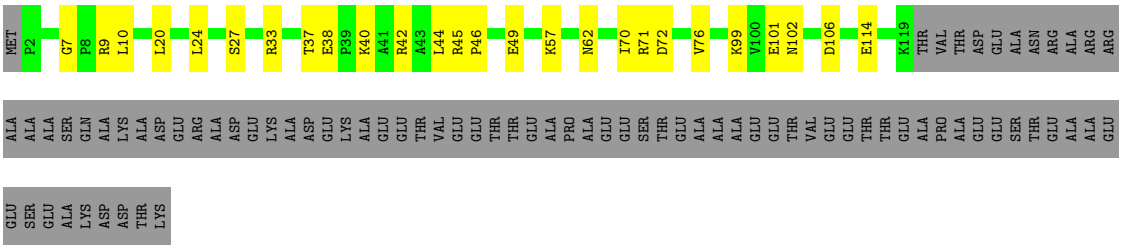
Chain N:



• Molecule 16: 50S ribosomal protein L17

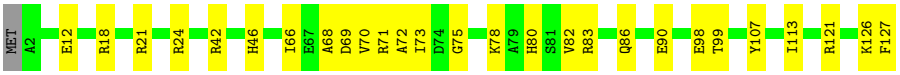
Chain O:





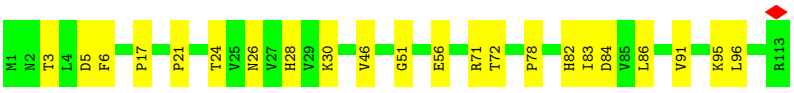
• Molecule 17: 50S ribosomal protein L18

Chain P:



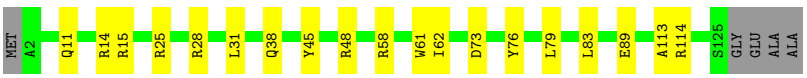
• Molecule 18: 50S ribosomal protein L19

Chain Q:



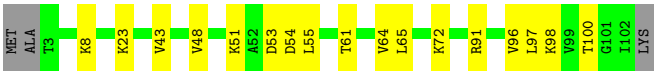
• Molecule 19: 50S ribosomal protein L20

Chain R:



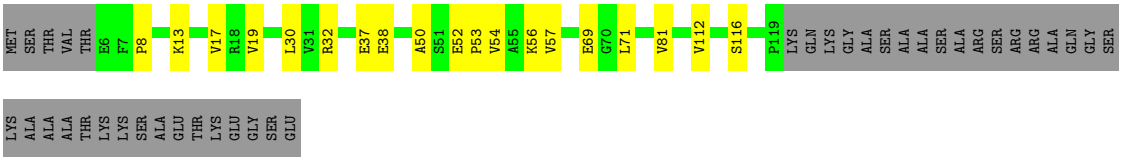
• Molecule 20: 50S ribosomal protein L21

Chain S:



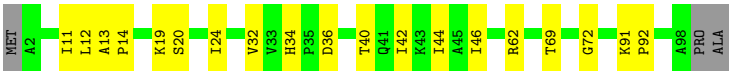
• Molecule 21: 50S ribosomal protein L22

Chain T:



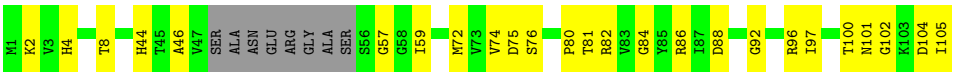
• Molecule 22: 50S ribosomal protein L23

Chain U:



• Molecule 23: Large ribosomal subunit protein uL24

Chain V:



• Molecule 24: 50S ribosomal protein L25

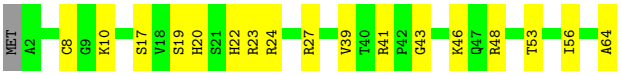
Chain W:

• Molecule 25: 50S ribosomal protein L27

Chain X:

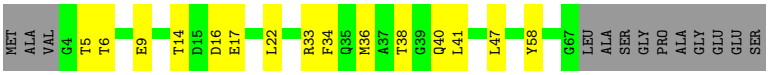
• Molecule 26: 50S ribosomal protein L28

Chain Y:



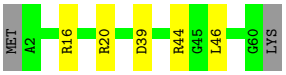
• Molecule 27: 50S ribosomal protein L29

Chain Z:



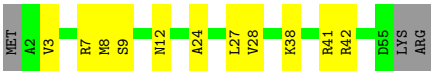
• Molecule 28: 50S ribosomal protein L30

Chain a:



• Molecule 29: 50S ribosomal protein L32

Chain b:



• Molecule 30: 50S ribosomal protein L33 1

Chain c:

• Molecule 31: 50S ribosomal protein L34

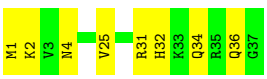
Chain d:

• Molecule 32: 50S ribosomal protein L35

Chain e:

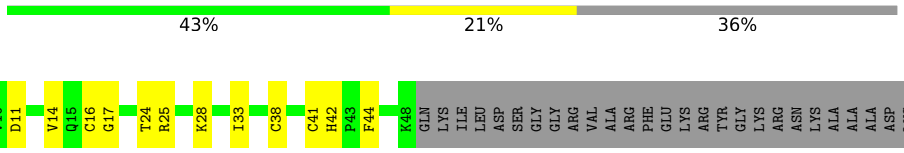
• Molecule 33: 50S ribosomal protein L36

Chain f:



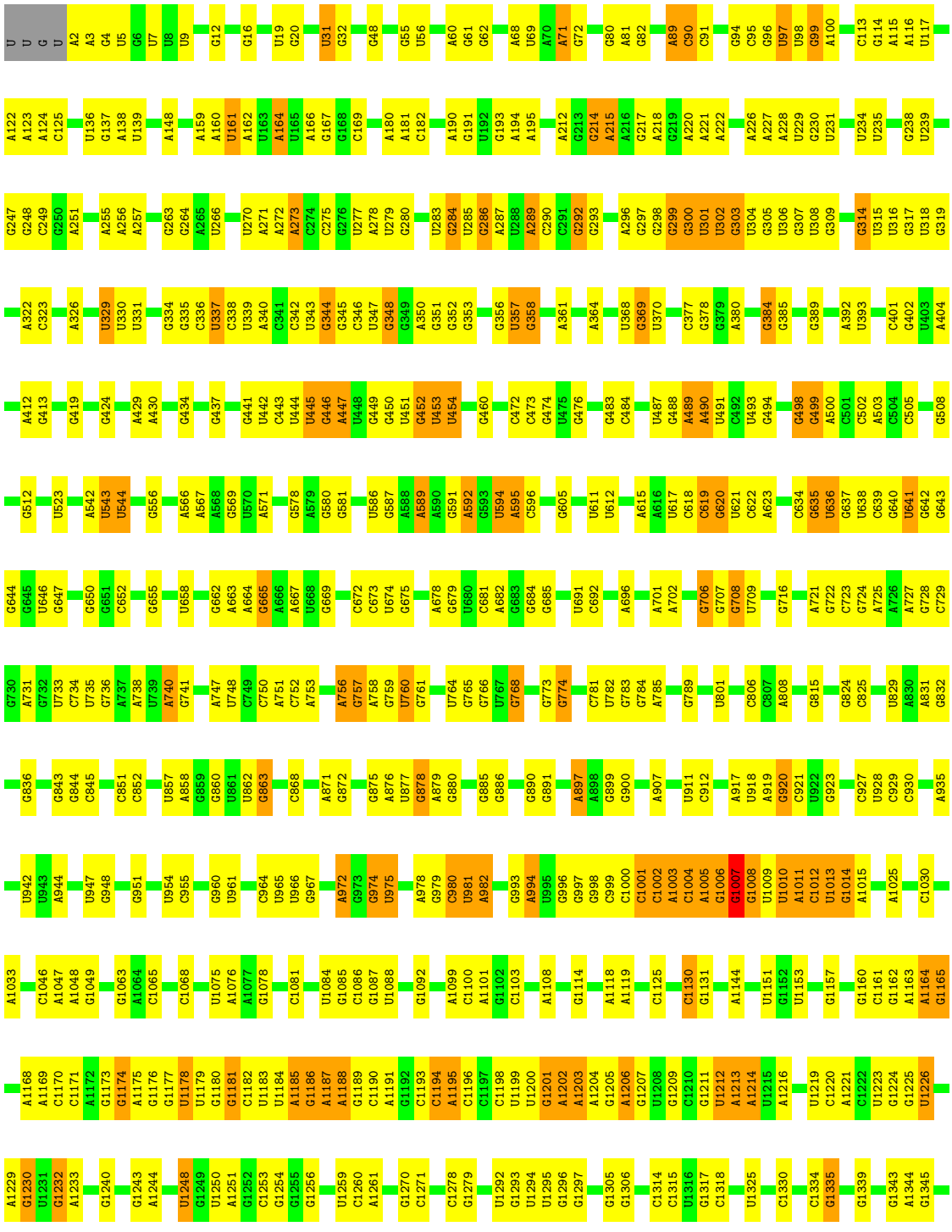
• Molecule 34: 50S ribosomal protein L31

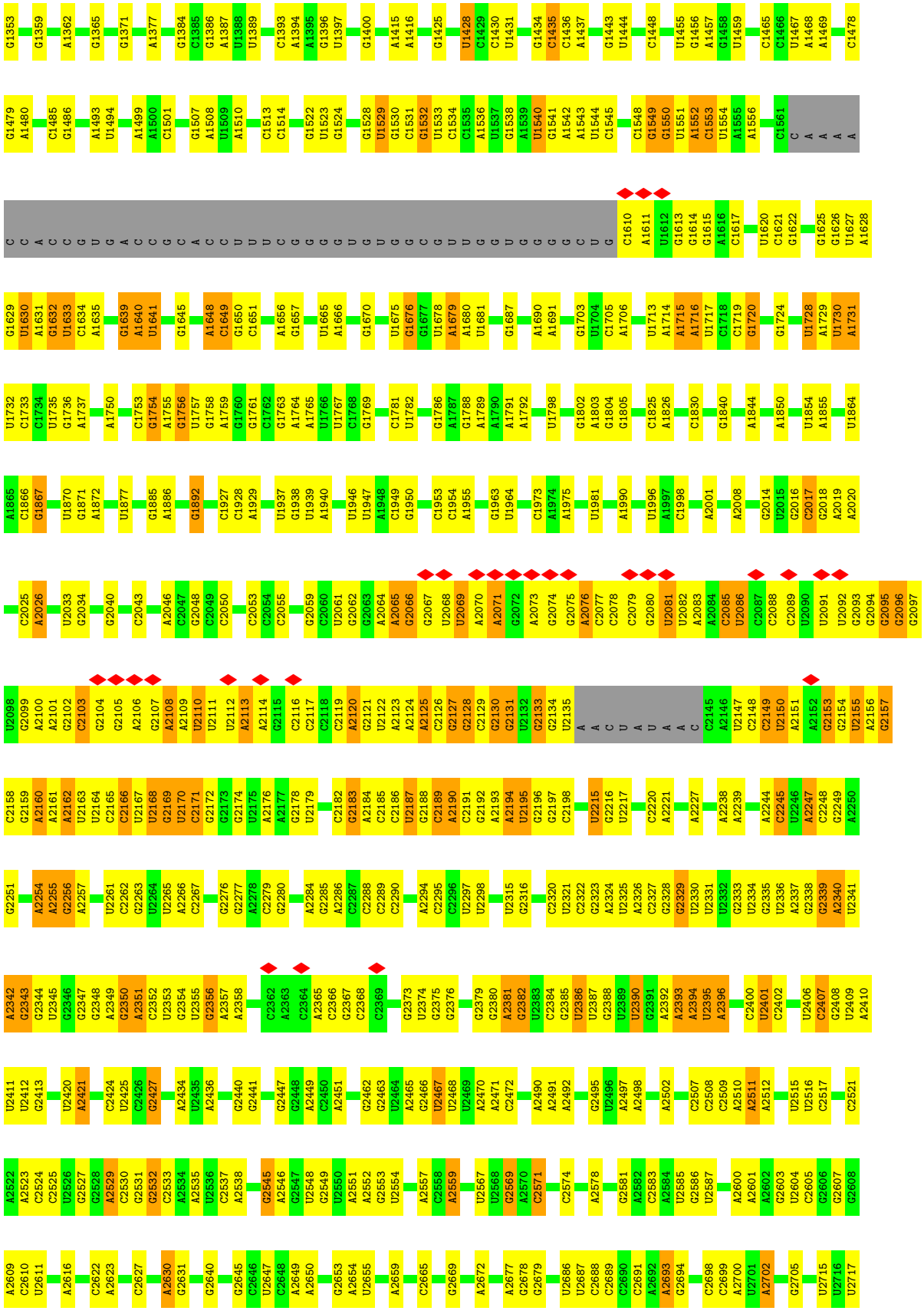
Chain g:

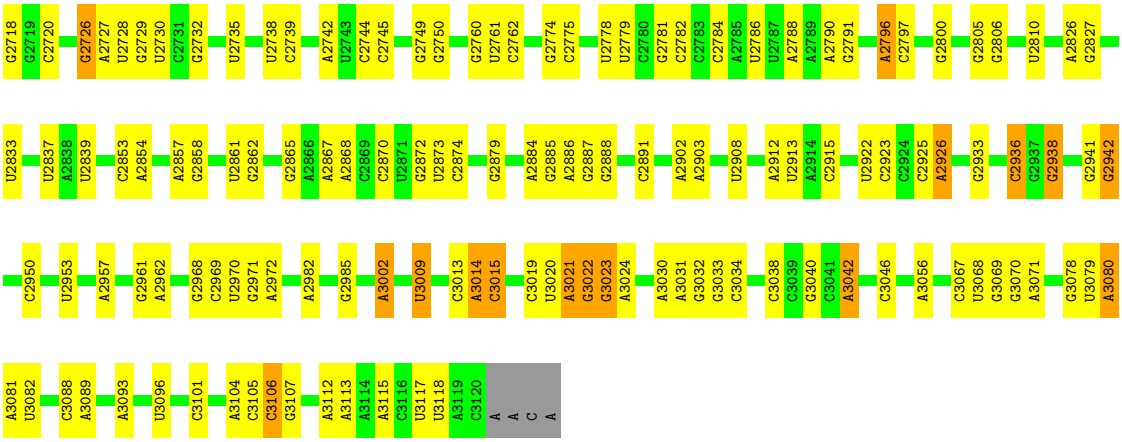


• Molecule 35: 23S ribosomal RNA

Chain A:






G2718 G2719 C2720
G2726 A2727 U2728 G2729 U2730 C2731 G2732
U2735
U2738 C2739
A2742 U2743 C2744 C2745
G2749 G2750
G2760 U2761 C2762
G2774 C2775
U2778 U2779 C2780 G2781 C2782 C2783 C2784 A2785 U2786 U2787 A2788 A2789 A2790 G2791
A2796 C2797
G2800
G2805 G2806
U2810
A2826 G2827
U2833
U2837 A2838 U2839
C2853 A2854
A2857 G2858
U2861 G2862
G2865 A2866 A2867 A2868 C2869 C2870 U2871 G2872 U2873 C2874
G2879
A2884 G2885 A2886 G2887 G2888
C2891
A2902 A2903
U2908
A2912 U2913 A2914 C2915
U2922 C2923 C2924 C2925 A2926
G2933
C2936 G2937 G2938
G2941 G2942
C2950
U2953
A2957
G2961 A2962
G2968 C2969 U2970 G2971 A2972
A2982
G2985
A3002
U3009
C3013 A3014 C3015
C3019 U3020 A3021 G3022 G3023 A3024
A3030 A3031 G3032 G3033 C3034
C3038 C3039 G3040 G3041 A3042
C3046
A3056
C3067 U3068 G3069 G3070 A3071
G3078 U3079 A3080
A3081 U3082
C3088 A3089
A3093
U3096
C3101
A3104 C3105 C3106 G3107
A3112 A3113 A3114 A3115 C3116 U3117 U3118 A3119 C3120
A
A
C
A

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	39621	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	54	Depositor
Minimum defocus (nm)	1800	Depositor
Maximum defocus (nm)	3300	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.118	Depositor
Minimum map value	-0.025	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.00715	Depositor
Map size (Å)	483.0, 483.0, 483.0	wwPDB
Map dimensions	350, 350, 350	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.38, 1.38, 1.38	Depositor

5 Model quality

5.1 Standard geometry

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

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	3	0.27	0/191	0.41	0/247
2	5	0.17	0/5405	0.38	1/7360 (0.0%)
2	6	0.20	1/5405 (0.0%)	0.39	0/7360
3	B	0.27	0/2821	0.27	0/4396
4	C	0.36	0/2153	0.45	0/2895
5	D	0.35	0/1609	0.45	0/2165
6	E	0.32	0/1592	0.39	0/2153
7	F	0.21	0/1467	0.42	0/1973
8	G	0.24	0/1369	0.36	0/1848
9	H	0.18	0/1027	0.36	0/1398
10	I	0.16	0/925	0.39	2/1246 (0.2%)
11	J	0.16	0/1006	0.36	0/1364
12	K	0.36	0/1157	0.37	0/1567
13	L	0.33	0/946	0.39	0/1268
14	M	0.31	0/1091	0.49	2/1457 (0.1%)
15	N	0.32	0/1118	0.46	0/1506
16	O	0.36	0/945	0.43	0/1267
17	P	0.27	0/966	0.48	0/1298
18	Q	0.30	0/921	0.41	0/1236
19	R	0.35	0/1000	0.37	0/1341
20	S	0.34	0/764	0.42	0/1030
21	T	0.34	0/887	0.40	0/1204
22	U	0.30	0/766	0.34	0/1030
23	V	0.28	0/738	0.35	0/987
24	W	0.24	0/1443	0.35	0/1970
25	X	0.33	0/595	0.33	0/798
26	Y	0.35	0/478	0.44	0/641
27	Z	0.34	0/534	0.47	0/713
28	a	0.33	0/477	0.30	0/640
29	b	0.34	0/427	0.45	0/572
30	c	0.20	0/413	0.36	0/553
31	d	0.35	0/380	0.45	0/500

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	e	0.20	0/507	0.33	0/672
33	f	0.31	0/303	0.37	0/401
34	g	0.14	0/372	0.32	0/503
35	A	0.34	0/73637	0.33	5/114895 (0.0%)
All	All	0.32	1/115835 (0.0%)	0.35	10/172454 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	6	517	ARG	C-N	6.23	1.40	1.33

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
35	A	1761	G	P-O3'-C3'	20.49	150.93	120.20
35	A	1538	G	P-O3'-C3'	7.56	131.54	120.20
35	A	1007	G	C2'-C3'-O3'	-6.78	103.52	113.70
35	A	1761	G	OP1-P-O3'	6.57	127.71	108.00
14	M	43	ARG	CA-C-N	-6.24	114.04	121.90
14	M	43	ARG	C-N-CA	-6.24	114.04	121.90
35	A	1761	G	OP2-P-O3'	-5.86	90.43	108.00
2	5	700	ARG	N-CA-C	-5.69	105.44	112.38
10	I	87	VAL	N-CA-CB	-5.35	104.48	112.67
10	I	87	VAL	CB-CA-C	5.07	115.72	110.70

There are no chirality outliers.

There are no planarity outliers.

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	3	189	0	205	3	0
2	5	5299	0	5230	167	0
2	6	5299	0	5229	163	0
3	B	2522	0	1285	23	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	C	2110	0	2165	65	0
5	D	1587	0	1629	24	0
6	E	1569	0	1607	19	0
7	F	1445	0	1476	69	0
8	G	1348	0	1399	37	0
9	H	1018	0	988	19	0
10	I	918	0	959	32	0
11	J	990	0	1021	43	0
12	K	1130	0	1167	24	0
13	L	938	0	999	28	0
14	M	1078	0	1151	20	0
15	N	1092	0	1128	22	0
16	O	928	0	972	21	0
17	P	956	0	991	20	0
18	Q	907	0	938	13	0
19	R	988	0	1038	15	0
20	S	754	0	802	10	0
21	T	873	0	909	12	0
22	U	756	0	802	12	0
23	V	732	0	782	18	0
24	W	1428	0	1443	18	0
25	X	586	0	601	12	0
26	Y	470	0	480	12	0
27	Z	531	0	541	16	0
28	a	474	0	500	5	0
29	b	423	0	463	11	0
30	c	405	0	407	13	0
31	d	377	0	411	5	0
32	e	502	0	541	13	0
33	f	299	0	321	6	0
34	g	364	0	348	15	0
35	A	65763	0	33080	774	0
36	5	32	0	13	1	0
36	6	32	0	13	2	0
37	A	388	0	0	0	0
37	B	9	0	0	0	0
37	C	5	0	0	0	0
37	D	1	0	0	0	0
37	F	1	0	0	0	0
37	N	1	0	0	0	0
37	T	1	0	0	0	0
37	X	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	Y	1	0	0	0	0
38	c	1	0	0	0	0
38	f	1	0	0	0	0
38	g	1	0	0	0	0
All	All	107523	0	74034	1581	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 9.

All (1581) 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)
2:6:332:TYR:OH	13:L:47:ILE:HD12	1.68	0.92
35:A:2086:U:H3	35:A:2096:G:H1	1.25	0.84
11:J:89:LYS:HB3	35:A:1182:C:H5"	1.60	0.82
35:A:860:G:HO2'	35:A:863:G:HO2'	1.26	0.81
4:C:261:ASN:HD21	35:A:2451:A:H5"	1.45	0.81
35:A:1002:C:H2'	35:A:1003:A:H5"	1.61	0.81
35:A:1174:G:H4'	35:A:1204:A:H8	1.46	0.81
35:A:337:U:N3	35:A:344:G:N1	2.29	0.81
35:A:1201:G:N2	35:A:1204:A:OP2	2.12	0.81
35:A:1194:C:H2'	35:A:1195:A:C8	2.17	0.79
35:A:1540:U:H3	35:A:1632:G:H1	1.25	0.79
2:6:332:TYR:OH	13:L:47:ILE:CD1	2.30	0.79
11:J:94:PRO:HD2	35:A:1194:C:H1'	1.63	0.79
31:d:17:ARG:NH1	35:A:886:G:OP1	2.15	0.79
35:A:747:A:N6	35:A:768:G:O2'	2.16	0.79
27:Z:36:MET:HE3	27:Z:41:LEU:HD23	1.65	0.79
12:K:116:ARG:HH12	35:A:615:A:H2	1.32	0.78
14:M:43:ARG:NH2	35:A:923:G:N7	2.33	0.77
16:O:38:GLU:OE1	29:b:42:ARG:NH2	2.17	0.77
5:D:3:ARG:NH1	5:D:210:SER:O	2.15	0.77
2:5:393:LEU:HD13	2:5:407:VAL:HG23	1.67	0.77
19:R:25:ARG:NH1	35:A:2245:C:OP1	2.18	0.77
35:A:1198:C:H2'	35:A:1199:U:C6	2.20	0.76
15:N:32:TYR:OH	15:N:111:GLU:OE1	2.03	0.76
27:Z:22:LEU:HD11	27:Z:58:TYR:CE1	2.21	0.76
2:6:110:ARG:HG2	2:6:439:TRP:HE3	1.50	0.76
16:O:33:ARG:HG2	16:O:114:GLU:HG3	1.68	0.75
11:J:114:LYS:O	11:J:118:LEU:N	2.17	0.75
35:A:451:U:H2'	35:A:452:G:C8	2.22	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:279:U:H3	35:A:307:G:H1	1.35	0.75
7:F:143:SER:HA	7:F:148:ILE:HD11	1.69	0.75
10:I:28:TYR:HD2	10:I:78:ALA:HB2	1.52	0.74
19:R:58:ARG:O	19:R:62:ILE:HG13	1.87	0.74
35:A:1198:C:H2'	35:A:1199:U:H6	1.51	0.74
11:J:128:LYS:HE2	35:A:1198:C:H5"	1.69	0.74
35:A:1194:C:H2'	35:A:1195:A:H8	1.52	0.74
35:A:1541:G:N1	35:A:1631:A:N6	2.35	0.74
8:G:106:PHE:HB3	8:G:108:LEU:HD23	1.68	0.74
35:A:2174:G:H1	35:A:2178:G:HO2'	1.25	0.74
7:F:20:ARG:HE	7:F:35:ILE:HG21	1.51	0.73
35:A:994:A:N6	35:A:1014:G:O2'	2.20	0.73
35:A:3013:C:H5'	35:A:3014:A:H5'	1.69	0.73
2:5:236:THR:HA	2:5:239:GLU:HG3	1.70	0.73
35:A:2048:G:H1	35:A:2198:C:H42	1.35	0.73
2:5:675:LYS:HE3	11:J:27:GLY:O	1.88	0.73
34:g:11:ASP:HA	34:g:25:ARG:HG3	1.70	0.73
35:A:2157:G:H2'	35:A:2158:C:H2'	1.70	0.73
17:P:98:GLU:OE2	17:P:126:LYS:NZ	2.18	0.72
35:A:337:U:O2	35:A:344:G:N2	2.22	0.72
26:Y:41:ARG:HG2	26:Y:43:GLY:H	1.52	0.72
35:A:1188:A:N7	35:A:1214:A:O2'	2.23	0.72
2:5:257:GLU:HG2	2:5:289:GLY:HA2	1.69	0.72
35:A:1758:G:H2'	35:A:1759:A:H8	1.53	0.72
35:A:2726:G:H5"	35:A:2727:A:H5"	1.70	0.72
11:J:118:LEU:HD21	35:A:1177:G:O4'	1.89	0.72
14:M:84:ASN:ND2	14:M:117:LYS:O	2.21	0.72
35:A:1754:G:H22	35:A:1759:A:H61	1.37	0.72
35:A:1541:G:C6	35:A:1631:A:N6	2.58	0.71
35:A:1005:A:H3'	35:A:1006:G:H8	1.55	0.71
4:C:43:ARG:HE	4:C:49:ILE:HG12	1.55	0.71
35:A:2155:U:O2'	35:A:2157:G:N2	2.23	0.71
19:R:73:ASP:O	19:R:114:ARG:NH2	2.23	0.71
34:g:24:THR:HG22	34:g:25:ARG:H	1.56	0.71
2:5:673:THR:O	11:J:23:ALA:HB1	1.91	0.71
9:H:124:ILE:HG22	9:H:125:LYS:H	1.55	0.71
35:A:2102:G:H2'	35:A:2103:C:C2	2.26	0.71
13:L:7:ARG:NH1	13:L:18:GLU:OE2	2.22	0.70
35:A:160:A:H3'	35:A:161:U:H5"	1.71	0.70
27:Z:22:LEU:HD11	27:Z:58:TYR:HE1	1.55	0.70
7:F:29:TYR:OH	7:F:172:GLU:OE1	2.09	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:1627:U:H2'	35:A:1628:A:H8	1.57	0.70
35:A:1229:A:H8	35:A:1230:G:H1'	1.55	0.69
7:F:178:ARG:NH2	7:F:182:PHE:O	2.25	0.69
8:G:150:ARG:NH1	8:G:163:VAL:O	2.24	0.69
6:E:2:THR:HG22	6:E:21:PRO:HA	1.75	0.69
8:G:78:THR:HA	8:G:81:THR:HG22	1.73	0.69
2:6:100:ASP:HA	2:6:491:MET:HG2	1.73	0.69
34:g:2:LYS:HD2	34:g:5:ILE:HD11	1.72	0.69
2:5:461:LEU:HD13	2:5:509:VAL:HG11	1.74	0.69
35:A:2902:A:H2'	35:A:2903:A:C8	2.28	0.69
35:A:256:A:H2'	35:A:257:A:H8	1.58	0.69
35:A:1195:A:H3'	35:A:1196:C:C6	2.28	0.69
35:A:2323:G:H1	35:A:2412:U:H3	1.40	0.69
35:A:1187:A:H4'	35:A:1188:A:H5"	1.75	0.68
2:5:178:PRO:HD3	2:5:270:PRO:HG3	1.75	0.68
35:A:996:G:H2'	35:A:997:G:H8	1.56	0.68
35:A:2122:U:O2'	35:A:2125:A:N6	2.25	0.68
22:U:19:LYS:NZ	35:A:1455:U:OP1	2.25	0.68
25:X:64:PRO:HB3	35:A:759:G:H1	1.59	0.68
2:5:444:PRO:O	2:5:476:ARG:NH2	2.26	0.68
4:C:69:ARG:HB2	4:C:130:ASN:HD22	1.57	0.68
10:I:87:VAL:HG13	10:I:91:LYS:HZ3	1.58	0.68
35:A:981:U:O2'	35:A:982:A:OP2	2.10	0.68
2:6:649:ILE:HB	2:6:683:ILE:HB	1.76	0.67
12:K:98:THR:HG23	12:K:124:VAL:HG13	1.76	0.67
2:6:47:GLY:HA3	2:6:83:LEU:HD11	1.77	0.67
2:6:565:LYS:HE3	2:6:607:PHE:HB3	1.75	0.67
35:A:2255:A:N3	35:A:2679:G:O2'	2.27	0.67
35:A:2356:G:H2'	35:A:2380:G:H1	1.60	0.67
4:C:245:HIS:HB2	4:C:246:PRO:HD3	1.77	0.67
33:f:2:LYS:HB2	33:f:34:GLN:HB3	1.75	0.67
22:U:34:HIS:ND1	22:U:36:ASP:OD1	2.27	0.67
15:N:17:GLN:OE1	15:N:39:HIS:HB3	1.95	0.67
35:A:1550:G:O6	35:A:1620:U:O4	2.13	0.67
35:A:289:A:H62	35:A:299:G:H22	1.42	0.67
35:A:2101:A:H2'	35:A:2102:G:C8	2.29	0.67
35:A:2329:G:H1	35:A:2406:U:H3	1.43	0.66
35:A:2552:A:H2'	35:A:2553:G:C8	2.30	0.66
31:d:38:ARG:HG3	31:d:45:LEU:HD21	1.78	0.66
10:I:40:ARG:NH2	35:A:1201:G:O3'	2.28	0.66
15:N:118:LEU:O	15:N:122:ILE:HD12	1.94	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Z:14:THR:N	27:Z:17:GLU:OE2	2.25	0.66
35:A:137:G:H21	35:A:1524:G:H1'	1.59	0.66
2:5:320:LEU:HA	2:5:344:GLY:HA3	1.75	0.66
2:5:324:VAL:HG22	2:5:339:VAL:HG22	1.76	0.66
4:C:236:GLY:O	4:C:244:ARG:NE	2.28	0.66
9:H:27:ARG:NH2	35:A:2315:U:OP2	2.23	0.66
23:V:46:ALA:HB2	35:A:571:A:H4'	1.76	0.66
2:6:676:HIS:HB2	2:6:682:VAL:HG23	1.78	0.66
11:J:94:PRO:HB2	35:A:1195:A:H1'	1.77	0.66
35:A:2351:A:N3	35:A:2396:A:O2'	2.29	0.66
2:5:674:ASP:O	2:5:682:VAL:N	2.29	0.66
2:5:327:THR:HB	2:5:471:GLU:HA	1.76	0.66
35:A:1001:C:C2	35:A:1002:C:H1'	2.31	0.66
17:P:70:VAL:HG12	17:P:83:ARG:HG3	1.78	0.66
35:A:543:U:H3'	35:A:544:U:H5"	1.78	0.65
33:f:31:ARG:NH1	35:A:2702:A:OP1	2.30	0.65
35:A:298:G:H2'	35:A:299:G:C8	2.32	0.65
4:C:43:ARG:HH12	35:A:806:C:H1'	1.61	0.65
35:A:1556:A:N1	35:A:1615:G:O6	2.29	0.65
2:6:352:VAL:HG21	2:6:427:LEU:HD13	1.78	0.65
16:O:57:LYS:O	16:O:62:ASN:ND2	2.30	0.65
35:A:301:U:H5'	35:A:302:U:O5'	1.96	0.65
35:A:273:A:H61	35:A:314:G:H1'	1.62	0.65
35:A:1754:G:H22	35:A:1759:A:N6	1.94	0.65
35:A:2096:G:H2'	35:A:2097:G:C8	2.31	0.65
2:6:39:LEU:HD13	2:6:271:VAL:HG11	1.78	0.65
35:A:1177:G:H2'	35:A:1178:U:C5	2.31	0.65
35:A:3014:A:O2'	35:A:3015:C:H5"	1.97	0.65
4:C:67:PHE:HE1	4:C:106:ILE:HD11	1.60	0.64
11:J:114:LYS:HG3	11:J:130:ILE:HD11	1.77	0.64
35:A:1541:G:N1	35:A:1631:A:C6	2.65	0.64
2:5:229:ILE:CG2	2:5:237:LEU:HB3	2.28	0.64
2:6:687:ILE:HB	2:6:692:LEU:HD21	1.80	0.64
2:5:671:LEU:HG	2:5:685:ALA:HA	1.80	0.64
11:J:129:ILE:HG12	35:A:1198:C:H1'	1.80	0.64
2:6:674:ASP:O	2:6:682:VAL:N	2.30	0.64
2:6:395:PHE:HB2	2:6:402:ARG:HB2	1.79	0.64
2:5:465:LEU:HD13	2:5:477:ILE:HG12	1.79	0.64
7:F:8:LEU:HD21	7:F:13:GLN:HB2	1.80	0.64
35:A:1000:C:H2'	35:A:1001:C:H5"	1.80	0.64
6:E:2:THR:HA	6:E:20:LEU:O	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:29:TYR:HD2	7:F:35:ILE:HD13	1.61	0.64
35:A:451:U:H2'	35:A:452:G:H8	1.62	0.64
35:A:2160:A:H62	35:A:2194:A:H2'	1.63	0.64
2:5:142:PRO:HG2	2:5:291:PRO:HG3	1.80	0.63
14:M:55:MET:O	14:M:60:ARG:NH1	2.31	0.63
16:O:7:GLY:O	16:O:9:ARG:NH1	2.31	0.63
35:A:2134:G:H2'	35:A:2135:U:H2'	1.80	0.63
2:5:560:PHE:HB2	2:5:587:MET:HE1	1.80	0.63
2:6:257:GLU:HG2	2:6:289:GLY:HA2	1.80	0.63
9:H:126:SER:O	9:H:130:HIS:NE2	2.32	0.63
35:A:1758:G:H2'	35:A:1759:A:C8	2.33	0.63
3:B:81:U:O2'	35:A:1033:A:N3	2.32	0.63
2:5:353:HIS:ND1	2:5:387:ASP:OD1	2.22	0.63
35:A:2425:U:O2'	35:A:2427:G:OP1	2.17	0.63
3:B:4:A:N1	3:B:23:G:O2'	2.26	0.63
24:W:158:THR:HG22	24:W:161:GLN:HG3	1.81	0.63
35:A:1003:A:H1'	35:A:1004:C:H2'	1.79	0.63
35:A:1756:G:H1'	35:A:1758:G:C6	2.34	0.63
13:L:4:GLN:HG3	13:L:5:GLU:HG2	1.81	0.63
35:A:1530:G:H21	35:A:1805:G:H22	1.47	0.63
2:5:325:VAL:HG23	2:5:326:LYS:HG3	1.81	0.63
35:A:1544:U:H3	35:A:1626:G:H1	1.44	0.63
2:5:699:LEU:HA	2:5:702:MET:HE2	1.80	0.63
2:6:301:VAL:HG21	2:6:312:LEU:HG	1.81	0.63
13:L:7:ARG:HE	13:L:20:LEU:HD12	1.64	0.63
35:A:2019:A:H2'	35:A:2020:A:C8	2.34	0.63
2:5:37:THR:HG23	2:5:63:CYS:HB2	1.81	0.62
11:J:136:SER:HB2	35:A:1180:G:N3	2.14	0.62
2:5:172:VAL:HG22	2:5:266:PHE:HB2	1.79	0.62
8:G:99:LEU:HD23	8:G:126:VAL:HG12	1.80	0.62
27:Z:36:MET:HG3	27:Z:47:LEU:HD11	1.80	0.62
35:A:1005:A:H3'	35:A:1006:G:C8	2.34	0.62
2:6:444:PRO:O	2:6:476:ARG:NH2	2.32	0.62
35:A:1202:A:N3	35:A:1223:U:O2'	2.33	0.62
35:A:1754:G:N2	35:A:1759:A:H61	1.97	0.62
2:6:322:ALA:N	2:6:427:LEU:O	2.33	0.62
4:C:238:GLY:HA3	4:C:245:HIS:HA	1.82	0.62
2:5:338:LEU:HD11	2:5:396:PRO:HG3	1.82	0.62
7:F:71:LYS:HZ3	34:g:5:ILE:HB	1.64	0.62
35:A:3079:U:H2'	35:A:3080:A:C8	2.35	0.62
2:6:178:PRO:HA	2:6:188:VAL:HA	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:6:531:HIS:ND1	2:6:548:ASP:OD1	2.31	0.62
11:J:132:GLY:HA2	11:J:135:ARG:HD2	1.81	0.62
16:O:106:ASP:OD2	35:A:1867:G:O2'	2.16	0.62
34:g:14:VAL:HG22	34:g:33:ILE:HB	1.81	0.62
2:5:44:LEU:HD23	2:5:83:LEU:HD22	1.81	0.62
10:I:40:ARG:CZ	35:A:1201:G:H4'	2.29	0.62
2:6:544:TYR:HB3	2:6:615:ASP:HB3	1.82	0.62
35:A:337:U:O4	35:A:344:G:O6	2.18	0.61
2:5:27:ALA:HA	2:5:93:ILE:HB	1.82	0.61
2:6:82:SER:H	2:6:402:ARG:HH12	1.49	0.61
35:A:2178:G:H21	35:A:2775:C:H5'	1.65	0.61
2:5:670:VAL:HB	35:A:1185:A:C8	2.36	0.61
11:J:114:LYS:HB3	11:J:118:LEU:HD12	1.82	0.61
35:A:1174:G:H4'	35:A:1204:A:C8	2.31	0.61
18:Q:3:THR:HG23	35:A:3096:U:H4'	1.82	0.61
35:A:858:A:O2'	35:A:1877:U:OP1	2.17	0.61
4:C:75:VAL:HG11	4:C:99:ASP:HB2	1.83	0.61
35:A:1002:C:C2'	35:A:1003:A:H5"	2.31	0.61
35:A:1185:A:H2'	35:A:1186:G:C8	2.35	0.61
35:A:993:G:N2	35:A:1015:A:OP2	2.28	0.61
2:6:353:HIS:ND1	2:6:387:ASP:OD1	2.34	0.61
27:Z:36:MET:CE	27:Z:41:LEU:HB3	2.30	0.61
2:5:544:TYR:N	2:5:615:ASP:O	2.34	0.61
2:5:578:SER:HB2	2:5:622:GLN:HG3	1.83	0.61
4:C:164:GLN:HB3	4:C:176:ARG:HG2	1.82	0.61
11:J:90:GLY:HA3	35:A:1181:G:O2'	2.00	0.61
5:D:44:ARG:NH1	35:A:3009:U:OP1	2.30	0.60
35:A:1532:G:O2'	35:A:1803:A:N1	2.30	0.60
35:A:1621:C:H2'	35:A:1622:G:H8	1.65	0.60
35:A:1656:A:H2'	35:A:1657:G:H8	1.65	0.60
35:A:2064:A:H1'	35:A:2065:A:C2	2.36	0.60
2:6:371:ALA:HB1	2:6:441:MET:HG2	1.82	0.60
4:C:231:HIS:CE1	4:C:233:HIS:HD2	2.19	0.60
19:R:83:LEU:HD22	19:R:113:ALA:HB2	1.82	0.60
35:A:2079:C:N4	35:A:2080:G:O6	2.35	0.60
2:5:587:MET:HG3	2:5:629:LEU:HD21	1.83	0.60
35:A:2190:A:OP2	35:A:2191:C:N4	2.33	0.60
21:T:71:LEU:HD23	21:T:116:SER:HB2	1.83	0.60
35:A:1543:A:N1	35:A:1628:A:O2'	2.33	0.60
35:A:1996:U:OP2	35:A:2001:A:N6	2.32	0.60
3:B:83:C:OP1	28:a:16:ARG:NH1	2.21	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:1193:C:H2'	35:A:1194:C:C6	2.37	0.60
2:5:586:GLN:HB3	2:5:629:LEU:HD23	1.84	0.60
35:A:2294:A:H2'	35:A:2295:C:C6	2.36	0.60
17:P:46:HIS:ND1	17:P:66:ILE:HD13	2.16	0.60
2:6:641:LEU:HB3	2:6:716:TYR:HB3	1.84	0.60
9:H:62:ILE:O	9:H:66:ASN:N	2.32	0.60
35:A:1550:G:N1	35:A:1620:U:N3	2.50	0.60
16:O:99:LYS:HD2	29:b:42:ARG:HE	1.67	0.59
2:6:475:LEU:HD13	2:6:499:VAL:HG11	1.83	0.59
10:I:3:LYS:HE2	35:A:1163:A:OP1	2.02	0.59
4:C:54:LYS:NZ	35:A:2040:G:OP1	2.35	0.59
35:A:594:U:H5'	35:A:595:A:H5"	1.83	0.59
2:5:217:ILE:O	2:5:221:ARG:HG3	2.02	0.59
2:6:652:PRO:HA	2:6:680:ARG:HA	1.83	0.59
4:C:88:ARG:NH2	35:A:2034:G:OP1	2.35	0.59
10:I:22:ALA:HB2	10:I:110:MET:SD	2.42	0.59
12:K:116:ARG:NH1	35:A:615:A:H2	1.97	0.59
2:5:178:PRO:HA	2:5:188:VAL:HA	1.85	0.59
23:V:75:ASP:OD1	23:V:76:SER:N	2.36	0.59
14:M:32:THR:HG22	14:M:35:ARG:H	1.66	0.59
35:A:346:C:H2'	35:A:347:U:C6	2.37	0.59
16:O:20:LEU:HD21	16:O:40:LYS:HE2	1.85	0.59
2:6:91:ASN:ND2	2:6:411:ASP:OD1	2.35	0.59
4:C:183:ARG:NH2	35:A:2017:C:OP2	2.35	0.59
8:G:111:SER:OG	35:A:2891:C:N3	2.29	0.59
10:I:23:THR:HG22	10:I:109:TYR:HB3	1.85	0.59
12:K:92:LEU:HD11	12:K:99:ARG:HD2	1.84	0.59
8:G:35:LEU:HD11	8:G:72:LEU:HB3	1.83	0.59
20:S:53:ASP:OD1	20:S:54:ASP:N	2.36	0.59
35:A:1885:G:O2'	35:A:2215:U:O4	2.18	0.59
2:6:550:GLU:HB3	2:6:605:THR:HB	1.84	0.59
35:A:621:U:H2'	35:A:622:C:C6	2.38	0.59
35:A:1825:C:N4	35:A:1840:G:OP2	2.27	0.59
2:5:103:GLY:HA3	2:5:474:THR:HG21	1.84	0.58
11:J:29:ALA:O	11:J:33:HIS:ND1	2.34	0.58
11:J:95:HIS:ND1	35:A:1195:A:O3'	2.36	0.58
35:A:429:A:H2'	35:A:430:A:C8	2.38	0.58
7:F:44:ASN:ND2	35:A:2537:C:O4'	2.37	0.58
35:A:2074:G:O2'	35:A:2110:U:O4	2.17	0.58
10:I:40:ARG:NH2	35:A:1201:G:H4'	2.19	0.58
11:J:128:LYS:HD3	35:A:1198:C:H4'	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:339:U:H2'	35:A:340:A:C8	2.37	0.58
35:A:357:U:H4'	35:A:358:G:O5'	2.03	0.58
35:A:3020:U:O2'	35:A:3021:A:O5'	2.20	0.58
2:5:666:ARG:NH2	2:5:698:ASP:OD2	2.35	0.58
35:A:2340:A:N1	35:A:2393:A:N6	2.51	0.58
17:P:42:ARG:HD3	17:P:113:ILE:HD11	1.85	0.58
2:6:83:LEU:HB3	2:6:90:VAL:HB	1.86	0.58
27:Z:36:MET:HE2	27:Z:41:LEU:HB3	1.84	0.58
35:A:2174:G:N1	35:A:2178:G:O2'	2.19	0.58
2:5:229:ILE:HG23	2:5:237:LEU:HB3	1.84	0.58
2:6:505:ARG:HE	2:6:506:ARG:HG3	1.69	0.58
15:N:74:LEU:HD12	15:N:92:TRP:HE1	1.67	0.58
2:5:292:ALA:O	2:5:296:HIS:N	2.34	0.58
2:5:676:HIS:HB2	2:5:682:VAL:HG23	1.86	0.58
7:F:128:GLN:HB3	7:F:135:TYR:CE1	2.39	0.58
8:G:5:GLY:HA3	8:G:66:HIS:CD2	2.39	0.58
26:Y:48:ARG:NH2	35:A:2424:C:OP1	2.33	0.58
35:A:2386:U:OP1	35:A:2393:A:O2'	2.22	0.58
12:K:99:ARG:HA	12:K:102:GLU:HB2	1.84	0.58
35:A:1530:G:H22	35:A:1805:G:H1	1.52	0.58
2:6:540:GLY:N	35:A:3080:A:H5"	2.19	0.58
35:A:998:G:H2'	35:A:999:C:H6	1.69	0.58
2:5:22:ALA:O	2:5:89:LYS:N	2.32	0.57
3:B:10:G:O2'	3:B:11:U:OP1	2.19	0.57
15:N:110:ASP:OD1	15:N:113:THR:OG1	2.21	0.57
20:S:23:LYS:HD3	20:S:96:VAL:HG22	1.86	0.57
32:e:9:GLY:O	32:e:13:ARG:HG2	2.03	0.57
35:A:292:G:N1	35:A:343:U:N3	2.52	0.57
35:A:2095:G:HO2'	35:A:2096:G:H8	1.51	0.57
2:6:676:HIS:H	2:6:681:THR:HA	1.68	0.57
4:C:231:HIS:CE1	4:C:233:HIS:CD2	2.92	0.57
7:F:75:ARG:HH21	7:F:95:ARG:NH2	2.03	0.57
35:A:1001:C:H1'	35:A:1007:G:H22	1.69	0.57
35:A:1185:A:H2'	35:A:1186:G:H8	1.69	0.57
35:A:1186:G:H2'	35:A:1187:A:C5	2.39	0.57
2:5:551:VAL:HG22	2:5:604:VAL:HG22	1.87	0.57
2:6:225:ILE:HG12	2:6:252:LEU:HD22	1.86	0.57
2:6:324:VAL:HA	2:6:339:VAL:HA	1.86	0.57
14:M:51:GLU:OE2	32:e:57:ARG:NH1	2.38	0.57
23:V:4:HIS:NE2	35:A:81:A:OP1	2.36	0.57
35:A:1195:A:H3'	35:A:1196:C:H6	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:1610:C:H2'	35:A:1611:A:H8	1.70	0.57
35:A:2381:A:H4'	35:A:2382:G:O5'	2.04	0.57
4:C:212:MET:HE2	4:C:217:LYS:HE3	1.86	0.57
35:A:284:G:O2'	35:A:286:G:O4'	2.21	0.57
35:A:1542:A:H61	35:A:1628:A:H1'	1.68	0.57
35:A:2761:U:H2'	35:A:2762:C:H6	1.69	0.57
2:6:376:GLY:O	2:6:379:HIS:N	2.33	0.57
10:I:28:TYR:CD2	10:I:78:ALA:HB2	2.35	0.57
22:U:11:ILE:O	27:Z:33:ARG:NH2	2.38	0.57
24:W:158:THR:OG1	24:W:174:PRO:O	2.15	0.57
35:A:303:G:H2'	35:A:304:U:O4'	2.04	0.57
35:A:2169:G:O2'	35:A:2170:U:OP1	2.19	0.57
2:5:448:ILE:N	2:5:488:LEU:O	2.36	0.57
11:J:128:LYS:CD	35:A:1198:C:H4'	2.34	0.57
35:A:1178:U:C2	35:A:1180:G:H5'	2.39	0.57
35:A:2867:A:H2'	35:A:2868:A:H8	1.69	0.57
2:5:78:LEU:HD23	2:5:104:GLU:HB3	1.87	0.57
2:6:302:PHE:N	2:6:435:VAL:O	2.34	0.57
35:A:2761:U:H2'	35:A:2762:C:C6	2.40	0.57
2:6:322:ALA:HB3	2:6:427:LEU:HB2	1.87	0.57
2:6:324:VAL:HG22	2:6:339:VAL:HG22	1.85	0.57
22:U:40:THR:O	22:U:44:ILE:HG13	2.04	0.57
25:X:26:PHE:N	25:X:29:GLN:OE1	2.34	0.57
35:A:2902:A:H2'	35:A:2903:A:H8	1.70	0.57
2:5:357:HIS:CE1	2:5:424:GLY:HA3	2.40	0.57
22:U:12:LEU:HB2	22:U:32:VAL:HG23	1.87	0.57
35:A:1225:G:O2'	35:A:1226:U:H5'	2.05	0.57
35:A:3020:U:H1'	35:A:3022:G:O6	2.04	0.57
30:c:44:ASN:OD1	30:c:45:CYS:N	2.36	0.56
35:A:844:G:H4'	35:A:878:G:H5'	1.87	0.56
2:5:353:HIS:HB2	2:5:430:LYS:HA	1.87	0.56
2:5:468:LEU:HG	2:5:507:TYR:HE2	1.70	0.56
2:5:552:GLU:OE2	2:5:603:ARG:NH1	2.32	0.56
4:C:69:ARG:HB2	4:C:130:ASN:ND2	2.20	0.56
35:A:1530:G:N2	35:A:1805:G:H1	2.03	0.56
2:5:47:GLY:HA3	2:5:83:LEU:HD21	1.87	0.56
2:5:701:SER:C	2:5:703:SER:H	2.13	0.56
2:6:174:PRO:HA	2:6:268:VAL:HB	1.87	0.56
4:C:226:MET:HE2	4:C:230:ASP:HB3	1.87	0.56
8:G:69:SER:O	8:G:73:ILE:HG12	2.06	0.56
18:Q:30:LYS:NZ	18:Q:78:PRO:O	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:R:45:TYR:HD1	19:R:48:ARG:HE	1.53	0.56
35:A:292:G:H22	35:A:343:U:H2'	1.70	0.56
35:A:1220:C:H2'	35:A:1221:A:H8	1.70	0.56
35:A:1656:A:H2'	35:A:1657:G:C8	2.40	0.56
24:W:134:GLU:HB2	24:W:171:ILE:HD11	1.87	0.56
10:I:26:THR:HG22	10:I:105:ILE:HA	1.87	0.56
30:c:8:ARG:NH2	35:A:2509:C:OP2	2.38	0.56
4:C:60:ARG:HA	35:A:1788:G:H5'	1.87	0.56
7:F:11:LEU:HD12	7:F:14:ARG:HB3	1.87	0.56
9:H:8:GLU:HG2	9:H:14:ALA:HA	1.88	0.56
35:A:334:G:H2'	35:A:335:G:C8	2.40	0.56
35:A:337:U:C2	35:A:344:G:N1	2.73	0.56
35:A:1174:G:C4'	35:A:1204:A:H8	2.18	0.56
2:5:323:GLU:N	2:5:340:ARG:O	2.39	0.56
7:F:19:ILE:HD12	7:F:179:ALA:HB1	1.87	0.56
15:N:43:THR:HG22	15:N:94:VAL:HG12	1.86	0.56
35:A:1963:G:H2'	35:A:1964:U:C6	2.41	0.56
35:A:2178:G:N2	35:A:2774:G:O3'	2.39	0.56
2:6:106:ARG:HD2	2:6:442:PRO:HD3	1.88	0.56
2:6:332:TYR:HH	13:L:47:ILE:HD12	1.71	0.56
2:6:452:PRO:HA	2:6:511:VAL:HG12	1.87	0.56
23:V:86:ARG:NH2	23:V:104:ASP:OD2	2.39	0.56
35:A:445:U:H4'	35:A:446:G:O5'	2.06	0.56
2:6:321:LEU:HD11	2:6:436:LEU:HG	1.88	0.56
7:F:11:LEU:HD21	7:F:180:LEU:HD12	1.87	0.56
24:W:9:ASN:HD21	24:W:61:HIS:CE1	2.23	0.56
35:A:329:U:O2	35:A:447:A:N6	2.39	0.56
35:A:1164:A:H2'	35:A:1164:A:OP1	2.05	0.56
35:A:1791:A:H2'	35:A:1792:A:C8	2.41	0.56
35:A:2329:G:O6	35:A:2406:U:O4	2.22	0.56
35:A:2862:G:O2'	35:A:3002:A:N6	2.39	0.56
2:5:550:GLU:O	2:5:605:THR:N	2.35	0.55
7:F:107:LEU:HA	7:F:110:LEU:HG	1.89	0.55
24:W:52:ARG:NH2	35:A:1157:G:H4'	2.21	0.55
31:d:14:ARG:NH2	35:A:885:G:OP2	2.39	0.55
13:L:2:ILE:HG13	13:L:8:LEU:HD21	1.88	0.55
24:W:39:GLY:HA3	24:W:99:VAL:HB	1.87	0.55
34:g:16:CYS:SG	34:g:17:GLY:N	2.79	0.55
35:A:2168:U:O4	35:A:2187:U:O2'	2.24	0.55
2:5:43:LEU:HD21	2:5:282:LEU:HD23	1.86	0.55
2:5:84:SER:HA	2:5:89:LYS:HA	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:477:ILE:HD13	2:5:488:LEU:HD23	1.88	0.55
2:6:25:ASN:ND2	2:6:112:ALA:HA	2.21	0.55
35:A:218:A:N3	35:A:234:U:O2'	2.33	0.55
35:A:1118:A:H2'	35:A:1119:A:C8	2.41	0.55
35:A:1554:U:O4	35:A:1617:C:N3	2.39	0.55
35:A:1705:C:H2'	35:A:1706:A:H8	1.72	0.55
13:L:66:VAL:O	13:L:78:LYS:HE2	2.07	0.55
35:A:2120:A:H2'	35:A:2121:G:H8	1.72	0.55
35:A:2358:A:HO2'	35:A:2382:G:HO2'	1.53	0.55
2:5:575:PHE:O	2:5:578:SER:OG	2.17	0.55
35:A:2127:G:H3'	35:A:2128:G:H8	1.70	0.55
10:I:57:VAL:O	10:I:61:ALA:N	2.39	0.55
13:L:76:TYR:O	18:Q:71:ARG:HD2	2.06	0.55
21:T:32:ARG:NH1	21:T:81:VAL:O	2.39	0.55
35:A:190:A:H2'	35:A:191:G:N3	2.22	0.55
2:6:351:THR:HA	2:6:389:ARG:HA	1.89	0.55
16:O:71:ARG:HH22	35:A:2933:G:H5'	1.71	0.55
2:6:338:LEU:HD11	2:6:396:PRO:HG3	1.89	0.55
10:I:82:VAL:HG21	10:I:86:ALA:HA	1.89	0.55
35:A:1165:G:H8	35:A:1165:G:OP2	1.89	0.55
2:5:20:PRO:HD3	2:5:316:PRO:HD3	1.89	0.55
2:5:675:LYS:NZ	11:J:31:GLY:HA3	2.21	0.55
3:B:50:C:O3'	17:P:78:LYS:NZ	2.40	0.55
35:A:453:U:H2'	35:A:454:U:C6	2.41	0.55
35:A:1628:A:N3	35:A:1630:U:N3	2.54	0.55
35:A:2261:U:H2'	35:A:2262:C:C6	2.42	0.55
2:6:536:LYS:HD2	35:A:1929:A:OP1	2.06	0.54
12:K:56:VAL:HB	12:K:124:VAL:HG23	1.88	0.54
16:O:33:ARG:NH1	16:O:114:GLU:OE2	2.40	0.54
21:T:13:LYS:HB2	35:A:581:G:H4'	1.89	0.54
2:6:374:ALA:HA	2:6:473:PRO:HA	1.89	0.54
2:6:377:SER:H	2:6:476:ARG:HG3	1.72	0.54
8:G:86:GLN:NE2	8:G:87:LYS:O	2.40	0.54
9:H:62:ILE:H	9:H:65:ALA:HB3	1.72	0.54
18:Q:24:THR:HG23	18:Q:86:LEU:HB2	1.88	0.54
22:U:69:THR:HG23	22:U:72:GLY:H	1.72	0.54
4:C:257:THR:OG1	35:A:2014:G:O2'	2.25	0.54
8:G:158:TYR:O	8:G:172:ARG:NH2	2.29	0.54
33:f:25:VAL:HB	33:f:34:GLN:HG3	1.89	0.54
35:A:1886:A:O2'	35:A:1892:G:N7	2.31	0.54
35:A:2190:A:H2'	35:A:2191:C:C2	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:378:THR:OG1	2:5:462:SER:OG	2.25	0.54
3:B:5:C:OP1	3:B:62:C:O2'	2.25	0.54
7:F:117:ARG:NH1	7:F:145:PHE:O	2.40	0.54
15:N:108:TYR:CD1	15:N:109:PRO:HD2	2.43	0.54
35:A:1690:A:H2'	35:A:1691:A:C8	2.42	0.54
35:A:2730:U:OP2	35:A:2800:G:N1	2.37	0.54
2:5:657:GLY:HA3	35:A:1213:A:OP2	2.07	0.54
2:6:338:LEU:HD12	2:6:412:ILE:HG22	1.90	0.54
15:N:42:ILE:HD12	15:N:97:VAL:HG21	1.89	0.54
30:c:6:ASP:O	30:c:8:ARG:N	2.36	0.54
35:A:1012:C:H2'	35:A:1012:C:O2	2.06	0.54
35:A:2105:G:N2	35:A:2106:A:N7	2.53	0.54
35:A:2160:A:N6	35:A:2194:A:H2'	2.22	0.54
35:A:2510:A:H4'	35:A:2511:A:O4'	2.07	0.54
35:A:2745:C:O2'	35:A:2788:A:N3	2.40	0.54
2:6:674:ASP:N	2:6:682:VAL:O	2.41	0.54
4:C:43:ARG:NH1	35:A:806:C:H1'	2.22	0.54
5:D:169:ARG:HH22	35:A:3046:C:H41	1.54	0.54
7:F:61:ILE:HG23	7:F:72:PRO:HD2	1.90	0.54
11:J:16:GLN:O	11:J:44:TYR:OH	2.26	0.54
11:J:128:LYS:CE	35:A:1198:C:H5"	2.35	0.54
12:K:65:SER:OG	35:A:1259:U:OP2	2.25	0.54
24:W:165:PRO:HD2	24:W:168:VAL:HG21	1.90	0.54
35:A:1928:C:H4'	35:A:3079:U:O2	2.07	0.54
35:A:2351:A:H2'	35:A:2352:C:C6	2.42	0.54
35:A:337:U:N3	35:A:344:G:C6	2.75	0.54
2:5:24:ARG:O	2:5:91:ASN:N	2.35	0.54
10:I:54:ASN:ND2	10:I:73:PHE:O	2.41	0.54
2:5:139:VAL:HG13	2:5:141:MET:HB2	1.91	0.53
2:6:126:ASP:HB2	2:6:128:PRO:HD2	1.90	0.53
35:A:998:G:H2'	35:A:999:C:C6	2.42	0.53
2:5:546:VAL:HB	2:5:610:LYS:HB2	1.89	0.53
4:C:176:ARG:HH22	35:A:2062:G:H5"	1.73	0.53
14:M:124:VAL:HG21	14:M:137:ILE:HD13	1.90	0.53
20:S:43:VAL:HG22	20:S:48:VAL:HG12	1.91	0.53
35:A:2569:G:N3	35:A:2605:C:H2'	2.24	0.53
17:P:73:ILE:HG22	17:P:75:GLY:H	1.72	0.53
24:W:26:GLN:OE1	24:W:29:ARG:NH2	2.33	0.53
35:A:256:A:H2'	35:A:257:A:C8	2.41	0.53
7:F:64:LEU:HA	7:F:67:ILE:HG22	1.91	0.53
17:P:127:PHE:O	35:A:2601:A:O2'	2.19	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:c:40:LYS:NZ	35:A:2571:C:OP1	2.42	0.53
35:A:1099:A:OP2	35:A:1100:C:N4	2.33	0.53
35:A:1553:C:H5"	35:A:1554:U:H5	1.73	0.53
35:A:2256:G:OP1	35:A:2678:G:O2'	2.19	0.53
2:6:328:THR:HG22	2:6:336:VAL:HB	1.90	0.53
24:W:8:PRO:HA	24:W:66:ILE:HG23	1.89	0.53
35:A:3023:G:H2'	35:A:3024:A:O4'	2.08	0.53
2:5:271:VAL:HG21	2:5:282:LEU:HD22	1.91	0.53
2:5:701:SER:HA	35:A:2884:A:N7	2.23	0.53
2:6:69:GLU:HG3	2:6:76:VAL:HG22	1.89	0.53
2:6:151:ASP:OD2	36:6:801:GNP:N2	2.33	0.53
4:C:79:VAL:HG23	4:C:114:GLY:H	1.73	0.53
17:P:66:ILE:O	17:P:71:ARG:NH2	2.40	0.53
2:5:191:LEU:HD13	2:5:220:LEU:HB3	1.91	0.53
2:5:550:GLU:HB3	2:5:605:THR:HB	1.89	0.53
6:E:34:MET:HE2	6:E:189:LEU:HD11	1.89	0.53
1:3:8:LYS:HG2	1:3:11:ARG:HH12	1.72	0.53
2:5:14:VAL:HG13	2:5:402:ARG:HD2	1.90	0.53
7:F:73:GLU:OE2	7:F:75:ARG:NE	2.42	0.53
11:J:95:HIS:HB2	35:A:1195:A:H4'	1.91	0.53
2:6:543:GLN:HB3	2:6:620:ALA:HB2	1.91	0.53
4:C:67:PHE:CE1	4:C:106:ILE:HD11	2.41	0.53
35:A:1196:C:H1'	35:A:1206:A:H2'	1.91	0.53
35:A:2805:G:OP2	35:A:2805:G:N2	2.41	0.53
4:C:206:TRP:O	4:C:211:ARG:HD3	2.09	0.52
16:O:42:ARG:NH2	35:A:3038:C:OP1	2.35	0.52
24:W:178:VAL:HG12	24:W:179:VAL:HG23	1.91	0.52
35:A:81:A:N1	35:A:96:G:O2'	2.35	0.52
35:A:2872:G:H2'	35:A:2873:U:C6	2.44	0.52
2:6:24:ARG:O	2:6:91:ASN:N	2.35	0.52
35:A:2128:G:O2'	35:A:2150:U:O2	2.27	0.52
2:5:189:VAL:HG22	2:5:196:TYR:HB2	1.92	0.52
2:5:269:ILE:HG12	2:5:285:ILE:HD13	1.92	0.52
2:5:397:LEU:HD22	2:5:402:ARG:HD3	1.91	0.52
4:C:226:MET:HE3	35:A:897:A:C2	2.44	0.52
11:J:94:PRO:HD2	35:A:1194:C:C1'	2.37	0.52
32:e:29:ARG:CZ	32:e:45:ASP:HB3	2.39	0.52
35:A:473:C:O2'	35:A:476:G:N2	2.42	0.52
12:K:125:TYR:HH	12:K:132:HIS:HE2	1.58	0.52
15:N:75:THR:HA	15:N:90:PRO:HA	1.89	0.52
32:e:43:ARG:NH2	35:A:2587:U:OP2	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:2322:C:H2'	35:A:2323:G:H8	1.73	0.52
2:6:663:LEU:HA	2:6:666:ARG:HB2	1.91	0.52
10:I:14:ALA:O	10:I:18:LYS:HG2	2.10	0.52
12:K:93:LEU:HD12	12:K:97:PRO:HB3	1.90	0.52
30:c:6:ASP:C	30:c:8:ARG:H	2.15	0.52
35:A:353:G:H1	35:A:442:U:H3	1.58	0.52
35:A:1001:C:N3	35:A:1002:C:H1'	2.25	0.52
2:6:69:GLU:HG2	2:6:76:VAL:H	1.73	0.52
7:F:117:ARG:HD2	7:F:146:HIS:CE1	2.45	0.52
15:N:1:MET:HE1	15:N:45:ARG:HA	1.91	0.52
22:U:91:LYS:HD3	22:U:92:PRO:HD2	1.92	0.52
25:X:11:ARG:O	25:X:14:ARG:NH2	2.35	0.52
35:A:857:U:H2'	35:A:858:A:C8	2.45	0.52
35:A:2347:G:O6	35:A:2348:G:N2	2.43	0.52
2:6:436:LEU:O	2:6:438:PRO:HD3	2.10	0.52
6:E:160:ARG:HH12	35:A:706:G:HO2'	1.54	0.52
30:c:8:ARG:HH21	35:A:2508:C:H3'	1.74	0.52
35:A:137:G:H2'	35:A:138:A:C8	2.45	0.52
35:A:429:A:H2'	35:A:430:A:H8	1.74	0.52
35:A:3071:A:N7	35:A:3089:A:O2'	2.31	0.52
4:C:182:ILE:HB	4:C:269:VAL:HB	1.91	0.52
19:R:31:LEU:HD21	35:A:672:C:H4'	1.92	0.52
21:T:69:GLU:OE2	21:T:69:GLU:N	2.43	0.52
35:A:2:A:H2'	35:A:3:A:C8	2.45	0.52
35:A:2922:U:H2'	35:A:2923:C:C6	2.45	0.52
2:5:554:LEU:HD11	2:5:603:ARG:HB2	1.90	0.52
2:6:353:HIS:O	2:6:427:LEU:HA	2.10	0.52
10:I:87:VAL:HG13	10:I:91:LYS:NZ	2.23	0.52
35:A:672:C:H2'	35:A:673:C:C6	2.45	0.52
35:A:1627:U:H2'	35:A:1628:A:C8	2.40	0.52
35:A:1963:G:H2'	35:A:1964:U:H6	1.75	0.52
35:A:2061:U:H2'	35:A:2062:G:C8	2.44	0.52
2:5:702:MET:HG3	8:G:176:LYS:HD3	1.91	0.52
7:F:95:ARG:NH1	35:A:2538:A:OP1	2.43	0.52
7:F:170:ASP:OD1	7:F:174:ARG:NH2	2.41	0.52
35:A:1005:A:H2'	35:A:1006:G:O4'	2.10	0.52
2:5:534:HIS:NE2	2:5:543:GLN:OE1	2.43	0.51
2:5:704:HIS:HB3	35:A:2884:A:H5'	1.92	0.51
2:6:83:LEU:N	2:6:90:VAL:O	2.36	0.51
3:B:42:C:N4	7:F:74:VAL:O	2.37	0.51
9:H:41:ARG:O	9:H:45:ARG:N	2.31	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:1715:A:H2'	35:A:1716:A:C8	2.46	0.51
7:F:134:ASN:OD1	7:F:164:VAL:HG23	2.10	0.51
18:Q:28:HIS:CD2	18:Q:82:HIS:HB2	2.46	0.51
35:A:292:G:N2	35:A:343:U:O2	2.43	0.51
2:5:173:ALA:HB3	2:5:265:PHE:HZ	1.76	0.51
9:H:98:ALA:HB2	9:H:114:LYS:HD3	1.91	0.51
26:Y:53:THR:HA	26:Y:56:ILE:HD12	1.90	0.51
35:A:729:C:O2'	35:A:733:U:OP1	2.27	0.51
35:A:1548:C:N4	35:A:1549:G:O6	2.43	0.51
2:6:180:GLY:HA3	2:6:185:CYS:HA	1.92	0.51
2:6:591:VAL:HA	2:6:630:ARG:HH22	1.76	0.51
4:C:181:GLU:HB2	4:C:270:ARG:O	2.10	0.51
29:b:27:LEU:HD23	29:b:38:LYS:HB3	1.92	0.51
35:A:502:C:H2'	35:A:503:A:C8	2.45	0.51
35:A:1179:U:C4	35:A:1188:A:C2	2.99	0.51
2:5:321:LEU:HD11	2:5:436:LEU:HG	1.91	0.51
35:A:279:U:H2'	35:A:280:G:H8	1.75	0.51
35:A:1001:C:H4'	35:A:1001:C:OP1	2.09	0.51
35:A:1211:G:H21	35:A:1216:A:H62	1.58	0.51
2:5:72:GLN:HB3	2:5:74:ARG:NE	2.25	0.51
2:6:650:VAL:HG22	2:6:682:VAL:HG22	1.93	0.51
7:F:15:TYR:OH	7:F:36:PRO:O	2.29	0.51
11:J:94:PRO:HB2	35:A:1195:A:C1'	2.41	0.51
11:J:136:SER:O	35:A:1180:G:N2	2.32	0.51
2:5:654:ASP:OD1	2:5:655:LEU:HG	2.11	0.51
19:R:11:GLN:OE1	19:R:14:ARG:NH1	2.43	0.51
35:A:1314:C:H2'	35:A:1315:C:H6	1.76	0.51
35:A:1541:G:C2	35:A:1631:A:N1	2.78	0.51
35:A:217:G:H22	35:A:235:U:H4'	1.75	0.51
35:A:3019:C:H2'	35:A:3020:U:O4'	2.11	0.51
35:A:337:U:C4	35:A:344:G:O6	2.64	0.51
35:A:1012:C:H3'	35:A:1013:U:C6	2.45	0.51
35:A:1162:G:O3'	35:A:1165:G:H5'	2.11	0.51
35:A:2471:A:H2'	35:A:2472:C:H6	1.76	0.51
6:E:156:VAL:HG12	6:E:158:ILE:HG12	1.92	0.51
7:F:178:ARG:NH1	7:F:184:PHE:HB2	2.26	0.51
35:A:277:U:H2'	35:A:278:A:C8	2.46	0.51
35:A:911:U:H2'	35:A:912:C:C6	2.46	0.51
35:A:928:U:H2'	35:A:929:C:C6	2.46	0.51
35:A:1927:C:O2'	35:A:3080:A:H1'	2.11	0.51
35:A:3030:A:H2'	35:A:3031:A:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:6:565:LYS:HE2	2:6:605:THR:HG22	1.93	0.50
4:C:162:SER:HB3	4:C:195:GLU:HG2	1.92	0.50
7:F:80:SER:OG	7:F:88:GLU:N	2.44	0.50
11:J:137:MET:HE1	35:A:1181:G:O5'	2.11	0.50
17:P:83:ARG:HH11	17:P:86:GLN:HE21	1.58	0.50
18:Q:91:VAL:HG11	18:Q:96:LEU:HD21	1.92	0.50
35:A:1634:C:H2'	35:A:1635:A:C8	2.45	0.50
35:A:2350:G:H2'	35:A:2351:A:C8	2.46	0.50
2:5:674:ASP:HA	11:J:23:ALA:HB1	1.94	0.50
13:L:17:LYS:HZ1	13:L:47:ILE:HD13	1.76	0.50
16:O:10:LEU:HD21	16:O:40:LYS:HA	1.93	0.50
32:e:47:ARG:HH22	35:A:725:A:P	2.34	0.50
4:C:224:VAL:HG13	35:A:2043:C:OP1	2.11	0.50
5:D:53:ALA:HB1	5:D:78:ARG:HB2	1.92	0.50
12:K:112:ASN:ND2	35:A:650:G:H5"	2.26	0.50
14:M:84:ASN:HD21	14:M:118:LEU:HA	1.75	0.50
16:O:70:ILE:HD11	16:O:76:VAL:HG22	1.92	0.50
19:R:48:ARG:NH1	35:A:652:C:O2'	2.45	0.50
34:g:16:CYS:SG	34:g:38:CYS:HB3	2.51	0.50
35:A:929:C:H1'	35:A:1339:G:H21	1.75	0.50
35:A:1195:A:H3'	35:A:1196:C:C5	2.47	0.50
35:A:1425:G:N2	35:A:1428:U:C4	2.79	0.50
35:A:2182:C:H2'	35:A:2183:G:C8	2.46	0.50
35:A:1180:G:C6	35:A:1195:A:N1	2.80	0.50
2:6:116:LEU:HD21	2:6:290:PHE:HZ	1.77	0.50
2:6:325:VAL:HG23	2:6:326:LYS:HG3	1.94	0.50
8:G:95:TYR:HD1	8:G:108:LEU:HA	1.76	0.50
19:R:28:ARG:NH1	19:R:38:GLN:OE1	2.45	0.50
35:A:589:A:O2'	35:A:592:A:OP1	2.24	0.50
35:A:750:C:H2'	35:A:751:A:H8	1.75	0.50
35:A:829:U:O2'	35:A:831:A:N7	2.34	0.50
35:A:1679:A:H4'	35:A:1679:A:OP1	2.12	0.50
10:I:51:VAL:HB	35:A:1202:A:N7	2.26	0.50
12:K:125:TYR:OH	12:K:132:HIS:NE2	2.38	0.50
23:V:88:ASP:O	23:V:92:GLY:N	2.45	0.50
32:e:7:HIS:NE2	35:A:251:A:OP1	2.38	0.50
35:A:1610:C:H2'	35:A:1611:A:C8	2.46	0.50
35:A:1732:U:H2'	35:A:1733:C:C6	2.47	0.50
35:A:2076:A:H2'	35:A:2077:C:O4'	2.11	0.50
2:5:322:ALA:HB3	2:5:427:LEU:HB2	1.94	0.50
6:E:160:ARG:NH1	35:A:706:G:O2'	2.35	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:F:141:GLU:CD	7:F:143:SER:H	2.19	0.50
16:O:45:ARG:O	16:O:49:GLU:HG3	2.12	0.50
5:D:130:HIS:CD2	5:D:165:ARG:HB3	2.46	0.50
35:A:2190:A:H5'	35:A:2191:C:C4	2.47	0.50
2:5:161:LEU:HD21	2:5:174:PRO:HG3	1.94	0.50
7:F:149:ASP:O	7:F:152:SER:OG	2.28	0.50
35:A:356:G:H4'	35:A:358:G:C6	2.47	0.50
35:A:2238:A:H2'	35:A:2239:A:C8	2.47	0.50
35:A:2515:U:H2'	35:A:2516:U:C6	2.47	0.50
2:6:417:ARG:CD	13:L:97:ARG:HD3	2.40	0.49
9:H:78:VAL:HB	9:H:146:LEU:HD23	1.93	0.49
11:J:137:MET:HE1	35:A:1181:G:C4'	2.42	0.49
12:K:112:ASN:OD1	12:K:112:ASN:N	2.43	0.49
27:Z:5:THR:OG1	27:Z:9:GLU:OE2	2.24	0.49
35:A:56:U:O2'	35:A:71:A:OP2	2.29	0.49
2:6:332:TYR:HA	13:L:13:ASN:HD22	1.77	0.49
13:L:47:ILE:HG22	13:L:49:GLY:H	1.77	0.49
18:Q:95:LYS:NZ	35:A:3068:U:OP1	2.40	0.49
35:A:1550:G:O6	35:A:1620:U:C4	2.65	0.49
35:A:1621:C:H2'	35:A:1622:G:C8	2.47	0.49
35:A:2465:A:H2'	35:A:2466:G:C8	2.47	0.49
2:5:292:ALA:HB1	2:5:294:PRO:HD2	1.93	0.49
2:5:346:ILE:HB	2:5:407:VAL:HB	1.93	0.49
3:B:63:U:H2'	3:B:64:G:H8	1.77	0.49
4:C:24:ILE:HG23	4:C:83:GLU:HA	1.94	0.49
7:F:147:GLU:HA	34:g:28:LYS:HE3	1.94	0.49
7:F:154:ASP:OD1	7:F:155:ARG:N	2.45	0.49
11:J:128:LYS:HE2	35:A:1198:C:C5'	2.41	0.49
35:A:368:U:O2'	35:A:369:G:H5'	2.12	0.49
2:5:272:CYS:HB2	2:5:277:VAL:HB	1.94	0.49
2:5:353:HIS:CD2	2:5:433:PRO:HB3	2.47	0.49
2:6:550:GLU:O	2:6:605:THR:N	2.44	0.49
3:B:60:G:H4'	17:P:12:GLU:HB2	1.94	0.49
4:C:257:THR:HG1	35:A:2014:G:HO2'	1.56	0.49
5:D:147:ARG:CG	5:D:148:PRO:HD2	2.42	0.49
29:b:3:VAL:HG12	35:A:2239:A:C2	2.47	0.49
35:A:966:U:H2'	35:A:967:G:H8	1.78	0.49
35:A:999:C:H2'	35:A:1000:C:H6	1.78	0.49
2:5:24:ARG:N	2:5:89:LYS:O	2.43	0.49
2:6:357:HIS:HB3	2:6:438:PRO:HG2	1.95	0.49
3:B:10:G:O2'	3:B:11:U:H5'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:E:118:ARG:NH2	14:M:4:ILE:O	2.45	0.49
9:H:88:THR:HG22	9:H:90:LYS:HG3	1.94	0.49
14:M:63:LYS:HA	32:e:13:ARG:HD3	1.94	0.49
23:V:84:GLY:C	23:V:97:ILE:HG22	2.38	0.49
35:A:2085:C:O2'	35:A:2086:U:OP1	2.29	0.49
35:A:2165:C:H3'	35:A:2166:C:H5'	1.95	0.49
35:A:2530:C:H5"	35:A:2531:G:H2'	1.94	0.49
35:A:2879:G:O2'	35:A:2888:G:O6	2.28	0.49
35:A:3117:U:H2'	35:A:3118:U:C6	2.48	0.49
2:6:376:GLY:H	2:6:476:ARG:HA	1.77	0.49
2:6:533:ARG:H	2:6:627:LEU:HD23	1.78	0.49
15:N:48:GLU:OE1	15:N:51:ARG:NH1	2.46	0.49
16:O:72:ASP:O	16:O:76:VAL:HG23	2.13	0.49
35:A:2248:C:H2'	35:A:2249:G:H8	1.76	0.49
2:6:186:LYS:HB2	2:6:200:SER:HB3	1.95	0.49
10:I:66:ILE:HG22	10:I:109:TYR:CZ	2.47	0.49
13:L:86:ILE:HG22	13:L:94:ARG:HG3	1.93	0.49
19:R:89:GLU:OE1	20:S:8:LYS:NZ	2.38	0.49
35:A:2622:C:H2'	35:A:2623:A:H8	1.77	0.49
5:D:63:ILE:HD11	35:A:3032:G:H5"	1.94	0.49
25:X:35:GLU:HG2	35:A:2578:A:H4'	1.94	0.49
35:A:1756:G:H1'	35:A:1758:G:N1	2.26	0.49
2:6:661:GLY:O	2:6:664:SER:OG	2.26	0.49
28:a:16:ARG:O	28:a:20:ARG:HG3	2.13	0.49
35:A:2:A:H2'	35:A:3:A:H8	1.78	0.49
35:A:2288:C:H2'	35:A:2289:C:C6	2.47	0.49
2:6:376:GLY:HA2	2:6:477:ILE:H	1.77	0.49
3:B:115:A:H2'	3:B:116:C:C6	2.48	0.49
4:C:89:THR:CG2	4:C:201:GLN:HG2	2.43	0.49
6:E:36:GLN:OE1	35:A:774:G:N2	2.34	0.49
8:G:59:GLU:OE2	8:G:62:SER:N	2.39	0.49
11:J:94:PRO:HD2	35:A:1194:C:O2'	2.13	0.49
14:M:80:VAL:CG1	14:M:118:LEU:HB2	2.43	0.49
35:A:297:G:H2'	35:A:298:G:C8	2.47	0.49
13:L:89:ASN:OD1	13:L:90:ASP:N	2.46	0.48
25:X:75:ARG:NH2	35:A:2557:A:OP1	2.46	0.48
35:A:673:C:H2'	35:A:674:U:C6	2.48	0.48
35:A:1400:G:N2	35:A:1443:G:H5"	2.28	0.48
35:A:2867:A:H2'	35:A:2868:A:C8	2.47	0.48
2:5:322:ALA:HA	2:5:341:VAL:HA	1.95	0.48
2:6:561:GLU:HB3	2:6:603:ARG:HH21	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:46:A:C4	3:B:47:A:C8	3.02	0.48
23:V:96:ARG:HE	23:V:105:ILE:HG23	1.78	0.48
25:X:48:GLY:HA3	25:X:79:ASN:OD1	2.13	0.48
35:A:138:A:H2'	35:A:139:U:O2	2.13	0.48
35:A:289:A:N6	35:A:299:G:H1	2.11	0.48
35:A:752:C:H2'	35:A:753:A:H8	1.77	0.48
35:A:1705:C:H2'	35:A:1706:A:C8	2.48	0.48
2:6:368:HIS:HB2	2:6:710:ARG:HB3	1.95	0.48
12:K:102:GLU:O	12:K:106:ILE:HG12	2.13	0.48
13:L:35:ILE:O	13:L:69:ARG:NH1	2.39	0.48
18:Q:51:GLY:HA2	18:Q:56:GLU:HG3	1.96	0.48
25:X:41:ARG:NH1	35:A:2610:C:O2'	2.46	0.48
35:A:339:U:H2'	35:A:340:A:H8	1.76	0.48
35:A:929:C:H1'	35:A:1339:G:N2	2.28	0.48
35:A:2342:A:N6	35:A:2390:U:O2'	2.47	0.48
2:6:165:GLN:HA	2:6:172:VAL:HB	1.94	0.48
5:D:148:PRO:O	35:A:2735:U:O2'	2.29	0.48
23:V:46:ALA:HA	23:V:57:GLY:HA3	1.95	0.48
35:A:32:G:H1'	35:A:542:A:C4	2.49	0.48
35:A:389:G:N1	35:A:392:A:OP2	2.41	0.48
35:A:2019:A:H2'	35:A:2020:A:H8	1.78	0.48
35:A:2551:A:H2'	35:A:2552:A:C8	2.48	0.48
2:5:697:ILE:HD11	35:A:2885:G:H21	1.78	0.48
2:6:172:VAL:HG22	2:6:266:PHE:HB2	1.96	0.48
18:Q:26:ASN:OD1	18:Q:84:ASP:HB2	2.13	0.48
35:A:489:A:H2'	35:A:490:A:C8	2.49	0.48
35:A:2095:G:O2'	35:A:2096:G:H8	1.96	0.48
35:A:2297:U:H2'	35:A:2298:U:C6	2.48	0.48
35:A:2339:G:O6	35:A:2394:A:N6	2.46	0.48
35:A:2420:U:H1'	35:A:2421:A:C8	2.48	0.48
2:5:225:ILE:O	2:5:229:ILE:HG13	2.13	0.48
35:A:980:C:O2'	35:A:981:U:O5'	2.27	0.48
35:A:999:C:H2'	35:A:1000:C:C6	2.48	0.48
4:C:276:LYS:HD3	35:A:2125:A:H62	1.78	0.48
24:W:52:ARG:HH22	35:A:1157:G:H4'	1.77	0.48
32:e:23:VAL:CG1	32:e:47:ARG:HB3	2.43	0.48
35:A:979:G:H2'	35:A:980:C:C6	2.49	0.48
35:A:1529:U:H3'	35:A:1530:G:C8	2.49	0.48
35:A:2096:G:H2'	35:A:2097:G:H8	1.76	0.48
35:A:3022:G:H2'	35:A:3023:G:C8	2.49	0.48
35:A:3030:A:H2'	35:A:3031:A:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:5:261:ALA:HA	2:5:291:PRO:HB3	1.96	0.48
2:6:25:ASN:HB2	2:6:93:ILE:HD11	1.95	0.48
8:G:60:ARG:HH11	35:A:1153:U:H5'	1.78	0.48
16:O:101:GLU:HG3	16:O:102:ASN:N	2.28	0.48
35:A:2070:A:H2'	35:A:2071:A:C4	2.49	0.48
2:5:451:ALA:N	2:5:512:ASP:O	2.41	0.48
5:D:160:VAL:HG12	5:D:160:VAL:O	2.14	0.48
12:K:55:ILE:HA	12:K:123:LYS:O	2.14	0.48
14:M:93:VAL:HB	14:M:124:VAL:HG12	1.95	0.48
35:A:1468:A:H2'	35:A:1469:A:C8	2.49	0.48
35:A:1940:A:N6	35:A:1954:C:O2'	2.46	0.48
2:5:26:VAL:HG13	2:5:114:CYS:HB3	1.95	0.48
2:5:450:VAL:HG12	2:5:513:THR:HA	1.95	0.48
2:5:583:VAL:HG13	2:5:629:LEU:HD22	1.96	0.48
2:6:475:LEU:HD21	2:6:488:LEU:HD11	1.96	0.48
5:D:154:CYS:C	5:D:156:THR:H	2.21	0.48
7:F:105:GLU:HG3	7:F:109:ARG:HH12	1.79	0.48
10:I:40:ARG:HG2	35:A:1200:U:O3'	2.13	0.48
27:Z:14:THR:OG1	27:Z:17:GLU:OE1	2.31	0.48
27:Z:36:MET:CE	27:Z:41:LEU:HD23	2.41	0.48
35:A:502:C:H2'	35:A:503:A:H8	1.78	0.48
35:A:277:U:H2'	35:A:278:A:H8	1.79	0.47
35:A:2195:U:H1'	35:A:2196:G:C5	2.49	0.47
35:A:2686:U:H2'	35:A:2687:U:C6	2.48	0.47
2:5:41:GLU:HG3	2:5:61:THR:HG22	1.95	0.47
2:5:699:LEU:HG	2:5:707:GLY:HA3	1.95	0.47
2:5:714:ALA:HB1	2:5:715:ARG:NH1	2.29	0.47
4:C:165:LEU:HA	4:C:175:LEU:HD23	1.96	0.47
5:D:121:LYS:HB2	5:D:170:MET:HG3	1.97	0.47
15:N:80:GLU:OE2	35:A:2717:U:O2'	2.21	0.47
35:A:292:G:H2'	35:A:293:G:C8	2.49	0.47
35:A:441:G:H2'	35:A:442:U:C6	2.49	0.47
35:A:543:U:H3'	35:A:544:U:C5'	2.43	0.47
35:A:1087:G:H2'	35:A:1088:U:C6	2.49	0.47
35:A:1732:U:H2'	35:A:1733:C:H6	1.79	0.47
35:A:1939:U:H3	35:A:1955:A:H62	1.61	0.47
4:C:126:LYS:HB2	4:C:129:ASN:HD21	1.79	0.47
4:C:245:HIS:HB2	4:C:246:PRO:CD	2.44	0.47
8:G:71:THR:HG21	35:A:2971:G:H5'	1.96	0.47
15:N:65:TRP:HB2	15:N:105:GLU:HB2	1.96	0.47
26:Y:39:VAL:HG11	26:Y:64:ALA:HB3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:c:38:ILE:HG22	30:c:39:LYS:N	2.29	0.47
35:A:1314:C:H2'	35:A:1315:C:C6	2.49	0.47
2:5:189:VAL:HA	2:5:196:TYR:HA	1.95	0.47
8:G:108:LEU:O	8:G:153:ARG:NH2	2.33	0.47
14:M:72:ARG:HH12	35:A:724:G:H1	1.62	0.47
35:A:4:G:H2'	35:A:5:U:H6	1.79	0.47
35:A:284:G:C8	35:A:303:G:C5	3.02	0.47
35:A:635:G:O2'	35:A:636:U:O4'	2.32	0.47
35:A:877:U:H4'	35:A:878:G:O5'	2.13	0.47
2:5:322:ALA:N	2:5:427:LEU:O	2.39	0.47
3:B:26:A:H2'	3:B:27:A:C8	2.50	0.47
4:C:270:ARG:NH2	35:A:2062:G:OP1	2.48	0.47
17:P:86:GLN:O	17:P:90:GLU:OE1	2.31	0.47
27:Z:16:ASP:N	27:Z:16:ASP:OD1	2.46	0.47
30:c:38:ILE:HG22	30:c:39:LYS:H	1.79	0.47
35:A:1614:G:H2'	35:A:1615:G:H8	1.79	0.47
35:A:2073:A:N6	35:A:2074:G:N3	2.62	0.47
35:A:2411:U:H2'	35:A:2412:U:C6	2.50	0.47
2:5:190:GLY:N	2:5:195:THR:O	2.34	0.47
2:6:396:PRO:O	2:6:402:ARG:NH2	2.45	0.47
2:6:651:VAL:O	2:6:681:THR:N	2.47	0.47
7:F:29:TYR:CD2	7:F:35:ILE:HD13	2.46	0.47
8:G:95:TYR:CD1	8:G:108:LEU:HD13	2.49	0.47
11:J:23:ALA:HB3	11:J:24:PRO:HD3	1.96	0.47
11:J:90:GLY:N	35:A:1182:C:H5'	2.29	0.47
35:A:138:A:N3	35:A:1523:U:O2'	2.41	0.47
35:A:287:A:N6	35:A:299:G:O2'	2.48	0.47
35:A:1953:C:H2'	35:A:1954:C:O4'	2.15	0.47
35:A:2169:G:H2'	35:A:2170:U:C6	2.49	0.47
2:5:321:LEU:N	2:5:343:SER:O	2.42	0.47
2:5:703:SER:O	2:5:704:HIS:C	2.57	0.47
2:6:320:LEU:HB3	2:6:429:ASP:HB2	1.97	0.47
2:6:446:LEU:HB3	2:6:490:CYS:O	2.14	0.47
4:C:275:GLY:O	4:C:276:LYS:C	2.58	0.47
10:I:66:ILE:HB	10:I:69:LEU:HD12	1.97	0.47
13:L:68:GLU:OE1	35:A:2908:U:O2'	2.28	0.47
17:P:21:ARG:HA	17:P:24:ARG:HG2	1.96	0.47
19:R:48:ARG:NH2	35:A:652:C:O2	2.40	0.47
23:V:44:HIS:CD2	23:V:59:ILE:HD12	2.50	0.47
35:A:247:G:OP2	35:A:249:C:N4	2.48	0.47
35:A:947:U:H2'	35:A:948:G:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:994:A:H8	35:A:1014:G:H21	1.63	0.47
35:A:1434:G:O2'	35:A:1435:C:H5'	2.15	0.47
35:A:2358:A:N6	35:A:2379:G:O2'	2.47	0.47
35:A:2365:A:H2'	35:A:2366:C:C6	2.49	0.47
35:A:2380:G:N2	35:A:2381:A:N1	2.62	0.47
7:F:107:LEU:O	7:F:111:ILE:HG12	2.15	0.47
14:M:68:LYS:HE3	14:M:68:LYS:HA	1.97	0.47
15:N:74:LEU:HD12	15:N:92:TRP:NE1	2.30	0.47
16:O:71:ARG:NH2	35:A:2933:G:H5'	2.29	0.47
34:g:24:THR:HG22	34:g:25:ARG:N	2.26	0.47
35:A:829:U:H1'	35:A:832:G:N7	2.30	0.47
35:A:1001:C:H1'	35:A:1007:G:N2	2.29	0.47
35:A:2961:G:H2'	35:A:2962:A:C8	2.49	0.47
2:6:332:TYR:CE1	13:L:47:ILE:HG13	2.50	0.47
7:F:67:ILE:HG23	7:F:68:THR:HG23	1.95	0.47
8:G:86:GLN:NE2	8:G:165:TYR:HD1	2.12	0.47
9:H:124:ILE:HG22	9:H:125:LYS:N	2.27	0.47
10:I:26:THR:HG21	10:I:93:ILE:HG21	1.96	0.47
15:N:62:GLY:HA2	15:N:107:SER:O	2.15	0.47
15:N:124:LYS:NZ	35:A:2691:C:O2	2.48	0.47
25:X:38:VAL:HG12	25:X:59:LEU:HB2	1.97	0.47
35:A:580:G:H2'	35:A:581:G:O4'	2.14	0.47
3:B:81:U:H2'	3:B:82:A:C8	2.50	0.47
4:C:139:GLY:O	4:C:164:GLN:NE2	2.42	0.47
8:G:23:ASN:OD1	8:G:24:LEU:N	2.48	0.47
12:K:96:HIS:CD2	12:K:99:ARG:NE	2.83	0.47
17:P:69:ASP:N	17:P:69:ASP:OD1	2.46	0.47
32:e:50:VAL:HG11	32:e:58:ILE:HD12	1.97	0.47
35:A:1478:C:O2'	35:A:2026:A:N3	2.46	0.47
35:A:1633:U:H2'	35:A:1634:C:H6	1.80	0.47
2:6:170:ASP:N	2:6:170:ASP:OD1	2.48	0.46
6:E:160:ARG:NH2	35:A:706:G:O3'	2.43	0.46
11:J:129:ILE:HG12	35:A:1198:C:O2	2.13	0.46
16:O:24:LEU:HB3	16:O:44:LEU:HD22	1.97	0.46
29:b:8:MET:HE3	29:b:12:ASN:HB3	1.98	0.46
35:A:672:C:H2'	35:A:673:C:H6	1.80	0.46
35:A:996:G:H2'	35:A:997:G:C8	2.45	0.46
35:A:1010:U:H4'	35:A:1011:A:OP1	2.14	0.46
7:F:45:MET:SD	7:F:159:MET:HB3	2.55	0.46
7:F:76:ARG:HB3	7:F:89:GLY:HA2	1.97	0.46
16:O:27:SER:OG	35:A:1393:C:O2'	2.32	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:X:41:ARG:NH1	35:A:2611:U:O4'	2.48	0.46
35:A:978:A:H2'	35:A:979:G:C8	2.49	0.46
35:A:2076:A:HO2'	35:A:2133:G:HO2'	1.62	0.46
35:A:3078:G:N2	35:A:3081:A:OP2	2.36	0.46
2:5:659:ILE:CD1	2:5:702:MET:HB3	2.45	0.46
2:6:178:PRO:HD3	2:6:270:PRO:HG3	1.98	0.46
2:6:623:MET:HE3	2:6:623:MET:HB3	1.65	0.46
35:A:2108:A:N6	35:A:2109:A:H62	2.13	0.46
35:A:2329:G:O6	35:A:2407:C:N4	2.48	0.46
35:A:2470:A:H2'	35:A:2471:A:C8	2.50	0.46
2:6:152:HIS:HE1	2:6:154:ARG:HE	1.63	0.46
2:6:651:VAL:HG11	2:6:659:ILE:HG13	1.96	0.46
4:C:258:ARG:NH1	35:A:2016:G:OP1	2.43	0.46
6:E:40:ALA:HB2	6:E:100:GLN:HE21	1.79	0.46
35:A:1532:G:N2	35:A:1804:G:C4	2.84	0.46
35:A:1854:U:H2'	35:A:1855:A:H8	1.81	0.46
35:A:1937:U:H2'	35:A:1938:G:O4'	2.16	0.46
35:A:2515:U:OP1	35:A:2604:U:O2'	2.32	0.46
2:5:461:LEU:HD11	2:5:503:LEU:HD21	1.96	0.46
14:M:84:ASN:ND2	14:M:118:LEU:HA	2.31	0.46
35:A:663:A:N3	35:A:663:A:H2'	2.30	0.46
35:A:1001:C:H3'	35:A:1002:C:O4'	2.14	0.46
35:A:1183:U:H6	35:A:1183:U:O5'	1.98	0.46
35:A:1633:U:H2'	35:A:1634:C:C6	2.51	0.46
35:A:2101:A:H2'	35:A:2102:G:H8	1.78	0.46
2:6:240:ARG:NE	2:6:245:GLU:OE2	2.49	0.46
4:C:123:ALA:HB3	4:C:131:LEU:HD21	1.97	0.46
15:N:17:GLN:NE2	15:N:41:TYR:CE1	2.84	0.46
21:T:54:VAL:O	21:T:57:VAL:HG12	2.16	0.46
22:U:62:ARG:HG2	22:U:62:ARG:HH11	1.80	0.46
35:A:384:G:H2'	35:A:385:G:H8	1.81	0.46
35:A:1750:A:N6	35:A:1763:G:O2'	2.48	0.46
35:A:2884:A:H2'	35:A:2885:G:O4'	2.16	0.46
2:5:482:GLU:OE1	2:5:521:ARG:NH1	2.49	0.46
2:6:417:ARG:CD	13:L:97:ARG:CD	2.86	0.46
7:F:8:LEU:CD2	7:F:13:GLN:HB2	2.44	0.46
12:K:36:LEU:HD11	12:K:122:LEU:HB2	1.96	0.46
13:L:58:VAL:HG22	13:L:59:LYS:H	1.79	0.46
20:S:23:LYS:HE3	35:A:641:U:H1'	1.97	0.46
25:X:18:ALA:HB1	35:A:2495:G:OP1	2.16	0.46
35:A:287:A:C6	35:A:300:G:C6	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:681:C:H2'	35:A:682:A:H8	1.80	0.46
35:A:740:A:O2'	35:A:741:G:OP2	2.28	0.46
35:A:1457:A:O2'	35:A:1459:U:OP2	2.32	0.46
35:A:1513:C:H2'	35:A:1514:C:H6	1.79	0.46
35:A:2162:A:N3	35:A:2162:A:H2'	2.31	0.46
35:A:2321:U:H2'	35:A:2322:C:C6	2.51	0.46
7:F:136:THR:HG21	35:A:2527:G:H21	1.80	0.46
8:G:150:ARG:NH2	8:G:168:GLU:OE1	2.48	0.46
10:I:62:SER:HA	10:I:67:GLU:HG2	1.98	0.46
12:K:21:SER:HA	12:K:61:LYS:HB2	1.98	0.46
35:A:4:G:H2'	35:A:5:U:C6	2.50	0.46
35:A:222:A:O2'	35:A:508:G:N3	2.45	0.46
35:A:442:U:H2'	35:A:443:C:C6	2.51	0.46
35:A:2552:A:H2'	35:A:2553:G:H8	1.77	0.46
2:6:321:LEU:N	2:6:343:SER:O	2.48	0.46
2:6:673:THR:HG22	2:6:683:ILE:HG12	1.98	0.46
7:F:142:GLN:HE22	7:F:156:PRO:HA	1.81	0.46
14:M:31:LYS:HE3	35:A:658:U:H5'	1.98	0.46
31:d:10:PRO:HG3	35:A:1830:C:H5'	1.98	0.46
35:A:611:U:H2'	35:A:612:U:C6	2.51	0.46
35:A:974:G:O2'	35:A:975:U:P	2.73	0.46
35:A:1001:C:C4	35:A:1002:C:H1'	2.51	0.46
35:A:2395:U:H4'	35:A:2396:A:H5'	1.98	0.46
35:A:3033:G:H2'	35:A:3034:C:H6	1.81	0.46
1:3:4:ARG:NH1	35:A:2679:G:O3'	2.49	0.46
2:5:697:ILE:HD11	35:A:2885:G:N2	2.31	0.46
2:6:286:ILE:HA	2:6:290:PHE:CG	2.51	0.46
8:G:30:LYS:HE3	8:G:82:GLU:O	2.16	0.46
13:L:76:TYR:HB2	18:Q:72:THR:HB	1.98	0.46
23:V:72:MET:SD	23:V:80:PRO:HB2	2.56	0.46
27:Z:58:TYR:HD2	35:A:69:U:C6	2.34	0.46
35:A:681:C:H2'	35:A:682:A:C8	2.51	0.46
2:5:36:LYS:HG2	2:5:118:VAL:HB	1.98	0.45
2:5:493:GLU:OE2	35:A:2885:G:O2'	2.18	0.45
9:H:9:VAL:HG23	9:H:12:LEU:HB2	1.98	0.45
9:H:124:ILE:O	9:H:125:LYS:HB2	2.16	0.45
24:W:158:THR:HG23	24:W:160:GLY:H	1.81	0.45
35:A:980:C:HO2'	35:A:981:U:P	2.39	0.45
35:A:1008:G:H2'	35:A:1009:U:O4'	2.17	0.45
35:A:2069:U:H2'	35:A:2113:A:H61	1.80	0.45
35:A:2189:C:H6	35:A:2190:A:H5"	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:2194:A:H1'	35:A:2195:U:O2	2.16	0.45
35:A:2497:A:H2'	35:A:2498:A:C8	2.51	0.45
2:5:347:ARG:O	2:5:390:ILE:HD11	2.16	0.45
9:H:109:GLY:N	9:H:110:PRO:HD2	2.31	0.45
15:N:34:ILE:HD12	15:N:104:PHE:HD2	1.81	0.45
35:A:292:G:N1	35:A:343:U:C2	2.84	0.45
35:A:2247:A:H2'	35:A:2248:C:C6	2.52	0.45
35:A:2345:U:OP2	35:A:2392:A:O2'	2.35	0.45
2:6:649:ILE:O	2:6:683:ILE:N	2.43	0.45
26:Y:22:HIS:HE1	26:Y:24:ARG:HD3	1.81	0.45
26:Y:41:ARG:HH12	35:A:164:A:H4'	1.81	0.45
31:d:42:ARG:NH2	35:A:556:G:N7	2.52	0.45
35:A:751:A:H2'	35:A:752:C:C6	2.51	0.45
35:A:1528:G:H2'	35:A:1529:U:C6	2.52	0.45
35:A:1690:A:H2'	35:A:1691:A:H8	1.81	0.45
2:6:286:ILE:O	2:6:290:PHE:HB2	2.16	0.45
2:6:533:ARG:HH21	2:6:546:VAL:HG21	1.82	0.45
2:6:541:HIS:HB3	35:A:3079:U:H5"	1.99	0.45
2:6:648:THR:HG23	2:6:682:VAL:HG13	1.99	0.45
3:B:43:C:C5	7:F:73:GLU:HG2	2.52	0.45
12:K:144:GLN:HB3	35:A:1130:C:C5	2.51	0.45
17:P:73:ILE:HB	17:P:80:HIS:CE1	2.51	0.45
35:A:263:G:H2'	35:A:264:G:O4'	2.16	0.45
35:A:1755:A:H2'	35:A:1758:G:H1	1.81	0.45
35:A:2553:G:H2'	35:A:2554:U:C6	2.51	0.45
2:5:530:GLY:HA3	2:5:628:ALA:O	2.16	0.45
4:C:163:ILE:HB	4:C:176:ARG:O	2.17	0.45
7:F:12:LYS:HE3	7:F:16:ARG:HH21	1.81	0.45
14:M:81:GLY:HA2	14:M:84:ASN:HD22	1.82	0.45
25:X:69:PHE:CD2	35:A:972:A:H5"	2.51	0.45
35:A:97:U:H5"	35:A:99:G:O4'	2.17	0.45
35:A:380:A:N3	35:A:401:C:O2'	2.45	0.45
2:6:447:PRO:HB3	2:6:489:TRP:CE2	2.52	0.45
4:C:96:HIS:CD2	4:C:102:LYS:HD3	2.51	0.45
5:D:85:ARG:NH1	35:A:2861:U:H5"	2.32	0.45
5:D:94:GLU:CD	5:D:94:GLU:H	2.24	0.45
7:F:44:ASN:OD1	7:F:160:ASP:HB3	2.17	0.45
7:F:47:VAL:HG13	7:F:56:LEU:HD22	1.98	0.45
7:F:126:PRO:HB2	7:F:174:ARG:NH1	2.32	0.45
12:K:41:LYS:NZ	12:K:50:GLY:O	2.42	0.45
21:T:30:LEU:HD22	29:b:24:ALA:HB2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:U:13:ALA:O	22:U:32:VAL:HG22	2.17	0.45
35:A:214:G:H4'	35:A:215:A:H4'	1.97	0.45
35:A:619:C:H4'	35:A:620:G:C8	2.51	0.45
35:A:2153:G:H1'	35:A:2155:U:C6	2.52	0.45
35:A:2857:A:H2'	35:A:2858:G:H8	1.81	0.45
35:A:3033:G:H2'	35:A:3034:C:C6	2.52	0.45
26:Y:19:SER:OG	26:Y:20:HIS:N	2.50	0.45
30:c:10:LYS:NZ	35:A:2645:G:OP2	2.50	0.45
35:A:181:A:H2'	35:A:182:C:H6	1.82	0.45
35:A:1081:C:O2'	35:A:2497:A:N3	2.41	0.45
35:A:1719:C:C2	35:A:1720:G:C8	3.05	0.45
35:A:2872:G:H2'	35:A:2873:U:H6	1.81	0.45
2:6:214:ASP:OD1	2:6:215:ALA:N	2.50	0.45
2:6:340:ARG:HA	2:6:412:ILE:HA	1.98	0.45
4:C:221:VAL:HG21	35:A:897:A:N7	2.31	0.45
11:J:120:ALA:HB1	11:J:125:ALA:HB3	1.98	0.45
15:N:116:ASP:O	15:N:120:ARG:HG2	2.17	0.45
30:c:6:ASP:OD1	30:c:6:ASP:N	2.50	0.45
35:A:81:A:C2	35:A:100:A:C5	3.04	0.45
35:A:402:G:H4'	35:A:404:A:N7	2.32	0.45
35:A:747:A:H2'	35:A:748:U:O4'	2.16	0.45
35:A:1012:C:H3'	35:A:1013:U:C5	2.52	0.45
35:A:1729:A:H2'	35:A:1731:A:C8	2.51	0.45
35:A:2343:G:H2'	35:A:2344:G:C8	2.52	0.45
2:6:168:PHE:HB2	2:6:172:VAL:HG21	1.99	0.45
4:C:133:LEU:HD23	4:C:136:ILE:HD12	1.99	0.45
10:I:31:LEU:HD11	10:I:103:LEU:HG	1.97	0.45
17:P:121:ARG:NH2	35:A:2600:A:N3	2.58	0.45
35:A:733:U:H2'	35:A:734:C:C6	2.52	0.45
35:A:1232:G:O6	35:A:1233:A:N6	2.50	0.45
35:A:2108:A:H61	35:A:2109:A:H62	1.63	0.45
35:A:3070:G:H4'	35:A:3071:A:H5'	1.98	0.45
2:5:321:LEU:HB3	2:5:343:SER:HB3	1.98	0.45
2:5:478:GLU:HB3	2:5:489:TRP:HE1	1.82	0.45
2:5:700:ARG:HB2	35:A:2884:A:C2	2.51	0.45
11:J:38:MET:SD	11:J:39:GLU:N	2.90	0.45
11:J:94:PRO:CD	35:A:1194:C:H1'	2.40	0.45
12:K:25:LEU:HA	12:K:62:ILE:HD11	1.98	0.45
12:K:123:LYS:HG2	12:K:132:HIS:HE2	1.81	0.45
23:V:81:THR:HG23	23:V:100:THR:HG23	1.99	0.45
24:W:159:ALA:O	24:W:162:ILE:HG22	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:159:A:H2'	35:A:160:A:C8	2.52	0.45
35:A:289:A:H62	35:A:299:G:H1	1.63	0.45
35:A:735:U:H2'	35:A:736:G:O4'	2.17	0.45
35:A:1213:A:H2'	35:A:1213:A:N3	2.32	0.45
35:A:1545:C:N4	35:A:1626:G:O6	2.49	0.45
5:D:151:ILE:HG22	35:A:2276:G:OP1	2.17	0.44
12:K:108:MET:HE2	35:A:1256:G:N2	2.32	0.44
18:Q:17:PRO:HG3	18:Q:83:ILE:O	2.17	0.44
33:f:32:HIS:O	33:f:34:GLN:HG2	2.18	0.44
34:g:42:HIS:HD2	34:g:44:PHE:HB3	1.81	0.44
35:A:31:U:O2'	35:A:32:G:H5'	2.18	0.44
35:A:289:A:H5"	35:A:289:A:N3	2.32	0.44
35:A:844:G:O2'	35:A:878:G:H4'	2.16	0.44
35:A:2256:G:N2	35:A:2796:A:OP2	2.51	0.44
2:5:450:VAL:HA	2:5:513:THR:HA	1.97	0.44
2:5:476:ARG:HG2	2:5:489:TRP:CD1	2.52	0.44
2:6:339:VAL:HG11	2:6:427:LEU:HD12	1.99	0.44
8:G:152:LEU:HD23	8:G:152:LEU:HA	1.81	0.44
35:A:193:G:H2'	35:A:194:A:O4'	2.17	0.44
35:A:498:G:H8	35:A:498:G:H5"	1.82	0.44
35:A:728:G:H2'	35:A:729:C:C6	2.53	0.44
35:A:1223:U:H2'	35:A:1224:G:C8	2.51	0.44
1:3:23:ASN:ND2	35:A:1065:C:H4'	2.32	0.44
2:5:351:THR:HA	2:5:389:ARG:HA	2.00	0.44
2:6:26:VAL:HG11	2:6:116:LEU:HG	1.99	0.44
4:C:20:ASP:O	4:C:22:ALA:N	2.48	0.44
8:G:24:LEU:HD23	8:G:73:ILE:HD12	1.99	0.44
10:I:115:LEU:HD12	10:I:119:ASP:HB3	2.00	0.44
22:U:42:ILE:O	22:U:46:ILE:HG12	2.17	0.44
23:V:75:ASP:OD2	23:V:101:ASN:HB2	2.17	0.44
26:Y:8:CYS:SG	26:Y:10:LYS:HB2	2.58	0.44
35:A:90:C:H2'	35:A:91:C:C6	2.52	0.44
35:A:1479:G:H4'	35:A:2025:C:H5	1.82	0.44
2:5:703:SER:OG	2:5:707:GLY:N	2.50	0.44
8:G:19:ILE:HG13	8:G:24:LEU:HD13	1.99	0.44
9:H:32:PRO:HB3	26:Y:64:ALA:HA	1.98	0.44
20:S:72:LYS:HD2	20:S:91:ARG:HG3	2.00	0.44
35:A:621:U:H2'	35:A:622:C:H6	1.83	0.44
35:A:722:G:H2'	35:A:723:C:C6	2.52	0.44
35:A:1011:A:C6	35:A:1012:C:H1'	2.52	0.44
35:A:1544:U:H2'	35:A:1545:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:2622:C:H2'	35:A:2623:A:C8	2.52	0.44
2:6:536:LYS:HZ3	35:A:1929:A:P	2.41	0.44
2:6:653:ASP:HA	2:6:656:VAL:HG23	1.98	0.44
4:C:134:ARG:O	4:C:168:LYS:NZ	2.51	0.44
6:E:51:SER:HB2	6:E:95:PRO:HD3	1.99	0.44
7:F:71:LYS:HZ3	34:g:5:ILE:CB	2.27	0.44
9:H:41:ARG:HG2	35:A:306:U:H5"	2.00	0.44
10:I:94:LYS:HE2	10:I:121:GLU:HA	2.00	0.44
21:T:8:PRO:HB2	21:T:71:LEU:HD21	2.00	0.44
23:V:81:THR:HG22	23:V:82:ARG:O	2.18	0.44
35:A:2738:U:H2'	35:A:2739:C:C6	2.53	0.44
2:6:540:GLY:HA3	35:A:3080:A:OP1	2.17	0.44
7:F:57:ILE:HD12	7:F:57:ILE:H	1.83	0.44
7:F:139:LEU:O	7:F:158:GLY:HA3	2.18	0.44
8:G:95:TYR:CD1	8:G:108:LEU:HA	2.51	0.44
11:J:77:ALA:HB2	11:J:114:LYS:HE3	2.00	0.44
35:A:2440:G:H2'	35:A:2441:G:H8	1.83	0.44
35:A:2557:A:H5"	35:A:2559:A:N3	2.33	0.44
35:A:2781:G:H2'	35:A:2782:C:C6	2.53	0.44
2:5:453:ARG:NH2	2:5:512:ASP:OD2	2.51	0.44
7:F:105:GLU:O	7:F:109:ARG:HG3	2.18	0.44
20:S:61:THR:HG23	20:S:100:THR:OG1	2.18	0.44
20:S:65:LEU:HD11	20:S:98:LYS:HB2	1.99	0.44
35:A:586:U:H2'	35:A:587:G:O4'	2.18	0.44
35:A:1248:U:N3	35:A:2249:G:OP1	2.46	0.44
35:A:2289:C:H2'	35:A:2290:C:H6	1.83	0.44
3:B:43:C:O2	7:F:97:THR:HG22	2.18	0.44
19:R:15:ARG:NH2	35:A:1330:C:OP1	2.46	0.44
20:S:64:VAL:HA	20:S:97:LEU:HD23	1.99	0.44
35:A:964:C:H2'	35:A:965:U:C6	2.52	0.44
35:A:1296:G:H2'	35:A:1297:G:C8	2.53	0.44
35:A:1754:G:N3	35:A:1754:G:H2'	2.33	0.44
35:A:3079:U:O5'	35:A:3079:U:H6	2.00	0.44
2:5:116:LEU:HD23	2:5:116:LEU:HA	1.87	0.43
2:5:286:ILE:O	2:5:290:PHE:HB2	2.18	0.43
2:5:444:PRO:HG2	2:5:476:ARG:HB3	1.99	0.43
2:6:116:LEU:HD23	2:6:116:LEU:HA	1.84	0.43
7:F:40:LYS:HA	7:F:103:MET:SD	2.58	0.43
10:I:27:GLU:HG3	10:I:76:PRO:HG2	1.99	0.43
35:A:815:G:O2'	35:A:1850:A:N3	2.46	0.43
35:A:1013:U:H2'	35:A:1014:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:1665:U:C4	35:A:1687:G:C2	3.06	0.43
35:A:1854:U:H2'	35:A:1855:A:C8	2.53	0.43
35:A:2545:G:H5'	35:A:2546:A:OP2	2.18	0.43
2:5:475:LEU:HD13	2:5:499:VAL:HG21	2.00	0.43
2:5:689:GLU:OE2	2:5:711:ARG:NH2	2.47	0.43
2:5:699:LEU:C	2:5:701:SER:N	2.73	0.43
2:6:696:ALA:HB2	2:6:709:PHE:HE1	1.83	0.43
13:L:13:ASN:OD1	13:L:97:ARG:N	2.49	0.43
35:A:181:A:H2'	35:A:182:C:C6	2.53	0.43
35:A:750:C:H2'	35:A:751:A:C8	2.53	0.43
35:A:1485:C:H2'	35:A:1486:G:O4'	2.18	0.43
35:A:1650:G:H2'	35:A:1651:C:C6	2.53	0.43
2:6:110:ARG:O	2:6:110:ARG:NH1	2.49	0.43
2:6:699:LEU:HG	2:6:707:GLY:HA3	2.00	0.43
7:F:70:GLN:NE2	34:g:1:MET:SD	2.91	0.43
17:P:113:ILE:HD12	17:P:113:ILE:H	1.82	0.43
27:Z:38:THR:OG1	27:Z:40:GLN:HG3	2.18	0.43
30:c:12:THR:HG21	30:c:21:ARG:HD3	2.00	0.43
35:A:736:G:H1'	35:A:740:A:N6	2.34	0.43
35:A:964:C:H2'	35:A:965:U:H6	1.83	0.43
35:A:1334:C:H2'	35:A:1335:G:O4'	2.17	0.43
35:A:1529:U:H3'	35:A:1530:G:H8	1.84	0.43
35:A:1675:U:O2'	35:A:1676:G:N7	2.51	0.43
35:A:2289:C:H2'	35:A:2290:C:C6	2.53	0.43
2:5:199:TYR:CE2	2:5:204:HIS:HB2	2.53	0.43
2:6:223:SER:O	2:6:226:GLU:HG2	2.19	0.43
2:6:543:GLN:OE1	2:6:619:PHE:HB3	2.19	0.43
4:C:53:HIS:ND1	4:C:220:THR:HG22	2.33	0.43
23:V:4:HIS:CD2	35:A:81:A:H5"	2.54	0.43
32:e:29:ARG:HH12	32:e:41:THR:HG22	1.83	0.43
34:g:38:CYS:H	34:g:41:CYS:HB2	1.83	0.43
35:A:137:G:H8	35:A:137:G:OP1	2.01	0.43
35:A:444:U:H5'	35:A:446:G:O5'	2.18	0.43
35:A:1530:G:H21	35:A:1805:G:N2	2.15	0.43
2:6:536:LYS:NZ	35:A:1929:A:P	2.92	0.43
2:6:550:GLU:HB2	2:6:607:PHE:HE2	1.84	0.43
2:6:684:LYS:HD3	2:6:684:LYS:HA	1.74	0.43
4:C:256:ARG:HH11	4:C:256:ARG:HG3	1.82	0.43
6:E:166:ALA:O	6:E:170:ARG:HG3	2.18	0.43
7:F:87:ARG:HB2	7:F:90:MET:SD	2.59	0.43
7:F:105:GLU:OE1	34:g:25:ARG:NE	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:G:147:ALA:O	8:G:151:ARG:HG2	2.19	0.43
22:U:20:SER:O	22:U:24:ILE:HG13	2.18	0.43
25:X:53:ARG:NH2	25:X:57:ASP:OD1	2.51	0.43
35:A:337:U:O2	35:A:344:G:C2	2.71	0.43
35:A:756:A:H3'	35:A:757:G:N2	2.33	0.43
35:A:1614:G:H2'	35:A:1615:G:C8	2.53	0.43
35:A:2077:C:H4'	35:A:2133:G:H4'	2.01	0.43
2:5:37:THR:O	2:5:41:GLU:HG2	2.19	0.43
2:5:551:VAL:HA	2:5:603:ARG:O	2.19	0.43
3:B:50:C:H2'	3:B:51:G:C8	2.53	0.43
5:D:147:ARG:HG2	5:D:148:PRO:HD2	2.00	0.43
7:F:15:TYR:HE1	7:F:176:LEU:HD11	1.83	0.43
12:K:39:LYS:NZ	35:A:1125:C:OP1	2.50	0.43
16:O:101:GLU:HG3	16:O:102:ASN:H	1.83	0.43
27:Z:6:THR:OG1	27:Z:9:GLU:OE1	2.31	0.43
28:a:46:LEU:HD23	28:a:46:LEU:HA	1.82	0.43
35:A:307:G:H2'	35:A:308:U:C6	2.54	0.43
35:A:377:C:H2'	35:A:378:G:H8	1.83	0.43
35:A:443:C:H2'	35:A:444:U:O4'	2.18	0.43
35:A:733:U:H2'	35:A:734:C:H6	1.84	0.43
35:A:929:C:H2'	35:A:930:C:H6	1.84	0.43
35:A:1613:G:H2'	35:A:1614:G:C8	2.54	0.43
35:A:1640:A:O2'	35:A:1641:U:OP1	2.34	0.43
2:5:126:ASP:HB2	2:5:128:PRO:HD2	2.01	0.43
2:6:316:PRO:HB3	2:6:408:VAL:HB	2.00	0.43
3:B:41:U:N3	3:B:45:G:OP2	2.36	0.43
35:A:113:C:H2'	35:A:114:G:O4'	2.18	0.43
35:A:292:G:C2	35:A:343:U:O2	2.72	0.43
35:A:851:C:H2'	35:A:852:C:C6	2.53	0.43
35:A:2873:U:H2'	35:A:2874:C:C6	2.53	0.43
2:5:677:ASP:OD1	2:5:680:ARG:N	2.51	0.43
11:J:63:TYR:HD2	11:J:67:SER:HB3	1.84	0.43
35:A:334:G:H2'	35:A:335:G:H8	1.84	0.43
35:A:483:G:H2'	35:A:484:C:C6	2.54	0.43
35:A:664:A:H5"	35:A:665:G:OP2	2.19	0.43
35:A:1211:G:N2	35:A:1216:A:H62	2.17	0.43
35:A:1730:U:O2'	35:A:1731:A:OP2	2.29	0.43
35:A:2326:A:N6	35:A:2410:A:N6	2.67	0.43
35:A:2467:U:H2'	35:A:2468:U:C6	2.54	0.43
2:5:149:LYS:HG2	36:5:801:GNP:C6	2.48	0.43
2:5:663:LEU:HA	2:5:666:ARG:HB2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:6:321:LEU:HB3	2:6:343:SER:HB3	2.01	0.43
2:6:531:HIS:H	2:6:631:ASP:HB3	1.83	0.43
2:6:640:LEU:O	2:6:718:PRO:HA	2.18	0.43
8:G:45:ARG:HH12	8:G:50:ALA:N	2.16	0.43
10:I:55:THR:HA	10:I:58:LYS:HB2	2.01	0.43
17:P:98:GLU:OE1	17:P:99:THR:HG23	2.18	0.43
23:V:97:ILE:HD11	23:V:102:GLY:O	2.17	0.43
24:W:115:GLU:OE1	24:W:145:THR:OG1	2.36	0.43
2:5:437:ARG:CZ	2:5:437:ARG:HB3	2.49	0.43
6:E:61:GLY:HA3	6:E:80:ARG:HG2	2.00	0.43
11:J:39:GLU:O	11:J:42:LYS:HG3	2.17	0.43
35:A:61:G:H2'	35:A:62:G:H8	1.84	0.43
35:A:993:G:O2'	35:A:994:A:O4'	2.31	0.43
35:A:1186:G:H2'	35:A:1187:A:N7	2.34	0.43
35:A:1212:U:H3'	35:A:1213:A:C5'	2.49	0.43
35:A:1243:G:OP2	35:A:1244:A:O2'	2.29	0.43
35:A:1552:A:H2'	35:A:1617:C:N4	2.34	0.43
35:A:1735:U:H2'	35:A:1736:G:O4'	2.19	0.43
35:A:2065:A:N3	35:A:2065:A:H3'	2.34	0.43
35:A:2170:U:H2'	35:A:2171:C:O4'	2.19	0.43
2:5:26:VAL:HG21	2:5:290:PHE:HD2	1.84	0.42
2:6:193:THR:O	2:6:194:ARG:HG2	2.18	0.42
2:6:397:LEU:HB2	2:6:402:ARG:NE	2.33	0.42
3:B:110:G:H2'	3:B:111:C:C6	2.53	0.42
4:C:200:GLU:OE2	4:C:200:GLU:N	2.47	0.42
8:G:75:ASN:HA	8:G:78:THR:HG22	2.01	0.42
10:I:29:ARG:NH2	35:A:1171:C:O2	2.52	0.42
35:A:239:U:O2'	35:A:716:G:O2'	2.34	0.42
35:A:1203:A:C8	35:A:1204:A:C6	3.07	0.42
35:A:2885:G:H2'	35:A:2886:A:C8	2.54	0.42
2:5:653:ASP:HA	2:5:656:VAL:HG23	2.00	0.42
2:6:575:PHE:O	2:6:579:VAL:HG23	2.19	0.42
2:6:653:ASP:OD1	2:6:681:THR:OG1	2.26	0.42
4:C:226:MET:HE3	35:A:897:A:N1	2.34	0.42
5:D:94:GLU:OE2	5:D:94:GLU:N	2.48	0.42
6:E:48:GLY:O	6:E:95:PRO:HA	2.19	0.42
13:L:93:PRO:HG3	13:L:114:ILE:HG13	2.00	0.42
17:P:18:ARG:HD2	17:P:107:TYR:CZ	2.54	0.42
18:Q:5:ASP:OD1	18:Q:6:PHE:N	2.52	0.42
29:b:8:MET:HE3	29:b:12:ASN:CB	2.49	0.42
35:A:1648:A:H4'	35:A:1649:C:O5'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:1665:U:H2'	35:A:1666:A:H8	1.84	0.42
4:C:89:THR:HG23	4:C:201:GLN:HG2	2.01	0.42
4:C:256:ARG:HG3	4:C:256:ARG:NH1	2.34	0.42
5:D:151:ILE:HG22	35:A:2276:G:P	2.59	0.42
7:F:165:THR:HG23	7:F:167:ALA:H	1.84	0.42
14:M:30:GLY:O	14:M:32:THR:N	2.52	0.42
15:N:135:GLU:OE2	15:N:135:GLU:N	2.47	0.42
35:A:289:A:H62	35:A:299:G:N2	2.14	0.42
35:A:298:G:O2'	35:A:299:G:H5'	2.19	0.42
35:A:499:G:OP2	35:A:2630:A:O2'	2.30	0.42
35:A:1270:G:H2'	35:A:1271:C:O4'	2.20	0.42
35:A:1755:A:C2'	35:A:1758:G:H22	2.32	0.42
35:A:1781:C:H2'	35:A:1782:U:C6	2.54	0.42
35:A:2120:A:H2'	35:A:2121:G:C8	2.53	0.42
35:A:2327:C:H2'	35:A:2328:G:H8	1.84	0.42
35:A:2491:A:H5"	35:A:2492:A:H5'	2.01	0.42
35:A:2717:U:C4	35:A:2718:G:C8	3.07	0.42
2:5:26:VAL:HG21	2:5:290:PHE:CD2	2.54	0.42
2:5:231:GLU:H	2:5:231:GLU:HG3	1.59	0.42
2:5:650:VAL:HG22	2:5:682:VAL:HG22	2.01	0.42
7:F:128:GLN:HB3	7:F:135:TYR:HE1	1.84	0.42
21:T:37:GLU:HG2	21:T:38:GLU:N	2.34	0.42
23:V:75:ASP:HB2	23:V:81:THR:OG1	2.19	0.42
35:A:993:G:H1'	35:A:1015:A:H62	1.84	0.42
35:A:1169:A:H2'	35:A:1170:C:C6	2.54	0.42
35:A:1530:G:N2	35:A:1805:G:H22	2.13	0.42
35:A:2366:C:H2'	35:A:2367:G:O4'	2.19	0.42
35:A:2529:A:H2'	35:A:2530:C:C6	2.54	0.42
35:A:2941:G:H2'	35:A:2942:G:O4'	2.18	0.42
2:5:111:ALA:HB2	2:5:325:VAL:HG11	2.01	0.42
2:5:699:LEU:O	2:5:700:ARG:C	2.61	0.42
2:6:226:GLU:HA	2:6:238:MET:HE1	2.01	0.42
2:6:315:ASP:OD2	2:6:318:GLY:N	2.53	0.42
3:B:115:A:H2'	3:B:116:C:H6	1.84	0.42
6:E:50:HIS:O	6:E:50:HIS:ND1	2.53	0.42
6:E:108:ALA:O	6:E:112:ARG:HD3	2.20	0.42
8:G:17:VAL:HG13	8:G:24:LEU:HD11	2.01	0.42
9:H:33:ARG:NH2	35:A:2421:A:O5'	2.53	0.42
21:T:81:VAL:HG23	21:T:112:VAL:HG22	2.02	0.42
23:V:2:LYS:HE2	35:A:419:G:OP1	2.19	0.42
30:c:10:LYS:HZ1	35:A:2645:G:P	2.41	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:724:G:N2	35:A:727:A:OP2	2.35	0.42
35:A:789:G:H2'	35:A:919:A:H61	1.85	0.42
35:A:996:G:C2	35:A:1013:U:C2	3.08	0.42
35:A:1278:C:C2	35:A:1279:G:C8	3.07	0.42
35:A:1294:U:H2'	35:A:1295:U:C6	2.55	0.42
35:A:1396:G:H2'	35:A:1397:U:C6	2.54	0.42
2:6:703:SER:OG	2:6:707:GLY:N	2.53	0.42
4:C:183:ARG:HG3	4:C:268:ILE:HD13	2.01	0.42
8:G:89:GLU:HG3	8:G:131:LYS:HG2	2.00	0.42
10:I:28:TYR:HE2	10:I:77:THR:O	2.02	0.42
10:I:55:THR:HA	10:I:58:LYS:HD2	2.02	0.42
16:O:45:ARG:HB3	16:O:46:PRO:HD3	2.00	0.42
19:R:79:LEU:O	19:R:83:LEU:HD23	2.20	0.42
28:a:16:ARG:HD3	35:A:1086:C:OP2	2.19	0.42
29:b:9:SER:OG	29:b:12:ASN:OD1	2.36	0.42
32:e:40:ARG:NH2	35:A:2586:G:OP1	2.50	0.42
35:A:1764:A:H2'	35:A:1765:A:C8	2.55	0.42
35:A:2080:G:N7	35:A:2081:U:N3	2.67	0.42
35:A:2265:U:C2	35:A:2266:A:C8	3.08	0.42
35:A:2531:G:H5'	35:A:2532:G:C8	2.54	0.42
2:5:102:VAL:HG13	2:5:442:PRO:HG3	2.01	0.42
2:5:324:VAL:HA	2:5:339:VAL:HA	2.01	0.42
2:5:480:ASN:HB3	2:5:485:GLN:H	1.84	0.42
5:D:33:PRO:C	5:D:34:ASN:HD22	2.27	0.42
7:F:105:GLU:OE2	34:g:9:TYR:OH	2.28	0.42
9:H:91:LEU:HD13	9:H:125:LYS:HA	2.01	0.42
24:W:124:VAL:HG22	24:W:181:VAL:HG22	2.00	0.42
35:A:487:U:H2'	35:A:488:G:O4'	2.20	0.42
35:A:935:A:H4'	35:A:951:G:N2	2.34	0.42
35:A:947:U:H2'	35:A:948:G:H8	1.84	0.42
35:A:1003:A:H2'	35:A:1003:A:OP1	2.19	0.42
35:A:1296:G:H2'	35:A:1297:G:H8	1.85	0.42
35:A:1317:G:C5	35:A:1359:G:C2	3.08	0.42
35:A:1753:C:H3'	35:A:1754:G:H8	1.84	0.42
35:A:2375:G:H2'	35:A:2376:G:H8	1.83	0.42
35:A:2490:A:H4'	35:A:2491:A:N3	2.34	0.42
2:6:116:LEU:HD21	2:6:290:PHE:CZ	2.55	0.42
4:C:43:ARG:HE	4:C:49:ILE:CG1	2.26	0.42
8:G:119:PRO:O	8:G:122:ILE:HG22	2.19	0.42
14:M:4:ILE:HG23	14:M:8:ASP:HB2	2.02	0.42
15:N:82:ARG:HD2	35:A:2720:C:OP2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:P:82:VAL:O	17:P:86:GLN:OE1	2.37	0.42
35:A:1179:U:C5	35:A:1188:A:C2	3.08	0.42
35:A:1213:A:H3'	35:A:1214:A:H8	1.85	0.42
35:A:2186:C:O2'	35:A:2187:U:O4'	2.37	0.42
2:6:503:LEU:HD12	2:6:507:TYR:CD2	2.55	0.42
4:C:176:ARG:O	4:C:176:ARG:HG3	2.19	0.42
6:E:184:ASN:HD21	35:A:708:G:N2	2.17	0.42
35:A:824:G:H2'	35:A:825:C:C6	2.55	0.42
35:A:1393:C:H2'	35:A:1394:A:H8	1.85	0.42
35:A:2516:U:H2'	35:A:2517:C:C6	2.55	0.42
2:5:199:TYR:CD1	2:5:277:VAL:HG13	2.55	0.42
2:5:575:PHE:O	2:5:579:VAL:HG23	2.19	0.42
2:6:375:ASP:HB3	2:6:376:GLY:H	1.65	0.42
2:6:376:GLY:HA2	2:6:476:ARG:HA	2.01	0.42
2:6:581:LYS:O	2:6:584:ARG:HG2	2.19	0.42
2:6:663:LEU:HA	2:6:663:LEU:HD23	1.92	0.42
4:C:13:ARG:HD2	35:A:843:G:H4'	2.02	0.42
4:C:80:ALA:O	4:C:113:GLN:NE2	2.52	0.42
7:F:92:ILE:HD11	35:A:2535:A:H1'	2.01	0.42
10:I:58:LYS:HG2	10:I:70:ASP:OD1	2.20	0.42
21:T:52:GLU:O	21:T:56:LYS:HG3	2.20	0.42
35:A:1430:C:H2'	35:A:1431:U:C6	2.55	0.42
35:A:2603:G:H2'	35:A:2604:U:C6	2.55	0.42
35:A:2760:G:H2'	35:A:2761:U:C6	2.55	0.42
2:5:121:ALA:HB3	2:5:155:ALA:HB1	2.02	0.41
11:J:17:ALA:HB1	11:J:48:THR:HB	2.01	0.41
11:J:118:LEU:HD23	35:A:1176:G:O2'	2.20	0.41
24:W:82:ALA:HB3	24:W:96:ASP:HB2	2.02	0.41
32:e:40:ARG:HH21	35:A:2586:G:H5"	1.85	0.41
35:A:691:U:H2'	35:A:692:C:C6	2.54	0.41
35:A:751:A:H2'	35:A:752:C:H6	1.85	0.41
35:A:2524:C:H2'	35:A:2525:C:H6	1.84	0.41
35:A:2530:C:OP2	35:A:2531:G:O2'	2.35	0.41
35:A:2936:C:OP1	35:A:2938:G:H4'	2.20	0.41
35:A:3106:C:H6	35:A:3106:C:H2'	1.72	0.41
2:5:105:LEU:HD13	2:5:132:LEU:HD11	2.01	0.41
2:5:533:ARG:HE	2:5:535:VAL:HG21	1.84	0.41
2:5:701:SER:C	2:5:703:SER:N	2.71	0.41
2:6:180:GLY:HA2	2:6:186:LYS:HG2	2.02	0.41
2:6:192:LEU:HD23	2:6:192:LEU:HA	1.92	0.41
2:6:446:LEU:HD22	2:6:697:ILE:HG21	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:6:522:GLU:HG3	2:6:640:LEU:HD23	2.02	0.41
3:B:33:C:C2	3:B:52:G:N2	2.88	0.41
5:D:65:PRO:O	5:D:69:GLN:HG2	2.20	0.41
7:F:11:LEU:HD23	7:F:107:LEU:HD11	2.02	0.41
7:F:20:ARG:HH21	7:F:35:ILE:HG22	1.85	0.41
7:F:110:LEU:HA	7:F:114:ALA:HB3	2.03	0.41
8:G:104:LEU:HD12	8:G:104:LEU:HA	1.86	0.41
28:a:39:ASP:OD1	28:a:44:ARG:HD3	2.20	0.41
35:A:851:C:H2'	35:A:852:C:H6	1.85	0.41
35:A:875:G:H2'	35:A:876:A:O4'	2.20	0.41
35:A:1343:G:H2'	35:A:1345:G:C8	2.56	0.41
35:A:2581:G:H2'	35:A:2583:C:OP2	2.20	0.41
2:5:150:LEU:HD12	2:5:272:CYS:SG	2.60	0.41
4:C:85:ASP:OD2	4:C:88:ARG:NH1	2.38	0.41
7:F:15:TYR:OH	7:F:37:GLY:HA2	2.20	0.41
7:F:85:LYS:O	7:F:87:ARG:NH1	2.53	0.41
22:U:14:PRO:HD3	27:Z:34:PHE:CE1	2.55	0.41
29:b:28:VAL:HG21	29:b:41:ARG:HG3	2.02	0.41
35:A:2216:G:N2	35:A:2220:C:O2'	2.53	0.41
35:A:2400:C:C4	35:A:2401:U:H1'	2.55	0.41
2:5:320:LEU:HD11	2:5:346:ILE:HG12	2.01	0.41
2:6:340:ARG:NH2	2:6:410:GLY:HA2	2.35	0.41
5:D:153:GLY:O	35:A:2276:G:H4'	2.19	0.41
8:G:154:ARG:NH2	35:A:2750:G:OP2	2.54	0.41
18:Q:21:PRO:HA	18:Q:46:VAL:HG12	2.02	0.41
29:b:7:ARG:NH1	35:A:1377:A:N3	2.68	0.41
35:A:89:A:O2'	35:A:90:C:OP1	2.33	0.41
35:A:160:A:C3'	35:A:161:U:H5"	2.46	0.41
35:A:255:A:O2'	35:A:472:C:OP2	2.35	0.41
35:A:2066:G:O2'	35:A:2119:C:H1'	2.20	0.41
35:A:2288:C:H2'	35:A:2289:C:H6	1.85	0.41
35:A:2322:C:H2'	35:A:2323:G:C8	2.53	0.41
2:5:178:PRO:HA	2:5:188:VAL:HG12	2.02	0.41
2:5:320:LEU:HB3	2:5:429:ASP:H	1.86	0.41
2:6:627:LEU:HA	2:6:630:ARG:HG2	2.02	0.41
4:C:242:GLY:HA3	4:C:244:ARG:HH11	1.85	0.41
7:F:147:GLU:N	7:F:147:GLU:OE1	2.53	0.41
8:G:59:GLU:OE1	8:G:61:ARG:N	2.45	0.41
35:A:161:U:H1'	35:A:162:A:C8	2.54	0.41
35:A:279:U:O2	35:A:307:G:N2	2.45	0.41
35:A:662:G:H2'	35:A:2254:A:N7	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:A:2176:A:N3	35:A:2784:C:O2'	2.46	0.41
35:A:2521:C:C2	35:A:2557:A:N1	2.89	0.41
2:5:583:VAL:HG11	2:5:604:VAL:HG21	2.02	0.41
2:5:702:MET:HE2	2:5:702:MET:HB2	1.80	0.41
2:6:322:ALA:O	2:6:427:LEU:N	2.40	0.41
2:6:335:ARG:HE	2:6:335:ARG:HB2	1.67	0.41
2:6:444:PRO:HD3	2:6:474:THR:O	2.19	0.41
6:E:118:ARG:HA	6:E:118:ARG:HD3	1.91	0.41
7:F:165:THR:OG1	7:F:166:THR:N	2.54	0.41
21:T:50:ALA:O	21:T:53:PRO:HD2	2.21	0.41
26:Y:19:SER:HB3	26:Y:23:ARG:H	1.84	0.41
35:A:2077:C:N4	35:A:2105:G:H22	2.19	0.41
35:A:2101:A:H2'	35:A:2102:G:O4'	2.20	0.41
35:A:2130:G:O2'	35:A:2131:G:O4'	2.37	0.41
35:A:2169:G:HO2'	35:A:2170:U:P	2.43	0.41
35:A:3020:U:OP2	35:A:3020:U:H6	2.04	0.41
35:A:3040:G:H2'	35:A:3042:A:N7	2.35	0.41
35:A:3067:C:H2'	35:A:3068:U:C6	2.55	0.41
2:5:161:LEU:HD11	2:5:174:PRO:HD3	2.02	0.41
2:5:704:HIS:C	2:5:706:ALA:H	2.28	0.41
2:6:272:CYS:SG	2:6:277:VAL:HB	2.60	0.41
2:6:426:THR:HG21	2:6:436:LEU:H	1.85	0.41
7:F:124:LEU:HB3	7:F:135:TYR:OH	2.21	0.41
8:G:35:LEU:HD23	8:G:36:ASP:N	2.35	0.41
13:L:66:VAL:HG23	13:L:82:ASN:OD1	2.20	0.41
14:M:7:HIS:HB3	35:A:1318:C:O2	2.20	0.41
29:b:28:VAL:HG13	35:A:3107:G:O3'	2.21	0.41
35:A:89:A:HO2'	35:A:90:C:P	2.43	0.41
35:A:226:A:C2	35:A:2631:G:H1'	2.55	0.41
35:A:1169:A:C5	35:A:1170:C:C4	3.09	0.41
35:A:2326:A:H2'	35:A:2327:C:H6	1.86	0.41
35:A:2873:U:H2'	35:A:2874:C:H6	1.84	0.41
35:A:2969:C:H2'	35:A:2970:U:C6	2.55	0.41
2:5:358:PHE:O	2:5:360:ALA:N	2.54	0.41
2:6:543:GLN:OE1	35:A:3079:U:H5'	2.20	0.41
2:6:694:ARG:HB2	2:6:697:ILE:HD11	2.03	0.41
5:D:161:PHE:O	5:D:162:LYS:C	2.64	0.41
5:D:178:GLN:OE1	5:D:213:LYS:NZ	2.33	0.41
8:G:27:LYS:HD2	8:G:28:GLY:N	2.36	0.41
10:I:27:GLU:HB3	10:I:104:VAL:HB	2.01	0.41
11:J:16:GLN:HA	11:J:55:VAL:HG12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:P:68:ALA:O	17:P:72:ALA:N	2.52	0.41
35:A:308:U:H2'	35:A:309:G:H8	1.86	0.41
35:A:920:G:N2	35:A:944:A:OP1	2.54	0.41
35:A:954:U:H2'	35:A:955:C:C6	2.56	0.41
35:A:1201:G:H21	35:A:1203:A:H8	1.67	0.41
35:A:1639:G:H5'	35:A:1640:A:OP1	2.21	0.41
35:A:2194:A:C8	35:A:2196:G:N2	2.88	0.41
35:A:2410:A:C6	35:A:2411:U:C4	3.09	0.41
2:5:394:SER:HB2	2:5:401:GLN:HB3	2.01	0.41
2:6:56:VAL:HG21	36:6:801:GNP:O3A	2.21	0.41
2:6:96:PRO:HG2	2:6:104:GLU:HB2	2.03	0.41
2:6:173:ALA:HB3	2:6:265:PHE:HZ	1.85	0.41
2:6:255:ASP:HA	2:6:258:LYS:HD2	2.03	0.41
5:D:127:MET:HE3	5:D:134:GLY:HA3	2.03	0.41
7:F:182:PHE:HA	7:F:183:PRO:HD3	1.92	0.41
10:I:39:LEU:HD13	10:I:96:PHE:CG	2.56	0.41
13:L:35:ILE:HG22	13:L:105:GLU:HB2	2.03	0.41
14:M:75:TYR:CE1	14:M:109:LEU:HG	2.56	0.41
21:T:17:VAL:HG12	21:T:19:VAL:HG22	2.03	0.41
30:c:42:CYS:HB3	30:c:45:CYS:HB2	2.03	0.41
32:e:28:ASN:HA	35:A:2616:A:H5"	2.02	0.41
33:f:1:MET:HB2	35:A:2750:G:O2'	2.21	0.41
35:A:166:A:H2'	35:A:167:G:O4'	2.20	0.41
35:A:346:C:H2'	35:A:347:U:H6	1.83	0.41
35:A:752:C:H2'	35:A:753:A:C8	2.54	0.41
35:A:808:A:O2'	35:A:1468:A:N3	2.45	0.41
35:A:1174:G:O2'	35:A:1204:A:H1'	2.21	0.41
35:A:1553:C:H5"	35:A:1554:U:C5	2.54	0.41
35:A:1728:U:H4'	35:A:1729:A:O4'	2.20	0.41
35:A:2125:A:H5'	35:A:2127:G:OP2	2.20	0.41
35:A:2148:C:H2'	35:A:2149:C:C6	2.56	0.41
35:A:2327:C:H2'	35:A:2328:G:C8	2.56	0.41
35:A:2861:U:H2'	35:A:2862:G:O4'	2.20	0.41
35:A:3013:C:O2'	35:A:3113:A:N6	2.52	0.41
2:5:185:CYS:HB3	2:5:272:CYS:SG	2.61	0.41
2:5:253:ILE:HG21	2:5:288:ARG:NH2	2.36	0.41
2:5:376:GLY:O	2:5:378:THR:N	2.54	0.41
2:5:705:GLY:C	2:5:707:GLY:H	2.29	0.41
2:6:465:LEU:HD13	2:6:477:ILE:HG21	2.03	0.41
4:C:79:VAL:HG11	4:C:111:LEU:HD21	2.03	0.41
8:G:106:PHE:HB2	8:G:114:VAL:HG13	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:J:107:VAL:HG21	11:J:141:VAL:HG13	2.03	0.41
35:A:760:U:H2'	35:A:761:G:H8	1.86	0.41
35:A:781:C:H2'	35:A:782:U:C6	2.56	0.41
35:A:1194:C:C2	35:A:1195:A:C8	3.09	0.41
35:A:1305:G:H2'	35:A:1306:G:H8	1.86	0.41
35:A:1938:G:N2	35:A:1955:A:OP2	2.46	0.41
35:A:2130:G:O2'	35:A:2131:G:O5'	2.37	0.41
2:5:549:ILE:HG22	2:5:606:LEU:HD13	2.03	0.40
2:5:646:ASP:HA	2:5:686:GLU:HA	2.03	0.40
2:6:208:PRO:HA	2:6:209:PRO:HD3	1.98	0.40
3:B:26:A:H2	3:B:115:A:H1'	1.86	0.40
12:K:109:LEU:HD23	12:K:109:LEU:HA	1.93	0.40
13:L:68:GLU:HG2	13:L:78:LYS:HD2	2.03	0.40
16:O:37:THR:OG1	16:O:40:LYS:HD2	2.20	0.40
24:W:43:ASP:OD1	24:W:43:ASP:N	2.54	0.40
24:W:105:LYS:HA	24:W:105:LYS:HD3	1.86	0.40
26:Y:17:SER:HB3	26:Y:27:ARG:HD2	2.03	0.40
35:A:347:U:H2'	35:A:348:G:C8	2.56	0.40
35:A:701:A:H2'	35:A:702:A:C8	2.56	0.40
35:A:857:U:H2'	35:A:858:A:H8	1.84	0.40
35:A:1003:A:H8	35:A:1003:A:P	2.43	0.40
35:A:1804:G:H2'	35:A:1805:G:C8	2.56	0.40
35:A:2857:A:H2'	35:A:2858:G:C8	2.55	0.40
35:A:2925:C:H3'	35:A:2926:A:C5'	2.51	0.40
35:A:3068:U:H2'	35:A:3069:G:O4'	2.22	0.40
2:5:220:LEU:HD23	2:5:220:LEU:HA	1.95	0.40
2:5:550:GLU:HB2	2:5:607:PHE:CE2	2.57	0.40
2:6:139:VAL:O	2:6:140:GLN:HG3	2.21	0.40
2:6:300:GLU:CD	2:6:437:ARG:HD3	2.46	0.40
2:6:335:ARG:NH1	2:6:419:SER:O	2.54	0.40
2:6:348:PRO:HD3	2:6:393:LEU:HD12	2.03	0.40
3:B:104:G:H2'	3:B:105:A:O4'	2.20	0.40
13:L:114:ILE:HD12	13:L:114:ILE:H	1.86	0.40
35:A:123:A:H2'	35:A:124:A:C8	2.56	0.40
35:A:997:G:C4	35:A:998:G:C8	3.10	0.40
35:A:1001:C:H1'	35:A:1007:G:H1	1.87	0.40
35:A:1160:G:H2'	35:A:1161:C:H6	1.86	0.40
35:A:2471:A:H2'	35:A:2472:C:C6	2.54	0.40
2:6:462:SER:O	2:6:465:LEU:HG	2.22	0.40
4:C:106:ILE:HD12	4:C:106:ILE:H	1.87	0.40
7:F:75:ARG:HD3	7:F:75:ARG:HA	1.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:111:PHE:HB3	13:L:114:ILE:HD13	2.03	0.40
19:R:58:ARG:HA	19:R:61:TRP:CE3	2.56	0.40
20:S:51:LYS:O	20:S:55:LEU:HG	2.21	0.40
23:V:8:THR:HG23	23:V:74:VAL:HG12	2.03	0.40
33:f:4:ASN:O	33:f:36:GLN:HA	2.21	0.40
35:A:220:A:H2	35:A:266:U:H5"	1.87	0.40
35:A:1160:G:H2'	35:A:1161:C:C6	2.55	0.40
35:A:1168:A:C4	35:A:1169:A:C8	3.10	0.40
35:A:1294:U:H2'	35:A:1295:U:H6	1.86	0.40
35:A:2326:A:H2'	35:A:2327:C:C6	2.56	0.40
35:A:2523:A:H2'	35:A:2524:C:C6	2.56	0.40
2:6:562:PHE:CD1	2:6:604:VAL:HG13	2.56	0.40
4:C:244:ARG:H	4:C:244:ARG:HD3	1.87	0.40
7:F:45:MET:CE	7:F:159:MET:HB3	2.51	0.40
9:H:115:ARG:HD3	9:H:115:ARG:HA	1.63	0.40
19:R:62:ILE:HG23	19:R:76:TYR:CZ	2.57	0.40
35:A:271:A:OP2	35:A:314:G:N1	2.29	0.40
35:A:782:U:H2'	35:A:783:G:O4'	2.21	0.40
35:A:1632:G:H8	35:A:1632:G:O5'	2.04	0.40
35:A:2373:G:H2'	35:A:2374:U:C6	2.57	0.40
2:5:337:SER:HB2	2:5:418:LEU:HD12	2.04	0.40
2:5:529:THR:HG22	2:5:550:GLU:HG3	2.04	0.40
2:5:549:ILE:HA	2:5:606:LEU:HA	2.03	0.40
4:C:244:ARG:O	4:C:244:ARG:HG2	2.21	0.40
5:D:155:ALA:H	35:A:2277:G:H5'	1.86	0.40
6:E:2:THR:HB	6:E:19:GLU:HB3	2.03	0.40
15:N:56:ARG:NH1	35:A:2693:A:O2'	2.55	0.40
26:Y:39:VAL:HG12	26:Y:46:LYS:HG2	2.03	0.40
35:A:302:U:O2'	35:A:303:G:N7	2.39	0.40
35:A:1177:G:H2'	35:A:1178:U:C6	2.56	0.40
35:A:1758:G:OP2	35:A:1758:G:H8	2.04	0.40
35:A:2026:A:H8	35:A:2026:A:OP2	2.04	0.40
35:A:2247:A:H2'	35:A:2248:C:H6	1.87	0.40
35:A:2297:U:H2'	35:A:2298:U:H6	1.87	0.40
35:A:2581:G:OP2	35:A:2581:G:H8	2.04	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	3	21/24 (88%)	19 (90%)	2 (10%)	0	100	100
2	5	707/709 (100%)	673 (95%)	31 (4%)	3 (0%)	30	63
2	6	707/709 (100%)	679 (96%)	27 (4%)	1 (0%)	48	79
4	C	273/278 (98%)	258 (94%)	15 (6%)	0	100	100
5	D	212/217 (98%)	200 (94%)	12 (6%)	0	100	100
6	E	207/215 (96%)	203 (98%)	4 (2%)	0	100	100
7	F	180/187 (96%)	175 (97%)	5 (3%)	0	100	100
8	G	174/179 (97%)	169 (97%)	5 (3%)	0	100	100
9	H	149/151 (99%)	142 (95%)	7 (5%)	0	100	100
10	I	124/175 (71%)	120 (97%)	4 (3%)	0	100	100
11	J	131/142 (92%)	126 (96%)	5 (4%)	0	100	100
12	K	144/147 (98%)	139 (96%)	5 (4%)	0	100	100
13	L	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
14	M	143/147 (97%)	129 (90%)	14 (10%)	0	100	100
15	N	134/138 (97%)	127 (95%)	7 (5%)	0	100	100
16	O	116/199 (58%)	111 (96%)	5 (4%)	0	100	100
17	P	124/127 (98%)	122 (98%)	2 (2%)	0	100	100
18	Q	111/113 (98%)	103 (93%)	8 (7%)	0	100	100
19	R	122/129 (95%)	120 (98%)	2 (2%)	0	100	100
20	S	98/103 (95%)	96 (98%)	2 (2%)	0	100	100
21	T	112/153 (73%)	106 (95%)	6 (5%)	0	100	100
22	U	95/100 (95%)	93 (98%)	2 (2%)	0	100	100
23	V	93/105 (89%)	90 (97%)	3 (3%)	0	100	100
24	W	190/215 (88%)	182 (96%)	8 (4%)	0	100	100
25	X	77/88 (88%)	73 (95%)	4 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
26	Y	61/64 (95%)	58 (95%)	3 (5%)	0	100 100
27	Z	62/77 (80%)	60 (97%)	2 (3%)	0	100 100
28	a	57/61 (93%)	56 (98%)	1 (2%)	0	100 100
29	b	52/57 (91%)	52 (100%)	0	0	100 100
30	c	47/55 (86%)	43 (92%)	3 (6%)	1 (2%)	5 33
31	d	44/47 (94%)	43 (98%)	1 (2%)	0	100 100
32	e	61/64 (95%)	59 (97%)	2 (3%)	0	100 100
33	f	35/37 (95%)	34 (97%)	1 (3%)	0	100 100
34	g	46/75 (61%)	45 (98%)	1 (2%)	0	100 100
All	All	5029/5409 (93%)	4820 (96%)	204 (4%)	5 (0%)	50 79

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	5	375	ASP
2	6	381	HIS
30	c	7	VAL
2	5	702	MET
2	5	381	HIS

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	3	18/19 (95%)	18 (100%)	0	100 100
2	5	564/564 (100%)	557 (99%)	7 (1%)	67 82
2	6	564/564 (100%)	558 (99%)	6 (1%)	70 83
4	C	215/218 (99%)	215 (100%)	0	100 100
5	D	160/163 (98%)	160 (100%)	0	100 100
6	E	169/173 (98%)	169 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	F	151/156 (97%)	150 (99%)	1 (1%)	81	90
8	G	148/150 (99%)	148 (100%)	0	100	100
9	H	90/116 (78%)	90 (100%)	0	100	100
10	I	89/120 (74%)	89 (100%)	0	100	100
11	J	102/108 (94%)	102 (100%)	0	100	100
12	K	119/120 (99%)	119 (100%)	0	100	100
13	L	100/100 (100%)	100 (100%)	0	100	100
14	M	112/114 (98%)	112 (100%)	0	100	100
15	N	114/116 (98%)	114 (100%)	0	100	100
16	O	97/158 (61%)	97 (100%)	0	100	100
17	P	93/94 (99%)	93 (100%)	0	100	100
18	Q	100/100 (100%)	100 (100%)	0	100	100
19	R	97/99 (98%)	97 (100%)	0	100	100
20	S	81/83 (98%)	81 (100%)	0	100	100
21	T	90/117 (77%)	90 (100%)	0	100	100
22	U	83/85 (98%)	83 (100%)	0	100	100
23	V	81/86 (94%)	81 (100%)	0	100	100
24	W	155/168 (92%)	155 (100%)	0	100	100
25	X	58/63 (92%)	58 (100%)	0	100	100
26	Y	50/51 (98%)	50 (100%)	0	100	100
27	Z	58/66 (88%)	58 (100%)	0	100	100
28	a	52/54 (96%)	52 (100%)	0	100	100
29	b	43/46 (94%)	43 (100%)	0	100	100
30	c	47/52 (90%)	47 (100%)	0	100	100
31	d	35/36 (97%)	35 (100%)	0	100	100
32	e	53/54 (98%)	53 (100%)	0	100	100
33	f	35/35 (100%)	35 (100%)	0	100	100
34	g	43/63 (68%)	43 (100%)	0	100	100
All	All	4066/4311 (94%)	4052 (100%)	14 (0%)	90	96

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	5	74	ARG
2	5	229	ILE
2	5	239	GLU
2	5	281	GLU
2	5	701	SER
2	5	702	MET
2	5	704	HIS
2	6	338	LEU
2	6	346	ILE
2	6	354	VAL
2	6	518	VAL
2	6	522	GLU
2	6	623	MET
7	F	161	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (40) such sidechains are listed below:

Mol	Chain	Res	Type
1	3	23	ASN
2	5	73	GLN
2	5	381	HIS
2	6	73	GLN
2	6	297	GLN
2	6	534	HIS
4	C	135	ASN
4	C	233	HIS
5	D	21	ASN
5	D	130	HIS
6	E	121	ASN
6	E	151	ASN
6	E	208	ASN
7	F	13	GLN
7	F	24	GLN
7	F	62	ASN
7	F	83	GLN
11	J	21	ASN
11	J	32	GLN
11	J	106	GLN
12	K	136	GLN
13	L	4	GLN
14	M	84	ASN
16	O	31	HIS
17	P	53	ASN

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Mol	Chain	Res	Type
19	R	94	ASN
20	S	67	HIS
23	V	31	ASN
24	W	6	ASN
24	W	9	ASN
24	W	64	ASN
24	W	76	GLN
24	W	91	ASN
24	W	143	GLN
25	X	12	ASN
26	Y	47	GLN
27	Z	44	ASN
31	d	9	GLN
32	e	31	HIS
32	e	63	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
3	B	117/118 (99%)	18 (15%)	1 (0%)
35	A	3059/3127 (97%)	640 (20%)	34 (1%)
All	All	3176/3245 (97%)	658 (20%)	35 (1%)

All (658) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
3	B	4	A
3	B	9	G
3	B	11	U
3	B	12	C
3	B	13	C
3	B	23	G
3	B	30	G
3	B	31	C
3	B	42	C
3	B	57	U
3	B	58	A
3	B	67	A
3	B	87	U
3	B	88	C
3	B	89	C

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Mol	Chain	Res	Type
3	B	90	G
3	B	103	G
3	B	107	A
35	A	7	U
35	A	9	U
35	A	12	G
35	A	16	G
35	A	19	U
35	A	20	G
35	A	31	U
35	A	48	G
35	A	55	G
35	A	60	A
35	A	68	A
35	A	71	A
35	A	72	G
35	A	80	G
35	A	82	G
35	A	89	A
35	A	90	C
35	A	94	G
35	A	95	C
35	A	98	U
35	A	99	G
35	A	115	A
35	A	116	A
35	A	117	U
35	A	122	A
35	A	125	C
35	A	136	U
35	A	148	A
35	A	161	U
35	A	164	A
35	A	169	C
35	A	180	A
35	A	195	A
35	A	212	A
35	A	214	G
35	A	215	A
35	A	221	A
35	A	227	A
35	A	228	A

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Mol	Chain	Res	Type
35	A	229	U
35	A	230	G
35	A	231	U
35	A	238	G
35	A	248	G
35	A	270	U
35	A	272	A
35	A	273	A
35	A	275	C
35	A	283	U
35	A	285	U
35	A	286	G
35	A	289	A
35	A	290	C
35	A	292	G
35	A	296	A
35	A	299	G
35	A	300	G
35	A	301	U
35	A	302	U
35	A	303	G
35	A	305	G
35	A	314	G
35	A	315	U
35	A	317	G
35	A	318	U
35	A	319	G
35	A	322	A
35	A	323	C
35	A	326	A
35	A	329	U
35	A	330	U
35	A	331	U
35	A	336	C
35	A	337	U
35	A	338	C
35	A	342	C
35	A	344	G
35	A	345	G
35	A	348	G
35	A	350	A
35	A	351	G

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Mol	Chain	Res	Type
35	A	352	G
35	A	357	U
35	A	358	G
35	A	361	A
35	A	364	A
35	A	369	G
35	A	370	U
35	A	384	G
35	A	393	U
35	A	412	A
35	A	413	G
35	A	424	G
35	A	434	G
35	A	437	G
35	A	445	U
35	A	446	G
35	A	447	A
35	A	449	G
35	A	450	G
35	A	452	G
35	A	453	U
35	A	454	U
35	A	460	G
35	A	474	G
35	A	489	A
35	A	490	A
35	A	491	U
35	A	493	U
35	A	494	G
35	A	498	G
35	A	499	G
35	A	500	A
35	A	505	C
35	A	512	G
35	A	523	U
35	A	543	U
35	A	544	U
35	A	566	A
35	A	567	A
35	A	569	G
35	A	578	G
35	A	589	A

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Mol	Chain	Res	Type
35	A	591	G
35	A	592	A
35	A	594	U
35	A	595	A
35	A	596	C
35	A	605	G
35	A	617	U
35	A	618	C
35	A	619	C
35	A	620	G
35	A	623	A
35	A	634	C
35	A	635	G
35	A	636	U
35	A	637	G
35	A	638	U
35	A	639	C
35	A	640	G
35	A	642	G
35	A	644	G
35	A	646	U
35	A	647	G
35	A	655	G
35	A	665	G
35	A	667	A
35	A	669	G
35	A	675	G
35	A	678	A
35	A	679	G
35	A	684	G
35	A	685	G
35	A	696	A
35	A	706	G
35	A	707	G
35	A	708	G
35	A	709	U
35	A	721	A
35	A	731	A
35	A	738	A
35	A	740	A
35	A	756	A
35	A	757	G

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Mol	Chain	Res	Type
35	A	758	A
35	A	760	U
35	A	764	U
35	A	765	G
35	A	766	G
35	A	768	G
35	A	773	G
35	A	774	G
35	A	784	G
35	A	785	A
35	A	801	U
35	A	836	G
35	A	845	C
35	A	862	U
35	A	863	G
35	A	868	C
35	A	871	A
35	A	872	G
35	A	878	G
35	A	879	A
35	A	880	G
35	A	890	G
35	A	891	G
35	A	897	A
35	A	899	G
35	A	900	G
35	A	907	A
35	A	917	A
35	A	918	U
35	A	920	G
35	A	921	C
35	A	927	C
35	A	942	U
35	A	960	G
35	A	961	U
35	A	972	A
35	A	974	G
35	A	975	U
35	A	981	U
35	A	982	A
35	A	994	A
35	A	1001	C

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Mol	Chain	Res	Type
35	A	1002	C
35	A	1003	A
35	A	1004	C
35	A	1005	A
35	A	1006	G
35	A	1007	G
35	A	1008	G
35	A	1010	U
35	A	1011	A
35	A	1012	C
35	A	1013	U
35	A	1014	G
35	A	1025	A
35	A	1030	C
35	A	1046	C
35	A	1047	A
35	A	1048	A
35	A	1049	G
35	A	1063	G
35	A	1068	C
35	A	1075	U
35	A	1076	A
35	A	1078	G
35	A	1085	G
35	A	1092	G
35	A	1101	A
35	A	1103	C
35	A	1108	A
35	A	1114	G
35	A	1130	C
35	A	1131	G
35	A	1144	A
35	A	1151	U
35	A	1164	A
35	A	1165	G
35	A	1173	G
35	A	1174	G
35	A	1175	A
35	A	1178	U
35	A	1181	G
35	A	1184	U
35	A	1185	A

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Mol	Chain	Res	Type
35	A	1186	G
35	A	1187	A
35	A	1188	A
35	A	1189	G
35	A	1190	C
35	A	1191	A
35	A	1194	C
35	A	1195	A
35	A	1201	G
35	A	1202	A
35	A	1203	A
35	A	1205	G
35	A	1206	A
35	A	1207	G
35	A	1209	G
35	A	1212	U
35	A	1213	A
35	A	1214	A
35	A	1219	U
35	A	1226	U
35	A	1230	G
35	A	1232	G
35	A	1240	G
35	A	1248	U
35	A	1250	U
35	A	1251	A
35	A	1253	C
35	A	1254	G
35	A	1260	C
35	A	1261	A
35	A	1292	U
35	A	1293	G
35	A	1325	U
35	A	1335	G
35	A	1344	A
35	A	1353	G
35	A	1362	A
35	A	1365	G
35	A	1371	G
35	A	1384	G
35	A	1386	G
35	A	1387	A

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Mol	Chain	Res	Type
35	A	1389	U
35	A	1415	A
35	A	1416	A
35	A	1428	U
35	A	1435	C
35	A	1436	C
35	A	1437	A
35	A	1444	U
35	A	1448	C
35	A	1456	G
35	A	1465	C
35	A	1467	U
35	A	1480	A
35	A	1493	A
35	A	1494	U
35	A	1499	A
35	A	1501	C
35	A	1507	G
35	A	1508	A
35	A	1510	A
35	A	1522	G
35	A	1529	U
35	A	1531	C
35	A	1532	G
35	A	1533	U
35	A	1534	C
35	A	1536	A
35	A	1540	U
35	A	1549	G
35	A	1550	G
35	A	1551	U
35	A	1552	A
35	A	1553	C
35	A	1625	G
35	A	1629	G
35	A	1630	U
35	A	1632	G
35	A	1633	U
35	A	1639	G
35	A	1640	A
35	A	1641	U
35	A	1645	G

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Mol	Chain	Res	Type
35	A	1648	A
35	A	1649	C
35	A	1670	G
35	A	1676	G
35	A	1678	U
35	A	1679	A
35	A	1680	A
35	A	1681	U
35	A	1703	G
35	A	1713	U
35	A	1714	A
35	A	1715	A
35	A	1716	A
35	A	1717	U
35	A	1720	G
35	A	1724	G
35	A	1728	U
35	A	1731	A
35	A	1737	A
35	A	1754	G
35	A	1756	G
35	A	1757	U
35	A	1767	U
35	A	1769	G
35	A	1786	G
35	A	1789	A
35	A	1798	U
35	A	1802	G
35	A	1826	A
35	A	1844	A
35	A	1864	U
35	A	1866	C
35	A	1867	G
35	A	1870	U
35	A	1871	G
35	A	1872	A
35	A	1892	G
35	A	1946	U
35	A	1947	U
35	A	1949	C
35	A	1950	G
35	A	1973	C

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Mol	Chain	Res	Type
35	A	1975	A
35	A	1981	U
35	A	1990	A
35	A	1998	C
35	A	2008	A
35	A	2017	C
35	A	2018	G
35	A	2026	A
35	A	2033	U
35	A	2046	A
35	A	2050	C
35	A	2053	C
35	A	2055	C
35	A	2059	G
35	A	2065	A
35	A	2066	G
35	A	2067	G
35	A	2068	U
35	A	2069	U
35	A	2071	A
35	A	2075	G
35	A	2076	A
35	A	2078	C
35	A	2081	U
35	A	2082	U
35	A	2083	A
35	A	2085	C
35	A	2086	U
35	A	2089	C
35	A	2091	U
35	A	2092	U
35	A	2093	G
35	A	2094	G
35	A	2095	G
35	A	2096	G
35	A	2099	G
35	A	2100	A
35	A	2103	C
35	A	2104	G
35	A	2107	G
35	A	2108	A
35	A	2110	U

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Mol	Chain	Res	Type
35	A	2111	U
35	A	2112	U
35	A	2113	A
35	A	2114	A
35	A	2116	C
35	A	2117	C
35	A	2120	A
35	A	2123	A
35	A	2124	A
35	A	2125	A
35	A	2126	C
35	A	2127	G
35	A	2128	G
35	A	2129	C
35	A	2130	G
35	A	2131	G
35	A	2133	G
35	A	2147	U
35	A	2149	C
35	A	2150	U
35	A	2151	A
35	A	2153	G
35	A	2154	G
35	A	2155	U
35	A	2156	A
35	A	2157	G
35	A	2159	G
35	A	2160	A
35	A	2161	A
35	A	2162	A
35	A	2163	U
35	A	2164	U
35	A	2166	C
35	A	2167	U
35	A	2168	U
35	A	2169	G
35	A	2170	U
35	A	2171	C
35	A	2172	G
35	A	2179	U
35	A	2183	G
35	A	2184	A

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Mol	Chain	Res	Type
35	A	2185	C
35	A	2187	U
35	A	2188	G
35	A	2189	C
35	A	2190	A
35	A	2192	G
35	A	2193	A
35	A	2194	A
35	A	2195	U
35	A	2197	G
35	A	2215	U
35	A	2217	U
35	A	2221	A
35	A	2227	A
35	A	2244	A
35	A	2245	C
35	A	2247	A
35	A	2251	G
35	A	2254	A
35	A	2255	A
35	A	2256	G
35	A	2257	A
35	A	2263	G
35	A	2267	C
35	A	2279	C
35	A	2280	G
35	A	2284	A
35	A	2285	G
35	A	2286	A
35	A	2316	G
35	A	2320	C
35	A	2324	A
35	A	2325	U
35	A	2329	G
35	A	2330	U
35	A	2331	U
35	A	2333	G
35	A	2334	U
35	A	2335	G
35	A	2336	U
35	A	2337	A
35	A	2338	G

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Mol	Chain	Res	Type
35	A	2339	G
35	A	2340	A
35	A	2341	U
35	A	2342	A
35	A	2343	G
35	A	2349	A
35	A	2351	A
35	A	2353	U
35	A	2354	G
35	A	2355	U
35	A	2356	G
35	A	2357	A
35	A	2368	C
35	A	2382	G
35	A	2384	C
35	A	2385	G
35	A	2386	U
35	A	2387	U
35	A	2388	G
35	A	2390	U
35	A	2393	A
35	A	2394	A
35	A	2395	U
35	A	2396	A
35	A	2401	U
35	A	2402	C
35	A	2407	C
35	A	2408	G
35	A	2409	U
35	A	2413	G
35	A	2421	A
35	A	2427	G
35	A	2434	A
35	A	2436	A
35	A	2447	G
35	A	2449	A
35	A	2462	G
35	A	2463	G
35	A	2467	U
35	A	2502	A
35	A	2507	C
35	A	2511	A

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Mol	Chain	Res	Type
35	A	2512	A
35	A	2529	A
35	A	2532	G
35	A	2533	C
35	A	2545	G
35	A	2548	U
35	A	2549	G
35	A	2559	A
35	A	2567	U
35	A	2569	G
35	A	2571	C
35	A	2574	C
35	A	2585	U
35	A	2607	G
35	A	2609	A
35	A	2627	C
35	A	2630	A
35	A	2640	G
35	A	2647	U
35	A	2649	A
35	A	2650	A
35	A	2653	G
35	A	2654	A
35	A	2655	U
35	A	2659	A
35	A	2665	C
35	A	2669	G
35	A	2672	A
35	A	2677	A
35	A	2688	C
35	A	2689	C
35	A	2693	A
35	A	2694	G
35	A	2699	C
35	A	2700	A
35	A	2702	A
35	A	2705	G
35	A	2715	U
35	A	2726	G
35	A	2728	U
35	A	2729	G
35	A	2732	G

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Mol	Chain	Res	Type
35	A	2742	A
35	A	2744	C
35	A	2749	G
35	A	2778	U
35	A	2779	U
35	A	2786	U
35	A	2790	A
35	A	2791	G
35	A	2796	A
35	A	2797	C
35	A	2806	G
35	A	2810	U
35	A	2826	A
35	A	2827	G
35	A	2833	U
35	A	2837	U
35	A	2839	U
35	A	2853	C
35	A	2854	A
35	A	2865	G
35	A	2870	C
35	A	2887	G
35	A	2912	A
35	A	2913	U
35	A	2915	C
35	A	2926	A
35	A	2936	C
35	A	2938	G
35	A	2942	G
35	A	2950	C
35	A	2953	U
35	A	2957	A
35	A	2968	G
35	A	2972	A
35	A	2982	A
35	A	2985	G
35	A	3002	A
35	A	3009	U
35	A	3014	A
35	A	3015	C
35	A	3021	A
35	A	3022	G

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Mol	Chain	Res	Type
35	A	3023	G
35	A	3042	A
35	A	3056	A
35	A	3080	A
35	A	3082	U
35	A	3088	C
35	A	3093	A
35	A	3101	C
35	A	3104	A
35	A	3105	C
35	A	3106	C
35	A	3112	A
35	A	3115	A

All (35) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	B	10	G
35	A	89	A
35	A	97	U
35	A	284	G
35	A	299	G
35	A	302	U
35	A	316	U
35	A	357	U
35	A	445	U
35	A	641	U
35	A	643	G
35	A	974	G
35	A	980	C
35	A	981	U
35	A	1007	G
35	A	1010	U
35	A	1012	C
35	A	1084	U
35	A	1164	A
35	A	1185	A
35	A	1186	G
35	A	1253	C
35	A	1436	C
35	A	1730	U
35	A	2085	C

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Mol	Chain	Res	Type
35	A	2088	C
35	A	2094	G
35	A	2130	G
35	A	2163	U
35	A	2168	U
35	A	2169	G
35	A	2342	A
35	A	2350	G
35	A	2381	A
35	A	2698	C

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 413 ligands modelled in this entry, 411 are monoatomic - leaving 2 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	$\#\|Z\| > 2$
36	GNP	6	801	-	29,34,34	1.60	7 (24%)	33,54,54	2.12	6 (18%)
36	GNP	5	801	-	29,34,34	1.59	7 (24%)	33,54,54	2.14	6 (18%)

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
36	GNP	6	801	-	-	3/14/38/38	0/3/3/3
36	GNP	5	801	-	-	4/14/38/38	0/3/3/3

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
36	6	801	GNP	PB-O3A	4.40	1.64	1.59
36	5	801	GNP	PB-O3A	4.26	1.64	1.59
36	6	801	GNP	C6-N1	3.14	1.38	1.33
36	6	801	GNP	PB-O1B	3.10	1.51	1.46
36	5	801	GNP	C6-N1	3.09	1.38	1.33
36	5	801	GNP	PB-O1B	3.04	1.51	1.46
36	5	801	GNP	PG-N3B	3.01	1.71	1.63
36	6	801	GNP	PG-N3B	2.90	1.70	1.63
36	5	801	GNP	PG-O1G	2.73	1.50	1.46
36	6	801	GNP	PG-O1G	2.67	1.50	1.46
36	5	801	GNP	PB-O2B	-2.22	1.50	1.56
36	6	801	GNP	PB-O2B	-2.16	1.50	1.56
36	6	801	GNP	C5-C6	2.08	1.44	1.41
36	5	801	GNP	C5-C6	2.07	1.44	1.41

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
36	5	801	GNP	C5-C6-N1	-8.43	111.91	123.43
36	6	801	GNP	C5-C6-N1	-8.42	111.92	123.43
36	5	801	GNP	C2-N1-C6	5.85	125.23	115.93
36	6	801	GNP	C2-N1-C6	5.82	125.17	115.93
36	6	801	GNP	PB-O3A-PA	-2.80	122.76	132.62
36	5	801	GNP	PB-O3A-PA	-2.77	122.86	132.62
36	5	801	GNP	N3-C2-N1	-2.77	123.53	127.22
36	6	801	GNP	N3-C2-N1	-2.76	123.55	127.22
36	5	801	GNP	C4-C5-C6	-2.57	118.35	120.80
36	6	801	GNP	C4-C5-C6	-2.54	118.37	120.80
36	5	801	GNP	C2-N3-C4	-2.17	112.87	115.36
36	6	801	GNP	C2-N3-C4	-2.12	112.93	115.36

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
36	5	801	GNP	C5'-O5'-PA-O3A

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Mol	Chain	Res	Type	Atoms
36	5	801	GNP	C5'-O5'-PA-O1A
36	5	801	GNP	O4'-C4'-C5'-O5'
36	5	801	GNP	C3'-C4'-C5'-O5'
36	6	801	GNP	O4'-C4'-C5'-O5'
36	6	801	GNP	C3'-C4'-C5'-O5'
36	6	801	GNP	C5'-O5'-PA-O1A

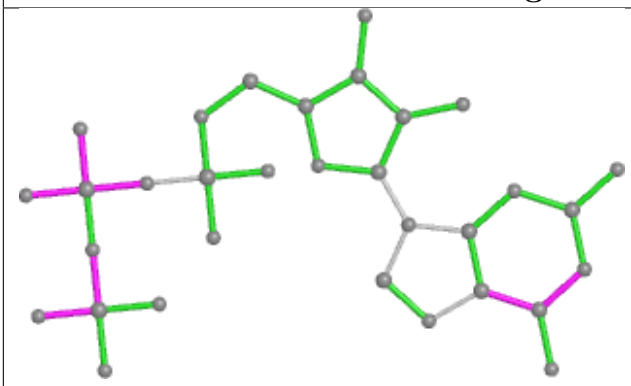
There are no ring outliers.

2 monomers are involved in 3 short contacts:

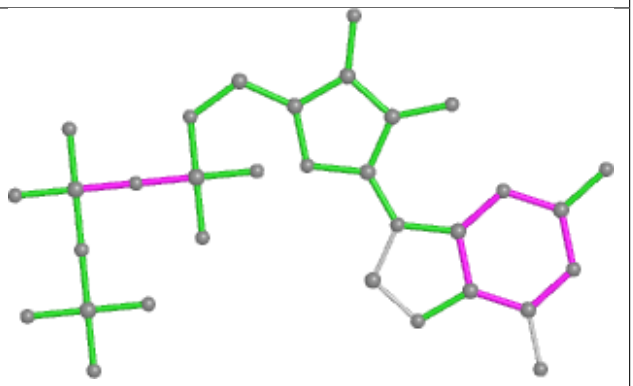
Mol	Chain	Res	Type	Clashes	Symm-Clashes
36	6	801	GNP	2	0
36	5	801	GNP	1	0

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.

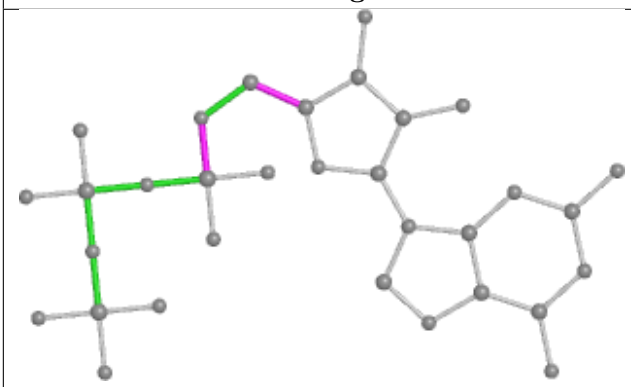
Ligand GNP 6 801



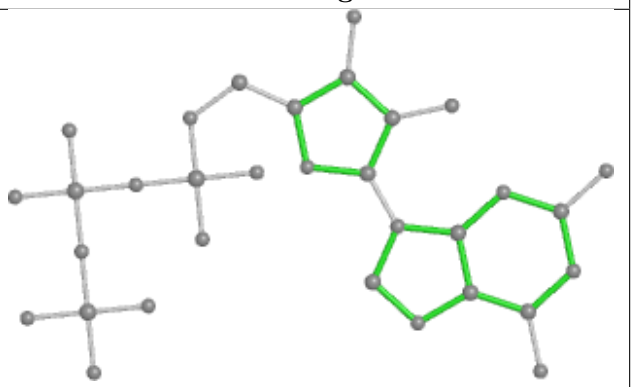
Bond lengths



Bond angles

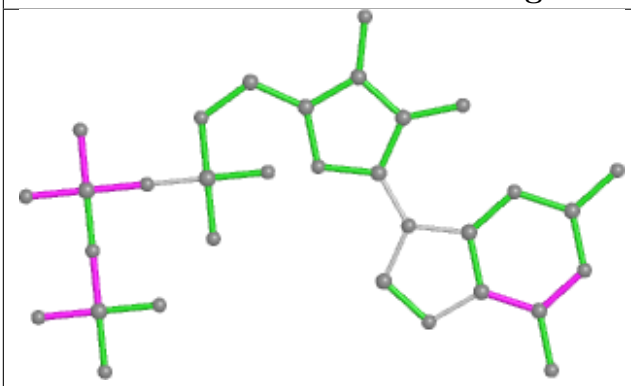


Torsions

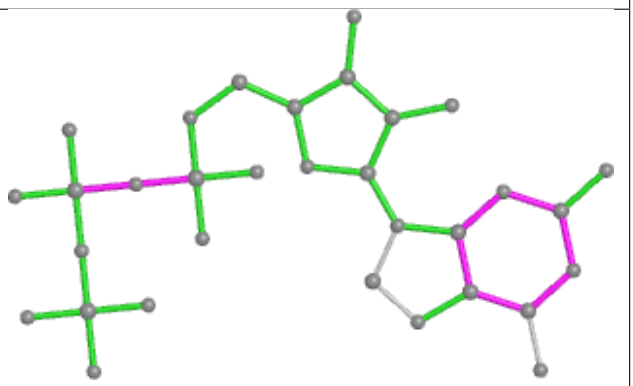


Rings

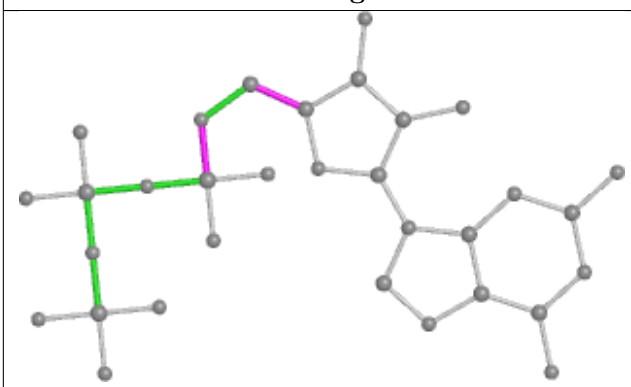
Ligand GNP 5 801



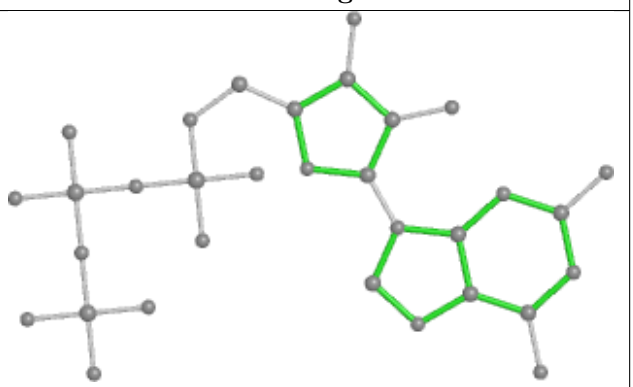
Bond lengths



Bond angles



Torsions



Rings

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.

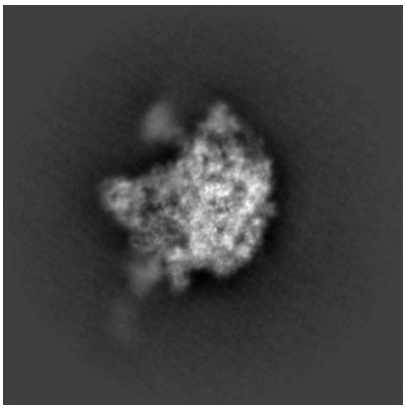
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-61960. These allow visual inspection of the internal detail of the map and identification of artifacts.

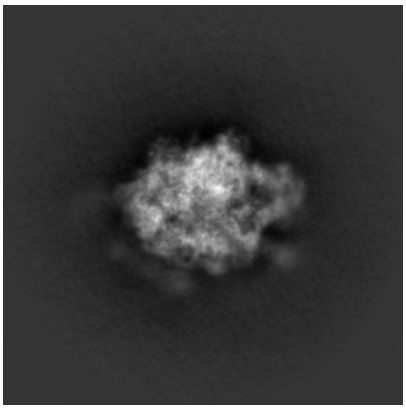
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

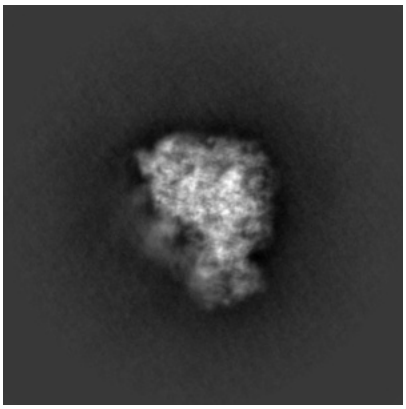
6.1.1 Primary map



X

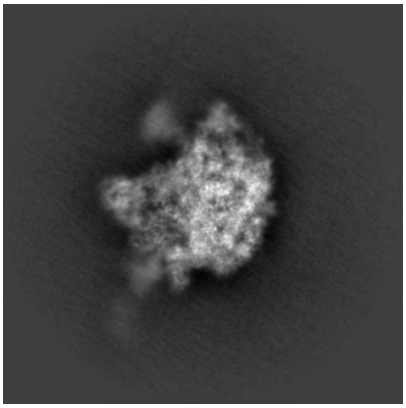


Y

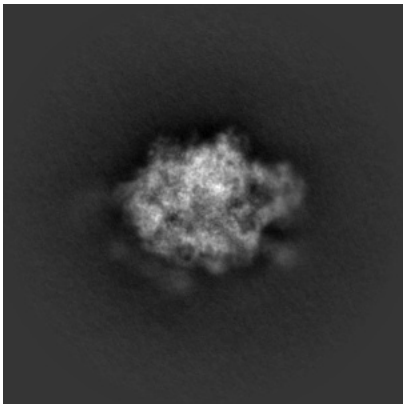


Z

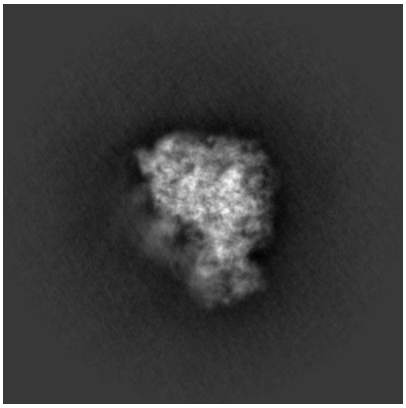
6.1.2 Raw map



X



Y

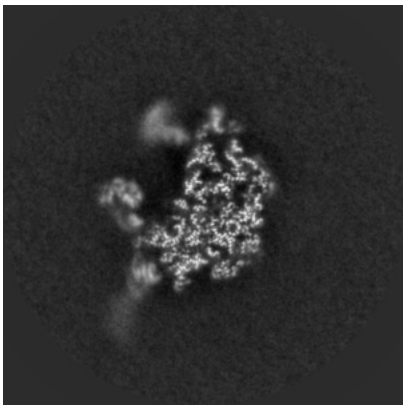


Z

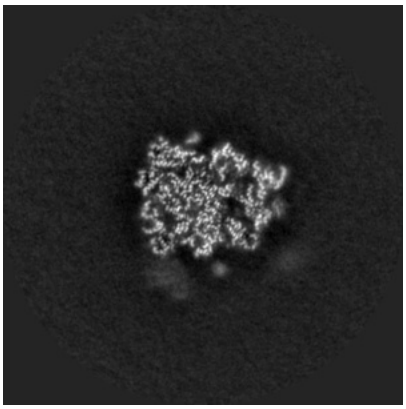
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

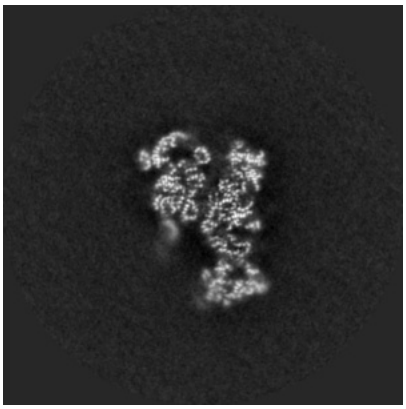
6.2.1 Primary map



X Index: 175

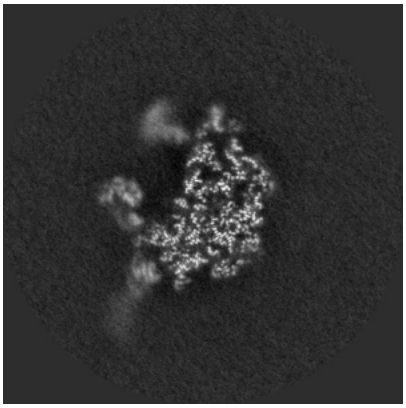


Y Index: 175

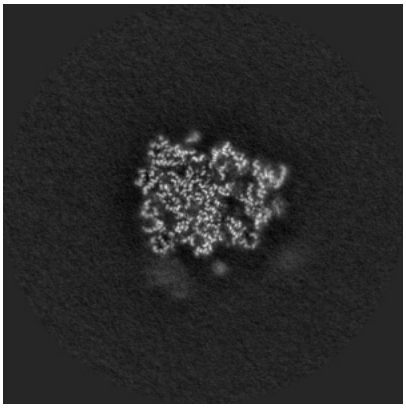


Z Index: 175

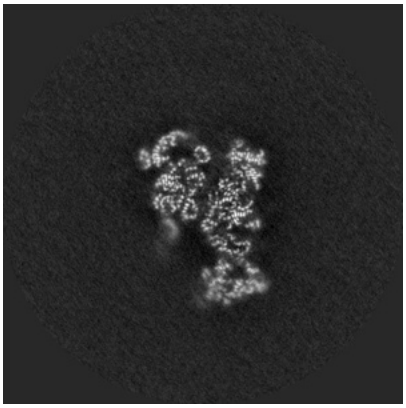
6.2.2 Raw map



X Index: 175



Y Index: 175

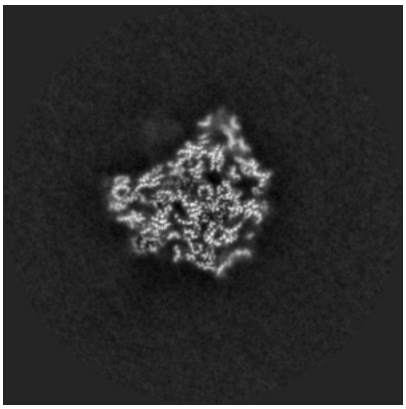


Z Index: 175

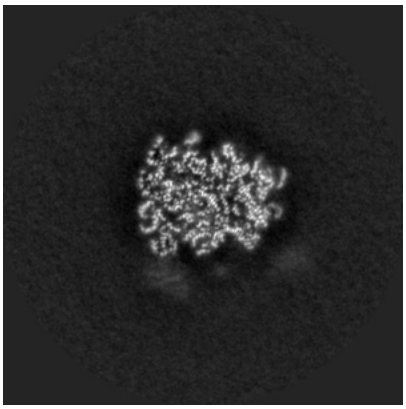
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

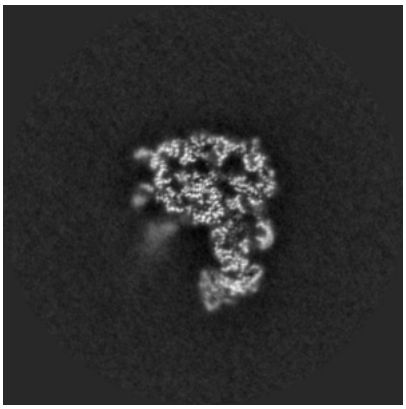
6.3.1 Primary map



X Index: 203

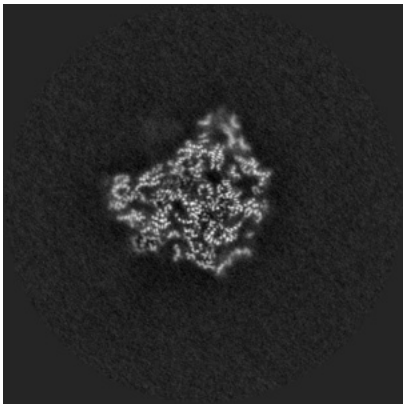


Y Index: 172

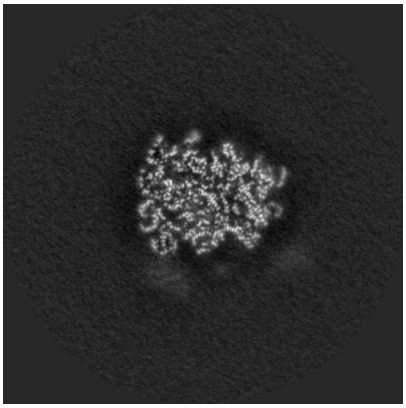


Z Index: 191

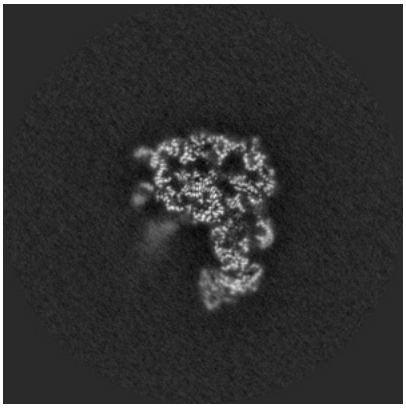
6.3.2 Raw map



X Index: 203



Y Index: 172

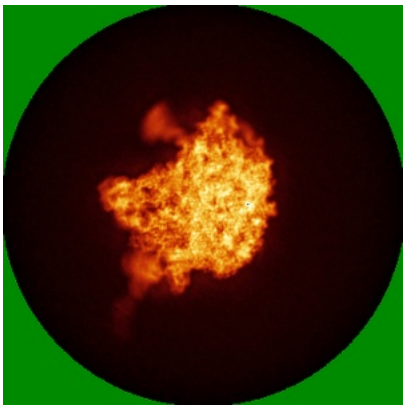


Z Index: 191

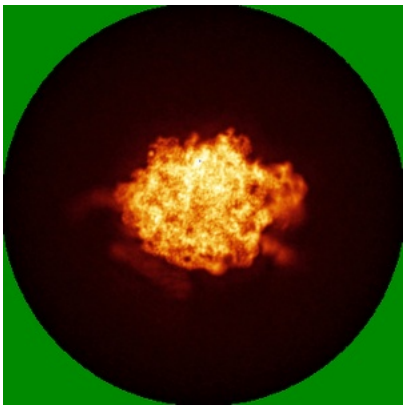
The images above show the largest variance slices of the map in three orthogonal directions.

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

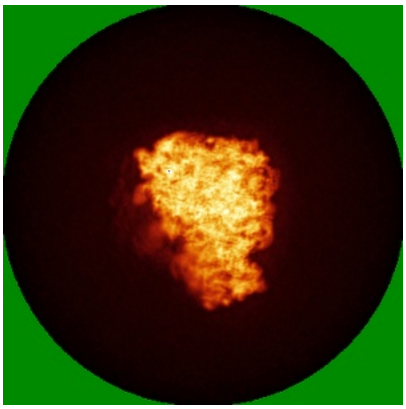
6.4.1 Primary map



X

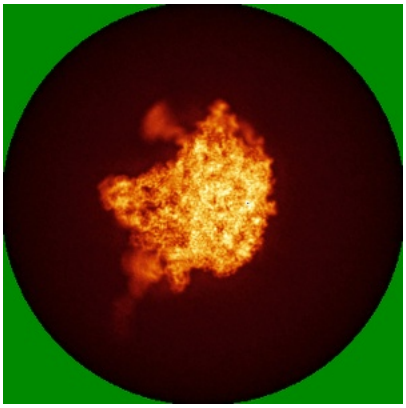


Y

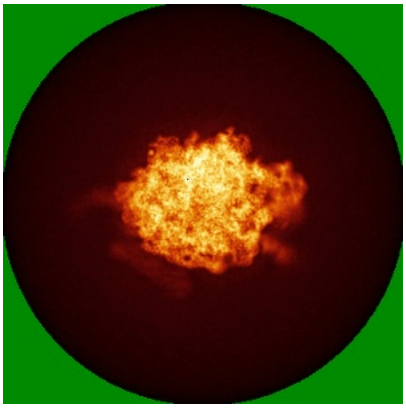


Z

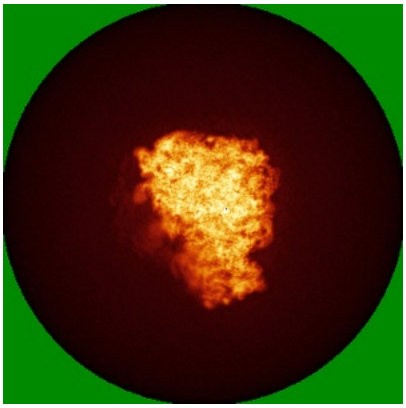
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00715. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

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

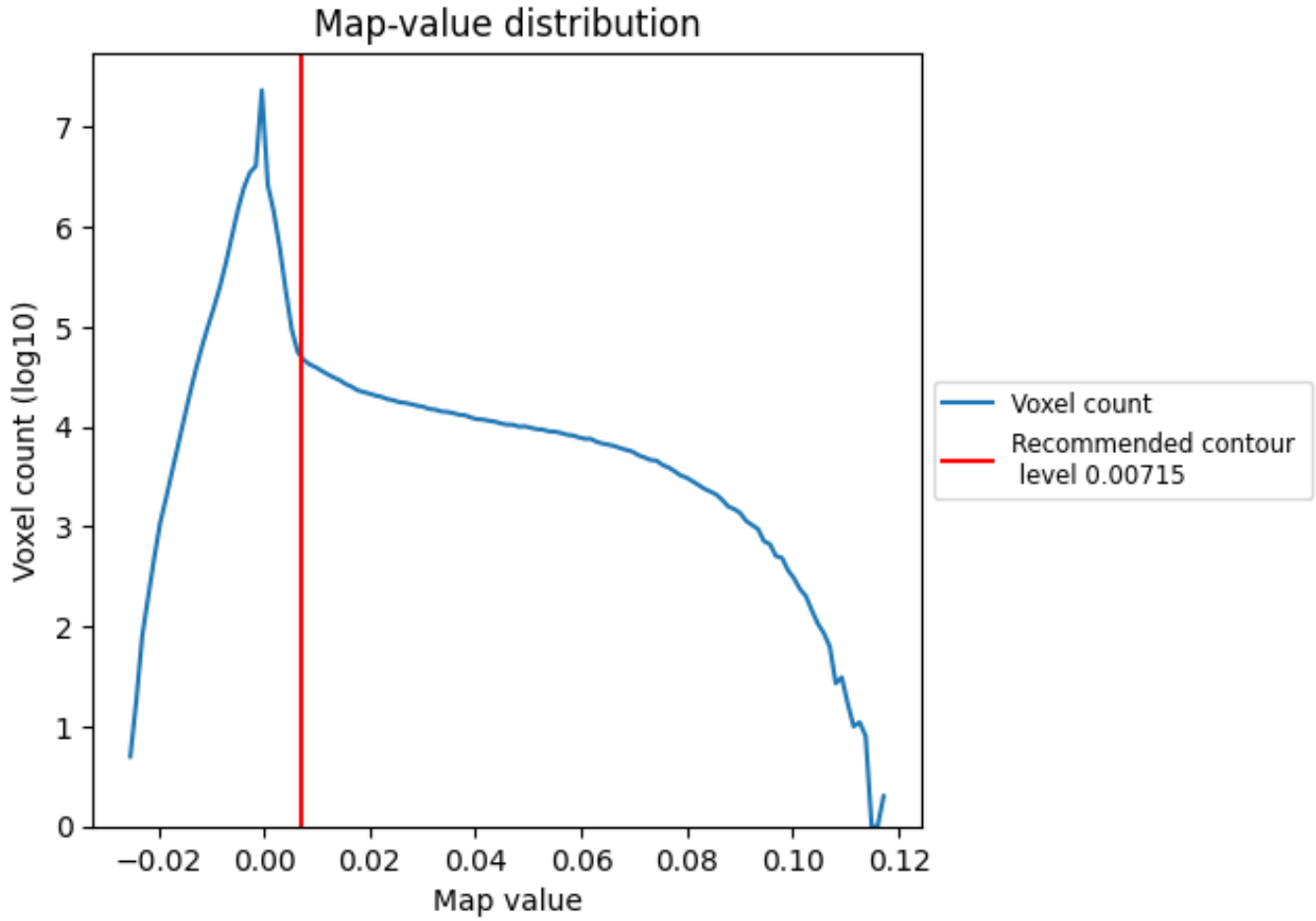
6.6 Mask visualisation (i)

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

7 Map analysis

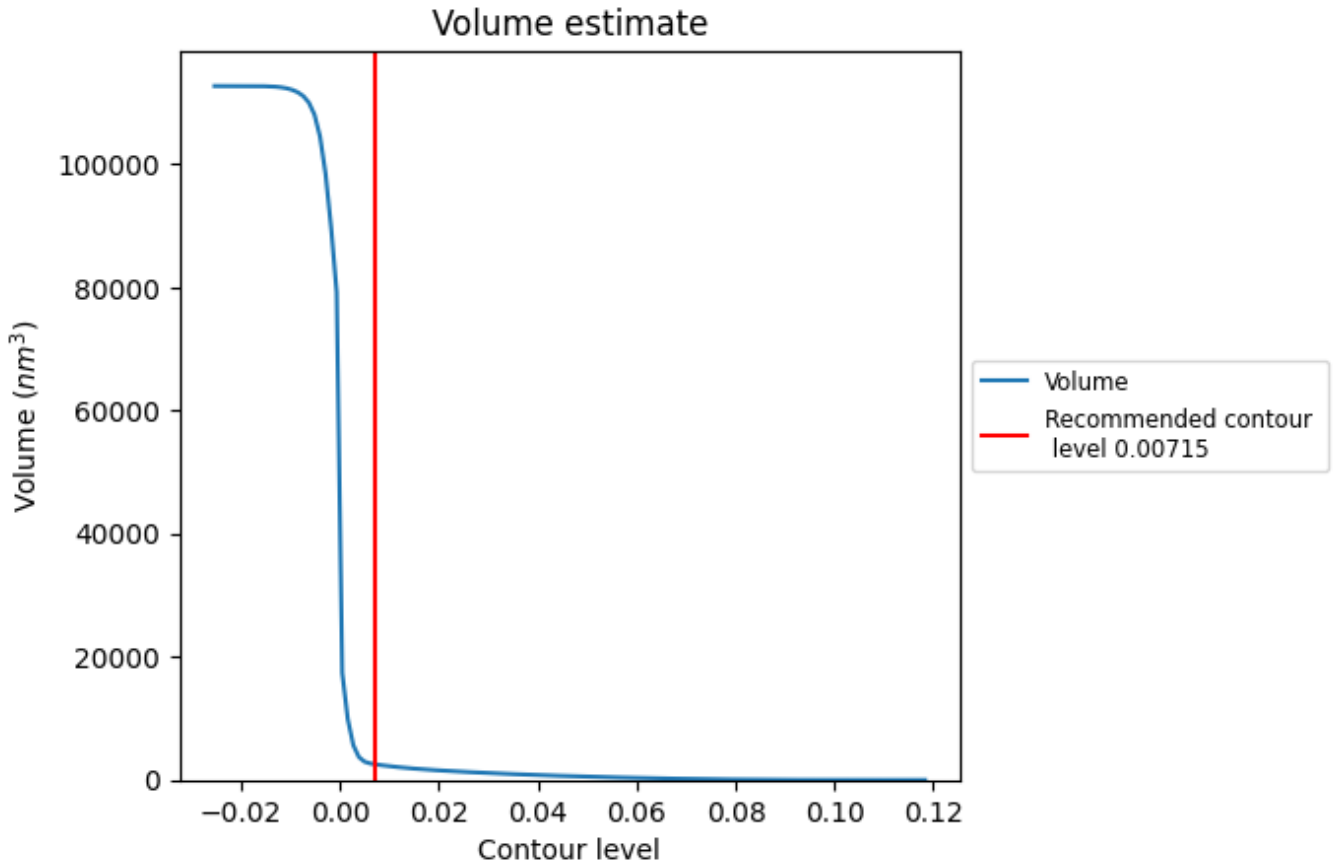
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

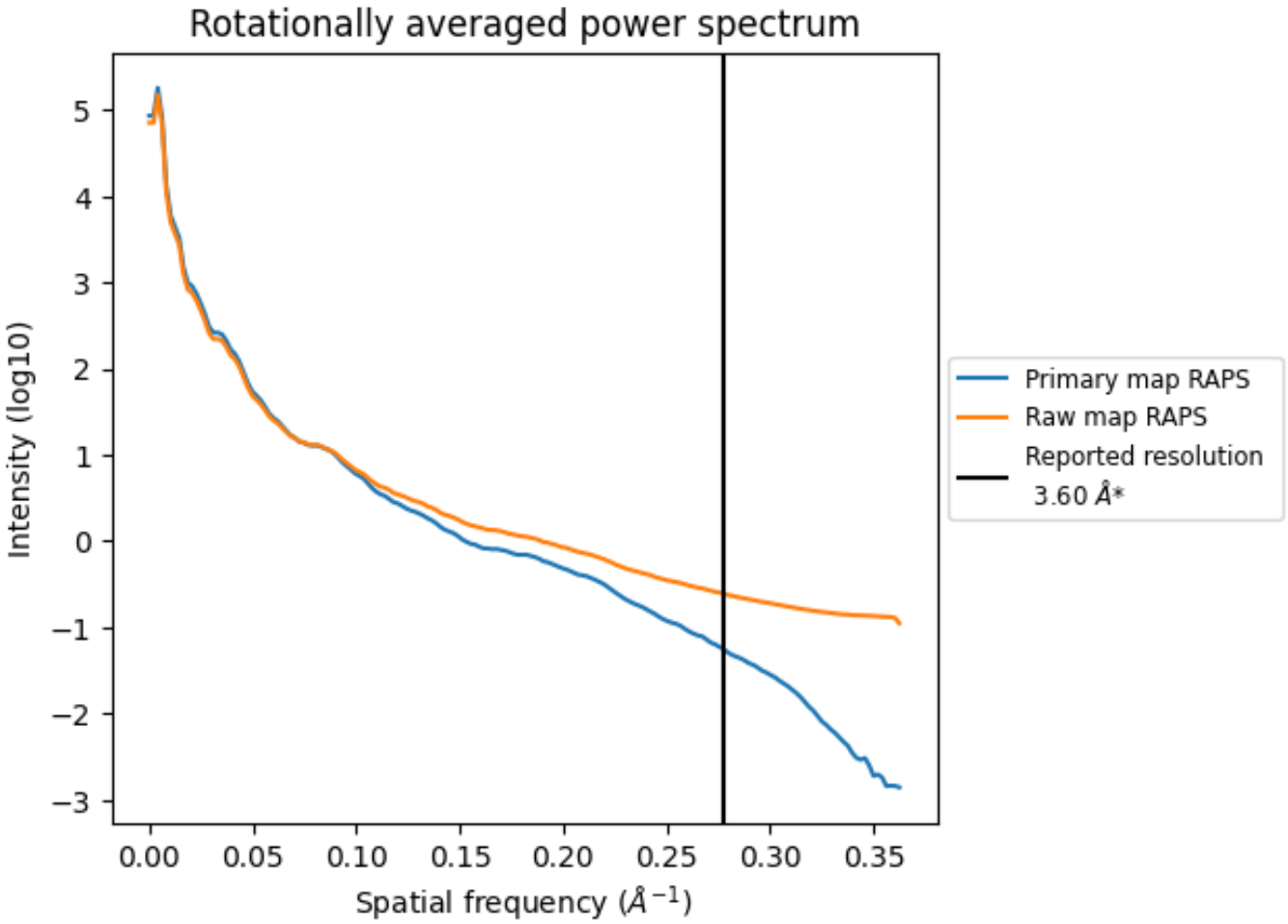
7.2 Volume estimate



The volume at the recommended contour level is 2544 nm^3; this corresponds to an approximate mass of 2298 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)

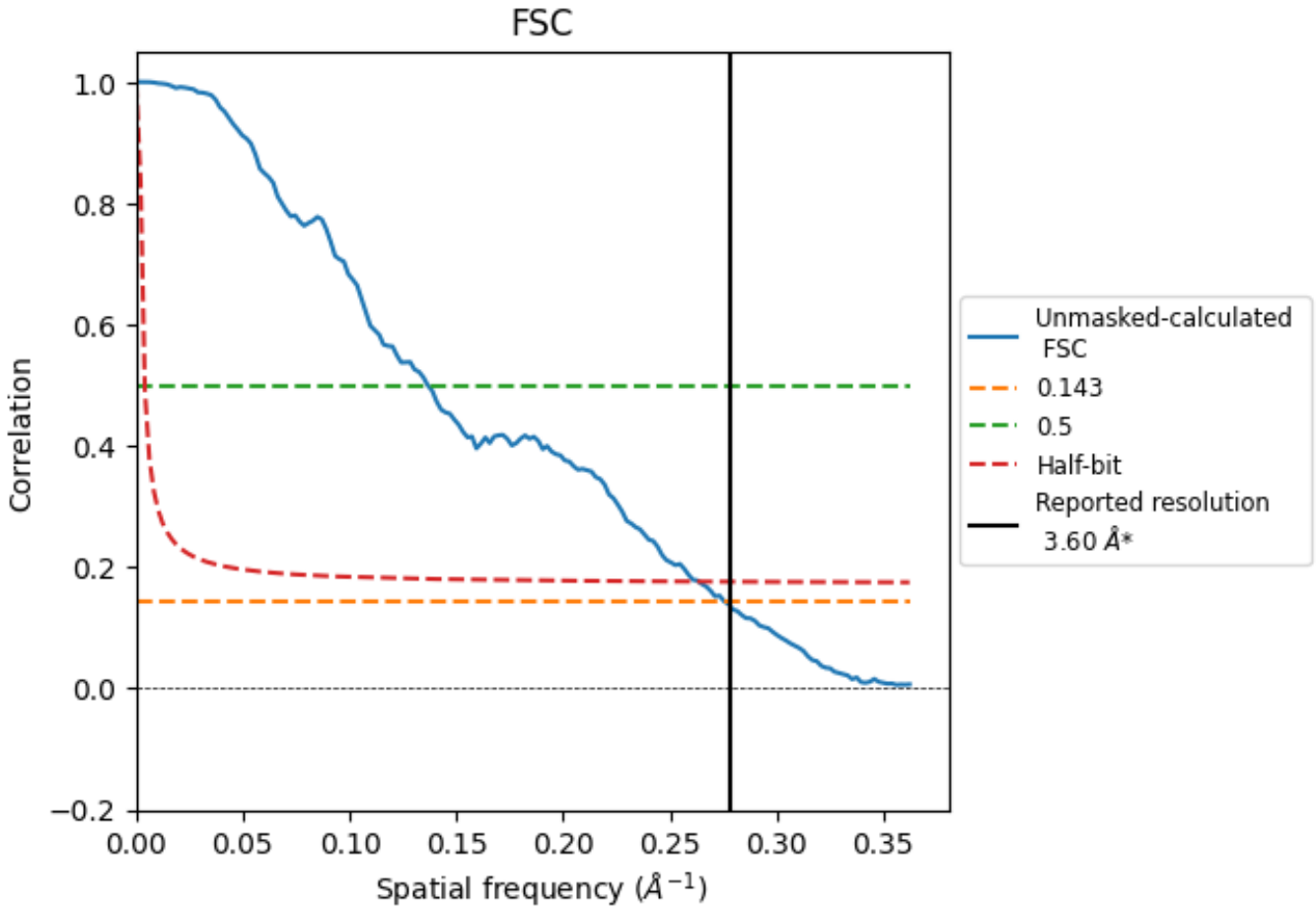


*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.278 Å^{-1}

8.2 Resolution estimates (i)

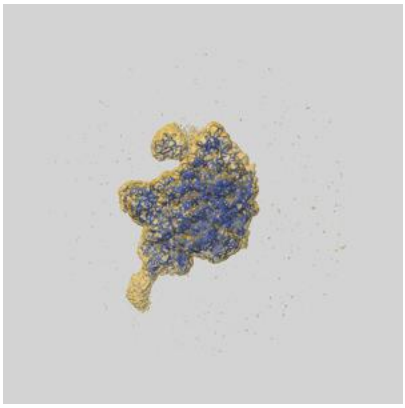
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.63	7.32	3.79

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

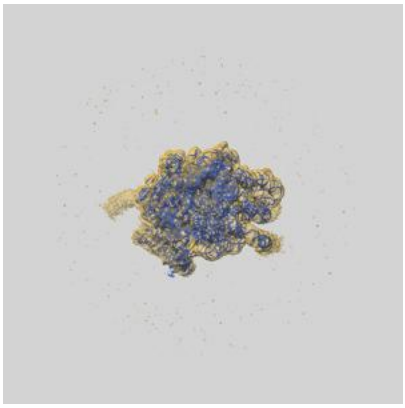
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-61960 and PDB model 9K10. Per-residue inclusion information can be found in section 3 on page 12.

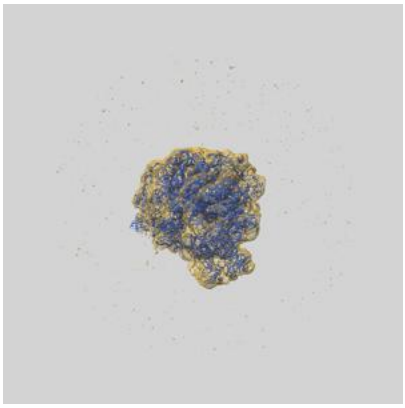
9.1 Map-model overlay



X



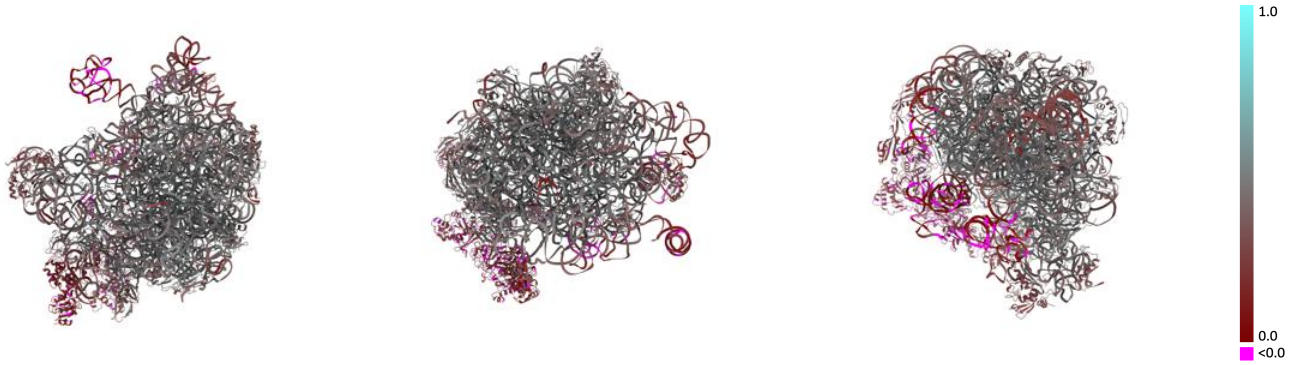
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00715 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.

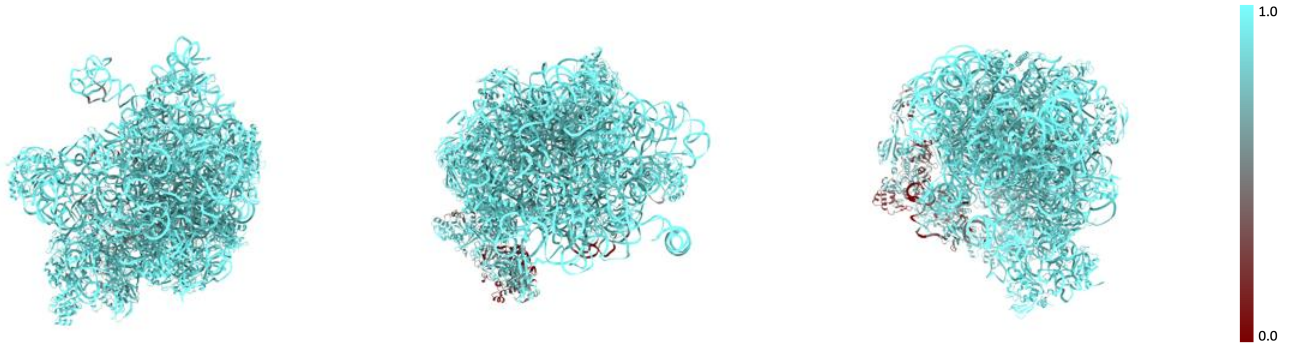
9.2 Q-score mapped to coordinate model (i)



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.

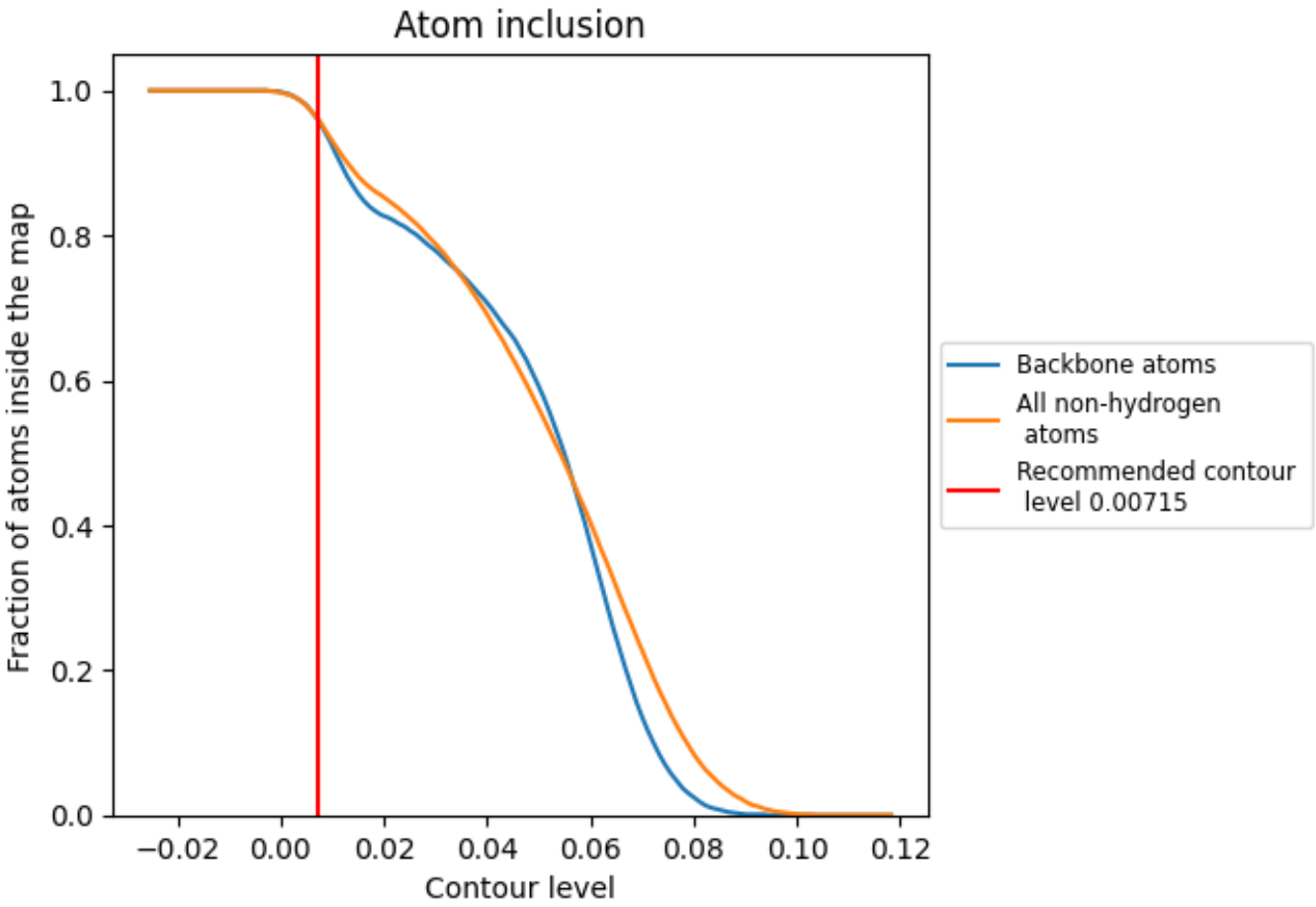
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.00715).

9.4 Atom inclusion (i)



At the recommended contour level, 96% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.00715) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9620	0.3820
3	0.9890	0.4380
5	0.8110	0.1370
6	0.6100	0.1690
A	0.9880	0.4100
B	0.9980	0.4130
C	0.9910	0.4470
D	1.0000	0.4660
E	0.9940	0.4420
F	0.9960	0.3000
G	0.9920	0.3840
H	0.9680	0.3500
I	0.9760	0.1390
J	0.9830	0.1250
K	0.9940	0.4520
L	0.9950	0.4460
M	0.9970	0.4300
N	0.9960	0.4480
O	0.9960	0.4470
P	0.9980	0.3820
Q	0.9810	0.4250
R	0.9970	0.4460
S	0.9990	0.4760
T	0.9950	0.4590
U	0.9910	0.4310
V	0.9930	0.3930
W	0.9890	0.3860
X	1.0000	0.4690
Y	0.9960	0.4550
Z	0.9980	0.3900
a	0.9940	0.4370
b	0.9930	0.4610
c	0.9870	0.4290
d	0.9940	0.4630
e	0.9580	0.4030

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Chain	Atom inclusion	Q-score
f	0.9970	0.4590
g	0.9890	0.2600