



Full wwPDB EM Validation Report ⓘ

Sep 16, 2026 – 11:05 PM EDT

PDB ID : 9MOR / pdb_00009mor
EMDB ID : EMD-48479
Title : Damaged 70S ribosome with PrfH bound
Authors : Tian, Y.; Li, Q.; Jin, H.; Fatma, S.; Zeng, F.; Huang, R.H.
Deposited on : 2024-12-27
Resolution : 2.65 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev133
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.50

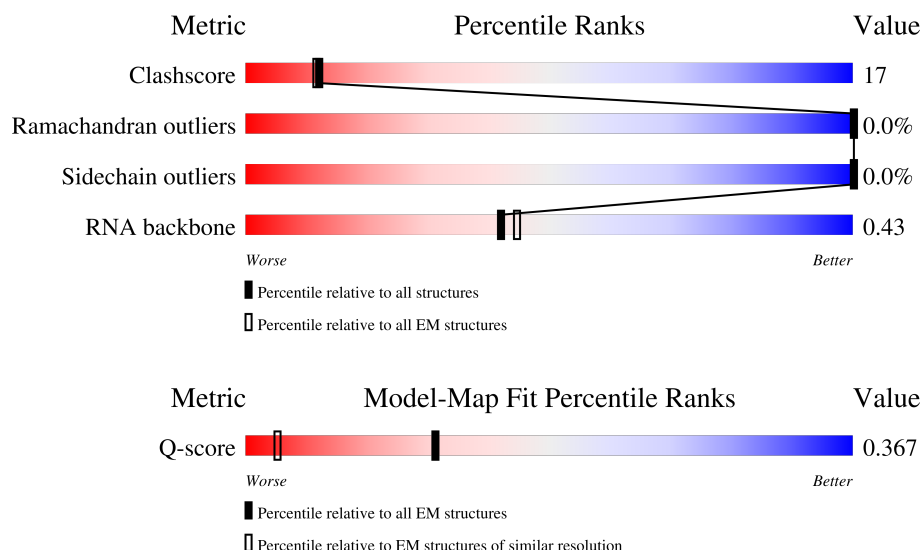
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.65 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	9050 (2.15 - 3.15)

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

Mol	Chain	Length	Quality of chain
1	1	2903	
2	2	1534	
3	4	120	

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Mol	Chain	Length	Quality of chain
4	5	77	
4	6	77	
5	7	25	
6	A	231	
7	B	273	
8	C	209	
9	D	201	
10	E	179	
11	F	177	
12	G	149	
13	H	165	
14	I	142	
15	J	142	
16	K	123	
17	L	144	
18	M	136	
19	N	127	
20	O	117	
21	P	115	
22	Q	118	
23	R	103	
24	S	110	
25	T	100	
26	U	104	
27	V	94	

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Mol	Chain	Length	Quality of chain
28	W	85	
29	X	78	
30	Y	63	
31	Z	59	
32	a	70	
33	b	57	
34	c	55	
35	d	46	
36	e	65	
37	f	38	
38	g	241	
39	h	233	
40	i	206	
41	j	167	
42	k	135	
43	l	179	
44	m	130	
45	n	130	
46	o	103	
47	p	129	
48	q	124	
49	r	118	
50	s	101	
51	t	89	
52	u	82	

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Mol	Chain	Length	Quality of chain
53	v	84	
54	w	75	
55	x	92	
56	y	87	
57	z	71	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	G7M	1	2069	X	-	-	-
2	A3P	2	1493	X	-	-	-

2 Entry composition [i](#)

There are 60 unique types of molecules in this entry. The entry contains 150119 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	2903	Total	C	N	O	P	0	0
			62336	27816	11470	20147	2903		

- Molecule 2 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	1534	Total	C	N	O	P	0	0
			32930	14693	6041	10662	1534		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	4	120	Total	C	N	O	P	0	0
			2569	1144	468	837	120		

- Molecule 4 is a RNA chain called P-tRNA, E-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	5	77	Total	C	N	O	P	0	0
			1643	732	297	537	77		
4	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 5 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	7	13	Total	C	N	O	P	0	0
			275	124	49	89	13		

- Molecule 6 is a protein called Peptide chain release factor H.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	A	208	Total	C	N	O	S	0	0
			1660	1041	305	310	4		

- Molecule 7 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	B	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 8 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	C	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 9 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	D	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 10 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	E	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 11 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	F	175	Total	C	N	O	S	0	0
			1313	826	241	244	2		

- Molecule 12 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	G	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 13 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	H	130	Total	C	N	O	S	0	0
			980	620	174	182	4		

- Molecule 14 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	I	135	Total	C	N	O	S	0	0
			984	622	171	185	6		

- Molecule 15 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	J	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 16 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	K	123	Total	C	N	O	S	0	0
			946	593	181	166	6		

- Molecule 17 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	L	144	Total	C	N	O	S	0	0
			1053	654	207	190	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	M	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 19 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	N	119	Total	C	N	O	S	0	0
			951	588	195	163	5		

- Molecule 20 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	O	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 21 is a protein called Large ribosomal subunit protein bL19.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	P	114	Total	C	N	O	S	0
			917	574	179	163	1	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
22	Q	117	Total	C	N	O		0
			947	604	192	151		0

- Molecule 23 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	R	103	Total	C	N	O	S	0
			816	516	153	145	2	0

- Molecule 24 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	S	110	Total	C	N	O	S	0
			857	532	166	156	3	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
25	T	94	Total	C	N	O	S	0
			746	470	140	134	2	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
26	U	103	Total	C	N	O		0
			788	498	148	142		0

- Molecule 27 is a protein called Large ribosomal subunit protein bL25.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	V	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 28 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	W	76	Total	C	N	O	S	0	0
			582	360	117	104	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
29	X	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 30 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Y	62	Total	C	N	O	S	0	0
			501	308	98	94	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Z	58	Total	C	N	O	S	0	0
			448	281	87	78	2		

- Molecule 32 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	a	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 33 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	b	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 34 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	c	52	Total	C	N	O	0	0
			426	275	78	73		

- Molecule 35 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	d	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 36 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	e	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 37 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	f	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 38 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	g	225	Total	C	N	O	S	0	0
			1760	1113	316	323	8		

- Molecule 39 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	h	208	Total	C	N	O	S	0	0
			1636	1036	307	290	3		

- Molecule 40 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	i	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 41 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	j	156	Total	C	N	O	S	0	0
			1152	717	217	212	6		

- Molecule 42 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	k	104	Total	C	N	O	S	0	0
			848	536	153	152	7		

- Molecule 43 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	l	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 44 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	m	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 45 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	n	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 46 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	o	99	Total	C	N	O	S	0	0
			790	495	151	143	1		

- Molecule 47 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	p	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 48 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	q	123	Total	C	N	O	S	0	0
			957	591	196	165	5		

- Molecule 49 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	r	116	Total	C	N	O	S	0	0
			900	558	181	158	3		

- Molecule 50 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	s	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 51 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	t	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 52 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	u	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 53 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	v	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 54 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	w	66	Total	C	N	O	S	0	0
			544	344	102	97	1		

- Molecule 55 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	x	83	Total	C	N	O	S	0	0
			663	424	126	111	2		

- Molecule 56 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	y	86	Total	C	N	O	S	0	0
			669	414	138	114	3		

- Molecule 57 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	z	70	Total	C	N	O	S	0	0
			589	366	125	97	1		

- Molecule 58 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
58	1	285	Total	Mg	0
			285	285	
58	2	126	Total	Mg	0
			126	126	
58	4	8	Total	Mg	0
			8	8	
58	5	5	Total	Mg	0
			5	5	
58	A	1	Total	Mg	0
			1	1	
58	C	1	Total	Mg	0
			1	1	
58	D	2	Total	Mg	0
			2	2	
58	L	3	Total	Mg	0
			3	3	
58	M	1	Total	Mg	0
			1	1	
58	N	1	Total	Mg	0
			1	1	
58	b	1	Total	Mg	0
			1	1	
58	e	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
58	f	1	Total 1	Mg 1	0
58	h	1	Total 1	Mg 1	0
58	i	1	Total 1	Mg 1	0
58	s	1	Total 1	Mg 1	0

- Molecule 59 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
59	a	1	Total 1	Zn 1	0
59	f	1	Total 1	Zn 1	0

- Molecule 60 is water.

Mol	Chain	Residues	Atoms		AltConf
60	B	2	Total 2	O 2	0

3 Residue-property plots

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: 23S ribosomal RNA

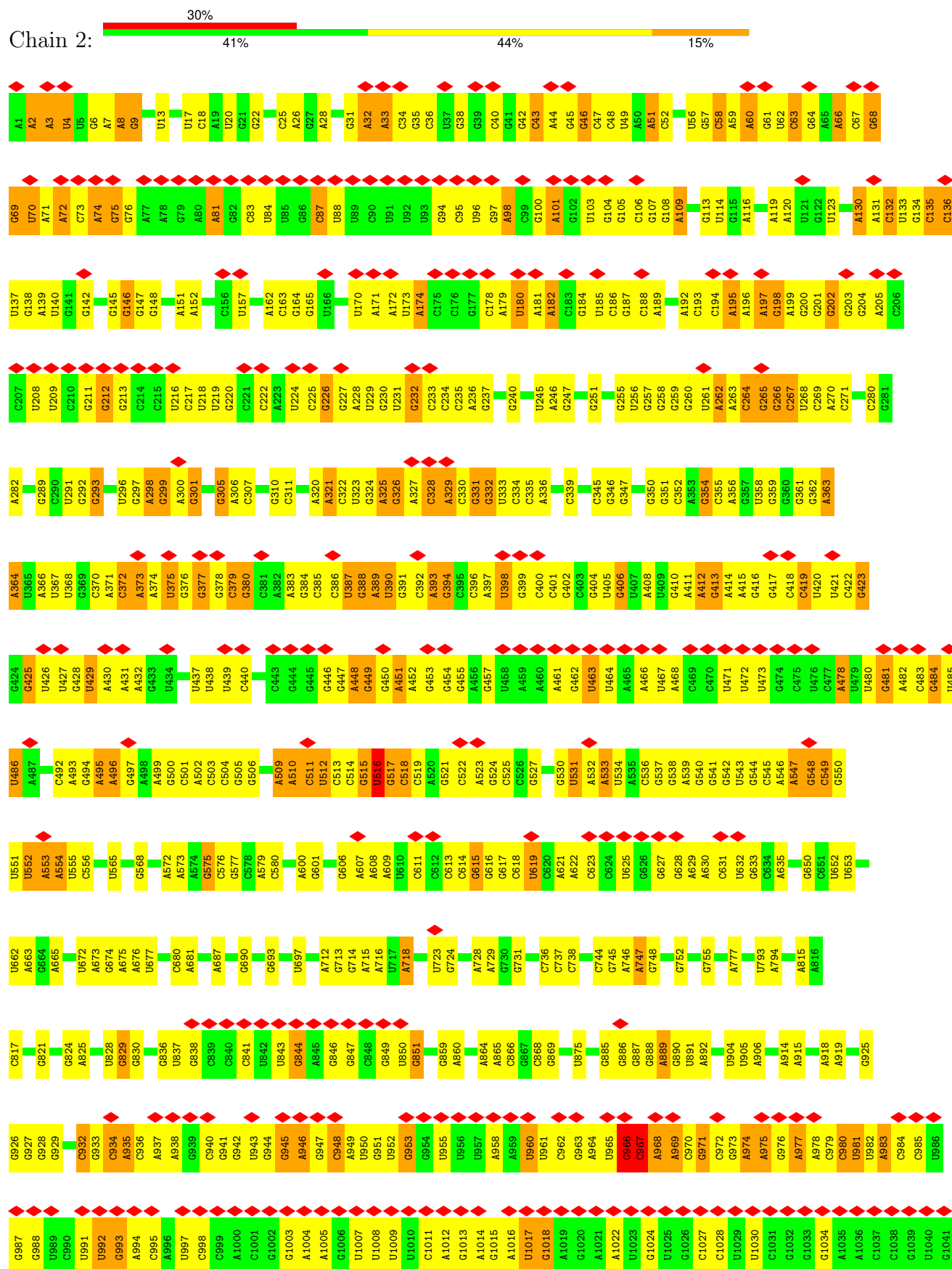






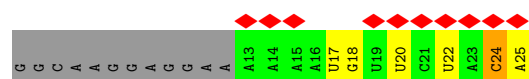
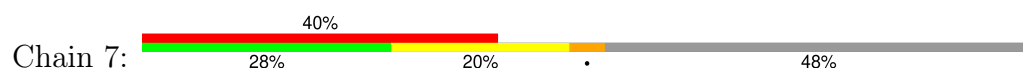
• Molecule 2: 16S ribosomal RNA

Chain 2:

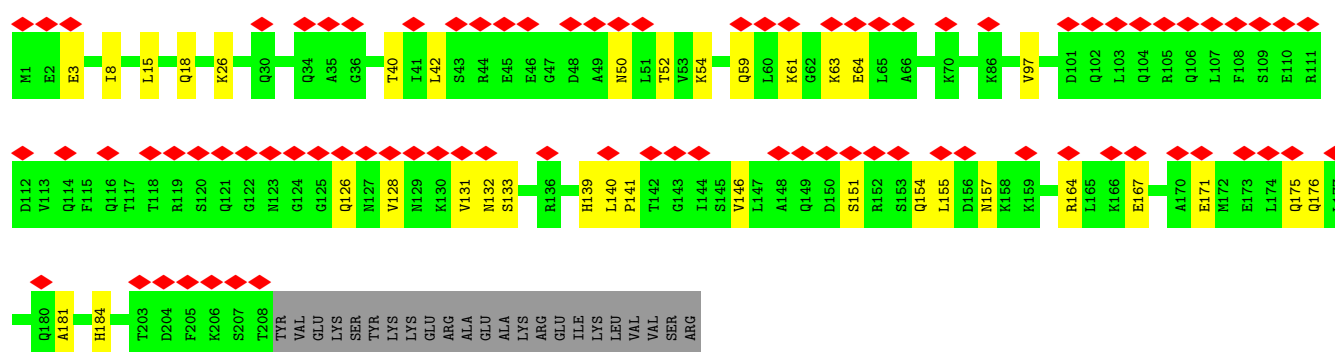
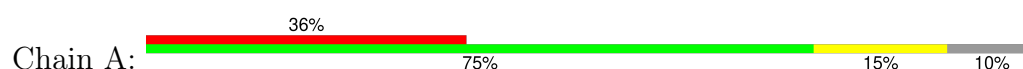




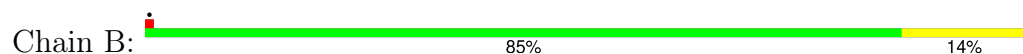
• Molecule 5: mRNA



• Molecule 6: Peptide chain release factor H

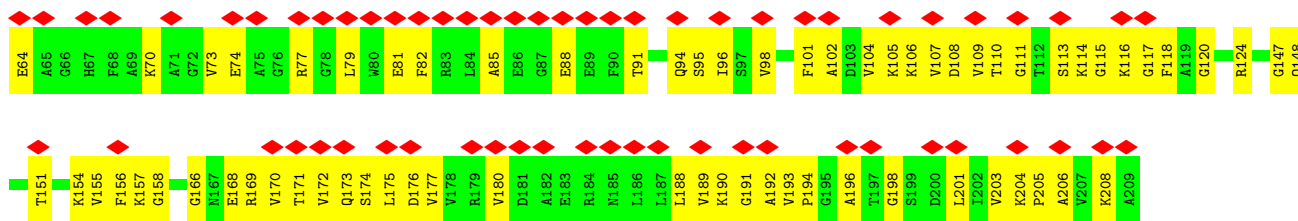


• Molecule 7: 50S ribosomal protein L2

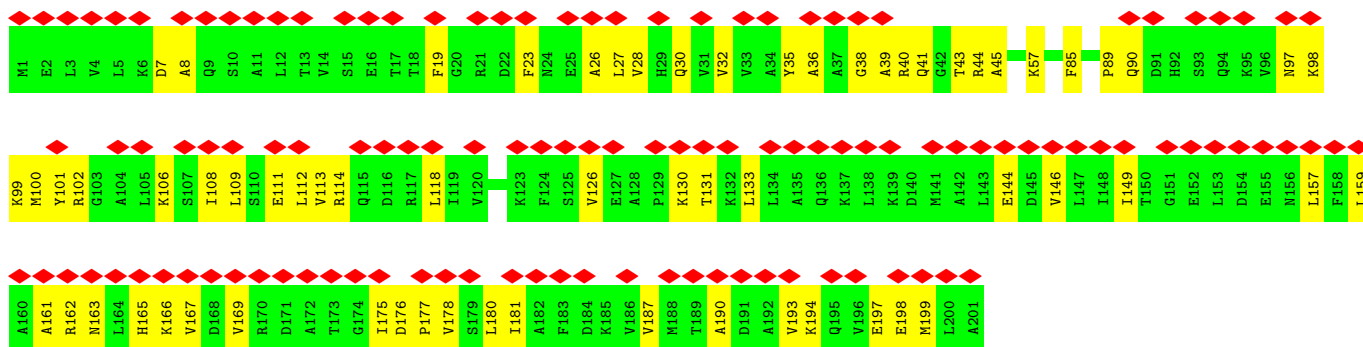


• Molecule 8: 50S ribosomal protein L3

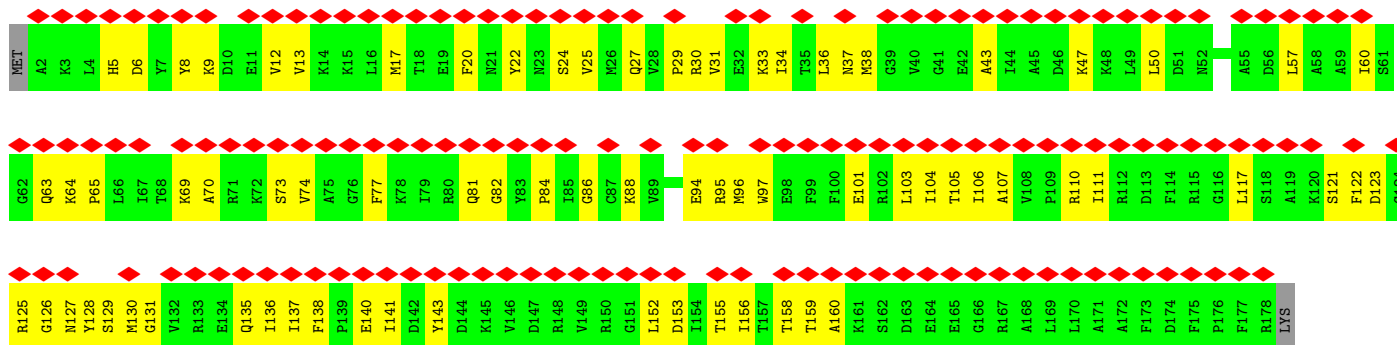
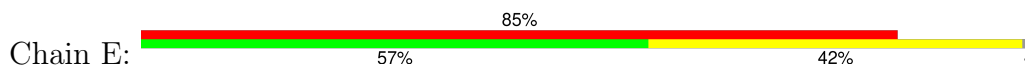




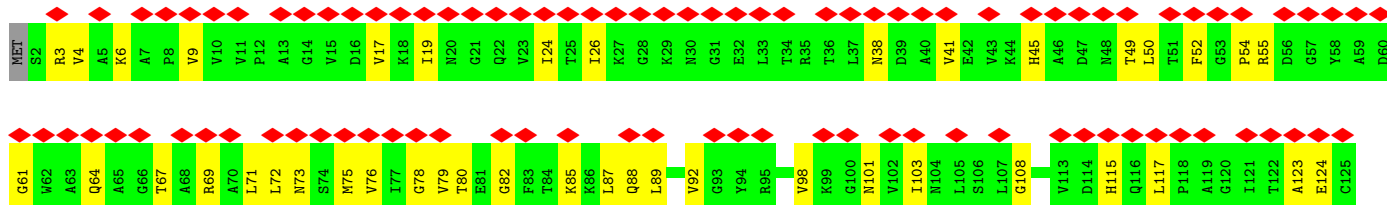
• Molecule 9: Large ribosomal subunit protein uL4

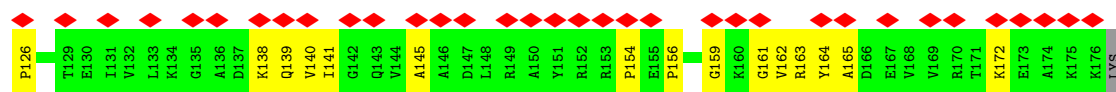


• Molecule 10: Large ribosomal subunit protein uL5

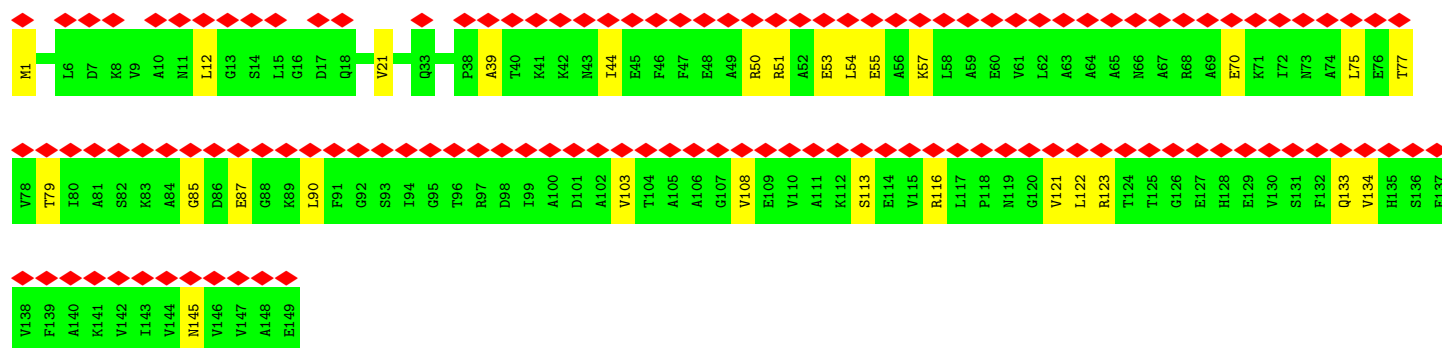
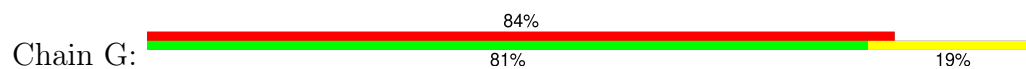


• Molecule 11: Large ribosomal subunit protein uL6

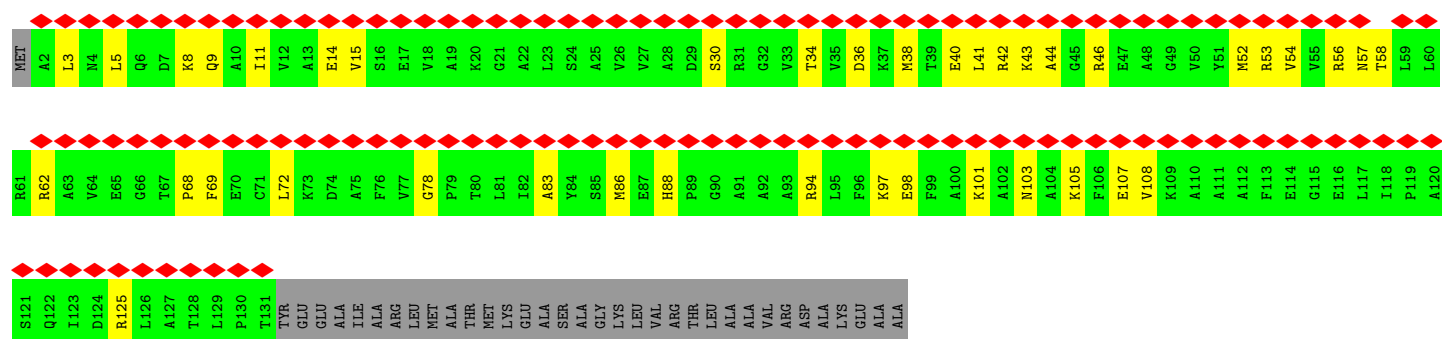
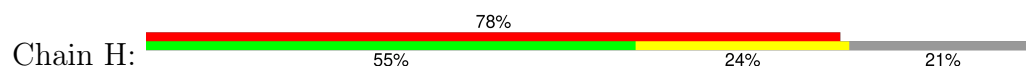




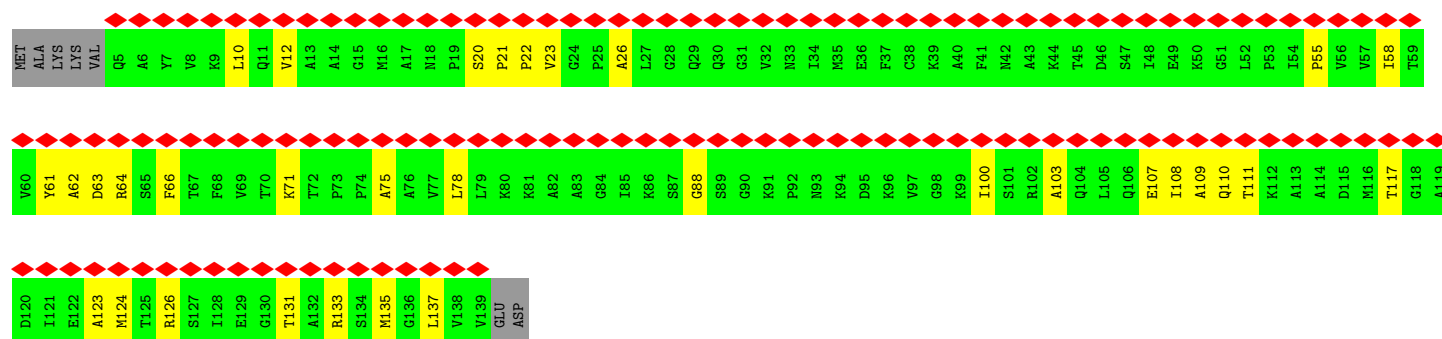
- Molecule 12: Large ribosomal subunit protein bL9



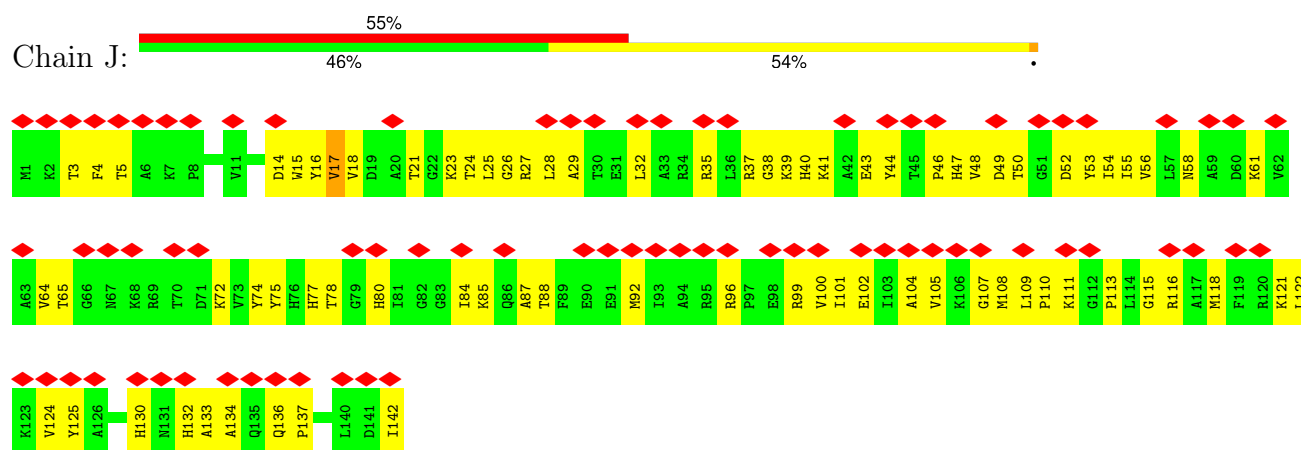
- Molecule 13: 50S ribosomal protein L10



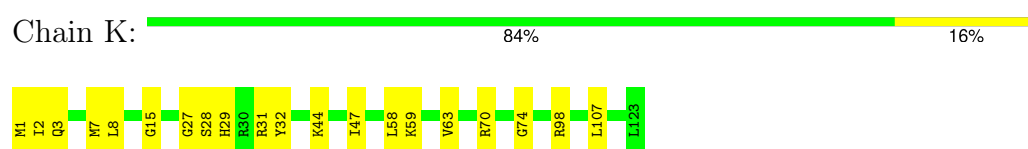
- Molecule 14: 50S ribosomal protein L11



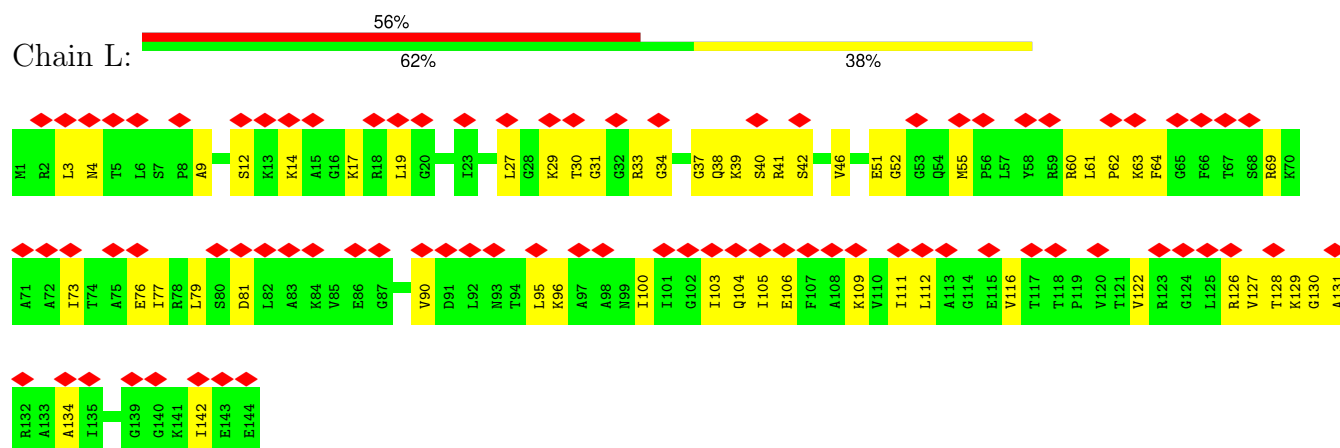
- Molecule 15: Large ribosomal subunit protein uL13



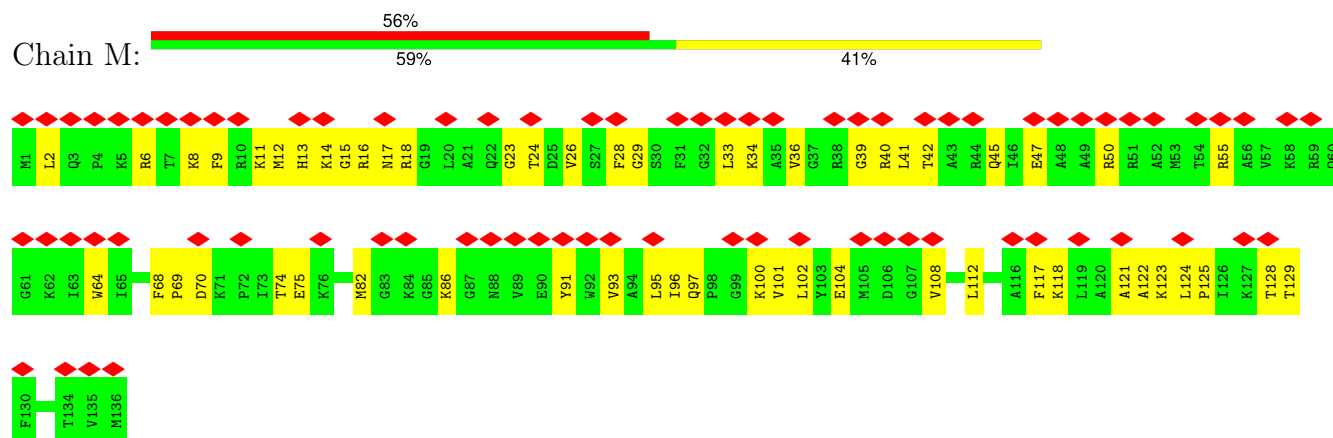
- Molecule 16: Large ribosomal subunit protein uL14



- Molecule 17: Large ribosomal subunit protein uL15

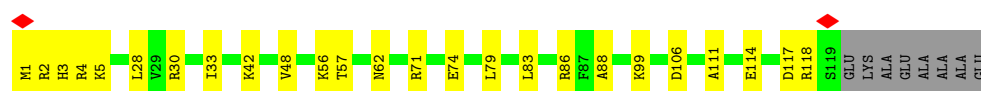


- Molecule 18: 50S ribosomal protein L16



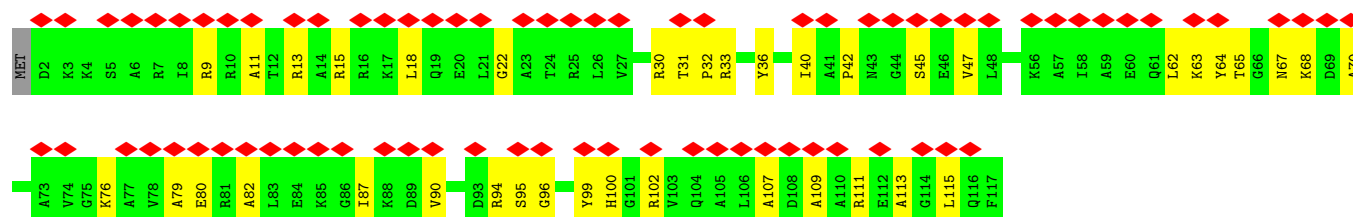
- Molecule 19: Large ribosomal subunit protein bL17

Chain N: 



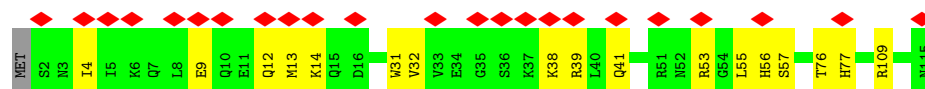
- Molecule 20: Large ribosomal subunit protein uL18

Chain O: 



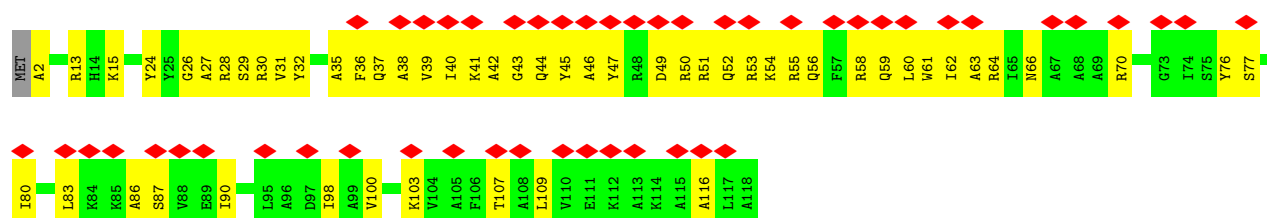
- Molecule 21: Large ribosomal subunit protein bL19

Chain P: 



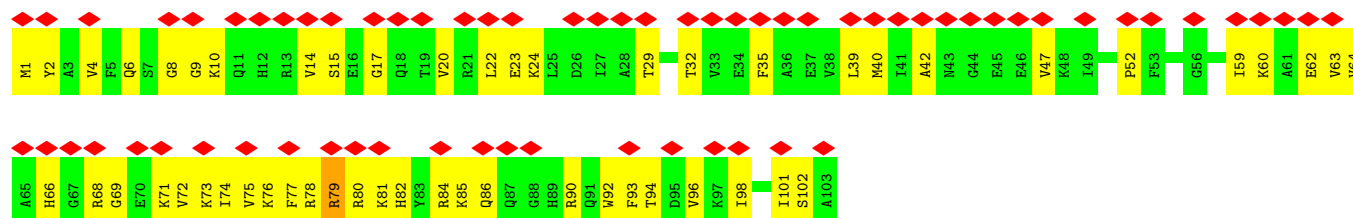
- Molecule 22: 50S ribosomal protein L20

Chain Q: 



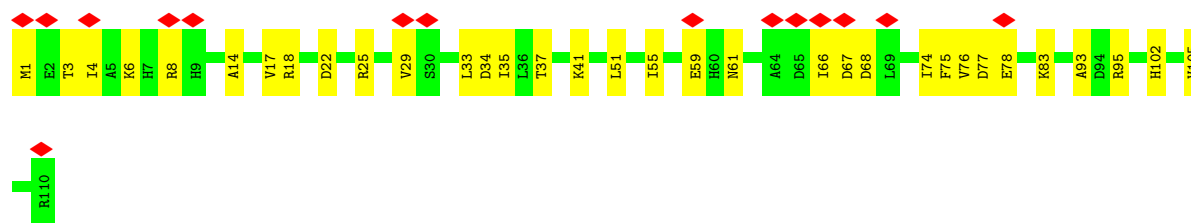
- Molecule 23: Large ribosomal subunit protein bL21

Chain R: 

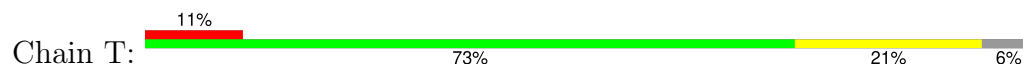


- Molecule 24: Large ribosomal subunit protein uL22

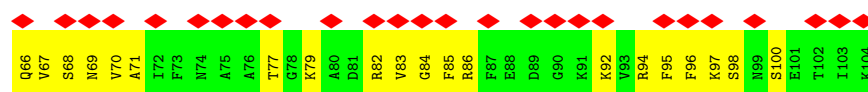
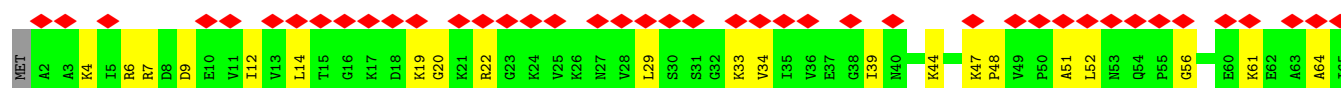
Chain S: 



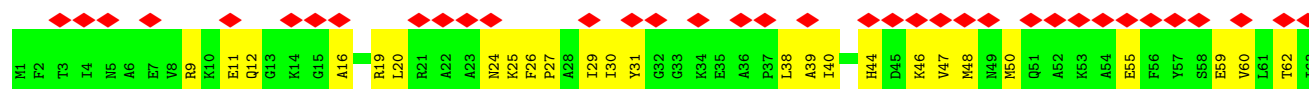
- Molecule 25: 50S ribosomal protein L23



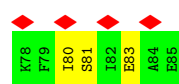
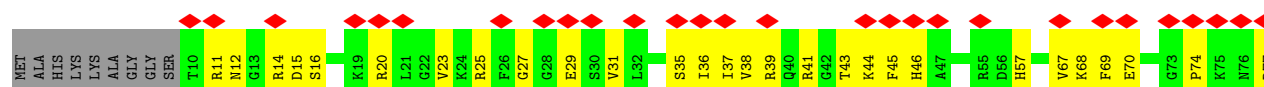
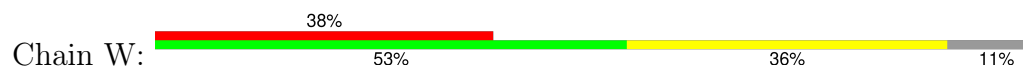
- Molecule 26: 50S ribosomal protein L24



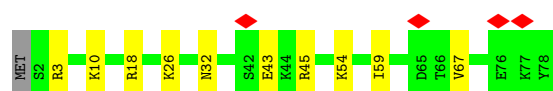
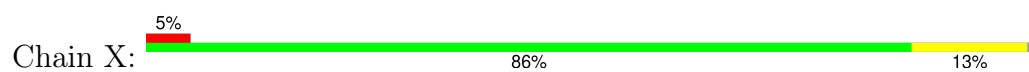
- Molecule 27: Large ribosomal subunit protein bL25



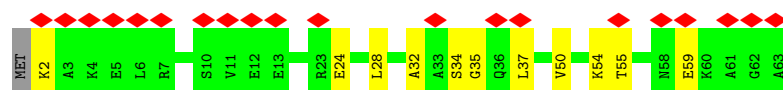
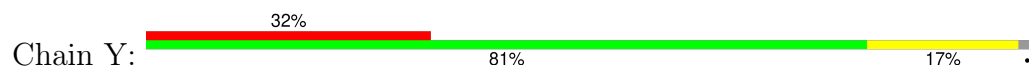
- Molecule 28: Large ribosomal subunit protein bL27



- Molecule 29: 50S ribosomal protein L28



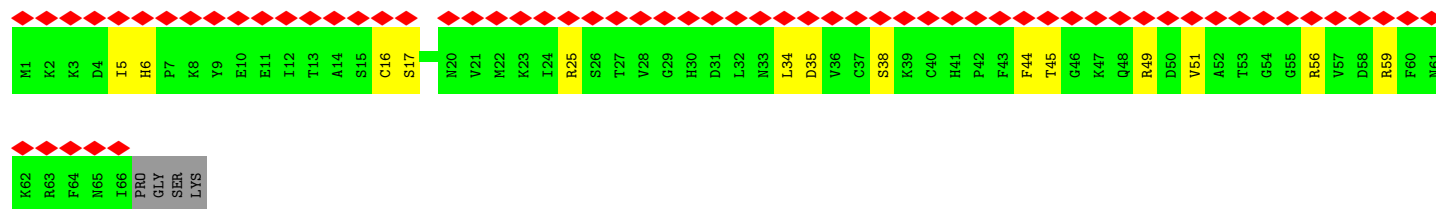
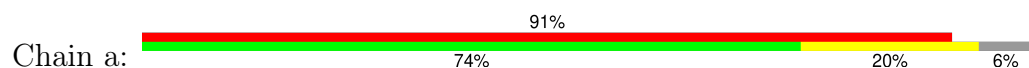
- Molecule 30: Large ribosomal subunit protein uL29



- Molecule 31: 50S ribosomal protein L30



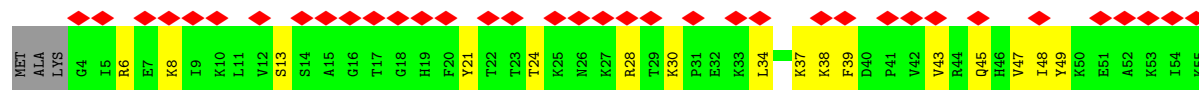
- Molecule 32: 50S ribosomal protein L31



- Molecule 33: 50S ribosomal protein L32

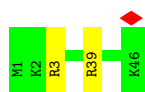


- Molecule 34: 50S ribosomal protein L33

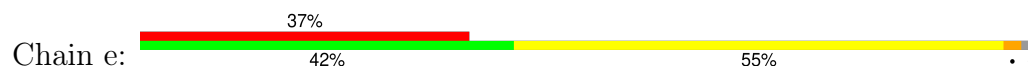


- Molecule 35: 50S ribosomal protein L34





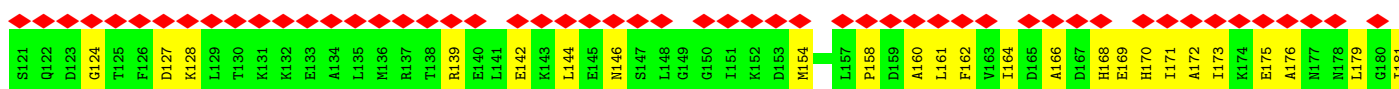
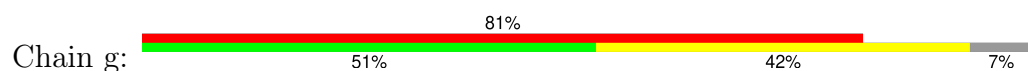
• Molecule 36: 50S ribosomal protein L35



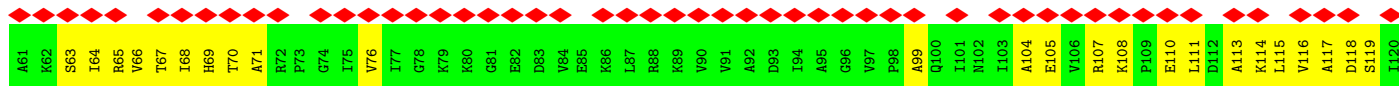
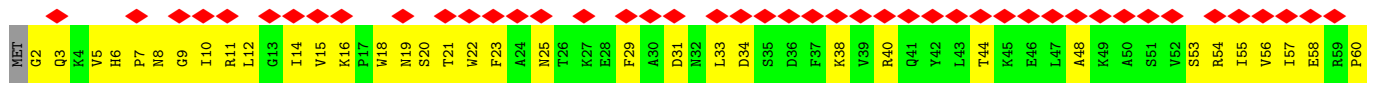
• Molecule 37: 50S ribosomal protein L36

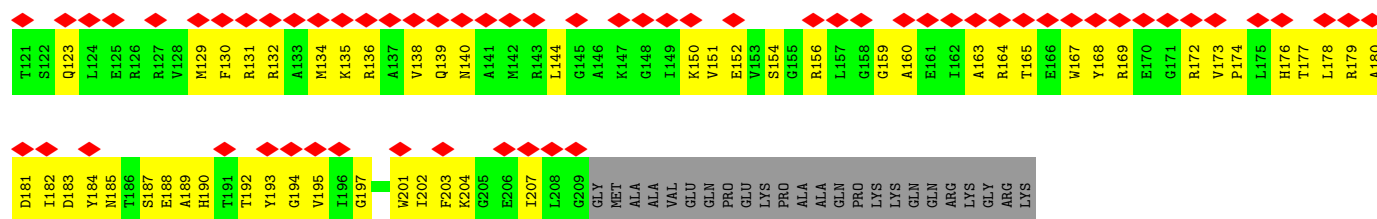


• Molecule 38: 30S ribosomal protein S2

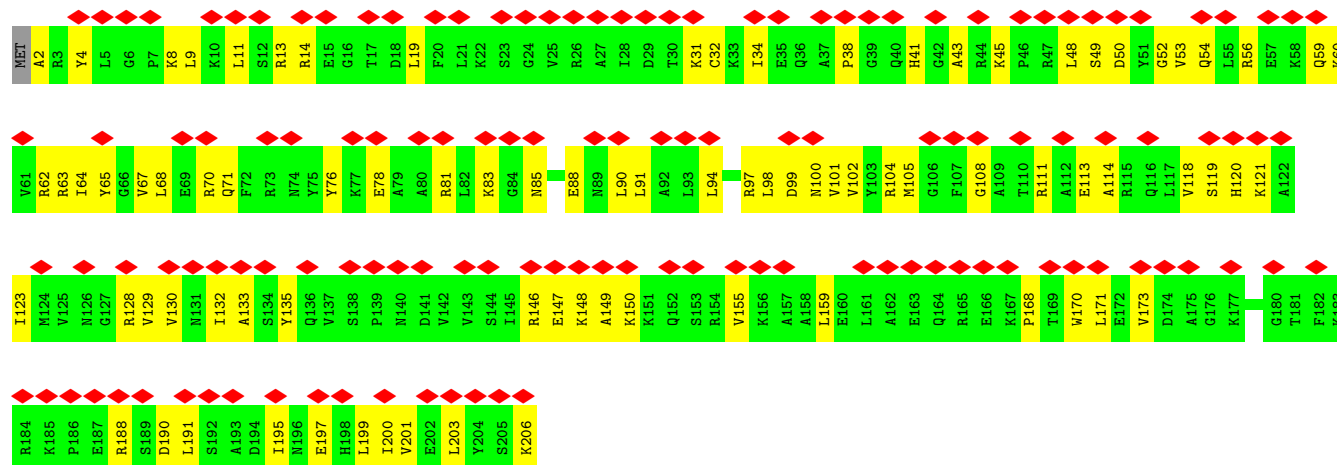


• Molecule 39: 30S ribosomal protein S3

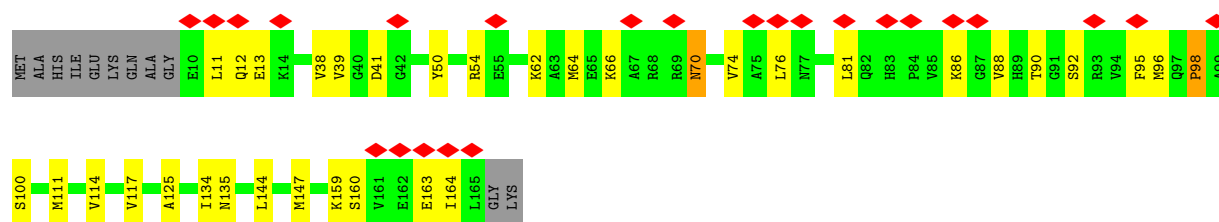




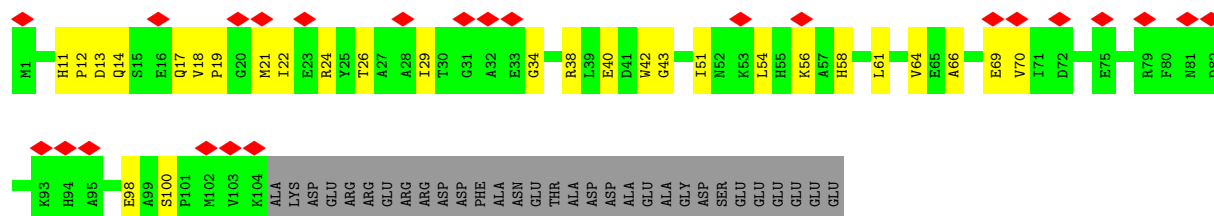
• Molecule 40: 30S ribosomal protein S4



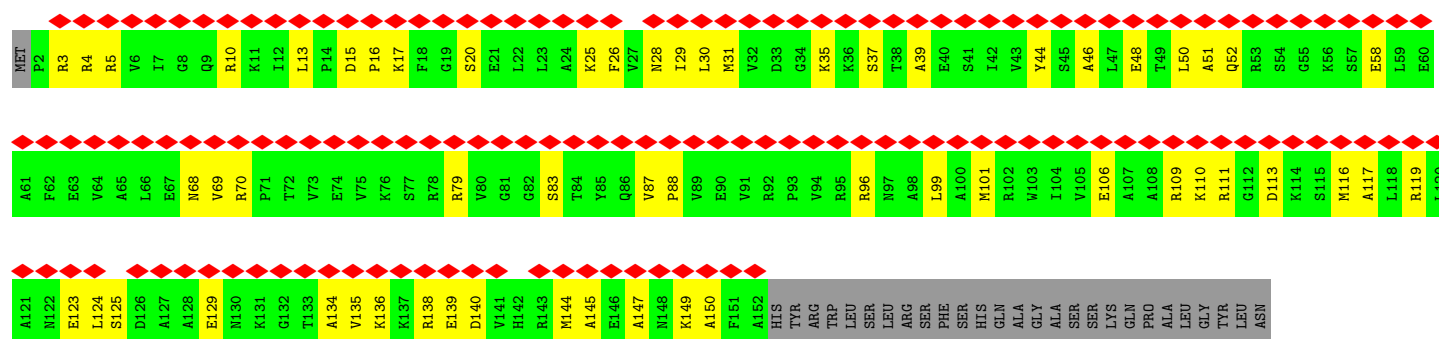
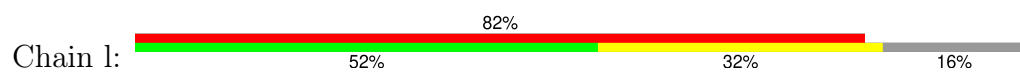
• Molecule 41: 30S ribosomal protein S5



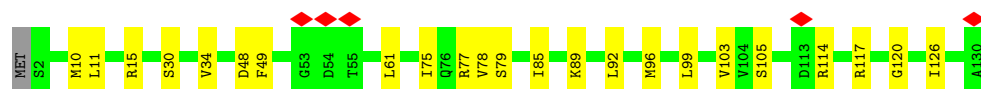
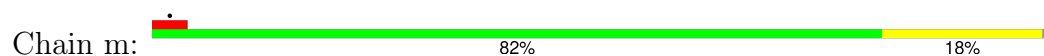
• Molecule 42: 30S ribosomal protein S6



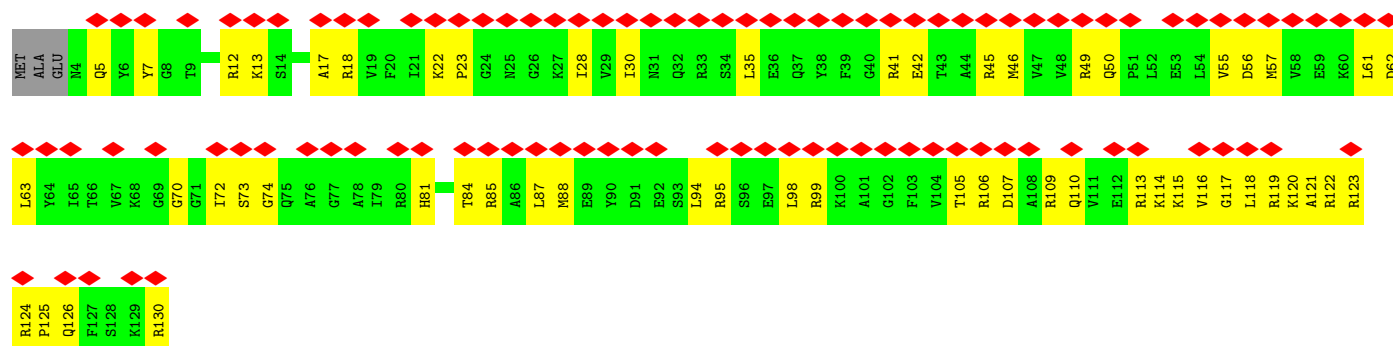
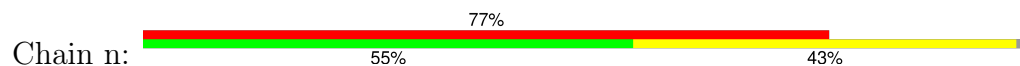
• Molecule 43: 30S ribosomal protein S7



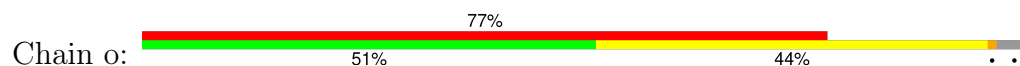
- Molecule 44: Small ribosomal subunit protein uS8



- Molecule 45: Small ribosomal subunit protein uS9

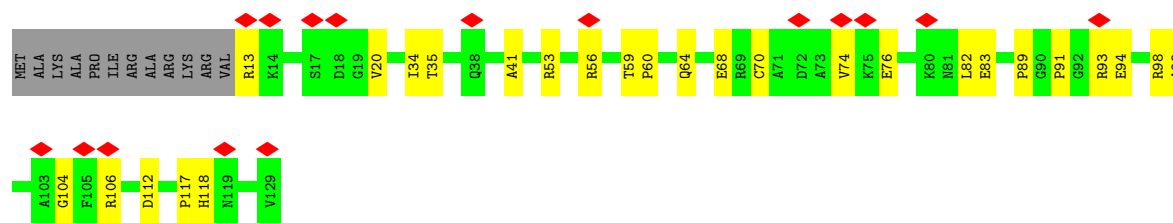


- Molecule 46: Small ribosomal subunit protein uS10

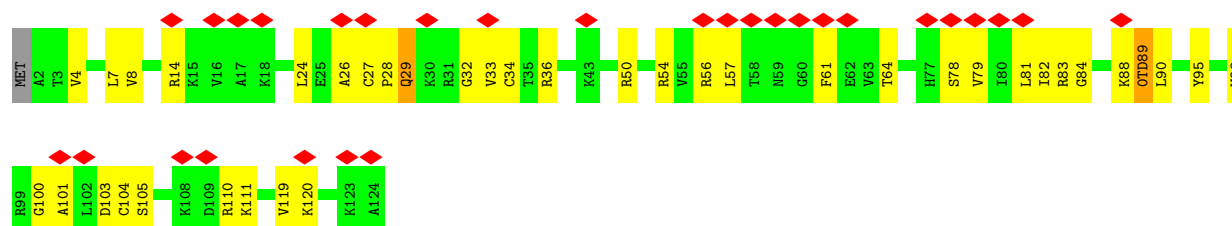


- Molecule 47: 30S ribosomal protein S11

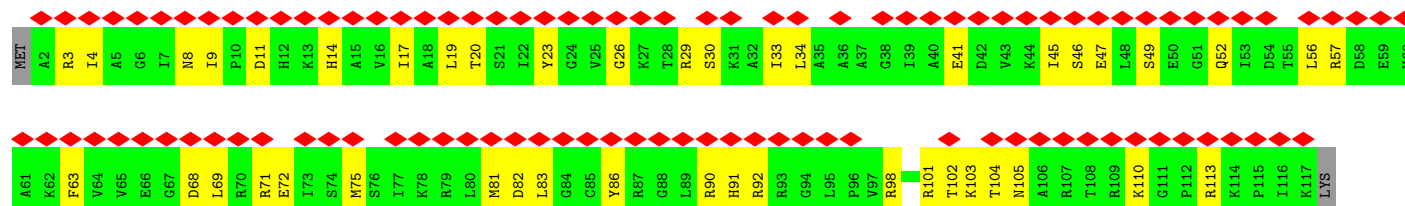
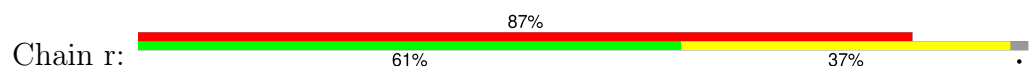




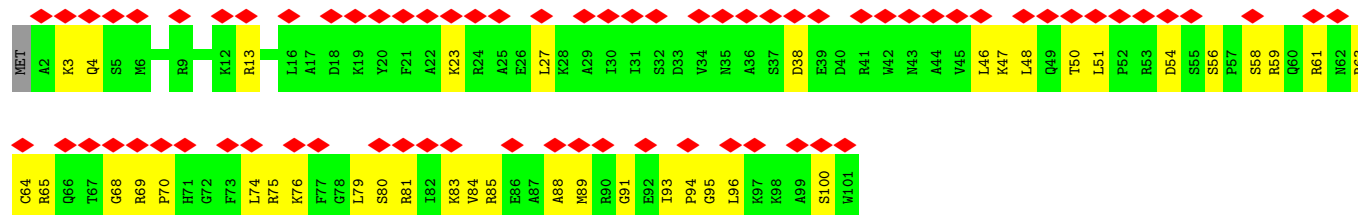
- Molecule 48: Small ribosomal subunit protein uS12



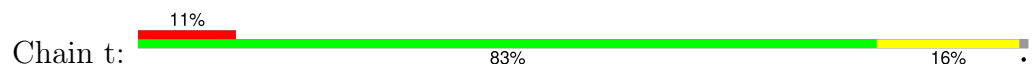
- Molecule 49: 30S ribosomal protein S13



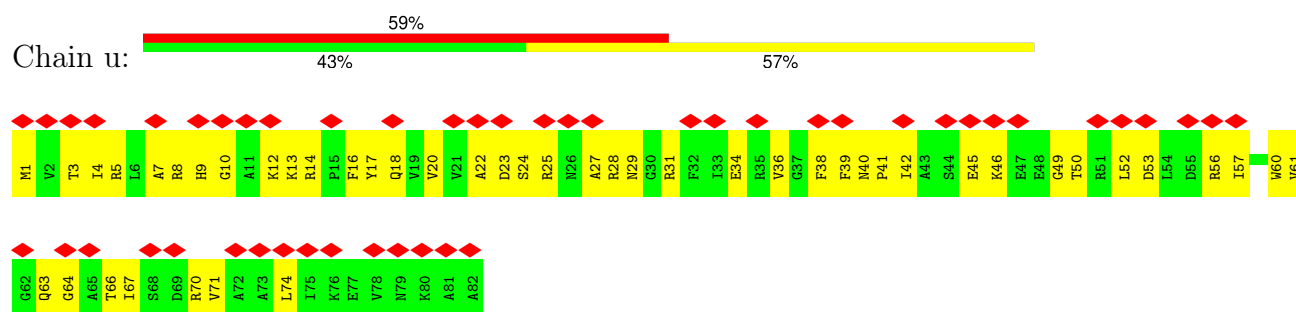
- Molecule 50: Small ribosomal subunit protein uS14



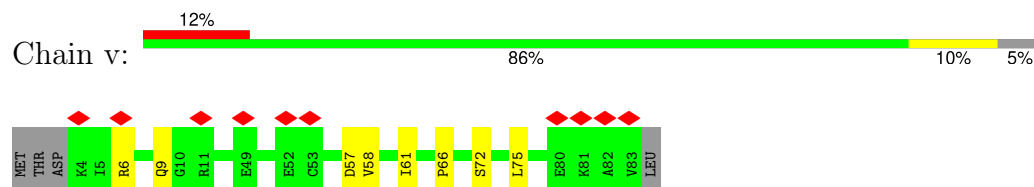
- Molecule 51: Small ribosomal subunit protein uS15



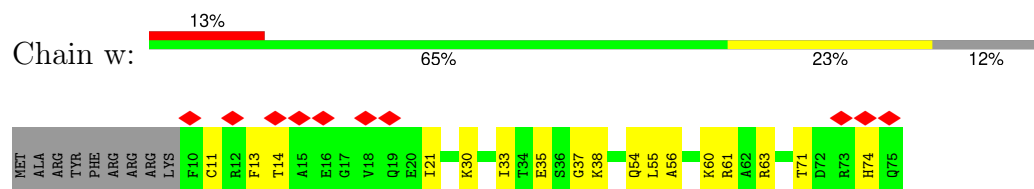
- Molecule 52: 30S ribosomal protein S16



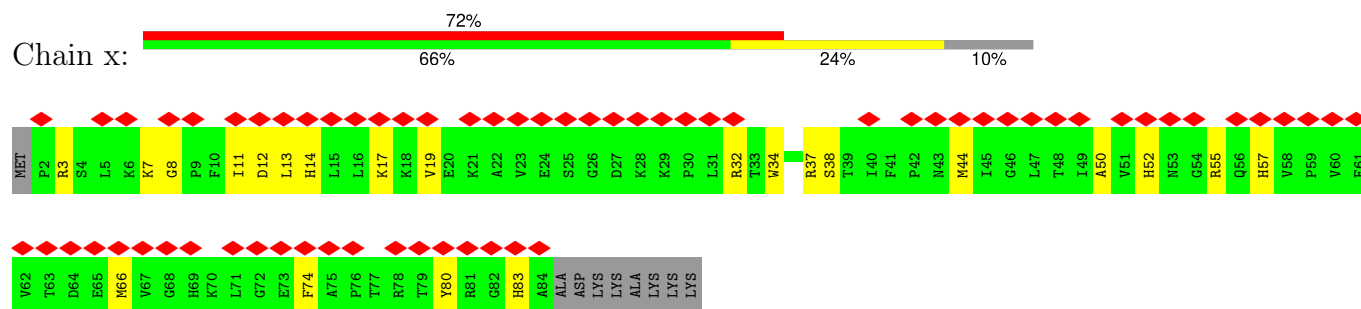
- Molecule 53: Small ribosomal subunit protein uS17



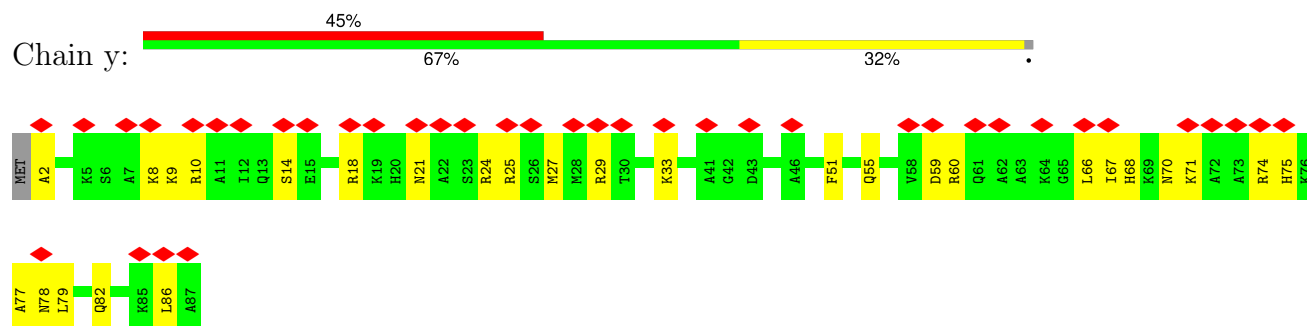
- Molecule 54: 30S ribosomal protein S18



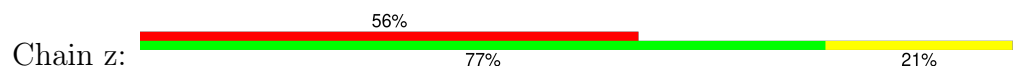
- Molecule 55: Small ribosomal subunit protein uS19



- Molecule 56: 30S ribosomal protein S20



- Molecule 57: 30S ribosomal protein S21





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	330925	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 ($e^-/\text{\AA}^2$)	30.0	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	7.386	Depositor
Minimum map value	-3.925	Depositor
Average map value	0.010	Depositor
Map value standard deviation	0.215	Depositor
Recommended contour level	0.701	Depositor
Map size (Å)	420.48, 420.48, 420.48	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.095, 1.095, 1.095	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, A3P, 0TD, 6MZ, PSU, 5MU, UR3, 1MG, MA6, 5MC, OMU, 2MG, 2MA, ZN, OMG, 4OC, G7M, MG, 3TD

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	1	0.18	1/69285 (0.0%)	0.35	0/108083
2	2	0.17	0/36561	0.34	1/57027 (0.0%)
3	4	0.16	0/2872	0.33	0/4478
4	5	0.11	0/1835	0.26	0/2859
4	6	0.10	0/1832	0.23	0/2855
5	7	0.13	0/307	0.20	0/475
6	A	0.15	0/1686	0.42	0/2271
7	B	0.16	0/2121	0.33	0/2852
8	C	0.24	0/1586	0.53	0/2134
9	D	0.16	0/1571	0.43	0/2113
10	E	0.16	0/1434	0.40	0/1926
11	F	0.17	0/1333	0.41	0/1805
12	G	0.15	0/1122	0.40	0/1515
13	H	0.18	0/993	0.43	0/1340
14	I	0.15	0/998	0.36	0/1348
15	J	0.21	0/1152	0.58	0/1551
16	K	0.17	0/955	0.35	0/1279
17	L	0.22	0/1062	0.47	0/1413
18	M	0.19	0/1093	0.52	0/1460
19	N	0.19	0/964	0.42	0/1289
20	O	0.15	0/902	0.41	0/1209
21	P	0.21	0/929	0.44	0/1242
22	Q	0.25	0/960	0.51	0/1278
23	R	0.22	0/829	0.54	0/1107
24	S	0.21	0/864	0.48	0/1156
25	T	0.12	0/752	0.31	0/1005
26	U	0.17	0/796	0.47	0/1062
27	V	0.17	0/766	0.42	0/1025
28	W	0.20	0/589	0.54	0/779
29	X	0.14	0/635	0.34	0/848
30	Y	0.13	0/502	0.32	0/667

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
31	Z	0.25	0/452	0.56	0/605
32	a	0.13	0/531	0.34	0/709
33	b	0.27	0/450	0.52	0/599
34	c	0.16	0/433	0.49	0/576
35	d	0.13	0/380	0.34	0/498
36	e	0.23	0/513	0.57	0/676
37	f	0.23	0/303	0.56	0/397
38	g	0.17	0/1791	0.44	0/2413
39	h	0.19	0/1663	0.44	0/2241
40	i	0.19	0/1665	0.42	0/2227
41	j	0.27	0/1165	0.60	2/1568 (0.1%)
42	k	0.17	0/867	0.42	0/1171
43	l	0.15	0/1195	0.37	0/1602
44	m	0.15	0/989	0.38	0/1326
45	n	0.15	0/1034	0.44	0/1375
46	o	0.16	0/800	0.49	2/1082 (0.2%)
47	p	0.15	0/893	0.34	0/1205
48	q	0.20	0/960	0.49	0/1286
49	r	0.15	0/909	0.38	0/1215
50	s	0.17	0/817	0.38	0/1088
51	t	0.15	0/722	0.34	0/964
52	u	0.19	0/659	0.46	0/884
53	v	0.14	0/657	0.35	0/881
54	w	0.14	0/553	0.33	0/743
55	x	0.13	0/680	0.35	0/915
56	y	0.22	0/675	0.52	0/895
57	z	0.12	0/597	0.34	0/792
All	All	0.18	1/161639 (0.0%)	0.37	5/241384 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	1	3	0
2	2	1	0
15	J	0	1
23	R	0	1
36	e	0	1
48	q	0	1
All	All	4	4

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	2069	G7M	O3'-P	5.70	1.61	1.56

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	j	98	PRO	CA-N-CD	-10.23	97.68	112.00
41	j	98	PRO	N-CD-CG	-5.20	95.39	103.20
2	2	1462	C	N1-C1'-C2'	5.18	119.77	112.00
46	o	56	HIS	CA-C-N	-5.03	118.18	122.96
46	o	56	HIS	C-N-CA	-5.03	118.18	122.96

All (4) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	1	2069	G7M	C2',C3',C4'
2	2	1493	A3P	C2'

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
15	J	17	VAL	Peptide
23	R	79	ARG	Peptide
36	e	31	HIS	Peptide
48	q	36	ARG	Sidechain

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	1	62336	0	31365	1744	0
2	2	32930	0	16581	1005	0
3	4	2569	0	1300	102	0
4	5	1643	0	836	36	0
4	6	1640	0	837	46	0
5	7	275	0	140	3	0
6	A	1660	0	1677	25	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	B	2082	0	2154	24	0
8	C	1565	0	1616	123	0
9	D	1552	0	1619	57	0
10	E	1410	0	1444	61	0
11	F	1313	0	1358	47	0
12	G	1111	0	1148	18	0
13	H	980	0	1013	31	0
14	I	984	0	1035	22	0
15	J	1129	0	1162	83	0
16	K	946	0	1023	16	0
17	L	1053	0	1128	86	0
18	M	1074	0	1157	56	0
19	N	951	0	994	22	0
20	O	892	0	923	33	0
21	P	917	0	962	21	0
22	Q	947	0	1019	69	0
23	R	816	0	839	51	0
24	S	857	0	922	25	0
25	T	746	0	811	14	0
26	U	788	0	844	39	0
27	V	753	0	780	32	0
28	W	582	0	599	28	0
29	X	625	0	652	8	0
30	Y	501	0	531	7	0
31	Z	448	0	488	26	0
32	a	522	0	520	10	0
33	b	444	0	458	30	0
34	c	426	0	464	17	0
35	d	377	0	418	2	0
36	e	504	0	572	52	0
37	f	302	0	340	28	0
38	g	1760	0	1787	88	0
39	h	1636	0	1710	106	0
40	i	1643	0	1707	94	0
41	j	1152	0	1196	28	0
42	k	848	0	846	18	0
43	l	1181	0	1238	54	0
44	m	979	0	1031	13	0
45	n	1022	0	1070	62	0
46	o	790	0	831	42	0
47	p	877	0	887	21	0
48	q	957	0	1017	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
49	r	900	0	965	43	0
50	s	805	0	844	49	0
51	t	714	0	734	7	0
52	u	649	0	666	48	0
53	v	648	0	691	6	0
54	w	544	0	560	12	0
55	x	663	0	688	21	0
56	y	669	0	719	30	0
57	z	589	0	629	11	0
58	1	285	0	0	0	0
58	2	126	0	0	0	0
58	4	8	0	0	0	0
58	5	5	0	0	0	0
58	A	1	0	0	0	0
58	C	1	0	0	0	0
58	D	2	0	0	0	0
58	L	3	0	0	0	0
58	M	1	0	0	0	0
58	N	1	0	0	0	0
58	b	1	0	0	0	0
58	e	1	0	0	0	0
58	f	1	0	0	0	0
58	h	1	0	0	0	0
58	i	1	0	0	0	0
58	s	1	0	0	0	0
59	a	1	0	0	0	0
59	f	1	0	0	0	0
60	B	2	0	0	0	0
All	All	150119	0	101545	4184	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 17.

All (4184) 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)
1:1:861:A:H62	1:1:916:G:N2	1.18	1.42
1:1:861:A:N6	1:1:916:G:H21	1.21	1.36
1:1:2047:C:O2	1:1:2048:G:N7	1.58	1.34
1:1:2834:G:N2	1:1:2883:A:H62	1.27	1.29
1:1:2834:G:H21	1:1:2883:A:N6	1.30	1.28

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2675:A:N6	1:1:2732:G:H1	1.32	1.27
2:2:322:C:N4	2:2:329:A:H62	1.34	1.23
1:1:2472:G:H21	1:1:2478:A:N6	1.38	1.18
1:1:2741:A:H62	1:1:2763:G:N2	1.40	1.18
1:1:227:A:H61	1:1:410:G:N2	1.40	1.18
2:2:68:G:N2	2:2:151:A:C2	2.11	1.17
1:1:2741:A:N6	1:1:2763:G:H21	1.41	1.17
2:2:322:C:H42	2:2:329:A:N6	1.42	1.17
1:1:227:A:N6	1:1:410:G:H21	1.44	1.15
2:2:68:G:N2	2:2:151:A:H2	1.44	1.15
1:1:2047:C:C2	1:1:2048:G:N7	2.15	1.13
2:2:68:G:H1	2:2:101:A:N6	1.46	1.13
2:2:1349:A:H62	2:2:1373:G:N2	1.45	1.12
1:1:2469:A:H62	1:1:2481:G:N2	1.49	1.10
1:1:1857:G:N2	1:1:1885:A:H62	1.49	1.10
1:1:975:A:H62	1:1:989:G:N2	1.50	1.08
2:2:1088:G:N2	2:2:1167:A:H61	1.50	1.08
1:1:2472:G:N2	1:1:2478:A:H62	1.51	1.08
1:1:2472:G:N2	1:1:2478:A:N6	2.01	1.07
2:2:1349:A:N6	2:2:1373:G:H21	1.50	1.07
2:2:372:C:N4	2:2:389:A:H62	1.51	1.07
1:1:2469:A:N6	1:1:2481:G:H21	1.52	1.06
1:1:975:A:N6	1:1:989:G:H21	1.53	1.05
2:2:1088:G:H21	2:2:1167:A:N6	1.55	1.04
2:2:372:C:H42	2:2:389:A:N6	1.56	1.01
1:1:606:U:H3	1:1:622:G:H1	1.05	0.99
8:C:110:THR:HA	8:C:171:THR:HA	1.43	0.99
1:1:813:U:O2	1:1:1225:G:N2	1.96	0.98
1:1:826:U:H3	1:1:831:G:H1	1.00	0.98
2:2:1160:G:H1	2:2:1176:A:N6	1.60	0.97
1:1:641:U:H3	1:1:647:G:H1	1.12	0.97
1:1:1724:G:H1	1:1:1736:U:H3	1.12	0.97
1:1:1857:G:H21	1:1:1885:A:H62	1.02	0.97
2:2:182:A:H62	2:2:194:C:H42	1.03	0.96
3:4:78:A:H62	3:4:98:G:N2	1.62	0.96
1:1:2484:G:N2	18:M:122:ALA:O	1.99	0.95
1:1:2524:G:H21	1:1:2741:A:H2	1.15	0.95
2:2:1109:C:H2'	2:2:1110:A:C8	2.01	0.95
1:1:1029:A:H62	1:1:1125:G:N2	1.65	0.94
3:4:77:U:O2	3:4:99:A:N7	2.00	0.94
2:2:201:G:H1	2:2:216:U:H3	1.15	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:594:U:H3	1:1:663:G:H1	0.95	0.94
1:1:2047:C:O2	1:1:2048:G:C8	2.20	0.93
2:2:372:C:H42	2:2:389:A:H62	0.98	0.93
2:2:950:U:H3	2:2:1231:G:H1	1.14	0.93
17:L:33:ARG:HB3	17:L:40:SER:HA	1.50	0.93
45:n:120:LYS:HD3	45:n:121:ALA:H	1.32	0.93
37:f:14:CYS:SG	37:f:27:CYS:HB2	2.09	0.93
3:4:73:A:H8	3:4:103:U:H3	1.17	0.93
1:1:2483:C:H42	18:M:123:LYS:HE3	1.33	0.92
1:1:819:A:H62	1:1:1188:U:H3	1.13	0.92
1:1:1217:U:O2	1:1:1232:G:N2	2.01	0.92
2:2:157:U:H3	2:2:164:G:H1	1.14	0.91
1:1:1029:A:N6	1:1:1125:G:H21	1.69	0.91
1:1:2648:G:H1	1:1:2672:U:H3	1.12	0.91
1:1:2519:U:O2	1:1:2521:C:N4	2.02	0.91
1:1:2482:A:N1	18:M:55:ARG:NH1	2.19	0.91
1:1:2675:A:N1	1:1:2732:G:N2	2.18	0.90
17:L:96:LYS:NZ	17:L:105:ILE:O	2.04	0.90
2:2:1232:U:H5''	45:n:126:GLN:HB2	1.54	0.90
2:2:60:A:OP1	2:2:331:G:N2	2.04	0.90
1:1:2540:C:O2'	1:1:2740:A:N3	2.04	0.89
3:4:73:A:C8	3:4:103:U:N3	2.39	0.89
1:1:2472:G:H21	1:1:2478:A:H62	0.90	0.89
1:1:2824:C:H3'	1:1:2825:G:H21	1.37	0.89
1:1:540:C:H42	1:1:554:U:H3	1.18	0.88
2:2:1107:C:OP2	2:2:1109:C:N4	2.05	0.88
8:C:107:VAL:HA	8:C:205:PRO:HA	1.55	0.88
39:h:44:THR:O	39:h:48:ALA:HB2	1.74	0.88
1:1:2830:C:H3'	8:C:59:ARG:HE	1.38	0.87
46:o:9:ARG:HG2	46:o:73:LEU:HG	1.55	0.87
1:1:284:U:H3	1:1:356:G:H1	1.20	0.87
3:4:78:A:H62	3:4:98:G:H21	1.20	0.87
17:L:55:MET:O	17:L:60:ARG:NH1	2.07	0.87
1:1:970:U:H5'	31:Z:15:GLY:HA2	1.57	0.86
1:1:1218:G:OP2	22:Q:15:LYS:NZ	2.09	0.86
43:l:31:MET:HE2	43:l:35:LYS:HB2	1.55	0.86
1:1:1264:A:OP1	33:b:16:ARG:NH2	2.09	0.86
1:1:1129:A:O2'	1:1:2515:C:O2	1.92	0.86
3:4:18:G:H1	3:4:65:U:H3	0.86	0.86
31:Z:9:GLN:HB2	31:Z:29:LEU:HD22	1.58	0.86
1:1:982:C:H1'	1:1:2029:G:H5'	1.58	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1029:A:N6	1:1:1125:G:N2	2.22	0.85
1:1:2107:G:H1	1:1:2182:U:H3	1.23	0.85
1:1:13:A:O2'	1:1:15:G:N7	2.09	0.85
2:2:1088:G:H21	2:2:1167:A:H61	0.87	0.85
1:1:639:U:O4	1:1:649:G:O6	1.95	0.85
2:2:373:A:N3	2:2:451:A:N6	2.25	0.85
2:2:928:G:H2'	2:2:929:G:H8	1.42	0.85
1:1:1133:A:N6	1:1:2025:C:O2	2.09	0.84
1:1:2618:G:H21	8:C:155:VAL:HG21	1.42	0.84
2:2:375:U:H1'	52:u:8:ARG:HE	1.39	0.84
1:1:805:G:N3	1:1:831:G:O2'	2.09	0.84
1:1:1860:G:H1	1:1:1882:U:H3	1.25	0.84
2:2:300:A:C5	2:2:301:G:H1'	2.13	0.84
1:1:832:U:H2'	1:1:833:A:C8	2.12	0.84
2:2:1305:G:HO2'	2:2:1306:A:H8	1.26	0.84
1:1:2472:G:C2	1:1:2478:A:N6	2.46	0.84
2:2:454:G:H1	2:2:478:A:H61	1.21	0.84
47:p:64:GLN:NE2	47:p:68:GLU:OE2	2.11	0.84
1:1:524:G:H5''	1:1:539:G:H22	1.43	0.84
1:1:954:G:H22	1:1:2250:G:H1	1.26	0.84
1:1:1223:G:N2	1:1:1226:A:OP2	2.11	0.84
39:h:53:SER:HB2	39:h:114:LYS:HB3	1.60	0.84
1:1:826:U:O4	1:1:831:G:O6	1.95	0.83
1:1:1187:G:N2	1:1:1188:U:O4	2.09	0.83
1:1:2469:A:H62	1:1:2481:G:H21	0.84	0.83
39:h:105:GLU:OE1	39:h:107:ARG:NH1	2.11	0.83
39:h:167:TRP:HZ3	39:h:169:ARG:HB2	1.43	0.83
1:1:1857:G:H21	1:1:1885:A:N6	1.77	0.83
1:1:1217:U:H3	1:1:1232:G:H1	1.20	0.83
1:1:833:A:H2'	1:1:834:G:C8	2.13	0.83
1:1:1131:G:O6	8:C:154:LYS:NZ	2.10	0.83
1:1:2471:A:N6	1:1:2480:C:O2	2.10	0.83
2:2:1377:A:H61	43:l:10:ARG:HE	1.26	0.83
40:i:101:VAL:HG12	40:i:105:MET:HE1	1.61	0.83
2:2:552:U:H2'	2:2:553:A:H8	1.44	0.83
2:2:1074:G:H1	2:2:1082:A:H61	1.25	0.83
2:2:182:A:H62	2:2:194:C:N4	1.76	0.82
18:M:17:ASN:ND2	18:M:97:GLN:OE1	2.11	0.82
1:1:600:G:H1	1:1:657:U:H3	0.83	0.82
2:2:1367:C:H5''	45:n:116:VAL:HG23	1.61	0.82
1:1:2467:C:O2'	18:M:118:LYS:NZ	2.12	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:227:A:H61	1:1:410:G:H21	0.83	0.82
1:1:870:U:O2	1:1:907:G:N2	2.14	0.81
38:g:166:ALA:HB3	38:g:191:SER:HB3	1.61	0.81
2:2:355:C:H1'	2:2:388:G:H1'	1.62	0.81
1:1:16:C:O2'	33:b:11:SER:OG	1.97	0.81
2:2:68:G:H21	2:2:151:A:H2	0.95	0.81
38:g:23:TRP:HA	38:g:190:ASN:HA	1.62	0.81
2:2:1178:G:H5''	45:n:95:ARG:HH21	1.45	0.80
1:1:2345:G:H4'	1:1:2346:A:H5''	1.62	0.80
2:2:375:U:H3'	2:2:376:G:C8	2.16	0.80
48:q:29:GLN:HB3	48:q:81:LEU:HD22	1.63	0.80
2:2:33:A:H2'	2:2:34:C:H6	1.46	0.80
36:e:14:PHE:HB3	36:e:22:PHE:HB3	1.61	0.80
1:1:2638:G:O2'	1:1:2639:A:N7	2.14	0.80
38:g:183:VAL:HB	38:g:197:ASP:H	1.45	0.80
2:2:542:G:H5''	40:i:38:PRO:HB2	1.62	0.80
1:1:1008:A:H3'	15:J:37:ARG:HH12	1.47	0.79
2:2:937:A:N6	2:2:1345:U:O4	2.14	0.79
3:4:22:U:H3	3:4:61:G:H1	1.30	0.79
39:h:56:VAL:HB	39:h:67:THR:HB	1.64	0.79
1:1:600:G:O6	1:1:657:U:O4	2.00	0.79
2:2:1157:A:C2	2:2:1178:G:N2	2.50	0.79
2:2:1349:A:H62	2:2:1373:G:H21	0.82	0.79
2:2:1015:G:N2	2:2:1218:C:O2	2.16	0.79
39:h:11:ARG:NH2	39:h:177:THR:O	2.16	0.79
1:1:2519:U:O2'	1:1:2541:A:N6	2.15	0.79
1:1:1133:A:N1	1:1:2038:G:N2	2.30	0.79
2:2:151:A:N7	2:2:170:U:O2	2.16	0.79
2:2:374:A:N6	2:2:390:U:O2	2.15	0.79
2:2:1072:G:O6	2:2:1084:G:N2	2.14	0.79
2:2:1229:A:OP2	49:r:113:ARG:NH1	2.16	0.79
1:1:815:C:H4'	1:1:1165:A:H1'	1.64	0.78
1:1:1008:A:N3	1:1:1010:A:N6	2.30	0.78
2:2:966:2MG:N2	4:5:34:C:H4'	1.97	0.78
1:1:2230:G:H1'	29:X:32:ASN:HB3	1.66	0.78
1:1:2513:A:H2'	1:1:2514:U:H6	1.48	0.78
1:1:2883:A:HO2'	33:b:41:HIS:HE2	1.28	0.78
1:1:82:U:O2	1:1:104:A:N6	2.15	0.78
1:1:257:C:O2	17:L:104:GLN:NE2	2.15	0.78
52:u:4:ILE:HG22	52:u:71:VAL:HG21	1.64	0.78
39:h:10:ILE:HG13	39:h:178:LEU:HD11	1.65	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2645:G:H4'	1:1:2646:C:OP2	1.82	0.78
1:1:2830:C:O2'	1:1:2836:U:O4'	2.02	0.78
3:4:78:A:N6	3:4:98:G:H21	1.80	0.78
2:2:393:A:H4'	2:2:483:C:H4'	1.66	0.78
1:1:991:C:H5'	1:1:1186:G:H5'	1.66	0.78
1:1:1160:G:O2'	23:R:6:GLN:NE2	2.17	0.78
47:p:117:PRO:O	57:z:35:ARG:NH1	2.15	0.78
1:1:570:G:N2	1:1:2030:6MZ:O5'	2.16	0.78
1:1:1912:A:HO2'	2:2:1494:G:HO2'	1.31	0.78
31:Z:17:LEU:HD12	31:Z:18:PRO:HD2	1.66	0.78
1:1:1028:A:H2'	1:1:1029:A:C8	2.19	0.78
39:h:156:ARG:HD3	39:h:194:GLY:HA3	1.66	0.77
40:i:71:GLN:OE1	40:i:97:ARG:NH1	2.17	0.77
1:1:60:G:N2	1:1:88:G:OP2	2.17	0.77
1:1:667:U:O4	1:1:668:A:N6	2.16	0.77
1:1:2354:C:N4	1:1:2355:G:O6	2.17	0.77
8:C:148:GLN:HE22	8:C:156:PHE:HZ	1.31	0.77
11:F:50:LEU:HD13	11:F:72:LEU:HD21	1.66	0.77
20:O:15:ARG:HH21	20:O:95:SER:HB3	1.49	0.77
1:1:2356:U:O2	1:1:2361:G:N2	2.17	0.77
1:1:2377:A:N1	20:O:94:ARG:NH2	2.32	0.77
1:1:2426:A:H5''	1:1:2427:C:H5	1.48	0.77
2:2:63:C:OP1	2:2:383:A:N6	2.16	0.77
1:1:527:C:H5''	1:1:2779:U:H3	1.49	0.77
2:2:416:G:H2'	2:2:417:G:H8	1.49	0.77
2:2:544:G:OP1	40:i:63:ARG:NH2	2.17	0.77
2:2:1116:U:O2	2:2:1184:G:O6	2.03	0.77
1:1:535:G:N2	22:Q:56:GLN:OE1	2.16	0.77
1:1:2006:C:O2'	1:1:2823:A:N3	2.15	0.77
2:2:68:G:N2	2:2:101:A:N1	2.31	0.77
2:2:1083:U:O2	2:2:1102:A:N6	2.18	0.77
1:1:2682:A:N3	8:C:13:ARG:NH2	2.33	0.77
2:2:829:G:H4'	38:g:25:PRO:HG2	1.67	0.77
1:1:617:G:H4'	9:D:199:MET:HE3	1.66	0.77
2:2:137:U:O2	2:2:226:G:O6	2.02	0.77
2:2:966:2MG:HN2	4:5:34:C:H4'	1.49	0.76
1:1:1055:G:H4'	13:H:34:THR:HB	1.67	0.76
1:1:2831:G:H8	8:C:59:ARG:HH22	1.33	0.76
2:2:1315:U:O2'	2:2:1360:A:N3	2.16	0.76
26:U:33:LYS:HD3	26:U:64:ALA:HB1	1.67	0.76
43:l:113:ASP:HB2	43:l:119:ARG:HG2	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2261:C:H41	28:W:14:ARG:HG2	1.50	0.76
1:1:2569:G:H2'	1:1:2570:G:H8	1.50	0.76
1:1:2679:A:H4'	8:C:194:PRO:HG3	1.66	0.76
52:u:16:PHE:HZ	52:u:38:PHE:HB2	1.50	0.76
1:1:957:C:H42	1:1:2494:G:H21	1.33	0.76
1:1:2372:U:OP1	34:c:45:GLN:NE2	2.19	0.76
2:2:324:G:H21	2:2:326:G:H8	1.31	0.76
40:i:147:GLU:HA	40:i:150:LYS:HG3	1.68	0.76
1:1:567:U:OP1	17:L:29:LYS:NZ	2.17	0.76
2:2:412:A:H62	2:2:431:A:H2	1.33	0.76
2:2:618:C:N4	2:2:621:A:OP2	2.17	0.76
50:s:13:ARG:HH21	50:s:59:ARG:HE	1.32	0.76
57:z:10:GLU:OE2	57:z:18:ARG:NH1	2.17	0.76
1:1:2658:C:N4	1:1:2659:G:O6	2.18	0.76
2:2:1127:G:N2	2:2:1148:U:O4	2.19	0.76
47:p:64:GLN:HG2	47:p:99:ALA:HB2	1.67	0.76
1:1:2134:A:N6	1:1:2156:G:N2	2.33	0.76
1:1:951:C:N4	1:1:952:G:O6	2.18	0.76
1:1:1028:A:OP2	1:1:1126:A:N6	2.18	0.76
26:U:34:VAL:HG13	26:U:67:VAL:HG12	1.68	0.76
1:1:247:G:O2'	1:1:250:G:N7	2.19	0.75
1:1:2405:G:O2'	1:1:2411:A:N6	2.19	0.75
2:2:439:U:O4	2:2:496:A:N6	2.18	0.75
11:F:154:PRO:HB3	11:F:161:GLY:HA3	1.67	0.75
41:j:11:LEU:HD23	41:j:41:ASP:HB3	1.67	0.75
2:2:553:A:H2'	2:2:554:A:H5'	1.68	0.75
2:2:1160:G:N2	2:2:1176:A:N1	2.32	0.75
37:f:19:ARG:HD2	37:f:24:ARG:HG3	1.67	0.75
1:1:24:G:H2'	1:1:25:U:H6	1.52	0.75
1:1:443:A:H5'	1:1:1201:U:H4'	1.68	0.75
1:1:2478:A:OP2	37:f:2:LYS:NZ	2.17	0.75
45:n:123:ARG:NH1	45:n:124:ARG:O	2.19	0.75
1:1:537:G:H5''	15:J:5:THR:HG21	1.69	0.75
1:1:2296:U:OP2	20:O:9:ARG:NH2	2.20	0.75
2:2:690:G:N2	2:2:697:U:O4	2.19	0.75
28:W:11:ARG:O	28:W:14:ARG:NH1	2.20	0.75
1:1:2391:G:H1	1:1:2424:C:H3'	1.50	0.75
2:2:619:U:O2'	40:i:128:ARG:NH1	2.20	0.75
2:2:1047:G:H21	2:2:1215:G:H5'	1.50	0.75
41:j:12:GLN:HB3	41:j:117:VAL:HG23	1.69	0.75
1:1:17:G:H5''	33:b:10:ARG:HG3	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:647:G:H21	1:1:2351:G:H5'	1.51	0.75
17:L:33:ARG:NH1	17:L:39:LYS:O	2.18	0.75
17:L:112:LEU:HD12	17:L:134:ALA:HB2	1.67	0.75
1:1:974:G:O4'	1:1:990:A:N6	2.19	0.74
2:2:983:A:N1	2:2:1222:G:N2	2.34	0.74
1:1:641:U:O4	1:1:647:G:O6	2.04	0.74
1:1:2530:A:H4'	1:1:2535:G:H1	1.52	0.74
4:5:54:U:H3	4:5:58:A:H62	1.36	0.74
1:1:245:G:H2'	1:1:246:C:C6	2.23	0.74
1:1:819:A:N7	1:1:1188:U:O4	2.21	0.74
1:1:993:G:H4'	23:R:72:VAL:HG21	1.68	0.74
13:H:5:LEU:O	13:H:9:GLN:NE2	2.21	0.74
2:2:1375:A:H4'	43:l:29:ILE:HG12	1.68	0.74
1:1:1864:U:H4'	1:1:2410:G:H21	1.53	0.74
2:2:543:U:H5''	40:i:14:ARG:HG2	1.70	0.74
52:u:5:ARG:NH2	52:u:23:ASP:O	2.20	0.74
1:1:1860:G:N2	1:1:1882:U:O2	2.21	0.74
2:2:260:G:N7	56:y:74:ARG:NH1	2.35	0.73
28:W:68:LYS:HB2	28:W:83:GLU:HG3	1.69	0.73
1:1:606:U:O2	1:1:622:G:N2	2.21	0.73
2:2:416:G:O6	2:2:427:U:O4	2.05	0.73
1:1:2748:A:H5''	11:F:4:VAL:HG21	1.71	0.73
37:f:5:ALA:O	37:f:37:GLN:NE2	2.21	0.73
1:1:847:U:H1'	1:1:934:U:H1'	1.70	0.73
1:1:2836:U:H2'	1:1:2837:A:H8	1.54	0.73
18:M:42:THR:HA	18:M:93:VAL:HG12	1.71	0.73
1:1:2362:C:N4	1:1:2363:G:O6	2.21	0.73
1:1:993:G:OP2	22:Q:51:ARG:NH2	2.21	0.73
52:u:8:ARG:O	52:u:29:ASN:ND2	2.14	0.73
1:1:2355:G:H2'	1:1:2356:U:C6	2.24	0.73
1:1:2390:U:H2'	1:1:2391:G:H5''	1.70	0.73
2:2:68:G:N3	2:2:151:A:N1	2.36	0.73
1:1:601:C:O2'	9:D:99:LYS:NZ	2.17	0.73
1:1:976:G:HO2'	1:1:1155:A:HO2'	1.34	0.73
2:2:1015:G:N3	2:2:1218:C:O2'	2.21	0.73
8:C:193:VAL:HG21	8:C:201:LEU:HD11	1.71	0.73
7:B:29:PRO:HG2	7:B:34:LEU:HD11	1.70	0.73
1:1:25:U:H3	1:1:515:A:H61	1.36	0.73
1:1:177:G:OP2	1:1:177:G:N2	2.19	0.73
1:1:243:U:H2'	1:1:244:A:H8	1.53	0.73
1:1:587:C:C2	17:L:19:LEU:HD12	2.24	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:182:A:N6	2:2:194:C:H42	1.85	0.72
2:2:1249:C:O2	2:2:1288:A:N6	2.22	0.72
12:G:116:ARG:HG3	12:G:133:GLN:HG2	1.72	0.72
1:1:966:G:O2'	1:1:2267:A:N7	2.23	0.72
1:1:1779:U:OP2	1:1:1784:A:N6	2.22	0.72
1:1:590:A:H2'	1:1:591:U:O4'	1.89	0.72
1:1:2779:U:H4'	1:1:2780:G:H3'	1.70	0.72
1:1:2883:A:O2'	33:b:41:HIS:NE2	2.22	0.72
2:2:38:G:N1	2:2:397:A:OP1	2.22	0.72
2:2:994:A:H1'	2:2:1217:C:H5'	1.72	0.72
7:B:78:VAL:HG21	7:B:110:LEU:HD11	1.71	0.72
23:R:63:VAL:HA	23:R:96:VAL:HG12	1.70	0.72
2:2:1249:C:O2'	45:n:70:GLY:O	2.08	0.72
1:1:648:G:H4'	1:1:2352:A:H5'	1.71	0.72
1:1:958:U:H2'	3:4:89:U:H1'	1.72	0.72
2:2:1368:A:OP1	45:n:113:ARG:NH2	2.23	0.72
17:L:33:ARG:NH1	17:L:41:ARG:O	2.23	0.72
46:o:8:ILE:HG22	46:o:100:ILE:HG12	1.71	0.72
2:2:6:G:O6	41:j:100:SER:OG	2.06	0.72
55:x:3:ARG:HH21	55:x:7:LYS:HB3	1.54	0.72
1:1:859:G:H21	1:1:917:A:H8	1.38	0.72
1:1:978:G:OP1	1:1:1002:G:N2	2.22	0.72
2:2:509:A:H5''	40:i:48:LEU:HD11	1.72	0.72
2:2:1064:G:N2	2:2:1190:G:O3'	2.22	0.72
2:2:1144:G:H21	2:2:1146:A:H62	1.38	0.72
23:R:35:PHE:HB2	23:R:59:ILE:HB	1.71	0.72
1:1:31:C:H5''	1:1:1239:G:H5'	1.70	0.72
1:1:250:G:OP2	36:e:13:ARG:NH1	2.22	0.72
1:1:608:A:OP2	1:1:619:G:N2	2.23	0.72
2:2:33:A:O2'	2:2:363:A:N3	2.20	0.72
31:Z:45:ARG:NH1	31:Z:45:ARG:O	2.23	0.72
1:1:320:A:H2'	9:D:131:THR:HB	1.71	0.71
1:1:980:A:O2'	1:1:2037:A:N3	2.23	0.71
1:1:2648:G:N2	1:1:2672:U:O2	2.20	0.71
2:2:363:A:N6	48:q:27:CYS:SG	2.62	0.71
21:P:14:LYS:HG3	21:P:77:HIS:HA	1.72	0.71
1:1:1789:A:OP2	7:B:221:ARG:NH1	2.22	0.71
1:1:2683:C:H2'	1:1:2684:U:H5'	1.71	0.71
1:1:2348:U:H2'	1:1:2349:G:H8	1.53	0.71
39:h:14:ILE:HD13	39:h:178:LEU:HD12	1.73	0.71
1:1:989:G:H4'	1:1:1157:G:H4'	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:299:G:H21	2:2:565:U:H3	1.36	0.71
2:2:513:C:H2'	2:2:514:C:C6	2.25	0.71
1:1:245:G:H2'	1:1:246:C:H6	1.56	0.71
1:1:2521:C:H2'	1:1:2522:U:C6	2.25	0.71
1:1:2723:C:OP1	8:C:114:LYS:NZ	2.23	0.71
7:B:142:HIS:ND1	7:B:193:GLY:O	2.22	0.71
1:1:1128:G:N3	1:1:2516:A:O2'	2.20	0.71
8:C:176:ASP:HB3	8:C:190:LYS:HE2	1.72	0.71
1:1:2473:U:OP1	1:1:2475:C:N4	2.23	0.71
1:1:2741:A:H62	1:1:2763:G:H21	0.75	0.71
2:2:1440:U:O2'	2:2:1442:G:N7	2.23	0.71
15:J:18:VAL:HG21	15:J:54:ILE:HD11	1.71	0.71
1:1:2818:U:O2	1:1:2828:G:N2	2.19	0.71
2:2:195:A:N3	2:2:222:C:O2'	2.24	0.71
11:F:38:ASN:ND2	11:F:64:GLN:OE1	2.23	0.71
48:q:57:LEU:HD12	48:q:61:PHE:HB2	1.73	0.71
1:1:99:U:H5''	1:1:100:U:H5'	1.73	0.71
1:1:2462:C:H2'	1:1:2463:C:H6	1.55	0.71
2:2:1110:A:H2'	2:2:1111:A:C8	2.26	0.71
2:2:936:C:H2'	2:2:937:A:H8	1.55	0.70
2:2:987:G:N2	2:2:1015:G:H22	1.89	0.70
22:Q:66:ASN:HD21	22:Q:70:ARG:HH21	1.37	0.70
1:1:659:G:N3	9:D:30:GLN:NE2	2.37	0.70
9:D:106:LYS:HA	9:D:109:LEU:HD12	1.72	0.70
1:1:1252:G:H1	22:Q:37:GLN:HB3	1.55	0.70
2:2:233:C:H2'	2:2:234:C:H5'	1.74	0.70
40:i:11:LEU:HB3	40:i:63:ARG:HE	1.56	0.70
1:1:322:A:H5'	1:1:340:A:H1'	1.72	0.70
1:1:856:G:O6	1:1:920:A:N6	2.23	0.70
1:1:1143:A:N6	15:J:27:ARG:HG3	2.06	0.70
39:h:135:LYS:O	39:h:139:GLN:NE2	2.23	0.70
1:1:255:A:H1'	1:1:384:A:OP1	1.91	0.70
1:1:2037:A:H2'	1:1:2038:G:C8	2.27	0.70
1:1:306:U:O2'	1:1:1211:C:OP2	2.09	0.70
1:1:952:G:OP1	18:M:18:ARG:NH1	2.25	0.70
2:2:980:C:O2'	50:s:13:ARG:NH1	2.23	0.70
24:S:55:ILE:HG23	24:S:66:ILE:HD12	1.74	0.70
1:1:929:U:O2'	31:Z:26:GLY:O	2.08	0.70
1:1:1019:U:H2'	1:1:1020:A:N7	2.06	0.70
1:1:1039:A:H2	1:1:1116:G:H1	1.38	0.70
2:2:927:G:H2'	2:2:928:G:H8	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:p:60:PRO:HD3	47:p:91:PRO:HB2	1.72	0.70
1:1:1131:G:N2	1:1:1132:U:O4	2.23	0.70
17:L:127:VAL:HG11	17:L:142:ILE:HD13	1.74	0.70
2:2:263:A:H5'	56:y:70:ASN:HB3	1.74	0.70
2:2:481:G:N3	2:2:482:A:N6	2.39	0.70
2:2:1317:C:OP1	50:s:56:SER:OG	2.06	0.70
9:D:45:ALA:HB2	9:D:89:PRO:HG3	1.74	0.70
33:b:15:MET:O	33:b:18:SER:OG	2.09	0.70
39:h:156:ARG:H	39:h:163:ALA:HA	1.57	0.70
11:F:45:HIS:ND1	11:F:49:THR:O	2.25	0.70
40:i:53:VAL:HA	40:i:56:ARG:HE	1.56	0.70
1:1:957:C:N4	1:1:2494:G:H21	1.90	0.69
1:1:2131:U:H5'	1:1:2132:U:H5''	1.73	0.69
2:2:1348:U:N3	2:2:1374:A:C8	2.60	0.69
3:4:49:C:OP2	20:O:30:ARG:NH2	2.25	0.69
2:2:1179:A:OP2	45:n:99:ARG:NH2	2.25	0.69
12:G:113:SER:O	12:G:116:ARG:NH1	2.25	0.69
50:s:61:ARG:NH2	50:s:70:PRO:O	2.25	0.69
1:1:254:G:O2'	1:1:384:A:OP2	2.08	0.69
1:1:671:C:H5	17:L:33:ARG:HE	1.40	0.69
1:1:878:A:H3'	1:1:879:G:H8	1.56	0.69
2:2:1249:C:N4	2:2:1288:A:OP2	2.26	0.69
3:4:78:A:N6	3:4:98:G:N2	2.38	0.69
14:I:55:PRO:HG2	14:I:71:LYS:HB2	1.74	0.69
15:J:49:ASP:HB2	15:J:118:MET:HE1	1.72	0.69
1:1:828:U:O4	1:1:2246:G:N2	2.16	0.69
2:2:1012:A:H2'	2:2:1013:G:C8	2.28	0.69
40:i:13:ARG:HH21	40:i:38:PRO:HA	1.57	0.69
1:1:1079:C:H2'	1:1:1080:A:H8	1.57	0.69
2:2:1348:U:C2	2:2:1374:A:N7	2.61	0.69
1:1:572:A:C2	1:1:2029:G:N2	2.60	0.69
2:2:673:A:H2'	2:2:674:G:C8	2.28	0.69
2:2:1247:U:O2	2:2:1290:G:O6	2.11	0.69
28:W:23:VAL:HA	28:W:38:VAL:HG23	1.74	0.69
1:1:2513:A:H2'	1:1:2514:U:C6	2.28	0.69
2:2:1251:A:N3	2:2:1369:C:O2'	2.22	0.69
2:2:1253:G:H2'	2:2:1254:A:H8	1.56	0.69
2:2:1309:G:H2'	2:2:1310:G:H8	1.57	0.69
1:1:2116:G:N7	1:1:2165:C:N4	2.41	0.68
2:2:204:G:H2'	2:2:205:A:H8	1.58	0.68
10:E:63:GLN:OE1	10:E:95:ARG:NH1	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2286:G:N3	1:1:2287:A:N6	2.41	0.68
2:2:1359:C:O2'	2:2:1361:G:N7	2.27	0.68
1:1:2623:G:H3'	1:1:2624:G:H8	1.58	0.68
2:2:955:U:OP1	6:A:50:ASN:ND2	2.26	0.68
1:1:516:C:N3	1:1:517:C:N4	2.41	0.68
1:1:1027:A:N3	1:1:2487:G:O2'	2.27	0.68
2:2:541:G:H2'	2:2:542:G:C8	2.28	0.68
3:4:95:U:H2'	3:4:96:G:C8	2.28	0.68
1:1:639:U:H3	1:1:649:G:H1	0.82	0.68
2:2:447:G:H22	2:2:486:U:H3'	1.58	0.68
1:1:77:G:O2'	30:Y:59:GLU:OE2	2.12	0.68
1:1:2282:G:N2	1:1:2390:U:O2	2.25	0.68
2:2:522:C:N4	48:q:89:0TD:OD2	2.26	0.68
1:1:2047:C:H2'	1:1:2048:G:H8	1.58	0.68
39:h:111:LEU:HD22	39:h:204:LYS:HE2	1.74	0.68
1:1:243:U:H2'	1:1:244:A:C8	2.29	0.68
1:1:519:U:H2'	1:1:520:G:C8	2.28	0.68
1:1:618:G:OP2	9:D:98:LYS:NZ	2.25	0.68
1:1:2369:A:H2'	1:1:2370:G:C8	2.29	0.68
1:1:2756:U:H1'	1:1:2757:A:H5''	1.75	0.68
2:2:1074:G:H1	2:2:1082:A:N6	1.90	0.68
13:H:54:VAL:O	13:H:56:ARG:NH1	2.27	0.68
1:1:2730:C:O2'	8:C:173:GLN:O	2.12	0.68
20:O:99:TYR:OH	20:O:111:ARG:NH2	2.25	0.68
1:1:857:G:O6	1:1:920:A:N1	2.26	0.68
1:1:1001:A:OP2	1:1:1154:G:N1	2.17	0.68
1:1:2361:G:OP1	36:e:26:HIS:ND1	2.26	0.68
1:1:2673:G:N2	1:1:2674:G:O6	2.26	0.68
2:2:339:C:OP2	16:K:98:ARG:NH1	2.27	0.68
2:2:1238:A:OP2	2:2:1300:G:N2	2.26	0.67
2:2:1377:A:O2'	2:2:1379:G:N7	2.26	0.67
1:1:390:U:H1'	1:1:391:A:C8	2.29	0.67
1:1:830:G:H4'	1:1:831:G:OP1	1.92	0.67
40:i:102:VAL:HA	40:i:105:MET:HE2	1.76	0.67
1:1:16:C:H5''	33:b:14:GLY:HA3	1.75	0.67
1:1:2529:G:N7	37:f:32:LYS:NZ	2.37	0.67
2:2:451:A:N6	2:2:481:G:OP2	2.21	0.67
2:2:1216:A:H2'	2:2:1217:C:C6	2.28	0.67
3:4:51:G:OP2	20:O:63:LYS:NZ	2.27	0.67
23:R:78:ARG:HH21	23:R:81:LYS:HG3	1.58	0.67
34:c:6:ARG:NH1	34:c:24:THR:OG1	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:f:9:LYS:NZ	37:f:11:CYS:O	2.27	0.67
50:s:64:CYS:HB3	50:s:69:ARG:H	1.59	0.67
1:1:263:G:O2'	1:1:429:A:N3	2.27	0.67
1:1:826:U:C4	1:1:831:G:O6	2.48	0.67
1:1:2623:G:HO2'	1:1:2825:G:H8	1.42	0.67
3:4:48:U:OP1	20:O:30:ARG:NH1	2.28	0.67
31:Z:5:ILE:HG12	31:Z:40:ASP:HB2	1.76	0.67
1:1:600:G:N2	1:1:657:U:O2	2.25	0.67
1:1:2784:U:H4'	8:C:43:ASP:HA	1.75	0.67
3:4:73:A:N7	3:4:103:U:O2	2.27	0.67
4:6:51:U:H3	4:6:65:G:H1	1.41	0.67
1:1:18:U:OP1	22:Q:30:ARG:NH1	2.28	0.67
1:1:1047:G:OP2	13:H:62:ARG:NH1	2.28	0.67
2:2:523:A:H62	48:q:88:LYS:H	1.40	0.67
2:2:553:A:H4'	48:q:26:ALA:HA	1.77	0.67
2:2:1293:C:H2'	2:2:1294:G:H8	1.60	0.67
2:2:1179:A:OP2	45:n:95:ARG:NH2	2.28	0.67
3:4:9:G:O6	3:4:111:U:O2	2.13	0.67
37:f:2:LYS:HD2	37:f:35:GLN:HG2	1.75	0.67
1:1:1008:A:H5''	15:J:37:ARG:HH22	1.60	0.67
2:2:1235:U:O2'	2:2:1305:G:O5'	2.12	0.67
2:2:1356:G:H2'	2:2:1357:A:C8	2.30	0.67
38:g:94:HIS:ND1	38:g:146:ASN:O	2.27	0.67
1:1:307:G:N2	1:1:310:A:OP2	2.23	0.67
1:1:540:C:N4	1:1:554:U:H3	1.92	0.67
1:1:587:C:C6	17:L:19:LEU:HB2	2.30	0.67
1:1:609:A:H62	1:1:619:G:N2	1.93	0.67
1:1:1039:A:N1	1:1:1116:G:O6	2.28	0.67
1:1:2528:U:H3'	1:1:2530:A:C8	2.30	0.67
2:2:327:A:N6	2:2:329:A:N3	2.42	0.67
19:N:86:ARG:NH2	19:N:117:ASP:O	2.28	0.67
28:W:68:LYS:NZ	28:W:69:PHE:O	2.26	0.67
1:1:533:G:N2	22:Q:49:ASP:OD2	2.28	0.66
1:1:839:U:O2	1:1:939:G:O6	2.13	0.66
1:1:1084:A:N7	13:H:56:ARG:NH2	2.43	0.66
39:h:156:ARG:NH2	39:h:159:GLY:O	2.29	0.66
1:1:370:G:OP1	1:1:423:A:N6	2.28	0.66
1:1:523:C:H2'	1:1:524:G:C8	2.30	0.66
1:1:1857:G:N2	1:1:1885:A:N6	2.34	0.66
1:1:2024:G:O6	1:1:2039:U:O2	2.12	0.66
2:2:454:G:H1	2:2:478:A:N6	1.93	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:6:CYS:SG	7:B:18:LYS:NZ	2.68	0.66
14:I:12:VAL:HG11	14:I:22:PRO:HG2	1.76	0.66
1:1:1168:G:O6	1:1:1181:U:O4	2.13	0.66
1:1:2574:G:H2'	1:1:2575:C:C6	2.30	0.66
2:2:746:A:H2'	2:2:747:A:C8	2.30	0.66
2:2:1309:G:OP2	49:r:98:ARG:NH2	2.28	0.66
10:E:24:SER:HB3	10:E:27:GLN:HB2	1.77	0.66
41:j:163:GLU:O	44:m:114:ARG:NH2	2.29	0.66
56:y:29:ARG:O	56:y:33:LYS:HG3	1.96	0.66
1:1:2585:U:O4	6:A:126:GLN:NE2	2.28	0.66
24:S:22:ASP:OD1	24:S:25:ARG:NH1	2.25	0.66
1:1:102:U:O4	30:Y:2:LYS:N	2.28	0.66
1:1:978:G:H2'	1:1:979:A:O4'	1.95	0.66
1:1:2467:C:N3	18:M:123:LYS:NZ	2.37	0.66
2:2:1323:G:H2'	2:2:1324:A:C8	2.30	0.66
11:F:89:LEU:HG	11:F:162:VAL:HG12	1.78	0.66
43:l:145:ALA:O	43:l:149:LYS:HB2	1.96	0.66
1:1:1040:A:N1	1:1:1115:G:O6	2.29	0.66
2:2:322:C:H42	2:2:329:A:H62	0.71	0.66
2:2:501:C:H2'	2:2:502:A:C8	2.31	0.66
2:2:1064:G:H21	2:2:1190:G:H1'	1.61	0.66
4:5:32:C:O5'	45:n:130:ARG:NH2	2.29	0.66
11:F:98:VAL:HG21	11:F:123:ALA:HB3	1.78	0.66
15:J:4:PHE:O	22:Q:64:ARG:NH2	2.19	0.66
22:Q:86:ALA:HB2	22:Q:116:ALA:HB2	1.78	0.66
22:Q:87:SER:HB3	23:R:52:PRO:HB3	1.76	0.66
32:a:16:CYS:SG	32:a:17:SER:N	2.66	0.66
39:h:117:ALA:HB1	39:h:187:SER:HB3	1.77	0.66
1:1:2453:A:H2	1:1:2504:PSU:HN3	1.43	0.66
2:2:376:G:H2'	2:2:377:G:C8	2.30	0.66
41:j:13:GLU:HG2	41:j:64:MET:HE2	1.76	0.66
1:1:77:G:H2'	1:1:78:U:H6	1.61	0.66
1:1:242:G:O2'	1:1:254:G:O6	2.07	0.66
1:1:1224:U:N3	1:1:1225:G:O6	2.29	0.66
2:2:33:A:H2'	2:2:34:C:C6	2.31	0.66
2:2:1344:C:H5'	45:n:122:ARG:HB3	1.77	0.66
9:D:23:PHE:CZ	9:D:28:VAL:HG21	2.31	0.66
10:E:60:ILE:HD11	10:E:138:PHE:HB3	1.76	0.66
39:h:156:ARG:NH1	39:h:193:TYR:O	2.29	0.66
1:1:781:A:OP1	7:B:217:ARG:NH2	2.28	0.66
1:1:1130:U:O4	1:1:2032:G:N2	2.15	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1853:A:N3	1:1:2233:U:O2'	2.29	0.66
1:1:2362:C:H2'	1:1:2363:G:H8	1.61	0.66
1:1:2393:U:O3'	17:L:62:PRO:HA	1.96	0.66
2:2:1073:U:H2'	2:2:1074:G:C8	2.31	0.66
10:E:8:TYR:HA	10:E:12:VAL:HB	1.78	0.66
40:i:197:GLU:OE1	40:i:201:VAL:HG23	1.95	0.66
1:1:26:G:H4'	1:1:1260:A:H4'	1.77	0.66
1:1:810:U:N3	17:L:29:LYS:O	2.28	0.66
1:1:2723:C:O3'	8:C:116:LYS:NZ	2.28	0.66
8:C:106:LYS:HB3	8:C:174:SER:HA	1.78	0.66
16:K:3:GLN:HE21	16:K:32:TYR:HE1	1.43	0.66
18:M:34:LYS:HB3	18:M:129:THR:HB	1.78	0.66
38:g:20:THR:HG22	38:g:39:HIS:HD2	1.61	0.66
1:1:243:U:OP2	1:1:254:G:N1	2.27	0.65
1:1:667:U:H1'	36:e:2:PRO:HD2	1.78	0.65
1:1:2729:G:H21	8:C:172:VAL:HG13	1.61	0.65
13:H:57:ASN:HB2	13:H:62:ARG:HD3	1.78	0.65
15:J:118:MET:HA	15:J:121:LYS:HE2	1.78	0.65
2:2:100:G:N2	2:2:152:A:O2'	2.29	0.65
1:1:31:C:O2'	1:1:1238:G:OP1	2.13	0.65
1:1:927:A:H2'	1:1:928:A:C8	2.31	0.65
17:L:19:LEU:HD23	17:L:27:LEU:HD13	1.77	0.65
19:N:1:MET:HE3	19:N:3:HIS:HE1	1.61	0.65
38:g:43:LEU:HA	38:g:46:THR:HB	1.77	0.65
1:1:2836:U:H2'	1:1:2837:A:C8	2.31	0.65
2:2:346:G:OP1	21:P:39:ARG:NH1	2.29	0.65
2:2:371:A:H2	2:2:374:A:H62	1.45	0.65
2:2:417:G:N2	2:2:540:G:O2'	2.29	0.65
2:2:1206:G:O2'	39:h:192:THR:O	2.14	0.65
17:L:63:LYS:HE3	36:e:12:LYS:HD3	1.76	0.65
1:1:285:G:O6	1:1:355:U:O2	2.15	0.65
1:1:594:U:O2	1:1:663:G:N2	2.22	0.65
1:1:2104:C:H41	1:1:2186:G:H21	1.42	0.65
38:g:187:VAL:HG13	38:g:191:SER:HB2	1.79	0.65
52:u:3:THR:O	52:u:22:ALA:N	2.22	0.65
1:1:2370:G:C4	1:1:2371:G:H1'	2.31	0.65
2:2:186:C:H5''	56:y:77:ALA:HB2	1.78	0.65
8:C:34:VAL:HG22	8:C:50:VAL:HG12	1.78	0.65
1:1:630:G:N2	1:1:633:A:OP2	2.28	0.65
1:1:2380:C:H2'	1:1:2381:A:C8	2.32	0.65
1:1:2571:U:H4'	8:C:151:THR:HG21	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1005:A:OP2	2:2:1024:G:N2	2.29	0.65
1:1:535:G:O3'	22:Q:53:ARG:NH2	2.28	0.65
1:1:827:U:H5'	1:1:828:U:C6	2.32	0.65
4:6:4:G:H2'	4:6:5:G:H8	1.61	0.65
23:R:8:GLY:HA3	23:R:22:LEU:HD22	1.79	0.65
36:e:38:THR:HB	36:e:42:ARG:HH21	1.62	0.65
43:l:106:GLU:HG2	43:l:110:LYS:HE2	1.78	0.65
45:n:13:LYS:O	45:n:110:GLN:NE2	2.29	0.65
1:1:881:G:H1	1:1:895:U:H3	1.43	0.65
2:2:949:A:OP2	49:r:101:ARG:NH1	2.29	0.65
12:G:1:MET:N	12:G:21:VAL:O	2.29	0.65
1:1:196:A:H61	1:1:832:U:H1'	1.61	0.65
1:1:659:G:H1'	9:D:100:MET:HE1	1.79	0.65
2:2:1230:C:H2'	2:2:1231:G:C8	2.32	0.65
2:2:1239:A:O2'	2:2:1297:G:N2	2.29	0.65
3:4:14:U:OP2	3:4:70:C:O2'	2.15	0.65
50:s:23:LYS:HG2	50:s:51:LEU:HD21	1.79	0.65
1:1:2361:G:H2'	1:1:2362:C:C6	2.32	0.64
1:1:2898:U:H2'	1:1:2899:A:H8	1.62	0.64
2:2:552:U:H2'	2:2:553:A:C8	2.31	0.64
2:2:613:C:H2'	2:2:614:C:C6	2.32	0.64
43:l:15:ASP:OD1	43:l:20:SER:N	2.22	0.64
1:1:1245:G:H2'	1:1:1246:A:H8	1.62	0.64
1:1:2830:C:H3'	8:C:59:ARG:NE	2.11	0.64
2:2:1045:C:H2'	2:2:1046:A:H5''	1.79	0.64
3:4:95:U:H2'	3:4:96:G:H8	1.60	0.64
15:J:54:ILE:HG22	15:J:122:LEU:HB2	1.79	0.64
43:l:30:LEU:O	43:l:109:ARG:NH2	2.30	0.64
1:1:84:A:OP1	26:U:6:ARG:NH2	2.30	0.64
1:1:531:C:P	1:1:561:G:H22	2.21	0.64
1:1:976:G:O2'	1:1:1155:A:O2'	2.12	0.64
1:1:2183:A:H2'	1:1:2184:A:C8	2.32	0.64
1:1:2680:U:O3'	8:C:8:LYS:NZ	2.30	0.64
3:4:73:A:N7	3:4:103:U:C2	2.65	0.64
5:7:25:A:N7	39:h:164:ARG:NH2	2.45	0.64
8:C:8:LYS:O	8:C:198:GLY:N	2.25	0.64
38:g:176:ALA:HA	38:g:181:ILE:HD12	1.80	0.64
1:1:1168:G:N2	1:1:1181:U:O2	2.17	0.64
1:1:1203:U:H3	1:1:1242:U:H3	1.45	0.64
1:1:2047:C:H2'	1:1:2048:G:C8	2.31	0.64
1:1:2271:G:H2'	1:1:2272:U:C6	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:264:C:H2'	2:2:265:G:O4'	1.97	0.64
38:g:97:LEU:HB2	38:g:100:MET:HB2	1.79	0.64
1:1:1028:A:H2'	1:1:1029:A:H8	1.61	0.64
1:1:2355:G:H2'	1:1:2356:U:H6	1.61	0.64
1:1:2883:A:HO2'	33:b:41:HIS:CD2	2.13	0.64
2:2:1159:U:N3	2:2:1172:C:OP2	2.31	0.64
8:C:157:LYS:HB2	15:J:80:HIS:HA	1.78	0.64
15:J:77:HIS:HD2	15:J:84:ILE:HD12	1.63	0.64
48:q:110:ARG:HB3	48:q:119:VAL:HG21	1.79	0.64
1:1:242:G:C8	36:e:5:LYS:HG2	2.33	0.64
2:2:1222:G:OP2	2:2:1322:C:N4	2.30	0.64
8:C:55:LYS:HB2	8:C:77:ARG:HA	1.79	0.64
26:U:82:ARG:O	26:U:97:LYS:N	2.29	0.64
1:1:242:G:N2	1:1:254:G:OP2	2.31	0.64
1:1:833:A:OP2	1:1:944:C:N4	2.30	0.64
2:2:171:A:H2'	2:2:172:A:H8	1.62	0.64
3:4:9:G:O2'	20:O:45:SER:OG	2.14	0.64
39:h:190:HIS:HA	39:h:195:VAL:HG22	1.79	0.64
46:o:42:LEU:HD12	46:o:73:LEU:HD13	1.79	0.64
1:1:2315:G:H21	10:E:125:ARG:HH12	1.43	0.64
1:1:2341:G:H22	1:1:2375:G:P	2.21	0.64
2:2:387:U:O2'	2:2:389:A:N7	2.30	0.64
3:4:78:A:N6	3:4:98:G:C2	2.65	0.64
13:H:42:ARG:HD2	14:I:117:THR:HB	1.80	0.64
1:1:563:A:OP1	22:Q:45:TYR:OH	2.15	0.64
8:C:111:GLY:N	8:C:170:VAL:O	2.30	0.64
10:E:117:LEU:HD22	10:E:130:MET:HG2	1.80	0.64
1:1:1129:A:N1	1:1:2569:G:O2'	2.26	0.64
11:F:124:GLU:HG3	11:F:126:PRO:HD3	1.80	0.64
48:q:34:CYS:N	48:q:78:SER:O	2.22	0.64
1:1:301:G:OP2	26:U:82:ARG:NH1	2.29	0.63
1:1:635:C:OP2	17:L:126:ARG:NH1	2.31	0.63
1:1:651:G:H2'	1:1:652:U:H5'	1.80	0.63
1:1:979:A:N6	1:1:983:A:OP2	2.31	0.63
1:1:987:C:O2'	1:1:1000:A:N3	2.31	0.63
1:1:2392:A:H2'	1:1:2393:U:C6	2.34	0.63
1:1:2527:C:H3'	1:1:2528:U:H6	1.63	0.63
1:1:2818:U:H3	1:1:2828:G:H1	1.46	0.63
2:2:375:U:H5''	52:u:70:ARG:HH11	1.62	0.63
2:2:553:A:C2'	2:2:554:A:H5'	2.28	0.63
57:z:34:ARG:HH21	57:z:35:ARG:HE	1.45	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2287:A:N7	1:1:2346:A:N6	2.47	0.63
1:1:2392:A:O2'	17:L:60:ARG:O	2.14	0.63
1:1:2822:G:H2'	1:1:2823:A:H5''	1.80	0.63
2:2:1052:U:O2'	2:2:1055:A:OP2	2.11	0.63
15:J:88:THR:O	15:J:92:MET:CB	2.46	0.63
49:r:83:LEU:HD22	55:x:66:MET:HB3	1.78	0.63
52:u:50:THR:HG21	52:u:74:LEU:HD13	1.79	0.63
1:1:242:G:N7	36:e:3:LYS:HB2	2.12	0.63
1:1:826:U:C5	1:1:828:U:H1'	2.34	0.63
1:1:2639:A:N1	1:1:2775:G:O2'	2.31	0.63
1:1:2649:C:H2'	1:1:2650:U:H6	1.63	0.63
2:2:406:G:OP2	2:2:406:G:H8	1.80	0.63
2:2:1199:U:O2'	2:2:1202:U:OP2	2.10	0.63
2:2:1346:A:O2'	43:l:10:ARG:NH1	2.30	0.63
2:2:1516:2MG:N2	2:2:1519:MA6:OP2	2.28	0.63
7:B:108:LYS:HA	7:B:196:GLY:HA2	1.80	0.63
18:M:36:VAL:HG22	27:V:82:TYR:HB2	1.79	0.63
27:V:9:ARG:HH21	27:V:16:ALA:HB1	1.63	0.63
27:V:44:HIS:O	27:V:48:MET:HG2	1.98	0.63
38:g:20:THR:HG22	38:g:39:HIS:CD2	2.33	0.63
2:2:492:C:H2'	2:2:493:A:C8	2.33	0.63
2:2:1193:G:N7	39:h:3:GLN:NE2	2.42	0.63
8:C:51:THR:HB	8:C:79:LEU:HD23	1.81	0.63
1:1:632:A:O2'	1:1:2403:C:O2'	2.11	0.63
1:1:986:C:H1'	1:1:1001:A:H1'	1.79	0.63
1:1:2746:U:H5''	11:F:138:LYS:HE2	1.80	0.63
2:2:108:G:H5''	2:2:109:A:H5'	1.81	0.63
39:h:19:ASN:HB2	50:s:91:GLY:HA3	1.80	0.63
40:i:98:LEU:HD21	40:i:123:ILE:HG21	1.78	0.63
1:1:833:A:H2'	1:1:834:G:H8	1.60	0.63
1:1:2266:A:O2'	1:1:2272:U:O4	2.15	0.63
1:1:2289:G:H2'	1:1:2290:G:C8	2.34	0.63
1:1:2547:A:H4'	16:K:29:HIS:HE1	1.63	0.63
1:1:2642:G:H2'	1:1:2643:G:C8	2.33	0.63
27:V:62:THR:OG1	27:V:71:LYS:NZ	2.24	0.63
37:f:10:LEU:HG	37:f:25:VAL:HG11	1.78	0.63
43:l:111:ARG:HB3	43:l:119:ARG:HD2	1.81	0.63
1:1:1206:G:N2	1:1:1240:U:O2	2.30	0.63
1:1:2528:U:H3'	1:1:2530:A:H8	1.64	0.63
2:2:509:A:N3	2:2:543:U:O2'	2.32	0.63
2:2:713:G:H2'	2:2:714:G:C8	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1072:G:N2	38:g:106:THR:OG1	2.31	0.63
2:2:1077:G:N2	2:2:1080:A:OP2	2.28	0.63
4:6:40:C:H4'	47:p:56:ARG:HH22	1.63	0.63
11:F:54:PRO:HB3	11:F:61:GLY:HA3	1.81	0.63
36:e:22:PHE:HB2	36:e:50:VAL:HB	1.80	0.63
39:h:6:HIS:HD2	39:h:184:TYR:HD2	1.47	0.63
40:i:188:ARG:HH12	40:i:195:ILE:HB	1.63	0.63
1:1:832:U:H2'	1:1:833:A:H8	1.61	0.63
1:1:946:C:H2'	1:1:947:A:C8	2.33	0.63
1:1:1157:G:H1'	31:Z:32:ILE:HD12	1.80	0.63
1:1:2674:G:H21	16:K:28:SER:HB2	1.64	0.63
1:1:2821:A:H2'	1:1:2822:G:O4'	1.98	0.63
2:2:108:G:N2	2:2:326:G:H1	1.95	0.63
2:2:427:U:OP2	2:2:428:G:O2'	2.13	0.63
2:2:552:U:O4	2:2:553:A:N6	2.32	0.63
2:2:993:G:O2'	2:2:994:A:N7	2.32	0.63
5:7:24:C:O2'	39:h:164:ARG:NH1	2.29	0.63
9:D:111:GLU:OE2	9:D:114:ARG:NH2	2.31	0.63
44:m:96:MET:HG2	44:m:99:LEU:HB2	1.80	0.63
4:6:44:A:H2'	4:6:45:A:H8	1.64	0.62
9:D:178:VAL:HG13	17:L:3:LEU:HD11	1.81	0.62
48:q:78:SER:HB3	48:q:103:ASP:OD2	1.99	0.62
1:1:846:U:H1'	1:1:847:U:H5	1.64	0.62
1:1:1222:U:O2	1:1:1227:G:O6	2.16	0.62
17:L:30:THR:HB	17:L:33:ARG:HB2	1.80	0.62
39:h:11:ARG:NE	39:h:180:ALA:O	2.32	0.62
39:h:15:VAL:HG21	39:h:181:ASP:HA	1.81	0.62
1:1:296:U:H2'	1:1:297:G:C8	2.33	0.62
1:1:2748:A:OP2	1:1:2753:A:N6	2.33	0.62
2:2:373:A:H2'	2:2:374:A:H8	1.63	0.62
2:2:1126:U:O4	46:o:7:ARG:NH1	2.32	0.62
39:h:6:HIS:CD2	50:s:89:MET:HG2	2.34	0.62
39:h:53:SER:HB3	39:h:115:LEU:HG	1.80	0.62
1:1:1040:A:H2	1:1:1115:G:H1	1.46	0.62
1:1:2261:C:H1'	1:1:2388:A:H1'	1.81	0.62
1:1:2348:U:H2'	1:1:2349:G:C8	2.34	0.62
1:1:2831:G:H8	8:C:59:ARG:NH2	1.96	0.62
2:2:327:A:C6	2:2:329:A:H1'	2.34	0.62
2:2:539:A:H2'	2:2:540:G:O4'	2.00	0.62
15:J:77:HIS:HA	15:J:85:LYS:HB2	1.82	0.62
26:U:86:ARG:NH1	26:U:100:SER:OG	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:495:G:N3	24:S:61:ASN:ND2	2.41	0.62
1:1:2033:A:H2'	1:1:2036:C:H41	1.64	0.62
1:1:2385:C:H2'	1:1:2386:A:C8	2.34	0.62
2:2:1092:A:H5'	43:l:5:ARG:HH21	1.65	0.62
4:6:68:C:OP1	34:c:28:ARG:NH2	2.32	0.62
10:E:123:ASP:HB2	10:E:127:ASN:HB2	1.79	0.62
1:1:1224:U:H2'	1:1:1225:G:C8	2.35	0.62
1:1:2189:U:O2'	1:1:2190:G:H5''	2.00	0.62
1:1:2313:C:H5''	10:E:88:LYS:HD3	1.81	0.62
1:1:2750:A:H5''	11:F:3:ARG:HH22	1.64	0.62
2:2:946:A:H2'	2:2:947:G:C8	2.35	0.62
1:1:560:C:H2'	1:1:561:G:O4'	2.00	0.62
2:2:745:G:OP1	2:2:851:G:O2'	2.16	0.62
3:4:14:U:H5	3:4:71:C:H1'	1.65	0.62
10:E:30:ARG:NH1	10:E:31:VAL:O	2.32	0.62
15:J:25:LEU:HD13	15:J:100:VAL:HG12	1.82	0.62
23:R:72:VAL:HG13	23:R:74:ILE:HD11	1.80	0.62
1:1:296:U:H2'	1:1:297:G:H8	1.64	0.62
1:1:618:G:H2'	1:1:619:G:O4'	1.98	0.62
1:1:1026:G:OP1	1:1:1134:A:O2'	2.18	0.62
1:1:1245:G:H2'	1:1:1246:A:C8	2.34	0.62
2:2:227:G:N2	52:u:64:GLY:HA3	2.15	0.62
2:2:1071:C:OP1	41:j:54:ARG:NH2	2.33	0.62
2:2:1338:G:N3	4:5:41:C:O2'	2.32	0.62
3:4:5:U:OP2	3:4:61:G:O2'	2.16	0.62
6:A:140:LEU:HG	6:A:141:PRO:HD3	1.82	0.62
15:J:78:THR:HG22	15:J:85:LYS:HE3	1.82	0.62
1:1:518:G:O2'	24:S:18:ARG:NH2	2.33	0.62
1:1:1130:U:O2	1:1:2025:C:H5''	2.00	0.62
1:1:2640:G:H2'	1:1:2641:G:C8	2.35	0.62
4:6:43:G:H4'	43:l:136:LYS:HE2	1.81	0.62
15:J:77:HIS:CD2	15:J:84:ILE:HA	2.34	0.62
26:U:84:GLY:N	26:U:95:PHE:O	2.19	0.62
43:l:111:ARG:NH2	43:l:123:GLU:OE1	2.31	0.62
1:1:1166:G:O6	1:1:1183:U:O2	2.18	0.62
1:1:1209:U:O2'	1:1:1237:A:N1	2.31	0.62
1:1:2030:6MZ:O3'	1:1:2499:C:H4'	2.00	0.62
2:2:376:G:H2'	2:2:377:G:H8	1.63	0.62
2:2:946:A:H1'	2:2:1333:A:C2	2.35	0.62
2:2:950:U:O4	2:2:1231:G:O6	2.16	0.62
2:2:972:C:H4'	46:o:59:LYS:HB2	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:L:90:VAL:HB	17:L:122:VAL:HG13	1.82	0.62
40:i:132:ILE:HB	40:i:135:TYR:HB2	1.80	0.62
52:u:5:ARG:NH2	52:u:27:ALA:O	2.33	0.62
1:1:512:G:OP1	1:1:1234:U:O2'	2.17	0.61
1:1:531:C:O5'	1:1:561:G:N2	2.32	0.61
1:1:2360:G:O6	1:1:2361:G:N2	2.33	0.61
2:2:375:U:H5''	52:u:70:ARG:NH1	2.15	0.61
2:2:1059:C:O3'	50:s:85:ARG:NH1	2.33	0.61
2:2:1253:G:H2'	2:2:1254:A:C8	2.34	0.61
22:Q:52:GLN:HA	22:Q:55:ARG:HE	1.65	0.61
49:r:81:MET:O	49:r:92:ARG:NH2	2.33	0.61
1:1:572:A:H61	1:1:2029:G:H1'	1.64	0.61
1:1:599:A:H5'	17:L:9:ALA:HB2	1.82	0.61
1:1:1196:C:O2	1:1:1226:A:O2'	2.14	0.61
1:1:2544:G:H1'	1:1:2646:C:H4'	1.81	0.61
17:L:95:LEU:HD22	17:L:100:ILE:HG21	1.82	0.61
1:1:45:G:H5''	1:1:46:G:H5'	1.82	0.61
1:1:632:A:H2'	1:1:633:A:C8	2.36	0.61
1:1:954:G:O6	1:1:963:U:O2	2.19	0.61
1:1:1242:U:O2	17:L:4:ASN:ND2	2.31	0.61
1:1:2133:G:O2'	1:1:2157:G:N2	2.33	0.61
1:1:2356:U:O4	1:1:2361:G:O6	2.18	0.61
2:2:323:U:OP1	56:y:21:ASN:ND2	2.33	0.61
2:2:372:C:N4	2:2:389:A:N6	2.27	0.61
2:2:372:C:N3	2:2:375:U:O4	2.33	0.61
2:2:890:G:O2'	2:2:906:A:N6	2.33	0.61
28:W:15:ASP:OD1	28:W:16:SER:N	2.32	0.61
1:1:2467:C:H3'	1:1:2468:A:C8	2.35	0.61
1:1:2569:G:H2'	1:1:2570:G:C8	2.33	0.61
1:1:2830:C:H5''	8:C:56:LYS:HD2	1.80	0.61
2:2:75:G:H2'	2:2:76:G:H8	1.64	0.61
2:2:260:G:OP1	56:y:75:HIS:NE2	2.32	0.61
2:2:1073:U:O2	38:g:103:ASN:ND2	2.33	0.61
2:2:1442:G:H2'	2:2:1443:C:C6	2.35	0.61
7:B:132:MET:HE2	7:B:188:CYS:HB2	1.83	0.61
52:u:8:ARG:N	52:u:29:ASN:OD1	2.34	0.61
1:1:589:U:H2'	1:1:590:A:H8	1.66	0.61
1:1:973:A:H4'	1:1:1187:G:H1'	1.83	0.61
1:1:2023:C:O2'	1:1:2617:U:O2'	2.19	0.61
1:1:2041:U:H2'	1:1:2042:A:C8	2.36	0.61
2:2:693:G:N3	43:l:83:SER:OG	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:943:U:H3'	2:2:944:G:C8	2.35	0.61
2:2:993:G:H5''	2:2:995:C:H41	1.64	0.61
1:1:15:G:H4'	33:b:18:SER:HB3	1.82	0.61
1:1:2273:A:H2'	1:1:2274:A:C8	2.36	0.61
1:1:2363:G:H21	28:W:39:ARG:HD2	1.65	0.61
1:1:2732:G:H3'	1:1:2733:A:O4'	2.00	0.61
2:2:1060:U:H2'	2:2:1061:G:C8	2.36	0.61
2:2:1309:G:H2'	2:2:1310:G:C8	2.35	0.61
2:2:1412:C:H2'	2:2:1413:A:C8	2.36	0.61
3:4:5:U:H2'	3:4:6:G:C8	2.35	0.61
47:p:35:THR:HG22	47:p:41:ALA:HA	1.81	0.61
1:1:988:A:H5''	31:Z:32:ILE:HD11	1.81	0.61
1:1:994:C:O2	23:R:10:LYS:NZ	2.22	0.61
1:1:2404:U:O4	1:1:2413:G:O6	2.19	0.61
2:2:948:C:H5''	49:r:101:ARG:HH12	1.65	0.61
2:2:1171:A:H2'	2:2:1172:C:H6	1.65	0.61
2:2:1319:A:H4'	2:2:1320:C:H5	1.66	0.61
17:L:63:LYS:HG2	17:L:64:PHE:N	2.15	0.61
52:u:1:MET:O	52:u:24:SER:N	2.30	0.61
1:1:636:G:O2'	1:1:638:G:O2'	2.14	0.61
1:1:1232:G:H2'	1:1:1233:C:C6	2.35	0.61
1:1:2047:C:N3	1:1:2048:G:O6	2.34	0.61
1:1:2358:A:H3'	1:1:2359:C:C6	2.36	0.61
2:2:546:A:H61	40:i:4:TYR:HA	1.65	0.61
2:2:885:G:H2'	2:2:886:G:H8	1.65	0.61
4:5:34:C:H2'	4:5:35:A:C8	2.35	0.61
16:K:7:MET:HE1	16:K:44:LYS:HG3	1.82	0.61
36:e:33:LEU:HB3	36:e:41:LYS:HE3	1.82	0.61
1:1:988:A:H2'	1:1:989:G:C4	2.35	0.61
1:1:1015:U:H2'	1:1:1016:G:H5'	1.83	0.61
1:1:1036:G:O6	1:1:1119:U:O2	2.19	0.61
2:2:109:A:N7	2:2:326:G:H2'	2.15	0.61
2:2:235:C:H2'	2:2:236:A:C8	2.36	0.61
2:2:556:C:OP1	48:q:14:ARG:NH2	2.33	0.61
2:2:1229:A:H5''	4:5:29:G:H4'	1.83	0.61
2:2:1321:U:H2'	2:2:1322:C:C4	2.36	0.61
2:2:1346:A:N3	45:n:109:ARG:NH1	2.46	0.61
3:4:5:U:H2'	3:4:6:G:H8	1.65	0.61
18:M:41:LEU:HD11	18:M:102:LEU:HD13	1.82	0.61
45:n:72:ILE:HG13	45:n:73:SER:H	1.65	0.61
45:n:87:LEU:HB3	45:n:94:LEU:HD11	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1858:A:H2'	1:1:1859:U:O4'	2.00	0.61
1:1:2543:G:H22	1:1:2647:U:P	2.23	0.61
2:2:398:U:H2'	2:2:399:G:H8	1.66	0.61
2:2:615:G:O6	2:2:625:U:O2	2.19	0.61
8:C:33:ARG:NH2	8:C:53:GLY:O	2.34	0.61
36:e:26:HIS:NE2	36:e:46:PRO:O	2.33	0.61
38:g:108:ARG:O	38:g:112:LYS:HG2	2.01	0.61
40:i:11:LEU:HB3	40:i:63:ARG:NE	2.15	0.61
1:1:540:C:N3	1:1:554:U:O2	2.34	0.60
1:1:587:C:N4	17:L:30:THR:O	2.33	0.60
1:1:640:C:H2'	1:1:641:U:C5	2.35	0.60
1:1:1194:A:H2	1:1:1225:G:H22	1.49	0.60
2:2:974:A:H4'	2:2:975:A:H3'	1.83	0.60
20:O:31:THR:O	20:O:102:ARG:NH1	2.32	0.60
1:1:500:G:N1	1:1:503:A:OP2	2.33	0.60
1:1:2031:A:C2	1:1:2498:OMC:H6	2.19	0.60
1:1:2326:C:O2'	1:1:2388:A:N6	2.34	0.60
2:2:1017:U:O2'	2:2:1018:G:O4'	2.19	0.60
2:2:1227:A:OP2	49:r:110:LYS:NZ	2.34	0.60
17:L:17:LYS:HB3	17:L:27:LEU:HD11	1.82	0.60
23:R:69:GLY:O	23:R:90:ARG:NH2	2.34	0.60
1:1:1218:G:O6	1:1:1231:U:O2	2.18	0.60
2:2:232:G:C2	2:2:233:C:C4	2.89	0.60
9:D:146:VAL:HG21	9:D:187:VAL:HG23	1.83	0.60
10:E:36:LEU:HD21	10:E:152:LEU:HD22	1.83	0.60
1:1:1653:G:H4'	1:1:2822:G:H1	1.67	0.60
1:1:2028:U:H2'	1:1:2029:G:C8	2.36	0.60
1:1:2048:G:O4'	1:1:2823:A:N6	2.35	0.60
1:1:2463:C:C2	1:1:2488:G:N2	2.69	0.60
2:2:8:A:O2'	2:2:9:G:O5'	2.19	0.60
2:2:42:G:H2'	2:2:43:C:C6	2.37	0.60
2:2:106:C:O3'	2:2:134:G:N2	2.34	0.60
4:6:29:C:H2'	4:6:30:G:H8	1.66	0.60
8:C:25:THR:HG21	8:C:193:VAL:HG22	1.82	0.60
11:F:9:VAL:HG21	11:F:52:PHE:HE1	1.66	0.60
19:N:28:LEU:HD23	19:N:48:VAL:HG21	1.82	0.60
38:g:119:THR:O	38:g:124:GLY:N	2.31	0.60
40:i:13:ARG:HD2	40:i:32:CYS:HB2	1.83	0.60
1:1:2134:A:C6	1:1:2156:G:N2	2.68	0.60
1:1:2291:U:O2	1:1:2374:C:O2'	2.16	0.60
2:2:203:G:N2	2:2:204:G:O6	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:227:G:H21	52:u:64:GLY:HA3	1.66	0.60
2:2:299:G:H2'	2:2:300:A:H8	1.65	0.60
2:2:693:G:H1'	43:l:83:SER:H	1.66	0.60
2:2:1402:4OC:HM22	2:2:1403:C:H5'	1.83	0.60
1:1:255:A:H3'	1:1:256:A:H8	1.66	0.60
1:1:870:U:OP1	18:M:6:ARG:NH2	2.34	0.60
1:1:2848:G:O2'	1:1:2867:G:N2	2.31	0.60
46:o:55:PRO:O	50:s:81:ARG:NH2	2.34	0.60
47:p:93:ARG:NH2	47:p:112:ASP:OD2	2.35	0.60
1:1:1022:G:O6	1:1:1140:C:H3'	2.02	0.60
2:2:299:G:C2	2:2:300:A:C5	2.89	0.60
2:2:1075:U:C2	2:2:1076:U:C5	2.90	0.60
8:C:8:LYS:HG3	8:C:25:THR:HG23	1.83	0.60
1:1:1128:G:N2	1:1:2518:A:O2'	2.35	0.60
1:1:1858:A:N6	1:1:1884:G:H1'	2.15	0.60
1:1:2039:U:H2'	1:1:2040:G:C8	2.36	0.60
1:1:2139:U:H2'	1:1:2140:G:C8	2.36	0.60
1:1:2528:U:OP1	11:F:172:LYS:NZ	2.35	0.60
1:1:2682:A:H2'	8:C:13:ARG:HH21	1.67	0.60
2:2:1160:G:H1	2:2:1176:A:H61	0.77	0.60
2:2:1215:G:H2'	2:2:1216:A:O4'	2.02	0.60
12:G:75:LEU:HD12	12:G:77:THR:H	1.67	0.60
52:u:16:PHE:CZ	52:u:38:PHE:HB2	2.34	0.60
1:1:861:A:H2	3:4:78:A:H2	1.47	0.60
1:1:2461:A:O2'	6:A:154:GLN:OE1	2.17	0.60
1:1:2462:C:H2'	1:1:2463:C:C6	2.36	0.60
2:2:178:C:OP2	56:y:60:ARG:NH2	2.35	0.60
11:F:103:ILE:HB	11:F:115:HIS:HB3	1.82	0.60
22:Q:38:ALA:O	22:Q:42:ALA:CB	2.49	0.60
1:1:2393:U:H5''	17:L:62:PRO:HB3	1.84	0.60
1:1:2532:G:OP2	1:1:2534:A:N6	2.34	0.60
2:2:32:A:H61	2:2:553:A:N6	2.00	0.60
1:1:14:A:N1	1:1:2624:G:N2	2.47	0.59
1:1:408:G:O6	1:1:419:U:O4	2.19	0.59
1:1:598:U:O2	1:1:659:G:O6	2.20	0.59
1:1:2292:U:H5'	1:1:2378:A:N6	2.17	0.59
1:1:2562:U:H3	1:1:2566:A:H62	1.48	0.59
2:2:505:G:H5'	2:2:534:U:O2	2.02	0.59
18:M:33:LEU:HD13	18:M:117:PHE:HB3	1.84	0.59
41:j:70:ASN:O	41:j:70:ASN:ND2	2.25	0.59
45:n:84:THR:HG22	45:n:88:MET:HE1	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:77:G:H2'	1:1:78:U:C6	2.37	0.59
1:1:848:C:H2'	1:1:849:A:C8	2.37	0.59
1:1:970:U:H5''	31:Z:14:ILE:HG22	1.83	0.59
1:1:1135:C:H41	1:1:1137:G:H3'	1.67	0.59
1:1:1365:A:OP1	29:X:3:ARG:NH1	2.35	0.59
1:1:2278:A:N7	28:W:12:ASN:HB3	2.17	0.59
2:2:429:U:H5'	40:i:9:LEU:HD12	1.83	0.59
2:2:927:G:N2	2:2:1532:U:OP1	2.35	0.59
4:5:33:U:N3	4:5:36:U:OP2	2.35	0.59
25:T:69:ARG:HH12	25:T:74:ILE:HG12	1.66	0.59
41:j:74:VAL:HG11	41:j:144:LEU:HG	1.83	0.59
44:m:11:LEU:HD22	44:m:75:ILE:HD11	1.84	0.59
1:1:599:A:H4'	9:D:26:ALA:HB3	1.83	0.59
1:1:954:G:OP1	18:M:15:GLY:N	2.27	0.59
1:1:2296:U:O2'	1:1:2333:A:N1	2.33	0.59
2:2:393:A:H4'	2:2:483:C:C4'	2.31	0.59
2:2:405:U:O2	2:2:499:A:N7	2.35	0.59
4:5:14:G:H2'	4:5:59:A:H61	1.65	0.59
8:C:113:SER:HA	8:C:194:PRO:HB3	1.83	0.59
10:E:31:VAL:HG22	10:E:158:THR:HG22	1.84	0.59
39:h:114:LYS:NZ	39:h:118:ASP:OD1	2.35	0.59
45:n:119:ARG:N	45:n:125:PRO:HD3	2.17	0.59
1:1:80:G:H4'	1:1:346:A:H1'	1.83	0.59
1:1:2312:U:H4'	10:E:86:GLY:HA3	1.84	0.59
7:B:17:VAL:HB	7:B:204:VAL:HG12	1.84	0.59
9:D:175:ILE:HB	9:D:180:LEU:HD11	1.82	0.59
11:F:87:LEU:HD11	11:F:145:ALA:HA	1.83	0.59
46:o:52:LEU:HB2	50:s:81:ARG:HD2	1.84	0.59
1:1:248:G:O2'	1:1:2432:A:OP1	2.19	0.59
1:1:2025:C:H2'	1:1:2026:U:C6	2.37	0.59
1:1:2466:C:H5''	37:f:5:ALA:HB3	1.84	0.59
1:1:2544:G:H2'	1:1:2545:G:C8	2.38	0.59
1:1:2682:A:H4'	21:P:56:HIS:NE2	2.17	0.59
2:2:1143:G:H2'	2:2:1144:G:C8	2.38	0.59
2:2:1391:U:O2'	2:2:1392:G:H5'	2.02	0.59
50:s:69:ARG:HD2	50:s:80:SER:HB2	1.84	0.59
1:1:605:G:O2'	1:1:657:U:O2'	2.19	0.59
1:1:2347:C:O2'	34:c:21:TYR:OH	2.20	0.59
1:1:2498:OMC:HM21	1:1:2500:U:C5	2.37	0.59
1:1:2528:U:H5'	37:f:32:LYS:HE3	1.84	0.59
1:1:2623:G:O5'	1:1:2826:A:O2'	2.21	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:104:ILE:HG13	10:E:105:THR:HG23	1.83	0.59
39:h:114:LYS:HB2	39:h:185:ASN:ND2	2.17	0.59
42:k:29:ILE:HG12	42:k:34:GLY:HA3	1.83	0.59
1:1:591:U:H2'	1:1:592:A:C8	2.38	0.59
1:1:977:G:O2'	1:1:1000:A:N6	2.36	0.59
1:1:1038:G:H2'	1:1:1039:A:C8	2.38	0.59
1:1:2729:G:O2'	8:C:190:LYS:O	2.10	0.59
2:2:68:G:C2	2:2:151:A:N1	2.71	0.59
2:2:107:G:OP1	2:2:325:A:N6	2.36	0.59
2:2:108:G:O2'	2:2:331:G:N7	2.35	0.59
2:2:235:C:H2'	2:2:236:A:H8	1.68	0.59
2:2:1065:U:O2'	2:2:1067:A:N1	2.30	0.59
2:2:1097:C:O3'	38:g:139:ARG:NH1	2.35	0.59
2:2:1130:A:H61	2:2:1144:G:H1'	1.66	0.59
9:D:130:LYS:HB2	9:D:133:LEU:HG	1.85	0.59
17:L:33:ARG:HG2	17:L:39:LYS:O	2.03	0.59
19:N:79:LEU:HD23	19:N:83:LEU:HD12	1.84	0.59
46:o:59:LYS:HE3	46:o:62:ARG:HH21	1.66	0.59
50:s:63:ARG:HE	50:s:68:GLY:HA2	1.68	0.59
52:u:1:MET:H3	52:u:24:SER:HB3	1.67	0.59
1:1:1597:A:H5''	1:1:1598:A:H5'	1.84	0.59
1:1:1654:A:N1	1:1:2048:G:O2'	2.36	0.59
2:2:321:A:N6	2:2:329:A:N7	2.50	0.59
2:2:1345:U:H4'	2:2:1346:A:H8	1.68	0.59
8:C:104:VAL:HG11	8:C:205:PRO:HB3	1.85	0.59
1:1:434:U:O2	1:1:435:C:N4	2.30	0.59
1:1:561:G:O2'	1:1:563:A:OP1	2.20	0.59
1:1:1226:A:O2'	1:1:1250:G:N2	2.36	0.59
2:2:927:G:H2'	2:2:928:G:C8	2.38	0.59
2:2:1229:A:H4'	4:5:29:G:O3'	2.02	0.59
27:V:79:ARG:HA	27:V:87:GLN:H	1.67	0.59
38:g:170:HIS:HA	38:g:173:ILE:HB	1.85	0.59
41:j:38:VAL:HG21	41:j:114:VAL:HG23	1.85	0.59
1:1:2385:C:O2	28:W:57:HIS:NE2	2.32	0.59
2:2:1058:G:H2'	2:2:1059:C:H5'	1.84	0.59
50:s:27:LEU:HD21	50:s:47:LYS:HD2	1.83	0.59
1:1:305:C:H2'	1:1:306:U:C6	2.38	0.58
1:1:1111:A:OP1	11:F:6:LYS:NZ	2.35	0.58
1:1:1458:U:H4'	1:1:1459:G:C4	2.38	0.58
2:2:70:U:H2'	2:2:94:G:N7	2.18	0.58
18:M:26:VAL:HG22	18:M:101:VAL:HG21	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:N:1:MET:HE3	19:N:3:HIS:CE1	2.37	0.58
38:g:72:THR:N	38:g:169:GLU:OE2	2.31	0.58
40:i:78:GLU:OE2	40:i:81:ARG:NE	2.33	0.58
1:1:475:C:O2	1:1:480:A:N6	2.36	0.58
1:1:581:C:H2'	1:1:582:A:H8	1.68	0.58
1:1:2134:A:N6	1:1:2156:G:H21	2.00	0.58
2:2:201:G:H2'	2:2:202:G:C8	2.38	0.58
4:6:63:C:H2'	4:6:64:G:H8	1.68	0.58
8:C:157:LYS:HB2	15:J:80:HIS:CG	2.38	0.58
10:E:110:ARG:NH2	10:E:136:ILE:O	2.36	0.58
20:O:79:ALA:HB3	20:O:113:ALA:HB3	1.85	0.58
24:S:83:LYS:HG2	24:S:95:ARG:HH21	1.67	0.58
26:U:9:ASP:OD2	26:U:94:ARG:NH1	2.35	0.58
1:1:382:A:H2'	1:1:383:C:C6	2.39	0.58
1:1:2289:G:H2'	1:1:2290:G:H8	1.67	0.58
2:2:1071:C:H2'	2:2:1072:G:H8	1.67	0.58
2:2:1124:G:H5''	46:o:37:ARG:HB3	1.85	0.58
2:2:1147:C:H2'	2:2:1148:U:C6	2.38	0.58
4:5:14:G:H22	4:5:48:C:H42	1.48	0.58
43:l:70:ARG:HD3	43:l:96:ARG:HD3	1.86	0.58
55:x:50:ALA:HB1	55:x:57:HIS:HB3	1.85	0.58
1:1:80:G:H2'	1:1:81:G:C8	2.37	0.58
1:1:833:A:H1'	17:L:52:GLY:N	2.19	0.58
1:1:954:G:N2	1:1:2250:G:H1	1.98	0.58
1:1:1123:C:O2'	37:f:21:GLY:O	2.21	0.58
1:1:2655:G:N2	1:1:2665:A:OP2	2.27	0.58
1:1:2675:A:H5''	16:K:31:ARG:NH1	2.18	0.58
2:2:81:A:N6	2:2:88:U:O4	2.35	0.58
2:2:607:A:H3'	2:2:608:A:H8	1.67	0.58
2:2:1047:G:H3'	2:2:1048:G:C8	2.38	0.58
2:2:1193:G:H8	2:2:1193:G:OP2	1.85	0.58
14:I:10:LEU:HB3	14:I:23:VAL:HG11	1.85	0.58
14:I:109:ALA:HB1	14:I:124:MET:SD	2.43	0.58
38:g:69:PHE:H	38:g:91:PHE:HA	1.67	0.58
42:k:38:ARG:NH1	42:k:98:GLU:O	2.30	0.58
1:1:100:U:O4	26:U:6:ARG:NH2	2.36	0.58
1:1:1054:A:H2'	1:1:1055:G:H8	1.69	0.58
2:2:970:C:N4	45:n:130:ARG:OXT	2.37	0.58
38:g:73:LYS:NZ	38:g:204:ASP:O	2.34	0.58
1:1:416:U:H2'	1:1:417:C:O4'	2.03	0.58
1:1:418:C:H2'	1:1:419:U:C6	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:534:U:H3'	1:1:535:G:H8	1.68	0.58
1:1:553:G:C6	1:1:554:U:C4	2.92	0.58
1:1:965:C:H2'	1:1:966:G:C8	2.38	0.58
1:1:1141:U:H5'	15:J:27:ARG:NH2	2.18	0.58
1:1:2891:U:H2'	1:1:2892:G:C8	2.38	0.58
2:2:269:C:H2'	2:2:270:A:H8	1.68	0.58
2:2:404:G:H2'	2:2:405:U:C6	2.38	0.58
2:2:606:G:N2	2:2:631:C:OP2	2.36	0.58
2:2:1064:G:H22	2:2:1191:A:P	2.26	0.58
2:2:1305:G:O2'	2:2:1306:A:H8	1.83	0.58
2:2:1357:A:H2	2:2:1365:G:H22	1.51	0.58
15:J:15:TRP:HB3	15:J:137:PRO:HB3	1.84	0.58
25:T:6:ARG:O	25:T:10:VAL:HG23	2.04	0.58
38:g:81:LYS:HD2	38:g:93:ASN:HD21	1.67	0.58
1:1:2656:U:O2	1:1:2665:A:N7	2.36	0.58
49:r:83:LEU:HB3	55:x:74:PHE:HE2	1.68	0.58
1:1:1127:A:H2'	1:1:2518:A:C2	2.39	0.58
1:1:1186:G:OP1	1:1:1186:G:H3'	2.04	0.58
1:1:2732:G:OP1	1:1:2733:A:H1'	2.04	0.58
8:C:73:VAL:HG22	8:C:74:GLU:H	1.68	0.58
20:O:30:ARG:HE	20:O:102:ARG:HD3	1.68	0.58
46:o:44:THR:HG23	46:o:70:HIS:HA	1.85	0.58
1:1:463:G:N2	1:1:466:A:OP2	2.27	0.58
1:1:569:U:OP1	1:1:945:A:O2'	2.20	0.58
1:1:1059:G:N3	14:I:131:THR:OG1	2.35	0.58
1:1:2623:G:O2'	1:1:2825:G:H8	1.87	0.58
2:2:327:A:O2'	2:2:328:C:O4'	2.21	0.58
10:E:6:ASP:OD1	10:E:9:LYS:NZ	2.31	0.58
14:I:88:GLY:HA3	14:I:135:MET:HE2	1.85	0.58
1:1:340:A:O2'	9:D:162:ARG:NH2	2.35	0.58
1:1:980:A:H2'	1:1:981:A:C4	2.39	0.58
1:1:2048:G:C6	1:1:2621:G:C2	2.92	0.58
1:1:2391:G:OP2	36:e:35:LYS:NZ	2.25	0.58
2:2:147:G:H21	2:2:1447:A:H2	1.51	0.58
2:2:524:G:H2'	2:2:525:C:C6	2.37	0.58
2:2:830:G:O2'	38:g:21:ARG:O	2.22	0.58
2:2:928:G:H2'	2:2:929:G:C8	2.31	0.58
4:6:63:C:H2'	4:6:64:G:C8	2.39	0.58
18:M:33:LEU:HD11	18:M:128:THR:HB	1.86	0.58
48:q:98:VAL:HB	48:q:101:ALA:HB2	1.86	0.58
1:1:2024:G:H2'	1:1:2025:C:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:5:7:U:H5'	4:5:49:G:H5'	1.86	0.57
1:1:116:C:O2'	1:1:126:A:N3	2.35	0.57
1:1:913:U:H4'	1:1:914:G:OP2	2.04	0.57
1:1:1042:G:H1	1:1:1113:U:H3	0.76	0.57
1:1:2729:G:N2	8:C:172:VAL:HG13	2.20	0.57
2:2:33:A:H5''	2:2:364:A:H1'	1.86	0.57
2:2:35:G:H2'	2:2:36:C:C6	2.39	0.57
2:2:398:U:H2'	2:2:399:G:C8	2.40	0.57
2:2:628:G:H2'	2:2:629:A:C8	2.39	0.57
2:2:1097:C:H2'	2:2:1098:C:C6	2.40	0.57
2:2:1300:G:H1'	2:2:1303:C:N4	2.19	0.57
21:P:9:GLU:HG2	21:P:55:LEU:HB2	1.86	0.57
1:1:15:G:O6	1:1:525:U:O2	2.21	0.57
1:1:531:C:H3'	1:1:561:G:H21	1.69	0.57
1:1:1028:A:N3	1:1:2486:C:O2'	2.36	0.57
1:1:2391:G:O2'	1:1:2424:C:N4	2.35	0.57
1:1:2644:G:O2'	1:1:2645:G:H5'	2.03	0.57
1:1:2831:G:N2	1:1:2883:A:O2'	2.33	0.57
4:6:10:G:H2'	4:6:11:A:H8	1.69	0.57
10:E:122:PHE:HB3	10:E:126:GLY:H	1.70	0.57
28:W:27:GLY:HA2	28:W:67:VAL:HB	1.84	0.57
43:l:136:LYS:O	43:l:139:GLU:HG2	2.04	0.57
45:n:56:ASP:O	45:n:57:MET:HE2	2.04	0.57
1:1:244:A:H3'	1:1:245:G:C8	2.39	0.57
1:1:573:U:O4	1:1:2029:G:O2'	2.11	0.57
1:1:671:C:H5	17:L:33:ARG:NE	2.02	0.57
1:1:828:U:O2'	1:1:831:G:O6	2.22	0.57
1:1:2064:C:H2'	1:1:2065:C:C6	2.39	0.57
1:1:2682:A:N1	1:1:2727:A:O2'	2.38	0.57
2:2:393:A:OP1	2:2:483:C:O2'	2.15	0.57
2:2:1003:G:N2	2:2:1005:A:O5'	2.37	0.57
26:U:22:ARG:O	26:U:39:ILE:HD11	2.04	0.57
39:h:60:PRO:O	39:h:63:SER:OG	2.18	0.57
1:1:145:C:H2'	1:1:146:A:H8	1.69	0.57
1:1:833:A:O2'	17:L:51:GLU:HA	2.04	0.57
1:1:865:C:N4	1:1:909:A:OP2	2.38	0.57
2:2:199:A:H2'	2:2:200:G:C8	2.40	0.57
2:2:299:G:N2	2:2:565:U:H3	2.02	0.57
2:2:427:U:H1'	2:2:541:G:H5''	1.85	0.57
2:2:448:A:H3'	2:2:449:G:C8	2.40	0.57
2:2:575:G:O2'	2:2:821:G:OP2	2.16	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1228:C:OP2	49:r:110:LYS:NZ	2.30	0.57
8:C:25:THR:OG1	8:C:192:ALA:HA	2.04	0.57
14:I:62:ALA:HA	14:I:64:ARG:HH21	1.69	0.57
24:S:59:GLU:HB2	24:S:66:ILE:HD11	1.85	0.57
37:f:22:VAL:HG11	37:f:36:ARG:HD2	1.86	0.57
39:h:167:TRP:CZ3	39:h:169:ARG:HB2	2.31	0.57
43:l:134:ALA:O	43:l:138:ARG:HG3	2.04	0.57
1:1:370:G:O2'	1:1:424:G:OP1	2.20	0.57
1:1:2280:G:N2	1:1:2388:A:O2'	2.38	0.57
1:1:2283:C:O5'	1:1:2389:G:O2'	2.21	0.57
1:1:2421:G:H2'	4:6:77:A:C8	2.40	0.57
2:2:232:G:H2'	2:2:233:C:C5	2.39	0.57
2:2:1176:A:H2'	2:2:1177:G:C8	2.38	0.57
3:4:116:G:H2'	3:4:117:G:H8	1.70	0.57
4:6:11:A:H2'	4:6:12:G:C8	2.39	0.57
11:F:52:PHE:HZ	11:F:72:LEU:HD23	1.69	0.57
1:1:18:U:C5'	22:Q:30:ARG:HH12	2.18	0.57
1:1:942:G:H3'	1:1:943:A:H8	1.70	0.57
1:1:1217:U:O2	1:1:1232:G:C2	2.58	0.57
2:2:34:C:H3'	2:2:35:G:H8	1.70	0.57
2:2:523:A:H61	48:q:88:LYS:HB3	1.68	0.57
2:2:947:G:O2'	2:2:1306:A:O2'	2.16	0.57
36:e:4:ILE:HG22	36:e:5:LYS:H	1.70	0.57
45:n:12:ARG:O	45:n:106:ARG:NH2	2.33	0.57
55:x:34:TRP:O	55:x:37:ARG:NH1	2.37	0.57
1:1:587:C:N4	17:L:31:GLY:HA3	2.20	0.57
1:1:2625:G:H2'	1:1:2626:C:O4'	2.05	0.57
1:1:2719:G:O3'	21:P:53:ARG:NH2	2.38	0.57
2:2:44:A:C4	2:2:45:G:C8	2.93	0.57
2:2:60:A:N6	2:2:107:G:O2'	2.35	0.57
2:2:427:U:OP1	40:i:13:ARG:NH2	2.38	0.57
3:4:97:C:H2'	3:4:98:G:O4'	2.04	0.57
16:K:58:LEU:HD12	16:K:59:LYS:H	1.68	0.57
25:T:54:GLU:N	25:T:54:GLU:OE2	2.38	0.57
51:t:26:GLU:HG3	51:t:81:LEU:HD11	1.87	0.57
1:1:645:C:H5''	1:1:647:G:N7	2.20	0.57
1:1:1168:G:H1	1:1:1181:U:H3	0.70	0.57
1:1:2322:A:H2'	1:1:2323:G:O4'	2.05	0.57
1:1:2406:A:O4'	17:L:69:ARG:NH1	2.35	0.57
1:1:2524:G:N2	1:1:2741:A:H2	1.95	0.57
1:1:2729:G:O2'	8:C:175:LEU:HA	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:201:G:H2'	2:2:202:G:H8	1.69	0.57
8:C:37:VAL:HG22	8:C:48:ILE:HG22	1.87	0.57
40:i:54:GLN:HG2	40:i:199:LEU:HB3	1.86	0.57
41:j:70:ASN:HD22	41:j:70:ASN:C	2.11	0.57
1:1:219:A:N3	1:1:234:U:O2'	2.36	0.57
1:1:2512:C:C4	1:1:2513:A:C8	2.93	0.57
2:2:291:U:OP2	2:2:305:G:N1	2.37	0.57
2:2:378:G:H2'	2:2:379:C:C6	2.39	0.57
40:i:118:VAL:HA	40:i:123:ILE:HG12	1.87	0.57
1:1:1085:A:H2'	1:1:1086:A:C4	2.40	0.56
1:1:1434:A:H2'	1:1:1435:G:H8	1.69	0.56
1:1:2572:A:H4'	1:1:2573:C:H5''	1.86	0.56
1:1:2657:A:H2'	1:1:2658:C:O4'	2.04	0.56
4:6:1:C:H2'	4:6:2:G:H8	1.69	0.56
45:n:30:ILE:HD12	45:n:35:LEU:HA	1.86	0.56
1:1:851:C:O2'	31:Z:43:ALA:O	2.21	0.56
1:1:2369:A:H2'	1:1:2370:G:H8	1.70	0.56
1:1:2528:U:OP2	1:1:2530:A:N6	2.39	0.56
2:2:171:A:H2'	2:2:172:A:C8	2.39	0.56
2:2:712:A:H2'	2:2:713:G:C8	2.40	0.56
2:2:1320:C:H42	55:x:37:ARG:HG3	1.69	0.56
2:2:1367:C:O2'	46:o:64:GLN:OE1	2.19	0.56
22:Q:43:GLY:HA3	23:R:75:VAL:HB	1.86	0.56
22:Q:59:GLN:HA	22:Q:62:ILE:HD12	1.88	0.56
26:U:12:ILE:N	26:U:71:ALA:O	2.28	0.56
39:h:11:ARG:HH21	39:h:180:ALA:HB3	1.70	0.56
1:1:1509:A:O2'	1:1:1510:G:O5'	2.23	0.56
1:1:2134:A:H62	1:1:2156:G:N2	2.00	0.56
1:1:2426:A:H5''	1:1:2427:C:C5	2.34	0.56
1:1:2526:G:H2'	1:1:2527:C:H6	1.70	0.56
1:1:2527:C:H3'	1:1:2528:U:C6	2.40	0.56
1:1:2762:C:H2'	1:1:2763:G:H8	1.69	0.56
1:1:2831:G:OP2	8:C:59:ARG:NE	2.38	0.56
1:1:2834:G:N2	1:1:2883:A:N6	2.09	0.56
2:2:68:G:H1	2:2:101:A:H61	0.69	0.56
2:2:291:U:OP2	2:2:305:G:N2	2.37	0.56
2:2:405:U:C2	2:2:499:A:N7	2.73	0.56
2:2:975:A:O3'	2:2:1358:U:O2'	2.23	0.56
2:2:994:A:N6	2:2:1215:G:O2'	2.37	0.56
2:2:1028:C:H1'	2:2:1034:G:H22	1.69	0.56
2:2:1053:G:H4'	2:2:1054:C:H3'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1060:U:H5''	39:h:2:GLY:O	2.05	0.56
2:2:1225:A:OP1	49:r:102:THR:OG1	2.22	0.56
3:4:18:G:N2	3:4:65:U:O2	2.27	0.56
4:5:6:G:O2'	4:5:49:G:O4'	2.23	0.56
15:J:23:LYS:HZ3	15:J:142:ILE:HB	1.70	0.56
26:U:67:VAL:O	26:U:70:VAL:HG22	2.05	0.56
38:g:164:ILE:HD11	38:g:214:LEU:HD21	1.86	0.56
45:n:23:PRO:HA	45:n:61:LEU:HA	1.85	0.56
49:r:14:HIS:HB2	49:r:17:ILE:HG12	1.86	0.56
49:r:68:ASP:OD1	49:r:71:ARG:NH2	2.35	0.56
49:r:105:ASN:OD1	49:r:113:ARG:NH2	2.36	0.56
1:1:535:G:H2'	1:1:536:G:H8	1.70	0.56
1:1:662:G:H1'	17:L:14:LYS:HD3	1.87	0.56
1:1:833:A:H1'	17:L:52:GLY:H	1.71	0.56
1:1:1127:A:H2'	1:1:2518:A:N3	2.21	0.56
1:1:2114:A:N7	1:1:2167:U:O2'	2.33	0.56
8:C:98:VAL:HG23	8:C:101:PHE:HD2	1.69	0.56
17:L:40:SER:OG	17:L:41:ARG:NE	2.39	0.56
20:O:22:GLY:C	20:O:42:PRO:HB3	2.31	0.56
23:R:32:THR:HA	23:R:62:GLU:HA	1.86	0.56
43:l:135:VAL:HG13	43:l:138:ARG:HH21	1.70	0.56
47:p:104:GLY:HA2	47:p:106:ARG:HH22	1.70	0.56
1:1:589:U:H2'	1:1:590:A:C8	2.40	0.56
1:1:815:C:O2'	1:1:1165:A:O2'	2.13	0.56
1:1:870:U:O2	1:1:907:G:C2	2.59	0.56
1:1:1022:G:N2	1:1:1023:U:O4	2.18	0.56
1:1:1869:G:N2	1:1:1871:A:O2'	2.38	0.56
1:1:2461:A:H3'	1:1:2462:C:C6	2.41	0.56
1:1:2729:G:OP1	8:C:22:ILE:HG23	2.06	0.56
2:2:966:2MG:C2	4:5:34:C:H4'	2.40	0.56
2:2:992:U:O2	2:2:1044:A:N7	2.38	0.56
8:C:107:VAL:HG21	8:C:189:VAL:HG12	1.88	0.56
12:G:79:THR:HA	12:G:145:ASN:HB3	1.87	0.56
22:Q:53:ARG:HA	22:Q:56:GLN:HG3	1.86	0.56
38:g:60:ILE:HA	38:g:63:ARG:HG2	1.86	0.56
1:1:306:U:H2'	1:1:307:G:O4'	2.04	0.56
1:1:335:C:O2'	26:U:68:SER:O	2.22	0.56
2:2:61:G:H2'	2:2:62:U:C6	2.41	0.56
2:2:72:A:H61	2:2:98:A:H2	1.53	0.56
8:C:46:ARG:NH1	8:C:85:ALA:O	2.39	0.56
8:C:147:GLY:HA2	8:C:156:PHE:CZ	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:O:90:VAL:HG21	20:O:115:LEU:HD23	1.86	0.56
23:R:75:VAL:HG13	23:R:86:GLN:HG2	1.87	0.56
43:l:135:VAL:HA	43:l:138:ARG:HE	1.71	0.56
1:1:927:A:C6	1:1:928:A:C6	2.93	0.56
1:1:968:C:H2'	1:1:969:G:O4'	2.05	0.56
1:1:2394:C:H5''	17:L:63:LYS:HB3	1.87	0.56
2:2:32:A:H2'	2:2:33:A:C8	2.40	0.56
2:2:194:C:H1'	56:y:59:ASP:HB3	1.87	0.56
2:2:502:A:H2'	2:2:503:C:C6	2.41	0.56
2:2:510:A:H4'	40:i:14:ARG:NH2	2.20	0.56
14:I:107:GLU:OE1	14:I:110:GLN:NE2	2.39	0.56
26:U:85:PHE:HD2	26:U:92:LYS:HD3	1.71	0.56
38:g:105:LYS:HA	38:g:108:ARG:HE	1.71	0.56
39:h:113:ALA:HB3	39:h:185:ASN:HB3	1.87	0.56
46:o:10:LEU:HD11	46:o:92:LEU:HD22	1.88	0.56
1:1:573:U:H2'	1:1:575:A:C8	2.40	0.56
1:1:1054:A:H2'	1:1:1055:G:C8	2.41	0.56
1:1:1158:C:H5'	31:Z:31:ARG:HD3	1.86	0.56
1:1:1434:A:H2'	1:1:1435:G:C8	2.40	0.56
1:1:2633:G:O2'	8:C:64:GLU:OE2	2.24	0.56
2:2:233:C:N4	2:2:234:C:C5	2.74	0.56
2:2:1222:G:H3'	2:2:1322:C:H42	1.69	0.56
3:4:2:G:H2'	3:4:3:C:C6	2.40	0.56
9:D:19:PHE:HB3	9:D:113:VAL:HG21	1.87	0.56
37:f:7:VAL:HG22	37:f:37:GLN:NE2	2.21	0.56
40:i:102:VAL:HG23	40:i:114:ALA:HB1	1.87	0.56
41:j:81:LEU:HD23	41:j:147:MET:HE3	1.88	0.56
45:n:72:ILE:HG13	45:n:73:SER:N	2.21	0.56
1:1:990:A:N3	22:Q:47:TYR:OH	2.38	0.56
1:1:1199:U:H2'	1:1:1200:C:C6	2.40	0.56
1:1:2265:U:C6	1:1:2266:A:H2'	2.40	0.56
1:1:2305:U:H2'	1:1:2306:C:O4'	2.05	0.56
1:1:2328:A:H2'	1:1:2329:U:C6	2.41	0.56
2:2:1303:C:H3'	2:2:1304:G:H8	1.71	0.56
15:J:16:TYR:OH	15:J:35:ARG:NH2	2.38	0.56
22:Q:46:ALA:HB1	22:Q:50:ARG:CZ	2.35	0.56
26:U:44:LYS:HG3	26:U:61:LYS:HD3	1.88	0.56
49:r:46:SER:OG	49:r:47:GLU:OE1	2.21	0.56
52:u:20:VAL:HG23	52:u:22:ALA:HB2	1.87	0.56
52:u:34:GLU:HG3	52:u:60:TRP:HE1	1.71	0.56
1:1:826:U:C4	1:1:828:U:H1'	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:978:A:N6	2:2:1316:G:H1'	2.21	0.56
2:2:1060:U:OP1	50:s:85:ARG:NH2	2.39	0.56
2:2:1317:C:H3'	2:2:1318:A:C8	2.41	0.56
39:h:108:LYS:HB3	39:h:144:LEU:HD12	1.88	0.56
40:i:99:ASP:OD1	40:i:100:ASN:N	2.39	0.56
45:n:99:ARG:NH1	45:n:105:THR:OG1	2.39	0.56
1:1:921:C:H2'	1:1:922:C:O4'	2.06	0.55
1:1:944:C:OP1	1:1:945:A:H8	1.89	0.55
1:1:1025:G:H4'	1:1:1026:G:OP2	2.05	0.55
1:1:1084:A:N3	1:1:1105:U:O2'	2.32	0.55
2:2:927:G:H21	2:2:1532:U:H5''	1.71	0.55
2:2:946:A:H2'	2:2:947:G:H8	1.71	0.55
2:2:1011:C:H2'	2:2:1012:A:C8	2.41	0.55
9:D:144:GLU:OE2	9:D:166:LYS:NZ	2.32	0.55
52:u:7:ALA:HB1	52:u:29:ASN:HA	1.87	0.55
1:1:523:C:H4'	1:1:540:C:O2	2.07	0.55
1:1:878:A:H3'	1:1:879:G:C8	2.40	0.55
1:1:2543:G:N2	1:1:2646:C:H5''	2.20	0.55
1:1:2896:C:H2'	1:1:2897:U:C6	2.41	0.55
2:2:270:A:H2'	2:2:271:C:C6	2.41	0.55
2:2:987:G:H22	2:2:1015:G:H22	1.53	0.55
2:2:1048:G:H2'	2:2:1050:G:C8	2.40	0.55
2:2:1391:U:C2'	2:2:1392:G:H5'	2.36	0.55
3:4:73:A:H8	3:4:103:U:N3	1.90	0.55
22:Q:35:ALA:O	22:Q:39:VAL:HG23	2.06	0.55
27:V:30:ILE:HD11	27:V:40:ILE:HG23	1.88	0.55
38:g:114:LEU:HB2	38:g:144:LEU:HD23	1.87	0.55
52:u:39:PHE:CE2	52:u:41:PRO:HD3	2.41	0.55
1:1:95:A:H2'	1:1:96:C:O4'	2.06	0.55
1:1:1139:G:H2'	1:1:1140:C:C6	2.41	0.55
1:1:1227:G:OP1	22:Q:13:ARG:NH1	2.40	0.55
2:2:266:G:OP1	2:2:266:G:N2	2.39	0.55
2:2:387:U:O2'	2:2:388:G:H5''	2.06	0.55
2:2:513:C:H2'	2:2:514:C:H6	1.68	0.55
2:2:1202:U:H3	50:s:83:LYS:HE2	1.72	0.55
3:4:85:G:H2'	3:4:86:G:H8	1.71	0.55
9:D:161:ALA:HB3	9:D:169:VAL:HG23	1.87	0.55
45:n:42:GLU:OE2	45:n:45:ARG:NH1	2.38	0.55
1:1:407:G:H2'	1:1:408:G:C8	2.41	0.55
1:1:590:A:N6	1:1:668:A:N1	2.55	0.55
1:1:1886:U:C2	1:1:1887:C:H1'	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2678:C:O2'	8:C:171:THR:O	2.19	0.55
2:2:60:A:OP2	2:2:386:C:O2'	2.20	0.55
2:2:511:C:H1'	40:i:41:HIS:NE2	2.22	0.55
2:2:635:A:O2'	53:v:6:ARG:NH2	2.39	0.55
10:E:60:ILE:HD13	10:E:141:ILE:HG12	1.88	0.55
15:J:88:THR:O	15:J:92:MET:HB2	2.07	0.55
21:P:13:MET:HA	21:P:77:HIS:ND1	2.21	0.55
1:1:535:G:O2'	22:Q:53:ARG:NE	2.26	0.55
1:1:573:U:H5''	1:1:575:A:N7	2.21	0.55
1:1:1720:U:H2'	1:1:1721:G:O4'	2.07	0.55
1:1:2354:C:H4'	28:W:25:ARG:HH21	1.71	0.55
1:1:2487:G:C2	1:1:2488:G:H1'	2.42	0.55
1:1:2547:A:N7	1:1:2566:A:C5	2.74	0.55
1:1:2816:G:O3'	19:N:42:LYS:NZ	2.39	0.55
1:1:2823:A:C4	1:1:2824:C:C6	2.95	0.55
2:2:2:A:H1'	2:2:613:C:O2'	2.07	0.55
2:2:108:G:N2	2:2:108:G:OP2	2.36	0.55
15:J:109:LEU:HD13	15:J:118:MET:HB2	1.87	0.55
39:h:152:GLU:HG3	39:h:167:TRP:HB3	1.88	0.55
39:h:156:ARG:NE	39:h:160:ALA:O	2.39	0.55
42:k:19:PRO:HA	42:k:22:ILE:HD12	1.87	0.55
47:p:13:ARG:NH2	47:p:76:GLU:OE1	2.39	0.55
1:1:20:C:H2'	1:1:21:A:C8	2.41	0.55
1:1:245:G:C4	1:1:246:C:C5	2.94	0.55
1:1:537:G:O2'	1:1:538:A:O4'	2.24	0.55
1:1:672:C:OP1	1:1:801:G:N2	2.40	0.55
1:1:915:C:O2	3:4:100:G:H4'	2.07	0.55
1:1:2303:G:H2'	1:1:2304:G:C8	2.41	0.55
1:1:2333:A:H4'	1:1:2334:U:H5''	1.89	0.55
1:1:2359:C:H2'	1:1:2360:G:O4'	2.07	0.55
1:1:2802:G:H2'	1:1:2803:G:H8	1.72	0.55
2:2:8:A:N7	40:i:206:LYS:HD2	2.22	0.55
2:2:936:C:H2'	2:2:937:A:C8	2.40	0.55
2:2:1240:U:C4	43:l:116:MET:HE2	2.42	0.55
3:4:108:A:OP1	3:4:109:A:O2'	2.23	0.55
9:D:112:LEU:HB3	9:D:118:LEU:HB2	1.89	0.55
12:G:39:ALA:HB1	12:G:44:ILE:HD11	1.89	0.55
15:J:38:GLY:HA2	15:J:40:HIS:CD2	2.41	0.55
33:b:54:VAL:HG23	33:b:55:ILE:H	1.72	0.55
39:h:8:ASN:O	39:h:12:LEU:HD22	2.07	0.55
39:h:23:PHE:HZ	46:o:11:LYS:HE2	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:q:100:GLY:H	48:q:104:CYS:HB3	1.70	0.55
1:1:553:G:C6	1:1:554:U:N3	2.75	0.55
1:1:573:U:O2'	1:1:574:A:H3'	2.07	0.55
1:1:1070:A:O2'	1:1:1097:U:O3'	2.24	0.55
1:1:1860:G:H2'	1:1:1861:G:C8	2.42	0.55
1:1:2343:U:H4'	1:1:2373:G:H4'	1.89	0.55
1:1:2885:G:N7	33:b:40:ARG:NH1	2.43	0.55
2:2:270:A:H2'	2:2:271:C:H6	1.72	0.55
14:I:58:ILE:HD11	14:I:66:PHE:HB2	1.88	0.55
56:y:67:ILE:HB	56:y:71:LYS:HD3	1.88	0.55
1:1:372:G:O2'	29:X:54:LYS:NZ	2.39	0.55
1:1:384:A:OP1	1:1:384:A:H8	1.90	0.55
1:1:1094:U:H2'	1:1:1095:A:H2'	1.89	0.55
1:1:1866:A:H3'	1:1:1867:G:H8	1.72	0.55
1:1:1889:A:H2'	1:1:1890:A:C8	2.41	0.55
1:1:2396:G:C2	1:1:2397:G:N7	2.74	0.55
1:1:2461:A:H3'	1:1:2462:C:H6	1.71	0.55
1:1:2463:C:H2'	1:1:2464:G:H8	1.72	0.55
2:2:61:G:H2'	2:2:62:U:H6	1.72	0.55
2:2:68:G:O2'	2:2:151:A:N6	2.40	0.55
2:2:374:A:H4'	2:2:452:A:N6	2.21	0.55
2:2:662:U:H2'	2:2:663:A:C8	2.42	0.55
2:2:1108:G:OP1	39:h:176:HIS:ND1	2.40	0.55
30:Y:32:ALA:HB2	30:Y:37:LEU:HD23	1.89	0.55
52:u:40:ASN:N	52:u:49:GLY:O	2.39	0.55
1:1:443:A:H4'	1:1:444:C:H5'	1.89	0.55
1:1:516:C:H2'	1:1:517:C:C5	2.42	0.55
1:1:1201:U:H2'	1:1:1202:G:C8	2.41	0.55
1:1:1443:U:H2'	1:1:1444:G:H8	1.72	0.55
1:1:2274:A:H2'	1:1:2275:C:H2'	1.88	0.55
1:1:2540:C:H2'	1:1:2541:A:C8	2.42	0.55
2:2:17:U:H2'	2:2:18:C:C6	2.41	0.55
2:2:146:G:H2'	2:2:147:G:C8	2.42	0.55
2:2:511:C:H1'	40:i:41:HIS:CE1	2.41	0.55
2:2:662:U:O2'	2:2:836:G:OP1	2.24	0.55
2:2:1066:C:H4'	2:2:1386:G:H2'	1.89	0.55
2:2:1102:A:H2	38:g:103:ASN:HD22	1.55	0.55
3:4:83:G:OP1	31:Z:16:ARG:HD2	2.07	0.55
8:C:3:GLY:HA3	8:C:204:LYS:HA	1.89	0.55
8:C:114:LYS:HD3	8:C:116:LYS:HZ1	1.72	0.55
26:U:48:PRO:HG3	26:U:56:GLY:HA3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:12:U:H3'	1:1:13:A:C8	2.42	0.55
1:1:1042:G:O6	1:1:1113:U:O4	2.24	0.55
2:2:366:A:O2'	2:2:394:G:N2	2.40	0.55
2:2:1462:C:O2'	2:2:1463:U:OP1	2.23	0.55
2:2:1463:U:O2'	2:2:1464:U:H5'	2.06	0.55
34:c:8:LYS:HA	34:c:24:THR:HG22	1.89	0.55
39:h:132:ARG:HD3	39:h:136:ARG:HH21	1.72	0.55
40:i:43:ALA:O	40:i:45:LYS:NZ	2.35	0.55
45:n:55:VAL:HG21	45:n:94:LEU:HD12	1.88	0.55
54:w:13:PHE:HE2	54:w:55:LEU:HD12	1.71	0.55
1:1:1447:C:O2'	1:1:1544:A:N3	2.37	0.54
1:1:2265:U:H2'	1:1:2266:A:C4	2.42	0.54
1:1:2394:C:OP1	17:L:63:LYS:N	2.24	0.54
1:1:2543:G:N2	1:1:2647:U:OP2	2.38	0.54
9:D:27:LEU:HD11	9:D:100:MET:HG2	1.89	0.54
1:1:1128:G:O6	1:1:2489:U:O2'	2.25	0.54
2:2:501:C:H2'	2:2:502:A:H8	1.71	0.54
3:4:106:G:H2'	3:4:107:G:C8	2.43	0.54
24:S:1:MET:HE1	24:S:3:THR:OG1	2.06	0.54
34:c:47:VAL:HG22	34:c:48:ILE:H	1.72	0.54
43:l:17:LYS:HD3	43:l:44:TYR:CE2	2.42	0.54
46:o:67:ILE:HG13	50:s:96:LEU:HD12	1.89	0.54
1:1:6:A:H1'	15:J:134:ALA:HB3	1.89	0.54
1:1:242:G:H2'	36:e:5:LYS:HG2	1.89	0.54
1:1:245:G:OP2	1:1:245:G:H8	1.91	0.54
1:1:311:A:N6	1:1:329:G:OP1	2.36	0.54
1:1:561:G:H2'	1:1:562:U:H5''	1.88	0.54
1:1:832:U:H5''	17:L:38:GLN:HB2	1.88	0.54
1:1:2317:A:H2'	1:1:2318:G:H8	1.71	0.54
1:1:2345:G:O6	1:1:2371:G:O6	2.24	0.54
1:1:2362:C:C4	1:1:2363:G:O6	2.59	0.54
1:1:2732:G:H5''	1:1:2733:A:C8	2.42	0.54
2:2:145:G:C2	2:2:146:G:H1'	2.43	0.54
2:2:1293:C:H2'	2:2:1294:G:C8	2.41	0.54
15:J:43:GLU:OE1	15:J:43:GLU:N	2.37	0.54
20:O:68:LYS:HA	20:O:102:ARG:HG2	1.88	0.54
38:g:66:LYS:HB3	38:g:90:PHE:HE2	1.72	0.54
46:o:92:LEU:HB2	46:o:96:VAL:HG11	1.89	0.54
1:1:64:A:H2'	1:1:65:U:C6	2.42	0.54
1:1:145:C:H2'	1:1:146:A:C8	2.41	0.54
1:1:226:A:H2'	1:1:227:A:H4'	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1798:U:OP2	7:B:270:ARG:NH2	2.41	0.54
1:1:2565:A:C5	1:1:2566:A:C6	2.95	0.54
2:2:376:G:O2'	2:2:377:G:H5'	2.07	0.54
2:2:630:A:H2'	2:2:631:C:H6	1.73	0.54
2:2:1412:C:H2'	2:2:1413:A:H8	1.71	0.54
6:A:175:GLN:NE2	6:A:176:GLN:OE1	2.41	0.54
10:E:104:ILE:O	32:a:38:SER:OG	2.24	0.54
11:F:145:ALA:HB1	11:F:164:TYR:HE1	1.73	0.54
29:X:43:GLU:OE1	29:X:45:ARG:NE	2.32	0.54
38:g:32:PHE:N	38:g:40:ILE:O	2.38	0.54
39:h:54:ARG:HB3	39:h:69:HIS:HB2	1.87	0.54
1:1:227:A:N6	1:1:410:G:N2	2.19	0.54
1:1:305:C:N3	1:1:313:G:N2	2.55	0.54
1:1:527:C:O2'	1:1:528:A:OP2	2.25	0.54
1:1:2264:C:O5'	1:1:2264:C:H6	1.90	0.54
2:2:227:G:O2'	52:u:63:GLN:OE1	2.11	0.54
2:2:1250:A:N3	2:2:1370:G:O2'	2.32	0.54
2:2:1339:A:H3'	2:2:1340:A:C8	2.42	0.54
2:2:1346:A:H1'	45:n:109:ARG:HH11	1.73	0.54
10:E:135:GLN:HE22	10:E:152:LEU:HD23	1.73	0.54
11:F:52:PHE:CZ	11:F:72:LEU:HD23	2.43	0.54
15:J:88:THR:O	15:J:92:MET:HB3	2.06	0.54
22:Q:44:GLN:CD	23:R:77:PHE:HB3	2.32	0.54
28:W:43:THR:O	28:W:46:HIS:NE2	2.39	0.54
39:h:40:ARG:HG3	39:h:57:ILE:HD12	1.89	0.54
1:1:482:A:H5''	26:U:47:LYS:HE2	1.89	0.54
1:1:581:C:H2'	1:1:582:A:C8	2.43	0.54
1:1:659:G:N2	9:D:30:GLN:OE1	2.27	0.54
1:1:910:A:H2'	1:1:911:A:C8	2.43	0.54
1:1:942:G:H5'	17:L:34:GLY:HA3	1.89	0.54
1:1:2398:U:H2'	1:1:2399:G:C8	2.42	0.54
1:1:2802:G:H2'	1:1:2803:G:C8	2.41	0.54
1:1:2820:A:P	19:N:4:ARG:H	2.30	0.54
2:2:142:G:O2'	2:2:196:A:N1	2.30	0.54
2:2:418:C:H2'	2:2:419:C:C6	2.42	0.54
2:2:1098:C:H2'	2:2:1099:G:O4'	2.07	0.54
2:2:1178:G:H5''	45:n:95:ARG:NH2	2.21	0.54
2:2:1464:U:H2'	2:2:1465:A:H8	1.71	0.54
34:c:38:LYS:HB2	34:c:49:TYR:CG	2.43	0.54
46:o:39:PRO:HA	46:o:74:VAL:HG22	1.88	0.54
1:1:647:G:N2	1:1:2351:G:H5'	2.21	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:944:C:H5''	1:1:945:A:H5''	1.89	0.54
1:1:1225:G:H2'	1:1:1226:A:O4'	2.07	0.54
1:1:2675:A:N6	1:1:2732:G:N1	2.10	0.54
2:2:227:G:H2'	2:2:228:A:C8	2.42	0.54
2:2:929:G:O6	2:2:1389:C:N4	2.36	0.54
4:6:2:G:H2'	4:6:3:C:H6	1.72	0.54
16:K:70:ARG:HH21	16:K:74:GLY:HA2	1.72	0.54
24:S:29:VAL:O	24:S:33:LEU:HG	2.08	0.54
39:h:174:PRO:HG2	39:h:177:THR:HB	1.88	0.54
44:m:48:ASP:OD1	44:m:49:PHE:N	2.36	0.54
1:1:535:G:H2'	1:1:536:G:C8	2.43	0.54
1:1:865:C:H1'	1:1:867:C:N4	2.22	0.54
1:1:2392:A:H2'	1:1:2393:U:H6	1.70	0.54
1:1:2623:G:H3'	1:1:2624:G:C8	2.40	0.54
2:2:1101:A:H8	38:g:171:ILE:HG23	1.73	0.54
2:2:1303:C:H3'	2:2:1304:G:C8	2.42	0.54
31:Z:17:LEU:HG	31:Z:19:LYS:H	1.72	0.54
39:h:64:ILE:HG22	39:h:99:ALA:HA	1.89	0.54
1:1:2647:U:O2'	1:1:2648:G:H5'	2.07	0.54
1:1:2898:U:H2'	1:1:2899:A:C8	2.43	0.54
2:2:530:G:H5''	2:2:531:U:H5''	1.90	0.54
2:2:674:G:H21	47:p:118:HIS:HB2	1.72	0.54
4:6:1:C:H2'	4:6:2:G:C8	2.43	0.54
24:S:6:LYS:HD3	24:S:8:ARG:HG2	1.89	0.54
1:1:38:A:H1'	9:D:43:THR:HB	1.89	0.54
1:1:321:U:OP2	9:D:130:LYS:HA	2.08	0.54
1:1:957:C:H42	1:1:2494:G:N2	2.04	0.54
1:1:1539:U:H2'	1:1:1540:G:H8	1.73	0.54
1:1:2064:C:H2'	1:1:2065:C:H6	1.71	0.54
2:2:13:U:H3	2:2:915:A:H62	1.56	0.54
2:2:384:G:H2'	2:2:385:C:O4'	2.08	0.54
2:2:630:A:H2'	2:2:631:C:C6	2.42	0.54
2:2:1532:U:O4	2:2:1533:C:N4	2.41	0.54
8:C:15:PHE:CE2	21:P:77:HIS:HB2	2.43	0.54
14:I:100:ILE:HG13	14:I:137:LEU:HB3	1.90	0.54
40:i:118:VAL:HG22	40:i:123:ILE:HG13	1.90	0.54
43:l:51:ALA:HB2	43:l:58:GLU:OE2	2.08	0.54
48:q:33:VAL:HG22	48:q:79:VAL:HG22	1.90	0.54
1:1:1242:U:H2'	1:1:1243:C:C6	2.42	0.53
1:1:2385:C:N3	1:1:2386:A:N6	2.56	0.53
1:1:2642:G:H2'	1:1:2643:G:H8	1.71	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:103:U:OP2	56:y:9:LYS:HG3	2.08	0.53
2:2:1071:C:H2'	2:2:1072:G:C8	2.43	0.53
2:2:1184:G:H2'	2:2:1185:G:H8	1.73	0.53
2:2:1233:G:H5'	45:n:119:ARG:HH11	1.73	0.53
11:F:88:GLN:HG2	11:F:165:ALA:HA	1.89	0.53
23:R:24:LYS:HA	23:R:94:THR:HB	1.90	0.53
45:n:119:ARG:N	45:n:123:ARG:O	2.40	0.53
1:1:99:U:O2	26:U:7:ARG:NH1	2.40	0.53
1:1:974:G:OP2	23:R:78:ARG:HD2	2.09	0.53
1:1:1966:A:N3	1:1:2592:G:O2'	2.38	0.53
1:1:2666:C:H42	11:F:108:GLY:C	2.16	0.53
2:2:200:G:H2'	2:2:201:G:C8	2.43	0.53
2:2:405:U:H3	2:2:499:A:H62	1.55	0.53
2:2:1060:U:H4'	46:o:53:ILE:HB	1.89	0.53
2:2:1101:A:H5'	38:g:171:ILE:HD13	1.90	0.53
2:2:1226:C:H4'	55:x:80:TYR:CZ	2.43	0.53
2:2:1342:C:H2'	2:2:1343:G:C8	2.43	0.53
8:C:14:ILE:O	8:C:21:SER:HA	2.08	0.53
15:J:41:LYS:NZ	15:J:50:THR:O	2.36	0.53
15:J:92:MET:SD	15:J:99:ARG:HB2	2.48	0.53
40:i:9:LEU:HD11	40:i:31:LYS:HE3	1.90	0.53
1:1:668:A:N1	1:1:670:A:N6	2.56	0.53
1:1:1954:G:O2'	1:1:1956:U:O4	2.25	0.53
1:1:2333:A:OP1	28:W:77:ARG:NH1	2.41	0.53
2:2:113:G:H1'	2:2:354:G:H5'	1.89	0.53
2:2:356:A:N3	2:2:368:U:O2'	2.27	0.53
2:2:1377:A:H61	43:l:10:ARG:NE	2.00	0.53
8:C:154:LYS:HZ2	8:C:157:LYS:HE2	1.73	0.53
15:J:105:VAL:HA	15:J:108:MET:SD	2.47	0.53
17:L:19:LEU:HD23	17:L:27:LEU:HB3	1.91	0.53
50:s:56:SER:HB3	50:s:59:ARG:HG3	1.90	0.53
1:1:533:G:C8	1:1:533:G:H3'	2.44	0.53
1:1:538:A:N6	1:1:556:A:C8	2.77	0.53
1:1:861:A:N6	1:1:916:G:N2	2.03	0.53
1:1:969:G:O2'	31:Z:15:GLY:O	2.23	0.53
1:1:1206:G:H1	1:1:1240:U:H3	1.56	0.53
1:1:1417:C:O5'	1:1:1587:G:N2	2.36	0.53
1:1:1432:G:H2'	1:1:1433:A:C8	2.44	0.53
1:1:2033:A:H2'	1:1:2036:C:N4	2.24	0.53
1:1:2453:A:H2	1:1:2504:PSU:N3	2.05	0.53
1:1:2824:C:C6	1:1:2825:G:C2	2.96	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:69:G:H3'	2:2:70:U:H6	1.73	0.53
2:2:1077:G:O2'	2:2:1079:G:N7	2.30	0.53
6:A:63:LYS:HG2	6:A:64:GLU:OE1	2.08	0.53
1:1:810:U:C5	17:L:29:LYS:HB2	2.44	0.53
1:1:833:A:H5''	17:L:46:VAL:HG21	1.89	0.53
1:1:859:G:N2	1:1:917:A:H8	2.06	0.53
1:1:954:G:C8	1:1:955:PSU:C6	2.97	0.53
1:1:1029:A:C6	1:1:1125:G:N2	2.76	0.53
1:1:1871:A:O2'	1:1:1872:A:N7	2.41	0.53
1:1:2786:U:H5'	8:C:70:LYS:HD2	1.91	0.53
2:2:224:U:H2'	2:2:225:C:C6	2.44	0.53
2:2:555:U:H2'	2:2:556:C:C6	2.43	0.53
2:2:937:A:H3'	2:2:938:A:H8	1.72	0.53
3:4:42:C:O2'	10:E:63:GLN:HB3	2.09	0.53
4:5:56:C:O4'	10:E:73:SER:OG	2.24	0.53
15:J:110:PRO:O	15:J:115:GLY:HA3	2.08	0.53
38:g:99:GLY:N	38:g:175:GLU:OE2	2.29	0.53
51:t:71:LYS:HE2	51:t:78:TYR:CZ	2.44	0.53
1:1:24:G:C4	1:1:25:U:C5	2.97	0.53
1:1:391:A:C2	1:1:392:U:C4	2.95	0.53
1:1:975:A:H2'	1:1:976:G:O4'	2.07	0.53
1:1:2316:G:H2'	1:1:2317:A:H8	1.73	0.53
1:1:2530:A:OP2	1:1:2535:G:N2	2.40	0.53
1:1:2556:C:H5'	1:1:2557:G:OP2	2.09	0.53
1:1:2622:U:N3	1:1:2623:G:C8	2.76	0.53
2:2:201:G:O6	2:2:216:U:O4	2.27	0.53
2:2:967:5MC:H3'	2:2:968:A:H8	1.74	0.53
2:2:1187:G:H1'	50:s:100:SER:HB2	1.90	0.53
3:4:80:U:H2'	3:4:81:G:O4'	2.07	0.53
8:C:22:ILE:HG21	8:C:190:LYS:HG3	1.90	0.53
15:J:64:VAL:HG11	15:J:72:LYS:HE2	1.89	0.53
46:o:6:ILE:HG13	46:o:76:ILE:HB	1.90	0.53
1:1:225:C:O2'	1:1:258:G:OP1	2.25	0.53
1:1:536:G:H21	15:J:47:HIS:CE1	2.26	0.53
1:1:2339:C:O2'	3:4:41:G:N2	2.42	0.53
2:2:379:C:H2'	2:2:380:G:C8	2.43	0.53
2:2:744:C:H2'	2:2:745:G:H8	1.72	0.53
2:2:836:G:H2'	2:2:837:U:O4'	2.08	0.53
6:A:131:VAL:HG22	6:A:133:SER:H	1.74	0.53
20:O:82:ALA:HB1	20:O:87:ILE:HB	1.89	0.53
22:Q:38:ALA:O	22:Q:42:ALA:HB3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:p:20:VAL:HG22	47:p:83:GLU:HB2	1.91	0.53
1:1:548:G:H5'	1:1:549:G:C8	2.44	0.53
1:1:1056:G:H4'	1:1:1086:A:H8	1.74	0.53
1:1:1211:C:H5''	1:1:1212:G:C8	2.44	0.53
1:1:2273:A:H2'	1:1:2274:A:C4	2.44	0.53
1:1:2622:U:H2'	1:1:2623:G:H5''	1.91	0.53
2:2:551:U:O2'	48:q:83:ARG:O	2.26	0.53
2:2:552:U:C2	2:2:553:A:N7	2.77	0.53
2:2:875:U:O2'	44:m:15:ARG:NH1	2.39	0.53
2:2:988:G:N3	2:2:1016:A:H2	2.07	0.53
11:F:26:ILE:HG12	11:F:79:VAL:HG21	1.91	0.53
45:n:17:ALA:C	45:n:18:ARG:HD3	2.34	0.53
46:o:55:PRO:HA	50:s:81:ARG:HH22	1.74	0.53
52:u:39:PHE:HE1	52:u:74:LEU:HD21	1.73	0.53
1:1:1045:C:H41	1:1:1111:A:H2'	1.74	0.53
1:1:1078:U:O2'	1:1:1088:A:OP1	2.26	0.53
1:1:1133:A:H4'	1:1:1134:A:H5''	1.91	0.53
1:1:2344:U:P	34:c:37:LYS:HB3	2.49	0.53
2:2:325:A:H2'	2:2:326:G:O4'	2.09	0.53
2:2:1056:U:O2'	39:h:195:VAL:HB	2.09	0.53
2:2:1377:A:N1	43:l:10:ARG:NH2	2.55	0.53
7:B:133:ARG:O	7:B:167:ARG:NH2	2.41	0.53
31:Z:7:ILE:HB	31:Z:36:VAL:HG23	1.91	0.53
41:j:159:LYS:HG2	41:j:160:SER:H	1.73	0.53
1:1:1071:G:H22	1:1:1090:A:N6	2.07	0.53
1:1:1082:U:H3'	1:1:1083:U:H5''	1.91	0.53
1:1:1129:A:H1'	1:1:2516:A:H1'	1.91	0.53
1:1:2193:G:H2'	1:1:2194:U:C6	2.44	0.53
1:1:2847:U:H2'	1:1:2848:G:O4'	2.08	0.53
2:2:59:A:O3'	2:2:386:C:O2'	2.27	0.53
10:E:64:LYS:HG2	10:E:65:PRO:HD2	1.91	0.53
24:S:77:ASP:O	24:S:102:HIS:N	2.42	0.53
37:f:24:ARG:NH1	37:f:36:ARG:HH11	2.06	0.53
42:k:11:HIS:CD2	42:k:13:ASP:HB2	2.44	0.53
47:p:89:PRO:HG3	57:z:32:VAL:HG11	1.91	0.53
49:r:83:LEU:HB3	55:x:74:PHE:CE2	2.43	0.53
56:y:71:LYS:HG2	56:y:75:HIS:HE1	1.74	0.53
1:1:255:A:OP1	1:1:255:A:H4'	2.10	0.52
1:1:475:C:H4'	1:1:510:C:H5'	1.91	0.52
1:1:524:G:H5''	1:1:539:G:N2	2.17	0.52
1:1:1607:C:N4	1:1:1622:G:OP2	2.31	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2386:A:O2'	28:W:41:ARG:NH1	2.42	0.52
1:1:2403:C:H2'	1:1:2404:U:C6	2.44	0.52
1:1:2640:G:H2'	1:1:2641:G:H8	1.73	0.52
1:1:2729:G:H1'	8:C:191:GLY:HA3	1.90	0.52
2:2:60:A:H1'	2:2:61:G:O4'	2.09	0.52
2:2:1112:C:O2'	39:h:179:ARG:HD3	2.09	0.52
2:2:1238:A:N7	2:2:1301:U:O2	2.42	0.52
8:C:102:ALA:HB2	8:C:180:VAL:HG11	1.90	0.52
8:C:154:LYS:NZ	8:C:157:LYS:HE2	2.24	0.52
38:g:17:GLY:HA2	38:g:203:ASN:ND2	2.25	0.52
38:g:69:PHE:HD2	38:g:91:PHE:HB3	1.73	0.52
39:h:16:LYS:NZ	39:h:181:ASP:OD1	2.42	0.52
39:h:108:LYS:HD2	39:h:111:LEU:HD12	1.90	0.52
50:s:63:ARG:HB2	50:s:68:GLY:HA2	1.90	0.52
52:u:7:ALA:HA	52:u:28:ARG:HG2	1.92	0.52
1:1:1007:C:OP2	1:1:1008:A:O2'	2.23	0.52
1:1:1129:A:N6	1:1:2491:U:O5'	2.42	0.52
1:1:1143:A:C6	15:J:27:ARG:HG3	2.44	0.52
1:1:1379:U:O2'	1:1:1380:G:OP1	2.22	0.52
1:1:2488:G:C2	1:1:2489:U:C4	2.97	0.52
2:2:32:A:N6	2:2:553:A:N6	2.56	0.52
2:2:419:C:H2'	2:2:420:U:O4'	2.08	0.52
2:2:944:G:N1	2:2:1338:G:OP2	2.24	0.52
2:2:953:G:O6	49:r:103:LYS:HE2	2.10	0.52
2:2:1172:C:C2	2:2:1173:U:C5	2.98	0.52
2:2:1463:U:O5'	21:P:109:ARG:NH2	2.42	0.52
4:6:42:C:O2'	43:l:140:ASP:OD1	2.28	0.52
9:D:149:ILE:HG12	9:D:175:ILE:HG22	1.91	0.52
10:E:30:ARG:H	10:E:159:THR:HG1	1.57	0.52
1:1:1200:C:N4	1:1:1201:U:O4	2.42	0.52
1:1:2029:G:C4	1:1:2031:A:H5''	2.43	0.52
2:2:976:G:C8	2:2:1358:U:H2'	2.44	0.52
2:2:1229:A:O2'	4:5:30:G:OP1	2.19	0.52
1:1:531:C:OP2	1:1:561:G:N1	2.36	0.52
1:1:805:G:H4'	17:L:38:GLN:HA	1.90	0.52
1:1:1131:G:N2	15:J:77:HIS:HB3	2.25	0.52
1:1:1239:G:H8	1:1:1239:G:O5'	1.92	0.52
1:1:2742:G:P	37:f:24:ARG:HH12	2.33	0.52
1:1:2820:A:OP1	19:N:3:HIS:HA	2.09	0.52
1:1:2857:G:N2	1:1:2860:A:OP2	2.26	0.52
2:2:43:C:H2'	2:2:44:A:H8	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:94:GLU:HA	10:E:97:TRP:HD1	1.73	0.52
10:E:103:LEU:HD12	10:E:107:ALA:HB3	1.91	0.52
14:I:133:ARG:NE	14:I:133:ARG:O	2.42	0.52
20:O:76:LYS:HZ2	20:O:109:ALA:HA	1.73	0.52
28:W:27:GLY:H	28:W:69:PHE:HE1	1.57	0.52
54:w:11:CYS:HB3	54:w:14:THR:HG22	1.91	0.52
1:1:495:G:N2	24:S:61:ASN:OD1	2.42	0.52
1:1:1042:G:HO2'	1:1:1043:C:H6	1.57	0.52
1:1:2025:C:H2'	1:1:2026:U:H6	1.73	0.52
2:2:693:G:H21	4:6:36:A:H61	1.55	0.52
2:2:1051:C:H2'	2:2:1052:U:C6	2.43	0.52
2:2:1242:G:O2'	2:2:1302:C:O2'	2.24	0.52
4:6:4:G:H2'	4:6:5:G:C8	2.44	0.52
38:g:32:PHE:HE2	38:g:35:ARG:HH12	1.57	0.52
39:h:14:ILE:HG22	39:h:15:VAL:HG13	1.92	0.52
1:1:17:G:C5'	33:b:10:ARG:HG3	2.37	0.52
1:1:2194:U:H2'	1:1:2195:U:H6	1.75	0.52
1:1:2356:U:H3	1:1:2361:G:H1	0.68	0.52
1:1:2362:C:H2'	1:1:2363:G:C8	2.42	0.52
1:1:2513:A:C4	1:1:2514:U:C5	2.97	0.52
2:2:354:G:O2'	2:2:389:A:OP2	2.26	0.52
2:2:374:A:H4'	2:2:452:A:H61	1.74	0.52
2:2:613:C:H2'	2:2:614:C:H6	1.73	0.52
2:2:946:A:H1'	2:2:1333:A:H2	1.73	0.52
3:4:74:U:O2	27:V:29:ILE:HD13	2.09	0.52
4:5:67:C:H2'	4:5:68:C:C6	2.44	0.52
56:y:25:ARG:HA	56:y:66:LEU:HD21	1.92	0.52
1:1:647:G:H3'	1:1:648:G:C8	2.44	0.52
1:1:827:U:H2'	1:1:2430:A:N6	2.24	0.52
1:1:2362:C:OP1	36:e:40:ARG:HG3	2.09	0.52
1:1:2516:A:H2'	1:1:2517:C:C6	2.45	0.52
2:2:323:U:O2	56:y:10:ARG:NH1	2.42	0.52
2:2:393:A:H3'	2:2:394:G:C8	2.45	0.52
2:2:736:C:OP1	54:w:61:ARG:NH1	2.43	0.52
3:4:14:U:C5	3:4:71:C:H1'	2.45	0.52
17:L:61:LEU:HD13	36:e:24:HIS:CE1	2.45	0.52
23:R:4:VAL:HG12	23:R:39:LEU:HD12	1.91	0.52
1:1:527:C:N4	1:1:2777:G:O2'	2.34	0.52
1:1:1145:C:H2'	1:1:1146:C:C6	2.45	0.52
1:1:1224:U:H2'	1:1:1225:G:N7	2.25	0.52
1:1:1802:A:H2'	1:1:1803:A:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1889:A:H2'	1:1:1890:A:H8	1.74	0.52
1:1:2542:A:OP1	1:1:2766:A:O2'	2.28	0.52
1:1:2731:G:H4'	8:C:208:LYS:NZ	2.24	0.52
1:1:2830:C:H2'	8:C:59:ARG:HH21	1.75	0.52
2:2:324:G:N2	2:2:326:G:O5'	2.43	0.52
2:2:393:A:H3'	2:2:394:G:H8	1.74	0.52
2:2:1068:G:N3	2:2:1068:G:H2'	2.25	0.52
2:2:1439:G:H2'	2:2:1440:U:O4'	2.10	0.52
11:F:41:VAL:O	11:F:55:ARG:NE	2.42	0.52
19:N:99:LYS:HA	19:N:111:ALA:HA	1.92	0.52
36:e:45:ARG:O	36:e:47:LYS:NZ	2.42	0.52
1:1:865:C:O2	1:1:908:C:N4	2.43	0.52
1:1:968:C:H4'	31:Z:17:LEU:HD13	1.92	0.52
1:1:2029:G:N7	1:1:2031:A:H4'	2.25	0.52
1:1:2300:C:H2'	1:1:2301:C:H6	1.75	0.52
2:2:837:U:H2'	2:2:838:G:H8	1.75	0.52
2:2:932:C:H4'	43:l:4:ARG:CZ	2.39	0.52
10:E:29:PRO:HB3	10:E:160:ALA:HA	1.91	0.52
15:J:96:ARG:HB3	15:J:99:ARG:HG2	1.91	0.52
19:N:33:ILE:HD11	19:N:118:ARG:CZ	2.40	0.52
36:e:58:VAL:HA	36:e:61:CYS:HB2	1.91	0.52
39:h:138:VAL:HG22	39:h:151:VAL:HG21	1.92	0.52
45:n:5:GLN:OE1	45:n:22:LYS:HE3	2.09	0.52
46:o:13:PHE:CD1	50:s:95:GLY:HA3	2.44	0.52
52:u:17:TYR:HB2	52:u:39:PHE:HD2	1.75	0.52
1:1:9:G:H1'	1:1:2800:A:N6	2.25	0.52
1:1:458:G:H1'	1:1:469:G:O6	2.09	0.52
1:1:541:A:H2'	1:1:542:C:O4'	2.10	0.52
1:1:607:U:OP1	9:D:97:ASN:ND2	2.41	0.52
1:1:963:U:H2'	1:1:964:C:C5	2.44	0.52
1:1:1128:G:O2'	1:1:1129:A:H5''	2.10	0.52
1:1:1649:G:O2'	19:N:106:ASP:OD2	2.20	0.52
2:2:135:C:N3	52:u:1:MET:HG2	2.25	0.52
2:2:940:C:O2'	2:2:1349:A:N3	2.43	0.52
2:2:1236:A:H4'	2:2:1304:G:H4'	1.92	0.52
2:2:1268:G:H21	2:2:1327:C:H1'	1.73	0.52
3:4:116:G:H2'	3:4:117:G:C8	2.44	0.52
14:I:23:VAL:HB	14:I:26:ALA:HB3	1.91	0.52
15:J:39:LYS:HE2	22:Q:63:ALA:HA	1.92	0.52
26:U:14:LEU:HD21	26:U:71:ALA:HB2	1.91	0.52
40:i:13:ARG:HG3	40:i:34:ILE:HD12	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:y:14:SER:O	56:y:18:ARG:CB	2.58	0.52
1:1:528:A:H2'	1:1:2042:A:C2	2.44	0.51
1:1:533:G:H5'	22:Q:28:ARG:CZ	2.40	0.51
1:1:582:A:H2'	1:1:583:G:H8	1.75	0.51
1:1:1143:A:H61	15:J:27:ARG:HG3	1.75	0.51
1:1:1194:A:H2	1:1:1225:G:N2	2.08	0.51
1:1:2266:A:N6	1:1:2273:A:OP2	2.37	0.51
1:1:2363:G:H2'	1:1:2364:C:H5'	1.92	0.51
1:1:2618:G:N2	8:C:155:VAL:HG21	2.20	0.51
1:1:2824:C:O5'	1:1:2825:G:N2	2.43	0.51
2:2:64:G:H4'	2:2:66:A:H5''	1.91	0.51
2:2:928:G:C4	2:2:929:G:N7	2.78	0.51
2:2:1090:U:O3'	2:2:1171:A:O2'	2.28	0.51
4:6:10:G:H2'	4:6:11:A:C8	2.44	0.51
9:D:7:ASP:OD1	9:D:8:ALA:N	2.43	0.51
38:g:67:ILE:HD13	38:g:160:ALA:HB3	1.91	0.51
1:1:24:G:H2'	1:1:25:U:C6	2.39	0.51
1:1:65:U:H2'	1:1:66:C:H6	1.75	0.51
1:1:1079:C:H2'	1:1:1080:A:C8	2.41	0.51
1:1:2048:G:H21	8:C:118:PHE:HE2	1.58	0.51
1:1:2261:C:N4	28:W:14:ARG:HG2	2.23	0.51
1:1:2356:U:C2	1:1:2357:G:H1'	2.46	0.51
2:2:292:G:N7	2:2:293:G:H1'	2.25	0.51
3:4:22:U:O2	3:4:61:G:N2	2.43	0.51
4:5:43:A:H2'	4:5:44:A:C8	2.44	0.51
17:L:29:LYS:HB3	23:R:82:HIS:CE1	2.46	0.51
31:Z:9:GLN:NE2	31:Z:11:ARG:O	2.37	0.51
39:h:180:ALA:HA	39:h:203:PHE:CE1	2.45	0.51
1:1:86:G:H2'	1:1:87:U:C6	2.45	0.51
1:1:1208:C:H2'	1:1:1209:U:O4'	2.10	0.51
1:1:2333:A:P	28:W:77:ARG:HH22	2.33	0.51
1:1:2557:G:H2'	1:1:2558:C:C6	2.45	0.51
2:2:212:G:H2'	2:2:213:G:H8	1.75	0.51
2:2:218:U:H2'	2:2:219:U:H6	1.75	0.51
2:2:234:C:H2'	2:2:235:C:H6	1.75	0.51
2:2:260:G:H5''	56:y:71:LYS:NZ	2.25	0.51
2:2:1253:G:OP1	46:o:48:ARG:NH1	2.44	0.51
2:2:1391:U:H2'	2:2:1392:G:H8	1.75	0.51
6:A:151:SER:O	6:A:157:ASN:ND2	2.42	0.51
8:C:27:ILE:HD11	8:C:189:VAL:HG22	1.91	0.51
8:C:175:LEU:HD22	8:C:191:GLY:HA3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Q:103:LYS:O	22:Q:107:THR:OG1	2.20	0.51
39:h:15:VAL:HG12	39:h:207:ILE:HB	1.92	0.51
44:m:77:ARG:NH1	44:m:79:SER:O	2.43	0.51
44:m:92:LEU:HD12	44:m:117:ARG:HB3	1.92	0.51
1:1:358:U:H2'	1:1:359:G:C8	2.45	0.51
1:1:635:C:H3'	1:1:636:G:H8	1.75	0.51
1:1:812:C:H5''	1:1:1250:G:O2'	2.09	0.51
1:1:991:C:H2'	1:1:992:C:C6	2.45	0.51
1:1:1069:A:O2'	1:1:1073:A:N6	2.44	0.51
1:1:2547:A:C8	1:1:2566:A:C6	2.99	0.51
1:1:2679:A:H5''	8:C:113:SER:HB3	1.93	0.51
1:1:2730:C:O2'	8:C:174:SER:HB2	2.11	0.51
2:2:542:G:O2'	40:i:14:ARG:NH2	2.40	0.51
2:2:1224:U:N3	2:2:1322:C:O4'	2.44	0.51
2:2:1442:G:H2'	2:2:1443:C:H6	1.74	0.51
18:M:108:VAL:HB	18:M:112:LEU:HD23	1.92	0.51
33:b:13:ARG:HD2	33:b:17:ARG:CZ	2.41	0.51
38:g:183:VAL:H	38:g:197:ASP:HB2	1.75	0.51
38:g:203:ASN:OD1	38:g:204:ASP:N	2.44	0.51
50:s:64:CYS:SG	50:s:80:SER:N	2.82	0.51
1:1:322:A:H3'	9:D:163:ASN:OD1	2.11	0.51
1:1:562:U:P	1:1:2036:C:H4'	2.51	0.51
1:1:1002:G:H8	1:1:1002:G:O5'	1.94	0.51
1:1:1213:A:H2'	1:1:1214:A:H8	1.76	0.51
1:1:2193:G:H2'	1:1:2194:U:H6	1.76	0.51
1:1:2376:A:H1'	20:O:111:ARG:HH22	1.74	0.51
2:2:1152:A:OP1	46:o:72:ARG:NH2	2.43	0.51
8:C:11:MET:HB3	8:C:25:THR:HA	1.91	0.51
8:C:60:VAL:HG13	8:C:64:GLU:HB2	1.92	0.51
17:L:63:LYS:HB2	36:e:13:ARG:CZ	2.40	0.51
32:a:35:ASP:OD1	49:r:57:ARG:NH2	2.43	0.51
40:i:98:LEU:HB2	40:i:135:TYR:O	2.11	0.51
50:s:74:LEU:HD12	50:s:84:VAL:HG21	1.92	0.51
56:y:2:ALA:HB3	56:y:8:LYS:HG3	1.92	0.51
1:1:592:A:H1'	36:e:3:LYS:HA	1.92	0.51
1:1:2404:U:C4	1:1:2413:G:O6	2.64	0.51
2:2:186:C:N4	2:2:187:G:O6	2.43	0.51
2:2:257:G:H2'	2:2:258:G:H8	1.75	0.51
2:2:439:U:O2'	40:i:119:SER:O	2.29	0.51
2:2:499:A:H1'	2:2:500:G:C8	2.44	0.51
2:2:1144:G:H22	2:2:1147:C:N4	2.08	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1247:U:C2	2:2:1290:G:O6	2.64	0.51
5:7:17:U:H2'	5:7:18:G:C8	2.45	0.51
17:L:9:ALA:HB3	17:L:12:SER:HB3	1.91	0.51
25:T:69:ARG:HH22	25:T:74:ILE:HG23	1.76	0.51
1:1:18:U:O2'	1:1:554:U:H5''	2.11	0.51
1:1:538:A:N6	1:1:556:A:N7	2.58	0.51
1:1:955:PSU:H3'	1:1:956:G:C8	2.45	0.51
1:1:1001:A:H8	1:1:1154:G:N2	2.09	0.51
1:1:2101:A:H2'	1:1:2102:G:C8	2.46	0.51
1:1:2292:U:H5'	1:1:2378:A:H61	1.74	0.51
2:2:511:C:O3'	40:i:41:HIS:ND1	2.43	0.51
2:2:1086:U:H2'	2:2:1087:G:H8	1.76	0.51
8:C:148:GLN:HB2	8:C:151:THR:O	2.10	0.51
29:X:10:LYS:HE3	29:X:54:LYS:HD3	1.93	0.51
49:r:11:ASP:HB3	49:r:46:SER:HB3	1.93	0.51
1:1:528:A:H2'	1:1:2042:A:N1	2.26	0.51
1:1:636:G:C2	17:L:111:ILE:HD13	2.46	0.51
1:1:2029:G:C5	1:1:2031:A:H5''	2.46	0.51
1:1:2307:G:OP1	1:1:2308:G:N1	2.44	0.51
1:1:2341:G:N2	1:1:2375:G:OP1	2.43	0.51
2:2:56:U:H2'	2:2:57:G:H8	1.75	0.51
2:2:1067:A:OP1	2:2:1386:G:N2	2.44	0.51
2:2:1324:A:H2'	2:2:1325:C:C6	2.45	0.51
8:C:109:VAL:HG22	8:C:203:VAL:HG22	1.93	0.51
9:D:108:ILE:HG21	9:D:180:LEU:HB3	1.93	0.51
21:P:32:VAL:HB	21:P:39:ARG:HG2	1.91	0.51
38:g:14:VAL:HG13	38:g:43:LEU:HG	1.93	0.51
1:1:19:A:H2'	1:1:20:C:C5	2.46	0.51
1:1:524:G:H5''	1:1:539:G:H1	1.75	0.51
1:1:1152:C:H5'	22:Q:80:ILE:HG21	1.91	0.51
1:1:2565:A:C6	1:1:2566:A:N1	2.78	0.51
1:1:2623:G:H21	33:b:19:HIS:HE1	1.59	0.51
1:1:2776:A:N3	1:1:2778:A:O2'	2.40	0.51
1:1:2829:A:H2'	1:1:2830:C:C6	2.45	0.51
2:2:417:G:H21	2:2:540:G:H4'	1.75	0.51
2:2:448:A:O2'	2:2:449:G:OP1	2.25	0.51
2:2:1445:U:O2	2:2:1457:G:O6	2.29	0.51
23:R:17:GLY:N	23:R:98:ILE:O	2.39	0.51
39:h:154:SER:HA	39:h:165:THR:HA	1.92	0.51
45:n:35:LEU:HG	45:n:45:ARG:HG2	1.92	0.51
45:n:115:LYS:HD3	45:n:118:LEU:HD12	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:568:U:O4	23:R:81:LYS:NZ	2.44	0.51
1:1:818:G:H21	1:1:1189:A:H62	1.59	0.51
1:1:990:A:H5'	1:1:1157:G:H5''	1.93	0.51
1:1:1081:U:H4'	14:I:123:ALA:HB1	1.92	0.51
1:1:2488:G:C2	1:1:2489:U:O4	2.64	0.51
2:2:1064:G:O3'	2:2:1190:G:N2	2.44	0.51
8:C:106:LYS:O	8:C:206:ALA:N	2.44	0.51
10:E:43:ALA:HB1	10:E:50:LEU:HD12	1.93	0.51
15:J:15:TRP:CD1	15:J:53:TYR:HB2	2.45	0.51
21:P:39:ARG:CZ	21:P:41:GLN:HB2	2.41	0.51
23:R:23:GLU:HA	23:R:93:PHE:HA	1.93	0.51
38:g:68:LEU:HA	38:g:90:PHE:O	2.11	0.51
40:i:85:ASN:HB3	40:i:88:GLU:OE1	2.11	0.51
40:i:146:ARG:HG2	40:i:149:ALA:H	1.76	0.51
40:i:147:GLU:OE1	40:i:150:LYS:NZ	2.32	0.51
42:k:21:MET:HB3	42:k:24:ARG:NH2	2.25	0.51
1:1:12:U:N3	1:1:2626:C:O2'	2.44	0.50
2:2:322:C:N4	2:2:329:A:N6	2.19	0.50
2:2:964:A:H5''	2:2:1198:G:H5''	1.93	0.50
4:6:59:A:H1'	4:6:61:U:H5	1.76	0.50
13:H:36:ASP:O	13:H:40:GLU:HG2	2.11	0.50
17:L:96:LYS:HD3	17:L:103:ILE:HA	1.93	0.50
36:e:36:LYS:HG2	36:e:40:ARG:HD3	1.93	0.50
1:1:65:U:H2'	1:1:66:C:C6	2.46	0.50
1:1:80:G:H2'	1:1:81:G:H8	1.76	0.50
1:1:155:A:H2'	1:1:156:A:C8	2.45	0.50
1:1:305:C:C4	1:1:313:G:N2	2.80	0.50
1:1:437:U:H2'	1:1:438:G:H8	1.76	0.50
1:1:648:G:H2'	1:1:649:G:C8	2.47	0.50
1:1:1005:C:N4	1:1:1139:G:H21	2.09	0.50
1:1:2646:C:C4	1:1:2647:U:C2	3.00	0.50
2:2:269:C:H2'	2:2:270:A:C8	2.47	0.50
2:2:1064:G:OP2	2:2:1385:G:O2'	2.23	0.50
31:Z:18:PRO:HA	31:Z:21:LYS:HB2	1.93	0.50
38:g:104:TRP:HZ2	38:g:154:MET:SD	2.34	0.50
39:h:6:HIS:CE1	39:h:8:ASN:HB3	2.46	0.50
48:q:50:ARG:HG3	48:q:90:LEU:HD21	1.94	0.50
1:1:308:G:H2'	1:1:309:A:C8	2.47	0.50
1:1:528:A:N6	1:1:2043:C:OP2	2.42	0.50
1:1:856:G:N1	1:1:857:G:O6	2.45	0.50
1:1:1021:A:H4'	1:1:1123:C:OP1	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1248:G:C8	22:Q:2:ALA:HB3	2.45	0.50
1:1:1405:U:H2'	1:1:1406:U:C6	2.46	0.50
1:1:2279:G:N2	1:1:2327:A:N3	2.59	0.50
2:2:148:G:O6	2:2:174:A:N1	2.45	0.50
2:2:516:PSU:H4'	2:2:517:G:OP1	2.11	0.50
2:2:718:A:H2	54:w:38:LYS:HE3	1.76	0.50
2:2:1414:U:H2'	2:2:1415:G:H8	1.75	0.50
10:E:5:HIS:HB2	10:E:97:TRP:CD1	2.45	0.50
10:E:74:VAL:HG21	10:E:77:PHE:HD2	1.76	0.50
10:E:138:PHE:HZ	10:E:152:LEU:HD11	1.76	0.50
13:H:94:ARG:NH1	13:H:98:GLU:OE2	2.36	0.50
26:U:66:GLN:HB2	26:U:69:ASN:HD22	1.76	0.50
45:n:12:ARG:HG3	45:n:13:LYS:H	1.76	0.50
1:1:12:U:H1'	1:1:2627:G:OP1	2.12	0.50
1:1:16:C:O3'	33:b:11:SER:HA	2.10	0.50
1:1:591:U:H2'	1:1:592:A:H8	1.76	0.50
1:1:626:A:N6	17:L:81:ASP:OD2	2.44	0.50
1:1:882:G:H1	1:1:894:U:H3	1.58	0.50
1:1:1590:A:H2'	1:1:1591:A:H8	1.76	0.50
1:1:2134:A:C5	1:1:2156:G:N2	2.79	0.50
1:1:2266:A:N6	1:1:2273:A:N7	2.59	0.50
2:2:401:C:OP1	40:i:70:ARG:NH1	2.43	0.50
2:2:1255:G:N1	2:2:1283:U:O4	2.45	0.50
2:2:1347:G:H1'	2:2:1348:U:H5	1.77	0.50
4:6:2:G:H2'	4:6:3:C:C6	2.45	0.50
10:E:60:ILE:HD12	10:E:140:GLU:HB2	1.94	0.50
15:J:37:ARG:NE	15:J:44:TYR:OH	2.39	0.50
27:V:29:ILE:HA	27:V:39:ALA:HA	1.94	0.50
36:e:58:VAL:O	36:e:62:LEU:HD23	2.11	0.50
39:h:176:HIS:O	39:h:178:LEU:HD22	2.12	0.50
40:i:62:ARG:HH21	40:i:68:LEU:HA	1.76	0.50
40:i:67:VAL:HG13	40:i:71:GLN:HB3	1.94	0.50
48:q:24:LEU:HB3	48:q:27:CYS:O	2.10	0.50
1:1:573:U:H2'	1:1:575:A:H8	1.76	0.50
1:1:668:A:N6	1:1:670:A:N7	2.60	0.50
1:1:1361:G:H2'	1:1:1362:C:C6	2.47	0.50
1:1:2193:G:O2'	1:1:2194:U:OP1	2.28	0.50
1:1:2417:C:H5'	36:e:45:ARG:CZ	2.41	0.50
1:1:2420:C:N4	1:1:2421:G:O6	2.44	0.50
1:1:2753:A:H2'	1:1:2754:U:C6	2.46	0.50
1:1:2764:A:C5	1:1:2766:A:C6	3.00	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:972:C:H5'	46:o:59:LYS:HZ2	1.77	0.50
2:2:1216:A:H2'	2:2:1217:C:H6	1.74	0.50
17:L:33:ARG:CB	17:L:40:SER:HA	2.34	0.50
17:L:64:PHE:CD1	36:e:25:LYS:HB2	2.46	0.50
18:M:121:ALA:HB2	18:M:128:THR:HG21	1.93	0.50
22:Q:52:GLN:HG3	22:Q:55:ARG:NE	2.27	0.50
25:T:56:GLU:HB2	25:T:86:THR:HG23	1.94	0.50
37:f:30:GLU:HG3	37:f:32:LYS:HB2	1.93	0.50
39:h:20:SER:HB3	39:h:22:TRP:CD1	2.46	0.50
39:h:182:ILE:HD13	39:h:203:PHE:HB2	1.93	0.50
52:u:10:GLY:HA3	52:u:16:PHE:H	1.76	0.50
56:y:24:ARG:HA	56:y:27:MET:HG3	1.92	0.50
1:1:628:G:H2'	1:1:629:G:H8	1.76	0.50
1:1:2104:C:H41	1:1:2186:G:N2	2.08	0.50
1:1:2139:U:H2'	1:1:2140:G:H8	1.77	0.50
1:1:2489:U:H4'	1:1:2518:A:H62	1.76	0.50
2:2:1452:C:H1'	2:2:1453:G:C2	2.46	0.50
3:4:72:G:N2	3:4:104:A:H62	2.09	0.50
23:R:14:VAL:HG11	23:R:20:VAL:HG22	1.92	0.50
31:Z:51:VAL:O	31:Z:55:VAL:HG22	2.11	0.50
39:h:29:PHE:HB3	50:s:76:LYS:O	2.10	0.50
49:r:4:ILE:HB	49:r:9:ILE:HG13	1.94	0.50
1:1:8:C:H5'	15:J:53:TYR:HE2	1.77	0.50
1:1:587:C:C5	17:L:19:LEU:HB2	2.46	0.50
1:1:599:A:H2'	1:1:600:G:C8	2.47	0.50
1:1:616:A:H4'	9:D:101:TYR:CE2	2.46	0.50
1:1:2376:A:H1'	20:O:111:ARG:NH2	2.27	0.50
1:1:2528:U:O2	1:1:2536:G:C2	2.65	0.50
1:1:2764:A:N7	1:1:2766:A:N6	2.60	0.50
3:4:33:G:H2'	3:4:34:A:O4'	2.11	0.50
4:5:23:C:H2'	4:5:24:U:C6	2.47	0.50
4:6:29:C:H2'	4:6:30:G:C8	2.46	0.50
8:C:31:ALA:HB1	8:C:95:SER:OG	2.12	0.50
13:H:3:LEU:HD12	13:H:5:LEU:H	1.77	0.50
13:H:8:LYS:O	13:H:11:ILE:HG22	2.11	0.50
26:U:29:LEU:HD12	26:U:33:LYS:HB2	1.93	0.50
38:g:6:MET:HA	38:g:9:MET:HE3	1.93	0.50
44:m:103:VAL:HG23	44:m:126:ILE:HB	1.94	0.50
50:s:63:ARG:NH2	50:s:64:CYS:O	2.45	0.50
1:1:227:A:H5''	1:1:2407:A:H4'	1.93	0.50
1:1:582:A:H2'	1:1:583:G:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:921:C:C4	1:1:922:C:C4	3.00	0.50
1:1:1016:G:H2'	1:1:1017:G:O4'	2.12	0.50
1:1:1019:U:H5'	1:1:1120:G:N2	2.27	0.50
1:1:1141:U:O2	1:1:1142:A:N6	2.45	0.50
1:1:1746:A:H2'	1:1:1747:U:C6	2.47	0.50
1:1:2046:G:C2	1:1:2047:C:H1'	2.46	0.50
1:1:2270:A:H2'	1:1:2271:G:C8	2.46	0.50
1:1:2467:C:HO2'	18:M:118:LYS:NZ	2.10	0.50
1:1:2529:G:O6	37:f:32:LYS:NZ	2.45	0.50
1:1:2662:A:H3'	1:1:2663:G:H8	1.77	0.50
2:2:147:G:H2'	2:2:148:G:C8	2.46	0.50
2:2:417:G:N3	2:2:540:G:H4'	2.26	0.50
2:2:1251:A:H2'	2:2:1252:A:C8	2.46	0.50
20:O:11:ALA:HB2	20:O:96:GLY:HA3	1.94	0.50
27:V:75:GLN:HB2	27:V:92:VAL:HG13	1.92	0.50
32:a:49:ARG:NH1	49:r:68:ASP:OD2	2.44	0.50
39:h:70:THR:HG21	39:h:76:VAL:HG21	1.94	0.50
49:r:86:TYR:O	49:r:90:ARG:HG2	2.12	0.50
53:v:61:ILE:HA	53:v:75:LEU:HA	1.94	0.50
55:x:52:HIS:HB2	55:x:57:HIS:CE1	2.46	0.50
1:1:411:G:OP2	1:1:2406:A:O2'	2.30	0.50
1:1:557:C:H5'	15:J:113:PRO:HG2	1.94	0.50
1:1:857:G:H21	1:1:2269:G:H5'	1.77	0.50
1:1:927:A:H1'	31:Z:41:THR:HG21	1.94	0.50
1:1:2460:U:H4'	6:A:155:LEU:HD11	1.94	0.50
2:2:25:C:H2'	2:2:26:A:C8	2.47	0.50
2:2:44:A:N1	2:2:399:G:C6	2.79	0.50
2:2:425:G:C2	2:2:426:U:C4	3.00	0.50
32:a:51:VAL:O	49:r:75:MET:HE1	2.12	0.50
36:e:26:HIS:CD2	36:e:47:LYS:HA	2.47	0.50
1:1:527:C:H2'	1:1:2779:U:O2	2.12	0.49
1:1:572:A:H2'	1:1:573:U:O4'	2.12	0.49
1:1:1005:C:H41	1:1:1139:G:H21	1.59	0.49
2:2:414:A:H2'	2:2:415:A:O4'	2.12	0.49
2:2:714:G:H2'	2:2:715:A:C8	2.46	0.49
2:2:1014:A:O2'	2:2:1219:A:H4'	2.12	0.49
2:2:1316:G:H4'	50:s:58:SER:OG	2.11	0.49
8:C:109:VAL:O	8:C:172:VAL:N	2.45	0.49
10:E:69:LYS:HA	10:E:84:PRO:HA	1.94	0.49
13:H:41:LEU:HD12	13:H:42:ARG:HE	1.77	0.49
17:L:73:ILE:HD12	17:L:106:GLU:H	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Q:46:ALA:HB1	22:Q:50:ARG:NH1	2.27	0.49
31:Z:23:THR:HG21	31:Z:51:VAL:HG11	1.94	0.49
38:g:6:MET:HA	38:g:9:MET:HG2	1.94	0.49
54:w:30:LYS:HA	54:w:33:ILE:HG12	1.94	0.49
1:1:336:C:P	26:U:82:ARG:HD2	2.52	0.49
1:1:532:A:H4'	1:1:533:G:C8	2.47	0.49
1:1:541:A:O5'	1:1:541:A:H8	1.95	0.49
1:1:1281:G:H2'	1:1:1282:U:C6	2.47	0.49
1:1:2461:A:C6	1:1:2492:U:N3	2.80	0.49
1:1:2831:G:N2	33:b:41:HIS:HE2	2.10	0.49
2:2:463:U:H5''	2:2:464:U:H5	1.76	0.49
2:2:1186:G:H2'	2:2:1187:G:C8	2.47	0.49
3:4:76:G:OP1	27:V:27:PRO:HG3	2.12	0.49
9:D:112:LEU:HD13	9:D:118:LEU:HD13	1.94	0.49
10:E:73:SER:HB3	10:E:81:GLN:HB2	1.94	0.49
11:F:9:VAL:HG21	11:F:52:PHE:CE1	2.47	0.49
11:F:9:VAL:HG13	11:F:73:ASN:ND2	2.26	0.49
15:J:46:PRO:HD3	22:Q:60:LEU:HD13	1.93	0.49
22:Q:36:PHE:O	22:Q:40:ILE:HG12	2.11	0.49
24:S:33:LEU:O	24:S:37:THR:HG23	2.12	0.49
48:q:54:ARG:NH1	48:q:64:THR:OG1	2.40	0.49
49:r:49:SER:OG	49:r:52:GLN:OE1	2.28	0.49
1:1:382:A:C5	1:1:383:C:C4	3.00	0.49
1:1:536:G:H5'	22:Q:53:ARG:NE	2.26	0.49
1:1:981:A:H1'	1:1:2027:G:N2	2.27	0.49
1:1:2291:U:O2'	1:1:2380:C:O2	2.31	0.49
1:1:2469:A:H1'	18:M:55:ARG:NE	2.27	0.49
1:1:2489:U:H4'	1:1:2518:A:N7	2.27	0.49
1:1:2515:C:H2'	1:1:2516:A:H8	1.77	0.49
1:1:2742:G:P	37:f:24:ARG:HH22	2.35	0.49
15:J:56:VAL:O	15:J:125:TYR:HB2	2.12	0.49
38:g:179:LEU:HB3	38:g:181:ILE:HG13	1.93	0.49
43:l:125:SER:O	43:l:129:GLU:HG2	2.13	0.49
1:1:609:A:H62	1:1:619:G:H21	1.56	0.49
1:1:819:A:N6	1:1:1188:U:H3	1.96	0.49
1:1:915:C:H2'	1:1:916:G:O4'	2.12	0.49
1:1:2675:A:N6	1:1:2732:G:C6	2.73	0.49
2:2:151:A:N7	2:2:170:U:C2	2.80	0.49
2:2:232:G:C6	2:2:233:C:N4	2.80	0.49
2:2:449:G:N2	2:2:486:U:O2	2.45	0.49
13:H:43:LYS:O	13:H:46:ARG:HG3	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:113:U:H5''	1:1:114:U:O5'	2.13	0.49
1:1:539:G:H2'	1:1:540:C:H5'	1.95	0.49
1:1:1055:G:H2'	1:1:1056:G:O4'	2.13	0.49
1:1:1095:A:O2'	1:1:1096:A:H8	1.95	0.49
1:1:1212:G:H21	1:1:1237:A:H62	1.59	0.49
1:1:2317:A:H2'	1:1:2318:G:C8	2.47	0.49
1:1:2675:A:O4'	16:K:29:HIS:HB2	2.10	0.49
1:1:2683:C:N4	16:K:70:ARG:HD3	2.27	0.49
2:2:193:C:H2'	2:2:194:C:H6	1.77	0.49
2:2:200:G:H2'	2:2:201:G:H8	1.77	0.49
2:2:232:G:H2'	2:2:233:C:C6	2.47	0.49
2:2:673:A:H2'	2:2:674:G:H8	1.77	0.49
8:C:4:LEU:HD11	8:C:96:ILE:HG22	1.94	0.49
19:N:30:ARG:NH1	19:N:74:GLU:OE2	2.45	0.49
23:R:69:GLY:HA2	23:R:93:PHE:HE2	1.77	0.49
39:h:114:LYS:HD3	39:h:185:ASN:OD1	2.13	0.49
40:i:118:VAL:HG11	40:i:133:ALA:HA	1.94	0.49
40:i:168:PRO:HG2	40:i:171:LEU:HB2	1.95	0.49
40:i:188:ARG:HH22	40:i:195:ILE:H	1.61	0.49
45:n:12:ARG:HG2	45:n:74:GLY:HA2	1.93	0.49
1:1:17:G:P	1:1:17:G:H8	2.34	0.49
1:1:320:A:H5''	1:1:321:U:OP2	2.11	0.49
1:1:480:A:H3'	1:1:481:G:H5''	1.95	0.49
1:1:2293:G:OP1	20:O:94:ARG:NH2	2.45	0.49
1:1:2622:U:C2	1:1:2623:G:H8	2.31	0.49
2:2:1046:A:N6	2:2:1047:G:O2'	2.45	0.49
2:2:1125:U:N3	2:2:1127:G:N7	2.61	0.49
3:4:13:G:H1'	3:4:16:G:H1'	1.93	0.49
8:C:46:ARG:NH2	8:C:88:GLU:O	2.45	0.49
8:C:113:SER:OG	8:C:166:GLY:HA2	2.12	0.49
10:E:110:ARG:HE	10:E:137:ILE:C	2.20	0.49
14:I:78:LEU:HG	14:I:108:ILE:HD12	1.94	0.49
45:n:12:ARG:NH1	45:n:13:LYS:HG3	2.28	0.49
46:o:66:GLU:CD	46:o:68:ARG:HE	2.21	0.49
47:p:94:GLU:HG3	57:z:16:LEU:HD21	1.94	0.49
1:1:954:G:OP1	18:M:13:HIS:HB3	2.13	0.49
2:2:292:G:H1'	2:2:609:A:C2	2.48	0.49
2:2:438:U:H4'	2:2:439:U:O2	2.13	0.49
3:4:15:A:O2'	3:4:16:G:O4'	2.22	0.49
25:T:39:THR:O	25:T:43:ILE:HG12	2.13	0.49
40:i:13:ARG:NH2	40:i:38:PRO:HA	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:244:A:P	36:e:8:ARG:HH21	2.35	0.49
1:1:2770:G:HO2'	1:1:2771:C:P	2.35	0.49
1:1:2799:A:N6	1:1:2801:G:O6	2.46	0.49
2:2:108:G:C5'	2:2:109:A:H5'	2.42	0.49
2:2:608:A:H3'	2:2:609:A:C8	2.48	0.49
2:2:1188:A:C5	2:2:1189:U:H1'	2.48	0.49
2:2:1518:MA6:H92	2:2:1519:MA6:N6	2.27	0.49
4:6:3:C:H2'	4:6:4:G:C8	2.47	0.49
22:Q:32:TYR:O	22:Q:36:PHE:N	2.45	0.49
22:Q:51:ARG:HA	22:Q:54:LYS:HD2	1.94	0.49
36:e:22:PHE:HZ	36:e:59:ILE:HG12	1.78	0.49
54:w:21:ILE:HD12	54:w:54:GLN:HB2	1.95	0.49
1:1:249:C:OP2	1:1:2394:C:H1'	2.13	0.49
1:1:274:C:H2'	1:1:275:C:C2	2.47	0.49
1:1:670:A:OP1	17:L:42:SER:OG	2.21	0.49
1:1:865:C:H1'	1:1:867:C:H41	1.77	0.49
1:1:1212:G:N2	1:1:1237:A:H62	2.10	0.49
1:1:2285:C:OP2	34:c:6:ARG:NE	2.46	0.49
2:2:28:A:O2'	2:2:296:U:OP1	2.29	0.49
2:2:228:A:H4'	52:u:60:TRP:HH2	1.78	0.49
2:2:320:A:H2'	2:2:321:A:C8	2.48	0.49
2:2:674:G:H2'	2:2:675:A:H8	1.78	0.49
3:4:5:U:OP1	3:4:61:G:H1'	2.12	0.49
4:5:4:G:H2'	4:5:5:G:C8	2.48	0.49
11:F:85:LYS:HB2	11:F:141:ILE:HG13	1.95	0.49
12:G:70:GLU:HB2	12:G:134:VAL:HG21	1.94	0.49
15:J:78:THR:HA	15:J:85:LYS:HE3	1.95	0.49
39:h:57:ILE:HG12	39:h:66:VAL:HG22	1.95	0.49
40:i:98:LEU:HD22	40:i:135:TYR:HB3	1.94	0.49
43:l:140:ASP:O	43:l:144:MET:HG2	2.12	0.49
50:s:64:CYS:H	50:s:69:ARG:N	2.09	0.49
51:t:2:SER:OG	51:t:3:LEU:N	2.45	0.49
1:1:647:G:H3'	1:1:648:G:H8	1.77	0.49
1:1:1715:G:O2'	1:1:1743:G:O6	2.24	0.49
2:2:96:U:H2'	2:2:97:G:C8	2.46	0.49
2:2:438:U:H1'	2:2:439:U:H3	1.78	0.49
2:2:548:G:H2'	2:2:549:C:C6	2.48	0.49
2:2:965:U:H5''	2:2:966:2MG:H5'	1.94	0.49
22:Q:51:ARG:O	22:Q:54:LYS:HB2	2.13	0.49
39:h:11:ARG:NH2	39:h:174:PRO:O	2.44	0.49
40:i:120:HIS:O	40:i:146:ARG:NH1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:s:27:LEU:HD11	50:s:47:LYS:HG2	1.95	0.49
57:z:40:LYS:O	57:z:44:GLU:HG3	2.12	0.49
1:1:954:G:H2'	1:1:955:PSU:O4'	2.13	0.48
1:1:979:A:H61	1:1:982:C:H3'	1.77	0.48
1:1:1450:G:N2	1:1:1452:G:O6	2.40	0.48
1:1:2728:U:O2'	1:1:2729:G:H8	1.96	0.48
2:2:44:A:O3'	2:2:307:C:O2'	2.31	0.48
2:2:386:C:C2'	2:2:387:U:H5'	2.43	0.48
2:2:950:U:H1'	2:2:971:G:N7	2.28	0.48
2:2:1222:G:C8	2:2:1322:C:N4	2.81	0.48
3:4:6:G:H1'	20:O:36:TYR:HE2	1.78	0.48
3:4:78:A:H8	3:4:78:A:P	2.36	0.48
15:J:28:LEU:HD21	15:J:101:ILE:HD11	1.95	0.48
15:J:55:ILE:HD13	15:J:132:HIS:CG	2.48	0.48
17:L:33:ARG:HD3	17:L:40:SER:HA	1.95	0.48
26:U:4:LYS:HE2	26:U:83:VAL:O	2.12	0.48
39:h:15:VAL:HG23	39:h:16:LYS:HG2	1.94	0.48
40:i:170:TRP:CZ3	40:i:190:ASP:HB3	2.48	0.48
43:l:16:PRO:HA	45:n:46:MET:SD	2.53	0.48
46:o:28:THR:HA	46:o:31:ARG:HE	1.78	0.48
1:1:25:U:H2'	1:1:26:G:O4'	2.13	0.48
1:1:414:C:H2'	1:1:415:A:C8	2.48	0.48
1:1:516:C:H5''	33:b:10:ARG:NH2	2.29	0.48
1:1:538:A:H2'	1:1:539:G:C8	2.48	0.48
1:1:2297:A:H62	1:1:2318:G:H21	1.61	0.48
1:1:2831:G:H21	1:1:2883:A:C2'	2.26	0.48
2:2:377:G:H5''	52:u:5:ARG:HH11	1.77	0.48
2:2:437:U:O2	2:2:495:A:N7	2.46	0.48
2:2:865:A:H2'	2:2:866:C:C6	2.48	0.48
2:2:1239:A:H62	2:2:1299:A:H62	1.60	0.48
4:6:3:C:H2'	4:6:4:G:H8	1.78	0.48
4:6:53:G:H2'	4:6:54:G:H8	1.77	0.48
15:J:78:THR:C	15:J:80:HIS:H	2.20	0.48
22:Q:98:ILE:HG21	22:Q:109:LEU:HD12	1.94	0.48
25:T:34:VAL:HG11	25:T:43:ILE:HD12	1.95	0.48
38:g:106:THR:HA	38:g:109:GLN:HG2	1.93	0.48
1:1:86:G:O2'	1:1:87:U:H5'	2.14	0.48
1:1:418:C:H2'	1:1:419:U:H6	1.78	0.48
1:1:910:A:N7	18:M:13:HIS:N	2.56	0.48
1:1:948:C:H1'	1:1:984:A:C8	2.48	0.48
1:1:2341:G:N3	1:1:2341:G:H2'	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2547:A:C8	1:1:2566:A:C5	3.01	0.48
1:1:2762:C:H2'	1:1:2763:G:C8	2.47	0.48
2:2:32:A:H2'	2:2:33:A:H8	1.75	0.48
2:2:411:A:C4	2:2:431:A:N6	2.80	0.48
2:2:1107:C:H5'	39:h:173:VAL:C	2.38	0.48
2:2:1230:C:H2'	2:2:1231:G:H8	1.76	0.48
2:2:1316:G:H5'	2:2:1360:A:H1'	1.94	0.48
3:4:116:G:C2	3:4:117:G:C5	3.01	0.48
6:A:128:VAL:HA	6:A:131:VAL:HG12	1.95	0.48
6:A:139:HIS:ND1	6:A:141:PRO:HD2	2.29	0.48
8:C:148:GLN:NE2	8:C:156:PHE:HZ	2.03	0.48
10:E:138:PHE:CZ	10:E:152:LEU:HD11	2.46	0.48
15:J:104:ALA:HB1	15:J:108:MET:HE1	1.94	0.48
22:Q:41:LYS:HD2	22:Q:45:TYR:CE1	2.48	0.48
39:h:130:PHE:CD2	39:h:131:ARG:HG3	2.48	0.48
39:h:152:GLU:HA	39:h:167:TRP:HA	1.95	0.48
42:k:29:ILE:HD11	42:k:66:ALA:HB2	1.94	0.48
54:w:71:THR:H	54:w:74:HIS:CE1	2.31	0.48
1:1:888:C:C5	49:r:81:MET:HB3	2.49	0.48
1:1:947:A:H2'	1:1:948:C:C6	2.48	0.48
1:1:971:G:O2'	1:1:983:A:N3	2.38	0.48
1:1:981:A:N7	1:1:982:C:C5	2.82	0.48
1:1:1059:G:O3'	14:I:75:ALA:HB3	2.13	0.48
1:1:1443:U:H2'	1:1:1444:G:C8	2.48	0.48
1:1:2071:A:H2'	1:1:2072:C:C6	2.48	0.48
1:1:2149:U:H2'	1:1:2150:C:C6	2.48	0.48
1:1:2451:A:O2'	6:A:126:GLN:HB2	2.13	0.48
1:1:2824:C:H2'	1:1:2825:G:O4'	2.14	0.48
2:2:373:A:C6	2:2:482:A:N6	2.81	0.48
2:2:399:G:H2'	2:2:400:C:O4'	2.14	0.48
2:2:962:C:H2'	2:2:963:G:O4'	2.14	0.48
9:D:98:LYS:O	9:D:102:ARG:HG3	2.13	0.48
32:a:56:ARG:HA	32:a:59:ARG:HG2	1.94	0.48
38:g:186:ILE:HA	38:g:200:ILE:O	2.13	0.48
56:y:71:LYS:O	56:y:75:HIS:ND1	2.46	0.48
1:1:572:A:P	1:1:572:A:H8	2.36	0.48
1:1:992:C:H2'	1:1:993:G:C8	2.47	0.48
1:1:1667:G:O2'	1:1:1991:U:O4	2.25	0.48
1:1:2014:A:H2'	1:1:2015:A:C8	2.48	0.48
1:1:2146:C:O2'	1:1:2147:A:O5'	2.30	0.48
2:2:260:G:H5''	56:y:71:LYS:HZ1	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1219:A:H2'	2:2:1220:G:O4'	2.13	0.48
2:2:1377:A:N6	43:l:10:ARG:HE	2.02	0.48
4:6:59:A:H1'	4:6:61:U:C5	2.48	0.48
23:R:77:PHE:CD1	23:R:84:ARG:HA	2.48	0.48
33:b:16:ARG:O	33:b:19:HIS:HB2	2.13	0.48
39:h:110:GLU:HG3	39:h:116:VAL:HG21	1.94	0.48
52:u:7:ALA:O	52:u:18:GLN:N	2.40	0.48
1:1:562:U:H5'	1:1:2036:C:H5''	1.96	0.48
1:1:2007:U:H4'	1:1:2824:C:O2'	2.12	0.48
1:1:2162:G:O2'	1:1:2163:A:N7	2.45	0.48
1:1:2273:A:H2'	1:1:2274:A:C5	2.49	0.48
1:1:2356:U:C5	1:1:2357:G:C8	3.02	0.48
1:1:2420:C:H5'	34:c:8:LYS:HE2	1.96	0.48
2:2:216:U:H2'	2:2:217:C:C6	2.48	0.48
2:2:427:U:C1'	2:2:541:G:H5''	2.43	0.48
2:2:950:U:H2'	2:2:951:G:C8	2.48	0.48
2:2:1053:G:N7	2:2:1200:C:H5''	2.29	0.48
2:2:1179:A:P	45:n:95:ARG:HH22	2.35	0.48
3:4:33:G:O6	3:4:50:A:N6	2.47	0.48
4:5:68:C:H2'	4:5:69:C:C6	2.48	0.48
4:6:44:A:H2'	4:6:45:A:C8	2.47	0.48
4:6:64:G:H2'	4:6:65:G:H8	1.78	0.48
13:H:44:ALA:HB1	13:H:52:MET:HB3	1.95	0.48
15:J:43:GLU:HG3	22:Q:100:VAL:HG13	1.93	0.48
27:V:60:VAL:HG22	27:V:73:LYS:HD2	1.96	0.48
39:h:23:PHE:CZ	46:o:11:LYS:HE2	2.48	0.48
54:w:56:ALA:O	54:w:60:LYS:HG3	2.13	0.48
1:1:84:A:N1	1:1:98:G:O2'	2.47	0.48
1:1:307:G:H2'	1:1:309:A:OP2	2.13	0.48
1:1:507:A:N3	1:1:507:A:H2'	2.28	0.48
1:1:517:C:C2	1:1:518:G:H1'	2.48	0.48
1:1:627:A:N6	17:L:111:ILE:HD12	2.29	0.48
1:1:815:C:H1'	1:1:1193:G:N2	2.29	0.48
1:1:1653:G:H4'	1:1:2822:G:H22	1.79	0.48
1:1:2371:G:H2'	1:1:2372:U:C6	2.49	0.48
1:1:2683:C:H42	16:K:70:ARG:HD3	1.79	0.48
1:1:2774:C:H2'	1:1:2775:G:O4'	2.13	0.48
2:2:396:C:H2'	2:2:397:A:H5''	1.95	0.48
2:2:493:A:H2'	2:2:494:G:C8	2.49	0.48
2:2:1315:U:H2'	2:2:1316:G:O4'	2.13	0.48
2:2:1332:A:H2'	2:2:1333:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:5:58:A:O2'	4:5:59:A:H5''	2.14	0.48
17:L:33:ARG:HD3	17:L:40:SER:C	2.39	0.48
38:g:105:LYS:HA	38:g:108:ARG:HH21	1.78	0.48
41:j:74:VAL:HG12	41:j:76:LEU:HD12	1.96	0.48
41:j:96:MET:HG2	41:j:125:ALA:HA	1.96	0.48
43:l:13:LEU:HD13	45:n:50:GLN:HE22	1.76	0.48
49:r:81:MET:HE1	49:r:91:HIS:HB2	1.94	0.48
1:1:155:A:H2'	1:1:156:A:H8	1.78	0.48
1:1:309:A:H1'	1:1:329:G:C6	2.48	0.48
1:1:532:A:N7	1:1:2021:C:O2'	2.44	0.48
1:1:817:C:O2	1:1:839:U:H4'	2.14	0.48
1:1:862:G:H2'	1:1:863:A:O4'	2.14	0.48
1:1:957:C:H5'	18:M:75:GLU:HG2	1.95	0.48
1:1:1316:U:H2'	1:1:1317:G:H8	1.79	0.48
1:1:2373:G:H2'	1:1:2374:C:O4'	2.14	0.48
1:1:2421:G:H2'	4:6:77:A:H8	1.77	0.48
1:1:2471:A:H61	1:1:2480:C:H1'	1.79	0.48
1:1:2649:C:H2'	1:1:2650:U:C6	2.47	0.48
1:1:2764:A:C6	1:1:2766:A:C6	3.02	0.48
2:2:3:A:N1	2:2:628:G:O2'	2.35	0.48
2:2:299:G:H8	2:2:299:G:OP2	1.97	0.48
2:2:452:A:C5	2:2:453:G:H1'	2.48	0.48
2:2:1057:G:O2'	39:h:188:GLU:HG2	2.13	0.48
2:2:1124:G:H1'	2:2:1125:U:H5	1.77	0.48
2:2:1530:G:O6	57:z:46:LYS:NZ	2.30	0.48
11:F:72:LEU:HA	11:F:75:MET:HG2	1.96	0.48
19:N:114:GLU:OE1	33:b:52:ARG:NH2	2.46	0.48
21:P:76:THR:O	21:P:76:THR:HG22	2.14	0.48
23:R:77:PHE:HD1	23:R:84:ARG:HA	1.79	0.48
48:q:100:GLY:HA2	48:q:104:CYS:O	2.14	0.48
1:1:356:G:H2'	1:1:357:C:C6	2.48	0.48
1:1:1353:A:H2'	1:1:1354:A:C8	2.49	0.48
1:1:1862:G:O6	1:1:1880:U:O2	2.32	0.48
1:1:2039:U:H2'	1:1:2040:G:N7	2.29	0.48
1:1:2547:A:H2'	1:1:2548:U:C6	2.48	0.48
1:1:2637:U:H3'	1:1:2638:G:C8	2.49	0.48
2:2:8:A:C8	40:i:206:LYS:HA	2.49	0.48
2:2:44:A:C6	2:2:45:G:C5	3.01	0.48
2:2:517:G:N2	2:2:533:A:OP1	2.42	0.48
2:2:1319:A:H4'	2:2:1320:C:C5	2.48	0.48
6:A:42:LEU:HD11	6:A:59:GLN:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:L:40:SER:C	17:L:41:ARG:HD3	2.39	0.48
18:M:47:GLU:OE2	18:M:50:ARG:NH2	2.46	0.48
22:Q:60:LEU:HG	22:Q:64:ARG:HE	1.79	0.48
53:v:57:ASP:OD1	53:v:58:VAL:N	2.47	0.48
1:1:9:G:H1'	1:1:2800:A:H62	1.79	0.48
1:1:81:G:H2'	1:1:82:U:O4'	2.14	0.48
1:1:332:A:O2'	1:1:333:G:H5''	2.13	0.48
1:1:926:G:N1	1:1:927:A:N6	2.61	0.48
1:1:996:A:H2'	1:1:996:A:N3	2.29	0.48
1:1:2192:U:H2'	1:1:2193:G:H8	1.78	0.48
1:1:2526:G:H2'	1:1:2527:C:C6	2.49	0.48
1:1:2829:A:OP1	8:C:55:LYS:NZ	2.47	0.48
2:2:1073:U:OP2	41:j:62:LYS:HE2	2.14	0.48
3:4:73:A:H5'	3:4:74:U:OP2	2.13	0.48
4:5:10:A:H2'	4:5:11:G:C8	2.49	0.48
7:B:144:VAL:HG21	7:B:162:VAL:HG11	1.95	0.48
11:F:17:VAL:HG22	11:F:26:ILE:HG13	1.95	0.48
12:G:51:ARG:HH22	12:G:54:LEU:HD13	1.78	0.48
23:R:77:PHE:CE2	23:R:79:ARG:HA	2.49	0.48
39:h:60:PRO:HB3	46:o:94:ALA:HA	1.94	0.48
45:n:106:ARG:NH1	45:n:107:ASP:O	2.47	0.48
47:p:34:ILE:HG21	47:p:74:VAL:HG21	1.95	0.48
48:q:104:CYS:SG	48:q:105:SER:N	2.87	0.48
1:1:249:C:O2	17:L:63:LYS:NZ	2.41	0.47
1:1:980:A:H8	1:1:980:A:OP1	1.97	0.47
1:1:2393:U:H2'	1:1:2394:C:O4'	2.13	0.47
2:2:43:C:N4	2:2:44:A:N6	2.62	0.47
2:2:297:G:C2	2:2:299:G:OP2	2.66	0.47
2:2:397:A:C8	2:2:547:A:O2'	2.66	0.47
2:2:405:U:O4	40:i:2:ALA:N	2.48	0.47
2:2:537:G:H2'	2:2:538:G:C8	2.49	0.47
2:2:997:U:H2'	2:2:998:C:C6	2.49	0.47
8:C:3:GLY:O	8:C:4:LEU:HG	2.14	0.47
30:Y:34:SER:OG	30:Y:35:GLY:N	2.47	0.47
32:a:44:PHE:HD2	32:a:45:THR:HG23	1.78	0.47
36:e:24:HIS:O	36:e:47:LYS:HB3	2.14	0.47
39:h:183:ASP:N	39:h:202:ILE:O	2.31	0.47
40:i:121:LYS:HE3	40:i:129:VAL:HG12	1.96	0.47
45:n:55:VAL:O	45:n:57:MET:N	2.43	0.47
52:u:40:ASN:OD1	52:u:42:ILE:HG12	2.14	0.47
1:1:357:C:H2'	1:1:358:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:848:C:H2'	1:1:849:A:H8	1.78	0.47
1:1:1109:C:H3'	1:1:1110:G:H8	1.79	0.47
1:1:2740:A:C6	1:1:2764:A:C4	3.03	0.47
1:1:2774:C:C4	1:1:2775:G:C4	3.01	0.47
2:2:138:G:H2'	2:2:139:A:C8	2.49	0.47
2:2:139:A:H2'	2:2:140:U:C6	2.49	0.47
2:2:1046:A:N6	2:2:1047:G:HO2'	2.11	0.47
2:2:1148:U:H5'	45:n:7:TYR:OH	2.14	0.47
2:2:1157:A:H2	2:2:1178:G:N2	2.07	0.47
2:2:1173:U:H2'	2:2:1174:G:C8	2.49	0.47
4:6:41:C:O2	43:l:144:MET:HE1	2.14	0.47
15:J:96:ARG:NH1	15:J:102:GLU:OE1	2.47	0.47
17:L:37:GLY:O	17:L:40:SER:OG	2.15	0.47
56:y:71:LYS:HG2	56:y:75:HIS:CE1	2.49	0.47
1:1:250:G:OP1	36:e:13:ARG:NH2	2.47	0.47
1:1:325:G:H2'	1:1:326:G:C8	2.49	0.47
1:1:1022:G:H1	1:1:1140:C:H2'	1.77	0.47
1:1:1190:G:OP1	17:L:34:GLY:HA2	2.15	0.47
2:2:358:U:H2'	2:2:359:G:H8	1.79	0.47
2:2:966:2MG:H4'	2:2:969:A:C8	2.49	0.47
2:2:1169:A:H2'	2:2:1170:A:C8	2.49	0.47
2:2:1267:C:O2'	2:2:1268:G:OP1	2.28	0.47
6:A:18:GLN:HB2	6:A:52:THR:HB	1.97	0.47
12:G:53:GLU:O	12:G:57:LYS:HG2	2.13	0.47
17:L:95:LEU:HB3	17:L:100:ILE:HB	1.95	0.47
22:Q:58:ARG:HA	22:Q:61:TRP:CE3	2.49	0.47
38:g:15:HIS:O	38:g:40:ILE:HG23	2.15	0.47
38:g:69:PHE:HE2	38:g:89:GLN:HB2	1.78	0.47
1:1:381:G:OP1	29:X:18:ARG:NH1	2.47	0.47
1:1:645:C:H5''	1:1:647:G:C8	2.50	0.47
1:1:861:A:H2	3:4:78:A:C2	2.31	0.47
1:1:1130:U:P	1:1:2570:G:H21	2.37	0.47
1:1:2540:C:H2'	1:1:2541:A:H8	1.78	0.47
1:1:2622:U:C2	1:1:2623:G:C8	3.02	0.47
2:2:552:U:O2	48:q:28:PRO:HB3	2.15	0.47
3:4:37:C:O2	20:O:100:HIS:NE2	2.46	0.47
8:C:168:GLU:HG3	8:C:170:VAL:HG23	1.96	0.47
36:e:22:PHE:O	36:e:50:VAL:N	2.34	0.47
39:h:22:TRP:HZ2	39:h:33:LEU:HD13	1.78	0.47
40:i:65:TYR:CE1	40:i:94:LEU:HB3	2.50	0.47
44:m:105:SER:HB2	44:m:126:ILE:HD11	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:561:G:C2'	1:1:562:U:H5''	2.44	0.47
1:1:1590:A:H2'	1:1:1591:A:C8	2.48	0.47
1:1:2493:U:H5''	6:A:132:ASN:H	1.79	0.47
1:1:2681:C:H5'	8:C:8:LYS:NZ	2.29	0.47
1:1:2739:U:O2	1:1:2740:A:N7	2.48	0.47
1:1:2771:C:O2'	8:C:173:GLN:OE1	2.33	0.47
1:1:2780:G:H4'	1:1:2781:A:OP2	2.11	0.47
1:1:2820:A:OP1	19:N:4:ARG:N	2.35	0.47
2:2:68:G:C2	2:2:151:A:C2	2.96	0.47
2:2:391:G:N2	2:2:482:A:C4	2.82	0.47
2:2:546:A:N7	40:i:68:LEU:HD21	2.30	0.47
2:2:1162:C:H2'	2:2:1163:A:H8	1.80	0.47
10:E:122:PHE:CD2	10:E:126:GLY:HA2	2.50	0.47
15:J:48:VAL:HG12	15:J:50:THR:HG23	1.96	0.47
21:P:55:LEU:HD12	21:P:55:LEU:HA	1.74	0.47
23:R:74:ILE:HG22	23:R:76:LYS:HG3	1.96	0.47
26:U:51:ALA:C	26:U:52:LEU:HD23	2.39	0.47
47:p:94:GLU:O	47:p:98:ARG:HG3	2.15	0.47
1:1:1532:A:N6	1:1:1540:G:O6	2.47	0.47
1:1:2683:C:H6	8:C:13:ARG:NH2	2.12	0.47
2:2:267:C:C4	2:2:268:U:C4	3.01	0.47
2:2:1463:U:C2	2:2:1464:U:H5	2.33	0.47
3:4:73:A:H3'	3:4:74:U:C6	2.50	0.47
9:D:165:HIS:CD2	9:D:166:LYS:HE3	2.49	0.47
11:F:76:VAL:O	11:F:80:THR:HG23	2.15	0.47
15:J:14:ASP:O	15:J:52:ASP:HB3	2.15	0.47
38:g:161:LEU:HD22	38:g:176:ALA:HB2	1.97	0.47
1:1:151:C:H2'	1:1:152:A:H8	1.80	0.47
1:1:247:G:H4'	1:1:386:G:N1	2.29	0.47
1:1:284:U:O2	1:1:356:G:N2	2.35	0.47
1:1:298:G:H21	1:1:340:A:H62	1.61	0.47
1:1:609:A:N6	1:1:619:G:C2	2.77	0.47
1:1:928:A:H2'	1:1:929:U:O4'	2.14	0.47
1:1:955:PSU:O4	1:1:962:G:N2	2.39	0.47
1:1:958:U:O2	3:4:89:U:O2'	2.26	0.47
1:1:1808:A:H3'	1:1:1809:A:C8	2.49	0.47
1:1:2134:A:O2'	1:1:2159:G:N2	2.43	0.47
1:1:2300:C:H2'	1:1:2301:C:C6	2.50	0.47
1:1:2421:G:C5	4:6:77:A:C5	3.02	0.47
1:1:2564:A:N7	1:1:2648:G:H5''	2.30	0.47
1:1:2747:G:H2'	1:1:2754:U:O4	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2823:A:C5	1:1:2824:C:C4	3.03	0.47
2:2:108:G:H4'	2:2:331:G:O6	2.15	0.47
2:2:255:G:H2'	2:2:256:U:C6	2.50	0.47
2:2:328:C:H4'	2:2:329:A:H5'	1.96	0.47
2:2:510:A:H4'	40:i:14:ARG:HH22	1.79	0.47
2:2:941:G:H4'	2:2:1350:A:H4'	1.96	0.47
2:2:958:A:N6	55:x:55:ARG:HB2	2.30	0.47
2:2:969:A:H2'	2:2:970:C:O4'	2.14	0.47
2:2:973:G:H1'	46:o:56:HIS:HD2	1.79	0.47
2:2:984:C:H2'	2:2:985:C:C6	2.50	0.47
2:2:1066:C:N4	2:2:1191:A:C5	2.82	0.47
2:2:1129:C:O2'	2:2:1139:G:N7	2.46	0.47
2:2:1287:A:H2	2:2:1353:G:H1'	1.79	0.47
2:2:1316:G:O6	55:x:7:LYS:NZ	2.38	0.47
3:4:15:A:H5''	3:4:108:A:H4'	1.97	0.47
4:5:5:G:H2'	4:5:6:G:C8	2.49	0.47
6:A:40:THR:HG22	6:A:59:GLN:HB3	1.97	0.47
6:A:139:HIS:CE1	6:A:141:PRO:HD2	2.49	0.47
9:D:35:TYR:CE1	9:D:176:ASP:HB2	2.50	0.47
10:E:13:VAL:O	10:E:17:MET:HG2	2.14	0.47
10:E:94:GLU:OE2	32:a:25:ARG:NH1	2.47	0.47
10:E:101:GLU:HA	10:E:104:ILE:HG12	1.97	0.47
23:R:78:ARG:NH2	23:R:81:LYS:HG3	2.25	0.47
33:b:17:ARG:O	33:b:20:ASP:HB2	2.14	0.47
34:c:13:SER:HA	34:c:49:TYR:CD1	2.50	0.47
38:g:19:GLN:HG2	38:g:38:VAL:HG22	1.96	0.47
38:g:139:ARG:O	38:g:142:GLU:HG3	2.14	0.47
42:k:42:TRP:HZ2	42:k:61:LEU:HD22	1.79	0.47
45:n:120:LYS:CD	45:n:121:ALA:H	2.16	0.47
50:s:54:ASP:HA	50:s:59:ARG:HD3	1.97	0.47
51:t:25:THR:HG23	51:t:66:LEU:HG	1.97	0.47
1:1:364:C:H2'	1:1:365:U:C6	2.50	0.47
1:1:629:G:H1'	1:1:639:U:O2'	2.14	0.47
1:1:942:G:H3'	1:1:943:A:C8	2.48	0.47
1:1:2029:G:C2'	1:1:2030:6MZ:H5'1	2.45	0.47
1:1:2286:G:N2	1:1:2344:U:O2	2.35	0.47
1:1:2321:U:H5'	1:1:2322:A:OP2	2.14	0.47
2:2:1156:G:O2'	2:2:1180:A:N1	2.48	0.47
2:2:1464:U:H2'	2:2:1465:A:C8	2.49	0.47
4:6:22:A:O2'	4:6:47:G:O6	2.30	0.47
9:D:146:VAL:HG12	9:D:167:VAL:HG22	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:F:19:ILE:HG12	11:F:24:ILE:HG12	1.96	0.47
19:N:56:LYS:HE3	19:N:88:ALA:HA	1.97	0.47
28:W:44:LYS:HB2	28:W:44:LYS:HE2	1.75	0.47
45:n:84:THR:HG23	45:n:98:LEU:HD13	1.96	0.47
52:u:61:VAL:HG22	52:u:67:ILE:HD11	1.97	0.47
1:1:367:G:H2'	1:1:367:G:N3	2.29	0.47
1:1:956:G:H4'	18:M:82:MET:HE1	1.96	0.47
1:1:1238:G:H2'	1:1:1239:G:C8	2.50	0.47
1:1:2243:U:H2'	1:1:2244:U:C6	2.50	0.47
2:2:181:A:N6	2:2:195:A:OP2	2.47	0.47
2:2:1338:G:O2'	4:5:41:C:H4'	2.14	0.47
4:6:28:U:H2'	4:6:29:C:C6	2.50	0.47
40:i:97:ARG:O	40:i:101:VAL:HG23	2.15	0.47
45:n:85:ARG:HA	45:n:88:MET:HE2	1.97	0.47
56:y:14:SER:O	56:y:18:ARG:HB2	2.14	0.47
1:1:84:A:OP2	1:1:101:A:N6	2.45	0.47
1:1:524:G:O2'	1:1:556:A:OP1	2.28	0.47
1:1:814:C:OP1	23:R:85:LYS:HE2	2.15	0.47
1:1:1083:U:OP1	13:H:53:ARG:NH1	2.33	0.47
1:1:1173:U:H4'	1:1:1174:U:H5'	1.97	0.47
1:1:2290:G:H2'	1:1:2291:U:H6	1.80	0.47
1:1:2623:G:C3'	1:1:2624:G:H8	2.24	0.47
2:2:60:A:N3	2:2:61:G:H1'	2.30	0.47
2:2:579:A:H2'	2:2:580:C:C6	2.49	0.47
2:2:629:A:H2'	2:2:630:A:O4'	2.15	0.47
11:F:72:LEU:HD13	11:F:75:MET:HE3	1.97	0.47
24:S:6:LYS:HE2	24:S:8:ARG:NH1	2.30	0.47
43:l:68:ASN:O	43:l:138:ARG:NH1	2.48	0.47
43:l:150:ALA:HB1	47:p:59:THR:OG1	2.15	0.47
49:r:3:ARG:HG3	49:r:8:ASN:HA	1.97	0.47
1:1:225:C:H41	1:1:419:U:H4'	1.80	0.46
1:1:253:C:OP2	36:e:5:LYS:NZ	2.47	0.46
1:1:391:A:H2'	1:1:392:U:C5	2.50	0.46
1:1:2470:G:O6	1:1:2476:A:O2'	2.21	0.46
1:1:2638:G:N2	1:1:2775:G:H2'	2.30	0.46
2:2:130:A:N6	2:2:233:C:O2'	2.48	0.46
2:2:197:A:N3	2:2:198:G:H1'	2.31	0.46
2:2:227:G:H2'	2:2:228:A:H8	1.80	0.46
2:2:298:A:C6	2:2:299:G:C2	3.02	0.46
2:2:452:A:N7	2:2:453:G:H1'	2.31	0.46
2:2:979:C:N4	50:s:58:SER:HB3	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1118:U:H1'	2:2:1179:A:C4	2.51	0.46
2:2:1173:U:C2	2:2:1174:G:C8	3.03	0.46
3:4:27:C:H2'	3:4:28:C:C5	2.50	0.46
3:4:47:C:H2'	3:4:48:U:O4'	2.15	0.46
3:4:96:G:H2'	3:4:97:C:H5'	1.96	0.46
4:5:66:C:H2'	4:5:67:C:C6	2.51	0.46
15:J:24:THR:HB	15:J:27:ARG:HD3	1.97	0.46
15:J:48:VAL:CG1	15:J:50:THR:HG23	2.45	0.46
22:Q:80:ILE:HD13	22:Q:83:LEU:HD12	1.95	0.46
23:R:71:LYS:N	23:R:90:ARG:HH21	2.12	0.46
1:1:304:U:H2'	1:1:305:C:H5	1.78	0.46
1:1:536:G:H21	15:J:47:HIS:CG	2.33	0.46
1:1:552:U:H2'	1:1:553:G:N7	2.30	0.46
1:1:574:A:C6	1:1:2033:A:H4'	2.50	0.46
1:1:590:A:C6	1:1:668:A:N1	2.83	0.46
1:1:964:C:H3'	1:1:965:C:H5''	1.96	0.46
1:1:1189:A:H3'	1:1:1190:G:C8	2.51	0.46
1:1:2370:G:N3	1:1:2371:G:H1'	2.30	0.46
1:1:2455:G:H2'	1:1:2456:C:C6	2.51	0.46
1:1:2474:U:H5''	1:1:2475:C:H5	1.79	0.46
1:1:2571:U:C2	1:1:2574:G:H1'	2.50	0.46
1:1:2823:A:C5	1:1:2824:C:C5	3.02	0.46
2:2:376:G:OP1	52:u:70:ARG:HG3	2.14	0.46
2:2:1074:G:H4'	38:g:102:THR:HG22	1.97	0.46
2:2:1229:A:H62	49:r:104:THR:CG2	2.28	0.46
17:L:77:ILE:HD13	17:L:109:LYS:H	1.80	0.46
38:g:78:GLU:HG2	38:g:79:ALA:N	2.30	0.46
48:q:4:VAL:O	48:q:8:VAL:HG13	2.16	0.46
50:s:88:ALA:HB2	50:s:93:ILE:HD12	1.97	0.46
1:1:610:C:H2'	1:1:611:C:C6	2.51	0.46
1:1:1029:A:C5	1:1:1125:G:N2	2.83	0.46
1:1:2657:A:O3'	11:F:92:VAL:HG21	2.15	0.46
1:1:2822:G:C8	8:C:117:GLY:HA2	2.50	0.46
2:2:43:C:H2'	2:2:44:A:C8	2.50	0.46
2:2:448:A:HO2'	2:2:449:G:P	2.36	0.46
2:2:978:A:H61	2:2:1316:G:H1'	1.80	0.46
39:h:31:ASP:CG	50:s:65:ARG:HH12	2.23	0.46
1:1:272:A:H2'	1:1:273:G:C8	2.51	0.46
1:1:622:G:H2'	1:1:623:C:C6	2.51	0.46
1:1:910:A:H2'	1:1:911:A:N9	2.30	0.46
1:1:967:U:H2'	1:1:968:C:C5	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1019:U:H2'	1:1:1020:A:C8	2.49	0.46
1:1:1035:U:O2	1:1:1120:G:O6	2.32	0.46
1:1:1190:G:H2'	1:1:1191:G:O4'	2.15	0.46
1:1:1796:U:H2'	1:1:1797:G:C8	2.51	0.46
1:1:2288:A:O2'	1:1:2289:G:H5'	2.15	0.46
1:1:2622:U:H2'	1:1:2623:G:C5'	2.45	0.46
1:1:2746:U:H4'	11:F:138:LYS:HG2	1.97	0.46
2:2:32:A:C4	2:2:33:A:C8	3.03	0.46
2:2:174:A:H8	2:2:174:A:OP2	1.98	0.46
2:2:179:A:H2'	2:2:180:U:H5'	1.98	0.46
2:2:322:C:C4	2:2:329:A:N6	2.71	0.46
2:2:397:A:O2'	2:2:398:U:O5'	2.25	0.46
3:4:62:C:H2'	3:4:63:C:H6	1.81	0.46
23:R:15:SER:HA	23:R:101:ILE:HD11	1.98	0.46
38:g:81:LYS:HD2	38:g:93:ASN:ND2	2.31	0.46
40:i:91:LEU:HB3	40:i:191:LEU:HD12	1.98	0.46
1:1:72:U:O2	30:Y:55:THR:OG1	2.34	0.46
1:1:171:U:H2'	1:1:172:A:H8	1.80	0.46
1:1:810:U:O4	17:L:29:LYS:HG3	2.16	0.46
1:1:1009:A:H1'	22:Q:59:GLN:CD	2.40	0.46
1:1:1853:A:N7	1:1:1889:A:N6	2.63	0.46
1:1:2391:G:N1	1:1:2424:C:H3'	2.27	0.46
1:1:2417:C:H5'	36:e:45:ARG:NE	2.31	0.46
1:1:2574:G:C2	1:1:2575:C:O2	2.68	0.46
1:1:2719:G:H5''	21:P:53:ARG:HH22	1.81	0.46
1:1:2725:A:O2'	1:1:2727:A:N7	2.44	0.46
2:2:471:U:H2'	2:2:472:U:C6	2.50	0.46
2:2:553:A:N6	2:2:554:A:C5	2.84	0.46
2:2:891:U:H2'	2:2:892:A:H8	1.81	0.46
2:2:1200:C:O5'	2:2:1201:A:O2'	2.34	0.46
2:2:1252:A:H2'	2:2:1253:G:O4'	2.15	0.46
49:r:34:LEU:HD13	49:r:41:GLU:HG2	1.96	0.46
49:r:72:GLU:HA	49:r:75:MET:HG2	1.97	0.46
55:x:11:ILE:HA	55:x:38:SER:HB3	1.97	0.46
1:1:13:A:H8	1:1:13:A:OP2	1.99	0.46
1:1:44:A:H2'	1:1:45:G:O4'	2.16	0.46
1:1:107:G:H4'	1:1:293:U:O2'	2.16	0.46
1:1:321:U:C2	9:D:159:LEU:HD13	2.50	0.46
1:1:536:G:H5''	1:1:995:C:N4	2.31	0.46
1:1:955:PSU:H3'	1:1:956:G:H8	1.81	0.46
1:1:2391:G:O2'	1:1:2392:A:OP2	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2395:C:H41	36:e:30:ARG:HG2	1.79	0.46
2:2:136:C:H2'	2:2:137:U:C6	2.51	0.46
2:2:321:A:N6	2:2:329:A:C8	2.84	0.46
2:2:393:A:H2'	2:2:393:A:N3	2.30	0.46
2:2:1102:A:H2'	2:2:1103:C:H6	1.81	0.46
2:2:1179:A:H2'	2:2:1180:A:C8	2.51	0.46
2:2:1303:C:C2'	2:2:1304:G:H5'	2.45	0.46
2:2:1349:A:H5''	45:n:123:ARG:HB2	1.98	0.46
3:4:57:A:O4'	10:E:27:GLN:HG3	2.15	0.46
7:B:145:GLU:HG2	7:B:151:GLY:C	2.41	0.46
22:Q:52:GLN:O	22:Q:56:GLN:HG3	2.16	0.46
27:V:46:LYS:O	27:V:50:MET:HG3	2.15	0.46
38:g:81:LYS:HB2	38:g:93:ASN:ND2	2.31	0.46
49:r:23:TYR:CD2	49:r:69:LEU:HD23	2.50	0.46
55:x:32:ARG:HA	55:x:50:ALA:HB3	1.98	0.46
1:1:331:C:N4	1:1:1210:G:H22	2.14	0.46
1:1:347:A:H2'	1:1:348:A:C8	2.50	0.46
1:1:443:A:H5'	1:1:1201:U:C4'	2.43	0.46
1:1:529:A:OP1	15:J:113:PRO:HD3	2.15	0.46
1:1:536:G:H2'	1:1:537:G:H5'	1.98	0.46
1:1:654:A:N1	36:e:19:LYS:NZ	2.55	0.46
1:1:1161:C:O2'	23:R:23:GLU:HB2	2.16	0.46
1:1:2151:U:H2'	1:1:2152:G:H8	1.80	0.46
1:1:2331:G:H2'	1:1:2332:C:O4'	2.15	0.46
1:1:2362:C:C2	1:1:2363:G:N7	2.84	0.46
1:1:2772:C:H2'	1:1:2773:C:C6	2.51	0.46
1:1:2846:G:H5''	21:P:53:ARG:HH12	1.81	0.46
1:1:2888:C:C2	1:1:2889:C:C5	3.04	0.46
2:2:888:G:OP2	2:2:889:A:H3'	2.15	0.46
3:4:29:A:P	20:O:32:PRO:HD2	2.56	0.46
8:C:91:THR:OG1	8:C:94:GLN:HG3	2.15	0.46
18:M:16:ARG:CG	18:M:18:ARG:HG2	2.45	0.46
20:O:64:TYR:CD2	20:O:67:ASN:HB3	2.51	0.46
23:R:71:LYS:O	23:R:73:LYS:HE3	2.15	0.46
25:T:4:GLU:OE2	25:T:49:LYS:NZ	2.48	0.46
26:U:86:ARG:HB3	26:U:95:PHE:HE2	1.80	0.46
36:e:13:ARG:O	36:e:15:LYS:N	2.48	0.46
41:j:88:VAL:HG23	41:j:92:SER:C	2.41	0.46
53:v:9:GLN:OE1	53:v:9:GLN:N	2.49	0.46
1:1:636:G:N7	17:L:128:THR:HG21	2.31	0.46
1:1:992:C:H2'	1:1:993:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1459:G:C5	1:1:1461:C:C4	3.04	0.46
1:1:1539:U:H2'	1:1:1540:G:C8	2.49	0.46
1:1:2571:U:N3	1:1:2574:G:H1'	2.31	0.46
1:1:2738:A:H2'	1:1:2739:U:O4'	2.16	0.46
2:2:415:A:H2'	2:2:416:G:O4'	2.16	0.46
2:2:428:G:H4'	2:2:429:U:O5'	2.15	0.46
2:2:652:U:O4	2:2:752:G:O2'	2.32	0.46
2:2:904:U:H2'	2:2:905:U:C6	2.50	0.46
2:2:1056:U:H2'	2:2:1057:G:H8	1.81	0.46
2:2:1074:G:N1	2:2:1075:U:C4	2.84	0.46
2:2:1240:U:O4	43:l:109:ARG:NH2	2.37	0.46
24:S:67:ASP:OD1	24:S:68:ASP:N	2.48	0.46
44:m:78:VAL:HG12	44:m:85:ILE:HD11	1.98	0.46
48:q:29:GLN:HG3	48:q:82:ILE:O	2.15	0.46
1:1:414:C:H1'	1:1:1864:U:O2'	2.15	0.46
1:1:479:A:H1'	1:1:480:A:H5''	1.97	0.46
1:1:1081:U:H2'	1:1:1082:U:C6	2.51	0.46
1:1:1084:A:H62	13:H:56:ARG:NH2	2.14	0.46
1:1:1239:G:H8	1:1:1239:G:P	2.38	0.46
1:1:1790:C:H2'	1:1:1791:A:C8	2.50	0.46
1:1:2342:C:H2'	1:1:2343:U:O4'	2.15	0.46
2:2:68:G:H5'	2:2:69:G:OP2	2.15	0.46
2:2:195:A:H5''	56:y:60:ARG:HG3	1.98	0.46
2:2:386:C:H2'	2:2:387:U:H5'	1.98	0.46
2:2:973:G:H2'	2:2:974:A:N7	2.31	0.46
3:4:75:G:H22	27:V:78:GLN:CD	2.24	0.46
8:C:107:VAL:HG22	8:C:175:LEU:O	2.16	0.46
12:G:50:ARG:HG3	12:G:51:ARG:HG2	1.96	0.46
27:V:38:LEU:HD12	27:V:39:ALA:H	1.81	0.46
44:m:10:MET:HE3	44:m:61:LEU:HD11	1.97	0.46
1:1:990:A:C6	1:1:1186:G:H1'	2.50	0.46
1:1:1657:U:H2'	1:1:1658:C:H6	1.81	0.46
1:1:1883:U:H2'	1:1:1884:G:O4'	2.16	0.46
1:1:2140:G:H2'	1:1:2141:G:H8	1.81	0.46
1:1:2370:G:C2	1:1:2371:G:H1'	2.51	0.46
2:2:416:G:C4	2:2:417:G:N7	2.84	0.46
2:2:511:C:H2'	2:2:534:U:O2	2.16	0.46
2:2:546:A:OP2	40:i:68:LEU:HD23	2.16	0.46
2:2:600:A:H2'	2:2:601:G:H8	1.81	0.46
2:2:1195:C:H2'	2:2:1197:A:C8	2.51	0.46
3:4:69:G:H1	3:4:107:G:N2	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:R:42:ALA:HA	23:R:47:VAL:HA	1.98	0.46
26:U:95:PHE:HD1	26:U:96:PHE:O	1.99	0.46
40:i:105:MET:HG3	40:i:173:VAL:HG22	1.97	0.46
41:j:86:LYS:HG2	41:j:95:PHE:HD1	1.81	0.46
1:1:374:A:H62	1:1:400:G:H21	1.64	0.45
1:1:383:C:N3	1:1:385:C:N4	2.63	0.45
1:1:1008:A:H1'	1:1:1010:A:N6	2.31	0.45
1:1:1796:U:H2'	1:1:1797:G:H8	1.81	0.45
1:1:1863:G:H2'	1:1:1864:U:C6	2.51	0.45
1:1:2315:G:O4'	10:E:127:ASN:ND2	2.49	0.45
1:1:2355:G:C4	1:1:2356:U:C5	3.04	0.45
2:2:34:C:H3'	2:2:35:G:C8	2.50	0.45
2:2:259:G:H2'	2:2:260:G:O4'	2.16	0.45
2:2:554:A:H2'	2:2:555:U:C6	2.50	0.45
2:2:1124:G:N2	2:2:1125:U:O4	2.40	0.45
2:2:1130:A:H4'	45:n:5:GLN:NE2	2.31	0.45
2:2:1229:A:H62	49:r:104:THR:HG23	1.81	0.45
3:4:61:G:H2'	3:4:62:C:H6	1.81	0.45
11:F:139:GLN:NE2	11:F:140:VAL:HG23	2.31	0.45
16:K:63:VAL:HG22	16:K:107:LEU:HD11	1.98	0.45
17:L:64:PHE:HD1	36:e:25:LYS:HB2	1.81	0.45
23:R:79:ARG:O	23:R:80:ARG:HG2	2.16	0.45
39:h:130:PHE:O	39:h:134:MET:HG2	2.15	0.45
52:u:53:ASP:CG	52:u:56:ARG:HG2	2.41	0.45
1:1:242:G:C4	36:e:5:LYS:HE2	2.51	0.45
1:1:445:C:OP1	22:Q:2:ALA:N	2.49	0.45
1:1:495:G:H5'	24:S:4:ILE:O	2.16	0.45
1:1:835:C:H4'	1:1:2358:A:H4'	1.98	0.45
1:1:1548:A:H2'	1:1:1549:A:C8	2.50	0.45
1:1:1682:G:H2'	1:1:1683:U:C6	2.52	0.45
1:1:2682:A:H61	1:1:2727:A:C2'	2.28	0.45
2:2:132:C:H2'	2:2:133:U:O4'	2.16	0.45
2:2:193:C:H2'	2:2:194:C:C6	2.50	0.45
2:2:299:G:H2'	2:2:300:A:C8	2.48	0.45
2:2:1254:A:O4'	2:2:1356:G:H5''	2.16	0.45
2:2:1391:U:C2	2:2:1392:G:N7	2.84	0.45
11:F:78:GLY:HA2	11:F:82:GLY:HA2	1.98	0.45
22:Q:41:LYS:HD3	22:Q:44:GLN:HB2	1.99	0.45
37:f:16:ILE:HD13	37:f:25:VAL:HG22	1.98	0.45
38:g:27:MET:HE1	38:g:187:VAL:O	2.16	0.45
38:g:218:ALA:O	38:g:222:ARG:HG3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:h:12:LEU:HD12	39:h:18:TRP:CD1	2.51	0.45
55:x:12:ASP:HB3	55:x:14:HIS:CD2	2.52	0.45
1:1:242:G:H5''	36:e:5:LYS:HA	1.98	0.45
1:1:308:G:H21	1:1:329:G:H21	1.63	0.45
1:1:518:G:N3	1:1:518:G:H2'	2.30	0.45
1:1:519:U:O2'	24:S:75:PHE:HB3	2.15	0.45
1:1:566:U:H5	23:R:80:ARG:HB2	1.81	0.45
1:1:600:G:H4'	9:D:27:LEU:HD22	1.97	0.45
1:1:1184:U:H2'	1:1:1185:G:H5'	1.97	0.45
1:1:1779:U:H5	1:1:1784:A:N7	2.15	0.45
1:1:2425:A:H4'	1:1:2426:A:O5'	2.16	0.45
1:1:2427:C:H5''	1:1:2429:G:H5'	1.97	0.45
1:1:2446:G:HO2'	1:1:2448:A:H8	1.62	0.45
1:1:2641:G:H2'	1:1:2642:G:O4'	2.15	0.45
2:2:45:G:C6	2:2:46:G:C6	3.04	0.45
2:2:418:C:O2'	2:2:419:C:H5'	2.16	0.45
2:2:430:A:H2'	2:2:431:A:H5'	1.97	0.45
2:2:927:G:H21	2:2:1532:U:C5'	2.29	0.45
2:2:1097:C:H2'	2:2:1098:C:H6	1.80	0.45
12:G:12:LEU:HD11	12:G:21:VAL:HG12	1.99	0.45
15:J:78:THR:CG2	15:J:85:LYS:HE3	2.46	0.45
23:R:60:LYS:NZ	23:R:102:SER:HB2	2.32	0.45
38:g:69:PHE:CD1	38:g:162:PHE:HB3	2.51	0.45
52:u:8:ARG:HD2	52:u:28:ARG:NH1	2.31	0.45
54:w:71:THR:O	54:w:74:HIS:ND1	2.49	0.45
1:1:23:G:C6	1:1:24:G:C5	3.04	0.45
1:1:327:G:N2	26:U:68:SER:OG	2.48	0.45
1:1:831:G:H2'	1:1:832:U:O4'	2.16	0.45
1:1:975:A:H62	1:1:989:G:H21	0.68	0.45
1:1:1042:G:N2	1:1:1113:U:O2	2.29	0.45
1:1:1059:G:H2'	1:1:1060:U:C5	2.52	0.45
1:1:1199:U:C4	1:1:1200:C:C4	3.04	0.45
1:1:1225:G:H8	1:1:1225:G:O5'	1.99	0.45
1:1:1794:A:H2'	1:1:1795:C:C6	2.51	0.45
1:1:1858:A:C6	1:1:1885:A:C8	3.04	0.45
1:1:2140:G:H2'	1:1:2141:G:C8	2.50	0.45
1:1:2175:C:H2'	1:1:2176:A:H8	1.81	0.45
1:1:2547:A:C8	1:1:2566:A:C4	3.04	0.45
1:1:2830:C:HO2'	1:1:2836:U:C4'	2.29	0.45
2:2:46:G:H2'	2:2:366:A:H62	1.80	0.45
2:2:105:G:H2'	2:2:106:C:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:195:A:H2'	2:2:196:A:O4'	2.15	0.45
2:2:324:G:N2	2:2:326:G:H8	2.09	0.45
2:2:1148:U:H2'	2:2:1149:C:O4'	2.15	0.45
2:2:1181:G:H4'	2:2:1182:G:H5'	1.99	0.45
2:2:1273:C:H2'	2:2:1274:A:O4'	2.16	0.45
2:2:1357:A:H2'	2:2:1358:U:O4'	2.17	0.45
3:4:72:G:H21	3:4:104:A:H62	1.65	0.45
15:J:15:TRP:NE1	15:J:53:TYR:HB2	2.31	0.45
20:O:18:LEU:HD23	20:O:18:LEU:HA	1.74	0.45
20:O:64:TYR:HD2	20:O:67:ASN:HB3	1.82	0.45
34:c:21:TYR:OH	34:c:39:PHE:O	2.28	0.45
39:h:189:ALA:O	39:h:195:VAL:HG13	2.16	0.45
41:j:81:LEU:HD22	41:j:96:MET:HE1	1.97	0.45
45:n:81:HIS:O	45:n:85:ARG:HG2	2.17	0.45
45:n:106:ARG:NH1	45:n:110:GLN:OE1	2.49	0.45
54:w:35:GLU:OE2	54:w:35:GLU:N	2.42	0.45
1:1:573:U:O2	1:1:2029:G:N2	2.50	0.45
1:1:652:U:O2'	1:1:653:U:O4'	2.34	0.45
1:1:2642:G:H5'	8:C:158:GLY:HA3	1.98	0.45
2:2:928:G:O2'	2:2:1533:C:OP1	2.34	0.45
2:2:1048:G:P	50:s:4:GLN:HB2	2.56	0.45
2:2:1074:G:N2	2:2:1075:U:C2	2.85	0.45
2:2:1530:G:H2'	2:2:1531:A:C8	2.51	0.45
3:4:43:C:O4'	10:E:63:GLN:NE2	2.50	0.45
43:l:26:PHE:CD1	43:l:101:MET:HB2	2.51	0.45
49:r:19:LEU:HD11	49:r:56:LEU:HD11	1.98	0.45
1:1:15:G:H2'	1:1:16:C:C6	2.52	0.45
1:1:112:U:H2'	1:1:113:U:H5'	1.97	0.45
1:1:323:C:OP2	1:1:324:A:H8	1.99	0.45
1:1:444:C:OP2	9:D:44:ARG:HB3	2.17	0.45
1:1:587:C:H5''	9:D:85:PHE:CE2	2.52	0.45
1:1:615:U:H3	9:D:38:GLY:HA3	1.82	0.45
1:1:668:A:C2	1:1:670:A:N6	2.84	0.45
1:1:874:G:C6	1:1:904:G:C6	3.04	0.45
1:1:920:A:C6	1:1:921:C:N4	2.85	0.45
1:1:1141:U:OP2	15:J:65:THR:OG1	2.25	0.45
1:1:2684:U:H2'	1:1:2685:G:O4'	2.17	0.45
2:2:979:C:C2	2:2:980:C:C5	3.04	0.45
2:2:1218:C:H2'	2:2:1219:A:C8	2.51	0.45
20:O:33:ARG:O	20:O:65:THR:OG1	2.28	0.45
48:q:119:VAL:HG12	48:q:120:LYS:O	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:911:A:OP1	1:1:912:C:H5	1.99	0.45
1:1:979:A:N6	1:1:982:C:OP2	2.45	0.45
1:1:984:A:O2'	1:1:985:C:H5'	2.16	0.45
1:1:1005:C:O2'	1:1:1012:U:O4	2.34	0.45
1:1:2519:U:H2'	1:1:2519:U:OP2	2.17	0.45
1:1:2623:G:H2'	1:1:2624:G:C8	2.51	0.45
1:1:2751:G:P	11:F:3:ARG:HH21	2.40	0.45
2:2:33:A:C4	2:2:34:C:C5	3.05	0.45
2:2:164:G:H2'	2:2:165:G:C8	2.51	0.45
2:2:542:G:H4'	40:i:38:PRO:O	2.16	0.45
2:2:1062:U:H2'	2:2:1063:C:C6	2.52	0.45
2:2:1151:A:O2'	2:2:1152:A:H8	1.99	0.45
2:2:1316:G:H2'	2:2:1318:A:N7	2.31	0.45
2:2:1360:A:OP2	50:s:75:ARG:NH2	2.49	0.45
2:2:1372:U:H2'	2:2:1373:G:O4'	2.17	0.45
2:2:1438:G:H5'	56:y:33:LYS:HE2	1.99	0.45
3:4:107:G:O5'	3:4:107:G:H8	1.99	0.45
4:6:24:C:H2'	4:6:25:U:C6	2.51	0.45
8:C:107:VAL:HG23	8:C:175:LEU:HB2	1.98	0.45
9:D:32:VAL:HG11	9:D:181:ILE:HD12	1.98	0.45
10:E:37:ASN:OD1	10:E:38:MET:N	2.49	0.45
10:E:121:SER:HB3	10:E:129:SER:O	2.16	0.45
12:G:103:VAL:HG22	12:G:108:VAL:H	1.81	0.45
14:I:123:ALA:HA	14:I:126:ARG:HE	1.81	0.45
15:J:17:VAL:HA	15:J:55:ILE:O	2.17	0.45
20:O:80:GLU:HG3	20:O:113:ALA:HB1	1.98	0.45
1:1:18:U:P	22:Q:30:ARG:HH12	2.39	0.45
1:1:64:A:H2'	1:1:65:U:H6	1.81	0.45
1:1:239:C:OP1	36:e:3:LYS:NZ	2.41	0.45
1:1:533:G:O4'	22:Q:28:ARG:NH2	2.49	0.45
1:1:586:A:O2'	1:1:671:C:O2	2.33	0.45
1:1:805:G:H1'	1:1:831:G:O2'	2.17	0.45
1:1:953:G:C2	1:1:954:G:N7	2.85	0.45
1:1:1245:G:C2	1:1:1246:A:C5	3.05	0.45
1:1:1812:U:H2'	1:1:1813:G:H8	1.81	0.45
1:1:2286:G:C8	34:c:34:LEU:HD11	2.51	0.45
1:1:2297:A:N6	1:1:2318:G:H21	2.15	0.45
1:1:2372:U:C2'	1:1:2373:G:H5'	2.46	0.45
1:1:2526:G:N1	1:1:2538:C:N3	2.65	0.45
2:2:6:G:H5''	2:2:298:A:H4'	1.98	0.45
2:2:38:G:H1	2:2:397:A:P	2.37	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:363:A:C5'	48:q:81:LEU:HD11	2.47	0.45
2:2:543:U:C5'	40:i:14:ARG:HE	2.30	0.45
2:2:1170:A:C4	2:2:1171:A:C8	3.05	0.45
2:2:1208:C:H2'	2:2:1209:C:C6	2.51	0.45
2:2:1304:G:N2	2:2:1334:G:O6	2.50	0.45
2:2:1375:A:OP1	43:l:28:ASN:ND2	2.50	0.45
22:Q:66:ASN:OD1	22:Q:76:TYR:HB2	2.16	0.45
23:R:69:GLY:HA2	23:R:93:PHE:CE2	2.52	0.45
36:e:39:LYS:HA	36:e:42:ARG:NE	2.32	0.45
39:h:19:ASN:OD1	39:h:54:ARG:NE	2.48	0.45
52:u:57:ILE:O	52:u:61:VAL:HG23	2.16	0.45
1:1:23:G:C4	1:1:24:G:C8	3.05	0.45
1:1:253:C:H2'	1:1:254:G:C8	2.52	0.45
1:1:629:G:N3	1:1:639:U:O2'	2.49	0.45
1:1:649:G:H2'	1:1:650:C:C5	2.51	0.45
1:1:782:A:C2	7:B:225:MET:HG2	2.52	0.45
1:1:1534:U:H4'	1:1:1535:A:H2	1.81	0.45
1:1:2052:A:C4	8:C:155:VAL:HG23	2.51	0.45
1:1:2177:C:H2'	1:1:2178:C:C6	2.52	0.45
1:1:2362:C:O5'	1:1:2362:C:H6	1.99	0.45
1:1:2370:G:H2'	1:1:2371:G:H4'	1.98	0.45
1:1:2463:C:H2'	1:1:2464:G:C8	2.51	0.45
1:1:2468:A:OP2	1:1:2476:A:N6	2.44	0.45
1:1:2824:C:H3'	1:1:2825:G:N2	2.17	0.45
1:1:2895:G:H2'	1:1:2896:C:C6	2.52	0.45
2:2:6:G:H3'	2:2:6:G:N3	2.32	0.45
2:2:44:A:C5	2:2:45:G:N7	2.85	0.45
2:2:157:U:O2	2:2:164:G:N2	2.33	0.45
2:2:184:G:C2	2:2:185:U:C4	3.04	0.45
2:2:292:G:O2'	2:2:609:A:N1	2.46	0.45
2:2:416:G:H2'	2:2:417:G:C8	2.39	0.45
2:2:1049:U:H2'	50:s:3:LYS:HD2	1.99	0.45
2:2:1130:A:O2'	45:n:5:GLN:NE2	2.50	0.45
3:4:73:A:H3'	3:4:74:U:H6	1.82	0.45
6:A:167:GLU:O	6:A:171:GLU:HG2	2.17	0.45
12:G:90:LEU:HD13	12:G:123:ARG:O	2.17	0.45
15:J:24:THR:HG22	15:J:26:GLY:H	1.82	0.45
20:O:107:ALA:O	20:O:111:ARG:HG3	2.17	0.45
22:Q:40:ILE:HA	23:R:75:VAL:HG11	1.98	0.45
26:U:98:SER:C	26:U:100:SER:H	2.25	0.45
39:h:140:ASN:O	39:h:144:LEU:HD23	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:i:59:GLN:OE1	40:i:62:ARG:NH1	2.50	0.45
40:i:64:ILE:O	40:i:111:ARG:NE	2.49	0.45
40:i:88:GLU:HG3	40:i:188:ARG:HB2	1.98	0.45
52:u:45:GLU:HG2	52:u:46:LYS:HE2	1.98	0.45
53:v:72:SER:O	53:v:72:SER:OG	2.30	0.45
1:1:595:C:H2'	1:1:596:U:C6	2.51	0.45
1:1:742:A:H2'	1:1:743:A:C8	2.51	0.45
1:1:888:C:N4	49:r:82:ASP:OD1	2.48	0.45
1:1:954:G:OP1	18:M:14:LYS:N	2.50	0.45
1:1:958:U:OP2	18:M:40:ARG:NH2	2.49	0.45
1:1:1016:G:H2'	1:1:1017:G:C4'	2.46	0.45
1:1:1614:A:N1	24:S:93:ALA:HB2	2.31	0.45
1:1:2402:U:O2	1:1:2402:U:H2'	2.17	0.45
1:1:2538:C:O2'	37:f:1:MET:O	2.31	0.45
1:1:2543:G:O4'	1:1:2766:A:H5''	2.16	0.45
1:1:2888:C:N3	1:1:2889:C:N4	2.65	0.45
2:2:419:C:H5''	2:2:513:C:C1'	2.47	0.45
2:2:511:C:O2	40:i:41:HIS:NE2	2.50	0.45
2:2:517:G:N2	2:2:530:G:OP1	2.50	0.45
2:2:886:G:C4	2:2:887:G:C8	3.04	0.45
2:2:1150:A:H2'	2:2:1151:A:C8	2.52	0.45
2:2:1196:A:O2'	2:2:1197:A:OP1	2.29	0.45
4:5:1:G:H2'	4:5:2:C:C6	2.52	0.45
9:D:146:VAL:O	9:D:167:VAL:HA	2.17	0.45
15:J:77:HIS:CD2	15:J:84:ILE:HD12	2.49	0.45
29:X:26:LYS:HD3	29:X:26:LYS:HA	1.83	0.45
32:a:5:ILE:HG13	32:a:6:HIS:N	2.32	0.45
1:1:25:U:O2	1:1:1261:C:H5'	2.17	0.44
1:1:97:C:H2'	1:1:98:G:O4'	2.18	0.44
1:1:191:A:H2'	1:1:192:C:C6	2.52	0.44
1:1:408:G:O6	1:1:419:U:C4	2.70	0.44
1:1:964:C:H1'	1:1:2274:A:C2	2.52	0.44
1:1:981:A:C2	1:1:2027:G:N3	2.85	0.44
1:1:2259:U:H4'	1:1:2428:G:P	2.57	0.44
1:1:2309:A:H2'	1:1:2310:C:C6	2.52	0.44
1:1:2482:A:H61	18:M:55:ARG:NH2	2.14	0.44
1:1:2565:A:N7	1:1:2566:A:C6	2.85	0.44
1:1:2648:G:H2'	1:1:2649:C:O4'	2.17	0.44
1:1:2651:C:C2	1:1:2652:C:C5	3.05	0.44
2:2:260:G:O3'	56:y:71:LYS:NZ	2.49	0.44
2:2:1067:A:C4	2:2:1108:G:N2	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1114:C:H2'	2:2:1115:U:C6	2.52	0.44
2:2:1140:C:HO2'	2:2:1141:C:P	2.40	0.44
2:2:1212:U:H5'	2:2:1213:A:C5	2.52	0.44
9:D:194:LYS:O	9:D:198:GLU:OE1	2.36	0.44
25:T:37:ASP:OD1	25:T:37:ASP:N	2.46	0.44
31:Z:9:GLN:HG3	31:Z:29:LEU:HD13	1.99	0.44
38:g:27:MET:SD	38:g:201:PRO:HB3	2.57	0.44
45:n:22:LYS:O	45:n:62:ASP:N	2.43	0.44
1:1:246:C:N4	1:1:247:G:C8	2.85	0.44
1:1:745:1MG:HO2'	1:1:748:G:HO2'	1.65	0.44
1:1:904:G:C6	1:1:905:A:C8	3.05	0.44
1:1:904:G:C2	1:1:905:A:H1'	2.52	0.44
1:1:980:A:N7	1:1:1136:G:H5'	2.32	0.44
1:1:1227:G:P	22:Q:13:ARG:HD3	2.58	0.44
1:1:2314:A:H1'	10:E:155:THR:HG21	1.98	0.44
1:1:2889:C:H2'	1:1:2890:G:O4'	2.16	0.44
2:2:106:C:O2'	2:2:379:C:O5'	2.30	0.44
2:2:186:C:N3	2:2:192:A:N6	2.64	0.44
2:2:390:U:H2'	2:2:391:G:C8	2.52	0.44
2:2:553:A:C3'	2:2:554:A:H5'	2.47	0.44
2:2:934:C:H2'	2:2:1345:U:OP2	2.17	0.44
2:2:983:A:H5'	2:2:984:C:OP2	2.17	0.44
2:2:1107:C:OP1	39:h:172:ARG:HB2	2.17	0.44
2:2:1268:G:O2'	2:2:1326:U:O2'	2.24	0.44
7:B:137:VAL:HG21	7:B:167:ARG:HG2	1.99	0.44
15:J:58:ASN:HD22	15:J:61:LYS:HE3	1.82	0.44
18:M:16:ARG:HG3	18:M:18:ARG:HG2	2.00	0.44
18:M:64:TRP:HB2	18:M:104:GLU:HB2	2.00	0.44
18:M:69:PRO:HA	18:M:93:VAL:O	2.17	0.44
38:g:18:HIS:CD2	38:g:205:ASP:HB2	2.52	0.44
40:i:114:ALA:O	40:i:118:VAL:HG23	2.16	0.44
54:w:37:GLY:O	54:w:63:ARG:NH2	2.50	0.44
1:1:25:U:O2'	1:1:1261:C:OP1	2.33	0.44
1:1:552:U:N3	1:1:553:G:O6	2.50	0.44
1:1:567:U:H2'	1:1:568:U:C6	2.52	0.44
1:1:589:U:C2	1:1:590:A:N7	2.85	0.44
1:1:839:U:H2'	1:1:840:C:C6	2.53	0.44
1:1:858:G:N3	1:1:2268:A:H2'	2.33	0.44
1:1:977:G:H21	1:1:1000:A:H2	1.63	0.44
1:1:2271:G:C5	1:1:2272:U:C4	3.05	0.44
1:1:2286:G:H21	1:1:2287:A:H61	1.63	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2297:A:H8	1:1:2297:A:OP2	2.00	0.44
1:1:2329:U:H2'	1:1:2330:G:C8	2.53	0.44
1:1:2897:U:H2'	1:1:2898:U:C6	2.52	0.44
2:2:58:C:H2'	2:2:59:A:H5'	1.98	0.44
2:2:843:U:O5'	2:2:844:G:N2	2.50	0.44
2:2:849:G:N2	2:2:850:U:C2	2.86	0.44
2:2:935:A:N6	43:l:3:ARG:HG3	2.32	0.44
2:2:991:U:O2	2:2:1213:A:N7	2.51	0.44
2:2:1083:U:C2	2:2:1102:A:N6	2.84	0.44
14:I:61:TYR:HD2	14:I:63:ASP:OD1	2.01	0.44
23:R:68:ARG:HA	23:R:92:TRP:HA	1.99	0.44
36:e:31:HIS:O	36:e:33:LEU:HG	2.17	0.44
40:i:104:ARG:HD2	40:i:104:ARG:HA	1.82	0.44
40:i:130:VAL:HG11	40:i:135:TYR:CG	2.52	0.44
41:j:111:MET:SD	41:j:125:ALA:HB1	2.57	0.44
42:k:40:GLU:OE1	42:k:100:SER:OG	2.34	0.44
51:t:43:PHE:HE1	51:t:49:ASP:HB3	1.82	0.44
52:u:45:GLU:HG2	52:u:46:LYS:HG2	2.00	0.44
56:y:78:ASN:O	56:y:82:GLN:OE1	2.35	0.44
1:1:16:C:H2'	1:1:17:G:C8	2.53	0.44
1:1:558:U:H6	1:1:558:U:O5'	2.01	0.44
1:1:1011:G:OP1	22:Q:76:TYR:HB3	2.18	0.44
1:1:1076:C:H2'	1:1:1077:A:C8	2.52	0.44
1:1:1141:U:H1'	1:1:1142:A:C5	2.52	0.44
1:1:1204:A:N6	1:1:1242:U:O4	2.51	0.44
1:1:2478:A:C2	1:1:2479:U:H5	2.35	0.44
1:1:2514:U:H1'	8:C:148:GLN:CD	2.43	0.44
1:1:2515:C:O2'	1:1:2516:A:H5'	2.18	0.44
1:1:2572:A:H4'	1:1:2573:C:C5'	2.46	0.44
2:2:60:A:H1'	2:2:61:G:C1'	2.47	0.44
2:2:219:U:H2'	2:2:220:G:C8	2.52	0.44
2:2:1162:C:H2'	2:2:1163:A:C8	2.51	0.44
2:2:1249:C:N4	2:2:1287:A:H3'	2.31	0.44
4:6:22:A:O2'	4:6:23:G:OP2	2.36	0.44
9:D:41:GLN:O	9:D:43:THR:HG23	2.18	0.44
10:E:57:LEU:HA	10:E:60:ILE:HG22	2.00	0.44
13:H:56:ARG:HG3	13:H:83:ALA:HB2	1.99	0.44
18:M:74:THR:OG1	18:M:86:LYS:HE3	2.18	0.44
36:e:54:ASP:HB3	36:e:58:VAL:HG23	1.99	0.44
43:l:48:GLU:O	43:l:52:GLN:NE2	2.42	0.44
43:l:69:VAL:HA	43:l:138:ARG:CD	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:n:114:LYS:HE2	45:n:119:ARG:O	2.17	0.44
52:u:39:PHE:CE1	52:u:74:LEU:HD21	2.51	0.44
1:1:856:G:C2	1:1:857:G:C5	3.06	0.44
1:1:1011:G:N2	1:1:1151:A:H1'	2.32	0.44
1:1:1164:C:C2	1:1:1165:A:N7	2.85	0.44
1:1:1532:A:H2'	1:1:1533:C:C6	2.52	0.44
1:1:2032:G:O6	1:1:2454:G:H5'	2.18	0.44
1:1:2480:C:H2'	1:1:2481:G:C8	2.52	0.44
1:1:2785:C:H2'	1:1:2786:U:O4'	2.17	0.44
2:2:358:U:H2'	2:2:359:G:C8	2.53	0.44
2:2:1160:G:C6	2:2:1161:C:C4	3.06	0.44
2:2:1234:C:H2'	2:2:1235:U:C6	2.53	0.44
2:2:1347:G:N7	45:n:13:LYS:HE2	2.33	0.44
3:4:59:A:H2'	3:4:60:C:C6	2.52	0.44
4:6:14:A:H2'	4:6:14:A:N3	2.32	0.44
8:C:6:GLY:O	8:C:201:LEU:N	2.51	0.44
16:K:2:ILE:HD13	16:K:8:LEU:HD21	2.00	0.44
18:M:40:ARG:HA	18:M:95:LEU:HA	2.00	0.44
21:P:12:GLN:O	21:P:55:LEU:HD11	2.18	0.44
23:R:1:MET:N	23:R:42:ALA:O	2.41	0.44
1:1:226:A:N6	1:1:418:C:O2'	2.50	0.44
1:1:279:A:N6	1:1:361:G:H1'	2.32	0.44
1:1:321:U:OP2	9:D:130:LYS:HD2	2.17	0.44
1:1:827:U:H5'	1:1:828:U:C5	2.53	0.44
1:1:956:G:H2'	1:1:957:C:H2'	2.00	0.44
1:1:1151:A:O2'	22:Q:77:SER:O	2.35	0.44
1:1:1246:A:C6	1:1:1247:A:C4	3.06	0.44
1:1:1442:U:H2'	1:1:1443:U:C6	2.52	0.44
1:1:1814:G:OP2	1:1:1815:A:O2'	2.29	0.44
1:1:2246:G:H2'	1:1:2247:A:C8	2.52	0.44
1:1:2641:G:H3'	1:1:2642:G:H8	1.83	0.44
1:1:2679:A:H2'	1:1:2680:U:C6	2.51	0.44
1:1:2681:C:H4'	8:C:11:MET:HG2	2.00	0.44
1:1:2766:A:C6	1:1:2767:C:C2	3.05	0.44
2:2:4:U:H1'	40:i:83:LYS:HE3	1.99	0.44
2:2:104:G:H4'	2:2:174:A:H5'	1.99	0.44
2:2:229:U:H2'	2:2:230:G:C8	2.53	0.44
2:2:484:G:C5	2:2:486:U:H1'	2.53	0.44
2:2:554:A:O2'	2:2:555:U:O4'	2.28	0.44
2:2:1137:C:O2	2:2:1138:G:N2	2.48	0.44
2:2:1189:U:H2'	39:h:176:HIS:CD2	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:146:VAL:HG21	6:A:164:ARG:HB3	1.99	0.44
7:B:247:PRO:HG2	7:B:248:TRP:CZ3	2.52	0.44
39:h:131:ARG:O	39:h:135:LYS:HG2	2.17	0.44
40:i:197:GLU:HA	40:i:200:ILE:HD13	1.98	0.44
46:o:10:LEU:C	46:o:18:ILE:HD11	2.43	0.44
1:1:22:C:H2'	1:1:23:G:H5''	2.00	0.44
1:1:477:A:H2'	1:1:478:A:C8	2.53	0.44
1:1:1063:G:H1'	14:I:135:MET:HE1	1.98	0.44
1:1:1144:A:H3'	1:1:1145:C:C5	2.53	0.44
1:1:1161:C:O4'	23:R:9:GLY:HA3	2.18	0.44
1:1:1165:A:C2	1:1:1166:G:C8	3.05	0.44
1:1:2333:A:H4'	1:1:2334:U:H2'	2.00	0.44
1:1:2342:C:O2'	1:1:2374:C:OP1	2.35	0.44
1:1:2488:G:H2'	1:1:2489:U:H5	1.82	0.44
1:1:2745:C:H2'	1:1:2746:U:C6	2.53	0.44
2:2:87:C:H2'	2:2:88:U:C6	2.52	0.44
2:2:371:A:H2	2:2:374:A:N6	2.14	0.44
2:2:949:A:H2'	2:2:950:U:O4'	2.17	0.44
2:2:966:2MG:H4'	2:2:969:A:N7	2.33	0.44
2:2:1105:A:H2'	2:2:1106:G:H5'	2.00	0.44
2:2:1150:A:N3	46:o:41:PRO:HG2	2.33	0.44
2:2:1153:G:C2	2:2:1154:G:H1'	2.52	0.44
2:2:1410:A:H2'	2:2:1411:C:H6	1.81	0.44
4:6:43:G:H2'	4:6:44:A:H8	1.83	0.44
11:F:54:PRO:HB3	11:F:61:GLY:CA	2.47	0.44
11:F:87:LEU:HD21	11:F:145:ALA:HA	1.99	0.44
18:M:28:PHE:HB2	18:M:104:GLU:OE1	2.17	0.44
18:M:75:GLU:OE2	18:M:91:TYR:OH	2.35	0.44
39:h:58:GLU:O	39:h:65:ARG:N	2.49	0.44
39:h:114:LYS:HA	39:h:117:ALA:HB3	1.99	0.44
40:i:49:SER:O	40:i:53:VAL:HG13	2.17	0.44
40:i:76:TYR:HA	40:i:90:LEU:HD13	1.98	0.44
49:r:26:GLY:O	49:r:30:SER:HB3	2.18	0.44
1:1:96:C:C2	1:1:97:C:H5	2.35	0.44
1:1:257:C:H2'	17:L:104:GLN:HE22	1.82	0.44
1:1:557:C:H2'	1:1:558:U:O4'	2.17	0.44
1:1:623:C:H2'	1:1:624:C:C5	2.53	0.44
1:1:953:G:C2	1:1:954:G:C5	3.05	0.44
1:1:1429:G:H2'	1:1:1430:G:H8	1.83	0.44
1:1:2530:A:H4'	1:1:2535:G:N1	2.28	0.44
1:1:2831:G:C8	8:C:59:ARG:NH2	2.74	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:231:U:H2'	2:2:232:G:O4'	2.17	0.44
2:2:393:A:OP2	52:u:12:LYS:HD2	2.18	0.44
2:2:514:C:H2'	2:2:515:G:H8	1.82	0.44
2:2:888:G:H5''	2:2:1488:G:H4'	1.99	0.44
2:2:1074:G:H4'	38:g:102:THR:CG2	2.48	0.44
3:4:70:C:H2'	3:4:71:C:H6	1.83	0.44
7:B:51:THR:HG23	7:B:54:ILE:HD12	1.99	0.44
8:C:27:ILE:HG22	8:C:29:VAL:HG13	1.99	0.44
11:F:101:ASN:HB2	11:F:117:LEU:HB2	2.00	0.44
26:U:19:LYS:HG2	26:U:20:GLY:H	1.83	0.44
27:V:70:ILE:HG22	27:V:72:VAL:HG13	2.00	0.44
35:d:3:ARG:HD3	35:d:3:ARG:HA	1.70	0.44
38:g:160:ALA:HA	38:g:181:ILE:HG23	1.98	0.44
39:h:31:ASP:HA	50:s:65:ARG:NH2	2.33	0.44
49:r:11:ASP:HA	49:r:45:ILE:HB	2.00	0.44
1:1:87:U:O5'	1:1:88:G:H5'	2.17	0.44
1:1:392:U:N3	1:1:393:C:C5	2.86	0.44
1:1:657:U:H2'	1:1:658:U:C6	2.53	0.44
1:1:693:A:O2'	1:1:1353:A:N3	2.46	0.44
1:1:846:U:H1'	1:1:847:U:C5	2.48	0.44
1:1:1476:U:H2'	1:1:1477:A:H8	1.83	0.44
1:1:1736:U:H2'	1:1:1737:G:O4'	2.18	0.44
1:1:2006:C:H2'	1:1:2007:U:C6	2.53	0.44
1:1:2286:G:H4'	1:1:2287:A:O4'	2.17	0.44
1:1:2463:C:C2	1:1:2464:G:C8	3.06	0.44
1:1:2544:G:H2'	1:1:2545:G:H8	1.80	0.44
2:2:56:U:H2'	2:2:57:G:C8	2.52	0.44
2:2:450:G:O6	2:2:481:G:C2	2.71	0.44
2:2:494:G:H2'	2:2:496:A:H8	1.83	0.44
2:2:546:A:H61	40:i:4:TYR:CA	2.29	0.44
2:2:554:A:H2'	2:2:555:U:H6	1.82	0.44
2:2:927:G:C4	2:2:928:G:N7	2.86	0.44
2:2:1146:A:N3	2:2:1146:A:H2'	2.32	0.44
2:2:1410:A:H2'	2:2:1411:C:C6	2.53	0.44
6:A:181:ALA:HA	6:A:184:HIS:HD2	1.83	0.44
13:H:86:MET:HB3	13:H:88:HIS:CE1	2.53	0.44
13:H:101:LYS:O	13:H:105:LYS:HG2	2.18	0.44
15:J:54:ILE:CG2	15:J:122:LEU:HB2	2.46	0.44
24:S:41:LYS:HE3	33:b:22:LEU:HD11	1.99	0.44
24:S:74:ILE:HG12	24:S:105:VAL:HG13	1.99	0.44
38:g:161:LEU:HB2	38:g:181:ILE:HG21	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:k:26:THR:HA	42:k:29:ILE:HG22	2.00	0.44
42:k:29:ILE:HD11	42:k:64:VAL:HG13	1.99	0.44
45:n:45:ARG:HB3	45:n:49:ARG:HH22	1.83	0.44
46:o:59:LYS:HD2	46:o:62:ARG:HE	1.83	0.44
54:w:13:PHE:CE2	54:w:55:LEU:HD12	2.53	0.44
1:1:17:G:H5'	33:b:11:SER:CA	2.48	0.43
1:1:571:U:P	23:R:80:ARG:HH22	2.38	0.43
1:1:1026:G:P	1:1:1026:G:H8	2.40	0.43
1:1:1206:G:H2'	1:1:1207:C:C5	2.52	0.43
1:1:2325:G:H2'	1:1:2326:C:C6	2.53	0.43
1:1:2329:U:H2'	1:1:2330:G:O4'	2.18	0.43
1:1:2363:G:H1'	28:W:39:ARG:NH2	2.33	0.43
1:1:2526:G:N3	37:f:1:MET:N	2.66	0.43
1:1:2623:G:H21	33:b:19:HIS:CE1	2.35	0.43
1:1:2796:U:O2'	1:1:2798:U:OP2	2.36	0.43
2:2:311:C:OP1	52:u:31:ARG:HD2	2.18	0.43
2:2:1090:U:H4'	2:2:1171:A:H1'	1.99	0.43
3:4:39:A:H2'	3:4:40:U:C6	2.53	0.43
12:G:121:VAL:O	12:G:122:LEU:HG	2.17	0.43
22:Q:27:ALA:HB1	22:Q:31:VAL:HG22	1.99	0.43
22:Q:52:GLN:O	22:Q:55:ARG:HG2	2.17	0.43
23:R:66:HIS:HA	23:R:94:THR:HA	2.00	0.43
36:e:23:LYS:HA	36:e:49:MET:HA	2.00	0.43
38:g:16:PHE:O	38:g:203:ASN:ND2	2.49	0.43
45:n:28:ILE:HG23	45:n:63:LEU:HD11	2.00	0.43
49:r:19:LEU:HD11	49:r:56:LEU:HD21	1.99	0.43
1:1:18:U:P	22:Q:30:ARG:NH1	2.91	0.43
1:1:144:A:H2'	1:1:145:C:C6	2.52	0.43
1:1:223:A:H2'	1:1:408:G:N2	2.32	0.43
1:1:1021:A:H2'	1:1:1022:G:H4'	2.01	0.43
1:1:1484:U:H2'	1:1:1485:U:C6	2.54	0.43
1:1:1735:A:H2'	1:1:1736:U:C6	2.53	0.43
1:1:1887:C:H3'	1:1:1888:G:H8	1.83	0.43
1:1:2324:U:H5''	1:1:2326:C:OP1	2.17	0.43
1:1:2497:A:N3	1:1:2498:OMC:N3	2.65	0.43
1:1:2571:U:P	1:1:2572:A:H5'	2.58	0.43
2:2:2:A:H2	2:2:614:C:H1'	1.82	0.43
2:2:63:C:H5'	2:2:383:A:H61	1.84	0.43
2:2:918:A:H2'	2:2:919:A:C8	2.53	0.43
2:2:933:G:OP2	43:l:3:ARG:HB2	2.18	0.43
2:2:940:C:H2'	2:2:941:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1013:G:C2	2:2:1015:G:H8	2.36	0.43
2:2:1065:U:O2	2:2:1066:C:N4	2.33	0.43
2:2:1190:G:OP2	39:h:5:VAL:HG22	2.18	0.43
2:2:1254:A:H4'	2:2:1357:A:OP1	2.18	0.43
2:2:1339:A:H4'	4:5:40:C:O2'	2.18	0.43
4:6:28:U:H2'	4:6:29:C:H6	1.84	0.43
7:B:25:HIS:HB3	7:B:82:GLU:HG2	1.99	0.43
8:C:25:THR:HG21	8:C:193:VAL:CG2	2.48	0.43
14:I:108:ILE:O	14:I:111:THR:HG22	2.18	0.43
18:M:70:ASP:OD1	18:M:70:ASP:N	2.50	0.43
23:R:32:THR:OG1	23:R:62:GLU:OE1	2.25	0.43
1:1:71:A:OP2	1:1:112:U:O2'	2.35	0.43
1:1:590:A:H5''	9:D:90:GLN:OE1	2.18	0.43
1:1:922:C:C4	1:1:923:G:C8	3.06	0.43
1:1:954:G:O3'	18:M:86:LYS:NZ	2.49	0.43
1:1:2355:G:C5	1:1:2356:U:C4	3.06	0.43
1:1:2530:A:N6	11:F:156:PRO:HG3	2.33	0.43
1:1:2739:U:O4	1:1:2763:G:H3'	2.18	0.43
1:1:2742:G:OP1	37:f:24:ARG:NH2	2.48	0.43
2:2:44:A:C6	2:2:45:G:N7	2.86	0.43
2:2:162:A:H2'	2:2:163:C:O4'	2.19	0.43
2:2:418:C:H2'	2:2:419:C:H6	1.82	0.43
2:2:536:C:H2'	2:2:537:G:C8	2.52	0.43
2:2:1218:C:H2'	2:2:1219:A:H8	1.83	0.43
2:2:1226:C:N4	49:r:103:LYS:HG3	2.34	0.43
2:2:1279:G:O2'	2:2:1281:C:OP2	2.36	0.43
2:2:1314:C:H2'	2:2:1315:U:C6	2.53	0.43
10:E:34:ILE:HD12	10:E:96:MET:HA	2.00	0.43
10:E:70:ALA:HB3	10:E:82:GLY:H	1.83	0.43
23:R:2:TYR:CZ	23:R:42:ALA:HB3	2.53	0.43
23:R:35:PHE:O	23:R:59:ILE:N	2.41	0.43
36:e:26:HIS:HB3	36:e:44:LEU:HD22	2.00	0.43
43:l:79:ARG:HG3	43:l:79:ARG:O	2.19	0.43
52:u:3:THR:HG1	52:u:66:THR:HG1	1.63	0.43
1:1:6:A:H2'	1:1:7:G:C8	2.54	0.43
1:1:399:U:H2'	1:1:400:G:O4'	2.18	0.43
1:1:493:G:O2'	24:S:6:LYS:O	2.37	0.43
1:1:597:G:H21	17:L:12:SER:HA	1.83	0.43
1:1:621:A:H2'	1:1:621:A:N3	2.33	0.43
1:1:685:A:O2'	1:1:773:U:O4	2.31	0.43
1:1:841:G:H2'	1:1:842:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:988:A:C8	31:Z:14:ILE:HD13	2.53	0.43
1:1:1386:C:H2'	1:1:1387:A:H8	1.83	0.43
1:1:1538:G:H2'	1:1:1539:U:C6	2.54	0.43
1:1:2167:U:H2'	1:1:2169:A:OP2	2.18	0.43
1:1:2334:U:H1'	20:O:13:ARG:HD2	2.00	0.43
1:1:2336:A:H1'	1:1:2385:C:O4'	2.18	0.43
1:1:2345:G:C6	1:1:2381:A:C6	3.06	0.43
1:1:2682:A:H4'	21:P:56:HIS:CE1	2.53	0.43
1:1:2821:A:OP2	8:C:115:GLY:N	2.50	0.43
2:2:472:U:H2'	2:2:473:U:C6	2.54	0.43
2:2:693:G:O2'	43:l:83:SER:HB2	2.19	0.43
2:2:728:A:H2'	2:2:729:A:C8	2.53	0.43
2:2:979:C:O2'	50:s:59:ARG:NH2	2.46	0.43
6:A:18:GLN:OE1	6:A:54:LYS:HA	2.17	0.43
10:E:107:ALA:O	10:E:111:ILE:HG13	2.19	0.43
13:H:38:MET:HA	13:H:41:LEU:HG	2.00	0.43
41:j:134:ILE:HG13	41:j:135:ASN:N	2.33	0.43
48:q:83:ARG:HG3	48:q:84:GLY:N	2.33	0.43
52:u:70:ARG:O	52:u:74:LEU:HG	2.18	0.43
1:1:303:G:C6	1:1:315:G:C6	3.06	0.43
1:1:576:U:H2'	1:1:577:G:C8	2.53	0.43
1:1:822:G:H2'	1:1:823:C:C6	2.52	0.43
1:1:937:C:H2'	1:1:938:G:C8	2.54	0.43
1:1:996:A:H5'	22:Q:61:TRP:CH2	2.54	0.43
1:1:1168:G:N1	1:1:1181:U:N3	2.27	0.43
1:1:1528:A:OP2	1:1:1543:G:N2	2.44	0.43
1:1:2033:A:C2'	1:1:2036:C:H41	2.28	0.43
1:1:2766:A:N6	1:1:2767:C:N3	2.66	0.43
1:1:2773:C:C4	1:1:2774:C:N4	2.87	0.43
2:2:181:A:C5	2:2:194:C:C5	3.06	0.43
2:2:481:G:C4	2:2:483:C:N4	2.86	0.43
2:2:1055:A:H62	2:2:1200:C:H42	1.67	0.43
2:2:1170:A:C5	2:2:1171:A:C5	3.06	0.43
3:4:46:A:H2'	3:4:47:C:C6	2.54	0.43
4:5:23:C:H2'	4:5:24:U:H6	1.83	0.43
4:5:50:U:H2'	4:5:51:C:C6	2.53	0.43
15:J:56:VAL:HB	15:J:124:VAL:HA	2.01	0.43
15:J:74:TYR:HB2	15:J:87:ALA:HB3	2.01	0.43
18:M:23:GLY:O	18:M:100:LYS:HA	2.17	0.43
56:y:86:LEU:HD23	56:y:86:LEU:HA	1.83	0.43
1:1:113:U:H5''	1:1:114:U:C5'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:451:U:C4	1:1:453:A:C8	3.06	0.43
1:1:533:G:C8	1:1:533:G:C3'	3.02	0.43
1:1:666:A:H2'	1:1:667:U:C6	2.54	0.43
1:1:967:U:H2'	1:1:968:C:C6	2.54	0.43
1:1:1019:U:H5'	1:1:1120:G:H21	1.82	0.43
1:1:1186:G:H5''	1:1:1187:G:OP2	2.17	0.43
1:1:2069:G7M:HO2'	1:1:2070:A:C5'	2.30	0.43
1:1:2461:A:C4	1:1:2492:U:C2	3.06	0.43
1:1:2479:U:H3'	1:1:2480:C:C5'	2.48	0.43
1:1:2755:C:O3'	1:1:2756:U:H6	2.01	0.43
1:1:2774:C:C4	1:1:2775:G:C5	3.07	0.43
2:2:108:G:H22	2:2:326:G:H1	1.63	0.43
2:2:123:U:OP1	2:2:311:C:O2'	2.35	0.43
2:2:350:G:H2'	2:2:351:G:C8	2.54	0.43
2:2:972:C:H5'	46:o:59:LYS:NZ	2.33	0.43
2:2:1130:A:C8	2:2:1146:A:C6	3.07	0.43
2:2:1447:A:O2'	2:2:1448:C:O5'	2.28	0.43
3:4:14:U:H1'	3:4:107:G:H1'	2.01	0.43
7:B:132:MET:HG2	7:B:188:CYS:O	2.19	0.43
10:E:128:TYR:HD2	10:E:156:ILE:HD12	1.83	0.43
13:H:3:LEU:HD12	13:H:5:LEU:N	2.34	0.43
21:P:57:SER:OG	21:P:77:HIS:CE1	2.71	0.43
37:f:25:VAL:O	37:f:34:LYS:HA	2.19	0.43
38:g:96:TRP:HH2	38:g:101:LEU:HD21	1.83	0.43
39:h:119:SER:O	39:h:123:GLN:HG3	2.18	0.43
40:i:4:TYR:HD2	40:i:8:LYS:NZ	2.16	0.43
40:i:53:VAL:HB	40:i:56:ARG:HH21	1.84	0.43
41:j:11:LEU:HB3	41:j:39:VAL:HG22	2.01	0.43
42:k:11:HIS:HB3	42:k:14:GLN:HB3	2.00	0.43
46:o:54:SER:HB2	46:o:58:ASN:HB2	2.01	0.43
52:u:13:LYS:O	52:u:14:ARG:NE	2.50	0.43
1:1:857:G:N2	1:1:2269:G:H5'	2.33	0.43
1:1:922:C:O2'	28:W:29:GLU:OE2	2.22	0.43
1:1:1538:G:H2'	1:1:1539:U:H6	1.84	0.43
1:1:2114:A:H61	1:1:2170:A:N6	2.17	0.43
1:1:2241:A:H2'	1:1:2242:G:C8	2.54	0.43
1:1:2280:G:H1'	1:1:2388:A:H2	1.83	0.43
1:1:2385:C:H2'	1:1:2386:A:H8	1.80	0.43
1:1:2681:C:H5'	8:C:8:LYS:HZ1	1.82	0.43
2:2:859:G:H2'	2:2:860:A:C8	2.54	0.43
2:2:960:U:H2'	2:2:1225:A:H62	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1144:G:N2	2:2:1146:A:H62	2.10	0.43
3:4:18:G:O6	3:4:65:U:O4	2.37	0.43
3:4:76:G:O2'	27:V:87:GLN:OE1	2.37	0.43
3:4:79:G:H5''	18:M:18:ARG:NH2	2.33	0.43
3:4:108:A:H3'	3:4:109:A:H4'	2.01	0.43
7:B:37:ASN:HB2	7:B:62:TYR:HB2	2.01	0.43
9:D:181:ILE:HG22	17:L:3:LEU:HA	2.01	0.43
15:J:29:ALA:HA	15:J:32:LEU:HB2	2.01	0.43
40:i:128:ARG:NH2	40:i:135:TYR:OH	2.51	0.43
52:u:36:VAL:HG12	52:u:52:LEU:HA	2.00	0.43
1:1:326:G:H2'	1:1:327:G:C8	2.54	0.43
1:1:511:U:H4'	1:1:1235:G:H4'	1.99	0.43
1:1:548:G:H3'	1:1:549:G:C8	2.53	0.43
1:1:557:C:C5'	15:J:113:PRO:HG2	2.48	0.43
1:1:1125:G:H5'	37:f:38:GLY:HA2	1.99	0.43
2:2:552:U:C2'	2:2:553:A:H5'	2.49	0.43
2:2:1066:C:H5''	2:2:1386:G:H21	1.84	0.43
2:2:1238:A:OP2	2:2:1335:U:H1'	2.18	0.43
3:4:94:A:H5''	27:V:19:ARG:NH1	2.34	0.43
25:T:58:VAL:HG22	25:T:85:VAL:HG23	2.01	0.43
36:e:24:HIS:ND1	36:e:25:LYS:O	2.48	0.43
38:g:166:ALA:O	38:g:170:HIS:HB3	2.19	0.43
40:i:19:LEU:HD12	40:i:19:LEU:O	2.19	0.43
41:j:50:TYR:O	41:j:66:LYS:HD2	2.18	0.43
1:1:552:U:H2'	1:1:553:G:C8	2.53	0.43
1:1:1096:A:H2'	1:1:1097:U:O4'	2.18	0.43
1:1:1428:C:OP2	7:B:28:LYS:NZ	2.48	0.43
1:1:1588:G:O2'	1:1:1589:U:H5'	2.19	0.43
1:1:1657:U:H2'	1:1:1658:C:C6	2.54	0.43
1:1:1812:U:H2'	1:1:1813:G:C8	2.54	0.43
1:1:2345:G:H5''	1:1:2347:C:H5''	2.01	0.43
1:1:2466:C:C5'	37:f:5:ALA:HB3	2.48	0.43
1:1:2482:A:H61	18:M:55:ARG:HH22	1.67	0.43
1:1:2729:G:O2'	8:C:175:LEU:HD23	2.18	0.43
2:2:180:U:H2'	2:2:181:A:C8	2.53	0.43
2:2:363:A:H2'	2:2:364:A:C8	2.53	0.43
2:2:373:A:C2	2:2:481:G:N2	2.87	0.43
2:2:1049:U:OP2	2:2:1050:G:H5''	2.19	0.43
2:2:1267:C:H42	49:r:29:ARG:CZ	2.32	0.43
2:2:1443:C:H2'	2:2:1444:U:O4'	2.19	0.43
7:B:35:GLU:HG2	7:B:36:LYS:N	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:J:3:THR:HG21	22:Q:61:TRP:HE1	1.84	0.43
18:M:16:ARG:HH11	18:M:18:ARG:HD2	1.83	0.43
18:M:33:LEU:O	18:M:101:VAL:HA	2.18	0.43
33:b:43:ILE:HD12	33:b:47:GLY:HA2	2.00	0.43
47:p:82:LEU:N	47:p:106:ARG:O	2.51	0.43
55:x:19:VAL:HG11	55:x:44:MET:HE1	2.01	0.43
1:1:240:C:H2'	1:1:256:A:N6	2.34	0.43
1:1:479:A:N6	1:1:481:G:H21	2.16	0.43
1:1:630:G:H2'	1:1:631:A:H5''	2.01	0.43
1:1:650:C:C4	1:1:651:G:C5	3.07	0.43
1:1:956:G:O2'	1:1:959:A:N7	2.35	0.43
1:1:968:C:H4'	31:Z:17:LEU:CD1	2.48	0.43
1:1:1043:C:H2'	1:1:1044:C:O4'	2.19	0.43
1:1:1138:G:C6	1:1:1139:G:H1'	2.54	0.43
1:1:2028:U:O2	1:1:2033:A:N7	2.52	0.43
1:1:2052:A:O2'	8:C:148:GLN:O	2.22	0.43
1:1:2303:G:H2'	1:1:2304:G:H8	1.81	0.43
1:1:2356:U:H4'	28:W:20:ARG:NE	2.34	0.43
1:1:2698:U:H2'	1:1:2699:C:C6	2.54	0.43
2:2:109:A:C8	2:2:326:G:H2'	2.53	0.43
2:2:674:G:H2'	2:2:675:A:C8	2.53	0.43
2:2:937:A:C4	2:2:938:A:C8	3.07	0.43
2:2:1056:U:H2'	2:2:1057:G:C8	2.54	0.43
2:2:1076:U:H2'	2:2:1077:G:H5'	2.01	0.43
2:2:1227:A:H5'	49:r:110:LYS:NZ	2.34	0.43
2:2:1454:G:H2'	2:2:1455:G:C8	2.54	0.43
3:4:104:A:H1'	27:V:31:TYR:CE1	2.53	0.43
4:5:32:C:H3'	45:n:130:ARG:HH22	1.84	0.43
4:5:54:U:O4	4:5:58:A:N7	2.52	0.43
8:C:82:PHE:CD2	8:C:204:LYS:HE3	2.53	0.43
18:M:12:MET:SD	18:M:13:HIS:N	2.92	0.43
18:M:29:GLY:N	18:M:104:GLU:OE1	2.52	0.43
19:N:57:THR:HG23	19:N:62:ASN:ND2	2.33	0.43
20:O:40:ILE:HG12	20:O:47:VAL:HG12	2.00	0.43
27:V:24:ASN:O	27:V:25:LYS:HG3	2.19	0.43
34:c:13:SER:HB2	34:c:49:TYR:CE1	2.54	0.43
1:1:479:A:H62	1:1:481:G:N2	2.18	0.42
1:1:572:A:H8	1:1:572:A:O5'	2.01	0.42
1:1:641:U:O5'	1:1:641:U:H6	2.01	0.42
1:1:805:G:O4'	17:L:38:GLN:HG3	2.19	0.42
1:1:882:G:N2	1:1:895:U:O4'	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1166:G:N2	1:1:1184:U:H1'	2.33	0.42
1:1:1469:A:H2'	1:1:1470:A:C8	2.54	0.42
1:1:1794:A:H2'	1:1:1795:C:H6	1.84	0.42
1:1:2246:G:H2'	1:1:2247:A:H8	1.83	0.42
1:1:2396:G:N1	1:1:2421:G:C6	2.87	0.42
1:1:2571:U:H2'	1:1:2574:G:O2'	2.19	0.42
1:1:2633:G:H4'	8:C:61:THR:HG21	2.00	0.42
1:1:2884:U:O2	33:b:49:TYR:OH	2.18	0.42
2:2:45:G:H2'	2:2:46:G:C8	2.54	0.42
2:2:374:A:H4'	2:2:452:A:C6	2.54	0.42
2:2:378:G:N1	2:2:386:C:N4	2.67	0.42
2:2:414:A:P	2:2:428:G:H22	2.40	0.42
2:2:431:A:H2'	2:2:432:A:C8	2.54	0.42
3:4:18:G:H2'	3:4:19:C:C6	2.54	0.42
3:4:49:C:H2'	3:4:50:A:H8	1.83	0.42
6:A:3:GLU:OE2	6:A:61:LYS:HG3	2.19	0.42
8:C:110:THR:HG21	8:C:169:ARG:HG2	2.01	0.42
9:D:19:PHE:CE1	9:D:109:LEU:HB3	2.54	0.42
22:Q:41:LYS:HD2	22:Q:45:TYR:CD1	2.54	0.42
38:g:179:LEU:HD23	38:g:179:LEU:O	2.18	0.42
39:h:11:ARG:HB3	39:h:15:VAL:HG22	2.00	0.42
39:h:25:ASN:O	39:h:29:PHE:HB2	2.19	0.42
40:i:52:GLY:O	40:i:56:ARG:HG3	2.19	0.42
51:t:24:SER:O	51:t:28:GLN:HG3	2.19	0.42
1:1:305:C:N4	1:1:313:G:N1	2.67	0.42
1:1:307:G:N2	1:1:309:A:H3'	2.34	0.42
1:1:1073:A:H2'	1:1:1074:G:C8	2.54	0.42
1:1:1166:G:H2'	1:1:1167:C:O4'	2.19	0.42
1:1:2028:U:O5'	1:1:2028:U:H6	2.03	0.42
1:1:2192:U:H2'	1:1:2193:G:C8	2.54	0.42
1:1:2394:C:H2'	1:1:2395:C:O4'	2.19	0.42
1:1:2461:A:C4	1:1:2492:U:O2	2.72	0.42
1:1:2513:A:C2	1:1:2574:G:C2	3.07	0.42
1:1:2524:G:C2	1:1:2525:G:N7	2.87	0.42
1:1:2545:G:H2'	1:1:2546:U:O4'	2.18	0.42
1:1:2619:C:H4'	8:C:157:LYS:HA	1.99	0.42
1:1:2819:G:P	19:N:2:ARG:HH12	2.42	0.42
2:2:109:A:C5	2:2:327:A:N7	2.88	0.42
2:2:979:C:O2	2:2:979:C:H2'	2.19	0.42
2:2:1014:A:H5''	55:x:14:HIS:HB2	2.01	0.42
2:2:1227:A:H5''	55:x:83:HIS:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1259:C:O2'	2:2:1283:U:O2	2.37	0.42
7:B:145:GLU:HB2	7:B:188:CYS:HB3	2.01	0.42
9:D:126:VAL:HG13	9:D:157:LEU:HD21	2.01	0.42
12:G:51:ARG:O	12:G:55:GLU:HG3	2.19	0.42
14:I:103:ALA:O	14:I:107:GLU:HG2	2.19	0.42
15:J:78:THR:OG1	15:J:80:HIS:O	2.37	0.42
15:J:130:HIS:HE1	15:J:133:ALA:HB2	1.85	0.42
27:V:55:GLU:HB2	27:V:59:GLU:HG3	2.01	0.42
38:g:162:PHE:HE2	38:g:214:LEU:HD23	1.83	0.42
39:h:151:VAL:O	39:h:168:TYR:N	2.37	0.42
43:l:25:LYS:O	43:l:29:ILE:HG13	2.19	0.42
43:l:31:MET:HB2	43:l:39:ALA:HB2	2.00	0.42
43:l:147:ALA:O	47:p:56:ARG:HD2	2.19	0.42
45:n:88:MET:HG3	45:n:95:ARG:HB2	2.00	0.42
55:x:13:LEU:HD11	55:x:17:LYS:HE2	2.01	0.42
56:y:79:LEU:HD23	56:y:79:LEU:HA	1.93	0.42
1:1:535:G:H2'	1:1:536:G:O4'	2.18	0.42
1:1:1433:A:H2'	1:1:1434:A:H8	1.84	0.42
1:1:2342:C:H1'	1:1:2374:C:H5''	2.00	0.42
1:1:2451:A:H2'	1:1:2452:C:H5''	2.01	0.42
1:1:2602:A:H8	4:5:74:C:H5''	1.84	0.42
2:2:59:A:H3'	2:2:60:A:C5'	2.50	0.42
2:2:105:G:H21	2:2:380:G:H5'	1.84	0.42
2:2:321:A:H2'	2:2:322:C:C6	2.54	0.42
2:2:600:A:H2'	2:2:601:G:C8	2.54	0.42
2:2:864:A:H5''	41:j:90:THR:HG23	1.99	0.42
2:2:927:G:C6	2:2:928:G:C6	3.07	0.42
2:2:1066:C:O2	2:2:1066:C:H2'	2.19	0.42
2:2:1250:A:H2	2:2:1370:G:H1'	1.84	0.42
2:2:1251:A:N6	2:2:1354:U:O2'	2.35	0.42
2:2:1444:U:H2'	2:2:1445:U:C6	2.54	0.42
4:6:51:U:H2'	4:6:52:C:C6	2.53	0.42
26:U:84:GLY:C	26:U:85:PHE:HD1	2.27	0.42
27:V:72:VAL:HB	27:V:91:PHE:HB3	2.00	0.42
39:h:68:ILE:C	39:h:104:ALA:HB3	2.44	0.42
39:h:105:GLU:CD	39:h:107:ARG:NH1	2.77	0.42
40:i:98:LEU:HD23	40:i:132:ILE:O	2.19	0.42
1:1:26:G:H21	1:1:514:A:H62	1.67	0.42
1:1:216:A:C8	1:1:432:A:N6	2.87	0.42
1:1:651:G:H4'	36:e:18:GLY:HA3	2.01	0.42
1:1:809:G:C5	1:1:810:U:C4	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:817:C:H5''	1:1:818:G:OP2	2.20	0.42
1:1:1021:A:H5'	1:1:1022:G:OP2	2.19	0.42
1:1:1075:C:H2'	1:1:1076:C:C6	2.54	0.42
1:1:1154:G:O2'	1:1:1155:A:OP1	2.35	0.42
1:1:1405:U:H2'	1:1:1406:U:H6	1.84	0.42
1:1:2487:G:N3	1:1:2488:G:H1'	2.35	0.42
1:1:2523:G:H1'	1:1:2765:A:H62	1.84	0.42
1:1:2674:G:H1'	16:K:27:GLY:HA3	2.01	0.42
2:2:73:C:O2'	2:2:74:A:H5'	2.19	0.42
2:2:262:A:H8	2:2:262:A:OP1	2.02	0.42
2:2:451:A:H4'	2:2:452:A:C8	2.55	0.42
2:2:454:G:H2'	2:2:455:G:C8	2.54	0.42
2:2:606:G:H2'	2:2:631:C:C4	2.55	0.42
2:2:627:G:H2'	2:2:628:G:O4'	2.19	0.42
2:2:925:G:N1	2:2:927:G:N7	2.67	0.42
2:2:1125:U:O2'	2:2:1126:U:O5'	2.32	0.42
2:2:1171:A:H2'	2:2:1172:C:C6	2.51	0.42
12:G:51:ARG:NH2	12:G:54:LEU:HD13	2.34	0.42
17:L:111:ILE:HA	17:L:131:ALA:HB2	2.01	0.42
38:g:187:VAL:HG21	38:g:193:PRO:HB3	2.02	0.42
40:i:65:TYR:CZ	40:i:94:LEU:HB3	2.55	0.42
40:i:97:ARG:HG2	40:i:99:ASP:OD1	2.19	0.42
44:m:89:LYS:HG3	44:m:120:GLY:HA2	2.02	0.42
1:1:23:G:H21	24:S:77:ASP:HB3	1.83	0.42
1:1:351:C:C2	1:1:352:A:C8	3.07	0.42
1:1:636:G:H5''	17:L:129:LYS:HG2	2.02	0.42
1:1:640:C:H2'	1:1:641:U:H5	1.83	0.42
1:1:1021:A:O2'	1:1:1023:U:H5'	2.19	0.42
1:1:1131:G:H21	15:J:77:HIS:HB3	1.84	0.42
1:1:1184:U:C4	1:1:1185:G:N7	2.87	0.42
1:1:1216:G:H3'	1:1:1217:U:C6	2.55	0.42
1:1:1564:C:H2'	1:1:1565:C:C6	2.54	0.42
1:1:1855:U:O2'	1:1:1856:U:H5'	2.19	0.42
1:1:2069:G7M:O2'	1:1:2070:A:O5'	2.30	0.42
1:1:2345:G:C6	1:1:2381:A:C5	3.07	0.42
1:1:2530:A:O2'	1:1:2535:G:O6	2.28	0.42
1:1:2572:A:OP1	1:1:2572:A:C8	2.72	0.42
1:1:2633:G:H2'	1:1:2634:A:O4'	2.19	0.42
1:1:2649:C:O2'	1:1:2650:U:O4'	2.19	0.42
1:1:2674:G:N3	1:1:2674:G:H2'	2.33	0.42
2:2:51:A:N7	2:2:114:U:O2'	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:503:C:H2'	2:2:504:C:C6	2.54	0.42
2:2:539:A:C6	2:2:540:G:C5	3.08	0.42
2:2:1074:G:H8	2:2:1074:G:O5'	2.02	0.42
3:4:45:A:N3	3:4:45:A:H2'	2.34	0.42
8:C:1:MET:HE1	8:C:205:PRO:HG2	2.00	0.42
8:C:104:VAL:HG22	8:C:105:LYS:H	1.85	0.42
13:H:11:ILE:O	13:H:14:GLU:HG3	2.20	0.42
13:H:15:VAL:HG13	13:H:69:PHE:CG	2.55	0.42
18:M:2:LEU:HB3	18:M:68:PHE:CE1	2.54	0.42
19:N:1:MET:O	19:N:5:LYS:HE3	2.20	0.42
21:P:9:GLU:O	21:P:13:MET:HG2	2.20	0.42
26:U:4:LYS:HG2	26:U:83:VAL:HB	2.01	0.42
26:U:22:ARG:C	26:U:39:ILE:HD11	2.44	0.42
38:g:87:CYS:HB2	38:g:221:VAL:HB	2.01	0.42
38:g:166:ALA:HB2	38:g:187:VAL:HG22	2.00	0.42
39:h:40:ARG:NH2	39:h:55:ILE:O	2.46	0.42
46:o:28:THR:O	46:o:31:ARG:HG2	2.20	0.42
1:1:246:C:OP2	1:1:249:C:N4	2.52	0.42
1:1:458:G:O2'	35:d:39:ARG:HD3	2.20	0.42
1:1:636:G:C5	17:L:111:ILE:HG21	2.54	0.42
1:1:1149:G:H2'	1:1:1150:C:H5'	2.02	0.42
1:1:1200:C:C4	1:1:1201:U:C5	3.07	0.42
1:1:1386:C:H2'	1:1:1387:A:C8	2.55	0.42
1:1:2260:C:O2'	1:1:2389:G:OP1	2.37	0.42
1:1:2346:A:H5'	1:1:2383:G:O4'	2.20	0.42
1:1:2640:G:C6	1:1:2641:G:O6	2.73	0.42
1:1:2683:C:C5	1:1:2684:U:C6	3.07	0.42
1:1:2748:A:H2'	1:1:2749:A:O4'	2.20	0.42
1:1:2834:G:H4'	8:C:56:LYS:HE2	2.02	0.42
2:2:60:A:P	2:2:386:C:O2'	2.77	0.42
2:2:419:C:OP1	2:2:513:C:O2'	2.37	0.42
2:2:523:A:N6	48:q:88:LYS:HB3	2.34	0.42
2:2:737:C:H2'	2:2:738:C:H6	1.83	0.42
2:2:945:G:N3	2:2:945:G:H2'	2.34	0.42
2:2:1125:U:N3	2:2:1127:G:C8	2.87	0.42
2:2:1181:G:H1'	2:2:1182:G:C4	2.54	0.42
2:2:1308:U:H2'	2:2:1309:G:C8	2.55	0.42
2:2:1321:U:H2'	2:2:1322:C:C5	2.54	0.42
2:2:1442:G:C6	2:2:1461:G:C2	3.08	0.42
2:2:1465:A:H2'	2:2:1466:C:C6	2.54	0.42
2:2:1477:U:H2'	2:2:1478:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:O:62:LEU:HD13	20:O:70:ALA:HA	2.01	0.42
24:S:51:LEU:O	24:S:55:ILE:HG13	2.19	0.42
28:W:36:ILE:HG22	28:W:37:ILE:N	2.34	0.42
39:h:180:ALA:O	39:h:182:ILE:N	2.51	0.42
42:k:18:VAL:HG12	42:k:22:ILE:HD11	2.00	0.42
42:k:43:GLY:HA2	42:k:58:HIS:CE1	2.54	0.42
49:r:26:GLY:O	49:r:30:SER:CB	2.67	0.42
52:u:9:HIS:O	52:u:16:PHE:HB3	2.19	0.42
55:x:3:ARG:NE	55:x:8:GLY:O	2.52	0.42
1:1:830:G:O3'	1:1:831:G:H8	2.03	0.42
1:1:918:A:C8	1:1:2268:A:N6	2.88	0.42
1:1:921:C:N4	1:1:922:C:N4	2.68	0.42
1:1:1199:U:H2'	1:1:1200:C:H6	1.84	0.42
1:1:1246:A:H2'	1:1:1247:A:O4'	2.20	0.42
1:1:1877:A:H2'	1:1:1878:G:C8	2.54	0.42
1:1:2514:U:H1'	8:C:148:GLN:NE2	2.35	0.42
2:2:246:A:C2	2:2:282:A:C5	3.07	0.42
2:2:330:C:H2'	2:2:331:G:C8	2.53	0.42
2:2:374:A:O2'	2:2:375:U:H5'	2.20	0.42
2:2:413:G:H21	2:2:428:G:H1'	1.83	0.42
2:2:427:U:C4	2:2:428:G:C6	3.07	0.42
4:5:15:C:H1'	4:5:59:A:H2	1.84	0.42
8:C:49:GLN:HG3	8:C:81:GLU:HG2	2.01	0.42
11:F:92:VAL:O	11:F:92:VAL:HG23	2.19	0.42
12:G:122:LEU:O	12:G:122:LEU:HD12	2.19	0.42
22:Q:41:LYS:HD2	22:Q:45:TYR:CZ	2.55	0.42
28:W:70:GLU:OE2	28:W:81:SER:HB3	2.20	0.42
40:i:59:GLN:O	40:i:63:ARG:HG3	2.20	0.42
40:i:203:LEU:O	40:i:206:LYS:HG2	2.19	0.42
57:z:4:ILE:HG21	57:z:19:PHE:HB2	2.01	0.42
1:1:259:G:H2'	1:1:260:G:C8	2.54	0.42
1:1:386:G:O3'	1:1:388:G:N2	2.53	0.42
1:1:598:U:H2'	1:1:599:A:H8	1.84	0.42
1:1:1027:A:N3	1:1:1027:A:H2'	2.35	0.42
1:1:1029:A:H62	1:1:1125:G:H21	1.34	0.42
1:1:2267:A:N1	1:1:2271:G:N1	2.68	0.42
1:1:2744:G:OP2	1:1:2755:C:N4	2.53	0.42
1:1:2774:C:N4	1:1:2775:G:C2	2.88	0.42
2:2:13:U:O4	2:2:20:U:O4	2.37	0.42
2:2:236:A:H2'	2:2:237:G:C8	2.54	0.42
2:2:298:A:H2'	2:2:299:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:512:U:O4'	40:i:41:HIS:HE1	2.02	0.42
2:2:523:A:N6	48:q:88:LYS:H	2.11	0.42
2:2:864:A:H2'	2:2:865:A:C8	2.54	0.42
2:2:868:C:H2'	2:2:869:G:O4'	2.20	0.42
2:2:1113:C:H2'	2:2:1114:C:H6	1.85	0.42
2:2:1115:U:H2'	2:2:1116:U:O4'	2.20	0.42
2:2:1220:G:OP1	55:x:37:ARG:NH2	2.53	0.42
2:2:1289:A:N6	2:2:1371:G:O2'	2.52	0.42
3:4:12:C:O2'	28:W:74:PRO:HA	2.20	0.42
3:4:51:G:H2'	3:4:52:A:C8	2.55	0.42
3:4:56:G:P	3:4:56:G:H8	2.43	0.42
8:C:105:LYS:O	8:C:177:VAL:N	2.50	0.42
9:D:32:VAL:HG12	9:D:177:PRO:HB2	2.01	0.42
15:J:21:THR:OG1	15:J:61:LYS:HD2	2.19	0.42
17:L:129:LYS:HG3	17:L:130:GLY:N	2.35	0.42
22:Q:90:ILE:HD11	23:R:40:MET:CE	2.50	0.42
26:U:29:LEU:N	26:U:33:LYS:O	2.50	0.42
38:g:25:PRO:C	38:g:27:MET:H	2.28	0.42
38:g:105:LYS:HG3	38:g:106:THR:N	2.34	0.42
38:g:188:ASP:HB3	38:g:190:ASN:OD1	2.19	0.42
40:i:60:LYS:O	40:i:64:ILE:HG13	2.19	0.42
43:l:116:MET:HG2	43:l:119:ARG:NH2	2.35	0.42
47:p:53:ARG:HB2	47:p:56:ARG:NH2	2.34	0.42
1:1:78:U:H2'	1:1:79:C:C6	2.55	0.42
1:1:87:U:OP1	1:1:88:G:H5'	2.20	0.42
1:1:533:G:H2'	1:1:534:U:O4'	2.19	0.42
1:1:641:U:H2'	1:1:642:U:C2	2.55	0.42
1:1:721:A:H2'	1:1:722:A:C8	2.55	0.42
1:1:856:G:C2	1:1:857:G:C6	3.08	0.42
1:1:901:C:H2'	1:1:902:C:C6	2.55	0.42
1:1:2420:C:C2	1:1:2421:G:N7	2.88	0.42
1:1:2659:G:N2	1:1:2662:A:C8	2.87	0.42
1:1:2773:C:H2'	1:1:2774:C:C6	2.55	0.42
2:2:192:A:H2'	2:2:193:C:O4'	2.20	0.42
2:2:231:U:H2'	2:2:232:G:C1'	2.50	0.42
2:2:232:G:N3	2:2:233:C:C5	2.88	0.42
2:2:325:A:HO2'	2:2:326:G:P	2.42	0.42
2:2:980:C:H3'	2:2:981:U:C6	2.55	0.42
2:2:1013:G:C2	2:2:1015:G:C8	3.08	0.42
2:2:1113:C:H2'	2:2:1114:C:C6	2.55	0.42
4:6:4:G:C2	4:6:71:G:C2	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:26:LYS:HE2	6:A:26:LYS:HB2	1.67	0.42
27:V:31:TYR:OH	27:V:90:ASP:HB3	2.20	0.42
31:Z:9:GLN:NE2	31:Z:12:SER:HA	2.35	0.42
42:k:69:GLU:HG2	42:k:70:VAL:N	2.35	0.42
48:q:82:ILE:HB	48:q:95:TYR:HB3	2.02	0.42
1:1:23:G:C5	1:1:24:G:N7	2.87	0.42
1:1:528:A:H2	15:J:116:ARG:NH2	2.17	0.42
1:1:824:U:H2'	1:1:825:A:O4'	2.20	0.42
1:1:980:A:O2'	1:1:2037:A:H1'	2.20	0.42
1:1:1002:G:C5	1:1:1003:G:H1'	2.55	0.42
1:1:2023:C:H4'	1:1:2617:U:O2'	2.19	0.42
1:1:2344:U:O5'	34:c:37:LYS:HB3	2.19	0.42
1:1:2743:U:H5''	1:1:2755:C:N4	2.34	0.42
1:1:2772:C:N3	1:1:2773:C:N4	2.68	0.42
2:2:43:C:C2	2:2:44:A:C8	3.08	0.42
2:2:299:G:C2	2:2:300:A:N7	2.88	0.42
2:2:399:G:C6	2:2:400:C:C4	3.08	0.42
2:2:538:G:H5''	48:q:111:LYS:HB3	2.02	0.42
2:2:1128:C:H2'	2:2:1129:C:C6	2.55	0.42
2:2:1320:C:H42	55:x:37:ARG:CG	2.33	0.42
2:2:1392:G:H5''	2:2:1531:A:H5'	2.01	0.42
8:C:13:ARG:HG3	8:C:15:PHE:CZ	2.54	0.42
10:E:37:ASN:HB3	10:E:153:ASP:OD1	2.20	0.42
14:I:20:SER:HB3	14:I:21:PRO:HD3	2.01	0.42
26:U:84:GLY:O	26:U:95:PHE:N	2.38	0.42
39:h:9:GLY:HA2	39:h:12:LEU:CD2	2.49	0.42
40:i:155:VAL:O	40:i:159:LEU:HG	2.20	0.42
50:s:46:LEU:O	50:s:50:THR:HG23	2.20	0.42
1:1:18:U:H5''	22:Q:30:ARG:HH12	1.85	0.41
1:1:414:C:H2'	1:1:415:A:H8	1.86	0.41
1:1:572:A:N6	1:1:2029:G:H1'	2.33	0.41
1:1:647:G:H21	1:1:2351:G:C5'	2.26	0.41
1:1:2194:U:H2'	1:1:2195:U:C6	2.53	0.41
1:1:2324:U:O2'	1:1:2385:C:H5	2.02	0.41
1:1:2428:G:H5'	1:1:2429:G:OP1	2.20	0.41
1:1:2471:A:H2'	1:1:2472:G:H5'	2.02	0.41
1:1:2514:U:H2'	1:1:2515:C:C6	2.55	0.41
1:1:2821:A:H2	1:1:2826:A:H61	1.68	0.41
2:2:260:G:H8	2:2:260:G:O5'	2.03	0.41
2:2:364:A:OP2	2:2:364:A:H8	2.03	0.41
2:2:466:A:H2'	2:2:468:A:C2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:628:G:H2'	2:2:629:A:H8	1.85	0.41
2:2:1269:A:O2'	2:2:1325:C:O2	2.38	0.41
8:C:24:VAL:HG21	8:C:188:LEU:HG	2.01	0.41
9:D:190:ALA:O	9:D:194:LYS:HG2	2.20	0.41
11:F:67:THR:O	11:F:71:LEU:HG	2.19	0.41
16:K:15:GLY:O	16:K:47:ILE:HG12	2.19	0.41
25:T:54:GLU:HG2	25:T:88:LYS:HG3	2.02	0.41
42:k:51:ILE:O	42:k:54:LEU:HG	2.20	0.41
46:o:40:ILE:H	46:o:40:ILE:HD12	1.84	0.41
1:1:17:G:H5'	33:b:11:SER:N	2.35	0.41
1:1:617:G:H2'	1:1:618:G:O4'	2.20	0.41
1:1:820:A:H4'	1:1:837:C:O2'	2.20	0.41
1:1:856:G:H2'	1:1:857:G:C8	2.55	0.41
1:1:927:A:N6	1:1:928:A:N6	2.68	0.41
1:1:1008:A:H5''	15:J:37:ARG:NH2	2.32	0.41
1:1:1084:A:OP2	13:H:53:ARG:NE	2.53	0.41
1:1:1207:C:H6	1:1:1207:C:O5'	2.03	0.41
1:1:1542:U:H2'	1:1:1543:G:O4'	2.20	0.41
1:1:2216:G:H2'	1:1:2217:G:H8	1.85	0.41
1:1:2336:A:C2	28:W:57:HIS:HE1	2.39	0.41
1:1:2395:C:H2'	1:1:2396:G:C8	2.56	0.41
2:2:137:U:O2	2:2:226:G:C6	2.72	0.41
2:2:205:A:N6	2:2:213:G:H1	2.19	0.41
2:2:545:C:H2'	2:2:546:A:C8	2.55	0.41
2:2:715:A:H2'	2:2:716:A:C8	2.55	0.41
2:2:824:G:H2'	2:2:825:A:H8	1.85	0.41
2:2:1392:G:O2'	2:2:1502:A:O5'	2.38	0.41
24:S:14:ALA:HB2	24:S:78:GLU:HG3	2.03	0.41
27:V:44:HIS:ND1	27:V:48:MET:HE3	2.34	0.41
36:e:36:LYS:HE2	36:e:44:LEU:HD11	2.01	0.41
39:h:22:TRP:H	50:s:94:PRO:HG3	1.85	0.41
50:s:63:ARG:NH1	50:s:65:ARG:HA	2.35	0.41
1:1:238:C:H1'	1:1:608:A:C2	2.55	0.41
1:1:479:A:N7	1:1:481:G:C2	2.89	0.41
1:1:1014:A:C6	1:1:1149:G:C6	3.08	0.41
1:1:1072:C:H42	1:1:1092:C:H42	1.67	0.41
1:1:1161:C:C2	1:1:1162:G:H1'	2.56	0.41
1:1:2355:G:C6	1:1:2356:U:C4	3.09	0.41
1:1:2393:U:H4'	17:L:61:LEU:C	2.45	0.41
1:1:2485:G:O2'	18:M:125:PRO:HB3	2.19	0.41
1:1:2757:A:OP1	37:f:18:LYS:NZ	2.30	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:35:G:H4'	48:q:98:VAL:HG11	2.01	0.41
2:2:132:C:H4'	56:y:68:HIS:CE1	2.55	0.41
2:2:331:G:H5''	2:2:332:G:H5'	2.02	0.41
2:2:1007:U:H2'	2:2:1008:U:C6	2.56	0.41
2:2:1045:C:C2'	2:2:1046:A:H5''	2.48	0.41
2:2:1065:U:N3	2:2:1108:G:O2'	2.53	0.41
2:2:1233:G:OP1	45:n:126:GLN:HG3	2.20	0.41
2:2:1250:A:H2'	2:2:1251:A:C8	2.55	0.41
2:2:1413:A:H2	2:2:1487:G:H22	1.67	0.41
3:4:3:C:H2'	3:4:4:C:H6	1.85	0.41
3:4:75:G:H21	27:V:88:HIS:CG	2.39	0.41
9:D:193:VAL:O	9:D:197:GLU:HG3	2.20	0.41
11:F:72:LEU:HD12	11:F:72:LEU:O	2.20	0.41
13:H:58:THR:OG1	13:H:78:GLY:O	2.28	0.41
21:P:31:TRP:HB3	21:P:38:LYS:HE2	2.01	0.41
25:T:33:LYS:HG3	25:T:80:TRP:CE3	2.54	0.41
27:V:26:PHE:HZ	27:V:47:VAL:HG11	1.85	0.41
38:g:18:HIS:NE2	38:g:205:ASP:HB2	2.36	0.41
38:g:208:ARG:HA	38:g:211:THR:HG22	2.02	0.41
39:h:134:MET:HA	39:h:134:MET:HE2	2.01	0.41
40:i:108:GLY:HA2	40:i:113:GLU:OE2	2.20	0.41
41:j:160:SER:O	41:j:164:ILE:HG13	2.19	0.41
1:1:117:G:OP2	1:1:119:A:O2'	2.26	0.41
1:1:336:C:OP1	26:U:82:ARG:HB3	2.21	0.41
1:1:527:C:N4	1:1:2779:U:OP2	2.50	0.41
1:1:651:G:N1	1:1:652:U:C5	2.89	0.41
1:1:729:G:O2'	1:1:763:G:H4'	2.20	0.41
1:1:826:U:N3	1:1:831:G:C6	2.72	0.41
1:1:930:G:H5''	1:1:931:U:OP2	2.21	0.41
1:1:984:A:H2'	1:1:984:A:N3	2.35	0.41
1:1:1086:A:O2'	1:1:1087:G:N7	2.47	0.41
1:1:1132:U:O2	15:J:75:TYR:HB3	2.19	0.41
1:1:1287:A:H3'	1:1:1288:G:N2	2.36	0.41
1:1:2048:G:H2'	1:1:2049:G:O4'	2.21	0.41
1:1:2328:A:H2'	1:1:2329:U:H6	1.84	0.41
1:1:2820:A:OP1	19:N:2:ARG:NH2	2.53	0.41
2:2:45:G:H5''	2:2:307:C:H4'	2.01	0.41
2:2:62:U:H2'	2:2:63:C:C6	2.55	0.41
2:2:676:A:H2'	2:2:677:U:H6	1.86	0.41
2:2:932:C:H4'	43:l:4:ARG:NH2	2.36	0.41
2:2:1061:G:H5'	46:o:61:ALA:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1239:A:HO2'	2:2:1297:G:H21	1.66	0.41
2:2:1348:U:O2	2:2:1374:A:N7	2.52	0.41
2:2:1350:A:P	45:n:123:ARG:HG2	2.61	0.41
2:2:1510:C:H2'	2:2:1511:G:C8	2.55	0.41
3:4:8:C:OP1	20:O:15:ARG:NH1	2.53	0.41
4:6:76:C:H5''	4:6:77:A:H5''	2.02	0.41
6:A:8:ILE:HG12	6:A:97:VAL:HG22	2.02	0.41
7:B:30:PHE:HD2	7:B:33:LEU:HG	1.85	0.41
10:E:94:GLU:HA	10:E:97:TRP:CD1	2.55	0.41
13:H:103:ASN:HA	13:H:107:GLU:HB2	2.02	0.41
33:b:10:ARG:HB2	33:b:13:ARG:CZ	2.51	0.41
33:b:40:ARG:HA	33:b:40:ARG:HD2	1.95	0.41
37:f:2:LYS:HD2	37:f:35:GLN:HA	2.02	0.41
38:g:73:LYS:HD2	38:g:168:HIS:CD2	2.56	0.41
39:h:31:ASP:OD1	50:s:65:ARG:NH1	2.53	0.41
40:i:50:ASP:O	40:i:53:VAL:HG22	2.20	0.41
42:k:12:PRO:HG3	42:k:56:LYS:HB2	2.02	0.41
43:l:50:LEU:HD22	43:l:124:LEU:HD13	2.03	0.41
46:o:7:ARG:O	46:o:100:ILE:HA	2.20	0.41
46:o:77:VAL:HG12	46:o:78:GLU:HG2	2.01	0.41
56:y:51:PHE:O	56:y:55:GLN:HG3	2.19	0.41
1:1:227:A:N6	1:1:410:G:C2	2.78	0.41
1:1:253:C:H6	36:e:5:LYS:NZ	2.19	0.41
1:1:310:A:O2'	1:1:312:G:O6	2.28	0.41
1:1:514:A:N3	1:1:581:C:O2'	2.49	0.41
1:1:571:U:H2'	23:R:80:ARG:CZ	2.51	0.41
1:1:631:A:O5'	17:L:64:PHE:HE2	2.03	0.41
1:1:982:C:O4'	1:1:2028:U:O2'	2.37	0.41
1:1:1186:G:N3	1:1:1186:G:H2'	2.35	0.41
1:1:1363:C:O2'	1:1:1809:A:N3	2.46	0.41
1:1:2011:U:H2'	1:1:2012:G:O4'	2.20	0.41
1:1:2376:A:H8	1:1:2376:A:OP1	2.03	0.41
1:1:2386:A:H2'	1:1:2387:U:O4'	2.20	0.41
1:1:2624:G:H2'	1:1:2625:G:H8	1.84	0.41
1:1:2650:U:C2	1:1:2651:C:C5	3.08	0.41
2:2:450:G:H4'	52:u:42:ILE:HG22	2.02	0.41
2:2:1320:C:H2'	2:2:1321:U:C6	2.55	0.41
4:5:14:G:H2'	4:5:59:A:N6	2.34	0.41
13:H:68:PRO:HA	13:H:72:LEU:HG	2.03	0.41
15:J:58:ASN:HD22	15:J:61:LYS:CE	2.33	0.41
27:V:76:ASP:H	27:V:90:ASP:HB2	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:g:67:ILE:CD1	38:g:160:ALA:HB3	2.51	0.41
46:o:23:ALA:O	46:o:27:GLU:HG2	2.21	0.41
1:1:247:G:H5'	1:1:386:G:C5	2.56	0.41
1:1:259:G:N3	1:1:621:A:O2'	2.51	0.41
1:1:360:U:H2'	1:1:361:G:C5	2.55	0.41
1:1:374:A:C2	1:1:401:A:N7	2.89	0.41
1:1:516:C:H2'	1:1:517:C:C6	2.55	0.41
1:1:572:A:N1	1:1:2029:G:C2	2.89	0.41
1:1:615:U:O4	9:D:39:ALA:N	2.54	0.41
1:1:837:C:O5'	1:1:837:C:H6	2.04	0.41
1:1:862:G:C5	1:1:863:A:C5	3.08	0.41
1:1:1232:G:H2'	1:1:1233:C:C5	2.55	0.41
1:1:2193:G:HO2'	1:1:2194:U:P	2.42	0.41
1:1:2748:A:H62	1:1:2754:U:H3	1.68	0.41
1:1:2820:A:N3	8:C:196:ALA:HB3	2.36	0.41
2:2:323:U:H3'	2:2:324:G:C8	2.56	0.41
2:2:462:G:H2'	2:2:463:U:C6	2.56	0.41
2:2:680:C:H2'	2:2:681:A:H8	1.86	0.41
2:2:1059:C:OP1	50:s:89:MET:HE2	2.20	0.41
3:4:55:U:H4'	10:E:25:VAL:HG12	2.03	0.41
3:4:75:G:H4'	27:V:12:GLN:NE2	2.36	0.41
4:6:37:U:H2'	4:6:38:A:H5'	2.03	0.41
9:D:146:VAL:CG2	9:D:187:VAL:HG23	2.50	0.41
17:L:79:LEU:HD13	17:L:116:VAL:HG12	2.01	0.41
27:V:9:ARG:NE	27:V:11:GLU:O	2.54	0.41
28:W:45:PHE:HB3	28:W:80:ILE:HG13	2.02	0.41
37:f:24:ARG:HH11	37:f:36:ARG:HH11	1.68	0.41
40:i:53:VAL:CB	40:i:56:ARG:HH21	2.33	0.41
41:j:88:VAL:HA	41:j:92:SER:O	2.20	0.41
43:l:99:LEU:HD23	43:l:99:LEU:HA	1.92	0.41
49:r:20:THR:HG22	49:r:26:GLY:C	2.46	0.41
49:r:33:ILE:HD11	49:r:63:PHE:HD2	1.86	0.41
50:s:38:ASP:OD1	50:s:38:ASP:N	2.52	0.41
50:s:69:ARG:NH2	50:s:81:ARG:HH21	2.18	0.41
1:1:96:C:C2	1:1:97:C:C5	3.09	0.41
1:1:524:G:H8	1:1:524:G:O5'	2.04	0.41
1:1:650:C:O5'	1:1:650:C:H6	2.02	0.41
1:1:857:G:H4'	28:W:45:PHE:CZ	2.56	0.41
1:1:987:C:C4	1:1:988:A:C2	3.09	0.41
1:1:1130:U:OP2	1:1:2570:G:N2	2.44	0.41
1:1:1655:A:H1'	8:C:118:PHE:CD1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2026:U:H2'	1:1:2027:G:O4'	2.21	0.41
1:1:2770:G:C8	1:1:2771:C:H5	2.39	0.41
2:2:1170:A:C6	2:2:1171:A:C4	3.08	0.41
8:C:28:GLU:HB3	21:P:4:ILE:CD1	2.51	0.41
10:E:106:ILE:HG12	32:a:34:LEU:HD11	2.03	0.41
10:E:131:GLY:HA2	10:E:153:ASP:HA	2.03	0.41
10:E:136:ILE:HG21	10:E:143:TYR:HD1	1.84	0.41
13:H:30:SER:HB2	13:H:108:VAL:HG11	2.02	0.41
21:P:57:SER:HG	21:P:77:HIS:CE1	2.39	0.41
25:T:43:ILE:O	25:T:47:VAL:HG12	2.20	0.41
29:X:59:ILE:HG12	29:X:67:VAL:HG21	2.03	0.41
38:g:114:LEU:O	38:g:118:GLU:HG2	2.21	0.41
38:g:183:VAL:HG11	38:g:196:VAL:HA	2.03	0.41
44:m:30:SER:O	44:m:34:VAL:HG23	2.20	0.41
1:1:258:G:O2'	17:L:103:ILE:HG12	2.20	0.41
1:1:370:G:H2'	1:1:370:G:OP2	2.20	0.41
1:1:534:U:H5''	1:1:535:G:OP2	2.21	0.41
1:1:944:C:OP1	1:1:945:A:H5''	2.21	0.41
1:1:1012:U:P	22:Q:70:ARG:HH22	2.44	0.41
1:1:1022:G:O2'	1:1:1024:G:O6	2.24	0.41
1:1:2259:U:H5''	1:1:2427:C:OP2	2.20	0.41
1:1:2531:A:H3'	1:1:2532:G:C8	2.56	0.41
1:1:2640:G:C2	1:1:2641:G:C5	3.09	0.41
2:2:130:A:N6	53:v:66:PRO:HG2	2.36	0.41
2:2:258:G:H2'	2:2:259:G:C8	2.56	0.41
2:2:420:U:O2'	2:2:423:G:O6	2.25	0.41
2:2:674:G:N2	47:p:118:HIS:HB2	2.35	0.41
2:2:1239:A:O2'	2:2:1298:U:O4	2.32	0.41
2:2:1320:C:H2'	2:2:1321:U:C5	2.56	0.41
3:4:36:C:N4	3:4:37:C:H41	2.19	0.41
8:C:116:LYS:HA	8:C:116:LYS:HD3	1.91	0.41
17:L:109:LYS:HD3	17:L:126:ARG:HE	1.85	0.41
19:N:33:ILE:HD11	19:N:118:ARG:NE	2.35	0.41
38:g:50:PHE:HD1	38:g:200:ILE:HG21	1.86	0.41
38:g:66:LYS:HB2	38:g:158:PRO:HA	2.02	0.41
38:g:127:ASP:C	38:g:128:LYS:HD2	2.46	0.41
39:h:7:PRO:O	39:h:11:ARG:HB2	2.20	0.41
43:l:46:ALA:HB2	43:l:117:ALA:HA	2.01	0.41
48:q:83:ARG:HB3	48:q:98:VAL:CG2	2.50	0.41
1:1:283:G:H2'	1:1:284:U:C6	2.55	0.41
1:1:308:G:N2	1:1:329:G:H21	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:524:G:H2'	1:1:525:U:O4'	2.21	0.41
1:1:529:A:H2'	1:1:530:G:C2	2.56	0.41
1:1:532:A:OP1	1:1:533:G:C5	2.73	0.41
1:1:552:U:C4	1:1:553:G:O6	2.74	0.41
1:1:553:G:N1	1:1:554:U:C2	2.89	0.41
1:1:600:G:C4'	9:D:27:LEU:HD22	2.50	0.41
1:1:636:G:N2	17:L:76:GLU:OE1	2.52	0.41
1:1:672:C:H2'	1:1:673:C:C6	2.56	0.41
1:1:823:C:H2'	1:1:824:U:C6	2.56	0.41
1:1:954:G:H5''	18:M:13:HIS:HA	2.02	0.41
1:1:1001:A:C8	1:1:1154:G:N2	2.89	0.41
1:1:1003:G:N2	1:1:1010:A:O2'	2.53	0.41
1:1:1065:U:O2'	1:1:1066:U:O5'	2.37	0.41
1:1:1083:U:O5'	13:H:53:ARG:NH2	2.54	0.41
1:1:1495:A:H2'	1:1:1496:A:C8	2.55	0.41
1:1:1863:G:H2'	1:1:1864:U:C5	2.55	0.41
1:1:2047:C:N3	1:1:2048:G:N7	2.62	0.41
1:1:2332:C:H2'	1:1:2335:A:N3	2.36	0.41
1:1:2454:G:O5'	1:1:2454:G:H8	2.03	0.41
1:1:2547:A:C8	1:1:2566:A:C2	3.09	0.41
1:1:2731:G:C2'	1:1:2732:G:H5'	2.51	0.41
1:1:2735:G:C6	1:1:2770:G:H1'	2.56	0.41
1:1:2738:A:H2	1:1:2764:A:H62	1.69	0.41
1:1:2822:G:H2'	1:1:2823:A:C5'	2.47	0.41
2:2:109:A:N3	2:2:109:A:H5''	2.35	0.41
2:2:174:A:OP2	2:2:174:A:C8	2.74	0.41
2:2:300:A:C4	2:2:301:G:H1'	2.54	0.41
2:2:361:G:H2'	2:2:362:G:O4'	2.20	0.41
2:2:428:G:H8	2:2:428:G:OP1	2.04	0.41
2:2:672:U:H2'	2:2:673:A:C8	2.56	0.41
2:2:948:C:H5''	49:r:101:ARG:NH1	2.33	0.41
2:2:971:G:H4'	2:2:972:C:H5''	2.02	0.41
2:2:977:A:O2'	2:2:979:C:OP2	2.38	0.41
2:2:1125:U:C2	2:2:1127:G:N7	2.89	0.41
2:2:1171:A:C4	2:2:1172:C:C5	3.09	0.41
2:2:1181:G:H1'	2:2:1182:G:C5	2.55	0.41
2:2:1367:C:OP1	45:n:117:GLY:N	2.49	0.41
3:4:61:G:H2'	3:4:62:C:C6	2.55	0.41
3:4:101:A:H5''	3:4:102:G:OP2	2.20	0.41
3:4:114:C:H2'	3:4:115:A:O4'	2.21	0.41
8:C:176:ASP:OD1	8:C:177:VAL:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:36:ALA:O	9:D:40:ARG:HG3	2.21	0.41
10:E:33:LYS:O	10:E:156:ILE:HG23	2.21	0.41
11:F:69:ARG:HD3	11:F:73:ASN:OD1	2.21	0.41
11:F:85:LYS:HA	11:F:85:LYS:HD2	1.80	0.41
12:G:85:GLY:O	12:G:87:GLU:N	2.54	0.41
18:M:39:GLY:N	18:M:96:ILE:HB	2.36	0.41
18:M:45:GLN:HB3	18:M:124:LEU:HD21	2.03	0.41
18:M:95:LEU:O	18:M:97:GLN:NE2	2.51	0.41
24:S:34:ASP:OD1	24:S:35:ILE:N	2.53	0.41
26:U:9:ASP:CG	26:U:94:ARG:HH12	2.29	0.41
26:U:77:THR:HB	26:U:79:LYS:HG3	2.02	0.41
30:Y:50:VAL:O	30:Y:54:LYS:HG2	2.21	0.41
31:Z:16:ARG:HG3	31:Z:54:MET:CE	2.51	0.41
39:h:34:ASP:O	39:h:38:LYS:HG3	2.21	0.41
39:h:129:MET:SD	39:h:129:MET:N	2.94	0.41
39:h:154:SER:O	39:h:197:GLY:N	2.35	0.41
41:j:81:LEU:CD2	41:j:96:MET:HE1	2.50	0.41
41:j:96:MET:CG	41:j:125:ALA:HA	2.51	0.41
43:l:37:SER:HB3	45:n:41:ARG:NH1	2.35	0.41
46:o:22:THR:HA	46:o:25:ILE:HG22	2.03	0.41
50:s:23:LYS:HG3	50:s:51:LEU:HD11	2.03	0.41
50:s:79:LEU:HB2	50:s:84:VAL:HG23	2.03	0.41
57:z:17:ARG:O	57:z:21:ARG:HG2	2.21	0.41
1:1:19:A:OP2	22:Q:30:ARG:NH2	2.54	0.41
1:1:2264:C:C4	1:1:2265:U:O2	2.73	0.41
1:1:2273:A:H2'	1:1:2274:A:N9	2.35	0.41
1:1:2287:A:OP1	34:c:30:LYS:NZ	2.50	0.41
1:1:2376:A:H2'	1:1:2377:A:O4'	2.21	0.41
1:1:2420:C:H5	36:e:31:HIS:HA	1.86	0.41
1:1:2517:C:O2	1:1:2518:A:O2'	2.33	0.41
1:1:2572:A:H8	1:1:2572:A:OP2	2.04	0.41
1:1:2726:A:H4'	16:K:1:MET:HE1	2.02	0.41
1:1:2820:A:C2	19:N:4:ARG:HD2	2.56	0.41
2:2:109:A:H2'	2:2:326:G:N2	2.36	0.41
2:2:260:G:H2'	2:2:261:U:C6	2.55	0.41
2:2:260:G:C8	56:y:74:ARG:NH1	2.88	0.41
2:2:333:U:H2'	2:2:334:C:H6	1.86	0.41
2:2:547:A:OP1	2:2:547:A:H4'	2.21	0.41
2:2:616:G:H2'	2:2:617:G:C8	2.56	0.41
2:2:964:A:O4'	46:o:56:HIS:HE1	2.04	0.41
2:2:1140:C:O2'	2:2:1141:C:O5'	2.37	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1349:A:H2'	2:2:1350:A:O4'	2.21	0.41
4:6:68:C:H2'	4:6:69:C:C6	2.55	0.41
6:A:15:LEU:HA	6:A:18:GLN:HG2	2.03	0.41
10:E:43:ALA:CB	10:E:50:LEU:HD12	2.51	0.41
10:E:47:LYS:O	10:E:50:LEU:HB3	2.21	0.41
15:J:37:ARG:HE	15:J:44:TYR:HH	1.65	0.41
26:U:85:PHE:CD2	26:U:92:LYS:HD3	2.55	0.41
34:c:43:VAL:HG23	34:c:45:GLN:H	1.85	0.41
36:e:4:ILE:HG22	36:e:5:LYS:N	2.35	0.41
40:i:130:VAL:HG12	40:i:132:ILE:H	1.85	0.41
42:k:19:PRO:O	42:k:22:ILE:N	2.53	0.41
47:p:70:CYS:O	47:p:74:VAL:HG12	2.21	0.41
1:1:27:G:O2'	1:1:512:G:N2	2.54	0.40
1:1:587:C:C4	17:L:31:GLY:HA3	2.56	0.40
1:1:650:C:H3'	1:1:651:G:H8	1.86	0.40
1:1:1038:G:H2'	1:1:1039:A:H8	1.84	0.40
1:1:1056:G:H4'	1:1:1086:A:C8	2.53	0.40
1:1:1155:A:H2'	1:1:1156:A:H2'	2.04	0.40
1:1:1433:A:H2'	1:1:1434:A:C8	2.55	0.40
1:1:2371:G:C4	1:1:2372:U:C5	3.09	0.40
1:1:2809:A:N6	1:1:2890:G:H2'	2.35	0.40
2:2:130:A:C6	2:2:263:A:H2	2.38	0.40
2:2:229:U:O2'	52:u:25:ARG:NH2	2.54	0.40
2:2:518:C:H2'	2:2:530:G:H1'	2.03	0.40
2:2:1102:A:H1'	38:g:98:GLY:HA3	2.03	0.40
2:2:1130:A:N6	2:2:1144:G:H1'	2.35	0.40
10:E:37:ASN:O	10:E:152:LEU:HA	2.20	0.40
13:H:53:ARG:HD3	13:H:53:ARG:HA	1.70	0.40
26:U:51:ALA:O	26:U:52:LEU:HD23	2.21	0.40
39:h:71:ALA:HB2	39:h:115:LEU:HD13	2.01	0.40
43:l:87:VAL:HA	43:l:88:PRO:HD3	1.95	0.40
48:q:32:GLY:HA2	48:q:56:ARG:O	2.21	0.40
1:1:317:G:H2'	1:1:318:C:H6	1.87	0.40
1:1:320:A:H4'	1:1:322:A:N7	2.36	0.40
1:1:796:C:OP1	9:D:57:LYS:HE2	2.21	0.40
1:1:813:U:O2'	1:1:1225:G:H1'	2.21	0.40
1:1:956:G:O2'	1:1:959:A:N6	2.52	0.40
1:1:1027:A:O2'	1:1:2487:G:H4'	2.21	0.40
1:1:1124:G:H2'	1:1:1125:G:O4'	2.21	0.40
1:1:1142:A:O2'	1:1:1143:A:OP2	2.34	0.40
1:1:1160:G:O2'	23:R:9:GLY:HA2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2277:G:H4'	18:M:11:LYS:HB2	2.04	0.40
1:1:2700:A:H2'	1:1:2701:U:C6	2.57	0.40
1:1:2727:A:O2'	1:1:2728:U:H5'	2.22	0.40
1:1:2785:C:OP1	8:C:42:ASN:ND2	2.42	0.40
1:1:2820:A:C2	8:C:196:ALA:HB3	2.56	0.40
1:1:2834:G:H2'	1:1:2879:A:H61	1.86	0.40
2:2:260:G:N2	2:2:267:C:C4	2.89	0.40
2:2:335:C:H2'	2:2:336:A:H8	1.85	0.40
2:2:516:PSU:H2'	2:2:517:G:C8	2.56	0.40
2:2:552:U:N3	2:2:553:A:N7	2.69	0.40
2:2:718:A:O2'	57:z:35:ARG:NH2	2.54	0.40
2:2:934:C:O2'	2:2:1344:C:H5''	2.20	0.40
2:2:1181:G:H1'	2:2:1182:G:C8	2.56	0.40
2:2:1229:A:H2'	2:2:1230:C:C6	2.56	0.40
2:2:1323:G:H2'	2:2:1324:A:H8	1.81	0.40
3:4:5:U:N3	3:4:116:G:C6	2.89	0.40
4:6:10:G:OP1	4:6:46:G:O2'	2.39	0.40
4:6:43:G:H2'	4:6:44:A:C8	2.56	0.40
15:J:54:ILE:HG22	15:J:122:LEU:CB	2.48	0.40
18:M:64:TRP:HE3	18:M:104:GLU:HB2	1.86	0.40
19:N:71:ARG:HA	19:N:71:ARG:HD2	1.76	0.40
22:Q:24:TYR:HB2	22:Q:29:SER:HB3	2.02	0.40
24:S:17:VAL:HB	24:S:76:VAL:HG11	2.03	0.40
36:e:38:THR:HB	36:e:42:ARG:NH2	2.32	0.40
39:h:150:LYS:HB3	39:h:201:TRP:CE3	2.56	0.40
39:h:183:ASP:HB3	39:h:202:ILE:HB	2.03	0.40
1:1:18:U:H5''	22:Q:26:GLY:H	1.84	0.40
1:1:184:C:H2'	1:1:185:G:H8	1.85	0.40
1:1:245:G:C2	1:1:246:C:C4	3.10	0.40
1:1:319:G:H2'	1:1:320:A:O4'	2.20	0.40
1:1:384:A:H2'	1:1:385:C:C6	2.56	0.40
1:1:523:C:H5''	1:1:540:C:O2'	2.20	0.40
1:1:697:G:H2'	1:1:698:C:C6	2.56	0.40
1:1:806:C:H5	17:L:41:ARG:HG3	1.87	0.40
1:1:1001:A:H2'	1:1:1002:G:H5'	2.02	0.40
1:1:1051:G:H2'	1:1:1052:C:O4'	2.21	0.40
1:1:1132:U:H1'	15:J:75:TYR:CD1	2.57	0.40
1:1:2046:G:O5'	33:b:16:ARG:HG2	2.21	0.40
1:1:2488:G:N1	1:1:2489:U:O4	2.54	0.40
1:1:2641:G:C6	1:1:2642:G:C5	3.10	0.40
1:1:2810:A:H62	1:1:2890:G:H21	1.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:265:G:C5	2:2:267:C:C5	3.09	0.40
2:2:370:C:H2'	2:2:371:A:C8	2.57	0.40
2:2:461:A:H2'	2:2:462:G:H8	1.86	0.40
2:2:672:U:H2'	2:2:673:A:H8	1.86	0.40
2:2:1193:G:OP1	39:h:167:TRP:NE1	2.54	0.40
2:2:1271:A:H2'	2:2:1272:G:C8	2.56	0.40
2:2:1462:C:H2'	2:2:1463:U:O4'	2.21	0.40
3:4:109:A:H2'	3:4:110:C:O4'	2.20	0.40
10:E:20:PHE:HB3	10:E:22:TYR:CE1	2.56	0.40
11:F:159:GLY:HA2	11:F:163:ARG:NH2	2.37	0.40
13:H:97:LYS:HB2	13:H:125:ARG:HH12	1.86	0.40
23:R:29:THR:OG1	23:R:64:VAL:O	2.39	0.40
27:V:16:ALA:O	27:V:20:LEU:HG	2.20	0.40
33:b:26:THR:HG23	33:b:27:SER:H	1.86	0.40
36:e:13:ARG:HB3	36:e:24:HIS:HB2	2.03	0.40
40:i:88:GLU:CG	40:i:188:ARG:HB2	2.52	0.40
40:i:146:ARG:HG3	40:i:148:LYS:H	1.86	0.40
42:k:17:GLN:O	42:k:21:MET:HG2	2.21	0.40
46:o:12:ALA:HB3	46:o:18:ILE:HD12	2.03	0.40
50:s:48:LEU:HD12	50:s:51:LEU:HD12	2.03	0.40
51:t:47:LYS:O	51:t:53:ARG:NH2	2.55	0.40
57:z:58:LYS:O	57:z:62:ARG:HG2	2.21	0.40
1:1:98:G:H2'	1:1:99:U:C6	2.57	0.40
1:1:321:U:O2'	1:1:340:A:H2'	2.21	0.40
1:1:637:A:H4'	1:1:638:G:H4'	2.04	0.40
1:1:858:G:H3'	1:1:859:G:C8	2.56	0.40
1:1:923:G:H2'	1:1:924:G:C8	2.57	0.40
1:1:1129:A:H4'	1:1:2515:C:O2'	2.22	0.40
1:1:1132:U:O2'	1:1:1133:A:H5'	2.21	0.40
1:1:1227:G:OP1	22:Q:13:ARG:HD3	2.21	0.40
1:1:1241:A:N6	17:L:4:ASN:HD21	2.19	0.40
1:1:1861:G:C6	1:1:1862:G:C8	3.09	0.40
1:1:2283:C:H2'	1:1:2284:A:C8	2.57	0.40
1:1:2307:G:H5'	1:1:2308:G:C2	2.57	0.40
1:1:2345:G:C5'	1:1:2347:C:H5''	2.52	0.40
1:1:2663:G:H2'	1:1:2664:G:O4'	2.22	0.40
2:2:181:A:N6	2:2:194:C:H3'	2.37	0.40
2:2:419:C:O3'	2:2:513:C:H4'	2.22	0.40
2:2:973:G:H2'	2:2:974:A:C8	2.56	0.40
2:2:1126:U:O2'	2:2:1280:A:O2'	2.31	0.40
2:2:1237:C:H4'	2:2:1303:C:O2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1314:C:H2'	2:2:1315:U:O4'	2.21	0.40
3:4:22:U:O4	3:4:61:G:O6	2.39	0.40
3:4:29:A:H2'	3:4:30:C:H6	1.85	0.40
8:C:108:ASP:N	8:C:204:LYS:O	2.45	0.40
11:F:141:ILE:HD12	11:F:141:ILE:HA	1.91	0.40
25:T:48:GLN:HG2	25:T:53:VAL:O	2.22	0.40
28:W:31:VAL:HG13	28:W:35:SER:HB2	2.04	0.40
38:g:73:LYS:C	38:g:75:ALA:H	2.30	0.40
39:h:21:THR:HA	50:s:94:PRO:HB3	2.03	0.40
48:q:7:LEU:HD23	48:q:7:LEU:HA	1.93	0.40
1:1:246:C:H3'	1:1:247:G:C5'	2.50	0.40
1:1:528:A:N3	1:1:528:A:H3'	2.36	0.40
1:1:839:U:C2	1:1:939:G:O6	2.74	0.40
1:1:958:U:O4	18:M:39:GLY:HA2	2.20	0.40
1:1:1461:C:C2	1:1:1462:C:C5	3.10	0.40
2:2:44:A:C5	2:2:45:G:C8	3.09	0.40
2:2:64:G:N2	2:2:69:G:N7	2.70	0.40
2:2:327:A:O2'	2:2:328:C:O5'	2.37	0.40
2:2:373:A:N1	2:2:482:A:N6	2.69	0.40
2:2:496:A:N3	2:2:496:A:H2'	2.35	0.40
2:2:925:G:H1'	2:2:1502:A:C4	2.57	0.40
2:2:1116:U:C2	2:2:1184:G:O6	2.72	0.40
4:5:1:G:H2'	4:5:2:C:H6	1.87	0.40
4:6:7:G:OP2	4:6:16:C:N4	2.54	0.40
8:C:109:VAL:HG22	8:C:203:VAL:HG13	2.04	0.40
8:C:110:THR:CG2	8:C:169:ARG:HG2	2.51	0.40
8:C:120:GLY:O	8:C:124:ARG:HB2	2.22	0.40
15:J:107:GLY:O	15:J:111:LYS:HE3	2.22	0.40
15:J:134:ALA:C	15:J:136:GLN:H	2.29	0.40
18:M:8:LYS:HE3	18:M:9:PHE:CE2	2.56	0.40
18:M:24:THR:CG2	27:V:81:PRO:HA	2.51	0.40
27:V:29:ILE:HG22	27:V:88:HIS:CE1	2.56	0.40
27:V:76:ASP:O	27:V:90:ASP:HB2	2.21	0.40
30:Y:24:GLU:O	30:Y:28:LEU:HD23	2.22	0.40
38:g:100:MET:HA	38:g:107:VAL:HG21	2.03	0.40
38:g:161:LEU:HD21	38:g:172:ALA:HB1	2.04	0.40
41:j:70:ASN:ND2	41:j:70:ASN:C	2.74	0.40
48:q:29:GLN:HE21	48:q:29:GLN:HB2	1.69	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	
6	A	204/231 (88%)	200 (98%)	4 (2%)	0	100	100
7	B	269/273 (98%)	261 (97%)	8 (3%)	0	100	100
8	C	207/209 (99%)	183 (88%)	24 (12%)	0	100	100
9	D	199/201 (99%)	194 (98%)	5 (2%)	0	100	100
10	E	175/179 (98%)	164 (94%)	11 (6%)	0	100	100
11	F	173/177 (98%)	163 (94%)	10 (6%)	0	100	100
12	G	147/149 (99%)	138 (94%)	9 (6%)	0	100	100
13	H	128/165 (78%)	117 (91%)	11 (9%)	0	100	100
14	I	133/142 (94%)	124 (93%)	9 (7%)	0	100	100
15	J	140/142 (99%)	125 (89%)	15 (11%)	0	100	100
16	K	121/123 (98%)	119 (98%)	2 (2%)	0	100	100
17	L	142/144 (99%)	129 (91%)	13 (9%)	0	100	100
18	M	134/136 (98%)	130 (97%)	4 (3%)	0	100	100
19	N	117/127 (92%)	114 (97%)	3 (3%)	0	100	100
20	O	114/117 (97%)	110 (96%)	4 (4%)	0	100	100
21	P	112/115 (97%)	108 (96%)	4 (4%)	0	100	100
22	Q	115/118 (98%)	111 (96%)	4 (4%)	0	100	100
23	R	101/103 (98%)	93 (92%)	8 (8%)	0	100	100
24	S	108/110 (98%)	104 (96%)	4 (4%)	0	100	100
25	T	92/100 (92%)	90 (98%)	2 (2%)	0	100	100
26	U	101/104 (97%)	90 (89%)	11 (11%)	0	100	100
27	V	92/94 (98%)	88 (96%)	4 (4%)	0	100	100
28	W	74/85 (87%)	65 (88%)	9 (12%)	0	100	100
29	X	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
30	Y	60/63 (95%)	59 (98%)	1 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	Z	56/59 (95%)	52 (93%)	4 (7%)	0	100	100
32	a	64/70 (91%)	62 (97%)	2 (3%)	0	100	100
33	b	54/57 (95%)	50 (93%)	4 (7%)	0	100	100
34	c	50/55 (91%)	48 (96%)	2 (4%)	0	100	100
35	d	44/46 (96%)	44 (100%)	0	0	100	100
36	e	62/65 (95%)	54 (87%)	8 (13%)	0	100	100
37	f	36/38 (95%)	33 (92%)	3 (8%)	0	100	100
38	g	223/241 (92%)	205 (92%)	18 (8%)	0	100	100
39	h	206/233 (88%)	189 (92%)	17 (8%)	0	100	100
40	i	203/206 (98%)	195 (96%)	8 (4%)	0	100	100
41	j	154/167 (92%)	143 (93%)	10 (6%)	1 (1%)	21	34
42	k	102/135 (76%)	97 (95%)	5 (5%)	0	100	100
43	l	149/179 (83%)	141 (95%)	8 (5%)	0	100	100
44	m	127/130 (98%)	123 (97%)	4 (3%)	0	100	100
45	n	125/130 (96%)	112 (90%)	13 (10%)	0	100	100
46	o	97/103 (94%)	89 (92%)	8 (8%)	0	100	100
47	p	115/129 (89%)	111 (96%)	4 (4%)	0	100	100
48	q	120/124 (97%)	108 (90%)	12 (10%)	0	100	100
49	r	114/118 (97%)	107 (94%)	7 (6%)	0	100	100
50	s	98/101 (97%)	92 (94%)	6 (6%)	0	100	100
51	t	86/89 (97%)	85 (99%)	1 (1%)	0	100	100
52	u	80/82 (98%)	73 (91%)	7 (9%)	0	100	100
53	v	78/84 (93%)	73 (94%)	5 (6%)	0	100	100
54	w	64/75 (85%)	64 (100%)	0	0	100	100
55	x	81/92 (88%)	78 (96%)	3 (4%)	0	100	100
56	y	84/87 (97%)	82 (98%)	2 (2%)	0	100	100
57	z	68/71 (96%)	68 (100%)	0	0	100	100
All	All	6073/6451 (94%)	5731 (94%)	341 (6%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
41	j	98	PRO

5.3.2 Protein sidechains ⓘ

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	
6	A	180/201 (90%)	180 (100%)	0	100	100
7	B	216/218 (99%)	216 (100%)	0	100	100
8	C	164/164 (100%)	164 (100%)	0	100	100
9	D	165/165 (100%)	165 (100%)	0	100	100
10	E	148/150 (99%)	148 (100%)	0	100	100
11	F	136/138 (99%)	136 (100%)	0	100	100
12	G	114/114 (100%)	114 (100%)	0	100	100
13	H	99/123 (80%)	99 (100%)	0	100	100
14	I	104/110 (94%)	104 (100%)	0	100	100
15	J	116/116 (100%)	116 (100%)	0	100	100
16	K	104/104 (100%)	104 (100%)	0	100	100
17	L	103/103 (100%)	103 (100%)	0	100	100
18	M	109/109 (100%)	109 (100%)	0	100	100
19	N	99/103 (96%)	99 (100%)	0	100	100
20	O	86/87 (99%)	86 (100%)	0	100	100
21	P	99/100 (99%)	99 (100%)	0	100	100
22	Q	89/90 (99%)	89 (100%)	0	100	100
23	R	84/84 (100%)	84 (100%)	0	100	100
24	S	93/93 (100%)	93 (100%)	0	100	100
25	T	81/84 (96%)	81 (100%)	0	100	100
26	U	84/85 (99%)	84 (100%)	0	100	100
27	V	78/78 (100%)	78 (100%)	0	100	100
28	W	58/63 (92%)	58 (100%)	0	100	100
29	X	67/68 (98%)	67 (100%)	0	100	100
30	Y	54/55 (98%)	54 (100%)	0	100	100
31	Z	48/49 (98%)	48 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
32	a	59/62 (95%)	59 (100%)	0	100	100
33	b	47/48 (98%)	47 (100%)	0	100	100
34	c	47/49 (96%)	47 (100%)	0	100	100
35	d	38/38 (100%)	38 (100%)	0	100	100
36	e	51/52 (98%)	51 (100%)	0	100	100
37	f	34/34 (100%)	34 (100%)	0	100	100
38	g	187/199 (94%)	187 (100%)	0	100	100
39	h	171/190 (90%)	171 (100%)	0	100	100
40	i	172/173 (99%)	172 (100%)	0	100	100
41	j	119/126 (94%)	118 (99%)	1 (1%)	73	85
42	k	91/116 (78%)	91 (100%)	0	100	100
43	l	124/147 (84%)	124 (100%)	0	100	100
44	m	104/105 (99%)	104 (100%)	0	100	100
45	n	105/107 (98%)	105 (100%)	0	100	100
46	o	86/90 (96%)	86 (100%)	0	100	100
47	p	90/99 (91%)	90 (100%)	0	100	100
48	q	102/103 (99%)	101 (99%)	1 (1%)	68	81
49	r	94/96 (98%)	94 (100%)	0	100	100
50	s	83/84 (99%)	83 (100%)	0	100	100
51	t	76/77 (99%)	76 (100%)	0	100	100
52	u	65/65 (100%)	65 (100%)	0	100	100
53	v	74/78 (95%)	74 (100%)	0	100	100
54	w	57/65 (88%)	57 (100%)	0	100	100
55	x	72/79 (91%)	72 (100%)	0	100	100
56	y	65/66 (98%)	65 (100%)	0	100	100
57	z	60/61 (98%)	60 (100%)	0	100	100
All	All	5051/5263 (96%)	5049 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
41	j	70	ASN
48	q	29	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

Mol	Chain	Res	Type
6	A	59	GLN
6	A	129	ASN
6	A	132	ASN
6	A	184	HIS
7	B	46	ASN
7	B	53	HIS
8	C	140	HIS
10	E	27	GLN
10	E	52	ASN
10	E	135	GLN
11	F	104	ASN
12	G	11	ASN
12	G	18	GLN
12	G	66	ASN
12	G	133	GLN
13	H	9	GLN
14	I	11	GLN
14	I	110	GLN
15	J	80	HIS
16	K	29	HIS
16	K	88	ASN
17	L	104	GLN
19	N	3	HIS
19	N	107	ASN
20	O	61	GLN
22	Q	44	GLN
23	R	6	GLN
23	R	89	HIS
24	S	7	HIS
27	V	12	GLN
29	X	20	HIS
29	X	34	HIS
29	X	36	HIS
30	Y	15	ASN
32	a	20	ASN
35	d	26	ASN
37	f	35	GLN
38	g	146	ASN
39	h	139	GLN
39	h	140	ASN
40	i	140	ASN

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Mol	Chain	Res	Type
41	j	61	GLN
42	k	17	GLN
43	l	68	ASN
45	n	5	GLN
45	n	50	GLN
47	p	15	GLN
47	p	118	HIS
52	u	26	ASN
56	y	20	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	2901/2903 (99%)	774 (26%)	23 (0%)
2	2	1530/1534 (99%)	354 (23%)	9 (0%)
3	4	119/120 (99%)	30 (25%)	0
4	5	76/77 (98%)	14 (18%)	1 (1%)
4	6	76/77 (98%)	19 (25%)	0
5	7	12/25 (48%)	3 (25%)	0
All	All	4714/4736 (99%)	1194 (25%)	33 (0%)

All (1194) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	10	A
1	1	12	U
1	1	13	A
1	1	14	A
1	1	15	G
1	1	19	A
1	1	20	C
1	1	21	A
1	1	23	G
1	1	24	G
1	1	27	G
1	1	34	U
1	1	35	G
1	1	42	A
1	1	46	G
1	1	50	U
1	1	51	G

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Mol	Chain	Res	Type
1	1	60	G
1	1	71	A
1	1	74	A
1	1	75	G
1	1	84	A
1	1	85	G
1	1	86	G
1	1	87	U
1	1	88	G
1	1	101	A
1	1	102	U
1	1	103	A
1	1	114	U
1	1	118	A
1	1	120	U
1	1	138	U
1	1	139	U
1	1	140	C
1	1	165	A
1	1	181	A
1	1	196	A
1	1	199	A
1	1	215	G
1	1	216	A
1	1	222	A
1	1	225	C
1	1	227	A
1	1	228	C
1	1	241	A
1	1	243	U
1	1	245	G
1	1	247	G
1	1	248	G
1	1	249	C
1	1	255	A
1	1	256	A
1	1	259	G
1	1	264	C
1	1	265	A
1	1	266	G
1	1	271	G
1	1	275	C

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Mol	Chain	Res	Type
1	1	276	U
1	1	279	A
1	1	285	G
1	1	291	G
1	1	294	A
1	1	299	A
1	1	301	G
1	1	302	C
1	1	305	C
1	1	308	G
1	1	311	A
1	1	312	G
1	1	313	G
1	1	314	C
1	1	317	G
1	1	321	U
1	1	322	A
1	1	329	G
1	1	330	A
1	1	331	C
1	1	335	C
1	1	338	G
1	1	341	C
1	1	352	A
1	1	353	C
1	1	360	U
1	1	361	G
1	1	362	A
1	1	368	A
1	1	369	U
1	1	370	G
1	1	371	A
1	1	372	G
1	1	383	C
1	1	384	A
1	1	386	G
1	1	387	U
1	1	388	G
1	1	391	A
1	1	392	U
1	1	396	G
1	1	399	U

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Mol	Chain	Res	Type
1	1	401	A
1	1	403	U
1	1	405	U
1	1	411	G
1	1	412	A
1	1	417	C
1	1	424	G
1	1	444	C
1	1	454	A
1	1	457	A
1	1	458	G
1	1	479	A
1	1	480	A
1	1	481	G
1	1	482	A
1	1	490	C
1	1	491	G
1	1	505	A
1	1	507	A
1	1	508	A
1	1	509	C
1	1	510	C
1	1	518	G
1	1	521	U
1	1	522	A
1	1	525	U
1	1	527	C
1	1	529	A
1	1	530	G
1	1	531	C
1	1	532	A
1	1	533	G
1	1	534	U
1	1	535	G
1	1	537	G
1	1	542	C
1	1	543	G
1	1	546	U
1	1	547	A
1	1	548	G
1	1	549	G
1	1	550	C

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Mol	Chain	Res	Type
1	1	551	G
1	1	552	U
1	1	556	A
1	1	559	G
1	1	562	U
1	1	563	A
1	1	564	C
1	1	568	U
1	1	569	U
1	1	570	G
1	1	572	A
1	1	573	U
1	1	575	A
1	1	590	A
1	1	592	A
1	1	603	A
1	1	604	G
1	1	605	G
1	1	607	U
1	1	609	A
1	1	611	C
1	1	612	G
1	1	614	A
1	1	615	U
1	1	616	A
1	1	621	A
1	1	622	G
1	1	623	C
1	1	625	G
1	1	627	A
1	1	628	G
1	1	631	A
1	1	632	A
1	1	633	A
1	1	635	C
1	1	637	A
1	1	640	C
1	1	643	A
1	1	646	U
1	1	647	G
1	1	649	G
1	1	650	C

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Mol	Chain	Res	Type
1	1	652	U
1	1	654	A
1	1	655	A
1	1	662	G
1	1	668	A
1	1	669	G
1	1	670	A
1	1	671	C
1	1	686	U
1	1	730	A
1	1	747	5MU
1	1	764	A
1	1	765	C
1	1	775	G
1	1	776	G
1	1	782	A
1	1	784	G
1	1	785	G
1	1	789	A
1	1	805	G
1	1	812	C
1	1	818	G
1	1	819	A
1	1	820	A
1	1	823	C
1	1	827	U
1	1	828	U
1	1	829	A
1	1	831	G
1	1	832	U
1	1	833	A
1	1	835	C
1	1	838	C
1	1	845	A
1	1	846	U
1	1	847	U
1	1	853	C
1	1	854	C
1	1	858	G
1	1	859	G
1	1	867	C
1	1	869	G

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Mol	Chain	Res	Type
1	1	873	C
1	1	877	A
1	1	878	A
1	1	882	G
1	1	884	U
1	1	885	C
1	1	887	A
1	1	888	C
1	1	891	G
1	1	895	U
1	1	896	A
1	1	903	C
1	1	905	A
1	1	907	G
1	1	910	A
1	1	912	C
1	1	914	G
1	1	915	C
1	1	919	U
1	1	920	A
1	1	921	C
1	1	923	G
1	1	925	A
1	1	926	G
1	1	931	U
1	1	932	U
1	1	933	A
1	1	934	U
1	1	939	G
1	1	941	A
1	1	942	G
1	1	945	A
1	1	946	C
1	1	948	C
1	1	950	G
1	1	952	G
1	1	955	PSU
1	1	956	G
1	1	957	C
1	1	958	U
1	1	959	A
1	1	961	C

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Mol	Chain	Res	Type
1	1	965	C
1	1	966	G
1	1	974	G
1	1	979	A
1	1	980	A
1	1	981	A
1	1	983	A
1	1	986	C
1	1	989	G
1	1	991	C
1	1	992	C
1	1	995	C
1	1	996	A
1	1	997	G
1	1	998	C
1	1	999	U
1	1	1003	G
1	1	1005	C
1	1	1006	C
1	1	1010	A
1	1	1011	G
1	1	1012	U
1	1	1013	C
1	1	1016	G
1	1	1017	G
1	1	1020	A
1	1	1021	A
1	1	1022	G
1	1	1026	G
1	1	1028	A
1	1	1031	G
1	1	1033	U
1	1	1034	G
1	1	1036	G
1	1	1037	G
1	1	1043	C
1	1	1046	A
1	1	1047	G
1	1	1048	A
1	1	1057	A
1	1	1064	C
1	1	1066	U

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Mol	Chain	Res	Type
1	1	1068	G
1	1	1070	A
1	1	1071	G
1	1	1073	A
1	1	1083	U
1	1	1085	A
1	1	1087	G
1	1	1088	A
1	1	1096	A
1	1	1101	U
1	1	1111	A
1	1	1112	G
1	1	1116	G
1	1	1122	G
1	1	1129	A
1	1	1130	U
1	1	1131	G
1	1	1132	U
1	1	1133	A
1	1	1134	A
1	1	1135	C
1	1	1136	G
1	1	1137	G
1	1	1141	U
1	1	1142	A
1	1	1143	A
1	1	1144	A
1	1	1145	C
1	1	1146	C
1	1	1152	C
1	1	1154	G
1	1	1155	A
1	1	1157	G
1	1	1162	G
1	1	1168	G
1	1	1169	A
1	1	1170	C
1	1	1173	U
1	1	1175	A
1	1	1176	U
1	1	1177	G
1	1	1178	C

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Mol	Chain	Res	Type
1	1	1180	U
1	1	1184	U
1	1	1185	G
1	1	1187	G
1	1	1189	A
1	1	1190	G
1	1	1191	G
1	1	1192	G
1	1	1195	G
1	1	1204	A
1	1	1205	A
1	1	1210	G
1	1	1212	G
1	1	1213	A
1	1	1216	G
1	1	1219	U
1	1	1221	C
1	1	1223	G
1	1	1226	A
1	1	1227	G
1	1	1229	C
1	1	1231	U
1	1	1236	G
1	1	1238	G
1	1	1240	U
1	1	1242	U
1	1	1247	A
1	1	1249	U
1	1	1250	G
1	1	1253	A
1	1	1256	G
1	1	1257	C
1	1	1266	G
1	1	1268	A
1	1	1271	G
1	1	1272	A
1	1	1300	G
1	1	1301	A
1	1	1345	C
1	1	1352	U
1	1	1365	A
1	1	1368	G

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Mol	Chain	Res	Type
1	1	1379	U
1	1	1380	G
1	1	1383	A
1	1	1408	G
1	1	1416	G
1	1	1417	C
1	1	1420	A
1	1	1428	C
1	1	1453	A
1	1	1458	U
1	1	1482	G
1	1	1490	A
1	1	1493	C
1	1	1503	A
1	1	1508	A
1	1	1510	G
1	1	1515	A
1	1	1532	A
1	1	1533	C
1	1	1534	U
1	1	1535	A
1	1	1536	C
1	1	1537	G
1	1	1538	G
1	1	1566	A
1	1	1569	A
1	1	1586	A
1	1	1589	U
1	1	1590	A
1	1	1608	A
1	1	1610	A
1	1	1618	6MZ
1	1	1634	A
1	1	1646	C
1	1	1647	U
1	1	1648	U
1	1	1654	A
1	1	1674	G
1	1	1675	C
1	1	1703	G
1	1	1715	G
1	1	1729	U

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Mol	Chain	Res	Type
1	1	1730	C
1	1	1738	G
1	1	1744	A
1	1	1764	C
1	1	1773	A
1	1	1800	C
1	1	1801	A
1	1	1808	A
1	1	1811	G
1	1	1816	C
1	1	1829	A
1	1	1833	C
1	1	1848	A
1	1	1856	U
1	1	1857	G
1	1	1858	A
1	1	1862	G
1	1	1864	U
1	1	1866	A
1	1	1869	G
1	1	1870	C
1	1	1871	A
1	1	1872	A
1	1	1873	G
1	1	1884	G
1	1	1887	C
1	1	1888	G
1	1	1906	G
1	1	1913	A
1	1	1924	C
1	1	1929	G
1	1	1930	G
1	1	1935	G
1	1	1936	A
1	1	1937	A
1	1	1938	A
1	1	1955	U
1	1	1964	G
1	1	1967	C
1	1	1970	A
1	1	1971	U
1	1	1972	G

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Mol	Chain	Res	Type
1	1	1991	U
1	1	1992	G
1	1	1993	U
1	1	1997	C
1	1	2007	U
1	1	2022	U
1	1	2023	C
1	1	2024	G
1	1	2027	G
1	1	2029	G
1	1	2030	6MZ
1	1	2031	A
1	1	2032	G
1	1	2033	A
1	1	2035	G
1	1	2036	C
1	1	2037	A
1	1	2038	G
1	1	2039	U
1	1	2040	G
1	1	2043	C
1	1	2047	C
1	1	2048	G
1	1	2049	G
1	1	2050	C
1	1	2052	A
1	1	2055	C
1	1	2056	G
1	1	2060	A
1	1	2061	G
1	1	2062	A
1	1	2069	G7M
1	1	2070	A
1	1	2093	G
1	1	2100	G
1	1	2102	G
1	1	2111	U
1	1	2112	G
1	1	2115	G
1	1	2116	G
1	1	2117	A
1	1	2118	U

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Mol	Chain	Res	Type
1	1	2119	A
1	1	2125	G
1	1	2128	G
1	1	2131	U
1	1	2132	U
1	1	2133	G
1	1	2134	A
1	1	2136	G
1	1	2146	C
1	1	2147	A
1	1	2158	A
1	1	2159	G
1	1	2164	C
1	1	2165	C
1	1	2167	U
1	1	2170	A
1	1	2171	A
1	1	2172	U
1	1	2173	A
1	1	2180	U
1	1	2183	A
1	1	2187	U
1	1	2189	U
1	1	2190	G
1	1	2191	A
1	1	2194	U
1	1	2198	A
1	1	2204	G
1	1	2211	A
1	1	2212	A
1	1	2225	A
1	1	2238	G
1	1	2239	G
1	1	2250	G
1	1	2252	G
1	1	2259	U
1	1	2260	C
1	1	2262	U
1	1	2263	C
1	1	2265	U
1	1	2266	A
1	1	2267	A

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Mol	Chain	Res	Type
1	1	2269	G
1	1	2273	A
1	1	2275	C
1	1	2277	G
1	1	2283	C
1	1	2287	A
1	1	2290	G
1	1	2293	G
1	1	2294	G
1	1	2305	U
1	1	2307	G
1	1	2309	A
1	1	2311	A
1	1	2314	A
1	1	2319	G
1	1	2322	A
1	1	2324	U
1	1	2325	G
1	1	2327	A
1	1	2331	G
1	1	2334	U
1	1	2335	A
1	1	2336	A
1	1	2342	C
1	1	2344	U
1	1	2345	G
1	1	2347	C
1	1	2355	G
1	1	2357	G
1	1	2361	G
1	1	2363	G
1	1	2367	G
1	1	2372	U
1	1	2373	G
1	1	2375	G
1	1	2380	C
1	1	2382	G
1	1	2383	G
1	1	2385	C
1	1	2389	G
1	1	2391	G
1	1	2392	A

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Mol	Chain	Res	Type
1	1	2397	G
1	1	2400	G
1	1	2401	U
1	1	2402	U
1	1	2405	G
1	1	2408	U
1	1	2416	C
1	1	2417	C
1	1	2418	A
1	1	2420	C
1	1	2422	C
1	1	2423	U
1	1	2425	A
1	1	2426	A
1	1	2427	C
1	1	2428	G
1	1	2429	G
1	1	2430	A
1	1	2431	U
1	1	2435	A
1	1	2441	U
1	1	2448	A
1	1	2449	U
1	1	2452	C
1	1	2454	G
1	1	2455	G
1	1	2456	C
1	1	2462	C
1	1	2464	G
1	1	2467	C
1	1	2468	A
1	1	2469	A
1	1	2470	G
1	1	2471	A
1	1	2472	G
1	1	2475	C
1	1	2476	A
1	1	2478	A
1	1	2479	U
1	1	2480	C
1	1	2488	G
1	1	2489	U

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Mol	Chain	Res	Type
1	1	2490	G
1	1	2491	U
1	1	2498	OMC
1	1	2499	C
1	1	2502	G
1	1	2505	G
1	1	2513	A
1	1	2515	C
1	1	2517	C
1	1	2518	A
1	1	2519	U
1	1	2520	C
1	1	2521	C
1	1	2522	U
1	1	2523	G
1	1	2526	G
1	1	2529	G
1	1	2532	G
1	1	2534	A
1	1	2535	G
1	1	2537	U
1	1	2539	C
1	1	2547	A
1	1	2549	G
1	1	2554	U
1	1	2555	U
1	1	2556	C
1	1	2563	U
1	1	2566	A
1	1	2567	G
1	1	2570	G
1	1	2572	A
1	1	2573	C
1	1	2574	G
1	1	2577	A
1	1	2582	G
1	1	2585	U
1	1	2602	A
1	1	2603	G
1	1	2609	U
1	1	2613	U
1	1	2615	U

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Mol	Chain	Res	Type
1	1	2623	G
1	1	2624	G
1	1	2627	G
1	1	2628	C
1	1	2629	U
1	1	2638	G
1	1	2639	A
1	1	2640	G
1	1	2646	C
1	1	2647	U
1	1	2648	G
1	1	2650	U
1	1	2653	U
1	1	2661	G
1	1	2665	A
1	1	2667	C
1	1	2669	G
1	1	2670	A
1	1	2673	G
1	1	2675	A
1	1	2680	U
1	1	2683	C
1	1	2684	U
1	1	2685	G
1	1	2689	U
1	1	2690	U
1	1	2714	G
1	1	2716	C
1	1	2726	A
1	1	2728	U
1	1	2730	C
1	1	2732	G
1	1	2733	A
1	1	2736	A
1	1	2741	A
1	1	2743	U
1	1	2744	G
1	1	2747	G
1	1	2751	G
1	1	2755	C
1	1	2756	U
1	1	2757	A

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Mol	Chain	Res	Type
1	1	2761	A
1	1	2765	A
1	1	2766	A
1	1	2768	U
1	1	2770	G
1	1	2771	C
1	1	2772	C
1	1	2773	C
1	1	2774	C
1	1	2776	A
1	1	2777	G
1	1	2778	A
1	1	2780	G
1	1	2781	A
1	1	2782	G
1	1	2791	G
1	1	2793	C
1	1	2796	U
1	1	2798	U
1	1	2800	A
1	1	2801	G
1	1	2805	C
1	1	2809	A
1	1	2817	U
1	1	2820	A
1	1	2823	A
1	1	2832	U
1	1	2833	U
1	1	2834	G
1	1	2835	A
1	1	2836	U
1	1	2849	U
1	1	2861	U
1	1	2867	G
1	1	2873	A
1	1	2880	C
1	1	2884	U
1	1	2885	G
1	1	2888	C
1	1	2893	A
1	1	2895	G
1	1	2899	A

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Mol	Chain	Res	Type
1	1	2901	C
2	2	2	A
2	2	3	A
2	2	4	U
2	2	7	A
2	2	8	A
2	2	9	G
2	2	22	G
2	2	31	G
2	2	32	A
2	2	33	A
2	2	40	C
2	2	43	C
2	2	46	G
2	2	47	C
2	2	48	C
2	2	49	U
2	2	51	A
2	2	52	C
2	2	58	C
2	2	60	A
2	2	63	C
2	2	66	A
2	2	67	C
2	2	68	G
2	2	69	G
2	2	70	U
2	2	71	A
2	2	72	A
2	2	74	A
2	2	75	G
2	2	81	A
2	2	83	C
2	2	84	U
2	2	87	C
2	2	95	C
2	2	98	A
2	2	101	A
2	2	109	A
2	2	116	A
2	2	119	A
2	2	120	A

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Mol	Chain	Res	Type
2	2	130	A
2	2	131	A
2	2	132	C
2	2	135	C
2	2	136	C
2	2	146	G
2	2	173	U
2	2	174	A
2	2	180	U
2	2	182	A
2	2	188	C
2	2	189	A
2	2	195	A
2	2	197	A
2	2	198	G
2	2	202	G
2	2	208	U
2	2	209	U
2	2	211	G
2	2	212	G
2	2	226	G
2	2	232	G
2	2	240	G
2	2	245	U
2	2	247	G
2	2	251	G
2	2	262	A
2	2	264	C
2	2	265	G
2	2	266	G
2	2	267	C
2	2	280	C
2	2	289	G
2	2	293	G
2	2	298	A
2	2	299	G
2	2	301	G
2	2	305	G
2	2	306	A
2	2	310	G
2	2	321	A
2	2	325	A

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Mol	Chain	Res	Type
2	2	326	G
2	2	328	C
2	2	329	A
2	2	331	G
2	2	332	G
2	2	345	C
2	2	347	G
2	2	352	C
2	2	354	G
2	2	363	A
2	2	364	A
2	2	367	U
2	2	372	C
2	2	373	A
2	2	375	U
2	2	377	G
2	2	379	C
2	2	380	G
2	2	387	U
2	2	388	G
2	2	389	A
2	2	390	U
2	2	392	C
2	2	393	A
2	2	394	G
2	2	398	U
2	2	402	G
2	2	406	G
2	2	408	A
2	2	410	G
2	2	412	A
2	2	413	G
2	2	419	C
2	2	421	U
2	2	422	C
2	2	423	G
2	2	425	G
2	2	429	U
2	2	440	C
2	2	446	G
2	2	448	A
2	2	449	G

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Mol	Chain	Res	Type
2	2	451	A
2	2	457	G
2	2	463	U
2	2	467	U
2	2	478	A
2	2	480	U
2	2	481	G
2	2	484	G
2	2	485	U
2	2	486	U
2	2	495	A
2	2	496	A
2	2	497	G
2	2	506	G
2	2	509	A
2	2	510	A
2	2	511	C
2	2	512	U
2	2	515	G
2	2	517	G
2	2	518	C
2	2	519	C
2	2	521	G
2	2	531	U
2	2	532	A
2	2	533	A
2	2	547	A
2	2	548	G
2	2	549	C
2	2	550	G
2	2	552	U
2	2	553	A
2	2	554	A
2	2	568	G
2	2	572	A
2	2	573	A
2	2	575	G
2	2	576	C
2	2	577	G
2	2	611	C
2	2	615	G
2	2	619	U

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Mol	Chain	Res	Type
2	2	622	A
2	2	623	C
2	2	632	U
2	2	633	G
2	2	650	G
2	2	653	U
2	2	665	A
2	2	687	A
2	2	718	A
2	2	723	U
2	2	724	G
2	2	731	G
2	2	747	A
2	2	748	G
2	2	755	G
2	2	777	A
2	2	793	U
2	2	794	A
2	2	815	A
2	2	817	C
2	2	828	U
2	2	829	G
2	2	841	C
2	2	844	G
2	2	846	G
2	2	847	G
2	2	851	G
2	2	889	A
2	2	914	A
2	2	926	G
2	2	932	C
2	2	934	C
2	2	935	A
2	2	942	G
2	2	945	G
2	2	946	A
2	2	948	C
2	2	952	U
2	2	953	G
2	2	960	U
2	2	961	U
2	2	966	2MG

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Mol	Chain	Res	Type
2	2	967	5MC
2	2	968	A
2	2	969	A
2	2	971	G
2	2	974	A
2	2	975	A
2	2	977	A
2	2	980	C
2	2	981	U
2	2	982	U
2	2	983	A
2	2	992	U
2	2	993	G
2	2	1004	A
2	2	1009	U
2	2	1017	U
2	2	1018	G
2	2	1022	A
2	2	1027	C
2	2	1030	U
2	2	1044	A
2	2	1046	A
2	2	1047	G
2	2	1048	G
2	2	1049	U
2	2	1051	C
2	2	1053	G
2	2	1058	G
2	2	1060	U
2	2	1064	G
2	2	1065	U
2	2	1067	A
2	2	1073	U
2	2	1074	G
2	2	1075	U
2	2	1088	G
2	2	1094	G
2	2	1095	U
2	2	1099	G
2	2	1101	A
2	2	1104	G
2	2	1105	A

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Mol	Chain	Res	Type
2	2	1107	C
2	2	1113	C
2	2	1130	A
2	2	1136	C
2	2	1137	C
2	2	1138	G
2	2	1139	G
2	2	1140	C
2	2	1141	C
2	2	1142	G
2	2	1143	G
2	2	1145	A
2	2	1146	A
2	2	1152	A
2	2	1154	G
2	2	1158	C
2	2	1159	U
2	2	1164	G
2	2	1167	A
2	2	1168	U
2	2	1176	A
2	2	1180	A
2	2	1184	G
2	2	1189	U
2	2	1190	G
2	2	1191	A
2	2	1196	A
2	2	1197	A
2	2	1201	A
2	2	1203	C
2	2	1212	U
2	2	1213	A
2	2	1216	A
2	2	1222	G
2	2	1224	U
2	2	1225	A
2	2	1236	A
2	2	1238	A
2	2	1239	A
2	2	1240	U
2	2	1241	G
2	2	1250	A

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Mol	Chain	Res	Type
2	2	1252	A
2	2	1253	G
2	2	1256	A
2	2	1258	G
2	2	1268	G
2	2	1270	G
2	2	1275	A
2	2	1278	G
2	2	1279	G
2	2	1280	A
2	2	1283	U
2	2	1285	A
2	2	1287	A
2	2	1298	U
2	2	1299	A
2	2	1300	G
2	2	1301	U
2	2	1302	C
2	2	1304	G
2	2	1305	G
2	2	1317	C
2	2	1318	A
2	2	1319	A
2	2	1322	C
2	2	1323	G
2	2	1327	C
2	2	1336	C
2	2	1337	G
2	2	1344	C
2	2	1346	A
2	2	1350	A
2	2	1363	A
2	2	1370	G
2	2	1374	A
2	2	1375	A
2	2	1378	C
2	2	1379	G
2	2	1386	G
2	2	1387	G
2	2	1389	C
2	2	1391	U
2	2	1392	G

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Mol	Chain	Res	Type
2	2	1394	A
2	2	1398	A
2	2	1432	G
2	2	1438	G
2	2	1442	G
2	2	1446	A
2	2	1448	C
2	2	1453	G
2	2	1463	U
2	2	1464	U
2	2	1487	G
2	2	1497	G
2	2	1499	A
2	2	1503	A
2	2	1506	U
2	2	1517	G
2	2	1529	G
2	2	1530	G
2	2	1534	A
3	4	2	G
3	4	8	C
3	4	13	G
3	4	15	A
3	4	17	C
3	4	24	G
3	4	26	C
3	4	35	C
3	4	36	C
3	4	51	G
3	4	56	G
3	4	66	A
3	4	73	A
3	4	75	G
3	4	83	G
3	4	88	C
3	4	89	U
3	4	90	C
3	4	92	C
3	4	94	A
3	4	97	C
3	4	99	A
3	4	100	G

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Mol	Chain	Res	Type
3	4	102	G
3	4	105	G
3	4	106	G
3	4	108	A
3	4	109	A
3	4	119	A
3	4	120	U
4	5	8	G
4	5	13	A
4	5	15	C
4	5	16	C
4	5	17	U
4	5	18	G
4	5	21	A
4	5	22	G
4	5	47	U
4	5	48	C
4	5	59	A
4	5	70	G
4	5	75	C
4	5	76	A
4	6	6	G
4	6	17	C
4	6	18	U
4	6	19	G
4	6	21	U
4	6	22	A
4	6	26	C
4	6	36	A
4	6	37	U
4	6	38	A
4	6	47	G
4	6	48	U
4	6	49	C
4	6	50	G
4	6	59	A
4	6	62	C
4	6	72	C
4	6	73	A
4	6	77	A
5	7	20	U
5	7	22	U

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Mol	Chain	Res	Type
5	7	24	C

All (33) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	320	A
1	1	404	A
1	1	479	A
1	1	620	G
1	1	784	G
1	1	830	G
1	1	894	U
1	1	913	U
1	1	1154	G
1	1	1184	U
1	1	1379	U
1	1	2146	C
1	1	2193	G
1	1	2264	C
1	1	2308	G
1	1	2425	A
1	1	2428	G
1	1	2602	A
1	1	2645	G
1	1	2756	U
1	1	2770	G
1	1	2780	G
1	1	2800	A
2	2	188	C
2	2	325	A
2	2	448	A
2	2	516	PSU
2	2	547	A
2	2	980	C
2	2	1109	C
2	2	1145	A
2	2	1267	C
4	5	17	U

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

35 non-standard protein/DNA/RNA residues are modelled in this entry.

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$
1	PSU	1	1917	1	18,21,22	1.11	1 (5%)	21,30,33	1.83	4 (19%)
1	2MG	1	2445	1	23,26,27	1.29	4 (17%)	33,38,41	2.15	5 (15%)
2	MA6	2	1518	2	23,26,27	1.47	4 (17%)	33,38,41	2.44	13 (39%)
2	2MG	2	1207	2	23,26,27	1.24	4 (17%)	33,38,41	2.19	7 (21%)
1	PSU	1	955	1	18,21,22	0.96	1 (5%)	21,30,33	1.72	4 (19%)
1	G7M	1	2069	1	23,26,27	1.55	3 (13%)	34,39,42	1.81	5 (14%)
2	5MC	2	967	2	19,22,23	1.61	3 (15%)	26,32,35	1.20	3 (11%)
2	UR3	2	1498	2	19,22,23	0.95	0	26,32,35	1.77	2 (7%)
2	4OC	2	1402	2	20,23,24	0.75	0	25,32,35	0.96	2 (8%)
1	OMU	1	2552	1	19,22,23	1.24	3 (15%)	25,31,34	1.84	5 (20%)
1	5MU	1	1939	1	19,22,23	1.40	5 (26%)	27,32,35	2.08	6 (22%)
1	5MC	1	1962	1	19,22,23	1.55	3 (15%)	26,32,35	1.12	2 (7%)
1	PSU	1	2605	1	18,21,22	1.04	1 (5%)	21,30,33	1.89	3 (14%)
1	2MG	1	1835	1	23,26,27	1.26	4 (17%)	33,38,41	2.23	7 (21%)
2	5MC	2	1407	2	19,22,23	1.55	3 (15%)	26,32,35	1.14	3 (11%)
1	3TD	1	1915	1	19,22,23	2.82	4 (21%)	23,32,35	7.24	5 (21%)
2	MA6	2	1519	2	23,26,27	1.48	4 (17%)	33,38,41	2.44	13 (39%)
1	PSU	1	1911	1	18,21,22	1.07	1 (5%)	21,30,33	1.89	4 (19%)
1	PSU	1	746	58,1	18,21,22	1.09	1 (5%)	21,30,33	1.88	5 (23%)
1	OMC	1	2498	1	19,22,23	0.84	0	25,31,34	1.72	5 (20%)
1	OMG	1	2251	1,4	23,26,27	1.19	3 (13%)	32,38,41	2.05	7 (21%)
1	1MG	1	745	1	23,26,27	1.18	3 (13%)	33,39,42	1.75	5 (15%)
48	0TD	q	89	48	8,9,10	1.58	2 (25%)	6,11,13	1.58	1 (16%)
1	5MU	1	747	1	19,22,23	1.41	6 (31%)	27,32,35	2.04	6 (22%)
2	2MG	2	966	2	23,26,27	1.18	4 (17%)	33,38,41	2.29	8 (24%)
1	PSU	1	2457	1	18,21,22	1.06	1 (5%)	21,30,33	1.98	6 (28%)
2	G7M	2	527	2	23,26,27	2.39	5 (21%)	34,39,42	3.02	10 (29%)
1	PSU	1	2580	1	18,21,22	1.06	2 (11%)	21,30,33	2.00	6 (28%)
1	6MZ	1	2030	58,1	22,25,26	1.50	5 (22%)	29,36,39	2.37	11 (37%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	A3P	2	1493	2	25,28,29	3.83	10 (40%)	37,42,45	2.17	10 (27%)
1	6MZ	1	1618	1	22,25,26	1.45	4 (18%)	29,36,39	2.19	9 (31%)
2	2MG	2	1516	2	23,26,27	1.25	4 (17%)	33,38,41	2.18	7 (21%)
1	PSU	1	2504	1	18,21,22	1.08	1 (5%)	21,30,33	1.76	4 (19%)
1	2MA	1	2503	58,1	22,25,26	1.47	4 (18%)	32,37,40	2.33	9 (28%)
2	PSU	2	516	2,58	18,21,22	1.09	1 (5%)	21,30,33	1.86	4 (19%)

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
1	PSU	1	1917	1	-	0/7/25/26	0/2/2/2
1	2MG	1	2445	1	-	2/9/27/28	0/3/3/3
2	MA6	2	1518	2	-	2/11/29/30	0/3/3/3
2	2MG	2	1207	2	-	0/9/27/28	0/3/3/3
1	PSU	1	955	1	-	1/7/25/26	0/2/2/2
1	G7M	1	2069	1	3/3/5/5	0/7/25/26	0/3/3/3
2	5MC	2	967	2	-	2/7/25/26	0/2/2/2
2	UR3	2	1498	2	-	0/7/25/26	0/2/2/2
2	4OC	2	1402	2	-	3/9/29/30	0/2/2/2
1	OMU	1	2552	1	-	0/9/27/28	0/2/2/2
1	5MU	1	1939	1	-	0/7/25/26	0/2/2/2
1	5MC	1	1962	1	-	2/7/25/26	0/2/2/2
1	PSU	1	2605	1	-	0/7/25/26	0/2/2/2
2	5MC	2	1407	2	-	0/7/25/26	0/2/2/2
1	2MG	1	1835	1	-	0/9/27/28	0/3/3/3
1	3TD	1	1915	1	-	4/7/25/26	0/2/2/2
2	MA6	2	1519	2	-	3/11/29/30	0/3/3/3
1	PSU	1	1911	1	-	0/7/25/26	0/2/2/2
1	PSU	1	746	58,1	-	2/7/25/26	0/2/2/2
1	OMC	1	2498	1	-	8/9/27/28	0/2/2/2
1	OMG	1	2251	1,4	-	1/9/27/28	0/3/3/3
1	1MG	1	745	1	-	0/7/25/26	0/3/3/3
48	0TD	q	89	48	-	1/7/12/14	-
1	5MU	1	747	1	-	0/7/25/26	0/2/2/2
2	2MG	2	966	2	-	3/9/27/28	0/3/3/3
1	PSU	1	2457	1	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	G7M	2	527	2	-	3/7/25/26	0/3/3/3
1	PSU	1	2580	1	-	0/7/25/26	0/2/2/2
1	6MZ	1	2030	58,1	-	1/9/27/28	0/3/3/3
2	A3P	2	1493	2	1/1/6/6	0/12/30/31	0/3/3/3
1	6MZ	1	1618	1	-	2/9/27/28	0/3/3/3
2	2MG	2	1516	2	-	0/9/27/28	0/3/3/3
1	PSU	1	2504	1	-	2/7/25/26	0/2/2/2
1	2MA	1	2503	58,1	-	2/7/25/26	0/3/3/3
2	PSU	2	516	2,58	-	2/7/25/26	0/2/2/2

All (104) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1493	A3P	C2'-C3'	-12.47	1.25	1.53
1	1	1915	3TD	C6-C5	-8.90	1.25	1.35
2	2	527	G7M	C8-N7	7.79	1.46	1.33
2	2	1493	A3P	O4'-C4'	-7.07	1.29	1.45
1	1	1915	3TD	C6-N1	-6.21	1.26	1.36
2	2	1493	A3P	C1'-N9	-5.79	1.30	1.46
2	2	1493	A3P	C3'-C4'	5.72	1.67	1.52
2	2	967	5MC	C5-C4	5.67	1.48	1.44
2	2	1407	5MC	C5-C4	5.53	1.48	1.44
2	2	1493	A3P	O4'-C1'	5.52	1.54	1.42
1	1	1962	5MC	C5-C4	5.51	1.48	1.44
1	1	2069	G7M	C5-N7	-5.08	1.33	1.39
2	2	527	G7M	C5-N7	-4.79	1.33	1.39
2	2	1518	MA6	C5-C4	4.60	1.47	1.39
2	2	1519	MA6	C5-C4	4.49	1.47	1.39
1	1	1618	6MZ	C5-C4	4.47	1.47	1.39
1	1	2030	6MZ	C5-C4	4.46	1.47	1.39
1	1	2503	2MA	C5-C4	4.37	1.46	1.39
2	2	1493	A3P	C6-N6	4.24	1.45	1.34
2	2	527	G7M	C8-N9	4.10	1.46	1.35
1	1	1915	3TD	C4-C5	-4.09	1.38	1.47
2	2	516	PSU	C6-C5	3.64	1.39	1.35
2	2	527	G7M	C5-C4	3.63	1.47	1.38
1	1	1917	PSU	C6-C5	3.61	1.39	1.35
1	1	2504	PSU	C6-C5	3.48	1.39	1.35
1	1	1911	PSU	C6-C5	3.45	1.39	1.35
1	1	746	PSU	C6-C5	3.41	1.39	1.35
1	1	2457	PSU	C6-C5	3.19	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1493	A3P	C8-N9	-3.16	1.32	1.37
1	1	2580	PSU	C6-C5	3.13	1.38	1.35
1	1	745	1MG	C5-C4	3.12	1.47	1.38
1	1	2605	PSU	C6-C5	3.12	1.38	1.35
1	1	2069	G7M	C5-C4	3.10	1.46	1.38
2	2	966	2MG	C5-C4	3.08	1.47	1.38
1	1	1835	2MG	C5-C4	3.05	1.47	1.38
2	2	1207	2MG	C5-C4	3.05	1.47	1.38
1	1	2445	2MG	C5-C4	3.03	1.47	1.38
2	2	1516	2MG	C5-C4	2.99	1.47	1.38
1	1	2251	OMG	C5-C4	2.97	1.46	1.38
1	1	955	PSU	C6-C5	2.94	1.38	1.35
2	2	967	5MC	C6-C5	2.92	1.39	1.34
1	1	2030	6MZ	C5-C6	2.86	1.48	1.41
1	1	2552	OMU	C4-N3	-2.85	1.33	1.38
1	1	2445	2MG	C6-N1	-2.84	1.33	1.38
1	1	1939	5MU	C4-N3	-2.83	1.33	1.38
2	2	1519	MA6	C5-C6	2.76	1.48	1.41
1	1	747	5MU	C6-C5	2.76	1.39	1.34
1	1	747	5MU	C4-N3	-2.76	1.33	1.38
1	1	1618	6MZ	C5-C6	2.72	1.48	1.41
2	2	1493	A3P	C5-N7	-2.69	1.34	1.39
1	1	1835	2MG	C6-N1	-2.66	1.33	1.38
2	2	1407	5MC	C6-C5	2.66	1.38	1.34
1	1	1962	5MC	C6-C5	2.65	1.38	1.34
1	1	1939	5MU	C6-C5	2.64	1.38	1.34
1	1	2251	OMG	C6-N1	-2.63	1.33	1.38
1	1	1915	3TD	C2-N3	2.63	1.44	1.38
2	2	1493	A3P	O2'-C2'	2.62	1.49	1.43
1	1	2503	2MA	C5-C6	2.61	1.48	1.41
2	2	1518	MA6	C5-C6	2.59	1.48	1.41
2	2	1516	2MG	C6-N1	-2.56	1.34	1.38
2	2	1207	2MG	C6-N1	-2.55	1.34	1.38
1	1	2069	G7M	C6-N1	-2.53	1.34	1.38
48	q	89	0TD	CB-CA	-2.52	1.53	1.54
2	2	1518	MA6	C5-N7	-2.52	1.34	1.39
1	1	2552	OMU	C2-N3	-2.51	1.33	1.38
1	1	2030	6MZ	C8-N7	2.50	1.36	1.31
2	2	1493	A3P	P1-O3'	2.48	1.63	1.59
2	2	527	G7M	C6-N1	-2.48	1.34	1.38
1	1	1939	5MU	C6-N1	-2.39	1.33	1.38
1	1	2503	2MA	C5-N7	-2.37	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	1962	5MC	C6-N1	-2.35	1.34	1.38
1	1	747	5MU	C6-N1	-2.34	1.34	1.38
2	2	1519	MA6	C5-N7	-2.34	1.34	1.39
1	1	745	1MG	C2-N1	2.33	1.41	1.37
1	1	2030	6MZ	C4-N9	-2.32	1.32	1.37
2	2	1519	MA6	C8-N7	2.31	1.36	1.31
1	1	1939	5MU	C2-N3	-2.29	1.34	1.38
2	2	1407	5MC	C6-N1	-2.28	1.34	1.38
1	1	1618	6MZ	C5-N7	-2.28	1.34	1.39
1	1	1618	6MZ	C8-N7	2.27	1.36	1.31
2	2	967	5MC	C6-N1	-2.25	1.34	1.38
1	1	2251	OMG	C5-N7	-2.23	1.34	1.39
1	1	1835	2MG	C5-N7	-2.22	1.34	1.39
1	1	2503	2MA	C8-N7	2.21	1.35	1.31
1	1	2445	2MG	C5-N7	-2.21	1.34	1.39
1	1	747	5MU	C4-C5	2.18	1.48	1.44
1	1	747	5MU	C2-N3	-2.17	1.34	1.38
1	1	2030	6MZ	C5-N7	-2.17	1.35	1.39
1	1	747	5MU	C2-N1	2.17	1.41	1.38
1	1	2580	PSU	O4'-C1'	-2.17	1.40	1.43
1	1	2445	2MG	C2-N3	2.14	1.36	1.32
1	1	745	1MG	C5-N7	-2.14	1.34	1.39
1	1	1835	2MG	C2-N3	2.13	1.36	1.32
1	1	1939	5MU	C4-C5	2.13	1.48	1.44
2	2	966	2MG	C6-N1	-2.11	1.34	1.38
2	2	1516	2MG	C5-N7	-2.11	1.34	1.39
2	2	1207	2MG	C5-N7	-2.10	1.34	1.39
2	2	1518	MA6	C8-N7	2.08	1.35	1.31
1	1	2552	OMU	C5-C4	-2.06	1.39	1.43
2	2	1207	2MG	C2-N3	2.03	1.35	1.32
2	2	966	2MG	C5-N7	-2.03	1.35	1.39
2	2	966	2MG	C4-N9	-2.02	1.32	1.38
2	2	1516	2MG	C2-N3	2.01	1.35	1.32
48	q	89	0TD	CSB-SB	-2.00	1.75	1.79

All (206) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1915	3TD	C5-C6-N1	24.86	156.66	122.14
1	1	1915	3TD	C6-C5-C4	-20.67	104.34	118.19
1	1	2503	2MA	C5-C4-N3	-8.28	118.46	127.18
1	1	1915	3TD	C1'-C5-C4	8.26	130.14	117.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1915	3TD	C6-N1-C2	-7.91	101.66	121.80
2	2	527	G7M	CN7-N7-C8	-7.79	112.98	124.79
1	1	1835	2MG	C2-N3-C4	7.34	121.18	112.00
2	2	966	2MG	C2-N3-C4	7.27	121.09	112.00
1	1	2445	2MG	C2-N3-C4	7.18	120.98	112.00
2	2	1516	2MG	C2-N3-C4	7.05	120.81	112.00
2	2	1207	2MG	C2-N3-C4	7.03	120.79	112.00
2	2	1498	UR3	C4-N3-C2	-7.03	118.93	124.58
2	2	527	G7M	N9-C8-N7	-6.95	95.60	112.48
2	2	527	G7M	C8-N7-C5	6.65	116.09	107.78
1	1	2503	2MA	N3-C4-N9	6.49	135.23	126.99
1	1	2251	OMG	C5-C4-N3	-6.49	118.06	128.39
1	1	1835	2MG	C5-C4-N3	-6.39	118.21	128.39
2	2	527	G7M	N9-C4-N3	6.34	138.63	125.95
1	1	2445	2MG	C5-C4-N3	-6.33	118.31	128.39
2	2	1207	2MG	C5-C4-N3	-6.07	118.72	128.39
2	2	1518	MA6	C5-C4-N3	-5.97	118.49	126.72
2	2	1516	2MG	C5-C4-N3	-5.95	118.92	128.39
2	2	1493	A3P	C5-C4-N3	-5.74	118.81	126.72
2	2	1519	MA6	C5-C4-N3	-5.73	118.83	126.72
1	1	1618	6MZ	C5-C4-N3	-5.71	118.86	126.72
2	2	966	2MG	C5-C4-N3	-5.67	119.37	128.39
1	1	2069	G7M	C5-C4-N3	-5.41	117.92	128.15
2	2	527	G7M	C5-C4-N3	-5.41	117.92	128.15
1	1	2069	G7M	N9-C4-N3	5.41	136.76	125.95
1	1	745	1MG	C5-C4-N3	-5.36	119.85	128.39
1	1	2251	OMG	C2-N3-C4	5.26	121.35	112.30
1	1	747	5MU	N3-C2-N1	5.13	121.57	114.89
1	1	1939	5MU	C4-N3-C2	-5.11	120.64	127.34
1	1	2030	6MZ	C5-C4-N3	-5.09	119.71	126.72
1	1	2030	6MZ	C9-N6-C6	-5.06	118.16	122.85
1	1	2605	PSU	C4-N3-C2	-5.06	119.41	126.37
1	1	1939	5MU	N3-C2-N1	5.03	121.44	114.89
1	1	2457	PSU	C4-N3-C2	-5.02	119.46	126.37
1	1	2552	OMU	C4-N3-C2	-4.99	120.42	126.61
1	1	747	5MU	C4-N3-C2	-4.98	120.82	127.34
1	1	746	PSU	C4-N3-C2	-4.96	119.53	126.37
1	1	2457	PSU	N1-C2-N3	4.90	120.33	115.17
2	2	1518	MA6	N3-C4-N9	4.87	135.45	127.17
1	1	1911	PSU	C4-N3-C2	-4.86	119.67	126.37
1	1	1835	2MG	N9-C4-N3	4.86	135.67	125.95
1	1	2445	2MG	N9-C4-N3	4.85	135.66	125.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2251	OMG	N9-C4-N3	4.84	135.62	125.95
2	2	516	PSU	C4-N3-C2	-4.82	119.73	126.37
1	1	2069	G7M	C2-N3-C4	4.80	120.56	112.30
1	1	2580	PSU	C4-N3-C2	-4.78	119.79	126.37
1	1	2580	PSU	N1-C2-N3	4.75	120.18	115.17
2	2	1493	A3P	N3-C4-N9	4.74	135.23	127.17
1	1	746	PSU	N1-C2-N3	4.73	120.15	115.17
1	1	1911	PSU	N1-C2-N3	4.66	120.08	115.17
2	2	1519	MA6	C10-N6-C6	-4.62	108.78	120.52
1	1	1917	PSU	C4-N3-C2	-4.61	120.02	126.37
1	1	2030	6MZ	C6-C5-N7	4.60	137.45	132.43
2	2	516	PSU	N1-C2-N3	4.59	120.01	115.17
1	1	955	PSU	C4-N3-C2	-4.59	120.05	126.37
1	1	1917	PSU	N1-C2-N3	4.58	120.00	115.17
2	2	1493	A3P	N3-C2-N1	-4.57	121.67	128.58
2	2	1207	2MG	N9-C4-N3	4.53	135.02	125.95
2	2	1519	MA6	C9-N6-C6	-4.53	108.99	120.52
1	1	2605	PSU	N1-C2-N3	4.50	119.91	115.17
2	2	527	G7M	C2-N3-C4	4.48	120.02	112.30
1	1	1939	5MU	C5-C4-N3	4.45	119.19	115.32
1	1	745	1MG	C2-N3-C4	4.44	121.97	111.98
2	2	527	G7M	C8-N9-C4	4.43	118.06	107.09
1	1	2504	PSU	N1-C2-N3	4.43	119.84	115.17
1	1	2498	OMC	C1'-N1-C2	4.43	128.22	118.44
1	1	1618	6MZ	N3-C4-N9	4.40	134.66	127.17
2	2	1519	MA6	N3-C4-N9	4.38	134.62	127.17
2	2	966	2MG	N1-C2-N2	4.35	121.00	116.56
2	2	1518	MA6	C10-N6-C6	-4.35	109.46	120.52
2	2	1516	2MG	N9-C4-N3	4.34	134.64	125.95
1	1	2552	OMU	N3-C2-N1	4.31	120.50	114.89
2	2	1518	MA6	N1-C6-N6	4.18	121.95	116.86
1	1	747	5MU	C5-C4-N3	4.18	118.95	115.32
1	1	1915	3TD	N1-C2-N3	4.15	119.15	116.13
2	2	1519	MA6	C2-N1-C6	4.14	121.94	111.83
2	2	1518	MA6	C2-N1-C6	4.06	121.75	111.83
1	1	955	PSU	N1-C2-N3	4.02	119.41	115.17
1	1	2504	PSU	C4-N3-C2	-4.01	120.84	126.37
1	1	745	1MG	N9-C4-N3	3.98	133.91	125.95
1	1	2552	OMU	C5-C4-N3	3.96	120.35	114.80
2	2	966	2MG	N9-C4-N3	3.95	133.85	125.95
1	1	2030	6MZ	N3-C4-N9	3.95	133.88	127.17
2	2	1493	A3P	N9-C8-N7	-3.91	108.39	113.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1939	5MU	O4-C4-C5	-3.90	120.46	124.92
2	2	527	G7M	C1'-N9-C8	-3.90	113.57	126.74
2	2	1493	A3P	C2-N3-C4	3.86	121.27	111.83
1	1	2030	6MZ	N1-C2-N3	-3.86	122.74	128.58
1	1	2030	6MZ	C2-N3-C4	3.81	121.13	111.83
2	2	967	5MC	C5-C6-N1	-3.79	119.20	123.31
2	2	1518	MA6	C9-N6-C6	-3.78	110.90	120.52
2	2	1519	MA6	C2-N3-C4	3.77	121.04	111.83
2	2	1493	A3P	C4-N9-C8	3.76	109.69	105.74
1	1	747	5MU	O4-C4-C5	-3.74	120.64	124.92
1	1	1618	6MZ	C2-N3-C4	3.72	120.91	111.83
2	2	1518	MA6	C2-N3-C4	3.69	120.86	111.83
1	1	1618	6MZ	C6-C5-N7	3.68	136.44	132.43
1	1	1939	5MU	C5-C6-N1	-3.62	119.38	123.31
2	2	1519	MA6	C4-C5-N7	-3.57	106.50	110.58
1	1	2030	6MZ	C4-C5-N7	-3.55	106.53	110.58
1	1	1618	6MZ	C4-C5-N7	-3.54	106.53	110.58
2	2	966	2MG	C6-C5-N7	3.52	136.70	130.29
1	1	2503	2MA	C4-C5-N7	-3.49	106.59	110.58
1	1	1962	5MC	C5-C6-N1	-3.48	119.53	123.31
1	1	2498	OMC	C1'-N1-C6	-3.46	113.39	120.78
2	2	1498	UR3	C5-C4-N3	3.40	119.52	115.04
1	1	1618	6MZ	C9-N6-C6	-3.39	119.70	122.85
2	2	1519	MA6	N1-C2-N3	-3.37	123.47	128.58
2	2	1516	2MG	C6-C5-N7	3.36	136.41	130.29
2	2	1407	5MC	C5-C6-N1	-3.33	119.69	123.31
2	2	527	G7M	CN7-N7-C5	3.31	130.92	126.80
2	2	966	2MG	N2-C2-N3	-3.30	116.30	120.51
1	1	1618	6MZ	N1-C2-N3	-3.29	123.59	128.58
1	1	747	5MU	C5-C6-N1	-3.28	119.75	123.31
1	1	2504	PSU	O2-C2-N1	-3.23	119.45	122.79
1	1	2580	PSU	O2-C2-N1	-3.22	119.47	122.79
2	2	1207	2MG	C6-C5-N7	3.21	136.12	130.29
2	2	1518	MA6	N1-C2-N3	-3.19	123.75	128.58
1	1	2030	6MZ	C4-N9-C8	3.18	109.08	105.74
2	2	1493	A3P	C5-N7-C8	3.17	108.43	103.45
48	q	89	0TD	OD2-CG-CB	3.15	119.96	113.15
1	1	2251	OMG	C6-C5-N7	3.12	135.97	130.29
2	2	1518	MA6	C4-C5-N7	-3.10	107.03	110.58
1	1	2445	2MG	C6-C5-N7	3.05	135.84	130.29
2	2	1518	MA6	C5-C6-N6	-3.04	120.53	125.33
2	2	1519	MA6	N1-C6-N6	3.01	120.52	116.86

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1835	2MG	C6-C5-N7	3.01	135.76	130.29
2	2	1493	A3P	P1-O3'-C3'	-2.94	115.58	123.43
1	1	2504	PSU	C6-N1-C2	-2.91	119.99	122.69
1	1	2552	OMU	O4-C4-C5	-2.88	120.20	125.16
1	1	2503	2MA	N6-C6-N1	2.87	120.90	117.03
1	1	745	1MG	C6-C5-N7	2.85	135.70	129.36
1	1	2498	OMC	CM2-O2'-C2'	-2.84	107.19	114.47
1	1	1962	5MC	C5-C4-N3	-2.76	118.92	121.75
1	1	745	1MG	C4-C5-N7	-2.76	106.30	110.67
1	1	2503	2MA	C4-N9-C8	2.73	108.61	105.74
2	2	967	5MC	C5-C4-N3	-2.69	119.00	121.75
2	2	1493	A3P	C4-C5-N7	-2.67	107.53	110.58
1	1	955	PSU	O2-C2-N1	-2.67	120.04	122.79
2	2	966	2MG	C4-C5-N7	-2.64	106.48	110.67
1	1	2503	2MA	C2-N1-C6	2.64	122.16	118.10
1	1	2580	PSU	O4'-C1'-C2'	2.63	108.78	105.15
1	1	746	PSU	O2-C2-N1	-2.61	120.09	122.79
2	2	1407	5MC	C5-C4-N3	-2.61	119.08	121.75
2	2	516	PSU	O2-C2-N1	-2.61	120.09	122.79
2	2	527	G7M	O6-C6-C5	-2.60	122.21	128.01
1	1	1911	PSU	O2-C2-N1	-2.60	120.11	122.79
1	1	2457	PSU	O2-C2-N1	-2.59	120.12	122.79
1	1	2503	2MA	C5-N7-C8	2.59	107.51	103.45
1	1	2605	PSU	O2-C2-N1	-2.58	120.13	122.79
1	1	1618	6MZ	C4-N9-C8	2.56	108.42	105.74
2	2	1516	2MG	C4-C5-N7	-2.56	106.62	110.67
1	1	2251	OMG	C4-C5-N7	-2.53	106.66	110.67
2	2	1519	MA6	C10-N6-C9	-2.53	108.05	116.18
1	1	1618	6MZ	C5-N7-C8	2.53	107.42	103.45
1	1	2030	6MZ	C5-N7-C8	2.52	107.41	103.45
1	1	2498	OMC	O2-C2-N3	-2.52	118.36	122.33
2	2	1519	MA6	C4-N9-C8	2.52	108.38	105.74
2	2	1207	2MG	C4-C5-N7	-2.51	106.70	110.67
2	2	1519	MA6	C5-N7-C8	2.51	107.39	103.45
1	1	1917	PSU	O2-C2-N1	-2.50	120.21	122.79
2	2	516	PSU	C6-N1-C2	-2.49	120.38	122.69
1	1	2552	OMU	O2-C2-N1	-2.49	119.56	122.80
1	1	1917	PSU	C6-N1-C2	-2.48	120.39	122.69
1	1	2069	G7M	O6-C6-C5	-2.44	122.56	128.01
1	1	1939	5MU	O2-C2-N1	-2.42	119.64	122.80
1	1	1835	2MG	C4-C5-N7	-2.39	106.88	110.67
1	1	2445	2MG	C4-C5-N7	-2.39	106.88	110.67

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1518	MA6	C4-N9-C8	2.38	108.24	105.74
1	1	2030	6MZ	N9-C8-N7	-2.37	110.58	113.94
1	1	2498	OMC	O2-C2-N1	2.34	123.49	118.90
1	1	2580	PSU	C6-N1-C2	-2.34	120.52	122.69
2	2	1518	MA6	C5-N7-C8	2.30	107.07	103.45
2	2	1519	MA6	C5-C6-N6	-2.27	121.74	125.33
1	1	2069	G7M	C5-C6-N1	2.25	116.48	111.84
1	1	747	5MU	O2-C2-N1	-2.24	119.88	122.80
1	1	2251	OMG	O6-C6-C5	-2.22	120.67	126.53
1	1	2457	PSU	C6-C5-C4	2.21	119.67	118.17
2	2	1207	2MG	N1-C2-N2	2.21	118.82	116.56
1	1	2457	PSU	C6-N1-C2	-2.21	120.64	122.69
2	2	1516	2MG	N1-C2-N2	2.21	118.81	116.56
2	2	1402	4OC	C6-C5-C4	2.20	119.65	117.00
2	2	1407	5MC	O2-C2-N3	-2.20	118.86	122.33
1	1	2503	2MA	C6-C5-N7	2.17	136.28	132.09
1	1	2580	PSU	C6-C5-C4	2.15	119.62	118.17
2	2	1493	A3P	C2'-C3'-C4'	2.14	106.99	103.24
1	1	746	PSU	C6-C5-C4	2.14	119.62	118.17
1	1	746	PSU	C6-N1-C2	-2.14	120.70	122.69
2	2	1518	MA6	C10-N6-C9	-2.14	109.31	116.18
1	1	1911	PSU	C6-N1-C2	-2.13	120.72	122.69
1	1	2457	PSU	O4'-C1'-C2'	2.12	108.09	105.15
2	2	1516	2MG	O6-C6-C5	-2.12	120.94	126.53
2	2	966	2MG	O6-C6-C5	-2.11	120.96	126.53
2	2	1207	2MG	O6-C6-C5	-2.11	120.96	126.53
1	1	2030	6MZ	C2-N1-C6	2.10	122.19	115.24
2	2	1402	4OC	O2-C2-N3	-2.10	119.02	122.33
1	1	2503	2MA	N9-C8-N7	-2.09	110.97	113.94
1	1	955	PSU	O4'-C1'-C2'	2.05	107.98	105.15
1	1	2251	OMG	C5-C6-N1	2.03	118.43	113.25
1	1	1835	2MG	O6-C6-C5	-2.03	121.19	126.53
1	1	1835	2MG	CM2-N2-C2	-2.02	119.31	123.65
2	2	967	5MC	O2-C2-N3	-2.01	119.16	122.33

All (4) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	2	1493	A3P	C2'
1	1	2069	G7M	C2'
1	1	2069	G7M	C3'
1	1	2069	G7M	C4'

All (46) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	2	516	PSU	O4'-C1'-C5-C4
2	2	516	PSU	O4'-C1'-C5-C6
2	2	966	2MG	O4'-C4'-C5'-O5'
2	2	966	2MG	C3'-C4'-C5'-O5'
2	2	1519	MA6	C5-C6-N6-C9
1	1	1915	3TD	C2'-C1'-C5-C4
1	1	1915	3TD	O4'-C1'-C5-C4
1	1	1915	3TD	O4'-C1'-C5-C6
1	1	2445	2MG	N1-C2-N2-CM2
1	1	2445	2MG	N3-C2-N2-CM2
1	1	2498	OMC	C4'-C5'-O5'-P
1	1	2504	PSU	O4'-C4'-C5'-O5'
2	2	967	5MC	O4'-C4'-C5'-O5'
2	2	967	5MC	C3'-C4'-C5'-O5'
1	1	1618	6MZ	O4'-C4'-C5'-O5'
1	1	2498	OMC	C3'-C4'-C5'-O5'
2	2	1519	MA6	N1-C6-N6-C9
1	1	2498	OMC	C2'-C1'-N1-C2
2	2	527	G7M	C3'-C4'-C5'-O5'
1	1	2504	PSU	C3'-C4'-C5'-O5'
2	2	1518	MA6	C5-C6-N6-C9
1	1	2498	OMC	O4'-C4'-C5'-O5'
2	2	1402	4OC	O4'-C4'-C5'-O5'
2	2	966	2MG	C4'-C5'-O5'-P
1	1	2498	OMC	C2'-C1'-N1-C6
1	1	1618	6MZ	C3'-C4'-C5'-O5'
2	2	527	G7M	O4'-C4'-C5'-O5'
1	1	2503	2MA	O4'-C4'-C5'-O5'
48	q	89	0TD	CG-CB-SB-CSB
1	1	2498	OMC	O4'-C1'-N1-C6
2	2	1518	MA6	N1-C6-N6-C9
2	2	1519	MA6	O4'-C4'-C5'-O5'
1	1	2498	OMC	O4'-C1'-N1-C2
1	1	2030	6MZ	C3'-C4'-C5'-O5'
1	1	1962	5MC	C2'-C1'-N1-C6
1	1	955	PSU	C4'-C5'-O5'-P
1	1	1962	5MC	O4'-C1'-N1-C6
1	1	2503	2MA	C3'-C4'-C5'-O5'
1	1	746	PSU	O4'-C1'-C5-C6
1	1	2251	OMG	C3'-C2'-O2'-CM2
1	1	2498	OMC	C3'-C2'-O2'-CM2
1	1	746	PSU	C2'-C1'-C5-C6

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Mol	Chain	Res	Type	Atoms
1	1	1915	3TD	C2'-C1'-C5-C6
2	2	1402	4OC	C3'-C2'-O2'-CM2
2	2	527	G7M	C4'-C5'-O5'-P
2	2	1402	4OC	C3'-C4'-C5'-O5'

There are no ring outliers.

14 monomers are involved in 29 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	2	1518	MA6	1	0
1	1	955	PSU	5	0
1	1	2069	G7M	2	0
2	2	967	5MC	1	0
2	2	1402	4OC	1	0
2	2	1519	MA6	2	0
1	1	2498	OMC	3	0
1	1	745	1MG	1	0
48	q	89	0TD	1	0
2	2	966	2MG	6	0
1	1	2030	6MZ	3	0
2	2	1516	2MG	1	0
1	1	2504	PSU	2	0
2	2	516	PSU	2	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 441 ligands modelled in this entry, 441 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	1	1
6	A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	1	2314:A	O3'	2315:G	P	3.96
1	A	108:PHE	C	109:SER	N	3.24

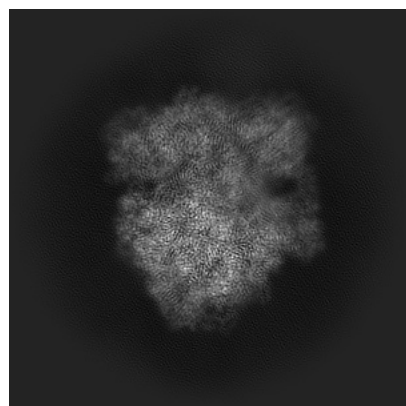
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-48479. These allow visual inspection of the internal detail of the map and identification of artifacts.

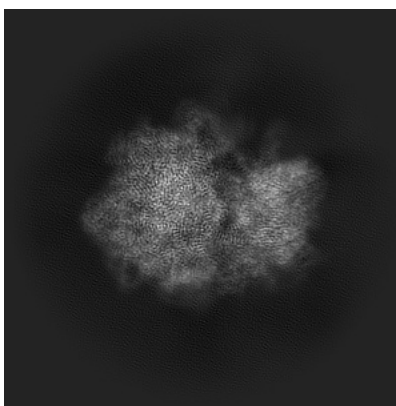
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

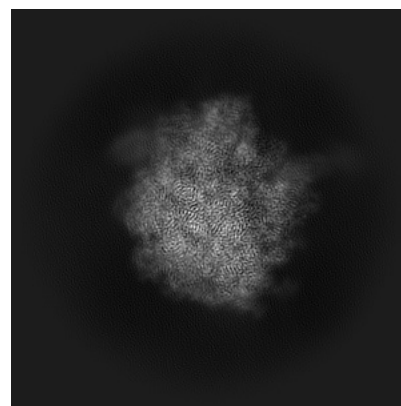
6.1.1 Primary map



X

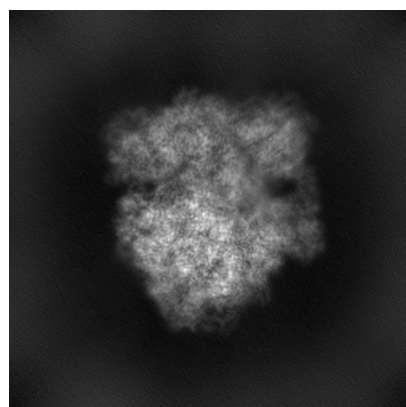


Y

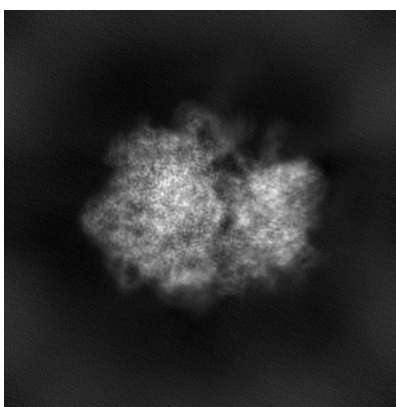


Z

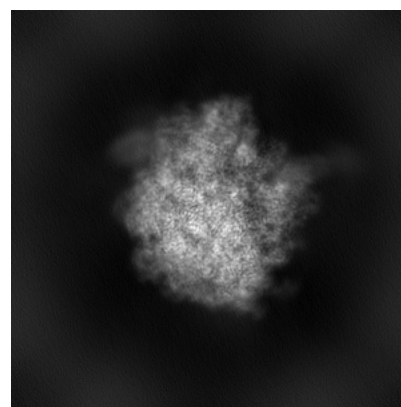
6.1.2 Raw map



X



Y

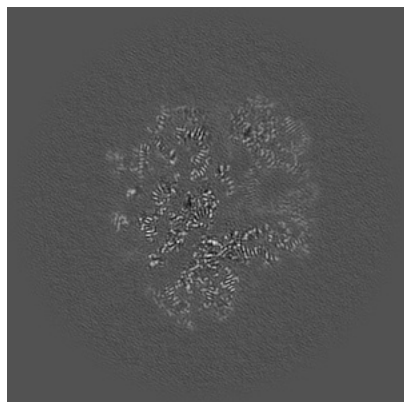


Z

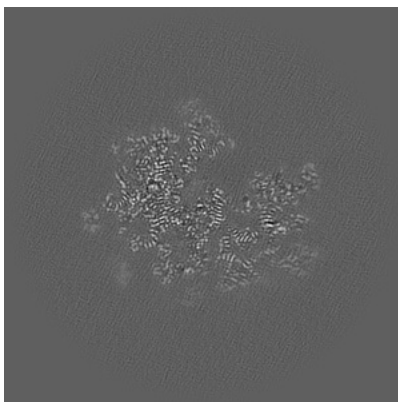
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

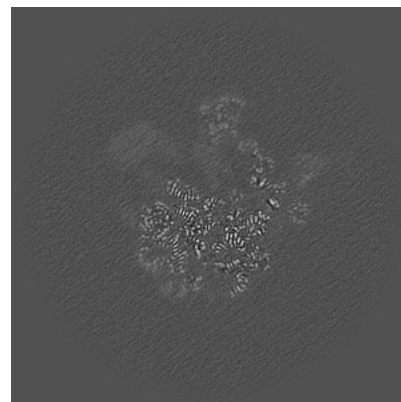
6.2.1 Primary map



X Index: 192

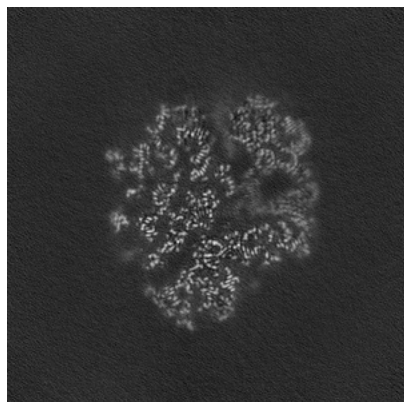


Y Index: 192

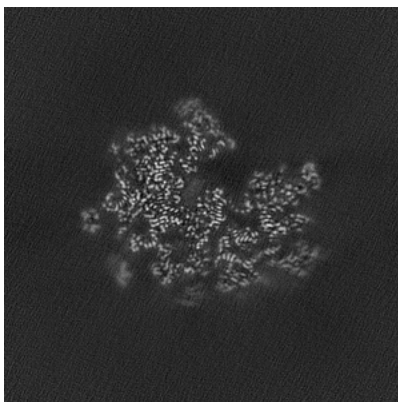


Z Index: 192

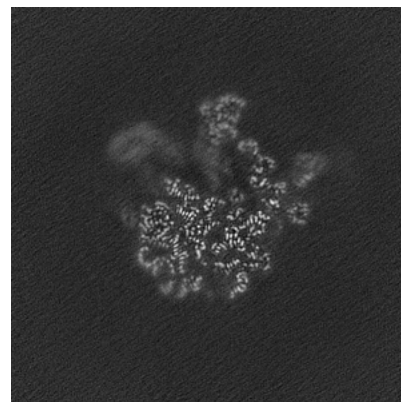
6.2.2 Raw map



X Index: 192



Y Index: 192

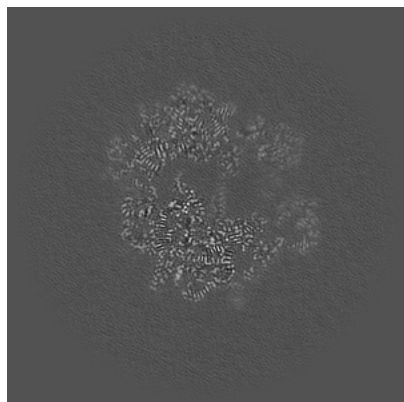


Z Index: 192

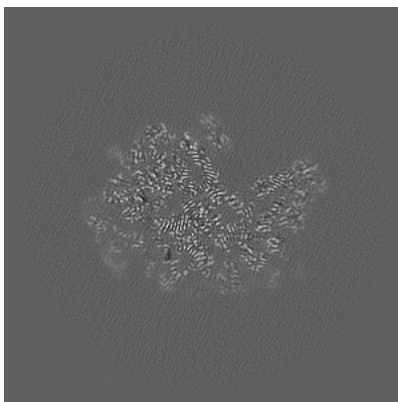
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

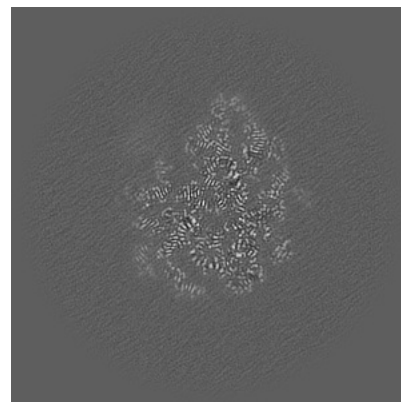
6.3.1 Primary map



X Index: 215

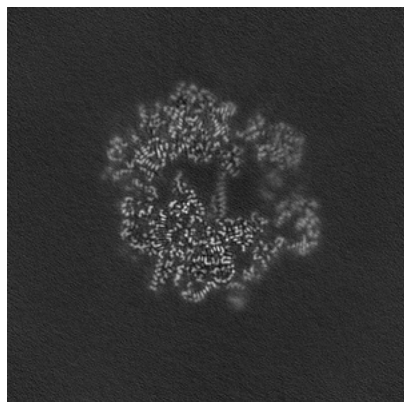


Y Index: 179

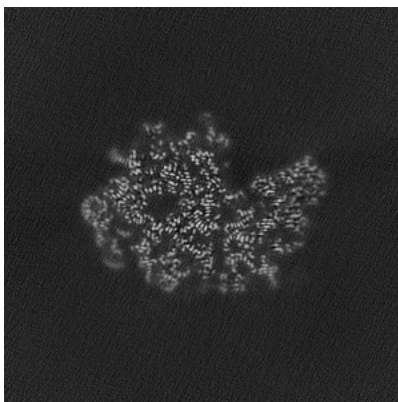


Z Index: 164

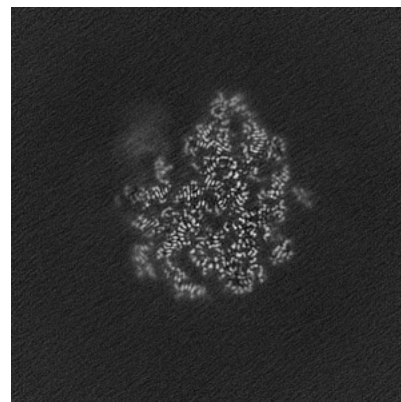
6.3.2 Raw map



X Index: 215



Y Index: 175

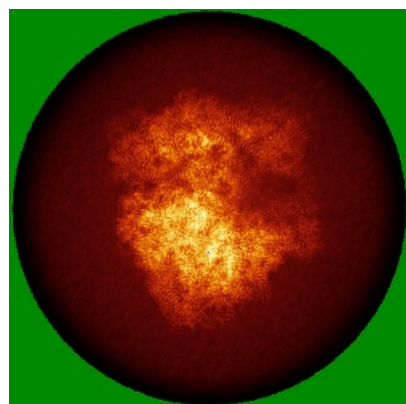


Z Index: 164

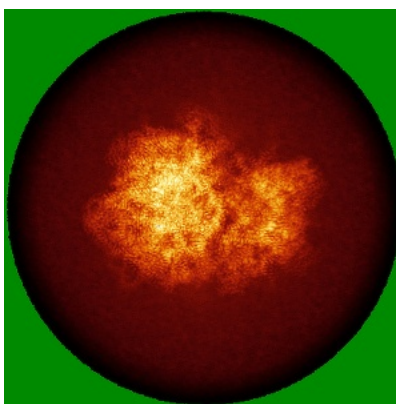
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

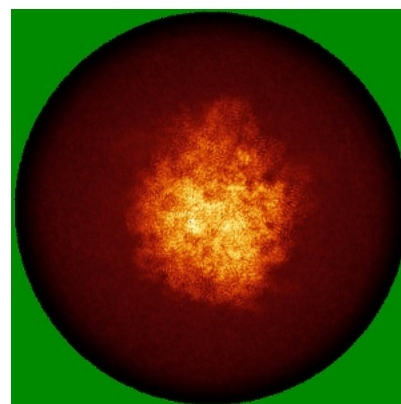
6.4.1 Primary map



X

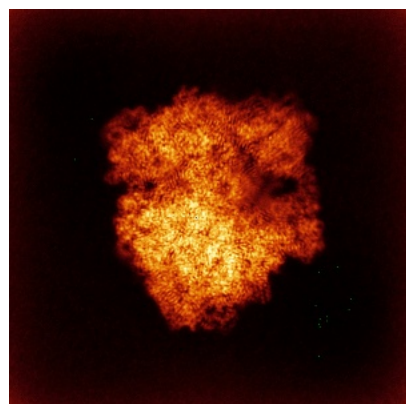


Y

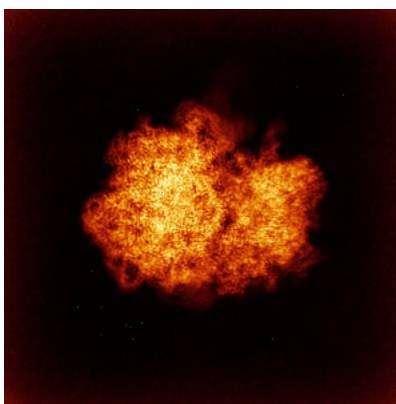


Z

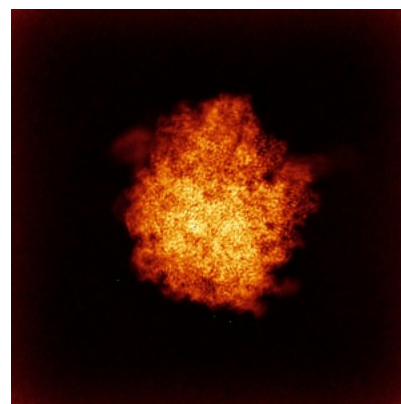
6.4.2 Raw map



X



Y

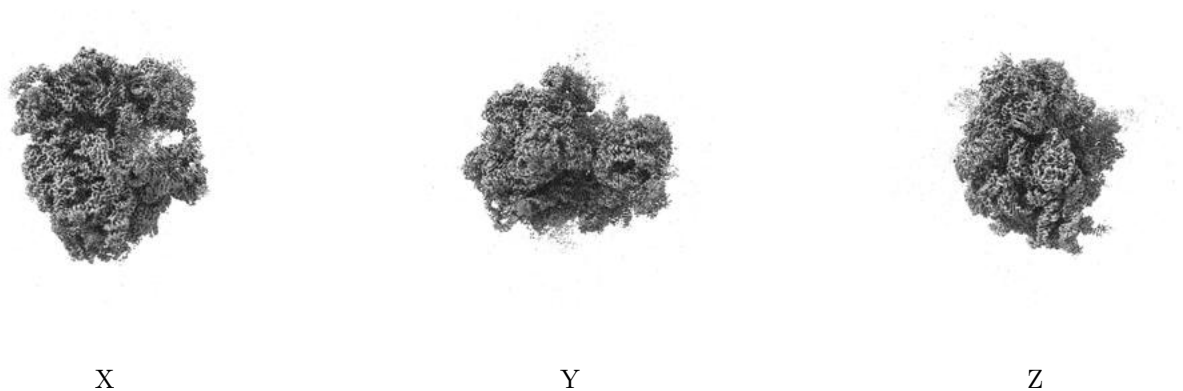


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.701. 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



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.

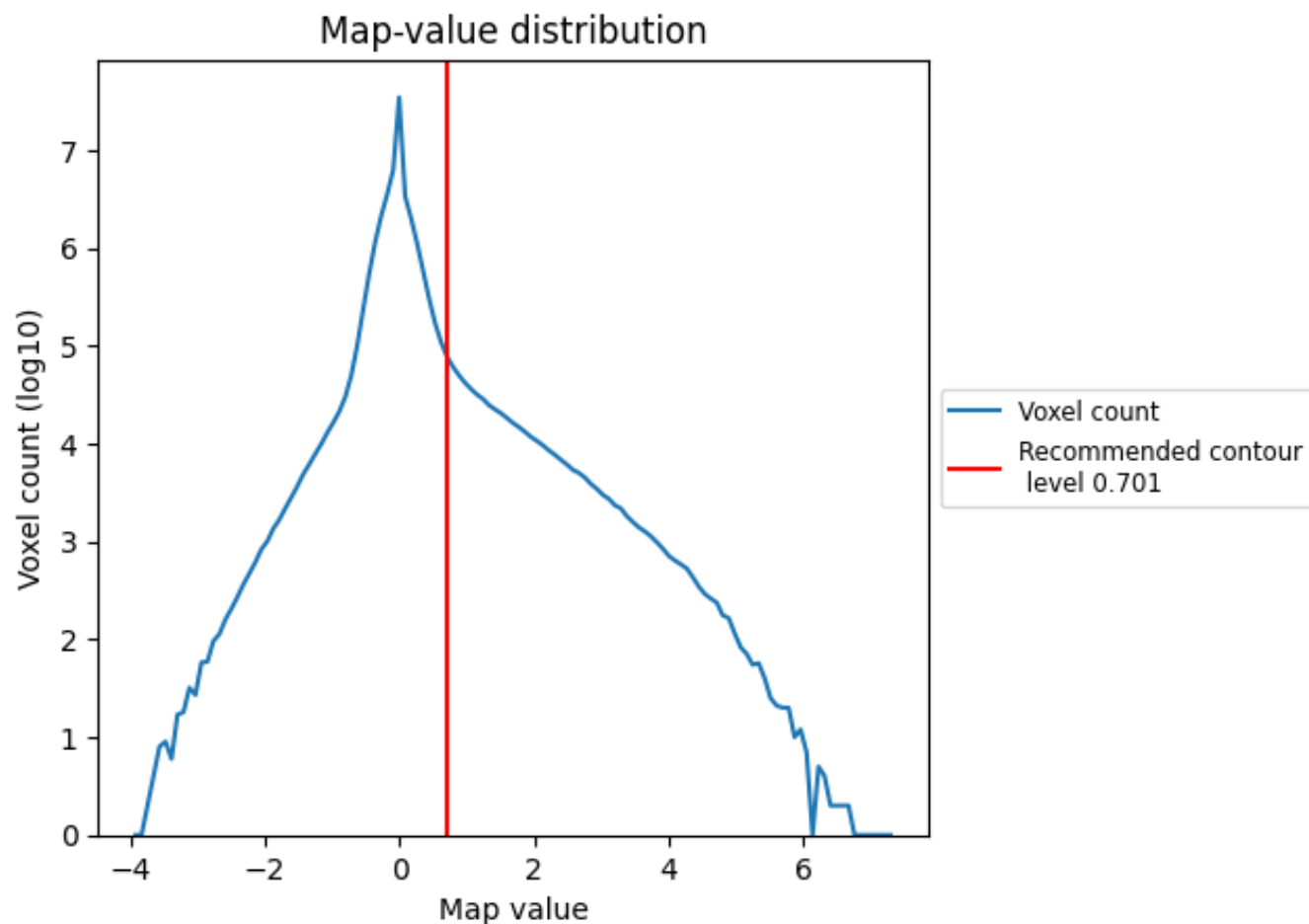
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

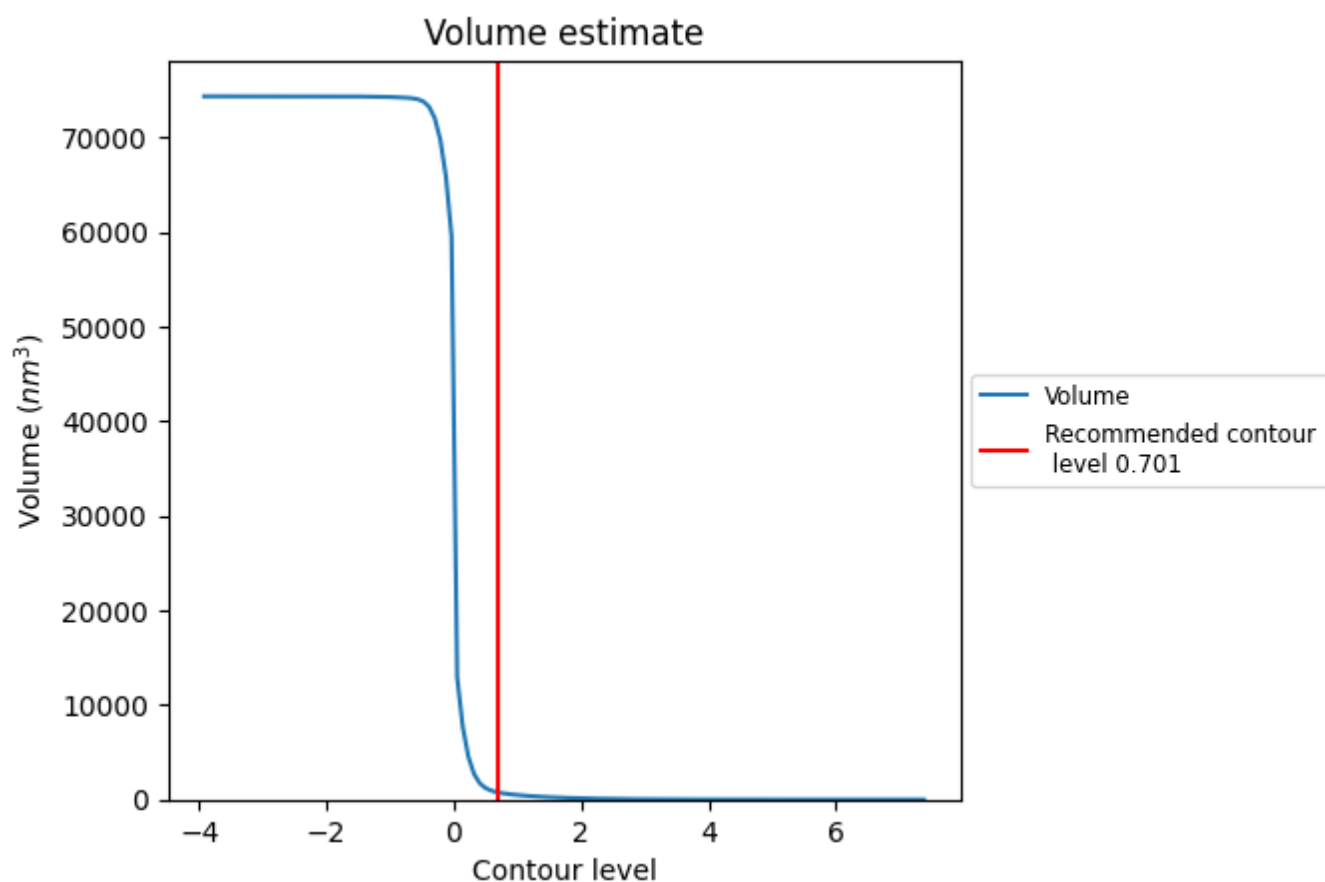
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

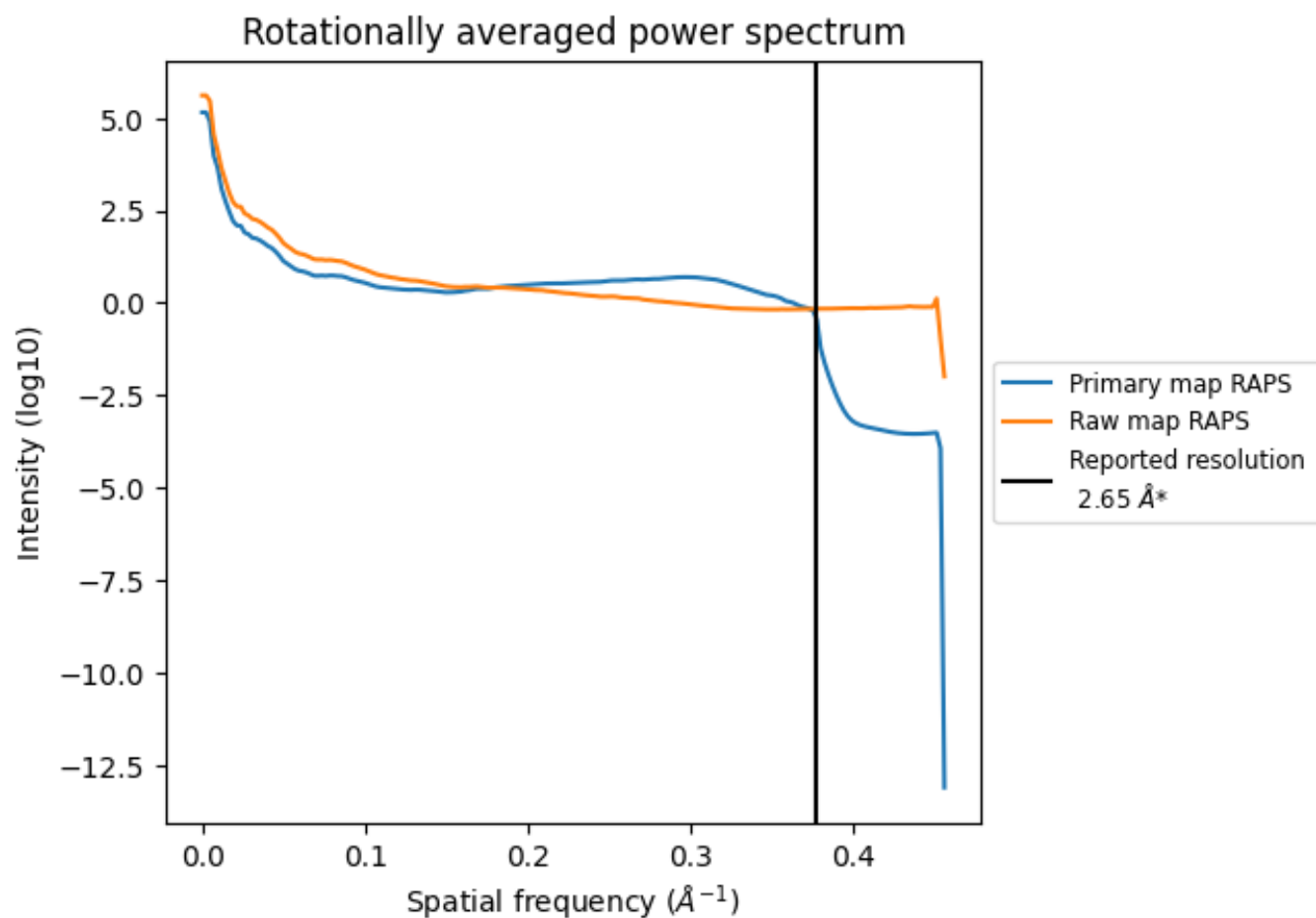
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 749 nm³; this corresponds to an approximate mass of 677 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 ⓘ

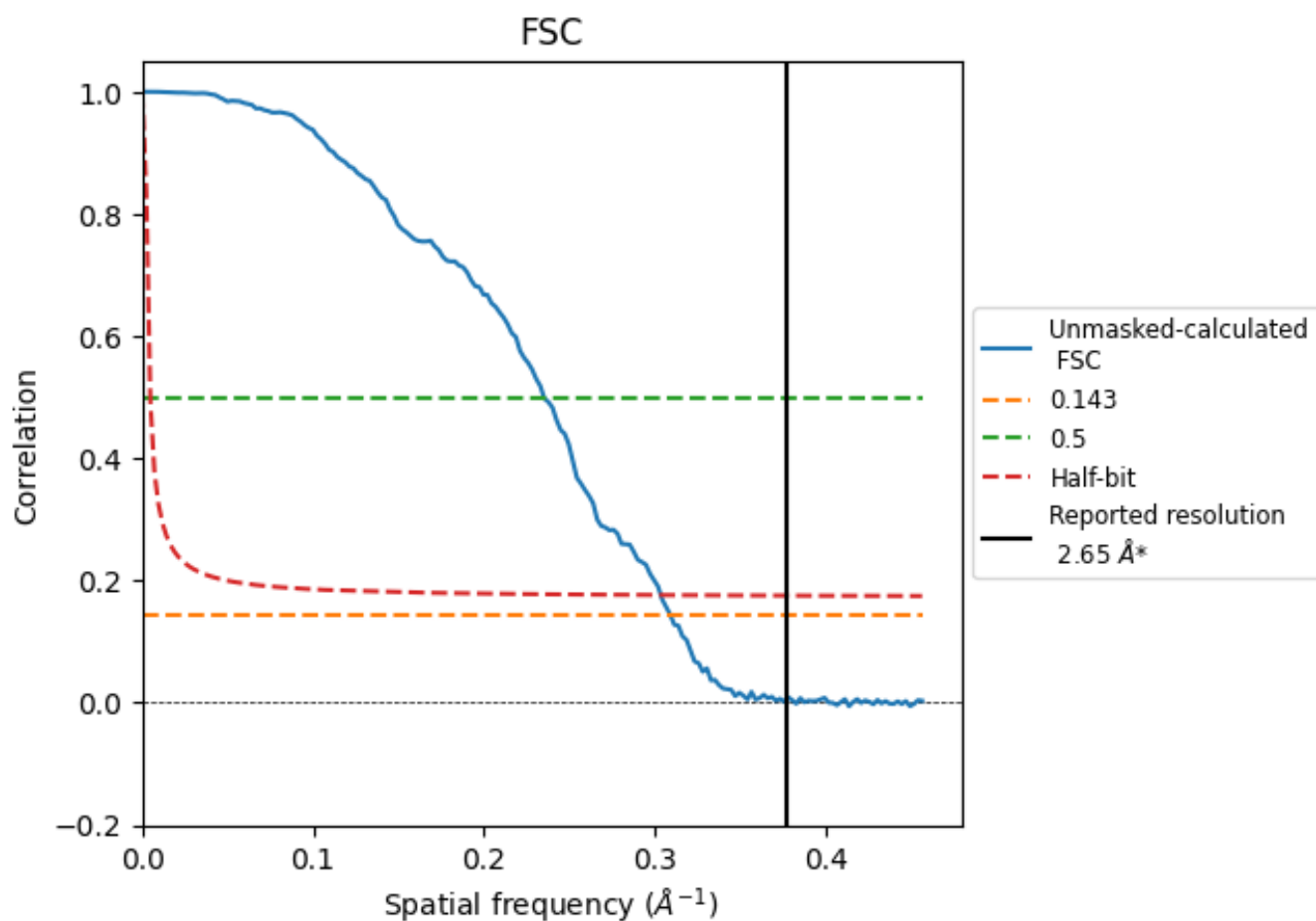


*Reported resolution corresponds to spatial frequency of 0.377 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.377 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

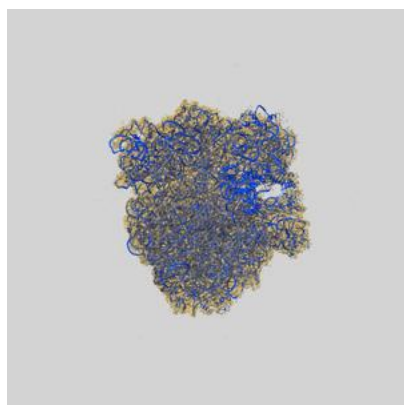
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.65	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.23	4.25	3.29

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.23 differs from the reported value 2.65 by more than 10 %

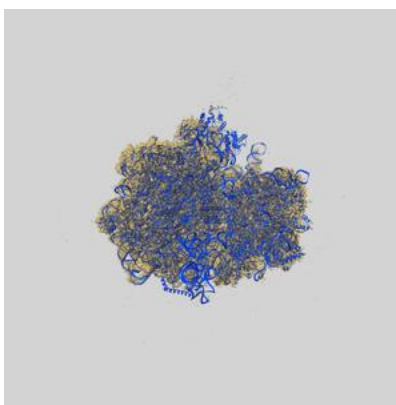
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-48479 and PDB model 9MOR. Per-residue inclusion information can be found in section [3](#) on page [16](#).

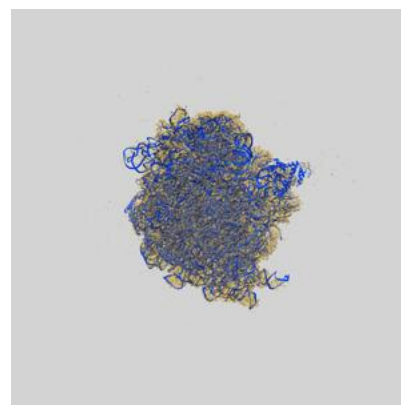
9.1 Map-model overlay [i](#)



X



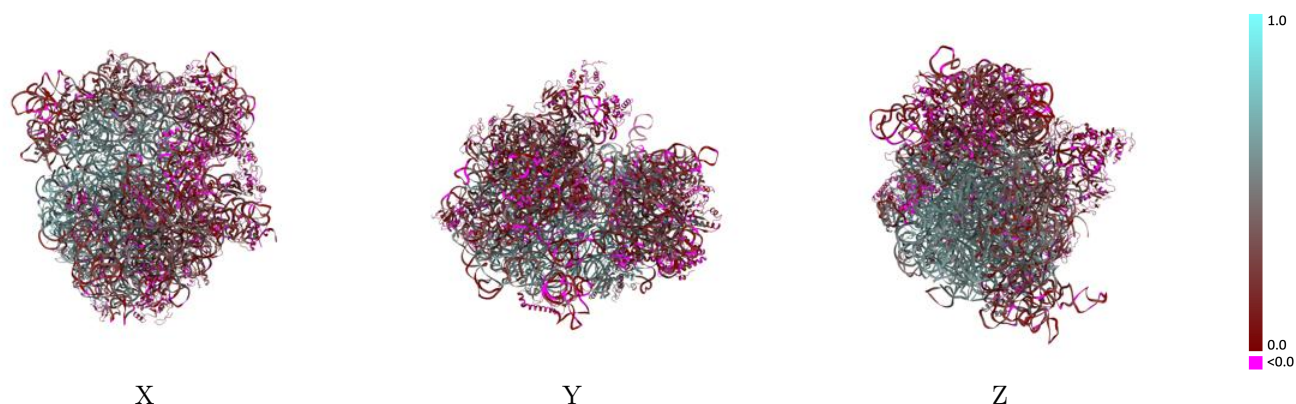
Y



Z

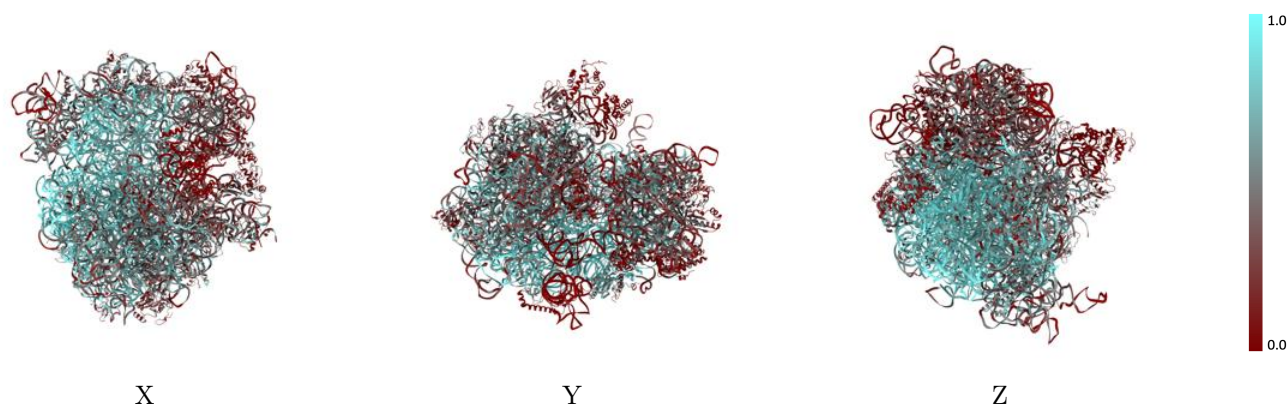
The images above show the 3D surface view of the map at the recommended contour level 0.701 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



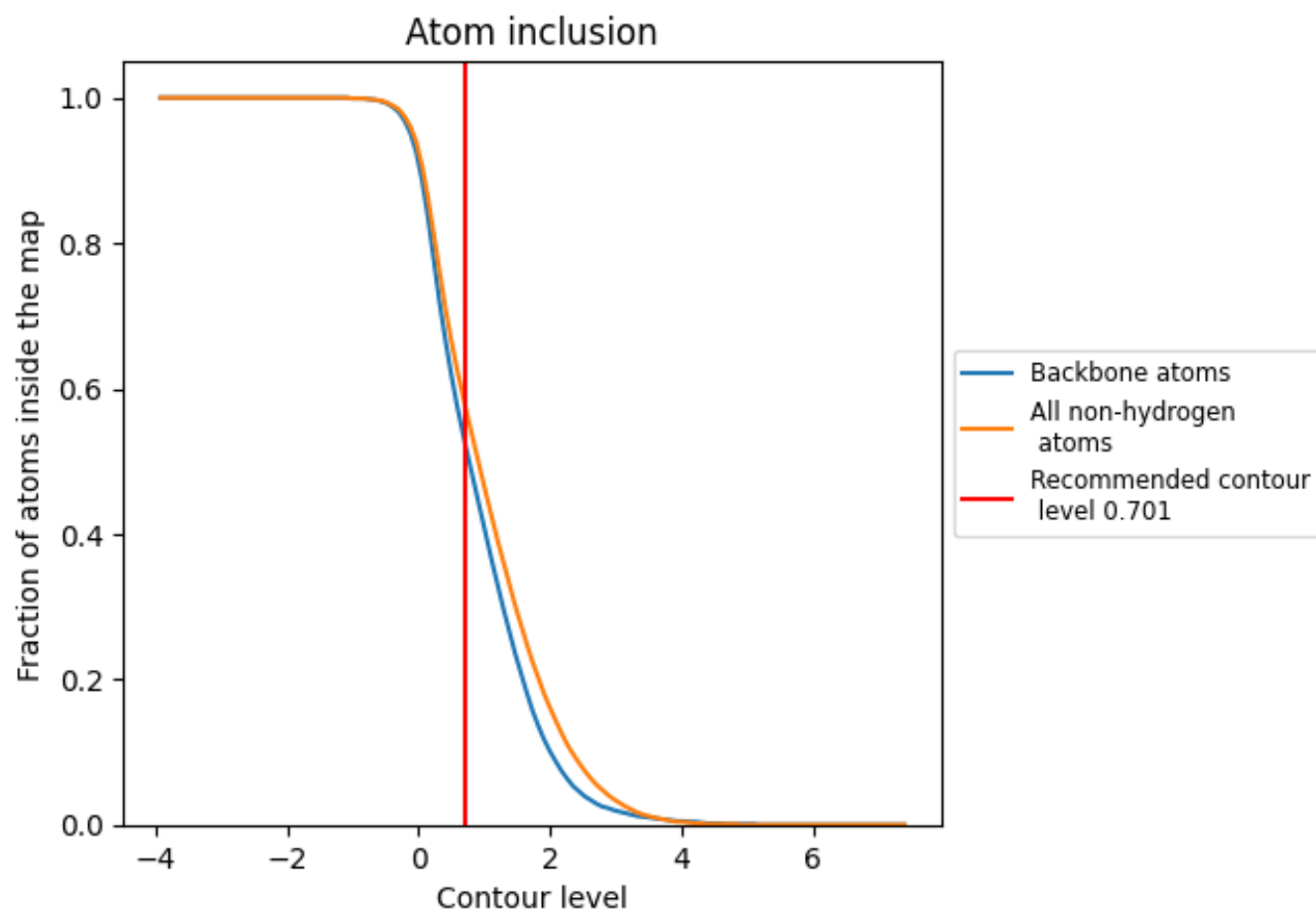
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.701).

9.4 Atom inclusion [i](#)



At the recommended contour level, 53% of all backbone atoms, 58% 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 (0.701) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5780	 0.3670
1	 0.6940	 0.4300
2	 0.6280	 0.3860
4	 0.3620	 0.1770
5	 0.2170	 0.2640
6	 0.0070	 0.0730
7	 0.3270	 0.2910
A	 0.5010	 0.4590
B	 0.9090	 0.6230
C	 0.4940	 0.2600
D	 0.3910	 0.2370
E	 0.1650	 0.1220
F	 0.2790	 0.1670
G	 0.1300	 0.1820
H	 0.0230	 0.0970
I	 0.0050	 0.0610
J	 0.4030	 0.2090
K	 0.8580	 0.6080
L	 0.3800	 0.1640
M	 0.3480	 0.1770
N	 0.8980	 0.6060
O	 0.3060	 0.1500
P	 0.7200	 0.4830
Q	 0.5180	 0.2480
R	 0.3510	 0.1780
S	 0.7400	 0.4850
T	 0.7040	 0.5270
U	 0.3070	 0.1750
V	 0.3310	 0.1810
W	 0.4520	 0.2230
X	 0.8290	 0.6010
Y	 0.5480	 0.4400
Z	 0.4080	 0.1970
a	 0.0860	 0.0950
b	 0.6250	 0.4030



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Chain	Atom inclusion	Q-score
c	 0.2440	 0.1170
d	 0.9100	 0.6220
e	 0.4710	 0.2280
f	 0.4660	 0.2330
g	 0.1500	 0.1000
h	 0.2370	 0.1400
i	 0.3210	 0.2190
j	 0.6680	 0.4410
k	 0.6160	 0.4850
l	 0.0870	 0.0920
m	 0.7870	 0.5550
n	 0.2010	 0.1420
o	 0.2380	 0.1950
p	 0.6710	 0.5180
q	 0.6630	 0.4510
r	 0.1590	 0.1290
s	 0.2890	 0.1750
t	 0.7410	 0.5340
u	 0.3640	 0.2000
v	 0.7150	 0.5200
w	 0.6920	 0.5190
x	 0.1960	 0.1570
y	 0.4360	 0.2510
z	 0.3780	 0.3680