



Full wwPDB EM Validation Report ⓘ

Jun 17, 2026 – 09:28 pm BST

PDB ID : 8RCT / pdb_00008rct
EMDB ID : EMD-19059
Title : Escherichia coli paused disome complex (Rotated disome interface class 2)
Authors : Fluegel, T.; Schacherl, M.
Deposited on : 2023-12-07
Resolution : 5.32 Å(reported)
Based on initial model : 7N1P

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:

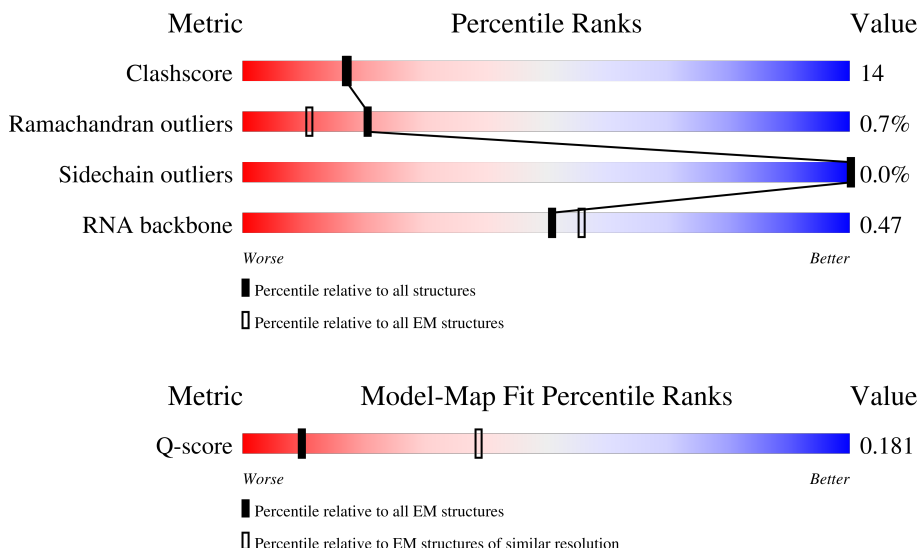
EMDB validation analysis : 0.0.1.dev132
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

The reported resolution of this entry is 5.32 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.



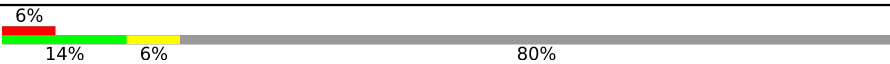
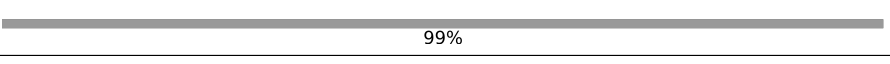
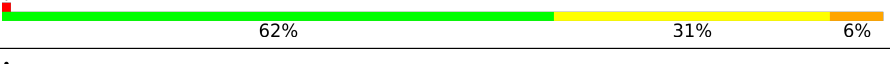
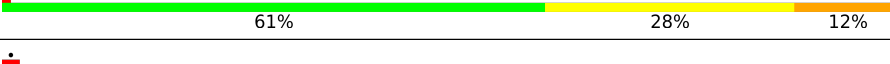
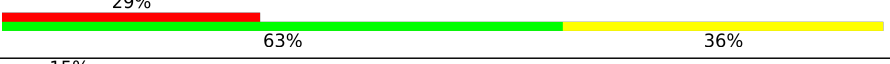
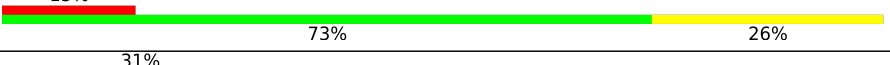
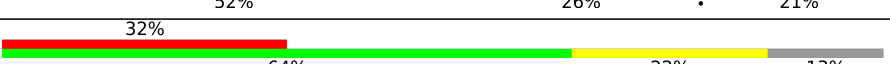
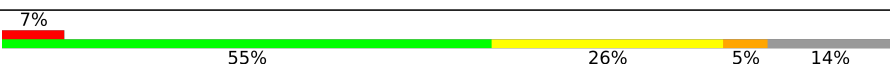
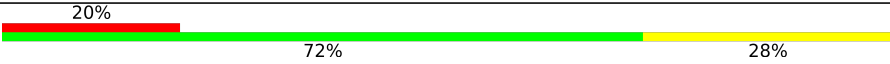
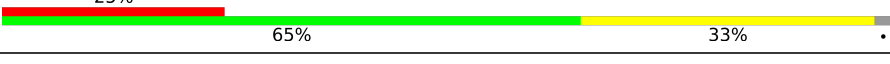
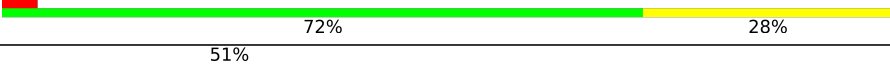
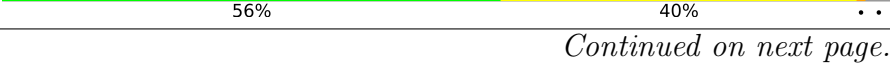
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	506 (4.82 - 5.82)

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	12	78	 67% 31%
2	32	59	 5% 59% 39%
3	4	70	 20% 63% 33%

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Mol	Chain	Length	Quality of chain
3	41	70	
4	62	65	
5	71	2904	
5	72	2904	
6	82	120	
7	A1	1542	
7	A2	1542	
8	B	241	
8	B2	241	
9	C1	233	
9	C2	233	
10	D1	206	
10	D2	206	
11	E1	167	
11	E2	167	
12	F1	135	
12	F2	135	
13	G1	179	
13	G2	179	
14	H1	130	
14	H2	130	
15	I1	130	
15	I2	130	
16	J1	103	
16	J2	103	

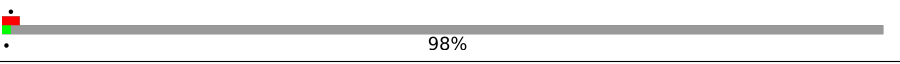
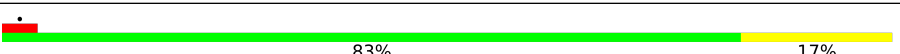
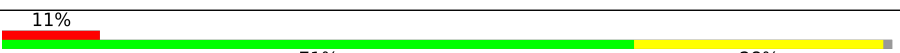
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Mol	Chain	Length	Quality of chain
17	K1	129	
17	K2	129	
18	L1	124	
18	L2	124	
19	M1	118	
19	M2	118	
20	N1	101	
20	N2	101	
21	O1	89	
21	O2	89	
22	P1	82	
23	Q1	84	
23	Q2	84	
24	R1	75	
24	R2	75	
25	S1	92	
25	S2	92	
26	T1	87	
27	U1	71	
27	U2	71	
28	V2	59	
29	W	76	
30	W1	76	
31	Y	76	
32	Y1	76	

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Mol	Chain	Length	Quality of chain
33	Z1	557	
34	a2	234	
35	b2	273	
36	e2	179	
37	g2	55	
38	h2	136	
39	i2	149	
40	l2	46	
41	o2	144	
42	p	10	
43	r2	117	
44	z2	85	

2 Entry composition [i](#)

There are 48 unique types of molecules in this entry. The entry contains 187381 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	12	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 2 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	32	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 3 is a protein called Large ribosomal subunit protein bL31A.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	4	68	Total	C	N	O	S	0	0
			533	330	101	96	6		
3	41	14	Total	C	N	O		0	0
			118	74	26	18			

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

Mol	Chain	Residues	Atoms					AltConf	Trace
4	62	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 5 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	71	19	Total	C	N	O	P	0	0
			406	182	73	132	19		
5	72	2904	Total	C	N	O	P	0	0
			62355	27824	11468	20159	2904		

- Molecule 6 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	82	120	Total	C	N	O	P	0	0
			2569	1144	468	837	120		

- Molecule 7 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A1	1542	Total	C	N	O	P	0	0
			33092	14767	6064	10719	1542		
7	A2	1537	Total	C	N	O	P	0	0
			32990	14721	6049	10683	1537		

- Molecule 8 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	B	233	Total	C	N	O	S	0	0
			1815	1145	325	337	8		
8	B2	227	Total	C	N	O	S	0	0
			1776	1123	318	327	8		

- Molecule 9 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	C1	213	Total	C	N	O	S	0	0
			1665	1054	312	295	4		
9	C2	212	Total	C	N	O	S	0	0
			1658	1049	311	294	4		

- Molecule 10 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	D1	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		
10	D2	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 11 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	E1	158	Total	C	N	O	S	0	0
			1166	725	220	215	6		
11	E2	158	Total	C	N	O	S	0	0
			1166	725	220	215	6		

- Molecule 12 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	F1	106	Total	C	N	O	S	0	0
			862	545	156	154	7		
12	F2	106	Total	C	N	O	S	0	0
			862	545	156	154	7		

- Molecule 13 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	G1	155	Total	C	N	O	S	0	0
			1228	767	237	220	4		
13	G2	154	Total	C	N	O	S	0	0
			1214	756	235	219	4		

- Molecule 14 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	H1	129	Total	C	N	O	S	0	0
			979	616	173	184	6		
14	H2	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 15 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	I1	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		
15	I2	129	Total	C	N	O	S	0	0
			1036	642	208	183	3		

- Molecule 16 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	J1	102	Total	C	N	O	S	0	0
			817	509	157	150	1		
16	J2	100	Total	C	N	O	S	0	0
			803	502	154	146	1		

- Molecule 17 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	K1	115	Total	C	N	O	S	0	0
			857	528	168	158	3		
17	K2	118	Total	C	N	O	S	0	0
			884	545	175	161	3		

- Molecule 18 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	L1	123	Total	C	N	O	S	0	0
			955	590	196	165	4		
18	L2	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 19 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	M1	115	Total	C	N	O	S	0	0
			891	552	179	157	3		
19	M2	117	Total	C	N	O	S	0	0
			910	564	183	160	3		

- Molecule 20 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	N1	100	Total	C	N	O	S	0	0
			805	499	164	139	3		
20	N2	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 21 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	O1	88	Total	C	N	O	S	0	0
			714	439	144	130	1		
21	O2	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 22 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	P1	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 23 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Q1	80	Total	C	N	O	S	0	0
			648	411	121	113	3		
23	Q2	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 24 is a protein called Small ribosomal subunit protein bS18.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	R1	74	Total	C	N	O	S	0	0
			624	395	122	105	2		
24	R2	74	Total	C	N	O	S	0	0
			626	395	123	107	1		

- Molecule 25 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	S1	83	Total	C	N	O	S	0	0
			663	424	126	111	2		
25	S2	83	Total	C	N	O	S	0	0
			663	424	126	111	2		

- Molecule 26 is a protein called Small ribosomal subunit protein bS20.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	T1	86	Total	C	N	O	S	0	0
			670	414	138	115	3		

- Molecule 27 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	U1	70	Total	C	N	O	S	0	0
			590	366	125	98	1		
27	U2	70	Total	C	N	O	S	0	0
			590	366	125	98	1		

- Molecule 28 is a RNA chain called messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	V2	59	Total	C	N	O	P	0	0
			1272	569	242	402	59		

- Molecule 29 is a RNA chain called tRNA-Trp (P/E-site).

Mol	Chain	Residues	Atoms						AltConf	Trace
29	W	76	Total	C	N	O	P	S	0	0
			1630	730	286	536	76	2		

- Molecule 30 is a RNA chain called tRNA-Phe (P/E-site).

Mol	Chain	Residues	Atoms						AltConf	Trace
30	W1	36	Total	C	N	O	P	S	0	0
			781	352	143	248	36	2		

- Molecule 31 is a RNA chain called tRNA-Ala (A/P-site).

Mol	Chain	Residues	Atoms						AltConf	Trace
31	Y	76	Total	C	N	O	P		0	0
			1628	726	293	533	76			

- Molecule 32 is a RNA chain called tRNA-Val (A/P-site).

Mol	Chain	Residues	Atoms						AltConf	Trace
32	Y1	36	Total	C	N	O	P		0	0
			778	348	142	252	36			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Y1	34	CM0	U	variant	GB 1847302804

- Molecule 33 is a protein called 30S ribosomal protein S1.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	Z1	9	Total	C	N	O	0	0
			75	49	10	16		

- Molecule 34 is a protein called Large ribosomal subunit protein uL1.

Mol	Chain	Residues	Atoms						AltConf	Trace
34	a2	223	Total	C	N	O	S		0	0
			1661	1039	302	314	6			

- Molecule 35 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	b2	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 36 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	e2	178	Total	C	N	O	S	0	0
			1420	905	251	258	6		

- Molecule 37 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
37	g2	52	Total	C	N	O	0	0
			427	275	78	74		

- Molecule 38 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	h2	136	Total	C	N	O	S	1	0
			1085	692	209	178	6		

- Molecule 39 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	i2	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 40 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	l2	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 41 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	o2	51	Total	C	N	O	S	0	0
			377	231	83	62	1		

- Molecule 42 is a protein called Nascent chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	p	10	Total	C	N	O	0	0
			76	47	18	11		

- Molecule 43 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
43	r2	116	Total	C	N	O	0	0
			891	552	178	161		

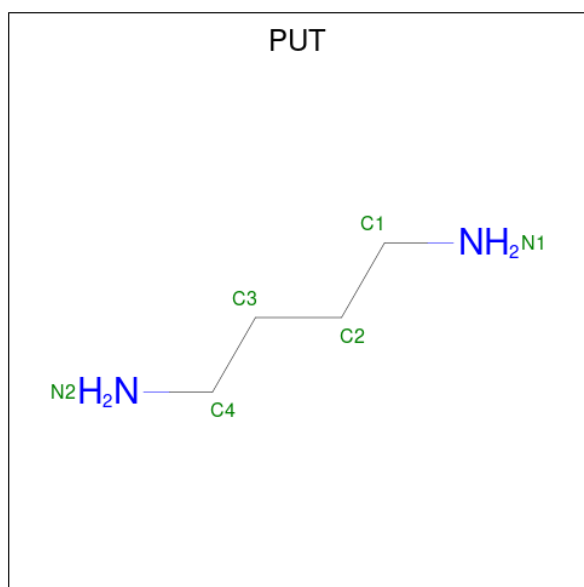
- Molecule 44 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	z2	76	Total	C	N	O	S	0	0
			582	360	117	104	1		

- Molecule 45 is ZINC ION (CCD ID: ZN) (formula: Zn).

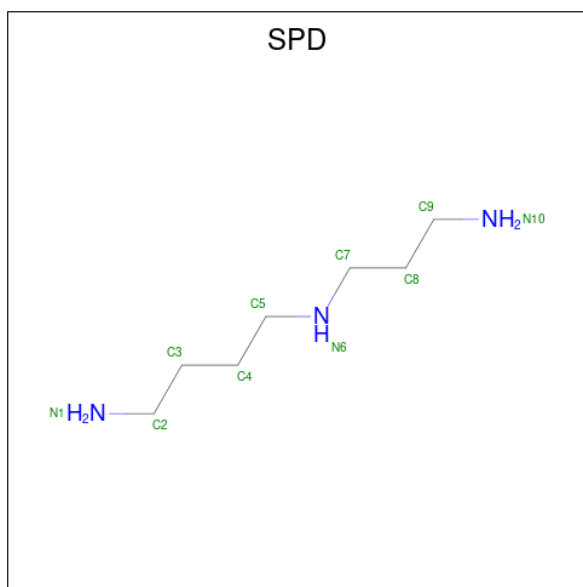
Mol	Chain	Residues	Atoms		AltConf
45	4	1	Total	Zn	0
			1	1	
45	B	1	Total	Zn	0
			1	1	

- Molecule 46 is 1,4-DIAMINOBUTANE (CCD ID: PUT) (formula: C₄H₁₂N₂).



Mol	Chain	Residues	Atoms			AltConf
46	72	1	Total	C	N	0
			6	4	2	
46	72	1	Total	C	N	0
			6	4	2	

- Molecule 47 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).



Mol	Chain	Residues	Atoms			AltConf
47	72	1	Total	C	N	0
			10	7	3	

- Molecule 48 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
48	72	163	Total	Mg	0
			163	163	
48	A1	60	Total	Mg	0
			60	60	
48	A2	42	Total	Mg	0
			42	42	
48	Y	2	Total	Mg	0
			2	2	
48	h2	1	Total	Mg	0
			1	1	



• Molecule 5: 23S ribosomal RNA

Chain 71: 99%

G G U U A A G C G A C U A A A G C C G G U A C A C G G A U G G A U C C C U G G C A A G C G U G
C U A A U C U G C G A A A A A G C C G G U C C G G U A A A A G G U A A C C G U U U C C G A A U
G G G G A A C C C A A G U G U G U G U U C G G A C U A A A C C A A U U C A A A G G U A G G C G
A A C C G G G A A C U G A A A A C C A A G U C C C C C A A G A C C C C C C C C C C C C C C C C C C
A G U A A G C G C G A A A C C G G A A C C G G A A G C
G C G U C U G G A A A A G C G G C G G A C C A C A G G G U U A C C C C C C C C C C C C C C C C C C
G A G C C U C G A U G A A G U A G G G G C G G A C
C A A G C G U A A A A A A C
G A A C C C G G A A G G G G A A G G A
A C G C U U A G G C C G U G A A C
C A A G G U A A A C
A G G G U A A C
A A C U U G A
A A A G C C A A A C
G U G A A U U C A A A C
C C G G A U C C A A C
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U U A A A A G A
U A A A C C A U G C A A C



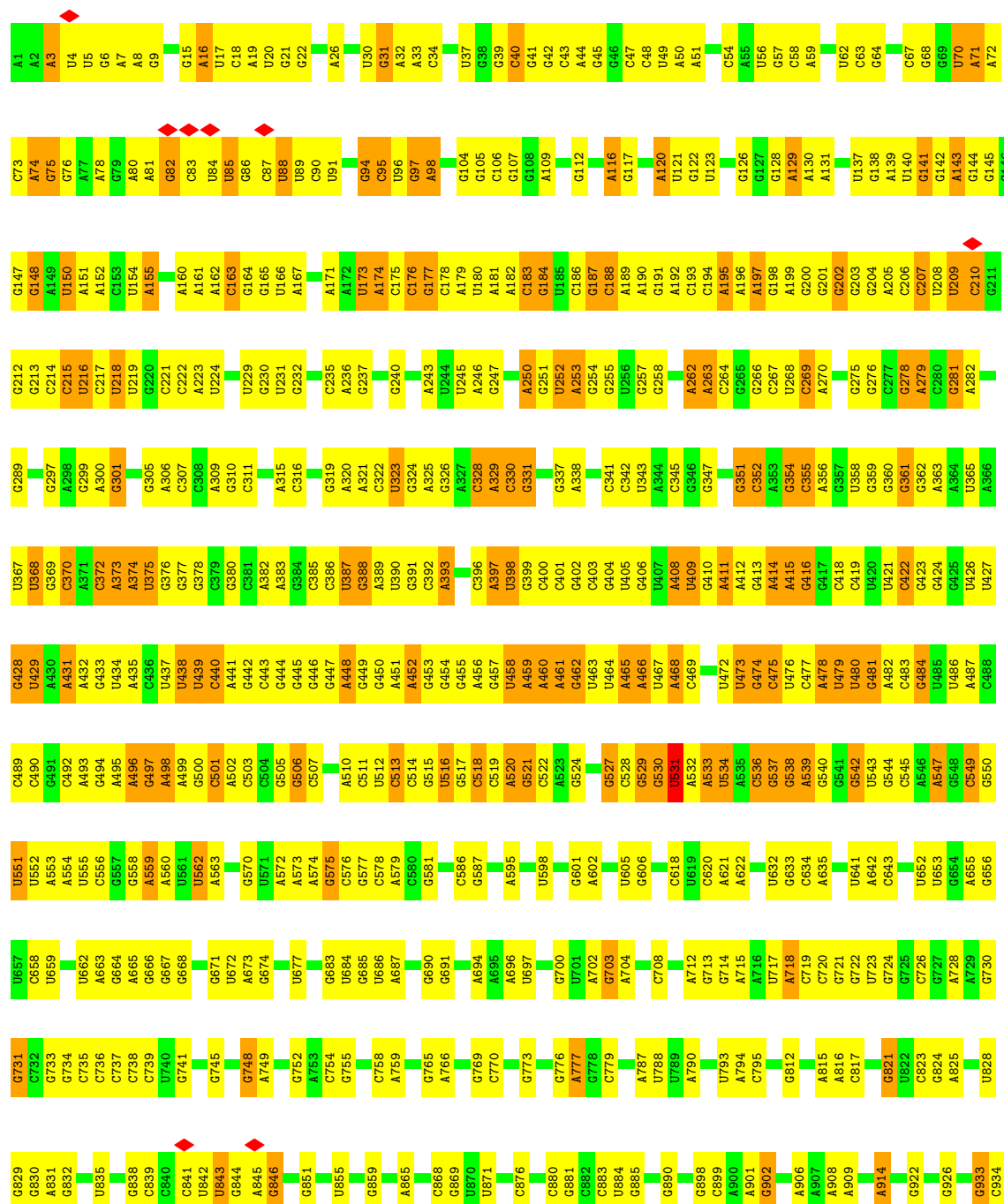


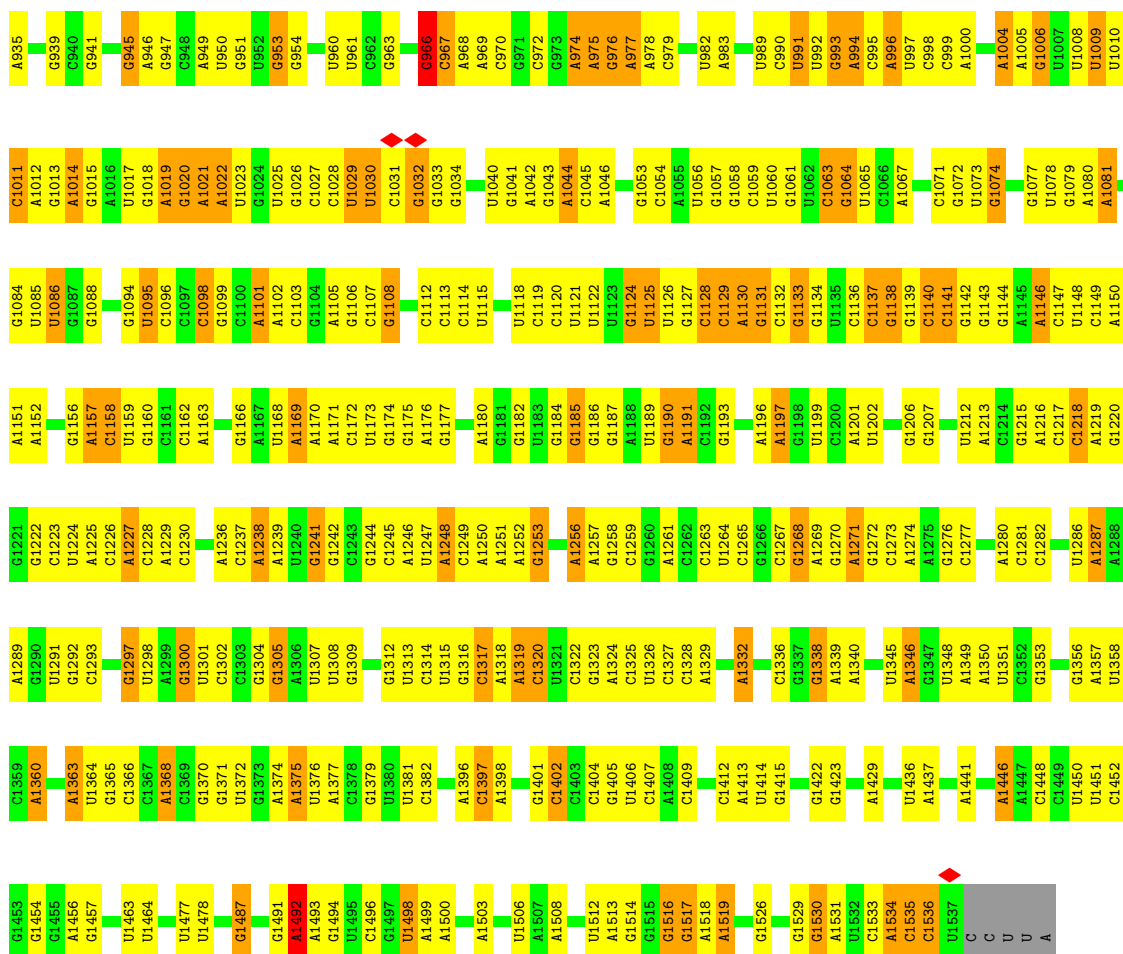
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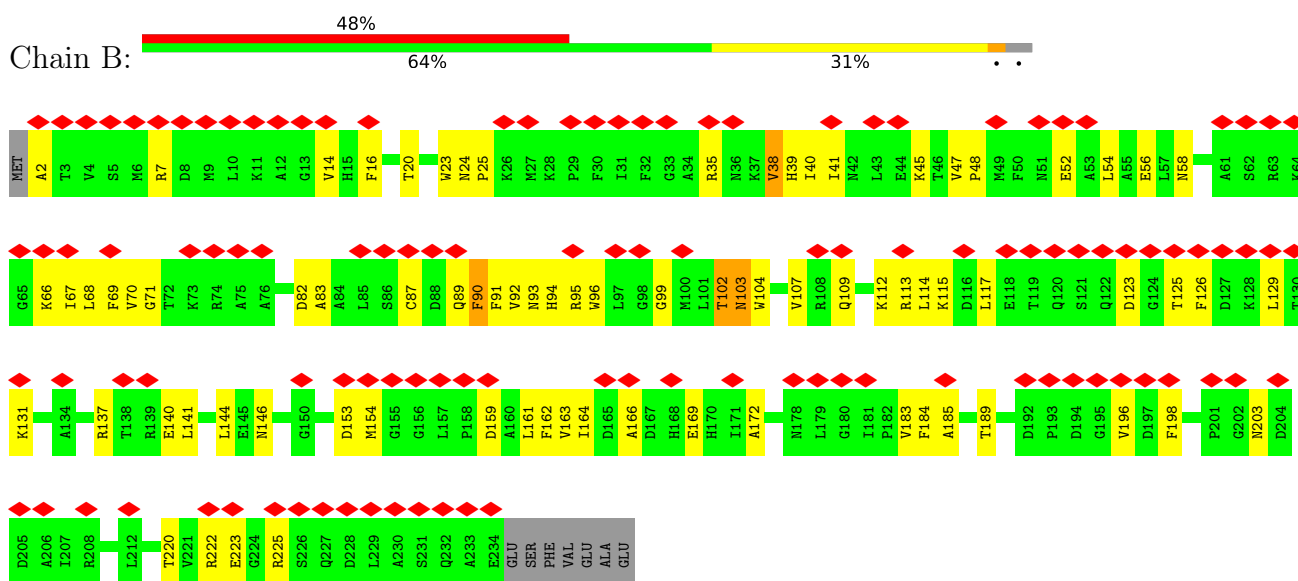


WORLDWIDE
PDB
PROTEIN DATA BANK



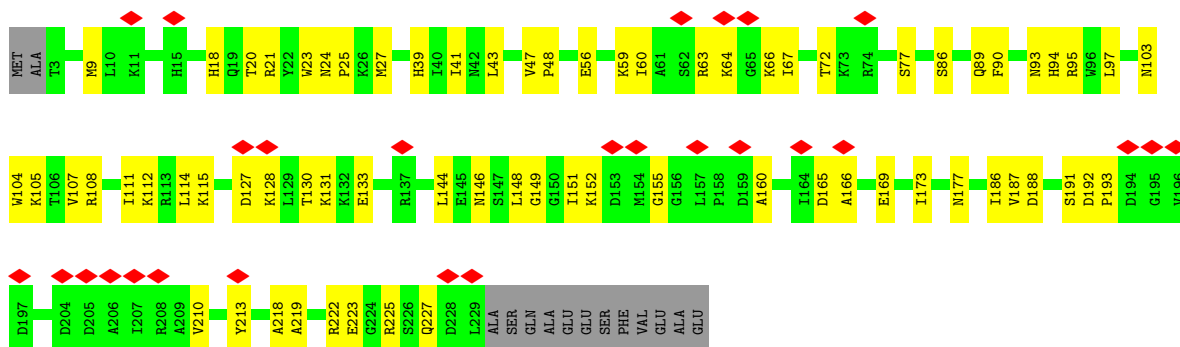


• Molecule 8: Small ribosomal subunit protein uS2

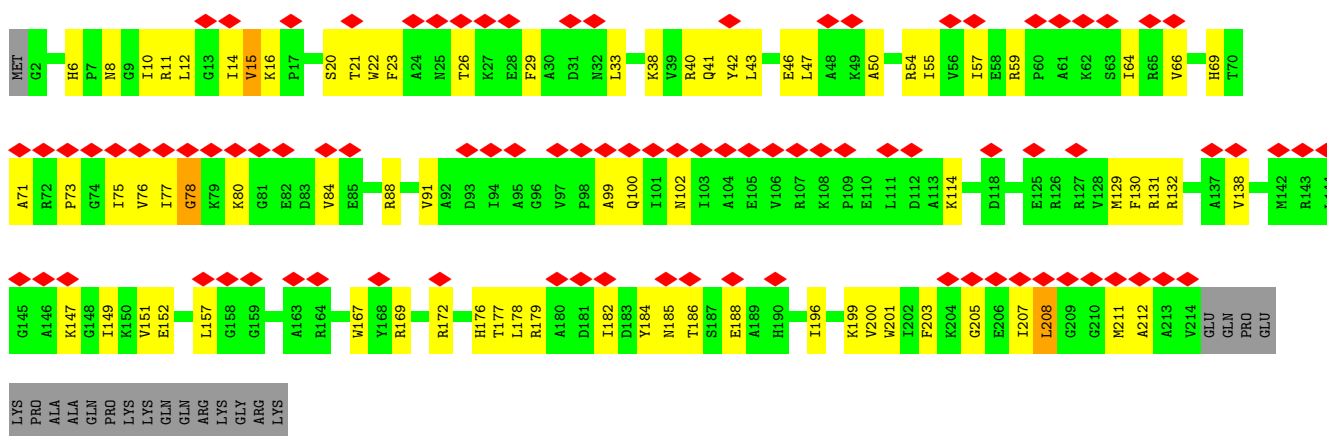
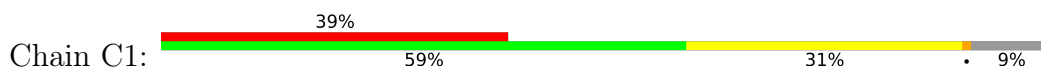


• Molecule 8: Small ribosomal subunit protein uS2





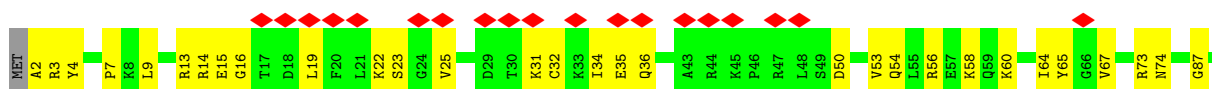
• Molecule 9: Small ribosomal subunit protein uS3

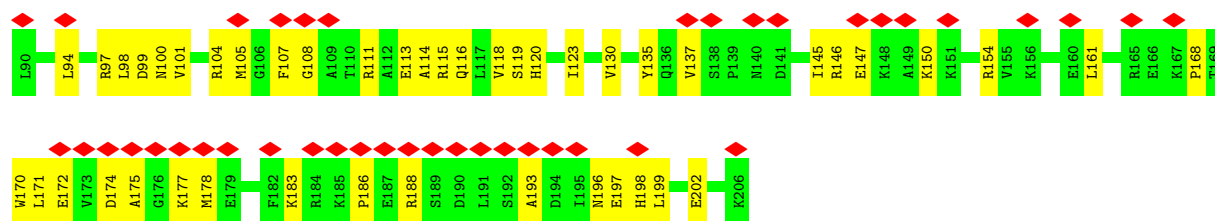


• Molecule 9: Small ribosomal subunit protein uS3

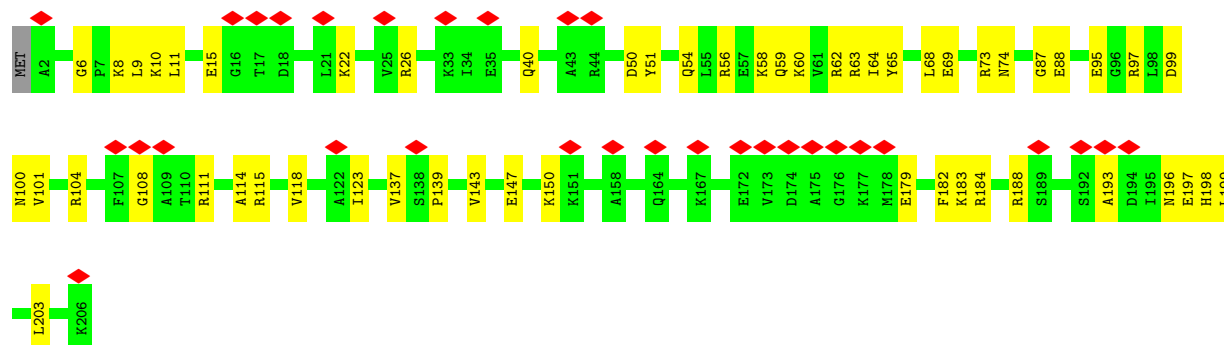
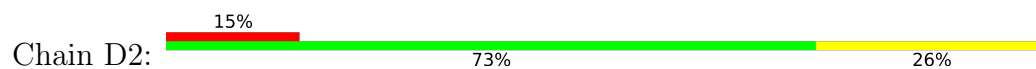


• Molecule 10: Small ribosomal subunit protein uS4

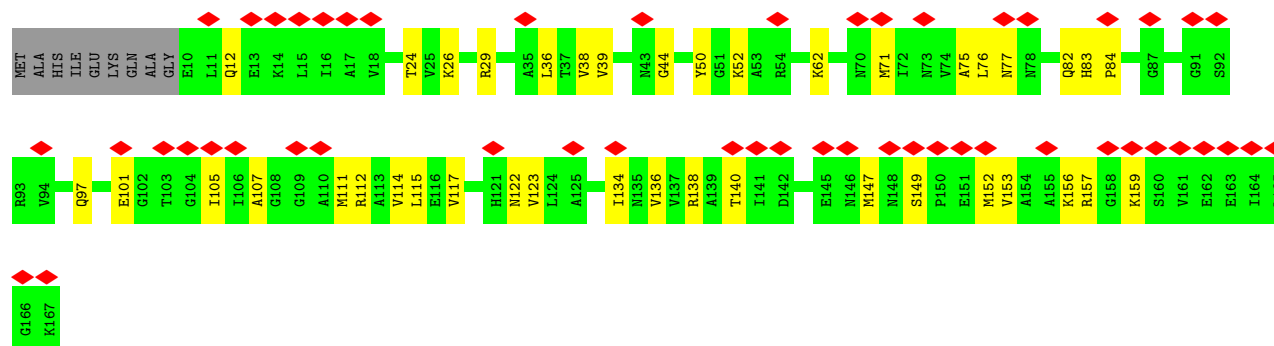
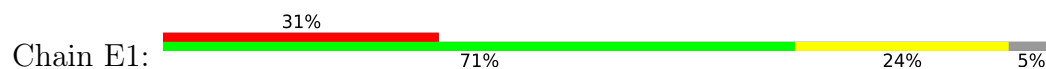




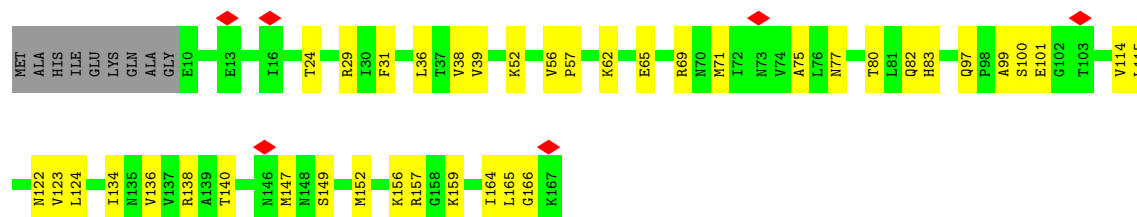
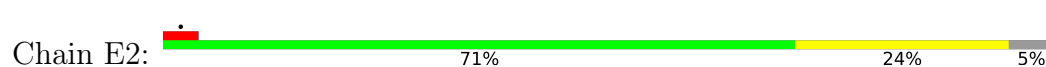
- Molecule 10: Small ribosomal subunit protein uS4



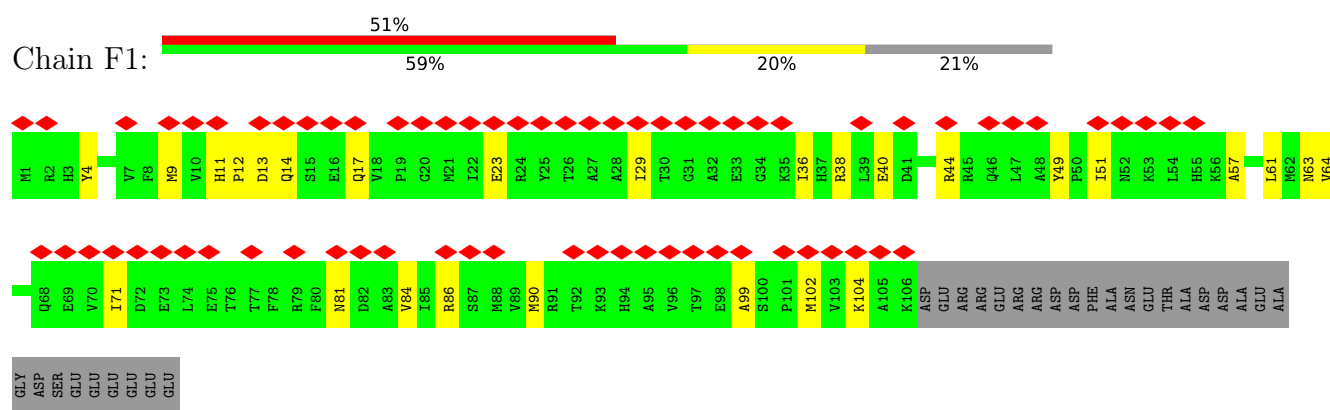
- Molecule 11: Small ribosomal subunit protein uS5



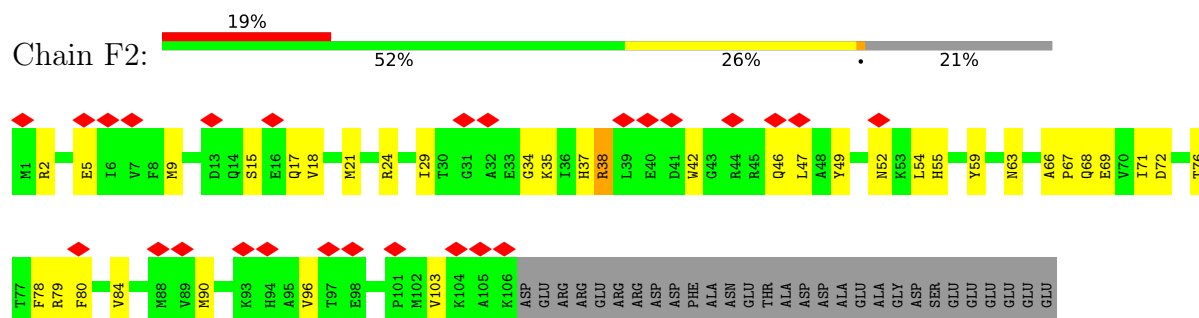
- Molecule 11: Small ribosomal subunit protein uS5



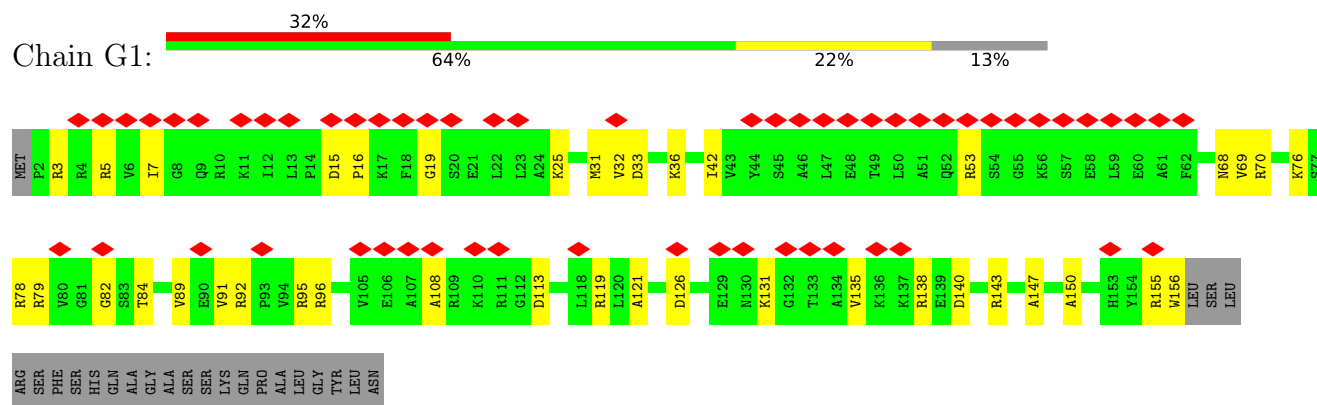
- Molecule 12: 30S ribosomal protein S6



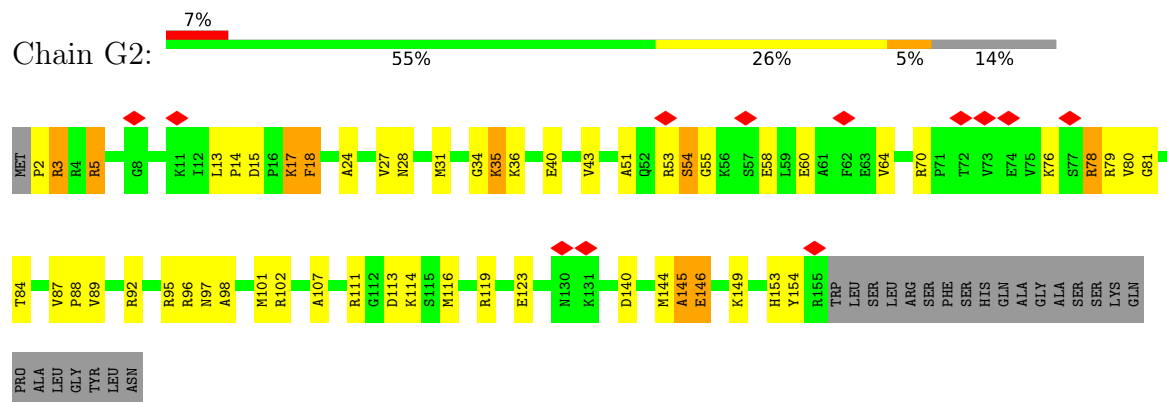
- Molecule 12: 30S ribosomal protein S6



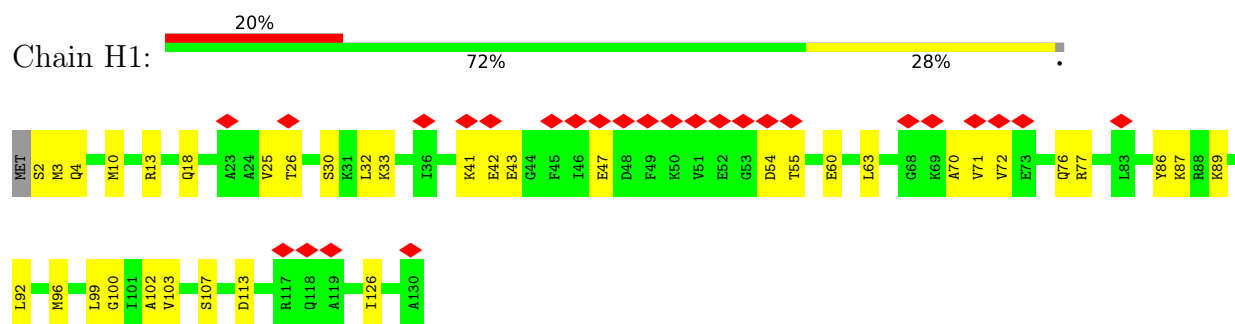
- Molecule 13: 30S ribosomal protein S7



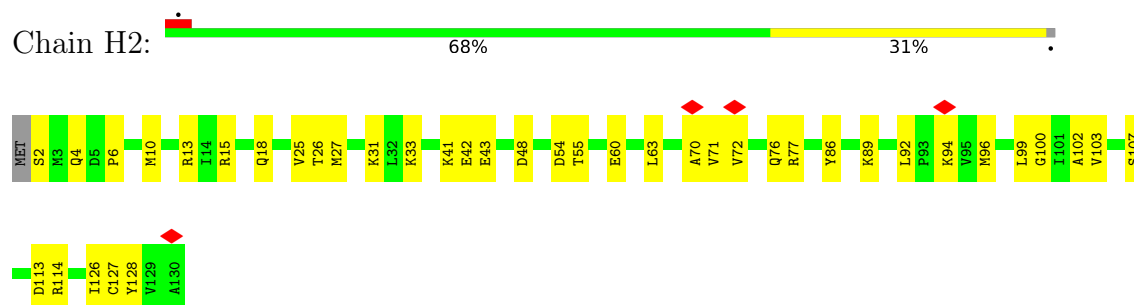
- Molecule 13: 30S ribosomal protein S7



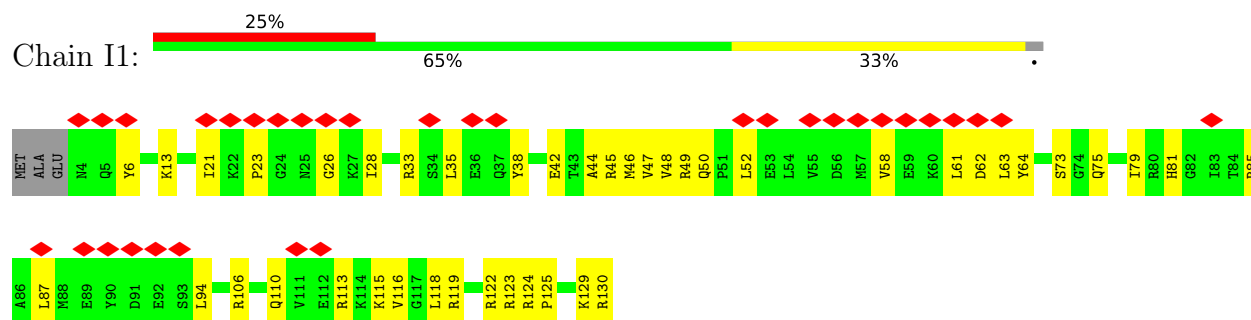
- Molecule 14: Small ribosomal subunit protein uS8



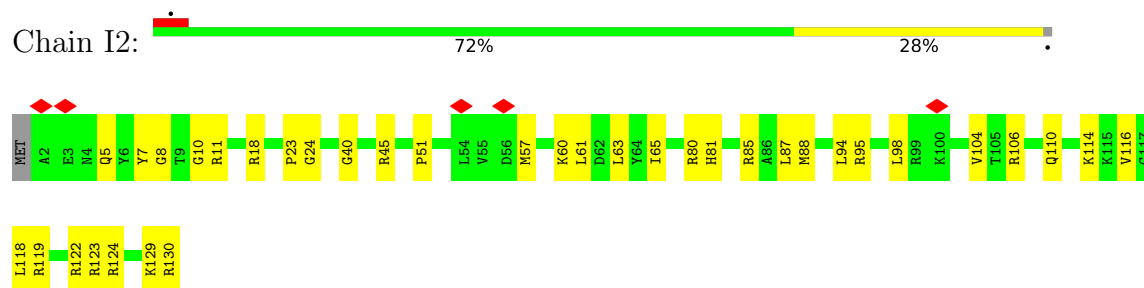
- Molecule 14: Small ribosomal subunit protein uS8



- Molecule 15: Small ribosomal subunit protein uS9

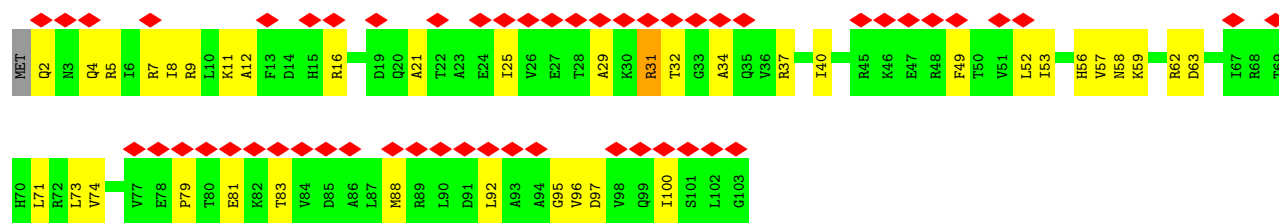


- Molecule 15: Small ribosomal subunit protein uS9

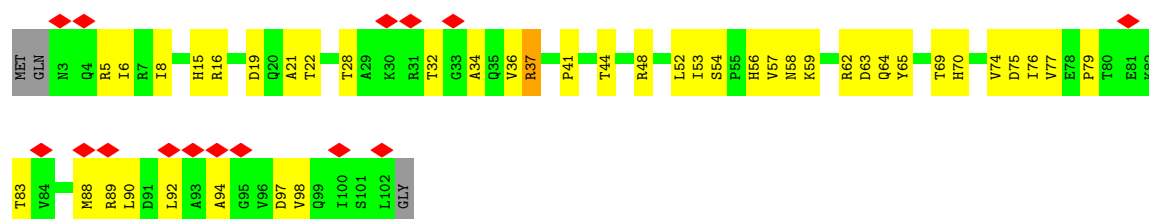


- Molecule 16: 30S ribosomal protein S10

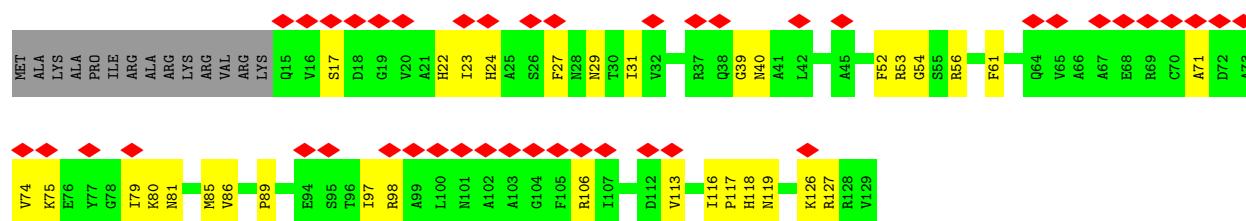




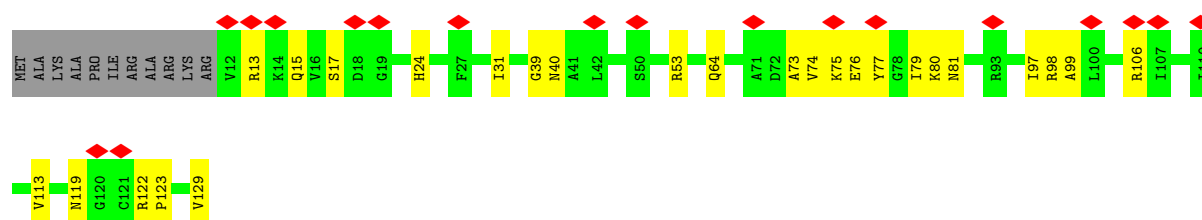
- Molecule 16: 30S ribosomal protein S10



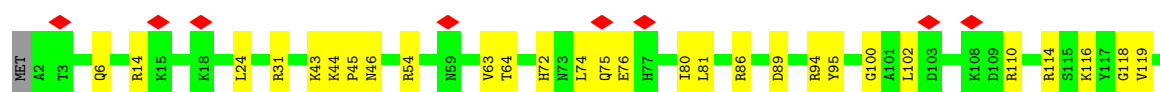
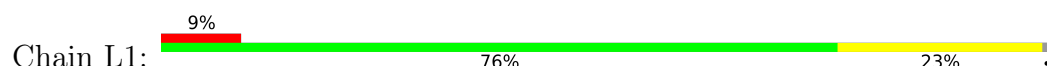
- Molecule 17: Small ribosomal subunit protein uS11



- Molecule 17: Small ribosomal subunit protein uS11



- Molecule 18: Small ribosomal subunit protein uS12

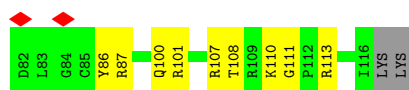
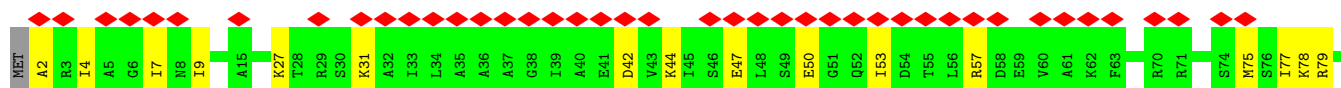
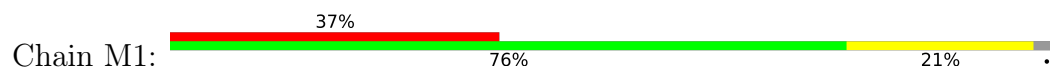




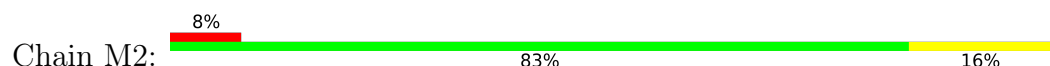
- Molecule 18: Small ribosomal subunit protein uS12



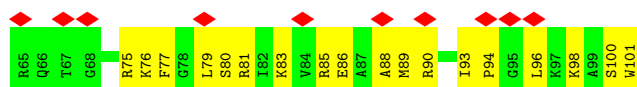
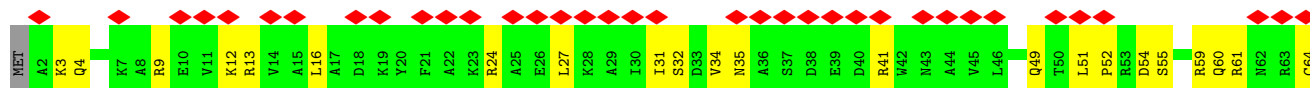
- Molecule 19: Small ribosomal subunit protein uS13



- Molecule 19: Small ribosomal subunit protein uS13

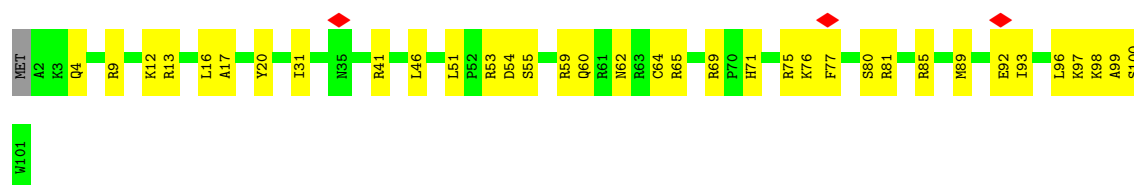


- Molecule 20: Small ribosomal subunit protein uS14

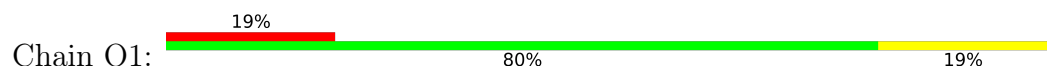


- Molecule 20: Small ribosomal subunit protein uS14

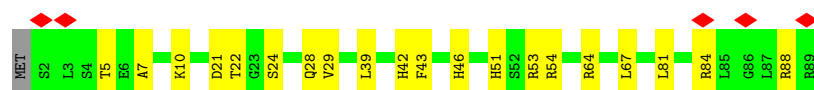
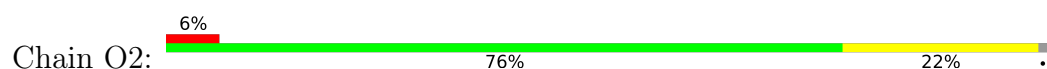




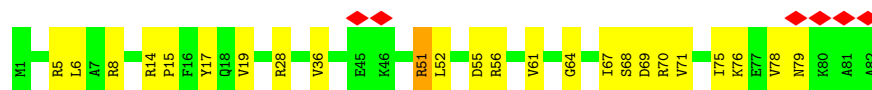
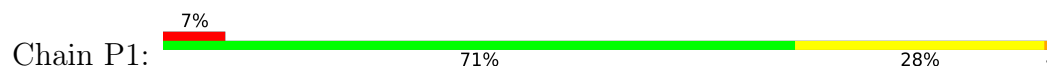
- Molecule 21: 30S ribosomal protein S15



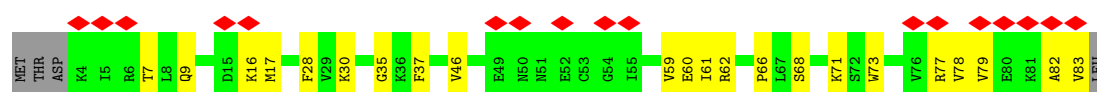
- Molecule 21: 30S ribosomal protein S15



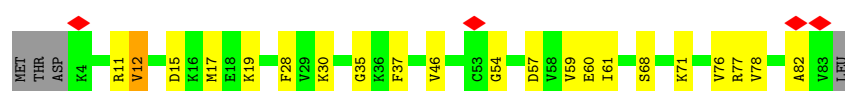
- Molecule 22: 30S ribosomal protein S16



- Molecule 23: Small ribosomal subunit protein uS17

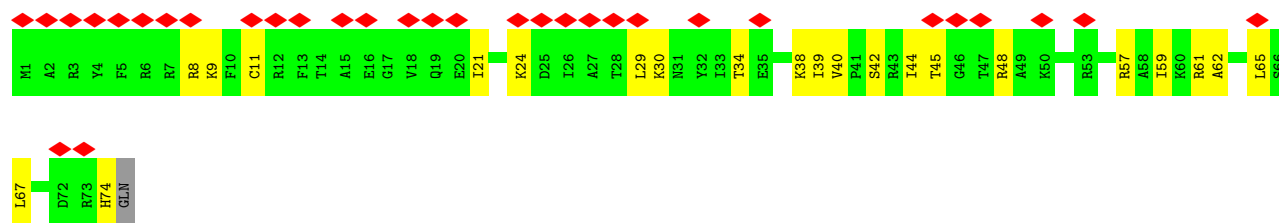


- Molecule 23: Small ribosomal subunit protein uS17

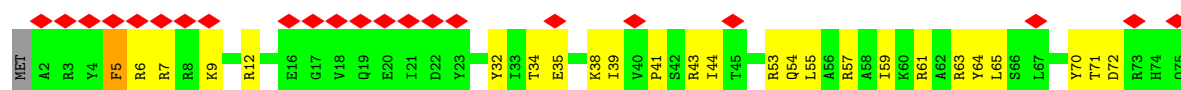


- Molecule 24: Small ribosomal subunit protein bS18

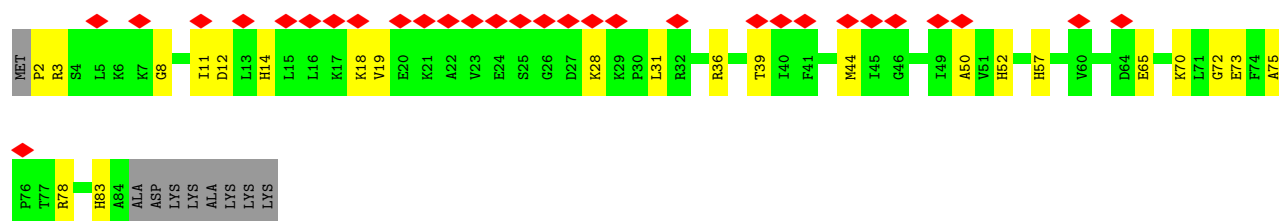




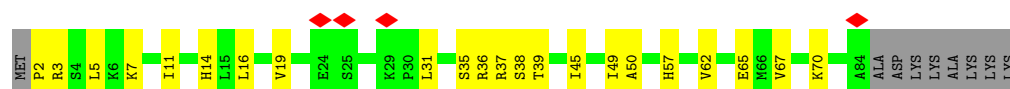
- Molecule 24: Small ribosomal subunit protein bS18



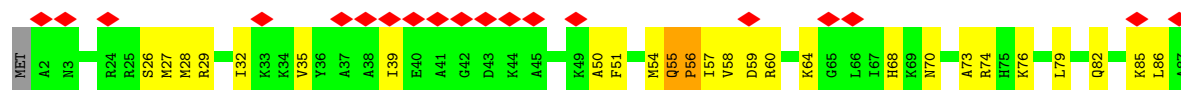
- Molecule 25: Small ribosomal subunit protein uS19



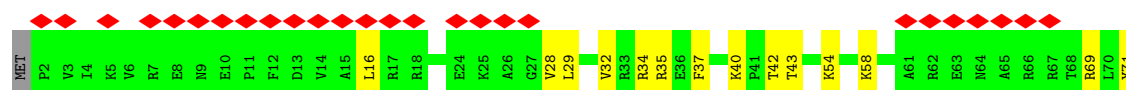
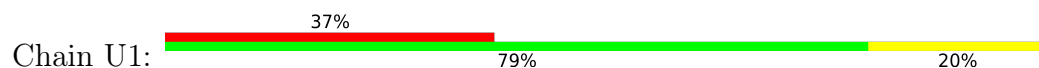
- Molecule 25: Small ribosomal subunit protein uS19



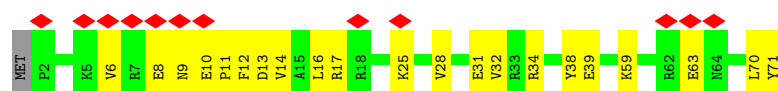
- Molecule 26: Small ribosomal subunit protein bS20



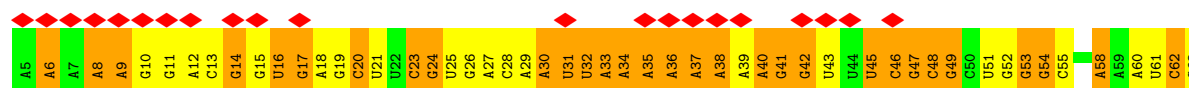
- Molecule 27: 30S ribosomal protein S21



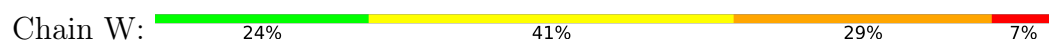
- Molecule 27: 30S ribosomal protein S21



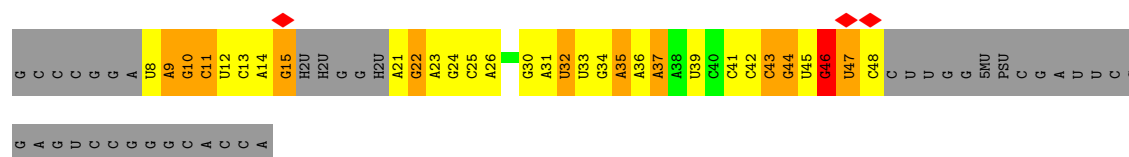
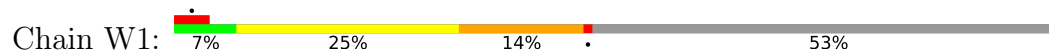
- Molecule 28: messenger RNA



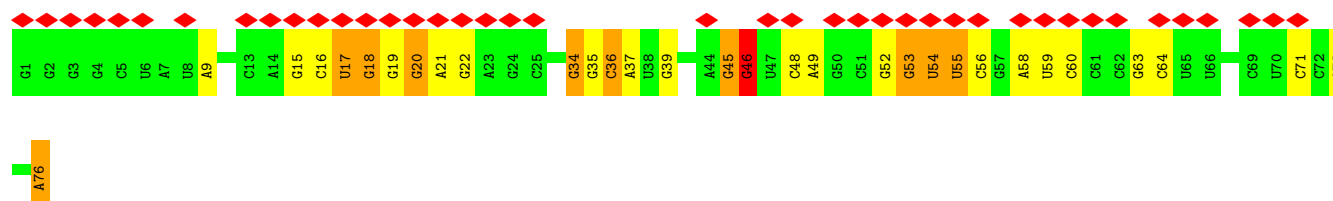
- Molecule 29: tRNA-Trp (P/E-site)



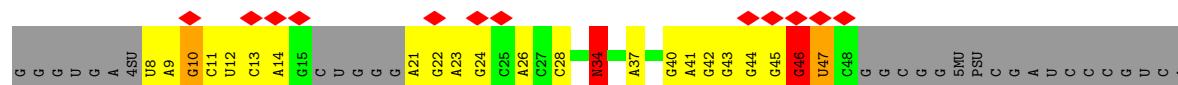
- Molecule 30: tRNA-Phe (P/E-site)



- Molecule 31: tRNA-Ala (A/P-site)



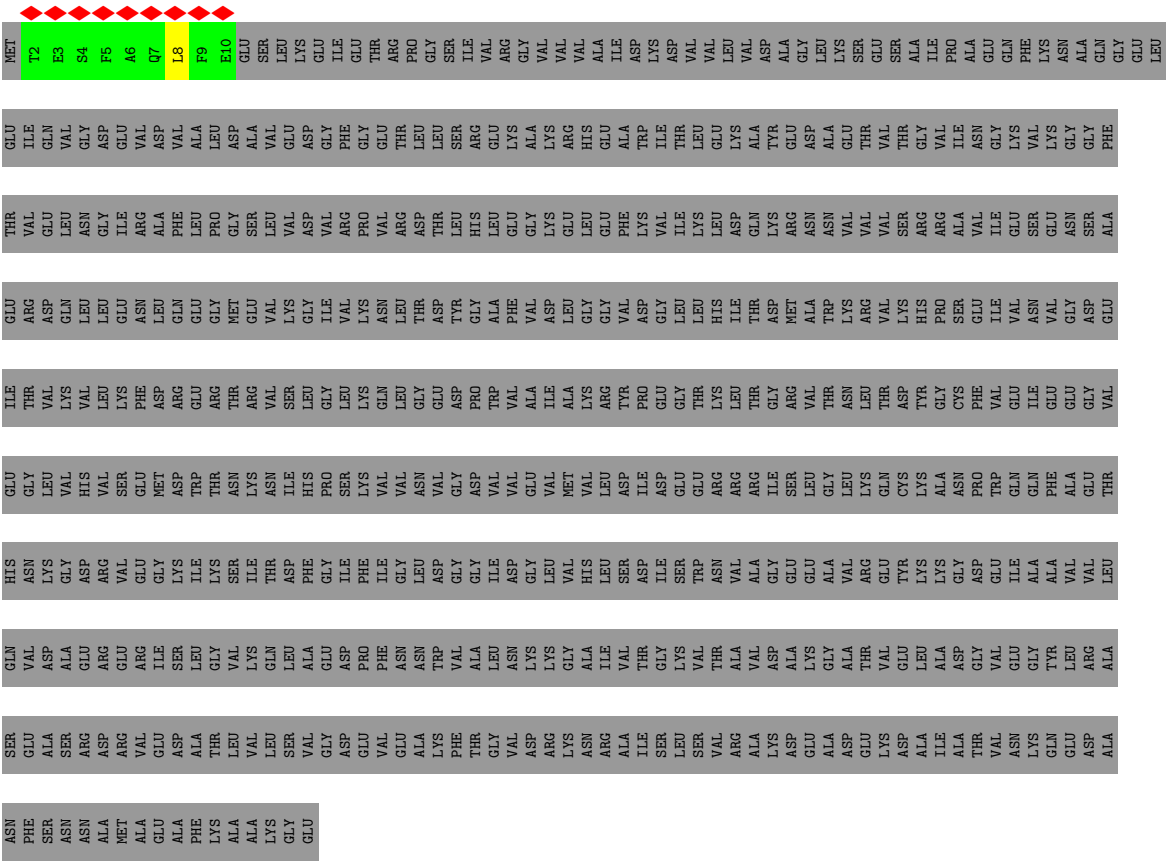
- Molecule 32: tRNA-Val (A/P-site)



U C A C C C A C A

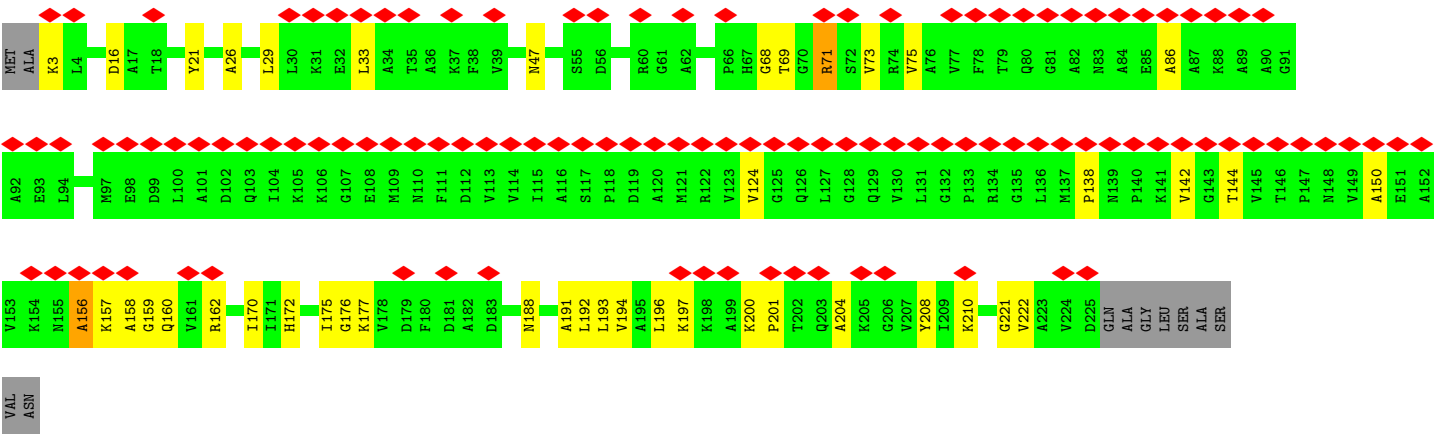
• Molecule 33: 30S ribosomal protein S1

Chain Z1: 98%

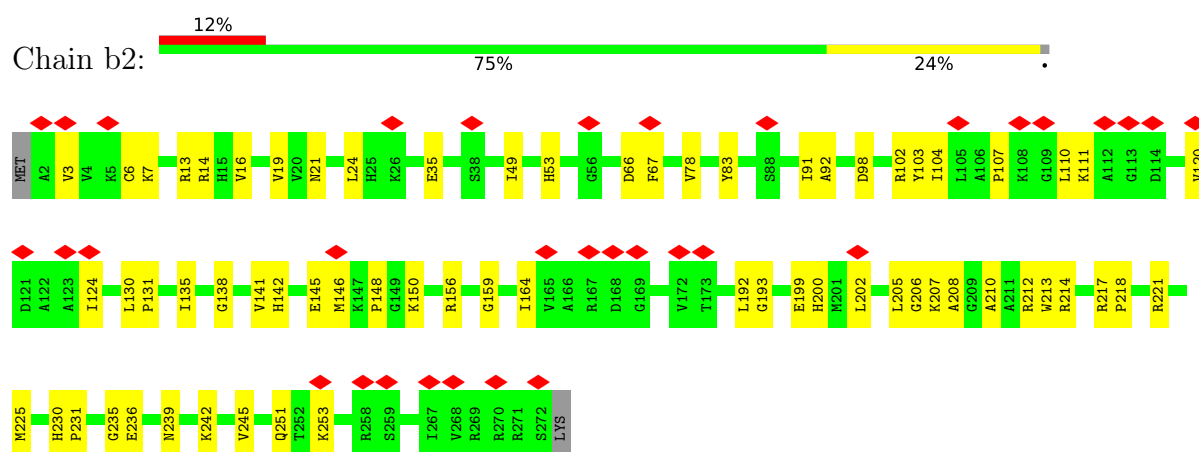


• Molecule 34: Large ribosomal subunit protein uL1

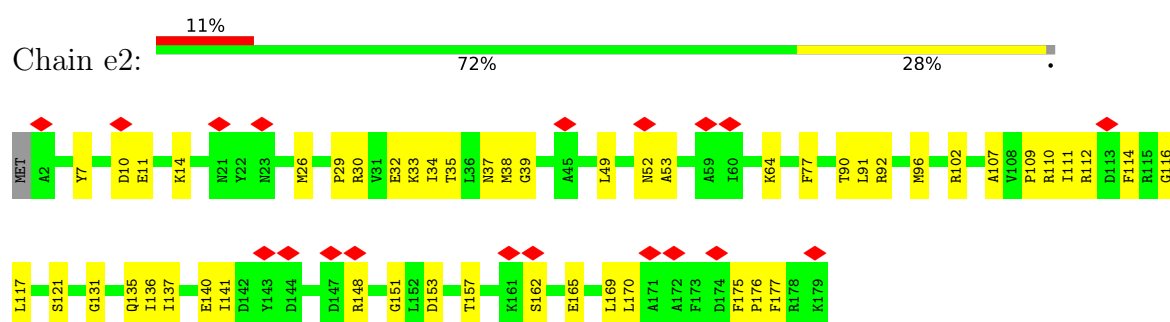
Chain a2: 48% 77% 18% 5%



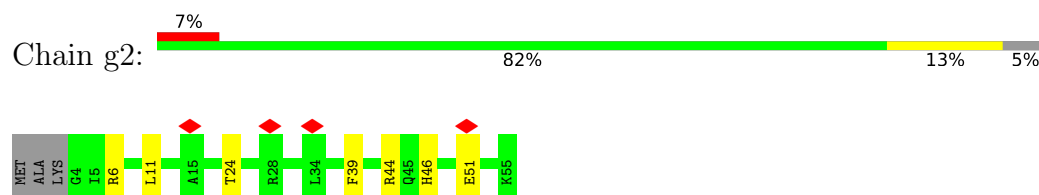
• Molecule 35: 50S ribosomal protein L2



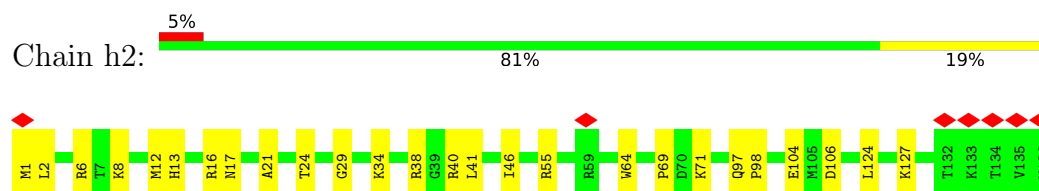
• Molecule 36: 50S ribosomal protein L5



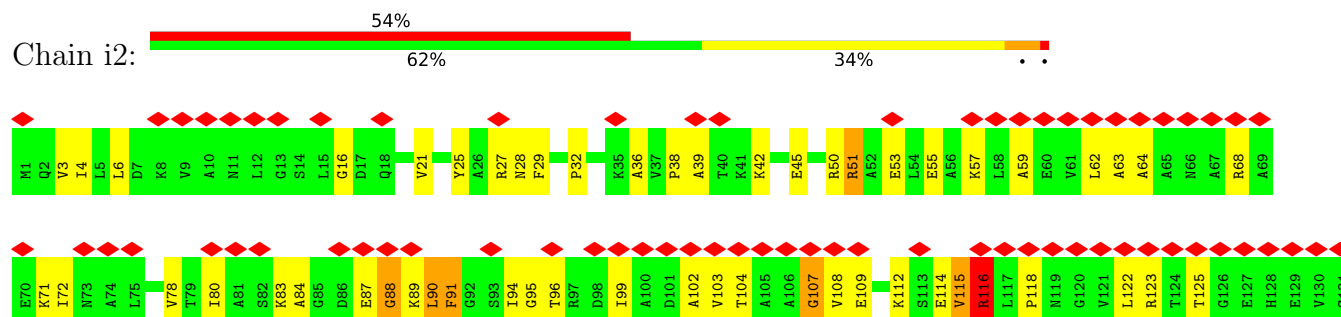
• Molecule 37: 50S ribosomal protein L33

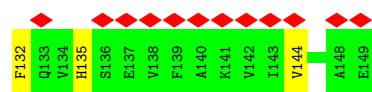


• Molecule 38: 50S ribosomal protein L16

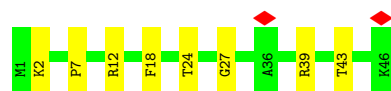
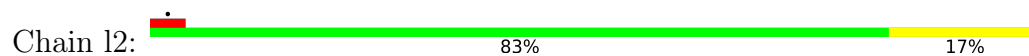


• Molecule 39: 50S ribosomal protein L9

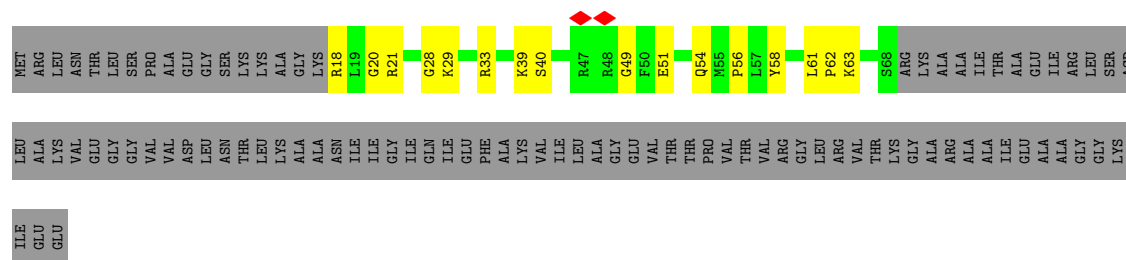




- Molecule 40: 50S ribosomal protein L34



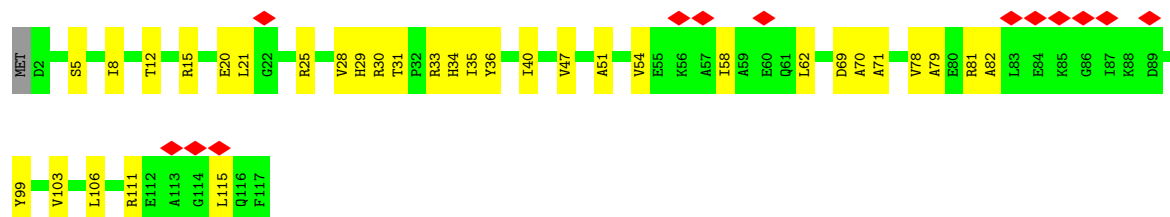
- Molecule 41: 50S ribosomal protein L15



- Molecule 42: Nascent chain



- Molecule 43: 50S ribosomal protein L18



- Molecule 44: 50S ribosomal protein L27



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	6999	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	45	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	18.085	Depositor
Minimum map value	-5.504	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.940	Depositor
Recommended contour level	4	Depositor
Map size (Å)	744.12, 744.12, 744.12	wwPDB
Map dimensions	468, 468, 468	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.59, 1.59, 1.59	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: OMU, 3TD, MG, 1MG, OMG, 4SU, CM0, H2U, 2MG, PUT, 2MA, 4OC, UR3, ZN, 5MU, MA6, MIA, PSU, SPD, 7MG, 5MC, G7M, OMC, 6MZ

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	12	0.12	0/635	0.37	0/848
2	32	0.09	0/453	0.30	0/605
3	4	0.15	0/543	0.49	0/726
3	41	0.11	0/120	0.38	0/158
4	62	0.09	0/513	0.31	0/676
5	71	0.09	0/429	0.22	0/664
5	72	0.11	0/69306	0.23	6/108116 (0.0%)
6	82	0.11	0/2872	0.25	0/4478
7	A1	0.16	0/36794	0.32	0/57392
7	A2	0.15	0/36681	0.30	3/57217 (0.0%)
8	B	0.14	0/1846	0.46	0/2488
8	B2	0.13	0/1807	0.41	0/2435
9	C1	0.15	0/1692	0.44	0/2280
9	C2	0.15	0/1685	0.41	0/2270
10	D1	0.18	0/1665	0.42	0/2227
10	D2	0.09	0/1665	0.30	0/2227
11	E1	0.11	0/1179	0.31	0/1584
11	E2	0.11	0/1179	0.32	0/1584
12	F1	0.09	0/881	0.27	0/1189
12	F2	0.13	0/881	0.41	0/1189
13	G1	0.10	0/1246	0.32	0/1672
13	G2	0.14	0/1230	0.44	0/1649
14	H1	0.10	0/989	0.31	0/1326
14	H2	0.10	0/989	0.30	0/1326
15	I1	0.12	0/1034	0.36	0/1375
15	I2	0.10	0/1048	0.33	0/1394
16	J1	0.15	0/827	0.46	0/1117
16	J2	0.13	0/813	0.44	0/1100
17	K1	0.11	0/873	0.33	0/1180
17	K2	0.12	0/900	0.34	0/1215
18	L1	0.11	0/969	0.33	0/1300

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
18	L2	0.11	0/969	0.34	0/1300
19	M1	0.10	0/900	0.29	0/1204
19	M2	0.11	0/919	0.32	0/1226
20	N1	0.13	0/817	0.42	0/1088
20	N2	0.10	0/817	0.38	0/1088
21	O1	0.09	0/722	0.30	0/964
21	O2	0.11	0/722	0.35	0/964
22	P1	0.11	0/659	0.32	0/884
23	Q1	0.12	0/657	0.37	0/881
23	Q2	0.12	0/657	0.39	0/881
24	R1	0.11	0/635	0.33	0/849
24	R2	0.14	0/637	0.46	0/851
25	S1	0.11	0/680	0.33	0/915
25	S2	0.12	0/680	0.35	0/915
26	T1	0.15	0/676	0.41	0/895
27	U1	0.13	0/598	0.40	0/792
27	U2	0.11	0/598	0.36	0/792
28	V2	0.21	0/1427	0.45	0/2224
29	W	0.27	0/1604	0.69	5/2496 (0.2%)
30	W1	0.32	1/747 (0.1%)	0.51	0/1161
31	Y	0.20	0/1725	0.33	0/2687
32	Y1	0.15	0/786	0.39	0/1216
33	Z1	0.09	0/76	0.24	0/101
34	a2	0.10	0/1676	0.32	0/2259
35	b2	0.11	0/2121	0.33	0/2852
36	e2	0.10	0/1444	0.28	0/1937
37	g2	0.12	0/434	0.32	0/576
38	h2	0.09	0/1104	0.28	0/1474
39	i2	0.19	0/1122	0.50	0/1515
40	l2	0.07	0/380	0.23	0/498
41	o2	0.11	0/383	0.38	0/501
42	p	0.87	0/77	0.94	0/104
43	r2	0.10	0/901	0.34	0/1209
44	z2	0.07	0/589	0.26	0/779
All	All	0.14	1/202683 (0.0%)	0.31	14/305085 (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	12	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
3	4	0	1
10	D1	0	1
10	D2	0	1
13	G2	0	3
16	J1	0	1
16	J2	0	2
17	K1	0	1
21	O2	0	1
22	P1	0	1
34	a2	0	1
39	i2	0	3
42	p	0	1
All	All	0	18

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	W1	46	G7M	O3'-P	5.06	1.61	1.56

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	W	43	G	OP1-P-OP2	-13.79	78.24	119.60
29	W	42	G	OP1-P-O3'	-11.71	72.88	108.00
29	W	43	G	O5'-P-OP2	-10.32	77.05	108.00
29	W	42	G	OP2-P-O3'	9.68	137.04	108.00
5	72	1916	A	P-O3'-C3'	-7.70	108.65	120.20
5	72	1913	A	P-O3'-C3'	-7.60	108.80	120.20
29	W	43	G	O5'-P-OP1	7.29	129.89	108.00
7	A2	1492	A	P-O3'-C3'	-6.89	109.86	120.20
7	A2	1491	G	P-O3'-C3'	-6.78	110.03	120.20
5	72	2176	A	C4'-C3'-O3'	6.42	122.62	113.00
5	72	2176	A	C5'-C4'-O4'	6.14	119.01	109.80
5	72	1939	5MU	P-O3'-C3'	-5.96	111.27	120.20
5	72	2176	A	C2'-C3'-O3'	5.90	122.55	113.70
7	A2	531	U	P-O3'-C3'	-5.57	111.85	120.20

There are no chirality outliers.

All (18) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	12	74	ARG	Sidechain
3	4	56	ARG	Sidechain
10	D1	104	ARG	Sidechain
10	D2	104	ARG	Sidechain
13	G2	3	ARG	Sidechain
13	G2	5	ARG	Sidechain
13	G2	78	ARG	Sidechain
16	J1	31	ARG	Sidechain
16	J2	37	ARG	Sidechain
16	J2	48	ARG	Sidechain
17	K1	98	ARG	Sidechain
21	O2	84	ARG	Sidechain
22	P1	51	ARG	Sidechain
34	a2	71	ARG	Sidechain
39	i2	116	ARG	Sidechain
39	i2	50	ARG	Sidechain
39	i2	51	ARG	Sidechain
42	p	31	ARG	Sidechain

5.2 Too-close contacts ⓘ

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	12	625	0	652	22	0
2	32	449	0	491	16	0
3	4	533	0	530	25	0
3	41	118	0	118	3	0
4	62	504	0	572	15	0
5	71	406	0	208	5	0
5	72	62355	0	31380	581	0
6	82	2569	0	1301	28	0
7	A1	33092	0	16674	863	0
7	A2	32990	0	16621	662	0
8	B	1815	0	1836	67	0
8	B2	1776	0	1802	56	0
9	C1	1665	0	1741	55	0
9	C2	1658	0	1732	72	0
10	D1	1643	0	1707	54	0
10	D2	1643	0	1707	37	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	E1	1166	0	1212	31	0
11	E2	1166	0	1212	35	0
12	F1	862	0	864	19	0
12	F2	862	0	864	27	0
13	G1	1228	0	1277	30	0
13	G2	1214	0	1267	38	0
14	H1	979	0	1031	33	0
14	H2	979	0	1031	33	0
15	I1	1022	0	1070	38	0
15	I2	1036	0	1081	32	0
16	J1	817	0	853	41	0
16	J2	803	0	842	31	0
17	K1	857	0	861	28	0
17	K2	884	0	896	23	0
18	L1	955	0	1016	22	0
18	L2	955	0	1016	32	0
19	M1	891	0	952	24	0
19	M2	910	0	978	15	0
20	N1	805	0	844	38	0
20	N2	805	0	844	35	0
21	O1	714	0	734	11	0
21	O2	714	0	734	18	0
22	P1	649	0	666	22	0
23	Q1	648	0	691	16	0
23	Q2	648	0	691	13	0
24	R1	624	0	652	21	0
24	R2	626	0	648	18	0
25	S1	663	0	688	20	0
25	S2	663	0	688	18	0
26	T1	670	0	719	22	0
27	U1	590	0	629	12	0
27	U2	590	0	629	19	0
28	V2	1272	0	639	45	0
29	W	1630	0	841	49	0
30	W1	781	0	405	30	0
31	Y	1628	0	828	19	0
32	Y1	778	0	399	18	0
33	Z1	75	0	65	1	0
34	a2	1661	0	1750	27	0
35	b2	2082	0	2154	54	0
36	e2	1420	0	1457	44	0
37	g2	427	0	464	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	h2	1085	0	1169	18	0
39	i2	1111	0	1148	42	0
40	l2	377	0	418	6	0
41	o2	377	0	389	20	0
42	p	76	0	75	13	0
43	r2	891	0	923	23	0
44	z2	582	0	599	13	0
45	4	1	0	0	0	0
45	B	1	0	0	0	0
46	72	12	0	24	0	0
47	72	10	0	19	0	0
48	72	163	0	0	0	0
48	A1	60	0	0	0	0
48	A2	42	0	0	0	0
48	Y	2	0	0	0	0
48	h2	1	0	0	0	0
All	All	187381	0	121018	3316	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 14.

All (3316) 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)
5:72:2062:A:N1	42:p:30:VAL:HG12	1.38	1.39
5:72:2062:A:N6	42:p:31:ARG:O	1.72	1.19
5:72:2062:A:C6	42:p:30:VAL:HG12	1.79	1.17
5:72:2062:A:N1	42:p:30:VAL:CG1	2.17	1.08
16:J1:31:ARG:NH1	16:J1:32:THR:OG1	1.88	1.06
5:72:2058:A:N3	42:p:31:ARG:NH1	2.05	1.04
5:72:2062:A:C6	42:p:30:VAL:CG1	2.41	1.03
7:A2:765:G:H1	7:A2:812:G:HO2'	1.13	0.93
28:V2:54:G:H1	31:Y:36:C:H42	1.15	0.91
7:A2:74:A:H61	7:A2:96:U:H3	1.16	0.88
8:B:87:CYS:SG	8:B:225:ARG:NH1	2.51	0.84
29:W:18:G:H1	29:W:55:PSU:H1'	1.42	0.84
7:A1:375:U:H4'	22:P1:6:LEU:HD11	1.59	0.84
9:C2:18:TRP:HD1	9:C2:20:SER:H	1.25	0.83
7:A1:94:G:H4'	7:A1:95:C:H5'	1.59	0.83
7:A1:1178:G:N2	7:A1:1181:G:OP2	2.12	0.83
4:62:13:ARG:NH2	41:o2:58:TYR:O	2.12	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1229:A:OP2	19:M1:113:ARG:NH2	2.12	0.82
7:A1:1305:G:H2'	7:A1:1331:G:H21	1.46	0.81
9:C2:79:LYS:HA	9:C2:83:ASP:HB2	1.63	0.81
7:A2:739:C:HO2'	21:O2:42:HIS:HD1	1.25	0.80
7:A1:1537:U:H3	28:V2:13:C:H42	1.31	0.79
7:A1:1419:G:N1	7:A1:1481:U:O2	2.14	0.79
8:B:114:LEU:HD12	8:B:144:LEU:HG	1.64	0.79
7:A2:427:U:H3'	7:A2:428:G:H5''	1.65	0.78
10:D2:62:ARG:HH21	10:D2:68:LEU:HA	1.48	0.78
16:J1:57:VAL:HG12	16:J1:58:ASN:H	1.48	0.78
8:B:94:HIS:HD2	8:B:95:ARG:HG2	1.48	0.78
8:B:90:PHE:HE1	8:B:153:ASP:HB3	1.49	0.78
7:A2:1493:A:C2	31:Y:37:A:H1'	2.18	0.78
10:D1:54:GLN:HA	10:D1:199:LEU:HD21	1.65	0.78
3:4:9:TYR:OH	36:e2:102:ARG:NH1	2.17	0.77
7:A1:1349:A:H5''	15:I1:123:ARG:HG2	1.65	0.77
8:B:67:ILE:HB	8:B:89:GLN:HB3	1.66	0.77
5:72:2062:A:C2	42:p:30:VAL:CG1	2.68	0.77
7:A1:401:C:O2'	7:A1:621:A:N3	2.17	0.77
7:A2:459:A:H61	7:A2:473:U:H3	1.33	0.77
5:72:1800:C:HO2'	5:72:1818:U:H3	1.30	0.76
18:L1:72:HIS:HB2	18:L1:74:LEU:HD23	1.67	0.76
10:D2:54:GLN:HA	10:D2:199:LEU:HD21	1.65	0.76
7:A2:459:A:N6	7:A2:474:G:N3	2.34	0.76
9:C2:48:ALA:O	9:C2:49:LYS:HG2	1.86	0.75
5:72:910:A:N3	5:72:2264:C:O2'	2.20	0.75
7:A1:1045:C:H3'	7:A1:1046:A:H5''	1.67	0.75
19:M2:4:ILE:HG13	19:M2:57:ARG:HG2	1.68	0.75
10:D2:15:GLU:OE2	10:D2:63:ARG:NH2	2.20	0.75
15:I1:28:ILE:HD12	15:I1:63:LEU:HB2	1.67	0.74
7:A1:201:G:H21	7:A1:469:C:H1'	1.52	0.74
7:A2:677:U:H3	7:A2:713:G:H22	1.35	0.74
29:W:15:A:H3'	29:W:16:H2U:H62	1.70	0.74
7:A2:1030:U:O2	7:A2:1032:G:N2	2.20	0.74
2:32:12:ALA:HB2	2:32:53:MET:HE1	1.69	0.74
7:A1:1217:C:H5'	20:N1:9:ARG:HH21	1.52	0.74
5:72:1907:G:H1	5:72:1923:U:H3	1.36	0.74
3:41:61:ASN:HB3	3:41:62:LYS:HZ2	1.53	0.73
5:72:1478:G:H1	5:72:1513:U:H3	1.32	0.73
36:e2:110:ARG:NH2	36:e2:136:ILE:O	2.21	0.73
3:4:11:GLU:HA	3:4:25:ARG:HA	1.70	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:V2:41:G:H2'	28:V2:42:G:H4'	1.69	0.73
9:C2:10:ILE:HG23	9:C2:11:ARG:HD3	1.69	0.73
5:72:1779:U:OP2	5:72:1784:A:N6	2.22	0.73
15:I2:130:ARG:NH2	29:W:33:U:OP2	2.20	0.73
7:A1:409:U:H3	7:A1:433:G:H1	1.33	0.73
7:A1:231:U:H2'	7:A1:232:G:H8	1.52	0.73
8:B2:219:ALA:HA	8:B2:222:ARG:HE	1.54	0.73
9:C2:15:VAL:HG23	9:C2:16:LYS:H	1.53	0.73
20:N2:54:ASP:HA	20:N2:59:ARG:HG2	1.69	0.73
39:i2:90:LEU:HB2	39:i2:125:THR:HB	1.71	0.73
8:B:38:VAL:HG12	8:B:39:HIS:H	1.54	0.72
9:C2:18:TRP:CD1	9:C2:20:SER:H	2.06	0.72
13:G2:28:ASN:HA	13:G2:31:MET:HE3	1.70	0.72
29:W:43:G:H2'	29:W:44:G:C8	2.24	0.72
16:J1:31:ARG:NH1	16:J1:32:THR:HG1	1.86	0.72
5:72:2:G:H1	5:72:2901:U:H3	1.37	0.72
4:62:9:GLY:O	4:62:13:ARG:NE	2.22	0.72
20:N2:46:LEU:HD21	25:S2:16:LEU:HD23	1.72	0.72
7:A1:90:C:O2'	7:A1:91:U:H5'	1.90	0.71
7:A1:1536:C:H42	28:V2:14:G:H1	1.38	0.71
7:A2:397:A:N7	7:A2:547:A:O2'	2.22	0.71
7:A2:1492:A:H2'	7:A2:1493:A:C8	2.25	0.71
16:J2:53:ILE:HD13	16:J2:63:ASP:HB2	1.72	0.71
7:A2:501:C:OP1	18:L2:114:ARG:NH2	2.22	0.71
7:A2:949:A:N7	19:M2:105:ASN:ND2	2.39	0.71
31:Y:54:5MU:H5'	38:h2:6:ARG:HD2	1.72	0.71
5:72:881:G:N2	5:72:897:C:N3	2.37	0.71
5:72:1528:A:N6	5:72:1543:G:O2'	2.24	0.71
7:A2:454:G:H1	7:A2:478:A:H2	1.37	0.71
5:72:2125:G:N2	5:72:2171:A:OP1	2.24	0.71
7:A1:1368:A:H5'	20:N1:101:TRP:HZ2	1.54	0.71
7:A2:181:A:H61	7:A2:194:C:H3'	1.54	0.71
15:I2:130:ARG:HH22	29:W:33:U:H5	1.38	0.71
18:L2:72:HIS:HB2	18:L2:74:LEU:HD23	1.72	0.71
34:a2:142:VAL:HG11	34:a2:162:ARG:HE	1.55	0.71
5:72:2264:C:N4	44:z2:15:ASP:OD2	2.24	0.71
7:A2:483:C:H2'	7:A2:484:G:C8	2.25	0.71
11:E1:101:GLU:OE1	11:E1:122:ASN:ND2	2.22	0.71
7:A1:1116:U:H3	7:A1:1184:G:H1	1.37	0.71
7:A1:1230:C:H2'	7:A1:1231:G:H8	1.55	0.71
7:A2:83:C:H2'	7:A2:84:U:H3'	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G2:88:PRO:HG3	13:G2:149:LYS:HA	1.72	0.71
8:B2:24:ASN:HD22	8:B2:192:ASP:HA	1.56	0.71
19:M1:107:ARG:NH1	19:M1:111:GLY:O	2.24	0.71
7:A2:666:G:H5'	7:A2:726:C:H1'	1.72	0.71
7:A1:83:C:H2'	7:A1:84:U:H3'	1.73	0.70
7:A1:770:C:H1'	7:A1:899:C:H42	1.56	0.70
5:72:1918:A:O2'	5:72:1920:C:N4	2.24	0.70
5:72:2108:A:H2	5:72:2181:U:H3	1.39	0.70
9:C2:18:TRP:H	9:C2:211:MET:HE1	1.56	0.70
17:K2:64:GLN:HG3	17:K2:99:ALA:HB2	1.73	0.70
7:A1:927:G:O2'	7:A1:1503:A:N7	2.24	0.70
5:72:1211:C:H4'	5:72:1212:G:OP2	1.91	0.70
20:N2:93:ILE:HG21	20:N2:96:LEU:HD12	1.74	0.70
7:A2:1316:G:N1	7:A2:1319:A:OP2	2.24	0.70
19:M1:4:ILE:HG13	19:M1:57:ARG:HG2	1.72	0.70
7:A2:1073:U:OP2	11:E2:62:LYS:NZ	2.24	0.70
7:A1:1373:G:OP2	15:I1:73:SER:OG	2.10	0.70
7:A2:363:A:H5'	18:L2:31:ARG:HB2	1.72	0.69
7:A2:1081:A:N7	11:E2:52:LYS:NZ	2.39	0.69
5:72:2058:A:C2	42:p:31:ARG:NH1	2.59	0.69
7:A1:1187:G:N3	20:N1:100:SER:OG	2.24	0.69
8:B:92:VAL:HG12	8:B:93:ASN:H	1.57	0.69
9:C2:56:VAL:HB	9:C2:67:THR:HB	1.74	0.69
5:72:475:C:H4'	5:72:510:C:H5'	1.73	0.69
7:A1:532:A:N6	7:A1:1206:G:O2'	2.25	0.69
5:72:2788:C:O2'	5:72:2809:A:N3	2.26	0.69
7:A2:545:C:OP1	10:D2:58:LYS:NZ	2.25	0.69
7:A2:933:G:N7	13:G2:3:ARG:NH2	2.40	0.69
12:F1:102:MET:HE1	24:R1:24:LYS:HB3	1.73	0.69
36:e2:10:ASP:O	36:e2:14:LYS:NZ	2.25	0.69
7:A1:200:G:H1	7:A1:217:C:H42	1.38	0.69
7:A1:1236:A:H4'	7:A1:1304:G:H4'	1.74	0.69
7:A2:672:U:H5'	12:F2:79:ARG:HH22	1.58	0.69
7:A2:1010:U:H3	7:A2:1019:A:H61	1.41	0.69
7:A2:1130:A:O2'	15:I2:5:GLN:NE2	2.26	0.69
7:A2:531:U:H4'	7:A2:532:A:H5'	1.74	0.69
8:B2:114:LEU:HD13	8:B2:148:LEU:HD22	1.75	0.69
14:H1:13:ARG:NH1	14:H1:26:THR:O	2.26	0.69
7:A2:70:U:H3	7:A2:98:A:H61	1.41	0.69
16:J1:88:MET:HE1	16:J1:100:ILE:HG21	1.75	0.69
28:V2:26:G:H1	32:Y1:34:CM0:H3	1.38	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:2447:G:H1	5:72:2451:A:H62	1.41	0.68
7:A1:1088:G:H21	7:A1:1167:A:H61	1.42	0.68
7:A2:380:G:N2	7:A2:383:A:OP2	2.22	0.68
35:b2:3:VAL:HG12	35:b2:19:VAL:HG12	1.74	0.68
3:4:56:ARG:NH2	25:S2:67:VAL:O	2.26	0.68
13:G1:82:GLY:HA3	28:V2:17:G:H4'	1.75	0.68
5:72:2100:G:H3'	5:72:2101:A:H8	1.58	0.68
7:A1:1130:A:H2'	7:A1:1131:G:C8	2.28	0.68
16:J2:54:SER:HB3	16:J2:58:ASN:HB3	1.75	0.68
5:72:1800:C:O2'	5:72:1818:U:N3	2.22	0.68
5:72:1936:A:H2	5:72:1943:U:H3	1.39	0.68
7:A1:891:U:H2'	7:A1:892:A:H8	1.58	0.68
10:D2:65:TYR:O	10:D2:97:ARG:NH1	2.23	0.68
24:R1:9:LYS:NZ	24:R1:44:ILE:O	2.23	0.68
7:A1:211:G:C5	7:A1:212:G:H1'	2.29	0.68
7:A1:1525:G:O5'	27:U1:40:LYS:NZ	2.26	0.68
31:Y:20:G:N2	31:Y:59:U:OP1	2.27	0.68
7:A2:823:C:HO2'	14:H2:2:SER:N	1.92	0.68
5:72:707:G:H1	5:72:724:U:H3	1.41	0.68
5:72:2263:C:N4	44:z2:15:ASP:OD1	2.25	0.68
7:A1:262:A:O2'	26:T1:70:ASN:ND2	2.25	0.68
20:N2:16:LEU:HD23	20:N2:54:ASP:HB2	1.75	0.68
7:A2:562:U:O2'	18:L2:14:ARG:NH2	2.27	0.68
7:A2:1500:A:H5''	7:A2:1508:A:H5''	1.75	0.68
11:E2:101:GLU:OE1	11:E2:122:ASN:ND2	2.27	0.68
16:J1:52:LEU:HD21	16:J1:59:LYS:HG3	1.76	0.68
5:72:2688:G:N1	5:72:2720:U:OP2	2.21	0.67
7:A1:1255:G:O2'	7:A1:1258:G:N3	2.22	0.67
7:A2:501:C:H6	7:A2:501:C:H5'	1.58	0.67
6:82:30:C:H1'	6:82:57:A:H61	1.59	0.67
14:H2:13:ARG:NH1	14:H2:26:THR:O	2.27	0.67
9:C2:88:ARG:HH12	9:C2:100:GLN:HG3	1.59	0.67
9:C2:150:LYS:HG3	9:C2:169:ARG:HB3	1.76	0.67
14:H1:18:GLN:HB3	14:H1:70:ALA:HB1	1.76	0.67
17:K2:24:HIS:HB3	17:K2:31:ILE:HB	1.77	0.67
25:S1:39:THR:HA	25:S1:70:LYS:HA	1.77	0.67
8:B2:86:SER:OG	8:B2:222:ARG:NH1	2.27	0.67
30:W1:43:C:H2'	30:W1:44:G:C8	2.30	0.67
5:72:1927:A:H2'	5:72:1928:A:C8	2.30	0.67
7:A1:501:C:OP1	18:L1:114:ARG:NH2	2.26	0.67
6:82:27:C:OP1	43:r2:34:HIS:NE2	2.23	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:H2:96:MET:HB3	14:H2:100:GLY:H	1.59	0.67
1:12:58:VAL:HG12	5:72:372:G:H2'	1.77	0.67
5:72:2522:U:O2'	5:72:2647:U:OP1	2.13	0.67
13:G1:5:ARG:HH12	13:G1:7:ILE:HD12	1.59	0.67
7:A1:93:U:H5''	7:A1:94:G:OP2	1.94	0.66
7:A1:664:G:H22	7:A1:741:G:H1	1.42	0.66
7:A2:975:A:N1	7:A2:1366:C:O2'	2.26	0.66
7:A2:1368:A:H5''	15:I2:114:LYS:HB3	1.77	0.66
16:J2:34:ALA:HB2	16:J2:83:THR:HG21	1.77	0.66
5:72:65:U:O2'	5:72:456:C:N3	2.26	0.66
7:A1:562:U:O2'	18:L1:14:ARG:NH2	2.28	0.66
8:B2:66:LYS:HD2	8:B2:155:GLY:HA2	1.77	0.66
35:b2:231:PRO:O	35:b2:242:LYS:NZ	2.26	0.66
17:K1:27:PHE:HE1	17:K1:89:PRO:HG2	1.60	0.66
2:32:5:LYS:HB2	2:32:57:GLU:HB2	1.78	0.66
7:A2:1115:U:H3	7:A2:1185:G:H1	1.44	0.66
31:Y:18:G:H1	31:Y:55:PSU:H1'	1.61	0.66
7:A1:128:G:O2'	7:A1:129:A:H5'	1.94	0.66
7:A2:1349:A:H5''	15:I2:123:ARG:HG2	1.77	0.66
16:J1:2:GLN:HB2	16:J1:5:ARG:HG2	1.78	0.66
7:A1:643:C:H5''	14:H1:32:LEU:HD21	1.77	0.66
5:72:1537:G:N2	5:72:1537:G:OP2	2.28	0.66
6:82:3:C:O2'	6:82:4:C:OP1	2.12	0.66
39:i2:6:LEU:HD23	39:i2:36:ALA:HA	1.77	0.66
5:72:2062:A:C2	42:p:30:VAL:HG11	2.30	0.65
7:A1:950:U:H2'	7:A1:951:G:H8	1.61	0.65
7:A1:1003:G:H21	7:A1:1005:A:H5'	1.61	0.65
11:E2:156:LYS:NZ	14:H2:71:VAL:O	2.29	0.65
5:72:987:C:O2'	5:72:1000:A:N3	2.29	0.65
7:A1:309:A:O2'	7:A1:607:A:N1	2.28	0.65
7:A1:31:G:O2'	7:A1:48:C:N4	2.29	0.65
7:A2:664:G:H22	7:A2:741:G:H1	1.43	0.65
7:A1:269:C:H2'	7:A1:270:A:C8	2.32	0.65
7:A2:58:C:O2'	7:A2:388:G:N7	2.30	0.65
7:A2:203:G:O2'	7:A2:465:A:N1	2.30	0.65
7:A2:1406:U:O2	7:A2:1517:G:N2	2.29	0.65
8:B:109:GLN:HA	8:B:112:LYS:HD2	1.78	0.65
17:K1:89:PRO:HG3	27:U1:32:VAL:HG11	1.76	0.65
40:l2:24:THR:HG23	40:l2:27:GLY:H	1.61	0.65
6:82:29:A:O2'	6:82:58:A:N1	2.29	0.65
8:B:7:ARG:HH21	33:Z1:8:LEU:HD21	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G2:87:VAL:HG21	13:G2:154:TYR:HB2	1.79	0.65
5:72:858:G:OP2	44:z2:78:LYS:NZ	2.30	0.65
7:A1:187:G:N2	7:A1:190:A:OP2	2.26	0.65
7:A1:666:G:H5'	7:A1:726:C:H1'	1.79	0.65
7:A2:1187:G:N3	20:N2:100:SER:OG	2.29	0.65
10:D1:174:ASP:HB3	10:D1:177:LYS:HB3	1.79	0.65
35:b2:21:ASN:HB3	35:b2:24:LEU:HD23	1.79	0.65
36:e2:26:MET:O	36:e2:30:ARG:NH2	2.30	0.65
10:D1:97:ARG:NH2	10:D1:99:ASP:OD2	2.30	0.65
16:J2:65:TYR:HB3	20:N2:96:LEU:HD22	1.78	0.65
3:4:41:HIS:HD2	36:e2:109:PRO:HA	1.62	0.65
5:72:1044:C:O2'	5:72:1111:A:N1	2.28	0.65
7:A1:618:C:O2'	22:P1:14:ARG:NH1	2.30	0.65
7:A2:203:G:H1'	7:A2:465:A:H61	1.61	0.65
8:B2:23:TRP:CZ3	8:B2:25:PRO:HA	2.32	0.65
8:B2:130:THR:HG22	8:B2:131:LYS:H	1.62	0.65
9:C2:85:GLU:HA	9:C2:88:ARG:HD3	1.77	0.65
20:N1:16:LEU:HD23	20:N1:54:ASP:HB2	1.79	0.65
5:72:2645:G:OP2	5:72:2645:G:N2	2.24	0.64
7:A2:902:G:OP1	7:A2:902:G:H4'	1.97	0.64
5:72:1827:U:OP1	5:72:1971:U:O2'	2.15	0.64
5:72:45:G:H5'	5:72:46:G:H5'	1.77	0.64
5:72:2469:A:H61	5:72:2481:G:H1'	1.59	0.64
8:B2:66:LYS:HB3	8:B2:90:PHE:HE2	1.62	0.64
5:72:1800:C:H3'	35:b2:146:MET:HE1	1.79	0.64
7:A1:713:G:H2'	7:A1:714:G:C8	2.32	0.64
18:L1:46:ASN:ND2	18:L1:89:ASP:OD2	2.30	0.64
2:32:12:ALA:O	2:32:20:LYS:NZ	2.30	0.64
5:72:2394:C:H5''	41:o2:63:LYS:HD3	1.79	0.64
7:A1:254:G:H1'	23:Q1:17:MET:HE2	1.80	0.64
7:A1:693:G:H3'	7:A1:694:A:H8	1.62	0.64
30:W1:36:A:H2'	30:W1:37:MIA:H8	1.79	0.64
7:A1:994:A:N6	7:A1:1215:G:O2'	2.31	0.64
10:D2:100:ASN:OD1	10:D2:111:ARG:NH1	2.31	0.64
12:F1:99:ALA:O	12:F1:104:LYS:NZ	2.31	0.64
17:K1:24:HIS:HB3	17:K1:31:ILE:HB	1.78	0.64
5:72:1363:C:O2'	5:72:1809:A:N3	2.28	0.64
5:72:2114:A:H62	5:72:2115:G:H21	1.45	0.64
7:A1:836:G:H3'	7:A1:837:U:H5''	1.80	0.64
7:A2:570:G:O6	7:A2:865:A:N6	2.30	0.64
8:B:222:ARG:HG2	8:B:225:ARG:HH22	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:D2:97:ARG:NH2	10:D2:99:ASP:OD2	2.31	0.64
20:N2:64:CYS:HB2	20:N2:80:SER:HB3	1.79	0.64
7:A1:151:A:OP2	7:A1:169:C:N4	2.30	0.64
7:A1:830:G:H5'	8:B:23:TRP:HE1	1.63	0.64
7:A2:1147:C:H1'	15:I2:18:ARG:HH21	1.63	0.64
7:A1:50:A:O2'	7:A1:360:G:N2	2.32	0.63
7:A1:964:A:H1'	16:J1:57:VAL:HG21	1.79	0.63
12:F1:40:GLU:HB2	12:F1:61:LEU:HB3	1.80	0.63
7:A1:369:G:OP2	7:A1:388:G:N1	2.31	0.63
5:72:1447:C:O2'	5:72:1544:A:N3	2.30	0.63
7:A1:694:A:N1	7:A1:787:A:O2'	2.31	0.63
7:A2:195:A:H2'	7:A2:196:A:C8	2.34	0.63
7:A2:855:U:OP2	7:A2:871:U:N3	2.27	0.63
7:A2:1073:U:O2	8:B2:103:ASN:ND2	2.31	0.63
7:A1:58:C:H2'	7:A1:59:A:H8	1.63	0.63
7:A1:589:U:H5''	14:H1:30:SER:HB3	1.78	0.63
7:A1:662:U:H2'	7:A1:663:A:C8	2.34	0.63
13:G1:68:ASN:O	13:G1:138:ARG:NH2	2.31	0.63
15:I2:129:LYS:NZ	29:W:33:U:OP1	2.32	0.63
40:I2:18:PHE:HB2	40:I2:43:THR:HG21	1.79	0.63
11:E1:157:ARG:NH1	14:H1:99:LEU:O	2.31	0.63
7:A2:1071:C:H2'	7:A2:1072:G:H8	1.63	0.63
13:G2:153:HIS:ND1	28:V2:45:U:OP2	2.23	0.63
5:72:1906:G:H2'	5:72:1907:G:H8	1.63	0.63
7:A1:1360:A:OP2	20:N1:75:ARG:NH2	2.29	0.63
8:B:196:VAL:HG12	8:B:198:PHE:H	1.63	0.63
18:L2:100:GLY:HA3	18:L2:118:GLY:HA3	1.81	0.63
5:72:877:A:O2'	5:72:900:A:N6	2.32	0.63
16:J1:34:ALA:HB2	16:J1:83:THR:HG21	1.81	0.63
7:A1:1304:G:H21	7:A1:1333:A:H62	1.47	0.63
5:72:371:A:N6	5:72:402:A:OP2	2.27	0.62
7:A2:75:G:H1	7:A2:95:C:H42	1.47	0.62
7:A1:1019:A:H3'	7:A1:1020:G:H5''	1.81	0.62
9:C1:179:ARG:HD3	9:C1:208:LEU:HG	1.79	0.62
7:A1:269:C:H2'	7:A1:270:A:H8	1.63	0.62
7:A2:54:C:H2'	7:A2:352:C:H41	1.63	0.62
8:B:66:LYS:HB2	8:B:159:ASP:H	1.64	0.62
10:D1:100:ASN:OD1	10:D1:111:ARG:NH1	2.33	0.62
20:N2:17:ALA:HA	20:N2:55:SER:HA	1.82	0.62
5:72:643:A:N1	5:72:2369:A:O2'	2.32	0.62
7:A2:1009:U:H3	7:A2:1020:G:H1	1.44	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1297:G:H21	13:G2:114:LYS:HB3	1.62	0.62
8:B:70:VAL:HG23	8:B:161:LEU:HD11	1.80	0.62
5:72:2175:C:H6	5:72:2175:C:H5''	1.64	0.62
7:A1:1045:C:C3'	7:A1:1046:A:H5''	2.29	0.62
7:A2:1166:G:O2'	7:A2:1169:A:N6	2.29	0.62
5:72:1394:U:H4'	5:72:1603:A:H4'	1.81	0.62
6:82:66:A:H61	6:82:107:G:H2'	1.64	0.62
7:A1:1160:G:H4'	8:B:131:LYS:HE2	1.81	0.62
7:A2:246:A:N7	7:A2:281:G:N2	2.47	0.62
7:A2:1345:U:H5''	15:I2:122:ARG:HH11	1.64	0.62
7:A2:1356:G:H2'	7:A2:1357:A:C8	2.34	0.62
35:b2:107:PRO:HD2	35:b2:110:LEU:HD22	1.82	0.62
5:72:2118:U:O2	5:72:2145:C:N4	2.32	0.62
26:T1:54:MET:SD	26:T1:55:GLN:N	2.71	0.62
31:Y:34:G:H2'	31:Y:35:G:C8	2.35	0.62
15:I1:116:VAL:HG21	16:J1:62:ARG:HB2	1.80	0.62
5:72:1250:G:OP2	41:o2:18:ARG:NH2	2.32	0.62
5:72:1580:A:O2'	5:72:1581:G:OP1	2.18	0.62
7:A1:742:G:O2'	7:A1:743:A:H5'	2.00	0.62
7:A2:530:G:N3	31:Y:34:G:N2	2.48	0.62
9:C1:40:ARG:NH1	9:C1:55:ILE:O	2.33	0.62
9:C2:152:GLU:HG3	9:C2:199:LYS:HB2	1.80	0.62
18:L1:114:ARG:HG2	18:L1:119:VAL:HB	1.81	0.62
7:A1:337:G:H2'	7:A1:338:A:C8	2.34	0.62
7:A1:448:A:H3'	7:A1:449:G:H8	1.65	0.62
7:A1:1008:U:H2'	7:A1:1009:U:C6	2.35	0.62
11:E1:12:GLN:HB2	11:E1:117:VAL:HG12	1.81	0.62
43:r2:31:THR:HG22	43:r2:33:ARG:H	1.64	0.62
7:A1:619:U:H1'	10:D1:130:VAL:HG22	1.82	0.61
7:A1:1425:U:H2'	7:A1:1426:G:H5''	1.81	0.61
7:A2:1375:A:OP1	13:G2:28:ASN:ND2	2.33	0.61
10:D1:65:TYR:O	10:D1:97:ARG:NH1	2.32	0.61
5:72:512:G:OP1	5:72:1234:U:O2'	2.16	0.61
7:A2:269:C:H2'	7:A2:270:A:H8	1.65	0.61
7:A2:898:G:N2	7:A2:901:A:OP2	2.28	0.61
9:C2:14:ILE:HG22	9:C2:15:VAL:HG13	1.82	0.61
13:G2:34:GLY:O	13:G2:36:LYS:N	2.33	0.61
35:b2:130:LEU:HB2	35:b2:135:ILE:HD11	1.82	0.61
7:A1:966:2MG:HM21	15:I1:129:LYS:HE2	1.82	0.61
7:A2:476:U:H2'	7:A2:477:C:C6	2.36	0.61
10:D1:116:GLN:HE21	10:D1:154:ARG:HH12	1.48	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:E2:159:LYS:NZ	14:H2:42:GLU:O	2.26	0.61
11:E2:166:GLY:HA3	14:H2:114:ARG:HH12	1.64	0.61
14:H1:96:MET:HB3	14:H1:100:GLY:H	1.64	0.61
5:72:453:A:N3	5:72:457:A:O2'	2.33	0.61
7:A1:770:C:O2'	7:A1:899:C:N3	2.34	0.61
7:A2:404:G:OP2	10:D2:115:ARG:NH1	2.33	0.61
7:A2:972:C:OP2	16:J2:59:LYS:NZ	2.32	0.61
5:72:160:A:N3	5:72:2208:C:O2'	2.32	0.61
5:72:571:U:O2	5:72:2030:6MZ:O2'	2.16	0.61
7:A2:126:G:OP1	7:A2:605:U:O2'	2.17	0.61
7:A2:408:A:H61	7:A2:434:U:H3	1.48	0.61
7:A2:1084:G:O2'	7:A2:1103:C:N4	2.32	0.61
7:A2:1413:A:H2	7:A2:1487:G:H22	1.46	0.61
9:C2:22:TRP:HB3	9:C2:59:ARG:H	1.65	0.61
16:J1:56:HIS:ND1	16:J1:57:VAL:HG23	2.15	0.61
5:72:265:A:N1	5:72:427:U:O2'	2.33	0.61
5:72:668:A:H2'	5:72:670:A:H62	1.65	0.61
5:72:2047:C:O2'	5:72:2823:A:N1	2.33	0.61
6:82:75:G:H2'	6:82:76:G:H8	1.65	0.61
7:A2:575:G:N2	7:A2:880:C:O2	2.33	0.61
8:B2:114:LEU:HD12	8:B2:144:LEU:HB3	1.82	0.61
5:72:1309:G:H4'	40:I2:7:PRO:HB2	1.83	0.61
5:72:1416:G:O2'	5:72:1417:C:OP2	2.16	0.61
7:A2:56:U:H2'	7:A2:57:G:C8	2.35	0.61
10:D1:105:MET:HE1	10:D1:171:LEU:HD22	1.83	0.61
29:W:25:C:H2'	29:W:26:A:C8	2.35	0.61
5:72:960:A:H2'	5:72:962:G:H5''	1.81	0.61
7:A1:390:U:H4'	22:P1:28:ARG:HH21	1.66	0.61
7:A2:1309:G:N7	19:M2:98:ARG:NH2	2.47	0.61
21:O1:14:GLU:HB2	21:O1:84:ARG:HH22	1.65	0.61
39:I2:72:ILE:HB	39:I2:108:VAL:HG11	1.81	0.61
7:A1:83:C:N3	7:A1:86:G:N2	2.49	0.61
7:A2:477:C:H3'	7:A2:478:A:H8	1.66	0.61
7:A2:1156:G:O2'	7:A2:1180:A:N1	2.32	0.61
5:72:476:G:H22	5:72:479:A:H5''	1.65	0.60
5:72:825:A:O2'	41:O2:54:GLN:OE1	2.16	0.60
5:72:2134:A:H1'	5:72:2159:G:H1'	1.83	0.60
7:A2:455:G:H1	7:A2:477:C:H42	1.48	0.60
28:V2:46:C:H4'	28:V2:47:G:OP1	2.01	0.60
5:72:858:G:N2	5:72:2269:G:OP2	2.34	0.60
7:A1:626:G:O3'	22:P1:51:ARG:NH2	2.30	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:908:A:H2'	7:A1:909:A:C8	2.36	0.60
35:b2:236:GLU:O	35:b2:239:ASN:ND2	2.35	0.60
5:72:79:C:O2'	5:72:346:A:N3	2.32	0.60
7:A2:1142:G:H3'	7:A2:1143:G:H8	1.66	0.60
10:D2:6:GLY:O	10:D2:8:LYS:NZ	2.27	0.60
5:72:411:G:OP2	5:72:2406:A:O2'	2.19	0.60
5:72:566:U:H5''	41:o2:29:LYS:HE3	1.83	0.60
7:A1:1308:U:OP2	19:M1:100:GLN:NE2	2.34	0.60
19:M1:79:ARG:HH11	25:S1:65:GLU:HB3	1.67	0.60
23:Q1:9:GLN:NE2	23:Q1:60:GLU:OE1	2.33	0.60
7:A1:1338:G:N3	30:W1:41:C:O2'	2.34	0.60
43:r2:20:GLU:HG2	43:r2:21:LEU:HD12	1.84	0.60
7:A1:176:C:OP1	26:T1:64:LYS:NZ	2.34	0.60
7:A1:696:A:N3	7:A1:786:G:O2'	2.28	0.60
7:A1:1059:C:H4'	20:N1:85:ARG:HH22	1.67	0.60
7:A1:1238:A:N7	7:A1:1299:A:N6	2.50	0.60
7:A2:683:G:N2	17:K2:39:GLY:O	2.35	0.60
7:A2:1397:C:OP2	11:E2:29:ARG:NH2	2.34	0.60
13:G2:2:PRO:HD3	13:G2:5:ARG:HH11	1.65	0.60
29:W:14:A:H3'	29:W:15:A:H8	1.66	0.60
5:72:1047:G:HO2'	5:72:1110:G:H1	1.48	0.60
7:A1:1345:U:O5'	15:I1:122:ARG:NH1	2.35	0.60
7:A2:269:C:H2'	7:A2:270:A:C8	2.37	0.60
9:C1:151:VAL:HG23	9:C1:200:VAL:HG22	1.84	0.60
9:C2:58:GLU:O	9:C2:65:ARG:N	2.34	0.60
11:E1:157:ARG:HH21	14:H1:43:GLU:HB3	1.66	0.60
17:K1:97:ILE:HG21	27:U1:16:LEU:HD21	1.83	0.60
7:A1:441:A:H2'	7:A1:442:G:H5''	1.83	0.60
7:A1:600:A:H5''	14:H1:89:LYS:HD3	1.83	0.60
7:A1:1124:G:H3'	16:J1:37:ARG:HH21	1.66	0.60
7:A2:49:U:H3	7:A2:362:G:H1'	1.65	0.60
7:A2:202:G:H1	7:A2:215:C:H42	1.48	0.60
7:A2:1319:A:O2'	7:A2:1323:G:N7	2.31	0.60
10:D2:118:VAL:HG22	10:D2:123:ILE:HG13	1.84	0.60
2:32:2:LYS:NZ	2:32:39:ASP:OD2	2.35	0.60
5:72:221:A:N1	5:72:265:A:O2'	2.34	0.60
5:72:1131:G:N2	5:72:1132:U:O4	2.35	0.60
5:72:1910:G:H1	5:72:1920:C:H42	1.49	0.60
5:72:2119:A:N6	5:72:2167:U:O2'	2.35	0.60
7:A1:999:C:H2'	7:A1:1000:A:C8	2.37	0.60
7:A1:1106:G:H5''	9:C1:172:ARG:HG2	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:451:A:OP1	7:A2:481:G:N2	2.34	0.60
12:F1:81:ASN:HB3	12:F1:84:VAL:HG12	1.83	0.60
5:72:1275:A:OP2	5:72:1646:C:N4	2.35	0.60
7:A1:405:U:OP2	10:D1:3:ARG:NE	2.35	0.60
7:A2:685:G:N1	7:A2:704:A:OP2	2.32	0.59
18:L2:46:ASN:ND2	18:L2:89:ASP:OD2	2.35	0.59
34:a2:68:GLY:HA2	34:a2:159:GLY:HA3	1.82	0.59
1:12:18:ARG:NH1	1:12:22:LEU:O	2.34	0.59
5:72:324:A:OP2	5:72:1205:A:N6	2.34	0.59
5:72:2500:U:O2'	5:72:2504:PSU:OP1	2.19	0.59
6:82:75:G:H2'	6:82:76:G:C8	2.37	0.59
7:A1:718:A:C8	17:K1:118:HIS:HB3	2.36	0.59
8:B:14:VAL:O	8:B:203:ASN:ND2	2.35	0.59
5:72:1475:G:O2'	5:72:1476:U:O5'	2.20	0.59
5:72:2176:A:O3'	34:a2:221:GLY:N	2.34	0.59
7:A1:450:G:H1	7:A1:483:C:H42	1.50	0.59
7:A1:1340:A:O2'	30:W1:31:A:O3'	2.21	0.59
7:A1:1418:A:H3'	7:A1:1419:G:H5''	1.84	0.59
5:72:686:U:O4	40:12:12:ARG:NH1	2.32	0.59
7:A1:407:U:H2'	7:A1:408:A:C8	2.37	0.59
7:A2:452:A:H61	7:A2:480:U:H3	1.49	0.59
8:B2:95:ARG:HH21	8:B2:97:LEU:HD22	1.67	0.59
12:F1:38:ARG:HB3	12:F1:63:ASN:HB2	1.83	0.59
14:H2:103:VAL:HG12	14:H2:126:ILE:HD13	1.83	0.59
7:A2:352:C:O2	7:A2:355:C:N4	2.34	0.59
10:D2:101:VAL:HG21	10:D2:137:VAL:HG21	1.83	0.59
15:I1:87:LEU:HB3	15:I1:94:LEU:HD12	1.84	0.59
23:Q2:68:SER:HB3	23:Q2:71:LYS:HB2	1.83	0.59
25:S1:36:ARG:NH2	25:S1:72:GLY:O	2.36	0.59
30:W1:43:C:H2'	30:W1:44:G:H8	1.67	0.59
1:12:71:LEU:HG	1:12:74:ARG:HH21	1.66	0.59
5:72:1826:G:O2'	5:72:1971:U:OP2	2.19	0.59
7:A1:201:G:H1	7:A1:216:U:H3	1.50	0.59
7:A1:830:G:H2'	7:A1:831:A:C8	2.38	0.59
7:A2:87:C:H2'	7:A2:88:U:H4'	1.84	0.59
18:L2:114:ARG:HG2	18:L2:119:VAL:HB	1.84	0.59
35:b2:66:ASP:OD2	35:b2:102:ARG:NH1	2.35	0.59
5:72:1664:A:H61	5:72:1996:C:H42	1.51	0.59
16:J1:4:GLN:HB2	16:J1:79:PRO:HG3	1.85	0.59
5:72:1326:U:O2'	5:72:2010:G:O2'	2.20	0.59
7:A2:1011:C:H2'	7:A2:1012:A:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1268:G:N3	7:A2:1326:U:O2'	2.34	0.59
5:72:481:G:O2'	5:72:507:A:N1	2.33	0.59
7:A1:1380:U:O2'	13:G1:3:ARG:NH1	2.36	0.59
7:A2:1175:G:H2'	7:A2:1176:A:C8	2.38	0.59
7:A2:1534:A:H1'	7:A2:1535:C:H5''	1.84	0.59
10:D1:14:ARG:C	10:D1:16:GLY:H	2.11	0.59
19:M1:107:ARG:HH21	19:M1:110:LYS:HE3	1.67	0.59
39:i2:68:ARG:NH2	39:i2:109:GLU:O	2.32	0.59
5:72:2159:G:H2'	5:72:2160:C:C6	2.38	0.59
5:72:2177:C:P	34:a2:221:GLY:H	2.26	0.59
7:A2:1218:C:H2'	7:A2:1219:A:C8	2.38	0.59
8:B:113:ARG:HH21	8:B:144:LEU:HD23	1.68	0.59
5:72:1709:U:O2'	5:72:2859:G:N3	2.36	0.58
10:D1:147:GLU:CD	10:D1:147:GLU:H	2.11	0.58
10:D1:172:GLU:HG3	10:D1:183:LYS:HD2	1.85	0.58
5:72:1906:G:H2'	5:72:1907:G:C8	2.38	0.58
5:72:2162:G:H4'	5:72:2173:A:C5	2.38	0.58
5:72:2279:G:N7	44:z2:14:ARG:NH2	2.51	0.58
5:72:2305:U:H1'	36:e2:151:GLY:HA3	1.85	0.58
5:72:2655:G:O2'	5:72:2664:G:O6	2.19	0.58
7:A1:603:U:H2'	7:A1:604:G:H8	1.67	0.58
7:A1:1405:G:H21	7:A1:1518:MA6:H1'	1.68	0.58
7:A2:1086:U:H3	7:A2:1099:G:H22	1.50	0.58
20:N1:79:LEU:HB3	20:N1:83:LYS:HB3	1.85	0.58
23:Q1:68:SER:HB3	23:Q1:71:LYS:HB2	1.85	0.58
7:A2:389:A:H3'	7:A2:390:U:H6	1.68	0.58
19:M2:81:MET:HE2	19:M2:91:HIS:HB3	1.85	0.58
27:U2:17:ARG:NH1	28:V2:41:G:OP2	2.36	0.58
7:A1:467:U:H5'	7:A1:468:A:H5'	1.83	0.58
7:A1:685:G:N1	7:A1:704:A:OP2	2.36	0.58
7:A1:736:C:OP1	24:R1:61:ARG:NH2	2.36	0.58
7:A1:603:U:H2'	7:A1:604:G:C8	2.39	0.58
7:A2:1216:A:O2'	20:N2:9:ARG:NH2	2.36	0.58
14:H1:102:ALA:HB3	14:H1:113:ASP:HB3	1.86	0.58
15:I2:85:ARG:HA	15:I2:88:MET:HE3	1.84	0.58
20:N1:51:LEU:HD12	20:N1:52:PRO:HD2	1.85	0.58
24:R2:63:ARG:HB3	24:R2:70:TYR:CZ	2.39	0.58
7:A1:1113:C:H42	7:A1:1187:G:H1	1.52	0.58
7:A1:1406:U:O2	7:A1:1517:G:N2	2.33	0.58
7:A2:416:G:H1	7:A2:427:U:H3	1.52	0.58
7:A2:970:C:N4	15:I2:130:ARG:O	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1137:C:O2	7:A2:1138:G:N2	2.34	0.58
17:K2:74:VAL:HG23	17:K2:75:LYS:H	1.69	0.58
22:P1:55:ASP:OD1	22:P1:56:ARG:N	2.36	0.58
7:A1:1333:A:H3'	7:A1:1334:G:H8	1.68	0.58
7:A2:1261:A:N6	7:A2:1274:A:O2'	2.37	0.58
10:D2:54:GLN:HB3	10:D2:203:LEU:HD13	1.84	0.58
7:A1:335:C:O2'	7:A1:1433:A:N3	2.34	0.58
7:A1:769:G:H4'	7:A1:1513:A:H4'	1.85	0.58
7:A1:1048:G:H2'	7:A1:1050:G:H8	1.69	0.58
7:A1:1342:C:H2'	7:A1:1343:G:C8	2.38	0.58
10:D1:196:ASN:HB2	10:D1:198:HIS:CE1	2.39	0.58
17:K2:73:ALA:HB1	17:K2:77:TYR:HD2	1.68	0.58
39:i2:3:VAL:HA	39:i2:39:ALA:H	1.69	0.58
43:r2:78:VAL:HA	43:r2:81:ARG:HD2	1.85	0.58
5:72:1167:C:H2'	5:72:1168:G:C8	2.38	0.58
7:A1:538:G:H2'	7:A1:539:A:H8	1.68	0.58
7:A2:769:G:H4'	7:A2:1513:A:H4'	1.86	0.58
9:C2:79:LYS:HB3	9:C2:84:VAL:HB	1.85	0.58
7:A1:668:G:HO2'	21:O1:46:HIS:HD1	1.50	0.58
7:A1:1396:A:H2	11:E1:24:THR:HG21	1.69	0.58
29:W:50:G:H1	29:W:64:U:H3	1.50	0.58
5:72:2094:A:H2'	5:72:2095:A:H8	1.68	0.57
7:A1:505:G:H5'	7:A1:534:U:H2'	1.86	0.57
7:A1:690:G:O6	17:K1:53:ARG:NH2	2.36	0.57
7:A1:1118:U:H4'	15:I1:85:ARG:HH22	1.69	0.57
7:A2:410:G:OP1	10:D2:26:ARG:NH1	2.33	0.57
7:A2:1115:U:O2	7:A2:1185:G:N2	2.36	0.57
10:D2:73:ARG:NH2	10:D2:74:ASN:OD1	2.33	0.57
11:E1:156:LYS:NZ	14:H1:71:VAL:O	2.35	0.57
16:J1:40:ILE:HD11	16:J1:73:LEU:HD23	1.85	0.57
5:72:776:G:O2'	5:72:2241:A:OP1	2.22	0.57
5:72:1912:A:H1'	7:A2:1494:G:H21	1.69	0.57
6:82:33:G:H1	6:82:49:C:H42	1.50	0.57
7:A1:113:G:N3	7:A1:353:A:O2'	2.37	0.57
7:A1:1314:C:N4	25:S1:2:PRO:O	2.37	0.57
7:A1:1423:G:H22	7:A1:1477:U:H2'	1.68	0.57
7:A2:150:U:H2'	7:A2:151:A:H8	1.69	0.57
7:A2:202:G:O2'	7:A2:468:A:N3	2.36	0.57
24:R2:5:PHE:HD1	24:R2:43:ARG:HG2	1.68	0.57
5:72:729:G:O4'	35:b2:207:LYS:NZ	2.37	0.57
5:72:1028:A:N3	5:72:2486:C:O2'	2.32	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:2286:G:N2	37:g2:24:THR:O	2.34	0.57
7:A1:581:G:N1	7:A1:759:A:OP2	2.32	0.57
7:A1:736:C:H2'	7:A1:737:C:C6	2.39	0.57
7:A1:1206:G:H2'	7:A1:1207:2MG:C8	2.38	0.57
7:A2:545:C:OP2	10:D2:59:GLN:NE2	2.32	0.57
7:A2:1106:G:O2'	9:C2:169:ARG:NH1	2.37	0.57
10:D2:108:GLY:HA3	10:D2:114:ALA:HB2	1.85	0.57
34:a2:86:ALA:HB1	34:a2:150:ALA:HB2	1.86	0.57
7:A1:67:C:H2'	7:A1:68:G:C8	2.39	0.57
7:A1:1047:G:HO2'	7:A1:1215:G:HO2'	1.50	0.57
7:A2:999:C:H2'	7:A2:1000:A:H8	1.67	0.57
10:D1:73:ARG:NH2	10:D1:74:ASN:OD1	2.34	0.57
5:72:1139:G:O2'	5:72:1143:A:N1	2.37	0.57
5:72:2062:A:C6	42:p:31:ARG:O	2.51	0.57
5:72:2062:A:C5	42:p:34:ARG:HG2	2.40	0.57
7:A1:490:C:H2'	7:A1:491:G:C8	2.39	0.57
7:A1:948:C:H2'	7:A1:949:A:H8	1.69	0.57
7:A1:1041:G:H2'	7:A1:1042:A:C8	2.40	0.57
7:A2:545:C:O2'	7:A2:549:C:H5'	2.03	0.57
7:A2:687:A:N1	7:A2:700:G:O2'	2.35	0.57
7:A2:1030:U:H2'	7:A2:1032:G:H1	1.68	0.57
9:C1:10:ILE:HG23	9:C1:11:ARG:HG3	1.86	0.57
9:C2:59:ARG:HG2	9:C2:64:ILE:HG12	1.87	0.57
12:F1:14:GLN:HB3	12:F1:17:GLN:HE21	1.69	0.57
15:I1:47:VAL:HA	15:I1:50:GLN:HG2	1.86	0.57
17:K1:74:VAL:HG23	17:K1:75:LYS:H	1.69	0.57
35:b2:6:CYS:SG	35:b2:13:ARG:NH2	2.77	0.57
5:72:2185:U:H2'	5:72:2186:G:C8	2.39	0.57
7:A1:662:U:O2'	7:A1:836:G:O5'	2.22	0.57
7:A1:692:U:H3	17:K1:54:GLY:HA2	1.69	0.57
7:A1:1086:U:H3	7:A1:1099:G:N2	2.03	0.57
7:A1:1216:A:O2'	20:N1:9:ARG:NH2	2.37	0.57
15:I1:42:GLU:HG3	15:I1:46:MET:HE3	1.87	0.57
39:i2:3:VAL:HG12	39:i2:38:PRO:HA	1.87	0.57
3:4:12:ILE:HG21	3:4:29:GLY:HA2	1.86	0.57
5:72:1212:G:O2'	5:72:1236:G:N1	2.27	0.57
5:72:1315:C:O2'	5:72:1392:A:N3	2.31	0.57
7:A1:477:C:H2'	7:A1:478:A:C8	2.39	0.57
7:A1:1448:C:H2'	7:A1:1449:C:C6	2.40	0.57
7:A2:246:A:N1	7:A2:278:G:O2'	2.30	0.57
7:A2:1118:U:H4'	15:I2:85:ARG:HH22	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C2:57:ILE:HG12	9:C2:66:VAL:HG13	1.86	0.57
10:D2:196:ASN:HB2	10:D2:198:HIS:CE1	2.39	0.57
30:W1:37:MIA:N1	30:W1:37:MIA:H131	2.20	0.57
34:a2:47:ASN:O	34:a2:210:LYS:N	2.37	0.57
39:i2:25:TYR:O	39:i2:29:PHE:HB3	2.05	0.57
5:72:1138:G:H2'	5:72:1139:G:O4'	2.05	0.57
6:82:49:C:H2'	6:82:50:A:C8	2.39	0.57
7:A1:1111:A:N1	9:C1:177:THR:OG1	2.34	0.57
7:A2:766:A:OP2	7:A2:812:G:N2	2.38	0.57
29:W:5:G:H2'	29:W:6:C:C6	2.40	0.57
7:A1:746:A:H2'	7:A1:747:A:C8	2.40	0.57
7:A1:974:A:OP2	20:N1:81:ARG:NE	2.38	0.57
7:A2:502:A:H61	7:A2:543:U:H3	1.53	0.57
7:A2:1059:C:O3'	20:N2:85:ARG:NH1	2.33	0.57
39:i2:42:LYS:O	39:i2:45:GLU:HG3	2.05	0.57
39:i2:83:LYS:HG3	39:i2:84:ALA:H	1.70	0.57
3:4:5:ILE:HB	36:e2:64:LYS:HD2	1.87	0.57
7:A1:458:U:H3	7:A1:474:G:H1	1.53	0.57
7:A2:17:U:O2'	7:A2:1079:G:N3	2.37	0.57
7:A2:150:U:H2'	7:A2:151:A:C8	2.40	0.57
20:N2:20:TYR:HB2	20:N2:55:SER:HB2	1.87	0.57
5:72:714:U:H1'	5:72:717:C:H5	1.70	0.56
7:A1:691:G:O6	17:K1:53:ARG:NH2	2.38	0.56
7:A1:972:C:H1'	16:J1:57:VAL:HG13	1.87	0.56
7:A1:1413:A:H2	7:A1:1487:G:H22	1.53	0.56
7:A1:1460:C:H3'	7:A1:1461:G:H5''	1.87	0.56
7:A2:231:U:H2'	7:A2:232:G:H8	1.70	0.56
7:A2:438:U:H4'	7:A2:439:U:O5'	2.04	0.56
7:A2:578:C:O2'	7:A2:728:A:N3	2.36	0.56
7:A2:606:G:N2	7:A2:632:U:OP1	2.29	0.56
7:A2:1060:U:H2'	7:A2:1061:G:H8	1.70	0.56
11:E2:157:ARG:NH1	14:H2:99:LEU:O	2.38	0.56
1:12:22:LEU:HD23	29:W:75:C:H41	1.70	0.56
7:A1:404:G:O2'	7:A1:498:A:N1	2.37	0.56
7:A2:147:G:H2'	7:A2:148:G:C8	2.40	0.56
7:A2:481:G:O2'	7:A2:483:C:N4	2.37	0.56
7:A2:1088:G:H4'	27:U2:70:LEU:HD13	1.87	0.56
13:G1:53:ARG:HH12	13:G1:121:ALA:HB1	1.69	0.56
14:H2:76:GLN:NE2	14:H2:77:ARG:O	2.38	0.56
1:12:20:HIS:NE2	29:W:75:C:OP2	2.39	0.56
5:72:700:G:O2'	5:72:1632:A:N3	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:776:G:N7	5:72:793:A:O2'	2.37	0.56
5:72:1056:G:H4'	5:72:1086:A:H8	1.70	0.56
5:72:1130:U:O2'	5:72:1131:G:OP1	2.21	0.56
7:A1:649:A:C3'	7:A1:650:G:H5''	2.35	0.56
7:A1:683:G:N2	17:K1:39:GLY:O	2.39	0.56
7:A1:1316:G:N1	7:A1:1319:A:OP2	2.34	0.56
7:A1:1462:C:H2'	7:A1:1463:U:H5'	1.87	0.56
7:A2:575:G:O2'	7:A2:821:G:H5'	2.05	0.56
8:B:104:TRP:HA	8:B:107:VAL:HG22	1.86	0.56
11:E2:75:ALA:O	11:E2:82:GLN:NE2	2.30	0.56
25:S1:19:VAL:HG21	25:S1:44:MET:HG2	1.87	0.56
27:U2:8:GLU:OE2	27:U2:9:ASN:ND2	2.38	0.56
31:Y:54:5MU:H2'	31:Y:55:PSU:C6	2.40	0.56
38:h2:13:HIS:O	38:h2:71:LYS:NZ	2.38	0.56
5:72:278:A:OP2	5:72:361:G:N1	2.38	0.56
5:72:1130:U:N3	5:72:2025:C:OP1	2.28	0.56
7:A1:12:U:O2'	7:A1:914:A:OP2	2.22	0.56
7:A1:71:A:H61	7:A1:99:C:H1'	1.70	0.56
7:A1:781:A:H5''	7:A1:782:A:C8	2.40	0.56
7:A1:838:G:H22	7:A1:849:G:H1'	1.70	0.56
7:A1:841:C:C4	7:A1:843:U:H5'	2.41	0.56
7:A2:74:A:H3'	7:A2:75:G:H8	1.69	0.56
7:A2:414:A:H3'	7:A2:415:A:H8	1.70	0.56
7:A2:1193:G:O6	9:C2:2:GLY:N	2.38	0.56
8:B2:59:LYS:HG2	8:B2:63:ARG:HH12	1.70	0.56
12:F1:29:ILE:HD13	12:F1:64:VAL:HG11	1.88	0.56
13:G1:140:ASP:OD1	13:G1:143:ARG:NH2	2.33	0.56
27:U1:28:VAL:HG13	27:U1:29:LEU:HD22	1.88	0.56
29:W:25:C:H2'	29:W:26:A:H8	1.69	0.56
4:62:13:ARG:HH11	41:o2:63:LYS:HG3	1.70	0.56
5:72:2332:C:OP1	44:z2:77:ARG:NH2	2.38	0.56
7:A1:512:U:H2'	7:A1:513:C:C6	2.41	0.56
7:A2:1314:C:N4	25:S2:2:PRO:O	2.38	0.56
25:S1:18:LYS:HD3	25:S1:31:LEU:HD12	1.86	0.56
32:Y1:14:A:N1	32:Y1:21:A:O2'	2.38	0.56
39:i2:94:ILE:HD12	39:i2:99:ILE:HG12	1.87	0.56
5:72:1133:A:N6	5:72:2025:C:O2'	2.38	0.56
5:72:2540:C:O2'	5:72:2740:A:N3	2.36	0.56
7:A1:195:A:H2'	7:A1:196:A:C8	2.40	0.56
7:A1:715:A:H2'	7:A1:716:A:C8	2.41	0.56
7:A1:823:C:HO2'	14:H1:2:SER:N	2.02	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1376:U:H2'	7:A1:1377:A:C8	2.39	0.56
7:A2:376:G:H2'	7:A2:377:G:H8	1.70	0.56
7:A2:1227:A:N7	19:M2:117:LYS:NZ	2.44	0.56
19:M2:79:ARG:HG3	36:e2:112:ARG:HH22	1.70	0.56
32:Y1:9:A:H1'	32:Y1:45:G:H2'	1.86	0.56
1:12:22:LEU:HD23	29:W:75:C:N4	2.20	0.56
7:A1:166:U:H2'	7:A1:167:A:H8	1.70	0.56
7:A2:414:A:OP2	7:A2:428:G:N2	2.38	0.56
8:B2:112:LYS:HA	8:B2:115:LYS:HE2	1.88	0.56
16:J2:5:ARG:HG2	16:J2:77:VAL:HA	1.88	0.56
5:72:2137:U:H2'	5:72:2138:G:C8	2.41	0.56
7:A1:82:G:H3'	7:A1:83:C:H6	1.70	0.56
7:A1:166:U:H2'	7:A1:167:A:C8	2.41	0.56
7:A1:299:G:N2	7:A1:565:U:O2	2.39	0.56
7:A1:1250:A:H2'	7:A1:1251:A:C8	2.40	0.56
7:A1:1439:G:N2	7:A1:1461:G:O6	2.38	0.56
8:B:113:ARG:HH12	8:B:117:LEU:HB2	1.71	0.56
9:C1:88:ARG:HD2	9:C1:99:ALA:HB3	1.88	0.56
17:K1:126:LYS:HG2	27:U1:37:PHE:HB3	1.88	0.56
5:72:573:U:N3	5:72:2031:A:OP1	2.36	0.56
5:72:2305:U:O4	36:e2:39:GLY:N	2.38	0.56
5:72:2470:G:OP1	38:h2:55:ARG:NH2	2.36	0.56
7:A1:481:G:O2'	7:A1:483:C:N4	2.39	0.56
7:A1:490:C:H2'	7:A1:491:G:H8	1.70	0.56
7:A1:588:G:H2'	7:A1:589:U:C6	2.41	0.56
7:A1:948:C:H2'	7:A1:949:A:C8	2.41	0.56
7:A1:1170:A:H2'	7:A1:1171:A:O4'	2.06	0.56
7:A1:1356:G:H2'	7:A1:1357:A:C8	2.41	0.56
18:L1:44:LYS:HB3	18:L1:45:PRO:HD3	1.87	0.56
20:N2:31:ILE:O	20:N2:41:ARG:NH1	2.38	0.56
29:W:37:MIA:OP2	29:W:37:MIA:H8	2.06	0.56
5:72:1992:G:N2	5:72:1996:C:O2'	2.39	0.56
5:72:2470:G:O6	5:72:2481:G:N2	2.38	0.56
7:A1:1133:G:H2'	7:A1:1134:G:C8	2.41	0.56
9:C2:186:THR:HG22	9:C2:199:LYS:HG2	1.88	0.56
20:N1:54:ASP:HA	20:N1:59:ARG:HG2	1.88	0.56
3:4:5:ILE:HG13	3:4:6:HIS:H	1.71	0.55
5:72:2133:G:O2'	5:72:2157:G:N1	2.39	0.55
5:72:2595:G:N2	5:72:2598:A:OP2	2.35	0.55
7:A1:386:C:H2'	7:A1:387:U:H5''	1.88	0.55
7:A2:983:A:N1	7:A2:1222:G:N2	2.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1220:G:P	20:N2:53:ARG:HH12	2.29	0.55
8:B:96:TRP:CZ2	8:B:172:ALA:HA	2.42	0.55
7:A1:770:C:H2'	7:A1:771:G:H8	1.71	0.55
7:A1:1081:A:N7	11:E1:52:LYS:NZ	2.54	0.55
7:A1:1348:U:H2'	7:A1:1349:A:H8	1.71	0.55
7:A1:1414:U:H2'	7:A1:1415:G:C8	2.41	0.55
5:72:2115:G:H4'	5:72:2166:U:H3	1.72	0.55
7:A1:595:A:H61	7:A1:641:U:H2'	1.70	0.55
7:A1:1216:A:OP1	20:N1:3:LYS:NZ	2.39	0.55
7:A1:1321:U:O2'	25:S1:78:ARG:NH2	2.38	0.55
7:A1:1397:C:OP2	11:E1:29:ARG:NH2	2.39	0.55
7:A2:21:G:H2'	7:A2:22:G:C8	2.41	0.55
5:72:2100:G:H3'	5:72:2101:A:C8	2.40	0.55
7:A2:1256:A:H3'	9:C2:27:LYS:NZ	2.21	0.55
14:H1:103:VAL:HG12	14:H1:126:ILE:HD13	1.87	0.55
24:R2:64:TYR:HD2	24:R2:65:LEU:HD22	1.70	0.55
29:W:18:G:H5'	29:W:58:A:C2	2.42	0.55
37:g2:39:PHE:HB2	37:g2:46:HIS:CE1	2.41	0.55
6:82:49:C:H2'	6:82:50:A:H8	1.72	0.55
7:A1:901:A:C5	7:A1:902:G:H1'	2.41	0.55
7:A1:1162:C:H2'	7:A1:1163:A:C8	2.42	0.55
29:W:31:U:C2'	29:W:32:PSU:H5''	2.36	0.55
5:72:2061:G:H22	42:p:35:TRP:HE1	1.55	0.55
7:A1:219:U:H2'	7:A1:220:G:C8	2.41	0.55
7:A2:562:U:H1'	18:L2:12:ARG:HD2	1.89	0.55
8:B:94:HIS:CE1	8:B:146:ASN:HB3	2.42	0.55
16:J1:5:ARG:NH1	16:J1:7:ARG:HD2	2.22	0.55
5:72:1039:A:H2	5:72:1116:G:H22	1.52	0.55
7:A2:50:A:N1	7:A2:360:G:O2'	2.34	0.55
11:E2:31:PHE:H	28:V2:60:A:N6	2.04	0.55
12:F2:21:MET:HA	12:F2:24:ARG:HH11	1.70	0.55
1:12:36:HIS:NE2	39:i2:28:ASN:OD1	2.35	0.55
5:72:1537:G:H3'	5:72:1538:G:O4'	2.06	0.55
7:A1:946:A:O2'	7:A1:1333:A:N3	2.39	0.55
7:A2:595:A:N6	7:A2:641:U:O2'	2.40	0.55
9:C1:15:VAL:HG13	9:C1:207:ILE:HD12	1.88	0.55
9:C2:23:PHE:CE2	16:J2:97:ASP:HB2	2.42	0.55
11:E2:31:PHE:H	28:V2:60:A:H62	1.53	0.55
14:H1:87:LYS:HG2	14:H1:92:LEU:HA	1.87	0.55
14:H2:10:MET:HE1	14:H2:33:LYS:HA	1.88	0.55
29:W:1:A:H61	29:W:72:U:H3	1.53	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:W:2:G:H2'	29:W:3:G:C8	2.42	0.55
7:A1:1391:U:H2'	7:A1:1392:G:C8	2.42	0.55
7:A2:428:G:H5'	10:D2:10:LYS:HE3	1.89	0.55
7:A2:1040:U:H2'	7:A2:1041:G:H8	1.72	0.55
7:A2:1493:A:O5'	7:A2:1493:A:H8	1.90	0.55
19:M1:75:MET:HA	19:M1:78:LYS:HE3	1.88	0.55
23:Q1:59:VAL:HG12	23:Q1:78:VAL:HG22	1.89	0.55
27:U2:31:GLU:OE2	27:U2:34:ARG:NH2	2.40	0.55
32:Y1:12:U:H3	32:Y1:23:A:H61	1.55	0.55
5:72:931:U:O2	5:72:1167:C:O2'	2.25	0.55
7:A1:10:A:H2'	7:A1:11:G:H8	1.72	0.55
7:A1:538:G:H2'	7:A1:539:A:C8	2.41	0.55
7:A1:1412:C:H2'	7:A1:1413:A:C8	2.42	0.55
7:A2:33:A:H1'	18:L2:29:GLN:HE22	1.70	0.55
8:B:20:THR:O	8:B:23:TRP:HD1	1.90	0.55
11:E1:159:LYS:NZ	14:H1:42:GLU:O	2.26	0.55
11:E2:56:VAL:HB	28:V2:62:C:H4'	1.89	0.55
18:L2:43:LYS:HG2	18:L2:44:LYS:H	1.72	0.55
7:A2:43:C:H2'	7:A2:44:A:C8	2.42	0.54
7:A2:1308:U:H2'	7:A2:1309:G:H8	1.71	0.54
8:B:38:VAL:HG12	8:B:39:HIS:N	2.21	0.54
8:B2:173:ILE:O	8:B2:177:ASN:ND2	2.40	0.54
30:W1:34:G:H3'	30:W1:35:A:H8	1.72	0.54
5:72:1791:A:H5''	35:b2:205:LEU:HD11	1.90	0.54
5:72:1818:U:OP2	35:b2:156:ARG:NE	2.40	0.54
7:A1:1005:A:H3'	7:A1:1006:G:H8	1.72	0.54
7:A1:1405:G:N3	7:A1:1518:MA6:O2'	2.37	0.54
7:A2:40:C:H2'	7:A2:41:G:C8	2.42	0.54
7:A2:309:A:H2'	7:A2:310:G:H8	1.72	0.54
7:A2:382:A:H2'	7:A2:383:A:C8	2.42	0.54
9:C1:147:LYS:HD2	9:C1:205:GLY:HA2	1.88	0.54
5:72:910:A:H62	38:h2:12:MET:HA	1.72	0.54
5:72:1825:U:H1'	35:b2:253:LYS:HE2	1.90	0.54
7:A1:70:U:O2'	7:A1:72:A:N6	2.34	0.54
7:A1:977:A:H8	7:A1:1223:C:C2	2.25	0.54
7:A2:579:A:H4'	21:O2:54:ARG:HH21	1.72	0.54
8:B:90:PHE:CE1	8:B:153:ASP:HB3	2.35	0.54
8:B2:90:PHE:HB3	8:B2:151:ILE:HG22	1.90	0.54
13:G2:76:LYS:HG2	13:G2:89:VAL:HB	1.88	0.54
16:J2:52:LEU:HD11	20:N2:81:ARG:HD2	1.88	0.54
17:K2:17:SER:HA	17:K2:79:ILE:HA	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h2:1:MET:HG2	38:h2:2:LEU:H	1.71	0.54
5:72:881:G:H1	5:72:895:U:H3	1.53	0.54
9:C2:34:ASP:OD2	20:N2:65:ARG:NH2	2.39	0.54
5:72:954:G:OP2	38:h2:16:ARG:NH1	2.35	0.54
7:A1:77:A:H2'	7:A1:78:A:C8	2.42	0.54
7:A1:587:G:N1	7:A1:754:C:OP2	2.32	0.54
7:A1:908:A:H2'	7:A1:909:A:H8	1.72	0.54
7:A1:1144:G:N2	7:A1:1146:A:H62	2.05	0.54
7:A2:154:U:H2'	7:A2:155:A:C8	2.42	0.54
7:A2:503:C:OP1	18:L2:116:LYS:NZ	2.35	0.54
12:F2:66:ALA:HB3	12:F2:71:ILE:HD11	1.88	0.54
20:N2:60:GLN:OE1	20:N2:60:GLN:N	2.41	0.54
7:A2:401:C:O2'	7:A2:621:A:N3	2.40	0.54
8:B:70:VAL:HA	8:B:92:VAL:HB	1.89	0.54
7:A1:17:U:H2'	7:A1:18:C:C6	2.43	0.54
17:K2:73:ALA:O	17:K2:77:TYR:N	2.33	0.54
44:z2:75:LYS:HB2	44:z2:77:ARG:HG3	1.90	0.54
7:A1:2:A:N3	7:A1:613:C:O2'	2.38	0.54
7:A1:1474:U:H2'	7:A1:1475:G:C8	2.43	0.54
7:A2:581:G:N1	7:A2:759:A:OP2	2.29	0.54
7:A2:770:C:O2'	7:A2:899:C:N3	2.37	0.54
9:C2:82:GLU:HG2	9:C2:85:GLU:HB3	1.90	0.54
9:C2:110:GLU:HB2	9:C2:144:LEU:HD12	1.89	0.54
12:F1:12:PRO:O	12:F1:44:ARG:NH2	2.41	0.54
13:G1:147:ALA:O	17:K1:56:ARG:NH2	2.41	0.54
5:72:1167:C:H2'	5:72:1168:G:H8	1.73	0.54
7:A1:10:A:H2'	7:A1:11:G:C8	2.43	0.54
7:A1:429:U:O2'	10:D1:31:LYS:NZ	2.27	0.54
7:A1:584:G:H2'	7:A1:585:G:C8	2.43	0.54
7:A1:1267:C:H3'	7:A1:1268:G:C8	2.43	0.54
7:A2:1516:2MG:N2	7:A2:1519:MA6:OP2	2.39	0.54
8:B:47:VAL:HG13	8:B:48:PRO:HD3	1.90	0.54
9:C2:7:PRO:HG3	9:C2:201:TRP:HE1	1.73	0.54
13:G2:13:LEU:HD12	13:G2:14:PRO:HD2	1.89	0.54
23:Q2:28:PHE:CZ	23:Q2:37:PHE:HB3	2.42	0.54
26:T1:55:GLN:HB3	26:T1:56:PRO:HD3	1.90	0.54
39:i2:62:LEU:HD13	39:i2:135:HIS:CD2	2.42	0.54
5:72:858:G:N3	5:72:2268:A:H2'	2.23	0.54
7:A1:73:C:H2'	7:A1:74:A:C8	2.43	0.54
7:A1:1414:U:H2'	7:A1:1415:G:H8	1.73	0.54
7:A2:212:G:H2'	7:A2:213:G:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1535:C:H1'	7:A2:1536:C:H5'	1.90	0.54
9:C2:150:LYS:O	9:C2:201:TRP:N	2.41	0.54
9:C2:212:ALA:H	16:J2:16:ARG:HH12	1.55	0.54
11:E2:157:ARG:HH21	14:H2:43:GLU:HB3	1.71	0.54
29:W:54:5MU:H2'	29:W:55:PSU:O4'	2.08	0.54
3:4:41:HIS:CD2	36:e2:109:PRO:HA	2.42	0.53
5:72:1071:G:N3	5:72:1089:A:O2'	2.41	0.53
7:A1:82:G:H3'	7:A1:83:C:C6	2.43	0.53
7:A1:709:U:H2'	7:A1:710:G:C8	2.43	0.53
7:A2:67:C:O2'	7:A2:171:A:N3	2.41	0.53
7:A2:963:G:H21	16:J2:57:VAL:HG11	1.71	0.53
7:A2:1256:A:H3'	9:C2:27:LYS:HZ1	1.72	0.53
7:A2:1346:A:N1	7:A2:1374:A:H5''	2.23	0.53
29:W:31:U:H2'	29:W:32:PSU:H5''	1.89	0.53
43:r2:8:ILE:O	43:r2:12:THR:OG1	2.26	0.53
2:32:5:LYS:NZ	2:32:36:GLU:OE1	2.41	0.53
5:72:1230:A:H2'	5:72:1231:U:C6	2.44	0.53
7:A1:185:U:H2'	7:A1:186:C:C6	2.44	0.53
7:A1:1058:G:H2'	7:A1:1059:C:C6	2.43	0.53
7:A1:1263:C:H2'	7:A1:1264:U:C6	2.44	0.53
7:A2:1247:U:H2'	7:A2:1248:A:H5''	1.89	0.53
8:B2:67:ILE:HG12	8:B2:89:GLN:HE21	1.73	0.53
9:C2:18:TRP:CD1	9:C2:20:SER:O	2.62	0.53
24:R1:42:SER:HA	24:R1:45:THR:HG22	1.90	0.53
5:72:372:G:O2'	5:72:400:G:O6	2.23	0.53
5:72:455:C:H3'	5:72:456:C:H5''	1.89	0.53
5:72:1105:U:H2'	5:72:1106:G:C8	2.44	0.53
5:72:1604:C:O2'	5:72:1610:A:N1	2.35	0.53
7:A1:57:G:H1'	39:i2:83:LYS:HE2	1.90	0.53
7:A1:978:A:N7	7:A1:1360:A:N6	2.53	0.53
7:A1:1318:A:H5''	25:S1:3:ARG:HH12	1.71	0.53
7:A2:255:G:H4'	23:Q2:19:LYS:HD3	1.90	0.53
10:D1:14:ARG:O	10:D1:16:GLY:N	2.39	0.53
14:H2:102:ALA:HB3	14:H2:113:ASP:HB3	1.89	0.53
30:W1:10:G:N2	30:W1:26:A:H1'	2.23	0.53
5:72:83:A:O2'	5:72:103:A:N6	2.41	0.53
5:72:713:G:OP2	21:O2:88:ARG:NH1	2.40	0.53
7:A1:538:G:OP2	18:L1:110:ARG:NH2	2.41	0.53
7:A1:1271:A:H2'	7:A1:1272:G:C8	2.43	0.53
7:A2:160:A:H2'	7:A2:161:A:O4'	2.07	0.53
7:A2:418:C:H2'	7:A2:419:C:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:B:69:PHE:HE1	8:B:89:GLN:HB2	1.73	0.53
8:B2:66:LYS:HB3	8:B2:90:PHE:CE2	2.42	0.53
13:G1:78:ARG:HH11	13:G1:156:TRP:HB2	1.72	0.53
26:T1:54:MET:HE3	26:T1:79:LEU:HD11	1.91	0.53
28:V2:31:U:O2'	28:V2:32:U:OP1	2.22	0.53
5:72:463:G:N2	5:72:466:A:OP2	2.24	0.53
5:72:747:5MU:O2	5:72:2014:A:H1'	2.09	0.53
5:72:1278:C:H2'	5:72:1279:G:C8	2.43	0.53
5:72:2166:U:H5''	5:72:2167:U:C5	2.42	0.53
7:A1:46:G:H2'	7:A1:366:A:N7	2.23	0.53
7:A1:243:A:H62	7:A1:281:G:H1'	1.72	0.53
7:A1:304:U:H2'	7:A1:305:G:C8	2.43	0.53
7:A1:643:C:H2'	7:A1:644:U:C6	2.43	0.53
7:A1:1030:U:O5'	7:A1:1030:U:H6	1.92	0.53
7:A1:1320:C:H1'	25:S1:73:GLU:HG3	1.91	0.53
7:A2:377:G:H2'	7:A2:378:G:H8	1.73	0.53
15:I2:119:ARG:HH21	15:I2:123:ARG:NH2	2.06	0.53
1:12:65:ASP:OD1	1:12:66:THR:N	2.42	0.53
5:72:1338:G:O2'	5:72:1393:A:N1	2.38	0.53
7:A2:33:A:O2'	18:L2:29:GLN:NE2	2.42	0.53
7:A2:501:C:H1'	7:A2:549:C:H1'	1.90	0.53
7:A2:1185:G:H2'	7:A2:1186:G:C8	2.44	0.53
7:A2:1218:C:H2'	7:A2:1219:A:H8	1.73	0.53
7:A2:1236:A:H4'	7:A2:1304:G:H4'	1.90	0.53
8:B2:94:HIS:ND1	8:B2:146:ASN:O	2.41	0.53
20:N1:64:CYS:HB2	20:N1:80:SER:HB3	1.89	0.53
22:P1:6:LEU:HD13	22:P1:17:TYR:CD1	2.44	0.53
39:i2:62:LEU:HD13	39:i2:135:HIS:HD2	1.73	0.53
7:A1:398:U:H2'	7:A1:399:G:H8	1.74	0.53
9:C1:11:ARG:NH1	9:C1:178:LEU:HA	2.24	0.53
10:D2:11:LEU:HD23	10:D2:63:ARG:HG2	1.91	0.53
35:b2:107:PRO:HG2	35:b2:110:LEU:HB2	1.90	0.53
3:4:2:LYS:HB2	3:4:6:HIS:HE2	1.73	0.53
7:A1:34:C:H2'	7:A1:35:G:C8	2.44	0.53
7:A1:599:C:H2'	7:A1:600:A:H8	1.74	0.53
7:A1:864:A:H2'	7:A1:865:A:C8	2.43	0.53
7:A1:1257:A:H5''	7:A1:1258:G:C8	2.43	0.53
7:A2:1124:G:N2	7:A2:1125:U:O4	2.41	0.53
7:A2:1162:C:H2'	7:A2:1163:A:C8	2.44	0.53
7:A2:1323:G:H2'	7:A2:1324:A:C8	2.43	0.53
9:C1:14:ILE:O	9:C1:15:VAL:HB	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h2:41:LEU:HD22	38:h2:124:LEU:HD12	1.90	0.53
5:72:1820:U:N3	35:b2:159:GLY:HA3	2.24	0.53
5:72:2070:A:H2'	5:72:2071:A:O4'	2.09	0.53
5:72:2512:C:H2'	5:72:2513:A:O4'	2.09	0.53
7:A2:376:G:H2'	7:A2:377:G:C8	2.44	0.53
7:A2:694:A:N1	7:A2:787:A:O2'	2.41	0.53
7:A2:999:C:H2'	7:A2:1000:A:C8	2.44	0.53
7:A2:1057:G:H2'	7:A2:1058:G:O4'	2.09	0.53
17:K1:17:SER:HA	17:K1:79:ILE:HA	1.90	0.53
20:N1:32:SER:HA	20:N1:41:ARG:HH21	1.73	0.53
4:62:27:ALA:HB2	41:o2:61:LEU:HD13	1.91	0.53
5:72:600:G:H1	5:72:657:U:H3	1.55	0.53
7:A1:190:A:H3'	7:A1:191:G:H8	1.74	0.53
7:A1:677:U:H2'	7:A1:678:U:C6	2.43	0.53
7:A1:894:G:H2'	7:A1:895:G:H8	1.73	0.53
7:A2:977:A:N6	7:A2:1224:U:O5'	2.42	0.53
7:A2:1040:U:H2'	7:A2:1041:G:C8	2.43	0.53
35:b2:199:GLU:HB2	35:b2:202:LEU:HD12	1.90	0.53
3:4:2:LYS:HB2	3:4:5:ILE:HD11	1.90	0.52
5:72:859:G:O2'	5:72:916:G:O6	2.23	0.52
7:A1:402:G:H5'	7:A1:621:A:H1'	1.91	0.52
7:A1:595:A:N6	7:A1:641:U:H2'	2.24	0.52
7:A2:109:A:H2'	7:A2:326:G:H21	1.74	0.52
7:A2:1404:C:H2'	7:A2:1405:G:C8	2.44	0.52
9:C1:29:PHE:CE2	9:C1:33:LEU:HD11	2.44	0.52
9:C2:123:GLN:HB3	9:C2:128:VAL:HB	1.89	0.52
10:D1:188:ARG:HH22	10:D1:193:ALA:HA	1.74	0.52
18:L2:99:ARG:HB2	18:L2:117:TYR:HA	1.91	0.52
26:T1:35:VAL:HG22	26:T1:50:ALA:HB1	1.91	0.52
36:e2:49:LEU:HA	36:e2:52:ASN:HD21	1.74	0.52
6:82:66:A:N6	6:82:107:G:H2'	2.23	0.52
7:A1:591:U:H2'	7:A1:592:G:C8	2.44	0.52
7:A2:411:A:H62	7:A2:429:U:H5''	1.74	0.52
8:B:54:LEU:HB3	8:B:220:THR:HG21	1.92	0.52
5:72:676:A:HO2'	5:72:2442:C:HO2'	1.57	0.52
5:72:959:A:N3	5:72:2457:PSU:O2'	2.40	0.52
7:A1:12:U:H4'	7:A1:526:C:H4'	1.91	0.52
7:A1:142:G:H3'	7:A1:143:A:H8	1.73	0.52
7:A1:439:U:O4'	10:D1:120:HIS:HA	2.08	0.52
7:A1:751:U:H4'	21:O1:24:SER:HA	1.91	0.52
7:A2:148:G:O2'	7:A2:1446:A:N3	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:B2:24:ASN:ND2	8:B2:192:ASP:HA	2.24	0.52
9:C1:114:LYS:HA	9:C1:185:ASN:ND2	2.24	0.52
10:D1:50:ASP:O	10:D1:53:VAL:HG22	2.09	0.52
31:Y:58:A:O2'	31:Y:60:C:OP2	2.21	0.52
5:72:1594:U:H2'	5:72:1595:C:C6	2.43	0.52
7:A1:335:C:H2'	7:A1:336:A:H8	1.73	0.52
7:A1:1229:A:H2'	7:A1:1230:C:C6	2.45	0.52
7:A1:1323:G:H2'	7:A1:1324:A:C8	2.45	0.52
7:A2:890:G:O2'	7:A2:906:A:N6	2.43	0.52
9:C2:73:PRO:O	9:C2:76:VAL:HG22	2.10	0.52
10:D1:101:VAL:HG21	10:D1:137:VAL:HG21	1.91	0.52
11:E2:115:LEU:HD13	11:E2:123:VAL:HG11	1.91	0.52
17:K2:81:ASN:HA	17:K2:106:ARG:HB2	1.92	0.52
20:N1:31:ILE:O	20:N1:41:ARG:NE	2.35	0.52
20:N1:60:GLN:OE1	20:N1:60:GLN:N	2.42	0.52
32:Y1:23:A:H2'	32:Y1:24:G:C8	2.44	0.52
5:72:1283:G:N1	5:72:1286:A:OP2	2.43	0.52
7:A1:19:A:O2'	7:A1:572:A:N1	2.36	0.52
7:A1:250:A:H4'	7:A1:251:G:O5'	2.09	0.52
7:A1:476:U:H2'	7:A1:477:C:C6	2.45	0.52
7:A1:899:C:H2'	7:A1:900:A:O4'	2.10	0.52
7:A2:96:U:H2'	7:A2:97:G:C8	2.44	0.52
7:A2:519:C:H3'	7:A2:520:A:H8	1.73	0.52
7:A2:542:G:OP1	10:D2:10:LYS:NZ	2.42	0.52
7:A2:1077:G:N2	7:A2:1080:A:OP2	2.35	0.52
25:S2:50:ALA:HB1	25:S2:57:HIS:HB3	1.92	0.52
5:72:355:U:H2'	5:72:356:G:H8	1.75	0.52
5:72:833:A:OP1	41:o2:39:LYS:NZ	2.41	0.52
5:72:2859:G:H2'	5:72:2860:A:C8	2.44	0.52
7:A1:649:A:H3'	7:A1:650:G:H5''	1.92	0.52
7:A1:1266:G:N2	7:A1:1269:A:OP2	2.39	0.52
7:A2:15:G:O4'	7:A2:1396:A:O2'	2.26	0.52
7:A2:358:U:H2'	7:A2:359:G:C8	2.44	0.52
7:A2:474:G:H2'	7:A2:475:C:C2	2.45	0.52
7:A2:514:C:H2'	7:A2:515:G:H8	1.75	0.52
12:F2:52:ASN:C	12:F2:54:LEU:H	2.17	0.52
24:R2:7:ARG:HE	24:R2:9:LYS:HE2	1.72	0.52
31:Y:34:G:H2'	31:Y:35:G:H8	1.74	0.52
5:72:68:G:N2	5:72:74:A:O5'	2.43	0.52
5:72:717:C:H3'	5:72:718:A:H8	1.75	0.52
5:72:2204:G:O2'	35:b2:148:PRO:O	2.22	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:2532:G:O2'	5:72:2657:A:N1	2.43	0.52
7:A1:207:C:O2	7:A1:212:G:N1	2.43	0.52
7:A1:374:A:O3'	22:P1:70:ARG:NH1	2.41	0.52
7:A1:986:U:H3	7:A1:1219:A:H61	1.58	0.52
7:A1:1327:C:H2'	7:A1:1328:C:H6	1.75	0.52
7:A2:361:G:H2'	7:A2:362:G:O4'	2.09	0.52
9:C1:157:LEU:HD23	9:C1:196:ILE:HD13	1.91	0.52
15:I2:88:MET:SD	15:I2:95:ARG:NE	2.83	0.52
16:J1:7:ARG:HB3	16:J1:73:LEU:HD11	1.91	0.52
3:4:24:ILE:HD12	36:e2:102:ARG:HG2	1.92	0.52
5:72:858:G:O2'	5:72:859:G:O4'	2.17	0.52
5:72:1837:C:O2'	5:72:1927:A:N3	2.31	0.52
7:A1:54:C:H2'	7:A1:352:C:H41	1.75	0.52
7:A1:584:G:H2'	7:A1:585:G:H8	1.75	0.52
7:A1:633:G:H2'	7:A1:634:C:C6	2.45	0.52
7:A1:1404:C:H2'	7:A1:1405:G:C8	2.44	0.52
7:A2:183:C:O2'	7:A2:184:G:H5'	2.10	0.52
7:A2:451:A:H62	7:A2:481:G:H5'	1.73	0.52
14:H1:76:GLN:NE2	14:H1:77:ARG:O	2.42	0.52
23:Q2:15:ASP:OD2	23:Q2:54:GLY:HA2	2.09	0.52
24:R2:57:ARG:HG3	24:R2:61:ARG:HH12	1.75	0.52
1:12:57:ARG:NH2	5:72:400:G:N7	2.54	0.52
5:72:1035:U:H2'	5:72:1036:G:H8	1.75	0.52
7:A1:1021:A:H3'	7:A1:1022:A:H8	1.75	0.52
7:A1:1051:C:O2	7:A1:1207:2MG:N1	2.37	0.52
7:A1:1327:C:H2'	7:A1:1328:C:C6	2.45	0.52
7:A2:1029:U:H2'	7:A2:1030:U:H6	1.75	0.52
7:A2:1317:C:N3	25:S2:37:ARG:NH1	2.57	0.52
7:A2:1363:A:O2'	7:A2:1365:G:N7	2.39	0.52
17:K1:116:ILE:HD12	17:K1:117:PRO:HD2	1.91	0.52
19:M1:75:MET:HG3	19:M1:78:LYS:HE3	1.92	0.52
34:a2:69:THR:HA	34:a2:176:GLY:HA2	1.92	0.52
39:i2:89:LYS:C	39:i2:91:PHE:H	2.18	0.52
5:72:503:A:H5''	5:72:504:A:H3'	1.92	0.52
5:72:964:C:O2'	5:72:2273:A:N3	2.40	0.52
5:72:1796:U:H2'	5:72:1797:G:C8	2.44	0.52
5:72:2094:A:H2'	5:72:2095:A:C8	2.44	0.52
7:A1:148:G:H1'	7:A1:1447:A:H1'	1.92	0.52
7:A1:1088:G:H1'	27:U1:71:TYR:HA	1.92	0.52
7:A1:1464:U:H2'	7:A1:1465:A:H8	1.74	0.52
7:A2:1043:G:H2'	7:A2:1044:A:H8	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:I1:45:ARG:HD3	15:I1:49:ARG:HH22	1.75	0.52
26:T1:54:MET:HE3	26:T1:79:LEU:HD21	1.92	0.52
28:V2:8:A:H4'	28:V2:9:A:OP1	2.09	0.52
29:W:15:A:C3'	29:W:16:H2U:H62	2.37	0.52
7:A2:107:G:OP1	7:A2:325:A:N6	2.42	0.51
7:A2:1314:C:H2'	7:A2:1315:U:C6	2.44	0.51
8:B:82:ASP:OD1	8:B:83:ALA:N	2.42	0.51
10:D2:50:ASP:OD1	10:D2:51:TYR:N	2.43	0.51
16:J2:21:ALA:HB1	16:J2:92:LEU:HD11	1.92	0.51
21:O1:24:SER:O	21:O1:28:GLN:HG2	2.10	0.51
24:R2:39:ILE:H	24:R2:39:ILE:HD12	1.74	0.51
5:72:715:A:N7	21:O2:53:ARG:NH1	2.58	0.51
7:A1:539:A:H2'	7:A1:540:G:C8	2.45	0.51
7:A1:677:U:O2	7:A1:777:A:O2'	2.27	0.51
7:A1:744:C:H2'	7:A1:745:G:H8	1.75	0.51
7:A1:995:C:H2'	7:A1:996:A:H8	1.74	0.51
7:A1:1356:G:H2'	7:A1:1357:A:H8	1.75	0.51
7:A1:1404:C:H42	7:A1:1497:G:H1	1.56	0.51
7:A1:1478:U:H2'	7:A1:1479:C:C6	2.46	0.51
7:A1:1540:U:H2'	28:V2:6:A:H5''	1.92	0.51
7:A2:377:G:H2'	7:A2:378:G:C8	2.45	0.51
7:A2:946:A:H2'	7:A2:947:G:C8	2.45	0.51
8:B:35:ARG:HB3	8:B:40:ILE:HD11	1.92	0.51
8:B:91:PHE:HE2	8:B:93:ASN:HD21	1.57	0.51
9:C2:70:THR:O	9:C2:106:VAL:N	2.40	0.51
11:E1:44:GLY:HA2	11:E1:76:LEU:HG	1.92	0.51
13:G2:145:ALA:O	13:G2:149:LYS:N	2.42	0.51
44:z2:25:ARG:HH21	44:z2:29:GLU:HB3	1.75	0.51
5:72:1859:U:H2'	5:72:1860:G:C8	2.45	0.51
7:A1:1100:C:OP2	8:B:95:ARG:NH1	2.44	0.51
7:A1:1253:G:N2	7:A1:1356:G:OP1	2.42	0.51
7:A1:1455:G:H3'	7:A1:1456:A:H8	1.74	0.51
7:A2:203:G:H1	7:A2:214:C:H42	1.57	0.51
11:E2:136:VAL:O	11:E2:140:THR:HG23	2.11	0.51
15:I2:24:GLY:H	15:I2:61:LEU:HA	1.74	0.51
21:O2:29:VAL:HG11	21:O2:81:LEU:HD21	1.92	0.51
26:T1:39:ILE:HG23	26:T1:86:LEU:HD12	1.92	0.51
5:72:500:G:N1	5:72:503:A:OP2	2.44	0.51
5:72:1808:A:H3'	5:72:1809:A:C8	2.45	0.51
7:A1:1512:U:H2'	7:A1:1513:A:C8	2.46	0.51
7:A2:1251:A:H2'	7:A2:1252:A:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1326:U:H2'	7:A2:1327:C:C6	2.45	0.51
25:S2:11:ILE:HG13	25:S2:38:SER:HB3	1.92	0.51
39:i2:4:ILE:HD11	39:i2:16:GLY:HA2	1.92	0.51
6:82:88:C:H4'	6:82:89:U:OP1	2.09	0.51
7:A1:12:U:H2'	7:A1:13:U:H5''	1.93	0.51
7:A1:335:C:H2'	7:A1:336:A:C8	2.46	0.51
7:A1:411:A:H62	7:A1:429:U:H5''	1.74	0.51
7:A1:448:A:H3'	7:A1:449:G:C8	2.46	0.51
7:A1:451:A:OP2	22:P1:70:ARG:NH2	2.34	0.51
7:A1:690:G:H2'	7:A1:691:G:C8	2.46	0.51
7:A1:1088:G:N2	7:A1:1167:A:H61	2.05	0.51
7:A1:1251:A:N3	7:A1:1369:C:O2'	2.41	0.51
7:A1:1346:A:H2	7:A1:1375:A:H62	1.59	0.51
7:A2:17:U:H2'	7:A2:18:C:C6	2.46	0.51
7:A2:376:G:H1	7:A2:387:U:H3	1.58	0.51
7:A2:1402:4OC:O5'	7:A2:1402:4OC:H6	2.09	0.51
9:C1:6:HIS:CE1	9:C1:8:ASN:HB3	2.46	0.51
10:D1:202:GLU:HB2	11:E1:112:ARG:HH22	1.75	0.51
10:D2:188:ARG:HH22	10:D2:193:ALA:HA	1.75	0.51
13:G2:113:ASP:H	13:G2:119:ARG:HE	1.59	0.51
26:T1:57:ILE:HD12	26:T1:57:ILE:H	1.76	0.51
3:4:44:PHE:HE1	36:e2:176:PRO:HB3	1.76	0.51
5:72:307:G:N1	5:72:310:A:OP2	2.40	0.51
7:A1:982:U:O2	7:A1:1222:G:N1	2.33	0.51
7:A1:1240:U:H5'	13:G1:42:ILE:HD11	1.92	0.51
7:A2:45:G:H1	7:A2:396:C:H42	1.58	0.51
7:A2:200:G:H2'	7:A2:201:G:H8	1.76	0.51
7:A2:722:G:H4'	24:R2:43:ARG:HH22	1.76	0.51
7:A2:816:A:OP1	7:A2:1526:G:O2'	2.23	0.51
7:A2:998:C:H42	7:A2:1042:A:H61	1.59	0.51
7:A2:1412:C:H2'	7:A2:1413:A:C8	2.45	0.51
10:D2:59:GLN:O	10:D2:63:ARG:NE	2.41	0.51
10:D2:147:GLU:HA	10:D2:150:LYS:HG2	1.92	0.51
5:72:1299:G:N1	5:72:1640:A:OP2	2.31	0.51
7:A1:401:C:H2'	7:A1:402:G:H8	1.76	0.51
7:A1:591:U:H2'	7:A1:592:G:H8	1.75	0.51
7:A1:830:G:H2'	7:A1:831:A:H8	1.75	0.51
7:A1:1166:G:H22	7:A1:1169:A:H5''	1.75	0.51
7:A1:1275:A:H2'	7:A1:1276:G:O4'	2.11	0.51
7:A1:1304:G:H1'	7:A1:1334:G:N2	2.25	0.51
7:A2:859:G:OP2	7:A2:869:G:N1	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1414:U:H2'	7:A2:1415:G:H8	1.75	0.51
15:I1:119:ARG:HH12	15:I1:125:PRO:HA	1.75	0.51
30:W1:10:G:H22	30:W1:26:A:H1'	1.75	0.51
36:e2:116:GLY:HA2	36:e2:176:PRO:HB2	1.93	0.51
41:o2:20:GLY:HA2	41:o2:28:GLY:HA2	1.92	0.51
5:72:1924:C:H2'	5:72:1925:C:C6	2.45	0.51
5:72:2104:C:H2'	5:72:2105:U:C6	2.46	0.51
5:72:2285:C:OP2	37:g2:6:ARG:NH2	2.44	0.51
7:A1:148:G:O2'	7:A1:1446:A:N3	2.37	0.51
7:A1:150:U:H2'	7:A1:151:A:H8	1.75	0.51
7:A1:430:A:OP1	10:D1:9:LEU:HB2	2.11	0.51
7:A1:520:A:H61	7:A1:529:G:H1'	1.76	0.51
7:A1:602:A:H2'	7:A1:603:U:C6	2.45	0.51
7:A1:1033:G:H3'	7:A1:1034:G:H5''	1.93	0.51
7:A1:1087:G:C2	7:A1:1099:G:H1'	2.45	0.51
7:A2:21:G:H2'	7:A2:22:G:H8	1.75	0.51
7:A2:254:G:H2'	7:A2:255:G:H8	1.75	0.51
7:A2:448:A:H3'	7:A2:449:G:H8	1.75	0.51
7:A2:483:C:O2'	7:A2:484:G:OP1	2.24	0.51
7:A2:1043:G:H2'	7:A2:1044:A:C8	2.45	0.51
8:B:71:GLY:H	8:B:92:VAL:HB	1.76	0.51
10:D1:9:LEU:HD12	10:D1:32:CYS:SG	2.51	0.51
13:G2:51:ALA:O	13:G2:55:GLY:N	2.40	0.51
15:I1:130:ARG:NH1	30:W1:35:A:OP1	2.44	0.51
39:i2:94:ILE:HG12	39:i2:122:LEU:HD22	1.92	0.51
3:4:13:THR:HG23	3:4:23:LYS:HZ1	1.76	0.51
7:A1:398:U:H2'	7:A1:399:G:C8	2.45	0.51
7:A1:1267:C:H3'	7:A1:1268:G:H8	1.75	0.51
7:A1:1305:G:H4'	7:A1:1332:A:H62	1.75	0.51
7:A1:1513:A:H2'	7:A1:1514:G:H8	1.76	0.51
7:A2:1098:C:O2'	27:U2:71:TYR:OXT	2.23	0.51
7:A2:1149:C:H2'	7:A2:1150:A:C8	2.46	0.51
7:A2:1338:G:H2'	7:A2:1339:A:C8	2.46	0.51
9:C1:57:ILE:HG23	9:C1:66:VAL:HG22	1.92	0.51
10:D2:60:LYS:O	10:D2:64:ILE:HD12	2.09	0.51
15:I2:51:PRO:HD3	15:I2:80:ARG:HG3	1.93	0.51
24:R2:34:THR:HG22	24:R2:38:LYS:H	1.76	0.51
36:e2:34:ILE:HG13	36:e2:96:MET:HG3	1.93	0.51
38:h2:64:TRP:HB2	38:h2:104:GLU:HB2	1.92	0.51
5:72:245:G:O2'	5:72:384:A:N1	2.38	0.51
7:A1:950:U:H2'	7:A1:951:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:559:A:H4'	7:A2:560:A:H3'	1.92	0.51
7:A2:643:C:OP1	14:H2:31:LYS:NZ	2.39	0.51
7:A2:824:G:H2'	7:A2:825:A:C8	2.46	0.51
19:M1:107:ARG:NH2	19:M1:110:LYS:HE3	2.26	0.51
21:O2:24:SER:O	21:O2:28:GLN:HG2	2.11	0.51
29:W:14:A:H3'	29:W:15:A:C8	2.45	0.51
39:i2:87:GLU:OE1	39:i2:88:GLY:N	2.44	0.51
5:72:1570:A:H2'	5:72:1571:A:C8	2.46	0.50
7:A1:783:C:H2'	7:A1:784:A:C8	2.46	0.50
7:A2:37:U:HO2'	7:A2:500:G:HO2'	1.57	0.50
7:A2:180:U:O2	7:A2:196:A:N6	2.44	0.50
7:A2:197:A:H4'	7:A2:198:G:O5'	2.11	0.50
7:A2:1492:A:N3	28:V2:55:C:O2'	2.39	0.50
13:G2:24:ALA:O	13:G2:27:VAL:HG22	2.11	0.50
13:G2:78:ARG:HA	13:G2:78:ARG:HE	1.76	0.50
17:K1:23:ILE:N	17:K1:85:MET:O	2.45	0.50
22:P1:61:VAL:HG22	22:P1:67:ILE:HD11	1.93	0.50
39:i2:96:THR:HB	39:i2:112:LYS:HB3	1.92	0.50
3:4:27:THR:N	36:e2:140:GLU:OE1	2.43	0.50
5:72:2063:C:O2'	31:Y:76:A:O3'	2.26	0.50
7:A1:505:G:H2'	7:A1:506:G:H8	1.77	0.50
7:A2:360:G:O2'	7:A2:361:G:H5'	2.12	0.50
7:A2:544:G:OP1	10:D2:56:ARG:NH1	2.44	0.50
7:A2:1162:C:H2'	7:A2:1163:A:H8	1.76	0.50
8:B:47:VAL:CG1	8:B:48:PRO:HD3	2.41	0.50
9:C1:77:ILE:HG22	9:C1:77:ILE:O	2.12	0.50
12:F1:49:TYR:HB3	24:R1:74:HIS:CE1	2.46	0.50
2:32:27:GLY:HA3	2:32:37:ARG:HH21	1.75	0.50
5:72:881:G:N2	5:72:895:U:O2	2.42	0.50
5:72:2116:G:H8	5:72:2117:A:C5	2.29	0.50
5:72:2554:U:H2'	5:72:2555:U:C6	2.47	0.50
7:A1:886:G:H1	7:A1:911:U:H3	1.58	0.50
7:A1:1040:U:H2'	7:A1:1041:G:C8	2.46	0.50
7:A1:1157:A:H1'	7:A1:1181:G:N2	2.26	0.50
7:A1:1239:A:H1'	7:A1:1241:G:C4	2.46	0.50
7:A2:358:U:H2'	7:A2:359:G:H8	1.74	0.50
8:B:163:VAL:HG22	8:B:164:ILE:H	1.76	0.50
9:C1:15:VAL:HG12	9:C1:16:LYS:N	2.26	0.50
11:E2:38:VAL:HG21	11:E2:114:VAL:HA	1.93	0.50
23:Q2:59:VAL:HG12	23:Q2:78:VAL:HG22	1.93	0.50
5:72:839:U:H3	5:72:939:G:H1	1.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:2127:G:H2'	5:72:2128:G:O4'	2.11	0.50
5:72:2176:A:OP1	5:72:2176:A:H4'	2.09	0.50
5:72:2189:U:H2'	5:72:2190:G:O4'	2.11	0.50
7:A1:102:G:H2'	7:A1:103:U:H6	1.77	0.50
7:A1:578:C:H2'	7:A1:579:A:H8	1.76	0.50
7:A1:618:C:N4	7:A1:621:A:OP2	2.42	0.50
7:A1:880:C:H3'	18:L1:6:GLN:HE21	1.76	0.50
7:A1:1118:U:H5'	15:I1:106:ARG:HG3	1.92	0.50
7:A2:997:U:H2'	7:A2:998:C:C6	2.47	0.50
7:A2:1222:G:OP2	7:A2:1322:C:N4	2.37	0.50
7:A2:1320:C:N3	25:S2:36:ARG:NH1	2.60	0.50
11:E1:75:ALA:O	11:E1:82:GLN:NE2	2.34	0.50
11:E1:136:VAL:O	11:E1:140:THR:HG23	2.11	0.50
5:72:706:A:OP1	35:b2:7:LYS:NZ	2.45	0.50
5:72:1428:C:N4	5:72:1570:A:OP2	2.35	0.50
5:72:1475:G:H4'	5:72:1476:U:H5'	1.93	0.50
7:A1:181:A:H61	7:A1:194:C:H3'	1.76	0.50
7:A1:350:G:H2'	7:A1:351:G:C8	2.47	0.50
7:A1:681:A:H2'	7:A1:682:G:H8	1.77	0.50
7:A2:1371:G:H2'	7:A2:1372:U:C6	2.46	0.50
9:C1:46:GLU:HB2	9:C1:47:LEU:HD12	1.93	0.50
9:C2:206:GLU:O	9:C2:206:GLU:HG2	2.12	0.50
12:F2:55:HIS:ND1	12:F2:55:HIS:O	2.45	0.50
34:a2:71:ARG:O	34:a2:73:VAL:HG13	2.11	0.50
5:72:45:G:N7	5:72:215:G:O2'	2.44	0.50
5:72:383:C:H2'	5:72:385:C:H41	1.76	0.50
5:72:1693:U:O2'	35:b2:14:ARG:NH2	2.44	0.50
5:72:1753:G:N2	5:72:1756:G:O5'	2.44	0.50
5:72:1818:U:H5	35:b2:156:ARG:HH22	1.59	0.50
5:72:1935:G:H3'	5:72:1962:5MC:HN41	1.75	0.50
7:A1:578:C:O2'	7:A1:728:A:N3	2.37	0.50
7:A1:686:U:H3	7:A1:703:G:H1'	1.76	0.50
7:A1:689:C:OP1	17:K1:29:ASN:ND2	2.40	0.50
7:A2:399:G:H2'	7:A2:400:C:C6	2.47	0.50
7:A2:493:A:H2'	7:A2:494:G:O4'	2.12	0.50
7:A2:503:C:O2'	7:A2:510:A:N1	2.35	0.50
8:B:162:PHE:HD1	8:B:184:PHE:HB2	1.76	0.50
13:G1:70:ARG:HG2	13:G1:96:ARG:HE	1.77	0.50
5:72:1688:U:O2'	5:72:1700:A:N7	2.39	0.50
7:A1:584:G:H1	7:A1:757:U:H3	1.59	0.50
7:A1:1002:G:H3'	7:A1:1003:G:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1060:U:H3	7:A1:1197:A:H61	1.58	0.50
7:A1:1310:G:OP2	19:M1:87:ARG:NH2	2.45	0.50
7:A2:201:G:H1	7:A2:216:U:H3	1.59	0.50
11:E2:149:SER:OG	11:E2:152:MET:HE3	2.12	0.50
13:G1:150:ALA:HA	17:K1:61:PHE:HB3	1.93	0.50
15:I2:98:LEU:HB3	15:I2:104:VAL:HG13	1.93	0.50
24:R1:39:ILE:HG22	24:R1:40:VAL:H	1.77	0.50
29:W:66:C:H2'	29:W:67:G:C8	2.47	0.50
5:72:158:U:H3	5:72:168:G:H1	1.60	0.50
5:72:774:G:N2	5:72:787:C:O2'	2.40	0.50
5:72:1130:U:O2'	5:72:1131:G:P	2.70	0.50
5:72:1769:U:O2'	5:72:1958:C:OP1	2.29	0.50
7:A1:109:A:H5'	7:A1:110:C:H5	1.77	0.50
7:A1:413:G:O3'	7:A1:428:G:N2	2.41	0.50
7:A1:834:U:H2'	7:A1:835:U:C6	2.47	0.50
7:A1:1303:C:H2'	7:A1:1304:G:O4'	2.11	0.50
7:A1:1513:A:H2'	7:A1:1514:G:C8	2.47	0.50
7:A2:320:A:H2'	7:A2:321:A:C8	2.46	0.50
7:A2:1199:U:H4'	16:J2:56:HIS:CD2	2.47	0.50
8:B:90:PHE:CE2	8:B:154:MET:HG2	2.46	0.50
18:L2:81:LEU:HB2	18:L2:102:LEU:HD13	1.93	0.50
19:M2:50:GLU:HA	19:M2:53:ILE:HD12	1.93	0.50
23:Q2:46:VAL:HG11	23:Q2:61:ILE:HD12	1.94	0.50
35:b2:245:VAL:HG12	35:b2:251:GLN:HA	1.94	0.50
36:e2:117:LEU:HD13	36:e2:176:PRO:HG2	1.93	0.50
43:r2:28:VAL:HG11	43:r2:103:VAL:HG13	1.93	0.50
5:72:2314:A:H5'	36:e2:35:THR:HG21	1.94	0.50
5:72:2849:U:N3	5:72:2867:G:O4'	2.45	0.50
7:A1:401:C:H2'	7:A1:402:G:C8	2.47	0.50
7:A1:407:U:H2'	7:A1:408:A:H8	1.76	0.50
7:A1:463:U:C4	7:A1:467:U:H2'	2.47	0.50
7:A1:712:A:H2'	7:A1:713:G:C8	2.47	0.50
7:A1:865:A:H5'	7:A1:1078:U:C5	2.47	0.50
9:C2:9:GLY:HA3	20:N2:89:MET:SD	2.52	0.50
14:H1:54:ASP:OD1	14:H1:55:THR:N	2.44	0.50
22:P1:71:VAL:O	22:P1:75:ILE:HG13	2.11	0.50
31:Y:53:G:H5''	31:Y:54:5MU:H73	1.93	0.50
39:i2:114:GLU:O	39:i2:116:ARG:N	2.36	0.50
43:r2:69:ASP:OD1	43:r2:70:ALA:N	2.44	0.50
1:12:55:GLY:O	1:12:59:ILE:HG12	2.12	0.49
5:72:299:A:N3	5:72:319:G:O2'	2.37	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:109:A:H5'	7:A1:110:C:C5	2.47	0.49
7:A1:1218:C:H2'	7:A1:1219:A:C8	2.47	0.49
7:A1:1225:A:H2'	7:A1:1225:A:N3	2.27	0.49
7:A1:1346:A:O2'	7:A1:1347:G:H4'	2.12	0.49
7:A1:1435:G:H2'	7:A1:1436:U:C6	2.46	0.49
7:A2:200:G:H2'	7:A2:201:G:C8	2.47	0.49
7:A2:411:A:N6	7:A2:429:U:H5''	2.27	0.49
18:L1:54:ARG:HH11	18:L1:64:THR:HB	1.77	0.49
20:N1:4:GLN:OE1	20:N1:4:GLN:N	2.42	0.49
20:N2:9:ARG:O	20:N2:13:ARG:HG2	2.12	0.49
34:a2:156:ALA:HA	34:a2:160:GLN:CB	2.42	0.49
43:r2:99:TYR:OH	43:r2:111:ARG:NH2	2.45	0.49
5:72:2194:U:H2'	5:72:2195:U:C6	2.47	0.49
7:A1:408:A:O3'	10:D1:23:SER:HB3	2.11	0.49
7:A1:742:G:H2'	7:A1:743:A:H8	1.77	0.49
7:A1:784:A:H2'	7:A1:785:G:H8	1.77	0.49
7:A2:354:G:O2'	7:A2:389:A:OP1	2.29	0.49
7:A2:976:G:OP2	7:A2:1358:U:O2'	2.30	0.49
8:B2:186:ILE:HG21	8:B2:213:TYR:CE2	2.47	0.49
23:Q1:7:THR:HG22	23:Q1:62:ARG:HB3	1.92	0.49
3:4:11:GLU:OE2	3:4:23:LYS:HB3	2.12	0.49
7:A1:129:A:HO2'	7:A1:130:A:H2'	1.77	0.49
7:A1:219:U:H2'	7:A1:220:G:H8	1.77	0.49
7:A1:320:A:H2'	7:A1:321:A:C8	2.46	0.49
7:A1:545:C:OP1	10:D1:58:LYS:NZ	2.45	0.49
7:A1:714:G:H2'	7:A1:715:A:C8	2.46	0.49
7:A1:816:A:OP1	7:A1:1526:G:O2'	2.29	0.49
7:A1:984:C:H42	7:A1:1221:G:H1	1.59	0.49
7:A1:1229:A:O2'	30:W1:30:G:OP1	2.29	0.49
7:A2:993:G:H2'	7:A2:995:C:H41	1.76	0.49
7:A2:1144:G:N2	7:A2:1146:A:H62	2.10	0.49
7:A2:1305:G:H1'	7:A2:1332:A:N6	2.26	0.49
14:H2:18:GLN:HB3	14:H2:70:ALA:HB1	1.95	0.49
22:P1:19:VAL:HG12	22:P1:36:VAL:HG23	1.94	0.49
36:e2:35:THR:HG23	36:e2:90:THR:HG22	1.94	0.49
5:72:84:A:N1	5:72:98:G:O2'	2.37	0.49
5:72:388:G:O6	5:72:390:U:O2'	2.31	0.49
7:A1:19:A:H2'	7:A1:20:U:C6	2.47	0.49
7:A1:162:A:C5	7:A1:163:C:H1'	2.46	0.49
7:A1:319:G:H1	7:A1:334:C:H42	1.61	0.49
7:A1:746:A:H2'	7:A1:747:A:H8	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1115:U:H3	7:A1:1185:G:H1	1.58	0.49
7:A2:1289:A:O3'	13:G2:35:LYS:NZ	2.45	0.49
8:B2:111:ILE:HG12	8:B2:148:LEU:HD21	1.94	0.49
8:B2:130:THR:HG22	8:B2:131:LYS:N	2.27	0.49
8:B2:166:ALA:HB3	8:B2:191:SER:HB3	1.93	0.49
11:E1:149:SER:OG	11:E1:152:MET:HE3	2.12	0.49
16:J2:64:GLN:O	20:N2:99:ALA:N	2.43	0.49
39:i2:94:ILE:O	39:i2:99:ILE:HD11	2.13	0.49
41:o2:33:ARG:NE	41:o2:39:LYS:O	2.41	0.49
2:32:38:GLU:HG2	2:32:40:THR:HG23	1.94	0.49
5:72:554:U:H2'	5:72:555:G:O4'	2.13	0.49
5:72:717:C:H2'	5:72:718:A:O4'	2.11	0.49
5:72:754:U:O2'	5:72:1272:A:N1	2.45	0.49
5:72:1297:C:O2'	5:72:1302:A:N1	2.38	0.49
7:A1:404:G:H5''	10:D1:119:SER:OG	2.12	0.49
7:A1:671:G:H2'	7:A1:672:U:H5'	1.94	0.49
7:A1:1060:U:H2'	7:A1:1061:G:H8	1.76	0.49
7:A1:1295:U:O2'	7:A1:1302:C:N4	2.37	0.49
7:A1:1447:A:OP1	7:A1:1448:C:N4	2.44	0.49
7:A2:1328:C:H2'	7:A2:1329:A:C8	2.48	0.49
7:A2:1397:C:H5'	28:V2:58:A:H61	1.78	0.49
8:B:23:TRP:CZ3	8:B:25:PRO:HA	2.47	0.49
9:C2:212:ALA:H	16:J2:16:ARG:NH1	2.10	0.49
12:F2:49:TYR:OH	24:R2:63:ARG:O	2.17	0.49
5:72:1094:U:H1'	5:72:1097:U:H5	1.78	0.49
5:72:2393:U:H5''	41:o2:62:PRO:HB3	1.93	0.49
7:A1:658:C:H1'	21:O1:22:THR:HG21	1.93	0.49
7:A1:691:G:H22	7:A1:695:A:H3'	1.77	0.49
7:A1:745:G:H2'	7:A1:746:A:C8	2.46	0.49
7:A1:898:G:N2	7:A1:901:A:OP2	2.43	0.49
7:A1:1304:G:H2'	7:A1:1305:G:O4'	2.12	0.49
7:A1:1449:C:H2'	7:A1:1450:U:O4'	2.12	0.49
7:A1:1456:A:H2'	7:A1:1457:G:O4'	2.12	0.49
7:A2:553:A:H5''	18:L2:21:VAL:HG21	1.94	0.49
7:A2:718:A:H5'	17:K2:119:ASN:OD1	2.13	0.49
7:A2:1319:A:H5''	25:S2:70:LYS:NZ	2.28	0.49
9:C1:57:ILE:HG12	9:C1:66:VAL:HG13	1.93	0.49
9:C2:22:TRP:HB2	9:C2:59:ARG:HB2	1.94	0.49
9:C2:76:VAL:HA	9:C2:79:LYS:HD2	1.94	0.49
9:C2:167:TRP:HZ3	9:C2:169:ARG:HG2	1.77	0.49
17:K2:97:ILE:HG22	27:U2:12:PHE:HZ	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:U2:6:VAL:HG13	27:U2:10:GLU:HB3	1.94	0.49
30:W1:41:C:H2'	30:W1:42:C:C6	2.47	0.49
38:h2:46:ILE:HD12	38:h2:69:PRO:HG3	1.95	0.49
5:72:2144:G:H1'	5:72:2147:A:H61	1.77	0.49
5:72:2258:C:O2'	5:72:2427:C:OP2	2.20	0.49
7:A1:59:A:H3'	7:A1:331:G:H22	1.78	0.49
7:A1:72:A:H2'	7:A1:73:C:C6	2.47	0.49
7:A1:488:C:O2'	7:A1:489:C:H5'	2.12	0.49
7:A1:1319:A:N6	7:A1:1360:A:N1	2.61	0.49
7:A2:459:A:H2'	7:A2:460:A:O4'	2.13	0.49
17:K1:27:PHE:CE1	17:K1:89:PRO:HG2	2.45	0.49
25:S1:36:ARG:HD2	25:S1:52:HIS:O	2.12	0.49
25:S1:36:ARG:HE	25:S1:75:ALA:HB3	1.77	0.49
5:72:373:U:H2'	5:72:374:A:H8	1.77	0.49
5:72:527:C:N4	5:72:2777:G:O2'	2.39	0.49
5:72:1064:C:N4	5:72:1070:A:OP1	2.43	0.49
7:A1:555:U:H2'	7:A1:556:C:C6	2.48	0.49
7:A1:578:C:H2'	7:A1:579:A:C8	2.47	0.49
7:A1:613:C:H2'	7:A1:614:C:C6	2.48	0.49
7:A1:651:C:N4	7:A1:753:A:OP2	2.46	0.49
7:A1:1324:A:H2'	7:A1:1325:C:C6	2.47	0.49
7:A2:218:U:H2'	7:A2:219:U:C6	2.48	0.49
7:A2:486:U:H2'	7:A2:487:A:H8	1.77	0.49
7:A2:553:A:H2'	7:A2:554:A:C8	2.47	0.49
9:C2:67:THR:HA	9:C2:102:ASN:O	2.12	0.49
10:D1:145:ILE:HG13	10:D1:178:MET:HE3	1.95	0.49
14:H2:89:LYS:O	14:H2:92:LEU:HD22	2.13	0.49
15:I1:45:ARG:O	15:I1:48:VAL:HG22	2.12	0.49
16:J2:97:ASP:OD1	16:J2:98:VAL:N	2.45	0.49
20:N2:20:TYR:HB3	20:N2:51:LEU:HD23	1.95	0.49
23:Q2:60:GLU:HG2	23:Q2:77:ARG:HH21	1.78	0.49
37:g2:39:PHE:HA	37:g2:46:HIS:HA	1.94	0.49
5:72:1141:U:H4'	5:72:1142:A:O4'	2.12	0.49
5:72:2474:U:OP2	5:72:2475:C:N4	2.40	0.49
7:A1:263:A:H2'	7:A1:264:C:C6	2.47	0.49
7:A1:1015:G:H2'	7:A1:1016:A:C8	2.47	0.49
7:A1:1073:U:H2'	7:A1:1074:G:C8	2.48	0.49
7:A2:252:U:O4	7:A2:253:A:N6	2.45	0.49
7:A2:520:A:H62	7:A2:529:G:N2	2.10	0.49
7:A2:1319:A:H5''	25:S2:70:LYS:HZ1	1.77	0.49
7:A2:1423:G:H1	7:A2:1477:U:H3	1.58	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:I2:87:LEU:HB3	15:I2:94:LEU:HD12	1.93	0.49
29:W:1:A:H3'	29:W:2:G:H8	1.77	0.49
35:b2:120:VAL:HG12	35:b2:131:PRO:HG2	1.95	0.49
5:71:1918:A:O2'	5:71:1920:C:N4	2.46	0.49
5:72:1789:A:OP2	35:b2:221:ARG:NH1	2.45	0.49
7:A1:718:A:H5'	17:K1:119:ASN:ND2	2.27	0.49
7:A1:1181:G:H1'	7:A1:1182:G:C8	2.48	0.49
7:A1:1430:A:H2'	7:A1:1431:A:O4'	2.13	0.49
7:A2:1241:G:H2'	7:A2:1242:G:C8	2.48	0.49
7:A2:1245:C:H2'	7:A2:1246:A:C8	2.47	0.49
15:I2:7:TYR:CG	15:I2:8:GLY:N	2.81	0.49
16:J2:36:VAL:HG12	16:J2:76:ILE:HG13	1.95	0.49
1:12:76:GLU:HG3	1:12:77:LYS:H	1.78	0.48
5:72:1796:U:H2'	5:72:1797:G:H8	1.78	0.48
5:72:2830:C:O2'	5:72:2883:A:N1	2.40	0.48
7:A1:15:G:H1	7:A1:920:U:H3	1.61	0.48
7:A1:1382:C:H2'	7:A1:1383:C:C6	2.48	0.48
7:A2:521:G:H1	7:A2:528:C:H42	1.61	0.48
7:A2:922:G:H1'	11:E2:24:THR:HG23	1.95	0.48
9:C1:23:PHE:HB3	16:J1:97:ASP:HB2	1.94	0.48
9:C2:18:TRP:HZ2	20:N2:93:ILE:O	1.96	0.48
10:D1:87:GLY:HA3	10:D1:197:GLU:HB2	1.94	0.48
10:D2:9:LEU:HD21	10:D2:22:LYS:HG2	1.95	0.48
15:I2:40:GLY:HA2	15:I2:45:ARG:HH21	1.78	0.48
35:b2:16:VAL:HG12	35:b2:206:GLY:HA3	1.95	0.48
5:72:574:A:N6	5:72:2034:U:OP1	2.41	0.48
5:72:682:G:O6	5:72:794:A:N6	2.46	0.48
5:72:2298:A:H61	5:72:2318:G:H1'	1.77	0.48
5:72:2581:G:OP2	5:72:2581:G:N2	2.38	0.48
7:A1:195:A:OP1	26:T1:60:ARG:NE	2.45	0.48
7:A1:436:C:H2'	7:A1:437:U:C6	2.48	0.48
7:A1:999:C:H2'	7:A1:1000:A:H8	1.77	0.48
7:A1:1177:G:H2'	7:A1:1178:G:O4'	2.13	0.48
7:A2:254:G:H1'	23:Q2:17:MET:HE2	1.95	0.48
7:A2:459:A:N6	7:A2:473:U:H3	2.08	0.48
7:A2:831:A:H2'	7:A2:832:G:H8	1.79	0.48
7:A2:1015:G:N2	7:A2:1218:C:O2	2.43	0.48
7:A2:1238:A:H2'	7:A2:1239:A:H5''	1.94	0.48
7:A2:1328:C:H2'	7:A2:1329:A:H8	1.78	0.48
8:B2:64:LYS:HE2	8:B2:225:ARG:HG3	1.94	0.48
10:D1:14:ARG:C	10:D1:16:GLY:N	2.72	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G1:79:ARG:HG2	13:G1:84:THR:HB	1.94	0.48
14:H2:18:GLN:HE21	14:H2:72:VAL:H	1.61	0.48
15:I1:33:ARG:HH21	15:I1:38:TYR:HA	1.77	0.48
15:I1:81:HIS:CE1	15:I1:106:ARG:HG2	2.48	0.48
20:N1:27:LEU:O	20:N1:31:ILE:HG13	2.12	0.48
24:R2:54:GLN:O	24:R2:57:ARG:HG2	2.13	0.48
26:T1:28:MET:HE1	26:T1:58:VAL:HA	1.95	0.48
30:W1:10:G:N3	30:W1:10:G:H2'	2.28	0.48
34:a2:156:ALA:HA	34:a2:160:GLN:HB3	1.94	0.48
3:4:36:VAL:HG13	36:e2:109:PRO:HB2	1.95	0.48
5:72:395:U:O2'	5:72:396:G:N7	2.40	0.48
5:72:729:G:O5'	35:b2:207:LYS:NZ	2.46	0.48
5:72:2113:U:H2'	5:72:2114:A:H8	1.78	0.48
7:A1:33:A:H2'	7:A1:34:C:C6	2.48	0.48
7:A1:109:A:H61	7:A1:324:G:H1'	1.78	0.48
7:A1:640:A:H2'	7:A1:641:U:O4'	2.13	0.48
7:A1:996:A:H2'	7:A1:997:U:C6	2.49	0.48
7:A2:43:C:H2'	7:A2:44:A:H8	1.78	0.48
7:A2:299:G:H2'	7:A2:300:A:C8	2.48	0.48
17:K2:97:ILE:HG22	27:U2:12:PHE:CZ	2.48	0.48
28:V2:60:A:H2'	28:V2:60:A:N3	2.28	0.48
5:72:1127:A:N1	5:72:2463:C:O2'	2.42	0.48
5:72:2128:G:O5'	5:72:2128:G:H8	1.96	0.48
7:A1:71:A:N1	7:A1:99:C:O2'	2.46	0.48
7:A1:493:A:H2'	7:A1:494:G:C8	2.48	0.48
7:A1:634:C:H2'	7:A1:635:A:C8	2.48	0.48
7:A1:681:A:H2'	7:A1:682:G:C8	2.48	0.48
7:A1:1431:A:H2'	7:A1:1432:G:C8	2.49	0.48
7:A1:1489:G:H2'	7:A1:1490:U:C6	2.49	0.48
7:A2:537:G:O2'	7:A2:538:G:OP1	2.30	0.48
7:A2:1044:A:C5	7:A2:1045:C:H1'	2.48	0.48
36:e2:34:ILE:O	36:e2:91:LEU:N	2.41	0.48
43:r2:40:ILE:HG13	43:r2:47:VAL:HG22	1.94	0.48
5:72:1580:A:HO2'	5:72:1581:G:P	2.37	0.48
7:A1:147:G:H2'	7:A1:148:G:C8	2.49	0.48
7:A1:404:G:H2'	7:A1:405:U:C6	2.48	0.48
7:A1:718:A:O2'	27:U1:35:ARG:NH2	2.47	0.48
7:A2:655:A:H2'	7:A2:656:G:C8	2.49	0.48
7:A2:1244:G:H2'	7:A2:1245:C:C6	2.48	0.48
9:C1:26:THR:HG22	20:N1:76:LYS:HD3	1.95	0.48
9:C1:100:GLN:NE2	9:C1:102:ASN:OD1	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C2:121:THR:HG22	9:C2:189:ALA:HB2	1.95	0.48
28:V2:36:A:HO2'	28:V2:37:A:P	2.36	0.48
29:W:3:G:H2'	29:W:4:G:H8	1.78	0.48
29:W:8:4SU:P	29:W:8:4SU:H6	2.54	0.48
29:W:60:U:H5''	29:W:61:C:H5	1.78	0.48
29:W:71:C:H3'	29:W:72:U:H6	1.78	0.48
44:z2:25:ARG:NH2	44:z2:29:GLU:HB3	2.29	0.48
5:72:226:A:N1	5:72:418:C:O2'	2.40	0.48
5:72:276:U:H2'	5:72:277:G:C2	2.48	0.48
5:72:714:U:H1'	5:72:717:C:C5	2.48	0.48
5:72:1043:C:O2'	5:72:1048:A:O2'	2.32	0.48
5:72:1210:G:H4'	5:72:1211:C:H5''	1.96	0.48
5:72:2303:G:O2'	36:e2:121:SER:O	2.31	0.48
5:72:2314:A:H2'	5:72:2315:G:C8	2.48	0.48
7:A1:666:G:H2'	7:A1:667:G:C8	2.48	0.48
7:A1:1326:U:H2'	7:A1:1327:C:H6	1.79	0.48
7:A1:1372:U:H2'	7:A1:1373:G:O4'	2.14	0.48
7:A2:123:U:H5''	7:A2:311:C:O2'	2.13	0.48
7:A2:545:C:H5'	10:D2:69:GLU:HB2	1.96	0.48
7:A2:1269:A:H8	7:A2:1269:A:O5'	1.97	0.48
15:I1:13:LYS:HA	15:I1:110:GLN:HE22	1.79	0.48
20:N2:4:GLN:N	20:N2:4:GLN:OE1	2.45	0.48
39:i2:90:LEU:HB3	39:i2:123:ARG:O	2.14	0.48
5:72:780:G:O2'	5:72:783:A:N6	2.46	0.48
5:72:2202:U:O2'	5:72:2204:G:OP1	2.26	0.48
5:72:2469:A:N6	5:72:2481:G:H1'	2.27	0.48
7:A1:682:G:H2'	7:A1:683:G:C8	2.49	0.48
7:A1:918:A:H2'	7:A1:919:A:C8	2.48	0.48
7:A1:927:G:H1	7:A1:1390:U:H3	1.62	0.48
7:A1:1237:C:H3'	7:A1:1336:C:H41	1.78	0.48
7:A2:6:G:O6	11:E2:100:SER:N	2.37	0.48
7:A2:88:U:O2'	7:A2:89:U:O5'	2.27	0.48
7:A2:188:C:H3'	7:A2:189:A:H8	1.78	0.48
7:A2:191:G:H3'	7:A2:192:A:H8	1.77	0.48
7:A2:258:G:H1	7:A2:268:U:H3	1.62	0.48
7:A2:453:G:H2'	7:A2:454:G:C8	2.48	0.48
7:A2:941:G:H4'	7:A2:1350:A:H4'	1.95	0.48
5:72:971:G:O2'	5:72:983:A:N3	2.40	0.48
5:72:1019:U:OP1	5:72:1035:U:O2'	2.20	0.48
7:A1:258:G:H1	7:A1:268:U:H3	1.61	0.48
7:A1:598:U:H4'	14:H1:86:TYR:CD2	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:243:A:H62	7:A2:281:G:H1'	1.78	0.48
7:A2:494:G:H2'	7:A2:496:A:H8	1.79	0.48
9:C2:123:GLN:HG3	9:C2:126:ARG:HH22	1.78	0.48
13:G2:15:ASP:OD1	13:G2:15:ASP:N	2.44	0.48
14:H2:54:ASP:OD1	14:H2:55:THR:N	2.43	0.48
5:72:865:C:O2	5:72:867:C:N4	2.46	0.48
7:A1:157:U:H2'	7:A1:158:G:C8	2.48	0.48
7:A1:998:C:H42	7:A1:1042:A:H61	1.61	0.48
7:A1:1126:U:O4	16:J1:7:ARG:NH2	2.47	0.48
7:A2:953:G:H2'	7:A2:954:G:O4'	2.14	0.48
7:A2:1107:C:H5'	9:C2:169:ARG:HH12	1.79	0.48
7:A2:1302:C:C6	19:M2:17:ILE:HG13	2.48	0.48
8:B2:47:VAL:HB	8:B2:48:PRO:HD3	1.95	0.48
9:C1:42:TYR:HD2	9:C1:43:LEU:HD12	1.78	0.48
21:O2:64:ARG:HD2	21:O2:67:LEU:HD21	1.96	0.48
23:Q1:46:VAL:HG11	23:Q1:61:ILE:HD12	1.95	0.48
5:72:49:A:H61	5:72:177:G:H2'	1.78	0.48
5:72:1010:A:N3	5:72:1153:C:H1'	2.29	0.48
7:A1:1087:G:N2	7:A1:1099:G:H1'	2.29	0.48
7:A1:1279:G:H4'	7:A1:1281:C:H5	1.78	0.48
7:A1:1351:U:H4'	13:G1:33:ASP:HB3	1.95	0.48
7:A2:323:U:H2'	7:A2:324:G:O4'	2.14	0.48
7:A2:434:U:H2'	7:A2:435:A:C8	2.49	0.48
7:A2:1346:A:P	15:I2:122:ARG:HH12	2.36	0.48
9:C1:20:SER:HB3	9:C1:22:TRP:NE1	2.28	0.48
9:C1:42:TYR:O	9:C1:46:GLU:HG2	2.13	0.48
10:D1:99:ASP:OD1	10:D1:100:ASN:N	2.47	0.48
16:J1:9:ARG:HH22	16:J1:71:LEU:HD12	1.78	0.48
20:N1:24:ARG:HE	20:N1:55:SER:HG	1.58	0.48
29:W:69:C:H2'	29:W:70:C:C6	2.49	0.48
5:72:784:G:H5'	5:72:785:G:OP1	2.14	0.47
5:72:1209:U:O2'	5:72:1237:A:N1	2.37	0.47
5:72:1971:U:OP2	5:72:1971:U:H4'	2.13	0.47
5:72:2267:A:H5''	5:72:2268:A:H5'	1.96	0.47
7:A1:376:G:O3'	22:P1:5:ARG:NH1	2.43	0.47
7:A1:599:C:H2'	7:A1:600:A:C8	2.49	0.47
7:A1:745:G:H1'	7:A1:836:G:O2'	2.14	0.47
7:A1:780:A:N6	7:A1:801:U:OP2	2.47	0.47
7:A1:853:C:H2'	7:A1:854:U:C6	2.48	0.47
7:A1:1046:A:H2'	7:A1:1047:G:H5'	1.96	0.47
7:A1:1245:C:H2'	7:A1:1246:A:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1291:U:H2'	7:A1:1292:G:H8	1.79	0.47
7:A1:1400:C:N4	30:W1:34:G:H1'	2.29	0.47
7:A2:41:G:H2'	7:A2:42:G:C8	2.49	0.47
7:A2:94:G:H4'	7:A2:95:C:H5'	1.95	0.47
7:A2:297:G:N2	7:A2:300:A:OP2	2.42	0.47
7:A2:982:U:O2	7:A2:1222:G:N1	2.40	0.47
12:F1:11:HIS:ND1	12:F1:13:ASP:OD1	2.47	0.47
13:G1:32:VAL:HG22	13:G1:33:ASP:OD2	2.14	0.47
23:Q2:30:LYS:HE3	23:Q2:35:GLY:HA2	1.96	0.47
27:U2:11:PRO:HB2	27:U2:14:VAL:HG12	1.95	0.47
36:e2:33:LYS:HD3	36:e2:92:ARG:NH2	2.29	0.47
3:4:57:VAL:O	3:4:61:ASN:ND2	2.48	0.47
5:72:833:A:H2'	5:72:834:G:C8	2.48	0.47
5:72:2129:C:O2'	5:72:2159:G:N1	2.42	0.47
5:72:2788:C:H2'	5:72:2789:C:C6	2.48	0.47
7:A1:70:U:H2'	7:A1:94:G:N7	2.29	0.47
7:A1:708:C:H2'	7:A1:709:U:C6	2.49	0.47
7:A1:911:U:OP2	18:L1:94:ARG:NH2	2.47	0.47
7:A1:977:A:N6	7:A1:1224:U:O4'	2.47	0.47
7:A1:988:G:H4'	7:A1:1014:A:H61	1.80	0.47
7:A1:1530:G:H2'	7:A1:1531:A:C8	2.49	0.47
7:A2:128:G:H2'	7:A2:129:A:C8	2.48	0.47
7:A2:1513:A:H2'	7:A2:1514:G:C8	2.48	0.47
8:B2:223:GLU:O	8:B2:227:GLN:HG2	2.13	0.47
10:D1:25:VAL:HG22	10:D1:161:LEU:HD13	1.96	0.47
14:H1:18:GLN:HG3	14:H1:72:VAL:HB	1.96	0.47
15:I1:26:GLY:N	15:I1:62:ASP:OD1	2.46	0.47
15:I1:44:ALA:O	15:I1:47:VAL:HG12	2.14	0.47
18:L1:75:GLN:NE2	18:L1:76:GLU:O	2.47	0.47
35:b2:124:ILE:HG13	35:b2:124:ILE:O	2.14	0.47
2:32:8:GLN:HB2	2:32:28:LEU:HD13	1.95	0.47
5:72:864:G:H21	5:72:866:A:H62	1.63	0.47
5:72:1432:G:H2'	5:72:1433:A:C8	2.49	0.47
7:A1:490:C:OP1	10:D1:146:ARG:NH2	2.47	0.47
7:A1:1073:U:H2'	7:A1:1074:G:H8	1.80	0.47
7:A1:1202:U:H2'	7:A1:1203:C:O4'	2.15	0.47
7:A1:1512:U:H3	7:A1:1523:G:H1	1.63	0.47
7:A2:1071:C:H2'	7:A2:1072:G:C8	2.47	0.47
7:A2:1258:G:H2'	7:A2:1259:C:C6	2.49	0.47
10:D1:170:TRP:CE2	10:D1:186:PRO:HB3	2.49	0.47
12:F2:5:GLU:HG3	12:F2:63:ASN:OD1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:R1:62:ALA:HB1	24:R1:67:LEU:HB2	1.96	0.47
26:T1:51:PHE:O	26:T1:54:MET:HG3	2.13	0.47
36:e2:162:SER:OG	36:e2:165:GLU:OE1	2.28	0.47
5:71:1916:A:H2'	5:71:1917:U:O4'	2.14	0.47
5:72:48:G:O2'	5:72:118:A:N1	2.42	0.47
5:72:671:C:N4	41:o2:40:SER:O	2.29	0.47
5:72:1214:A:H62	5:72:1235:G:H21	1.62	0.47
5:72:1847:A:O2'	5:72:1848:A:O5'	2.30	0.47
5:72:2185:U:H2'	5:72:2186:G:H8	1.77	0.47
7:A1:229:U:H2'	7:A1:230:G:C8	2.50	0.47
7:A1:246:A:O4'	7:A1:282:A:N6	2.48	0.47
7:A1:352:C:O2	7:A1:356:A:N6	2.45	0.47
7:A1:410:G:H1'	7:A1:432:A:H61	1.80	0.47
7:A1:801:U:H2'	7:A1:802:A:C8	2.49	0.47
7:A1:1147:C:H2'	7:A1:1148:U:H6	1.79	0.47
7:A1:1358:U:OP1	20:N1:75:ARG:N	2.44	0.47
7:A1:1397:C:H41	28:V2:27:A:H2'	1.80	0.47
7:A1:1410:A:H2'	7:A1:1411:C:C6	2.50	0.47
7:A1:1532:U:H2'	7:A1:1533:C:O4'	2.14	0.47
7:A2:19:A:H2'	7:A2:20:U:C6	2.48	0.47
7:A2:385:C:H2'	7:A2:386:C:C6	2.50	0.47
7:A2:667:G:H4'	21:O2:51:HIS:ND1	2.30	0.47
7:A2:1519:MA6:O5'	7:A2:1519:MA6:H8	2.14	0.47
8:B:41:ILE:H	8:B:41:ILE:HD12	1.77	0.47
8:B2:20:THR:HG23	8:B2:21:ARG:H	1.79	0.47
29:W:37:MIA:H112	29:W:38:A:H1'	1.97	0.47
5:72:593:U:H2'	5:72:594:U:C6	2.49	0.47
5:72:627:A:O4'	5:72:637:A:N6	2.48	0.47
5:72:1754:A:N1	5:72:2716:C:O2'	2.44	0.47
5:72:2128:G:H2'	5:72:2129:C:O4'	2.14	0.47
5:72:2134:A:H2'	5:72:2135:A:C8	2.49	0.47
7:A1:188:C:H3'	7:A1:189:A:C8	2.49	0.47
7:A1:926:G:H22	28:V2:20:C:H3'	1.80	0.47
7:A1:1493:A:O2'	28:V2:24:G:O2'	2.28	0.47
7:A2:235:C:H2'	7:A2:236:A:C8	2.49	0.47
7:A2:736:C:H2'	7:A2:737:C:C6	2.49	0.47
7:A2:1074:G:O2'	7:A2:1101:A:N1	2.37	0.47
7:A2:1101:A:OP2	8:B2:95:ARG:HD2	2.14	0.47
9:C1:80:LYS:O	9:C1:84:VAL:HG23	2.13	0.47
9:C2:30:ALA:HA	9:C2:33:LEU:HD12	1.96	0.47
11:E2:166:GLY:HA3	14:H2:114:ARG:NH1	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G1:15:ASP:OD1	13:G1:19:GLY:N	2.48	0.47
4:62:12:LYS:C	4:62:13:ARG:HD3	2.38	0.47
5:72:927:A:H2'	5:72:928:A:C8	2.50	0.47
5:72:1311:G:N2	5:72:1311:G:OP2	2.45	0.47
5:72:1343:G:H1'	5:72:1597:A:C4	2.49	0.47
5:72:2122:U:H2'	5:72:2123:G:C8	2.50	0.47
7:A1:461:A:H2'	7:A1:462:G:C8	2.49	0.47
7:A1:685:G:H1	7:A1:704:A:P	2.37	0.47
7:A1:850:U:N3	7:A1:851:G:N7	2.61	0.47
7:A1:1071:C:H2'	7:A1:1072:G:H8	1.80	0.47
7:A1:1264:U:H2'	7:A1:1265:C:C6	2.49	0.47
7:A2:552:U:H2'	7:A2:553:A:H8	1.79	0.47
7:A2:712:A:H5'	35:b2:138:GLY:HA3	1.96	0.47
7:A2:1095:U:H2'	7:A2:1096:C:C6	2.50	0.47
8:B:99:GLY:O	8:B:103:ASN:HB2	2.14	0.47
8:B:137:ARG:NH2	8:B:140:GLU:OE2	2.47	0.47
9:C2:40:ARG:NH1	20:N2:92:GLU:OE1	2.48	0.47
15:I1:23:PRO:HA	15:I1:61:LEU:HA	1.96	0.47
18:L2:75:GLN:NE2	18:L2:76:GLU:O	2.47	0.47
3:4:9:TYR:CE1	3:4:25:ARG:HG2	2.50	0.47
5:72:729:G:C5	35:b2:207:LYS:HD2	2.50	0.47
5:72:1084:A:N3	5:72:1105:U:O2'	2.44	0.47
5:72:1504:A:H2'	5:72:1505:A:C8	2.50	0.47
5:72:1952:A:H2'	5:72:1953:A:C8	2.49	0.47
6:82:8:C:O3'	43:r2:25:ARG:NH2	2.47	0.47
7:A1:76:G:H2'	7:A1:77:A:C8	2.50	0.47
7:A1:106:C:H2'	7:A1:107:G:C8	2.50	0.47
7:A1:208:U:O2'	7:A1:209:U:H6	1.98	0.47
7:A1:785:G:H2'	7:A1:786:G:H8	1.80	0.47
7:A1:894:G:H2'	7:A1:895:G:C8	2.49	0.47
7:A1:1366:C:HO2'	16:J1:62:ARG:HH22	1.58	0.47
7:A1:1390:U:O2'	7:A1:1391:U:H5'	2.14	0.47
7:A1:1409:C:H2'	7:A1:1410:A:H8	1.79	0.47
7:A1:1411:C:H2'	7:A1:1412:C:C6	2.50	0.47
7:A2:116:A:H2'	7:A2:117:G:O4'	2.14	0.47
7:A2:151:A:H2'	7:A2:152:A:H8	1.78	0.47
7:A2:454:G:N2	7:A2:479:U:O4'	2.47	0.47
7:A2:835:U:OP1	24:R2:53:ARG:NH1	2.47	0.47
7:A2:1451:U:OP2	7:A2:1452:C:N4	2.36	0.47
9:C2:12:LEU:HG	9:C2:18:TRP:CE3	2.49	0.47
10:D1:108:GLY:HA3	10:D1:114:ALA:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:N1:85:ARG:O	20:N1:89:MET:N	2.34	0.47
21:O1:21:ASP:OD1	21:O1:24:SER:HB3	2.14	0.47
23:Q1:30:LYS:HE3	23:Q1:35:GLY:HA2	1.95	0.47
28:V2:48:C:H3'	28:V2:49:G:H8	1.80	0.47
36:e2:37:ASN:OD1	36:e2:38:MET:N	2.47	0.47
36:e2:170:LEU:HD23	36:e2:175:PHE:HD2	1.80	0.47
38:h2:29:GLY:HA2	38:h2:106:ASP:OD2	2.15	0.47
5:72:1759:A:O2'	5:72:2714:G:O2'	2.32	0.47
5:72:2106:U:H2'	5:72:2107:G:C8	2.50	0.47
7:A1:252:U:H2'	7:A1:253:A:H8	1.79	0.47
7:A1:505:G:H2'	7:A1:506:G:C8	2.49	0.47
7:A1:947:G:H2'	7:A1:948:C:C6	2.50	0.47
7:A1:1186:G:N2	20:N1:100:SER:O	2.48	0.47
7:A1:1380:U:H4'	13:G1:156:TRP:HH2	1.79	0.47
7:A2:431:A:H2'	7:A2:432:A:C8	2.49	0.47
7:A2:824:G:H2'	7:A2:825:A:H8	1.80	0.47
8:B2:20:THR:HG23	8:B2:21:ARG:N	2.30	0.47
13:G2:92:ARG:O	13:G2:96:ARG:HG3	2.15	0.47
15:I1:35:LEU:HD21	15:I1:49:ARG:HH21	1.78	0.47
32:Y1:34:CM0:H6	32:Y1:34:CM0:H7C1	1.66	0.47
35:b2:142:HIS:ND1	35:b2:193:GLY:O	2.43	0.47
5:72:191:A:H2'	5:72:192:C:C6	2.49	0.47
5:72:458:G:O2'	5:72:469:G:O6	2.29	0.47
5:72:1352:U:O2'	5:72:1570:A:N3	2.40	0.47
7:A1:370:C:H2'	7:A1:371:A:C8	2.50	0.47
7:A1:513:C:H2'	7:A1:514:C:C6	2.49	0.47
7:A1:621:A:H2'	7:A1:622:A:C8	2.50	0.47
7:A1:951:G:OP2	19:M1:101:ARG:NH2	2.48	0.47
7:A2:3:A:H5''	7:A2:5:U:OP1	2.14	0.47
7:A2:56:U:H2'	7:A2:57:G:H8	1.77	0.47
7:A2:144:G:H2'	7:A2:145:G:C8	2.50	0.47
7:A2:502:A:H5'	18:L2:113:ALA:HA	1.97	0.47
7:A2:1530:G:H2'	7:A2:1531:A:C8	2.50	0.47
12:F1:14:GLN:HB3	12:F1:17:GLN:NE2	2.28	0.47
5:72:715:A:C2	21:O2:43:PHE:HB3	2.50	0.47
5:72:918:A:N3	6:82:80:U:O2'	2.38	0.47
5:72:2461:A:H1'	5:72:2492:U:C2	2.50	0.47
5:72:2687:U:H2'	5:72:2688:G:O4'	2.14	0.47
7:A1:390:U:H2'	7:A1:391:G:H8	1.78	0.47
7:A1:404:G:P	10:D1:115:ARG:HH12	2.38	0.47
7:A2:372:C:H4'	7:A2:373:A:OP1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1106:G:H5''	9:C2:172:ARG:HG3	1.97	0.47
10:D1:168:PRO:HB3	10:D1:170:TRP:CH2	2.51	0.47
13:G1:108:ALA:O	13:G1:119:ARG:HD3	2.14	0.47
15:I2:10:GLY:HA2	15:I2:81:HIS:ND1	2.30	0.47
16:J2:88:MET:C	16:J2:90:LEU:H	2.23	0.47
23:Q1:82:ALA:O	23:Q1:83:VAL:HG12	2.14	0.47
24:R2:72:ASP:OD1	24:R2:72:ASP:N	2.48	0.47
29:W:8:4SU:H1'	29:W:21:A:H2	1.79	0.47
35:b2:78:VAL:HG21	35:b2:110:LEU:HD11	1.96	0.47
3:4:13:THR:HG23	3:4:23:LYS:NZ	2.29	0.46
5:72:1278:C:H2'	5:72:1279:G:H8	1.79	0.46
5:72:1664:A:H61	5:72:1996:C:N4	2.13	0.46
5:72:2124:G:N2	5:72:2174:C:O2	2.48	0.46
5:72:2153:C:H2'	5:72:2154:A:C8	2.50	0.46
7:A1:70:U:H1'	7:A1:71:A:N7	2.30	0.46
7:A1:126:G:OP1	7:A1:633:G:N2	2.48	0.46
7:A1:198:G:N2	7:A1:219:U:O2	2.48	0.46
7:A1:543:U:H2'	7:A1:544:G:C8	2.51	0.46
7:A1:1130:A:H2'	7:A1:1131:G:H8	1.80	0.46
7:A1:1271:A:H2'	7:A1:1272:G:H8	1.81	0.46
7:A2:404:G:O2'	7:A2:498:A:N1	2.39	0.46
7:A2:652:U:O4	7:A2:752:G:O2'	2.27	0.46
7:A2:655:A:H2'	7:A2:656:G:H8	1.79	0.46
7:A2:684:U:H1'	17:K2:40:ASN:HA	1.96	0.46
7:A2:982:U:H4'	7:A2:983:A:O5'	2.16	0.46
7:A2:1060:U:OP1	20:N2:85:ARG:NH2	2.42	0.46
7:A2:1114:C:H2'	7:A2:1115:U:H6	1.80	0.46
7:A2:1292:G:H2'	7:A2:1293:C:C6	2.50	0.46
7:A2:1308:U:H2'	7:A2:1309:G:C8	2.48	0.46
8:B2:187:VAL:HG23	8:B2:191:SER:HB2	1.97	0.46
9:C1:47:LEU:HB3	9:C1:50:ALA:HB3	1.96	0.46
11:E2:99:ALA:HB2	11:E2:124:LEU:HG	1.97	0.46
29:W:18:G:H1'	29:W:57:G:N2	2.31	0.46
32:Y1:40:G:H2'	32:Y1:41:A:C8	2.50	0.46
7:A1:224:U:H2'	7:A1:225:C:C6	2.50	0.46
7:A1:925:G:H1'	7:A1:1502:A:C4	2.50	0.46
7:A1:1391:U:H2'	7:A1:1392:G:H8	1.79	0.46
7:A2:758:C:H4'	7:A2:880:C:H4'	1.97	0.46
7:A2:990:C:H2'	7:A2:991:U:C6	2.50	0.46
7:A2:1227:A:C8	19:M2:116:ILE:HG13	2.50	0.46
7:A2:1356:G:H2'	7:A2:1357:A:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1422:G:H1	7:A2:1478:U:H3	1.63	0.46
8:B:92:VAL:HG12	8:B:93:ASN:N	2.26	0.46
9:C2:75:ILE:HG13	9:C2:79:LYS:HE3	1.96	0.46
12:F2:68:GLN:H	12:F2:68:GLN:CD	2.23	0.46
16:J1:88:MET:HE1	16:J1:100:ILE:HD13	1.97	0.46
27:U1:34:ARG:HD3	27:U1:35:ARG:NH1	2.31	0.46
27:U2:25:LYS:HE2	27:U2:25:LYS:HB3	1.81	0.46
27:U2:59:LYS:O	27:U2:63:GLU:HG2	2.15	0.46
31:Y:35:G:H2'	31:Y:36:C:O4'	2.15	0.46
1:12:55:GLY:O	1:12:58:VAL:HG22	2.14	0.46
3:41:56:ARG:HH21	19:M1:79:ARG:NE	2.13	0.46
5:72:43:G:O2'	5:72:44:A:OP1	2.33	0.46
5:72:1288:G:OP2	5:72:1288:G:N2	2.28	0.46
5:72:1418:G:H1'	5:72:1580:A:H61	1.80	0.46
5:72:2303:G:H4'	36:e2:121:SER:HA	1.96	0.46
5:72:2599:G:OP2	35:b2:235:GLY:HA2	2.16	0.46
7:A1:35:G:H2'	7:A1:36:C:C6	2.51	0.46
7:A1:191:G:H3'	7:A1:192:A:H8	1.81	0.46
7:A1:382:A:H2'	7:A1:383:A:C8	2.50	0.46
7:A1:517:G:N2	7:A1:530:G:OP1	2.47	0.46
7:A1:673:A:H61	7:A1:716:A:N6	2.14	0.46
7:A1:853:C:H2'	7:A1:854:U:H6	1.81	0.46
7:A1:860:A:H2'	7:A1:861:G:O4'	2.14	0.46
7:A1:933:G:OP1	13:G1:3:ARG:HB3	2.14	0.46
7:A1:995:C:H2'	7:A1:996:A:H5'	1.96	0.46
7:A1:1325:C:H2'	7:A1:1326:U:C6	2.51	0.46
7:A1:1388:C:H2'	7:A1:1389:C:C6	2.50	0.46
7:A2:41:G:H2'	7:A2:42:G:H8	1.80	0.46
7:A2:202:G:H21	7:A2:466:A:H61	1.63	0.46
7:A2:620:C:H2'	7:A2:621:A:O4'	2.16	0.46
7:A2:993:G:O2'	7:A2:994:A:N7	2.47	0.46
12:F1:14:GLN:O	12:F1:17:GLN:NE2	2.49	0.46
12:F2:9:MET:HE1	12:F2:47:LEU:HD11	1.97	0.46
15:I1:33:ARG:NH2	15:I1:38:TYR:HA	2.30	0.46
39:i2:104:THR:HG22	39:i2:107:GLY:H	1.80	0.46
1:12:32:ASN:CG	5:72:2230:G:H1'	2.40	0.46
5:72:1801:A:N6	5:72:2201:G:O2'	2.49	0.46
5:72:2107:G:H1	5:72:2182:U:H3	1.61	0.46
5:72:2311:A:H5'	36:e2:77:PHE:HE2	1.81	0.46
5:72:2646:C:OP2	5:72:2732:G:O2'	2.24	0.46
7:A1:210:C:H1'	7:A1:211:G:C2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:263:A:P	26:T1:74:ARG:HH21	2.39	0.46
7:A1:1486:G:H2'	7:A1:1487:G:C8	2.50	0.46
7:A2:109:A:H2'	7:A2:326:G:N2	2.31	0.46
7:A2:328:C:H4'	7:A2:329:A:H5''	1.97	0.46
7:A2:389:A:H3'	7:A2:390:U:C6	2.49	0.46
9:C2:64:ILE:HG22	9:C2:66:VAL:HG22	1.97	0.46
13:G2:107:ALA:HB3	13:G2:123:GLU:OE2	2.15	0.46
13:G2:116:MET:HA	13:G2:119:ARG:HD2	1.98	0.46
19:M1:42:ASP:OD1	19:M1:42:ASP:N	2.48	0.46
21:O1:29:VAL:HG11	21:O1:81:LEU:HD21	1.96	0.46
23:Q2:11:ARG:O	23:Q2:12:VAL:C	2.59	0.46
30:W1:11:C:H2'	30:W1:12:U:C6	2.50	0.46
36:e2:7:TYR:CE1	36:e2:11:GLU:HG3	2.50	0.46
5:72:1:G:H2'	5:72:2:G:H8	1.80	0.46
5:72:476:G:H4'	5:72:502:A:N1	2.30	0.46
5:72:586:A:N1	5:72:809:G:O2'	2.41	0.46
5:72:2092:U:OP1	5:72:2199:A:O2'	2.24	0.46
7:A1:138:G:H2'	7:A1:139:A:C8	2.50	0.46
7:A1:188:C:H3'	7:A1:189:A:H8	1.81	0.46
7:A1:311:C:H2'	7:A1:312:C:C6	2.50	0.46
7:A1:575:G:O2'	7:A1:821:G:H5'	2.15	0.46
7:A1:900:A:H2'	7:A1:901:A:C8	2.50	0.46
7:A1:1006:G:H2'	7:A1:1007:U:C6	2.50	0.46
7:A1:1451:U:H3'	7:A1:1452:C:H6	1.81	0.46
7:A2:486:U:H2'	7:A2:487:A:C8	2.51	0.46
8:B:112:LYS:O	8:B:115:LYS:HG2	2.15	0.46
8:B:117:LEU:HD23	8:B:141:LEU:HD13	1.96	0.46
11:E1:83:HIS:NE2	11:E1:147:MET:HG3	2.29	0.46
11:E1:115:LEU:HD13	11:E1:123:VAL:HG11	1.97	0.46
13:G2:97:ASN:O	13:G2:101:MET:HG3	2.16	0.46
16:J1:25:ILE:HD11	16:J1:92:LEU:HD13	1.97	0.46
35:b2:138:GLY:N	35:b2:164:ILE:O	2.44	0.46
36:e2:170:LEU:HD23	36:e2:175:PHE:CD2	2.51	0.46
38:h2:38:ARG:HB3	38:h2:98:PRO:HD3	1.97	0.46
2:32:17:PRO:HD3	5:72:969:G:OP1	2.15	0.46
3:4:20:ASN:O	3:4:22:MET:SD	2.73	0.46
3:4:63:ARG:HB3	25:S2:5:LEU:HD11	1.98	0.46
5:72:629:G:H5''	5:72:650:C:O2'	2.16	0.46
5:72:764:A:H2	35:b2:218:PRO:HG3	1.79	0.46
7:A1:67:C:H2'	7:A1:68:G:H8	1.79	0.46
7:A1:265:G:N2	7:A1:267:C:O4'	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:268:U:H2'	7:A1:269:C:C6	2.50	0.46
7:A1:684:U:H1'	17:K1:40:ASN:HA	1.97	0.46
7:A1:1218:C:OP1	20:N1:13:ARG:NH2	2.48	0.46
7:A1:1363:A:O2'	7:A1:1365:G:N7	2.44	0.46
7:A1:1448:C:H2'	7:A1:1449:C:H6	1.79	0.46
7:A2:112:G:H22	7:A2:315:A:H2	1.63	0.46
7:A2:745:G:OP1	7:A2:851:G:O2'	2.28	0.46
7:A2:908:A:H2'	7:A2:909:A:C8	2.51	0.46
7:A2:946:A:H2'	7:A2:947:G:H8	1.81	0.46
7:A2:1140:C:O2'	7:A2:1141:C:H6	1.99	0.46
7:A2:1219:A:H2'	7:A2:1220:G:C8	2.51	0.46
9:C2:33:LEU:HD22	20:N2:93:ILE:HD13	1.98	0.46
16:J1:52:LEU:HB2	20:N1:81:ARG:HD2	1.96	0.46
21:O2:21:ASP:OD1	21:O2:24:SER:HB3	2.16	0.46
25:S1:50:ALA:HB1	25:S1:57:HIS:HB3	1.96	0.46
35:b2:13:ARG:O	35:b2:16:VAL:HG22	2.15	0.46
5:72:69:C:O2	5:72:73:A:O2'	2.29	0.46
5:72:158:U:O2'	5:72:159:G:OP1	2.28	0.46
5:72:872:U:H2'	5:72:873:C:C6	2.51	0.46
5:72:2127:G:N3	5:72:2162:G:H8	2.12	0.46
5:72:2604:PSU:H2'	5:72:2605:PSU:H6	1.81	0.46
7:A1:256:U:H3	7:A1:270:A:H61	1.64	0.46
7:A1:642:A:C5	14:H1:107:SER:HA	2.51	0.46
7:A1:886:G:H4'	7:A1:915:A:H1'	1.97	0.46
7:A1:1304:G:H1'	7:A1:1334:G:H22	1.81	0.46
7:A1:1307:U:H1'	19:M1:108:THR:HG21	1.97	0.46
7:A1:1384:C:H2'	7:A1:1385:G:C8	2.51	0.46
7:A1:1403:C:N4	28:V2:23:C:OP1	2.46	0.46
7:A2:552:U:H2'	7:A2:553:A:C8	2.50	0.46
7:A2:843:U:OP1	7:A2:846:G:N2	2.48	0.46
8:B2:149:GLY:HA2	8:B2:152:LYS:HE3	1.97	0.46
11:E2:57:PRO:HD3	28:V2:62:C:H4'	1.98	0.46
13:G1:89:VAL:HG23	13:G1:155:ARG:HD2	1.97	0.46
16:J1:53:ILE:HG13	16:J1:63:ASP:HB2	1.97	0.46
21:O2:39:LEU:HD12	21:O2:43:PHE:CE2	2.51	0.46
24:R1:57:ARG:HB3	24:R1:61:ARG:NH1	2.31	0.46
27:U2:11:PRO:HD2	28:V2:38:A:H5''	1.98	0.46
27:U2:14:VAL:HG11	28:V2:38:A:H4'	1.98	0.46
5:72:1351:C:O2'	5:72:1571:A:N3	2.47	0.46
5:72:1927:A:H8	5:72:1927:A:O5'	1.99	0.46
7:A1:503:C:OP1	18:L1:116:LYS:NZ	2.38	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:765:G:N2	7:A1:813:U:OP2	2.48	0.46
7:A2:130:A:H1'	7:A2:263:A:O2'	2.15	0.46
7:A2:173:U:H5''	7:A2:197:A:O4'	2.16	0.46
7:A2:1080:A:OP1	11:E2:52:LYS:HE2	2.16	0.46
7:A2:1120:C:H2'	7:A2:1121:U:C6	2.51	0.46
7:A2:1147:C:H2'	7:A2:1148:U:C6	2.51	0.46
8:B:2:ALA:HB1	8:B:54:LEU:HD13	1.97	0.46
8:B2:169:GLU:N	8:B2:169:GLU:OE1	2.49	0.46
14:H1:87:LYS:HE2	14:H1:87:LYS:HB2	1.68	0.46
15:I2:60:LYS:HG2	15:I2:61:LEU:HD12	1.97	0.46
34:a2:47:ASN:OD1	34:a2:170:ILE:HG12	2.15	0.46
5:72:839:U:H1'	5:72:1191:G:H1'	1.98	0.46
5:72:1789:A:OP1	35:b2:221:ARG:HG3	2.16	0.46
5:72:2126:A:C2	5:72:2162:G:H1'	2.50	0.46
5:72:2162:G:H4'	5:72:2173:A:C6	2.50	0.46
7:A1:341:C:H2'	7:A1:342:C:C6	2.51	0.46
7:A1:501:C:H2'	7:A1:502:A:C8	2.50	0.46
7:A1:563:A:O2'	7:A1:566:G:O3'	2.34	0.46
7:A1:594:U:H3	7:A1:645:G:H1	1.64	0.46
7:A1:666:G:H2'	7:A1:667:G:H8	1.80	0.46
7:A1:715:A:H2'	7:A1:716:A:H8	1.81	0.46
7:A1:1059:C:OP2	9:C1:199:LYS:NZ	2.47	0.46
12:F2:29:ILE:HG22	12:F2:34:GLY:HA3	1.97	0.46
14:H2:25:VAL:HG13	14:H2:63:LEU:HD11	1.98	0.46
19:M1:27:LYS:HG3	19:M1:31:LYS:NZ	2.31	0.46
23:Q2:71:LYS:HB3	23:Q2:71:LYS:HE2	1.82	0.46
28:V2:36:A:O2'	28:V2:37:A:O5'	2.30	0.46
36:e2:107:ALA:HB1	36:e2:137:ILE:HD12	1.98	0.46
39:i2:51:ARG:NH1	39:i2:51:ARG:O	2.49	0.46
5:72:737:C:H2'	5:72:738:G:H8	1.80	0.46
5:72:958:U:OP1	38:h2:40:ARG:NH2	2.49	0.46
5:72:1567:G:OP2	35:b2:83:TYR:OH	2.34	0.46
5:72:2039:U:H2'	5:72:2040:G:C8	2.51	0.46
5:72:2112:G:H1'	29:W:19:G:C8	2.52	0.46
5:72:2125:G:H21	5:72:2173:A:H61	1.64	0.46
6:82:95:U:H2'	6:82:96:G:H8	1.81	0.46
7:A1:202:G:H1	7:A1:215:C:H42	1.64	0.46
7:A1:457:G:H5'	7:A1:458:U:OP2	2.15	0.46
7:A1:459:A:H2'	7:A1:460:A:C8	2.51	0.46
7:A1:691:G:H2'	7:A1:692:U:C6	2.51	0.46
7:A1:735:C:H2'	7:A1:736:C:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:772:U:H2'	7:A1:773:G:C8	2.51	0.46
7:A1:784:A:H2'	7:A1:785:G:C8	2.51	0.46
7:A1:1437:A:H5''	26:T1:29:ARG:HH12	1.81	0.46
7:A2:188:C:H3'	7:A2:189:A:C8	2.51	0.46
7:A2:553:A:H2'	7:A2:554:A:H8	1.81	0.46
7:A2:1064:G:H21	7:A2:1190:G:H1'	1.80	0.46
7:A2:1245:C:H2'	7:A2:1246:A:H8	1.79	0.46
9:C1:29:PHE:HE2	20:N1:77:PHE:HA	1.80	0.46
9:C2:117:ALA:HB1	9:C2:187:SER:HB3	1.97	0.46
13:G1:92:ARG:O	13:G1:96:ARG:HG3	2.16	0.46
32:Y1:9:A:OP2	32:Y1:13:C:N4	2.44	0.46
38:h2:17:ASN:OD1	38:h2:97:GLN:NE2	2.46	0.46
4:62:19:LYS:HG3	5:72:651:G:H5'	1.98	0.45
5:72:851:C:H2'	5:72:852:U:C6	2.51	0.45
5:72:1275:A:N1	5:72:1295:C:O2'	2.40	0.45
5:72:2129:C:HO2'	5:72:2159:G:H1	1.60	0.45
7:A1:544:G:OP1	10:D1:56:ARG:NH2	2.47	0.45
7:A1:952:U:H5'	7:A1:972:C:N4	2.31	0.45
7:A2:80:A:H2'	7:A2:81:A:O4'	2.15	0.45
7:A2:432:A:H3'	7:A2:433:G:H8	1.81	0.45
7:A2:454:G:N1	7:A2:478:A:H2	2.11	0.45
7:A2:1030:U:O2	7:A2:1030:U:H2'	2.14	0.45
7:A2:1060:U:H3	7:A2:1197:A:H61	1.64	0.45
7:A2:1112:C:C2	9:C2:178:LEU:HD23	2.51	0.45
7:A2:1268:G:H2'	7:A2:1269:A:C8	2.51	0.45
7:A2:1271:A:H2'	7:A2:1272:G:H8	1.80	0.45
8:B:69:PHE:O	8:B:92:VAL:HG23	2.16	0.45
10:D1:22:LYS:HE2	10:D1:31:LYS:HE2	1.98	0.45
11:E2:36:LEU:HD22	11:E2:134:ILE:HG22	1.97	0.45
14:H2:96:MET:HB3	14:H2:100:GLY:N	2.29	0.45
5:72:685:A:O2'	5:72:773:U:O4	2.26	0.45
5:72:962:G:H5'	5:72:962:G:H8	1.81	0.45
5:72:1837:C:H2'	5:72:1899:A:H61	1.82	0.45
5:72:2233:U:H2'	5:72:2234:G:C8	2.50	0.45
7:A1:543:U:H2'	7:A1:544:G:H8	1.80	0.45
7:A1:634:C:H2'	7:A1:635:A:H8	1.80	0.45
7:A1:717:U:H5'	7:A1:734:G:OP2	2.15	0.45
7:A1:736:C:H5''	12:F1:90:MET:HE1	1.98	0.45
7:A1:888:G:H1'	7:A1:909:A:H61	1.81	0.45
7:A1:1036:A:H3'	7:A1:1037:C:C6	2.51	0.45
7:A1:1252:A:H2'	7:A1:1253:G:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:106:C:H2'	7:A2:107:G:H8	1.81	0.45
7:A2:342:C:H2'	7:A2:343:U:C6	2.51	0.45
7:A2:421:U:C3'	7:A2:422:C:H5'	2.46	0.45
7:A2:1095:U:P	7:A2:1108:G:H1	2.39	0.45
7:A2:1170:A:H2'	7:A2:1171:A:O4'	2.16	0.45
7:A2:1219:A:H2'	7:A2:1220:G:H8	1.81	0.45
7:A2:1273:C:H2'	7:A2:1274:A:O4'	2.16	0.45
7:A2:1287:A:H5''	7:A2:1287:A:H8	1.81	0.45
13:G2:40:GLU:HA	13:G2:43:VAL:HG12	1.97	0.45
24:R2:35:GLU:CD	24:R2:35:GLU:H	2.23	0.45
35:b2:145:GLU:OE2	35:b2:150:LYS:N	2.49	0.45
44:z2:33:ALA:N	44:z2:64:ASP:OD1	2.47	0.45
4:62:13:ARG:HD2	41:o2:63:LYS:CG	2.46	0.45
5:72:1357:C:H2'	5:72:1358:G:O4'	2.15	0.45
6:82:95:U:H2'	6:82:96:G:C8	2.52	0.45
7:A1:362:G:N2	7:A1:365:U:OP2	2.30	0.45
7:A1:431:A:H2'	7:A1:432:A:O4'	2.16	0.45
7:A1:587:G:H4'	14:H1:4:GLN:HB3	1.98	0.45
7:A1:725:G:H2'	7:A1:726:C:C6	2.51	0.45
7:A1:837:U:H2'	7:A1:838:G:C8	2.50	0.45
7:A1:1041:G:H2'	7:A1:1042:A:H8	1.81	0.45
7:A2:497:G:N2	7:A2:498:A:N1	2.65	0.45
7:A2:713:G:H2'	7:A2:714:G:C8	2.52	0.45
7:A2:1315:U:H2'	7:A2:1316:G:C8	2.52	0.45
8:B:24:ASN:N	8:B:189:THR:O	2.45	0.45
12:F1:44:ARG:HA	12:F1:57:ALA:O	2.16	0.45
16:J2:8:ILE:HB	16:J2:74:VAL:HG23	1.97	0.45
18:L1:100:GLY:HA3	18:L1:118:GLY:HA3	1.99	0.45
28:V2:12:A:H2'	28:V2:13:C:C6	2.51	0.45
30:W1:36:A:H2'	30:W1:37:MIA:C8	2.45	0.45
5:72:598:U:H2'	5:72:599:A:C8	2.51	0.45
5:72:760:G:H2'	5:72:761:A:O4'	2.16	0.45
5:72:859:G:N2	5:72:916:G:H2'	2.30	0.45
5:72:1935:G:H21	5:72:1964:G:H5'	1.82	0.45
5:72:2230:G:H2'	5:72:2231:U:C6	2.51	0.45
5:72:2291:U:H2'	5:72:2292:U:C6	2.51	0.45
7:A1:1032:G:H2'	7:A1:1033:G:O4'	2.17	0.45
7:A1:1418:A:C3'	7:A1:1419:G:H5''	2.46	0.45
7:A2:459:A:C6	7:A2:474:G:H1'	2.52	0.45
7:A2:876:C:P	14:H2:15:ARG:HH12	2.39	0.45
7:A2:1061:G:OP2	9:C2:3:GLN:NE2	2.29	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1176:A:H2'	7:A2:1177:G:C8	2.51	0.45
7:A2:1402:4OC:HM23	7:A2:1402:4OC:H1'	1.70	0.45
8:B:162:PHE:CD1	8:B:184:PHE:HB2	2.51	0.45
8:B2:41:ILE:HD12	8:B2:41:ILE:H	1.82	0.45
9:C1:138:VAL:HA	9:C1:149:ILE:HD13	1.98	0.45
9:C1:186:THR:HG22	9:C1:199:LYS:HG2	1.98	0.45
14:H1:89:LYS:O	14:H1:92:LEU:HD22	2.15	0.45
15:I2:118:LEU:HB3	15:I2:123:ARG:O	2.17	0.45
16:J2:44:THR:HG23	16:J2:69:THR:O	2.17	0.45
18:L2:80:ILE:HG22	18:L2:81:LEU:N	2.32	0.45
29:W:22:G:H2'	29:W:23:A:C8	2.51	0.45
39:i2:53:GLU:O	39:i2:57:LYS:HG2	2.17	0.45
5:71:1924:C:H4'	30:W1:13:C:H4'	1.97	0.45
5:72:1028:A:N6	5:72:1125:G:H2'	2.32	0.45
5:72:2329:U:H2'	5:72:2330:G:C8	2.52	0.45
7:A1:706:A:H2'	7:A1:707:U:C6	2.51	0.45
7:A1:1013:G:H2'	7:A1:1015:G:OP2	2.16	0.45
7:A1:1030:U:H2'	7:A1:1031:C:O4'	2.17	0.45
7:A1:1079:G:P	11:E1:138:ARG:HH22	2.39	0.45
7:A2:337:G:H2'	7:A2:338:A:C8	2.52	0.45
7:A2:400:C:H2'	7:A2:401:C:O4'	2.16	0.45
7:A2:618:C:N4	7:A2:621:A:OP2	2.36	0.45
7:A2:618:C:O2	7:A2:622:A:N6	2.50	0.45
7:A2:950:U:H2'	7:A2:951:G:C8	2.52	0.45
7:A2:1250:A:H2'	7:A2:1251:A:C8	2.52	0.45
23:Q1:71:LYS:HB3	23:Q1:71:LYS:HE2	1.80	0.45
24:R1:57:ARG:HD3	24:R1:61:ARG:HH22	1.82	0.45
28:V2:37:A:H4'	28:V2:38:A:H5'	1.98	0.45
32:Y1:8:U:H2'	32:Y1:46:7MG:HN22	1.82	0.45
5:72:161:A:OP2	5:72:162:U:O2'	2.32	0.45
5:72:903:C:H2'	5:72:904:G:C8	2.52	0.45
5:72:1889:A:H2'	5:72:1890:A:C8	2.51	0.45
5:72:1915:3TD:O5'	5:72:1915:3TD:H6	2.17	0.45
5:72:2117:A:H1'	5:72:2119:A:OP2	2.16	0.45
5:72:2591:C:H2'	5:72:2592:G:C8	2.51	0.45
7:A1:71:A:H2'	7:A1:72:A:C8	2.51	0.45
7:A1:90:C:H2'	7:A1:91:U:C6	2.52	0.45
7:A1:670:G:H2'	7:A1:671:G:C8	2.51	0.45
7:A1:773:G:H2'	7:A1:774:G:O4'	2.16	0.45
7:A1:842:U:H3'	7:A1:843:U:H4'	1.99	0.45
7:A1:845:A:H61	24:R1:8:ARG:HB2	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:912:C:H2'	7:A1:913:A:C8	2.52	0.45
7:A1:1116:U:H2'	7:A1:1117:A:C8	2.52	0.45
7:A2:187:G:N2	7:A2:189:A:H3'	2.31	0.45
7:A2:202:G:H1	7:A2:215:C:N4	2.13	0.45
7:A2:434:U:H2'	7:A2:435:A:H8	1.81	0.45
7:A2:448:A:H3'	7:A2:449:G:C8	2.52	0.45
7:A2:520:A:H62	7:A2:529:G:H21	1.65	0.45
7:A2:748:G:H2'	7:A2:749:A:C8	2.52	0.45
7:A2:1172:C:H2'	7:A2:1173:U:C6	2.50	0.45
7:A2:1312:G:H2'	7:A2:1313:U:C6	2.52	0.45
8:B:102:THR:C	8:B:104:TRP:H	2.24	0.45
15:I1:118:LEU:HB3	15:I1:123:ARG:O	2.16	0.45
17:K1:86:VAL:O	17:K1:113:VAL:N	2.30	0.45
24:R1:39:ILE:H	24:R1:39:ILE:HD12	1.81	0.45
29:W:19:G:H5'	29:W:57:G:H21	1.81	0.45
43:r2:5:SER:O	43:r2:8:ILE:HG22	2.17	0.45
5:72:13:A:O2'	5:72:15:G:N7	2.48	0.45
5:72:969:G:H2'	5:72:970:U:C6	2.52	0.45
7:A1:255:G:H2'	7:A1:256:U:C6	2.52	0.45
7:A1:675:A:H2'	7:A1:676:A:O4'	2.17	0.45
7:A1:1317:C:H3'	7:A1:1318:A:H8	1.82	0.45
7:A1:1478:U:H2'	7:A1:1479:C:H6	1.80	0.45
7:A2:236:A:H2'	7:A2:237:G:C8	2.51	0.45
7:A2:362:G:N2	7:A2:365:U:OP2	2.49	0.45
7:A2:447:G:O2'	7:A2:487:A:N6	2.49	0.45
7:A2:461:A:H2'	7:A2:462:G:H8	1.82	0.45
7:A2:773:G:H5''	35:b2:202:LEU:HD22	1.99	0.45
7:A2:951:G:OP2	19:M2:101:ARG:NH2	2.49	0.45
7:A2:1078:U:H4'	11:E2:138:ARG:NH1	2.32	0.45
7:A2:1142:G:H3'	7:A2:1143:G:C8	2.51	0.45
8:B2:56:GLU:O	8:B2:60:ILE:HG13	2.17	0.45
9:C1:54:ARG:H	9:C1:69:HIS:HB2	1.82	0.45
9:C2:185:ASN:CG	9:C2:186:THR:H	2.25	0.45
5:72:1105:U:H2'	5:72:1106:G:H8	1.80	0.45
5:72:1744:A:H3'	5:72:1745:A:H8	1.82	0.45
5:72:2817:U:O2'	5:72:2836:U:O2	2.31	0.45
7:A1:185:U:H2'	7:A1:186:C:H6	1.81	0.45
7:A1:390:U:H2'	7:A1:391:G:C8	2.52	0.45
7:A1:669:G:H2'	7:A1:670:G:C8	2.52	0.45
7:A1:933:G:H8	7:A1:933:G:OP2	2.00	0.45
7:A1:957:U:N3	7:A1:960:U:OP2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1025:U:O3'	7:A1:1026:G:H8	1.99	0.45
7:A1:1348:U:H2'	7:A1:1349:A:C8	2.49	0.45
7:A1:1433:A:H2'	7:A1:1434:A:O4'	2.17	0.45
7:A2:154:U:H2'	7:A2:155:A:H8	1.80	0.45
7:A2:691:G:O6	17:K2:53:ARG:NH2	2.50	0.45
7:A2:719:C:OP2	7:A2:720:C:N4	2.47	0.45
7:A2:1175:G:H2'	7:A2:1176:A:H8	1.80	0.45
12:F1:36:ILE:HG13	12:F1:64:VAL:HG12	1.98	0.45
16:J1:52:LEU:CD2	16:J1:59:LYS:HG3	2.45	0.45
5:72:639:U:H2'	5:72:640:C:C6	2.52	0.45
7:A1:136:C:O2'	22:P1:64:GLY:O	2.33	0.45
7:A1:604:G:H2'	7:A1:605:U:O4'	2.17	0.45
7:A1:979:C:H2'	7:A1:980:C:H5'	1.98	0.45
7:A1:984:C:H2'	7:A1:985:C:C6	2.52	0.45
7:A1:1048:G:H2'	7:A1:1050:G:C8	2.50	0.45
7:A1:1130:A:H5''	15:I1:64:TYR:HE2	1.81	0.45
7:A1:1382:C:H2'	7:A1:1383:C:H6	1.81	0.45
7:A2:382:A:H2'	7:A2:383:A:H8	1.82	0.45
7:A2:489:C:H2'	7:A2:490:C:C6	2.52	0.45
7:A2:885:G:O2'	7:A2:914:A:N1	2.36	0.45
8:B:58:ASN:ND2	8:B:223:GLU:OE1	2.50	0.45
8:B:70:VAL:HG11	8:B:169:GLU:HG2	1.99	0.45
8:B:70:VAL:HB	8:B:163:VAL:HG23	1.99	0.45
8:B2:210:VAL:HA	8:B2:213:TYR:CD2	2.52	0.45
13:G1:31:MET:SD	13:G1:36:LYS:HG2	2.56	0.45
26:T1:29:ARG:O	26:T1:32:ILE:HG22	2.16	0.45
28:V2:32:U:H1'	28:V2:33:A:C4	2.52	0.45
28:V2:52:G:H2'	28:V2:53:G:C8	2.52	0.45
35:b2:35:GLU:OE1	35:b2:35:GLU:N	2.50	0.45
5:72:885:C:H2'	5:72:891:G:H1	1.82	0.45
7:A1:404:G:N7	10:D1:2:ALA:HB3	2.32	0.45
7:A1:909:A:H2'	7:A1:910:C:O4'	2.17	0.45
7:A1:1106:G:O2'	9:C1:169:ARG:NH1	2.49	0.45
7:A1:1436:U:H2'	7:A1:1437:A:C8	2.52	0.45
7:A2:206:C:OP2	7:A2:207:C:N4	2.50	0.45
7:A2:321:A:H2'	7:A2:322:C:C6	2.52	0.45
7:A2:410:G:H2'	7:A2:429:U:C4	2.53	0.45
7:A2:494:G:H2'	7:A2:496:A:C8	2.52	0.45
7:A2:506:G:H2'	7:A2:507:C:C6	2.51	0.45
7:A2:1125:U:O2'	7:A2:1126:U:H3'	2.17	0.45
7:A2:1477:U:H2'	7:A2:1478:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C1:184:TYR:HB2	9:C1:201:TRP:CD1	2.52	0.45
11:E2:156:LYS:HZ1	14:H2:71:VAL:C	2.20	0.45
14:H1:10:MET:HE1	14:H1:33:LYS:HA	1.99	0.45
14:H2:41:LYS:HE2	14:H2:48:ASP:HA	1.98	0.45
16:J1:53:ILE:HD12	20:N1:85:ARG:HD3	1.98	0.45
17:K1:113:VAL:HG12	17:K1:113:VAL:O	2.17	0.45
20:N2:69:ARG:CZ	20:N2:81:ARG:HH21	2.30	0.45
20:N2:76:LYS:HG3	20:N2:77:PHE:CD2	2.52	0.45
26:T1:82:GLN:O	26:T1:85:LYS:HG3	2.17	0.45
28:V2:26:G:H22	32:Y1:34:CMO:H3	1.65	0.45
32:Y1:28:C:H42	32:Y1:42:G:H1	1.65	0.45
44:z2:19:LYS:O	44:z2:39:ARG:NH2	2.50	0.45
5:72:158:U:HO2'	5:72:159:G:P	2.40	0.44
5:72:221:A:O2'	5:72:266:G:N7	2.48	0.44
5:72:1265:A:H4'	5:72:1266:G:H4'	1.99	0.44
5:72:1542:U:H2'	5:72:1543:G:O4'	2.17	0.44
7:A1:128:G:H2'	7:A1:129:A:C8	2.52	0.44
7:A1:758:C:H4'	7:A1:880:C:H4'	1.98	0.44
7:A1:802:A:H3'	7:A1:803:G:H8	1.81	0.44
7:A1:1007:U:H2'	7:A1:1008:U:C6	2.51	0.44
7:A1:1073:U:OP2	11:E1:62:LYS:NZ	2.51	0.44
7:A2:94:G:H4'	7:A2:95:C:C5'	2.48	0.44
7:A2:178:C:H2'	7:A2:179:A:H8	1.82	0.44
7:A2:263:A:H2'	7:A2:264:C:C6	2.53	0.44
7:A2:550:G:O2'	18:L2:116:LYS:HE3	2.17	0.44
9:C1:182:ILE:HG22	9:C1:203:PHE:HA	1.99	0.44
10:D2:99:ASP:OD1	10:D2:100:ASN:N	2.50	0.44
15:I1:130:ARG:HH12	30:W1:35:A:P	2.40	0.44
15:I1:130:ARG:HH21	30:W1:33:U:P	2.40	0.44
24:R1:57:ARG:O	24:R1:61:ARG:HG3	2.17	0.44
31:Y:52:G:H2'	31:Y:53:G:O4'	2.17	0.44
35:b2:78:VAL:HG21	35:b2:110:LEU:HD21	1.99	0.44
35:b2:225:MET:SD	35:b2:230:HIS:HB2	2.58	0.44
39:i2:87:GLU:HA	39:i2:125:THR:HG21	1.98	0.44
5:71:1913:A:C8	7:A1:1494:G:H4'	2.52	0.44
5:72:296:U:H2'	5:72:297:G:C8	2.52	0.44
5:72:1916:A:N1	7:A2:1409:C:H5'	2.32	0.44
5:72:1935:G:N2	5:72:1964:G:H5'	2.31	0.44
5:72:2391:G:C6	5:72:2427:C:H1'	2.52	0.44
6:82:66:A:O4'	6:82:108:A:N6	2.50	0.44
7:A1:57:G:H2'	7:A1:58:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:109:A:C8	7:A1:326:G:H2'	2.53	0.44
7:A1:1117:A:H5''	15:I1:106:ARG:NH2	2.32	0.44
7:A1:1118:U:H2'	7:A1:1119:C:C6	2.51	0.44
7:A2:262:A:H2'	7:A2:263:A:C8	2.52	0.44
7:A2:587:G:N1	7:A2:754:C:OP2	2.46	0.44
7:A2:1129:C:H1'	7:A2:1130:A:N7	2.32	0.44
10:D1:98:LEU:HD22	10:D1:135:TYR:HD2	1.82	0.44
15:I1:75:GLN:O	15:I1:79:ILE:HG13	2.17	0.44
17:K2:98:ARG:HH11	27:U2:16:LEU:HD13	1.82	0.44
18:L1:81:LEU:HB2	18:L1:102:LEU:HD13	1.99	0.44
19:M1:107:ARG:NH1	19:M1:113:ARG:HD2	2.31	0.44
24:R1:39:ILE:HG22	24:R1:40:VAL:N	2.32	0.44
32:Y1:21:A:H61	32:Y1:47:U:H3'	1.82	0.44
39:i2:51:ARG:HH12	39:i2:55:GLU:HB2	1.83	0.44
5:72:309:A:N3	5:72:329:G:O2'	2.44	0.44
5:72:607:U:O4	5:72:620:G:H5''	2.18	0.44
5:72:1040:A:H61	5:72:1115:G:H1	1.64	0.44
5:72:2345:G:N3	5:72:2381:A:H2'	2.33	0.44
5:72:2604:PSU:H2'	5:72:2605:PSU:C6	2.53	0.44
5:72:2698:U:H2'	5:72:2699:C:C6	2.52	0.44
7:A1:324:G:N2	7:A1:326:G:H3'	2.32	0.44
7:A1:418:C:H2'	7:A1:419:C:C6	2.51	0.44
7:A1:484:G:C5	7:A1:486:U:H1'	2.52	0.44
7:A1:671:G:C2'	7:A1:672:U:H5'	2.48	0.44
7:A1:1086:U:H3	7:A1:1099:G:H22	1.65	0.44
7:A1:1526:G:H2'	7:A1:1527:U:C6	2.53	0.44
7:A2:62:U:H2'	7:A2:63:C:C6	2.53	0.44
7:A2:151:A:H2'	7:A2:152:A:C8	2.51	0.44
7:A2:966:2MG:H2'	7:A2:967:5MC:C6	2.51	0.44
7:A2:1011:C:H2'	7:A2:1012:A:H8	1.79	0.44
8:B2:169:GLU:O	8:B2:173:ILE:HG13	2.18	0.44
9:C2:90:VAL:O	9:C2:94:ILE:HG13	2.18	0.44
13:G1:113:ASP:HB2	13:G1:119:ARG:CG	2.48	0.44
25:S1:12:ASP:HB3	25:S1:14:HIS:CE1	2.53	0.44
31:Y:9:A:H1'	31:Y:45:G:O2'	2.17	0.44
5:72:587:C:O2	41:o2:33:ARG:NH1	2.51	0.44
5:72:1528:A:OP2	5:72:1543:G:N2	2.51	0.44
5:72:1864:U:OP1	5:72:2410:G:O2'	2.24	0.44
5:72:2127:G:N2	5:72:2162:G:O5'	2.51	0.44
5:72:2194:U:O2'	5:72:2195:U:H5'	2.18	0.44
6:82:40:U:H5'	6:82:46:A:C2	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:173:U:H5''	7:A1:197:A:O4'	2.17	0.44
7:A1:1230:C:H2'	7:A1:1231:G:C8	2.43	0.44
7:A1:1315:U:O2'	7:A1:1361:G:O4'	2.28	0.44
7:A2:522:C:H41	18:L2:50:ARG:NH2	2.15	0.44
7:A2:939:G:O5'	13:G2:102:ARG:NH1	2.49	0.44
7:A2:1326:U:H2'	7:A2:1327:C:H6	1.83	0.44
8:B2:67:ILE:HD12	8:B2:160:ALA:HB3	1.99	0.44
11:E2:83:HIS:CG	14:H2:96:MET:HE1	2.53	0.44
17:K2:113:VAL:O	17:K2:113:VAL:HG12	2.17	0.44
29:W:6:C:H2'	29:W:7:G:C8	2.51	0.44
30:W1:34:G:N3	30:W1:34:G:H2'	2.32	0.44
5:72:247:G:H4'	5:72:386:G:C4	2.53	0.44
5:72:373:U:H2'	5:72:374:A:C8	2.52	0.44
5:72:488:G:H1'	5:72:492:A:N6	2.33	0.44
5:72:1231:U:H2'	5:72:1232:G:H8	1.81	0.44
5:72:1586:A:H2'	5:72:1587:G:O4'	2.18	0.44
5:72:1682:G:OP2	5:72:1699:G:N2	2.49	0.44
5:72:2144:G:H8	5:72:2144:G:O5'	2.01	0.44
5:72:2391:G:O6	5:72:2425:A:H8	2.00	0.44
7:A1:143:A:H2	7:A1:220:G:H1	1.64	0.44
7:A1:256:U:H2'	7:A1:257:G:C8	2.53	0.44
7:A1:264:C:O2'	23:Q1:66:PRO:O	2.35	0.44
7:A1:895:G:N2	7:A1:904:U:O2	2.50	0.44
7:A1:979:C:H1'	7:A1:1317:C:H41	1.82	0.44
7:A1:980:C:O2'	20:N1:59:ARG:O	2.34	0.44
7:A1:1037:C:H2'	7:A1:1038:C:C6	2.52	0.44
7:A1:1268:G:H21	7:A1:1326:U:H1'	1.81	0.44
7:A1:1314:C:H2'	7:A1:1315:U:C6	2.52	0.44
7:A2:461:A:H2'	7:A2:462:G:C8	2.51	0.44
7:A2:528:C:H3'	7:A2:529:G:H8	1.83	0.44
7:A2:739:C:O2'	21:O2:42:HIS:ND1	2.24	0.44
7:A2:838:G:H2'	7:A2:839:C:C6	2.52	0.44
9:C1:59:ARG:HG2	9:C1:64:ILE:HG22	2.00	0.44
23:Q1:28:PHE:CE2	23:Q1:37:PHE:HB3	2.53	0.44
24:R2:55:LEU:O	24:R2:59:ILE:HG12	2.18	0.44
5:72:1329:U:H5''	5:72:1330:C:H5	1.82	0.44
5:72:1782:U:H1'	5:72:2609:U:H5''	1.98	0.44
5:72:2127:G:N2	5:72:2161:C:H2'	2.33	0.44
7:A1:182:A:O2'	7:A1:183:C:H5''	2.17	0.44
7:A1:214:C:H2'	7:A1:215:C:C6	2.52	0.44
7:A1:220:G:H2'	7:A1:221:C:H6	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1079:G:H2'	7:A1:1080:A:C8	2.52	0.44
7:A1:1250:A:N3	7:A1:1370:G:O2'	2.47	0.44
7:A2:31:G:C8	7:A2:306:A:H1'	2.53	0.44
7:A2:300:A:C6	7:A2:301:G:H1'	2.52	0.44
7:A2:554:A:H2'	7:A2:555:U:C6	2.53	0.44
7:A2:1492:A:H1'	28:V2:55:C:O2'	2.18	0.44
8:B:166:ALA:HB2	8:B:185:ALA:HB1	1.99	0.44
8:B2:60:ILE:O	8:B2:63:ARG:HG2	2.18	0.44
18:L2:86:ARG:HA	18:L2:94:ARG:HA	1.99	0.44
20:N1:49:GLN:NE2	25:S1:11:ILE:O	2.47	0.44
21:O1:64:ARG:HD2	21:O1:67:LEU:HD21	1.99	0.44
24:R1:65:LEU:HB3	24:R1:67:LEU:HD13	1.99	0.44
24:R2:41:PRO:HG2	24:R2:44:ILE:HG12	1.99	0.44
35:b2:91:ILE:HD12	35:b2:103:TYR:CD1	2.52	0.44
4:62:8:ARG:NH1	5:72:243:U:OP2	2.50	0.44
4:62:13:ARG:HG3	41:o2:63:LYS:HA	1.99	0.44
5:72:1003:G:O2'	5:72:1010:A:N1	2.45	0.44
5:72:1566:A:H5'	35:b2:214:ARG:CZ	2.47	0.44
5:72:2357:G:N2	5:72:2360:G:OP2	2.44	0.44
5:72:2627:G:O2'	5:72:2781:A:N1	2.42	0.44
7:A1:232:G:H1'	7:A1:262:A:N1	2.33	0.44
7:A1:1350:A:H2'	7:A1:1351:U:O4'	2.18	0.44
7:A1:1418:A:H3'	7:A1:1419:G:C5'	2.48	0.44
7:A2:175:C:H2'	7:A2:176:C:C6	2.53	0.44
7:A2:586:C:O2'	14:H2:4:GLN:OE1	2.19	0.44
7:A2:1114:C:H2'	7:A2:1115:U:C6	2.53	0.44
7:A2:1121:U:H2'	7:A2:1122:U:C6	2.52	0.44
7:A2:1271:A:H2'	7:A2:1272:G:C8	2.53	0.44
8:B:68:LEU:HD12	8:B:69:PHE:H	1.83	0.44
10:D1:60:LYS:O	10:D1:64:ILE:HG13	2.17	0.44
23:Q1:61:ILE:HG22	23:Q1:73:TRP:HE3	1.82	0.44
23:Q1:77:ARG:HH12	23:Q1:79:VAL:HG22	1.81	0.44
5:72:832:U:H2'	5:72:833:A:C8	2.53	0.44
5:72:2134:A:O2'	5:72:2159:G:N3	2.50	0.44
5:72:2198:A:HO2'	5:72:2199:A:H8	1.63	0.44
5:72:2471:A:N6	5:72:2476:A:O2'	2.51	0.44
7:A1:102:G:H2'	7:A1:103:U:C6	2.53	0.44
7:A1:408:A:H2'	7:A1:409:U:C6	2.53	0.44
7:A1:929:G:H2'	7:A1:930:C:C6	2.53	0.44
7:A1:1071:C:H2'	7:A1:1072:G:C8	2.52	0.44
7:A1:1227:A:C5	25:S1:83:HIS:HB3	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1321:U:H4'	19:M1:86:TYR:CZ	2.53	0.44
7:A1:1338:G:H1'	30:W1:42:C:H5'	2.00	0.44
7:A2:201:G:H2'	7:A2:202:G:C8	2.53	0.44
7:A2:209:U:H3'	7:A2:210:C:H6	1.82	0.44
7:A2:1512:U:H2'	7:A2:1513:A:C8	2.53	0.44
9:C1:21:THR:O	16:J1:95:GLY:HA2	2.17	0.44
9:C1:88:ARG:HA	9:C1:91:VAL:HB	2.00	0.44
11:E2:97:GLN:N	11:E2:124:LEU:O	2.43	0.44
16:J1:8:ILE:HB	16:J1:74:VAL:HG23	1.99	0.44
16:J1:29:ALA:HB1	16:J1:34:ALA:HB3	2.00	0.44
22:P1:5:ARG:HA	22:P1:71:VAL:HG11	2.00	0.44
22:P1:8:ARG:HG3	22:P1:17:TYR:CE1	2.53	0.44
22:P1:78:VAL:HG13	22:P1:79:ASN:N	2.33	0.44
24:R2:12:ARG:NE	24:R2:32:TYR:OH	2.49	0.44
26:T1:73:ALA:HA	26:T1:76:LYS:HD3	1.99	0.44
27:U2:38:TYR:CG	27:U2:39:GLU:N	2.86	0.44
31:Y:18:G:N1	31:Y:55:PSU:H1'	2.30	0.44
34:a2:196:LEU:HB3	34:a2:208:TYR:HE2	1.83	0.44
2:32:15:ARG:HE	2:32:52:PHE:HE2	1.66	0.44
5:72:1182:G:H2'	5:72:1183:U:O4'	2.18	0.44
5:72:1487:U:H2'	5:72:1488:C:C6	2.53	0.44
5:72:1914:C:H2'	5:72:1915:3TD:H6	1.99	0.44
7:A1:198:G:H2'	7:A1:199:A:C8	2.53	0.44
7:A1:296:U:H1'	7:A1:556:C:H1'	2.00	0.44
7:A1:407:U:H4'	10:D1:113:GLU:HB2	2.00	0.44
7:A1:1126:U:O2'	7:A1:1127:G:H5'	2.18	0.44
7:A1:1409:C:H2'	7:A1:1410:A:C8	2.52	0.44
7:A2:162:A:C5	7:A2:163:C:H1'	2.53	0.44
7:A2:779:C:H1'	17:K2:122:ARG:HD3	1.98	0.44
7:A2:1079:G:H2'	7:A2:1080:A:C8	2.53	0.44
10:D1:13:ARG:HH21	10:D1:36:GLN:HG2	1.83	0.44
13:G2:80:VAL:HG23	13:G2:84:THR:HG23	2.00	0.44
16:J1:5:ARG:HH12	16:J1:7:ARG:HD2	1.83	0.44
17:K2:13:ARG:HH21	17:K2:76:GLU:HG2	1.83	0.44
24:R1:29:LEU:HD23	24:R1:59:ILE:HG22	2.00	0.44
25:S2:14:HIS:NE2	25:S2:35:SER:HB3	2.32	0.44
28:V2:30:A:O2'	28:V2:31:U:O4'	2.36	0.44
1:12:17:ASN:HB2	1:12:25:THR:OG1	2.18	0.43
5:72:1344:U:O2	5:72:1385:A:H5'	2.16	0.43
5:72:1783:A:O2'	5:72:2607:G:O2'	2.27	0.43
5:72:2120:G:H2'	5:72:2120:G:N3	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:165:G:H2'	7:A1:166:U:C6	2.53	0.43
7:A1:278:G:H1'	7:A1:282:A:H1'	1.99	0.43
7:A1:363:A:P	18:L1:31:ARG:H	2.41	0.43
7:A1:545:C:O2'	7:A1:549:C:H5''	2.18	0.43
7:A1:647:C:H2'	7:A1:648:A:H8	1.83	0.43
7:A1:1318:A:H5''	25:S1:3:ARG:NH1	2.33	0.43
7:A1:1342:C:H2'	7:A1:1343:G:H8	1.80	0.43
7:A2:161:A:H2'	7:A2:162:A:C8	2.52	0.43
7:A2:360:G:C2'	7:A2:361:G:H5'	2.47	0.43
7:A2:369:G:H2'	7:A2:370:C:C6	2.51	0.43
7:A2:458:U:H2'	7:A2:474:G:N2	2.33	0.43
7:A2:1325:C:H2'	7:A2:1326:U:C6	2.53	0.43
7:A2:1327:C:H2'	7:A2:1328:C:C6	2.53	0.43
7:A2:1498:UR3:O5'	7:A2:1498:UR3:H6	2.18	0.43
8:B2:104:TRP:CD1	8:B2:108:ARG:HH11	2.36	0.43
9:C1:188:GLU:OE1	9:C1:188:GLU:N	2.50	0.43
9:C2:150:LYS:HB3	9:C2:201:TRP:HB2	2.00	0.43
9:C2:207:ILE:HG22	9:C2:208:LEU:N	2.33	0.43
11:E1:153:VAL:HG21	14:H1:99:LEU:HD23	1.99	0.43
11:E1:156:LYS:HZ1	14:H1:71:VAL:C	2.24	0.43
15:I1:52:LEU:HB3	15:I1:58:VAL:HA	1.99	0.43
20:N1:86:GLU:O	20:N1:90:ARG:HG3	2.18	0.43
20:N2:62:ASN:OD1	20:N2:75:ARG:NE	2.51	0.43
29:W:3:G:H2'	29:W:4:G:C8	2.53	0.43
39:i2:115:VAL:HG22	39:i2:132:PHE:HE1	1.82	0.43
43:r2:29:HIS:HB3	43:r2:36:TYR:HB2	2.00	0.43
43:r2:30:ARG:HA	43:r2:35:ILE:HD12	2.00	0.43
5:72:811:U:H2'	41:o2:21:ARG:HA	2.00	0.43
5:72:1917:U:O4	5:72:1918:A:N6	2.51	0.43
5:72:2097:A:H61	5:72:2191:A:H61	1.66	0.43
7:A1:45:G:H2'	7:A1:46:G:C8	2.53	0.43
7:A1:223:A:H2'	7:A1:224:U:C6	2.53	0.43
7:A1:302:G:H2'	7:A1:303:A:C8	2.53	0.43
7:A1:637:C:H2'	7:A1:638:U:C6	2.52	0.43
7:A1:1388:C:H2'	7:A1:1389:C:H6	1.82	0.43
7:A1:1432:G:H8	7:A1:1432:G:OP2	2.01	0.43
7:A2:671:G:O3'	12:F2:79:ARG:NH2	2.51	0.43
7:A2:933:G:H8	7:A2:933:G:OP2	2.02	0.43
7:A2:979:C:OP1	7:A2:1223:C:N4	2.51	0.43
7:A2:1144:G:H21	7:A2:1146:A:H62	1.66	0.43
8:B2:165:ASP:OD1	8:B2:166:ALA:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:D1:118:VAL:HG22	10:D1:123:ILE:HG13	1.99	0.43
13:G1:69:VAL:HG23	13:G1:135:VAL:HA	2.00	0.43
13:G1:92:ARG:HG3	13:G1:95:ARG:H	1.83	0.43
22:P1:51:ARG:O	22:P1:52:LEU:HD23	2.18	0.43
39:i2:95:GLY:O	39:i2:99:ILE:HG13	2.18	0.43
5:72:468:G:N7	40:l2:39:ARG:NH2	2.61	0.43
5:72:868:U:O2	38:h2:8:LYS:NZ	2.51	0.43
5:72:1880:U:H2'	5:72:1881:C:C6	2.54	0.43
5:72:2370:G:H4'	37:g2:44:ARG:NH2	2.33	0.43
6:82:88:C:O5'	6:82:88:C:H6	2.02	0.43
7:A1:303:A:C2'	7:A1:304:U:H5'	2.49	0.43
7:A1:310:G:H2'	7:A1:311:C:H6	1.83	0.43
7:A1:813:U:H2'	7:A1:814:A:H8	1.83	0.43
7:A1:868:C:H2'	7:A1:869:G:O4'	2.18	0.43
7:A1:1015:G:H8	7:A1:1015:G:O5'	2.01	0.43
7:A1:1245:C:H2'	7:A1:1246:A:C8	2.53	0.43
7:A1:1256:A:O2'	7:A1:1278:G:O6	2.30	0.43
7:A1:1260:G:O2'	7:A1:1283:U:H4'	2.18	0.43
7:A1:1419:G:H2'	7:A1:1420:U:C6	2.54	0.43
7:A2:200:G:H1	7:A2:217:C:H42	1.66	0.43
7:A2:221:C:H2'	7:A2:222:C:C6	2.53	0.43
7:A2:421:U:O2'	7:A2:422:C:H5'	2.18	0.43
7:A2:662:U:H2'	7:A2:663:A:C8	2.54	0.43
7:A2:1149:C:P	15:l2:11:ARG:HH21	2.41	0.43
7:A2:1157:A:H4'	7:A2:1158:C:O5'	2.17	0.43
9:C1:23:PHE:CZ	16:j1:11:LYS:HD3	2.53	0.43
9:C1:38:LYS:O	9:C1:41:GLN:HG2	2.18	0.43
12:F2:46:GLN:HE22	12:F2:55:HIS:CE1	2.37	0.43
31:Y:45:G:H3'	31:Y:46:G7M:H5''	2.00	0.43
1:12:59:ILE:HD12	1:12:67:VAL:HG21	1.99	0.43
3:4:56:ARG:NE	25:S2:65:GLU:O	2.51	0.43
5:72:981:A:OP2	5:72:982:C:N4	2.49	0.43
5:72:2114:A:C5	5:72:2115:G:H1'	2.52	0.43
7:A1:338:A:H2	7:A1:351:G:H22	1.67	0.43
7:A1:832:G:N2	7:A1:854:U:O2	2.29	0.43
7:A1:1338:G:H21	30:W1:41:C:H1'	1.83	0.43
7:A1:1401:G:H2'	7:A1:1402:4OC:O4'	2.18	0.43
7:A2:120:A:H1'	7:A2:122:G:C8	2.54	0.43
7:A2:978:A:H61	7:A2:1316:G:H1'	1.84	0.43
7:A2:1027:C:H2'	7:A2:1028:C:C6	2.53	0.43
7:A2:1105:A:H2'	7:A2:1106:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:1228:C:H2'	7:A2:1229:A:C8	2.54	0.43
7:A2:1276:G:H2'	7:A2:1277:C:C6	2.53	0.43
8:B2:64:LYS:HA	8:B2:64:LYS:HD3	1.81	0.43
8:B2:77:SER:OG	8:B2:93:ASN:HB2	2.19	0.43
12:F2:90:MET:HE2	12:F2:90:MET:HB3	1.92	0.43
13:G2:113:ASP:HB2	13:G2:119:ARG:HG2	1.99	0.43
16:J1:12:ALA:HB2	16:J1:96:VAL:HG13	2.01	0.43
20:N1:88:ALA:HB2	20:N1:96:LEU:HD12	2.00	0.43
22:P1:8:ARG:NH2	22:P1:15:PRO:HG3	2.34	0.43
28:V2:25:U:H2'	28:V2:26:G:C8	2.54	0.43
36:e2:38:MET:HE1	36:e2:53:ALA:O	2.17	0.43
44:z2:21:LEU:HD23	44:z2:40:GLN:HA	2.00	0.43
5:72:594:U:H2'	5:72:595:C:C6	2.54	0.43
5:72:2129:C:O5'	5:72:2129:C:H6	2.01	0.43
7:A1:216:U:H1'	7:A1:466:A:N6	2.33	0.43
7:A1:471:U:H2'	7:A1:472:U:C6	2.54	0.43
7:A1:781:A:H3'	7:A1:782:A:H8	1.82	0.43
7:A1:1023:U:H2'	7:A1:1024:G:C8	2.53	0.43
7:A1:1236:A:H2'	7:A1:1237:C:C6	2.52	0.43
7:A1:1341:U:H5'	30:W1:32:PSU:OP1	2.19	0.43
7:A2:142:G:H3'	7:A2:143:A:H8	1.83	0.43
7:A2:402:G:O2'	7:A2:403:C:H5'	2.19	0.43
7:A2:518:C:H4'	7:A2:519:C:H5''	2.00	0.43
7:A2:1381:U:H2'	7:A2:1382:C:O4'	2.19	0.43
11:E1:77:ASN:HB2	11:E1:82:GLN:HG2	2.00	0.43
15:I1:45:ARG:HB2	15:I1:49:ARG:NH2	2.33	0.43
29:W:59:G:H2'	29:W:59:G:N3	2.34	0.43
30:W1:14:A:H3'	30:W1:15:G:H8	1.84	0.43
32:Y1:43:G:H3'	32:Y1:44:G:H8	1.83	0.43
34:a2:200:LYS:HD2	34:a2:208:TYR:HB2	1.99	0.43
39:i2:59:ALA:O	39:i2:63:ALA:N	2.49	0.43
39:i2:89:LYS:C	39:i2:91:PHE:N	2.76	0.43
1:12:39:TRP:CD1	39:i2:32:PRO:HA	2.53	0.43
1:12:60:ASP:OD2	39:i2:27:ARG:HD3	2.19	0.43
5:72:630:G:N2	5:72:633:A:OP2	2.41	0.43
5:72:1710:G:H4'	5:72:2858:C:O2	2.19	0.43
5:72:1835:2MG:HM21	5:72:1930:G:H4'	2.00	0.43
5:72:2106:U:H2'	5:72:2107:G:H8	1.83	0.43
7:A1:285:C:H2'	7:A1:286:C:C6	2.53	0.43
7:A1:381:C:H2'	7:A1:382:A:O4'	2.18	0.43
7:A1:824:G:O2'	14:H1:3:MET:HG2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:998:C:H2'	7:A1:999:C:C6	2.53	0.43
7:A1:1146:A:H3'	7:A1:1147:C:H6	1.84	0.43
7:A1:1175:G:H2'	7:A1:1176:A:H8	1.83	0.43
7:A1:1404:C:H2'	7:A1:1405:G:H8	1.83	0.43
7:A2:165:G:H2'	7:A2:166:U:C6	2.53	0.43
7:A2:179:A:H2'	7:A2:180:U:O4'	2.19	0.43
7:A2:214:C:H2'	7:A2:215:C:H6	1.82	0.43
7:A2:337:G:H2'	7:A2:338:A:H8	1.84	0.43
7:A2:474:G:N7	7:A2:475:C:N4	2.67	0.43
7:A2:1105:A:H2'	7:A2:1106:G:H8	1.83	0.43
12:F1:4:TYR:CD2	12:F1:71:ILE:HG13	2.53	0.43
12:F2:78:PHE:HA	12:F2:84:VAL:HG21	2.01	0.43
16:J2:15:HIS:HB3	16:J2:70:HIS:CD2	2.53	0.43
22:P1:6:LEU:HB2	22:P1:17:TYR:HB3	2.01	0.43
23:Q2:57:ASP:OD1	23:Q2:82:ALA:N	2.48	0.43
29:W:12:U:H2'	29:W:13:C:O4'	2.19	0.43
5:72:1:G:H2'	5:72:2:G:C8	2.53	0.43
5:72:569:U:O2'	5:72:983:A:N1	2.45	0.43
5:72:1332:G:N7	5:72:1609:A:O2'	2.43	0.43
5:72:1597:A:H5''	5:72:1598:A:H5'	2.00	0.43
5:72:1853:A:N1	5:72:2087:G:H1'	2.34	0.43
7:A1:39:G:N1	7:A1:403:C:O2	2.39	0.43
7:A1:267:C:H2'	7:A1:268:U:C6	2.53	0.43
7:A1:455:G:H1	7:A1:477:C:H42	1.66	0.43
7:A1:771:G:H2'	7:A1:772:U:C6	2.53	0.43
7:A1:855:U:H2'	7:A1:856:C:C6	2.53	0.43
7:A1:1009:U:H2'	7:A1:1010:U:C6	2.54	0.43
7:A2:1005:A:H2'	7:A2:1006:G:O4'	2.19	0.43
7:A2:1063:C:H2'	7:A2:1064:G:C8	2.53	0.43
15:I2:106:ARG:HH12	15:I2:110:GLN:HE22	1.67	0.43
17:K1:22:HIS:HA	17:K1:85:MET:HB2	2.01	0.43
18:L1:31:ARG:HE	18:L1:31:ARG:HB3	1.73	0.43
19:M1:44:LYS:HB2	19:M1:47:GLU:OE1	2.19	0.43
27:U2:28:VAL:O	27:U2:32:VAL:HG23	2.19	0.43
32:Y1:10:G:N2	32:Y1:26:A:H1'	2.34	0.43
34:a2:142:VAL:HG23	34:a2:144:THR:HG23	2.01	0.43
5:72:1869:G:H2'	5:72:1871:A:N7	2.34	0.43
5:72:1892:C:O2'	29:W:71:C:H5'	2.17	0.43
5:72:2819:G:H2'	5:72:2821:A:N7	2.34	0.43
6:82:8:C:H5''	43:r2:15:ARG:NH2	2.33	0.43
7:A1:231:U:H2'	7:A1:232:G:C8	2.42	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:465:A:H2'	7:A1:466:A:C8	2.54	0.43
7:A1:488:C:H2'	7:A1:489:C:H6	1.82	0.43
7:A1:590:U:H2'	7:A1:591:U:C6	2.54	0.43
7:A1:977:A:OP1	20:N1:61:ARG:NH2	2.44	0.43
7:A1:1135:U:O4	7:A1:1138:G:N2	2.50	0.43
7:A1:1244:G:H2'	7:A1:1245:C:C6	2.54	0.43
7:A1:1447:A:P	7:A1:1448:C:H41	2.40	0.43
7:A2:190:A:H3'	7:A2:191:G:H8	1.83	0.43
7:A2:202:G:H21	7:A2:466:A:N6	2.16	0.43
7:A2:322:C:H2'	7:A2:323:U:C6	2.53	0.43
7:A2:522:C:H41	18:L2:50:ARG:HH21	1.65	0.43
7:A2:831:A:H2'	7:A2:832:G:C8	2.54	0.43
7:A2:1014:A:N3	7:A2:1219:A:H1'	2.34	0.43
9:C1:132:ARG:HG2	28:V2:35:A:H61	1.83	0.43
12:F2:17:GLN:O	12:F2:21:MET:HG2	2.18	0.43
12:F2:69:GLU:H	12:F2:69:GLU:CD	2.27	0.43
19:M1:107:ARG:NE	19:M1:113:ARG:HH11	2.17	0.43
24:R1:57:ARG:HB3	24:R1:61:ARG:HH12	1.84	0.43
28:V2:8:A:H2'	28:V2:8:A:N3	2.33	0.43
35:b2:98:ASP:O	35:b2:98:ASP:OD1	2.37	0.43
35:b2:141:VAL:HG12	35:b2:192:LEU:HD13	2.01	0.43
36:e2:29:PRO:HB2	36:e2:169:LEU:HD22	2.00	0.43
36:e2:117:LEU:O	36:e2:177:PHE:HA	2.19	0.43
37:g2:11:LEU:HD23	37:g2:51:GLU:HA	2.00	0.43
2:32:29:ARG:HB3	5:72:1184:U:OP1	2.19	0.43
5:72:1469:A:H2'	5:72:1470:A:C8	2.54	0.43
5:72:1905:C:H2'	5:72:1930:G:C8	2.53	0.43
5:72:1936:A:P	5:72:1961:C:H41	2.42	0.43
5:72:2331:G:OP1	44:z2:44:LYS:NZ	2.52	0.43
5:72:2660:A:H2'	5:72:2661:G:O4'	2.18	0.43
7:A1:32:A:H2'	7:A1:33:A:C8	2.54	0.43
7:A1:126:G:H1	7:A1:235:C:H42	1.65	0.43
7:A1:297:G:H4'	7:A1:557:G:H4'	2.01	0.43
7:A1:302:G:H2'	7:A1:303:A:H8	1.84	0.43
7:A1:781:A:H4'	7:A1:1522:U:O2'	2.19	0.43
7:A1:858:G:H1	7:A1:869:G:H3'	1.83	0.43
7:A1:1201:A:H4'	7:A1:1202:U:O5'	2.18	0.43
7:A1:1387:G:H2'	7:A1:1388:C:C6	2.54	0.43
7:A1:1434:A:H2'	7:A1:1435:G:O4'	2.19	0.43
7:A2:105:G:H2'	7:A2:106:C:C6	2.54	0.43
7:A2:106:C:H2'	7:A2:107:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:235:C:H2'	7:A2:236:A:H8	1.84	0.43
7:A2:868:C:H2'	7:A2:869:G:O4'	2.19	0.43
7:A2:1012:A:H2'	7:A2:1013:G:C8	2.54	0.43
7:A2:1264:U:H2'	7:A2:1265:C:C6	2.54	0.43
7:A2:1376:U:H2'	7:A2:1377:A:H8	1.83	0.43
8:B2:107:VAL:O	8:B2:111:ILE:HG13	2.19	0.43
9:C1:11:ARG:HH11	9:C1:178:LEU:HA	1.82	0.43
10:D2:95:GLU:O	10:D2:100:ASN:ND2	2.51	0.43
12:F2:67:PRO:O	12:F2:71:ILE:HG12	2.19	0.43
13:G2:79:ARG:HB2	13:G2:154:TYR:CZ	2.54	0.43
22:P1:68:SER:HB3	22:P1:71:VAL:HG22	1.99	0.43
29:W:26:A:H61	29:W:44:G:H1	1.65	0.43
32:Y1:10:G:N3	32:Y1:10:G:H2'	2.33	0.43
35:b2:92:ALA:N	35:b2:104:ILE:O	2.39	0.43
5:72:482:A:N6	5:72:506:G:O2'	2.51	0.43
5:72:1055:G:O2'	5:72:1084:A:N6	2.48	0.43
5:72:1323:C:N4	5:72:1324:G:O6	2.52	0.43
5:72:2262:U:OP1	5:72:2387:U:O2'	2.31	0.43
7:A1:312:C:H2'	7:A1:313:A:C8	2.54	0.43
7:A1:313:A:H2'	7:A1:314:C:C6	2.54	0.43
7:A1:1044:A:C4	7:A1:1045:C:H1'	2.54	0.43
7:A1:1080:A:OP1	11:E1:50:TYR:OH	2.27	0.43
7:A1:1316:G:H22	7:A1:1319:A:P	2.42	0.43
7:A2:37:U:O2'	7:A2:500:G:O2'	2.28	0.43
7:A2:84:U:H4'	7:A2:85:U:H3'	2.01	0.43
7:A2:341:C:H2'	7:A2:342:C:C6	2.54	0.43
7:A2:440:C:C2	7:A2:441:A:C8	3.06	0.43
7:A2:776:G:O2'	7:A2:777:A:H8	2.01	0.43
7:A2:1189:U:P	20:N2:98:LYS:HE2	2.59	0.43
8:B:125:THR:O	8:B:129:LEU:HB2	2.19	0.43
11:E1:36:LEU:HD22	11:E1:134:ILE:HG22	2.00	0.43
12:F2:35:LYS:HG2	12:F2:37:HIS:CD2	2.54	0.43
13:G1:76:LYS:HB2	13:G1:89:VAL:HG11	2.01	0.43
15:I2:23:PRO:HA	15:I2:61:LEU:HG	2.00	0.43
16:J2:64:GLN:HB3	20:N2:99:ALA:HB3	2.00	0.43
17:K1:81:ASN:HA	17:K1:106:ARG:HB2	2.01	0.43
19:M2:27:LYS:HG3	19:M2:31:LYS:NZ	2.34	0.43
23:Q1:16:LYS:O	23:Q1:16:LYS:HD3	2.18	0.43
29:W:12:U:C2	29:W:24:G:N2	2.87	0.43
34:a2:26:ALA:HA	34:a2:222:VAL:HG11	1.99	0.43
36:e2:49:LEU:HA	36:e2:52:ASN:ND2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:e2:49:LEU:HD23	36:e2:52:ASN:HD21	1.84	0.43
5:72:223:A:N1	5:72:407:G:O2'	2.46	0.42
5:72:500:G:H1'	5:72:505:A:H61	1.84	0.42
5:72:542:C:H2'	5:72:543:G:C8	2.54	0.42
5:72:1076:C:H2'	5:72:1077:A:C8	2.54	0.42
5:72:1419:A:H8	5:72:1419:A:OP2	2.01	0.42
5:72:1677:A:H2'	5:72:1678:A:C8	2.54	0.42
5:72:2449:H2U:H4'	5:72:2450:A:OP1	2.19	0.42
7:A1:72:A:H2'	7:A1:73:C:H6	1.83	0.42
7:A1:371:A:H1'	7:A1:482:A:H1'	2.01	0.42
7:A1:722:G:H2'	7:A1:724:G:C8	2.54	0.42
7:A1:1099:G:H5''	27:U1:69:ARG:NE	2.34	0.42
7:A1:1237:C:H3'	7:A1:1238:A:H5'	2.00	0.42
7:A2:88:U:H2'	7:A2:89:U:C6	2.54	0.42
7:A2:634:C:H2'	7:A2:635:A:C8	2.54	0.42
7:A2:1328:C:OP1	19:M2:28:THR:HG21	2.18	0.42
14:H2:10:MET:HA	14:H2:27:MET:HE1	2.00	0.42
29:W:18:G:H5'	29:W:58:A:H2	1.83	0.42
34:a2:194:VAL:HA	34:a2:197:LYS:HD2	2.01	0.42
38:h2:24:THR:O	38:h2:34:LYS:NZ	2.45	0.42
5:72:687:C:H5''	40:l2:2:LYS:HE2	1.99	0.42
5:72:979:A:H2'	5:72:982:C:H42	1.84	0.42
5:72:1028:A:H2'	5:72:1029:A:C8	2.54	0.42
7:A1:88:U:O2'	7:A1:89:U:O5'	2.31	0.42
7:A1:211:G:N7	7:A1:212:G:H1'	2.34	0.42
7:A1:407:U:O2'	10:D1:113:GLU:OE2	2.29	0.42
7:A1:489:C:H2'	7:A1:490:C:C6	2.54	0.42
7:A1:502:A:H2'	7:A1:503:C:O4'	2.19	0.42
7:A2:18:C:H4'	7:A2:1078:U:O2	2.19	0.42
7:A2:222:C:H2'	7:A2:223:A:H8	1.84	0.42
7:A2:1436:U:H2'	7:A2:1437:A:C8	2.54	0.42
10:D1:150:LYS:HE2	10:D1:178:MET:HB2	2.01	0.42
13:G2:70:ARG:HE	13:G2:70:ARG:HB2	1.73	0.42
15:I1:21:ILE:HG12	15:I1:63:LEU:HD13	2.00	0.42
16:J2:56:HIS:ND1	16:J2:57:VAL:HG13	2.34	0.42
19:M1:50:GLU:HA	19:M1:53:ILE:HD12	2.01	0.42
35:b2:53:HIS:HA	35:b2:217:ARG:HB2	2.01	0.42
1:12:57:ARG:NH1	5:72:400:G:O6	2.49	0.42
5:72:215:G:H4'	5:72:216:A:H4'	2.00	0.42
5:72:1011:G:H1'	5:72:1013:C:O4'	2.19	0.42
5:72:1024:G:O2'	5:72:1144:A:O2'	2.29	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:1169:A:H61	5:72:1180:U:H3	1.67	0.42
5:72:1821:A:OP1	35:b2:200:HIS:NE2	2.52	0.42
5:72:2554:U:H2'	5:72:2555:U:H6	1.84	0.42
7:A1:34:C:H2'	7:A1:35:G:H8	1.83	0.42
7:A1:331:G:OP1	7:A1:332:G:H5''	2.19	0.42
7:A1:543:U:OP1	10:D1:14:ARG:NE	2.52	0.42
7:A1:577:G:H2'	7:A1:578:C:C6	2.54	0.42
7:A1:688:G:H2'	7:A1:689:C:O4'	2.19	0.42
7:A1:692:U:H1'	7:A1:695:A:N7	2.33	0.42
7:A1:828:U:H2'	7:A1:829:G:O4'	2.19	0.42
7:A1:1124:G:H1'	7:A1:1125:U:H5	1.84	0.42
7:A1:1317:C:H3'	7:A1:1318:A:C8	2.54	0.42
7:A1:1456:A:H3'	7:A1:1457:G:H8	1.83	0.42
7:A1:1522:U:H2'	7:A1:1523:G:C8	2.54	0.42
7:A2:59:A:H3'	7:A2:331:G:H22	1.84	0.42
7:A2:104:G:H4'	7:A2:174:A:O4'	2.19	0.42
7:A2:555:U:H2'	7:A2:556:C:C6	2.55	0.42
7:A2:574:A:H1'	7:A2:883:C:H1'	2.02	0.42
7:A2:738:C:P	12:F2:2:ARG:HH21	2.42	0.42
7:A2:1060:U:P	20:N2:85:ARG:HH22	2.41	0.42
8:B2:27:MET:HG2	8:B2:193:PRO:HD3	2.01	0.42
9:C2:69:HIS:HA	9:C2:104:ALA:HB3	2.00	0.42
9:C2:179:ARG:HD3	9:C2:208:LEU:HD13	2.01	0.42
10:D1:34:ILE:HG22	10:D1:35:GLU:N	2.34	0.42
10:D2:40:GLN:H	10:D2:40:GLN:CD	2.28	0.42
11:E2:80:THR:HG23	11:E2:122:ASN:O	2.20	0.42
12:F2:42:TRP:HE3	12:F2:59:TYR:HB3	1.83	0.42
16:J2:37:ARG:HB2	16:J2:75:ASP:HB2	2.01	0.42
17:K2:15:GLN:HG3	17:K2:77:TYR:HA	2.00	0.42
23:Q2:76:VAL:O	23:Q2:77:ARG:HG3	2.20	0.42
28:V2:28:C:H2'	28:V2:29:A:C8	2.54	0.42
29:W:70:C:H2'	29:W:71:C:C6	2.54	0.42
39:i2:94:ILE:O	39:i2:94:ILE:HG13	2.19	0.42
1:12:17:ASN:OD1	1:12:27:ARG:HD2	2.18	0.42
5:72:58:G:O2'	5:72:73:A:N1	2.51	0.42
5:72:478:A:N1	5:72:500:G:H4'	2.34	0.42
5:72:601:C:O2'	5:72:605:G:H5''	2.19	0.42
5:72:881:G:H2'	5:72:882:G:H8	1.84	0.42
5:72:1720:U:H2'	5:72:1721:G:O4'	2.20	0.42
5:72:2135:A:O4'	5:72:2159:G:O2'	2.37	0.42
5:72:2313:C:H2'	5:72:2314:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:2339:C:H2'	5:72:2340:A:H8	1.85	0.42
5:72:2659:G:N2	5:72:2662:A:OP2	2.51	0.42
7:A1:270:A:H2'	7:A1:271:C:O4'	2.19	0.42
7:A1:1309:G:H2'	7:A1:1310:G:O4'	2.18	0.42
7:A2:166:U:H2'	7:A2:167:A:C8	2.55	0.42
7:A2:708:C:O4'	17:K2:39:GLY:HA3	2.19	0.42
7:A2:1025:U:O5'	7:A2:1025:U:H6	2.02	0.42
9:C2:136:ARG:HD3	9:C2:136:ARG:HA	1.73	0.42
10:D2:139:PRO:HA	10:D2:182:PHE:HD2	1.85	0.42
12:F2:38:ARG:HH12	12:F2:96:VAL:HG12	1.84	0.42
20:N2:12:LYS:HE3	20:N2:13:ARG:HH12	1.84	0.42
5:72:1265:A:H61	5:72:2013:A:H3'	1.84	0.42
5:72:1937:A:H1'	5:72:1939:5MU:H72	2.01	0.42
7:A1:785:G:H2'	7:A1:786:G:C8	2.54	0.42
7:A1:844:G:H3'	7:A1:845:A:H3'	2.00	0.42
7:A1:1013:G:H21	7:A1:1015:G:H3'	1.83	0.42
7:A1:1016:A:H3'	7:A1:1017:U:H6	1.84	0.42
7:A1:1326:U:H2'	7:A1:1327:C:C6	2.54	0.42
7:A2:454:G:H2'	7:A2:455:G:C8	2.53	0.42
7:A2:1151:A:H1'	16:J2:41:PRO:HG2	2.01	0.42
8:B2:128:LYS:HD2	8:B2:128:LYS:C	2.44	0.42
11:E2:39:VAL:HG23	11:E2:71:MET:HE1	2.01	0.42
12:F2:42:TRP:HE1	12:F2:103:VAL:HG13	1.85	0.42
14:H2:18:GLN:NE2	14:H2:72:VAL:H	2.17	0.42
15:I1:116:VAL:CG2	16:J1:62:ARG:HB2	2.49	0.42
20:N1:93:ILE:HA	20:N1:94:PRO:HD3	1.86	0.42
22:P1:76:LYS:C	22:P1:78:VAL:H	2.27	0.42
39:i2:3:VAL:HA	39:i2:39:ALA:N	2.33	0.42
5:72:192:C:O2'	5:72:802:A:N3	2.41	0.42
5:72:1030:C:OP2	38:h2:127:LYS:NZ	2.53	0.42
5:72:1035:U:H2'	5:72:1036:G:C8	2.53	0.42
5:72:1068:G:O6	5:72:1069:A:N6	2.52	0.42
5:72:2118:U:OP2	5:72:2147:A:O2'	2.32	0.42
5:72:2162:G:H3'	5:72:2163:A:H8	1.85	0.42
5:72:2251:OMG:HM23	5:72:2251:OMG:H1'	1.65	0.42
5:72:2273:A:H2'	5:72:2274:A:C8	2.55	0.42
7:A1:413:G:H1'	7:A1:428:G:H21	1.84	0.42
7:A1:563:A:H61	7:A1:884:U:H3	1.67	0.42
7:A1:721:G:H4'	7:A1:722:G:O5'	2.20	0.42
7:A1:1054:C:O2'	32:Y1:34:CM0:H4'	2.19	0.42
7:A2:539:A:H2'	7:A2:540:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:551:U:H2'	7:A2:552:U:C6	2.54	0.42
7:A2:1149:C:OP2	15:I2:11:ARG:NH2	2.48	0.42
8:B2:105:LYS:HA	8:B2:108:ARG:NH1	2.34	0.42
8:B2:131:LYS:C	8:B2:133:GLU:H	2.27	0.42
9:C2:58:GLU:HG3	9:C2:60:PRO:HD3	2.02	0.42
11:E2:77:ASN:HB2	11:E2:82:GLN:HG2	2.01	0.42
16:J1:81:GLU:H	16:J1:81:GLU:CD	2.27	0.42
5:72:879:G:H22	5:72:899:A:H1'	1.83	0.42
5:72:1250:G:N7	41:o2:18:ARG:NH1	2.48	0.42
7:A1:775:G:H2'	7:A1:776:G:C8	2.54	0.42
7:A1:821:G:H2'	7:A1:822:U:C6	2.54	0.42
7:A2:338:A:H2	7:A2:351:G:H22	1.67	0.42
7:A2:598:U:H4'	14:H2:86:TYR:CD2	2.54	0.42
7:A2:1014:A:C2	7:A2:1219:A:H1'	2.55	0.42
7:A2:1019:A:H5'	7:A2:1020:G:OP2	2.19	0.42
8:B2:72:THR:HG22	8:B2:94:HIS:O	2.19	0.42
9:C2:90:VAL:HA	9:C2:93:ASP:OD2	2.19	0.42
10:D1:4:TYR:OH	10:D1:7:PRO:O	2.26	0.42
13:G1:126:ASP:HB3	13:G1:131:LYS:HG3	2.01	0.42
14:H1:18:GLN:NE2	14:H1:72:VAL:H	2.17	0.42
14:H1:25:VAL:HG13	14:H1:63:LEU:HD11	2.01	0.42
18:L1:24:LEU:HG	18:L1:95:TYR:HE1	1.85	0.42
20:N1:12:LYS:HE3	20:N1:13:ARG:HH12	1.85	0.42
21:O1:71:LYS:HE2	21:O1:78:TYR:CE2	2.54	0.42
30:W1:25:C:H2'	30:W1:26:A:O4'	2.19	0.42
2:32:5:LYS:HG2	2:32:36:GLU:OE1	2.19	0.42
5:72:796:C:H2'	5:72:797:G:C8	2.54	0.42
5:72:2103:C:O2'	5:72:2104:C:H5'	2.20	0.42
5:72:2834:G:H2'	5:72:2879:A:N6	2.35	0.42
7:A1:142:G:H2'	7:A1:142:G:N3	2.34	0.42
7:A1:148:G:N3	7:A1:1446:A:H2	2.18	0.42
7:A1:772:U:H2'	7:A1:773:G:H8	1.84	0.42
7:A1:957:U:H3	7:A1:960:U:P	2.42	0.42
7:A1:1288:A:N1	7:A1:1371:G:H1'	2.34	0.42
7:A2:409:U:H2'	7:A2:410:G:O4'	2.19	0.42
7:A2:496:A:O2'	7:A2:497:G:H3'	2.20	0.42
7:A2:1132:C:H5'	7:A2:1133:G:OP2	2.19	0.42
9:C2:123:GLN:HG3	9:C2:126:ARG:NH2	2.35	0.42
12:F2:79:ARG:HG2	12:F2:80:PHE:CE1	2.55	0.42
13:G2:98:ALA:O	13:G2:102:ARG:HG3	2.19	0.42
16:J1:31:ARG:HD2	16:J1:31:ARG:C	2.45	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:P1:69:ASP:OD1	22:P1:70:ARG:N	2.52	0.42
25:S1:28:LYS:HA	25:S1:28:LYS:HE3	2.01	0.42
34:a2:175:ILE:O	34:a2:188:ASN:ND2	2.53	0.42
35:b2:111:LYS:HE2	35:b2:111:LYS:HB2	1.85	0.42
2:32:10:ARG:HD3	5:72:988:A:OP1	2.19	0.42
5:72:934:U:H2'	5:72:935:C:C6	2.55	0.42
5:72:1308:A:H61	5:72:1606:C:H1'	1.85	0.42
5:72:1318:U:H2'	5:72:1319:C:C6	2.55	0.42
5:72:2171:A:H5'	5:72:2173:A:H62	1.85	0.42
5:72:2472:G:H1'	5:72:2478:A:H61	1.84	0.42
5:72:2514:U:H2'	5:72:2515:C:C6	2.55	0.42
5:72:2747:G:O6	5:72:2755:C:H5''	2.19	0.42
6:82:43:C:H2'	6:82:45:A:N7	2.34	0.42
7:A1:128:G:H2'	7:A1:129:A:H8	1.84	0.42
7:A1:297:G:N2	7:A1:300:A:OP2	2.51	0.42
7:A1:461:A:H2'	7:A1:462:G:H8	1.82	0.42
7:A1:1003:G:H2'	7:A1:1003:G:N3	2.34	0.42
7:A1:1188:A:O2'	20:N1:98:LYS:HG2	2.20	0.42
7:A1:1264:U:H2'	7:A1:1265:C:H6	1.85	0.42
7:A1:1304:G:N2	7:A1:1333:A:H62	2.14	0.42
7:A2:139:A:H2'	7:A2:140:U:C6	2.55	0.42
7:A2:343:U:H2'	7:A2:345:C:C5	2.54	0.42
7:A2:522:C:H1'	7:A2:536:C:H5''	2.02	0.42
7:A2:533:A:OP1	7:A2:533:A:H2'	2.20	0.42
7:A2:668:G:H21	21:O2:46:HIS:CE1	2.37	0.42
7:A2:748:G:H2'	7:A2:749:A:H8	1.85	0.42
7:A2:881:G:P	18:L2:9:ARG:HH22	2.43	0.42
7:A2:974:A:O4'	20:N2:71:HIS:ND1	2.51	0.42
7:A2:1029:U:H2'	7:A2:1030:U:C6	2.55	0.42
7:A2:1174:G:H2'	7:A2:1175:G:H8	1.84	0.42
7:A2:1267:C:H3'	7:A2:1268:G:H8	1.85	0.42
9:C2:129:MET:HB2	9:C2:132:ARG:HG3	2.02	0.42
11:E1:84:PRO:HB3	11:E1:97:GLN:HG3	2.02	0.42
15:I2:123:ARG:NH1	15:I2:124:ARG:O	2.41	0.42
16:J1:57:VAL:HG12	16:J1:58:ASN:N	2.24	0.42
18:L2:63:VAL:HG21	18:L2:95:TYR:HE2	1.85	0.42
20:N1:34:VAL:O	20:N1:35:ASN:HB3	2.20	0.42
25:S2:16:LEU:O	25:S2:19:VAL:HG12	2.19	0.42
35:b2:210:ALA:HA	35:b2:213:TRP:CE3	2.55	0.42
36:e2:111:ILE:HB	36:e2:114:PHE:HB2	2.01	0.42
41:o2:49:GLY:O	41:o2:56:PRO:HB3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:r2:51:ALA:HB3	43:r2:78:VAL:HB	2.02	0.42
4:62:13:ARG:HD2	41:o2:63:LYS:HG2	2.00	0.42
5:72:514:A:N3	5:72:581:C:O2'	2.45	0.42
5:72:1020:A:H1'	5:72:1021:A:OP2	2.19	0.42
5:72:1486:U:H2'	5:72:1487:U:C6	2.55	0.42
5:72:2447:G:H1	5:72:2451:A:N6	2.13	0.42
5:72:2605:PSU:H2'	5:72:2606:C:C6	2.55	0.42
6:82:9:G:P	43:r2:25:ARG:HH22	2.43	0.42
7:A1:4:U:H6	7:A1:4:U:H5'	1.85	0.42
7:A1:742:G:H2'	7:A1:743:A:C8	2.54	0.42
7:A1:862:C:H1'	7:A1:874:G:H5''	2.01	0.42
7:A1:984:C:H2'	7:A1:985:C:H6	1.84	0.42
7:A1:1036:A:H3'	7:A1:1037:C:H6	1.84	0.42
7:A1:1244:G:H1	7:A1:1293:C:H42	1.68	0.42
7:A1:1333:A:H3'	7:A1:1334:G:C8	2.53	0.42
7:A2:279:A:H5''	7:A2:281:G:O4'	2.20	0.42
7:A2:368:U:H6	7:A2:368:U:H2'	1.64	0.42
7:A2:501:C:H2'	7:A2:502:A:O4'	2.20	0.42
7:A2:502:A:OP1	18:L2:114:ARG:N	2.52	0.42
7:A2:515:G:H3'	7:A2:516:U:H6	1.84	0.42
7:A2:1064:G:H22	7:A2:1191:A:P	2.43	0.42
7:A2:1128:C:C2'	7:A2:1129:C:H5'	2.50	0.42
7:A2:1230:C:N4	19:M2:104:THR:HG21	2.35	0.42
7:A2:1450:U:H2'	7:A2:1452:C:C5	2.54	0.42
8:B2:9:MET:HB2	8:B2:43:LEU:HD21	2.02	0.42
9:C2:63:SER:OG	9:C2:99:ALA:HA	2.20	0.42
18:L1:86:ARG:HA	18:L1:94:ARG:HA	2.02	0.42
25:S2:45:ILE:HD13	25:S2:62:VAL:HG12	2.01	0.42
29:W:62:U:H2'	29:W:63:C:C6	2.55	0.42
34:a2:29:LEU:O	34:a2:33:LEU:HG	2.20	0.42
35:b2:208:ALA:O	35:b2:212:ARG:HG2	2.19	0.42
43:r2:71:ALA:HB1	43:r2:106:LEU:HD22	2.01	0.42
5:72:414:C:H2'	5:72:415:A:C8	2.55	0.41
5:72:1214:A:H62	5:72:1235:G:N2	2.17	0.41
5:72:1358:G:N1	5:72:1372:U:OP2	2.43	0.41
5:72:1475:G:O2'	5:72:1476:U:P	2.77	0.41
5:72:1871:A:O2'	5:72:1872:A:H8	2.03	0.41
5:72:2116:G:O6	5:72:2170:A:N6	2.53	0.41
7:A1:581:G:N2	7:A1:760:G:N7	2.68	0.41
7:A1:685:G:H2'	7:A1:686:U:C6	2.55	0.41
7:A1:824:G:H1	7:A1:876:C:H42	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1064:G:H21	7:A1:1190:G:H8	1.68	0.41
7:A1:1141:C:O2'	7:A1:1142:G:H8	2.02	0.41
7:A1:1272:G:H4'	20:N1:34:VAL:HG21	2.02	0.41
7:A2:446:G:C2	7:A2:489:C:C2	3.08	0.41
8:B:123:ASP:HA	8:B:126:PHE:CE2	2.55	0.41
8:B2:20:THR:HA	8:B2:39:HIS:NE2	2.35	0.41
8:B2:90:PHE:HD1	8:B2:151:ILE:HA	1.84	0.41
11:E2:83:HIS:NE2	11:E2:147:MET:HG3	2.34	0.41
13:G2:60:GLU:O	13:G2:64:VAL:HG23	2.21	0.41
15:I1:6:TYR:HB2	15:I1:21:ILE:HB	2.01	0.41
16:J1:21:ALA:HB1	16:J1:92:LEU:HD21	2.02	0.41
16:J1:32:THR:O	16:J1:32:THR:HG22	2.19	0.41
17:K2:98:ARG:HH22	27:U2:13:ASP:HA	1.85	0.41
19:M1:2:ALA:O	19:M1:9:ILE:HG22	2.20	0.41
27:U1:54:LYS:O	27:U1:58:LYS:HG2	2.21	0.41
34:a2:69:THR:O	34:a2:177:LYS:HG2	2.19	0.41
36:e2:32:GLU:N	36:e2:157:THR:O	2.44	0.41
43:r2:54:VAL:HG23	43:r2:54:VAL:O	2.20	0.41
5:72:1056:G:N1	5:72:1102:C:OP2	2.52	0.41
5:72:1359:A:OP2	5:72:1371:G:N1	2.45	0.41
5:72:1794:A:H2'	5:72:1795:C:C6	2.55	0.41
5:72:2220:U:H2'	5:72:2221:G:C8	2.55	0.41
7:A1:428:G:H8	7:A1:428:G:OP1	2.04	0.41
7:A1:709:U:H2'	7:A1:710:G:H8	1.83	0.41
7:A1:1113:C:H2'	7:A1:1114:C:C6	2.54	0.41
7:A1:1222:G:OP2	7:A1:1322:C:N4	2.37	0.41
7:A1:1457:G:O2'	26:T1:27:MET:HE1	2.20	0.41
7:A1:1527:U:H2'	7:A1:1528:U:C6	2.55	0.41
7:A2:33:A:H2'	7:A2:34:C:C6	2.54	0.41
7:A2:58:C:H2'	7:A2:59:A:H8	1.85	0.41
8:B:68:LEU:O	8:B:162:PHE:N	2.49	0.41
8:B2:218:ALA:O	8:B2:222:ARG:HG2	2.21	0.41
9:C2:69:HIS:O	9:C2:70:THR:OG1	2.30	0.41
10:D1:67:VAL:HG21	10:D1:94:LEU:HD22	2.01	0.41
16:J2:19:ASP:HA	16:J2:22:THR:HG22	2.03	0.41
18:L1:80:ILE:HG22	18:L1:81:LEU:N	2.35	0.41
4:62:40:ARG:HD2	5:72:2363:G:OP2	2.19	0.41
5:72:1066:U:O2'	5:72:1068:G:N7	2.46	0.41
5:72:1360:G:N7	5:72:1371:G:N2	2.68	0.41
5:72:1585:C:H2'	5:72:1586:A:O4'	2.20	0.41
5:72:2315:G:H2'	5:72:2316:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:175:C:C2'	7:A1:176:C:H5'	2.50	0.41
7:A1:666:G:H1	7:A1:740:U:H3	1.68	0.41
7:A1:751:U:H2'	7:A1:752:G:O4'	2.20	0.41
7:A1:779:C:H2'	7:A1:780:A:C8	2.56	0.41
7:A1:1466:C:H2'	7:A1:1467:C:O4'	2.20	0.41
7:A2:177:G:H2'	7:A2:178:C:O4'	2.21	0.41
7:A2:686:U:O2'	7:A2:703:G:N2	2.54	0.41
7:A2:714:G:H2'	7:A2:715:A:C8	2.56	0.41
7:A2:1301:U:O2'	7:A2:1302:C:H3'	2.20	0.41
7:A2:1307:U:H2'	7:A2:1308:U:C6	2.55	0.41
7:A2:1456:A:H2'	7:A2:1457:G:O4'	2.21	0.41
8:B2:127:ASP:O	8:B2:130:THR:OG1	2.29	0.41
11:E1:107:ALA:HB1	11:E1:111:MET:HE3	2.01	0.41
12:F2:15:SER:HA	12:F2:18:VAL:HG23	2.01	0.41
13:G2:17:LYS:HG2	13:G2:18:PHE:H	1.85	0.41
14:H1:26:THR:HG22	14:H1:60:GLU:OE1	2.20	0.41
14:H2:6:PRO:HB2	14:H2:33:LYS:HE3	2.02	0.41
15:I1:113:ARG:O	15:I1:115:LYS:NZ	2.48	0.41
25:S2:31:LEU:HB2	25:S2:49:ILE:HG13	2.02	0.41
26:T1:55:GLN:HB3	26:T1:56:PRO:CD	2.50	0.41
27:U2:13:ASP:OD1	27:U2:13:ASP:N	2.52	0.41
41:o2:51:GLU:HG3	41:o2:51:GLU:O	2.20	0.41
5:72:704:G:H1'	5:72:726:G:N2	2.36	0.41
5:72:779:U:OP1	35:b2:49:ILE:HD12	2.19	0.41
5:72:1165:A:H2'	5:72:1166:G:H8	1.85	0.41
5:72:1190:G:H2'	5:72:1191:G:H8	1.85	0.41
5:72:1386:C:O2'	5:72:1469:A:N3	2.45	0.41
5:72:1416:G:O2'	5:72:1417:C:P	2.79	0.41
5:72:1846:G:O3'	7:A2:702:A:N6	2.53	0.41
5:72:2836:U:H2'	5:72:2837:A:C8	2.56	0.41
7:A1:127:G:P	7:A1:604:G:H21	2.44	0.41
7:A1:236:A:H2'	7:A1:237:G:C8	2.56	0.41
7:A1:841:C:C5	7:A1:843:U:H5'	2.55	0.41
7:A1:1034:G:H2'	7:A1:1035:A:C8	2.56	0.41
7:A2:315:A:O2'	7:A2:330:C:O2'	2.38	0.41
7:A2:398:U:H2'	7:A2:399:G:C8	2.55	0.41
7:A2:658:C:H1'	21:O2:22:THR:HG21	2.02	0.41
7:A2:659:U:H5''	21:O2:5:THR:HG23	2.02	0.41
7:A2:945:G:N3	7:A2:945:G:H2'	2.34	0.41
7:A2:1060:U:H2'	7:A2:1061:G:C8	2.52	0.41
7:A2:1173:U:H2'	7:A2:1174:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:B:183:VAL:HG12	8:B:184:PHE:N	2.35	0.41
11:E1:39:VAL:HG23	11:E1:71:MET:HE1	2.02	0.41
13:G2:145:ALA:O	13:G2:146:GLU:C	2.63	0.41
24:R1:34:THR:HG22	24:R1:38:LYS:H	1.86	0.41
31:Y:55:PSU:O5'	31:Y:55:PSU:H6	2.02	0.41
34:a2:16:ASP:O	34:a2:21:TYR:OH	2.32	0.41
34:a2:193:LEU:HD12	34:a2:193:LEU:HA	1.87	0.41
43:r2:35:ILE:HG12	43:r2:106:LEU:HD21	2.02	0.41
2:32:25:GLY:O	5:72:929:U:H1'	2.21	0.41
5:72:848:C:H2'	5:72:849:A:C8	2.56	0.41
5:72:2137:U:H2'	5:72:2138:G:H8	1.84	0.41
5:72:2143:C:H2'	5:72:2144:G:O4'	2.21	0.41
5:72:2167:U:H2'	5:72:2169:A:H2'	2.02	0.41
5:72:2339:C:H2'	5:72:2340:A:C8	2.55	0.41
7:A1:97:G:H2'	7:A1:98:A:O4'	2.20	0.41
7:A1:783:C:H2'	7:A1:784:A:H8	1.84	0.41
7:A1:1127:G:H22	7:A1:1145:A:H2	1.67	0.41
7:A1:1263:C:H2'	7:A1:1264:U:H6	1.83	0.41
7:A1:1309:G:H5''	19:M1:77:ILE:HD11	2.02	0.41
7:A1:1402:4OC:HM23	7:A1:1402:4OC:H1'	1.71	0.41
7:A2:67:C:H2'	7:A2:68:G:C8	2.55	0.41
7:A2:82:G:H3'	7:A2:83:C:C6	2.56	0.41
7:A2:229:U:H2'	7:A2:230:G:O4'	2.20	0.41
7:A2:773:G:H5''	35:b2:202:LEU:CD2	2.51	0.41
7:A2:1032:G:H3'	7:A2:1032:G:N3	2.35	0.41
7:A2:1053:G:H4'	7:A2:1054:C:H5''	2.02	0.41
7:A2:1064:G:H1'	7:A2:1190:G:H21	1.85	0.41
7:A2:1151:A:H1'	16:J2:41:PRO:HB2	2.01	0.41
8:B:137:ARG:O	8:B:140:GLU:HG2	2.21	0.41
9:C1:114:LYS:HA	9:C1:185:ASN:HD22	1.86	0.41
10:D2:87:GLY:HA3	10:D2:197:GLU:OE1	2.20	0.41
10:D2:88:GLU:H	10:D2:88:GLU:CD	2.27	0.41
12:F1:51:ILE:O	12:F1:51:ILE:HG13	2.20	0.41
13:G2:27:VAL:HG12	13:G2:43:VAL:HG11	2.02	0.41
16:J2:28:THR:O	16:J2:32:THR:HG22	2.21	0.41
18:L2:43:LYS:CG	18:L2:44:LYS:H	2.33	0.41
19:M1:107:ARG:NE	19:M1:107:ARG:HA	2.36	0.41
28:V2:16:U:H1'	28:V2:17:G:C4	2.55	0.41
30:W1:9:A:H61	30:W1:22:G:H3'	1.86	0.41
1:12:18:ARG:HA	1:12:18:ARG:HD3	1.84	0.41
4:62:2:PRO:N	5:72:591:U:H1'	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:62:33:LEU:H	4:62:33:LEU:HD23	1.84	0.41
5:71:1914:C:N4	7:A1:1409:C:O3'	2.52	0.41
5:72:2151:U:H5'	34:a2:3:LYS:HG3	2.03	0.41
5:72:2220:U:H2'	5:72:2221:G:H8	1.85	0.41
5:72:2304:G:O3'	36:e2:131:GLY:HA3	2.21	0.41
5:72:2646:C:H2'	5:72:2647:U:O4'	2.20	0.41
5:72:2834:G:H2'	5:72:2879:A:H61	1.86	0.41
7:A1:158:G:H1	7:A1:163:C:H42	1.67	0.41
7:A1:503:C:O2'	7:A1:510:A:N1	2.43	0.41
7:A1:636:U:H2'	7:A1:637:C:C6	2.56	0.41
7:A1:728:A:H2'	7:A1:729:A:C8	2.56	0.41
7:A1:946:A:H2'	7:A1:947:G:C8	2.56	0.41
7:A1:1014:A:OP1	25:S1:18:LYS:NZ	2.52	0.41
7:A1:1119:C:H2'	7:A1:1120:C:C6	2.55	0.41
7:A1:1483:A:H8	7:A1:1483:A:O5'	2.04	0.41
7:A1:1512:U:H2'	7:A1:1513:A:H8	1.84	0.41
7:A2:1401:G:H2'	7:A2:1402:4OC:O4'	2.21	0.41
11:E1:38:VAL:HG21	11:E1:114:VAL:HA	2.01	0.41
15:I2:63:LEU:HB3	15:I2:65:ILE:HD11	2.03	0.41
17:K2:122:ARG:HA	17:K2:123:PRO:HD3	1.93	0.41
24:R1:24:LYS:HA	24:R1:67:LEU:HD21	2.02	0.41
24:R1:30:LYS:HA	24:R1:30:LYS:HD2	1.93	0.41
27:U1:40:LYS:HB3	27:U1:43:THR:HG22	2.03	0.41
32:Y1:21:A:H61	32:Y1:47:U:H5'	1.85	0.41
34:a2:124:VAL:HG11	34:a2:138:PRO:HD2	2.02	0.41
38:h2:21:ALA:HB2	38:h2:97:GLN:HB2	2.03	0.41
5:72:1378:A:O2'	5:72:1380:G:N7	2.54	0.41
5:72:1478:G:N2	5:72:1513:U:O2	2.42	0.41
5:72:1548:A:H2'	5:72:1549:A:C8	2.56	0.41
5:72:1860:G:H1	5:72:1882:U:H3	1.69	0.41
5:72:2039:U:H2'	5:72:2040:G:H8	1.86	0.41
5:72:2590:A:H2'	5:72:2591:C:C6	2.56	0.41
6:82:13:G:N7	6:82:70:C:H4'	2.36	0.41
6:82:78:A:H2'	6:82:79:G:O4'	2.21	0.41
7:A1:62:U:H2'	7:A1:63:C:C6	2.55	0.41
7:A1:132:C:H5''	26:T1:68:HIS:CE1	2.55	0.41
7:A1:175:C:H2'	7:A1:176:C:H5'	2.03	0.41
7:A1:323:U:H2'	7:A1:324:G:O4'	2.21	0.41
7:A1:439:U:C4	7:A1:440:C:C4	3.08	0.41
7:A1:1221:G:OP1	25:S1:36:ARG:NH1	2.54	0.41
7:A1:1251:A:H2'	7:A1:1252:A:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1375:A:OP1	13:G1:25:LYS:NZ	2.51	0.41
7:A1:1458:G:H5''	26:T1:26:SER:HB3	2.02	0.41
7:A2:16:A:N3	7:A2:1080:A:O2'	2.45	0.41
7:A2:49:U:N3	7:A2:362:G:H1'	2.35	0.41
7:A2:505:G:H4'	7:A2:534:U:C4	2.55	0.41
7:A2:690:G:O5'	7:A2:690:G:H8	2.03	0.41
7:A2:1106:G:H5''	9:C2:172:ARG:CG	2.51	0.41
7:A2:1106:G:H2'	7:A2:1107:C:C6	2.56	0.41
7:A2:1252:A:H2'	7:A2:1253:G:O4'	2.20	0.41
7:A2:1535:C:H1'	7:A2:1536:C:C5'	2.51	0.41
8:B:38:VAL:CG1	8:B:39:HIS:H	2.28	0.41
10:D1:58:LYS:HE3	10:D1:58:LYS:HB3	1.95	0.41
17:K2:74:VAL:HG23	17:K2:75:LYS:N	2.35	0.41
23:Q1:7:THR:OG1	23:Q1:60:GLU:OE2	2.31	0.41
30:W1:46:G7M:H4'	30:W1:47:U:OP1	2.21	0.41
39:i2:71:LYS:HE3	39:i2:71:LYS:HB3	1.85	0.41
43:r2:62:LEU:HD12	43:r2:62:LEU:O	2.20	0.41
1:12:72:ARG:HD3	1:12:78:TYR:OH	2.21	0.41
2:32:10:ARG:HB3	2:32:53:MET:CB	2.51	0.41
4:62:5:LYS:HE2	5:72:242:G:C6	2.56	0.41
5:72:910:A:N7	38:h2:12:MET:HG3	2.35	0.41
5:72:1386:C:H2'	5:72:1387:A:C8	2.56	0.41
5:72:1825:U:H2'	5:72:1826:G:C8	2.56	0.41
5:72:1906:G:C8	5:72:1929:G:H2'	2.56	0.41
7:A1:103:U:H5'	7:A1:151:A:O2'	2.20	0.41
7:A1:220:G:H2'	7:A1:221:C:C6	2.55	0.41
7:A1:337:G:H2'	7:A1:338:A:H8	1.83	0.41
7:A1:488:C:H2'	7:A1:489:C:C6	2.56	0.41
7:A1:1343:G:H2'	7:A1:1344:C:O4'	2.21	0.41
7:A1:1419:G:C6	7:A1:1482:G:C5	3.09	0.41
7:A2:254:G:H2'	7:A2:255:G:C8	2.55	0.41
7:A2:319:G:H2'	7:A2:320:A:C8	2.55	0.41
7:A2:543:U:H2'	7:A2:544:G:C8	2.56	0.41
7:A2:830:G:H2'	7:A2:831:A:C8	2.56	0.41
7:A2:947:G:O3'	19:M2:108:THR:OG1	2.39	0.41
7:A2:1157:A:H5'	7:A2:1158:C:C6	2.56	0.41
7:A2:1224:U:O2'	7:A2:1322:C:OP1	2.29	0.41
7:A2:1247:U:C2'	7:A2:1248:A:H5''	2.50	0.41
7:A2:1267:C:H2'	7:A2:1268:G:O4'	2.20	0.41
9:C1:12:LEU:HD23	9:C1:12:LEU:HA	1.87	0.41
12:F1:23:GLU:OE1	12:F1:23:GLU:N	2.42	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:F2:72:ASP:O	12:F2:76:THR:HG23	2.21	0.41
15:I1:123:ARG:NH1	15:I1:124:ARG:O	2.48	0.41
18:L2:3:THR:HG22	18:L2:5:ASN:H	1.86	0.41
28:V2:33:A:H2'	28:V2:34:A:C8	2.56	0.41
28:V2:40:A:H5''	28:V2:41:G:H8	1.86	0.41
29:W:9:A:H1'	29:W:45:U:H2'	2.02	0.41
30:W1:22:G:H8	30:W1:22:G:H5''	1.85	0.41
39:i2:64:ALA:O	39:i2:68:ARG:HG3	2.21	0.41
2:32:44:ARG:HH12	2:32:56:VAL:HG11	1.84	0.41
3:4:26:SER:HB2	36:e2:140:GLU:CD	2.46	0.41
5:72:455:C:N3	5:72:472:A:H2'	2.36	0.41
5:72:570:G:H2'	5:72:2030:6MZ:C8	2.50	0.41
5:72:833:A:H2'	5:72:834:G:H8	1.86	0.41
5:72:1053:C:H2'	5:72:1054:A:C8	2.56	0.41
5:72:1056:G:H4'	5:72:1086:A:C8	2.51	0.41
5:72:1265:A:N1	5:72:2013:A:H5''	2.36	0.41
5:72:1327:A:H2'	5:72:1328:A:O4'	2.21	0.41
5:72:1920:C:O2'	7:A2:1496:C:H4'	2.21	0.41
5:72:2123:G:H1'	34:a2:172:HIS:HB3	2.03	0.41
5:72:2328:A:H2'	5:72:2329:U:C6	2.54	0.41
5:72:2447:G:N2	5:72:2450:A:N7	2.69	0.41
5:72:2903:U:H2'	5:72:2904:U:H2'	2.03	0.41
6:82:38:C:H2'	6:82:39:A:H5'	2.02	0.41
6:82:58:A:H2'	6:82:59:A:O4'	2.20	0.41
7:A1:33:A:H2'	7:A1:34:C:H6	1.86	0.41
7:A1:130:A:H1'	7:A1:263:A:O2'	2.21	0.41
7:A1:303:A:O2'	7:A1:555:U:H4'	2.19	0.41
7:A1:428:G:H4'	7:A1:429:U:OP1	2.20	0.41
7:A1:446:G:C2	7:A1:489:C:C2	3.09	0.41
7:A1:455:G:H2'	7:A1:456:A:C8	2.56	0.41
7:A1:886:G:H2'	7:A1:887:G:O4'	2.21	0.41
7:A1:1009:U:H2'	7:A1:1010:U:H6	1.85	0.41
7:A1:1169:A:H3'	7:A1:1170:A:H8	1.85	0.41
7:A1:1228:C:H2'	7:A1:1229:A:C8	2.55	0.41
7:A1:1251:A:H2'	7:A1:1252:A:C8	2.55	0.41
7:A2:70:U:H4'	7:A2:71:A:C8	2.56	0.41
7:A2:250:A:H5''	7:A2:252:U:O4'	2.21	0.41
7:A2:374:A:H2'	7:A2:375:U:C6	2.56	0.41
7:A2:432:A:H2'	7:A2:433:G:O4'	2.21	0.41
7:A2:462:G:H3'	7:A2:463:U:C6	2.56	0.41
7:A2:517:G:H5'	7:A2:519:C:C2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A2:563:A:H61	7:A2:884:U:H3	1.69	0.41
7:A2:601:G:H2'	7:A2:602:A:C8	2.56	0.41
7:A2:730:G:H2'	7:A2:731:G:H5'	2.03	0.41
7:A2:830:G:H5'	8:B2:23:TRP:HE1	1.86	0.41
7:A2:1025:U:O3'	7:A2:1026:G:H8	2.03	0.41
8:B:16:PHE:O	8:B:203:ASN:ND2	2.54	0.41
8:B:102:THR:OG1	8:B:103:ASN:N	2.54	0.41
8:B2:18:HIS:ND1	8:B2:188:ASP:OD2	2.54	0.41
9:C1:130:PHE:CZ	9:C1:131:ARG:HG3	2.56	0.41
9:C1:184:TYR:CE1	9:C1:199:LYS:HB3	2.55	0.41
9:C1:207:ILE:O	9:C1:208:LEU:C	2.63	0.41
9:C1:211:MET:HE2	16:J1:16:ARG:HH22	1.86	0.41
9:C2:35:SER:O	9:C2:39:VAL:HG23	2.21	0.41
9:C2:63:SER:HA	9:C2:98:PRO:O	2.21	0.41
10:D2:183:LYS:HG2	10:D2:184:ARG:HG2	2.02	0.41
11:E1:82:GLN:HG3	11:E1:147:MET:HE3	2.01	0.41
11:E1:105:ILE:HG22	11:E1:112:ARG:HG2	2.03	0.41
12:F2:17:GLN:HB2	12:F2:21:MET:HE3	2.03	0.41
13:G1:16:PRO:HB2	15:I1:42:GLU:HG2	2.03	0.41
13:G2:53:ARG:O	13:G2:54:SER:HB2	2.21	0.41
13:G2:92:ARG:NH1	13:G2:95:ARG:HB2	2.36	0.41
13:G2:140:ASP:O	13:G2:144:MET:HG3	2.20	0.41
14:H1:41:LYS:HE2	14:H1:47:GLU:O	2.20	0.41
14:H1:96:MET:HB3	14:H1:100:GLY:N	2.33	0.41
14:H2:26:THR:HG22	14:H2:60:GLU:OE1	2.21	0.41
14:H2:94:LYS:HD3	14:H2:94:LYS:HA	1.90	0.41
15:I2:57:MET:SD	15:I2:60:LYS:HE2	2.61	0.41
15:I2:60:LYS:HE3	15:I2:61:LEU:HD11	2.03	0.41
18:L2:63:VAL:HG21	18:L2:95:TYR:CE2	2.56	0.41
18:L2:87:VAL:HG11	18:L2:90:LEU:HD23	2.01	0.41
18:L2:112:GLN:OE1	18:L2:112:GLN:N	2.54	0.41
21:O1:36:ILE:HD11	21:O1:59:MET:HG3	2.03	0.41
25:S2:39:THR:HA	25:S2:70:LYS:HA	2.03	0.41
26:T1:58:VAL:HG23	26:T1:59:ASP:N	2.35	0.41
34:a2:73:VAL:O	34:a2:75:VAL:HG23	2.21	0.41
35:b2:67:PHE:CE1	35:b2:156:ARG:HD2	2.56	0.41
39:i2:116:ARG:O	39:i2:118:PRO:HD3	2.21	0.41
5:72:538:A:H61	5:72:555:G:H1'	1.86	0.41
5:72:642:U:O2'	5:72:644:A:N7	2.52	0.41
5:72:2103:C:H2'	5:72:2104:C:C6	2.56	0.41
5:72:2677:G:H2'	5:72:2678:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:295:C:H2'	7:A1:296:U:H6	1.86	0.41
7:A1:341:C:H2'	7:A1:342:C:H6	1.85	0.41
7:A1:542:G:H2'	7:A1:543:U:C6	2.56	0.41
7:A1:652:U:H1'	7:A1:653:U:H6	1.86	0.41
7:A1:840:C:N3	7:A1:842:U:O2'	2.54	0.41
7:A1:1035:A:H3'	7:A1:1036:A:H5''	2.02	0.41
7:A1:1537:U:H1'	7:A1:1538:C:C5	2.56	0.41
7:A2:1004:A:H2'	7:A2:1005:A:O4'	2.21	0.41
9:C1:15:VAL:HA	9:C1:212:ALA:HA	2.03	0.41
9:C1:76:VAL:HG22	9:C1:78:GLY:H	1.85	0.41
13:G2:111:ARG:HB2	13:G2:111:ARG:NH1	2.35	0.41
16:J2:65:TYR:HA	20:N2:97:LYS:O	2.21	0.41
17:K1:126:LYS:HE2	17:K1:126:LYS:HB3	1.90	0.41
18:L1:123:LYS:HA	18:L1:123:LYS:HE3	2.02	0.41
18:L2:54:ARG:HH11	18:L2:64:THR:HB	1.86	0.41
36:e2:148:ARG:NH1	36:e2:148:ARG:HB2	2.36	0.41
5:72:715:A:C5	21:O2:53:ARG:NH1	2.89	0.40
5:72:1936:A:OP2	5:72:1962:5MC:N4	2.52	0.40
5:72:2405:G:O2'	5:72:2411:A:N6	2.51	0.40
5:72:2728:U:O2'	5:72:2729:G:H8	2.05	0.40
6:82:103:U:H2'	6:82:104:A:H8	1.86	0.40
7:A1:621:A:C6	7:A1:622:A:C6	3.09	0.40
7:A1:992:U:H1'	7:A1:1044:A:H62	1.86	0.40
7:A1:997:U:O2'	7:A1:998:C:H5'	2.22	0.40
7:A1:1014:A:H2'	7:A1:1015:G:C8	2.56	0.40
7:A1:1029:U:H2'	7:A1:1030:U:O4'	2.21	0.40
7:A1:1116:U:H2'	7:A1:1117:A:H8	1.86	0.40
7:A2:502:A:N6	7:A2:543:U:H3	2.17	0.40
7:A2:1021:A:H2'	7:A2:1022:A:H5''	2.03	0.40
7:A2:1119:C:H2'	7:A2:1120:C:H6	1.86	0.40
7:A2:1142:G:C2	7:A2:1143:G:H1'	2.56	0.40
7:A2:1324:A:H2'	7:A2:1325:C:C6	2.57	0.40
7:A2:1493:A:C2	31:Y:37:A:C1'	2.99	0.40
8:B:45:LYS:HD3	8:B:45:LYS:HA	1.89	0.40
8:B:113:ARG:HH22	8:B:117:LEU:HD23	1.85	0.40
9:C1:152:GLU:HG3	9:C1:199:LYS:HB2	2.03	0.40
9:C2:114:LYS:HA	9:C2:185:ASN:HD22	1.86	0.40
10:D1:19:LEU:HD12	10:D1:60:LYS:HD2	2.03	0.40
12:F2:35:LYS:HG2	12:F2:37:HIS:HD2	1.86	0.40
16:J1:49:PHE:CE2	20:N1:77:PHE:HE2	2.39	0.40
17:K1:71:ALA:O	17:K1:74:VAL:HG13	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:O1:7:ALA:O	21:O1:10:LYS:HG2	2.21	0.40
21:O2:39:LEU:HB3	21:O2:43:PHE:HD2	1.85	0.40
27:U1:42:THR:HG23	27:U1:43:THR:H	1.86	0.40
29:W:2:G:H2'	29:W:3:G:H8	1.86	0.40
43:r2:58:ILE:HG13	43:r2:58:ILE:O	2.20	0.40
5:72:1539:U:H2'	5:72:1540:G:C8	2.57	0.40
5:72:1645:G:H5''	5:72:1646:C:H5'	2.02	0.40
5:72:1708:C:HO2'	5:72:2860:A:HO2'	1.69	0.40
7:A1:215:C:H2'	7:A1:216:U:O4'	2.21	0.40
7:A1:342:C:H2'	7:A1:343:U:C6	2.56	0.40
7:A1:665:A:H62	7:A1:724:G:H1	1.68	0.40
7:A1:765:G:N1	7:A1:812:G:O2'	2.40	0.40
7:A1:800:G:H2'	7:A1:801:U:C5	2.57	0.40
7:A1:1001:C:H2'	7:A1:1002:G:C8	2.56	0.40
7:A1:1005:A:H3'	7:A1:1006:G:C8	2.55	0.40
7:A1:1142:G:H3'	7:A1:1143:G:H8	1.86	0.40
7:A2:87:C:C4	7:A2:88:U:H1'	2.55	0.40
7:A2:375:U:H3	7:A2:389:A:H61	1.69	0.40
7:A2:673:A:H2'	7:A2:674:G:C8	2.56	0.40
7:A2:696:A:H2'	7:A2:697:U:C6	2.56	0.40
7:A2:1263:C:H2'	7:A2:1264:U:C6	2.56	0.40
7:A2:1316:G:H5'	7:A2:1360:A:H1'	2.03	0.40
7:A2:1463:U:H2'	7:A2:1464:U:C6	2.56	0.40
8:B:52:GLU:O	8:B:56:GLU:HG2	2.21	0.40
8:B2:20:THR:HA	8:B2:39:HIS:CD2	2.56	0.40
11:E1:26:LYS:HE3	11:E1:26:LYS:HB3	1.82	0.40
16:J2:6:ILE:HD12	16:J2:6:ILE:HA	1.99	0.40
19:M1:7:ILE:HD12	19:M1:7:ILE:HA	1.94	0.40
21:O2:7:ALA:O	21:O2:10:LYS:HG2	2.19	0.40
27:U2:8:GLU:O	27:U2:9:ASN:C	2.62	0.40
28:V2:40:A:H5''	28:V2:41:G:C8	2.56	0.40
28:V2:52:G:H2'	28:V2:53:G:H8	1.86	0.40
29:W:33:U:H1'	29:W:37:MIA:H161	2.04	0.40
30:W1:45:U:O2'	30:W1:46:G7M:OP1	2.32	0.40
36:e2:135:GLN:HG3	36:e2:141:ILE:HG21	2.03	0.40
42:p:34:ARG:H	42:p:34:ARG:HG3	1.60	0.40
3:4:41:HIS:HE2	36:e2:114:PHE:HB3	1.86	0.40
3:4:42:PRO:HB3	3:4:48:GLN:HA	2.03	0.40
4:62:26:HIS:HB3	4:62:44:LEU:HD22	2.03	0.40
5:72:248:G:OP2	5:72:249:C:H5''	2.21	0.40
5:72:701:G:H5'	5:72:1632:A:H1'	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:878:A:H3'	5:72:879:G:H8	1.86	0.40
5:72:2096:C:H2'	5:72:2097:A:C8	2.57	0.40
7:A1:201:G:H2'	7:A1:202:G:O4'	2.21	0.40
7:A1:208:U:H2'	7:A1:209:U:H5''	2.02	0.40
7:A1:253:A:H2'	7:A1:254:G:O4'	2.22	0.40
7:A1:404:G:OP2	10:D1:115:ARG:NH1	2.45	0.40
7:A1:408:A:H2'	7:A1:409:U:H6	1.87	0.40
7:A1:719:C:O2'	24:R1:38:LYS:HB3	2.21	0.40
7:A1:797:C:H5'	17:K1:127:ARG:HH12	1.87	0.40
7:A1:810:C:H2'	7:A1:811:C:O4'	2.22	0.40
7:A1:955:U:H2'	7:A1:956:U:C6	2.57	0.40
7:A1:1054:C:C5	32:Y1:34:CM0:H1'	2.56	0.40
7:A1:1091:U:H2'	7:A1:1093:A:OP2	2.21	0.40
7:A1:1149:C:H2'	7:A1:1150:A:C8	2.56	0.40
7:A1:1190:G:H5''	9:C1:176:HIS:NE2	2.35	0.40
7:A1:1351:U:H5'	13:G1:33:ASP:OD1	2.21	0.40
7:A1:1431:A:H2	7:A1:1469:C:H41	1.69	0.40
7:A1:1497:G:H2'	7:A1:1498:UR3:H6	2.03	0.40
7:A2:67:C:H2'	7:A2:68:G:H8	1.87	0.40
7:A2:82:G:H3'	7:A2:83:C:H6	1.85	0.40
7:A2:140:U:H3'	7:A2:141:G:H5''	2.03	0.40
7:A2:402:G:H2'	7:A2:403:C:C6	2.56	0.40
7:A2:642:A:C5	14:H2:107:SER:HA	2.56	0.40
7:A2:1131:G:H1	7:A2:1143:G:H21	1.69	0.40
8:B:67:ILE:HG22	8:B:68:LEU:N	2.37	0.40
10:D2:95:GLU:HG2	10:D2:100:ASN:HD21	1.86	0.40
10:D2:143:VAL:O	10:D2:179:GLU:HG2	2.21	0.40
11:E1:83:HIS:CE1	14:H1:96:MET:HE1	2.56	0.40
11:E2:65:GLU:OE2	11:E2:69:ARG:NE	2.35	0.40
12:F1:9:MET:HE2	12:F1:86:ARG:HB3	2.03	0.40
14:H1:18:GLN:HE21	14:H1:72:VAL:H	1.68	0.40
14:H2:127:CYS:SG	14:H2:128:TYR:N	2.94	0.40
15:I2:116:VAL:HG23	16:J2:62:ARG:HH11	1.87	0.40
24:R2:59:ILE:HG22	24:R2:63:ARG:HE	1.86	0.40
25:S2:3:ARG:NH2	25:S2:7:LYS:HE2	2.37	0.40
30:W1:23:A:H2'	30:W1:24:G:C8	2.57	0.40
36:e2:37:ASN:HB3	36:e2:153:ASP:HB2	2.03	0.40
43:r2:82:ALA:HB3	43:r2:115:LEU:HD21	2.02	0.40
1:12:3:ARG:O	1:12:12:PRO:HD3	2.21	0.40
3:41:64:PHE:CD1	25:S1:8:GLY:HA2	2.57	0.40
5:72:1932:A:H2'	5:72:1933:G:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:72:2087:G:H2'	5:72:2088:A:C8	2.56	0.40
5:72:2105:U:H2'	5:72:2106:U:C6	2.56	0.40
5:72:2153:C:H2'	5:72:2154:A:H8	1.85	0.40
5:72:2395:C:H2'	5:72:2396:G:C8	2.57	0.40
7:A1:664:G:H22	7:A1:741:G:H22	1.69	0.40
7:A1:1145:A:H4'	7:A1:1146:A:H5''	2.04	0.40
7:A1:1204:A:H2'	7:A1:1205:U:O4'	2.21	0.40
7:A1:1435:G:H2'	7:A1:1436:U:H6	1.87	0.40
7:A2:187:G:N2	7:A2:190:A:OP2	2.47	0.40
7:A2:209:U:H3'	7:A2:210:C:C6	2.56	0.40
7:A2:230:G:H2'	7:A2:231:U:C6	2.56	0.40
7:A2:419:C:H5''	7:A2:513:C:H4'	2.02	0.40
7:A2:795:C:O2'	17:K2:129:VAL:OXT	2.27	0.40
7:A2:909:A:OP2	18:L2:18:LYS:NZ	2.55	0.40
7:A2:995:C:H2'	7:A2:996:A:H5''	2.03	0.40
7:A2:1237:C:H4'	7:A2:1300:G:H22	1.87	0.40
7:A2:1312:G:H2'	7:A2:1313:U:H6	1.87	0.40
8:B:169:GLU:O	8:B:172:ALA:N	2.53	0.40
10:D1:107:PHE:CG	10:D1:145:ILE:HD11	2.56	0.40
13:G1:91:VAL:HG13	13:G1:96:ARG:HG2	2.03	0.40
13:G2:18:PHE:CE2	13:G2:58:GLU:HB2	2.56	0.40
16:J2:63:ASP:OD1	20:N2:98:LYS:HG3	2.21	0.40
17:K1:52:PHE:O	17:K1:53:ARG:HD2	2.20	0.40
25:S2:11:ILE:HD13	25:S2:16:LEU:HD13	2.03	0.40
34:a2:191:ALA:O	34:a2:194:VAL:HG22	2.22	0.40
39:i2:21:VAL:HG21	39:i2:25:TYR:CD2	2.57	0.40
39:i2:78:VAL:HG11	39:i2:103:VAL:HA	2.03	0.40
43:r2:79:ALA:HB1	43:r2:115:LEU:HD23	2.04	0.40
5:72:788:A:OP1	5:72:791:C:N4	2.36	0.40
5:72:1021:A:O2'	5:72:1123:C:OP1	2.35	0.40
5:72:1569:A:H2'	5:72:1570:A:C8	2.57	0.40
5:72:1638:C:H5''	5:72:2710:C:O2'	2.22	0.40
5:72:2233:U:H2'	5:72:2234:G:H8	1.86	0.40
5:72:2271:G:OP1	44:z2:18:ALA:HB1	2.22	0.40
5:72:2389:G:H5''	5:72:2390:U:O4'	2.22	0.40
6:82:90:C:H2'	6:82:91:C:O4'	2.22	0.40
7:A1:310:G:H2'	7:A1:311:C:C6	2.56	0.40
7:A1:995:C:C2'	7:A1:996:A:H5'	2.50	0.40
7:A1:1095:U:H2'	7:A1:1096:C:C6	2.57	0.40
7:A1:1121:U:H2'	7:A1:1122:U:H6	1.87	0.40
7:A1:1248:A:O3'	15:I1:33:ARG:NH1	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A1:1444:U:H1'	7:A1:1459:G:N2	2.36	0.40
7:A2:45:G:H5''	7:A2:307:C:O2'	2.22	0.40
7:A2:177:G:H3'	7:A2:178:C:H6	1.86	0.40
7:A2:392:C:H2'	7:A2:393:A:C8	2.56	0.40
7:A2:418:C:H2'	7:A2:419:C:H6	1.87	0.40
7:A2:532:A:H4'	7:A2:533:A:OP2	2.21	0.40
7:A2:1078:U:O3'	11:E2:138:ARG:NH2	2.54	0.40
9:C1:167:TRP:HZ3	9:C1:169:ARG:HG2	1.85	0.40
11:E2:164:ILE:HG13	11:E2:165:LEU:N	2.36	0.40
16:J1:57:VAL:CG1	16:J1:58:ASN:H	2.27	0.40
18:L1:44:LYS:NZ	28:V2:25:U:O3'	2.53	0.40
18:L1:63:VAL:HG21	18:L1:95:TYR:CE2	2.56	0.40
19:M2:77:ILE:HG22	19:M2:81:MET:HE3	2.04	0.40
23:Q1:77:ARG:CZ	23:Q1:77:ARG:HB3	2.51	0.40
24:R1:11:CYS:SG	24:R1:48:ARG:HG3	2.62	0.40
24:R2:6:ARG:HG2	24:R2:7:ARG:H	1.86	0.40
34:a2:192:LEU:O	34:a2:196:LEU:HD13	2.22	0.40
39:i2:78:VAL:HG23	39:i2:144:VAL:HG13	2.03	0.40
39:i2:80:ILE:HG13	39:i2:102:ALA:HA	2.01	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	12	75/78 (96%)	72 (96%)	3 (4%)	0	100	100
2	32	56/59 (95%)	52 (93%)	3 (5%)	1 (2%)	6	32
3	4	66/70 (94%)	57 (86%)	9 (14%)	0	100	100
3	41	12/70 (17%)	10 (83%)	2 (17%)	0	100	100
4	62	62/65 (95%)	58 (94%)	4 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	B	231/241 (96%)	193 (84%)	34 (15%)	4 (2%)	7	34
8	B2	225/241 (93%)	189 (84%)	36 (16%)	0	100	100
9	C1	211/233 (91%)	178 (84%)	26 (12%)	7 (3%)	3	20
9	C2	210/233 (90%)	185 (88%)	25 (12%)	0	100	100
10	D1	203/206 (98%)	183 (90%)	19 (9%)	1 (0%)	24	63
10	D2	203/206 (98%)	200 (98%)	3 (2%)	0	100	100
11	E1	156/167 (93%)	152 (97%)	4 (3%)	0	100	100
11	E2	156/167 (93%)	152 (97%)	4 (3%)	0	100	100
12	F1	104/135 (77%)	104 (100%)	0	0	100	100
12	F2	104/135 (77%)	80 (77%)	23 (22%)	1 (1%)	12	47
13	G1	153/179 (86%)	151 (99%)	2 (1%)	0	100	100
13	G2	152/179 (85%)	121 (80%)	24 (16%)	7 (5%)	2	16
14	H1	127/130 (98%)	127 (100%)	0	0	100	100
14	H2	127/130 (98%)	127 (100%)	0	0	100	100
15	I1	125/130 (96%)	103 (82%)	22 (18%)	0	100	100
15	I2	127/130 (98%)	116 (91%)	11 (9%)	0	100	100
16	J1	100/103 (97%)	92 (92%)	8 (8%)	0	100	100
16	J2	98/103 (95%)	86 (88%)	9 (9%)	3 (3%)	3	21
17	K1	113/129 (88%)	97 (86%)	15 (13%)	1 (1%)	14	49
17	K2	116/129 (90%)	101 (87%)	14 (12%)	1 (1%)	14	49
18	L1	121/124 (98%)	115 (95%)	5 (4%)	1 (1%)	16	52
18	L2	121/124 (98%)	116 (96%)	5 (4%)	0	100	100
19	M1	113/118 (96%)	109 (96%)	4 (4%)	0	100	100
19	M2	115/118 (98%)	108 (94%)	7 (6%)	0	100	100
20	N1	98/101 (97%)	84 (86%)	14 (14%)	0	100	100
20	N2	98/101 (97%)	95 (97%)	3 (3%)	0	100	100
21	O1	86/89 (97%)	83 (96%)	3 (4%)	0	100	100
21	O2	86/89 (97%)	84 (98%)	2 (2%)	0	100	100
22	P1	80/82 (98%)	75 (94%)	5 (6%)	0	100	100
23	Q1	78/84 (93%)	76 (97%)	2 (3%)	0	100	100
23	Q2	78/84 (93%)	75 (96%)	2 (3%)	1 (1%)	9	40

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
24	R1	72/75 (96%)	65 (90%)	6 (8%)	1 (1%)	9	38
24	R2	72/75 (96%)	53 (74%)	17 (24%)	2 (3%)	4	23
25	S1	81/92 (88%)	79 (98%)	2 (2%)	0	100	100
25	S2	81/92 (88%)	79 (98%)	2 (2%)	0	100	100
26	T1	84/87 (97%)	79 (94%)	3 (4%)	2 (2%)	4	25
27	U1	68/71 (96%)	58 (85%)	10 (15%)	0	100	100
27	U2	68/71 (96%)	60 (88%)	8 (12%)	0	100	100
33	Z1	7/557 (1%)	7 (100%)	0	0	100	100
34	a2	221/234 (94%)	201 (91%)	15 (7%)	5 (2%)	5	26
35	b2	269/273 (98%)	264 (98%)	5 (2%)	0	100	100
36	e2	176/179 (98%)	172 (98%)	4 (2%)	0	100	100
37	g2	50/55 (91%)	50 (100%)	0	0	100	100
38	h2	135/136 (99%)	135 (100%)	0	0	100	100
39	i2	147/149 (99%)	115 (78%)	26 (18%)	6 (4%)	2	17
40	l2	44/46 (96%)	43 (98%)	1 (2%)	0	100	100
41	o2	49/144 (34%)	45 (92%)	4 (8%)	0	100	100
42	p	8/10 (80%)	5 (62%)	2 (25%)	1 (12%)	0	4
43	r2	114/117 (97%)	110 (96%)	4 (4%)	0	100	100
44	z2	74/85 (87%)	74 (100%)	0	0	100	100
All	All	6206/7310 (85%)	5700 (92%)	461 (7%)	45 (1%)	20	55

All (45) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	C1	15	VAL
13	G2	18	PHE
13	G2	35	LYS
13	G2	54	SER
13	G2	146	GLU
23	Q2	12	VAL
34	a2	157	LYS
34	a2	158	ALA
42	p	30	VAL
9	C1	78	GLY
10	D1	175	ALA

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Mol	Chain	Res	Type
12	F2	38	ARG
13	G2	17	LYS
13	G2	81	GLY
16	J2	94	ALA
34	a2	156	ALA
39	i2	115	VAL
8	B	102	THR
13	G2	145	ALA
16	J2	89	ARG
17	K1	80	LYS
17	K2	80	LYS
18	L1	43	LYS
34	a2	204	ALA
39	i2	90	LEU
39	i2	91	PHE
39	i2	116	ARG
8	B	103	ASN
26	T1	55	GLN
39	i2	107	GLY
9	C1	129	MET
9	C1	208	LEU
24	R1	21	ILE
34	a2	201	PRO
2	32	33	HIS
8	B	90	PHE
9	C1	71	ALA
9	C1	75	ILE
24	R2	5	PHE
24	R2	71	THR
39	i2	88	GLY
9	C1	73	PRO
8	B	38	VAL
16	J2	79	PRO
26	T1	56	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	
1	12	67/68 (98%)	67 (100%)	0	100	100
2	32	48/49 (98%)	48 (100%)	0	100	100
3	4	60/62 (97%)	60 (100%)	0	100	100
3	41	12/62 (19%)	12 (100%)	0	100	100
4	62	51/52 (98%)	51 (100%)	0	100	100
8	B	192/199 (96%)	192 (100%)	0	100	100
8	B2	189/199 (95%)	189 (100%)	0	100	100
9	C1	173/190 (91%)	173 (100%)	0	100	100
9	C2	172/190 (90%)	172 (100%)	0	100	100
10	D1	172/173 (99%)	171 (99%)	1 (1%)	78	81
10	D2	172/173 (99%)	172 (100%)	0	100	100
11	E1	120/126 (95%)	120 (100%)	0	100	100
11	E2	120/126 (95%)	120 (100%)	0	100	100
12	F1	92/116 (79%)	92 (100%)	0	100	100
12	F2	92/116 (79%)	92 (100%)	0	100	100
13	G1	128/147 (87%)	128 (100%)	0	100	100
13	G2	127/147 (86%)	127 (100%)	0	100	100
14	H1	104/105 (99%)	104 (100%)	0	100	100
14	H2	104/105 (99%)	104 (100%)	0	100	100
15	I1	105/107 (98%)	105 (100%)	0	100	100
15	I2	106/107 (99%)	106 (100%)	0	100	100
16	J1	89/90 (99%)	89 (100%)	0	100	100
16	J2	88/90 (98%)	88 (100%)	0	100	100
17	K1	88/99 (89%)	88 (100%)	0	100	100
17	K2	91/99 (92%)	91 (100%)	0	100	100
18	L1	103/104 (99%)	103 (100%)	0	100	100
18	L2	103/104 (99%)	103 (100%)	0	100	100
19	M1	93/96 (97%)	93 (100%)	0	100	100
19	M2	95/96 (99%)	95 (100%)	0	100	100
20	N1	83/84 (99%)	83 (100%)	0	100	100
20	N2	83/84 (99%)	83 (100%)	0	100	100
21	O1	76/77 (99%)	76 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	O2	76/77 (99%)	76 (100%)	0	100	100
22	P1	65/65 (100%)	65 (100%)	0	100	100
23	Q1	74/78 (95%)	74 (100%)	0	100	100
23	Q2	74/78 (95%)	74 (100%)	0	100	100
24	R1	64/65 (98%)	64 (100%)	0	100	100
24	R2	64/65 (98%)	64 (100%)	0	100	100
25	S1	72/79 (91%)	72 (100%)	0	100	100
25	S2	72/79 (91%)	72 (100%)	0	100	100
26	T1	65/66 (98%)	65 (100%)	0	100	100
27	U1	60/61 (98%)	60 (100%)	0	100	100
27	U2	60/61 (98%)	60 (100%)	0	100	100
33	Z1	8/461 (2%)	8 (100%)	0	100	100
34	a2	174/181 (96%)	174 (100%)	0	100	100
35	b2	216/218 (99%)	216 (100%)	0	100	100
36	e2	149/150 (99%)	149 (100%)	0	100	100
37	g2	47/49 (96%)	47 (100%)	0	100	100
38	h2	110/109 (101%)	110 (100%)	0	100	100
39	i2	114/114 (100%)	114 (100%)	0	100	100
40	l2	38/38 (100%)	38 (100%)	0	100	100
41	o2	35/103 (34%)	35 (100%)	0	100	100
42	p	5/5 (100%)	4 (80%)	1 (20%)	1	8
43	r2	86/87 (99%)	86 (100%)	0	100	100
44	z2	58/63 (92%)	58 (100%)	0	100	100
All	All	5184/5994 (86%)	5182 (100%)	2 (0%)	100	100

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

Mol	Chain	Res	Type
10	D1	15	GLU
42	p	34	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (39) such sidechains are listed below:

Mol	Chain	Res	Type
8	B	58	ASN
8	B	93	ASN
8	B	94	HIS
8	B2	89	GLN
8	B2	177	ASN
9	C1	8	ASN
9	C1	32	ASN
9	C1	41	GLN
9	C1	185	ASN
9	C2	8	ASN
10	D2	36	GLN
10	D2	85	ASN
11	E2	89	HIS
12	F1	52	ASN
12	F2	55	HIS
13	G1	9	GLN
13	G2	97	ASN
13	G2	148	ASN
14	H1	18	GLN
14	H2	21	ASN
15	I1	4	ASN
15	I1	75	GLN
15	I1	110	GLN
15	I2	75	GLN
16	J1	15	HIS
16	J2	58	ASN
16	J2	99	GLN
17	K2	15	GLN
17	K2	119	ASN
18	L2	29	GLN
19	M1	105	ASN
21	O2	50	HIS
27	U2	9	ASN
27	U2	64	ASN
35	b2	243	HIS
35	b2	260	ASN
36	e2	63	GLN
38	h2	13	HIS
39	i2	135	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
28	V2	58/59 (98%)	40 (68%)	9 (15%)
29	W	75/76 (98%)	29 (38%)	3 (4%)
30	W1	35/76 (46%)	10 (28%)	2 (5%)
31	Y	75/76 (98%)	21 (28%)	2 (2%)
32	Y1	34/76 (44%)	6 (17%)	2 (5%)
5	71	18/2904 (0%)	1 (5%)	0
5	72	2903/2904 (99%)	466 (16%)	38 (1%)
6	82	119/120 (99%)	21 (17%)	3 (2%)
7	A1	1541/1542 (99%)	448 (29%)	36 (2%)
7	A2	1536/1542 (99%)	397 (25%)	30 (1%)
All	All	6394/9375 (68%)	1439 (22%)	125 (1%)

All (1439) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
5	71	1907	G
5	72	10	A
5	72	15	G
5	72	34	U
5	72	44	A
5	72	46	G
5	72	55	G
5	72	71	A
5	72	74	A
5	72	75	G
5	72	101	A
5	72	102	U
5	72	103	A
5	72	110	G
5	72	118	A
5	72	119	A
5	72	120	U
5	72	125	A
5	72	135	U
5	72	139	U
5	72	141	G
5	72	142	A
5	72	159	G
5	72	163	C
5	72	174	U
5	72	177	G
5	72	178	G
5	72	181	A

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Mol	Chain	Res	Type
5	72	196	A
5	72	199	A
5	72	215	G
5	72	216	A
5	72	221	A
5	72	222	A
5	72	248	G
5	72	252	G
5	72	275	C
5	72	277	G
5	72	278	A
5	72	279	A
5	72	283	G
5	72	284	U
5	72	285	G
5	72	286	U
5	72	311	A
5	72	330	A
5	72	345	A
5	72	353	C
5	72	359	G
5	72	361	G
5	72	362	A
5	72	386	G
5	72	395	U
5	72	396	G
5	72	401	A
5	72	405	U
5	72	412	A
5	72	455	C
5	72	456	C
5	72	457	A
5	72	470	A
5	72	473	G
5	72	481	G
5	72	491	G
5	72	505	A
5	72	506	G
5	72	509	C
5	72	513	A
5	72	527	C
5	72	532	A

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Mol	Chain	Res	Type
5	72	547	A
5	72	549	G
5	72	563	A
5	72	573	U
5	72	575	A
5	72	578	G
5	72	603	A
5	72	613	A
5	72	614	A
5	72	615	U
5	72	637	A
5	72	645	C
5	72	646	U
5	72	647	G
5	72	654	A
5	72	655	A
5	72	686	U
5	72	717	C
5	72	726	G
5	72	729	G
5	72	730	A
5	72	747	5MU
5	72	748	G
5	72	749	A
5	72	764	A
5	72	765	C
5	72	775	G
5	72	776	G
5	72	782	A
5	72	784	G
5	72	785	G
5	72	789	A
5	72	805	G
5	72	812	C
5	72	819	A
5	72	827	U
5	72	828	U
5	72	830	G
5	72	845	A
5	72	846	U
5	72	847	U
5	72	858	G

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Mol	Chain	Res	Type
5	72	859	G
5	72	869	G
5	72	878	A
5	72	883	G
5	72	887	U
5	72	888	C
5	72	890	C
5	72	896	A
5	72	897	C
5	72	898	C
5	72	900	A
5	72	902	C
5	72	907	G
5	72	910	A
5	72	917	A
5	72	919	U
5	72	931	U
5	72	932	U
5	72	941	A
5	72	946	C
5	72	961	C
5	72	962	G
5	72	974	G
5	72	983	A
5	72	995	C
5	72	996	A
5	72	999	U
5	72	1005	C
5	72	1012	U
5	72	1013	C
5	72	1021	A
5	72	1026	G
5	72	1033	U
5	72	1046	A
5	72	1047	G
5	72	1055	G
5	72	1060	U
5	72	1070	A
5	72	1081	U
5	72	1083	U
5	72	1084	A
5	72	1085	A

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Mol	Chain	Res	Type
5	72	1087	G
5	72	1088	A
5	72	1090	A
5	72	1097	U
5	72	1112	G
5	72	1130	U
5	72	1131	G
5	72	1132	U
5	72	1133	A
5	72	1134	A
5	72	1135	C
5	72	1136	G
5	72	1142	A
5	72	1149	G
5	72	1161	C
5	72	1169	A
5	72	1172	C
5	72	1173	U
5	72	1174	U
5	72	1176	U
5	72	1178	C
5	72	1179	G
5	72	1180	U
5	72	1212	G
5	72	1235	G
5	72	1236	G
5	72	1247	A
5	72	1249	U
5	72	1250	G
5	72	1253	A
5	72	1256	G
5	72	1262	A
5	72	1271	G
5	72	1272	A
5	72	1273	U
5	72	1300	G
5	72	1301	A
5	72	1321	A
5	72	1329	U
5	72	1345	C
5	72	1352	U
5	72	1365	A

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Mol	Chain	Res	Type
5	72	1368	G
5	72	1379	U
5	72	1380	G
5	72	1383	A
5	72	1395	A
5	72	1396	U
5	72	1416	G
5	72	1417	C
5	72	1419	A
5	72	1420	A
5	72	1421	G
5	72	1428	C
5	72	1434	A
5	72	1452	G
5	72	1453	A
5	72	1461	C
5	72	1476	U
5	72	1482	G
5	72	1488	C
5	72	1490	A
5	72	1491	G
5	72	1493	C
5	72	1494	A
5	72	1497	U
5	72	1503	A
5	72	1508	A
5	72	1509	A
5	72	1515	A
5	72	1524	G
5	72	1532	A
5	72	1539	U
5	72	1566	A
5	72	1569	A
5	72	1578	U
5	72	1581	G
5	72	1583	A
5	72	1584	U
5	72	1608	A
5	72	1610	A
5	72	1618	6MZ
5	72	1619	G
5	72	1647	U

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Mol	Chain	Res	Type
5	72	1648	U
5	72	1649	G
5	72	1674	G
5	72	1715	G
5	72	1727	C
5	72	1729	U
5	72	1730	C
5	72	1731	G
5	72	1738	G
5	72	1764	C
5	72	1773	A
5	72	1782	U
5	72	1784	A
5	72	1786	A
5	72	1791	A
5	72	1799	G
5	72	1800	C
5	72	1801	A
5	72	1807	G
5	72	1808	A
5	72	1816	C
5	72	1848	A
5	72	1870	C
5	72	1872	A
5	72	1873	G
5	72	1901	A
5	72	1913	A
5	72	1914	C
5	72	1919	A
5	72	1920	C
5	72	1921	G
5	72	1927	A
5	72	1928	A
5	72	1929	G
5	72	1930	G
5	72	1937	A
5	72	1938	A
5	72	1939	5MU
5	72	1940	U
5	72	1941	C
5	72	1955	U
5	72	1956	U

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Mol	Chain	Res	Type
5	72	1960	A
5	72	1963	U
5	72	1964	G
5	72	1966	A
5	72	1967	C
5	72	1970	A
5	72	1971	U
5	72	1972	G
5	72	1975	G
5	72	1982	U
5	72	1991	U
5	72	1993	U
5	72	1997	C
5	72	2022	U
5	72	2023	C
5	72	2030	6MZ
5	72	2031	A
5	72	2032	G
5	72	2033	A
5	72	2043	C
5	72	2055	C
5	72	2056	G
5	72	2059	A
5	72	2060	A
5	72	2061	G
5	72	2062	A
5	72	2069	G7M
5	72	2072	C
5	72	2098	U
5	72	2100	G
5	72	2101	A
5	72	2103	C
5	72	2104	C
5	72	2110	G
5	72	2111	U
5	72	2112	G
5	72	2113	U
5	72	2117	A
5	72	2118	U
5	72	2119	A
5	72	2120	G
5	72	2121	G

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Mol	Chain	Res	Type
5	72	2126	A
5	72	2130	U
5	72	2131	U
5	72	2132	U
5	72	2133	G
5	72	2134	A
5	72	2137	U
5	72	2141	G
5	72	2146	C
5	72	2152	G
5	72	2153	C
5	72	2161	C
5	72	2164	C
5	72	2165	C
5	72	2166	U
5	72	2167	U
5	72	2169	A
5	72	2170	A
5	72	2172	U
5	72	2173	A
5	72	2175	C
5	72	2176	A
5	72	2177	C
5	72	2182	U
5	72	2190	G
5	72	2195	U
5	72	2196	C
5	72	2198	A
5	72	2199	A
5	72	2204	G
5	72	2211	A
5	72	2225	A
5	72	2238	G
5	72	2239	G
5	72	2243	U
5	72	2251	OMG
5	72	2268	A
5	72	2278	A
5	72	2279	G
5	72	2283	C
5	72	2287	A
5	72	2305	U

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Mol	Chain	Res	Type
5	72	2308	G
5	72	2309	A
5	72	2311	A
5	72	2312	U
5	72	2319	G
5	72	2321	U
5	72	2322	A
5	72	2325	G
5	72	2333	A
5	72	2336	A
5	72	2345	G
5	72	2347	C
5	72	2350	C
5	72	2361	G
5	72	2372	U
5	72	2375	G
5	72	2379	G
5	72	2383	G
5	72	2385	C
5	72	2391	G
5	72	2402	U
5	72	2403	C
5	72	2406	A
5	72	2410	G
5	72	2423	U
5	72	2425	A
5	72	2429	G
5	72	2430	A
5	72	2431	U
5	72	2441	U
5	72	2448	A
5	72	2457	PSU
5	72	2464	G
5	72	2475	C
5	72	2476	A
5	72	2478	A
5	72	2482	A
5	72	2484	G
5	72	2491	U
5	72	2494	G
5	72	2498	OMC
5	72	2502	G

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Mol	Chain	Res	Type
5	72	2503	2MA
5	72	2505	G
5	72	2507	C
5	72	2514	U
5	72	2518	A
5	72	2529	G
5	72	2535	G
5	72	2537	U
5	72	2547	A
5	72	2549	G
5	72	2554	U
5	72	2556	C
5	72	2566	A
5	72	2567	G
5	72	2571	U
5	72	2572	A
5	72	2573	C
5	72	2581	G
5	72	2582	G
5	72	2586	U
5	72	2602	A
5	72	2608	G
5	72	2609	U
5	72	2613	U
5	72	2614	A
5	72	2615	U
5	72	2629	U
5	72	2630	G
5	72	2663	G
5	72	2689	U
5	72	2690	U
5	72	2714	G
5	72	2726	A
5	72	2732	G
5	72	2733	A
5	72	2743	U
5	72	2744	G
5	72	2748	A
5	72	2751	G
5	72	2757	A
5	72	2765	A
5	72	2778	A

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Mol	Chain	Res	Type
5	72	2779	U
5	72	2798	U
5	72	2800	A
5	72	2818	U
5	72	2820	A
5	72	2821	A
5	72	2832	U
5	72	2835	A
5	72	2861	U
5	72	2867	G
5	72	2873	A
5	72	2879	A
5	72	2880	C
5	72	2883	A
5	72	2884	U
5	72	2885	G
5	72	2886	A
5	72	2891	U
5	72	2904	U
6	82	4	C
6	82	9	G
6	82	13	G
6	82	33	G
6	82	34	A
6	82	35	C
6	82	37	C
6	82	40	U
6	82	41	G
6	82	45	A
6	82	48	U
6	82	50	A
6	82	51	G
6	82	66	A
6	82	67	G
6	82	87	U
6	82	89	U
6	82	90	C
6	82	91	C
6	82	99	A
6	82	109	A
7	A1	4	U
7	A1	5	U

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Mol	Chain	Res	Type
7	A1	6	G
7	A1	7	A
7	A1	8	A
7	A1	9	G
7	A1	26	A
7	A1	28	A
7	A1	32	A
7	A1	33	A
7	A1	39	G
7	A1	47	C
7	A1	48	C
7	A1	50	A
7	A1	51	A
7	A1	52	C
7	A1	54	C
7	A1	58	C
7	A1	70	U
7	A1	71	A
7	A1	72	A
7	A1	75	G
7	A1	76	G
7	A1	78	A
7	A1	79	G
7	A1	80	A
7	A1	82	G
7	A1	84	U
7	A1	85	U
7	A1	86	G
7	A1	88	U
7	A1	89	U
7	A1	90	C
7	A1	91	U
7	A1	92	U
7	A1	94	G
7	A1	95	C
7	A1	100	G
7	A1	120	A
7	A1	121	U
7	A1	122	G
7	A1	129	A
7	A1	131	A
7	A1	136	C

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Mol	Chain	Res	Type
7	A1	137	U
7	A1	138	G
7	A1	141	G
7	A1	142	G
7	A1	143	A
7	A1	144	G
7	A1	145	G
7	A1	146	G
7	A1	150	U
7	A1	156	C
7	A1	163	C
7	A1	164	G
7	A1	169	C
7	A1	173	U
7	A1	174	A
7	A1	176	C
7	A1	182	A
7	A1	183	C
7	A1	184	G
7	A1	185	U
7	A1	191	G
7	A1	192	A
7	A1	193	C
7	A1	194	C
7	A1	197	A
7	A1	198	G
7	A1	201	G
7	A1	204	G
7	A1	205	A
7	A1	208	U
7	A1	209	U
7	A1	210	C
7	A1	211	G
7	A1	212	G
7	A1	215	C
7	A1	222	C
7	A1	239	U
7	A1	240	G
7	A1	245	U
7	A1	247	G
7	A1	251	G
7	A1	252	U

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Mol	Chain	Res	Type
7	A1	253	A
7	A1	259	G
7	A1	261	U
7	A1	264	C
7	A1	266	G
7	A1	267	C
7	A1	275	G
7	A1	281	G
7	A1	289	G
7	A1	294	U
7	A1	298	A
7	A1	301	G
7	A1	306	A
7	A1	315	A
7	A1	316	C
7	A1	323	U
7	A1	328	C
7	A1	329	A
7	A1	330	C
7	A1	345	C
7	A1	351	G
7	A1	352	C
7	A1	354	G
7	A1	363	A
7	A1	367	U
7	A1	372	C
7	A1	373	A
7	A1	384	G
7	A1	387	U
7	A1	388	G
7	A1	406	G
7	A1	407	U
7	A1	411	A
7	A1	412	A
7	A1	413	G
7	A1	415	A
7	A1	421	U
7	A1	422	C
7	A1	423	G
7	A1	424	G
7	A1	428	G
7	A1	429	U

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Mol	Chain	Res	Type
7	A1	438	U
7	A1	442	G
7	A1	446	G
7	A1	451	A
7	A1	457	G
7	A1	458	U
7	A1	459	A
7	A1	460	A
7	A1	464	U
7	A1	465	A
7	A1	468	A
7	A1	470	C
7	A1	471	U
7	A1	474	G
7	A1	475	C
7	A1	476	U
7	A1	479	U
7	A1	484	G
7	A1	486	U
7	A1	496	A
7	A1	509	A
7	A1	511	C
7	A1	517	G
7	A1	518	C
7	A1	521	G
7	A1	522	C
7	A1	527	G7M
7	A1	530	G
7	A1	531	U
7	A1	532	A
7	A1	536	C
7	A1	547	A
7	A1	559	A
7	A1	562	U
7	A1	566	G
7	A1	572	A
7	A1	573	A
7	A1	575	G
7	A1	576	C
7	A1	577	G
7	A1	582	C
7	A1	596	A

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Mol	Chain	Res	Type
7	A1	611	C
7	A1	633	G
7	A1	639	G
7	A1	640	A
7	A1	643	C
7	A1	649	A
7	A1	650	G
7	A1	652	U
7	A1	653	U
7	A1	654	G
7	A1	661	G
7	A1	664	G
7	A1	665	A
7	A1	668	G
7	A1	672	U
7	A1	674	G
7	A1	675	A
7	A1	684	U
7	A1	686	U
7	A1	687	A
7	A1	690	G
7	A1	693	G
7	A1	694	A
7	A1	702	A
7	A1	703	G
7	A1	704	A
7	A1	705	G
7	A1	709	U
7	A1	712	A
7	A1	717	U
7	A1	720	C
7	A1	721	G
7	A1	723	U
7	A1	724	G
7	A1	725	G
7	A1	731	G
7	A1	734	G
7	A1	736	C
7	A1	746	A
7	A1	748	G
7	A1	755	G
7	A1	763	G

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Mol	Chain	Res	Type
7	A1	774	G
7	A1	777	A
7	A1	782	A
7	A1	787	A
7	A1	790	A
7	A1	793	U
7	A1	794	A
7	A1	799	G
7	A1	806	C
7	A1	808	C
7	A1	815	A
7	A1	817	C
7	A1	828	U
7	A1	831	A
7	A1	835	U
7	A1	837	U
7	A1	841	C
7	A1	842	U
7	A1	843	U
7	A1	844	G
7	A1	845	A
7	A1	846	G
7	A1	848	C
7	A1	849	G
7	A1	850	U
7	A1	860	A
7	A1	864	A
7	A1	870	U
7	A1	871	U
7	A1	874	G
7	A1	876	C
7	A1	884	U
7	A1	885	G
7	A1	887	G
7	A1	889	A
7	A1	890	G
7	A1	899	C
7	A1	902	G
7	A1	914	A
7	A1	922	G
7	A1	926	G
7	A1	933	G

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Mol	Chain	Res	Type
7	A1	934	C
7	A1	935	A
7	A1	939	G
7	A1	940	C
7	A1	942	G
7	A1	943	U
7	A1	947	G
7	A1	958	A
7	A1	960	U
7	A1	961	U
7	A1	966	2MG
7	A1	969	A
7	A1	971	G
7	A1	973	G
7	A1	975	A
7	A1	976	G
7	A1	977	A
7	A1	979	C
7	A1	981	U
7	A1	992	U
7	A1	993	G
7	A1	994	A
7	A1	995	C
7	A1	996	A
7	A1	998	C
7	A1	1003	G
7	A1	1004	A
7	A1	1008	U
7	A1	1009	U
7	A1	1010	U
7	A1	1014	A
7	A1	1017	U
7	A1	1020	G
7	A1	1021	A
7	A1	1027	C
7	A1	1029	U
7	A1	1030	U
7	A1	1031	C
7	A1	1032	G
7	A1	1034	G
7	A1	1036	A
7	A1	1044	A

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Mol	Chain	Res	Type
7	A1	1045	C
7	A1	1046	A
7	A1	1050	G
7	A1	1054	C
7	A1	1055	A
7	A1	1058	G
7	A1	1066	C
7	A1	1068	G
7	A1	1070	U
7	A1	1073	U
7	A1	1078	U
7	A1	1085	U
7	A1	1086	U
7	A1	1094	G
7	A1	1095	U
7	A1	1101	A
7	A1	1103	C
7	A1	1108	G
7	A1	1121	U
7	A1	1124	G
7	A1	1125	U
7	A1	1126	U
7	A1	1127	G
7	A1	1129	C
7	A1	1132	C
7	A1	1133	G
7	A1	1135	U
7	A1	1136	C
7	A1	1137	C
7	A1	1139	G
7	A1	1140	C
7	A1	1141	C
7	A1	1147	C
7	A1	1151	A
7	A1	1152	A
7	A1	1154	G
7	A1	1157	A
7	A1	1159	U
7	A1	1161	C
7	A1	1162	C
7	A1	1168	U
7	A1	1169	A

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Mol	Chain	Res	Type
7	A1	1170	A
7	A1	1174	G
7	A1	1182	G
7	A1	1183	U
7	A1	1190	G
7	A1	1191	A
7	A1	1196	A
7	A1	1197	A
7	A1	1201	A
7	A1	1202	U
7	A1	1206	G
7	A1	1211	U
7	A1	1212	U
7	A1	1213	A
7	A1	1214	C
7	A1	1215	G
7	A1	1221	G
7	A1	1224	U
7	A1	1225	A
7	A1	1226	C
7	A1	1227	A
7	A1	1228	C
7	A1	1235	U
7	A1	1236	A
7	A1	1239	A
7	A1	1240	U
7	A1	1241	G
7	A1	1243	C
7	A1	1250	A
7	A1	1253	G
7	A1	1256	A
7	A1	1257	A
7	A1	1258	G
7	A1	1260	G
7	A1	1270	G
7	A1	1272	G
7	A1	1279	G
7	A1	1280	A
7	A1	1281	C
7	A1	1287	A
7	A1	1298	U
7	A1	1300	G

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Mol	Chain	Res	Type
7	A1	1301	U
7	A1	1302	C
7	A1	1308	U
7	A1	1309	G
7	A1	1310	G
7	A1	1317	C
7	A1	1320	C
7	A1	1328	C
7	A1	1331	G
7	A1	1335	U
7	A1	1336	C
7	A1	1338	G
7	A1	1345	U
7	A1	1346	A
7	A1	1347	G
7	A1	1348	U
7	A1	1352	C
7	A1	1356	G
7	A1	1363	A
7	A1	1364	U
7	A1	1365	G
7	A1	1368	A
7	A1	1369	C
7	A1	1379	G
7	A1	1383	C
7	A1	1399	C
7	A1	1418	A
7	A1	1419	G
7	A1	1424	U
7	A1	1425	U
7	A1	1426	G
7	A1	1429	A
7	A1	1430	A
7	A1	1432	G
7	A1	1433	A
7	A1	1439	G
7	A1	1440	U
7	A1	1441	A
7	A1	1442	G
7	A1	1446	A
7	A1	1450	U
7	A1	1451	U

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Mol	Chain	Res	Type
7	A1	1452	C
7	A1	1454	G
7	A1	1455	G
7	A1	1460	C
7	A1	1461	G
7	A1	1462	C
7	A1	1464	U
7	A1	1475	G
7	A1	1476	A
7	A1	1486	G
7	A1	1487	G
7	A1	1492	A
7	A1	1493	A
7	A1	1499	A
7	A1	1503	A
7	A1	1505	G
7	A1	1506	U
7	A1	1507	A
7	A1	1517	G
7	A1	1529	G
7	A1	1530	G
7	A1	1536	C
7	A1	1537	U
7	A1	1539	C
7	A1	1541	U
7	A1	1542	A
7	A2	3	A
7	A2	4	U
7	A2	7	A
7	A2	8	A
7	A2	9	G
7	A2	16	A
7	A2	26	A
7	A2	30	U
7	A2	31	G
7	A2	32	A
7	A2	39	G
7	A2	40	C
7	A2	47	C
7	A2	48	C
7	A2	51	A
7	A2	64	G

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Mol	Chain	Res	Type
7	A2	70	U
7	A2	71	A
7	A2	72	A
7	A2	73	C
7	A2	74	A
7	A2	75	G
7	A2	76	G
7	A2	78	A
7	A2	82	G
7	A2	85	U
7	A2	86	G
7	A2	88	U
7	A2	90	C
7	A2	91	U
7	A2	94	G
7	A2	95	C
7	A2	97	G
7	A2	98	A
7	A2	116	A
7	A2	120	A
7	A2	121	U
7	A2	129	A
7	A2	131	A
7	A2	137	U
7	A2	138	G
7	A2	141	G
7	A2	143	A
7	A2	148	G
7	A2	150	U
7	A2	155	A
7	A2	163	C
7	A2	164	G
7	A2	173	U
7	A2	174	A
7	A2	176	C
7	A2	177	G
7	A2	182	A
7	A2	183	C
7	A2	184	G
7	A2	186	C
7	A2	187	G
7	A2	188	C

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Mol	Chain	Res	Type
7	A2	193	C
7	A2	195	A
7	A2	197	A
7	A2	199	A
7	A2	202	G
7	A2	204	G
7	A2	205	A
7	A2	207	C
7	A2	208	U
7	A2	209	U
7	A2	210	C
7	A2	215	C
7	A2	216	U
7	A2	218	U
7	A2	224	U
7	A2	240	G
7	A2	245	U
7	A2	247	G
7	A2	250	A
7	A2	251	G
7	A2	252	U
7	A2	253	A
7	A2	257	G
7	A2	262	A
7	A2	263	A
7	A2	266	G
7	A2	267	C
7	A2	269	C
7	A2	275	G
7	A2	276	G
7	A2	278	G
7	A2	279	A
7	A2	281	G
7	A2	282	A
7	A2	289	G
7	A2	301	G
7	A2	305	G
7	A2	316	C
7	A2	323	U
7	A2	328	C
7	A2	329	A
7	A2	330	C

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Mol	Chain	Res	Type
7	A2	331	G
7	A2	347	G
7	A2	351	G
7	A2	352	C
7	A2	354	G
7	A2	355	C
7	A2	356	A
7	A2	361	G
7	A2	367	U
7	A2	368	U
7	A2	370	C
7	A2	372	C
7	A2	373	A
7	A2	374	A
7	A2	375	U
7	A2	387	U
7	A2	388	G
7	A2	391	G
7	A2	393	A
7	A2	397	A
7	A2	398	U
7	A2	405	U
7	A2	406	G
7	A2	408	A
7	A2	409	U
7	A2	411	A
7	A2	412	A
7	A2	413	G
7	A2	414	A
7	A2	415	A
7	A2	416	G
7	A2	422	C
7	A2	423	G
7	A2	424	G
7	A2	426	U
7	A2	428	G
7	A2	429	U
7	A2	431	A
7	A2	437	U
7	A2	439	U
7	A2	440	C
7	A2	442	G

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Mol	Chain	Res	Type
7	A2	443	C
7	A2	444	G
7	A2	445	G
7	A2	448	A
7	A2	450	G
7	A2	452	A
7	A2	456	A
7	A2	457	G
7	A2	458	U
7	A2	459	A
7	A2	460	A
7	A2	461	A
7	A2	462	G
7	A2	464	U
7	A2	465	A
7	A2	466	A
7	A2	467	U
7	A2	468	A
7	A2	469	C
7	A2	472	U
7	A2	473	U
7	A2	474	G
7	A2	475	C
7	A2	478	A
7	A2	479	U
7	A2	480	U
7	A2	481	G
7	A2	482	A
7	A2	484	G
7	A2	492	C
7	A2	495	A
7	A2	496	A
7	A2	497	G
7	A2	498	A
7	A2	499	A
7	A2	501	C
7	A2	506	G
7	A2	511	C
7	A2	512	U
7	A2	513	C
7	A2	516	U
7	A2	518	C

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Mol	Chain	Res	Type
7	A2	520	A
7	A2	521	G
7	A2	524	G
7	A2	527	G7M
7	A2	529	G
7	A2	530	G
7	A2	531	U
7	A2	533	A
7	A2	534	U
7	A2	536	C
7	A2	538	G
7	A2	539	A
7	A2	542	G
7	A2	547	A
7	A2	549	C
7	A2	551	U
7	A2	558	G
7	A2	559	A
7	A2	562	U
7	A2	572	A
7	A2	573	A
7	A2	575	G
7	A2	576	C
7	A2	577	G
7	A2	633	G
7	A2	653	U
7	A2	665	A
7	A2	703	G
7	A2	717	U
7	A2	718	A
7	A2	721	G
7	A2	723	U
7	A2	724	G
7	A2	731	G
7	A2	733	G
7	A2	734	G
7	A2	735	C
7	A2	748	G
7	A2	755	G
7	A2	777	A
7	A2	788	U
7	A2	790	A

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Mol	Chain	Res	Type
7	A2	793	U
7	A2	794	A
7	A2	815	A
7	A2	817	C
7	A2	821	G
7	A2	828	U
7	A2	829	G
7	A2	841	C
7	A2	842	U
7	A2	843	U
7	A2	844	G
7	A2	845	A
7	A2	846	G
7	A2	902	G
7	A2	914	A
7	A2	926	G
7	A2	933	G
7	A2	934	C
7	A2	935	A
7	A2	945	G
7	A2	953	G
7	A2	960	U
7	A2	961	U
7	A2	966	2MG
7	A2	968	A
7	A2	969	A
7	A2	974	A
7	A2	975	A
7	A2	976	G
7	A2	977	A
7	A2	989	U
7	A2	991	U
7	A2	992	U
7	A2	993	G
7	A2	994	A
7	A2	996	A
7	A2	1004	A
7	A2	1006	G
7	A2	1008	U
7	A2	1009	U
7	A2	1011	C
7	A2	1014	A

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Mol	Chain	Res	Type
7	A2	1017	U
7	A2	1018	G
7	A2	1019	A
7	A2	1020	G
7	A2	1021	A
7	A2	1022	A
7	A2	1023	U
7	A2	1029	U
7	A2	1030	U
7	A2	1031	C
7	A2	1032	G
7	A2	1033	G
7	A2	1034	G
7	A2	1044	A
7	A2	1046	A
7	A2	1056	U
7	A2	1063	C
7	A2	1064	G
7	A2	1065	U
7	A2	1067	A
7	A2	1074	G
7	A2	1081	A
7	A2	1085	U
7	A2	1086	U
7	A2	1094	G
7	A2	1095	U
7	A2	1098	C
7	A2	1101	A
7	A2	1102	A
7	A2	1108	G
7	A2	1113	C
7	A2	1124	G
7	A2	1125	U
7	A2	1127	G
7	A2	1128	C
7	A2	1129	C
7	A2	1130	A
7	A2	1131	G
7	A2	1133	G
7	A2	1134	G
7	A2	1136	C
7	A2	1137	C

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Mol	Chain	Res	Type
7	A2	1138	G
7	A2	1139	G
7	A2	1140	C
7	A2	1141	C
7	A2	1146	A
7	A2	1152	A
7	A2	1157	A
7	A2	1158	C
7	A2	1159	U
7	A2	1160	G
7	A2	1168	U
7	A2	1169	A
7	A2	1182	G
7	A2	1184	G
7	A2	1185	G
7	A2	1191	A
7	A2	1196	A
7	A2	1197	A
7	A2	1201	A
7	A2	1202	U
7	A2	1206	G
7	A2	1212	U
7	A2	1213	A
7	A2	1215	G
7	A2	1217	C
7	A2	1218	C
7	A2	1225	A
7	A2	1226	C
7	A2	1227	A
7	A2	1238	A
7	A2	1241	G
7	A2	1248	A
7	A2	1249	C
7	A2	1253	G
7	A2	1256	A
7	A2	1257	A
7	A2	1268	G
7	A2	1270	G
7	A2	1271	A
7	A2	1280	A
7	A2	1281	C
7	A2	1282	C

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Mol	Chain	Res	Type
7	A2	1286	U
7	A2	1287	A
7	A2	1291	U
7	A2	1297	G
7	A2	1298	U
7	A2	1300	G
7	A2	1305	G
7	A2	1317	C
7	A2	1318	A
7	A2	1319	A
7	A2	1320	C
7	A2	1332	A
7	A2	1336	C
7	A2	1338	G
7	A2	1340	A
7	A2	1346	A
7	A2	1348	U
7	A2	1351	U
7	A2	1353	G
7	A2	1360	A
7	A2	1363	A
7	A2	1364	U
7	A2	1368	A
7	A2	1370	G
7	A2	1375	A
7	A2	1379	G
7	A2	1397	C
7	A2	1398	A
7	A2	1429	A
7	A2	1441	A
7	A2	1446	A
7	A2	1448	C
7	A2	1454	G
7	A2	1487	G
7	A2	1492	A
7	A2	1499	A
7	A2	1503	A
7	A2	1506	U
7	A2	1517	G
7	A2	1529	G
7	A2	1530	G
7	A2	1533	C

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Mol	Chain	Res	Type
7	A2	1534	A
7	A2	1535	C
7	A2	1536	C
28	V2	6	A
28	V2	8	A
28	V2	9	A
28	V2	10	G
28	V2	11	G
28	V2	14	G
28	V2	15	G
28	V2	16	U
28	V2	17	G
28	V2	18	A
28	V2	19	G
28	V2	20	C
28	V2	21	U
28	V2	23	C
28	V2	24	G
28	V2	30	A
28	V2	32	U
28	V2	33	A
28	V2	34	A
28	V2	35	A
28	V2	36	A
28	V2	37	A
28	V2	38	A
28	V2	39	A
28	V2	40	A
28	V2	41	G
28	V2	42	G
28	V2	43	U
28	V2	45	U
28	V2	46	C
28	V2	47	G
28	V2	48	C
28	V2	49	G
28	V2	51	U
28	V2	53	G
28	V2	54	G
28	V2	58	A
28	V2	61	U
28	V2	62	C

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Mol	Chain	Res	Type
28	V2	63	G
29	W	2	G
29	W	12	U
29	W	15	A
29	W	16	H2U
29	W	17	H2U
29	W	18	G
29	W	19	G
29	W	20	H2U
29	W	21	A
29	W	22	G
29	W	25	C
29	W	32	PSU
29	W	37	MIA
29	W	44	G
29	W	46	G7M
29	W	47	U
29	W	48	U
29	W	49	G
29	W	54	5MU
29	W	57	G
29	W	58	A
29	W	60	U
29	W	64	U
29	W	65	C
29	W	69	C
29	W	72	U
29	W	73	G
29	W	75	C
29	W	76	A
30	W1	9	A
30	W1	10	G
30	W1	11	C
30	W1	15	G
30	W1	22	G
30	W1	35	A
30	W1	44	G
30	W1	46	G7M
30	W1	47	U
30	W1	48	C
31	Y	15	G
31	Y	16	C

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Mol	Chain	Res	Type
31	Y	17	H2U
31	Y	18	G
31	Y	19	G
31	Y	20	G
31	Y	21	A
31	Y	22	G
31	Y	34	G
31	Y	36	C
31	Y	39	G
31	Y	45	G
31	Y	46	G7M
31	Y	48	C
31	Y	49	A
31	Y	53	G
31	Y	56	C
31	Y	64	C
31	Y	71	C
31	Y	73	A
31	Y	76	A
32	Y1	10	G
32	Y1	11	C
32	Y1	22	G
32	Y1	34	CM0
32	Y1	46	7MG
32	Y1	47	U

All (125) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
5	72	43	G
5	72	134	G
5	72	158	U
5	72	277	G
5	72	285	G
5	72	352	A
5	72	404	A
5	72	504	A
5	72	613	A
5	72	747	5MU
5	72	748	G
5	72	784	G
5	72	827	U

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Mol	Chain	Res	Type
5	72	1020	A
5	72	1046	A
5	72	1130	U
5	72	1211	C
5	72	1266	G
5	72	1416	G
5	72	1419	A
5	72	1420	A
5	72	1475	G
5	72	1490	A
5	72	1580	A
5	72	1847	A
5	72	1927	A
5	72	1940	U
5	72	2061	G
5	72	2117	A
5	72	2120	G
5	72	2151	U
5	72	2169	A
5	72	2175	C
5	72	2176	A
5	72	2198	A
5	72	2430	A
5	72	2581	G
5	72	2756	U
6	82	3	C
6	82	39	A
6	82	88	C
7	A1	5	U
7	A1	7	A
7	A1	51	A
7	A1	70	U
7	A1	129	A
7	A1	173	U
7	A1	197	A
7	A1	209	U
7	A1	251	G
7	A1	274	A
7	A1	372	C
7	A1	421	U
7	A1	428	G
7	A1	438	U

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Mol	Chain	Res	Type
7	A1	535	A
7	A1	559	A
7	A1	575	G
7	A1	653	U
7	A1	686	U
7	A1	870	U
7	A1	884	U
7	A1	992	U
7	A1	993	G
7	A1	1054	C
7	A1	1067	A
7	A1	1085	U
7	A1	1182	G
7	A1	1190	G
7	A1	1201	A
7	A1	1302	C
7	A1	1335	U
7	A1	1432	G
7	A1	1440	U
7	A1	1452	C
7	A1	1463	U
7	A1	1536	C
7	A2	7	A
7	A2	30	U
7	A2	70	U
7	A2	183	C
7	A2	208	U
7	A2	209	U
7	A2	251	G
7	A2	367	U
7	A2	411	A
7	A2	428	G
7	A2	438	U
7	A2	537	G
7	A2	717	U
7	A2	845	A
7	A2	992	U
7	A2	993	G
7	A2	1085	U
7	A2	1101	A
7	A2	1129	C
7	A2	1136	C

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Mol	Chain	Res	Type
7	A2	1140	C
7	A2	1168	U
7	A2	1190	G
7	A2	1201	A
7	A2	1256	A
7	A2	1281	C
7	A2	1297	G
7	A2	1319	A
7	A2	1534	A
7	A2	1535	C
28	V2	8	A
28	V2	23	C
28	V2	31	U
28	V2	35	A
28	V2	36	A
28	V2	37	A
28	V2	39	A
28	V2	46	C
28	V2	53	G
29	W	9	A
29	W	43	G
29	W	48	U
30	W1	21	A
30	W1	43	C
31	Y	17	H2U
31	Y	63	G
32	Y1	10	G
32	Y1	46	7MG

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

64 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
5	PSU	72	2504	5	18,21,22	4.69	8 (44%)	22,30,33	1.83	5 (22%)
31	H2U	Y	17	31	18,21,22	3.08	5 (27%)	21,30,33	2.02	5 (23%)
7	UR3	A1	1498	7	19,22,23	2.78	8 (42%)	26,32,35	1.28	2 (7%)
7	4OC	A2	1402	7	20,23,24	3.26	8 (40%)	26,32,35	0.90	1 (3%)
7	MA6	A2	1519	7	23,26,27	1.35	3 (13%)	34,38,41	3.28	14 (41%)
31	5MU	Y	54	31	19,22,23	4.14	14 (73%)	28,32,35	4.14	12 (42%)
5	1MG	72	745	5	22,26,27	2.73	5 (22%)	33,39,42	2.27	8 (24%)
31	PSU	Y	55	31	18,21,22	0.87	1 (5%)	22,30,33	0.58	0
5	PSU	72	746	5	18,21,22	0.89	1 (5%)	22,30,33	0.61	0
5	3TD	72	1915	5	19,22,23	0.82	1 (5%)	21,32,35	0.66	0
32	CM0	Y1	34	32	23,26,27	3.71	6 (26%)	27,37,40	1.58	3 (11%)
31	G7M	Y	46	31	23,26,27	2.85	9 (39%)	35,39,42	1.74	7 (20%)
29	H2U	W	20	29	18,21,22	3.07	5 (27%)	21,30,33	2.02	5 (23%)
29	MIA	W	37	29	28,31,32	2.40	5 (17%)	40,44,47	3.11	19 (47%)
29	PSU	W	55	29	18,21,22	0.87	1 (5%)	22,30,33	0.58	0
7	5MC	A1	967	7	18,22,23	4.06	7 (38%)	26,32,35	1.02	2 (7%)
30	PSU	W1	39	30	18,21,22	4.68	8 (44%)	22,30,33	1.82	5 (22%)
7	5MC	A1	1407	7	18,22,23	4.06	7 (38%)	26,32,35	0.96	2 (7%)
7	2MG	A1	1207	7	23,26,27	3.11	8 (34%)	32,38,41	2.51	11 (34%)
7	2MG	A1	1516	7	23,26,27	3.13	8 (34%)	32,38,41	2.52	11 (34%)
5	OMC	72	2498	5,48	19,22,23	3.30	8 (42%)	26,31,34	0.77	0
29	PSU	W	32	29	18,21,22	4.67	8 (44%)	22,30,33	1.91	5 (22%)
5	PSU	72	955	5	18,21,22	4.67	8 (44%)	22,30,33	1.86	5 (22%)
29	5MU	W	54	29	19,22,23	4.09	14 (73%)	28,32,35	4.01	13 (46%)
7	5MC	A2	1407	7	18,22,23	4.04	7 (38%)	26,32,35	0.97	2 (7%)
5	H2U	72	2449	5,48	18,21,22	3.06	5 (27%)	21,30,33	2.04	5 (23%)
5	2MG	72	1835	5	23,26,27	3.08	8 (34%)	32,38,41	2.56	12 (37%)
29	G7M	W	46	29	23,26,27	2.86	9 (39%)	35,39,42	1.86	7 (20%)
7	MA6	A2	1518	7	23,26,27	1.35	3 (13%)	34,38,41	3.29	14 (41%)
5	PSU	72	2604	5	18,21,22	4.66	8 (44%)	22,30,33	1.86	5 (22%)
5	OMG	72	2251	5,31	23,26,27	2.59	6 (26%)	33,38,41	2.40	10 (30%)
7	UR3	A2	1498	7	19,22,23	2.79	8 (42%)	26,32,35	1.32	3 (11%)
5	5MU	72	747	5	19,22,23	0.27	0	28,32,35	0.52	0
5	OMU	72	2552	5	19,22,23	3.22	8 (42%)	26,31,34	1.69	5 (19%)
7	4OC	A1	1402	7	20,23,24	3.25	8 (40%)	26,32,35	0.89	1 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	G7M	72	2069	5	23,26,27	2.84	9 (39%)	35,39,42	1.73	9 (25%)
5	PSU	72	2580	5	18,21,22	4.66	8 (44%)	22,30,33	1.84	6 (27%)
30	4SU	W1	8	30	18,21,22	3.81	7 (38%)	26,30,33	2.24	4 (15%)
7	MA6	A1	1519	7	23,26,27	1.34	3 (13%)	34,38,41	3.33	14 (41%)
7	G7M	A1	527	7	23,26,27	2.83	9 (39%)	35,39,42	1.72	9 (25%)
32	7MG	Y1	46	32	22,26,27	3.90	10 (45%)	29,39,42	2.04	9 (31%)
7	5MC	A2	967	7	18,22,23	4.03	7 (38%)	26,32,35	0.99	2 (7%)
5	6MZ	72	2030	5	22,25,26	2.82	5 (22%)	30,36,39	2.43	11 (36%)
7	2MG	A2	1207	7	23,26,27	3.12	8 (34%)	32,38,41	2.51	11 (34%)
5	6MZ	72	1618	5	22,25,26	2.77	4 (18%)	30,36,39	2.50	11 (36%)
32	6MZ	Y1	37	32	22,25,26	2.82	4 (18%)	30,36,39	2.49	12 (40%)
5	5MU	72	1939	5	19,22,23	4.14	15 (78%)	28,32,35	4.12	12 (42%)
30	PSU	W1	32	30	18,21,22	4.65	8 (44%)	22,30,33	1.83	5 (22%)
30	MIA	W1	37	30	28,31,32	2.44	5 (17%)	40,44,47	2.84	16 (40%)
5	2MG	72	2445	5	23,26,27	3.11	8 (34%)	32,38,41	2.53	11 (34%)
7	G7M	A2	527	7	23,26,27	2.84	9 (39%)	35,39,42	1.71	8 (22%)
7	MA6	A1	1518	7	23,26,27	1.35	4 (17%)	34,38,41	3.30	14 (41%)
5	PSU	72	2605	5	18,21,22	4.66	8 (44%)	22,30,33	1.81	5 (22%)
29	4SU	W	8	29	18,21,22	3.81	7 (38%)	26,30,33	2.26	4 (15%)
7	2MG	A1	966	7	23,26,27	3.09	8 (34%)	32,38,41	2.58	12 (37%)
5	3TD	71	1915	5	19,22,23	4.08	7 (36%)	21,32,35	1.69	2 (9%)
7	2MG	A2	1516	7	23,26,27	3.11	8 (34%)	32,38,41	2.48	11 (34%)
30	G7M	W1	46	30	23,26,27	2.85	8 (34%)	35,39,42	1.95	8 (22%)
7	2MG	A2	966	7	23,26,27	3.12	8 (34%)	32,38,41	2.51	11 (34%)
5	2MA	72	2503	5,48	22,25,26	4.11	8 (36%)	33,37,40	3.57	10 (30%)
5	PSU	72	2457	5	18,21,22	4.67	8 (44%)	22,30,33	1.87	5 (22%)
5	5MC	72	1962	5	18,22,23	4.03	7 (38%)	26,32,35	1.07	2 (7%)
29	H2U	W	16	29	18,21,22	3.04	5 (27%)	21,30,33	1.99	5 (23%)
29	H2U	W	17	29	18,21,22	3.06	5 (27%)	21,30,33	2.02	5 (23%)

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
5	PSU	72	2504	5	-	0/7/25/26	0/2/2/2
31	H2U	Y	17	31	-	7/7/38/39	0/2/2/2
7	UR3	A1	1498	7	-	2/7/25/26	0/2/2/2
7	4OC	A2	1402	7	-	1/9/29/30	0/2/2/2
7	MA6	A2	1519	7	-	2/11/29/30	0/3/3/3
31	5MU	Y	54	31	-	0/7/25/26	0/2/2/2
5	1MG	72	745	5	-	0/7/25/26	0/3/3/3
31	PSU	Y	55	31	-	0/7/25/26	0/2/2/2
5	PSU	72	746	5	-	4/7/25/26	0/2/2/2
5	3TD	72	1915	5	-	0/7/25/26	0/2/2/2
32	CM0	Y1	34	32	-	4/12/30/31	0/2/2/2
31	G7M	Y	46	31	-	2/7/25/26	0/3/3/3
29	H2U	W	20	29	-	3/7/38/39	0/2/2/2
29	MIA	W	37	29	-	6/15/33/34	0/3/3/3
29	PSU	W	55	29	-	0/7/25/26	0/2/2/2
7	5MC	A1	967	7	-	1/7/25/26	0/2/2/2
30	PSU	W1	39	30	-	0/7/25/26	0/2/2/2
7	5MC	A1	1407	7	-	0/7/25/26	0/2/2/2
7	2MG	A1	1207	7	-	0/9/27/28	0/3/3/3
7	2MG	A1	1516	7	-	0/9/27/28	0/3/3/3
5	OMC	72	2498	5,48	-	2/9/27/28	0/2/2/2
29	PSU	W	32	29	-	5/7/25/26	0/2/2/2
5	PSU	72	955	5	-	0/7/25/26	0/2/2/2
29	5MU	W	54	29	-	3/7/25/26	0/2/2/2
7	5MC	A2	1407	7	-	0/7/25/26	0/2/2/2
5	H2U	72	2449	5,48	-	0/7/38/39	0/2/2/2
5	2MG	72	1835	5	-	0/9/27/28	0/3/3/3
29	G7M	W	46	29	-	2/7/25/26	0/3/3/3
7	MA6	A2	1518	7	-	2/11/29/30	0/3/3/3
5	PSU	72	2604	5	-	0/7/25/26	0/2/2/2
5	OMG	72	2251	5,31	-	3/9/27/28	0/3/3/3
7	UR3	A2	1498	7	-	2/7/25/26	0/2/2/2
5	5MU	72	747	5	-	2/7/25/26	0/2/2/2
5	OMU	72	2552	5	-	0/9/27/28	0/2/2/2
7	4OC	A1	1402	7	-	1/9/29/30	0/2/2/2
5	G7M	72	2069	5	-	2/7/25/26	0/3/3/3
5	PSU	72	2580	5	-	0/7/25/26	0/2/2/2
30	4SU	W1	8	30	-	2/7/25/26	0/2/2/2
7	MA6	A1	1519	7	-	3/11/29/30	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	G7M	A1	527	7	-	1/7/25/26	0/3/3/3
32	7MG	Y1	46	32	-	1/7/37/38	0/3/3/3
7	5MC	A2	967	7	-	1/7/25/26	0/2/2/2
5	6MZ	72	2030	5	-	3/9/27/28	0/3/3/3
7	2MG	A2	1207	7	-	0/9/27/28	0/3/3/3
5	6MZ	72	1618	5	-	4/9/27/28	0/3/3/3
32	6MZ	Y1	37	32	-	2/9/27/28	0/3/3/3
5	5MU	72	1939	5	-	3/7/25/26	0/2/2/2
30	PSU	W1	32	30	-	0/7/25/26	0/2/2/2
30	MIA	W1	37	30	-	5/15/33/34	0/3/3/3
5	2MG	72	2445	5	-	0/9/27/28	0/3/3/3
7	G7M	A2	527	7	-	3/7/25/26	0/3/3/3
7	MA6	A1	1518	7	-	3/11/29/30	0/3/3/3
5	PSU	72	2605	5	-	0/7/25/26	0/2/2/2
29	4SU	W	8	29	-	0/7/25/26	0/2/2/2
7	2MG	A1	966	7	-	0/9/27/28	0/3/3/3
5	3TD	71	1915	5	-	1/7/25/26	0/2/2/2
7	2MG	A2	1516	7	-	0/9/27/28	0/3/3/3
30	G7M	W1	46	30	-	4/7/25/26	0/3/3/3
7	2MG	A2	966	7	-	0/9/27/28	0/3/3/3
5	2MA	72	2503	5,48	-	0/7/25/26	0/3/3/3
5	PSU	72	2457	5	-	0/7/25/26	0/2/2/2
5	5MC	72	1962	5	-	0/7/25/26	0/2/2/2
29	H2U	W	16	29	-	1/7/38/39	0/2/2/2
29	H2U	W	17	29	-	2/7/38/39	0/2/2/2

All (436) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	71	1915	3TD	C6-C5	12.66	1.50	1.35
32	Y1	34	CM0	C6-C5	12.62	1.48	1.34
5	72	2503	2MA	C4-N3	12.46	1.50	1.34
5	72	2504	PSU	C6-C5	12.23	1.49	1.35
5	72	955	PSU	C6-C5	12.20	1.49	1.35
30	W1	39	PSU	C6-C5	12.20	1.49	1.35
5	72	2457	PSU	C6-C5	12.18	1.49	1.35
29	W	32	PSU	C6-C5	12.18	1.49	1.35
5	72	2580	PSU	C6-C5	12.17	1.49	1.35
5	72	2604	PSU	C6-C5	12.15	1.49	1.35
5	72	2605	PSU	C6-C5	12.11	1.49	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	W1	32	PSU	C6-C5	12.09	1.49	1.35
5	72	2030	6MZ	C6-N6	11.96	1.47	1.34
32	Y1	37	6MZ	C6-N6	11.95	1.47	1.34
5	72	1618	6MZ	C6-N6	11.74	1.46	1.34
32	Y1	46	7MG	C8-N9	10.05	1.51	1.46
29	W	54	5MU	C3'-C2'	-10.03	1.25	1.53
7	A1	967	5MC	C6-C5	10.00	1.51	1.34
7	A1	1407	5MC	C6-C5	9.92	1.50	1.34
5	72	1939	5MU	C3'-C2'	-9.92	1.26	1.53
5	72	1962	5MC	C6-C5	9.88	1.50	1.34
7	A2	1407	5MC	C6-C5	9.88	1.50	1.34
7	A2	967	5MC	C6-C5	9.84	1.50	1.34
31	Y	54	5MU	C3'-C2'	-9.77	1.26	1.53
5	72	2504	PSU	C2-N1	9.65	1.49	1.36
5	72	2457	PSU	C2-N1	9.64	1.49	1.36
29	W	32	PSU	C2-N1	9.64	1.49	1.36
5	72	2605	PSU	C2-N1	9.59	1.49	1.36
5	72	2604	PSU	C2-N1	9.58	1.49	1.36
5	72	955	PSU	C2-N1	9.57	1.49	1.36
30	W1	39	PSU	C2-N1	9.57	1.49	1.36
30	W1	32	PSU	C2-N1	9.55	1.49	1.36
5	72	2580	PSU	C2-N1	9.52	1.49	1.36
5	72	2449	H2U	C2-N1	9.46	1.49	1.35
29	W	20	H2U	C2-N1	9.44	1.49	1.35
31	Y	17	H2U	C2-N1	9.41	1.49	1.35
29	W	17	H2U	C2-N1	9.40	1.49	1.35
29	W	16	H2U	C2-N1	9.33	1.48	1.35
30	W1	8	4SU	C4-N3	9.00	1.47	1.37
29	W	8	4SU	C4-N3	8.99	1.47	1.37
5	71	1915	3TD	C2-N1	8.87	1.48	1.37
30	W1	39	PSU	C2-N3	8.32	1.51	1.37
5	72	2504	PSU	C2-N3	8.32	1.51	1.37
30	W1	32	PSU	C2-N3	8.31	1.51	1.37
5	72	2604	PSU	C2-N3	8.29	1.51	1.37
7	A1	1516	2MG	C2-N3	8.29	1.47	1.31
7	A2	966	2MG	C2-N3	8.29	1.47	1.31
5	72	2605	PSU	C2-N3	8.27	1.51	1.37
29	W	32	PSU	C2-N3	8.26	1.51	1.37
7	A2	1207	2MG	C2-N3	8.26	1.47	1.31
5	72	2457	PSU	C2-N3	8.25	1.51	1.37
7	A2	1516	2MG	C2-N3	8.24	1.47	1.31
5	72	2445	2MG	C2-N3	8.24	1.47	1.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	72	2580	PSU	C2-N3	8.23	1.51	1.37
5	72	955	PSU	C2-N3	8.21	1.51	1.37
30	W1	37	MIA	C6-N6	8.20	1.47	1.34
7	A1	1207	2MG	C2-N3	8.16	1.47	1.31
7	A1	966	2MG	C2-N3	8.14	1.47	1.31
5	72	1835	2MG	C2-N3	8.05	1.47	1.31
5	72	2503	2MA	C2-N3	8.05	1.48	1.34
29	W	37	MIA	C2-S10	8.02	1.82	1.75
32	Y1	46	7MG	C5-N7	7.96	1.44	1.35
30	W1	37	MIA	C2-S10	7.80	1.82	1.75
29	W	37	MIA	C6-N6	7.57	1.46	1.34
32	Y1	34	CM0	C2-N1	7.52	1.50	1.38
7	A2	967	5MC	C4-N3	7.50	1.46	1.34
5	72	1962	5MC	C4-N3	7.48	1.46	1.34
7	A1	967	5MC	C4-N3	7.46	1.46	1.34
7	A1	1407	5MC	C4-N3	7.46	1.46	1.34
7	A2	1407	5MC	C4-N3	7.42	1.46	1.34
7	A2	1498	UR3	C2-N1	7.25	1.48	1.38
5	72	2251	OMG	C2-N2	7.22	1.51	1.34
7	A2	1402	4OC	C4-N3	7.20	1.45	1.32
7	A1	1498	UR3	C2-N1	7.19	1.48	1.38
7	A1	1402	4OC	C4-N3	7.08	1.45	1.32
5	72	2552	OMU	C2-N3	7.05	1.50	1.38
32	Y1	34	CM0	C2-N3	7.03	1.50	1.38
29	W	8	4SU	C2-N3	7.02	1.50	1.38
7	A1	1516	2MG	C4-N3	7.02	1.50	1.34
5	72	2445	2MG	C4-N3	7.01	1.50	1.34
5	72	745	1MG	C2-N3	7.01	1.47	1.34
5	72	1962	5MC	C2-N3	7.01	1.50	1.36
7	A1	1407	5MC	C2-N3	6.99	1.50	1.36
5	72	2498	OMC	C2-N3	6.99	1.50	1.36
7	A1	967	5MC	C2-N3	6.97	1.50	1.36
7	A2	967	5MC	C2-N3	6.96	1.50	1.36
7	A2	1407	5MC	C2-N3	6.96	1.50	1.36
30	W1	8	4SU	C2-N3	6.94	1.50	1.38
7	A2	966	2MG	C4-N3	6.94	1.50	1.34
7	A2	1207	2MG	C4-N3	6.93	1.50	1.34
5	72	1835	2MG	C4-N3	6.91	1.50	1.34
7	A1	966	2MG	C4-N3	6.88	1.50	1.34
7	A2	1516	2MG	C4-N3	6.88	1.50	1.34
7	A1	1207	2MG	C4-N3	6.88	1.50	1.34
5	72	2503	2MA	C6-N1	6.87	1.44	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	W1	46	G7M	C4-N3	6.78	1.50	1.34
29	W	46	G7M	C4-N3	6.73	1.50	1.34
31	Y	46	G7M	C4-N3	6.63	1.50	1.34
30	W1	46	G7M	C2-N2	6.60	1.49	1.34
5	72	2069	G7M	C4-N3	6.60	1.50	1.34
31	Y	46	G7M	C2-N2	6.59	1.49	1.34
7	A1	527	G7M	C4-N3	6.59	1.49	1.34
5	72	2069	G7M	C2-N2	6.57	1.49	1.34
7	A1	1516	2MG	C2-N2	6.56	1.48	1.33
29	W	46	G7M	C2-N2	6.56	1.49	1.34
7	A1	527	G7M	C2-N2	6.55	1.49	1.34
5	72	2552	OMU	C2-N1	6.54	1.48	1.38
7	A2	527	G7M	C2-N2	6.54	1.49	1.34
7	A2	527	G7M	C4-N3	6.54	1.49	1.34
7	A2	966	2MG	C2-N2	6.52	1.47	1.33
29	W	20	H2U	C2-N3	6.52	1.49	1.38
7	A1	1207	2MG	C2-N2	6.52	1.47	1.33
5	72	745	1MG	C4-N3	6.51	1.49	1.34
7	A2	1516	2MG	C2-N2	6.50	1.47	1.33
31	Y	17	H2U	C2-N3	6.50	1.49	1.38
7	A2	1207	2MG	C2-N2	6.47	1.47	1.33
29	W	17	H2U	C2-N3	6.47	1.49	1.38
5	72	2449	H2U	C2-N3	6.47	1.49	1.38
5	72	2445	2MG	C2-N2	6.46	1.47	1.33
7	A1	1402	4OC	C6-C5	6.45	1.50	1.35
29	W	16	H2U	C2-N3	6.44	1.49	1.38
7	A1	966	2MG	C2-N2	6.44	1.47	1.33
5	72	1835	2MG	C2-N2	6.40	1.47	1.33
5	72	745	1MG	C2-N2	6.38	1.45	1.34
7	A2	1402	4OC	C6-C5	6.36	1.49	1.35
31	Y	54	5MU	C2-N1	-6.33	1.28	1.38
7	A2	1402	4OC	C2-N3	6.29	1.49	1.36
7	A1	1402	4OC	C2-N3	6.28	1.49	1.36
7	A2	1498	UR3	C6-C5	6.19	1.49	1.35
5	72	2503	2MA	C2-N1	6.17	1.45	1.34
7	A1	1498	UR3	C6-C5	6.17	1.49	1.35
5	72	2498	OMC	C6-C5	6.16	1.49	1.35
5	72	1939	5MU	C2-N1	-6.04	1.28	1.38
5	72	2251	OMG	C4-N3	6.02	1.48	1.34
29	W	8	4SU	C4-S4	-5.99	1.57	1.68
30	W1	8	4SU	C4-S4	-5.97	1.57	1.68
31	Y	46	G7M	C2-N3	5.93	1.47	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	W1	46	G7M	C2-N3	5.89	1.47	1.33
29	W	8	4SU	C2-N1	5.87	1.47	1.38
7	A2	527	G7M	C2-N3	5.85	1.47	1.33
30	W1	8	4SU	C6-C5	5.84	1.48	1.35
5	72	2504	PSU	C6-N1	5.84	1.45	1.36
29	W	46	G7M	C2-N3	5.84	1.47	1.33
30	W1	39	PSU	C6-N1	5.84	1.45	1.36
32	Y1	46	7MG	C2-N3	5.83	1.47	1.33
7	A1	527	G7M	C2-N3	5.83	1.47	1.33
5	72	2580	PSU	C6-N1	5.82	1.45	1.36
30	W1	8	4SU	C2-N1	5.81	1.47	1.38
5	72	2604	PSU	C6-N1	5.81	1.45	1.36
5	72	2069	G7M	C2-N3	5.80	1.47	1.33
30	W1	32	PSU	C6-N1	5.80	1.45	1.36
5	72	2457	PSU	C6-N1	5.79	1.45	1.36
29	W	32	PSU	C6-N1	5.78	1.45	1.36
5	72	2605	PSU	C6-N1	5.78	1.45	1.36
29	W	54	5MU	C2-N1	-5.76	1.29	1.38
5	72	955	PSU	C6-N1	5.75	1.45	1.36
29	W	8	4SU	C6-C5	5.73	1.48	1.35
7	A1	967	5MC	C4-N4	5.70	1.48	1.34
7	A1	1407	5MC	C4-N4	5.70	1.48	1.34
7	A2	1407	5MC	C6-N1	5.68	1.47	1.38
7	A2	967	5MC	C4-N4	5.67	1.48	1.34
7	A2	1407	5MC	C4-N4	5.67	1.48	1.34
7	A1	1407	5MC	C6-N1	5.66	1.47	1.38
32	Y1	46	7MG	C4-N3	5.65	1.47	1.34
5	72	1962	5MC	C4-N4	5.63	1.48	1.34
32	Y1	46	7MG	C4-N9	5.63	1.44	1.37
7	A1	967	5MC	C6-N1	5.60	1.47	1.38
5	72	2498	OMC	C4-N3	5.55	1.45	1.34
5	71	1915	3TD	C6-N1	5.53	1.45	1.36
7	A2	967	5MC	C6-N1	5.53	1.47	1.38
5	72	2552	OMU	C6-C5	5.49	1.47	1.35
7	A1	1207	2MG	C2-N1	5.47	1.45	1.36
5	72	1962	5MC	C6-N1	5.45	1.47	1.38
7	A1	966	2MG	C2-N1	5.45	1.45	1.36
5	72	1835	2MG	C2-N1	5.45	1.45	1.36
7	A2	1207	2MG	C2-N1	5.43	1.45	1.36
7	A2	966	2MG	C2-N1	5.41	1.45	1.36
5	72	1939	5MU	O4'-C1'	-5.41	1.29	1.42
7	A2	1516	2MG	C2-N1	5.41	1.45	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	Y	54	5MU	O4'-C1'	-5.39	1.29	1.42
7	A1	1516	2MG	C2-N1	5.37	1.45	1.36
5	72	2445	2MG	C2-N1	5.35	1.45	1.36
5	72	2503	2MA	C5-C6	5.31	1.55	1.41
5	72	2251	OMG	C2-N3	5.30	1.46	1.33
7	A1	1498	UR3	C2-N3	5.24	1.49	1.39
5	72	2498	OMC	C4-N4	5.22	1.46	1.33
7	A2	1498	UR3	C2-N3	5.20	1.49	1.39
7	A2	1402	4OC	C4-N4	5.12	1.46	1.35
7	A1	1402	4OC	C4-N4	5.10	1.46	1.35
29	W	54	5MU	O4'-C1'	-5.01	1.30	1.42
29	W	17	H2U	C4-N3	4.94	1.46	1.37
31	Y	17	H2U	C4-N3	4.94	1.46	1.37
29	W	20	H2U	C4-N3	4.93	1.46	1.37
5	72	2449	H2U	C4-N3	4.90	1.45	1.37
29	W	16	H2U	C4-N3	4.88	1.45	1.37
5	72	1939	5MU	C2-N3	-4.75	1.29	1.38
32	Y1	46	7MG	C2-N2	4.74	1.45	1.34
31	Y	54	5MU	C2-N3	-4.66	1.29	1.38
5	72	1962	5MC	C2-N1	4.64	1.50	1.40
5	72	2552	OMU	C4-N3	4.64	1.46	1.38
29	W	54	5MU	C2-N3	-4.63	1.29	1.38
7	A1	967	5MC	C2-N1	4.60	1.50	1.40
7	A1	1407	5MC	C2-N1	4.59	1.49	1.40
31	Y	54	5MU	C2'-C1'	4.57	1.68	1.53
29	W	54	5MU	C2'-C1'	4.57	1.68	1.53
7	A2	1407	5MC	C2-N1	4.55	1.49	1.40
7	A2	967	5MC	C2-N1	4.54	1.49	1.40
29	W	54	5MU	O4'-C4'	4.52	1.55	1.45
5	72	1939	5MU	O4'-C4'	4.52	1.55	1.45
31	Y	54	5MU	C5'-C4'	-4.49	1.37	1.51
5	72	2498	OMC	C2-N1	4.48	1.49	1.40
29	W	54	5MU	C5'-C4'	-4.48	1.37	1.51
31	Y	54	5MU	C6-N1	-4.44	1.30	1.38
5	72	2504	PSU	C4-N3	4.43	1.47	1.38
5	72	955	PSU	C4-N3	4.42	1.47	1.38
30	W1	32	PSU	C4-N3	4.41	1.47	1.38
5	72	1939	5MU	C6-N1	-4.40	1.30	1.38
5	72	2552	OMU	O4-C4	-4.39	1.16	1.24
29	W	46	G7M	C5-N7	-4.38	1.34	1.39
5	72	2580	PSU	C4-N3	4.37	1.46	1.38
32	Y1	34	CM0	C6-N1	4.36	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A2	1402	4OC	C2-N1	4.36	1.49	1.40
30	W1	39	PSU	C4-N3	4.35	1.46	1.38
5	72	2605	PSU	C4-N3	4.35	1.46	1.38
5	72	2457	PSU	C4-N3	4.34	1.46	1.38
29	W	54	5MU	C6-N1	-4.33	1.30	1.38
29	W	32	PSU	C4-N3	4.31	1.46	1.38
5	72	2604	PSU	C4-N3	4.30	1.46	1.38
5	72	1939	5MU	C5'-C4'	-4.30	1.38	1.51
7	A1	1402	4OC	C2-N1	4.29	1.49	1.40
5	71	1915	3TD	C2-N3	4.25	1.48	1.38
5	72	1939	5MU	C2'-C1'	4.24	1.67	1.53
30	W1	46	G7M	C5-N7	-4.22	1.34	1.39
31	Y	54	5MU	O4'-C4'	4.21	1.54	1.45
7	A2	527	G7M	C5-N7	-4.18	1.34	1.39
5	72	2498	OMC	O2-C2	-4.15	1.16	1.23
5	72	2069	G7M	C5-N7	-4.14	1.34	1.39
31	Y	46	G7M	C5-N7	-4.10	1.34	1.39
7	A1	527	G7M	C5-N7	-4.06	1.34	1.39
7	A1	1402	4OC	C5-C4	4.00	1.49	1.40
31	Y	46	G7M	C5-C6	3.95	1.54	1.43
30	W1	46	G7M	C5-C6	3.95	1.54	1.43
7	A2	1402	4OC	C5-C4	3.95	1.49	1.40
29	W	46	G7M	C5-C6	3.92	1.54	1.43
7	A2	527	G7M	C5-C6	3.92	1.54	1.43
7	A1	527	G7M	C5-C6	3.91	1.54	1.43
5	72	2069	G7M	C5-C6	3.90	1.54	1.43
5	72	2498	OMC	C6-N1	3.87	1.47	1.38
7	A1	1519	MA6	C6-N6	3.87	1.48	1.36
7	A2	1519	MA6	C6-N6	3.86	1.48	1.36
32	Y1	34	CM0	C4-N3	3.85	1.46	1.38
7	A1	1518	MA6	C6-N6	3.84	1.48	1.36
7	A2	1518	MA6	C6-N6	3.84	1.48	1.36
32	Y1	46	7MG	C2-N1	3.83	1.47	1.37
5	72	2552	OMU	C6-N1	3.73	1.47	1.38
5	72	2503	2MA	C5-N7	-3.57	1.32	1.39
31	Y	54	5MU	C6-C5	3.56	1.40	1.34
5	72	2552	OMU	O2-C2	-3.54	1.16	1.23
30	W1	8	4SU	C5-C4	3.54	1.47	1.42
32	Y1	46	7MG	C5-C6	3.54	1.52	1.43
5	72	745	1MG	C5-C6	3.50	1.54	1.45
5	72	1939	5MU	C6-C5	3.45	1.40	1.34
5	72	746	PSU	C6-C5	3.44	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	W	54	5MU	C6-C5	3.43	1.40	1.34
32	Y1	46	7MG	C6-N1	3.42	1.45	1.38
30	W1	8	4SU	C6-N1	3.42	1.46	1.38
29	W	55	PSU	C6-C5	3.42	1.39	1.35
5	72	2503	2MA	C8-N7	3.41	1.38	1.31
29	W	8	4SU	C5-C4	3.41	1.47	1.42
29	W	8	4SU	C6-N1	3.39	1.46	1.38
7	A1	1402	4OC	C6-N1	3.38	1.46	1.38
31	Y	55	PSU	C6-C5	3.35	1.39	1.35
5	72	2251	OMG	C2-N1	3.35	1.46	1.37
5	72	1915	3TD	C6-C5	3.35	1.39	1.35
5	72	1939	5MU	C4-N3	-3.30	1.32	1.38
7	A2	1402	4OC	C6-N1	3.29	1.45	1.38
31	Y	54	5MU	C4-N3	-3.23	1.32	1.38
29	W	54	5MU	C4-N3	-3.21	1.32	1.38
5	72	955	PSU	O4-C4	-3.20	1.17	1.23
5	72	2580	PSU	O4-C4	-3.16	1.17	1.23
5	72	2605	PSU	O4-C4	-3.15	1.17	1.23
29	W	32	PSU	O4-C4	-3.15	1.17	1.23
30	W1	39	PSU	O4-C4	-3.13	1.17	1.23
5	72	2604	PSU	O4-C4	-3.13	1.17	1.23
5	72	2457	PSU	O4-C4	-3.13	1.17	1.23
31	Y	54	5MU	O3'-C3'	3.12	1.50	1.43
30	W1	32	PSU	O4-C4	-3.11	1.17	1.23
7	A1	1498	UR3	C6-N1	3.10	1.45	1.38
7	A2	1498	UR3	C6-N1	3.10	1.45	1.38
5	72	1939	5MU	O3'-C3'	3.10	1.50	1.43
31	Y	46	G7M	C6-N1	3.09	1.44	1.38
5	72	2504	PSU	O4-C4	-3.08	1.17	1.23
29	W	54	5MU	O3'-C3'	3.07	1.50	1.43
7	A2	527	G7M	C2-N1	3.06	1.45	1.37
7	A1	527	G7M	C2-N1	3.06	1.45	1.37
30	W1	46	G7M	C6-N1	3.05	1.44	1.38
31	Y	46	G7M	C2-N1	3.04	1.45	1.37
5	72	2069	G7M	C2-N1	3.04	1.45	1.37
5	72	2069	G7M	C6-N1	3.03	1.44	1.38
7	A2	527	G7M	C6-N1	3.01	1.44	1.38
29	W	46	G7M	C2-N1	3.00	1.45	1.37
30	W1	46	G7M	C2-N1	3.00	1.45	1.37
5	72	2445	2MG	C5-C6	2.96	1.55	1.44
7	A1	1516	2MG	C5-C6	2.96	1.55	1.44
7	A1	527	G7M	C6-N1	2.96	1.44	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A2	1207	2MG	C5-C6	2.95	1.55	1.44
29	W	46	G7M	C6-N1	2.94	1.44	1.38
7	A1	966	2MG	C5-C6	2.94	1.55	1.44
5	72	1835	2MG	C5-C6	2.93	1.55	1.44
7	A2	1516	2MG	C5-C6	2.92	1.55	1.44
7	A1	1207	2MG	C5-C6	2.91	1.55	1.44
7	A2	966	2MG	C5-C6	2.90	1.55	1.44
7	A1	1516	2MG	C6-N1	2.86	1.44	1.38
5	72	2498	OMC	C5-C4	2.85	1.49	1.42
5	72	1835	2MG	C6-N1	2.85	1.44	1.38
5	72	2580	PSU	C1'-C5	2.82	1.56	1.50
7	A1	966	2MG	C6-N1	2.82	1.44	1.38
5	72	2504	PSU	C1'-C5	2.81	1.56	1.50
5	72	2605	PSU	C1'-C5	2.80	1.56	1.50
7	A1	1207	2MG	C6-N1	2.77	1.44	1.38
5	72	2445	2MG	C6-N1	2.77	1.44	1.38
30	W1	39	PSU	C1'-C5	2.77	1.56	1.50
30	W1	32	PSU	C1'-C5	2.76	1.56	1.50
5	72	955	PSU	C1'-C5	2.76	1.56	1.50
7	A2	1516	2MG	C6-N1	2.75	1.43	1.38
5	72	2445	2MG	C5-N7	-2.75	1.33	1.39
7	A2	1207	2MG	C5-N7	-2.74	1.33	1.39
7	A2	966	2MG	C6-N1	2.73	1.43	1.38
5	72	2457	PSU	C1'-C5	2.73	1.56	1.50
7	A1	1207	2MG	C5-N7	-2.73	1.33	1.39
7	A2	1207	2MG	C6-N1	2.72	1.43	1.38
7	A2	966	2MG	C5-N7	-2.72	1.33	1.39
5	72	1939	5MU	C3'-C4'	2.72	1.59	1.53
7	A2	1516	2MG	C5-N7	-2.72	1.33	1.39
5	72	1835	2MG	C5-N7	-2.71	1.33	1.39
5	72	2604	PSU	C1'-C5	2.71	1.56	1.50
7	A2	1402	4OC	O2-C2	-2.71	1.18	1.23
7	A1	1402	4OC	O2-C2	-2.69	1.18	1.23
29	W	32	PSU	C1'-C5	2.68	1.56	1.50
7	A1	1516	2MG	C5-N7	-2.67	1.33	1.39
5	72	1939	5MU	O4-C4	-2.66	1.18	1.23
5	72	745	1MG	C5-N7	-2.66	1.33	1.39
5	71	1915	3TD	C1'-C5	2.63	1.56	1.50
7	A1	966	2MG	C5-N7	-2.63	1.34	1.39
5	71	1915	3TD	C4-N3	2.63	1.46	1.40
32	Y1	34	CM0	O5-C7	-2.61	1.38	1.44
5	72	2605	PSU	O2-C2	-2.60	1.17	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	W1	37	MIA	C5-N7	-2.60	1.34	1.39
5	72	2604	PSU	O2-C2	-2.59	1.18	1.23
29	W	54	5MU	O4-C4	-2.59	1.18	1.23
29	W	32	PSU	O2-C2	-2.58	1.18	1.23
5	72	2504	PSU	O2-C2	-2.58	1.18	1.23
30	W1	39	PSU	O2-C2	-2.58	1.18	1.23
29	W	37	MIA	C5-C4	-2.57	1.34	1.39
5	72	955	PSU	O2-C2	-2.57	1.18	1.23
30	W1	32	PSU	O2-C2	-2.56	1.18	1.23
5	72	2457	PSU	O2-C2	-2.56	1.18	1.23
5	72	2580	PSU	O2-C2	-2.54	1.18	1.23
5	72	1618	6MZ	C5-N7	-2.54	1.34	1.39
31	Y	54	5MU	O4-C4	-2.53	1.18	1.23
31	Y	54	5MU	O2-C2	-2.52	1.18	1.23
32	Y1	46	7MG	O6-C6	-2.50	1.18	1.23
29	W	37	MIA	C5-N7	-2.49	1.34	1.39
5	72	2030	6MZ	C5-N7	-2.47	1.34	1.39
29	W	46	G7M	O6-C6	-2.47	1.18	1.23
5	72	2069	G7M	O6-C6	-2.45	1.18	1.23
32	Y1	37	6MZ	C5-N7	-2.45	1.34	1.39
7	A1	527	G7M	O6-C6	-2.43	1.19	1.23
31	Y	46	G7M	O6-C6	-2.42	1.19	1.23
5	72	2251	OMG	C5-C6	2.42	1.53	1.44
30	W1	46	G7M	O6-C6	-2.41	1.19	1.23
7	A2	527	G7M	O6-C6	-2.39	1.19	1.23
30	W1	37	MIA	C5-C4	-2.37	1.34	1.39
5	72	2552	OMU	C5-C4	2.37	1.48	1.43
5	72	2445	2MG	O6-C6	-2.35	1.19	1.23
7	A1	1516	2MG	O6-C6	-2.34	1.19	1.23
7	A2	1516	2MG	O6-C6	-2.32	1.19	1.23
31	Y	54	5MU	C3'-C4'	2.31	1.58	1.53
7	A2	1207	2MG	O6-C6	-2.31	1.19	1.23
7	A2	966	2MG	O6-C6	-2.31	1.19	1.23
7	A1	1498	UR3	C5-C4	2.29	1.49	1.43
5	72	1835	2MG	O6-C6	-2.29	1.19	1.23
5	72	1939	5MU	O2-C2	-2.28	1.18	1.23
7	A1	1207	2MG	O6-C6	-2.28	1.19	1.23
7	A1	966	2MG	O6-C6	-2.27	1.19	1.23
5	72	2449	H2U	O2-C2	-2.27	1.18	1.23
7	A1	1407	5MC	O2-C2	-2.27	1.19	1.23
31	Y	17	H2U	O2-C2	-2.27	1.18	1.23
5	71	1915	3TD	O4-C4	-2.26	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A2	1498	UR3	C5-C4	2.26	1.49	1.43
7	A1	1498	UR3	C4-N3	2.26	1.45	1.40
29	W	54	5MU	O2-C2	-2.26	1.18	1.23
29	W	20	H2U	O2-C2	-2.25	1.18	1.23
7	A2	967	5MC	O2-C2	-2.24	1.19	1.23
7	A1	1518	MA6	C5-C4	-2.23	1.34	1.39
7	A2	1518	MA6	C5-C4	-2.23	1.34	1.39
5	72	1962	5MC	O2-C2	-2.23	1.19	1.23
29	W	16	H2U	O2-C2	-2.23	1.19	1.23
7	A2	1519	MA6	C5-C4	-2.22	1.34	1.39
7	A2	1407	5MC	O2-C2	-2.22	1.19	1.23
7	A2	1498	UR3	C4-N3	2.20	1.45	1.40
29	W	17	H2U	O2-C2	-2.19	1.19	1.23
7	A2	1519	MA6	C5-N7	-2.19	1.34	1.39
7	A1	967	5MC	O2-C2	-2.19	1.19	1.23
7	A2	527	G7M	C8-N7	2.18	1.37	1.33
7	A2	1518	MA6	C5-N7	-2.17	1.34	1.39
7	A1	1519	MA6	C5-N7	-2.17	1.34	1.39
31	Y	46	G7M	C8-N7	2.17	1.37	1.33
7	A1	527	G7M	C8-N7	2.17	1.36	1.33
5	72	1618	6MZ	C6-N1	-2.17	1.31	1.35
29	W	20	H2U	O4-C4	-2.17	1.18	1.23
29	W	54	5MU	O5'-C5'	-2.15	1.39	1.44
5	72	2503	2MA	C6-N6	-2.15	1.28	1.34
5	72	1939	5MU	C1'-N1	-2.15	1.41	1.47
7	A1	1518	MA6	C5-N7	-2.14	1.35	1.39
32	Y1	37	6MZ	C5-C4	-2.14	1.35	1.39
7	A2	1498	UR3	O2-C2	-2.13	1.18	1.22
7	A1	1519	MA6	C5-C4	-2.13	1.35	1.39
5	72	2069	G7M	C8-N7	2.13	1.36	1.33
29	W	16	H2U	O4-C4	-2.13	1.18	1.23
29	W	17	H2U	O4-C4	-2.12	1.19	1.23
7	A2	1498	UR3	O4-C4	-2.12	1.19	1.23
31	Y	17	H2U	O4-C4	-2.12	1.19	1.23
7	A1	1498	UR3	O4-C4	-2.11	1.19	1.23
5	72	2449	H2U	O4-C4	-2.09	1.19	1.23
29	W	46	G7M	C8-N7	2.08	1.36	1.33
5	72	1618	6MZ	C5-C4	-2.08	1.35	1.39
5	72	2030	6MZ	C6-N1	-2.07	1.31	1.35
5	72	2251	OMG	C8-N7	2.07	1.38	1.32
5	72	2030	6MZ	C5-C4	-2.06	1.35	1.39
5	72	2030	6MZ	C2-N1	2.05	1.37	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	W	37	MIA	C8-N9	-2.04	1.33	1.37
32	Y1	37	6MZ	C6-N1	-2.03	1.31	1.35
7	A1	1498	UR3	O2-C2	-2.03	1.18	1.22
30	W1	37	MIA	C8-N9	-2.02	1.33	1.37
7	A1	1518	MA6	C8-N7	2.00	1.35	1.31

All (443) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	72	2503	2MA	C1'-N9-C8	-12.91	97.98	127.14
7	A1	1519	MA6	N1-C6-N6	-12.03	103.93	117.08
7	A1	1518	MA6	N1-C6-N6	-11.84	104.14	117.08
7	A2	1519	MA6	N1-C6-N6	-11.78	104.21	117.08
7	A2	1518	MA6	N1-C6-N6	-11.62	104.38	117.08
29	W	37	MIA	C11-S10-C2	11.45	110.82	102.27
5	72	2503	2MA	C4-N9-C1'	11.31	153.54	126.59
30	W1	37	MIA	C11-S10-C2	10.67	110.23	102.27
31	Y	54	5MU	C4-N3-C2	-9.10	115.57	127.35
29	W	54	5MU	C5M-C5-C4	9.07	128.75	118.77
5	72	1939	5MU	C4-N3-C2	-9.06	115.61	127.35
31	Y	54	5MU	N3-C2-N1	8.69	126.42	114.89
31	Y	54	5MU	C5M-C5-C4	8.65	128.28	118.77
5	72	1939	5MU	C5M-C5-C4	8.53	128.16	118.77
5	72	1939	5MU	C5-C6-N1	-8.48	114.61	123.34
29	W	54	5MU	C4-N3-C2	-8.44	116.42	127.35
31	Y	54	5MU	C5-C6-N1	-8.40	114.70	123.34
5	72	1939	5MU	N3-C2-N1	8.26	125.85	114.89
29	W	54	5MU	N3-C2-N1	8.08	125.61	114.89
30	W1	8	4SU	C4-N3-C2	-7.87	119.69	127.34
29	W	8	4SU	C4-N3-C2	-7.77	119.79	127.34
29	W	54	5MU	C5-C6-N1	-7.51	115.61	123.34
29	W	54	5MU	C5M-C5-C6	-7.21	113.22	122.85
31	Y	54	5MU	C5M-C5-C6	-7.21	113.23	122.85
5	72	2449	H2U	C4-N3-C2	-7.15	119.86	125.79
5	72	1835	2MG	C2-N3-C4	7.11	120.86	112.04
29	W	17	H2U	C4-N3-C2	-7.02	119.97	125.79
29	W	20	H2U	C4-N3-C2	-7.01	119.98	125.79
31	Y	17	H2U	C4-N3-C2	-7.01	119.98	125.79
5	72	1939	5MU	C5M-C5-C6	-6.92	113.61	122.85
5	72	2445	2MG	C2-N3-C4	6.90	120.59	112.04
5	72	2251	OMG	C1'-N9-C8	-6.89	107.08	126.70
29	W	16	H2U	C4-N3-C2	-6.85	120.11	125.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	W1	37	MIA	C5-C4-N3	-6.82	119.52	127.19
5	72	1939	5MU	C5-C4-N3	6.78	121.09	115.31
7	A1	1516	2MG	C2-N3-C4	6.70	120.34	112.04
7	A2	1207	2MG	C2-N3-C4	6.61	120.24	112.04
7	A2	966	2MG	C2-N3-C4	6.59	120.21	112.04
7	A1	966	2MG	C2-N3-C4	6.52	120.12	112.04
5	72	745	1MG	C1'-N9-C4	-6.50	107.18	126.50
7	A2	1516	2MG	C2-N3-C4	6.50	120.10	112.04
29	W	37	MIA	C5-C4-N3	-6.31	120.09	127.19
7	A1	1207	2MG	C2-N3-C4	6.31	119.86	112.04
7	A1	1519	MA6	C5-C6-N6	6.29	136.26	125.30
31	Y	54	5MU	C5-C4-N3	6.22	120.62	115.31
7	A2	1519	MA6	C5-C6-N6	6.19	136.08	125.30
7	A1	1518	MA6	C5-C6-N6	6.16	136.03	125.30
29	W	54	5MU	C5-C4-N3	6.14	120.56	115.31
5	72	745	1MG	C1'-N9-C8	6.10	144.05	126.70
7	A2	1518	MA6	C5-C6-N6	6.05	135.84	125.30
5	72	2503	2MA	C5-C4-N3	-5.96	120.48	127.19
7	A1	966	2MG	C1'-N9-C4	-5.95	108.83	126.50
5	72	1618	6MZ	C5-C4-N3	-5.94	119.00	126.75
7	A1	1207	2MG	C1'-N9-C4	-5.93	108.89	126.50
7	A1	1207	2MG	C1'-N9-C8	5.76	143.10	126.70
7	A1	966	2MG	C1'-N9-C8	5.76	143.09	126.70
5	72	1835	2MG	C5-C4-N3	-5.74	119.16	128.46
5	72	2251	OMG	C1'-N9-C4	5.69	143.39	126.50
5	72	2445	2MG	C5-C4-N3	-5.66	119.28	128.46
29	W	37	MIA	N6-C6-N1	-5.61	111.33	118.50
7	A2	1519	MA6	N1-C2-N3	-5.57	119.88	128.60
5	72	1618	6MZ	N1-C2-N3	-5.55	119.92	128.60
30	W1	8	4SU	C5-C4-N3	5.55	119.84	114.69
32	Y1	37	6MZ	N1-C2-N3	-5.54	119.94	128.60
7	A1	1519	MA6	N1-C2-N3	-5.51	119.98	128.60
29	W	8	4SU	C5-C4-N3	5.51	119.80	114.69
7	A1	1518	MA6	N1-C2-N3	-5.48	120.03	128.60
7	A2	1518	MA6	N1-C2-N3	-5.47	120.05	128.60
32	Y1	34	CM0	C4-N3-C2	-5.46	120.28	127.35
7	A2	1516	2MG	C1'-N9-C4	-5.46	110.28	126.50
5	72	2030	6MZ	N1-C2-N3	-5.45	120.08	128.60
7	A1	1516	2MG	C1'-N9-C4	-5.45	110.32	126.50
7	A2	966	2MG	C1'-N9-C4	-5.43	110.36	126.50
7	A2	1518	MA6	C1'-N9-C8	-5.42	114.91	127.14
7	A2	1207	2MG	C1'-N9-C4	-5.36	110.57	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	A2	1207	2MG	C5-C4-N3	-5.34	119.80	128.46
5	72	2030	6MZ	C5-C4-N3	-5.34	119.79	126.75
7	A1	1516	2MG	C5-C4-N3	-5.31	119.84	128.46
7	A2	966	2MG	C5-C4-N3	-5.31	119.85	128.46
5	71	1915	3TD	N1-C2-N3	5.30	120.32	116.14
31	Y	54	5MU	O2-C2-N1	-5.29	115.75	122.79
7	A2	1207	2MG	C1'-N9-C8	5.29	141.74	126.70
7	A2	966	2MG	C1'-N9-C8	5.28	141.72	126.70
32	Y1	37	6MZ	C5-C4-N3	-5.26	119.89	126.75
7	A2	1516	2MG	C1'-N9-C8	5.25	141.65	126.70
7	A1	1516	2MG	C1'-N9-C8	5.24	141.61	126.70
7	A1	1518	MA6	C1'-N9-C8	-5.22	115.34	127.14
5	72	2552	OMU	C4-N3-C2	-5.18	119.75	126.58
7	A2	1516	2MG	C5-C4-N3	-5.16	120.10	128.46
5	72	745	1MG	C5-C4-N3	-5.11	120.17	128.46
7	A1	1519	MA6	C1'-N9-C8	-5.11	115.60	127.14
7	A1	966	2MG	C5-C4-N3	-5.10	120.18	128.46
7	A1	1519	MA6	C5-C4-N3	-5.09	120.11	126.75
32	Y1	46	7MG	C5-C6-N1	5.03	119.86	110.99
7	A2	1519	MA6	C1'-N9-C8	-5.01	115.81	127.14
5	72	2445	2MG	C1'-N9-C4	-4.95	111.80	126.50
7	A2	1518	MA6	C5-C4-N3	-4.94	120.31	126.75
7	A1	1207	2MG	C5-C4-N3	-4.88	120.54	128.46
30	W1	46	G7M	C2-N3-C4	4.88	120.99	112.30
7	A2	1519	MA6	C5-C4-N3	-4.87	120.39	126.75
7	A1	1518	MA6	C5-C4-N3	-4.85	120.43	126.75
5	72	2445	2MG	C1'-N9-C8	4.83	140.43	126.70
5	72	1835	2MG	C1'-N9-C4	-4.81	112.22	126.50
29	W	46	G7M	C2-N3-C4	4.79	120.83	112.30
5	72	1835	2MG	C2-N1-C6	-4.75	119.01	124.48
5	72	1835	2MG	C1'-N9-C8	4.75	140.22	126.70
29	W	32	PSU	C4-N3-C2	-4.74	119.51	126.34
30	W1	37	MIA	C4-C5-C6	4.70	120.45	116.81
5	72	2251	OMG	C5-C4-N3	-4.68	120.88	128.46
7	A1	1518	MA6	N9-C8-N7	-4.66	107.54	113.91
5	72	2604	PSU	C4-N3-C2	-4.65	119.63	126.34
7	A1	1498	UR3	C4-N3-C2	-4.65	120.19	124.56
30	W1	46	G7M	C5-C4-N3	-4.64	119.25	128.15
5	72	955	PSU	C4-N3-C2	-4.63	119.67	126.34
7	A2	1518	MA6	N9-C8-N7	-4.63	107.58	113.91
5	72	2503	2MA	N9-C8-N7	-4.61	107.61	113.91
5	72	2457	PSU	C4-N3-C2	-4.60	119.71	126.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	72	2504	PSU	C4-N3-C2	-4.60	119.72	126.34
30	W1	32	PSU	C4-N3-C2	-4.59	119.73	126.34
5	72	2580	PSU	C4-N3-C2	-4.59	119.73	126.34
5	72	2605	PSU	C4-N3-C2	-4.58	119.74	126.34
5	72	2445	2MG	C2-N1-C6	-4.55	119.24	124.48
7	A2	1519	MA6	N9-C8-N7	-4.55	107.69	113.91
30	W1	39	PSU	C4-N3-C2	-4.54	119.79	126.34
29	W	46	G7M	C5-C4-N3	-4.53	119.46	128.15
7	A2	1498	UR3	C4-N3-C2	-4.52	120.30	124.56
32	Y1	46	7MG	C2-N3-C4	4.48	120.29	112.30
5	72	1618	6MZ	C4-C5-C6	4.41	120.22	116.81
31	Y	46	G7M	C2-N3-C4	4.40	120.13	112.30
7	A1	1519	MA6	N9-C8-N7	-4.39	107.91	113.91
7	A1	966	2MG	C2-N1-C6	-4.38	119.44	124.48
7	A2	527	G7M	C2-N3-C4	4.38	120.11	112.30
29	W	37	MIA	N9-C8-N7	-4.35	107.96	113.91
32	Y1	37	6MZ	C4-N9-C1'	-4.35	116.24	126.59
7	A2	966	2MG	C2-N1-C6	-4.34	119.48	124.48
5	72	2069	G7M	C2-N3-C4	4.34	120.03	112.30
7	A1	527	G7M	C2-N3-C4	4.34	120.03	112.30
7	A2	1207	2MG	C2-N1-C6	-4.33	119.49	124.48
32	Y1	37	6MZ	N9-C8-N7	-4.33	107.99	113.91
7	A2	1516	2MG	C2-N1-C6	-4.30	119.54	124.48
7	A1	1516	2MG	C2-N1-C6	-4.28	119.56	124.48
29	W	37	MIA	C4-N9-C1'	-4.27	116.43	126.59
29	W	32	PSU	N1-C2-N3	4.26	119.96	115.13
5	72	2030	6MZ	C4-C5-C6	4.24	120.09	116.81
5	72	1939	5MU	O2-C2-N1	-4.23	117.17	122.79
5	72	955	PSU	N1-C2-N3	4.21	119.90	115.13
5	72	2251	OMG	C2-N3-C4	4.21	119.80	112.30
5	72	2604	PSU	N1-C2-N3	4.20	119.89	115.13
5	72	2030	6MZ	N9-C8-N7	-4.19	108.18	113.91
5	72	1939	5MU	O4-C4-N3	-4.17	112.13	120.12
7	A2	1518	MA6	C4-N9-C1'	4.15	136.48	126.59
5	72	2580	PSU	N1-C2-N3	4.14	119.82	115.13
5	72	2457	PSU	N1-C2-N3	4.13	119.81	115.13
30	W1	39	PSU	N1-C2-N3	4.12	119.80	115.13
30	W1	37	MIA	N9-C8-N7	-4.12	108.28	113.91
5	72	2605	PSU	N1-C2-N3	4.10	119.78	115.13
7	A1	1207	2MG	C2-N1-C6	-4.10	119.76	124.48
30	W1	46	G7M	C5-C6-N1	4.09	120.34	111.79
30	W1	32	PSU	N1-C2-N3	4.08	119.76	115.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	71	1915	3TD	C4-N3-C2	-4.07	120.19	124.61
5	72	2504	PSU	N1-C2-N3	4.07	119.74	115.13
30	W1	37	MIA	N3-C4-N9	4.05	132.61	126.99
29	W	54	5MU	O4-C4-N3	-4.05	112.35	120.12
29	W	46	G7M	C5-C6-N1	4.05	120.24	111.79
7	A1	1519	MA6	C4-N9-C1'	4.04	136.23	126.59
31	Y	54	5MU	O4-C4-N3	-4.03	112.39	120.12
5	72	2030	6MZ	C4-N9-C1'	-4.03	116.99	126.59
31	Y	46	G7M	C5-C4-N3	-4.01	120.46	128.15
5	72	1618	6MZ	N9-C8-N7	-4.01	108.43	113.91
32	Y1	46	7MG	C5-C4-N3	-3.99	120.53	128.13
7	A2	527	G7M	C5-C4-N3	-3.98	120.53	128.15
7	A1	1518	MA6	C4-N9-C1'	3.96	136.04	126.59
32	Y1	37	6MZ	C4-C5-C6	3.94	119.86	116.81
30	W1	46	G7M	N9-C4-N3	3.94	133.85	125.94
5	72	2069	G7M	C5-C4-N3	-3.93	120.61	128.15
7	A1	527	G7M	C5-C4-N3	-3.93	120.62	128.15
29	W	8	4SU	C5-C4-S4	-3.92	119.41	124.47
31	Y	46	G7M	C5-C6-N1	3.92	119.98	111.79
5	72	1939	5MU	C4'-O4'-C1'	-3.91	100.83	109.47
5	72	2069	G7M	C5-C6-N1	3.91	119.96	111.79
29	W	37	MIA	N3-C2-N1	-3.89	119.81	126.95
7	A1	527	G7M	C5-C6-N1	3.89	119.92	111.79
7	A2	527	G7M	C5-C6-N1	3.89	119.92	111.79
7	A2	1519	MA6	C4-N9-C1'	3.86	135.79	126.59
29	W	37	MIA	C5-C6-N6	3.85	128.26	121.76
5	72	1618	6MZ	C2-N3-C4	3.82	120.78	111.75
5	72	2552	OMU	N3-C2-N1	3.77	119.89	114.89
29	W	8	4SU	N3-C2-N1	3.76	119.88	114.89
32	Y1	37	6MZ	C1'-N9-C8	3.76	135.62	127.14
29	W	37	MIA	C1'-N9-C8	3.74	135.57	127.14
30	W1	8	4SU	N3-C2-N1	3.73	119.84	114.89
30	W1	37	MIA	N3-C2-N1	-3.72	120.13	126.95
29	W	46	G7M	N9-C4-N3	3.70	133.37	125.94
5	72	1618	6MZ	N3-C4-N9	3.69	133.16	127.08
5	72	745	1MG	C2-N3-C4	3.64	120.16	111.98
30	W1	37	MIA	C12-C13-C14	-3.64	120.06	127.14
7	A2	1519	MA6	C2-N1-C6	3.61	120.28	111.75
7	A1	1519	MA6	C2-N1-C6	3.56	120.16	111.75
32	Y1	34	CM0	N3-C2-N1	3.55	119.60	114.89
7	A2	1518	MA6	C4-C5-C6	3.55	119.85	115.88
32	Y1	37	6MZ	C2-N3-C4	3.54	120.11	111.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	A1	1519	MA6	C4-C5-C6	3.54	119.84	115.88
29	W	32	PSU	C6-C5-C4	3.54	120.67	118.20
5	72	2445	2MG	N9-C4-N3	3.53	133.04	125.94
7	A1	1518	MA6	C2-N1-C6	3.53	120.10	111.75
7	A1	1519	MA6	C2-N3-C4	3.53	120.10	111.75
7	A2	1518	MA6	C2-N1-C6	3.53	120.09	111.75
5	72	2251	OMG	N9-C8-N7	-3.53	106.75	113.39
5	72	2030	6MZ	C2-N3-C4	3.51	120.04	111.75
5	72	1835	2MG	N9-C4-N3	3.50	132.97	125.94
7	A2	1519	MA6	C2-N3-C4	3.49	120.00	111.75
30	W1	46	G7M	O6-C6-C5	-3.48	120.20	128.06
29	W	54	5MU	O2-C2-N1	-3.48	118.16	122.79
5	72	2030	6MZ	C1'-N9-C8	3.47	134.97	127.14
30	W1	8	4SU	C5-C4-S4	-3.47	120.00	124.47
29	W	46	G7M	O6-C6-C5	-3.47	120.24	128.06
7	A2	1518	MA6	C2-N3-C4	3.46	119.91	111.75
7	A2	1519	MA6	C4-C5-C6	3.45	119.74	115.88
7	A1	1518	MA6	C2-N3-C4	3.44	119.88	111.75
7	A1	1518	MA6	C4-C5-C6	3.44	119.72	115.88
31	Y	46	G7M	O6-C6-C5	-3.42	120.35	128.06
29	W	37	MIA	N3-C4-N9	3.42	131.73	126.99
5	72	1618	6MZ	C9-N6-C6	-3.41	119.94	122.87
7	A1	967	5MC	C5-C6-N1	-3.37	119.88	123.34
5	72	1962	5MC	C5-C6-N1	-3.37	119.88	123.34
5	72	2069	G7M	O6-C6-C5	-3.36	120.48	128.06
29	W	37	MIA	C12-N6-C6	-3.35	117.58	122.55
5	72	2552	OMU	C5-C4-N3	3.35	119.84	114.84
7	A1	527	G7M	O6-C6-C5	-3.33	120.55	128.06
7	A2	527	G7M	O6-C6-C5	-3.32	120.56	128.06
29	W	37	MIA	C4-C5-C6	3.31	119.37	116.81
5	72	2503	2MA	N3-C4-N9	3.31	131.58	126.99
7	A1	1516	2MG	N9-C4-N3	3.28	132.53	125.94
5	72	2457	PSU	C6-C5-C4	3.28	120.49	118.20
5	72	745	1MG	N9-C4-N3	3.27	132.51	125.94
29	W	20	H2U	N3-C2-N1	3.26	120.10	116.65
5	72	1939	5MU	C6-N1-C2	3.25	124.59	121.30
5	72	2449	H2U	N3-C2-N1	3.24	120.08	116.65
7	A1	1518	MA6	C5-N7-C8	3.23	108.10	103.51
29	W	37	MIA	C5-N7-C8	3.22	108.08	103.51
7	A2	1519	MA6	C5-N7-C8	3.22	108.08	103.51
32	Y1	46	7MG	C4-C5-N7	3.22	110.00	105.53
29	W	17	H2U	N3-C2-N1	3.21	120.05	116.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	72	2030	6MZ	N3-C4-N9	3.21	132.37	127.08
7	A2	966	2MG	N9-C4-N3	3.20	132.37	125.94
7	A2	1518	MA6	C5-N7-C8	3.20	108.05	103.51
5	72	2503	2MA	C5-N7-C8	3.19	108.05	103.51
5	72	2604	PSU	C6-C5-C4	3.18	120.42	118.20
32	Y1	37	6MZ	C5-N7-C8	3.18	108.02	103.51
30	W1	37	MIA	C5-N7-C8	3.16	108.00	103.51
7	A2	1207	2MG	N9-C4-N3	3.16	132.28	125.94
31	Y	46	G7M	N9-C4-N3	3.16	132.28	125.94
31	Y	17	H2U	N3-C2-N1	3.16	119.99	116.65
7	A1	1519	MA6	C5-N7-C8	3.15	107.98	103.51
29	W	54	5MU	C4'-O4'-C1'	-3.14	102.54	109.47
30	W1	46	G7M	C2-N1-C6	-3.14	119.37	125.10
29	W	16	H2U	N3-C2-N1	3.13	119.97	116.65
7	A2	967	5MC	C5-C6-N1	-3.13	120.12	123.34
32	Y1	37	6MZ	N3-C4-N9	3.13	132.23	127.08
5	72	1618	6MZ	C4-N9-C1'	-3.11	119.18	126.59
29	W	37	MIA	C12-C13-C14	-3.10	121.11	127.14
7	A2	527	G7M	N9-C4-N3	3.09	132.15	125.94
5	72	2030	6MZ	C5-N7-C8	3.09	107.90	103.51
7	A2	1516	2MG	N9-C4-N3	3.09	132.13	125.94
29	W	46	G7M	C2-N1-C6	-3.08	119.47	125.10
5	72	745	1MG	N9-C8-N7	-3.08	107.59	113.39
5	72	2069	G7M	N9-C4-N3	3.08	132.12	125.94
5	72	1618	6MZ	C5-N7-C8	3.07	107.87	103.51
5	72	955	PSU	C6-C5-C4	3.03	120.32	118.20
5	72	2503	2MA	N3-C2-N1	-3.02	120.16	125.72
7	A2	1518	MA6	N3-C4-N9	3.02	132.06	127.08
7	A1	527	G7M	N9-C4-N3	3.01	131.99	125.94
5	72	2580	PSU	C6-C5-C4	3.00	120.30	118.20
30	W1	39	PSU	C6-C5-C4	3.00	120.29	118.20
29	W	37	MIA	S10-C2-N3	3.00	126.37	116.01
29	W	37	MIA	C2-N3-C4	2.99	120.23	112.35
30	W1	37	MIA	C2-N3-C4	2.99	120.21	112.35
32	Y1	46	7MG	C5-C4-N9	2.97	110.21	106.35
7	A1	966	2MG	N9-C8-N7	-2.95	107.83	113.39
7	A1	1519	MA6	N3-C4-N9	2.95	131.94	127.08
30	W1	37	MIA	C4-N9-C1'	-2.94	119.59	126.59
7	A2	527	G7M	C2-N1-C6	-2.93	119.76	125.10
5	72	955	PSU	C6-N1-C2	-2.93	119.69	122.68
31	Y	46	G7M	C2-N1-C6	-2.92	119.77	125.10
5	72	2069	G7M	C2-N1-C6	-2.92	119.77	125.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	72	2504	PSU	C6-C5-C4	2.92	120.24	118.20
30	W1	32	PSU	C6-C5-C4	2.91	120.24	118.20
7	A1	1518	MA6	N3-C4-N9	2.91	131.88	127.08
5	72	2605	PSU	C6-N1-C2	-2.90	119.72	122.68
32	Y1	34	CM0	C7-O5-C5	-2.90	113.78	117.58
30	W1	32	PSU	C6-N1-C2	-2.89	119.73	122.68
7	A1	966	2MG	N9-C4-N3	2.89	131.74	125.94
5	72	2251	OMG	C2-N1-C6	-2.89	119.83	125.10
30	W1	46	G7M	CN7-N7-C5	2.88	130.34	126.77
30	W1	39	PSU	C6-N1-C2	-2.88	119.74	122.68
7	A1	527	G7M	C2-N1-C6	-2.88	119.85	125.10
31	Y	54	5MU	C6-N1-C2	2.87	124.20	121.30
5	72	2604	PSU	C6-N1-C2	-2.86	119.75	122.68
5	72	2552	OMU	O4-C4-C5	-2.86	120.14	125.16
5	72	2251	OMG	N9-C4-N3	2.85	131.67	125.94
7	A2	1516	2MG	N9-C8-N7	-2.85	108.02	113.39
31	Y	17	H2U	C5-C4-N3	2.84	119.84	116.65
7	A1	1207	2MG	N9-C8-N7	-2.84	108.04	113.39
7	A2	1519	MA6	N3-C4-N9	2.83	131.75	127.08
29	W	54	5MU	O2-C2-N3	-2.83	116.23	121.50
5	72	2449	H2U	C5-C4-N3	2.83	119.83	116.65
7	A1	1516	2MG	N9-C8-N7	-2.83	108.07	113.39
30	W1	37	MIA	S10-C2-N3	2.80	125.71	116.01
32	Y1	46	7MG	O6-C6-C5	-2.80	120.67	127.54
5	72	2580	PSU	C6-N1-C2	-2.80	119.82	122.68
7	A1	1207	2MG	N9-C4-N3	2.80	131.56	125.94
5	72	2504	PSU	C6-N1-C2	-2.80	119.82	122.68
31	Y	54	5MU	C4'-O4'-C1'	-2.80	103.30	109.47
5	72	1835	2MG	C5-C6-N1	2.79	120.28	113.19
29	W	16	H2U	C5-C4-N3	2.78	119.78	116.65
5	72	2457	PSU	C6-N1-C2	-2.78	119.84	122.68
7	A1	1407	5MC	C5-C6-N1	-2.78	120.48	123.34
7	A2	966	2MG	N9-C8-N7	-2.78	108.16	113.39
7	A2	1407	5MC	C5-C6-N1	-2.78	120.48	123.34
5	72	2605	PSU	C6-C5-C4	2.78	120.14	118.20
29	W	17	H2U	C5-C4-N3	2.78	119.77	116.65
29	W	32	PSU	C6-N1-C2	-2.76	119.86	122.68
5	72	2445	2MG	C5-C6-N1	2.75	120.18	113.19
32	Y1	46	7MG	C2-N1-C6	-2.74	120.10	125.10
29	W	20	H2U	C5-C4-N3	2.74	119.72	116.65
7	A2	966	2MG	C5-C6-N1	2.72	120.09	113.19
7	A1	1516	2MG	C5-C6-N1	2.71	120.08	113.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	W	16	H2U	C5-C6-N1	2.71	120.55	111.61
7	A1	966	2MG	C5-C6-N1	2.71	120.07	113.19
5	72	2445	2MG	N9-C8-N7	-2.69	108.32	113.39
29	W	54	5MU	O4'-C4'-C3'	-2.69	99.79	105.11
7	A2	1516	2MG	C5-C6-N1	2.69	120.02	113.19
7	A2	1207	2MG	C5-C6-N1	2.68	119.99	113.19
7	A2	1207	2MG	N9-C8-N7	-2.67	108.36	113.39
7	A1	1518	MA6	C4-N9-C8	2.67	108.62	105.73
7	A2	1518	MA6	C4-N9-C8	2.66	108.61	105.73
5	72	1618	6MZ	C1'-N9-C8	2.66	133.14	127.14
31	Y	17	H2U	C5-C6-N1	2.66	120.38	111.61
5	72	2251	OMG	C5-C6-N1	2.65	119.91	113.19
29	W	20	H2U	C5-C6-N1	2.65	120.33	111.61
29	W	17	H2U	C5-C6-N1	2.64	120.30	111.61
7	A1	1207	2MG	C5-C6-N1	2.63	119.88	113.19
5	72	1835	2MG	N9-C8-N7	-2.62	108.46	113.39
5	72	745	1MG	C5-C6-N1	2.61	119.94	114.91
5	72	1835	2MG	O6-C6-C5	-2.60	119.70	126.60
7	A1	1516	2MG	N1-C2-N3	-2.60	119.94	123.95
5	72	2449	H2U	C5-C6-N1	2.58	120.12	111.61
5	72	2069	G7M	CN7-N7-C5	2.57	129.96	126.77
7	A1	1207	2MG	N1-C2-N3	-2.56	119.99	123.95
31	Y	46	G7M	CN7-N7-C5	2.56	129.95	126.77
5	72	955	PSU	O2-C2-N1	-2.56	119.97	122.79
32	Y1	46	7MG	N9-C4-N3	2.54	129.27	125.47
29	W	17	H2U	O2-C2-N1	-2.53	119.92	123.11
7	A1	527	G7M	CN7-N7-C5	2.53	129.91	126.77
7	A2	966	2MG	N1-C2-N3	-2.53	120.04	123.95
5	72	2503	2MA	C4-N9-C8	2.53	108.47	105.73
7	A2	1516	2MG	N1-C2-N3	-2.53	120.05	123.95
7	A1	1516	2MG	O6-C6-C5	-2.51	119.93	126.60
32	Y1	37	6MZ	C9-N6-C6	-2.51	120.71	122.87
7	A2	1516	2MG	O6-C6-C5	-2.51	119.95	126.60
5	72	2445	2MG	O6-C6-C5	-2.50	119.96	126.60
7	A2	966	2MG	O6-C6-C5	-2.50	119.96	126.60
7	A2	1207	2MG	N1-C2-N3	-2.50	120.08	123.95
5	72	2449	H2U	O2-C2-N1	-2.50	119.97	123.11
29	W	20	H2U	O2-C2-N1	-2.50	119.97	123.11
30	W1	37	MIA	N6-C6-N1	-2.49	115.31	118.50
7	A1	966	2MG	N1-C2-N3	-2.49	120.11	123.95
7	A1	966	2MG	O6-C6-C5	-2.49	120.00	126.60
7	A1	1207	2MG	O6-C6-C5	-2.48	120.03	126.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	72	1835	2MG	N1-C2-N3	-2.47	120.13	123.95
7	A2	1207	2MG	O6-C6-C5	-2.47	120.04	126.60
5	72	2445	2MG	N1-C2-N3	-2.46	120.14	123.95
31	Y	17	H2U	O2-C2-N1	-2.46	120.02	123.11
7	A2	1519	MA6	C4-N9-C8	2.46	108.39	105.73
30	W1	39	PSU	O2-C2-N1	-2.45	120.09	122.79
5	72	2604	PSU	O2-C2-N1	-2.45	120.10	122.79
29	W	54	5MU	C6-N1-C2	2.45	123.77	121.30
5	72	2457	PSU	O2-C2-N1	-2.44	120.11	122.79
5	72	2580	PSU	O2-C2-N1	-2.44	120.11	122.79
7	A2	527	G7M	CN7-N7-C5	2.43	129.79	126.77
5	72	1939	5MU	O2-C2-N3	-2.43	116.98	121.50
31	Y	54	5MU	C3'-C2'-C1'	2.43	106.04	101.43
5	72	2251	OMG	O6-C6-C5	-2.42	120.17	126.60
29	W	32	PSU	O2-C2-N1	-2.42	120.12	122.79
30	W1	37	MIA	C1'-N9-C8	2.42	132.59	127.14
30	W1	32	PSU	O2-C2-N1	-2.41	120.13	122.79
5	72	2504	PSU	O2-C2-N1	-2.41	120.14	122.79
7	A2	1498	UR3	C1'-N1-C2	2.41	121.05	116.99
29	W	16	H2U	O2-C2-N1	-2.40	120.10	123.11
5	72	2251	OMG	C8-N7-C5	2.39	108.57	104.24
5	72	2605	PSU	O2-C2-N1	-2.39	120.16	122.79
30	W1	37	MIA	C16-C14-C15	2.37	119.84	114.60
7	A1	1402	4OC	C6-C5-C4	2.35	119.84	116.96
7	A2	1402	4OC	C6-C5-C4	2.35	119.83	116.96
29	W	46	G7M	CN7-N7-C5	2.32	129.66	126.77
29	W	37	MIA	C4-C5-N7	-2.31	107.80	110.62
5	72	1835	2MG	CM2-N2-C2	-2.30	118.77	123.86
7	A2	1498	UR3	C6-N1-C2	-2.27	119.76	121.79
7	A1	1519	MA6	C4-N9-C8	2.25	108.17	105.73
32	Y1	46	7MG	N9-C8-N7	2.25	106.60	103.38
5	72	1962	5MC	CM5-C5-C6	-2.23	119.87	122.85
32	Y1	37	6MZ	C4-N9-C8	2.22	108.14	105.73
29	W	37	MIA	C16-C14-C15	2.22	119.50	114.60
5	72	2503	2MA	C4-C5-N7	-2.20	107.94	110.62
30	W1	46	G7M	CN7-N7-C8	-2.19	121.46	124.84
7	A1	966	2MG	C8-N7-C5	2.19	108.20	104.24
7	A2	1407	5MC	CM5-C5-C6	-2.18	119.93	122.85
5	72	745	1MG	C8-N7-C5	2.18	108.19	104.24
7	A2	1519	MA6	C4-C5-N7	-2.17	107.97	110.62
32	Y1	37	6MZ	C4-C5-N7	-2.17	107.98	110.62
29	W	54	5MU	O4'-C1'-N1	2.17	113.31	108.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	72	1939	5MU	O4'-C1'-N1	2.16	113.31	108.36
7	A1	1519	MA6	C4-C5-N7	-2.15	108.00	110.62
7	A1	1407	5MC	CM5-C5-C6	-2.14	119.99	122.85
30	W1	37	MIA	C4-C5-N7	-2.13	108.03	110.62
5	72	2030	6MZ	C4-N9-C8	2.13	108.03	105.73
7	A1	967	5MC	CM5-C5-C6	-2.12	120.02	122.85
5	72	2030	6MZ	C4-C5-N7	-2.12	108.04	110.62
7	A1	1518	MA6	C4-C5-N7	-2.11	108.04	110.62
7	A1	966	2MG	CM2-N2-C2	-2.11	119.20	123.86
31	Y	54	5MU	O4'-C1'-N1	2.11	113.18	108.36
7	A1	1516	2MG	C8-N7-C5	2.11	108.06	104.24
5	72	2445	2MG	C8-N7-C5	2.11	108.05	104.24
7	A2	966	2MG	C8-N7-C5	2.11	108.05	104.24
30	W1	37	MIA	C5-C6-N6	2.09	125.30	121.76
5	72	2503	2MA	N6-C6-N1	2.08	119.97	117.03
7	A1	1498	UR3	C6-N1-C2	-2.08	119.93	121.79
29	W	37	MIA	C4-N9-C8	2.08	107.98	105.73
5	72	1835	2MG	C8-N7-C5	2.07	107.98	104.24
7	A1	527	G7M	CN7-N7-C8	-2.06	121.66	124.84
7	A2	1516	2MG	C8-N7-C5	2.06	107.97	104.24
7	A2	1518	MA6	C4-C5-N7	-2.06	108.11	110.62
29	W	37	MIA	C5-C4-N9	2.06	108.17	105.78
5	72	2552	OMU	O2-C2-N1	-2.05	120.06	122.79
5	72	2580	PSU	O4'-C1'-C2'	2.05	108.03	105.14
7	A1	527	G7M	N9-C8-N7	-2.04	107.17	112.21
5	72	2069	G7M	CN7-N7-C8	-2.04	121.70	124.84
7	A1	1207	2MG	C8-N7-C5	2.03	107.92	104.24
7	A2	1207	2MG	C8-N7-C5	2.02	107.91	104.24
5	72	2069	G7M	N9-C8-N7	-2.02	107.21	112.21
7	A2	967	5MC	CM5-C5-C6	-2.01	120.16	122.85
7	A2	527	G7M	N9-C8-N7	-2.01	107.23	112.21
5	72	1618	6MZ	C4-C5-N7	-2.01	108.17	110.62

There are no chirality outliers.

All (95) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A1	1402	4OC	C1'-C2'-O2'-CM2
7	A1	1518	MA6	C5-C6-N6-C9
7	A1	1518	MA6	C5-C6-N6-C10
7	A1	1519	MA6	C3'-C4'-C5'-O5'
7	A2	1402	4OC	C1'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
31	Y	17	H2U	O4'-C4'-C5'-O5'
31	Y	17	H2U	C3'-C4'-C5'-O5'
31	Y	17	H2U	O4'-C1'-N1-C6
31	Y	17	H2U	C2'-C1'-N1-C2
31	Y	17	H2U	C2'-C1'-N1-C6
32	Y1	37	6MZ	N1-C6-N6-C9
5	72	746	PSU	C2'-C1'-C5-C4
5	72	746	PSU	C2'-C1'-C5-C6
5	72	747	5MU	C3'-C4'-C5'-O5'
5	72	1618	6MZ	C5-C6-N6-C9
5	72	1618	6MZ	N1-C6-N6-C9
5	72	1618	6MZ	O4'-C4'-C5'-O5'
5	72	1618	6MZ	C3'-C4'-C5'-O5'
5	72	1939	5MU	O4'-C4'-C5'-O5'
5	72	2030	6MZ	N1-C6-N6-C9
5	72	2251	OMG	O4'-C4'-C5'-O5'
5	72	2251	OMG	C1'-C2'-O2'-CM2
29	W	37	MIA	O4'-C4'-C5'-O5'
29	W	37	MIA	C3'-C4'-C5'-O5'
29	W	37	MIA	N1-C2-S10-C11
29	W	37	MIA	N3-C2-S10-C11
29	W	37	MIA	N6-C12-C13-C14
29	W	54	5MU	O4'-C4'-C5'-O5'
30	W1	8	4SU	O4'-C4'-C5'-O5'
30	W1	37	MIA	N1-C2-S10-C11
30	W1	37	MIA	N3-C2-S10-C11
29	W	46	G7M	C4'-C5'-O5'-P
7	A1	1498	UR3	O4'-C4'-C5'-O5'
7	A1	1519	MA6	O4'-C4'-C5'-O5'
7	A2	1498	UR3	O4'-C4'-C5'-O5'
31	Y	46	G7M	C3'-C4'-C5'-O5'
5	72	747	5MU	O4'-C4'-C5'-O5'
5	72	1939	5MU	C3'-C4'-C5'-O5'
5	72	2251	OMG	C3'-C4'-C5'-O5'
5	72	2498	OMC	O4'-C4'-C5'-O5'
29	W	17	H2U	O4'-C4'-C5'-O5'
29	W	32	PSU	O4'-C4'-C5'-O5'
29	W	54	5MU	C3'-C4'-C5'-O5'
30	W1	8	4SU	C3'-C4'-C5'-O5'
30	W1	37	MIA	O4'-C4'-C5'-O5'
30	W1	37	MIA	C3'-C4'-C5'-O5'
30	W1	46	G7M	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
32	Y1	34	CM0	O5-C7-C8-O8
32	Y1	34	CM0	O5-C7-C8-O9
7	A1	1498	UR3	C3'-C4'-C5'-O5'
7	A2	1498	UR3	C3'-C4'-C5'-O5'
7	A2	1519	MA6	O4'-C4'-C5'-O5'
5	72	2498	OMC	C3'-C4'-C5'-O5'
29	W	17	H2U	C3'-C4'-C5'-O5'
30	W1	46	G7M	C3'-C4'-C5'-O5'
32	Y1	34	CM0	C3'-C4'-C5'-O5'
32	Y1	34	CM0	O4'-C4'-C5'-O5'
7	A1	1518	MA6	N1-C6-N6-C10
29	W	32	PSU	C3'-C4'-C5'-O5'
30	W1	46	G7M	C2'-C1'-N9-C4
7	A1	1519	MA6	C4'-C5'-O5'-P
7	A2	1518	MA6	C5-C6-N6-C10
31	Y	46	G7M	O4'-C4'-C5'-O5'
32	Y1	37	6MZ	C5-C6-N6-C9
5	72	2030	6MZ	C5-C6-N6-C9
30	W1	46	G7M	C2'-C1'-N9-C8
7	A2	1519	MA6	C3'-C4'-C5'-O5'
7	A1	527	G7M	C4'-C5'-O5'-P
29	W	20	H2U	C4'-C5'-O5'-P
29	W	54	5MU	C4'-C5'-O5'-P
29	W	16	H2U	C4'-C5'-O5'-P
29	W	37	MIA	C4'-C5'-O5'-P
7	A2	527	G7M	C3'-C4'-C5'-O5'
7	A2	527	G7M	C4'-C5'-O5'-P
31	Y	17	H2U	C4'-C5'-O5'-P
5	72	2069	G7M	C4'-C5'-O5'-P
29	W	32	PSU	C4'-C5'-O5'-P
29	W	20	H2U	O4'-C4'-C5'-O5'
32	Y1	46	7MG	C4'-C5'-O5'-P
5	72	746	PSU	O4'-C1'-C5-C4
29	W	32	PSU	O4'-C1'-C5-C4
31	Y	17	H2U	O4'-C1'-N1-C2
7	A2	527	G7M	O4'-C4'-C5'-O5'
5	72	2069	G7M	O4'-C4'-C5'-O5'
7	A2	1518	MA6	C5-C6-N6-C9
29	W	46	G7M	C2'-C1'-N9-C8
7	A1	967	5MC	O4'-C4'-C5'-O5'
29	W	20	H2U	C3'-C4'-C5'-O5'
5	72	746	PSU	O4'-C1'-C5-C6

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Mol	Chain	Res	Type	Atoms
29	W	32	PSU	O4'-C1'-C5-C6
5	72	1939	5MU	C4'-C5'-O5'-P
7	A2	967	5MC	O4'-C4'-C5'-O5'
5	72	2030	6MZ	O4'-C4'-C5'-O5'
5	71	1915	3TD	C3'-C4'-C5'-O5'
30	W1	37	MIA	C5-C6-N6-C12

There are no ring outliers.

37 monomers are involved in 61 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	72	2504	PSU	1	0
7	A1	1498	UR3	1	0
7	A2	1402	4OC	3	0
7	A2	1519	MA6	2	0
31	Y	54	5MU	3	0
31	Y	55	PSU	4	0
5	72	1915	3TD	2	0
32	Y1	34	CM0	5	0
31	Y	46	G7M	1	0
29	W	37	MIA	3	0
29	W	55	PSU	2	0
7	A1	1207	2MG	2	0
29	W	32	PSU	2	0
29	W	54	5MU	1	0
5	72	2449	H2U	1	0
5	72	1835	2MG	1	0
5	72	2604	PSU	2	0
5	72	2251	OMG	1	0
7	A2	1498	UR3	1	0
5	72	747	5MU	1	0
7	A1	1402	4OC	2	0
32	Y1	46	7MG	1	0
7	A2	967	5MC	1	0
5	72	2030	6MZ	2	0
5	72	1939	5MU	1	0
30	W1	32	PSU	1	0
30	W1	37	MIA	3	0
7	A1	1518	MA6	2	0
5	72	2605	PSU	3	0
29	W	8	4SU	2	0
7	A1	966	2MG	1	0

Continued on next page...

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A2	1516	2MG	1	0
30	W1	46	G7M	2	0
7	A2	966	2MG	1	0
5	72	2457	PSU	1	0
5	72	1962	5MC	2	0
29	W	16	H2U	2	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 273 ligands modelled in this entry, 270 are monoatomic - leaving 3 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
47	SPD	72	3003	-	9,9,9	0.32	0	8,8,8	0.84	0
46	PUT	72	3002	-	5,5,5	0.26	0	4,4,4	0.54	0
46	PUT	72	3001	-	5,5,5	0.26	0	4,4,4	0.52	0

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
47	SPD	72	3003	-	-	0/7/7/7	-
46	PUT	72	3002	-	-	0/3/3/3	-
46	PUT	72	3001	-	-	1/3/3/3	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
46	72	3001	PUT	C1-C2-C3-C4

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](#)

There are no chain breaks in this entry.

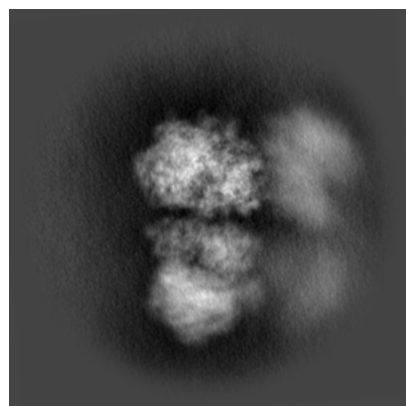
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-19059. These allow visual inspection of the internal detail of the map and identification of artifacts.

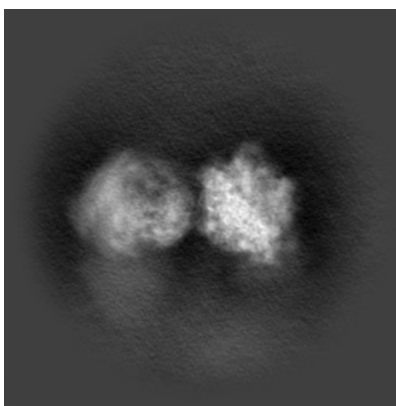
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

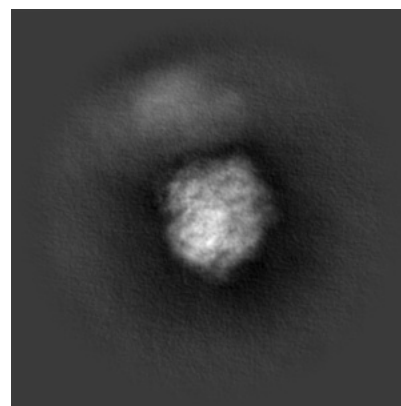
6.1.1 Primary map



X

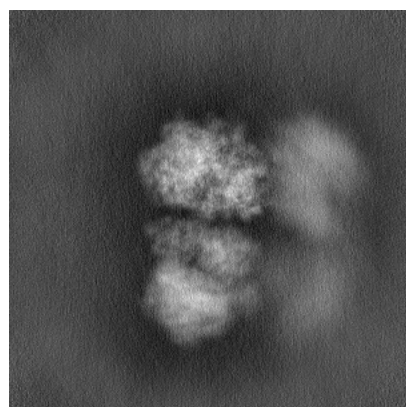


Y

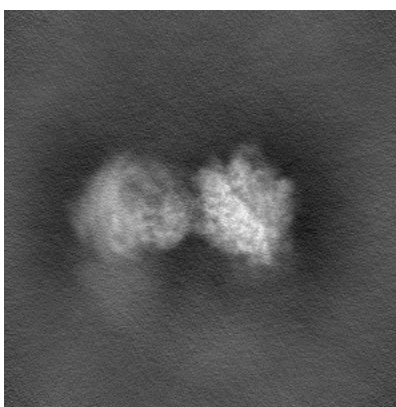


Z

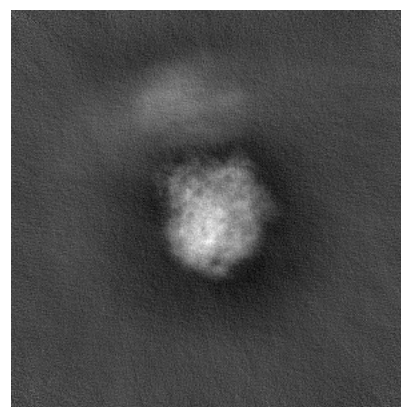
6.1.2 Raw map



X



Y

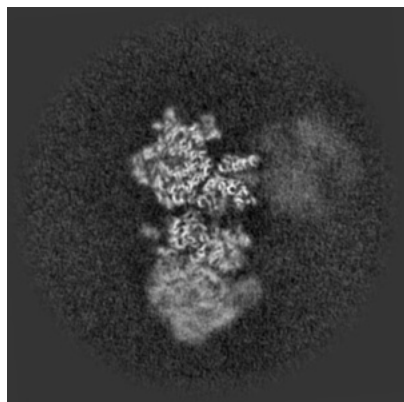


Z

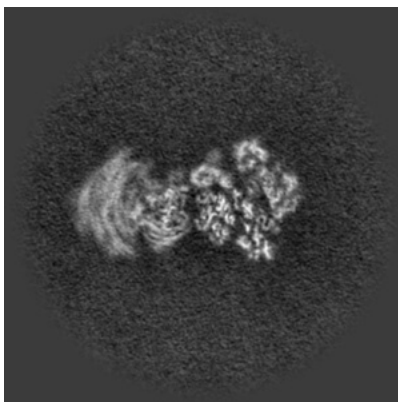
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

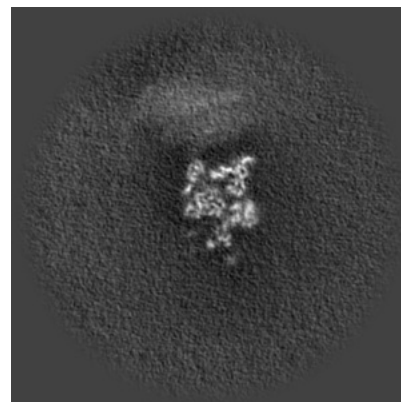
6.2.1 Primary map



X Index: 234

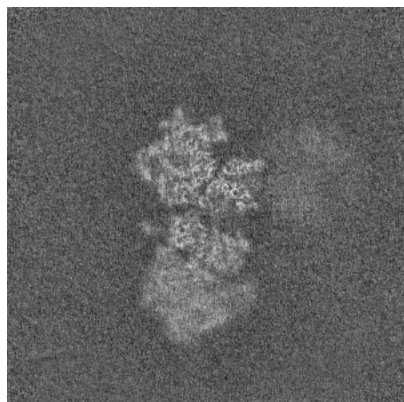


Y Index: 234

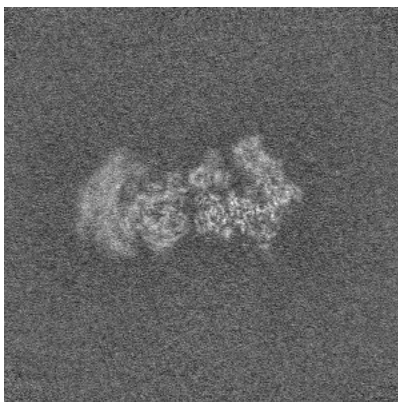


Z Index: 234

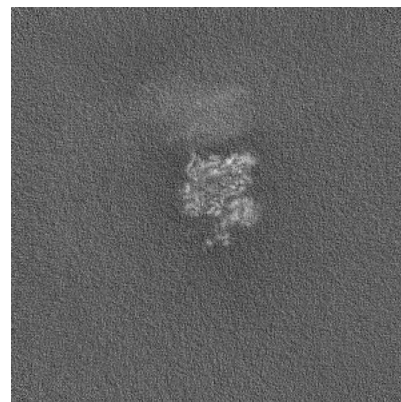
6.2.2 Raw map



X Index: 234



Y Index: 234

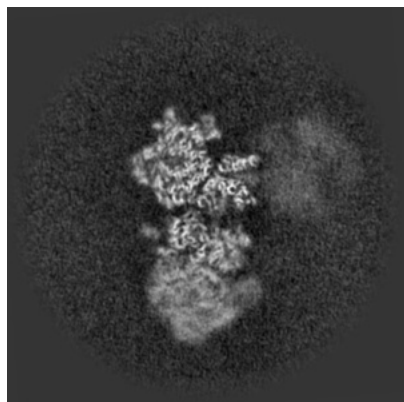


Z Index: 234

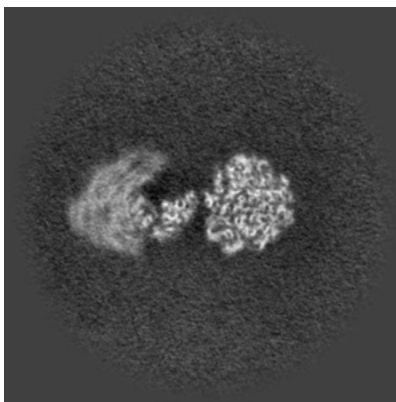
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

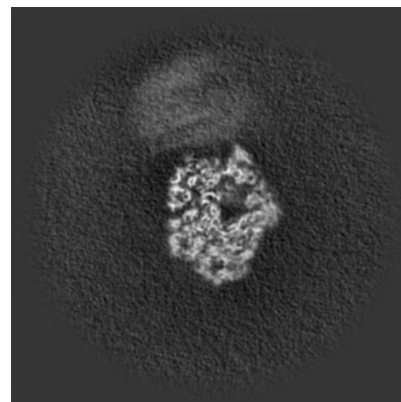
6.3.1 Primary map



X Index: 234

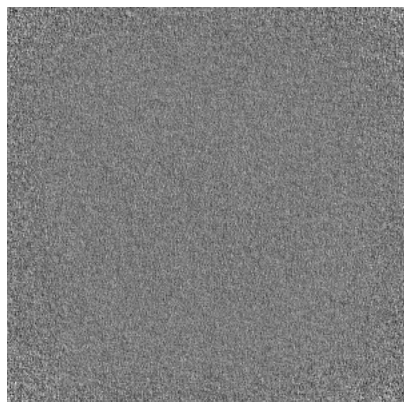


Y Index: 206

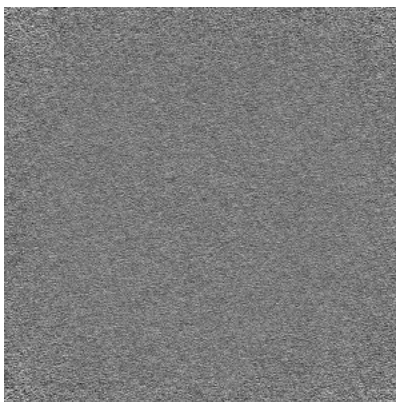


Z Index: 280

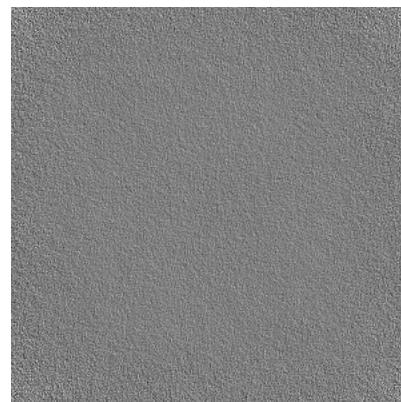
6.3.2 Raw map



X Index: 0



Y Index: 0

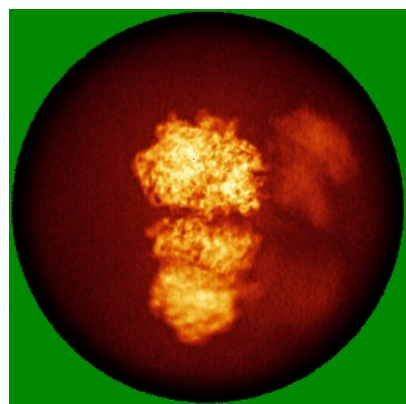


Z Index: 0

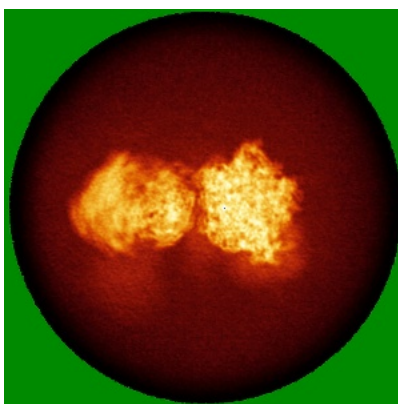
The images above show the largest variance slices of the map in three orthogonal directions.

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

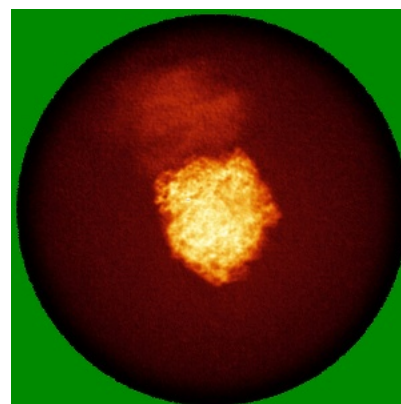
6.4.1 Primary map



X

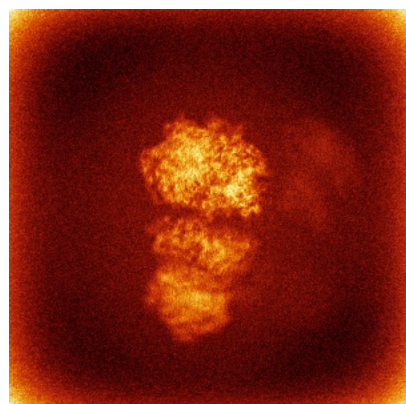


Y

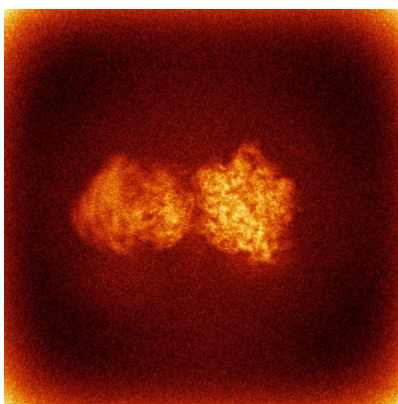


Z

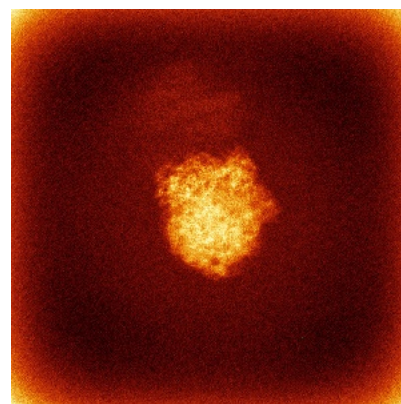
6.4.2 Raw map



X



Y

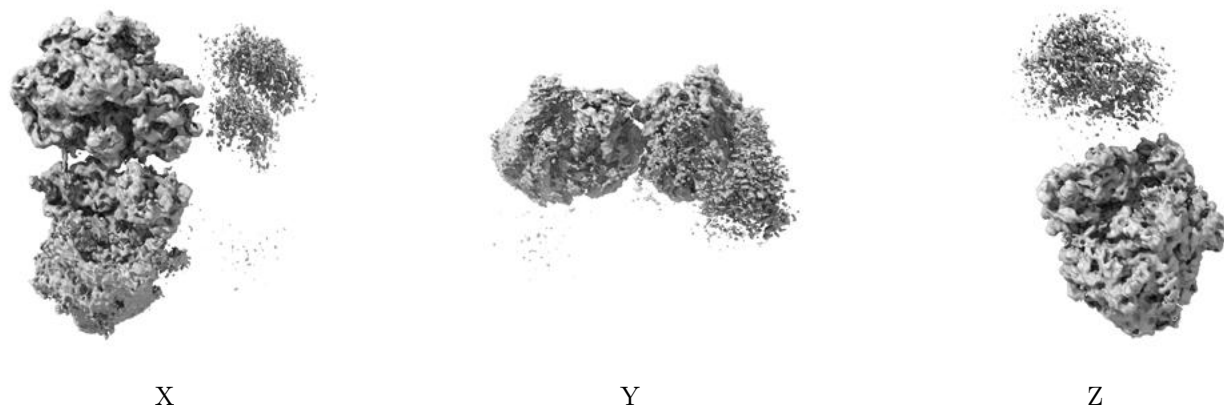


Z

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.

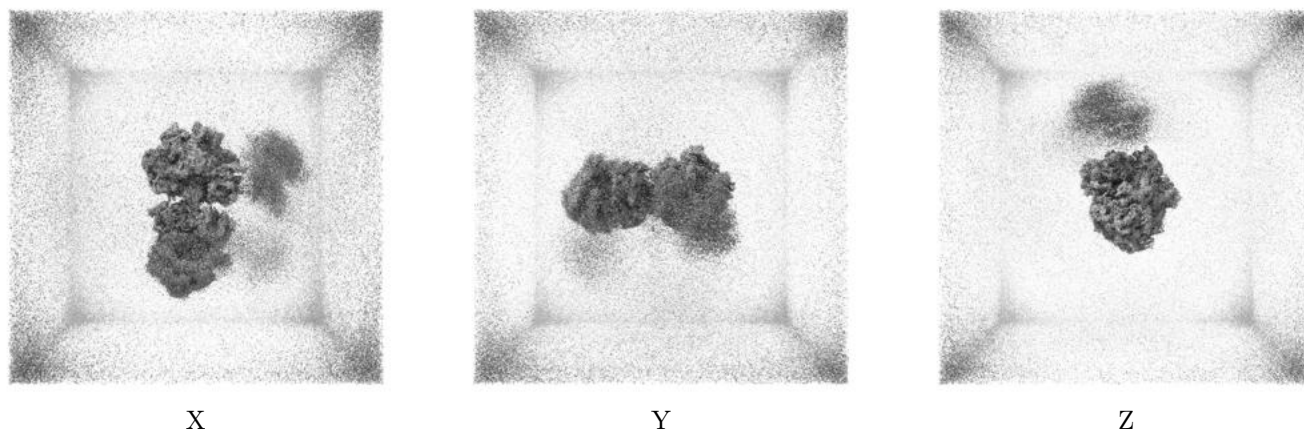
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 4.0. 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.

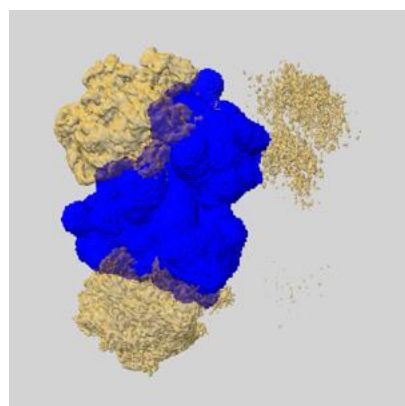
6.6 Mask visualisation [i](#)

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

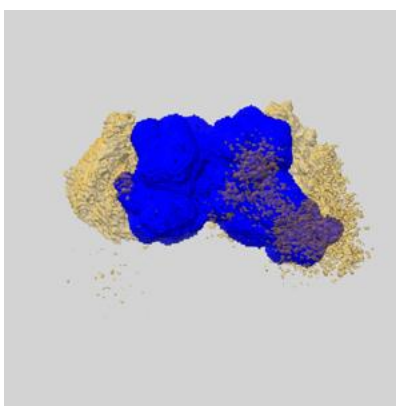
A mask typically either:

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

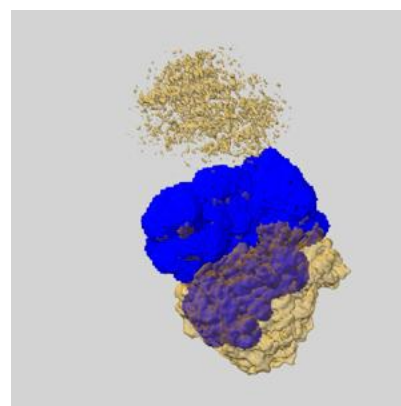
6.6.1 emd_19059_msk_1.map [i](#)



X



Y

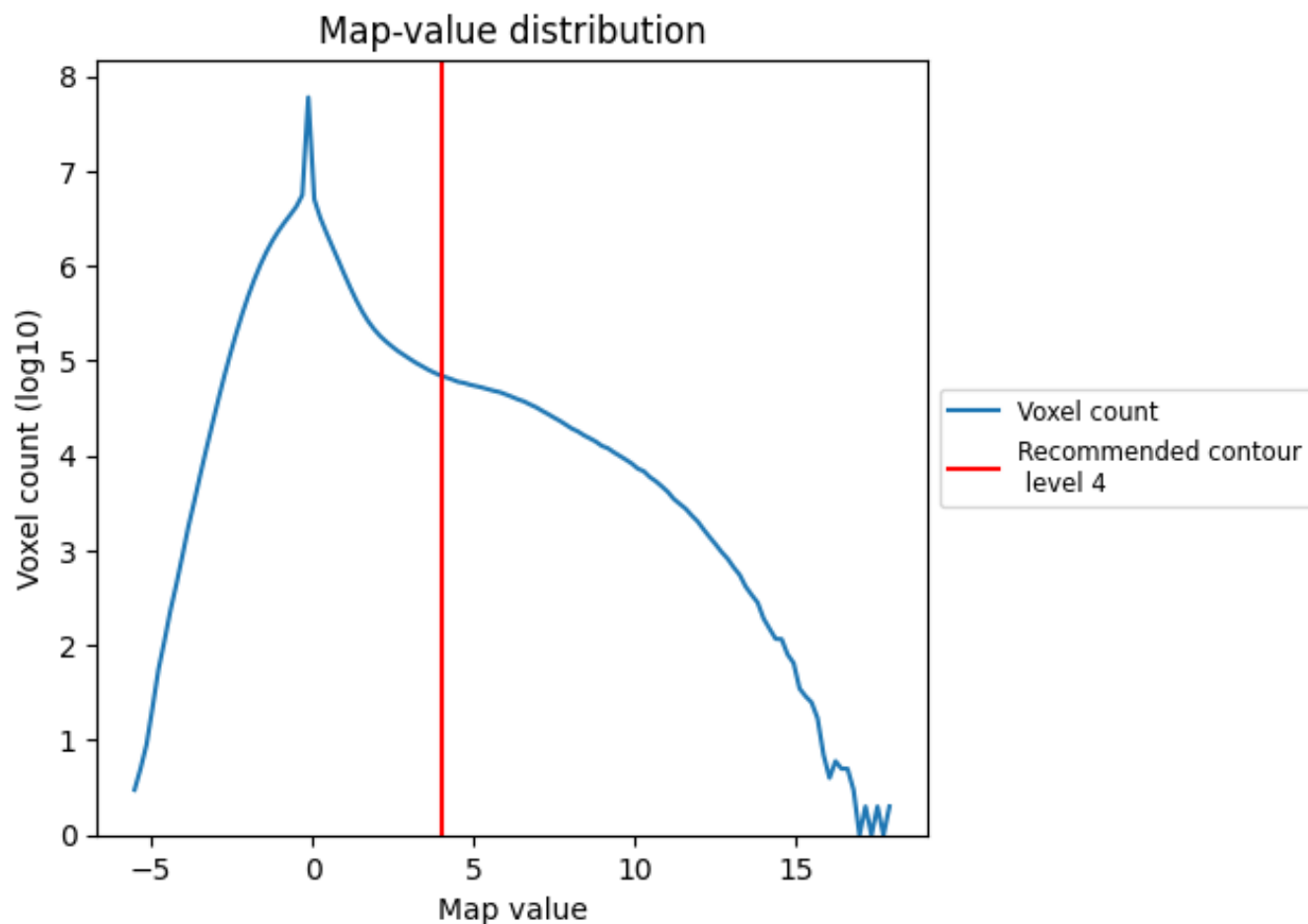


Z

7 Map analysis [i](#)

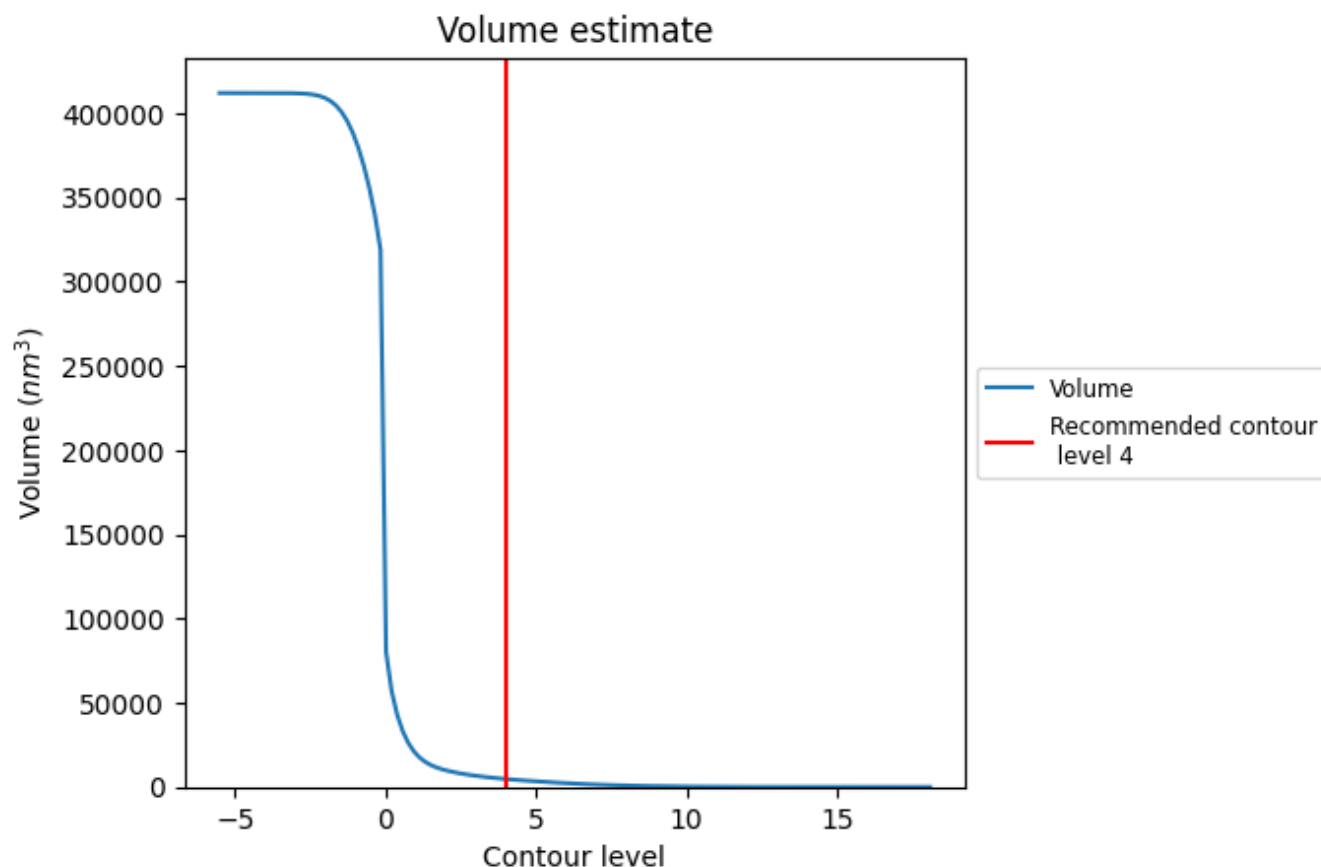
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

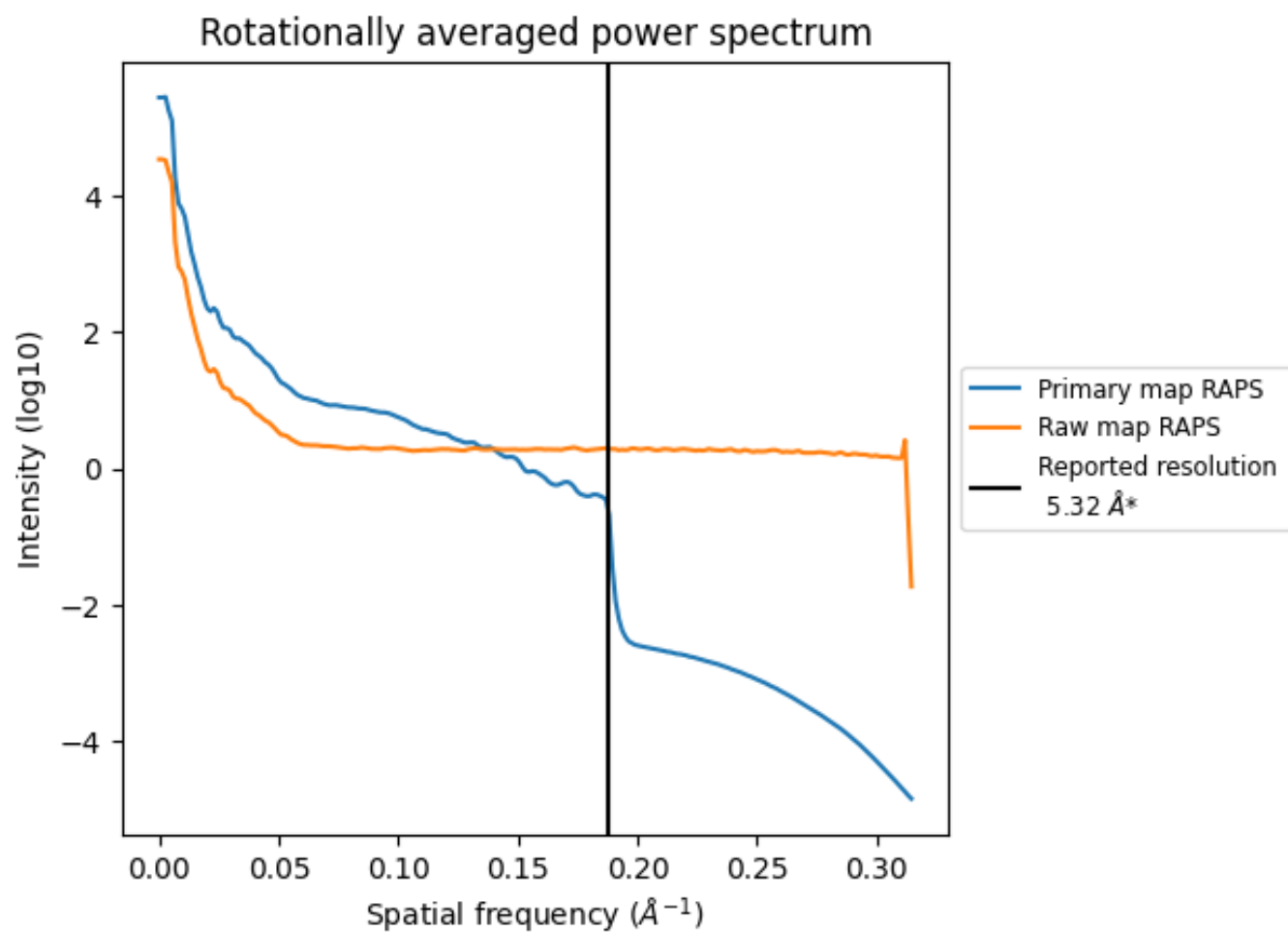
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 4704 nm^3 ; this corresponds to an approximate mass of 4250 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 ⓘ

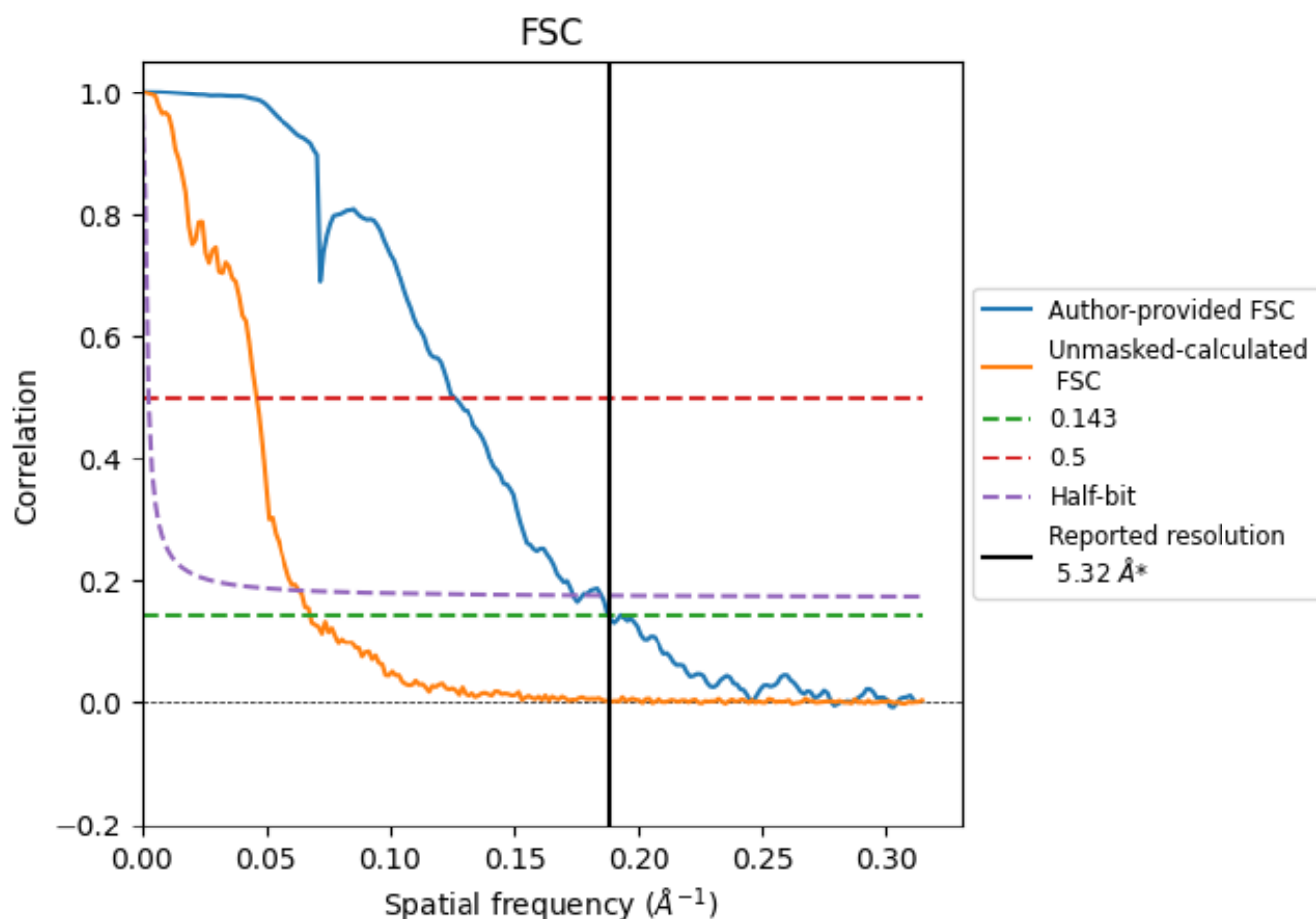


*Reported resolution corresponds to spatial frequency of 0.188 Å⁻¹

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 0.188 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

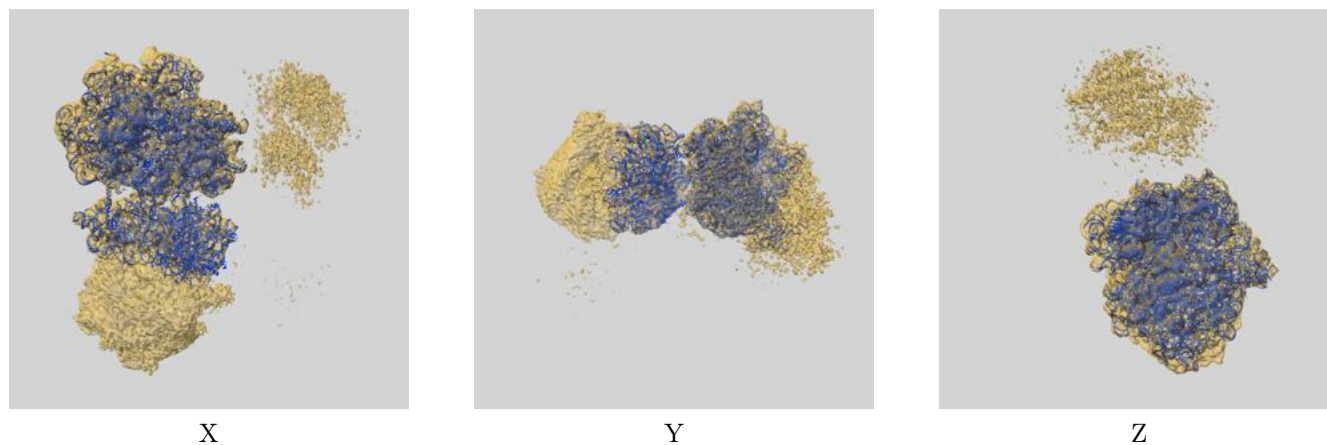
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.32	-	-
Author-provided FSC curve	5.32	7.96	5.75
Unmasked-calculated*	14.73	21.74	15.82

*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 14.73 differs from the reported value 5.32 by more than 10 %

9 Map-model fit [i](#)

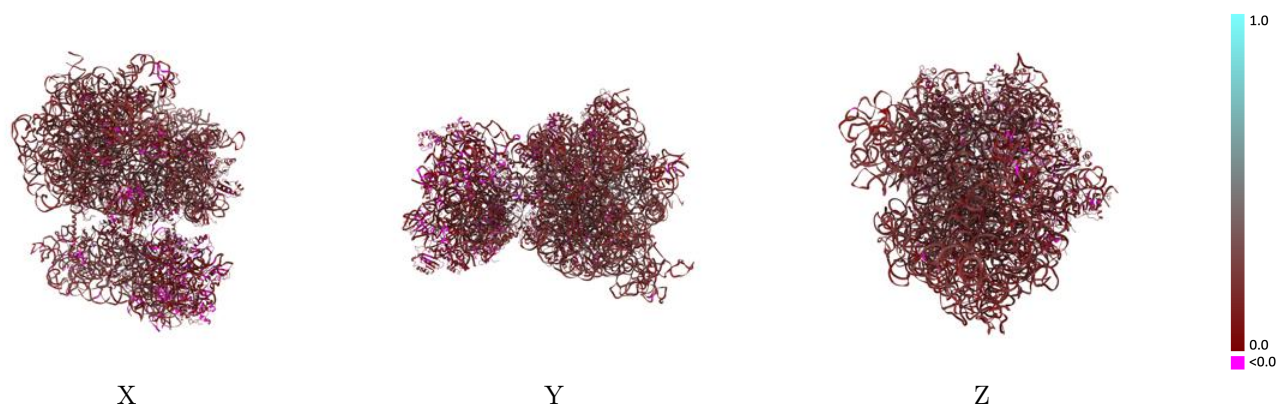
This section contains information regarding the fit between EMDB map EMD-19059 and PDB model 8RCT. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)



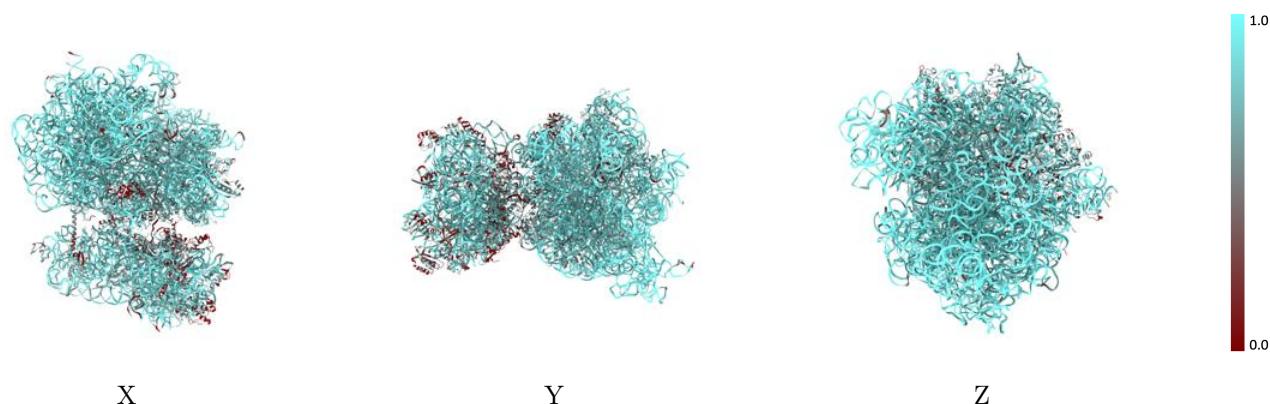
The images above show the 3D surface view of the map at the recommended contour level 4.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



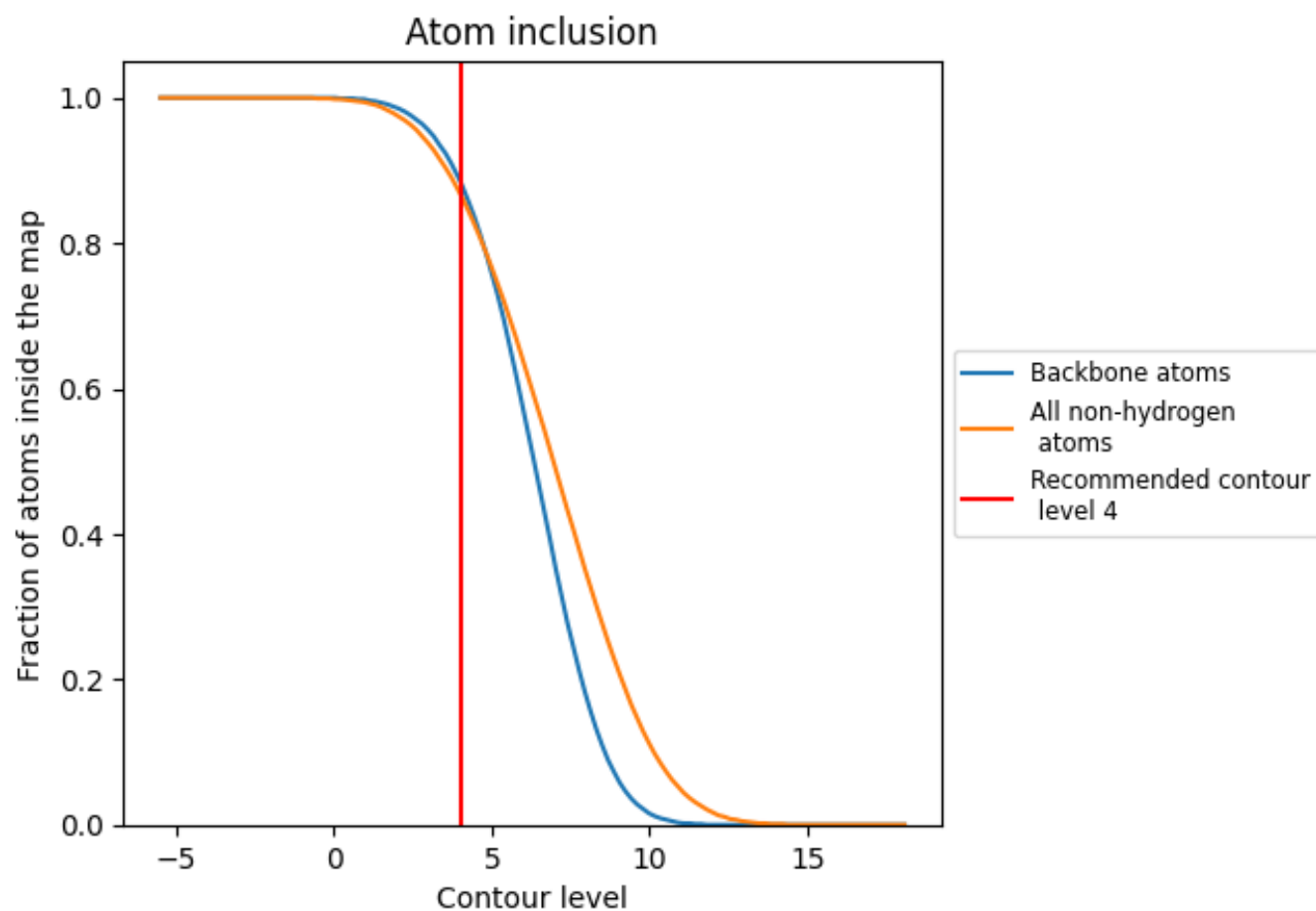
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (4).

9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 87% 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 (4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8670	 0.1810
12	 0.7490	 0.1540
32	 0.8240	 0.1270
4	 0.6620	 0.1440
41	 0.6070	 0.1250
62	 0.7920	 0.1240
71	 0.9680	 0.1820
72	 0.9680	 0.2000
82	 0.9620	 0.1910
A1	 0.9220	 0.1660
A2	 0.9740	 0.2300
B	 0.4180	 0.1370
B2	 0.6540	 0.1740
C1	 0.4850	 0.1320
C2	 0.7250	 0.1760
D1	 0.5790	 0.1370
D2	 0.6250	 0.1610
E1	 0.5240	 0.1440
E2	 0.7440	 0.1870
F1	 0.3400	 0.0990
F2	 0.5650	 0.1730
G1	 0.5660	 0.0960
G2	 0.7310	 0.1630
H1	 0.7080	 0.1330
H2	 0.7470	 0.1710
I1	 0.6370	 0.0860
I2	 0.8040	 0.1540
J1	 0.4500	 0.0600
J2	 0.7010	 0.1570
K1	 0.5220	 0.0940
K2	 0.6490	 0.1990
L1	 0.7580	 0.1590
L2	 0.7770	 0.1880
M1	 0.5400	 0.0750
M2	 0.7400	 0.1640



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Chain	Atom inclusion	Q-score
N1	 0.4690	 0.0900
N2	 0.8270	 0.1660
O1	 0.7220	 0.1240
O2	 0.7450	 0.1640
P1	 0.8050	 0.1520
Q1	 0.6680	 0.1060
Q2	 0.7560	 0.1570
R1	 0.4900	 0.1000
R2	 0.5120	 0.1450
S1	 0.6180	 0.0540
S2	 0.8350	 0.1430
T1	 0.7050	 0.1130
U1	 0.5090	 0.1220
U2	 0.6020	 0.1790
V2	 0.5850	 0.1300
W	 0.9500	 0.2080
W1	 0.8490	 0.1170
Y	 0.4220	 0.1580
Y1	 0.6320	 0.1260
Z1	 0.0000	 0.0470
a2	 0.4200	 0.0860
b2	 0.7190	 0.1560
e2	 0.7350	 0.1280
g2	 0.7800	 0.1320
h2	 0.7750	 0.1620
i2	 0.3920	 0.1630
l2	 0.8820	 0.1320
o2	 0.8830	 0.1090
p	 0.3240	 0.0570
r2	 0.7970	 0.1130
z2	 0.8680	 0.1120