



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 04:23 AM UTC

PDB ID : 9B24 / pdb_00009b24
EMDB ID : EMD-44097
Title : WT strain gidB mutant mycobacterial ribosome
Authors : Young, I.D.; Chen, Y.; Javid, B.; Fraser, J.S.
Deposited on : 2024-03-14
Resolution : 2.47 Å(reported)
Based on initial models : 5o5j, 5o60

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
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

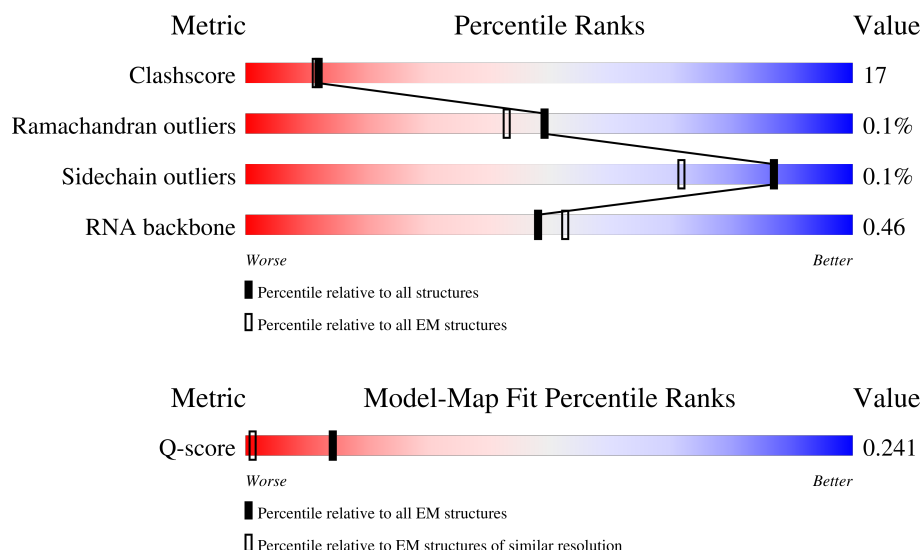
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.47 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	6086 (1.98 - 2.97)

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	A	1528	
2	C	275	
3	D	201	

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Mol	Chain	Length	Quality of chain
4	E	214	
5	F	96	
6	G	156	
7	H	132	
8	I	150	
9	J	101	
10	K	138	
11	L	124	
12	M	124	
13	N	61	
14	O	89	
15	P	156	
16	Q	98	
17	R	84	
18	T	86	
19	V	277	
20	Y	3120	
21	U	118	
22	Z	278	
23	a	217	
24	b	215	
25	c	187	
26	d	179	
27	e	142	
28	f	147	

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Mol	Chain	Length	Quality of chain
29	g	122	
30	h	147	
31	i	138	
32	j	199	
33	k	127	
34	l	113	
35	m	129	
36	n	103	
37	o	153	
38	p	100	
39	q	105	
40	r	215	
41	s	88	
42	t	64	
43	u	77	
44	v	175	
45	w	61	
46	x	57	
47	y	55	
48	z	47	
49	1	64	
50	2	37	
51	4	81	

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 146980 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called RNA (1528-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1511	Total	C	N	O	P	0	0
			32439	14448	5930	10550	1511		

- Molecule 2 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	208	Total	C	N	O	S	0	0
			1660	1036	322	298	4		

- Molecule 3 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	200	Total	C	N	O	S	0	0
			1641	1028	316	295	2		

- Molecule 4 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	180	Total	C	N	O	S	0	0
			1296	812	245	235	4		

- Molecule 5 is a protein called Small ribosomal subunit protein bS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	F	96	Total	C	N	O	S	0	0
			771	486	138	145	2		

- Molecule 6 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	155	Total	C	N	O	S	0	0
			1232	768	241	221	2		

- Molecule 7 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	H	131	Total	C	N	O	S	0	0
			1010	633	189	187	1		

- Molecule 8 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	126	Total	C	N	O	S	0	0
			994	630	194	170			

- Molecule 9 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	J	99	Total	C	N	O	S	0	0
			788	495	146	144	3		

- Molecule 10 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	K	115	Total	C	N	O	S	0	0
			855	528	170	156	1		

- Molecule 11 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	122	Total	C	N	O	S	0	0
			958	594	197	165	2		

- Molecule 12 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	116	Total	C	N	O	S	0	0
			935	572	191	169	3		

- Molecule 13 is a protein called Small ribosomal subunit protein uS14B.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N	60	Total	C	N	O	S	0	0
			477	302	97	73	5		

- Molecule 14 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	O	88	Total	C	N	O	0	0
			720	449	147	124		

- Molecule 15 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	P	96	Total	C	N	O	0	0
			764	488	142	134		

- Molecule 16 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	94	Total	C	N	O	S	0	0
			748	469	142	135	2		

- Molecule 17 is a protein called Small ribosomal subunit protein bS18B.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	65	Total	C	N	O	S	0	0
			513	318	102	90	3		

- Molecule 18 is a protein called Small ribosomal subunit protein bS20.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	T	85	Total	C	N	O	0	0
			660	402	139	119		

- Molecule 19 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	V	228	Total	C	N	O	S	0	0
			1793	1132	322	330	9		

- Molecule 20 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Y	3038	Total	C	N	O	P	0	0
			65241	29079	12000	21124	3038		

- Molecule 21 is a RNA chain called 5S rRNA.

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

- Molecule 22 is a protein called Large ribosomal subunit protein uL2.

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

- Molecule 23 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 24 is a protein called Large ribosomal subunit protein uL4.

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

- Molecule 25 is a protein called Large ribosomal subunit protein uL5.

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

- Molecule 26 is a protein called Large ribosomal subunit protein uL6.

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

- Molecule 27 is a protein called Large ribosomal subunit protein uL11.

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

- Molecule 28 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 29 is a protein called Large ribosomal subunit protein uL14.

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

- Molecule 30 is a protein called Large ribosomal subunit protein uL15.

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

- Molecule 31 is a protein called Large ribosomal subunit protein uL16.

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

- Molecule 32 is a protein called Large ribosomal subunit protein bL17.

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

- Molecule 33 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	k	126	Total	C	N	O	S	0	0
			956	586	199	171			

- Molecule 34 is a protein called Large ribosomal subunit protein bL19.

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

- Molecule 35 is a protein called Large ribosomal subunit protein bL20.

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

- Molecule 36 is a protein called Large ribosomal subunit protein bL21.

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

- Molecule 37 is a protein called Large ribosomal subunit protein uL22.

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

- Molecule 38 is a protein called Large ribosomal subunit protein uL23.

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

- Molecule 39 is a protein called Large ribosomal subunit protein uL24.

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

- Molecule 40 is a protein called Large ribosomal subunit protein bL25.

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

- Molecule 41 is a protein called Large ribosomal subunit protein bL27.

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

- Molecule 42 is a protein called Large ribosomal subunit protein bL28.

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

- Molecule 43 is a protein called Large ribosomal subunit protein uL29.

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

- Molecule 44 is a protein called Large ribosomal subunit protein uL10.

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

- Molecule 45 is a protein called Large ribosomal subunit protein uL30.

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

- Molecule 46 is a protein called Large ribosomal subunit protein bL32.

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

- Molecule 47 is a protein called Large ribosomal subunit protein bL33A.

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

- Molecule 48 is a protein called Large ribosomal subunit protein bL34.

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

- Molecule 49 is a protein called Large ribosomal subunit protein bL35.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	1	63	Total	C	N	O	0	0
			502	302	115	85		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	2	37	Total	C	N	O	S	0	0
			299	181	66	47	5		

- Molecule 51 is a RNA chain called 23S rRNA part.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	4	81	Total	C	N	O	P	0	0
			1740	775	313	571	81		

- Molecule 52 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
52	A	199	Total	Mg	0
			199	199	
52	D	1	Total	Mg	0
			1	1	
52	E	4	Total	Mg	0
			4	4	
52	I	1	Total	Mg	0
			1	1	
52	K	2	Total	Mg	0
			2	2	
52	N	1	Total	Mg	0
			1	1	
52	P	1	Total	Mg	0
			1	1	
52	Q	2	Total	Mg	0
			2	2	
52	R	1	Total	Mg	0
			1	1	
52	T	5	Total	Mg	0
			5	5	
52	Y	379	Total	Mg	0
			379	379	
52	U	10	Total	Mg	0
			10	10	

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Mol	Chain	Residues	Atoms		AltConf
52	Z	8	Total 8	Mg 8	0
52	a	1	Total 1	Mg 1	0
52	b	1	Total 1	Mg 1	0
52	h	1	Total 1	Mg 1	0
52	i	1	Total 1	Mg 1	0
52	o	1	Total 1	Mg 1	0
52	p	1	Total 1	Mg 1	0
52	t	1	Total 1	Mg 1	0
52	u	1	Total 1	Mg 1	0
52	y	1	Total 1	Mg 1	0
52	1	1	Total 1	Mg 1	0

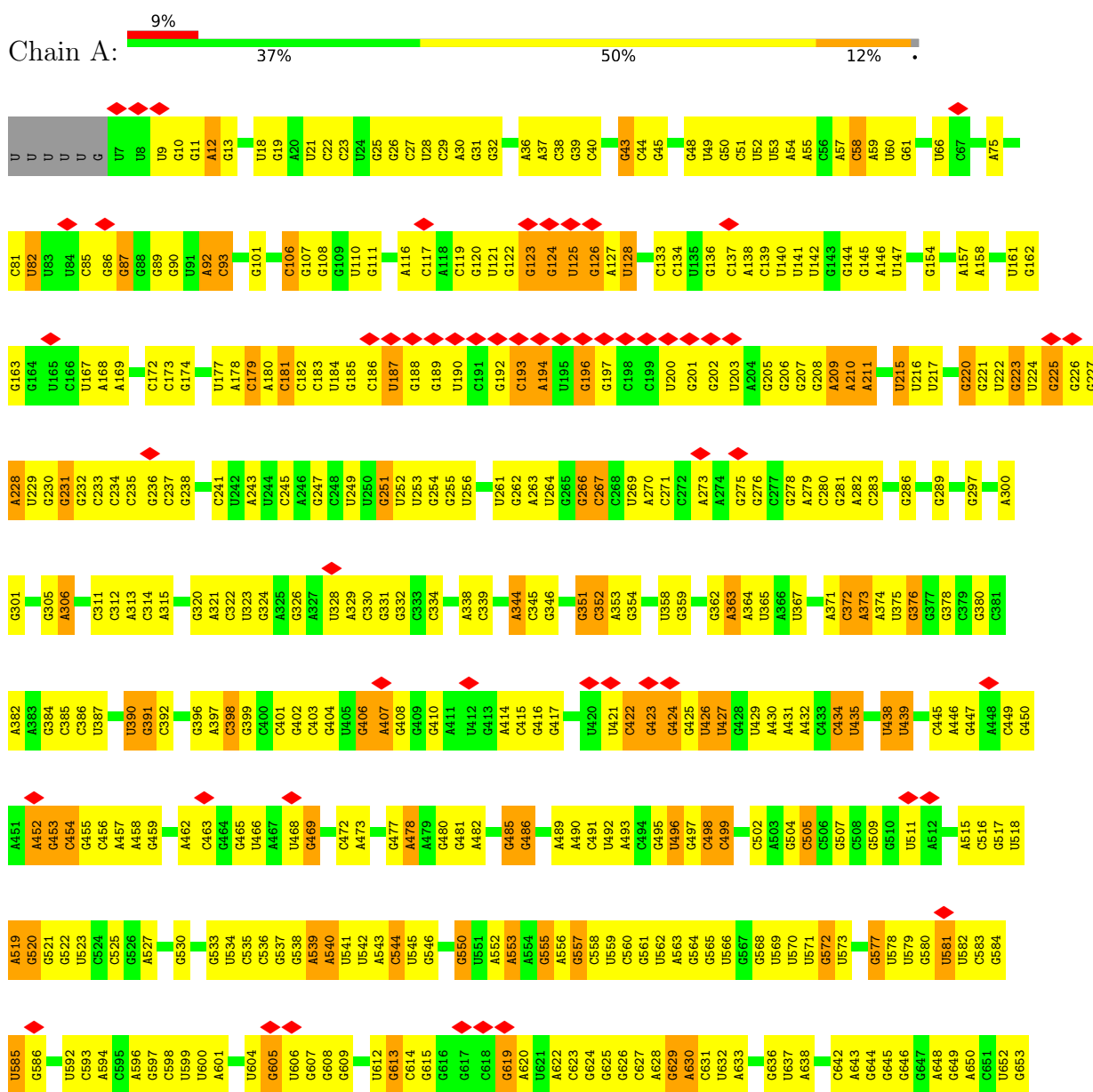
- Molecule 53 is ZINC ION (CCD ID: ZN) (formula: Zn).

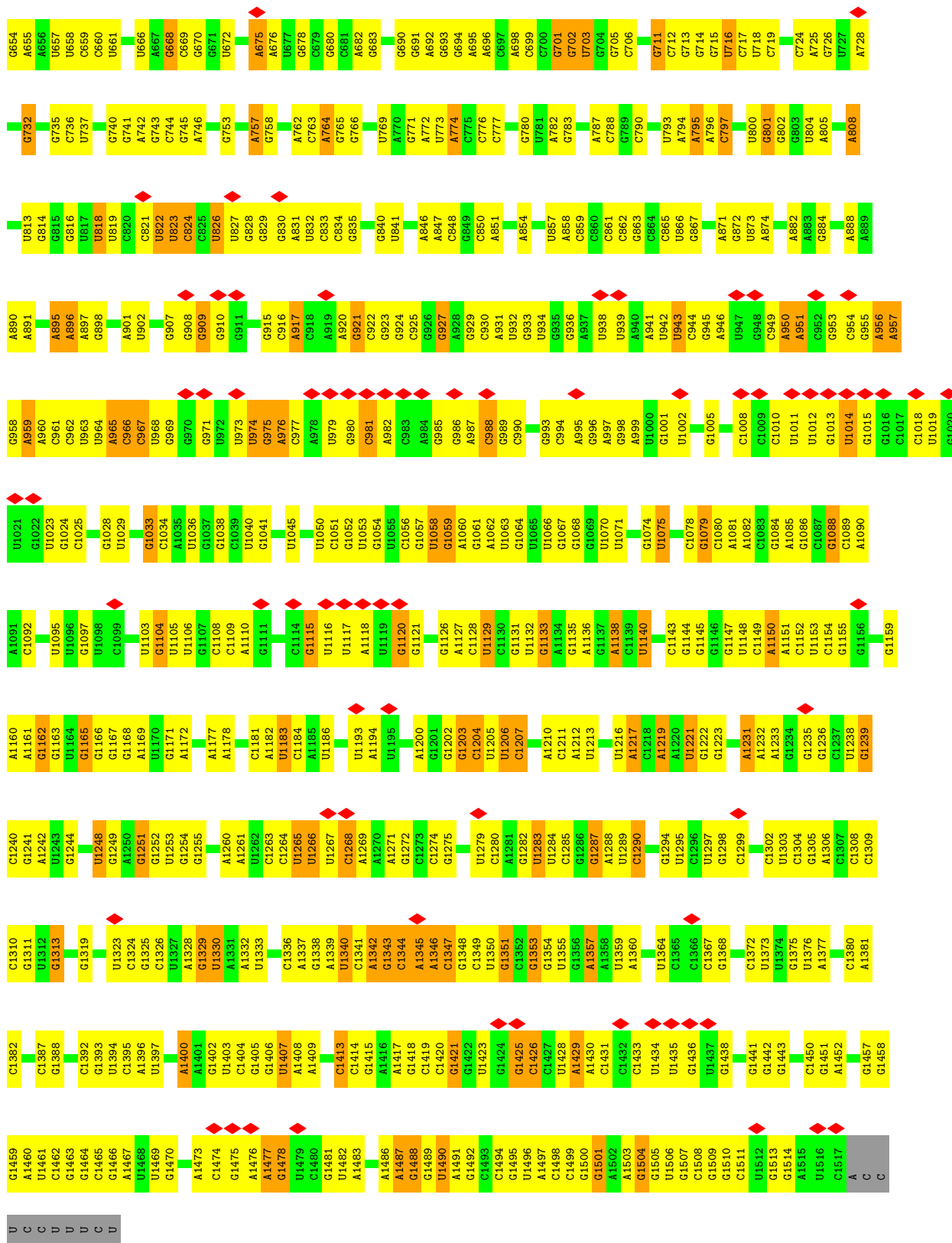
Mol	Chain	Residues	Atoms		AltConf
53	N	1	Total 1	Zn 1	0
53	R	1	Total 1	Zn 1	0
53	t	1	Total 1	Zn 1	0
53	y	1	Total 1	Zn 1	0
53	2	1	Total 1	Zn 1	0

3 Residue-property plots

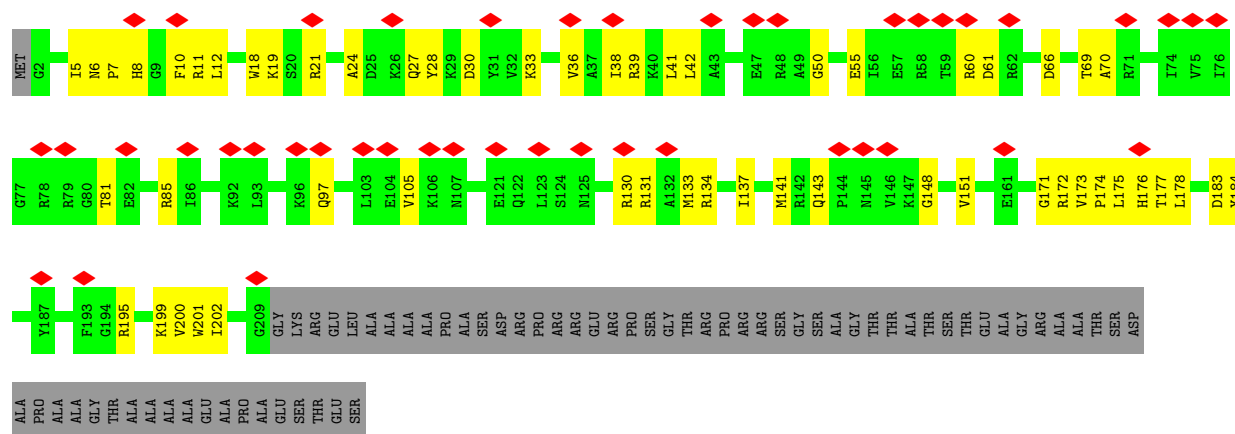
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: RNA (1528-MER)

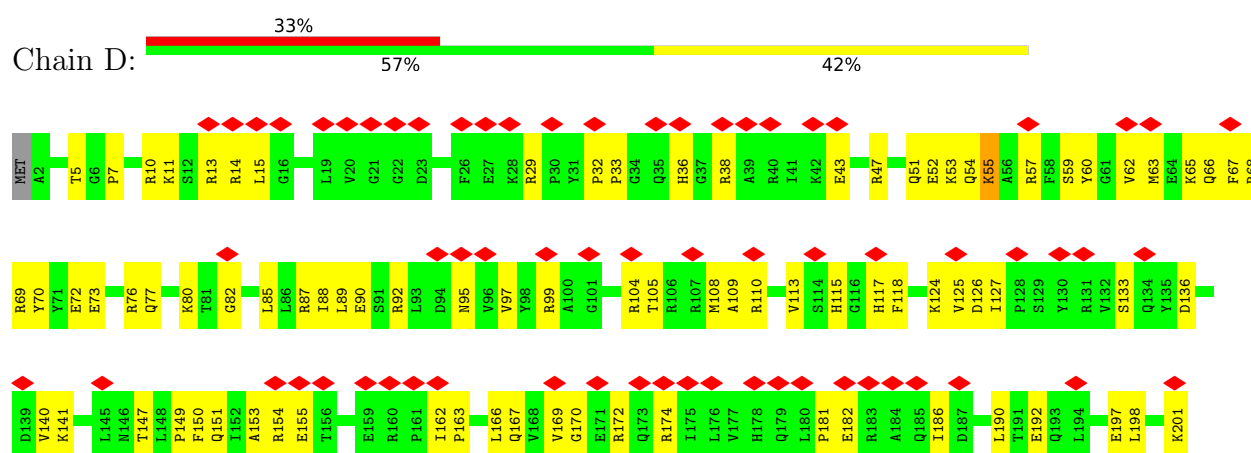




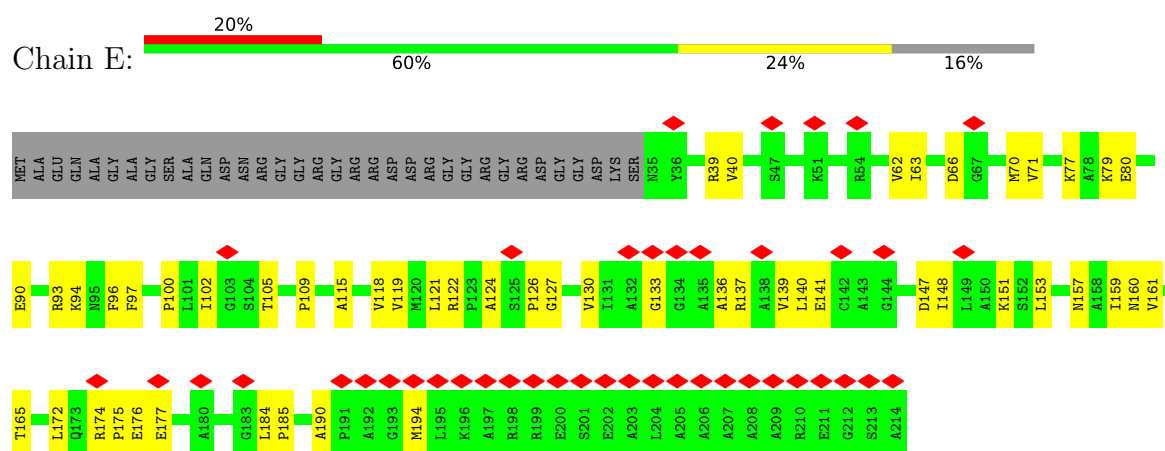
• Molecule 2: Small ribosomal subunit protein uS3



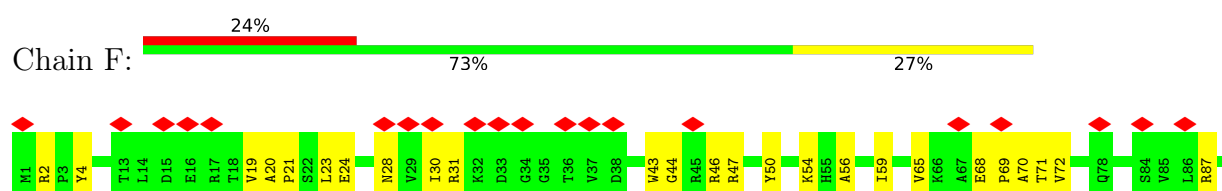
• Molecule 3: Small ribosomal subunit protein uS4

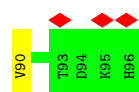


• Molecule 4: Small ribosomal subunit protein uS5

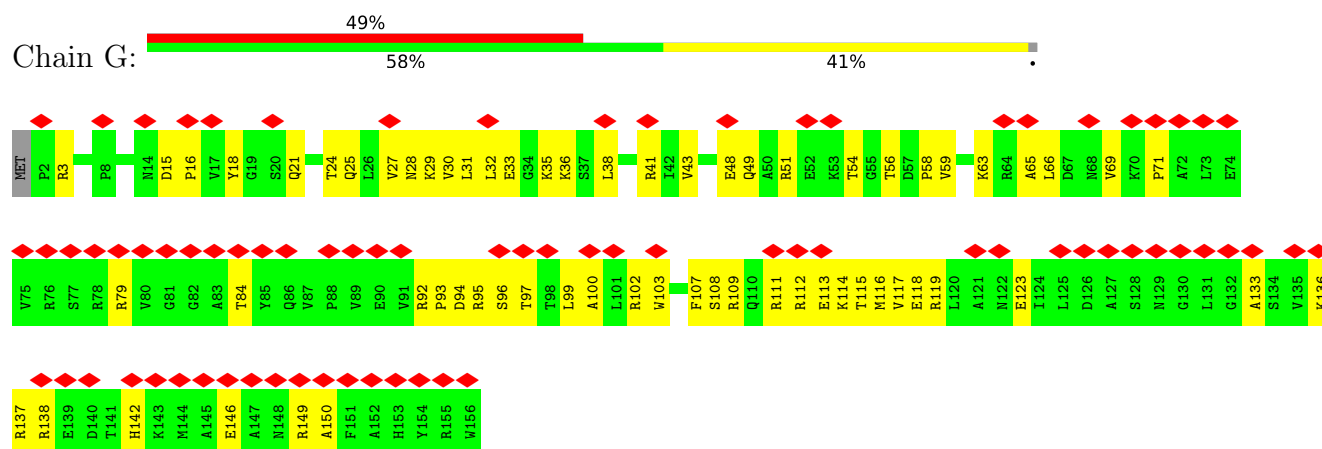


• Molecule 5: Small ribosomal subunit protein bS6

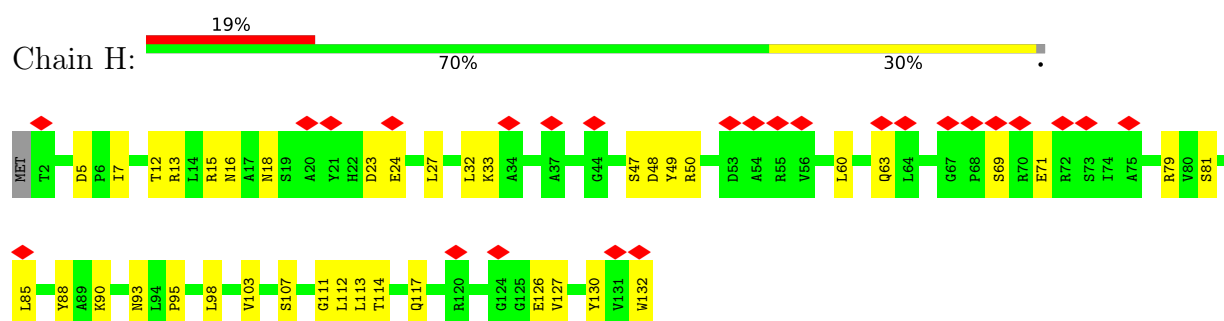




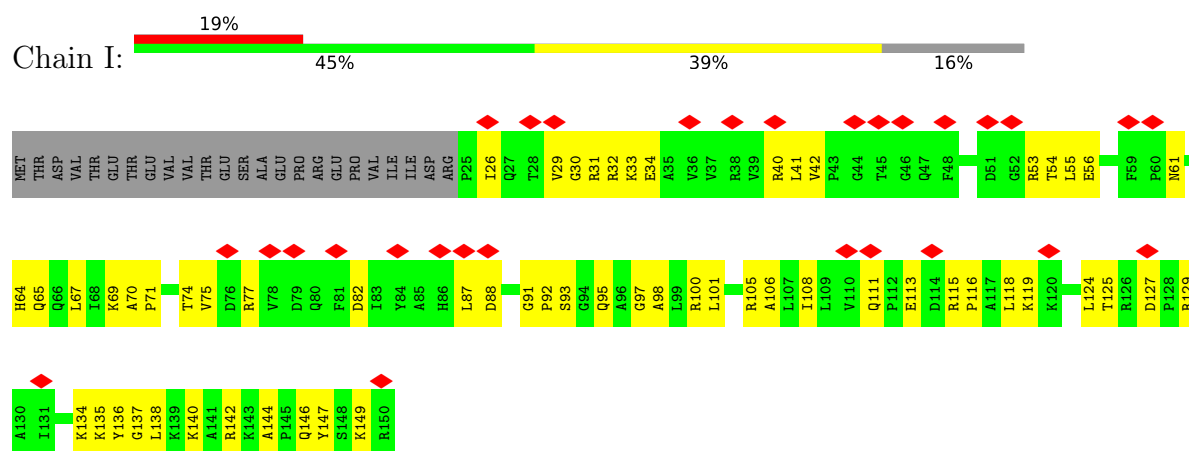
- Molecule 6: Small ribosomal subunit protein uS7



- Molecule 7: Small ribosomal subunit protein uS8

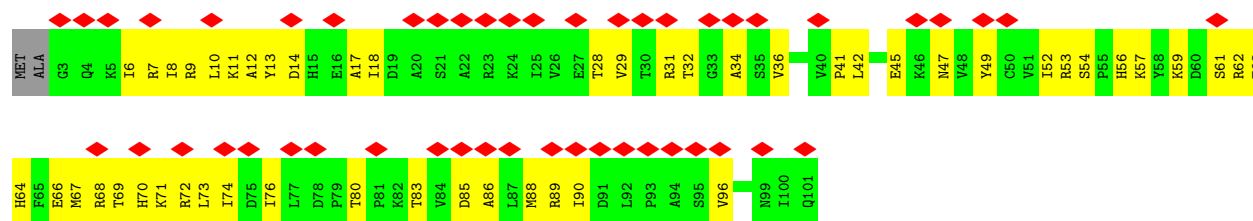


- Molecule 8: Small ribosomal subunit protein uS9

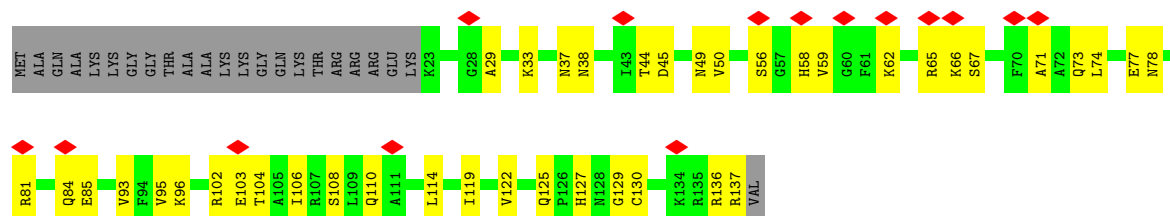


- Molecule 9: Small ribosomal subunit protein uS10

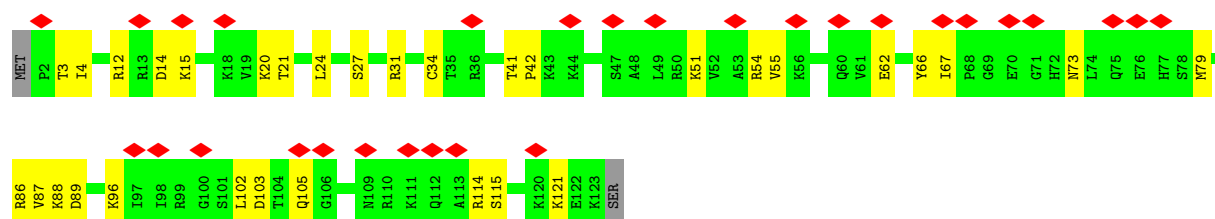




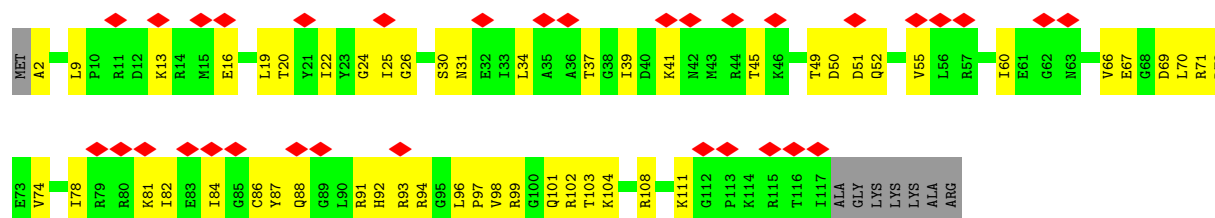
- Molecule 10: Small ribosomal subunit protein uS11



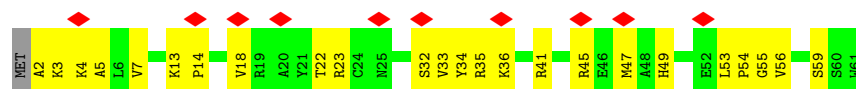
- Molecule 11: Small ribosomal subunit protein uS12



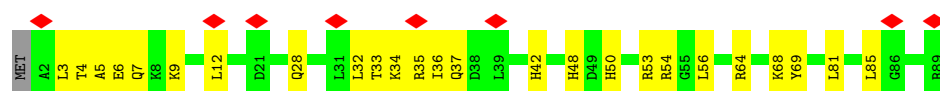
- Molecule 12: Small ribosomal subunit protein uS13



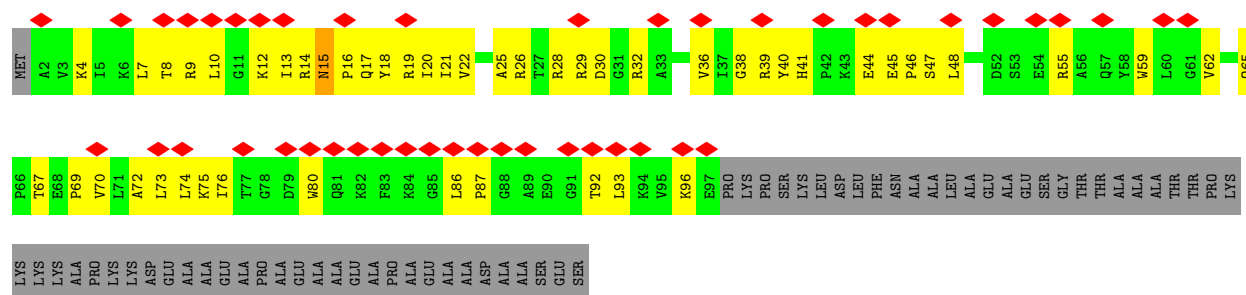
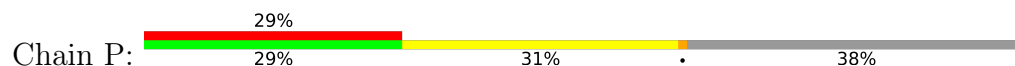
- Molecule 13: Small ribosomal subunit protein uS14B



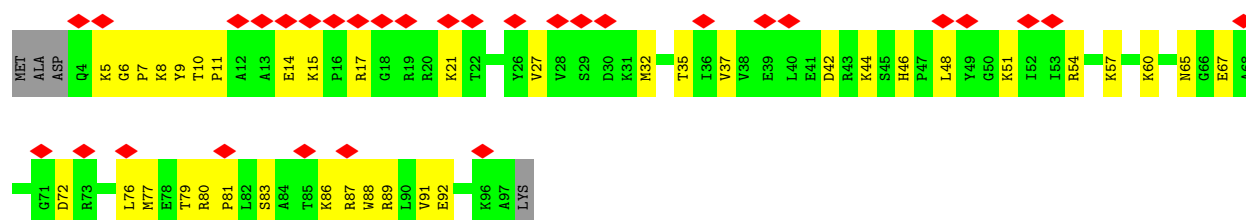
- Molecule 14: Small ribosomal subunit protein uS15



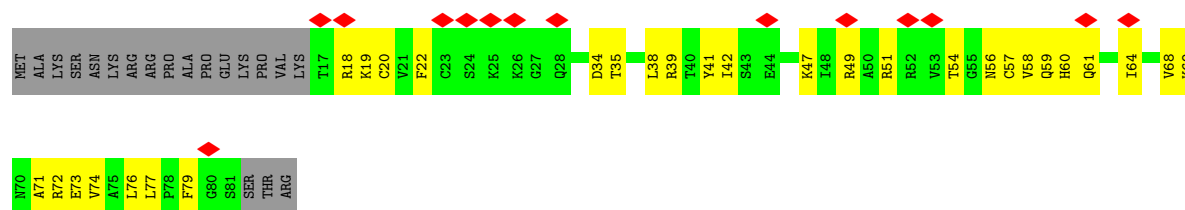
• Molecule 15: Small ribosomal subunit protein bS16



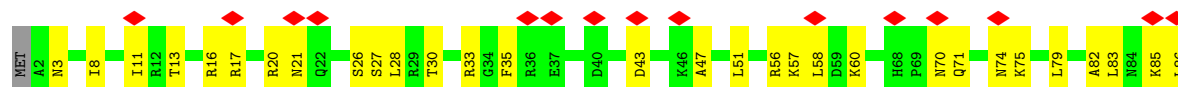
• Molecule 16: Small ribosomal subunit protein uS17



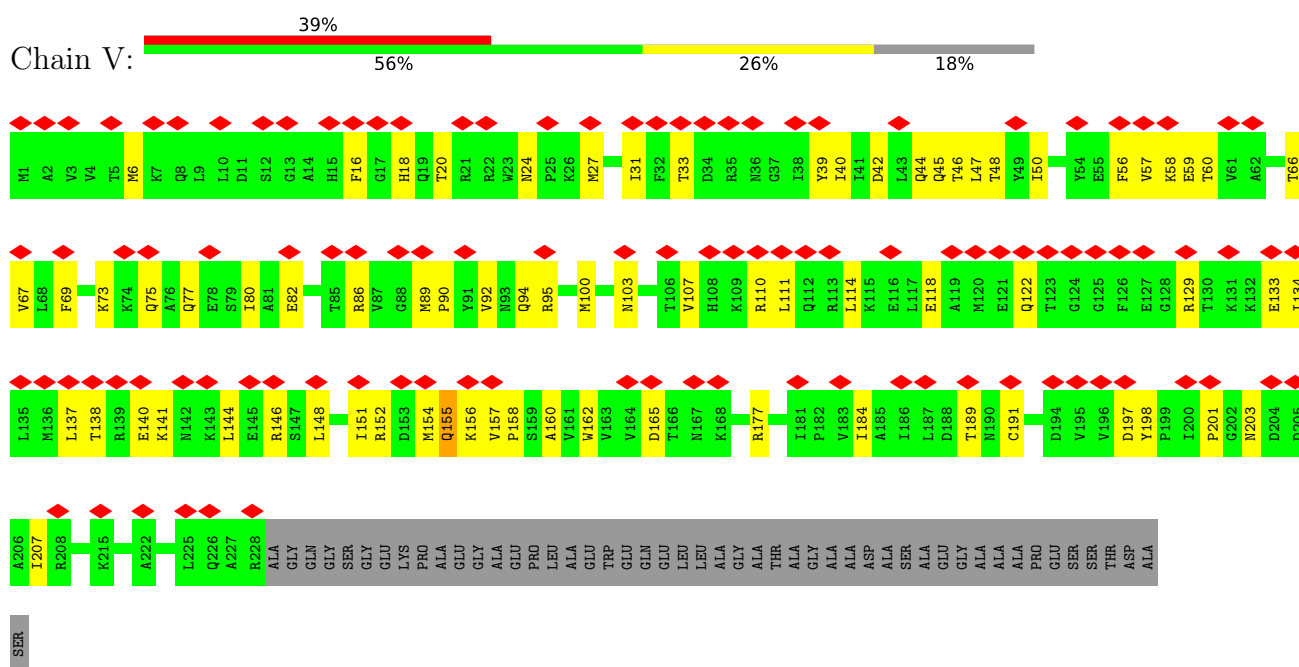
• Molecule 17: Small ribosomal subunit protein bS18B



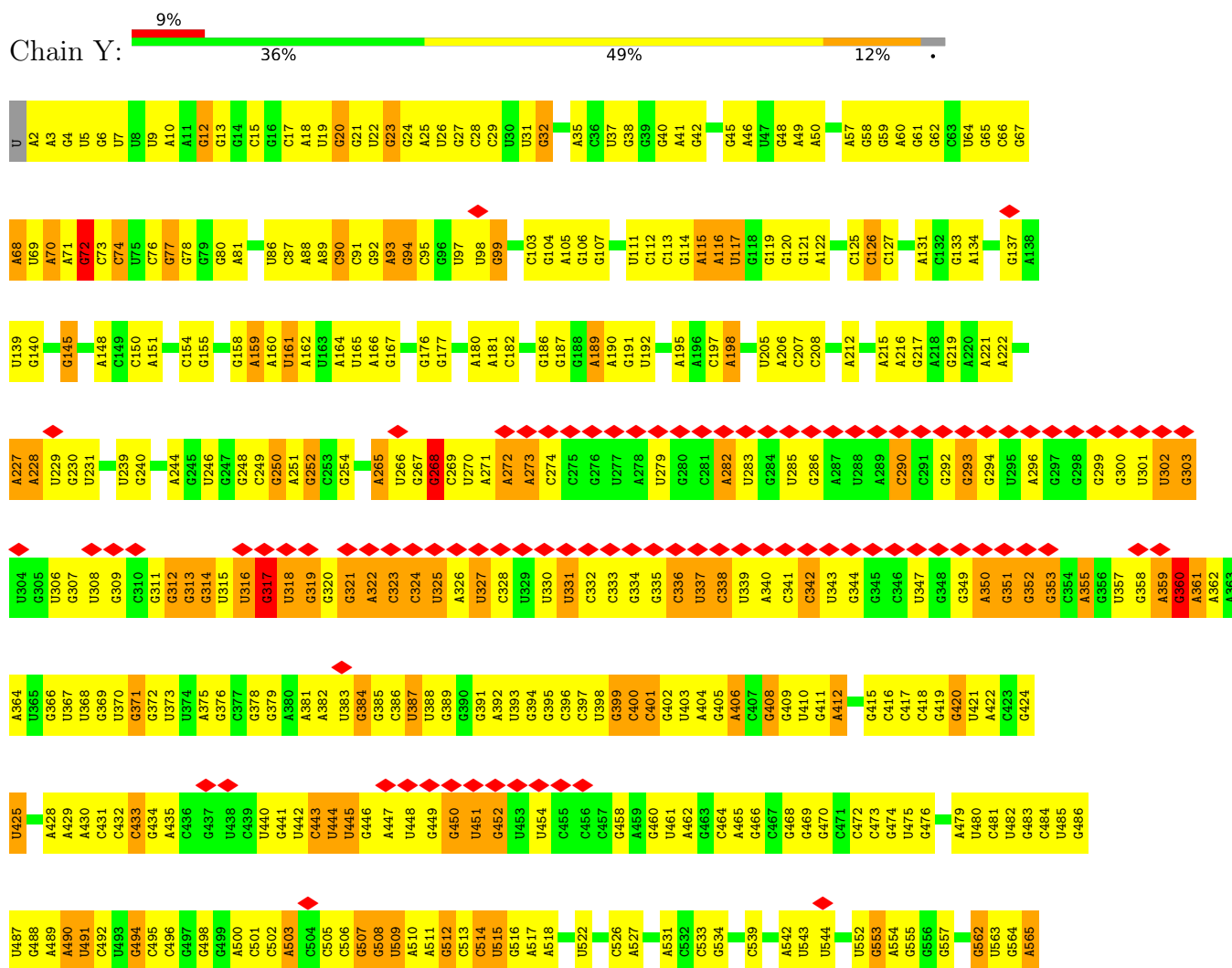
• Molecule 18: Small ribosomal subunit protein bS20

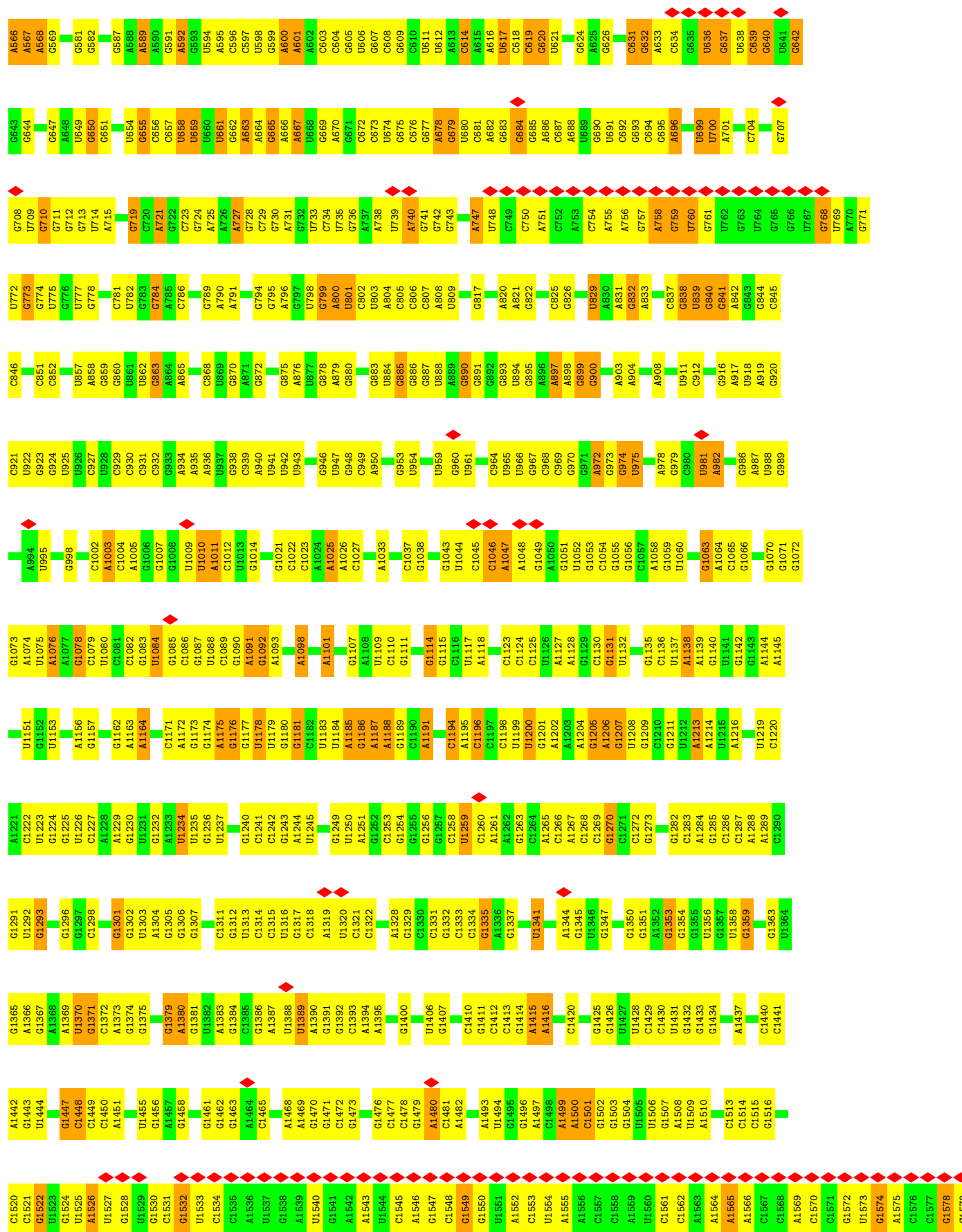


• Molecule 19: Small ribosomal subunit protein uS2

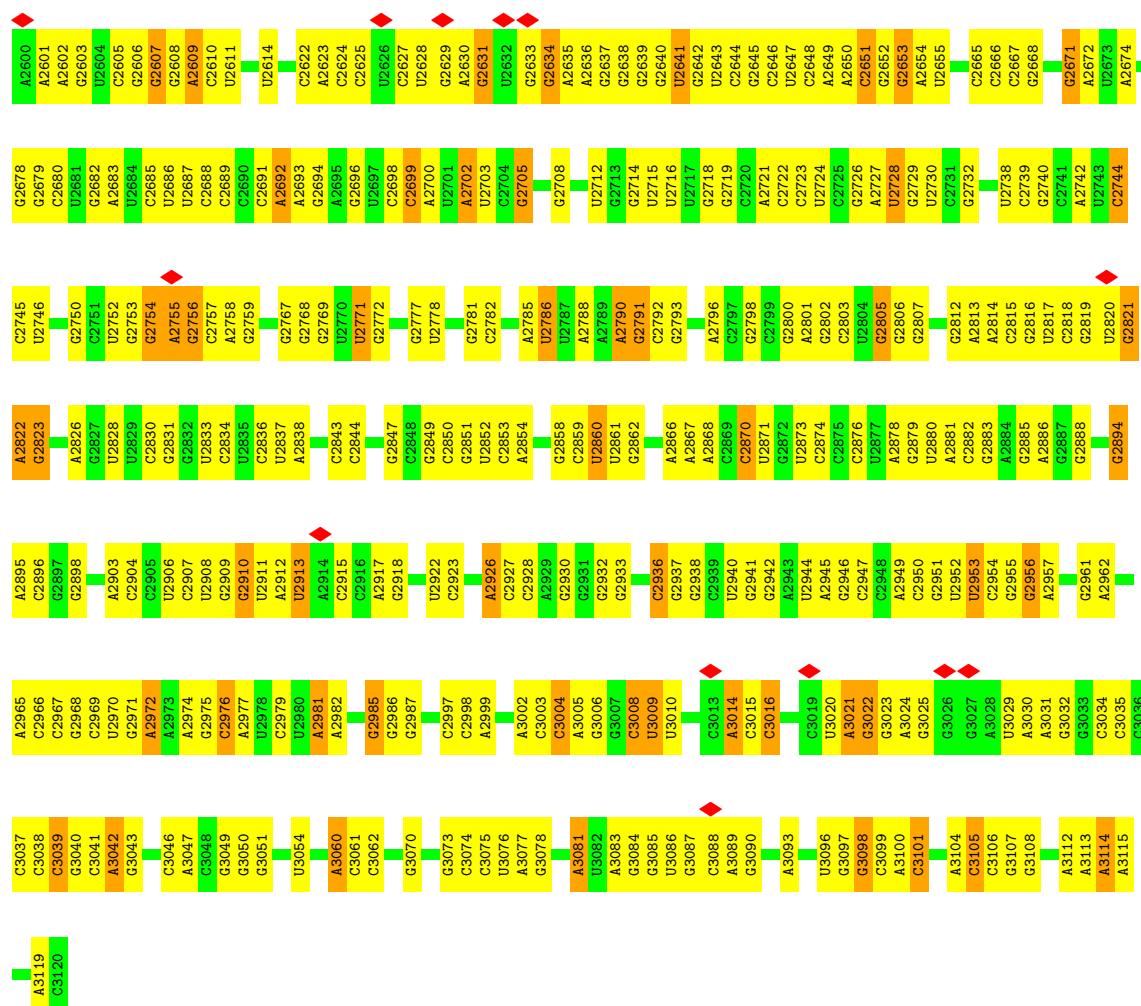


• Molecule 20: 23S rRNA

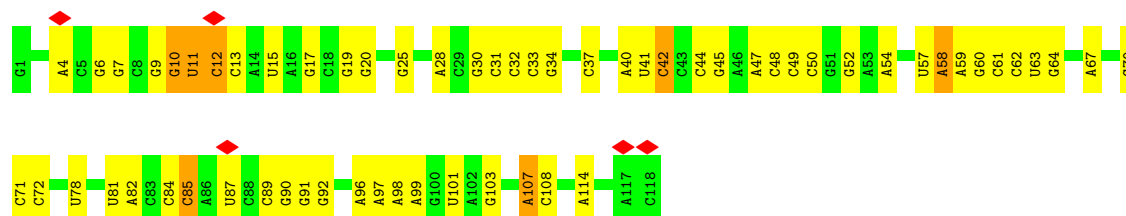




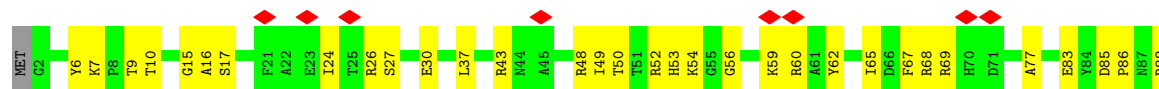


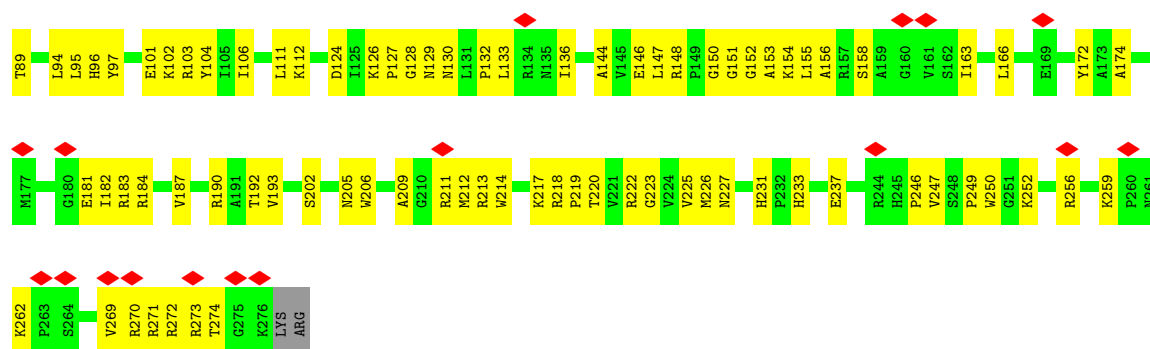


• Molecule 21: 5S rRNA

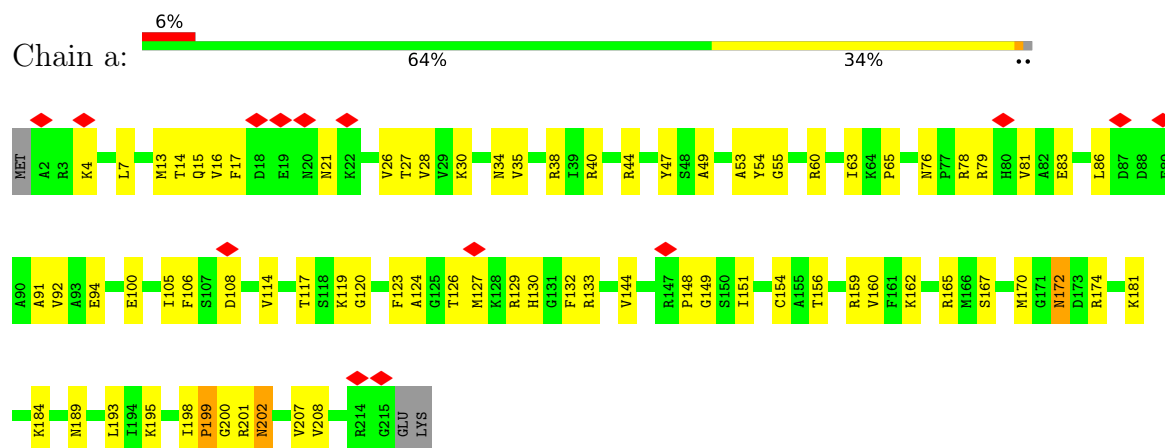


• Molecule 22: Large ribosomal subunit protein uL2

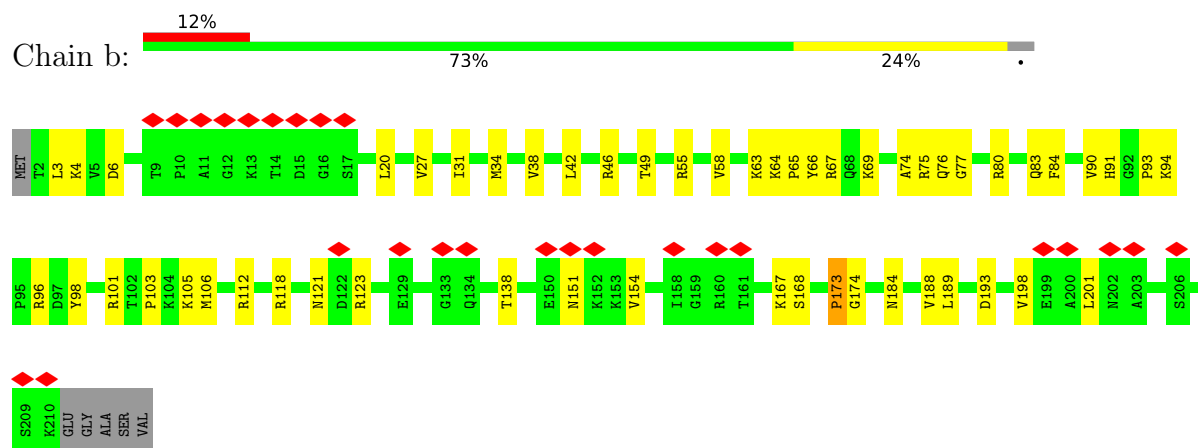




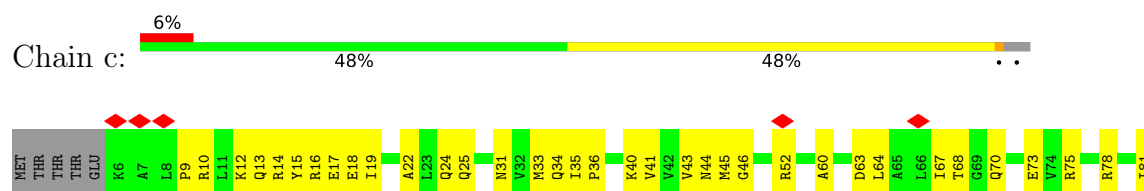
• Molecule 23: Large ribosomal subunit protein uL3

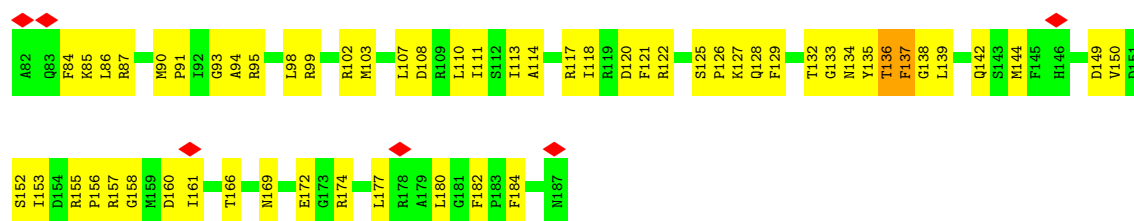


• Molecule 24: Large ribosomal subunit protein uL4

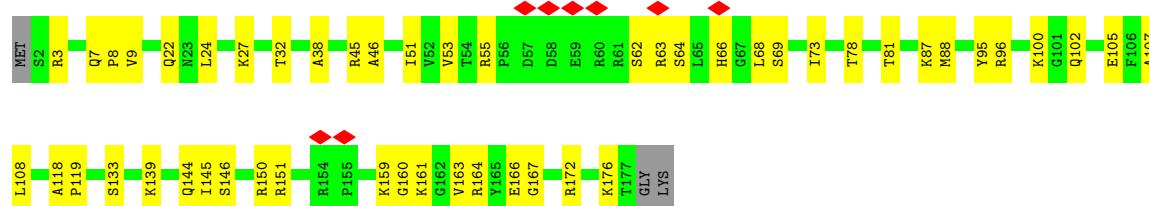


• Molecule 25: Large ribosomal subunit protein uL5

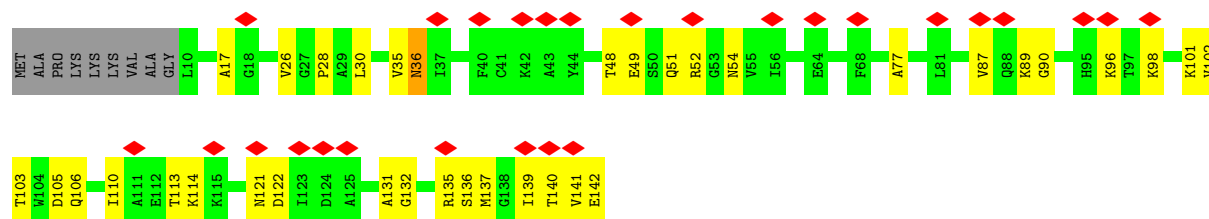




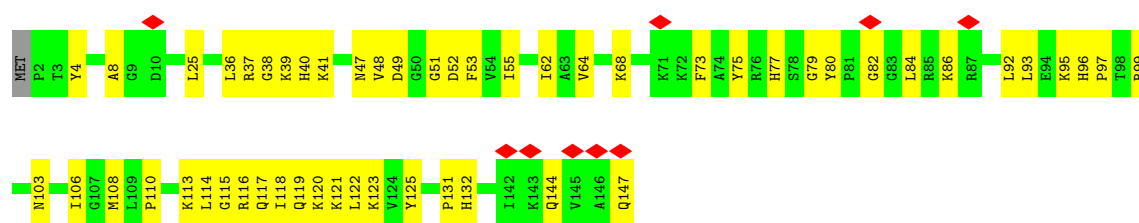
- Molecule 26: Large ribosomal subunit protein uL6



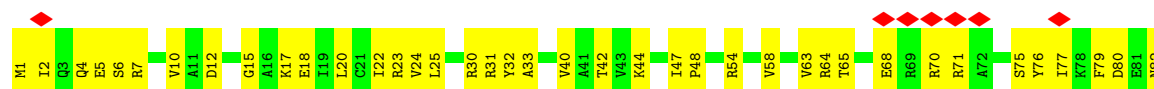
- Molecule 27: Large ribosomal subunit protein uL11



- Molecule 28: Large ribosomal subunit protein uL13

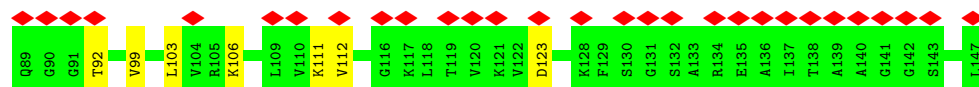
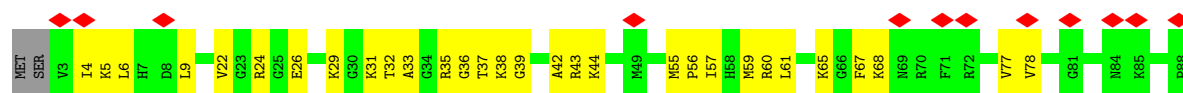
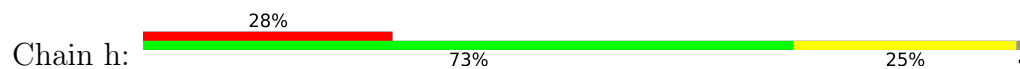


- Molecule 29: Large ribosomal subunit protein uL14

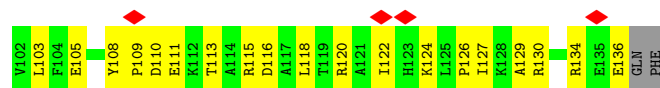
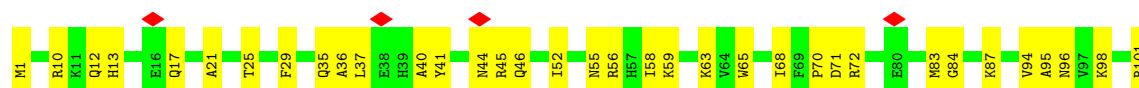




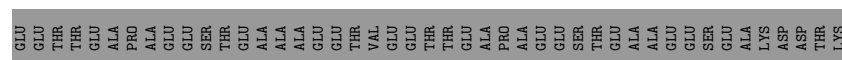
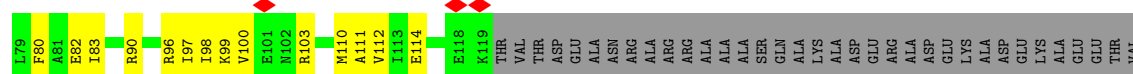
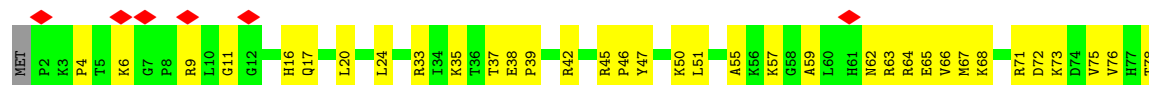
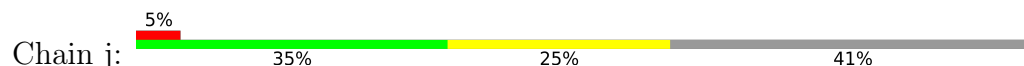
- Molecule 30: Large ribosomal subunit protein uL15



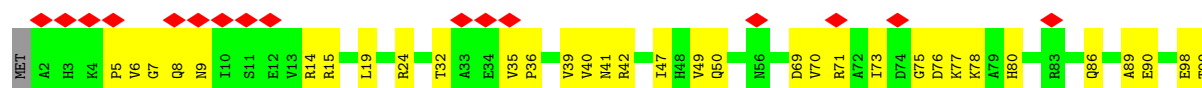
- Molecule 31: Large ribosomal subunit protein uL16



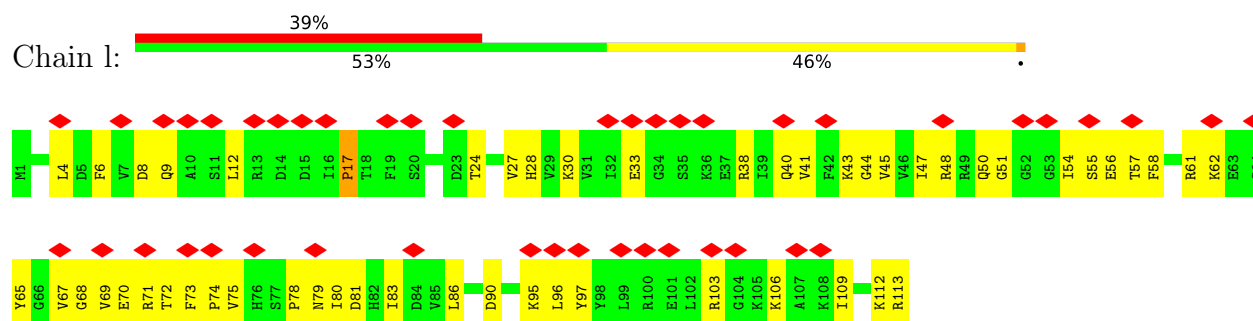
- Molecule 32: Large ribosomal subunit protein bL17



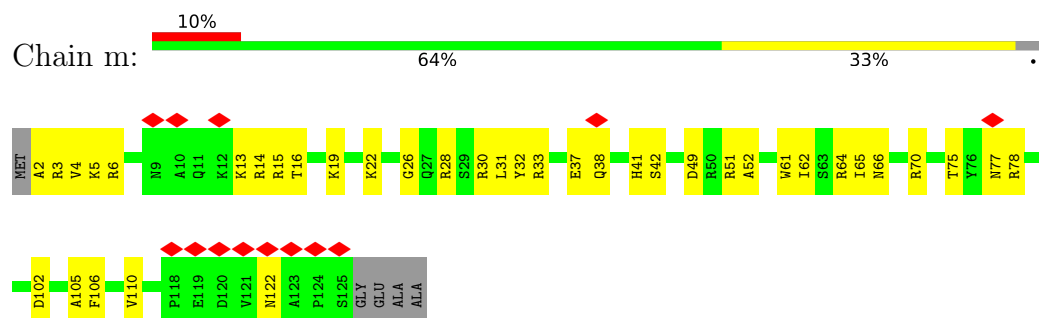
- Molecule 33: Large ribosomal subunit protein uL18



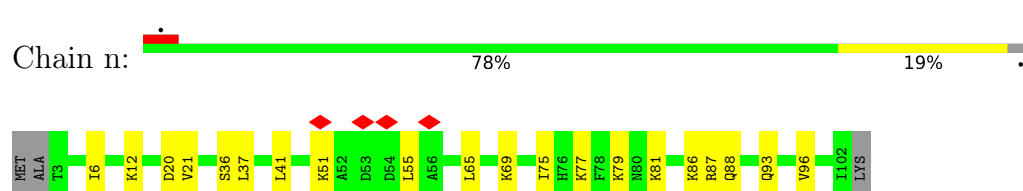
- Molecule 34: Large ribosomal subunit protein bL19



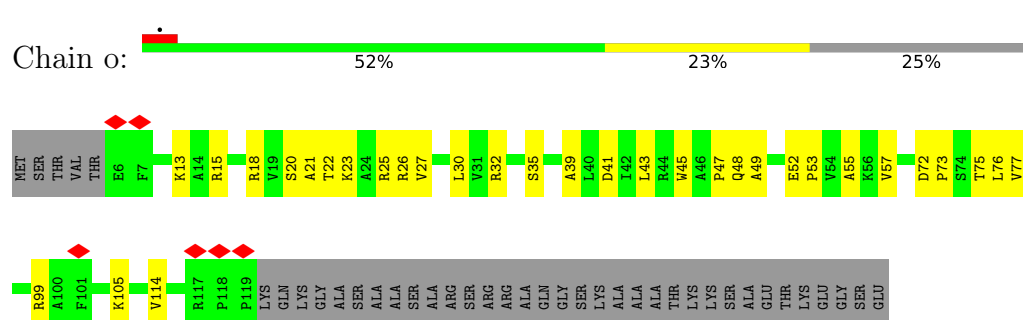
- Molecule 35: Large ribosomal subunit protein bL20



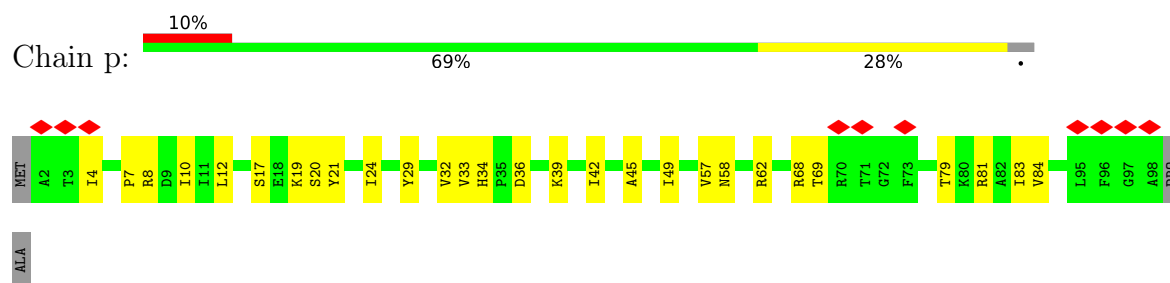
- Molecule 36: Large ribosomal subunit protein bL21



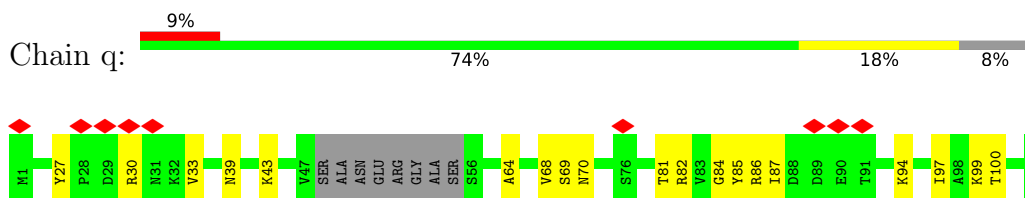
- Molecule 37: Large ribosomal subunit protein uL22



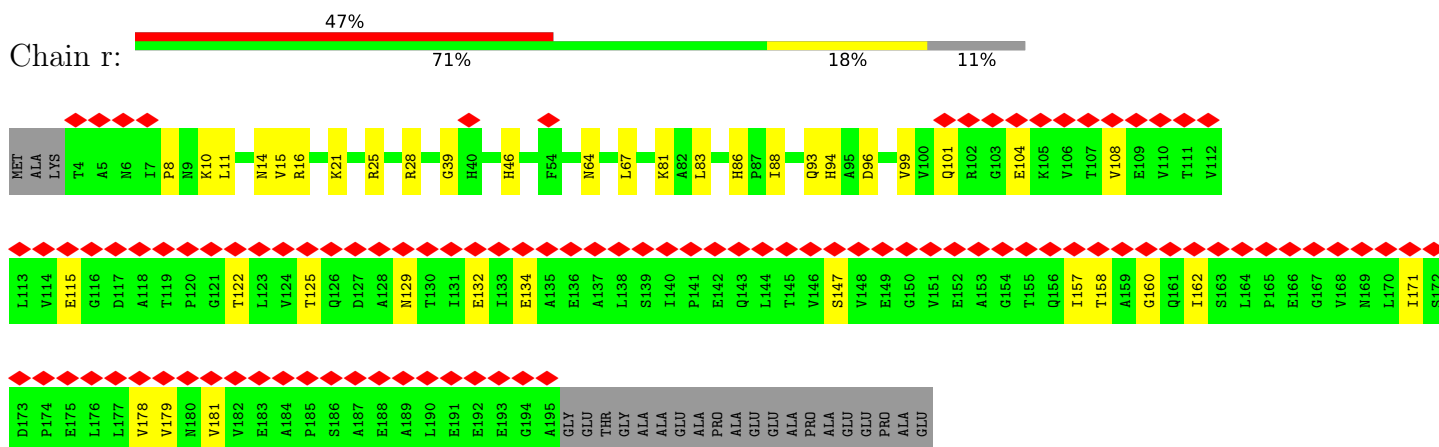
- Molecule 38: Large ribosomal subunit protein uL23



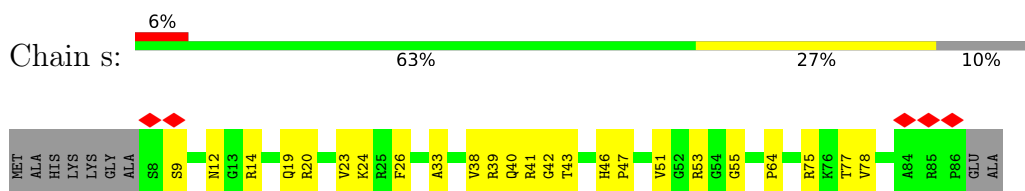
- Molecule 39: Large ribosomal subunit protein uL24



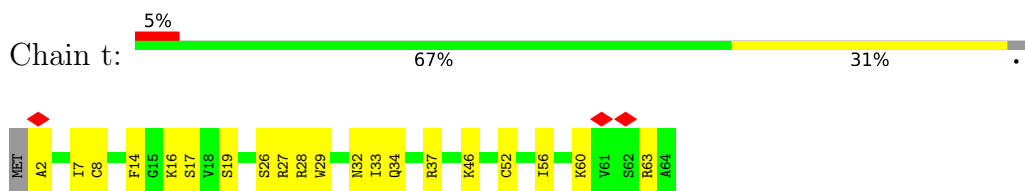
- Molecule 40: Large ribosomal subunit protein bL25



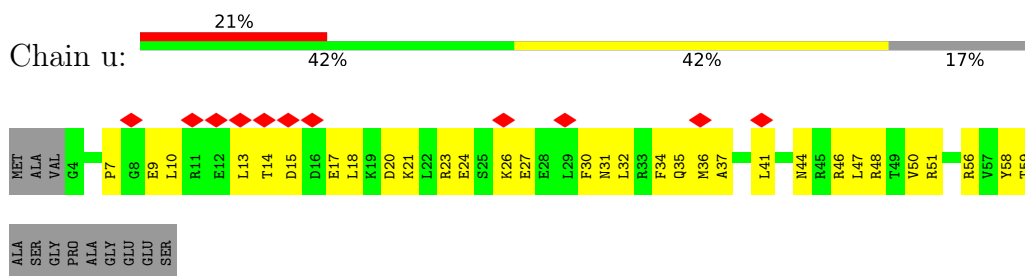
- Molecule 41: Large ribosomal subunit protein bL27



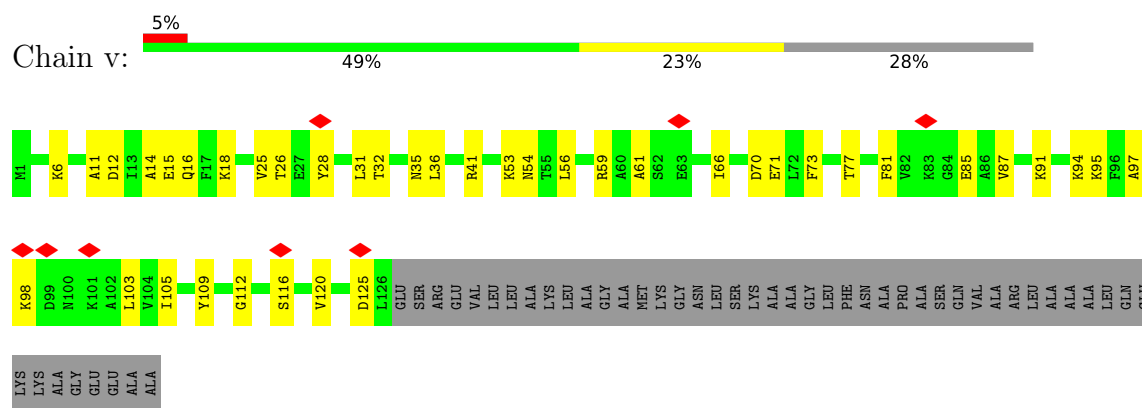
- Molecule 42: Large ribosomal subunit protein bL28



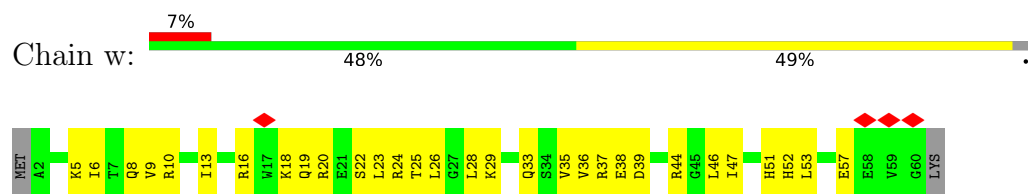
- Molecule 43: Large ribosomal subunit protein uL29



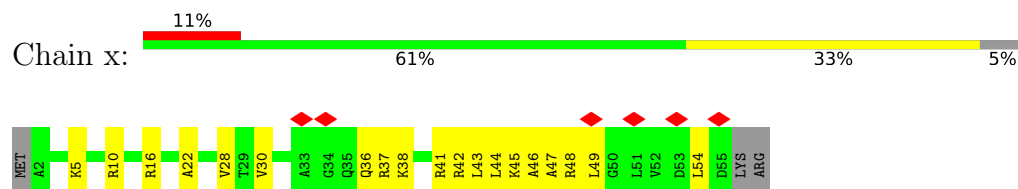
- Molecule 44: Large ribosomal subunit protein uL10



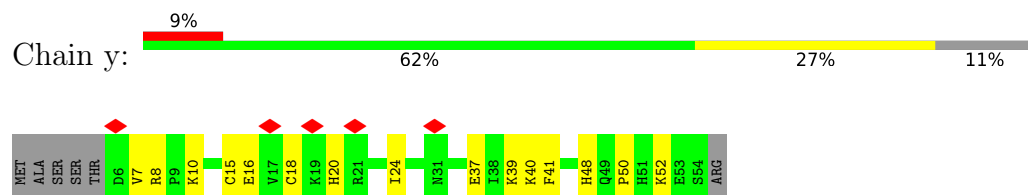
- Molecule 45: Large ribosomal subunit protein uL30



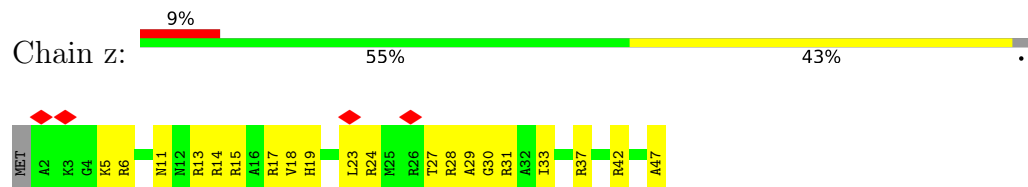
- Molecule 46: Large ribosomal subunit protein bL32



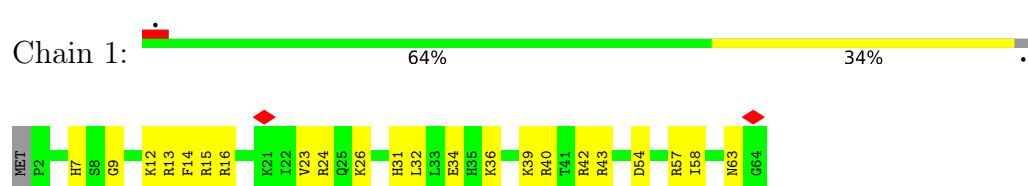
- Molecule 47: Large ribosomal subunit protein bL33A



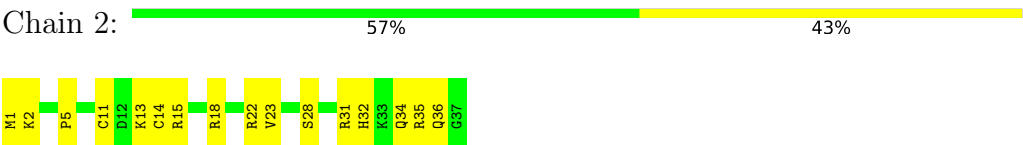
- Molecule 48: Large ribosomal subunit protein bL34



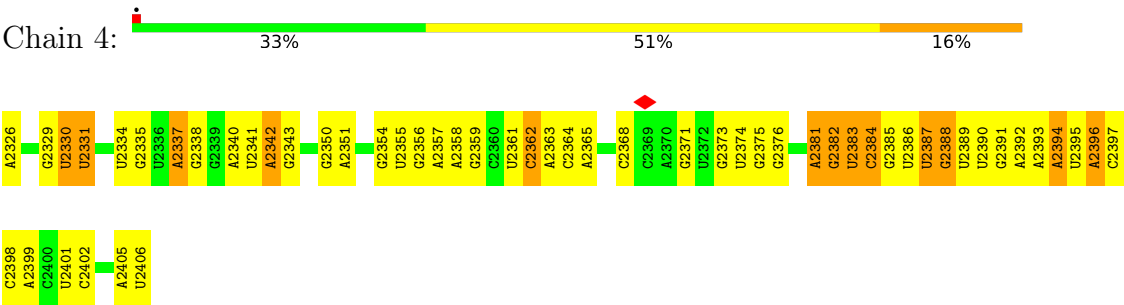
- Molecule 49: Large ribosomal subunit protein bL35



● Molecule 50: 50S ribosomal protein L36



● Molecule 51: 23S rRNA part



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	1466881	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	901.165	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	21.903	Depositor
Minimum map value	-12.598	Depositor
Average map value	-0.005	Depositor
Map value standard deviation	0.580	Depositor
Recommended contour level	1.04	Depositor
Map size (Å)	539.784, 539.784, 539.784	wwPDB
Map dimensions	648, 648, 648	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.833, 0.833, 0.833	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	A	0.10	0/36304	0.25	0/56637
2	C	0.16	0/1684	0.43	0/2261
3	D	0.24	0/1672	0.50	1/2251 (0.0%)
4	E	0.15	0/1312	0.42	0/1772
5	F	0.12	0/782	0.37	0/1059
6	G	0.16	0/1252	0.48	0/1690
7	H	0.14	0/1025	0.39	0/1385
8	I	0.20	0/1012	0.49	0/1362
9	J	0.18	0/802	0.53	0/1086
10	K	0.15	0/873	0.43	0/1180
11	L	0.14	0/969	0.40	0/1294
12	M	0.18	0/942	0.51	0/1260
13	N	0.15	0/488	0.45	0/650
14	O	0.17	0/729	0.42	0/977
15	P	0.17	0/778	0.42	0/1049
16	Q	0.17	0/759	0.49	0/1016
17	R	0.25	0/518	0.55	0/693
18	T	0.16	0/663	0.43	0/882
19	V	0.15	0/1822	0.42	0/2457
20	Y	0.28	9/73003 (0.0%)	0.30	14/113787 (0.0%)
21	U	0.12	0/2821	0.25	0/4396
22	Z	0.20	0/2153	0.50	0/2895
23	a	0.20	0/1609	0.52	1/2165 (0.0%)
24	b	0.20	0/1592	0.51	2/2153 (0.1%)
25	c	0.29	0/1467	0.64	1/1973 (0.1%)
26	d	0.16	0/1369	0.38	0/1848
27	e	0.16	0/986	0.45	2/1303 (0.2%)
28	f	0.21	0/1157	0.42	0/1567
29	g	0.23	0/946	0.53	0/1268
30	h	0.20	0/1091	0.50	0/1457
31	i	0.18	0/1118	0.51	1/1506 (0.1%)
32	j	0.24	0/945	0.53	0/1267

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	k	0.16	0/966	0.40	0/1298
34	l	0.26	0/921	0.61	2/1236 (0.2%)
35	m	0.23	0/1000	0.50	0/1341
36	n	0.16	0/764	0.35	0/1030
37	o	0.20	0/887	0.42	0/1204
38	p	0.21	0/766	0.45	0/1030
39	q	0.13	0/738	0.29	0/987
40	r	0.12	0/1443	0.31	0/1970
41	s	0.17	0/595	0.38	0/798
42	t	0.25	0/478	0.59	0/641
43	u	0.25	0/534	0.73	0/713
44	v	0.19	0/925	0.40	0/1246
45	w	0.23	0/477	0.46	0/640
46	x	0.26	0/427	0.53	0/572
47	y	0.15	0/413	0.40	0/553
48	z	0.26	0/380	0.64	2/500 (0.4%)
49	1	0.20	0/507	0.46	0/672
50	2	0.28	0/303	0.57	0/401
51	4	0.12	0/1943	0.38	2/3020 (0.1%)
All	All	0.22	9/159110 (0.0%)	0.34	28/238398 (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
25	c	0	1

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
20	Y	268	G	C1'-N9	37.54	2.04	1.48
20	Y	360	G	N1-C2	24.85	1.87	1.37
20	Y	360	G	C6-N1	23.08	1.85	1.39
20	Y	360	G	C2-N3	20.54	1.73	1.32
20	Y	360	G	N3-C4	20.10	1.75	1.35
20	Y	360	G	C5-C6	19.09	1.80	1.42
20	Y	360	G	C5-C4	17.71	1.73	1.38
20	Y	268	G	N9-C4	13.93	1.65	1.38
20	Y	268	G	N9-C8	10.98	1.59	1.37

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	Y	268	G	C8-N9-C4	-12.45	69.06	106.40
20	Y	268	G	N9-C1'-C2'	11.56	129.34	112.00
24	b	173	PRO	CA-N-CD	-11.07	96.51	112.00
34	l	17	PRO	CA-N-CD	-10.84	96.82	112.00
20	Y	268	G	N7-C8-N9	10.82	145.57	113.10
20	Y	800	A	OP2-P-O3'	-9.11	80.68	108.00
20	Y	799	G	OP1-P-O3'	-8.96	81.14	108.00
20	Y	72	G	OP1-P-O3'	-8.86	81.44	108.00
51	4	2394	A	OP1-P-O3'	-8.72	81.83	108.00
20	Y	268	G	C4-N9-C1'	8.28	151.32	126.50
20	Y	72	G	OP2-P-O3'	-8.27	83.20	108.00
51	4	2394	A	OP2-P-O3'	-8.04	83.86	108.00
20	Y	799	G	OP2-P-O3'	-8.00	84.00	108.00
20	Y	800	A	OP1-P-O3'	-7.45	85.64	108.00
20	Y	317	G	N1-C6-O6	-6.49	100.43	119.90
24	b	173	PRO	N-CD-CG	-6.38	93.63	103.20
20	Y	268	G	N3-C4-C5	-6.33	109.60	128.60
48	z	17	ARG	CA-C-N	-5.95	116.89	122.66
48	z	17	ARG	C-N-CA	-5.95	116.89	122.66
27	e	28	PRO	N-CD-CG	-5.94	94.30	103.20
31	i	59	LYS	CB-CA-C	-5.82	109.32	117.23
3	D	55	LYS	CA-CB-CG	5.78	125.65	114.10
27	e	28	PRO	CA-N-CD	-5.74	103.96	112.00
34	l	17	PRO	N-CD-CG	-5.70	94.64	103.20
20	Y	268	G	N9-C4-C5	5.69	122.47	105.40
25	c	137	PHE	CB-CA-C	5.50	124.75	112.82
20	Y	317	G	C5-C6-O6	5.30	144.49	128.60
23	a	199	PRO	CA-N-CD	-5.16	104.78	112.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
25	c	136	THR	Peptide

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	A	32439	0	16320	909	0
2	C	1660	0	1707	46	0
3	D	1641	0	1668	82	0
4	E	1296	0	1360	45	0
5	F	771	0	797	18	0
6	G	1232	0	1282	71	0
7	H	1010	0	1046	33	0
8	I	994	0	1050	50	0
9	J	788	0	819	56	0
10	K	855	0	863	38	0
11	L	958	0	1045	31	0
12	M	935	0	986	53	0
13	N	477	0	499	22	0
14	O	720	0	760	23	0
15	P	764	0	806	54	0
16	Q	748	0	795	49	0
17	R	513	0	537	39	0
18	T	660	0	711	27	0
19	V	1793	0	1839	57	0
20	Y	65241	0	32857	1806	0
21	U	2522	0	1285	51	0
22	Z	2110	0	2164	115	0
23	a	1587	0	1630	77	0
24	b	1569	0	1607	48	0
25	c	1445	0	1476	102	0
26	d	1348	0	1399	39	0
27	e	990	0	1002	26	0
28	f	1130	0	1167	45	0
29	g	938	0	1000	61	0
30	h	1078	0	1151	36	0
31	i	1092	0	1128	49	0
32	j	928	0	972	48	0
33	k	956	0	991	49	0
34	l	907	0	938	52	0
35	m	988	0	1038	47	0
36	n	754	0	802	16	0
37	o	873	0	909	29	0
38	p	756	0	802	31	0
39	q	732	0	782	16	0
40	r	1428	0	1443	29	0
41	s	586	0	601	25	0
42	t	470	0	480	25	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	u	531	0	541	34	0
44	v	918	0	959	28	0
45	w	474	0	500	33	0
46	x	423	0	463	28	0
47	y	405	0	407	10	0
48	z	377	0	411	20	0
49	1	502	0	541	22	0
50	2	299	0	321	16	0
51	4	1740	0	874	45	0
52	1	1	0	0	0	0
52	A	199	0	0	0	0
52	D	1	0	0	0	0
52	E	4	0	0	0	0
52	I	1	0	0	0	0
52	K	2	0	0	0	0
52	N	1	0	0	0	0
52	P	1	0	0	0	0
52	Q	2	0	0	0	0
52	R	1	0	0	0	0
52	T	5	0	0	0	0
52	U	10	0	0	0	0
52	Y	379	0	0	0	0
52	Z	8	0	0	0	0
52	a	1	0	0	0	0
52	b	1	0	0	0	0
52	h	1	0	0	0	0
52	i	1	0	0	0	0
52	o	1	0	0	0	0
52	p	1	0	0	0	0
52	t	1	0	0	0	0
52	u	1	0	0	0	0
52	y	1	0	0	0	0
53	2	1	0	0	0	0
53	N	1	0	0	0	0
53	R	1	0	0	0	0
53	t	1	0	0	0	0
53	y	1	0	0	0	0
All	All	146980	0	97531	4070	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 17.

All (4070) 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)
20:Y:360:G:C5	20:Y:360:G:C6	1.80	1.60
20:Y:360:G:N3	20:Y:360:G:C2	1.73	1.52
20:Y:360:G:N3	20:Y:360:G:C4	1.75	1.51
20:Y:360:G:C6	20:Y:360:G:N1	1.85	1.43
20:Y:268:G:N9	20:Y:360:G:C2	1.86	1.42
20:Y:360:G:C2	20:Y:360:G:N1	1.87	1.40
20:Y:268:G:H1'	20:Y:360:G:C5	1.58	1.37
20:Y:268:G:N9	20:Y:360:G:C6	1.95	1.34
20:Y:268:G:N9	20:Y:360:G:N1	1.77	1.32
20:Y:268:G:N9	20:Y:360:G:C4	1.99	1.28
20:Y:268:G:N9	20:Y:360:G:C5	2.04	1.25
20:Y:268:G:C8	20:Y:360:G:C2	2.24	1.24
20:Y:268:G:C8	20:Y:360:G:N1	2.08	1.21
20:Y:268:G:N9	20:Y:268:G:C1'	2.04	1.21
20:Y:268:G:C1'	20:Y:360:G:C2	2.24	1.21
1:A:961:C:H42	1:A:1342:A:N6	1.38	1.19
20:Y:268:G:N9	20:Y:360:G:N3	1.88	1.19
20:Y:268:G:C1'	20:Y:360:G:C6	2.26	1.18
20:Y:268:G:C1'	20:Y:360:G:N1	2.08	1.16
20:Y:1524:G:N2	20:Y:1812:A:N6	1.95	1.13
1:A:961:C:N4	1:A:1342:A:H61	1.48	1.12
20:Y:268:G:C1'	20:Y:360:G:C5	2.31	1.12
20:Y:355:A:N6	20:Y:441:G:C2	2.16	1.12
20:Y:1524:G:C2	20:Y:1812:A:N6	2.18	1.12
20:Y:268:G:C1'	20:Y:360:G:C4	2.33	1.11
20:Y:2971:G:H21	20:Y:2981:A:N6	1.50	1.09
20:Y:1938:G:N2	20:Y:1956:A:H62	1.51	1.09
20:Y:2971:G:N2	20:Y:2981:A:H62	1.49	1.08
20:Y:1524:G:N2	20:Y:1812:A:C6	2.21	1.08
51:4:2383:U:O4	51:4:2387:U:O4	1.71	1.07
20:Y:268:G:C4	20:Y:360:G:C4	2.44	1.05
20:Y:1530:G:C2	20:Y:1806:A:N6	2.26	1.04
51:4:2361:U:H3	51:4:2376:G:H1	1.04	1.03
20:Y:268:G:O4'	20:Y:360:G:N1	1.91	1.03
20:Y:268:G:H1'	20:Y:360:G:C4	1.94	1.02
20:Y:1938:G:H21	20:Y:1956:A:N6	1.58	1.02
1:A:410:G:N2	1:A:432:A:H62	1.56	1.01
20:Y:1525:U:H3	20:Y:1811:C:N4	1.58	1.01
20:Y:2528:G:H8	25:c:139:LEU:HB3	1.23	1.01
20:Y:1598:U:O2	20:Y:1600:G:C6	2.13	1.00
1:A:813:U:H3	1:A:835:G:H1	1.09	0.99
1:A:410:G:H21	1:A:432:A:N6	1.61	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1205:U:H3	1:A:1345:A:N6	1.61	0.98
20:Y:244:A:H62	20:Y:254:G:N2	1.62	0.98
20:Y:2693:A:H62	20:Y:2705:G:N2	1.62	0.98
1:A:154:G:H1	1:A:161:U:H3	1.01	0.97
20:Y:1555:A:N6	20:Y:1613:G:H1	1.61	0.97
20:Y:2408:G:H2'	51:4:2329:G:H1	1.30	0.97
1:A:138:A:H8	16:Q:6:GLY:H	1.09	0.97
1:A:138:A:H5''	16:Q:5:LYS:HB2	1.47	0.97
20:Y:268:G:C4	20:Y:360:G:C5	2.52	0.97
20:Y:332:C:N4	20:Y:445:U:C2	2.34	0.95
20:Y:2428:G:H1	20:Y:2443:U:H3	1.08	0.95
20:Y:355:A:N6	20:Y:441:G:N2	2.15	0.95
1:A:557:G:C6	1:A:745:G:C2	2.54	0.95
8:I:70:ALA:HB3	8:I:100:ARG:HH12	1.31	0.94
20:Y:244:A:N6	20:Y:254:G:H21	1.65	0.94
20:Y:2575:G:H21	20:Y:2590:A:H62	1.15	0.94
1:A:1408:A:H2	1:A:1459:G:H1	1.09	0.93
1:A:82:U:H3	1:A:87:G:H1	1.01	0.93
1:A:410:G:H21	1:A:432:A:H62	0.95	0.93
29:g:71:ARG:HH21	29:g:77:ILE:HD11	1.31	0.92
1:A:818:U:H3	1:A:830:G:H1	0.97	0.92
20:Y:2515:U:H3	20:Y:2565:G:H1	1.14	0.92
20:Y:959:U:H3	20:Y:1051:G:H1	1.17	0.92
20:Y:268:G:C1'	20:Y:360:G:N3	2.33	0.91
1:A:223:G:H1'	16:Q:8:LYS:HB2	1.52	0.91
17:R:54:THR:HG23	17:R:56:ASN:H	1.33	0.91
20:Y:1525:U:H3	20:Y:1811:C:H42	0.91	0.91
51:4:2383:U:C4	51:4:2387:U:O4	2.23	0.91
50:2:18:ARG:HG2	50:2:23:VAL:HG12	1.53	0.91
20:Y:2693:A:H62	20:Y:2705:G:H21	1.14	0.90
20:Y:1598:U:C2	20:Y:1600:G:O6	2.25	0.90
20:Y:1545:C:N4	20:Y:1623:U:C4	2.40	0.89
20:Y:2693:A:N6	20:Y:2705:G:H21	1.69	0.89
20:Y:74:C:C2	20:Y:107:G:N2	2.39	0.89
1:A:936:G:N2	1:A:1207:C:O2	2.04	0.89
1:A:585:U:H3	1:A:614:C:N4	1.70	0.89
32:j:72:ASP:HB3	32:j:75:VAL:HG12	1.53	0.88
1:A:181:C:O2	1:A:208:G:N2	2.06	0.88
20:Y:800:A:C4	20:Y:804:A:N6	2.41	0.88
20:Y:74:C:C2	20:Y:107:G:C2	2.60	0.88
1:A:585:U:H3	1:A:614:C:H42	1.16	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:53:ARG:HE	8:I:54:THR:H	1.20	0.88
22:Z:174:ALA:HB1	22:Z:182:ILE:HD11	1.56	0.88
19:V:151:ILE:HA	19:V:154:MET:HG2	1.56	0.87
20:Y:2898:G:H4'	29:g:30:ARG:HH12	1.38	0.87
20:Y:268:G:H1'	20:Y:360:G:C6	2.10	0.87
24:b:173:PRO:HD2	24:b:174:GLY:H	1.36	0.87
1:A:19:G:H1	1:A:902:U:H3	0.91	0.87
20:Y:317:G:C6	20:Y:509:U:C2	2.63	0.87
20:Y:268:G:H8	20:Y:360:G:N1	1.71	0.87
20:Y:1905:G:H21	20:Y:1919:A:H62	1.24	0.86
20:Y:2628:U:H3	20:Y:2637:G:H1	1.22	0.86
1:A:147:U:H3	1:A:168:A:H62	1.20	0.86
23:a:181:LYS:HB2	23:a:195:LYS:HB3	1.58	0.85
20:Y:1555:A:N7	20:Y:1613:G:O6	2.09	0.85
24:b:66:TYR:OH	24:b:76:GLN:NE2	2.08	0.85
20:Y:2528:G:C8	25:c:139:LEU:HB3	2.12	0.85
1:A:557:G:C5	1:A:745:G:N2	2.44	0.85
51:4:2383:U:H3'	51:4:2384:C:H4'	1.56	0.85
1:A:808:A:H62	1:A:840:G:N2	1.74	0.85
1:A:181:C:C2	1:A:208:G:N2	2.44	0.85
1:A:107:G:O6	1:A:330:C:N4	2.10	0.84
1:A:416:G:H1	1:A:427:U:H3	1.26	0.84
20:Y:1530:G:N2	20:Y:1806:A:N6	2.24	0.84
20:Y:1666:A:H62	20:Y:1687:G:H21	1.23	0.84
20:Y:62:G:H1	20:Y:86:U:H3	1.20	0.84
20:Y:1073:G:O2'	20:Y:1076:A:N6	2.10	0.84
1:A:571:U:N3	1:A:629:G:N1	2.27	0.83
20:Y:1547:G:H5''	20:Y:1620:U:H3'	1.59	0.83
1:A:990:C:O2	1:A:1005:G:N2	2.12	0.83
22:Z:273:ARG:NH1	22:Z:274:THR:O	2.11	0.83
20:Y:1479:G:N2	20:Y:1482:A:OP2	2.12	0.82
20:Y:2540:G:O2'	33:k:8:GLN:N	2.12	0.82
1:A:427:U:H5''	3:D:10:ARG:HH12	1.45	0.82
20:Y:1546:A:H2'	20:Y:1621:C:H5''	1.61	0.82
1:A:927:G:C5	1:A:1319:G:C2	2.66	0.82
20:Y:78:G:N2	20:Y:103:C:C2	2.47	0.82
19:V:94:GLN:HG3	19:V:146:ARG:HH12	1.44	0.82
20:Y:2573:G:OP2	49:1:42:ARG:NH1	2.12	0.82
20:Y:317:G:C6	20:Y:509:U:N3	2.48	0.82
20:Y:1651:C:H42	20:Y:1783:G:H1	1.28	0.82
9:J:47:ASN:HB2	9:J:67:MET:HB2	1.62	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:l:51:GLY:HA2	34:l:56:GLU:HA	1.62	0.81
1:A:138:A:N6	1:A:221:G:N1	2.29	0.81
1:A:600:U:C2	3:D:127:ILE:HG13	2.15	0.81
1:A:808:A:N6	1:A:840:G:H21	1.78	0.81
20:Y:2408:G:N2	51:4:2330:U:O2	2.13	0.81
1:A:1408:A:N1	1:A:1459:G:O6	2.14	0.81
20:Y:2575:G:N2	20:Y:2590:A:H62	1.78	0.81
32:j:99:LYS:HA	32:j:111:ALA:HA	1.63	0.81
20:Y:1984:G:N2	20:Y:2209:C:O2	2.12	0.80
20:Y:1555:A:N6	20:Y:1613:G:N1	2.27	0.80
1:A:404:G:OP2	3:D:110:ARG:NH2	2.14	0.80
1:A:814:G:H5''	17:R:58:VAL:HG21	1.61	0.80
20:Y:337:U:H3	20:Y:344:G:H1	1.27	0.80
1:A:585:U:O2	1:A:614:C:N3	2.15	0.80
22:Z:211:ARG:NH1	22:Z:212:MET:SD	2.55	0.80
32:j:33:ARG:NH1	32:j:114:GLU:OE2	2.14	0.80
20:Y:1575:A:H61	20:Y:1596:C:H42	1.30	0.80
6:G:146:GLU:HG3	6:G:149:ARG:HH12	1.46	0.79
20:Y:2580:G:N2	20:Y:2586:G:O6	2.16	0.79
23:a:63:ILE:HG22	23:a:65:PRO:HD2	1.63	0.79
20:Y:319:G:N2	20:Y:494:G:O6	2.16	0.79
20:Y:1522:G:N2	20:Y:1814:G:H1	1.80	0.79
20:Y:1525:U:O2	20:Y:1811:C:N3	2.15	0.79
20:Y:1598:U:O2	20:Y:1600:G:O6	1.97	0.79
30:h:37:THR:HG22	30:h:38:LYS:H	1.45	0.79
1:A:107:G:H5''	15:P:28:ARG:HA	1.64	0.79
20:Y:268:G:N3	20:Y:360:G:C4	2.50	0.79
20:Y:1549:G:H5'	20:Y:1550:G:H22	1.46	0.79
1:A:138:A:N6	1:A:221:G:H1	1.81	0.79
1:A:1400:A:N6	1:A:1466:G:C6	2.51	0.79
12:M:81:LYS:HG2	12:M:84:ILE:HD11	1.65	0.79
32:j:38:GLU:OE2	32:j:42:ARG:NE	2.14	0.79
20:Y:1306:G:OP2	30:h:29:LYS:NZ	2.15	0.78
20:Y:2819:G:N2	20:Y:2822:A:OP2	2.15	0.78
20:Y:244:A:H62	20:Y:254:G:H21	0.85	0.78
20:Y:293:G:H5''	20:Y:341:C:H2'	1.64	0.78
1:A:182:C:C2	1:A:207:G:N2	2.52	0.78
5:F:87:ARG:NH2	17:R:73:GLU:OE2	2.17	0.78
32:j:57:LYS:O	32:j:62:ASN:ND2	2.16	0.78
1:A:178:A:N3	1:A:209:A:N6	2.31	0.78
20:Y:368:U:C2	20:Y:435:A:C6	2.72	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2539:G:N3	25:c:134:ASN:ND2	2.31	0.78
20:Y:1044:U:H5'	45:w:37:ARG:HH12	1.48	0.78
20:Y:1022:C:O2'	31:i:101:ARG:NH2	2.16	0.77
1:A:182:C:C2	1:A:207:G:C2	2.71	0.77
9:J:45:GLU:HB3	9:J:69:THR:HB	1.66	0.77
20:Y:2881:A:O2'	26:d:161:LYS:NZ	2.16	0.77
20:Y:614:C:N4	20:Y:3003:C:OP2	2.17	0.77
20:Y:2082:U:O2	20:Y:2100:A:N7	2.18	0.77
42:t:7:ILE:HD12	42:t:60:LYS:HD2	1.66	0.77
20:Y:679:G:OP2	30:h:24:ARG:NH2	2.18	0.77
32:j:99:LYS:HG2	46:x:42:ARG:HE	1.49	0.77
1:A:927:G:C5	1:A:1319:G:N2	2.53	0.77
20:Y:355:A:C6	20:Y:441:G:N2	2.52	0.77
20:Y:2173:G:H2'	20:Y:2174:G:H8	1.49	0.77
20:Y:2569:G:HO2'	20:Y:2605:C:HO2'	1.24	0.77
1:A:1244:G:H1	1:A:1253:U:H3	0.80	0.77
24:b:67:ARG:NH1	24:b:69:LYS:O	2.17	0.77
1:A:147:U:O4	1:A:168:A:N7	2.18	0.77
14:O:33:THR:O	14:O:37:GLN:NE2	2.18	0.77
20:Y:2691:C:O2'	31:i:120:ARG:NH1	2.18	0.77
1:A:186:C:N3	1:A:203:U:O2	2.18	0.77
4:E:184:LEU:HD12	4:E:185:PRO:HD2	1.67	0.77
20:Y:2581:G:O5'	41:s:20:ARG:NH1	2.17	0.76
1:A:323:U:H5''	18:T:21:ASN:HD22	1.50	0.76
20:Y:672:C:O2	20:Y:1375:G:N2	2.15	0.76
38:p:8:ARG:HB3	43:u:30:PHE:HE1	1.49	0.76
50:2:13:LYS:NZ	50:2:28:SER:OG	2.18	0.76
5:F:50:TYR:HE1	17:R:79:PHE:H	1.31	0.76
20:Y:2234:G:H5''	37:o:49:ALA:HB2	1.68	0.76
20:Y:2410:A:N6	51:4:2405:A:N7	2.34	0.76
1:A:30:A:H62	1:A:538:G:H21	1.33	0.76
1:A:990:C:N3	1:A:1005:G:N1	2.34	0.76
1:A:1417:A:H62	1:A:1451:G:H21	1.31	0.76
2:C:130:ARG:NH1	4:E:80:GLU:OE1	2.18	0.76
7:H:113:LEU:HB3	7:H:117:GLN:NE2	2.00	0.76
1:A:147:U:H3	1:A:168:A:N6	1.82	0.76
19:V:42:ASP:OD2	19:V:45:GLN:NE2	2.18	0.76
20:Y:1433:G:H2'	20:Y:1434:G:C8	2.20	0.76
20:Y:1982:G:N1	20:Y:2212:A:N6	2.33	0.76
20:Y:1695:U:H3	20:Y:1739:A:H61	1.34	0.75
1:A:571:U:O2	1:A:629:G:N2	2.19	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:670:G:OP2	10:K:38:ASN:ND2	2.19	0.75
1:A:1333:U:H3	1:A:1354:G:H1	1.34	0.75
2:C:30:ASP:HA	2:C:33:LYS:HG2	1.69	0.75
20:Y:694:C:H42	20:Y:771:G:H1	1.31	0.75
20:Y:1046:C:O2	20:Y:1296:G:N2	2.18	0.75
20:Y:2750:G:H1'	50:2:1:MET:HG2	1.66	0.75
7:H:98:LEU:HD22	7:H:132:TRP:HB2	1.68	0.75
20:Y:382:A:OP2	39:q:82:ARG:NH2	2.19	0.75
20:Y:2515:U:H1'	20:Y:2598:C:H1'	1.68	0.75
1:A:25:G:H21	1:A:896:A:H62	1.33	0.75
1:A:49:U:H3	1:A:396:G:H1	1.34	0.75
20:Y:21:G:N1	20:Y:604:C:N3	2.35	0.75
20:Y:2528:G:O6	25:c:160:ASP:HA	1.86	0.75
20:Y:1996:U:OP2	20:Y:2001:A:N6	2.19	0.75
22:Z:233:HIS:HE1	22:Z:247:VAL:H	1.32	0.75
3:D:197:GLU:OE1	4:E:137:ARG:NH2	2.18	0.75
25:c:9:PRO:HD2	25:c:12:LYS:HB3	1.67	0.75
20:Y:724:G:N2	20:Y:727:A:OP2	2.20	0.74
20:Y:857:U:H2'	20:Y:858:A:H8	1.52	0.74
30:h:57:ILE:HD13	49:1:58:ILE:HD11	1.69	0.74
1:A:559:U:O2'	14:O:54:ARG:NH1	2.20	0.74
1:A:927:G:O6	1:A:1217:A:N1	2.20	0.74
20:Y:1072:G:OP1	31:i:87:LYS:NZ	2.16	0.74
1:A:181:C:C2	1:A:208:G:C2	2.76	0.74
1:A:1085:A:H5'	19:V:110:ARG:NH2	2.02	0.74
1:A:1205:U:H3	1:A:1345:A:H61	0.79	0.74
20:Y:21:G:C2	20:Y:604:C:C2	2.74	0.74
20:Y:1905:G:N2	20:Y:1919:A:H62	1.84	0.74
1:A:955:G:O5'	9:J:59:LYS:NZ	2.21	0.74
20:Y:27:G:OP2	35:m:5:LYS:NZ	2.20	0.74
20:Y:3096:U:H2'	20:Y:3097:G:H8	1.53	0.74
39:q:86:ARG:HB3	39:q:97:ILE:HD11	1.69	0.74
1:A:190:U:H3	1:A:197:G:H1	1.34	0.74
1:A:808:A:N6	1:A:840:G:N2	2.34	0.74
6:G:111:ARG:HH21	6:G:123:GLU:HG2	1.51	0.74
21:U:49:C:H5''	33:k:112:ARG:HH12	1.51	0.74
20:Y:1316:U:H3	20:Y:1359:G:H1	1.35	0.74
24:b:173:PRO:HD2	24:b:174:GLY:N	1.98	0.74
25:c:142:GLN:HE22	25:c:156:PRO:HA	1.51	0.74
4:E:93:ARG:HA	4:E:96:PHE:HE1	1.53	0.73
7:H:114:THR:O	7:H:117:GLN:NE2	2.20	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1530:G:N2	20:Y:1806:A:C6	2.56	0.73
20:Y:3038:C:OP1	32:j:42:ARG:NH2	2.21	0.73
23:a:14:THR:HG22	23:a:15:GLN:H	1.51	0.73
1:A:196:G:H2'	1:A:197:G:H8	1.52	0.73
1:A:985:G:N2	1:A:1018:C:O2	2.21	0.73
38:p:8:ARG:HB3	43:u:30:PHE:CE1	2.22	0.73
34:l:45:VAL:N	34:l:61:ARG:O	2.17	0.73
20:Y:494:G:H21	20:Y:510:A:H62	1.36	0.73
20:Y:890:G:H4'	20:Y:891:G:H5'	1.71	0.73
20:Y:2805:G:H22	20:Y:2834:C:H2'	1.50	0.73
23:a:114:VAL:HG12	23:a:208:VAL:HG12	1.71	0.73
1:A:1478:G:C6	20:Y:2137:A:C6	2.76	0.73
20:Y:384:G:H2'	20:Y:385:G:H8	1.53	0.73
20:Y:1379:G:OP1	46:x:16:ARG:NH2	2.22	0.73
31:i:41:TYR:HB3	31:i:94:VAL:HG21	1.70	0.73
11:L:42:PRO:HB3	11:L:89:ASP:HB3	1.71	0.73
20:Y:382:A:N7	20:Y:416:C:N3	2.37	0.73
20:Y:2457:U:H2'	20:Y:2458:G:H8	1.54	0.73
23:a:35:VAL:HG12	23:a:100:GLU:HG3	1.71	0.73
20:Y:1907:A:OP2	20:Y:1916:A:N6	2.22	0.73
30:h:61:LEU:HD13	49:l:24:ARG:HD3	1.70	0.73
1:A:920:A:H4'	6:G:95:ARG:HH22	1.54	0.72
21:U:30:G:H21	21:U:58:A:H62	1.35	0.72
9:J:31:ARG:NH1	9:J:32:THR:OG1	2.22	0.72
20:Y:382:A:H62	20:Y:416:C:H42	1.38	0.72
20:Y:1256:G:N2	28:f:108:MET:SD	2.59	0.72
20:Y:1666:A:H62	20:Y:1687:G:N2	1.87	0.72
43:u:31:ASN:O	43:u:35:GLN:NE2	2.23	0.72
20:Y:1272:C:OP1	35:m:92:ARG:NH2	2.23	0.72
20:Y:1480:A:OP1	42:t:28:ARG:NH2	2.21	0.72
20:Y:3039:C:OP2	32:j:42:ARG:NH1	2.22	0.72
1:A:1242:A:N6	1:A:1255:G:O2'	2.22	0.72
1:A:173:C:OP1	18:T:20:ARG:NH2	2.22	0.72
20:Y:3096:U:H2'	20:Y:3097:G:C8	2.25	0.72
23:a:15:GLN:O	34:l:55:SER:OG	2.07	0.72
28:f:75:TYR:OH	28:f:86:LYS:NZ	2.22	0.72
4:E:100:PRO:HG2	4:E:172:LEU:HD22	1.71	0.72
20:Y:1441:C:HO2'	20:Y:2234:G:HO2'	1.38	0.72
1:A:1085:A:H5'	19:V:110:ARG:HH22	1.54	0.72
19:V:16:PHE:O	19:V:203:ASN:ND2	2.21	0.72
26:d:45:ARG:NH1	26:d:46:ALA:O	2.23	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:951:A:O2'	9:J:57:LYS:NZ	2.23	0.71
1:A:1303:U:H3'	1:A:1304:C:H2'	1.72	0.71
1:A:969:G:H21	1:A:1200:A:H3'	1.56	0.71
19:V:152:ARG:O	19:V:155:GLN:NE2	2.23	0.71
20:Y:1187:A:H4'	20:Y:1188:A:H5''	1.72	0.71
20:Y:2016:G:H21	22:Z:155:LEU:HD22	1.54	0.71
20:Y:2309:U:H2'	20:Y:2310:G:C8	2.25	0.71
45:w:16:ARG:HG2	45:w:19:GLN:HG3	1.72	0.71
20:Y:1367:G:H1	35:m:37:GLU:HG3	1.55	0.71
29:g:80:ASP:HB2	34:l:67:VAL:HG13	1.71	0.71
20:Y:2528:G:H8	25:c:139:LEU:CB	2.02	0.71
22:Z:156:ALA:HB2	22:Z:163:ILE:HD12	1.71	0.71
23:a:27:THR:HG21	23:a:198:ILE:HG12	1.73	0.71
1:A:22:C:OP1	4:E:157:ASN:ND2	2.22	0.71
20:Y:74:C:O2	20:Y:107:G:C2	2.44	0.71
20:Y:320:G:C6	20:Y:492:C:H2'	2.25	0.71
20:Y:678:A:N7	20:Y:1366:A:N6	2.38	0.71
20:Y:1125:C:H5''	28:f:37:ARG:HH21	1.55	0.71
20:Y:2531:G:H22	25:c:46:GLY:H	1.39	0.71
23:a:21:ASN:HA	34:l:78:PRO:HG2	1.72	0.71
1:A:181:C:O2	1:A:208:G:C2	2.44	0.70
1:A:1097:G:N2	1:A:1161:A:N3	2.39	0.70
20:Y:1939:U:H3	20:Y:1955:A:H62	1.39	0.70
20:Y:2575:G:H21	20:Y:2590:A:N6	1.87	0.70
1:A:566:U:H3	1:A:736:C:N4	1.89	0.70
1:A:1061:G:N7	4:E:77:LYS:NZ	2.39	0.70
1:A:1145:G:H1	1:A:1153:U:H3	1.38	0.70
2:C:183:ASP:HB3	2:C:202:ILE:HB	1.73	0.70
20:Y:1479:G:OP1	42:t:2:ALA:N	2.23	0.70
20:Y:3060:A:H61	20:Y:3099:C:H42	1.36	0.70
27:e:49:GLU:O	27:e:52:ARG:NH1	2.23	0.70
20:Y:1242:C:O2	50:2:36:GLN:NE2	2.23	0.70
20:Y:2106:A:H3'	20:Y:2107:G:H5''	1.71	0.70
18:T:28:LEU:HD12	18:T:58:LEU:HD23	1.72	0.70
19:V:67:VAL:HG22	19:V:160:ALA:HB3	1.73	0.70
20:Y:563:U:H3	20:Y:567:A:N6	1.88	0.70
20:Y:679:G:N7	30:h:35:ARG:NH1	2.38	0.70
39:q:81:THR:HG23	39:q:100:THR:HG23	1.74	0.70
11:L:103:ASP:O	11:L:105:GLN:NE2	2.25	0.70
1:A:1184:C:OP1	13:N:2:ALA:N	2.24	0.70
6:G:133:ALA:HA	6:G:136:LYS:HG2	1.72	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:786:C:O2	20:Y:924:G:N2	2.18	0.70
23:a:21:ASN:O	34:l:79:ASN:ND2	2.24	0.70
31:i:21:ALA:HB2	31:i:98:LYS:HB2	1.71	0.70
1:A:81:C:H3'	1:A:82:U:H5''	1.73	0.70
1:A:182:C:N3	1:A:207:G:N1	2.39	0.70
20:Y:1333:C:OP2	35:m:19:LYS:NZ	2.18	0.70
31:i:52:ILE:O	31:i:56:ARG:HB2	1.92	0.70
9:J:66:GLU:HB2	13:N:59:SER:HB3	1.74	0.70
20:Y:857:U:H2'	20:Y:858:A:C8	2.26	0.70
20:Y:1093:A:H62	20:Y:1107:G:H21	1.39	0.70
20:Y:2909:G:H2'	20:Y:2910:G:H8	1.57	0.70
20:Y:3078:G:N2	20:Y:3081:A:OP2	2.23	0.70
34:l:48:ARG:NH1	34:l:97:TYR:OH	2.25	0.70
40:r:28:ARG:HD3	40:r:93:GLN:HG3	1.74	0.70
20:Y:268:G:C8	20:Y:360:G:C6	2.79	0.70
20:Y:554:A:OP1	48:z:37:ARG:NH2	2.24	0.70
20:Y:1533:U:O2'	20:Y:1803:A:N6	2.24	0.70
47:y:37:GLU:OE1	47:y:52:LYS:NZ	2.25	0.69
1:A:1231:A:H2'	1:A:1232:A:C8	2.27	0.69
1:A:1329:G:H5''	8:I:129:ARG:HB2	1.72	0.69
6:G:48:GLU:HA	6:G:51:ARG:HE	1.55	0.69
17:R:54:THR:HG21	17:R:61:GLN:NE2	2.07	0.69
20:Y:1813:C:H2'	20:Y:1814:G:H8	1.58	0.69
20:Y:1125:C:OP1	28:f:39:LYS:NZ	2.25	0.69
22:Z:52:ARG:HG3	22:Z:53:HIS:ND1	2.07	0.69
24:b:38:VAL:HG11	30:h:9:LEU:HD13	1.74	0.69
19:V:6:MET:HE1	19:V:47:LEU:HD11	1.75	0.69
13:N:22:THR:HG21	13:N:33:VAL:HG11	1.71	0.69
20:Y:87:C:H3'	20:Y:88:A:H2'	1.74	0.69
1:A:922:C:H5'	6:G:102:ARG:HH21	1.58	0.69
15:P:18:TYR:HB2	15:P:40:TYR:HB3	1.74	0.69
20:Y:2985:G:H2'	20:Y:2986:G:H8	1.56	0.69
33:k:112:ARG:H	33:k:112:ARG:HD3	1.58	0.69
41:s:40:GLN:NE2	41:s:42:GLY:O	2.25	0.69
1:A:1089:C:OP2	2:C:176:HIS:ND1	2.26	0.69
20:Y:379:G:O2'	20:Y:422:A:N6	2.25	0.69
34:l:17:PRO:HD2	34:l:17:PRO:O	1.92	0.69
20:Y:2036:A:H5''	22:Z:158:SER:HB2	1.75	0.69
1:A:819:U:H3	1:A:829:G:H1	1.40	0.69
6:G:21:GLN:O	6:G:25:GLN:NE2	2.25	0.69
4:E:140:LEU:HD13	4:E:148:ILE:HG21	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:580:G:H2'	1:A:619:G:H22	1.58	0.68
1:A:657:U:O2	1:A:757:A:O2'	2.11	0.68
5:F:44:GLY:HA3	5:F:59:ILE:HG13	1.75	0.68
20:Y:919:A:OP1	30:h:44:LYS:NZ	2.22	0.68
20:Y:2062:G:P	22:Z:256:ARG:HH21	2.16	0.68
38:p:7:PRO:HB2	38:p:45:ALA:HA	1.74	0.68
1:A:1506:U:H2'	1:A:1507:G:H8	1.58	0.68
2:C:19:LYS:HD2	2:C:39:ARG:HH12	1.58	0.68
20:Y:268:G:C2'	20:Y:360:G:N3	2.56	0.68
29:g:1:MET:N	29:g:33:ALA:O	2.18	0.68
36:n:65:LEU:HB3	36:n:96:VAL:HG23	1.75	0.68
1:A:485:G:H2'	1:A:486:G:C8	2.28	0.68
10:K:125:GLN:HE22	10:K:127:HIS:CE1	2.11	0.68
20:Y:930:C:OP2	36:n:86:LYS:NZ	2.25	0.68
20:Y:2752:U:H3	20:Y:2759:G:H1	1.40	0.68
21:U:60:G:H5'	33:k:9:ASN:HD22	1.59	0.68
1:A:44:C:H2'	1:A:45:G:H8	1.59	0.68
20:Y:1704:U:H3	20:Y:1725:G:H1	1.39	0.68
20:Y:3014:A:N6	20:Y:3113:A:OP2	2.23	0.68
21:U:49:C:OP1	33:k:42:ARG:NH1	2.26	0.68
22:Z:226:MET:HG2	22:Z:231:HIS:HB2	1.75	0.68
49:1:14:PHE:HE2	49:1:58:ILE:HD13	1.58	0.68
20:Y:294:G:N7	20:Y:341:C:O2'	2.25	0.68
20:Y:758:A:H5''	41:s:64:PRO:HG3	1.76	0.68
20:Y:841:G:H3'	20:Y:1653:G:H4'	1.74	0.68
20:Y:2173:G:H2'	20:Y:2174:G:C8	2.29	0.68
20:Y:2577:G:O2'	41:s:33:ALA:O	2.08	0.68
20:Y:2981:A:H61	26:d:68:LEU:HD11	1.58	0.68
45:w:8:GLN:HB2	45:w:28:LEU:HD23	1.75	0.68
1:A:324:G:H5'	18:T:17:ARG:HH12	1.59	0.68
20:Y:317:G:O6	20:Y:509:U:O2	2.11	0.68
20:Y:1314:C:H1'	35:m:4:VAL:HG22	1.76	0.68
20:Y:1938:G:H21	20:Y:1956:A:H62	0.77	0.68
23:a:7:LEU:HG	23:a:207:VAL:HG12	1.75	0.68
40:r:86:HIS:HB2	40:r:93:GLN:NE2	2.09	0.68
20:Y:176:G:OP2	20:Y:176:G:N2	2.24	0.68
20:Y:331:U:C4	20:Y:332:C:C5	2.81	0.68
37:o:89:ALA:HB3	37:o:105:LYS:HB3	1.76	0.68
40:r:162:ILE:HD11	40:r:178:VAL:HG11	1.75	0.68
20:Y:192:U:H4'	20:Y:918:U:H4'	1.75	0.68
20:Y:2081:U:O3'	20:Y:2633:G:N2	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2422:A:N1	20:Y:2450:C:N4	2.37	0.68
22:Z:233:HIS:HE2	22:Z:246:PRO:HA	1.59	0.68
29:g:75:SER:HA	34:l:72:THR:HB	1.75	0.68
20:Y:251:A:OP1	49:1:7:HIS:NE2	2.26	0.67
20:Y:563:U:N3	20:Y:567:A:N6	2.40	0.67
20:Y:1186:G:N2	20:Y:1213:A:O2'	2.25	0.67
20:Y:2997:C:OP1	23:a:174:ARG:NH2	2.26	0.67
25:c:132:THR:HA	25:c:169:ASN:HA	1.75	0.67
34:l:24:THR:HG22	34:l:86:LEU:HD13	1.75	0.67
1:A:1057:G:N2	1:A:1060:A:OP2	2.25	0.67
2:C:6:ASN:HD22	13:N:49:HIS:HB3	1.58	0.67
20:Y:21:G:C2	20:Y:604:C:O2	2.48	0.67
20:Y:724:G:P	49:1:15:ARG:HH22	2.17	0.67
20:Y:2310:G:H2'	20:Y:2311:G:H8	1.58	0.67
20:Y:417:C:OP2	39:q:82:ARG:NH1	2.27	0.67
20:Y:2971:G:H21	20:Y:2981:A:H62	0.75	0.67
29:g:7:ARG:NH1	29:g:18:GLU:OE1	2.24	0.67
51:4:2375:G:H2'	51:4:2376:G:H8	1.59	0.67
1:A:138:A:H8	16:Q:6:GLY:N	1.90	0.67
1:A:1265:U:H5''	1:A:1266:U:H4'	1.77	0.67
17:R:39:ARG:HA	17:R:42:ILE:HG22	1.76	0.67
20:Y:2645:G:OP1	47:y:10:LYS:NZ	2.27	0.67
31:i:130:ARG:NH1	40:r:88:ILE:O	2.27	0.67
1:A:230:G:O2'	15:P:26:ARG:NH2	2.26	0.67
13:N:3:LYS:HE3	13:N:5:ALA:HB3	1.74	0.67
34:l:48:ARG:HG3	34:l:95:LYS:HG2	1.76	0.67
1:A:582:U:H2'	1:A:583:C:C6	2.30	0.67
1:A:1428:U:H3	1:A:1441:G:H1	1.40	0.67
8:I:29:VAL:O	8:I:105:ARG:NH1	2.28	0.67
20:Y:68:A:H4'	20:Y:69:U:H3'	1.76	0.67
20:Y:273:A:N6	20:Y:314:G:C5	2.62	0.67
1:A:525:C:OP1	3:D:57:ARG:NH1	2.26	0.67
1:A:1041:G:P	9:J:53:ARG:HH12	2.18	0.67
20:Y:2030:C:H1'	22:Z:50:THR:HG21	1.75	0.67
20:Y:317:G:H1	20:Y:495:C:N4	1.92	0.67
20:Y:334:G:H1	20:Y:347:U:H3	1.40	0.67
20:Y:981:U:O2'	20:Y:982:A:OP2	2.11	0.67
20:Y:2965:A:O3'	50:2:35:ARG:NH2	2.28	0.67
26:d:55:ARG:HB2	26:d:62:SER:HB3	1.77	0.67
29:g:24:VAL:HG13	29:g:30:ARG:HG3	1.77	0.67
20:Y:632:G:H2'	20:Y:633:A:C8	2.30	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1900:C:OP2	20:Y:1917:G:N2	2.27	0.67
20:Y:17:C:OP1	35:m:22:LYS:NZ	2.23	0.67
1:A:297:G:N2	1:A:300:A:OP2	2.24	0.66
1:A:818:U:O2	1:A:830:G:N2	2.23	0.66
17:R:54:THR:OG1	17:R:56:ASN:OD1	2.11	0.66
20:Y:13:G:N2	20:Y:611:U:O2	2.20	0.66
20:Y:21:G:N2	20:Y:604:C:C2	2.62	0.66
20:Y:1501:C:H2'	20:Y:1502:G:C8	2.29	0.66
20:Y:1522:G:H21	20:Y:1814:G:H1	1.42	0.66
20:Y:2866:A:H2'	20:Y:2867:A:H8	1.59	0.66
20:Y:3003:C:O3'	28:f:120:LYS:NZ	2.26	0.66
25:c:45:MET:HG2	25:c:158:GLY:HA3	1.77	0.66
1:A:557:G:C5	1:A:745:G:C2	2.82	0.66
1:A:771:G:H4'	20:Y:2145:C:H4'	1.76	0.66
1:A:961:C:N4	1:A:1342:A:N6	2.20	0.66
6:G:27:VAL:HA	6:G:30:VAL:HG12	1.78	0.66
20:Y:1501:C:H2'	20:Y:1502:G:H8	1.59	0.66
20:Y:2739:C:H2'	20:Y:2740:G:H8	1.60	0.66
35:m:102:ASP:OD2	35:m:105:ALA:N	2.28	0.66
1:A:925:C:OP1	1:A:1217:A:N6	2.23	0.66
19:V:114:LEU:HD11	19:V:144:LEU:HD13	1.78	0.66
1:A:652:U:H3	1:A:714:G:H1	1.42	0.66
1:A:1260:A:H5''	9:J:9:ARG:HH22	1.60	0.66
20:Y:1183:U:O2	20:Y:1191:A:N6	2.27	0.66
2:C:27:GLN:HG3	2:C:30:ASP:HB3	1.77	0.66
20:Y:268:G:N3	20:Y:360:G:C5	2.63	0.66
20:Y:1195:A:H5'	27:e:96:LYS:HE3	1.78	0.66
1:A:137:C:H2'	16:Q:7:PRO:HD2	1.77	0.66
5:F:30:ILE:HG12	5:F:71:THR:HB	1.77	0.66
20:Y:268:G:O4'	20:Y:360:G:C6	2.49	0.66
20:Y:672:C:O3'	35:m:31:LEU:HD11	1.95	0.66
20:Y:1175:A:H2'	20:Y:1176:G:H8	1.61	0.66
20:Y:1572:G:C2	20:Y:1600:G:N1	2.64	0.66
20:Y:2542:G:N7	33:k:8:GLN:HB2	2.09	0.66
12:M:25:ILE:HD11	12:M:60:ILE:HD11	1.78	0.66
20:Y:441:G:H2'	20:Y:442:U:H6	1.60	0.66
20:Y:1872:A:O2'	23:a:123:PHE:O	2.12	0.66
20:Y:2271:C:H2'	20:Y:2272:G:H8	1.61	0.66
25:c:24:GLN:NE2	25:c:31:ASN:O	2.22	0.66
1:A:622:A:H1'	7:H:111:GLY:HA2	1.77	0.66
6:G:69:VAL:HG23	6:G:100:ALA:HB1	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:83:SER:O	16:Q:87:ARG:NH1	2.28	0.66
20:Y:74:C:N3	20:Y:107:G:N1	2.44	0.66
20:Y:399:G:H2'	20:Y:400:C:H5''	1.78	0.66
20:Y:857:U:H3	20:Y:870:G:H1	1.41	0.66
20:Y:2310:G:H2'	20:Y:2311:G:C8	2.31	0.66
1:A:1232:A:N6	1:A:1268:C:O2	2.28	0.65
11:L:20:LYS:HG3	11:L:21:THR:HG23	1.76	0.65
20:Y:693:G:H2'	20:Y:694:C:C6	2.30	0.65
20:Y:2635:A:H2'	20:Y:2636:A:C8	2.31	0.65
1:A:676:A:N3	1:A:766:G:O2'	2.23	0.65
20:Y:608:C:H2'	20:Y:609:G:H8	1.60	0.65
29:g:93:PRO:HD2	29:g:113:LYS:HD3	1.79	0.65
20:Y:2985:G:O2'	26:d:144:GLN:NE2	2.29	0.65
38:p:34:HIS:ND1	38:p:36:ASP:OD1	2.28	0.65
45:w:6:ILE:HD13	45:w:47:ILE:HD11	1.79	0.65
20:Y:268:G:C2'	20:Y:360:G:C4	2.78	0.65
20:Y:959:U:O4	20:Y:1051:G:O6	2.15	0.65
51:4:2330:U:H3'	51:4:2331:U:C6	2.31	0.65
1:A:762:A:H62	1:A:780:G:H21	1.45	0.65
1:A:930:C:OP2	12:M:108:ARG:NH1	2.29	0.65
20:Y:672:C:N3	20:Y:1375:G:N1	2.41	0.65
20:Y:1545:C:N4	20:Y:1623:U:N3	2.43	0.65
20:Y:2482:U:O2'	20:Y:2651:C:OP2	2.14	0.65
25:c:75:ARG:HH12	25:c:93:GLY:C	2.05	0.65
1:A:769:U:N3	1:A:772:A:OP2	2.23	0.65
20:Y:273:A:H62	20:Y:313:G:H2'	1.62	0.65
1:A:980:G:H1	1:A:1023:U:H3	1.45	0.65
20:Y:268:G:H2'	20:Y:360:G:N3	2.12	0.65
1:A:363:A:OP2	11:L:31:ARG:HG2	1.97	0.65
1:A:1138:A:H62	1:A:1159:G:H21	1.43	0.65
18:T:85:LYS:HG3	18:T:86:LEU:HG	1.78	0.65
20:Y:24:G:O2'	20:Y:599:G:N2	2.29	0.65
20:Y:1788:G:O4'	22:Z:60:ARG:NH1	2.30	0.65
20:Y:3097:G:H2'	20:Y:3098:G:C8	2.32	0.65
41:s:12:ASN:HA	41:s:14:ARG:HH12	1.62	0.65
1:A:598:C:N4	1:A:601:A:OP2	2.29	0.65
1:A:1329:G:N2	1:A:1357:A:OP2	2.20	0.65
19:V:92:VAL:HG21	19:V:100:MET:HE1	1.79	0.65
20:Y:292:G:N2	20:Y:342:C:OP1	2.25	0.65
20:Y:332:C:N4	20:Y:445:U:N3	2.44	0.65
20:Y:1092:G:O5'	36:n:79:LYS:NZ	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1206:A:H4'	20:Y:1207:G:H5''	1.77	0.65
20:Y:1883:A:H2'	20:Y:1884:G:H8	1.62	0.65
20:Y:2961:G:H2'	20:Y:2962:A:C8	2.32	0.65
3:D:73:GLU:HG3	3:D:77:GLN:HE22	1.62	0.64
5:F:47:ARG:HH22	5:F:56:ALA:HB1	1.62	0.64
20:Y:418:C:H2'	20:Y:419:G:H8	1.62	0.64
1:A:375:U:H2'	1:A:376:G:H8	1.60	0.64
1:A:746:A:N7	1:A:793:U:O4	2.30	0.64
2:C:7:PRO:HB3	2:C:11:ARG:HH21	1.61	0.64
20:Y:1319:A:N6	20:Y:1356:U:O4	2.19	0.64
20:Y:1699:G:H1	20:Y:1735:U:H3	1.45	0.64
20:Y:2051:U:H5''	20:Y:2052:G:H5'	1.79	0.64
21:U:91:G:H2'	21:U:92:G:H8	1.61	0.64
20:Y:2541:U:H5''	33:k:7:GLY:O	1.98	0.64
34:l:28:HIS:HB2	34:l:81:ASP:HB2	1.79	0.64
1:A:504:G:O3'	11:L:86:ARG:NH2	2.30	0.64
20:Y:290:C:O2'	20:Y:338:C:OP1	2.15	0.64
20:Y:1188:A:N7	20:Y:1214:A:O2'	2.30	0.64
27:e:103:THR:OG1	27:e:105:ASP:OD2	2.16	0.64
1:A:823:U:O4	1:A:826:U:N3	2.31	0.64
1:A:1336:C:H2'	1:A:1337:A:H8	1.62	0.64
20:Y:1178:U:H4'	20:Y:1179:U:H3'	1.79	0.64
20:Y:1366:A:H2	35:m:6:ARG:HH22	1.46	0.64
20:Y:2047:C:H2'	20:Y:2048:G:H8	1.62	0.64
20:Y:2166:C:H3'	20:Y:2167:U:H2'	1.79	0.64
20:Y:2843:C:H5''	23:a:162:LYS:HD3	1.79	0.64
22:Z:69:ARG:HG2	22:Z:130:ASN:HD22	1.61	0.64
23:a:130:HIS:CD2	23:a:165:ARG:HB3	2.32	0.64
27:e:49:GLU:HB2	27:e:52:ARG:HH22	1.61	0.64
6:G:146:GLU:HG3	6:G:149:ARG:NH1	2.11	0.64
17:R:60:HIS:O	17:R:64:ILE:HD12	1.97	0.64
20:Y:62:G:N2	20:Y:86:U:O2	2.27	0.64
20:Y:1406:U:H2'	20:Y:1407:G:H8	1.62	0.64
20:Y:1521:C:H3'	20:Y:1522:G:H8	1.63	0.64
20:Y:2089:C:O2'	20:Y:2090:U:O4'	2.15	0.64
22:Z:59:LYS:O	22:Z:60:ARG:NE	2.31	0.64
1:A:566:U:H3	1:A:736:C:H42	1.45	0.64
1:A:699:C:H1'	17:R:47:LYS:HZ2	1.62	0.64
1:A:826:U:H5''	17:R:19:LYS:HE3	1.80	0.64
7:H:95:PRO:HG3	7:H:127:VAL:HG21	1.80	0.64
20:Y:368:U:H1'	20:Y:435:A:C2	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:777:U:H2'	20:Y:778:G:H8	1.62	0.64
20:Y:2175:U:OP1	29:g:54:ARG:NH1	2.29	0.64
28:f:36:LEU:HD21	28:f:122:LEU:HB2	1.78	0.64
1:A:1106:U:OP1	9:J:7:ARG:NH2	2.31	0.64
20:Y:58:G:OP1	43:u:44:ASN:ND2	2.26	0.64
20:Y:2081:U:H4'	20:Y:2634:G:H21	1.63	0.64
20:Y:2453:U:O2	42:t:34:GLN:NE2	2.30	0.64
26:d:9:VAL:HB	26:d:51:ILE:HB	1.79	0.64
37:o:30:LEU:HD11	46:x:22:ALA:HB3	1.80	0.64
6:G:95:ARG:HH21	6:G:99:LEU:HD21	1.63	0.64
10:K:73:GLN:NE2	10:K:108:SER:HB2	2.12	0.64
20:Y:1086:C:H2'	20:Y:1087:G:H8	1.63	0.64
20:Y:2178:G:O2'	20:Y:2180:U:O4	2.15	0.64
1:A:301:G:H5''	16:Q:48:LEU:HD22	1.80	0.64
1:A:1084:G:O2'	19:V:110:ARG:NH2	2.31	0.64
1:A:1235:G:OP1	9:J:47:ASN:ND2	2.30	0.64
6:G:92:ARG:HH21	6:G:94:ASP:HB2	1.62	0.64
20:Y:1318:C:H2'	20:Y:1319:A:C8	2.32	0.64
33:k:73:ILE:HG22	33:k:75:GLY:H	1.63	0.64
1:A:320:G:H2'	1:A:321:A:C8	2.33	0.63
1:A:492:U:H2'	1:A:493:A:H8	1.61	0.63
1:A:623:C:H4'	7:H:32:LEU:HD21	1.80	0.63
1:A:931:A:H3'	12:M:101:GLN:HE21	1.62	0.63
1:A:1232:A:OP2	1:A:1268:C:N4	2.31	0.63
20:Y:1479:G:O2'	20:Y:2025:C:N4	2.31	0.63
21:U:44:C:O2	25:c:99:ARG:NH1	2.32	0.63
31:i:68:ILE:HG22	31:i:101:ARG:HE	1.62	0.63
1:A:927:G:H1	1:A:1217:A:H2	1.42	0.63
20:Y:90:C:H2'	20:Y:91:C:H6	1.63	0.63
20:Y:640:G:O2'	20:Y:642:G:OP2	2.15	0.63
20:Y:1137:U:OP1	20:Y:1153:U:O2'	2.17	0.63
23:a:4:LYS:HD3	23:a:105:ILE:HG12	1.80	0.63
39:q:39:ASN:HB3	39:q:64:ALA:HB3	1.79	0.63
47:y:41:PHE:HB2	47:y:48:HIS:CE1	2.34	0.63
1:A:251:G:H4'	1:A:252:U:H5'	1.81	0.63
1:A:1159:G:OP2	8:I:119:LYS:NZ	2.27	0.63
20:Y:440:U:H2'	20:Y:441:G:H8	1.64	0.63
20:Y:1530:G:C2	20:Y:1806:A:C6	2.87	0.63
37:o:73:PRO:HA	37:o:76:LEU:HD13	1.81	0.63
51:4:2337:A:N6	51:4:2342:A:N7	2.45	0.63
1:A:975:G:O2'	1:A:976:A:N7	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:42:VAL:HB	8:I:82:ASP:HB2	1.80	0.63
9:J:12:ALA:O	9:J:70:HIS:N	2.32	0.63
20:Y:701:A:OP2	20:Y:713:G:N1	2.21	0.63
20:Y:1813:C:H2'	20:Y:1814:G:C8	2.32	0.63
1:A:181:C:N3	1:A:208:G:N1	2.47	0.63
1:A:694:G:H2'	1:A:695:A:H8	1.63	0.63
20:Y:2088:C:O2'	20:Y:2089:C:O5'	2.16	0.63
20:Y:2531:G:N1	25:c:46:GLY:O	2.31	0.63
1:A:224:U:O2	16:Q:10:THR:N	2.29	0.63
1:A:932:U:H5''	12:M:102:ARG:HD3	1.80	0.63
1:A:1079:G:H5''	19:V:95:ARG:HH12	1.63	0.63
9:J:8:ILE:HB	9:J:74:ILE:HB	1.79	0.63
20:Y:1637:G:H5'	20:Y:1805:G:H21	1.63	0.63
20:Y:2018:G:OP2	22:Z:154:LYS:NZ	2.24	0.63
20:Y:2248:C:H2'	20:Y:2249:G:C8	2.33	0.63
20:Y:2967:C:O2'	26:d:151:ARG:NH1	2.32	0.63
1:A:927:G:N7	1:A:1319:G:C2	2.66	0.63
1:A:1266:U:H3'	1:A:1268:C:H5'	1.79	0.63
15:P:72:ALA:O	15:P:76:ILE:HG13	1.99	0.63
20:Y:473:C:O2'	20:Y:476:G:N2	2.31	0.63
20:Y:2898:G:H4'	29:g:30:ARG:NH1	2.11	0.63
25:c:68:THR:HG23	25:c:70:GLN:H	1.64	0.63
20:Y:13:G:O6	20:Y:611:U:O4	2.17	0.63
20:Y:350:A:H3'	20:Y:351:G:H21	1.63	0.63
22:Z:146:GLU:OE2	22:Z:151:GLY:N	2.31	0.63
45:w:9:VAL:HG23	45:w:10:ARG:HG2	1.79	0.63
1:A:363:A:N6	11:L:27:SER:HB2	2.14	0.63
20:Y:394:G:H2'	20:Y:395:G:H8	1.62	0.63
22:Z:37:LEU:HD22	22:Z:62:TYR:HB2	1.81	0.63
35:m:61:TRP:CH2	35:m:93:LYS:HB2	2.34	0.63
8:I:67:LEU:O	8:I:100:ARG:NH1	2.32	0.62
15:P:8:THR:HG23	15:P:30:ASP:HA	1.80	0.62
20:Y:1549:G:OP1	20:Y:1550:G:N1	2.33	0.62
20:Y:1683:C:O2'	20:Y:2926:A:O2'	2.17	0.62
20:Y:2528:G:H2'	25:c:139:LEU:HB3	1.80	0.62
1:A:12:A:C6	3:D:201:LYS:HD3	2.34	0.62
1:A:505:C:P	11:L:86:ARG:HH22	2.22	0.62
1:A:921:G:O2'	6:G:102:ARG:NH2	2.32	0.62
20:Y:2583:C:H2'	20:Y:2584:A:H8	1.63	0.62
17:R:71:ALA:HA	17:R:74:VAL:HG12	1.82	0.62
20:Y:893:G:H5''	22:Z:48:ARG:HD2	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1426:G:N2	20:Y:1426:G:OP2	2.31	0.62
20:Y:1825:C:N4	20:Y:1840:G:OP2	2.18	0.62
20:Y:1938:G:N2	20:Y:1955:A:OP2	2.25	0.62
44:v:94:LYS:NZ	44:v:125:ASP:OD1	2.32	0.62
1:A:1310:C:H2'	1:A:1311:G:C8	2.34	0.62
20:Y:665:G:OP2	36:n:81:LYS:NZ	2.28	0.62
20:Y:669:G:O2'	20:Y:1369:A:OP1	2.18	0.62
20:Y:2211:C:H2'	20:Y:2212:A:C8	2.34	0.62
20:Y:2754:G:O2'	20:Y:2758:A:N6	2.33	0.62
1:A:276:G:H5'	16:Q:32:MET:HE2	1.80	0.62
1:A:822:U:H2'	1:A:824:C:H1'	1.80	0.62
20:Y:15:C:OP1	35:m:30:ARG:NH2	2.31	0.62
20:Y:350:A:N6	20:Y:445:U:OP2	2.31	0.62
20:Y:1661:G:H1	20:Y:1771:U:H3	1.47	0.62
29:g:2:ILE:HB	29:g:33:ALA:HB3	1.80	0.62
51:4:2329:G:C4	51:4:2330:U:H1'	2.35	0.62
4:E:133:GLY:O	4:E:137:ARG:HB2	1.99	0.62
20:Y:22:U:O4	20:Y:603:C:N3	2.33	0.62
20:Y:840:G:H2'	20:Y:841:G:C4	2.34	0.62
20:Y:1433:G:H2'	20:Y:1434:G:H8	1.65	0.62
20:Y:2083:A:H62	20:Y:2099:G:H21	1.48	0.62
24:b:27:VAL:HG11	24:b:112:ARG:HE	1.64	0.62
4:E:174:ARG:HB3	4:E:177:GLU:OE1	1.99	0.62
20:Y:1249:G:OP1	28:f:82:GLY:N	2.26	0.62
20:Y:2062:G:OP1	22:Z:256:ARG:NH2	2.31	0.62
20:Y:2954:C:H2'	20:Y:2955:G:C8	2.34	0.62
25:c:142:GLN:NE2	25:c:156:PRO:HA	2.14	0.62
1:A:137:C:H2'	16:Q:6:GLY:HA3	1.82	0.62
1:A:930:C:H4'	1:A:1288:A:H4'	1.80	0.62
20:Y:825:C:H2'	20:Y:826:G:H8	1.65	0.62
20:Y:2009:G:N2	20:Y:2044:U:O2	2.28	0.62
20:Y:2594:G:H2'	20:Y:2595:G:C8	2.34	0.62
20:Y:2800:G:O2'	20:Y:2803:C:OP2	2.15	0.62
20:Y:2882:C:H4'	26:d:159:LYS:HE3	1.82	0.62
24:b:103:PRO:HD2	24:b:106:MET:HG3	1.81	0.62
1:A:26:G:H4'	1:A:867:G:C8	2.34	0.62
1:A:592:U:H3	1:A:609:G:H21	1.47	0.62
1:A:1059:G:H5'	4:E:159:ILE:HG21	1.80	0.62
3:D:99:ARG:HH21	3:D:163:PRO:HB3	1.64	0.62
20:Y:1043:G:H21	45:w:25:THR:HG23	1.65	0.62
20:Y:2528:G:H3'	25:c:139:LEU:HA	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:c:107:LEU:HD21	25:c:180:LEU:HD21	1.82	0.62
27:e:87:VAL:O	27:e:89:LYS:N	2.33	0.62
31:i:65:TRP:HB2	31:i:105:GLU:HB2	1.82	0.62
1:A:1339:A:H2	1:A:1348:G:H1	1.45	0.62
1:A:1501:G:N7	20:Y:2144:C:H5'	2.15	0.62
20:Y:2457:U:H2'	20:Y:2458:G:C8	2.35	0.62
20:Y:2754:G:OP2	20:Y:2759:G:N2	2.33	0.62
20:Y:384:G:H2'	20:Y:385:G:C8	2.35	0.61
20:Y:3008:C:O2'	20:Y:3009:U:OP1	2.16	0.61
23:a:40:ARG:NH1	23:a:47:TYR:OH	2.32	0.61
32:j:78:THR:OG1	32:j:82:GLU:OE1	2.18	0.61
1:A:407:A:H4'	3:D:108:MET:HE1	1.82	0.61
1:A:577:G:H2'	1:A:624:G:H21	1.65	0.61
1:A:777:C:OP1	10:K:136:ARG:NH1	2.33	0.61
20:Y:272:A:C8	20:Y:273:A:C2	2.88	0.61
20:Y:321:G:C2	20:Y:322:A:N7	2.68	0.61
20:Y:1383:A:H62	20:Y:2236:G:H21	1.46	0.61
38:p:62:ARG:NH1	38:p:81:ARG:HH21	1.98	0.61
1:A:492:U:H2'	1:A:493:A:C8	2.35	0.61
1:A:804:U:H2'	1:A:805:A:H8	1.65	0.61
20:Y:6:G:H21	20:Y:3114:A:H62	1.46	0.61
20:Y:1982:G:N1	20:Y:2212:A:C6	2.68	0.61
40:r:39:GLY:HA3	40:r:99:VAL:HG22	1.82	0.61
1:A:227:G:H2'	1:A:228:A:C8	2.35	0.61
1:A:438:U:H4'	3:D:115:HIS:CE1	2.35	0.61
1:A:653:G:H2'	1:A:654:G:C8	2.35	0.61
1:A:694:G:H2'	1:A:695:A:C8	2.35	0.61
1:A:964:U:H3	1:A:1204:C:H42	1.49	0.61
2:C:8:HIS:O	2:C:12:LEU:HB2	2.01	0.61
6:G:51:ARG:HH11	6:G:58:PRO:HG3	1.66	0.61
9:J:36:VAL:HG22	9:J:76:ILE:HA	1.82	0.61
20:Y:1379:G:OP2	20:Y:1380:A:H2'	1.99	0.61
20:Y:1905:G:H21	20:Y:1919:A:N6	1.95	0.61
1:A:682:A:OP2	20:Y:2065:A:O2'	2.18	0.61
1:A:960:A:N6	1:A:1297:U:O2	2.34	0.61
15:P:10:LEU:H	15:P:17:GLN:HB2	1.65	0.61
20:Y:601:A:N3	20:Y:673:C:O2'	2.34	0.61
20:Y:1470:G:H2'	20:Y:1471:G:H8	1.65	0.61
20:Y:2515:U:O4	20:Y:2565:G:O6	2.18	0.61
20:Y:2516:U:H2'	20:Y:2517:C:C6	2.36	0.61
40:r:132:GLU:HG2	40:r:171:ILE:HD12	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:334:C:HO2'	1:A:1417:A:HO2'	1.42	0.61
9:J:12:ALA:HB2	9:J:96:VAL:HA	1.81	0.61
20:Y:239:U:O5'	20:Y:684:G:N2	2.33	0.61
20:Y:268:G:C4	20:Y:360:G:C6	2.89	0.61
20:Y:2007:C:H2'	20:Y:2008:A:C8	2.36	0.61
3:D:51:GLN:HA	3:D:54:GLN:HE21	1.65	0.61
8:I:31:ARG:H	8:I:101:LEU:HD23	1.65	0.61
20:Y:268:G:H8	20:Y:360:G:C2	2.07	0.61
20:Y:2409:U:H6	51:4:2329:G:O6	1.83	0.61
25:c:10:ARG:NH1	25:c:108:ASP:OD2	2.30	0.61
25:c:14:ARG:NE	25:c:18:GLU:OE2	2.26	0.61
27:e:77:ALA:HB2	27:e:114:LYS:HE3	1.82	0.61
1:A:126:G:N2	16:Q:15:LYS:O	2.34	0.61
1:A:261:U:OP2	18:T:71:GLN:NE2	2.33	0.61
1:A:1338:G:H2'	1:A:1339:A:O4'	2.01	0.61
20:Y:406:A:N6	20:Y:420:G:O2'	2.34	0.61
20:Y:1565:A:H2'	20:Y:1602:U:H5	1.64	0.61
20:Y:2132:U:H2'	20:Y:2133:G:H8	1.66	0.61
1:A:1280:C:H2'	6:G:114:LYS:NZ	2.16	0.61
1:A:1467:A:HO2'	20:Y:2171:C:HO2'	1.46	0.61
15:P:19:ARG:HG2	15:P:39:ARG:HG3	1.83	0.61
20:Y:1084:U:O2'	20:Y:1086:C:O5'	2.13	0.61
1:A:693:G:H2'	1:A:694:G:C8	2.36	0.61
1:A:1339:A:N1	1:A:1348:G:O6	2.33	0.61
20:Y:885:G:O3'	48:z:13:ARG:NH1	2.34	0.61
20:Y:1268:C:H2'	20:Y:1269:C:C6	2.35	0.61
20:Y:2299:C:OP2	20:Y:2462:G:N2	2.33	0.61
20:Y:2409:U:H3'	51:4:2406:U:O4	2.01	0.61
20:Y:2814:A:H2'	20:Y:2815:C:C6	2.36	0.61
1:A:60:U:H2'	1:A:61:G:C8	2.36	0.60
1:A:391:G:H5''	15:P:16:PRO:HB3	1.83	0.60
1:A:637:U:H2'	1:A:638:A:H8	1.66	0.60
1:A:994:C:H2'	1:A:995:A:H8	1.65	0.60
1:A:1417:A:H62	1:A:1451:G:N2	1.97	0.60
11:L:86:ARG:NH1	11:L:88:LYS:HE3	2.16	0.60
20:Y:2517:C:H2'	20:Y:2518:C:C6	2.36	0.60
20:Y:2953:U:H5'	23:a:195:LYS:HZ3	1.66	0.60
25:c:98:LEU:HD12	25:c:102:ARG:HB3	1.83	0.60
51:4:2361:U:O4	51:4:2376:G:O6	2.19	0.60
1:A:502:C:OP2	11:L:66:TYR:OH	2.19	0.60
1:A:927:G:C4	1:A:1319:G:N2	2.69	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1205:U:N3	1:A:1345:A:N6	2.33	0.60
3:D:197:GLU:CD	4:E:137:ARG:HH22	2.09	0.60
6:G:54:THR:HG23	6:G:56:THR:H	1.67	0.60
7:H:127:VAL:HG11	7:H:130:TYR:HE1	1.65	0.60
20:Y:631:C:H2'	20:Y:632:G:C8	2.36	0.60
20:Y:1921:G:H2'	20:Y:1922:G:H8	1.65	0.60
20:Y:3037:C:H5''	46:x:42:ARG:HH11	1.66	0.60
25:c:75:ARG:HG2	25:c:75:ARG:HH11	1.66	0.60
25:c:118:ILE:HB	25:c:121:PHE:HB3	1.81	0.60
29:g:71:ARG:NH1	34:l:71:ARG:HH11	1.98	0.60
48:z:28:ARG:HA	48:z:31:ARG:HD2	1.82	0.60
1:A:805:A:O2'	7:H:13:ARG:NH2	2.33	0.60
1:A:1290:C:OP1	12:M:98:VAL:N	2.34	0.60
8:I:33:LYS:O	8:I:33:LYS:HD2	2.01	0.60
11:L:73:ASN:ND2	11:L:105:GLN:OE1	2.33	0.60
20:Y:32:G:O2'	20:Y:542:A:O4'	2.19	0.60
20:Y:631:C:H2'	20:Y:632:G:H8	1.65	0.60
20:Y:681:C:H2'	20:Y:682:A:H8	1.66	0.60
20:Y:1171:C:H42	20:Y:1224:G:H1	1.49	0.60
20:Y:3054:U:O2'	23:a:60:ARG:NH1	2.34	0.60
48:z:11:ASN:HD22	48:z:14:ARG:NH2	1.98	0.60
1:A:801:G:H2'	1:A:802:G:C8	2.36	0.60
6:G:71:PRO:HD3	6:G:138:ARG:HH21	1.66	0.60
20:Y:3005:A:H5''	20:Y:3006:G:H5'	1.82	0.60
20:Y:3101:C:O2'	32:j:90:ARG:NH1	2.34	0.60
32:j:98:ILE:O	32:j:112:VAL:N	2.32	0.60
1:A:126:G:O2'	16:Q:17:ARG:NH1	2.32	0.60
6:G:146:GLU:HG3	6:G:149:ARG:HH22	1.66	0.60
20:Y:19:U:H3	20:Y:605:G:H1	1.48	0.60
24:b:31:ILE:HA	24:b:34:MET:HE2	1.83	0.60
28:f:77:HIS:NE2	28:f:80:TYR:O	2.29	0.60
1:A:933:G:N1	1:A:1212:A:C6	2.69	0.60
16:Q:42:ASP:OD2	16:Q:44:LYS:NZ	2.34	0.60
20:Y:916:G:C4	24:b:55:ARG:HD3	2.37	0.60
20:Y:1812:A:H2'	20:Y:1813:C:O4'	2.02	0.60
20:Y:2474:G:C5	31:i:83:MET:HE1	2.36	0.60
1:A:1342:A:H2'	1:A:1343:G:C8	2.35	0.60
20:Y:674:U:OP2	35:m:14:ARG:NH1	2.34	0.60
20:Y:1578:G:H1	20:Y:1593:U:H3	1.49	0.60
20:Y:2102:G:H2'	20:Y:2103:C:C6	2.36	0.60
22:Z:67:PHE:HE1	22:Z:106:ILE:HD11	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Z:126:LYS:O	22:Z:129:ASN:ND2	2.34	0.60
34:l:58:PHE:HE1	34:l:75:VAL:HA	1.66	0.60
48:z:18:VAL:HG12	48:z:19:HIS:HD2	1.66	0.60
1:A:254:G:H2'	1:A:255:G:H8	1.67	0.60
1:A:427:U:H5''	3:D:10:ARG:NH1	2.16	0.60
1:A:949:C:OP2	1:A:950:A:O2'	2.16	0.60
3:D:15:LEU:HD22	3:D:51:GLN:OE1	2.02	0.60
20:Y:1180:G:O2'	27:e:137:MET:SD	2.60	0.60
20:Y:1982:G:C2	20:Y:2212:A:C6	2.89	0.60
20:Y:2975:G:OP1	20:Y:2975:G:N2	2.34	0.60
1:A:776:C:O3'	10:K:136:ARG:NH2	2.35	0.60
3:D:43:GLU:HA	3:D:47:ARG:NH2	2.17	0.60
3:D:60:TYR:O	3:D:92:ARG:NH2	2.35	0.60
18:T:13:THR:O	18:T:17:ARG:HG3	2.01	0.60
20:Y:1249:G:O2'	20:Y:2249:G:O2'	2.16	0.60
20:Y:1411:G:OP1	20:Y:2933:G:O2'	2.19	0.60
29:g:88:LYS:HD3	29:g:89:ASN:H	1.66	0.60
43:u:15:ASP:HA	43:u:18:LEU:CD2	2.32	0.60
1:A:813:U:O2	1:A:835:G:N2	2.28	0.60
1:A:1350:U:OP1	8:I:137:GLY:N	2.33	0.60
20:Y:800:A:C5	20:Y:804:A:N6	2.70	0.60
20:Y:943:U:H4'	20:Y:946:G:N1	2.17	0.60
20:Y:2313:A:N6	20:Y:2454:G:O6	2.35	0.60
20:Y:2954:C:H2'	20:Y:2955:G:H8	1.67	0.60
20:Y:3076:U:H2'	20:Y:3077:A:H8	1.67	0.60
23:a:16:VAL:HG23	23:a:26:VAL:HG11	1.84	0.60
29:g:71:ARG:NH2	29:g:77:ILE:HD11	2.09	0.60
1:A:801:G:H2'	1:A:802:G:H8	1.65	0.59
9:J:67:MET:HE1	13:N:55:GLY:HA3	1.84	0.59
12:M:108:ARG:HA	12:M:111:LYS:HB2	1.83	0.59
20:Y:681:C:H2'	20:Y:682:A:C8	2.36	0.59
43:u:15:ASP:HA	43:u:18:LEU:HD23	1.84	0.59
12:M:69:ASP:OD1	12:M:70:LEU:N	2.34	0.59
20:Y:409:G:N2	39:q:69:SER:OG	2.35	0.59
20:Y:860:G:H21	20:Y:865:A:H61	1.48	0.59
1:A:1014:U:H2'	1:A:1015:G:C8	2.37	0.59
1:A:1274:C:OP2	6:G:41:ARG:NH1	2.35	0.59
8:I:88:ASP:N	8:I:95:GLN:HE22	2.00	0.59
20:Y:90:C:H2'	20:Y:91:C:C6	2.37	0.59
20:Y:327:U:H2'	20:Y:450:G:H21	1.67	0.59
20:Y:747:A:N6	20:Y:768:G:O2'	2.31	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2969:C:H2'	20:Y:2970:U:C6	2.37	0.59
32:j:98:ILE:HD12	46:x:46:ALA:HB2	1.83	0.59
4:E:39:ARG:NH2	4:E:141:GLU:OE2	2.35	0.59
7:H:113:LEU:HB3	7:H:117:GLN:HE22	1.67	0.59
12:M:96:LEU:HD21	12:M:103:THR:HG21	1.84	0.59
17:R:19:LYS:NZ	17:R:20:CYS:O	2.34	0.59
20:Y:794:G:H2'	20:Y:795:G:H8	1.66	0.59
20:Y:2454:G:N3	42:t:32:ASN:ND2	2.50	0.59
20:Y:2520:U:H3	20:Y:2559:A:H62	1.48	0.59
20:Y:2563:G:H2'	20:Y:2564:A:C8	2.38	0.59
22:Z:271:ARG:HG2	22:Z:272:ARG:H	1.67	0.59
1:A:40:C:O2'	11:L:114:ARG:NH2	2.35	0.59
20:Y:127:C:OP1	20:Y:1463:G:N2	2.35	0.59
20:Y:158:G:O2'	20:Y:165:U:O4	2.19	0.59
20:Y:317:G:O6	20:Y:509:U:C2	2.55	0.59
43:u:14:THR:O	43:u:17:GLU:HG3	2.02	0.59
50:2:5:PRO:HA	50:2:36:GLN:HG3	1.82	0.59
1:A:1509:G:H2'	1:A:1510:G:H8	1.67	0.59
3:D:154:ARG:NH1	3:D:155:GLU:OE2	2.35	0.59
20:Y:74:C:O2	20:Y:107:G:N2	2.35	0.59
20:Y:3042:A:OP2	23:a:120:GLY:N	2.28	0.59
38:p:62:ARG:HH11	38:p:81:ARG:HH21	1.50	0.59
20:Y:417:C:H2'	20:Y:418:C:C6	2.38	0.59
20:Y:510:A:H2'	20:Y:511:A:C4	2.38	0.59
20:Y:806:C:H2'	20:Y:807:C:H6	1.67	0.59
20:Y:978:A:H2'	20:Y:979:G:C8	2.37	0.59
20:Y:1086:C:H2'	20:Y:1087:G:C8	2.38	0.59
20:Y:1225:G:OP1	44:v:54:ASN:ND2	2.28	0.59
1:A:1408:A:C2	1:A:1459:G:N1	2.64	0.59
3:D:197:GLU:OE2	4:E:130:VAL:N	2.35	0.59
19:V:44:GLN:O	19:V:48:THR:HG23	2.03	0.59
20:Y:81:A:N6	20:Y:99:G:O2'	2.36	0.59
20:Y:676:C:N4	20:Y:677:G:O6	2.35	0.59
20:Y:886:G:H2'	20:Y:887:G:H8	1.68	0.59
20:Y:2622:C:H2'	20:Y:2623:A:C8	2.38	0.59
24:b:4:LYS:NZ	24:b:6:ASP:OD1	2.23	0.59
34:l:27:VAL:HG23	34:l:80:ILE:HG23	1.84	0.59
1:A:124:G:O2'	1:A:125:U:OP1	2.20	0.59
6:G:24:THR:O	6:G:28:ASN:ND2	2.36	0.59
6:G:111:ARG:HG2	6:G:112:ARG:H	1.67	0.59
11:L:14:ASP:OD1	11:L:15:LYS:N	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:13:LYS:O	12:M:45:THR:OG1	2.20	0.59
18:T:70:ASN:OD1	18:T:74:ASN:ND2	2.35	0.59
20:Y:368:U:O2	20:Y:435:A:C5	2.56	0.59
20:Y:1572:G:N1	20:Y:1600:G:C6	2.71	0.59
20:Y:2408:G:H2'	51:4:2329:G:N1	2.10	0.59
20:Y:3023:G:H2'	20:Y:3024:A:H8	1.67	0.59
22:Z:206:TRP:HB3	22:Z:211:ARG:CZ	2.33	0.59
32:j:4:PRO:HB3	32:j:9:ARG:HH22	1.68	0.59
46:x:44:LEU:HG	46:x:48:ARG:HH11	1.67	0.59
1:A:1066:U:H3	1:A:1079:G:H22	1.49	0.59
13:N:34:TYR:CE2	13:N:36:LYS:HB2	2.38	0.59
20:Y:693:G:H2'	20:Y:694:C:H6	1.67	0.59
20:Y:949:C:H2'	20:Y:950:A:H8	1.66	0.59
20:Y:1524:G:H2'	20:Y:1525:U:C6	2.37	0.59
20:Y:2068:U:H3	20:Y:2115:G:H1	1.49	0.59
20:Y:2908:U:P	34:l:48:ARG:HH21	2.26	0.59
48:z:27:THR:HG23	48:z:30:GLY:H	1.66	0.59
50:2:11:CYS:HB3	50:2:32:HIS:HE1	1.68	0.59
1:A:416:G:H2'	1:A:417:G:H8	1.68	0.58
1:A:763:C:H2'	1:A:764:A:H8	1.67	0.58
1:A:959:A:C6	1:A:1345:A:C6	2.91	0.58
15:P:15:ASN:O	15:P:15:ASN:ND2	2.36	0.58
20:Y:837:C:H2'	20:Y:838:G:H8	1.68	0.58
20:Y:1982:G:C6	20:Y:2212:A:N6	2.71	0.58
20:Y:2080:G:O2'	20:Y:2635:A:O2'	2.18	0.58
22:Z:101:GLU:OE2	22:Z:103:ARG:NH1	2.36	0.58
31:i:118:LEU:O	31:i:122:ILE:HG12	2.03	0.58
1:A:434:C:H2'	1:A:435:U:C6	2.38	0.58
1:A:698:A:N1	17:R:47:LYS:NZ	2.40	0.58
1:A:1153:U:H2'	1:A:1154:C:C6	2.38	0.58
3:D:63:MET:HB3	3:D:66:GLN:HB2	1.85	0.58
3:D:147:THR:HG22	3:D:149:PRO:HD2	1.85	0.58
21:U:63:U:H2'	21:U:64:G:H8	1.69	0.58
1:A:1131:G:C2	9:J:41:PRO:HG2	2.38	0.58
20:Y:72:G:O3'	43:u:48:ARG:NH1	2.36	0.58
20:Y:598:U:O2'	20:Y:1329:G:N2	2.36	0.58
20:Y:2966:C:P	50:2:35:ARG:HH21	2.25	0.58
28:f:53:PHE:HD1	28:f:121:LYS:HB2	1.68	0.58
34:l:47:ILE:HA	34:l:96:LEU:HD12	1.84	0.58
1:A:571:U:O4	1:A:629:G:O6	2.21	0.58
17:R:72:ARG:HB3	17:R:79:PHE:CE1	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:273:A:N1	20:Y:314:G:C2	2.70	0.58
20:Y:409:G:H2'	20:Y:410:U:C6	2.38	0.58
20:Y:696:A:H2	20:Y:719:G:H21	1.50	0.58
20:Y:1037:C:H2'	20:Y:1038:G:H8	1.68	0.58
20:Y:1921:G:H2'	20:Y:1922:G:C8	2.38	0.58
20:Y:2574:C:OP2	49:1:42:ARG:NH1	2.37	0.58
26:d:160:GLY:O	26:d:164:ARG:NH2	2.36	0.58
28:f:95:LYS:HG2	28:f:96:HIS:ND1	2.19	0.58
43:u:32:LEU:HD23	43:u:46:ARG:HB2	1.86	0.58
1:A:961:C:H42	1:A:1342:A:H61	0.69	0.58
1:A:1477:A:H4'	1:A:1478:G:OP1	2.03	0.58
20:Y:336:C:O2'	20:Y:337:U:OP1	2.19	0.58
20:Y:837:C:H2'	20:Y:838:G:C8	2.38	0.58
20:Y:1073:G:HO2'	20:Y:1076:A:H62	1.49	0.58
20:Y:1369:A:N1	24:b:83:GLN:NE2	2.51	0.58
20:Y:2528:G:O4'	25:c:137:PHE:CD2	2.56	0.58
20:Y:2858:G:H21	23:a:38:ARG:HH12	1.51	0.58
20:Y:2917:A:H2'	20:Y:2918:G:H8	1.68	0.58
28:f:53:PHE:CD1	28:f:121:LYS:HB2	2.38	0.58
34:l:45:VAL:HG11	34:l:109:ILE:HG13	1.84	0.58
1:A:1251:G:H2'	1:A:1252:G:H8	1.67	0.58
2:C:137:ILE:O	2:C:141:MET:HG3	2.03	0.58
20:Y:1092:G:OP1	20:Y:1302:G:O2'	2.22	0.58
20:Y:1922:G:H2'	20:Y:1923:G:H8	1.68	0.58
32:j:63:ARG:HA	32:j:80:PHE:HE2	1.68	0.58
1:A:205:G:H2'	1:A:206:G:H8	1.68	0.58
1:A:1405:G:H4'	29:g:48:PRO:HB3	1.85	0.58
3:D:52:GLU:OE1	3:D:190:LEU:HB3	2.03	0.58
20:Y:659:U:H5''	30:h:38:LYS:HD2	1.85	0.58
20:Y:677:G:H2'	20:Y:1366:A:H61	1.68	0.58
20:Y:790:A:O2'	20:Y:791:A:O4'	2.14	0.58
20:Y:1111:G:P	35:m:51:ARG:HH12	2.27	0.58
20:Y:2909:G:OP2	34:l:48:ARG:NH1	2.36	0.58
31:i:37:LEU:HD22	40:r:88:ILE:HG23	1.85	0.58
1:A:1186:U:O2'	2:C:195:ARG:NH1	2.37	0.58
1:A:1249:G:N3	1:A:1308:C:O2'	2.36	0.58
20:Y:1331:C:OP2	35:m:15:ARG:NH1	2.36	0.58
20:Y:2540:G:HO2'	33:k:8:GLN:H	1.50	0.58
20:Y:2564:A:H2'	20:Y:2565:G:H8	1.69	0.58
20:Y:3073:G:H2'	20:Y:3074:C:C6	2.39	0.58
20:Y:3076:U:H2'	20:Y:3077:A:C8	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Z:233:HIS:CE1	22:Z:247:VAL:H	2.19	0.58
29:g:15:GLY:O	29:g:47:ILE:N	2.30	0.58
40:r:101:GLN:NE2	40:r:104:GLU:OE2	2.36	0.58
1:A:224:U:H1'	16:Q:9:TYR:HA	1.86	0.58
1:A:262:G:H5''	18:T:71:GLN:HB2	1.85	0.58
1:A:568:G:C2	1:A:632:U:O2	2.57	0.58
1:A:929:G:OP2	12:M:108:ARG:NE	2.37	0.58
1:A:996:G:N2	1:A:999:A:OP2	2.32	0.58
3:D:115:HIS:HD2	3:D:117:HIS:NE2	2.02	0.58
6:G:25:GLN:O	6:G:29:LYS:HG2	2.03	0.58
6:G:71:PRO:HD2	6:G:96:SER:HB3	1.85	0.58
20:Y:1431:U:H2'	20:Y:1432:G:H8	1.67	0.58
20:Y:1573:U:O2	20:Y:1597:G:O6	2.21	0.58
38:p:4:ILE:HG12	43:u:26:LYS:HD3	1.86	0.58
39:q:33:VAL:HB	39:q:68:VAL:HG22	1.86	0.58
46:x:44:LEU:HG	46:x:48:ARG:NH1	2.19	0.58
1:A:1490:U:O2	10:K:137:ARG:NH2	2.37	0.58
14:O:9:LYS:HA	14:O:12:LEU:HG	1.86	0.58
20:Y:2297:U:O2'	20:Y:2821:G:O2'	2.19	0.58
37:o:41:ASP:OD2	46:x:38:LYS:NZ	2.30	0.58
38:p:21:TYR:HA	38:p:24:ILE:HG22	1.85	0.58
43:u:44:ASN:O	43:u:47:LEU:HG	2.04	0.58
1:A:183:C:N3	1:A:206:G:N1	2.52	0.57
1:A:655:A:H61	1:A:695:A:H61	1.52	0.57
1:A:1104:G:N2	1:A:1105:U:O4	2.37	0.57
1:A:1351:G:H5'	9:J:64:HIS:HE1	1.68	0.57
1:A:1367:C:H2'	1:A:1368:G:H8	1.68	0.57
2:C:184:TYR:OH	2:C:199:LYS:NZ	2.32	0.57
8:I:32:ARG:NH1	8:I:127:ASP:H	2.02	0.57
18:T:8:ILE:HA	18:T:11:ILE:HD12	1.86	0.57
20:Y:219:G:H1	20:Y:515:U:H3'	1.68	0.57
20:Y:1311:C:H2'	20:Y:1312:G:H8	1.69	0.57
36:n:6:ILE:HD12	36:n:41:LEU:HB3	1.85	0.57
1:A:668:G:OP1	10:K:58:HIS:ND1	2.36	0.57
1:A:1075:U:OP2	1:A:1088:G:N1	2.29	0.57
3:D:51:GLN:HA	3:D:54:GLN:NE2	2.19	0.57
1:A:821:C:N4	1:A:823:U:O4	2.37	0.57
1:A:1095:U:OP1	9:J:68:ARG:NH2	2.34	0.57
18:T:16:ARG:NH2	18:T:17:ARG:HG2	2.20	0.57
20:Y:1520:C:H2'	20:Y:1521:C:H6	1.70	0.57
20:Y:2132:U:H2'	20:Y:2133:G:C8	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2622:C:H2'	20:Y:2623:A:H8	1.69	0.57
1:A:48:G:H4'	15:P:12:LYS:HD3	1.86	0.57
20:Y:2815:C:H2'	20:Y:2816:G:C8	2.39	0.57
26:d:102:GLN:HG3	26:d:118:ALA:HB3	1.87	0.57
48:z:15:ARG:HH12	48:z:47:ALA:HB1	1.68	0.57
1:A:862:C:H2'	1:A:863:G:H8	1.69	0.57
1:A:1057:G:H21	1:A:1059:G:H8	1.51	0.57
20:Y:58:G:P	43:u:44:ASN:HD21	2.28	0.57
20:Y:482:U:H2'	20:Y:483:G:H8	1.69	0.57
20:Y:2502:A:OP2	41:s:12:ASN:ND2	2.36	0.57
20:Y:3038:C:P	46:x:42:ARG:HH12	2.28	0.57
1:A:121:U:H2'	1:A:122:G:H8	1.70	0.57
1:A:943:U:OP2	1:A:1204:C:O2'	2.23	0.57
1:A:1324:C:H4'	8:I:147:TYR:HB3	1.87	0.57
18:T:75:LYS:O	18:T:79:LEU:HG	2.05	0.57
20:Y:1201:G:N2	20:Y:1204:A:OP2	2.36	0.57
20:Y:2519:C:OP1	33:k:14:ARG:NH2	2.38	0.57
20:Y:2788:A:H2	20:Y:2871:U:H4'	1.70	0.57
28:f:118:ILE:O	28:f:121:LYS:HG2	2.05	0.57
1:A:237:C:H2'	1:A:238:G:C8	2.39	0.57
1:A:269:U:H2'	1:A:270:A:H8	1.70	0.57
12:M:19:LEU:HG	12:M:25:ILE:HG21	1.86	0.57
20:Y:398:U:H3'	20:Y:399:G:H8	1.69	0.57
20:Y:844:G:OP1	22:Z:10:THR:OG1	2.20	0.57
20:Y:1572:G:N1	20:Y:1600:G:O6	2.38	0.57
20:Y:2486:U:P	41:s:19:GLN:HE22	2.28	0.57
1:A:557:G:H2'	1:A:558:C:C6	2.39	0.57
19:V:66:THR:HB	19:V:158:PRO:HA	1.85	0.57
22:Z:52:ARG:HH22	22:Z:249:PRO:HG2	1.69	0.57
38:p:58:ASN:O	38:p:83:ILE:N	2.29	0.57
1:A:516:C:H2'	1:A:517:G:H8	1.70	0.57
6:G:116:MET:HA	6:G:119:ARG:HB2	1.86	0.57
11:L:114:ARG:HH12	11:L:121:LYS:HA	1.69	0.57
12:M:96:LEU:HG	12:M:97:PRO:HD2	1.86	0.57
15:P:7:LEU:HB3	15:P:18:TYR:HB3	1.85	0.57
20:Y:885:G:OP1	48:z:11:ASN:ND2	2.38	0.57
20:Y:1636:A:H2	20:Y:1805:G:H1'	1.70	0.57
20:Y:2768:G:H2'	20:Y:2769:G:C8	2.40	0.57
20:Y:2818:C:N4	20:Y:2819:G:O6	2.37	0.57
25:c:125:SER:O	25:c:128:GLN:NE2	2.38	0.57
1:A:44:C:H2'	1:A:45:G:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:3009:U:H1'	23:a:38:ARG:NH2	2.19	0.57
28:f:55:ILE:HG12	28:f:123:LYS:HB2	1.87	0.57
33:k:15:ARG:HD3	33:k:19:LEU:HD23	1.87	0.57
47:y:18:CYS:SG	47:y:20:HIS:ND1	2.75	0.57
1:A:82:U:O2	1:A:87:G:N2	2.26	0.56
1:A:323:U:O3'	18:T:17:ARG:NH1	2.38	0.56
1:A:565:G:OP1	16:Q:54:ARG:NH2	2.38	0.56
1:A:1330:U:O2'	8:I:142:ARG:NH2	2.38	0.56
1:A:1405:G:H5'	29:g:48:PRO:HG3	1.87	0.56
10:K:56:SER:HB3	10:K:71:ALA:HB1	1.87	0.56
25:c:15:TYR:HA	25:c:19:ILE:HB	1.87	0.56
28:f:125:TYR:HE2	28:f:131:PRO:HD2	1.69	0.56
1:A:401:C:H2'	1:A:402:G:C8	2.40	0.56
1:A:920:A:H4'	6:G:95:ARG:NH2	2.19	0.56
20:Y:494:G:N2	20:Y:510:A:H62	2.02	0.56
20:Y:1574:G:H3'	20:Y:1575:A:H8	1.70	0.56
20:Y:2528:G:C8	25:c:139:LEU:N	2.73	0.56
22:Z:218:ARG:HG3	22:Z:219:PRO:HD2	1.88	0.56
28:f:4:TYR:HB3	35:m:64:ARG:HH12	1.68	0.56
1:A:225:G:H3'	16:Q:11:PRO:HG2	1.87	0.56
1:A:580:G:C6	1:A:620:A:C6	2.93	0.56
1:A:788:C:OP1	14:O:48:HIS:NE2	2.38	0.56
1:A:1372:C:H2'	1:A:1373:U:C6	2.40	0.56
6:G:27:VAL:HG12	6:G:43:VAL:HG21	1.88	0.56
9:J:67:MET:HA	9:J:67:MET:HE3	1.87	0.56
11:L:86:ARG:O	11:L:96:LYS:NZ	2.38	0.56
20:Y:49:A:H2'	20:Y:50:A:H8	1.71	0.56
20:Y:1078:G:C4	20:Y:2255:A:C6	2.93	0.56
20:Y:1082:C:H2'	20:Y:1083:G:H8	1.69	0.56
20:Y:1875:U:H2'	20:Y:1876:A:H8	1.70	0.56
20:Y:2008:A:N6	20:Y:2045:G:O2'	2.35	0.56
20:Y:2528:G:O4'	25:c:137:PHE:HD2	1.88	0.56
20:Y:3105:C:O2'	20:Y:3107:G:OP2	2.23	0.56
38:p:32:VAL:HG22	38:p:81:ARG:HH11	1.71	0.56
39:q:27:TYR:HD2	39:q:30:ARG:HH21	1.52	0.56
1:A:1409:A:H61	1:A:1458:G:H1	1.52	0.56
4:E:109:PRO:HB3	4:E:122:ARG:HB3	1.87	0.56
20:Y:2470:A:H2'	20:Y:2471:A:H8	1.70	0.56
20:Y:2564:A:H2'	20:Y:2565:G:C8	2.40	0.56
20:Y:2771:U:H2'	20:Y:2772:G:C8	2.40	0.56
20:Y:3023:G:H2'	20:Y:3024:A:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:c:126:PRO:HG2	25:c:127:LYS:HD3	1.88	0.56
40:r:134:GLU:HB2	40:r:171:ILE:HD11	1.88	0.56
1:A:208:G:H22	16:Q:8:LYS:HZ1	1.54	0.56
20:Y:190:A:H2'	20:Y:191:G:N3	2.19	0.56
20:Y:1787:A:H5''	22:Z:60:ARG:HD2	1.87	0.56
20:Y:2574:C:H2'	20:Y:2575:G:O4'	2.05	0.56
1:A:771:G:O2'	20:Y:2145:C:O5'	2.22	0.56
1:A:858:A:O5'	7:H:15:ARG:NH2	2.39	0.56
1:A:1357:A:OP1	6:G:36:LYS:NZ	2.39	0.56
12:M:69:ASP:O	12:M:72:ARG:HG2	2.05	0.56
20:Y:317:G:N1	20:Y:495:C:N4	2.53	0.56
20:Y:777:U:H2'	20:Y:778:G:C8	2.40	0.56
20:Y:1301:G:H2'	20:Y:1302:G:O4'	2.06	0.56
20:Y:2470:A:H2'	20:Y:2471:A:C8	2.39	0.56
31:i:40:ALA:HB2	31:i:127:ILE:HG21	1.86	0.56
37:o:43:LEU:HB3	37:o:55:ALA:HB2	1.87	0.56
48:z:11:ASN:HD22	48:z:14:ARG:HH21	1.52	0.56
1:A:557:G:N7	1:A:745:G:N2	2.54	0.56
1:A:1203:G:OP2	1:A:1304:C:N4	2.39	0.56
1:A:1349:C:O2'	9:J:62:ARG:NH1	2.37	0.56
3:D:124:LYS:HZ2	3:D:141:LYS:HD3	1.70	0.56
20:Y:1813:C:N4	20:Y:1814:G:O6	2.39	0.56
20:Y:2028:G:H2'	20:Y:2029:A:C8	2.40	0.56
20:Y:2309:U:H2'	20:Y:2310:G:H8	1.67	0.56
20:Y:2517:C:H2'	20:Y:2518:C:H6	1.70	0.56
20:Y:2583:C:H2'	20:Y:2584:A:C8	2.41	0.56
29:g:10:VAL:HG12	29:g:12:ASP:H	1.71	0.56
1:A:562:U:C4	1:A:740:G:O6	2.59	0.56
1:A:566:U:O2	1:A:736:C:N3	2.38	0.56
20:Y:791:A:O2'	20:Y:2666:C:O2'	2.24	0.56
20:Y:1337:G:N1	20:Y:1341:U:C2	2.74	0.56
20:Y:1882:A:H3'	20:Y:1883:A:H8	1.71	0.56
25:c:113:ILE:HG22	25:c:117:ARG:HH22	1.70	0.56
25:c:161:ILE:O	25:c:161:ILE:HG13	2.06	0.56
1:A:404:G:O2'	1:A:478:A:N1	2.35	0.56
1:A:648:A:H2'	1:A:649:G:H8	1.71	0.56
1:A:1236:G:OP2	1:A:1260:A:N6	2.38	0.56
1:A:1500:G:N2	1:A:1503:A:OP2	2.35	0.56
17:R:22:PHE:CE1	17:R:64:ILE:HD11	2.41	0.56
20:Y:115:A:H5'	20:Y:116:A:H8	1.71	0.56
20:Y:1052:U:H2'	20:Y:1053:G:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2293:G:H2'	20:Y:2294:A:C8	2.41	0.56
38:p:62:ARG:HD3	38:p:81:ARG:HE	1.71	0.56
42:t:14:PHE:CE1	42:t:28:ARG:HG2	2.40	0.56
1:A:581:U:H2'	1:A:582:U:C6	2.41	0.56
20:Y:355:A:N6	20:Y:441:G:N1	2.53	0.56
20:Y:531:A:H61	24:b:42:LEU:HB3	1.70	0.56
20:Y:663:A:H1'	20:Y:665:G:H8	1.71	0.56
20:Y:801:U:H6	20:Y:903:A:H61	1.53	0.56
20:Y:1316:U:O4	20:Y:1359:G:O6	2.24	0.56
20:Y:1545:C:C4	20:Y:1623:U:C4	2.94	0.56
22:Z:231:HIS:CE1	22:Z:233:HIS:ND1	2.73	0.56
26:d:96:ARG:HB3	26:d:107:ALA:HB3	1.88	0.56
32:j:50:LYS:HA	32:j:50:LYS:HE3	1.87	0.56
45:w:26:LEU:HD21	45:w:46:LEU:HB3	1.87	0.56
1:A:254:G:H4'	16:Q:35:THR:HG21	1.88	0.55
3:D:51:GLN:CD	3:D:54:GLN:HE21	2.14	0.55
20:Y:403:U:O2	24:b:167:LYS:NZ	2.26	0.55
20:Y:418:C:H2'	20:Y:419:G:C8	2.41	0.55
20:Y:1046:C:O2'	20:Y:1287:C:O2	2.18	0.55
20:Y:1854:U:H2'	20:Y:1855:A:H8	1.71	0.55
20:Y:2009:G:P	22:Z:206:TRP:HD1	2.29	0.55
20:Y:3024:A:H2'	20:Y:3025:G:H8	1.71	0.55
33:k:41:ASN:OD1	33:k:42:ARG:N	2.39	0.55
1:A:236:G:OP1	16:Q:57:LYS:NZ	2.38	0.55
1:A:600:U:O4	1:A:601:A:N6	2.40	0.55
1:A:931:A:O2'	1:A:1346:A:OP2	2.24	0.55
20:Y:265:A:H2	20:Y:359:A:N6	2.04	0.55
20:Y:400:C:H2'	20:Y:401:C:C6	2.41	0.55
20:Y:1072:G:H5''	31:i:87:LYS:HE3	1.89	0.55
23:a:202:ASN:O	23:a:202:ASN:ND2	2.36	0.55
35:m:90:VAL:HG12	35:m:95:LEU:HD12	1.88	0.55
38:p:8:ARG:HG2	43:u:34:PHE:CD2	2.41	0.55
51:4:2385:G:H4'	51:4:2388:G:C8	2.42	0.55
1:A:895:A:H4'	1:A:896:A:O5'	2.05	0.55
1:A:1063:U:O2'	1:A:1082:A:OP2	2.24	0.55
4:E:70:MET:HE2	4:E:96:PHE:HD2	1.72	0.55
7:H:27:LEU:HB2	7:H:33:LYS:HE2	1.87	0.55
20:Y:674:U:H2'	20:Y:675:G:C8	2.41	0.55
20:Y:1547:G:O2'	20:Y:1548:C:O4'	2.12	0.55
20:Y:2021:G:H5''	22:Z:252:LYS:HD2	1.88	0.55
20:Y:2303:A:H5'	42:t:19:SER:HB2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2634:G:H3'	20:Y:2635:A:H8	1.71	0.55
23:a:162:LYS:HG3	28:f:80:TYR:CE1	2.41	0.55
35:m:14:ARG:HG2	35:m:32:TYR:CD1	2.42	0.55
1:A:1400:A:C6	1:A:1466:G:N1	2.74	0.55
20:Y:1164:A:H5'	44:v:59:ARG:HH21	1.71	0.55
37:o:76:LEU:HD23	37:o:114:VAL:HG11	1.89	0.55
1:A:269:U:H2'	1:A:270:A:C8	2.41	0.55
1:A:1415:G:O2'	1:A:1452:A:N6	2.39	0.55
3:D:90:GLU:OE1	3:D:95:ASN:ND2	2.39	0.55
20:Y:2249:G:H2'	20:Y:2250:A:C8	2.41	0.55
20:Y:2293:G:H2'	20:Y:2294:A:H8	1.72	0.55
1:A:18:U:N3	1:A:21:U:OP2	2.24	0.55
1:A:675:A:H2'	1:A:676:A:C8	2.41	0.55
1:A:1204:C:H5''	1:A:1205:U:H5''	1.88	0.55
8:I:108:ILE:HD11	8:I:118:LEU:HD12	1.87	0.55
20:Y:1632:G:H2'	20:Y:1633:U:C6	2.40	0.55
20:Y:1850:A:H2'	20:Y:1851:G:C4	2.40	0.55
25:c:41:VAL:HG23	25:c:103:MET:HE3	1.86	0.55
25:c:149:ASP:OD1	25:c:152:SER:OG	2.24	0.55
31:i:70:PRO:HA	31:i:95:ALA:HB2	1.87	0.55
1:A:92:A:O2'	1:A:93:C:O5'	2.24	0.55
1:A:205:G:H2'	1:A:206:G:C8	2.42	0.55
1:A:782:A:H3'	1:A:783:G:H8	1.71	0.55
1:A:979:U:H2'	1:A:980:G:H8	1.70	0.55
1:A:1169:A:OP1	8:I:136:TYR:OH	2.18	0.55
6:G:107:PHE:CZ	6:G:137:ARG:HD2	2.42	0.55
9:J:85:ASP:HA	9:J:88:MET:SD	2.47	0.55
10:K:44:THR:HA	10:K:50:VAL:HA	1.89	0.55
20:Y:74:C:N3	20:Y:107:G:C2	2.75	0.55
20:Y:324:C:H2'	20:Y:325:U:C6	2.42	0.55
20:Y:352:G:C6	20:Y:353:G:H1'	2.41	0.55
20:Y:1644:G:H2'	20:Y:1645:G:H8	1.71	0.55
20:Y:2284:A:N6	24:b:75:ARG:HH22	2.05	0.55
20:Y:2815:C:H2'	20:Y:2816:G:H8	1.71	0.55
22:Z:211:ARG:HD2	22:Z:211:ARG:C	2.31	0.55
37:o:22:THR:OG1	37:o:26:ARG:NH1	2.40	0.55
44:v:95:LYS:HA	44:v:98:LYS:HG2	1.87	0.55
1:A:544:C:OP1	11:L:12:ARG:NH1	2.39	0.55
1:A:737:U:O2'	1:A:861:C:O2	2.25	0.55
1:A:847:A:H2'	1:A:848:C:C6	2.42	0.55
1:A:997:A:H2	1:A:1200:A:H4'	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1092:C:H2'	2:C:178:LEU:HD11	1.89	0.55
1:A:1392:C:H2'	1:A:1393:G:H8	1.72	0.55
6:G:107:PHE:HZ	6:G:137:ARG:HD2	1.72	0.55
6:G:115:THR:HG22	6:G:117:VAL:HG12	1.89	0.55
20:Y:27:G:H2'	20:Y:28:C:C6	2.42	0.55
20:Y:91:C:H2'	20:Y:92:G:C8	2.42	0.55
20:Y:92:G:H2'	20:Y:93:A:C8	2.42	0.55
20:Y:1999:U:O2'	20:Y:2000:A:OP1	2.23	0.55
20:Y:2698:C:H5''	20:Y:2699:C:H5	1.71	0.55
29:g:68:GLU:HA	29:g:77:ILE:O	2.06	0.55
1:A:577:G:C2	1:A:624:G:C4	2.95	0.55
1:A:1143:C:H2'	1:A:1144:G:H8	1.72	0.55
1:A:1154:C:H2'	1:A:1155:G:C8	2.42	0.55
5:F:24:GLU:HB2	5:F:31:ARG:HH22	1.71	0.55
20:Y:940:A:H2'	20:Y:941:U:C6	2.42	0.55
20:Y:2439:C:H2'	20:Y:2440:G:H8	1.72	0.55
20:Y:2985:G:H1'	26:d:144:GLN:HE22	1.72	0.55
22:Z:206:TRP:HB3	22:Z:211:ARG:NE	2.21	0.55
24:b:34:MET:HE1	30:h:4:ILE:HD13	1.88	0.55
43:u:21:LYS:HA	43:u:24:GLU:HG3	1.88	0.55
3:D:13:ARG:HB3	3:D:33:PRO:HD3	1.88	0.55
20:Y:268:G:C4	20:Y:360:G:N3	2.74	0.55
20:Y:1363:G:C5	35:m:3:ARG:HB2	2.41	0.55
20:Y:1690:A:H2'	20:Y:1691:A:H8	1.72	0.55
22:Z:69:ARG:HD2	22:Z:130:ASN:HB2	1.88	0.55
22:Z:233:HIS:NE2	22:Z:246:PRO:HA	2.20	0.55
35:m:38:GLN:HA	35:m:41:HIS:HB2	1.89	0.55
1:A:12:A:C5	3:D:201:LYS:HD3	2.42	0.54
1:A:1040:U:O3'	9:J:53:ARG:NH1	2.40	0.54
20:Y:104:G:H2'	20:Y:105:A:H8	1.73	0.54
20:Y:387:U:H3	20:Y:394:G:H1	1.54	0.54
20:Y:1442:A:H2'	20:Y:1443:G:O4'	2.08	0.54
20:Y:2922:U:H3	20:Y:2933:G:H1	1.54	0.54
21:U:101:U:O3'	40:r:81:LYS:NZ	2.41	0.54
1:A:922:C:H5'	6:G:102:ARG:NH2	2.22	0.54
20:Y:158:G:H22	20:Y:165:U:H3'	1.73	0.54
20:Y:1110:C:OP1	36:n:77:LYS:NZ	2.40	0.54
20:Y:2538:A:H2'	20:Y:2539:G:C8	2.43	0.54
22:Z:212:MET:HE3	22:Z:217:LYS:HB2	1.89	0.54
32:j:55:ALA:HA	32:j:80:PHE:HE1	1.71	0.54
48:z:18:VAL:HG12	48:z:19:HIS:CD2	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:401:C:H2'	1:A:402:G:H8	1.71	0.54
1:A:944:C:H2'	1:A:945:G:H8	1.72	0.54
1:A:1244:G:O6	1:A:1253:U:O4	2.24	0.54
1:A:1469:U:H2'	1:A:1470:G:H8	1.71	0.54
20:Y:150:C:H2'	20:Y:151:A:H8	1.73	0.54
20:Y:921:C:O2	20:Y:2668:G:O2'	2.25	0.54
20:Y:1524:G:C2	20:Y:1812:A:C6	2.85	0.54
20:Y:1532:G:O2'	20:Y:1533:U:O4'	2.24	0.54
1:A:391:G:P	15:P:9:ARG:HH12	2.29	0.54
1:A:654:G:H2'	1:A:655:A:H8	1.72	0.54
1:A:744:C:H4'	14:O:50:HIS:HD2	1.72	0.54
1:A:862:C:H2'	1:A:863:G:C8	2.42	0.54
1:A:1222:G:H2'	1:A:1223:G:C8	2.42	0.54
14:O:5:ALA:O	14:O:9:LYS:HG2	2.07	0.54
20:Y:2005:C:H5''	22:Z:225:VAL:HG11	1.89	0.54
20:Y:2016:G:N2	20:Y:2036:A:OP2	2.22	0.54
1:A:422:C:H4'	1:A:423:G:O5'	2.07	0.54
1:A:1221:U:H4'	6:G:38:LEU:HD21	1.88	0.54
1:A:1324:C:H2'	1:A:1325:G:C8	2.43	0.54
1:A:1336:C:H2'	1:A:1337:A:C8	2.40	0.54
12:M:19:LEU:HD23	12:M:30:SER:HA	1.90	0.54
20:Y:1073:G:H21	20:Y:1076:A:H8	1.55	0.54
20:Y:1200:U:O4	20:Y:1204:A:N1	2.40	0.54
20:Y:2047:C:H2'	20:Y:2048:G:C8	2.42	0.54
20:Y:2930:G:H1'	32:j:64:ARG:NH1	2.23	0.54
25:c:43:VAL:HA	25:c:160:ASP:HB3	1.89	0.54
25:c:107:LEU:HD11	25:c:182:PHE:CZ	2.42	0.54
1:A:228:A:H2'	1:A:229:U:C6	2.43	0.54
1:A:358:U:H2'	1:A:359:G:H8	1.73	0.54
1:A:525:C:P	3:D:57:ARG:HH12	2.31	0.54
1:A:794:A:HO2'	1:A:1494:C:HO2'	1.56	0.54
1:A:1014:U:H2'	1:A:1015:G:H8	1.72	0.54
1:A:1053:U:O2	19:V:103:ASN:ND2	2.41	0.54
3:D:66:GLN:HG2	3:D:70:TYR:HE1	1.73	0.54
12:M:2:ALA:HB3	12:M:9:LEU:HD12	1.88	0.54
20:Y:1058:A:H2'	20:Y:1059:G:C8	2.43	0.54
20:Y:1162:G:O2'	20:Y:1229:A:N6	2.40	0.54
20:Y:1329:G:O6	20:Y:1350:G:N2	2.41	0.54
20:Y:1379:G:OP2	20:Y:1379:G:H8	1.91	0.54
20:Y:1455:U:OP1	38:p:19:LYS:NZ	2.40	0.54
20:Y:2241:U:H4'	46:x:5:LYS:O	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2528:G:N3	25:c:137:PHE:CG	2.75	0.54
22:Z:192:THR:HG22	22:Z:193:VAL:H	1.73	0.54
48:z:15:ARG:HH22	48:z:47:ALA:HB1	1.73	0.54
1:A:21:U:O2'	1:A:1059:G:O2'	2.22	0.54
1:A:37:A:H2'	1:A:38:C:C6	2.43	0.54
1:A:375:U:H2'	1:A:376:G:C8	2.40	0.54
1:A:1287:G:O2'	1:A:1288:A:O4'	2.25	0.54
2:C:60:ARG:NH1	2:C:61:ASP:OD2	2.40	0.54
7:H:90:LYS:N	7:H:93:ASN:OD1	2.40	0.54
8:I:97:GLY:O	8:I:100:ARG:HB3	2.08	0.54
20:Y:292:G:H21	20:Y:342:C:P	2.29	0.54
20:Y:376:G:H1	20:Y:425:U:H3	1.56	0.54
20:Y:1527:U:H2'	20:Y:1528:G:H8	1.72	0.54
20:Y:2022:U:H4'	22:Z:250:TRP:CE3	2.43	0.54
28:f:38:GLY:HA2	28:f:40:HIS:CE1	2.43	0.54
1:A:929:G:H1	1:A:1216:U:H1'	1.73	0.54
15:P:67:THR:HG22	15:P:69:PRO:HD2	1.90	0.54
20:Y:381:A:OP2	39:q:99:LYS:NZ	2.41	0.54
20:Y:604:C:OP2	46:x:10:ARG:NH2	2.41	0.54
20:Y:608:C:H2'	20:Y:609:G:C8	2.40	0.54
20:Y:908:A:OP2	20:Y:2294:A:O2'	2.26	0.54
20:Y:1928:C:H2'	20:Y:1929:A:C8	2.43	0.54
28:f:64:VAL:HB	28:f:68:LYS:HD2	1.89	0.54
32:j:99:LYS:HE3	46:x:43:LEU:CD2	2.38	0.54
33:k:36:PRO:HD2	33:k:100:VAL:HG12	1.89	0.54
1:A:39:G:H21	11:L:115:SER:HB2	1.73	0.54
15:P:73:LEU:HA	15:P:76:ILE:HD12	1.90	0.54
20:Y:186:G:H21	20:Y:1480:A:H61	1.54	0.54
20:Y:394:G:H2'	20:Y:395:G:C8	2.41	0.54
20:Y:491:U:H4'	20:Y:492:C:H5'	1.88	0.54
20:Y:806:C:H5'	22:Z:218:ARG:HH12	1.71	0.54
20:Y:2465:A:H2'	20:Y:2466:G:C8	2.42	0.54
20:Y:2653:G:H8	30:h:55:MET:HE1	1.73	0.54
23:a:151:ILE:HG21	23:a:160:VAL:HG23	1.89	0.54
1:A:472:C:H2'	1:A:473:A:C8	2.43	0.54
1:A:1061:G:H2'	1:A:1062:A:H8	1.72	0.54
1:A:1067:G:H2'	1:A:1068:G:H8	1.72	0.54
1:A:1221:U:O3'	6:G:35:LYS:NZ	2.38	0.54
8:I:41:LEU:HD23	8:I:106:ALA:HB1	1.90	0.54
19:V:137:LEU:O	19:V:141:LYS:HG2	2.07	0.54
20:Y:672:C:H2'	20:Y:673:C:H6	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1672:C:O2	20:Y:1673:A:N6	2.41	0.54
20:Y:2133:G:H2'	20:Y:2134:G:C8	2.42	0.54
35:m:106:PHE:O	35:m:110:VAL:HG23	2.08	0.54
1:A:917:A:N6	6:G:3:ARG:HE	2.05	0.53
3:D:60:TYR:CD1	3:D:89:LEU:HD21	2.42	0.53
7:H:69:SER:OG	7:H:71:GLU:OE1	2.22	0.53
19:V:148:LEU:HD11	19:V:151:ILE:HB	1.90	0.53
19:V:156:LYS:O	19:V:157:VAL:HG22	2.08	0.53
20:Y:227:A:N6	20:Y:2631:G:N3	2.56	0.53
20:Y:464:C:H2'	20:Y:465:A:H8	1.73	0.53
20:Y:656:C:H2'	20:Y:657:C:H6	1.72	0.53
20:Y:662:G:H2'	20:Y:2254:A:C5	2.43	0.53
20:Y:1180:G:H2'	20:Y:1181:G:H8	1.74	0.53
20:Y:3009:U:H2'	20:Y:3010:U:C6	2.43	0.53
20:Y:3037:C:H2'	20:Y:3038:C:C6	2.43	0.53
22:Z:69:ARG:NH1	22:Z:128:GLY:O	2.40	0.53
23:a:17:PHE:CZ	34:l:74:PRO:HB2	2.44	0.53
27:e:26:VAL:O	27:e:30:LEU:HD23	2.08	0.53
32:j:67:MET:HE3	32:j:71:ARG:HE	1.73	0.53
1:A:1221:U:H6	6:G:116:MET:HE1	1.72	0.53
20:Y:25:A:H2'	20:Y:26:U:O4'	2.07	0.53
20:Y:269:C:H2'	20:Y:270:U:C6	2.43	0.53
20:Y:314:G:H4'	20:Y:321:G:H4'	1.90	0.53
20:Y:2199:G:H2'	20:Y:2200:U:O4'	2.08	0.53
20:Y:2541:U:H6	33:k:7:GLY:N	2.05	0.53
20:Y:2870:C:OP2	20:Y:2956:G:O2'	2.25	0.53
20:Y:2879:G:O2'	20:Y:2888:G:O6	2.26	0.53
20:Y:2940:U:H2'	20:Y:2941:G:H8	1.72	0.53
23:a:55:GLY:HA3	23:a:79:ARG:HB3	1.90	0.53
31:i:17:GLN:OE1	31:i:40:ALA:N	2.42	0.53
1:A:648:A:H2'	1:A:649:G:C8	2.43	0.53
3:D:163:PRO:HG2	3:D:166:LEU:HB2	1.90	0.53
7:H:85:LEU:HD12	16:Q:51:LYS:HD3	1.89	0.53
12:M:74:VAL:O	12:M:78:ILE:HG12	2.08	0.53
20:Y:379:G:N1	20:Y:421:U:OP2	2.40	0.53
20:Y:605:G:H4'	37:o:25:ARG:NH1	2.23	0.53
20:Y:1515:C:N4	20:Y:1516:G:O6	2.41	0.53
34:l:90:ASP:HB2	34:l:112:LYS:HE2	1.89	0.53
40:r:16:ARG:HB2	40:r:46:HIS:ND1	2.23	0.53
1:A:988:C:H3'	1:A:989:G:H8	1.73	0.53
14:O:50:HIS:CD2	14:O:53:ARG:HH22	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:863:G:OP2	37:o:95:ARG:NH1	2.41	0.53
20:Y:1900:C:C2	20:Y:1974:A:H1'	2.44	0.53
20:Y:2788:A:C2	20:Y:2871:U:H4'	2.43	0.53
25:c:13:GLN:NE2	25:c:17:GLU:HG3	2.23	0.53
46:x:30:VAL:HG11	46:x:47:ALA:HB1	1.90	0.53
17:R:18:ARG:HH21	17:R:54:THR:HA	1.73	0.53
20:Y:2043:C:O2'	20:Y:2195:U:OP2	2.27	0.53
20:Y:2739:C:H2'	20:Y:2740:G:C8	2.44	0.53
27:e:98:LYS:NZ	27:e:140:THR:OG1	2.32	0.53
1:A:931:A:H3'	12:M:101:GLN:NE2	2.23	0.53
20:Y:461:U:H2'	20:Y:462:A:H8	1.73	0.53
20:Y:802:C:O3'	48:z:5:LYS:NZ	2.42	0.53
20:Y:806:C:H2'	20:Y:807:C:C6	2.44	0.53
20:Y:1111:G:OP2	35:m:51:ARG:NH2	2.38	0.53
20:Y:1661:G:H22	20:Y:1771:U:H3	1.54	0.53
20:Y:1968:U:H2'	20:Y:1969:G:C8	2.44	0.53
20:Y:2024:G:N2	20:Y:2027:A:OP2	2.42	0.53
20:Y:2288:C:H2'	20:Y:2289:C:C6	2.44	0.53
20:Y:2515:U:O2'	20:Y:2598:C:O2	2.26	0.53
20:Y:2814:A:H2'	20:Y:2815:C:H6	1.73	0.53
20:Y:2908:U:OP2	34:l:48:ARG:NH2	2.38	0.53
20:Y:2961:G:H2'	20:Y:2962:A:H8	1.74	0.53
28:f:49:ASP:OD1	28:f:118:ILE:HG12	2.08	0.53
29:g:97:ARG:HA	29:g:117:LEU:HD21	1.90	0.53
37:o:21:ALA:HB1	37:o:25:ARG:HH21	1.73	0.53
43:u:17:GLU:OE1	43:u:21:LYS:HE2	2.09	0.53
1:A:10:G:H2'	1:A:11:G:H21	1.74	0.53
1:A:38:C:H2'	1:A:39:G:H8	1.73	0.53
1:A:266:G:OP2	1:A:267:C:N4	2.39	0.53
1:A:929:G:H2'	1:A:930:C:O4'	2.09	0.53
1:A:1162:G:H4'	1:A:1163:G:H5'	1.89	0.53
4:E:118:VAL:HB	4:E:153:LEU:HB2	1.91	0.53
4:E:119:VAL:HG11	4:E:165:THR:HG22	1.90	0.53
10:K:81:ARG:HA	10:K:84:GLN:HG3	1.91	0.53
20:Y:458:G:O2'	20:Y:512:G:OP1	2.25	0.53
20:Y:620:G:H2'	20:Y:621:U:C6	2.44	0.53
20:Y:1135:G:O6	20:Y:1265:A:N6	2.41	0.53
20:Y:2909:G:H2'	20:Y:2910:G:C8	2.42	0.53
26:d:166:GLU:HG2	26:d:167:GLY:N	2.24	0.53
31:i:134:ARG:HG2	40:r:129:ASN:ND2	2.24	0.53
34:l:8:ASP:HB3	34:l:54:ILE:HB	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:1:39:LYS:HE2	49:1:39:LYS:HA	1.90	0.53
1:A:416:G:H2'	1:A:417:G:C8	2.43	0.53
1:A:1355:U:OP1	8:I:93:SER:N	2.42	0.53
20:Y:678:A:O2'	20:Y:786:C:O2'	2.25	0.53
20:Y:1131:G:OP1	28:f:144:GLN:NE2	2.42	0.53
20:Y:1175:A:H2'	20:Y:1176:G:C8	2.43	0.53
20:Y:1363:G:OP1	35:m:2:ALA:N	2.41	0.53
20:Y:1410:C:H2'	20:Y:1411:G:H8	1.74	0.53
20:Y:1528:G:C6	20:Y:1808:A:C6	2.97	0.53
20:Y:2579:C:O2'	41:s:24:LYS:NZ	2.38	0.53
20:Y:2940:U:H2'	20:Y:2941:G:C8	2.43	0.53
1:A:196:G:H2'	1:A:197:G:C8	2.39	0.53
1:A:536:C:H2'	1:A:537:G:C8	2.44	0.53
20:Y:272:A:N7	20:Y:313:G:N2	2.57	0.53
20:Y:953:G:C2	20:Y:1058:A:N1	2.77	0.53
20:Y:1079:C:H2'	20:Y:1080:U:C6	2.44	0.53
20:Y:2689:C:O3'	50:2:5:PRO:HD2	2.09	0.53
32:j:96:ARG:HH22	46:x:49:LEU:HD22	1.74	0.53
1:A:1442:G:H2'	1:A:1443:G:H8	1.74	0.53
7:H:7:ILE:HB	7:H:79:ARG:NH1	2.23	0.53
15:P:86:LEU:HB2	15:P:87:PRO:HD3	1.89	0.53
20:Y:320:G:C2	20:Y:321:G:N7	2.77	0.53
20:Y:1450:C:H2'	20:Y:1451:A:H8	1.74	0.53
20:Y:2306:A:H61	20:Y:2460:U:H3	1.57	0.53
20:Y:2692:A:H5'	31:i:120:ARG:NH1	2.24	0.53
20:Y:3032:G:H5''	23:a:63:ILE:HG23	1.91	0.53
26:d:53:VAL:O	26:d:66:HIS:NE2	2.42	0.53
29:g:22:ILE:HD11	29:g:42:THR:HB	1.89	0.53
32:j:72:ASP:HB3	32:j:75:VAL:CG1	2.34	0.53
40:r:157:ILE:HB	40:r:179:VAL:HB	1.91	0.53
1:A:833:C:H2'	1:A:834:C:C6	2.44	0.52
1:A:1086:G:H5''	2:C:172:ARG:HG3	1.91	0.52
1:A:1425:G:OP2	1:A:1426:C:N4	2.41	0.52
3:D:87:ARG:CZ	3:D:181:PRO:HD2	2.39	0.52
5:F:4:TYR:N	5:F:65:VAL:O	2.31	0.52
15:P:22:VAL:HG21	15:P:59:TRP:CE2	2.43	0.52
20:Y:760:U:H2'	20:Y:761:G:C8	2.44	0.52
20:Y:891:G:N2	20:Y:2465:A:OP1	2.39	0.52
20:Y:2031:G:H5''	22:Z:54:LYS:HZ3	1.75	0.52
20:Y:2447:G:OP1	22:Z:172:TYR:OH	2.22	0.52
20:Y:2448:G:H4'	20:Y:2450:C:C2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2932:G:H2'	20:Y:2933:G:H8	1.74	0.52
25:c:118:ILE:HD13	25:c:144:MET:HE3	1.91	0.52
29:g:7:ARG:NH1	29:g:18:GLU:HB3	2.24	0.52
51:4:2358:A:H3'	51:4:2359:G:H8	1.74	0.52
1:A:1497:A:H2'	1:A:1498:C:C6	2.44	0.52
5:F:43:TRP:CD1	5:F:46:ARG:HH21	2.28	0.52
15:P:73:LEU:HD13	15:P:76:ILE:HD12	1.91	0.52
19:V:69:PHE:HB3	19:V:80:ILE:HD11	1.90	0.52
20:Y:656:C:H2'	20:Y:657:C:C6	2.43	0.52
20:Y:662:G:H2'	20:Y:2254:A:N7	2.23	0.52
20:Y:721:A:O2'	20:Y:730:G:N2	2.42	0.52
20:Y:2043:C:H2'	20:Y:2044:U:C6	2.44	0.52
20:Y:2149:C:H2'	20:Y:2150:U:C6	2.43	0.52
20:Y:2607:G:H2'	20:Y:2608:G:C8	2.44	0.52
1:A:48:G:P	15:P:14:ARG:HB2	2.49	0.52
1:A:622:A:H2'	1:A:623:C:C6	2.44	0.52
1:A:923:G:H1'	1:A:1332:A:H4'	1.91	0.52
1:A:1478:G:C6	20:Y:2137:A:N1	2.77	0.52
20:Y:337:U:O4	20:Y:344:G:O6	2.27	0.52
20:Y:801:U:H5''	20:Y:903:A:N6	2.24	0.52
20:Y:1481:C:H2'	20:Y:1482:A:C8	2.45	0.52
20:Y:2116:C:H2'	20:Y:2117:C:H6	1.74	0.52
20:Y:2682:G:H21	20:Y:2683:A:N6	2.07	0.52
20:Y:3041:C:O2'	20:Y:3042:A:OP1	2.25	0.52
22:Z:124:ASP:HB3	22:Z:126:LYS:NZ	2.25	0.52
33:k:42:ARG:HD2	33:k:112:ARG:HH21	1.74	0.52
1:A:1207:C:OP1	12:M:91:ARG:NH1	2.34	0.52
1:A:1325:G:H2'	1:A:1326:C:C6	2.45	0.52
6:G:49:GLN:NE2	6:G:117:VAL:O	2.43	0.52
16:Q:77:MET:HE3	16:Q:91:VAL:HG22	1.91	0.52
17:R:51:ARG:HA	17:R:54:THR:HG22	1.91	0.52
18:T:28:LEU:HD22	18:T:57:LYS:HE2	1.90	0.52
20:Y:137:G:H22	20:Y:1812:A:H2	1.57	0.52
20:Y:325:U:H2'	20:Y:452:G:H21	1.74	0.52
20:Y:391:G:N7	20:Y:412:A:N6	2.57	0.52
20:Y:621:U:H5'	35:m:42:SER:OG	2.09	0.52
20:Y:742:G:H2'	20:Y:743:G:H8	1.74	0.52
20:Y:2628:U:H2'	20:Y:2629:G:O4'	2.08	0.52
22:Z:166:LEU:HD12	22:Z:182:ILE:HD13	1.90	0.52
38:p:39:LYS:HA	38:p:42:ILE:HG22	1.91	0.52
45:w:24:ARG:HD2	45:w:24:ARG:O	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:416:G:N2	1:A:427:U:O2	2.39	0.52
1:A:485:G:H2'	1:A:486:G:H8	1.72	0.52
1:A:492:U:O4'	3:D:36:HIS:NE2	2.43	0.52
1:A:804:U:H2'	1:A:805:A:C8	2.44	0.52
1:A:1089:C:H2'	1:A:1090:A:H8	1.75	0.52
20:Y:10:A:O2'	20:Y:12:G:N7	2.42	0.52
20:Y:350:A:H5''	20:Y:351:G:H21	1.75	0.52
20:Y:604:C:P	46:x:10:ARG:HH12	2.32	0.52
20:Y:1394:A:H2'	20:Y:1395:A:C8	2.44	0.52
20:Y:1526:A:H2'	20:Y:1527:U:C6	2.45	0.52
20:Y:1939:U:O4	20:Y:1955:A:N7	2.42	0.52
20:Y:2601:A:H2'	20:Y:2602:A:C8	2.44	0.52
20:Y:2895:A:H2'	20:Y:2896:C:C6	2.43	0.52
50:2:22:ARG:HD2	50:2:35:ARG:HD3	1.91	0.52
51:4:2375:G:H2'	51:4:2376:G:C8	2.43	0.52
1:A:19:G:O6	1:A:902:U:O4	2.28	0.52
1:A:49:U:H2'	1:A:50:G:C8	2.45	0.52
1:A:762:A:H62	1:A:780:G:N2	2.07	0.52
1:A:846:A:H2'	1:A:847:A:C8	2.45	0.52
1:A:1310:C:H2'	1:A:1311:G:H8	1.74	0.52
1:A:1387:C:H2'	1:A:1388:G:H8	1.74	0.52
8:I:32:ARG:HG3	8:I:97:GLY:C	2.34	0.52
10:K:29:ALA:N	10:K:44:THR:O	2.39	0.52
14:O:3:LEU:HD13	14:O:35:ARG:HG2	1.90	0.52
20:Y:825:C:H2'	20:Y:826:G:C8	2.42	0.52
20:Y:2599:G:N1	20:Y:2603:G:O6	2.43	0.52
20:Y:2786:U:H3	20:Y:2790:A:H62	1.57	0.52
24:b:118:ARG:HH21	24:b:189:LEU:HD13	1.75	0.52
26:d:55:ARG:HH11	26:d:63:ARG:HA	1.73	0.52
29:g:31:ARG:HG2	29:g:32:TYR:HD1	1.75	0.52
51:4:2390:U:N3	51:4:2393:A:OP2	2.35	0.52
1:A:1054:G:H1	1:A:1063:U:H3	1.57	0.52
1:A:1430:A:OP1	1:A:1431:C:N4	2.36	0.52
2:C:70:ALA:HA	2:C:105:VAL:HG22	1.92	0.52
19:V:31:ILE:HG21	19:V:39:TYR:HD1	1.74	0.52
19:V:94:GLN:HG3	19:V:146:ARG:NH1	2.21	0.52
20:Y:249:C:O2	49:1:12:LYS:NZ	2.42	0.52
20:Y:268:G:C2'	20:Y:360:G:C2	2.92	0.52
20:Y:2133:G:H2'	20:Y:2134:G:H8	1.75	0.52
20:Y:2317:G:H2'	20:Y:2318:U:H6	1.75	0.52
34:l:9:GLN:HA	34:l:12:LEU:HD12	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:106:C:C2	1:A:107:G:C8	2.97	0.52
1:A:142:U:O2	1:A:174:G:O6	2.28	0.52
1:A:168:A:H2'	1:A:169:A:C8	2.45	0.52
1:A:623:C:H2'	1:A:624:G:C8	2.44	0.52
3:D:70:TYR:HD2	3:D:88:ILE:HG13	1.75	0.52
6:G:49:GLN:NE2	6:G:118:GLU:HA	2.25	0.52
20:Y:359:A:O2'	20:Y:360:G:H5'	2.09	0.52
20:Y:794:G:H2'	20:Y:795:G:C8	2.45	0.52
20:Y:1092:G:C5'	36:n:79:LYS:HZ1	2.23	0.52
20:Y:1527:U:H2'	20:Y:1528:G:C8	2.45	0.52
20:Y:2439:C:H2'	20:Y:2440:G:C8	2.45	0.52
20:Y:3042:A:OP1	23:a:201:ARG:HD2	2.09	0.52
20:Y:3075:C:H2'	20:Y:3076:U:C6	2.45	0.52
24:b:154:VAL:HG22	24:b:193:ASP:HB2	1.92	0.52
25:c:99:ARG:HA	25:c:103:MET:HG3	1.90	0.52
26:d:64:SER:O	26:d:68:LEU:HD23	2.09	0.52
28:f:119:GLN:O	28:f:119:GLN:NE2	2.38	0.52
29:g:31:ARG:HG2	29:g:32:TYR:CD1	2.45	0.52
40:r:11:LEU:HD21	40:r:67:LEU:HD23	1.92	0.52
1:A:162:G:H2'	1:A:163:G:H8	1.74	0.52
1:A:373:A:H2'	1:A:374:A:H8	1.75	0.52
1:A:725:A:H2'	1:A:726:G:C8	2.45	0.52
1:A:746:A:H62	1:A:793:U:H3	1.54	0.52
2:C:24:ALA:HB3	2:C:28:TYR:HD1	1.74	0.52
3:D:105:THR:HG22	3:D:108:MET:HG2	1.92	0.52
20:Y:1091:A:H5'	20:Y:1303:U:H1'	1.92	0.52
20:Y:1882:A:H61	20:Y:2220:C:H42	1.57	0.52
20:Y:2432:G:OP2	20:Y:2433:U:O2'	2.18	0.52
20:Y:2573:G:H2'	20:Y:2574:C:O4'	2.09	0.52
20:Y:2588:C:H2'	20:Y:2589:G:C8	2.45	0.52
20:Y:2653:G:C8	30:h:55:MET:HE1	2.45	0.52
20:Y:2952:U:H5''	29:g:70:ARG:HD2	1.92	0.52
20:Y:2975:G:OP2	26:d:3:ARG:NH1	2.39	0.52
25:c:81:ILE:HG22	25:c:84:PHE:H	1.74	0.52
1:A:392:C:O2'	1:A:463:C:O2'	2.28	0.52
9:J:14:ASP:OD1	9:J:17:ALA:HB3	2.10	0.52
20:Y:78:G:N1	20:Y:103:C:C2	2.76	0.52
20:Y:270:U:H3	20:Y:512:G:N2	2.07	0.52
20:Y:681:C:O3'	24:b:96:ARG:NH2	2.43	0.52
20:Y:899:G:H5''	22:Z:227:ASN:HD21	1.75	0.52
20:Y:1628:A:H4'	20:Y:1630:U:C5	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:e:105:ASP:OD2	27:e:106:GLN:N	2.42	0.52
30:h:56:PRO:HD2	30:h:59:MET:HB2	1.91	0.52
1:A:1351:G:H5'	9:J:64:HIS:CE1	2.45	0.51
13:N:22:THR:OG1	13:N:35:ARG:NH2	2.43	0.51
20:Y:408:G:H2'	20:Y:409:G:C8	2.44	0.51
20:Y:929:C:OP1	36:n:87:ARG:N	2.37	0.51
20:Y:1037:C:H2'	20:Y:1038:G:C8	2.45	0.51
20:Y:1198:C:H4'	27:e:135:ARG:HH11	1.73	0.51
20:Y:1226:U:H2'	20:Y:1227:C:C6	2.45	0.51
33:k:76:ASP:OD2	33:k:77:LYS:N	2.41	0.51
38:p:68:ARG:HD3	38:p:69:THR:H	1.75	0.51
43:u:47:LEU:HD13	43:u:51:ARG:HH22	1.76	0.51
3:D:11:LYS:O	3:D:15:LEU:HB2	2.10	0.51
6:G:32:LEU:HG	6:G:33:GLU:OE1	2.11	0.51
7:H:33:LYS:HE3	7:H:60:LEU:HD23	1.92	0.51
10:K:73:GLN:CD	10:K:104:THR:HG22	2.36	0.51
20:Y:133:G:H2'	20:Y:134:A:H8	1.74	0.51
20:Y:316:U:H2'	20:Y:509:U:H5	1.75	0.51
20:Y:700:U:H2'	20:Y:701:A:H8	1.75	0.51
20:Y:860:G:N2	20:Y:865:A:H61	2.08	0.51
20:Y:1048:A:H1'	45:w:24:ARG:HH21	1.75	0.51
20:Y:1125:C:H5''	28:f:37:ARG:NH2	2.23	0.51
20:Y:1546:A:H3'	20:Y:1621:C:OP2	2.10	0.51
20:Y:1809:U:H2'	20:Y:1810:A:H8	1.75	0.51
23:a:189:ASN:HB2	34:l:6:PHE:CZ	2.46	0.51
31:i:55:ASN:HA	31:i:58:ILE:HG22	1.91	0.51
37:o:99:ARG:HD2	37:o:99:ARG:C	2.36	0.51
1:A:187:U:C2	1:A:202:G:C2	2.99	0.51
1:A:957:A:N6	1:A:1338:G:H21	2.09	0.51
1:A:965:A:O2'	1:A:1029:U:O2'	2.24	0.51
1:A:1499:C:H2'	1:A:1500:G:C8	2.45	0.51
20:Y:672:C:H2'	20:Y:673:C:C6	2.46	0.51
20:Y:808:A:H2'	20:Y:809:U:C6	2.46	0.51
20:Y:1023:C:O3'	31:i:72:ARG:NH2	2.43	0.51
20:Y:1288:A:H2'	20:Y:1289:A:C8	2.46	0.51
20:Y:1883:A:H2'	20:Y:1884:G:C8	2.43	0.51
20:Y:2591:G:H2'	20:Y:2592:C:C6	2.45	0.51
20:Y:2777:G:C2	20:Y:2807:G:H1'	2.46	0.51
29:g:63:VAL:HG21	29:g:102:VAL:HG12	1.92	0.51
31:i:29:PHE:HB2	31:i:105:GLU:OE1	2.11	0.51
1:A:550:G:H5'	1:A:800:U:O4'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:622:A:H2'	1:A:623:C:H6	1.75	0.51
1:A:909:G:OP2	1:A:1487:A:O2'	2.26	0.51
6:G:59:VAL:HG22	6:G:63:LYS:HE2	1.93	0.51
6:G:146:GLU:HG3	6:G:149:ARG:NH2	2.26	0.51
6:G:150:ALA:HB3	10:K:65:ARG:HH12	1.75	0.51
12:M:104:LYS:HE2	12:M:104:LYS:HA	1.93	0.51
20:Y:300:G:N2	20:Y:303:G:OP1	2.43	0.51
20:Y:699:U:OP2	24:b:105:LYS:HD3	2.11	0.51
20:Y:1524:G:H2'	20:Y:1525:U:H6	1.75	0.51
20:Y:1676:G:H2'	20:Y:1677:G:C8	2.46	0.51
20:Y:1732:U:H2'	20:Y:1733:C:H6	1.75	0.51
20:Y:1733:C:H2'	20:Y:1734:C:H6	1.75	0.51
20:Y:2528:G:N2	25:c:136:THR:HA	2.25	0.51
20:Y:2955:G:H2'	20:Y:2956:G:C8	2.45	0.51
40:r:14:ASN:OD1	40:r:15:VAL:N	2.43	0.51
49:1:16:ARG:NH2	49:1:63:ASN:OD1	2.44	0.51
51:4:2394:A:O2'	51:4:2396:A:OP1	2.27	0.51
1:A:178:A:H3'	1:A:179:C:O4'	2.10	0.51
1:A:858:A:H1'	7:H:12:THR:HG21	1.91	0.51
1:A:1078:C:N4	1:A:1079:G:O6	2.43	0.51
1:A:1135:G:H2'	1:A:1136:A:H8	1.75	0.51
2:C:131:ARG:HA	2:C:134:ARG:HE	1.76	0.51
4:E:161:VAL:O	4:E:165:THR:HG23	2.10	0.51
12:M:86:CYS:SG	12:M:87:TYR:N	2.81	0.51
20:Y:4:G:H2'	20:Y:5:U:C6	2.46	0.51
20:Y:443:C:H2'	20:Y:443:C:O2	2.09	0.51
20:Y:894:U:H2'	20:Y:895:G:C8	2.46	0.51
20:Y:1448:C:H2'	20:Y:1449:C:C6	2.46	0.51
20:Y:1572:G:N1	20:Y:1600:G:N1	2.59	0.51
20:Y:2506:G:N2	20:Y:2614:U:O2	2.44	0.51
20:Y:2548:U:O2'	20:Y:2561:G:OP1	2.29	0.51
20:Y:2812:G:H2'	20:Y:2813:A:O4'	2.11	0.51
20:Y:3074:C:H2'	20:Y:3075:C:C6	2.46	0.51
21:U:10:G:O2'	21:U:11:U:OP1	2.26	0.51
1:A:571:U:C4	1:A:630:A:C6	2.99	0.51
8:I:61:ASN:HB2	8:I:64:HIS:ND1	2.26	0.51
20:Y:441:G:H2'	20:Y:442:U:C6	2.44	0.51
20:Y:1331:C:C5'	35:m:15:ARG:HH22	2.24	0.51
20:Y:2062:G:C6	20:Y:2120:A:C6	2.99	0.51
20:Y:2075:G:N2	20:Y:2108:A:OP2	2.44	0.51
20:Y:2297:U:H2'	20:Y:2298:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2474:G:C6	31:i:83:MET:HE1	2.46	0.51
20:Y:2511:A:C5	20:Y:2513:G:C8	2.99	0.51
31:i:116:ASP:O	31:i:120:ARG:HG2	2.10	0.51
1:A:573:U:C4	1:A:628:A:C6	2.99	0.51
1:A:1103:U:H2'	1:A:1104:G:N7	2.26	0.51
1:A:1288:A:H2'	1:A:1289:U:H6	1.75	0.51
11:L:86:ARG:HD2	11:L:87:VAL:N	2.25	0.51
12:M:91:ARG:NH1	12:M:96:LEU:HD22	2.26	0.51
20:Y:2:A:H2'	20:Y:3:A:C8	2.46	0.51
20:Y:22:U:N3	20:Y:603:C:O2	2.44	0.51
20:Y:661:U:H2'	20:Y:662:G:O4'	2.11	0.51
20:Y:1501:C:O2'	20:Y:1690:A:H1'	2.10	0.51
20:Y:2233:G:OP1	37:o:48:GLN:NE2	2.44	0.51
20:Y:2408:G:OP1	51:4:2406:U:O2'	2.23	0.51
29:g:22:ILE:HD12	29:g:40:VAL:HG22	1.92	0.51
31:i:122:ILE:HD12	31:i:129:ALA:HB3	1.93	0.51
32:j:66:VAL:HG12	32:j:76:VAL:HG12	1.92	0.51
1:A:362:G:O5'	11:L:31:ARG:HD3	2.10	0.51
1:A:649:G:H2'	1:A:650:A:C8	2.46	0.51
1:A:1033:G:N2	1:A:1038:G:O6	2.44	0.51
1:A:1400:A:C6	1:A:1466:G:C6	2.98	0.51
3:D:55:LYS:O	3:D:59:SER:HB3	2.11	0.51
20:Y:581:G:OP1	37:o:15:ARG:NH2	2.43	0.51
20:Y:790:A:H5''	24:b:64:LYS:HZ1	1.74	0.51
20:Y:1033:A:C2	21:U:81:U:H4'	2.46	0.51
20:Y:1373:A:H2'	20:Y:1374:G:H8	1.76	0.51
20:Y:1496:G:H2'	20:Y:1497:A:H8	1.76	0.51
20:Y:1922:G:H2'	20:Y:1923:G:C8	2.45	0.51
20:Y:2008:A:H5'	22:Z:211:ARG:HH21	1.75	0.51
21:U:40:A:H2'	21:U:41:U:C6	2.46	0.51
22:Z:69:ARG:HG3	22:Z:69:ARG:O	2.10	0.51
1:A:146:A:H1'	1:A:1429:A:C2	2.46	0.51
1:A:954:C:OP2	1:A:1348:G:O2'	2.29	0.51
1:A:1232:A:N7	1:A:1268:C:N3	2.59	0.51
20:Y:1431:U:H2'	20:Y:1432:G:C8	2.45	0.51
20:Y:2007:C:O2'	22:Z:209:ALA:HB2	2.11	0.51
20:Y:2041:G:H2'	20:Y:2042:A:H8	1.76	0.51
20:Y:2724:U:O2'	20:Y:2728:U:OP1	2.28	0.51
20:Y:2796:A:OP1	20:Y:2798:G:H4'	2.11	0.51
23:a:162:LYS:HG3	28:f:80:TYR:HE1	1.76	0.51
29:g:23:ARG:H	29:g:40:VAL:HG13	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:p:68:ARG:HD3	38:p:69:THR:N	2.26	0.51
41:s:39:ARG:HH11	41:s:39:ARG:HG3	1.75	0.51
49:1:26:LYS:HA	49:1:26:LYS:HE3	1.93	0.51
1:A:415:C:H3'	1:A:416:G:H8	1.75	0.51
1:A:552:A:O2'	1:A:898:G:O2'	2.24	0.51
1:A:555:G:N2	1:A:862:C:O2	2.38	0.51
1:A:1309:C:H2'	1:A:1310:C:H6	1.75	0.51
1:A:1420:C:H2'	1:A:1421:G:C8	2.46	0.51
20:Y:78:G:C2	20:Y:103:C:C2	2.99	0.51
20:Y:1118:A:OP2	20:Y:1273:G:N1	2.27	0.51
20:Y:2294:A:H2'	20:Y:2295:C:C6	2.46	0.51
20:Y:2671:G:N2	20:Y:2674:A:OP2	2.35	0.51
21:U:7:G:H4'	33:k:41:ASN:ND2	2.26	0.51
1:A:187:U:N3	1:A:202:G:C6	2.79	0.50
1:A:193:C:N4	16:Q:17:ARG:O	2.43	0.50
1:A:423:G:N2	1:A:423:G:OP2	2.44	0.50
1:A:927:G:C6	1:A:1319:G:N2	2.79	0.50
1:A:958:G:N2	1:A:1345:A:OP2	2.35	0.50
3:D:51:GLN:O	3:D:55:LYS:HG2	2.11	0.50
4:E:133:GLY:O	4:E:137:ARG:CB	2.59	0.50
8:I:108:ILE:HG13	8:I:124:LEU:HD12	1.93	0.50
9:J:88:MET:HG2	9:J:89:ARG:NH1	2.26	0.50
20:Y:1181:G:O2'	27:e:90:GLY:O	2.26	0.50
20:Y:1643:G:H2'	20:Y:1644:G:C8	2.46	0.50
22:Z:127:PRO:HA	22:Z:193:VAL:HG23	1.93	0.50
23:a:34:ASN:ND2	23:a:54:TYR:HB2	2.26	0.50
23:a:105:ILE:HG23	23:a:106:PHE:CD1	2.46	0.50
33:k:76:ASP:CG	33:k:77:LYS:H	2.18	0.50
1:A:140:U:H3	1:A:220:G:H1	1.59	0.50
7:H:13:ARG:HD2	7:H:27:LEU:HD11	1.93	0.50
18:T:27:SER:HB2	18:T:57:LYS:HZ1	1.76	0.50
19:V:137:LEU:HA	19:V:140:GLU:HG3	1.92	0.50
19:V:154:MET:O	19:V:156:LYS:N	2.44	0.50
20:Y:1117:U:H2'	20:Y:1118:A:H8	1.76	0.50
20:Y:1963:G:H2'	20:Y:1964:U:C6	2.46	0.50
25:c:128:GLN:OE1	25:c:128:GLN:N	2.44	0.50
28:f:147:GLN:HB2	35:m:78:ARG:HG3	1.93	0.50
39:q:87:ILE:HG23	39:q:94:LYS:HE2	1.93	0.50
43:u:10:LEU:HB3	43:u:56:ARG:HH12	1.76	0.50
50:2:11:CYS:HB3	50:2:32:HIS:CE1	2.45	0.50
1:A:154:G:N2	1:A:161:U:O2	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:498:C:H4'	1:A:499:C:O5'	2.09	0.50
1:A:691:G:H2'	1:A:692:A:C8	2.47	0.50
3:D:99:ARG:HE	3:D:163:PRO:HG3	1.75	0.50
14:O:33:THR:HA	14:O:36:ILE:HG12	1.92	0.50
15:P:74:LEU:HD12	15:P:80:TRP:HB2	1.93	0.50
16:Q:37:VAL:HG12	16:Q:60:LYS:HB3	1.93	0.50
19:V:73:LYS:O	19:V:77:GLN:HG3	2.11	0.50
20:Y:45:G:H1	20:Y:176:G:P	2.35	0.50
20:Y:271:A:C8	20:Y:272:A:N1	2.80	0.50
20:Y:368:U:C2	20:Y:435:A:C5	2.99	0.50
20:Y:690:G:H1	20:Y:775:U:H3	1.58	0.50
20:Y:1054:C:H2'	20:Y:1055:G:C8	2.47	0.50
20:Y:1428:U:H4'	20:Y:1447:G:H4'	1.93	0.50
20:Y:2056:G:C5	20:Y:2057:G:C8	2.99	0.50
20:Y:2635:A:H2'	20:Y:2636:A:H8	1.74	0.50
21:U:62:C:H2'	21:U:63:U:C6	2.46	0.50
25:c:40:LYS:HE2	25:c:99:ARG:CZ	2.41	0.50
32:j:99:LYS:HE3	46:x:43:LEU:HD21	1.92	0.50
35:m:49:ASP:HA	35:m:52:ALA:HB3	1.91	0.50
49:1:9:GLY:O	49:1:13:ARG:NH1	2.44	0.50
50:2:35:ARG:HG2	50:2:36:GLN:N	2.25	0.50
1:A:1092:C:N3	2:C:178:LEU:HG	2.26	0.50
1:A:1120:G:H4'	1:A:1121:G:H5'	1.93	0.50
4:E:130:VAL:HA	4:E:148:ILE:HG22	1.94	0.50
12:M:101:GLN:OE1	12:M:102:ARG:N	2.45	0.50
20:Y:563:U:H3	20:Y:567:A:H62	1.50	0.50
20:Y:1223:U:H2'	20:Y:1224:G:H8	1.75	0.50
20:Y:1545:C:C4	20:Y:1623:U:N3	2.80	0.50
20:Y:2409:U:O4	51:4:2405:A:C5	2.65	0.50
20:Y:2569:G:N3	20:Y:2605:C:H2'	2.26	0.50
20:Y:2599:G:N2	20:Y:2601:A:H3'	2.26	0.50
20:Y:2629:G:H1'	20:Y:2636:A:N6	2.27	0.50
1:A:453:G:H4'	15:P:72:ALA:HB1	1.93	0.50
1:A:533:G:H2'	1:A:534:U:C6	2.46	0.50
1:A:958:G:OP2	1:A:1340:U:H1'	2.10	0.50
1:A:967:C:H2'	1:A:968:U:C6	2.45	0.50
10:K:81:ARG:O	10:K:84:GLN:HG3	2.12	0.50
17:R:72:ARG:HB3	17:R:79:PHE:HE1	1.75	0.50
19:V:47:LEU:HA	19:V:50:ILE:HG22	1.92	0.50
19:V:89:MET:HE3	19:V:90:PRO:HD2	1.93	0.50
20:Y:246:U:H3	20:Y:252:G:H1	1.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:273:A:C6	20:Y:314:G:C4	3.00	0.50
20:Y:741:G:H2'	20:Y:742:G:C8	2.47	0.50
20:Y:2028:G:H2'	20:Y:2029:A:H8	1.75	0.50
20:Y:2802:G:H1'	23:a:149:GLY:HA2	1.93	0.50
21:U:33:C:H2'	21:U:34:G:C8	2.47	0.50
28:f:4:TYR:O	35:m:64:ARG:NH2	2.33	0.50
37:o:35:SER:HA	37:o:77:VAL:HG12	1.93	0.50
1:A:403:C:H2'	1:A:404:G:H8	1.76	0.50
1:A:452:A:C4	15:P:76:ILE:HG23	2.46	0.50
1:A:518:U:H2'	1:A:519:A:H8	1.77	0.50
1:A:1290:C:H5''	12:M:98:VAL:HG23	1.93	0.50
1:A:1325:G:H4'	8:I:144:ALA:HB3	1.94	0.50
5:F:2:ARG:HH21	5:F:69:PRO:HG3	1.76	0.50
20:Y:563:U:O4	20:Y:567:A:N7	2.45	0.50
20:Y:650:G:H5'	28:f:114:LEU:HB3	1.93	0.50
20:Y:1249:G:O6	20:Y:2248:C:O2'	2.30	0.50
20:Y:1450:C:H2'	20:Y:1451:A:C8	2.47	0.50
20:Y:2048:G:H2'	20:Y:2049:C:C6	2.46	0.50
20:Y:2212:A:H2'	20:Y:2213:A:C8	2.46	0.50
22:Z:144:ALA:N	22:Z:156:ALA:O	2.23	0.50
40:r:122:THR:HG23	40:r:181:VAL:HG13	1.93	0.50
1:A:691:G:H2'	1:A:692:A:H8	1.77	0.50
1:A:957:A:C8	1:A:1339:A:N3	2.80	0.50
1:A:996:G:N2	1:A:998:G:H3'	2.27	0.50
1:A:1166:G:H2'	1:A:1167:G:H8	1.76	0.50
1:A:1305:G:O2'	1:A:1344:C:O2'	2.19	0.50
5:F:68:GLU:HB3	5:F:71:THR:HG23	1.94	0.50
9:J:49:TYR:HE2	9:J:67:MET:HG2	1.77	0.50
11:L:24:LEU:O	11:L:27:SER:OG	2.26	0.50
12:M:81:LYS:HA	12:M:84:ILE:HG12	1.93	0.50
20:Y:1194:C:H2'	20:Y:1195:A:C8	2.47	0.50
20:Y:2536:U:OP2	25:c:78:ARG:NH1	2.33	0.50
20:Y:2547:G:H2'	20:Y:2548:U:C6	2.47	0.50
20:Y:2767:G:H2'	20:Y:2768:G:H8	1.76	0.50
20:Y:2898:G:H4'	29:g:30:ARG:HH22	1.76	0.50
1:A:39:G:H2'	1:A:40:C:C6	2.47	0.50
1:A:193:C:O2'	1:A:194:A:N7	2.43	0.50
1:A:424:G:H2'	1:A:425:G:H8	1.76	0.50
1:A:426:U:OP1	3:D:29:ARG:NH1	2.45	0.50
1:A:577:G:H21	1:A:624:G:H2'	1.77	0.50
1:A:594:A:H2	1:A:607:G:H22	1.59	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:758:G:H1'	10:K:130:CYS:HB3	1.94	0.50
3:D:104:ARG:HH11	3:D:153:ALA:HB2	1.75	0.50
7:H:33:LYS:HE3	7:H:60:LEU:HB3	1.92	0.50
20:Y:485:U:H5''	42:t:32:ASN:HB2	1.93	0.50
20:Y:600:A:H2'	20:Y:601:A:C8	2.47	0.50
20:Y:1025:A:H62	31:i:12:GLN:HA	1.77	0.50
20:Y:1715:A:H2'	20:Y:1716:A:C8	2.47	0.50
20:Y:2031:G:H5''	22:Z:54:LYS:NZ	2.27	0.50
22:Z:53:HIS:HE2	22:Z:220:THR:HG23	1.77	0.50
23:a:40:ARG:HB2	23:a:49:ALA:H	1.77	0.50
32:j:82:GLU:HG2	32:j:83:ILE:HD12	1.94	0.50
44:v:26:THR:HG22	44:v:105:ILE:HG23	1.94	0.50
1:A:314:C:H2'	1:A:315:A:C8	2.47	0.50
1:A:586:G:H1'	1:A:613:G:C6	2.46	0.50
1:A:1235:G:N2	1:A:1240:C:O2'	2.45	0.50
6:G:69:VAL:O	6:G:138:ARG:NH2	2.45	0.50
13:N:32:SER:HB3	13:N:41:ARG:HG3	1.94	0.50
20:Y:306:U:H2'	20:Y:307:G:C8	2.47	0.50
20:Y:336:C:HO2'	20:Y:337:U:P	2.35	0.50
20:Y:381:A:N1	20:Y:416:C:H5'	2.27	0.50
20:Y:1899:G:H21	20:Y:1979:A:H3'	1.77	0.50
20:Y:2211:C:H2'	20:Y:2212:A:H8	1.76	0.50
20:Y:2297:U:H2'	20:Y:2298:U:H6	1.77	0.50
22:Z:231:HIS:HE1	22:Z:233:HIS:ND1	2.10	0.50
31:i:1:MET:HA	31:i:1:MET:HE3	1.92	0.50
31:i:72:ARG:NH1	31:i:96:ASN:HB3	2.26	0.50
1:A:12:A:N6	3:D:197:GLU:O	2.39	0.49
1:A:390:U:H2'	1:A:391:G:C8	2.47	0.49
1:A:572:G:C6	1:A:628:A:N6	2.80	0.49
1:A:636:G:O2'	14:O:28:GLN:OE1	2.23	0.49
1:A:961:C:N4	1:A:1342:A:C6	2.79	0.49
1:A:1057:G:H2'	1:A:1058:U:H3'	1.94	0.49
1:A:1476:A:H2'	1:A:1477:A:H2'	1.94	0.49
3:D:14:ARG:HD3	3:D:32:PRO:HB3	1.94	0.49
15:P:7:LEU:HD23	15:P:18:TYR:HB3	1.93	0.49
20:Y:273:A:N1	20:Y:314:G:C4	2.80	0.49
20:Y:468:G:H1'	42:t:29:TRP:CH2	2.47	0.49
20:Y:1854:U:H2'	20:Y:1855:A:C8	2.46	0.49
20:Y:3009:U:H2'	20:Y:3010:U:H6	1.77	0.49
22:Z:212:MET:HE3	22:Z:217:LYS:HD2	1.93	0.49
23:a:30:LYS:NZ	23:a:54:TYR:OH	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:a:129:ARG:HD3	23:a:130:HIS:CD2	2.47	0.49
1:A:110:U:H2'	1:A:111:G:C8	2.46	0.49
1:A:182:C:O2	1:A:207:G:C2	2.65	0.49
1:A:352:C:O2'	1:A:354:G:OP1	2.21	0.49
1:A:555:G:O2'	1:A:801:G:H5'	2.12	0.49
1:A:654:G:H2'	1:A:655:A:C8	2.46	0.49
6:G:103:TRP:CE3	6:G:137:ARG:HD3	2.47	0.49
11:L:54:ARG:NH2	11:L:62:GLU:HG2	2.27	0.49
12:M:52:GLN:HA	12:M:55:VAL:HG12	1.94	0.49
12:M:101:GLN:CD	12:M:102:ARG:H	2.19	0.49
19:V:184:ILE:HG12	19:V:198:TYR:HB2	1.95	0.49
20:Y:273:A:N1	20:Y:314:G:N3	2.60	0.49
20:Y:401:C:H2'	20:Y:402:G:C8	2.47	0.49
20:Y:443:C:O2	20:Y:444:U:H5''	2.12	0.49
20:Y:2440:G:H2'	20:Y:2441:G:H8	1.78	0.49
20:Y:2685:C:H2'	20:Y:2686:U:C6	2.47	0.49
22:Z:65:ILE:HB	22:Z:67:PHE:CE2	2.47	0.49
1:A:21:U:H1'	1:A:1060:A:H1'	1.94	0.49
1:A:390:U:H5'	15:P:29:ARG:NH1	2.27	0.49
1:A:1154:C:H2'	1:A:1155:G:H8	1.77	0.49
2:C:21:ARG:HH22	9:J:13:TYR:H	1.60	0.49
4:E:102:ILE:O	4:E:102:ILE:HG13	2.12	0.49
9:J:9:ARG:HH11	9:J:71:LYS:HE3	1.77	0.49
10:K:81:ARG:O	10:K:85:GLU:OE1	2.30	0.49
14:O:3:LEU:HD21	14:O:34:LYS:HG2	1.94	0.49
18:T:56:ARG:O	18:T:60:LYS:HG3	2.11	0.49
20:Y:160:A:OP2	20:Y:161:U:O2'	2.22	0.49
20:Y:352:G:H8	20:Y:444:U:C4	2.31	0.49
20:Y:565:A:H2'	20:Y:566:A:C8	2.48	0.49
20:Y:1683:C:H4'	20:Y:2927:C:H5'	1.94	0.49
20:Y:1822:C:H2'	20:Y:1823:C:H6	1.77	0.49
20:Y:2087:C:N4	20:Y:2094:G:O6	2.46	0.49
20:Y:3009:U:H1'	23:a:38:ARG:HH22	1.77	0.49
33:k:112:ARG:HD3	33:k:112:ARG:N	2.25	0.49
1:A:147:U:N3	1:A:168:A:N6	2.48	0.49
1:A:254:G:H2'	1:A:255:G:C8	2.46	0.49
12:M:81:LYS:HZ3	12:M:88:GLN:HB2	1.77	0.49
12:M:82:ILE:HD11	12:M:93:ARG:HG3	1.95	0.49
12:M:82:ILE:HD12	12:M:92:HIS:HB2	1.93	0.49
19:V:46:THR:HA	19:V:201:PRO:HG2	1.95	0.49
19:V:114:LEU:O	19:V:118:GLU:HG2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:V:162:TRP:HA	19:V:184:ILE:O	2.12	0.49
20:Y:70:A:OP1	43:u:51:ARG:NH2	2.45	0.49
20:Y:1172:A:H2'	20:Y:1173:G:H8	1.77	0.49
20:Y:1627:U:H2'	20:Y:1628:A:H2'	1.94	0.49
20:Y:1732:U:H2'	20:Y:1733:C:C6	2.47	0.49
20:Y:1982:G:H1	20:Y:2212:A:N6	2.09	0.49
20:Y:2039:C:H2'	20:Y:2040:G:H8	1.78	0.49
20:Y:3004:C:P	28:f:120:LYS:HZ3	2.33	0.49
20:Y:3022:G:H2'	20:Y:3023:G:O4'	2.12	0.49
25:c:63:ASP:O	25:c:67:ILE:HG12	2.13	0.49
36:n:69:LYS:HE2	36:n:93:GLN:HG2	1.95	0.49
40:r:94:HIS:NE2	40:r:96:ASP:OD1	2.38	0.49
1:A:454:C:H2'	1:A:455:G:C8	2.47	0.49
1:A:560:C:H2'	1:A:561:G:O4'	2.12	0.49
1:A:1165:G:C2	1:A:1166:G:C8	3.00	0.49
1:A:1222:G:H2'	1:A:1223:G:H8	1.76	0.49
1:A:1280:C:H2'	6:G:114:LYS:HZ2	1.75	0.49
2:C:173:VAL:HG12	2:C:175:LEU:HD22	1.94	0.49
7:H:5:ASP:OD1	7:H:79:ARG:NH1	2.45	0.49
15:P:13:ILE:HD12	15:P:14:ARG:HH11	1.77	0.49
19:V:24:ASN:HD21	19:V:191:CYS:C	2.21	0.49
19:V:75:GLN:HB3	19:V:207:ILE:HD13	1.93	0.49
20:Y:227:A:H61	20:Y:506:C:H1'	1.76	0.49
20:Y:2251:G:H2'	20:Y:2252:U:C6	2.48	0.49
20:Y:2894:G:H2'	20:Y:2895:A:C8	2.47	0.49
20:Y:3038:C:P	32:j:42:ARG:HH22	2.35	0.49
31:i:25:THR:O	31:i:35:GLN:NE2	2.45	0.49
1:A:572:G:C6	1:A:628:A:C6	3.01	0.49
1:A:701:G:H5'	1:A:702:G:C4	2.48	0.49
1:A:1324:C:N4	1:A:1325:G:O6	2.45	0.49
4:E:71:VAL:O	4:E:97:PHE:N	2.44	0.49
6:G:79:ARG:HA	6:G:84:THR:HA	1.95	0.49
7:H:50:ARG:HA	7:H:50:ARG:NE	2.27	0.49
19:V:67:VAL:H	19:V:89:MET:HE2	1.76	0.49
20:Y:308:U:H2'	20:Y:309:G:H8	1.78	0.49
20:Y:1630:U:C2	20:Y:1631:A:C8	3.00	0.49
20:Y:2851:G:H2'	20:Y:2852:U:C6	2.47	0.49
20:Y:3024:A:H2'	20:Y:3025:G:C8	2.47	0.49
21:U:15:U:OP2	21:U:71:C:O2'	2.31	0.49
1:A:1092:C:C2	2:C:178:LEU:HG	2.47	0.49
1:A:1408:A:N1	1:A:1459:G:C6	2.80	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:86:ALA:O	9:J:90:ILE:HG13	2.13	0.49
20:Y:317:G:C5	20:Y:509:U:N3	2.81	0.49
20:Y:733:U:H3	20:Y:743:G:H1	1.60	0.49
20:Y:964:C:H2'	20:Y:965:U:C6	2.47	0.49
20:Y:1074:A:C6	20:Y:1076:A:C2	3.01	0.49
20:Y:1892:G:N2	20:Y:1895:A:N1	2.57	0.49
20:Y:1907:A:H2'	20:Y:1908:A:H8	1.77	0.49
20:Y:2540:G:HO2'	33:k:8:GLN:N	2.08	0.49
20:Y:2593:A:H2'	20:Y:2594:G:H8	1.78	0.49
20:Y:2944:U:C2	20:Y:2945:A:C8	3.00	0.49
32:j:45:ARG:HD2	32:j:97:ILE:HD12	1.95	0.49
32:j:99:LYS:HG2	46:x:42:ARG:NE	2.22	0.49
51:4:2393:A:O3'	51:4:2397:C:N4	2.42	0.49
1:A:363:A:OP2	11:L:31:ARG:N	2.45	0.49
1:A:538:G:OP2	1:A:539:A:O2'	2.23	0.49
1:A:993:G:H2'	1:A:994:C:C6	2.48	0.49
3:D:70:TYR:CD2	3:D:88:ILE:HG13	2.48	0.49
8:I:55:LEU:HD21	8:I:65:GLN:HA	1.94	0.49
20:Y:64:U:H2'	20:Y:65:G:H8	1.77	0.49
20:Y:78:G:C2	20:Y:103:C:O2	2.65	0.49
20:Y:410:U:O2'	39:q:70:ASN:ND2	2.46	0.49
20:Y:667:A:OP2	20:Y:2723:C:O2'	2.27	0.49
20:Y:728:G:H2'	20:Y:729:C:C6	2.48	0.49
20:Y:1333:C:H2'	20:Y:1334:C:C6	2.47	0.49
22:Z:146:GLU:HA	22:Z:153:ALA:HA	1.94	0.49
26:d:119:PRO:HG3	26:d:145:ILE:HD11	1.94	0.49
45:w:19:GLN:OE1	45:w:52:HIS:NE2	2.38	0.49
1:A:927:G:C6	1:A:1217:A:N1	2.81	0.49
20:Y:587:G:H21	20:Y:592:A:H62	1.59	0.49
20:Y:2528:G:N7	25:c:139:LEU:HD22	2.28	0.49
20:Y:2917:A:H2'	20:Y:2918:G:C8	2.47	0.49
20:Y:3073:G:H2'	20:Y:3074:C:H6	1.77	0.49
23:a:17:PHE:CE1	34:l:74:PRO:HB2	2.47	0.49
25:c:75:ARG:HG2	25:c:75:ARG:NH1	2.28	0.49
38:p:21:TYR:O	38:p:24:ILE:HG22	2.12	0.49
41:s:23:VAL:HG13	41:s:26:PHE:HE1	1.78	0.49
43:u:23:ARG:NH1	43:u:24:GLU:HB3	2.27	0.49
1:A:190:U:O4	1:A:197:G:O6	2.30	0.49
1:A:209:A:O2'	1:A:210:A:O5'	2.26	0.49
1:A:516:C:H2'	1:A:517:G:C8	2.47	0.49
1:A:572:G:N1	1:A:629:G:N7	2.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:669:C:N4	1:A:670:G:O6	2.46	0.49
1:A:1063:U:H3'	1:A:1064:G:C8	2.47	0.49
1:A:1486:A:H2	1:A:1489:G:H1	1.61	0.49
4:E:105:THR:HG22	4:E:147:ASP:HB2	1.94	0.49
20:Y:20:G:C6	20:Y:605:G:C6	3.00	0.49
20:Y:673:C:OP2	35:m:33:ARG:NH1	2.43	0.49
20:Y:973:G:H8	20:Y:973:G:OP2	1.95	0.49
20:Y:2113:A:H2'	20:Y:2114:A:H8	1.77	0.49
20:Y:2443:U:H2'	20:Y:2444:C:H6	1.78	0.49
20:Y:2952:U:H2'	20:Y:2953:U:C6	2.48	0.49
20:Y:2967:C:OP2	20:Y:2979:C:N4	2.46	0.49
20:Y:3084:G:H2'	20:Y:3085:G:C8	2.47	0.49
22:Z:53:HIS:CD2	22:Z:220:THR:HA	2.48	0.49
22:Z:211:ARG:HD2	22:Z:212:MET:N	2.27	0.49
22:Z:223:GLY:HA2	22:Z:226:MET:HB2	1.95	0.49
25:c:98:LEU:CD1	25:c:102:ARG:HB3	2.42	0.49
42:t:17:SER:HB3	42:t:27:ARG:HD2	1.94	0.49
43:u:59:THR:HA	43:u:62:ARG:NE	2.27	0.49
44:v:61:ALA:HB1	44:v:66:ILE:HG13	1.95	0.49
1:A:235:C:H5'	16:Q:87:ARG:HG3	1.94	0.48
1:A:1288:A:H62	1:A:1313:G:H21	1.61	0.48
11:L:51:LYS:HG3	11:L:67:ILE:HB	1.93	0.48
20:Y:77:G:N1	20:Y:78:G:O6	2.46	0.48
20:Y:164:A:H2'	20:Y:165:U:H6	1.78	0.48
20:Y:181:A:H2'	20:Y:182:C:H6	1.78	0.48
20:Y:326:A:C6	20:Y:452:G:C5	3.01	0.48
20:Y:2248:C:H4'	23:a:159:ARG:HH12	1.78	0.48
20:Y:2518:C:H2'	20:Y:2519:C:H6	1.78	0.48
20:Y:2757:C:H2'	20:Y:2758:A:O4'	2.13	0.48
20:Y:3020:U:O2'	20:Y:3021:A:O5'	2.30	0.48
30:h:39:GLY:H	30:h:43:ARG:NH1	2.11	0.48
1:A:649:G:H2'	1:A:650:A:H8	1.78	0.48
1:A:954:C:H1'	9:J:57:LYS:NZ	2.29	0.48
1:A:1311:G:OP1	12:M:26:GLY:HA3	2.13	0.48
1:A:1329:G:C8	8:I:129:ARG:HG3	2.48	0.48
1:A:1441:G:H2'	1:A:1442:G:H8	1.78	0.48
2:C:61:ASP:HB2	2:C:97:GLN:HE22	1.78	0.48
3:D:151:GLN:HA	3:D:154:ARG:HG2	1.95	0.48
15:P:45:GLU:HB2	15:P:46:PRO:HD3	1.95	0.48
20:Y:606:U:H2'	20:Y:607:G:C8	2.48	0.48
20:Y:807:C:OP1	22:Z:56:GLY:HA2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:858:A:H2'	20:Y:859:G:C8	2.48	0.48
20:Y:1236:G:H2'	20:Y:1237:U:O4'	2.13	0.48
20:Y:1284:A:H2'	20:Y:1285:G:C8	2.48	0.48
20:Y:1456:G:C2	38:p:83:ILE:HG21	2.46	0.48
20:Y:2019:A:H2'	20:Y:2020:A:C8	2.48	0.48
20:Y:2163:U:OP1	20:Y:2828:U:O2'	2.32	0.48
20:Y:2443:U:H2'	20:Y:2444:C:C6	2.49	0.48
20:Y:2601:A:H1'	33:k:121:ARG:HH21	1.78	0.48
33:k:42:ARG:HG3	33:k:47:ILE:HG22	1.95	0.48
33:k:42:ARG:HB3	33:k:107:TYR:CE1	2.48	0.48
46:x:28:VAL:HG22	46:x:41:ARG:NH2	2.28	0.48
1:A:1404:C:H2'	1:A:1405:G:O4'	2.14	0.48
1:A:1478:G:N1	20:Y:2137:A:C6	2.81	0.48
1:A:1496:U:H2'	1:A:1497:A:C8	2.48	0.48
8:I:65:GLN:HB3	8:I:69:LYS:NZ	2.28	0.48
20:Y:73:C:H2'	20:Y:74:C:C6	2.49	0.48
20:Y:105:A:H2'	20:Y:106:G:H8	1.79	0.48
20:Y:139:U:H2'	20:Y:140:G:O4'	2.12	0.48
20:Y:844:G:O2'	20:Y:878:G:H4'	2.12	0.48
20:Y:2284:A:H62	24:b:75:ARG:HH22	1.60	0.48
20:Y:2494:U:H2'	20:Y:2495:G:O4'	2.13	0.48
21:U:30:G:H21	21:U:58:A:N6	2.09	0.48
1:A:11:G:O6	4:E:122:ARG:NH1	2.41	0.48
1:A:998:G:H2'	1:A:999:A:C8	2.48	0.48
1:A:1143:C:H2'	1:A:1144:G:C8	2.47	0.48
1:A:1400:A:C6	1:A:1466:G:C2	3.02	0.48
20:Y:904:A:H2	48:z:6:ARG:NH1	2.10	0.48
20:Y:1114:G:P	36:n:12:LYS:HZ1	2.34	0.48
20:Y:1545:C:C5	20:Y:1623:U:O4	2.66	0.48
20:Y:1549:G:P	20:Y:1550:G:H1	2.36	0.48
20:Y:2540:G:N2	20:Y:2541:U:H5	2.11	0.48
20:Y:2947:C:OP1	23:a:119:LYS:NZ	2.45	0.48
20:Y:2971:G:O2'	26:d:68:LEU:HD13	2.14	0.48
21:U:28:A:OP1	33:k:71:ARG:NH1	2.46	0.48
22:Z:30:GLU:HB3	22:Z:104:TYR:OH	2.14	0.48
25:c:36:PRO:HG3	25:c:172:GLU:HB2	1.96	0.48
25:c:129:PHE:CD2	25:c:133:GLY:HA2	2.48	0.48
29:g:31:ARG:HH11	29:g:31:ARG:HG3	1.77	0.48
43:u:36:MET:HB3	43:u:41:LEU:HD23	1.95	0.48
1:A:373:A:N3	1:A:462:A:N6	2.61	0.48
1:A:568:G:N1	1:A:632:U:C2	2.82	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:949:C:P	1:A:950:A:HO2'	2.33	0.48
1:A:1221:U:C6	6:G:116:MET:HE1	2.49	0.48
11:L:79:MET:HG3	11:L:102:LEU:HD13	1.95	0.48
12:M:51:ASP:N	12:M:51:ASP:OD1	2.44	0.48
20:Y:159:A:H2'	20:Y:160:A:C8	2.49	0.48
20:Y:312:G:H3'	20:Y:313:G:C8	2.48	0.48
20:Y:444:U:H5'	20:Y:445:U:OP1	2.13	0.48
20:Y:605:G:H4'	37:o:25:ARG:HH11	1.77	0.48
20:Y:1138:A:N1	20:Y:1259:U:H2'	2.29	0.48
20:Y:1500:A:O2'	20:Y:1501:C:OP1	2.22	0.48
20:Y:1928:C:H2'	20:Y:1929:A:H8	1.77	0.48
20:Y:2284:A:N7	24:b:75:ARG:NH1	2.61	0.48
20:Y:2409:U:C6	51:4:2406:U:N3	2.82	0.48
20:Y:2479:G:H21	41:s:9:SER:HB2	1.78	0.48
20:Y:2952:U:H2'	20:Y:2953:U:H6	1.78	0.48
25:c:110:LEU:HD12	25:c:114:ALA:HB3	1.95	0.48
27:e:36:ASN:HD22	27:e:36:ASN:C	2.15	0.48
30:h:78:VAL:HB	30:h:112:VAL:HG12	1.95	0.48
1:A:127:A:OP1	16:Q:17:ARG:NH1	2.47	0.48
1:A:275:G:O2'	16:Q:32:MET:HE1	2.14	0.48
1:A:1183:U:OP2	9:J:56:HIS:NE2	2.39	0.48
2:C:148:GLY:HA2	2:C:171:GLY:HA3	1.96	0.48
4:E:79:LYS:HD2	4:E:79:LYS:N	2.29	0.48
6:G:38:LEU:HD13	6:G:41:ARG:HH21	1.78	0.48
20:Y:105:A:H2'	20:Y:106:G:C8	2.48	0.48
20:Y:552:U:O4	20:Y:903:A:C5	2.67	0.48
20:Y:800:A:C5	20:Y:804:A:C6	3.02	0.48
20:Y:895:G:H2'	20:Y:897:A:C6	2.49	0.48
20:Y:1223:U:H2'	20:Y:1224:G:C8	2.49	0.48
20:Y:1690:A:H2'	20:Y:1691:A:C8	2.47	0.48
20:Y:1855:A:H2'	20:Y:1856:C:C6	2.49	0.48
20:Y:2043:C:H2'	20:Y:2044:U:H6	1.77	0.48
20:Y:2738:U:H2'	20:Y:2739:C:C6	2.48	0.48
20:Y:2970:U:H2'	20:Y:2971:G:O4'	2.13	0.48
21:U:48:C:H5'	33:k:14:ARG:NH2	2.29	0.48
26:d:27:LYS:HE3	26:d:32:THR:HB	1.95	0.48
27:e:110:ILE:HA	27:e:113:THR:HG22	1.95	0.48
30:h:60:ARG:O	30:h:61:LEU:HD23	2.14	0.48
33:k:39:VAL:HA	33:k:103:ASP:HB3	1.96	0.48
43:u:9:GLU:O	43:u:13:LEU:HG	2.12	0.48
1:A:227:G:P	16:Q:14:GLU:HG3	2.53	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:406:G:H5'	3:D:5:THR:HG23	1.96	0.48
1:A:545:U:OP2	1:A:546:G:O2'	2.30	0.48
1:A:604:U:H2'	1:A:605:G:H8	1.79	0.48
1:A:701:G:OP1	17:R:51:ARG:HD3	2.13	0.48
3:D:7:PRO:HB2	3:D:10:ARG:HG2	1.94	0.48
4:E:100:PRO:HB3	4:E:174:ARG:HH21	1.79	0.48
15:P:4:LYS:HG2	15:P:65:GLN:HG3	1.96	0.48
17:R:64:ILE:O	17:R:68:VAL:HG12	2.14	0.48
20:Y:164:A:H2'	20:Y:165:U:C6	2.49	0.48
20:Y:371:G:H2'	20:Y:372:G:C8	2.49	0.48
20:Y:800:A:H61	20:Y:893:G:H21	1.62	0.48
20:Y:1092:G:C4	20:Y:1301:G:N2	2.81	0.48
20:Y:1211:G:H21	20:Y:1216:A:H62	1.60	0.48
20:Y:2318:U:C2	20:Y:2319:G:C8	3.02	0.48
20:Y:2554:U:H2'	20:Y:2555:G:O4'	2.14	0.48
21:U:58:A:H1'	25:c:34:GLN:OE1	2.12	0.48
24:b:151:ASN:ND2	24:b:193:ASP:OD1	2.43	0.48
26:d:53:VAL:HG13	26:d:66:HIS:CE1	2.48	0.48
29:g:64:ARG:O	29:g:82:ASN:HA	2.14	0.48
29:g:68:GLU:HB3	29:g:76:TYR:HD1	1.78	0.48
1:A:120:G:H2'	1:A:121:U:C6	2.49	0.48
1:A:181:C:C2	1:A:208:G:N1	2.81	0.48
1:A:183:C:C2	1:A:206:G:C2	3.02	0.48
1:A:954:C:H1'	9:J:57:LYS:HZ3	1.78	0.48
1:A:1323:U:O3'	8:I:149:LYS:NZ	2.45	0.48
1:A:1339:A:H2'	1:A:1340:U:C5	2.49	0.48
1:A:1491:A:H2'	1:A:1492:G:C8	2.49	0.48
4:E:63:ILE:HG21	4:E:139:VAL:HA	1.95	0.48
7:H:79:ARG:NE	7:H:81:SER:O	2.46	0.48
20:Y:334:G:H2'	20:Y:335:G:H8	1.78	0.48
20:Y:1610:C:H2'	20:Y:1611:A:H8	1.79	0.48
20:Y:2409:U:C4	51:4:2405:A:C5	3.02	0.48
20:Y:2638:G:H21	30:h:67:PHE:HE1	1.62	0.48
20:Y:2756:G:H2'	20:Y:2757:C:C6	2.49	0.48
20:Y:2903:A:H4'	23:a:199:PRO:HB3	1.94	0.48
34:l:12:LEU:HD23	34:l:54:ILE:HG13	1.95	0.48
1:A:66:U:H3	1:A:101:G:H1	1.61	0.48
1:A:654:G:H21	10:K:127:HIS:CD2	2.31	0.48
1:A:699:C:H1'	17:R:47:LYS:CE	2.43	0.48
1:A:873:U:H2'	1:A:874:A:H8	1.78	0.48
1:A:974:U:O2	1:A:975:G:N2	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:115:HIS:CD2	3:D:117:HIS:NE2	2.80	0.48
5:F:69:PRO:HA	5:F:72:VAL:HG12	1.94	0.48
20:Y:398:U:H3'	20:Y:399:G:C8	2.49	0.48
20:Y:729:C:O2'	20:Y:733:U:OP1	2.32	0.48
20:Y:911:U:H2'	20:Y:912:C:C6	2.49	0.48
20:Y:1331:C:H5''	35:m:15:ARG:HH22	1.78	0.48
20:Y:1332:G:C6	20:Y:1347:G:C6	3.02	0.48
20:Y:1987:G:H2'	20:Y:1988:C:H6	1.79	0.48
20:Y:2019:A:H2'	20:Y:2020:A:H8	1.78	0.48
20:Y:2148:C:H2'	20:Y:2149:C:C6	2.49	0.48
20:Y:2599:G:H22	20:Y:2601:A:H3'	1.79	0.48
20:Y:2767:G:H2'	20:Y:2768:G:C8	2.49	0.48
20:Y:2883:G:N2	20:Y:2886:A:OP2	2.36	0.48
20:Y:2930:G:H1'	32:j:64:ARG:HH12	1.79	0.48
25:c:73:GLU:HB2	25:c:95:ARG:HB2	1.95	0.48
25:c:99:ARG:CA	25:c:103:MET:HG3	2.43	0.48
25:c:129:PHE:CE1	25:c:135:TYR:HB2	2.49	0.48
29:g:58:VAL:HG11	29:g:86:ILE:HG23	1.96	0.48
29:g:71:ARG:HG3	29:g:75:SER:O	2.14	0.48
32:j:4:PRO:HB3	32:j:9:ARG:NH2	2.28	0.48
44:v:97:ALA:HB2	44:v:103:LEU:HD22	1.96	0.48
1:A:23:C:OP1	4:E:160:ASN:ND2	2.47	0.48
1:A:580:G:C6	1:A:620:A:C5	3.02	0.48
1:A:642:C:H2'	1:A:643:A:C8	2.49	0.48
1:A:702:G:O2'	1:A:703:U:H4'	2.13	0.48
1:A:969:G:H2'	1:A:1200:A:N3	2.29	0.48
1:A:1441:G:H2'	1:A:1442:G:C8	2.49	0.48
6:G:51:ARG:HD3	6:G:58:PRO:HG3	1.96	0.48
10:K:110:GLN:NE2	10:K:114:LEU:O	2.46	0.48
10:K:125:GLN:HE22	10:K:127:HIS:HE1	1.61	0.48
12:M:50:ASP:OD1	12:M:51:ASP:N	2.47	0.48
20:Y:319:G:H1	20:Y:492:C:H1'	1.79	0.48
20:Y:1266:C:H2'	20:Y:1267:A:H8	1.79	0.48
20:Y:1987:G:H2'	20:Y:1988:C:C6	2.49	0.48
20:Y:2248:C:H5''	23:a:159:ARG:NH2	2.28	0.48
20:Y:2409:U:C4	51:4:2405:A:C6	3.02	0.48
20:Y:2527:G:O2'	25:c:137:PHE:HB3	2.14	0.48
20:Y:2548:U:H3	20:Y:2555:G:H1	1.61	0.48
22:Z:181:GLU:OE1	22:Z:270:ARG:HG3	2.14	0.48
27:e:36:ASN:O	27:e:36:ASN:ND2	2.43	0.48
1:A:182:C:N3	1:A:207:G:C2	2.82	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:226:G:OP1	16:Q:14:GLU:HG2	2.13	0.47
1:A:1050:U:H2'	1:A:1051:C:C6	2.49	0.47
1:A:1148:U:OP1	1:A:1150:A:N6	2.44	0.47
1:A:1206:U:P	12:M:102:ARG:HH12	2.37	0.47
1:A:1294:G:H2'	1:A:1295:U:C6	2.49	0.47
1:A:1473:A:H2'	1:A:1474:C:C6	2.49	0.47
1:A:1497:A:H2'	1:A:1498:C:H6	1.77	0.47
3:D:69:ARG:HA	3:D:72:GLU:OE1	2.14	0.47
19:V:82:GLU:O	19:V:86:ARG:HG3	2.13	0.47
20:Y:741:G:H21	20:Y:2575:G:H5'	1.79	0.47
20:Y:1285:G:H2'	20:Y:1286:C:H6	1.79	0.47
20:Y:1393:C:H2'	20:Y:1394:A:H8	1.79	0.47
20:Y:2255:A:O2'	20:Y:2678:G:N2	2.46	0.47
20:Y:2480:G:H2'	20:Y:2481:U:C6	2.49	0.47
20:Y:2518:C:H2'	20:Y:2519:C:C6	2.49	0.47
20:Y:2579:C:N4	20:Y:2580:G:C2	2.82	0.47
1:A:569:U:O4	1:A:631:C:N3	2.47	0.47
1:A:865:C:H2'	1:A:866:U:C6	2.48	0.47
1:A:1508:C:H2'	1:A:1509:G:C8	2.49	0.47
6:G:92:ARG:HG2	6:G:93:PRO:HD2	1.95	0.47
16:Q:77:MET:HG3	16:Q:89:ARG:HH21	1.79	0.47
20:Y:40:G:H2'	20:Y:41:A:C8	2.49	0.47
20:Y:45:G:N1	20:Y:176:G:OP2	2.47	0.47
20:Y:650:G:H2'	20:Y:651:G:H8	1.79	0.47
20:Y:738:A:N6	20:Y:2573:G:H1'	2.29	0.47
20:Y:922:U:H2'	20:Y:923:G:H8	1.79	0.47
20:Y:1305:G:H2'	20:Y:1306:G:H8	1.79	0.47
20:Y:1480:A:H3'	20:Y:1481:C:H6	1.79	0.47
20:Y:1742:U:H2'	20:Y:1743:G:O4'	2.14	0.47
20:Y:1939:U:H3	20:Y:1955:A:N6	2.09	0.47
20:Y:2433:U:H4'	20:Y:2434:A:H8	1.79	0.47
20:Y:2541:U:O5'	33:k:7:GLY:N	2.32	0.47
20:Y:2541:U:C5'	33:k:7:GLY:H	2.26	0.47
20:Y:2559:A:H5''	33:k:24:ARG:HH21	1.79	0.47
20:Y:3040:G:H2'	20:Y:3042:A:N7	2.28	0.47
20:Y:3061:C:H2'	20:Y:3062:C:C6	2.49	0.47
25:c:40:LYS:HE2	25:c:99:ARG:NE	2.29	0.47
1:A:495:G:H2'	1:A:496:U:H6	1.79	0.47
1:A:557:G:C6	1:A:745:G:N3	2.82	0.47
1:A:1070:U:H2'	1:A:1071:U:C6	2.49	0.47
1:A:1080:C:OP2	19:V:95:ARG:NH1	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1442:G:H2'	1:A:1443:G:C8	2.49	0.47
3:D:169:VAL:HG22	3:D:174:ARG:HB2	1.95	0.47
12:M:91:ARG:HH11	12:M:96:LEU:HD22	1.79	0.47
19:V:107:VAL:O	19:V:111:LEU:HD23	2.15	0.47
20:Y:268:G:OP2	20:Y:360:G:N1	2.38	0.47
20:Y:894:U:H5''	22:Z:43:ARG:HH21	1.79	0.47
20:Y:1520:C:H2'	20:Y:1521:C:C6	2.49	0.47
20:Y:1886:A:H61	20:Y:1894:A:H61	1.62	0.47
20:Y:1953:C:H2'	20:Y:1954:C:O4'	2.14	0.47
20:Y:2643:U:H2'	20:Y:2644:C:C6	2.49	0.47
24:b:118:ARG:HH12	30:h:5:LYS:HZ1	1.62	0.47
28:f:47:ASN:OD1	28:f:48:VAL:HG23	2.14	0.47
28:f:110:PRO:O	28:f:115:GLY:HA3	2.13	0.47
28:f:125:TYR:CE2	28:f:131:PRO:HD2	2.47	0.47
35:m:70:ARG:HH12	35:m:75:THR:HG22	1.79	0.47
47:y:15:CYS:SG	47:y:16:GLU:N	2.87	0.47
49:l:13:ARG:C	49:l:14:PHE:HD1	2.23	0.47
1:A:1290:C:OP2	12:M:99:ARG:NH1	2.48	0.47
5:F:72:VAL:HG21	5:F:90:VAL:HG21	1.96	0.47
9:J:52:ILE:HG12	13:N:41:ARG:HD2	1.96	0.47
12:M:19:LEU:HD12	12:M:22:ILE:HD13	1.95	0.47
19:V:57:VAL:HA	19:V:60:THR:HG22	1.97	0.47
20:Y:28:C:O2'	20:Y:1353:G:OP1	2.27	0.47
20:Y:166:A:H2'	20:Y:167:G:O4'	2.13	0.47
20:Y:526:C:H2'	20:Y:527:A:C8	2.49	0.47
20:Y:605:G:O5'	37:o:25:ARG:NH1	2.47	0.47
20:Y:682:A:H2'	20:Y:683:G:C8	2.49	0.47
20:Y:728:G:H2'	20:Y:729:C:H6	1.78	0.47
20:Y:860:G:H21	20:Y:865:A:N6	2.12	0.47
20:Y:1642:G:H2'	20:Y:1643:G:H8	1.80	0.47
20:Y:2442:U:H2'	20:Y:2443:U:H6	1.78	0.47
20:Y:2508:C:P	47:y:8:ARG:HG2	2.53	0.47
20:Y:2817:U:H2'	20:Y:2818:C:C6	2.49	0.47
21:U:81:U:H2'	21:U:82:A:C8	2.49	0.47
34:l:80:ILE:HG21	34:l:83:ILE:HG12	1.95	0.47
42:t:33:ILE:HA	42:t:52:CYS:HA	1.96	0.47
1:A:177:U:H3'	1:A:178:A:H8	1.79	0.47
1:A:207:G:H4'	18:T:56:ARG:HD3	1.96	0.47
1:A:231:G:OP1	15:P:32:ARG:NH1	2.47	0.47
1:A:917:A:H61	6:G:3:ARG:HE	1.61	0.47
1:A:1235:G:H8	1:A:1235:G:O5'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1375:G:H2'	1:A:1376:U:C6	2.49	0.47
3:D:162:ILE:HG12	3:D:167:GLN:HA	1.97	0.47
7:H:107:SER:HB3	7:H:112:LEU:HD23	1.95	0.47
13:N:22:THR:HG23	13:N:23:ARG:H	1.79	0.47
19:V:56:PHE:HD2	19:V:184:ILE:HD11	1.80	0.47
19:V:134:ILE:HD13	19:V:137:LEU:HD21	1.97	0.47
20:Y:470:G:N2	20:Y:481:C:N3	2.62	0.47
20:Y:741:G:H2'	20:Y:742:G:H8	1.78	0.47
20:Y:805:C:H2'	20:Y:806:C:C6	2.49	0.47
20:Y:894:U:OP1	22:Z:49:ILE:HG22	2.14	0.47
20:Y:1249:G:H4'	28:f:84:LEU:HD22	1.95	0.47
20:Y:1285:G:H2'	20:Y:1286:C:C6	2.50	0.47
20:Y:2171:C:H2'	20:Y:2172:G:H8	1.80	0.47
20:Y:2469:U:H5''	20:Y:2470:A:H5'	1.96	0.47
21:U:30:G:O2'	21:U:59:A:N1	2.43	0.47
21:U:58:A:C2	25:c:33:MET:HE1	2.48	0.47
24:b:63:LYS:HD2	24:b:64:LYS:O	2.14	0.47
29:g:7:ARG:HH12	29:g:18:GLU:HB3	1.78	0.47
38:p:10:ILE:HG22	38:p:33:VAL:HG13	1.95	0.47
48:z:29:ALA:O	48:z:33:ILE:HG12	2.15	0.47
51:4:2381:A:H4'	51:4:2382:G:O5'	2.14	0.47
1:A:659:C:H2'	1:A:660:C:C6	2.50	0.47
1:A:909:G:H2'	1:A:910:G:H8	1.79	0.47
1:A:929:G:H5''	12:M:108:ARG:NH2	2.30	0.47
2:C:130:ARG:O	2:C:134:ARG:HG3	2.14	0.47
19:V:73:LYS:HE2	19:V:165:ASP:OD2	2.15	0.47
20:Y:29:C:N4	20:Y:562:G:O6	2.47	0.47
20:Y:759:G:O6	41:s:33:ALA:N	2.47	0.47
20:Y:2093:G:O2'	20:Y:2094:G:H5''	2.13	0.47
20:Y:2927:C:N4	20:Y:2928:C:N4	2.63	0.47
20:Y:3049:G:H2'	20:Y:3050:G:H8	1.79	0.47
20:Y:3077:A:H2'	20:Y:3078:G:C8	2.50	0.47
21:U:78:U:OP1	40:r:28:ARG:NH2	2.47	0.47
23:a:117:THR:O	23:a:200:GLY:HA2	2.14	0.47
30:h:99:VAL:HG22	30:h:106:LYS:HA	1.96	0.47
31:i:71:ASP:OD1	31:i:72:ARG:HD2	2.15	0.47
34:l:57:THR:HA	34:l:74:PRO:HA	1.96	0.47
44:v:32:THR:HG23	44:v:35:ASN:H	1.79	0.47
1:A:146:A:H2'	1:A:147:U:C6	2.50	0.47
1:A:378:G:O6	1:A:386:C:N4	2.47	0.47
1:A:453:G:OP1	15:P:75:LYS:NZ	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:577:G:C4	1:A:624:G:C2	3.02	0.47
1:A:579:U:H2'	1:A:580:G:H8	1.79	0.47
1:A:608:G:H3'	1:A:609:G:H8	1.78	0.47
1:A:715:G:H5'	17:R:69:LYS:NZ	2.29	0.47
1:A:987:A:N6	1:A:1008:C:H1'	2.30	0.47
1:A:987:A:H62	1:A:1008:C:H1'	1.79	0.47
1:A:1160:A:H2'	1:A:1161:A:C8	2.49	0.47
6:G:49:GLN:HE22	6:G:118:GLU:HA	1.78	0.47
8:I:65:GLN:HB3	8:I:69:LYS:HZ1	1.80	0.47
9:J:10:LEU:HB2	9:J:72:ARG:HB2	1.96	0.47
14:O:28:GLN:O	14:O:32:LEU:HD23	2.15	0.47
20:Y:181:A:H2'	20:Y:182:C:C6	2.49	0.47
20:Y:687:C:H2'	20:Y:688:A:C8	2.49	0.47
20:Y:858:A:O2'	20:Y:1877:U:OP1	2.33	0.47
20:Y:964:C:H2'	20:Y:965:U:H6	1.80	0.47
20:Y:1317:G:H21	30:h:6:LEU:HD23	1.80	0.47
20:Y:2409:U:N3	51:4:2405:A:C6	2.83	0.47
20:Y:2523:A:N6	20:Y:2542:G:N3	2.63	0.47
20:Y:2540:G:O2'	33:k:7:GLY:HA3	2.14	0.47
20:Y:2601:A:H1'	33:k:121:ARG:NH2	2.30	0.47
20:Y:2936:C:OP1	20:Y:2938:G:H4'	2.14	0.47
20:Y:3089:A:H2'	20:Y:3090:G:H8	1.79	0.47
26:d:144:GLN:OE1	26:d:144:GLN:HA	2.15	0.47
29:g:122:LEU:HD13	34:l:62:LYS:HD3	1.97	0.47
34:l:71:ARG:HH21	34:l:73:PHE:HZ	1.59	0.47
43:u:20:ASP:O	43:u:23:ARG:HG3	2.14	0.47
1:A:241:C:N3	1:A:286:G:N1	2.62	0.47
1:A:452:A:H61	15:P:93:LEU:N	2.13	0.47
1:A:1355:U:OP2	8:I:33:LYS:NZ	2.47	0.47
8:I:87:LEU:HB3	8:I:95:GLN:NE2	2.30	0.47
20:Y:191:G:O2'	20:Y:917:A:N3	2.43	0.47
20:Y:506:C:H2'	20:Y:507:G:H8	1.78	0.47
20:Y:798:U:H2'	20:Y:799:G:C8	2.49	0.47
20:Y:948:G:H2'	20:Y:949:C:C6	2.49	0.47
20:Y:1083:G:H1'	20:Y:2491:A:H62	1.79	0.47
20:Y:2586:G:H5''	49:l:40:ARG:HE	1.80	0.47
20:Y:2867:A:H2'	20:Y:2868:A:H8	1.79	0.47
20:Y:2913:U:H5'	20:Y:2913:U:O2	2.14	0.47
22:Z:53:HIS:NE2	22:Z:220:THR:HG23	2.30	0.47
42:t:16:LYS:HD3	42:t:26:SER:HA	1.97	0.47
45:w:20:ARG:HH11	45:w:20:ARG:HG3	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:167:U:H2'	1:A:168:A:C8	2.50	0.47
1:A:323:U:H5''	18:T:21:ASN:ND2	2.26	0.47
1:A:672:U:OP2	10:K:37:ASN:ND2	2.48	0.47
1:A:858:A:P	7:H:15:ARG:HH22	2.37	0.47
1:A:1299:C:H41	13:N:18:VAL:HG21	1.80	0.47
7:H:47:SER:OG	7:H:63:GLN:O	2.27	0.47
18:T:51:LEU:HD13	18:T:83:LEU:HD22	1.96	0.47
20:Y:694:C:H2'	20:Y:695:G:C8	2.49	0.47
20:Y:733:U:H2'	20:Y:734:C:C6	2.50	0.47
20:Y:1785:C:O2	20:Y:1786:G:O2'	2.33	0.47
20:Y:2216:G:N2	20:Y:2220:C:O2'	2.48	0.47
20:Y:2238:A:O2'	20:Y:2239:A:O4'	2.28	0.47
20:Y:2450:C:H2'	20:Y:2451:A:H8	1.79	0.47
20:Y:2911:U:C4	20:Y:2912:A:C6	3.03	0.47
20:Y:3015:C:H2'	20:Y:3016:C:O4'	2.14	0.47
23:a:21:ASN:HB3	34:l:79:ASN:CG	2.40	0.47
30:h:78:VAL:HG13	30:h:103:LEU:HD23	1.96	0.47
43:u:23:ARG:HH12	43:u:24:GLU:HB3	1.79	0.47
1:A:21:U:H2'	1:A:22:C:H6	1.79	0.47
1:A:1375:G:N2	1:A:1486:A:H8	2.13	0.47
1:A:1504:G:H2'	1:A:1505:G:H8	1.80	0.47
2:C:133:MET:O	2:C:137:ILE:HG12	2.15	0.47
3:D:97:VAL:HG21	3:D:118:PHE:CE2	2.49	0.47
9:J:42:LEU:HD13	9:J:71:LYS:HE2	1.96	0.47
17:R:41:TYR:HA	17:R:49:ARG:HH12	1.79	0.47
20:Y:2:A:H61	20:Y:3119:A:N6	2.13	0.47
20:Y:265:A:H2	20:Y:359:A:H62	1.61	0.47
20:Y:1370:U:H5''	20:Y:1371:G:H5''	1.97	0.47
20:Y:2313:A:H2'	20:Y:2314:U:C6	2.50	0.47
20:Y:2702:A:C8	20:Y:2753:G:N7	2.83	0.47
20:Y:2730:U:OP2	20:Y:2800:G:N1	2.29	0.47
20:Y:2976:C:H2'	20:Y:2977:A:O4'	2.15	0.47
22:Z:15:GLY:O	22:Z:205:ASN:ND2	2.48	0.47
23:a:202:ASN:HD22	23:a:202:ASN:C	2.13	0.47
24:b:90:VAL:HG12	24:b:91:HIS:ND1	2.29	0.47
34:l:43:LYS:O	34:l:62:LYS:HB3	2.14	0.47
38:p:8:ARG:HD2	38:p:49:ILE:HG12	1.97	0.47
1:A:312:C:H2'	1:A:313:A:C8	2.49	0.46
1:A:814:G:H5''	17:R:58:VAL:CG2	2.39	0.46
1:A:955:G:C8	1:A:956:A:H2'	2.51	0.46
1:A:1084:G:H2'	1:A:1085:A:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1263:C:H2'	1:A:1264:C:C6	2.50	0.46
2:C:151:VAL:HG12	2:C:200:VAL:HG23	1.96	0.46
15:P:38:GLY:C	15:P:39:ARG:HD2	2.41	0.46
20:Y:619:C:H3'	35:m:28:ARG:NH2	2.30	0.46
20:Y:1092:G:H22	20:Y:1107:G:H1'	1.79	0.46
20:Y:1366:A:OP2	35:m:6:ARG:HD2	2.15	0.46
20:Y:1659:U:H2'	20:Y:1660:A:H8	1.79	0.46
20:Y:1832:A:P	20:Y:1832:A:H8	2.38	0.46
20:Y:2009:G:H1	20:Y:2044:U:H3	1.62	0.46
20:Y:2022:U:H4'	22:Z:250:TRP:CZ3	2.50	0.46
20:Y:2044:U:OP2	22:Z:222:ARG:NE	2.43	0.46
20:Y:2176:A:C2	29:g:22:ILE:HG23	2.50	0.46
20:Y:2454:G:H1'	42:t:32:ASN:CG	2.41	0.46
20:Y:2609:A:H2'	20:Y:2610:C:H6	1.80	0.46
20:Y:2843:C:H5''	23:a:162:LYS:CD	2.43	0.46
20:Y:2851:G:H21	20:Y:3005:A:H2	1.62	0.46
25:c:64:LEU:O	25:c:68:THR:HG22	2.15	0.46
29:g:24:VAL:HG23	29:g:33:ALA:HB2	1.97	0.46
29:g:64:ARG:HB2	29:g:83:ALA:HB3	1.97	0.46
51:4:2337:A:H62	51:4:2342:A:H62	1.62	0.46
1:A:57:A:H2'	1:A:58:C:O4'	2.15	0.46
1:A:445:C:H2'	1:A:446:A:H8	1.80	0.46
1:A:1249:G:N2	1:A:1309:C:O4'	2.48	0.46
1:A:1461:U:H2'	1:A:1462:C:C6	2.50	0.46
20:Y:361:A:O2'	20:Y:362:A:O4'	2.32	0.46
20:Y:563:U:C2	20:Y:567:A:N6	2.82	0.46
20:Y:805:C:O3'	22:Z:218:ARG:NH1	2.44	0.46
20:Y:1468:A:H2'	20:Y:1469:A:C8	2.50	0.46
20:Y:1666:A:N6	20:Y:1687:G:H21	2.02	0.46
20:Y:1897:A:H2'	20:Y:1898:U:H6	1.79	0.46
20:Y:3105:C:N4	46:x:41:ARG:HG2	2.30	0.46
21:U:107:A:H2'	21:U:108:C:C6	2.50	0.46
22:Z:96:HIS:ND1	22:Z:102:LYS:HD3	2.29	0.46
24:b:65:PRO:HB2	24:b:66:TYR:CD1	2.51	0.46
44:v:31:LEU:HD21	44:v:103:LEU:HB2	1.95	0.46
47:y:24:ILE:HD13	49:1:34:GLU:HG3	1.98	0.46
1:A:438:U:O2'	1:A:439:U:O2	2.27	0.46
1:A:480:G:H2'	1:A:481:G:H8	1.80	0.46
1:A:1306:A:H5''	1:A:1345:A:H5''	1.96	0.46
1:A:1417:A:N6	1:A:1451:G:H21	2.08	0.46
3:D:57:ARG:HG3	3:D:62:VAL:HG23	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:48:LEU:HB2	15:P:96:LYS:NZ	2.30	0.46
20:Y:619:C:C5'	35:m:28:ARG:HH22	2.28	0.46
20:Y:655:G:C6	20:Y:2242:G:C5	3.04	0.46
20:Y:1092:G:N1	20:Y:1107:G:C4	2.83	0.46
20:Y:1565:A:H2'	20:Y:1602:U:C5	2.48	0.46
20:Y:1655:A:H2'	20:Y:1656:A:H8	1.79	0.46
20:Y:2506:G:N3	20:Y:2614:U:N3	2.64	0.46
20:Y:2629:G:O2'	20:Y:2635:A:N6	2.36	0.46
20:Y:2641:U:C2	20:Y:2642:G:C8	3.04	0.46
24:b:74:ALA:O	24:b:76:GLN:NE2	2.47	0.46
26:d:87:LYS:HA	26:d:133:SER:HA	1.96	0.46
1:A:187:U:N3	1:A:202:G:N1	2.64	0.46
1:A:596:A:H1'	1:A:605:G:H22	1.81	0.46
1:A:1387:C:H2'	1:A:1388:G:C8	2.50	0.46
1:A:1506:U:OP1	10:K:137:ARG:NH2	2.24	0.46
6:G:95:ARG:NH2	6:G:99:LEU:HD21	2.29	0.46
20:Y:265:A:C4	20:Y:516:G:C6	3.03	0.46
20:Y:1730:U:O2'	20:Y:1731:A:OP2	2.30	0.46
20:Y:2460:U:H2'	20:Y:2461:G:O4'	2.15	0.46
20:Y:2529:A:C5	25:c:139:LEU:O	2.69	0.46
22:Z:85:ASP:OD2	22:Z:88:ARG:NH2	2.49	0.46
29:g:22:ILE:HB	29:g:40:VAL:HG13	1.95	0.46
29:g:100:GLY:HA2	34:l:65:TYR:HD2	1.80	0.46
33:k:86:GLN:O	33:k:90:GLU:OE2	2.34	0.46
37:o:22:THR:O	37:o:26:ARG:HG2	2.16	0.46
1:A:1221:U:H1'	6:G:35:LYS:CE	2.46	0.46
1:A:1242:A:OP2	1:A:1255:G:N2	2.48	0.46
3:D:80:LYS:HD2	3:D:82:GLY:H	1.81	0.46
17:R:59:GLN:OE1	17:R:59:GLN:N	2.43	0.46
20:Y:21:G:N1	20:Y:604:C:C2	2.83	0.46
20:Y:69:U:O3'	43:u:51:ARG:NE	2.49	0.46
20:Y:293:G:N3	20:Y:293:G:H2'	2.31	0.46
20:Y:553:G:O2'	20:Y:554:A:O4'	2.19	0.46
20:Y:568:A:H5'	39:q:43:LYS:NZ	2.31	0.46
20:Y:972:A:H2'	20:Y:973:G:C8	2.51	0.46
20:Y:1605:G:H2'	20:Y:1606:G:H8	1.80	0.46
20:Y:1871:G:C2	32:j:6:LYS:HE2	2.51	0.46
20:Y:2079:C:C2	20:Y:2105:G:N2	2.84	0.46
20:Y:2465:A:H2'	20:Y:2466:G:H8	1.79	0.46
33:k:69:ASP:OD1	33:k:70:VAL:N	2.49	0.46
40:r:86:HIS:CE1	40:r:88:ILE:HB	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:445:C:H2'	1:A:446:A:C8	2.50	0.46
3:D:43:GLU:HA	3:D:47:ARG:HH22	1.80	0.46
4:E:39:ARG:HA	4:E:39:ARG:HD3	1.76	0.46
7:H:48:ASP:OD1	7:H:49:TYR:N	2.49	0.46
9:J:29:VAL:HG13	9:J:34:ALA:HB3	1.98	0.46
20:Y:21:G:C2	20:Y:22:U:C4	3.04	0.46
20:Y:131:A:N6	20:Y:145:G:O6	2.49	0.46
20:Y:734:C:H2'	20:Y:735:U:C6	2.50	0.46
20:Y:801:U:H2'	20:Y:903:A:N1	2.30	0.46
20:Y:987:A:H2	20:Y:1021:G:H1	1.64	0.46
20:Y:1136:C:H2'	20:Y:1137:U:C6	2.50	0.46
20:Y:1394:A:H2'	20:Y:1395:A:H8	1.81	0.46
20:Y:1521:C:H3'	20:Y:1522:G:C8	2.45	0.46
20:Y:1890:C:O2'	20:Y:1891:G:H5'	2.15	0.46
20:Y:2082:U:P	20:Y:2633:G:H21	2.38	0.46
20:Y:2113:A:H2'	20:Y:2114:A:C8	2.51	0.46
20:Y:2442:U:H2'	20:Y:2443:U:C6	2.50	0.46
20:Y:2528:G:H5''	25:c:138:GLY:H	1.80	0.46
20:Y:2847:G:OP1	20:Y:3047:A:O2'	2.22	0.46
20:Y:3083:A:H2'	20:Y:3084:G:C8	2.51	0.46
21:U:71:C:H2'	21:U:72:C:H6	1.81	0.46
22:Z:94:LEU:HD11	22:Z:102:LYS:HB3	1.98	0.46
24:b:76:GLN:HG2	24:b:84:PHE:CE1	2.50	0.46
25:c:87:ARG:HD2	25:c:90:MET:SD	2.56	0.46
32:j:33:ARG:HG2	32:j:114:GLU:OE2	2.16	0.46
42:t:14:PHE:HE1	42:t:28:ARG:HG2	1.80	0.46
1:A:186:C:N4	1:A:203:U:H3	2.13	0.46
1:A:215:U:O2	1:A:216:U:N3	2.46	0.46
1:A:255:G:H2'	1:A:256:U:C6	2.51	0.46
1:A:932:U:OP2	12:M:102:ARG:HG2	2.16	0.46
1:A:946:A:O2'	9:J:57:LYS:HE3	2.16	0.46
1:A:949:C:H4'	8:I:147:TYR:HE1	1.81	0.46
2:C:172:ARG:HD2	2:C:172:ARG:N	2.31	0.46
9:J:28:THR:HG21	9:J:90:ILE:HD11	1.98	0.46
19:V:20:THR:HA	19:V:39:TYR:HE2	1.81	0.46
20:Y:443:C:N3	20:Y:444:U:H5	2.13	0.46
20:Y:661:U:H5'	20:Y:936:A:C2	2.50	0.46
20:Y:747:A:H2'	20:Y:748:U:O4'	2.16	0.46
20:Y:754:C:H2'	20:Y:755:A:H8	1.81	0.46
20:Y:1044:U:O2	45:w:24:ARG:NH2	2.49	0.46
20:Y:1054:C:H2'	20:Y:1055:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1063:G:O6	20:Y:1090:G:N2	2.49	0.46
20:Y:1391:G:C2	20:Y:1410:C:C2	3.04	0.46
20:Y:1472:C:H2'	20:Y:1473:G:C8	2.51	0.46
20:Y:1532:G:N1	20:Y:1804:G:C2	2.83	0.46
20:Y:1662:C:H2'	20:Y:1663:C:C6	2.51	0.46
20:Y:1911:U:OP2	20:Y:1912:C:N4	2.49	0.46
20:Y:2301:C:H2'	20:Y:2302:U:C6	2.51	0.46
20:Y:2482:U:O2'	20:Y:2650:A:H4'	2.15	0.46
20:Y:2744:C:H2'	20:Y:2745:C:C6	2.51	0.46
30:h:92:THR:HA	30:h:123:ASP:HB3	1.97	0.46
38:p:12:LEU:HB2	38:p:32:VAL:HG12	1.97	0.46
41:s:23:VAL:HG23	41:s:38:VAL:HG22	1.97	0.46
44:v:11:ALA:O	44:v:15:GLU:OE1	2.33	0.46
44:v:70:ASP:OD1	44:v:71:GLU:N	2.49	0.46
51:4:2374:U:H2'	51:4:2375:G:C8	2.51	0.46
1:A:732:G:H4'	14:O:69:TYR:OH	2.16	0.46
1:A:977:C:O2	13:N:4:LYS:NZ	2.49	0.46
1:A:1040:U:H4'	9:J:54:SER:HB3	1.97	0.46
20:Y:18:A:N1	20:Y:607:G:C6	2.84	0.46
20:Y:114:G:OP2	20:Y:116:A:O2'	2.23	0.46
20:Y:624:G:N2	20:Y:649:U:O4	2.48	0.46
20:Y:795:G:H2'	20:Y:796:A:H8	1.81	0.46
20:Y:938:G:O6	20:Y:950:A:N6	2.49	0.46
20:Y:1174:G:H2'	20:Y:1220:C:N4	2.30	0.46
20:Y:1284:A:H2'	20:Y:1285:G:H8	1.80	0.46
20:Y:1329:G:O6	20:Y:1350:G:C2	2.68	0.46
20:Y:2528:G:H3'	25:c:138:GLY:O	2.15	0.46
20:Y:2563:G:H2'	20:Y:2564:A:H8	1.80	0.46
20:Y:3009:U:OP2	23:a:44:ARG:NH2	2.49	0.46
21:U:41:U:H3'	21:U:42:C:H4'	1.97	0.46
22:Z:192:THR:HG22	22:Z:193:VAL:N	2.30	0.46
23:a:14:THR:HG22	23:a:15:GLN:N	2.25	0.46
23:a:124:ALA:HB3	23:a:170:MET:HE3	1.98	0.46
35:m:14:ARG:HG2	35:m:32:TYR:CE1	2.51	0.46
1:A:25:G:H2'	1:A:26:G:H8	1.81	0.46
1:A:29:C:H2'	1:A:30:A:C8	2.51	0.46
1:A:146:A:H2'	1:A:147:U:H6	1.81	0.46
1:A:964:U:H5'	1:A:965:A:C8	2.50	0.46
1:A:1396:A:H2'	1:A:1397:U:C6	2.50	0.46
1:A:1408:A:H2'	1:A:1409:A:H8	1.80	0.46
5:F:68:GLU:HG2	5:F:70:ALA:H	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:23:ASP:OD1	7:H:24:GLU:N	2.49	0.46
12:M:49:THR:HB	12:M:52:GLN:OE1	2.16	0.46
14:O:6:GLU:HA	14:O:9:LYS:NZ	2.29	0.46
20:Y:18:A:H2'	20:Y:19:U:C6	2.51	0.46
20:Y:432:C:H2'	20:Y:433:C:C6	2.51	0.46
20:Y:772:U:H2'	20:Y:773:G:C8	2.51	0.46
20:Y:1089:C:H2'	20:Y:1090:G:O4'	2.15	0.46
20:Y:1849:G:H21	20:Y:1853:A:H62	1.63	0.46
20:Y:1885:G:O2'	20:Y:2215:U:O4	2.22	0.46
20:Y:2147:U:C4	20:Y:2148:C:N4	2.84	0.46
20:Y:2428:G:O6	20:Y:2443:U:O4	2.34	0.46
20:Y:2531:G:H5'	20:Y:2532:G:N9	2.30	0.46
20:Y:2541:U:H2'	20:Y:2542:G:H5'	1.98	0.46
21:U:40:A:H2	21:U:45:G:C2	2.33	0.46
23:a:76:ASN:OD1	23:a:78:ARG:NE	2.49	0.46
28:f:25:LEU:HD12	28:f:62:ILE:HG21	1.96	0.46
34:l:28:HIS:CE1	34:l:41:VAL:HG22	2.51	0.46
1:A:21:U:H3	1:A:901:A:H2	1.64	0.46
1:A:157:A:H1'	1:A:344:A:C5	2.51	0.46
1:A:431:A:H2'	1:A:432:A:H8	1.81	0.46
1:A:921:G:H2'	1:A:922:C:C6	2.51	0.46
1:A:998:G:H2'	1:A:999:A:H8	1.81	0.46
1:A:1418:G:H2'	1:A:1419:C:C6	2.51	0.46
6:G:92:ARG:HG2	6:G:93:PRO:CD	2.46	0.46
6:G:146:GLU:CG	6:G:149:ARG:HH22	2.29	0.46
20:Y:314:G:N1	20:Y:315:U:O4	2.48	0.46
20:Y:320:G:C2	20:Y:321:G:C5	3.04	0.46
20:Y:492:C:H1'	20:Y:494:G:C8	2.51	0.46
20:Y:500:A:N6	20:Y:2636:A:O2'	2.30	0.46
20:Y:897:A:H3'	20:Y:2005:C:H4'	1.97	0.46
20:Y:3041:C:OP2	32:j:6:LYS:NZ	2.49	0.46
22:Z:211:ARG:HA	22:Z:214:TRP:CE3	2.50	0.46
25:c:155:ARG:O	25:c:157:ARG:HD3	2.16	0.46
45:w:8:GLN:NE2	45:w:23:LEU:HD21	2.31	0.46
50:2:14:CYS:SG	50:2:32:HIS:HB3	2.56	0.46
1:A:699:C:H1'	17:R:47:LYS:NZ	2.29	0.45
1:A:890:A:H2'	1:A:891:A:C8	2.51	0.45
1:A:929:G:H5''	12:M:108:ARG:CZ	2.46	0.45
4:E:40:VAL:HG12	4:E:62:VAL:HG12	1.97	0.45
16:Q:91:VAL:HG12	16:Q:92:GLU:HG3	1.97	0.45
20:Y:349:G:H2'	20:Y:350:A:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1063:G:H2'	20:Y:1064:A:H8	1.82	0.45
20:Y:1272:C:H5''	35:m:62:ILE:HD13	1.98	0.45
20:Y:1547:G:H8	20:Y:1620:U:H2'	1.80	0.45
20:Y:1606:G:H2'	20:Y:1607:C:C6	2.51	0.45
20:Y:2859:C:H5'	23:a:81:VAL:HG13	1.97	0.45
20:Y:2906:U:C6	23:a:13:MET:HE1	2.52	0.45
20:Y:2985:G:H2'	20:Y:2986:G:C8	2.45	0.45
21:U:19:G:H2'	21:U:20:G:H8	1.81	0.45
36:n:51:LYS:O	36:n:55:LEU:HG	2.17	0.45
40:r:115:GLU:OE2	40:r:147:SER:OG	2.28	0.45
44:v:109:TYR:OH	44:v:112:GLY:HA2	2.17	0.45
1:A:221:G:H2'	1:A:222:U:C6	2.51	0.45
1:A:438:U:H4'	3:D:115:HIS:HE1	1.77	0.45
6:G:108:SER:HA	6:G:123:GLU:HG3	1.97	0.45
13:N:7:VAL:HG22	13:N:23:ARG:HD3	1.98	0.45
18:T:82:ALA:HA	18:T:85:LYS:HG2	1.97	0.45
19:V:16:PHE:C	19:V:203:ASN:HD21	2.18	0.45
20:Y:332:C:C2	20:Y:333:C:C5	3.04	0.45
20:Y:692:C:H2'	20:Y:693:G:C8	2.51	0.45
20:Y:1313:U:H2'	20:Y:1314:C:C6	2.51	0.45
20:Y:1472:C:H2'	20:Y:1473:G:H8	1.81	0.45
20:Y:1522:G:H21	20:Y:1814:G:H22	1.64	0.45
20:Y:2062:G:N1	20:Y:2120:A:C6	2.84	0.45
20:Y:2696:G:O2'	20:Y:2702:A:N6	2.49	0.45
20:Y:2781:G:H2'	20:Y:2782:C:C6	2.50	0.45
20:Y:2945:A:C4	20:Y:2946:G:C8	3.05	0.45
23:a:127:MET:HA	23:a:132:PHE:HB2	1.97	0.45
29:g:87:ILE:HD11	29:g:91:ASN:HA	1.97	0.45
39:q:81:THR:HG22	39:q:82:ARG:O	2.17	0.45
1:A:184:U:H2'	1:A:185:G:C8	2.51	0.45
1:A:934:U:H5''	1:A:946:A:H61	1.81	0.45
1:A:1051:C:H2'	1:A:1052:G:H8	1.81	0.45
1:A:1210:A:H2'	1:A:1211:C:C6	2.52	0.45
1:A:1400:A:N1	1:A:1466:G:C2	2.84	0.45
3:D:85:LEU:HA	3:D:88:ILE:HG22	1.97	0.45
6:G:65:ALA:O	6:G:69:VAL:HG22	2.16	0.45
20:Y:316:U:H2'	20:Y:509:U:C5	2.51	0.45
20:Y:323:C:O2	20:Y:323:C:H2'	2.15	0.45
20:Y:710:G:H2'	20:Y:711:G:H8	1.81	0.45
20:Y:916:G:N3	24:b:55:ARG:HD3	2.31	0.45
20:Y:1503:G:H2'	20:Y:1504:G:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2172:G:H2'	20:Y:2173:G:H8	1.82	0.45
20:Y:2907:C:N3	20:Y:2951:G:O2'	2.48	0.45
22:Z:133:LEU:HB2	22:Z:187:VAL:O	2.15	0.45
32:j:59:ALA:O	32:j:63:ARG:HG2	2.17	0.45
1:A:138:A:N6	1:A:221:G:C6	2.84	0.45
1:A:372:C:H41	1:A:387:U:H3'	1.82	0.45
1:A:1168:G:H2'	1:A:1169:A:C8	2.51	0.45
1:A:1420:C:H2'	1:A:1421:G:H8	1.81	0.45
20:Y:187:G:H5''	42:t:14:PHE:CD2	2.51	0.45
20:Y:372:G:H2'	20:Y:373:U:C6	2.52	0.45
20:Y:805:C:O3'	22:Z:218:ARG:NH2	2.49	0.45
20:Y:806:C:H5'	22:Z:218:ARG:NH1	2.31	0.45
20:Y:852:C:N3	20:Y:875:G:N1	2.64	0.45
20:Y:1007:G:H1'	20:Y:1009:U:C5	2.52	0.45
20:Y:1328:A:H61	20:Y:1350:G:H1'	1.81	0.45
20:Y:1843:C:N4	20:Y:1844:A:N1	2.64	0.45
20:Y:2235:C:OP2	37:o:23:LYS:NZ	2.43	0.45
20:Y:2529:A:H2'	20:Y:2530:C:O4'	2.17	0.45
20:Y:2539:G:C8	20:Y:2540:G:N7	2.84	0.45
32:j:37:THR:HG22	32:j:39:PRO:HD2	1.97	0.45
33:k:40:VAL:HG23	33:k:49:VAL:HG12	1.98	0.45
34:l:103:ARG:H	34:l:106:LYS:HD2	1.82	0.45
44:v:16:GLN:HB3	44:v:81:PHE:CE2	2.51	0.45
46:x:37:ARG:NH1	46:x:54:LEU:HD22	2.31	0.45
51:4:2391:G:H2'	51:4:2392:A:H5'	1.98	0.45
5:F:19:VAL:HG21	5:F:59:ILE:HD13	1.97	0.45
7:H:88:TYR:CE2	7:H:126:GLU:HB3	2.52	0.45
9:J:89:ARG:NE	9:J:89:ARG:HA	2.32	0.45
20:Y:66:C:H2'	20:Y:67:G:C8	2.51	0.45
20:Y:326:A:C2	20:Y:451:U:C2	3.04	0.45
20:Y:670:A:OP1	20:Y:1370:U:O2'	2.34	0.45
20:Y:686:A:H2'	20:Y:687:C:C6	2.52	0.45
20:Y:924:G:H2'	20:Y:925:U:C6	2.51	0.45
20:Y:935:A:H2'	20:Y:936:A:C8	2.51	0.45
20:Y:1185:A:O2'	20:Y:1186:G:O4'	2.34	0.45
20:Y:2073:A:H3'	20:Y:2074:G:H8	1.81	0.45
20:Y:2135:U:H3'	20:Y:2142:A:N6	2.32	0.45
20:Y:2528:G:N1	25:c:160:ASP:OD1	2.49	0.45
20:Y:2679:G:H2'	20:Y:2680:C:C6	2.51	0.45
20:Y:2860:U:H4'	23:a:83:GLU:OE2	2.17	0.45
21:U:11:U:O2'	21:U:12:C:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:k:109:TYR:CE1	33:k:114:ALA:HA	2.52	0.45
48:z:24:ARG:O	48:z:30:GLY:HA3	2.17	0.45
1:A:593:C:H2'	1:A:594:A:C8	2.50	0.45
1:A:858:A:H2'	1:A:859:C:C6	2.52	0.45
2:C:199:LYS:HE3	2:C:201:TRP:CH2	2.51	0.45
3:D:80:LYS:HD3	4:E:127:GLY:HA3	1.99	0.45
6:G:111:ARG:HH21	6:G:123:GLU:CG	2.26	0.45
8:I:75:VAL:HG12	8:I:77:ARG:HG2	1.97	0.45
9:J:45:GLU:OE2	9:J:47:ASN:ND2	2.50	0.45
12:M:34:LEU:HD11	12:M:41:LYS:HA	1.99	0.45
15:P:59:TRP:HA	15:P:62:VAL:HG12	1.98	0.45
20:Y:115:A:H5'	20:Y:116:A:C8	2.50	0.45
20:Y:320:G:N1	20:Y:492:C:H2'	2.31	0.45
20:Y:431:C:H2'	20:Y:432:C:C6	2.51	0.45
20:Y:820:A:H2'	20:Y:821:A:C8	2.52	0.45
20:Y:1135:G:C6	20:Y:1265:A:C6	3.04	0.45
20:Y:1224:G:N3	44:v:28:TYR:OH	2.50	0.45
20:Y:2089:C:O2'	20:Y:2090:U:O5'	2.33	0.45
20:Y:2130:G:C6	20:Y:2131:G:C6	3.05	0.45
20:Y:2629:G:H22	20:Y:2635:A:H3'	1.82	0.45
20:Y:2667:C:H2'	20:Y:2668:G:H8	1.82	0.45
23:a:91:ALA:O	23:a:94:GLU:HG2	2.16	0.45
27:e:121:ASN:OD1	44:v:41:ARG:NH1	2.37	0.45
30:h:26:GLU:HG3	30:h:26:GLU:O	2.15	0.45
32:j:9:ARG:HD2	32:j:17:GLN:NE2	2.31	0.45
51:4:2350:G:C2	51:4:2351:A:N7	2.85	0.45
2:C:55:GLU:HB2	2:C:66:ASP:HB2	1.99	0.45
2:C:174:PRO:HB2	2:C:177:THR:HB	1.98	0.45
3:D:133:SER:N	3:D:136:ASP:OD2	2.50	0.45
16:Q:60:LYS:HG3	16:Q:86:LYS:HB3	1.97	0.45
20:Y:661:U:O2'	20:Y:1101:A:N1	2.43	0.45
20:Y:710:G:H2'	20:Y:711:G:C8	2.52	0.45
20:Y:1047:A:H1'	20:Y:1048:A:C8	2.51	0.45
20:Y:1196:C:H2'	20:Y:1206:A:H5''	1.99	0.45
20:Y:2011:U:H2'	20:Y:2012:C:C6	2.52	0.45
20:Y:2528:G:N7	25:c:138:GLY:HA2	2.32	0.45
20:Y:2575:G:N7	49:1:43:ARG:NH1	2.64	0.45
21:U:60:G:H5'	33:k:9:ASN:ND2	2.28	0.45
38:p:17:SER:O	38:p:20:SER:OG	2.22	0.45
1:A:121:U:H2'	1:A:122:G:C8	2.51	0.45
1:A:606:U:H2'	1:A:607:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1459:G:H4'	20:Y:1907:A:H4'	1.98	0.45
19:V:69:PHE:HE1	19:V:89:MET:HG2	1.82	0.45
20:Y:250:G:H2'	20:Y:251:A:C8	2.52	0.45
20:Y:282:A:O2'	20:Y:302:U:O4	2.29	0.45
20:Y:316:U:H4'	20:Y:317:G:OP1	2.16	0.45
20:Y:674:U:H2'	20:Y:675:G:H8	1.80	0.45
20:Y:774:G:H5'	24:b:101:ARG:NE	2.31	0.45
20:Y:1025:A:C5	31:i:13:HIS:CE1	3.05	0.45
20:Y:1123:C:H2'	20:Y:1124:C:H6	1.81	0.45
20:Y:1241:C:H2'	20:Y:1242:C:H6	1.80	0.45
20:Y:1304:A:O3'	30:h:36:GLY:HA2	2.17	0.45
20:Y:1389:U:O2'	20:Y:1390:A:H2'	2.16	0.45
20:Y:1668:C:H2'	20:Y:1669:G:C8	2.52	0.45
20:Y:2801:A:O4'	20:Y:2836:C:N4	2.49	0.45
22:Z:77:ALA:HB2	22:Z:97:TYR:CD1	2.52	0.45
24:b:198:VAL:O	24:b:201:LEU:HG	2.17	0.45
26:d:160:GLY:N	26:d:172:ARG:HH12	2.14	0.45
27:e:30:LEU:HD12	27:e:35:VAL:HG11	1.98	0.45
27:e:121:ASN:O	27:e:122:ASP:N	2.50	0.45
37:o:20:SER:HB3	37:o:23:LYS:HB2	1.99	0.45
45:w:52:HIS:CE1	45:w:53:LEU:HG	2.51	0.45
1:A:581:U:H2'	1:A:582:U:H6	1.79	0.45
1:A:655:A:H1'	10:K:127:HIS:CD2	2.51	0.45
1:A:1425:G:P	1:A:1426:C:H41	2.40	0.45
4:E:121:LEU:HB3	4:E:148:ILE:HD11	1.98	0.45
20:Y:35:A:N3	24:b:49:THR:OG1	2.40	0.45
20:Y:112:C:H2'	20:Y:113:C:H6	1.82	0.45
20:Y:268:G:N3	20:Y:360:G:C8	2.85	0.45
20:Y:565:A:O2'	20:Y:566:A:O4'	2.31	0.45
20:Y:800:A:C6	20:Y:804:A:C6	3.05	0.45
20:Y:1107:G:C5	45:w:13:ILE:HG21	2.52	0.45
20:Y:1225:G:H2'	20:Y:1226:U:C6	2.52	0.45
20:Y:1787:A:H4'	22:Z:60:ARG:NH1	2.32	0.45
20:Y:2048:G:C6	20:Y:2199:G:N1	2.85	0.45
20:Y:2160:A:H61	20:Y:2187:U:H3	1.65	0.45
20:Y:2536:U:H4'	25:c:75:ARG:NE	2.31	0.45
20:Y:3034:C:H2'	20:Y:3035:C:H6	1.81	0.45
22:Z:67:PHE:CE1	22:Z:106:ILE:HD11	2.48	0.45
23:a:172:ASN:HD22	23:a:172:ASN:C	2.24	0.45
24:b:64:LYS:HZ2	24:b:77:GLY:HA2	1.81	0.45
40:r:86:HIS:HE1	40:r:88:ILE:HB	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:s:12:ASN:HA	41:s:14:ARG:NH1	2.30	0.45
41:s:43:THR:HG22	41:s:53:ARG:NH2	2.31	0.45
1:A:233:C:H2'	1:A:234:C:C6	2.52	0.45
1:A:570:U:H2'	1:A:571:U:H6	1.82	0.45
1:A:743:G:H2'	1:A:744:C:C6	2.52	0.45
9:J:49:TYR:CE2	9:J:67:MET:HG2	2.51	0.45
10:K:37:ASN:HA	10:K:67:SER:HB3	1.99	0.45
12:M:20:THR:HG22	12:M:26:GLY:C	2.42	0.45
12:M:94:ARG:O	12:M:94:ARG:HG2	2.17	0.45
17:R:18:ARG:NE	17:R:54:THR:O	2.50	0.45
20:Y:981:U:HO2'	20:Y:982:A:P	2.38	0.45
20:Y:1052:U:H2'	20:Y:1053:G:C8	2.51	0.45
20:Y:1098:A:N1	20:Y:1254:G:H4'	2.32	0.45
20:Y:1331:C:P	35:m:15:ARG:HH12	2.40	0.45
20:Y:1872:A:H2'	20:Y:1873:A:H8	1.81	0.45
20:Y:1897:A:H2'	20:Y:1898:U:C6	2.51	0.45
20:Y:2515:U:H2'	20:Y:2516:U:C6	2.51	0.45
20:Y:2579:C:O3'	41:s:24:LYS:NZ	2.47	0.45
40:r:64:ASN:HD22	40:r:108:VAL:HG13	1.81	0.45
44:v:116:SER:O	44:v:120:VAL:HG23	2.17	0.45
1:A:85:C:H4'	1:A:86:G:C8	2.52	0.44
1:A:236:G:H5''	16:Q:57:LYS:NZ	2.32	0.44
1:A:715:G:H5'	17:R:69:LYS:HZ3	1.83	0.44
1:A:794:A:O2'	1:A:1494:C:O2'	2.26	0.44
1:A:923:G:H2'	1:A:924:G:O4'	2.17	0.44
1:A:960:A:N6	1:A:1298:G:H1'	2.32	0.44
1:A:1160:A:H4'	8:I:125:THR:HG23	1.99	0.44
1:A:1219:A:H2	1:A:1222:G:N3	2.15	0.44
11:L:24:LEU:HB3	11:L:27:SER:O	2.17	0.44
13:N:7:VAL:HA	13:N:23:ARG:HD3	1.98	0.44
17:R:58:VAL:HG23	17:R:59:GLN:H	1.82	0.44
20:Y:37:U:H2'	20:Y:38:G:C8	2.52	0.44
20:Y:80:G:O2'	20:Y:81:A:O4'	2.30	0.44
20:Y:306:U:H2'	20:Y:307:G:H8	1.81	0.44
20:Y:429:A:H2'	20:Y:430:A:H8	1.81	0.44
20:Y:465:A:H2'	20:Y:466:G:C8	2.52	0.44
20:Y:935:A:H2'	20:Y:936:A:H8	1.81	0.44
20:Y:1468:A:H2'	20:Y:1469:A:H8	1.81	0.44
20:Y:1545:C:N4	20:Y:1623:U:C5	2.85	0.44
20:Y:1643:G:H2'	20:Y:1644:G:H8	1.82	0.44
20:Y:1809:U:H2'	20:Y:1810:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1883:A:H1'	29:g:1:MET:SD	2.58	0.44
20:Y:2247:A:H8	20:Y:2247:A:OP1	2.00	0.44
20:Y:2410:A:O2'	51:4:2326:A:N7	2.42	0.44
20:Y:2419:C:H2'	20:Y:2420:U:C6	2.52	0.44
20:Y:2685:C:H2'	20:Y:2686:U:H6	1.82	0.44
20:Y:2755:A:N6	20:Y:2886:A:H61	2.15	0.44
20:Y:3030:A:H2'	20:Y:3031:A:H8	1.82	0.44
22:Z:182:ILE:HG23	22:Z:269:VAL:HB	1.98	0.44
24:b:3:LEU:HD22	24:b:20:LEU:HD22	1.99	0.44
35:m:77:ASN:OD1	35:m:78:ARG:N	2.49	0.44
49:1:39:LYS:HD2	49:1:43:ARG:HH11	1.81	0.44
1:A:119:C:H42	1:A:238:G:H1	1.64	0.44
1:A:208:G:H5'	18:T:56:ARG:NH1	2.32	0.44
1:A:1011:U:O2	1:A:1012:U:N3	2.50	0.44
1:A:1128:C:H2'	1:A:1129:U:C6	2.52	0.44
14:O:64:ARG:HH11	14:O:64:ARG:HA	1.83	0.44
20:Y:150:C:H2'	20:Y:151:A:C8	2.51	0.44
20:Y:657:C:H2'	20:Y:658:U:H6	1.81	0.44
20:Y:692:C:H2'	20:Y:693:G:H8	1.82	0.44
20:Y:1415:A:H4'	20:Y:1416:A:H5'	1.98	0.44
20:Y:1441:C:H41	20:Y:1865:A:HO2'	1.62	0.44
20:Y:1605:G:H2'	20:Y:1606:G:C8	2.51	0.44
20:Y:1650:G:H2'	20:Y:1651:C:C6	2.53	0.44
20:Y:1733:C:H2'	20:Y:1734:C:C6	2.52	0.44
20:Y:2086:U:C2	20:Y:2087:C:C5	3.04	0.44
20:Y:2528:G:C6	25:c:160:ASP:HA	2.52	0.44
20:Y:2641:U:OP1	30:h:65:LYS:NZ	2.35	0.44
20:Y:2843:C:H2'	20:Y:2844:C:C6	2.52	0.44
20:Y:3030:A:H2'	20:Y:3031:A:C8	2.52	0.44
20:Y:3107:G:C2	20:Y:3108:G:C4	3.05	0.44
21:U:17:G:N2	21:U:70:G:H1'	2.32	0.44
21:U:40:A:C2	21:U:45:G:C2	3.05	0.44
27:e:101:LYS:HE2	27:e:142:GLU:HB3	1.99	0.44
30:h:35:ARG:HD3	30:h:42:ALA:HA	1.99	0.44
38:p:12:LEU:O	43:u:37:ALA:HB1	2.17	0.44
43:u:59:THR:HA	43:u:62:ARG:CZ	2.47	0.44
1:A:211:A:O2'	1:A:220:G:N2	2.50	0.44
1:A:223:G:O2'	1:A:224:U:O4'	2.32	0.44
1:A:496:U:H3'	1:A:497:G:N2	2.32	0.44
1:A:584:G:H2'	1:A:615:G:H1	1.83	0.44
1:A:787:A:H2'	1:A:788:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:944:C:H2'	1:A:945:G:C8	2.52	0.44
1:A:1057:G:N2	1:A:1059:G:H3'	2.32	0.44
1:A:1213:U:H5''	8:I:146:GLN:HB3	1.99	0.44
1:A:1408:A:H2'	1:A:1409:A:C8	2.52	0.44
3:D:126:ASP:O	3:D:127:ILE:HD13	2.17	0.44
20:Y:28:C:H5''	20:Y:1354:G:OP1	2.18	0.44
20:Y:267:G:H2'	20:Y:360:G:O6	2.17	0.44
20:Y:311:G:H2'	20:Y:312:G:C8	2.51	0.44
20:Y:351:G:C8	20:Y:444:U:C4	3.06	0.44
20:Y:1241:C:H2'	20:Y:1242:C:C6	2.52	0.44
20:Y:1621:C:O2'	20:Y:1622:G:O4'	2.35	0.44
20:Y:1927:C:H2'	20:Y:1928:C:C6	2.53	0.44
20:Y:2667:C:H2'	20:Y:2668:G:C8	2.52	0.44
20:Y:3008:C:HO2'	20:Y:3009:U:P	2.41	0.44
25:c:86:LEU:HA	25:c:90:MET:HE1	2.00	0.44
25:c:174:ARG:HH21	25:c:184:PHE:HE1	1.65	0.44
28:f:125:TYR:OH	28:f:132:HIS:NE2	2.45	0.44
32:j:20:LEU:O	32:j:24:LEU:HD23	2.17	0.44
44:v:66:ILE:HG22	44:v:109:TYR:CZ	2.52	0.44
1:A:518:U:H2'	1:A:519:A:C8	2.53	0.44
1:A:559:U:H2'	1:A:560:C:H6	1.81	0.44
1:A:724:C:H2'	1:A:725:A:C8	2.52	0.44
1:A:931:A:O4'	1:A:1347:C:N4	2.50	0.44
1:A:931:A:O5'	12:M:101:GLN:NE2	2.47	0.44
1:A:966:C:H2'	1:A:967:C:C6	2.53	0.44
1:A:1235:G:P	9:J:47:ASN:HD21	2.40	0.44
3:D:162:ILE:HD12	3:D:163:PRO:HD2	1.98	0.44
4:E:126:PRO:HA	4:E:147:ASP:OD2	2.18	0.44
8:I:71:PRO:HA	8:I:74:THR:HG22	2.00	0.44
10:K:33:LYS:HE3	10:K:96:LYS:NZ	2.31	0.44
20:Y:396:C:H2'	20:Y:397:C:C6	2.52	0.44
20:Y:582:G:OP1	37:o:13:LYS:NZ	2.50	0.44
20:Y:656:C:C2	20:Y:657:C:C5	3.06	0.44
20:Y:723:C:H2'	20:Y:724:G:C8	2.51	0.44
20:Y:1063:G:H2'	20:Y:1064:A:C8	2.52	0.44
20:Y:2262:C:H2'	20:Y:2263:G:C8	2.52	0.44
20:Y:2294:A:H2'	20:Y:2295:C:H6	1.82	0.44
20:Y:2745:C:H2'	20:Y:2746:U:O4'	2.17	0.44
20:Y:2927:C:C4	20:Y:2928:C:C4	3.06	0.44
22:Z:94:LEU:O	22:Z:95:LEU:HD23	2.17	0.44
22:Z:259:LYS:HB3	22:Z:262:LYS:NZ	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:g:5:GLU:OE2	29:g:20:LEU:HD21	2.17	0.44
34:l:30:LYS:HE3	34:l:81:ASP:OD1	2.17	0.44
35:m:26:GLY:O	35:m:30:ARG:NE	2.51	0.44
38:p:58:ASN:HB2	38:p:83:ILE:HB	2.00	0.44
41:s:43:THR:HG22	41:s:53:ARG:HH22	1.82	0.44
41:s:51:VAL:HG21	41:s:78:VAL:HG23	1.98	0.44
1:A:401:C:O2'	1:A:601:A:O2'	2.28	0.44
1:A:571:U:C2	1:A:629:G:N2	2.85	0.44
20:Y:633:A:H2'	20:Y:634:C:O4'	2.18	0.44
20:Y:682:A:H5'	24:b:96:ARG:HH12	1.81	0.44
20:Y:693:G:N3	24:b:105:LYS:NZ	2.49	0.44
20:Y:969:C:H2'	20:Y:970:G:H8	1.81	0.44
20:Y:1065:C:H2'	20:Y:1066:G:C8	2.53	0.44
20:Y:1321:C:H2'	20:Y:1322:C:H6	1.81	0.44
20:Y:2026:A:H2'	20:Y:2027:A:C8	2.53	0.44
21:U:71:C:H2'	21:U:72:C:C6	2.52	0.44
25:c:52:ARG:HH12	25:c:85:LYS:HB2	1.83	0.44
31:i:72:ARG:HH12	31:i:96:ASN:HB3	1.81	0.44
31:i:134:ARG:HD2	31:i:134:ARG:HA	1.79	0.44
1:A:107:G:C2	1:A:108:G:C8	3.06	0.44
1:A:536:C:H2'	1:A:537:G:H8	1.81	0.44
1:A:692:A:H2'	1:A:693:G:C8	2.52	0.44
20:Y:564:G:N1	20:Y:567:A:OP2	2.51	0.44
20:Y:723:C:N4	20:Y:724:G:O6	2.50	0.44
20:Y:829:U:O2'	20:Y:831:A:N7	2.49	0.44
20:Y:935:A:N3	20:Y:1060:U:O2'	2.50	0.44
20:Y:1180:G:H2'	20:Y:1181:G:C8	2.52	0.44
20:Y:1758:G:H2'	20:Y:1759:A:C8	2.53	0.44
20:Y:2251:G:H2'	20:Y:2252:U:H6	1.83	0.44
23:a:144:VAL:O	23:a:144:VAL:HG12	2.17	0.44
25:c:166:THR:HG22	25:c:166:THR:O	2.17	0.44
29:g:65:THR:O	29:g:79:PHE:HB2	2.18	0.44
32:j:99:LYS:HE2	46:x:42:ARG:HD3	2.00	0.44
1:A:264:U:O2	16:Q:81:PRO:HG2	2.18	0.44
1:A:323:U:O2'	18:T:17:ARG:NH1	2.50	0.44
1:A:572:G:N2	1:A:628:A:H2'	2.32	0.44
1:A:1274:C:H2'	1:A:1275:G:C8	2.53	0.44
2:C:21:ARG:NH1	9:J:13:TYR:HB2	2.32	0.44
2:C:27:GLN:HG3	2:C:27:GLN:O	2.18	0.44
8:I:30:GLY:HA3	8:I:98:ALA:O	2.18	0.44
14:O:4:THR:H	14:O:7:GLN:NE2	2.15	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:76:C:O2'	20:Y:428:A:N3	2.42	0.44
20:Y:216:A:H2'	20:Y:217:G:H8	1.82	0.44
20:Y:239:U:H3'	20:Y:240:G:C8	2.53	0.44
20:Y:448:U:H2'	20:Y:449:G:C4	2.53	0.44
20:Y:875:G:H2'	20:Y:876:A:O4'	2.17	0.44
20:Y:1205:G:H5''	20:Y:1206:A:OP2	2.17	0.44
20:Y:1476:G:H2'	20:Y:1477:C:C6	2.52	0.44
20:Y:1478:C:O2'	20:Y:2026:A:H1'	2.18	0.44
20:Y:1503:G:H2'	20:Y:1504:G:C8	2.53	0.44
20:Y:1669:G:H2'	20:Y:1670:G:H8	1.83	0.44
20:Y:2022:U:OP2	22:Z:252:LYS:NZ	2.47	0.44
20:Y:2074:G:H2'	20:Y:2109:A:H61	1.82	0.44
20:Y:2075:G:H21	20:Y:2107:G:H2'	1.83	0.44
20:Y:2528:G:H2'	25:c:139:LEU:CB	2.45	0.44
20:Y:2539:G:H3'	20:Y:2540:G:C8	2.52	0.44
20:Y:3097:G:H2'	20:Y:3098:G:H8	1.82	0.44
23:a:193:LEU:HD21	34:l:4:LEU:HD11	1.98	0.44
27:e:131:ALA:HA	27:e:141:VAL:HG21	2.00	0.44
1:A:137:C:O2	16:Q:6:GLY:HA3	2.18	0.44
1:A:404:G:H4'	1:A:439:U:C5	2.53	0.44
1:A:668:G:C6	1:A:680:G:C6	3.06	0.44
1:A:1283:U:H2'	1:A:1285:C:H5	1.83	0.44
3:D:38:ARG:CZ	3:D:38:ARG:HA	2.48	0.44
3:D:181:PRO:HB2	3:D:186:ILE:CG1	2.47	0.44
7:H:7:ILE:HD11	7:H:32:LEU:HB3	1.99	0.44
12:M:88:GLN:OE1	12:M:88:GLN:N	2.50	0.44
20:Y:272:A:N7	20:Y:273:A:C2	2.85	0.44
20:Y:382:A:N7	20:Y:416:C:C4	2.86	0.44
20:Y:820:A:O3'	22:Z:7:LYS:NZ	2.49	0.44
20:Y:953:G:C2	20:Y:954:U:C2	3.06	0.44
20:Y:2288:C:H2'	20:Y:2289:C:H6	1.82	0.44
20:Y:2525:C:H2'	20:Y:2526:U:C6	2.53	0.44
20:Y:2539:G:H1'	25:c:134:ASN:OD1	2.18	0.44
20:Y:2540:G:H21	20:Y:2541:U:H5	1.66	0.44
21:U:63:U:H2'	21:U:64:G:C8	2.50	0.44
25:c:41:VAL:O	25:c:98:LEU:N	2.34	0.44
29:g:79:PHE:HE1	29:g:101:PRO:HG2	1.83	0.44
36:n:20:ASP:OD1	36:n:21:VAL:N	2.51	0.44
43:u:21:LYS:HA	43:u:24:GLU:CG	2.48	0.44
1:A:31:G:H2'	1:A:32:G:H8	1.83	0.44
1:A:119:C:OP1	1:A:311:C:O2'	2.27	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:452:A:N6	15:P:92:THR:HB	2.32	0.44
1:A:832:U:H2'	1:A:833:C:C6	2.53	0.44
4:E:175:PRO:HG2	4:E:176:GLU:OE2	2.18	0.44
6:G:142:HIS:O	6:G:146:GLU:OE1	2.36	0.44
9:J:10:LEU:HD23	9:J:10:LEU:HA	1.74	0.44
20:Y:378:G:H5''	39:q:85:TYR:HD2	1.83	0.44
20:Y:677:G:H21	20:Y:1369:A:H62	1.66	0.44
20:Y:738:A:N7	20:Y:740:A:N6	2.66	0.44
20:Y:1963:G:H2'	20:Y:1964:U:H6	1.82	0.44
20:Y:2234:G:H2'	20:Y:2235:C:H6	1.83	0.44
20:Y:2718:G:H2'	20:Y:2719:G:H8	1.83	0.44
24:b:184:ASN:O	24:b:188:VAL:HG23	2.18	0.44
28:f:73:PHE:HB3	28:f:75:TYR:CE2	2.53	0.44
29:g:7:ARG:HH22	29:g:18:GLU:HG3	1.82	0.44
31:i:136:GLU:OE1	40:r:83:LEU:HD11	2.18	0.44
1:A:26:G:H2'	1:A:27:C:C6	2.53	0.43
1:A:28:U:H2'	1:A:29:C:C6	2.53	0.43
1:A:431:A:H2'	1:A:432:A:C8	2.53	0.43
1:A:559:U:H2'	1:A:560:C:C6	2.53	0.43
1:A:690:G:OP1	5:F:54:LYS:NZ	2.42	0.43
2:C:5:ILE:HD11	2:C:10:PHE:HB2	2.00	0.43
17:R:72:ARG:HH21	17:R:79:PHE:HA	1.82	0.43
20:Y:468:G:H1	20:Y:482:U:H3	1.65	0.43
20:Y:832:G:H3'	20:Y:833:A:H8	1.82	0.43
20:Y:1381:G:O2'	20:Y:2236:G:O6	2.32	0.43
20:Y:1393:C:H2'	20:Y:1394:A:C8	2.53	0.43
20:Y:1653:G:H2'	20:Y:1654:G:C8	2.53	0.43
20:Y:2234:G:H2'	20:Y:2235:C:C6	2.53	0.43
20:Y:2636:A:H3'	20:Y:2637:G:H8	1.83	0.43
20:Y:3075:C:H2'	20:Y:3076:U:H6	1.83	0.43
22:Z:111:LEU:O	22:Z:112:LYS:HE2	2.18	0.43
23:a:26:VAL:HG21	23:a:193:LEU:HB3	2.00	0.43
25:c:44:ASN:H	25:c:160:ASP:CB	2.31	0.43
31:i:58:ILE:HD11	31:i:108:TYR:CG	2.53	0.43
37:o:72:ASP:OD1	37:o:75:THR:OG1	2.33	0.43
44:v:87:VAL:HG22	44:v:91:LYS:HG3	2.00	0.43
45:w:16:ARG:HE	45:w:18:LYS:HB3	1.83	0.43
1:A:262:G:H2'	1:A:263:A:C8	2.53	0.43
1:A:936:G:O6	12:M:104:LYS:NZ	2.51	0.43
1:A:1152:C:H2'	1:A:1153:U:H6	1.84	0.43
1:A:1309:C:H2'	1:A:1310:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1423:U:OP1	18:T:33:ARG:NH2	2.44	0.43
1:A:1510:G:H2'	1:A:1511:C:C6	2.53	0.43
2:C:41:LEU:HD12	2:C:42:LEU:HD12	1.99	0.43
19:V:134:ILE:O	19:V:137:LEU:HG	2.19	0.43
20:Y:465:A:H2'	20:Y:466:G:H8	1.83	0.43
20:Y:492:C:H1'	20:Y:494:G:N7	2.34	0.43
20:Y:495:C:H2'	20:Y:496:C:C6	2.53	0.43
20:Y:1065:C:H2'	20:Y:1066:G:H8	1.82	0.43
20:Y:1073:G:N2	20:Y:1076:A:H8	2.16	0.43
20:Y:1669:G:H2'	20:Y:1670:G:C8	2.52	0.43
20:Y:1787:A:H2'	22:Z:86:PRO:CG	2.48	0.43
20:Y:1907:A:H2'	20:Y:1908:A:C8	2.52	0.43
20:Y:2519:C:O2'	20:Y:2520:U:H5'	2.17	0.43
20:Y:2527:G:H2'	25:c:137:PHE:HA	2.01	0.43
20:Y:2698:C:O2	20:Y:2698:C:H2'	2.17	0.43
20:Y:2732:G:O2'	20:Y:2778:U:O2'	2.23	0.43
21:U:61:C:H2'	21:U:62:C:H6	1.83	0.43
25:c:150:VAL:O	25:c:153:ILE:HG22	2.18	0.43
26:d:78:THR:HA	26:d:81:THR:HG22	1.99	0.43
32:j:73:LYS:HA	32:j:76:VAL:HG22	2.00	0.43
51:4:2389:U:O4	51:4:2394:A:H5'	2.18	0.43
1:A:275:G:H2'	1:A:276:G:C8	2.53	0.43
1:A:959:A:C8	1:A:1205:U:C4	3.06	0.43
1:A:1140:U:O4'	1:A:1163:G:N2	2.51	0.43
1:A:1353:G:H5'	8:I:34:GLU:OE1	2.18	0.43
1:A:1400:A:N6	1:A:1466:G:C5	2.86	0.43
1:A:1450:C:H2'	1:A:1451:G:O4'	2.18	0.43
2:C:33:LYS:HA	2:C:36:VAL:HG22	2.00	0.43
14:O:81:LEU:HD12	14:O:85:LEU:HD23	2.00	0.43
20:Y:37:U:H2'	20:Y:38:G:H8	1.83	0.43
20:Y:759:G:C6	41:s:64:PRO:HB3	2.53	0.43
20:Y:931:C:H2'	20:Y:932:C:C6	2.53	0.43
20:Y:1087:G:H2'	20:Y:1088:U:C6	2.53	0.43
20:Y:1741:G:H2'	20:Y:1742:U:C6	2.53	0.43
20:Y:1871:G:OP1	20:Y:3043:G:N1	2.35	0.43
20:Y:2037:U:O2	22:Z:202:SER:HB3	2.17	0.43
20:Y:2134:G:H2'	20:Y:2135:U:C6	2.53	0.43
20:Y:2823:G:H3'	22:Z:237:GLU:OE2	2.18	0.43
21:U:32:C:H2'	21:U:33:C:H6	1.83	0.43
25:c:44:ASN:HB2	25:c:94:ALA:O	2.17	0.43
26:d:166:GLU:HG2	26:d:167:GLY:H	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:f:117:GLN:O	28:f:120:LYS:HB2	2.18	0.43
31:i:110:ASP:OD1	31:i:113:THR:HG22	2.18	0.43
32:j:46:PRO:O	32:j:50:LYS:HG2	2.19	0.43
32:j:103:ARG:HD3	32:j:110:MET:HE2	1.99	0.43
51:4:2396:A:C2	51:4:2397:C:C5	3.06	0.43
1:A:254:G:OP1	16:Q:83:SER:OG	2.36	0.43
1:A:398:C:H2'	1:A:399:G:C8	2.54	0.43
1:A:627:C:H2'	1:A:628:A:C8	2.53	0.43
1:A:658:U:H2'	1:A:659:C:C6	2.54	0.43
1:A:907:G:H21	1:A:1486:A:H1'	1.83	0.43
1:A:1248:U:N3	1:A:1309:C:H4'	2.34	0.43
1:A:1339:A:H2'	1:A:1340:U:C6	2.53	0.43
1:A:1504:G:H2'	1:A:1505:G:C8	2.53	0.43
9:J:53:ARG:HB2	13:N:45:ARG:NH1	2.34	0.43
11:L:4:ILE:HG23	16:Q:51:LYS:HD2	2.01	0.43
20:Y:271:A:H3'	20:Y:272:A:C2	2.54	0.43
20:Y:271:A:O5'	20:Y:271:A:H8	2.00	0.43
20:Y:355:A:C6	20:Y:441:G:C2	2.97	0.43
20:Y:639:C:O2'	20:Y:640:G:O5'	2.36	0.43
20:Y:1318:C:H2'	20:Y:1319:A:H8	1.79	0.43
20:Y:1978:C:H2'	20:Y:1979:A:O4'	2.18	0.43
20:Y:1981:U:H2'	20:Y:1982:G:C8	2.53	0.43
20:Y:3037:C:H5''	46:x:42:ARG:HD2	1.99	0.43
22:Z:52:ARG:HH22	22:Z:249:PRO:CG	2.30	0.43
22:Z:183:ARG:HE	22:Z:183:ARG:HB3	1.73	0.43
25:c:107:LEU:HD11	25:c:182:PHE:HZ	1.82	0.43
25:c:110:LEU:HD22	25:c:161:ILE:HB	2.00	0.43
30:h:37:THR:CG2	30:h:38:LYS:H	2.24	0.43
32:j:65:GLU:O	32:j:68:LYS:HG2	2.19	0.43
43:u:58:TYR:CD2	43:u:62:ARG:NH1	2.87	0.43
51:4:2364:C:H2'	51:4:2365:A:C8	2.53	0.43
1:A:184:U:H2'	1:A:185:G:H8	1.83	0.43
1:A:522:G:H2'	1:A:523:U:C6	2.54	0.43
1:A:553:A:H3'	1:A:553:A:OP2	2.19	0.43
1:A:714:G:O2'	17:R:69:LYS:HE3	2.18	0.43
1:A:753:G:O6	1:A:787:A:N6	2.51	0.43
6:G:107:PHE:HZ	6:G:137:ARG:HH11	1.66	0.43
18:T:43:ASP:OD1	18:T:47:ALA:HB2	2.19	0.43
20:Y:781:C:H2'	20:Y:782:U:C6	2.53	0.43
20:Y:858:A:H2'	20:Y:859:G:H8	1.82	0.43
20:Y:1098:A:H8	20:Y:1098:A:OP1	2.02	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1128:A:OP1	35:m:66:ASN:ND2	2.46	0.43
20:Y:1142:G:HO2'	20:Y:1263:G:HO2'	1.65	0.43
20:Y:1245:U:O4	20:Y:2712:U:H1'	2.18	0.43
20:Y:1500:A:H2'	20:Y:1501:C:C6	2.54	0.43
20:Y:2173:G:C4	20:Y:2174:G:N7	2.87	0.43
20:Y:2408:G:N2	20:Y:2409:U:C5	2.86	0.43
20:Y:2528:G:C2	25:c:161:ILE:O	2.71	0.43
20:Y:2609:A:H2'	20:Y:2610:C:C6	2.53	0.43
45:w:44:ARG:HD3	45:w:44:ARG:HA	1.76	0.43
1:A:252:U:H2'	1:A:253:U:C6	2.54	0.43
1:A:376:G:OP1	15:P:70:VAL:HG23	2.19	0.43
1:A:535:C:H2'	1:A:536:C:C6	2.54	0.43
1:A:578:U:H4'	7:H:88:TYR:CE1	2.54	0.43
1:A:600:U:O2	3:D:127:ILE:HG13	2.17	0.43
1:A:605:G:H5''	15:P:41:HIS:HB3	2.00	0.43
1:A:1359:U:H2'	1:A:1360:A:C8	2.53	0.43
1:A:1394:U:H2'	1:A:1395:C:C6	2.54	0.43
4:E:190:ALA:HB1	4:E:194:MET:HE3	2.01	0.43
8:I:54:THR:HG23	8:I:56:GLU:H	1.84	0.43
15:P:20:ILE:N	15:P:38:GLY:O	2.51	0.43
16:Q:76:LEU:HB3	16:Q:88:TRP:CE3	2.54	0.43
20:Y:113:C:H2'	20:Y:114:G:O4'	2.19	0.43
20:Y:679:G:O6	30:h:35:ARG:HD2	2.18	0.43
20:Y:725:A:N1	20:Y:2640:G:H4'	2.34	0.43
20:Y:1071:G:H5''	31:i:13:HIS:HB3	2.01	0.43
20:Y:1374:G:H2'	20:Y:1375:G:C8	2.53	0.43
20:Y:1425:G:O6	20:Y:1823:C:N4	2.51	0.43
20:Y:1927:C:H2'	20:Y:1928:C:H6	1.84	0.43
20:Y:2119:C:H2'	20:Y:2120:A:H8	1.82	0.43
20:Y:2212:A:H2'	20:Y:2213:A:H8	1.84	0.43
20:Y:2556:C:OP1	41:s:75:ARG:NH1	2.52	0.43
20:Y:2679:G:H2'	20:Y:2680:C:H6	1.83	0.43
20:Y:2922:U:H2'	20:Y:2923:C:C6	2.54	0.43
20:Y:2972:A:N3	26:d:68:LEU:HD21	2.33	0.43
1:A:161:U:H2'	1:A:162:G:C8	2.53	0.43
1:A:186:C:H42	1:A:203:U:H3	1.67	0.43
1:A:188:G:H2'	1:A:189:G:H8	1.83	0.43
1:A:249:U:H3	1:A:275:G:H1	1.67	0.43
1:A:270:A:H2'	1:A:271:C:C6	2.53	0.43
1:A:539:A:H4'	1:A:540:A:H3'	2.01	0.43
1:A:625:G:N7	1:A:626:G:N7	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:717:C:H2'	1:A:718:U:C6	2.53	0.43
1:A:793:U:H5''	1:A:796:A:H61	1.83	0.43
1:A:943:U:H2'	1:A:944:C:C6	2.54	0.43
1:A:1330:U:H4'	8:I:142:ARG:NH1	2.34	0.43
6:G:116:MET:HB3	6:G:119:ARG:HH21	1.84	0.43
8:I:91:GLY:O	8:I:95:GLN:HG2	2.17	0.43
9:J:66:GLU:OE1	9:J:68:ARG:HG3	2.18	0.43
14:O:6:GLU:HA	14:O:9:LYS:HZ3	1.84	0.43
19:V:27:MET:HG3	19:V:189:THR:HA	2.01	0.43
20:Y:21:G:C2	20:Y:22:U:C5	3.07	0.43
20:Y:512:G:H2'	20:Y:513:C:C6	2.54	0.43
20:Y:883:G:H2'	20:Y:884:U:O4'	2.19	0.43
20:Y:886:G:H2'	20:Y:887:G:C8	2.50	0.43
20:Y:1318:C:H1'	30:h:6:LEU:HD22	2.01	0.43
20:Y:1634:C:O2'	20:Y:1635:A:OP1	2.30	0.43
20:Y:1937:U:H2'	20:Y:1938:G:O4'	2.18	0.43
20:Y:2087:C:N4	20:Y:2095:G:C6	2.86	0.43
20:Y:2130:G:H2'	20:Y:2131:G:C8	2.54	0.43
20:Y:2201:A:C4	20:Y:2202:A:C8	3.07	0.43
20:Y:2270:G:H2'	20:Y:2271:C:C6	2.53	0.43
20:Y:2271:C:H2'	20:Y:2272:G:C8	2.48	0.43
20:Y:2708:G:OP1	31:i:45:ARG:HD2	2.18	0.43
20:Y:2849:G:H2'	20:Y:2850:C:C6	2.54	0.43
20:Y:3105:C:H1'	46:x:48:ARG:HH12	1.82	0.43
28:f:103:ASN:HA	28:f:106:ILE:HG22	2.00	0.43
29:g:122:LEU:HB3	34:l:69:VAL:HG11	2.01	0.43
30:h:68:LYS:HA	30:h:68:LYS:HD3	1.86	0.43
38:p:57:VAL:HG13	38:p:84:VAL:HG12	2.00	0.43
51:4:2351:A:H1'	51:4:2396:A:H1'	2.01	0.43
1:A:25:G:H2'	1:A:26:G:C8	2.54	0.43
1:A:338:A:H2'	1:A:339:C:C6	2.53	0.43
1:A:380:G:N2	1:A:382:A:H3'	2.34	0.43
1:A:577:G:H21	1:A:624:G:C2'	2.31	0.43
1:A:857:U:O2	7:H:16:ASN:ND2	2.37	0.43
1:A:961:C:O2	1:A:961:C:H2'	2.19	0.43
1:A:1409:A:N6	1:A:1458:G:H1	2.15	0.43
1:A:1465:C:H2'	1:A:1466:G:C8	2.53	0.43
3:D:82:GLY:HA3	3:D:192:GLU:HG3	2.01	0.43
11:L:34:CYS:HA	11:L:55:VAL:HA	1.99	0.43
12:M:16:GLU:OE2	12:M:31:ASN:ND2	2.52	0.43
12:M:81:LYS:NZ	12:M:88:GLN:HB2	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:79:THR:OG1	16:Q:80:ARG:N	2.51	0.43
20:Y:120:G:H2'	20:Y:121:G:C8	2.54	0.43
20:Y:222:A:O4'	20:Y:510:A:H5'	2.19	0.43
20:Y:557:G:O6	48:z:42:ARG:NH2	2.52	0.43
20:Y:1002:C:H2'	20:Y:1003:A:H5''	2.00	0.43
20:Y:1055:G:H2'	20:Y:1056:G:H8	1.83	0.43
20:Y:2005:C:H2'	20:Y:2006:A:O4'	2.19	0.43
20:Y:2406:U:H5	20:Y:2411:U:H1'	1.84	0.43
20:Y:2515:U:O2	20:Y:2598:C:O2'	2.29	0.43
20:Y:2594:G:H2'	20:Y:2595:G:H8	1.83	0.43
20:Y:2952:U:C2	20:Y:2953:U:C5	3.06	0.43
22:Z:133:LEU:HA	22:Z:136:ILE:HG22	2.00	0.43
34:l:61:ARG:HG3	34:l:70:GLU:HG2	2.00	0.43
42:t:37:ARG:O	42:t:46:LYS:HD3	2.18	0.43
44:v:6:LYS:HB3	44:v:56:LEU:HD11	2.01	0.43
45:w:26:LEU:HD22	45:w:46:LEU:HD13	2.00	0.43
48:z:11:ASN:ND2	48:z:14:ARG:HH21	2.15	0.43
1:A:599:U:H1'	3:D:124:LYS:O	2.18	0.43
1:A:1115:G:H1'	1:A:1121:G:N2	2.34	0.43
15:P:7:LEU:HA	15:P:19:ARG:O	2.19	0.43
16:Q:79:THR:HB	16:Q:89:ARG:NE	2.33	0.43
19:V:18:HIS:H	19:V:189:THR:HG21	1.84	0.43
19:V:177:ARG:NH2	19:V:197:ASP:OD1	2.52	0.43
20:Y:22:U:C4	20:Y:23:G:N1	2.87	0.43
20:Y:750:C:H2'	20:Y:751:A:C8	2.53	0.43
20:Y:821:A:H2'	20:Y:822:G:O4'	2.19	0.43
20:Y:1132:U:O2'	35:m:122:ASN:ND2	2.52	0.43
20:Y:1636:A:C2	20:Y:1805:G:H1'	2.51	0.43
20:Y:1707:G:H2'	20:Y:1708:A:C8	2.53	0.43
20:Y:1735:U:H2'	20:Y:1736:G:O4'	2.19	0.43
20:Y:1875:U:H2'	20:Y:1876:A:C8	2.52	0.43
20:Y:2039:C:H2'	20:Y:2040:G:C8	2.54	0.43
20:Y:2623:A:H2'	20:Y:2624:C:C6	2.54	0.43
20:Y:2791:G:H2'	20:Y:2792:C:C6	2.53	0.43
20:Y:2844:C:O2'	23:a:167:SER:O	2.22	0.43
20:Y:3031:A:H2'	20:Y:3032:G:O4'	2.19	0.43
26:d:100:LYS:NZ	26:d:105:GLU:HB2	2.34	0.43
35:m:13:LYS:HA	35:m:16:THR:HG22	1.99	0.43
38:p:17:SER:N	38:p:20:SER:OG	2.40	0.43
42:t:14:PHE:HE1	42:t:28:ARG:HE	1.66	0.43
1:A:22:C:O2'	1:A:1059:G:N2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:364:A:O2'	1:A:365:U:O4'	2.29	0.43
1:A:534:U:H2'	1:A:535:C:H6	1.84	0.43
1:A:568:G:C2	1:A:632:U:C2	3.07	0.43
1:A:608:G:H3'	1:A:609:G:C8	2.53	0.43
1:A:695:A:H2	10:K:129:GLY:HA2	1.84	0.43
9:J:80:THR:HB	9:J:83:THR:OG1	2.19	0.43
10:K:73:GLN:NE2	10:K:104:THR:HG22	2.34	0.43
20:Y:273:A:C6	20:Y:313:G:N3	2.87	0.43
20:Y:328:C:N4	20:Y:450:G:C6	2.86	0.43
20:Y:334:G:H2'	20:Y:335:G:C8	2.54	0.43
20:Y:485:U:O2'	20:Y:2454:G:N2	2.52	0.43
20:Y:531:A:N6	24:b:42:LEU:HB3	2.33	0.43
20:Y:754:C:H2'	20:Y:755:A:C8	2.53	0.43
20:Y:801:U:H2'	20:Y:903:A:H61	1.83	0.43
20:Y:893:G:C5	20:Y:894:U:C4	3.07	0.43
20:Y:1291:G:H1'	20:Y:1293:G:N2	2.34	0.43
20:Y:1999:U:O2'	20:Y:2000:A:H5'	2.19	0.43
20:Y:2588:C:H5''	41:s:55:GLY:H	1.83	0.43
20:Y:2693:A:N6	20:Y:2705:G:N2	2.37	0.43
20:Y:2904:C:H5'	23:a:199:PRO:HA	2.01	0.43
20:Y:3105:C:O2	46:x:44:LEU:HB3	2.18	0.43
24:b:58:VAL:HG21	24:b:80:ARG:HB3	2.00	0.43
24:b:121:ASN:HB3	24:b:123:ARG:HE	1.84	0.43
29:g:80:ASP:H	34:l:67:VAL:HG13	1.83	0.43
31:i:111:GLU:OE2	31:i:115:ARG:NH2	2.52	0.43
33:k:109:TYR:CZ	33:k:114:ALA:HA	2.54	0.43
37:o:52:GLU:HB2	37:o:53:PRO:HD3	2.00	0.43
1:A:225:G:OP2	16:Q:11:PRO:HB3	2.18	0.42
1:A:410:G:N2	1:A:432:A:N6	2.36	0.42
1:A:957:A:N7	1:A:1339:A:N3	2.67	0.42
2:C:38:ILE:HA	2:C:41:LEU:HG	2.00	0.42
3:D:14:ARG:HA	3:D:32:PRO:HB3	2.01	0.42
3:D:53:LYS:HB2	3:D:198:LEU:HD23	2.00	0.42
3:D:182:GLU:O	3:D:186:ILE:HG13	2.20	0.42
10:K:33:LYS:HE3	10:K:33:LYS:HB2	1.88	0.42
10:K:45:ASP:OD2	10:K:49:ASN:HB3	2.19	0.42
10:K:65:ARG:HA	10:K:65:ARG:HH11	1.84	0.42
20:Y:273:A:N6	20:Y:314:G:C8	2.87	0.42
20:Y:292:G:N3	20:Y:292:G:H2'	2.33	0.42
20:Y:385:G:H2'	20:Y:386:C:C6	2.53	0.42
20:Y:391:G:H1'	20:Y:411:G:C4	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:409:G:H2'	20:Y:410:U:H6	1.82	0.42
20:Y:970:G:O6	20:Y:1038:G:N1	2.51	0.42
20:Y:1137:U:O2'	20:Y:1139:A:N7	2.50	0.42
20:Y:1156:A:H2'	20:Y:1157:G:C8	2.54	0.42
20:Y:1268:C:H2'	20:Y:1269:C:H6	1.83	0.42
20:Y:1651:C:N4	20:Y:1783:G:H1	2.08	0.42
20:Y:2011:U:H2'	20:Y:2012:C:H6	1.84	0.42
20:Y:2265:U:H2'	20:Y:2266:A:H8	1.84	0.42
20:Y:2311:G:H2'	20:Y:2312:U:C6	2.54	0.42
20:Y:2998:C:H2'	20:Y:2999:A:O4'	2.19	0.42
23:a:202:ASN:ND2	23:a:202:ASN:C	2.77	0.42
25:c:111:ILE:HD12	25:c:182:PHE:CE1	2.52	0.42
30:h:22:VAL:HG22	30:h:33:ALA:HA	2.00	0.42
44:v:25:VAL:HB	44:v:77:THR:HG23	2.00	0.42
45:w:8:GLN:HE22	45:w:23:LEU:HD21	1.84	0.42
1:A:21:U:H2'	1:A:22:C:C6	2.54	0.42
1:A:468:U:H2'	1:A:469:G:C8	2.54	0.42
1:A:557:G:N1	1:A:745:G:N3	2.67	0.42
1:A:642:C:O2'	1:A:816:G:H5'	2.19	0.42
1:A:1056:C:H2'	1:A:1057:G:C8	2.55	0.42
1:A:1403:U:H2'	1:A:1404:C:C6	2.54	0.42
3:D:15:LEU:HD23	3:D:15:LEU:HA	1.87	0.42
8:I:135:LYS:HB2	8:I:138:LEU:HD12	2.01	0.42
10:K:95:VAL:HG21	10:K:102:ARG:HG2	2.00	0.42
10:K:122:VAL:HG23	10:K:122:VAL:O	2.19	0.42
17:R:54:THR:HG21	17:R:61:GLN:HE22	1.83	0.42
17:R:71:ALA:HB1	17:R:76:LEU:HB3	2.02	0.42
20:Y:802:C:H2'	20:Y:803:U:O4'	2.19	0.42
20:Y:1740:G:H2'	20:Y:1741:G:H8	1.85	0.42
20:Y:2147:U:H2'	20:Y:2148:C:C6	2.54	0.42
20:Y:2433:U:H4'	20:Y:2434:A:C8	2.54	0.42
20:Y:2528:G:C4	25:c:137:PHE:C	2.97	0.42
20:Y:2879:G:H1'	20:Y:2880:U:H5	1.84	0.42
20:Y:3039:C:H2'	20:Y:3040:G:H8	1.84	0.42
21:U:32:C:H2'	21:U:33:C:C6	2.54	0.42
21:U:50:C:H5''	33:k:78:LYS:NZ	2.34	0.42
23:a:126:THR:HG21	23:a:148:PRO:HG3	2.00	0.42
28:f:36:LEU:O	28:f:51:GLY:HA3	2.19	0.42
31:i:10:ARG:H	31:i:10:ARG:HG2	1.67	0.42
34:l:62:LYS:HG3	34:l:69:VAL:HB	2.01	0.42
36:n:36:SER:C	36:n:37:LEU:HD12	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:252:U:H2'	1:A:253:U:H6	1.85	0.42
1:A:518:U:C2	1:A:519:A:C8	3.07	0.42
1:A:862:C:OP2	11:L:3:THR:OG1	2.37	0.42
1:A:1153:U:H2'	1:A:1154:C:H6	1.83	0.42
1:A:1166:G:H2'	1:A:1167:G:C8	2.54	0.42
1:A:1232:A:H2'	1:A:1233:A:C8	2.54	0.42
3:D:109:ALA:O	3:D:113:VAL:HG23	2.20	0.42
3:D:170:GLY:HA3	3:D:172:ARG:HH22	1.84	0.42
6:G:109:ARG:HA	6:G:109:ARG:HD2	1.92	0.42
9:J:63:GLU:OE1	9:J:63:GLU:N	2.53	0.42
15:P:29:ARG:NH2	15:P:30:ASP:OD2	2.52	0.42
17:R:35:THR:HA	17:R:38:LEU:HD12	2.00	0.42
20:Y:307:G:H2'	20:Y:308:U:C6	2.54	0.42
20:Y:324:C:N3	20:Y:454:U:N3	2.67	0.42
20:Y:392:A:O2'	20:Y:394:G:N7	2.41	0.42
20:Y:533:C:H2'	20:Y:534:G:C8	2.55	0.42
20:Y:663:A:H1'	20:Y:665:G:C8	2.54	0.42
20:Y:1306:G:H2'	20:Y:1307:G:H8	1.84	0.42
20:Y:1653:G:H1	20:Y:1781:C:H42	1.66	0.42
20:Y:2003:A:H1'	20:Y:2162:A:N6	2.34	0.42
20:Y:2021:G:O6	20:Y:2031:G:N2	2.52	0.42
20:Y:2030:C:H2'	20:Y:2031:G:O4'	2.20	0.42
20:Y:2056:G:C6	20:Y:2151:A:N1	2.88	0.42
20:Y:2248:C:H5''	23:a:159:ARG:HH22	1.84	0.42
20:Y:2541:U:H6	33:k:6:VAL:C	2.28	0.42
20:Y:2755:A:H61	20:Y:2886:A:H61	1.68	0.42
20:Y:2910:G:H2'	20:Y:2911:U:C6	2.54	0.42
20:Y:2965:A:H61	20:Y:2987:G:H1'	1.83	0.42
22:Z:250:TRP:N	22:Z:250:TRP:CD1	2.87	0.42
25:c:18:GLU:HG2	25:c:19:ILE:N	2.34	0.42
25:c:160:ASP:OD1	25:c:161:ILE:N	2.53	0.42
26:d:176:LYS:HD2	26:d:176:LYS:HA	1.73	0.42
27:e:98:LYS:HZ2	27:e:140:THR:HG1	1.60	0.42
28:f:92:LEU:HD11	28:f:99:ARG:HB3	2.01	0.42
32:j:75:VAL:HA	32:j:78:THR:HG22	2.00	0.42
33:k:125:LEU:HG	33:k:127:PHE:HD1	1.84	0.42
37:o:18:ARG:NH2	37:o:105:LYS:HD2	2.33	0.42
37:o:32:ARG:HD3	37:o:81:VAL:HG12	2.01	0.42
40:r:8:PRO:HB2	40:r:10:LYS:NZ	2.34	0.42
43:u:7:PRO:HA	43:u:10:LEU:HB2	2.02	0.42
48:z:18:VAL:HA	48:z:23:LEU:HD13	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:4:2382:G:H2'	51:4:2383:U:C6	2.54	0.42
1:A:232:G:H2'	1:A:233:C:C6	2.53	0.42
1:A:452:A:C5	15:P:76:ILE:HG23	2.55	0.42
1:A:711:G:H2'	1:A:712:C:C6	2.55	0.42
1:A:1138:A:N6	1:A:1161:A:N7	2.67	0.42
1:A:1202:G:H5''	1:A:1303:U:H5	1.84	0.42
9:J:53:ARG:NH1	9:J:61:SER:OG	2.52	0.42
9:J:89:ARG:HA	9:J:89:ARG:CZ	2.49	0.42
10:K:56:SER:HB2	10:K:66:LYS:HG2	2.01	0.42
11:L:86:ARG:HH12	11:L:88:LYS:HE3	1.84	0.42
12:M:67:GLU:HA	12:M:71:ARG:HH11	1.84	0.42
14:O:4:THR:HG22	14:O:7:GLN:HE22	1.83	0.42
15:P:9:ARG:HB3	15:P:29:ARG:HE	1.84	0.42
19:V:58:LYS:HD2	19:V:59:GLU:N	2.34	0.42
19:V:144:LEU:O	19:V:148:LEU:HB3	2.20	0.42
20:Y:140:G:N2	20:Y:1814:G:H4'	2.34	0.42
20:Y:197:C:O2'	20:Y:198:A:H5'	2.19	0.42
20:Y:227:A:N1	20:Y:506:C:O2'	2.36	0.42
20:Y:321:G:H2'	20:Y:322:A:H8	1.84	0.42
20:Y:322:A:H2'	20:Y:322:A:N3	2.35	0.42
20:Y:440:U:H2'	20:Y:441:G:C8	2.49	0.42
20:Y:789:G:H5''	24:b:77:GLY:N	2.33	0.42
20:Y:817:G:C2	20:Y:846:C:C2	3.08	0.42
20:Y:966:U:H2'	20:Y:967:G:H8	1.83	0.42
20:Y:986:G:N2	20:Y:1022:C:N3	2.67	0.42
20:Y:1204:A:H4'	20:Y:1205:G:C8	2.55	0.42
20:Y:1242:C:H2'	20:Y:1243:G:O4'	2.19	0.42
20:Y:1269:C:H2'	20:Y:1270:G:O4'	2.19	0.42
20:Y:1392:G:H2'	20:Y:1393:C:C6	2.54	0.42
20:Y:1547:G:H3'	20:Y:1620:U:H2'	2.02	0.42
20:Y:1608:U:H2'	20:Y:1609:G:C8	2.54	0.42
20:Y:2013:C:H2'	20:Y:2014:G:C8	2.54	0.42
20:Y:2166:C:OP2	20:Y:2167:U:O2'	2.18	0.42
20:Y:2528:G:H5''	25:c:138:GLY:O	2.18	0.42
20:Y:2610:C:H2'	20:Y:2611:U:C6	2.55	0.42
20:Y:2644:C:H2'	20:Y:2645:G:H8	1.84	0.42
20:Y:3008:C:H5''	23:a:44:ARG:NH1	2.34	0.42
26:d:88:MET:HE1	26:d:146:SER:HA	2.01	0.42
49:1:54:ASP:OD1	49:1:57:ARG:NH2	2.53	0.42
1:A:407:A:N3	1:A:407:A:H2'	2.35	0.42
1:A:643:A:H2'	1:A:644:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:669:C:H2'	1:A:670:G:C8	2.55	0.42
1:A:716:U:H2'	1:A:717:C:C6	2.55	0.42
2:C:143:GLN:OE1	2:C:143:GLN:HA	2.20	0.42
3:D:115:HIS:HD2	3:D:117:HIS:CE1	2.37	0.42
20:Y:6:G:N2	20:Y:3114:A:H62	2.15	0.42
20:Y:154:C:H2'	20:Y:155:G:C8	2.55	0.42
20:Y:189:A:N6	20:Y:206:A:C4	2.87	0.42
20:Y:470:G:N2	20:Y:481:C:C2	2.87	0.42
20:Y:512:G:H2'	20:Y:513:C:H6	1.84	0.42
20:Y:664:A:H5''	20:Y:665:G:OP2	2.19	0.42
20:Y:988:U:H2'	20:Y:989:G:C8	2.54	0.42
20:Y:1053:G:H2'	20:Y:1054:C:C6	2.55	0.42
20:Y:1311:C:H2'	20:Y:1312:G:C8	2.52	0.42
20:Y:1320:U:H2'	20:Y:1321:C:C6	2.55	0.42
20:Y:1456:G:H1'	38:p:58:ASN:HB3	2.02	0.42
20:Y:1458:G:N2	20:Y:1499:A:N3	2.67	0.42
20:Y:2528:G:H5'	20:Y:2529:A:OP2	2.19	0.42
20:Y:2977:A:O2'	50:2:15:ARG:NH1	2.53	0.42
20:Y:3087:G:C2	20:Y:3089:A:H1'	2.54	0.42
21:U:84:C:H2'	21:U:85:C:C6	2.54	0.42
23:a:28:VAL:HG13	34:l:4:LEU:HD21	2.00	0.42
29:g:24:VAL:CG2	29:g:33:ALA:HB2	2.49	0.42
32:j:11:GLY:HA3	32:j:16:HIS:HD2	1.85	0.42
37:o:39:ALA:O	37:o:43:LEU:HD23	2.20	0.42
38:p:8:ARG:HG2	38:p:8:ARG:O	2.19	0.42
41:s:46:HIS:HB2	41:s:77:THR:HG22	2.00	0.42
49:1:31:HIS:ND1	49:1:32:LEU:HD13	2.34	0.42
51:4:2350:G:C5	51:4:2386:U:H5	2.38	0.42
1:A:194:A:H61	16:Q:17:ARG:NH1	2.17	0.42
1:A:659:C:H2'	1:A:660:C:H6	1.84	0.42
1:A:741:G:H2'	1:A:742:A:C8	2.55	0.42
1:A:907:G:N2	1:A:1486:A:H1'	2.35	0.42
1:A:1274:C:H2'	1:A:1275:G:H8	1.84	0.42
2:C:199:LYS:HE3	2:C:201:TRP:HH2	1.84	0.42
8:I:26:ILE:H	8:I:40:ARG:NH1	2.17	0.42
15:P:21:ILE:HG12	15:P:36:VAL:HG12	2.01	0.42
15:P:22:VAL:HG21	15:P:59:TRP:NE1	2.35	0.42
20:Y:26:U:H5''	35:m:5:LYS:NZ	2.35	0.42
20:Y:49:A:H2'	20:Y:50:A:C8	2.51	0.42
20:Y:93:A:H5''	20:Y:94:G:OP2	2.20	0.42
20:Y:387:U:H2'	20:Y:388:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:636:U:H5''	20:Y:637:G:C4	2.54	0.42
20:Y:1010:U:O2'	20:Y:1011:A:OP1	2.29	0.42
20:Y:1441:C:H2'	20:Y:1442:A:C8	2.55	0.42
20:Y:1572:G:C2	20:Y:1600:G:C6	3.08	0.42
20:Y:1659:U:H2'	20:Y:1660:A:C8	2.54	0.42
20:Y:1867:G:H2'	20:Y:1868:A:H8	1.84	0.42
20:Y:2135:U:H2'	20:Y:2142:A:N1	2.34	0.42
20:Y:2531:G:H5'	20:Y:2532:G:C8	2.55	0.42
20:Y:2830:C:H2'	20:Y:2831:G:C8	2.55	0.42
20:Y:3089:A:H2'	20:Y:3090:G:C8	2.54	0.42
21:U:31:C:H2'	21:U:32:C:H5'	2.02	0.42
22:Z:6:TYR:HB2	22:Z:16:ALA:O	2.20	0.42
22:Z:184:ARG:CZ	22:Z:184:ARG:HB2	2.49	0.42
26:d:102:GLN:OE1	26:d:102:GLN:HA	2.19	0.42
29:g:44:LYS:O	29:g:54:ARG:NH2	2.51	0.42
31:i:83:MET:SD	31:i:84:GLY:N	2.93	0.42
42:t:14:PHE:HE1	42:t:28:ARG:NE	2.18	0.42
45:w:33:GLN:HG2	45:w:35:VAL:HG23	2.02	0.42
47:y:16:GLU:N	47:y:16:GLU:OE1	2.53	0.42
1:A:60:U:H2'	1:A:61:G:H8	1.82	0.42
1:A:227:G:OP2	16:Q:14:GLU:HG3	2.19	0.42
1:A:305:G:H4'	1:A:306:A:H5''	2.01	0.42
3:D:65:LYS:NZ	3:D:68:ARG:HH12	2.18	0.42
15:P:13:ILE:HG13	15:P:14:ARG:N	2.34	0.42
16:Q:27:VAL:HG12	16:Q:72:ASP:O	2.19	0.42
20:Y:3:A:H2'	20:Y:4:G:C8	2.54	0.42
20:Y:45:G:N2	20:Y:46:A:N1	2.67	0.42
20:Y:273:A:N6	20:Y:314:G:C4	2.88	0.42
20:Y:333:C:H2'	20:Y:334:G:H8	1.85	0.42
20:Y:483:G:H2'	20:Y:484:C:C6	2.55	0.42
20:Y:725:A:H8	20:Y:725:A:OP1	2.03	0.42
20:Y:1132:U:H1'	35:m:122:ASN:OD1	2.20	0.42
20:Y:1636:A:C6	20:Y:1803:A:H2	2.38	0.42
20:Y:2038:A:H5'	22:Z:89:THR:OG1	2.19	0.42
20:Y:2098:U:H2'	20:Y:2099:G:O4'	2.20	0.42
20:Y:2167:U:H4'	20:Y:2168:U:H3'	2.01	0.42
20:Y:2873:U:H2'	20:Y:2874:C:C6	2.55	0.42
22:Z:54:LYS:HA	22:Z:217:LYS:HA	2.01	0.42
24:b:93:PRO:O	24:b:94:LYS:HD2	2.20	0.42
25:c:46:GLY:HA2	25:c:93:GLY:HA3	2.01	0.42
29:g:17:LYS:HE2	29:g:47:ILE:HD13	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:i:108:TYR:CG	31:i:109:PRO:HD2	2.54	0.42
36:n:75:ILE:N	36:n:88:GLN:O	2.34	0.42
48:z:27:THR:O	48:z:31:ARG:HG3	2.20	0.42
1:A:10:G:N2	4:E:124:ALA:HB1	2.34	0.42
1:A:29:C:H2'	1:A:30:A:H8	1.84	0.42
1:A:108:G:H21	1:A:354:G:H5'	1.85	0.42
1:A:144:G:H2'	1:A:145:G:C8	2.54	0.42
1:A:331:G:O2'	18:T:3:ASN:ND2	2.33	0.42
1:A:543:A:O2'	1:A:546:G:O3'	2.38	0.42
1:A:670:G:N1	1:A:678:G:C6	2.88	0.42
1:A:929:G:O6	1:A:1216:U:C2	2.72	0.42
1:A:969:G:H2'	1:A:1200:A:H2'	2.01	0.42
1:A:980:G:H2'	1:A:981:C:C6	2.54	0.42
1:A:1402:G:H2'	1:A:1403:U:C6	2.54	0.42
6:G:66:LEU:HD21	6:G:97:THR:HG22	2.02	0.42
6:G:71:PRO:HD2	6:G:96:SER:CB	2.50	0.42
11:L:41:THR:HA	11:L:42:PRO:HD3	1.93	0.42
19:V:31:ILE:HD13	19:V:39:TYR:CD1	2.55	0.42
20:Y:308:U:H2'	20:Y:309:G:C8	2.52	0.42
20:Y:626:G:H5'	28:f:8:ALA:HB2	2.01	0.42
20:Y:739:U:O3'	20:Y:740:A:H2'	2.19	0.42
20:Y:800:A:C8	20:Y:888:U:O4	2.72	0.42
20:Y:934:A:H5''	20:Y:1091:A:N1	2.35	0.42
20:Y:967:G:H2'	20:Y:968:C:C6	2.55	0.42
20:Y:1145:A:N6	20:Y:1244:A:N3	2.68	0.42
20:Y:1305:G:OP1	30:h:32:THR:OG1	2.35	0.42
20:Y:1374:G:H2'	20:Y:1375:G:H8	1.84	0.42
20:Y:1456:G:C2	20:Y:1513:C:H4'	2.55	0.42
20:Y:1480:A:N3	20:Y:1480:A:H2'	2.35	0.42
20:Y:1500:A:H2'	20:Y:1501:C:H6	1.85	0.42
20:Y:2272:G:C6	20:Y:2273:G:C5	3.08	0.42
20:Y:2528:G:H21	25:c:136:THR:HA	1.85	0.42
20:Y:2639:G:H2'	20:Y:2640:G:H8	1.84	0.42
20:Y:2815:C:N4	20:Y:2816:G:O6	2.52	0.42
21:U:98:A:C4	21:U:99:A:C8	3.07	0.42
24:b:96:ARG:HD2	24:b:98:TYR:OH	2.20	0.42
31:i:134:ARG:O	31:i:134:ARG:NH1	2.45	0.42
41:s:39:ARG:HG3	41:s:39:ARG:NH1	2.34	0.42
44:v:14:ALA:O	44:v:18:LYS:HG2	2.19	0.42
49:1:15:ARG:HE	49:1:23:VAL:CG1	2.32	0.42
1:A:58:C:P	1:A:351:G:H21	2.42	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:89:G:H2'	1:A:90:G:C8	2.55	0.42
1:A:181:C:H2'	1:A:182:C:C6	2.55	0.42
1:A:522:G:O2'	3:D:14:ARG:NH2	2.53	0.42
1:A:557:G:O6	1:A:745:G:N1	2.53	0.42
1:A:580:G:H2'	1:A:619:G:N2	2.30	0.42
1:A:955:G:H5''	1:A:956:A:H3'	2.02	0.42
5:F:28:ASN:ND2	5:F:31:ARG:HH21	2.18	0.42
8:I:64:HIS:HA	8:I:67:LEU:HG	2.01	0.42
9:J:11:LYS:HA	9:J:71:LYS:HA	2.02	0.42
17:R:57:CYS:HB3	17:R:60:HIS:HB2	2.01	0.42
19:V:122:GLN:OE1	19:V:122:GLN:HA	2.20	0.42
20:Y:17:C:H2'	20:Y:18:A:C8	2.54	0.42
20:Y:18:A:C6	20:Y:607:G:N1	2.88	0.42
20:Y:479:A:H2'	20:Y:480:U:O4'	2.20	0.42
20:Y:496:C:C2	20:Y:508:G:N2	2.88	0.42
20:Y:1176:G:N2	20:Y:1199:U:O2	2.53	0.42
20:Y:1478:C:H2'	20:Y:1479:G:O4'	2.20	0.42
20:Y:2118:C:H2'	20:Y:2119:C:C6	2.55	0.42
20:Y:2949:A:C4	20:Y:2951:G:C8	3.08	0.42
25:c:177:LEU:HB3	25:c:184:PHE:CZ	2.54	0.42
32:j:35:LYS:HE3	32:j:100:VAL:HG21	2.02	0.42
39:q:84:GLY:O	39:q:97:ILE:N	2.48	0.42
42:t:7:ILE:HG13	42:t:8:CYS:N	2.35	0.42
44:v:70:ASP:HA	44:v:73:PHE:HD2	1.85	0.42
45:w:22:SER:O	45:w:26:LEU:HD23	2.19	0.42
45:w:38:GLU:HG3	45:w:39:ASP:H	1.84	0.42
51:4:2362:C:H2'	51:4:2363:A:C8	2.55	0.42
1:A:110:U:H2'	1:A:111:G:H8	1.83	0.42
1:A:126:G:C8	1:A:197:G:H1'	2.55	0.42
1:A:128:U:H1'	1:A:262:G:H21	1.83	0.42
1:A:384:G:H2'	1:A:385:C:C6	2.55	0.42
1:A:398:C:H2'	1:A:399:G:H8	1.85	0.42
1:A:660:C:H2'	1:A:661:U:H6	1.84	0.42
1:A:1011:U:O2	1:A:1011:U:H2'	2.18	0.42
1:A:1051:C:H5''	4:E:79:LYS:NZ	2.33	0.42
1:A:1058:U:C4	4:E:115:ALA:HA	2.55	0.42
1:A:1355:U:H5'	8:I:92:PRO:HD2	2.02	0.42
2:C:7:PRO:O	2:C:11:ARG:HG2	2.20	0.42
2:C:18:TRP:HH2	13:N:56:VAL:O	2.03	0.42
18:T:35:PHE:CD2	18:T:79:LEU:HD22	2.55	0.42
20:Y:307:G:H2'	20:Y:308:U:H6	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:327:U:C2	20:Y:450:G:C2	3.07	0.42
20:Y:368:U:H1'	20:Y:435:A:N1	2.35	0.42
20:Y:851:C:H2'	20:Y:852:C:H6	1.85	0.42
20:Y:2256:G:OP1	20:Y:2678:G:O2'	2.23	0.42
20:Y:2303:A:H2'	20:Y:2304:C:C6	2.55	0.42
20:Y:2514:G:H2'	20:Y:2515:U:H6	1.84	0.42
20:Y:3038:C:C2	20:Y:3051:G:N2	2.88	0.42
21:U:97:A:C4	21:U:98:A:C8	3.07	0.42
25:c:40:LYS:HE2	25:c:99:ARG:NH2	2.35	0.42
31:i:63:LYS:HD3	40:r:125:THR:HG23	2.02	0.42
33:k:98:GLU:CD	33:k:99:THR:HG23	2.45	0.42
34:l:112:LYS:HD3	34:l:113:ARG:H	1.85	0.42
1:A:29:C:H5'	1:A:504:G:H1'	2.02	0.41
1:A:133:C:H2'	1:A:134:C:C6	2.55	0.41
1:A:569:U:C4	1:A:631:C:N3	2.88	0.41
1:A:596:A:H2'	1:A:597:G:C8	2.55	0.41
1:A:830:G:H2'	1:A:831:A:H8	1.85	0.41
1:A:936:G:N1	1:A:1207:C:N3	2.62	0.41
5:F:19:VAL:HG12	5:F:23:LEU:HD23	2.02	0.41
6:G:31:LEU:HD21	6:G:36:LYS:HE2	2.02	0.41
10:K:59:VAL:HG22	10:K:78:ASN:ND2	2.33	0.41
15:P:70:VAL:HG12	15:P:74:LEU:HD23	2.01	0.41
20:Y:21:G:H2'	20:Y:22:U:C6	2.55	0.41
20:Y:442:U:C2	20:Y:443:C:C6	3.08	0.41
20:Y:487:U:H2'	20:Y:488:G:C8	2.55	0.41
20:Y:658:U:O5'	30:h:31:LYS:HD2	2.20	0.41
20:Y:750:C:H2'	20:Y:751:A:H8	1.85	0.41
20:Y:773:G:H2'	20:Y:774:G:C8	2.55	0.41
20:Y:1088:U:H2'	20:Y:1089:C:C6	2.55	0.41
20:Y:1176:G:C2	20:Y:1199:U:O2	2.73	0.41
20:Y:1258:C:OP2	28:f:68:LYS:NZ	2.53	0.41
20:Y:1272:C:H2'	20:Y:1273:G:O4'	2.20	0.41
20:Y:1514:C:H2'	20:Y:1515:C:C6	2.55	0.41
20:Y:1629:G:H4'	20:Y:1630:U:H5	1.85	0.41
20:Y:2041:G:H2'	20:Y:2042:A:C8	2.55	0.41
20:Y:2644:C:H2'	20:Y:2645:G:C8	2.55	0.41
20:Y:2702:A:H2'	20:Y:2703:U:O4'	2.20	0.41
20:Y:2867:A:H2'	20:Y:2868:A:C8	2.55	0.41
22:Z:26:ARG:HG2	22:Z:27:SER:N	2.33	0.41
26:d:69:SER:O	26:d:73:ILE:HG12	2.20	0.41
32:j:99:LYS:O	46:x:43:LEU:HD11	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:l:62:LYS:HE3	34:l:62:LYS:HB2	1.84	0.41
37:o:27:VAL:HA	37:o:30:LEU:HD12	2.02	0.41
42:t:14:PHE:CD1	42:t:28:ARG:HG2	2.54	0.41
45:w:9:VAL:HG22	45:w:53:LEU:O	2.20	0.41
45:w:37:ARG:HA	45:w:37:ARG:HD3	1.92	0.41
1:A:376:G:P	15:P:69:PRO:HG2	2.60	0.41
1:A:446:A:H2'	1:A:447:G:O4'	2.20	0.41
1:A:490:A:H1'	1:A:522:G:H21	1.85	0.41
1:A:714:G:H2'	1:A:715:G:C8	2.54	0.41
1:A:896:A:H2'	1:A:897:A:H8	1.84	0.41
1:A:963:U:H2'	1:A:964:U:C5	2.54	0.41
1:A:1488:G:OP1	1:A:1491:A:H4'	2.20	0.41
2:C:81:THR:O	2:C:85:ARG:HG2	2.20	0.41
5:F:20:ALA:HB3	5:F:21:PRO:HD3	2.02	0.41
6:G:113:GLU:HB3	6:G:119:ARG:HG2	2.01	0.41
6:G:115:THR:O	6:G:119:ARG:HG3	2.20	0.41
8:I:134:LYS:HE2	8:I:140:LYS:HA	2.01	0.41
9:J:41:PRO:HA	9:J:72:ARG:NH2	2.34	0.41
13:N:13:LYS:HD2	13:N:14:PRO:HD2	2.02	0.41
14:O:50:HIS:CG	14:O:53:ARG:HH12	2.38	0.41
18:T:26:SER:O	18:T:30:THR:HG23	2.20	0.41
20:Y:317:G:O2'	20:Y:318:U:OP2	2.38	0.41
20:Y:461:U:H2'	20:Y:462:A:C8	2.55	0.41
20:Y:677:G:N2	20:Y:1369:A:H62	2.19	0.41
20:Y:784:G:C2	20:Y:916:G:C6	3.09	0.41
20:Y:1128:A:N3	20:Y:1272:C:H1'	2.34	0.41
20:Y:1234:U:H2'	20:Y:1235:U:H5'	2.02	0.41
20:Y:1461:G:C2	20:Y:1462:G:C8	3.08	0.41
20:Y:2209:C:H2'	20:Y:2210:U:C6	2.54	0.41
20:Y:2264:U:H2'	20:Y:2265:U:H6	1.85	0.41
20:Y:2275:A:C8	20:Y:2838:A:N6	2.89	0.41
20:Y:2307:C:H2'	20:Y:2308:U:C6	2.55	0.41
20:Y:2586:G:OP1	49:l:40:ARG:NE	2.53	0.41
20:Y:2970:U:H5''	26:d:139:LYS:HE2	2.02	0.41
21:U:61:C:H2'	21:U:62:C:C6	2.54	0.41
25:c:60:ALA:O	25:c:64:LEU:HD23	2.19	0.41
40:r:158:THR:HG22	40:r:160:GLY:H	1.85	0.41
45:w:16:ARG:HG3	45:w:19:GLN:H	1.85	0.41
45:w:35:VAL:CG1	45:w:37:ARG:HE	2.32	0.41
1:A:137:C:C2'	16:Q:7:PRO:HD2	2.47	0.41
1:A:562:U:C2	1:A:563:A:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:577:G:N7	1:A:625:G:N2	2.68	0.41
1:A:814:G:C6	1:A:835:G:C6	3.08	0.41
1:A:929:G:C2	1:A:930:C:H1'	2.56	0.41
1:A:988:C:H3'	1:A:989:G:C8	2.54	0.41
1:A:1341:C:H1'	1:A:1344:C:H41	1.84	0.41
1:A:1403:U:H3	1:A:1464:G:H1	1.68	0.41
1:A:1413:C:H2'	1:A:1414:C:O4'	2.20	0.41
6:G:15:ASP:HA	6:G:16:PRO:HD3	1.95	0.41
10:K:62:LYS:HA	10:K:62:LYS:HD2	1.83	0.41
12:M:24:GLY:HA3	12:M:66:VAL:HG12	2.02	0.41
15:P:44:GLU:HG3	15:P:47:SER:HA	2.02	0.41
20:Y:312:G:H3'	20:Y:313:G:N7	2.35	0.41
20:Y:503:A:N1	20:Y:2633:G:N1	2.69	0.41
20:Y:774:G:OP1	24:b:101:ARG:NH1	2.54	0.41
20:Y:842:A:H2	22:Z:9:THR:HG21	1.86	0.41
20:Y:1282:G:H2'	20:Y:1283:C:C6	2.55	0.41
20:Y:1358:U:H2'	20:Y:1359:G:O4'	2.20	0.41
20:Y:1430:C:H2'	20:Y:1431:U:C6	2.55	0.41
20:Y:1502:G:H2'	20:Y:1503:G:C8	2.55	0.41
20:Y:2528:G:H3'	25:c:138:GLY:C	2.45	0.41
20:Y:2686:U:H2'	20:Y:2687:U:C6	2.55	0.41
23:a:184:LYS:HB3	23:a:193:LEU:HD12	2.01	0.41
23:a:201:ARG:HE	23:a:201:ARG:HB2	1.48	0.41
25:c:75:ARG:O	25:c:91:PRO:HA	2.20	0.41
25:c:182:PHE:O	25:c:184:PHE:N	2.53	0.41
30:h:56:PRO:C	30:h:60:ARG:HH11	2.28	0.41
1:A:26:G:H2'	1:A:27:C:H6	1.86	0.41
1:A:172:C:H1'	1:A:1430:A:H2	1.85	0.41
1:A:499:C:H41	1:A:509:G:H8	1.69	0.41
1:A:939:U:H2'	1:A:941:A:OP2	2.20	0.41
1:A:1211:C:H2'	1:A:1212:A:H8	1.86	0.41
2:C:195:ARG:HH11	2:C:195:ARG:HG3	1.85	0.41
3:D:60:TYR:CG	3:D:89:LEU:HD21	2.56	0.41
8:I:111:GLN:NE2	8:I:113:GLU:HB2	2.35	0.41
10:K:78:ASN:HA	10:K:81:ARG:HG2	2.03	0.41
17:R:47:LYS:HA	17:R:47:LYS:HD3	1.69	0.41
20:Y:32:G:H1'	20:Y:542:A:N3	2.35	0.41
20:Y:140:G:H21	20:Y:1814:G:H4'	1.86	0.41
20:Y:207:C:H2'	20:Y:208:C:H6	1.86	0.41
20:Y:368:U:C2	20:Y:435:A:N6	2.88	0.41
20:Y:616:A:H4'	20:Y:617:U:H5	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:620:G:H2'	20:Y:621:U:H6	1.84	0.41
20:Y:678:A:H5'	20:Y:679:G:OP1	2.21	0.41
20:Y:838:G:C2	20:Y:839:U:C5	3.08	0.41
20:Y:851:C:H2'	20:Y:852:C:C6	2.54	0.41
20:Y:922:U:P	30:h:38:LYS:NZ	2.94	0.41
20:Y:1521:C:N4	20:Y:1522:G:O6	2.53	0.41
20:Y:1981:U:H2'	20:Y:1982:G:H8	1.85	0.41
25:c:35:ILE:O	25:c:35:ILE:HG13	2.20	0.41
26:d:55:ARG:NH1	26:d:63:ARG:HG2	2.35	0.41
29:g:68:GLU:HB3	29:g:76:TYR:CD1	2.56	0.41
35:m:61:TRP:O	35:m:65:ILE:HG12	2.20	0.41
1:A:424:G:H2'	1:A:425:G:C8	2.54	0.41
1:A:600:U:C4	1:A:601:A:N7	2.89	0.41
1:A:772:A:O2'	1:A:774:A:N7	2.34	0.41
1:A:979:U:H2'	1:A:980:G:C8	2.54	0.41
3:D:87:ARG:HA	3:D:87:ARG:HD2	1.79	0.41
10:K:93:VAL:HG13	10:K:119:ILE:HG13	2.02	0.41
15:P:4:LYS:HG3	15:P:25:ALA:HB2	2.01	0.41
20:Y:317:G:C5	20:Y:509:U:C4	3.08	0.41
20:Y:359:A:H1'	20:Y:514:C:O2	2.20	0.41
20:Y:894:U:H5''	22:Z:43:ARG:NH2	2.35	0.41
20:Y:1044:U:H1'	45:w:24:ARG:NH1	2.36	0.41
20:Y:1083:G:C6	20:Y:1084:U:C4	3.09	0.41
20:Y:1507:G:C8	20:Y:1508:A:C2	3.09	0.41
20:Y:1794:C:H2'	20:Y:1795:C:H6	1.85	0.41
20:Y:2108:A:H2'	20:Y:2109:A:H8	1.86	0.41
20:Y:2115:G:H2'	20:Y:2116:C:C6	2.56	0.41
20:Y:2146:A:C6	20:Y:2147:U:C4	3.09	0.41
20:Y:2454:G:C4	42:t:32:ASN:ND2	2.89	0.41
22:Z:17:SER:H	22:Z:205:ASN:HB3	1.84	0.41
22:Z:146:GLU:HG2	22:Z:147:LEU:H	1.85	0.41
24:b:138:THR:OG1	24:b:168:SER:O	2.35	0.41
25:c:12:LYS:HD2	25:c:16:ARG:HH21	1.84	0.41
26:d:7:GLN:NE2	26:d:8:PRO:O	2.53	0.41
29:g:25:LEU:O	29:g:30:ARG:HG2	2.19	0.41
30:h:77:VAL:HA	30:h:111:LYS:O	2.21	0.41
31:i:44:ASN:OD1	31:i:45:ARG:N	2.54	0.41
31:i:63:LYS:HE2	31:i:63:LYS:HB2	1.84	0.41
43:u:27:GLU:OE2	43:u:31:ASN:ND2	2.48	0.41
1:A:599:U:O2	3:D:125:VAL:HA	2.21	0.41
1:A:1414:C:H2'	1:A:1415:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:103:VAL:HG13	7:H:114:THR:HG23	2.02	0.41
9:J:6:ILE:HB	9:J:76:ILE:HD11	2.03	0.41
16:Q:37:VAL:HA	16:Q:60:LYS:HA	2.02	0.41
16:Q:46:HIS:CE1	16:Q:48:LEU:HB2	2.56	0.41
19:V:33:THR:HG22	19:V:40:ILE:HD11	2.03	0.41
20:Y:219:G:N1	20:Y:516:G:OP2	2.54	0.41
20:Y:611:U:H2'	20:Y:612:U:C6	2.56	0.41
20:Y:657:C:H2'	20:Y:658:U:C6	2.55	0.41
20:Y:657:C:OP2	36:n:81:LYS:N	2.35	0.41
20:Y:742:G:H2'	20:Y:743:G:C8	2.55	0.41
20:Y:806:C:P	22:Z:218:ARG:HH22	2.43	0.41
20:Y:885:G:P	48:z:14:ARG:NH2	2.93	0.41
20:Y:940:A:H2'	20:Y:941:U:H6	1.85	0.41
20:Y:1072:G:OP1	31:i:13:HIS:HA	2.20	0.41
20:Y:1107:G:N7	45:w:13:ILE:HG21	2.34	0.41
20:Y:1372:C:H2'	20:Y:1373:A:C8	2.55	0.41
20:Y:1412:C:H2'	20:Y:1413:C:H6	1.86	0.41
20:Y:1637:G:H2'	20:Y:1638:C:C6	2.55	0.41
20:Y:2275:A:C8	20:Y:2838:A:C6	3.08	0.41
20:Y:2624:C:H2'	20:Y:2625:C:C6	2.55	0.41
20:Y:2772:G:O2'	29:g:4:GLN:NE2	2.49	0.41
20:Y:2885:G:H2'	20:Y:2886:A:C8	2.56	0.41
26:d:24:LEU:HD23	26:d:73:ILE:HD12	2.02	0.41
29:g:24:VAL:CG1	29:g:30:ARG:HG3	2.48	0.41
45:w:47:ILE:O	45:w:51:HIS:HB3	2.20	0.41
1:A:10:G:H22	4:E:124:ALA:HB1	1.86	0.41
1:A:43:G:H2'	1:A:44:C:C6	2.56	0.41
1:A:577:G:H8	1:A:577:G:O5'	2.03	0.41
1:A:699:C:O2	17:R:47:LYS:HD2	2.21	0.41
1:A:719:C:H1'	14:O:42:HIS:NE2	2.36	0.41
1:A:795:A:O4'	1:A:797:C:N4	2.53	0.41
1:A:1084:G:H2'	1:A:1085:A:H8	1.85	0.41
1:A:1253:U:H2'	1:A:1254:G:O4'	2.21	0.41
1:A:1406:G:H2'	1:A:1407:U:O4'	2.20	0.41
2:C:130:ARG:HE	2:C:134:ARG:HG3	1.84	0.41
4:E:66:ASP:CG	4:E:70:MET:HB2	2.46	0.41
13:N:22:THR:HG23	13:N:23:ARG:N	2.36	0.41
14:O:64:ARG:HH22	14:O:68:LYS:HG2	1.84	0.41
19:V:134:ILE:O	19:V:138:THR:HG23	2.19	0.41
20:Y:227:A:H4'	20:Y:228:A:H5'	2.02	0.41
20:Y:946:G:H2'	20:Y:947:U:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:1413:C:H2'	20:Y:1414:G:O4'	2.20	0.41
20:Y:1450:C:OP1	38:p:68:ARG:HB3	2.20	0.41
20:Y:1655:A:H2'	20:Y:1656:A:C8	2.54	0.41
20:Y:1747:C:H2'	20:Y:1748:A:C8	2.56	0.41
20:Y:1834:A:H2	20:Y:1865:A:H62	1.69	0.41
20:Y:1856:C:O2	20:Y:2922:U:O2'	2.38	0.41
20:Y:1964:U:H2'	20:Y:1965:G:H8	1.85	0.41
20:Y:2042:A:H2'	20:Y:2043:C:C6	2.56	0.41
20:Y:2133:G:C6	20:Y:2146:A:N1	2.88	0.41
20:Y:2598:C:N4	20:Y:2599:G:O6	2.54	0.41
20:Y:2686:U:H2'	20:Y:2687:U:H6	1.85	0.41
20:Y:2745:C:C2	20:Y:2769:G:N2	2.89	0.41
20:Y:2908:U:H2'	20:Y:2909:G:H8	1.85	0.41
21:U:96:A:C6	40:r:21:LYS:HD3	2.56	0.41
38:p:79:THR:OG1	38:p:81:ARG:NH2	2.54	0.41
50:2:2:LYS:O	50:2:34:GLN:HB2	2.20	0.41
1:A:48:G:OP2	15:P:14:ARG:HB2	2.20	0.41
1:A:122:G:H21	16:Q:21:LYS:NZ	2.18	0.41
1:A:480:G:H2'	1:A:481:G:C8	2.56	0.41
1:A:538:G:H4'	4:E:151:LYS:HZ1	1.86	0.41
1:A:578:U:H2'	1:A:579:U:C2	2.55	0.41
1:A:658:U:H2'	1:A:659:C:H6	1.85	0.41
1:A:927:G:N1	1:A:1217:A:C2	2.77	0.41
1:A:1303:U:H4'	12:M:87:TYR:CZ	2.55	0.41
6:G:146:GLU:HG3	6:G:149:ARG:CZ	2.51	0.41
15:P:9:ARG:NH2	15:P:12:LYS:O	2.53	0.41
20:Y:189:A:H62	20:Y:205:U:H3	1.67	0.41
20:Y:327:U:N3	20:Y:450:G:C2	2.89	0.41
20:Y:337:U:H5'	20:Y:338:C:H5''	2.03	0.41
20:Y:691:U:H2'	20:Y:692:C:H6	1.86	0.41
20:Y:898:A:N7	20:Y:900:G:H1'	2.35	0.41
20:Y:1476:G:H2'	20:Y:1477:C:H6	1.85	0.41
20:Y:1893:C:H2'	20:Y:1894:A:O4'	2.21	0.41
20:Y:2081:U:H4'	20:Y:2634:G:N2	2.32	0.41
20:Y:2176:A:OP1	29:g:42:THR:OG1	2.35	0.41
20:Y:2219:U:OP1	23:a:133:ARG:NE	2.53	0.41
20:Y:2431:C:H2'	20:Y:2432:G:C8	2.56	0.41
20:Y:2517:C:C2	20:Y:2518:C:C5	3.09	0.41
20:Y:2532:G:C6	20:Y:2535:A:C6	3.09	0.41
21:U:10:G:O2'	21:U:11:U:H5'	2.21	0.41
22:Z:148:ARG:O	22:Z:150:GLY:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Z:213:ARG:HG3	22:Z:213:ARG:HH11	1.85	0.41
23:a:21:ASN:OD1	34:l:78:PRO:HB2	2.20	0.41
25:c:22:ALA:HA	25:c:25:GLN:HE21	1.85	0.41
26:d:95:TYR:HD2	26:d:108:LEU:HD22	1.85	0.41
27:e:136:SER:OG	27:e:137:MET:HE2	2.20	0.41
28:f:77:HIS:CD2	28:f:79:GLY:H	2.39	0.41
31:i:124:LYS:HB2	31:i:124:LYS:HE2	1.87	0.41
34:l:33:GLU:OE1	34:l:38:ARG:NE	2.45	0.41
40:r:86:HIS:HB2	40:r:93:GLN:HE22	1.85	0.41
42:t:56:ILE:HG22	42:t:63:ARG:HH21	1.85	0.41
51:4:2350:G:N2	51:4:2387:U:O2	2.52	0.41
51:4:2373:G:H2'	51:4:2374:U:C6	2.56	0.41
1:A:48:G:C5'	15:P:12:LYS:HD3	2.51	0.41
1:A:186:C:N3	1:A:203:U:C2	2.89	0.41
1:A:373:A:H61	1:A:391:G:H1'	1.86	0.41
1:A:449:C:H2'	1:A:450:G:O4'	2.20	0.41
1:A:495:G:H2'	1:A:496:U:C6	2.56	0.41
1:A:561:G:N2	1:A:562:U:O4	2.53	0.41
1:A:660:C:H2'	1:A:661:U:C6	2.55	0.41
1:A:701:G:H5'	1:A:702:G:C5	2.56	0.41
1:A:872:G:O2'	1:A:888:A:N6	2.53	0.41
1:A:890:A:H2'	1:A:891:A:H8	1.85	0.41
1:A:896:A:H2'	1:A:897:A:C8	2.56	0.41
1:A:1001:G:H2'	1:A:1002:U:C6	2.56	0.41
1:A:1104:G:HO2'	1:A:1126:G:H1	1.65	0.41
1:A:1132:U:O2'	1:A:1133:G:O5'	2.35	0.41
1:A:1236:G:O2'	1:A:1239:G:N3	2.42	0.41
1:A:1271:A:H2'	1:A:1272:G:H5'	2.03	0.41
1:A:1494:C:H2'	1:A:1495:G:H8	1.86	0.41
2:C:50:GLY:O	2:C:69:THR:HG23	2.21	0.41
9:J:18:ILE:HG21	9:J:70:HIS:ND1	2.36	0.41
13:N:13:LYS:NZ	13:N:14:PRO:O	2.50	0.41
13:N:47:MET:HB3	13:N:53:LEU:HG	2.02	0.41
13:N:53:LEU:HA	13:N:54:PRO:HD3	1.90	0.41
17:R:34:ASP:O	17:R:38:LEU:HG	2.21	0.41
20:Y:18:A:H2'	20:Y:19:U:H6	1.86	0.41
20:Y:117:U:H5''	20:Y:119:G:OP2	2.20	0.41
20:Y:273:A:C6	20:Y:313:G:C2	3.09	0.41
20:Y:317:G:H8	20:Y:508:G:H3'	1.86	0.41
20:Y:317:G:C8	20:Y:508:G:H3'	2.55	0.41
20:Y:430:A:H2'	20:Y:431:C:H6	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:531:A:C4	24:b:46:ARG:NH1	2.88	0.41
20:Y:795:G:H2'	20:Y:796:A:C8	2.56	0.41
20:Y:1164:A:H5'	44:v:59:ARG:NH2	2.36	0.41
20:Y:1176:G:N1	20:Y:1199:U:C2	2.89	0.41
20:Y:1298:C:H4'	45:w:29:LYS:NZ	2.35	0.41
20:Y:1387:A:H62	20:Y:1836:A:H1'	1.86	0.41
20:Y:1441:C:O2'	20:Y:2234:G:O2'	2.17	0.41
20:Y:1561:C:H2'	20:Y:1562:C:C6	2.55	0.41
20:Y:1637:G:OP1	20:Y:1805:G:N2	2.54	0.41
20:Y:1715:A:N3	20:Y:1798:U:O2'	2.46	0.41
20:Y:1728:U:H4'	20:Y:1729:A:C8	2.56	0.41
20:Y:1849:G:N2	20:Y:1851:G:H8	2.19	0.41
20:Y:2142:A:H4'	20:Y:2143:A:H5'	2.02	0.41
20:Y:2265:U:H2'	20:Y:2266:A:C8	2.56	0.41
20:Y:2295:C:H2'	20:Y:2296:C:H6	1.86	0.41
20:Y:2410:A:N6	51:4:2405:A:H62	2.19	0.41
20:Y:2532:G:C6	20:Y:2535:A:N6	2.89	0.41
20:Y:2541:U:C5'	33:k:5:PRO:HB2	2.51	0.41
20:Y:2570:A:O2'	47:y:40:LYS:HE2	2.21	0.41
20:Y:2642:G:H2'	20:Y:2643:U:O4'	2.21	0.41
20:Y:2817:U:H2'	20:Y:2818:C:H6	1.84	0.41
20:Y:3070:G:H1'	20:Y:3087:G:N2	2.36	0.41
20:Y:3085:G:H2'	20:Y:3086:U:C6	2.56	0.41
21:U:7:G:H4'	33:k:41:ASN:HD22	1.85	0.41
21:U:47:A:O2'	33:k:14:ARG:NH2	2.53	0.41
23:a:108:ASP:N	23:a:108:ASP:OD1	2.54	0.41
26:d:22:GLN:NE2	26:d:38:ALA:O	2.54	0.41
27:e:51:GLN:OE1	27:e:54:ASN:N	2.46	0.41
27:e:102:VAL:HG23	27:e:139:ILE:HG21	2.02	0.41
27:e:132:GLY:HA2	27:e:135:ARG:HD2	2.03	0.41
28:f:41:LYS:HZ1	28:f:52:ASP:CG	2.28	0.41
28:f:113:LYS:HE2	28:f:116:ARG:HH22	1.85	0.41
29:g:6:SER:O	29:g:20:LEU:HD12	2.21	0.41
29:g:80:ASP:OD2	34:l:68:GLY:N	2.44	0.41
33:k:32:THR:HG23	33:k:35:VAL:H	1.85	0.41
42:t:52:CYS:O	42:t:56:ILE:HG12	2.20	0.41
44:v:16:GLN:HB3	44:v:81:PHE:HE2	1.86	0.41
51:4:2393:A:O3'	51:4:2398:C:N4	2.53	0.41
1:A:254:G:O6	1:A:273:A:N6	2.54	0.41
1:A:996:G:H22	1:A:998:G:H3'	1.86	0.41
1:A:1494:C:H2'	1:A:1495:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:73:GLU:O	3:D:76:ARG:HG3	2.21	0.41
4:E:136:ALA:HA	4:E:139:VAL:HG12	2.03	0.41
10:K:103:GLU:HA	10:K:106:ILE:HG12	2.03	0.41
19:V:129:ARG:HB3	19:V:133:GLU:OE2	2.20	0.41
20:Y:290:C:O2'	20:Y:339:U:OP2	2.38	0.41
20:Y:974:G:O2'	20:Y:975:U:O5'	2.37	0.41
20:Y:981:U:H4'	20:Y:982:A:H5''	2.03	0.41
20:Y:1086:C:OP2	45:w:16:ARG:NH1	2.50	0.41
20:Y:1314:C:H2'	20:Y:1315:C:H6	1.86	0.41
20:Y:1697:U:H2'	20:Y:1698:A:H8	1.86	0.41
20:Y:1994:U:H2'	20:Y:1995:U:C6	2.56	0.41
20:Y:2008:A:O3'	22:Z:206:TRP:HB2	2.21	0.41
20:Y:2085:C:O2'	20:Y:2086:U:H6	2.04	0.41
20:Y:2235:C:H2'	20:Y:2236:G:O4'	2.20	0.41
20:Y:2481:U:H2'	20:Y:2482:U:C6	2.56	0.41
20:Y:2553:G:H21	41:s:41:ARG:HB3	1.86	0.41
20:Y:2971:G:H5'	20:Y:2972:A:OP1	2.21	0.41
22:Z:24:ILE:HD12	22:Z:83:GLU:HA	2.03	0.41
22:Z:237:GLU:N	22:Z:237:GLU:OE1	2.54	0.41
29:g:109:LYS:HB3	29:g:111:PHE:CE2	2.56	0.41
33:k:77:LYS:HE2	33:k:80:HIS:ND1	2.36	0.41
34:l:44:GLY:HA2	34:l:62:LYS:HB3	2.03	0.41
42:t:7:ILE:HG21	42:t:7:ILE:HD13	1.84	0.41
46:x:30:VAL:O	46:x:36:GLN:HA	2.21	0.41
1:A:48:G:H5'	15:P:12:LYS:HB2	2.01	0.40
1:A:538:G:H4'	4:E:151:LYS:NZ	2.36	0.40
1:A:572:G:C2	1:A:628:A:C5	3.09	0.40
1:A:961:C:C2	1:A:962:C:C6	3.09	0.40
2:C:97:GLN:O	2:C:97:GLN:HG2	2.21	0.40
4:E:90:GLU:O	4:E:94:LYS:HG3	2.21	0.40
9:J:73:LEU:HD23	9:J:73:LEU:HA	1.93	0.40
10:K:74:LEU:O	10:K:77:GLU:HG3	2.21	0.40
20:Y:126:C:H2'	20:Y:127:C:C6	2.55	0.40
20:Y:176:G:H3'	20:Y:177:G:H8	1.86	0.40
20:Y:468:G:H2'	20:Y:469:G:H8	1.87	0.40
20:Y:1109:U:H3	20:Y:1282:G:H1	1.68	0.40
20:Y:1114:G:OP2	36:n:12:LYS:NZ	2.35	0.40
20:Y:1200:U:O2'	44:v:41:ARG:NH2	2.54	0.40
20:Y:1373:A:H2'	20:Y:1374:G:C8	2.56	0.40
20:Y:1668:C:H2'	20:Y:1669:G:H8	1.85	0.40
20:Y:2052:G:O6	20:Y:2154:G:N2	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2105:G:H2'	20:Y:2106:A:C8	2.55	0.40
20:Y:2467:U:H2'	20:Y:2468:U:C6	2.56	0.40
20:Y:2581:G:H2'	20:Y:2583:C:OP2	2.21	0.40
20:Y:2595:G:H2'	20:Y:2596:G:O4'	2.21	0.40
22:Z:68:ARG:CB	22:Z:152:GLY:HA2	2.51	0.40
28:f:93:LEU:HA	28:f:97:PRO:HA	2.03	0.40
31:i:36:ALA:HB2	31:i:103:LEU:HD11	2.03	0.40
31:i:46:GLN:HE22	31:i:126:PRO:HG3	1.86	0.40
32:j:37:THR:HA	32:j:110:MET:SD	2.62	0.40
45:w:5:LYS:HB2	45:w:57:GLU:HB2	2.03	0.40
45:w:5:LYS:HD2	45:w:36:VAL:HG12	2.03	0.40
1:A:363:A:O2'	1:A:364:A:O4'	2.36	0.40
1:A:375:U:OP1	15:P:69:PRO:HB3	2.22	0.40
1:A:924:G:H22	8:I:146:GLN:HE22	1.69	0.40
6:G:113:GLU:HG2	6:G:113:GLU:O	2.21	0.40
8:I:115:ARG:HB3	8:I:116:PRO:HD3	2.03	0.40
14:O:53:ARG:HA	14:O:56:LEU:HD23	2.02	0.40
20:Y:87:C:OP2	20:Y:88:A:O2'	2.32	0.40
20:Y:273:A:N6	20:Y:314:G:N7	2.69	0.40
20:Y:320:G:C6	20:Y:492:C:C2'	3.01	0.40
20:Y:1025:A:C2	20:Y:1026:A:C5	3.10	0.40
20:Y:1093:A:N6	20:Y:1107:G:H21	2.15	0.40
20:Y:1334:C:H2'	20:Y:1335:G:O4'	2.22	0.40
20:Y:1388:U:OP1	20:Y:1389:U:H3'	2.21	0.40
20:Y:1410:C:C2	20:Y:1411:G:C8	3.10	0.40
20:Y:2249:G:P	23:a:159:ARG:NH2	2.94	0.40
20:Y:2314:U:P	20:Y:2315:U:H2'	2.62	0.40
20:Y:2519:C:H5''	33:k:14:ARG:NH1	2.36	0.40
20:Y:3034:C:H2'	20:Y:3035:C:C6	2.56	0.40
21:U:33:C:H2'	21:U:34:G:H8	1.85	0.40
23:a:28:VAL:HG22	34:l:4:LEU:HG	2.03	0.40
23:a:86:LEU:HD12	23:a:92:VAL:HG22	2.03	0.40
24:b:64:LYS:HD2	24:b:77:GLY:HA2	2.03	0.40
25:c:120:ASP:HA	25:c:122:ARG:HH22	1.86	0.40
25:c:136:THR:HA	25:c:137:PHE:CD1	2.56	0.40
32:j:11:GLY:HA3	32:j:16:HIS:CD2	2.57	0.40
43:u:34:PHE:HA	43:u:37:ALA:HB3	2.03	0.40
43:u:36:MET:HB3	43:u:41:LEU:HB3	2.03	0.40
47:y:39:LYS:HA	47:y:50:PRO:HA	2.02	0.40
49:1:36:LYS:HG2	49:1:40:ARG:NH1	2.36	0.40
1:A:571:U:N3	1:A:630:A:C6	2.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:580:G:C2	1:A:620:A:C8	3.10	0.40
1:A:695:A:H2'	1:A:696:A:C8	2.55	0.40
1:A:850:C:H2'	1:A:851:A:O4'	2.21	0.40
3:D:140:VAL:HG11	3:D:150:PHE:CZ	2.56	0.40
15:P:9:ARG:HB3	15:P:29:ARG:HH21	1.86	0.40
16:Q:65:ASN:HB2	16:Q:67:GLU:HG3	2.02	0.40
16:Q:77:MET:CE	16:Q:91:VAL:HG22	2.49	0.40
17:R:76:LEU:C	17:R:77:LEU:HD12	2.47	0.40
20:Y:417:C:O2	39:q:69:SER:OG	2.39	0.40
20:Y:513:C:H2'	20:Y:514:C:C6	2.56	0.40
20:Y:604:C:OP2	46:x:10:ARG:NH1	2.52	0.40
20:Y:938:G:H2'	20:Y:939:C:C6	2.56	0.40
20:Y:1225:G:OP2	44:v:53:LYS:NZ	2.30	0.40
20:Y:1926:C:H2'	20:Y:1927:C:H6	1.85	0.40
20:Y:2702:A:OP2	50:2:31:ARG:HD3	2.22	0.40
20:Y:2861:U:H3'	20:Y:2862:G:H8	1.86	0.40
21:U:91:G:O5'	40:r:25:ARG:NH2	2.53	0.40
22:Z:132:PRO:HG3	22:Z:190:ARG:HE	1.85	0.40
23:a:53:ALA:HB1	23:a:78:ARG:HB2	2.04	0.40
23:a:154:CYS:C	23:a:156:THR:H	2.30	0.40
26:d:150:ARG:HA	26:d:163:VAL:CG2	2.51	0.40
32:j:47:TYR:O	32:j:51:LEU:HD23	2.22	0.40
34:l:28:HIS:HA	34:l:40:GLN:O	2.22	0.40
35:m:31:LEU:HD12	35:m:31:LEU:HA	1.83	0.40
37:o:53:PRO:O	37:o:57:VAL:HG23	2.21	0.40
44:v:12:ASP:HA	44:v:15:GLU:CD	2.45	0.40
51:4:2337:A:N6	51:4:2342:A:H62	2.19	0.40
1:A:157:A:H2'	1:A:158:A:O4'	2.22	0.40
1:A:282:A:H2'	1:A:283:C:O4'	2.21	0.40
1:A:321:A:H2'	1:A:322:C:C6	2.56	0.40
1:A:540:A:H4'	1:A:541:U:H5''	2.03	0.40
1:A:705:G:H2'	1:A:706:C:C6	2.56	0.40
1:A:816:G:O6	1:A:833:C:N4	2.54	0.40
1:A:959:A:N1	1:A:1345:A:C5	2.89	0.40
1:A:1067:G:H2'	1:A:1068:G:C8	2.55	0.40
7:H:13:ARG:NH1	7:H:27:LEU:HG	2.36	0.40
8:I:70:ALA:HB3	8:I:100:ARG:NH1	2.14	0.40
15:P:55:ARG:HD3	15:P:55:ARG:HA	1.85	0.40
20:Y:41:A:H61	20:Y:522:U:H3	1.70	0.40
20:Y:66:C:H2'	20:Y:67:G:H8	1.86	0.40
20:Y:207:C:H2'	20:Y:208:C:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:490:A:C2'	20:Y:491:U:H5'	2.51	0.40
20:Y:589:A:OP2	20:Y:589:A:H8	2.05	0.40
20:Y:729:C:H2'	20:Y:730:G:O4'	2.22	0.40
20:Y:1569:A:H2'	20:Y:1570:C:C6	2.56	0.40
20:Y:1662:C:H2'	20:Y:1663:C:H6	1.87	0.40
20:Y:1686:G:H3'	20:Y:1687:G:H8	1.86	0.40
20:Y:1805:G:C2	20:Y:1806:A:C8	3.09	0.40
20:Y:1885:G:OP1	29:g:7:ARG:HB3	2.21	0.40
20:Y:2040:G:OP2	22:Z:217:LYS:HE2	2.21	0.40
20:Y:2078:C:H2'	20:Y:2079:C:H6	1.86	0.40
20:Y:2097:G:C2	20:Y:2098:U:C5	3.09	0.40
20:Y:3029:U:H2'	20:Y:3030:A:H8	1.86	0.40
20:Y:3039:C:H2'	20:Y:3040:G:C8	2.57	0.40
20:Y:3074:C:H2'	20:Y:3075:C:H6	1.85	0.40
22:Z:233:HIS:CE1	22:Z:246:PRO:HA	2.56	0.40
25:c:182:PHE:O	25:c:184:PHE:HD2	2.04	0.40
27:e:17:ALA:HA	27:e:48:THR:HG21	2.03	0.40
28:f:4:TYR:HB3	35:m:64:ARG:NH1	2.36	0.40
37:o:45:TRP:O	37:o:47:PRO:HD3	2.20	0.40
38:p:29:TYR:HB2	38:p:84:VAL:CG2	2.51	0.40
41:s:47:PRO:HG3	41:s:53:ARG:HG3	2.03	0.40
44:v:35:ASN:OD1	44:v:36:LEU:N	2.54	0.40
1:A:38:C:H42	1:A:530:G:H1	1.67	0.40
1:A:122:G:H2'	1:A:123:G:C8	2.57	0.40
1:A:480:G:H5''	11:L:121:LYS:HE3	2.03	0.40
1:A:520:G:H3'	1:A:521:G:H8	1.85	0.40
1:A:580:G:C2	1:A:619:G:N1	2.90	0.40
1:A:1018:C:H2'	1:A:1019:U:C6	2.56	0.40
1:A:1413:C:H2'	1:A:1414:C:C6	2.57	0.40
3:D:67:PHE:HA	3:D:70:TYR:HD1	1.87	0.40
6:G:18:TYR:OH	6:G:51:ARG:NH1	2.54	0.40
8:I:61:ASN:O	8:I:65:GLN:HG2	2.21	0.40
11:L:86:ARG:HD2	11:L:86:ARG:C	2.46	0.40
12:M:37:THR:HG23	12:M:39:ILE:H	1.87	0.40
19:V:33:THR:O	19:V:40:ILE:HG12	2.21	0.40
19:V:69:PHE:HA	19:V:162:TRP:HE3	1.87	0.40
20:Y:662:G:O4'	20:Y:1101:A:N6	2.54	0.40
20:Y:1881:U:O2'	20:Y:2910:G:H4'	2.20	0.40
20:Y:2081:U:H2'	20:Y:2082:U:C6	2.56	0.40
20:Y:2197:G:H2'	20:Y:2198:C:C6	2.57	0.40
20:Y:2289:C:H2'	20:Y:2290:C:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Y:2541:U:C6	33:k:6:VAL:C	3.00	0.40
20:Y:2898:G:H2'	20:Y:2898:G:N3	2.36	0.40
21:U:37:C:N3	21:U:50:C:O2'	2.54	0.40
21:U:91:G:H2'	21:U:92:G:C8	2.49	0.40
33:k:86:GLN:O	33:k:89:ALA:HB3	2.22	0.40
34:l:50:GLN:HE21	34:l:95:LYS:HE3	1.87	0.40
35:m:13:LYS:O	35:m:16:THR:HG22	2.21	0.40
42:t:37:ARG:NH1	42:t:46:LYS:HD2	2.36	0.40
43:u:47:LEU:HA	43:u:50:VAL:HG12	2.03	0.40
46:x:45:LYS:O	46:x:48:ARG:HG2	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	C	206/275 (75%)	198 (96%)	8 (4%)	0	100	100
3	D	198/201 (98%)	194 (98%)	4 (2%)	0	100	100
4	E	178/214 (83%)	171 (96%)	7 (4%)	0	100	100
5	F	94/96 (98%)	93 (99%)	1 (1%)	0	100	100
6	G	153/156 (98%)	147 (96%)	6 (4%)	0	100	100
7	H	129/132 (98%)	123 (95%)	6 (5%)	0	100	100
8	I	124/150 (83%)	114 (92%)	10 (8%)	0	100	100
9	J	97/101 (96%)	89 (92%)	8 (8%)	0	100	100
10	K	113/138 (82%)	106 (94%)	7 (6%)	0	100	100
11	L	120/124 (97%)	115 (96%)	5 (4%)	0	100	100
12	M	114/124 (92%)	109 (96%)	5 (4%)	0	100	100
13	N	58/61 (95%)	54 (93%)	4 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	O	86/89 (97%)	84 (98%)	2 (2%)	0	100	100
15	P	94/156 (60%)	87 (93%)	7 (7%)	0	100	100
16	Q	92/98 (94%)	86 (94%)	6 (6%)	0	100	100
17	R	63/84 (75%)	61 (97%)	2 (3%)	0	100	100
18	T	83/86 (96%)	83 (100%)	0	0	100	100
19	V	226/277 (82%)	216 (96%)	9 (4%)	1 (0%)	30	46
22	Z	273/278 (98%)	260 (95%)	13 (5%)	0	100	100
23	a	212/217 (98%)	191 (90%)	21 (10%)	0	100	100
24	b	207/215 (96%)	203 (98%)	4 (2%)	0	100	100
25	c	180/187 (96%)	176 (98%)	4 (2%)	0	100	100
26	d	174/179 (97%)	173 (99%)	1 (1%)	0	100	100
27	e	96/142 (68%)	91 (95%)	5 (5%)	0	100	100
28	f	144/147 (98%)	139 (96%)	5 (4%)	0	100	100
29	g	120/122 (98%)	114 (95%)	6 (5%)	0	100	100
30	h	143/147 (97%)	131 (92%)	12 (8%)	0	100	100
31	i	134/138 (97%)	126 (94%)	8 (6%)	0	100	100
32	j	116/199 (58%)	110 (95%)	6 (5%)	0	100	100
33	k	124/127 (98%)	120 (97%)	4 (3%)	0	100	100
34	l	111/113 (98%)	103 (93%)	8 (7%)	0	100	100
35	m	122/129 (95%)	118 (97%)	4 (3%)	0	100	100
36	n	98/103 (95%)	95 (97%)	3 (3%)	0	100	100
37	o	112/153 (73%)	107 (96%)	5 (4%)	0	100	100
38	p	95/100 (95%)	89 (94%)	6 (6%)	0	100	100
39	q	93/105 (89%)	92 (99%)	1 (1%)	0	100	100
40	r	190/215 (88%)	186 (98%)	4 (2%)	0	100	100
41	s	77/88 (88%)	75 (97%)	2 (3%)	0	100	100
42	t	61/64 (95%)	57 (93%)	4 (7%)	0	100	100
43	u	62/77 (80%)	61 (98%)	1 (2%)	0	100	100
44	v	124/175 (71%)	120 (97%)	3 (2%)	1 (1%)	16	28
45	w	57/61 (93%)	55 (96%)	2 (4%)	0	100	100
46	x	52/57 (91%)	52 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
47	y	47/55 (86%)	45 (96%)	1 (2%)	1 (2%)	5	8
48	z	44/47 (94%)	44 (100%)	0	0	100	100
49	1	61/64 (95%)	59 (97%)	2 (3%)	0	100	100
50	2	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
All	All	5592/6303 (89%)	5356 (96%)	233 (4%)	3 (0%)	49	66

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
19	V	155	GLN
44	v	85	GLU
47	y	7	VAL

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	
2	C	170/212 (80%)	170 (100%)	0	100	100
3	D	175/176 (99%)	175 (100%)	0	100	100
4	E	127/147 (86%)	127 (100%)	0	100	100
5	F	85/85 (100%)	85 (100%)	0	100	100
6	G	131/132 (99%)	131 (100%)	0	100	100
7	H	107/108 (99%)	106 (99%)	1 (1%)	70	86
8	I	102/125 (82%)	102 (100%)	0	100	100
9	J	89/90 (99%)	89 (100%)	0	100	100
10	K	89/105 (85%)	89 (100%)	0	100	100
11	L	103/105 (98%)	103 (100%)	0	100	100
12	M	99/104 (95%)	99 (100%)	0	100	100
13	N	49/50 (98%)	49 (100%)	0	100	100
14	O	76/77 (99%)	76 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	P	79/118 (67%)	78 (99%)	1 (1%)	61	80
16	Q	80/83 (96%)	80 (100%)	0	100	100
17	R	55/72 (76%)	55 (100%)	0	100	100
18	T	69/70 (99%)	69 (100%)	0	100	100
19	V	191/218 (88%)	191 (100%)	0	100	100
22	Z	215/218 (99%)	215 (100%)	0	100	100
23	a	160/163 (98%)	158 (99%)	2 (1%)	61	80
24	b	169/173 (98%)	169 (100%)	0	100	100
25	c	151/156 (97%)	151 (100%)	0	100	100
26	d	148/150 (99%)	148 (100%)	0	100	100
27	e	102/108 (94%)	101 (99%)	1 (1%)	68	84
28	f	119/120 (99%)	119 (100%)	0	100	100
29	g	100/100 (100%)	100 (100%)	0	100	100
30	h	112/114 (98%)	112 (100%)	0	100	100
31	i	114/116 (98%)	114 (100%)	0	100	100
32	j	97/158 (61%)	97 (100%)	0	100	100
33	k	93/94 (99%)	92 (99%)	1 (1%)	65	83
34	l	100/100 (100%)	100 (100%)	0	100	100
35	m	97/99 (98%)	97 (100%)	0	100	100
36	n	81/83 (98%)	81 (100%)	0	100	100
37	o	90/117 (77%)	90 (100%)	0	100	100
38	p	83/85 (98%)	83 (100%)	0	100	100
39	q	81/86 (94%)	81 (100%)	0	100	100
40	r	155/168 (92%)	155 (100%)	0	100	100
41	s	58/63 (92%)	58 (100%)	0	100	100
42	t	50/51 (98%)	50 (100%)	0	100	100
43	u	58/66 (88%)	58 (100%)	0	100	100
44	v	89/120 (74%)	89 (100%)	0	100	100
45	w	52/54 (96%)	52 (100%)	0	100	100
46	x	43/46 (94%)	43 (100%)	0	100	100
47	y	47/52 (90%)	47 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
48	z	35/36 (97%)	35 (100%)	0	100	100
49	1	53/54 (98%)	53 (100%)	0	100	100
50	2	35/35 (100%)	35 (100%)	0	100	100
All	All	4663/5062 (92%)	4657 (100%)	6 (0%)	87	95

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	H	18	ASN
15	P	15	ASN
23	a	172	ASN
23	a	202	ASN
27	e	36	ASN
33	k	50	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (60) such sidechains are listed below:

Mol	Chain	Res	Type
2	C	125	ASN
2	C	138	GLN
3	D	54	GLN
3	D	84	ASN
3	D	115	HIS
3	D	173	GLN
4	E	173	GLN
6	G	49	GLN
7	H	18	ASN
8	I	66	GLN
8	I	95	GLN
9	J	47	ASN
10	K	37	ASN
10	K	73	GLN
10	K	125	GLN
10	K	127	HIS
11	L	73	ASN
11	L	105	GLN
14	O	14	GLN
14	O	18	HIS
14	O	37	GLN
14	O	42	HIS

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Mol	Chain	Res	Type
14	O	50	HIS
15	P	17	GLN
17	R	60	HIS
18	T	21	ASN
19	V	45	GLN
22	Z	70	HIS
22	Z	91	ASN
22	Z	113	GLN
22	Z	198	ASN
22	Z	203	ASN
22	Z	227	ASN
22	Z	231	HIS
23	a	130	HIS
23	a	139	HIS
23	a	183	HIS
24	b	76	GLN
25	c	13	GLN
25	c	25	GLN
26	d	75	ASN
26	d	144	GLN
27	e	45	ASN
27	e	119	ASN
28	f	103	ASN
29	g	4	GLN
33	k	50	GLN
34	l	79	ASN
35	m	39	GLN
35	m	122	ASN
36	n	13	GLN
37	o	48	GLN
38	p	61	ASN
40	r	6	ASN
40	r	126	GLN
43	u	35	GLN
43	u	44	ASN
47	y	31	ASN
48	z	11	ASN
48	z	19	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1506/1528 (98%)	324 (21%)	14 (0%)
20	Y	3009/3120 (96%)	684 (22%)	25 (0%)
21	U	117/118 (99%)	20 (17%)	1 (0%)
51	4	76/81 (93%)	27 (35%)	1 (1%)
All	All	4708/4847 (97%)	1055 (22%)	41 (0%)

All (1055) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	U
1	A	12	A
1	A	13	G
1	A	36	A
1	A	43	G
1	A	51	C
1	A	52	U
1	A	53	U
1	A	54	A
1	A	55	A
1	A	58	C
1	A	59	A
1	A	75	A
1	A	82	U
1	A	87	G
1	A	92	A
1	A	93	C
1	A	106	C
1	A	116	A
1	A	117	C
1	A	123	G
1	A	125	U
1	A	126	G
1	A	128	U
1	A	136	G
1	A	139	C
1	A	141	U
1	A	179	C
1	A	180	A
1	A	181	C
1	A	187	U
1	A	192	G
1	A	193	C
1	A	194	A

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Mol	Chain	Res	Type
1	A	196	G
1	A	200	U
1	A	201	G
1	A	210	A
1	A	211	A
1	A	215	U
1	A	217	U
1	A	220	G
1	A	223	G
1	A	225	G
1	A	228	A
1	A	231	G
1	A	243	A
1	A	245	C
1	A	247	G
1	A	251	G
1	A	266	G
1	A	267	C
1	A	278	G
1	A	279	A
1	A	280	C
1	A	281	G
1	A	289	G
1	A	306	A
1	A	326	G
1	A	328	U
1	A	329	A
1	A	332	G
1	A	344	A
1	A	345	C
1	A	346	G
1	A	351	G
1	A	352	C
1	A	353	A
1	A	363	A
1	A	367	U
1	A	371	A
1	A	372	C
1	A	373	A
1	A	376	G
1	A	390	U
1	A	391	G

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Mol	Chain	Res	Type
1	A	397	A
1	A	398	C
1	A	406	G
1	A	407	A
1	A	408	G
1	A	414	A
1	A	421	U
1	A	422	C
1	A	423	G
1	A	424	G
1	A	426	U
1	A	427	U
1	A	429	U
1	A	430	A
1	A	434	C
1	A	435	U
1	A	438	U
1	A	439	U
1	A	452	A
1	A	453	G
1	A	454	C
1	A	456	C
1	A	457	A
1	A	458	A
1	A	459	G
1	A	465	G
1	A	466	U
1	A	469	G
1	A	477	G
1	A	478	A
1	A	482	A
1	A	485	G
1	A	486	G
1	A	489	A
1	A	491	C
1	A	496	U
1	A	498	C
1	A	499	C
1	A	505	C
1	A	507	G
1	A	511	U
1	A	515	A

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Mol	Chain	Res	Type
1	A	519	A
1	A	520	G
1	A	527	A
1	A	539	A
1	A	540	A
1	A	542	U
1	A	544	C
1	A	550	G
1	A	553	A
1	A	555	G
1	A	556	A
1	A	557	G
1	A	564	G
1	A	572	G
1	A	577	G
1	A	581	U
1	A	585	U
1	A	605	G
1	A	612	U
1	A	613	G
1	A	619	G
1	A	629	G
1	A	630	A
1	A	633	A
1	A	645	G
1	A	646	G
1	A	666	U
1	A	668	G
1	A	675	A
1	A	683	G
1	A	701	G
1	A	702	G
1	A	703	U
1	A	711	G
1	A	713	G
1	A	716	U
1	A	728	A
1	A	732	G
1	A	735	G
1	A	757	A
1	A	764	A
1	A	765	G

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Mol	Chain	Res	Type
1	A	773	U
1	A	774	A
1	A	790	C
1	A	795	A
1	A	797	C
1	A	801	G
1	A	808	A
1	A	818	U
1	A	822	U
1	A	823	U
1	A	824	C
1	A	826	U
1	A	827	U
1	A	828	G
1	A	841	U
1	A	854	A
1	A	871	A
1	A	882	A
1	A	884	G
1	A	896	A
1	A	908	G
1	A	909	G
1	A	915	G
1	A	916	C
1	A	917	A
1	A	921	G
1	A	927	G
1	A	938	U
1	A	942	U
1	A	943	U
1	A	950	A
1	A	951	A
1	A	953	G
1	A	956	A
1	A	957	A
1	A	959	A
1	A	965	A
1	A	966	C
1	A	967	C
1	A	971	G
1	A	973	U
1	A	974	U

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Mol	Chain	Res	Type
1	A	975	G
1	A	976	A
1	A	981	C
1	A	982	A
1	A	986	G
1	A	988	C
1	A	1010	C
1	A	1013	G
1	A	1014	U
1	A	1024	G
1	A	1025	C
1	A	1028	G
1	A	1033	G
1	A	1034	C
1	A	1036	U
1	A	1045	U
1	A	1058	U
1	A	1059	G
1	A	1074	G
1	A	1075	U
1	A	1079	G
1	A	1081	A
1	A	1088	G
1	A	1104	G
1	A	1108	C
1	A	1110	A
1	A	1115	G
1	A	1116	U
1	A	1117	U
1	A	1118	A
1	A	1120	G
1	A	1127	A
1	A	1129	U
1	A	1133	G
1	A	1138	A
1	A	1140	U
1	A	1147	G
1	A	1149	C
1	A	1150	A
1	A	1151	A
1	A	1162	G
1	A	1165	G

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Mol	Chain	Res	Type
1	A	1171	G
1	A	1172	A
1	A	1177	A
1	A	1178	A
1	A	1181	C
1	A	1182	A
1	A	1183	U
1	A	1193	U
1	A	1194	A
1	A	1203	G
1	A	1204	C
1	A	1206	U
1	A	1207	C
1	A	1217	A
1	A	1219	A
1	A	1221	U
1	A	1231	A
1	A	1238	U
1	A	1239	G
1	A	1241	G
1	A	1248	U
1	A	1251	G
1	A	1261	A
1	A	1265	U
1	A	1266	U
1	A	1267	U
1	A	1268	C
1	A	1269	A
1	A	1279	U
1	A	1282	G
1	A	1283	U
1	A	1284	U
1	A	1287	G
1	A	1290	C
1	A	1302	C
1	A	1313	G
1	A	1328	A
1	A	1329	G
1	A	1330	U
1	A	1340	U
1	A	1342	A
1	A	1343	G

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Mol	Chain	Res	Type
1	A	1344	C
1	A	1345	A
1	A	1346	A
1	A	1347	C
1	A	1351	G
1	A	1353	G
1	A	1357	A
1	A	1364	U
1	A	1377	A
1	A	1380	C
1	A	1381	A
1	A	1382	C
1	A	1400	A
1	A	1407	U
1	A	1413	C
1	A	1421	G
1	A	1425	G
1	A	1426	C
1	A	1429	A
1	A	1433	C
1	A	1434	U
1	A	1435	U
1	A	1436	G
1	A	1438	G
1	A	1457	G
1	A	1460	A
1	A	1463	G
1	A	1475	G
1	A	1478	G
1	A	1481	G
1	A	1483	A
1	A	1487	A
1	A	1488	G
1	A	1490	U
1	A	1501	G
1	A	1504	G
1	A	1513	G
1	A	1514	G
20	Y	7	U
20	Y	9	U
20	Y	12	G
20	Y	20	G

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Mol	Chain	Res	Type
20	Y	23	G
20	Y	31	U
20	Y	32	G
20	Y	42	G
20	Y	48	G
20	Y	57	A
20	Y	59	G
20	Y	60	A
20	Y	61	G
20	Y	68	A
20	Y	70	A
20	Y	71	A
20	Y	72	G
20	Y	74	C
20	Y	77	G
20	Y	89	A
20	Y	90	C
20	Y	93	A
20	Y	94	G
20	Y	95	C
20	Y	97	U
20	Y	98	U
20	Y	99	G
20	Y	111	U
20	Y	115	A
20	Y	116	A
20	Y	117	U
20	Y	122	A
20	Y	125	C
20	Y	126	C
20	Y	145	G
20	Y	148	A
20	Y	159	A
20	Y	161	U
20	Y	162	A
20	Y	180	A
20	Y	189	A
20	Y	195	A
20	Y	198	A
20	Y	212	A
20	Y	215	A
20	Y	221	A

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Mol	Chain	Res	Type
20	Y	227	A
20	Y	228	A
20	Y	229	U
20	Y	230	G
20	Y	231	U
20	Y	248	G
20	Y	250	G
20	Y	252	G
20	Y	265	A
20	Y	266	U
20	Y	268	G
20	Y	272	A
20	Y	273	A
20	Y	274	C
20	Y	279	U
20	Y	282	A
20	Y	283	U
20	Y	285	U
20	Y	286	G
20	Y	290	C
20	Y	293	G
20	Y	296	A
20	Y	299	G
20	Y	301	U
20	Y	302	U
20	Y	303	G
20	Y	312	G
20	Y	313	G
20	Y	314	G
20	Y	317	G
20	Y	318	U
20	Y	319	G
20	Y	321	G
20	Y	322	A
20	Y	323	C
20	Y	324	C
20	Y	325	U
20	Y	327	U
20	Y	330	U
20	Y	331	U
20	Y	336	C
20	Y	337	U

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Mol	Chain	Res	Type
20	Y	338	C
20	Y	340	A
20	Y	342	C
20	Y	343	U
20	Y	350	A
20	Y	351	G
20	Y	352	G
20	Y	353	G
20	Y	355	A
20	Y	357	U
20	Y	358	G
20	Y	359	A
20	Y	360	G
20	Y	361	A
20	Y	364	A
20	Y	366	G
20	Y	367	U
20	Y	369	G
20	Y	370	U
20	Y	371	G
20	Y	375	A
20	Y	383	U
20	Y	384	G
20	Y	387	U
20	Y	389	G
20	Y	393	U
20	Y	399	G
20	Y	400	C
20	Y	401	C
20	Y	404	A
20	Y	405	G
20	Y	406	A
20	Y	408	G
20	Y	412	A
20	Y	415	G
20	Y	420	G
20	Y	424	G
20	Y	425	U
20	Y	433	C
20	Y	434	G
20	Y	443	C
20	Y	444	U

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Mol	Chain	Res	Type
20	Y	445	U
20	Y	446	G
20	Y	447	A
20	Y	450	G
20	Y	451	U
20	Y	452	G
20	Y	460	G
20	Y	472	C
20	Y	474	G
20	Y	475	U
20	Y	486	G
20	Y	489	A
20	Y	490	A
20	Y	491	U
20	Y	494	G
20	Y	498	G
20	Y	501	C
20	Y	502	C
20	Y	503	A
20	Y	505	C
20	Y	507	G
20	Y	508	G
20	Y	509	U
20	Y	512	G
20	Y	514	C
20	Y	515	U
20	Y	517	A
20	Y	518	A
20	Y	539	C
20	Y	543	U
20	Y	544	U
20	Y	553	G
20	Y	555	G
20	Y	562	G
20	Y	565	A
20	Y	566	A
20	Y	567	A
20	Y	568	A
20	Y	569	G
20	Y	589	A
20	Y	591	G
20	Y	592	A

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Mol	Chain	Res	Type
20	Y	594	U
20	Y	595	A
20	Y	596	C
20	Y	597	C
20	Y	601	A
20	Y	614	C
20	Y	617	U
20	Y	618	C
20	Y	619	C
20	Y	620	G
20	Y	631	C
20	Y	632	G
20	Y	636	U
20	Y	637	G
20	Y	638	U
20	Y	639	C
20	Y	640	G
20	Y	642	G
20	Y	644	G
20	Y	647	G
20	Y	650	G
20	Y	654	U
20	Y	655	G
20	Y	658	U
20	Y	659	U
20	Y	661	U
20	Y	663	A
20	Y	665	G
20	Y	666	A
20	Y	667	A
20	Y	678	A
20	Y	679	G
20	Y	680	U
20	Y	684	G
20	Y	685	G
20	Y	696	A
20	Y	699	U
20	Y	700	U
20	Y	704	C
20	Y	707	G
20	Y	708	G
20	Y	709	U

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Mol	Chain	Res	Type
20	Y	710	G
20	Y	712	G
20	Y	714	U
20	Y	715	A
20	Y	719	G
20	Y	721	A
20	Y	727	A
20	Y	731	A
20	Y	736	G
20	Y	740	A
20	Y	747	A
20	Y	756	A
20	Y	757	G
20	Y	758	A
20	Y	759	G
20	Y	760	U
20	Y	768	G
20	Y	769	U
20	Y	773	G
20	Y	784	G
20	Y	801	U
20	Y	829	U
20	Y	832	G
20	Y	838	G
20	Y	839	U
20	Y	840	G
20	Y	841	G
20	Y	845	C
20	Y	862	U
20	Y	863	G
20	Y	868	C
20	Y	872	G
20	Y	879	A
20	Y	880	G
20	Y	885	G
20	Y	890	G
20	Y	897	A
20	Y	899	G
20	Y	900	G
20	Y	920	G
20	Y	927	C
20	Y	942	U

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Mol	Chain	Res	Type
20	Y	960	G
20	Y	961	U
20	Y	972	A
20	Y	974	G
20	Y	975	U
20	Y	981	U
20	Y	982	A
20	Y	995	U
20	Y	998	G
20	Y	1003	A
20	Y	1005	A
20	Y	1010	U
20	Y	1011	A
20	Y	1012	C
20	Y	1014	G
20	Y	1025	A
20	Y	1027	C
20	Y	1045	C
20	Y	1046	C
20	Y	1047	A
20	Y	1049	G
20	Y	1063	G
20	Y	1070	G
20	Y	1075	U
20	Y	1076	A
20	Y	1078	G
20	Y	1084	U
20	Y	1085	G
20	Y	1091	A
20	Y	1092	G
20	Y	1098	A
20	Y	1101	A
20	Y	1114	G
20	Y	1115	G
20	Y	1127	A
20	Y	1130	C
20	Y	1131	G
20	Y	1138	A
20	Y	1140	G
20	Y	1144	A
20	Y	1151	U
20	Y	1163	A

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Mol	Chain	Res	Type
20	Y	1164	A
20	Y	1175	A
20	Y	1176	G
20	Y	1177	G
20	Y	1178	U
20	Y	1181	G
20	Y	1184	U
20	Y	1185	A
20	Y	1186	G
20	Y	1187	A
20	Y	1188	A
20	Y	1189	G
20	Y	1191	A
20	Y	1194	C
20	Y	1196	C
20	Y	1200	U
20	Y	1202	A
20	Y	1205	G
20	Y	1206	A
20	Y	1207	G
20	Y	1208	U
20	Y	1209	G
20	Y	1213	A
20	Y	1219	U
20	Y	1222	C
20	Y	1230	G
20	Y	1232	G
20	Y	1234	U
20	Y	1240	G
20	Y	1250	U
20	Y	1251	A
20	Y	1253	C
20	Y	1259	U
20	Y	1260	C
20	Y	1261	A
20	Y	1270	G
20	Y	1292	U
20	Y	1293	G
20	Y	1301	G
20	Y	1335	G
20	Y	1341	U
20	Y	1344	A

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Mol	Chain	Res	Type
20	Y	1345	G
20	Y	1351	G
20	Y	1353	G
20	Y	1359	G
20	Y	1365	G
20	Y	1370	U
20	Y	1371	G
20	Y	1379	G
20	Y	1380	A
20	Y	1384	G
20	Y	1386	G
20	Y	1389	U
20	Y	1400	G
20	Y	1415	A
20	Y	1416	A
20	Y	1420	C
20	Y	1429	C
20	Y	1437	A
20	Y	1440	C
20	Y	1444	U
20	Y	1447	G
20	Y	1448	C
20	Y	1465	C
20	Y	1480	A
20	Y	1493	A
20	Y	1494	U
20	Y	1499	A
20	Y	1500	A
20	Y	1501	C
20	Y	1506	U
20	Y	1509	U
20	Y	1510	A
20	Y	1522	G
20	Y	1526	A
20	Y	1531	C
20	Y	1532	G
20	Y	1534	C
20	Y	1540	U
20	Y	1543	A
20	Y	1549	G
20	Y	1552	A
20	Y	1553	C

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Mol	Chain	Res	Type
20	Y	1554	U
20	Y	1564	A
20	Y	1565	A
20	Y	1566	A
20	Y	1574	G
20	Y	1578	G
20	Y	1579	C
20	Y	1587	G
20	Y	1599	U
20	Y	1600	G
20	Y	1602	U
20	Y	1613	G
20	Y	1620	U
20	Y	1621	C
20	Y	1627	U
20	Y	1629	G
20	Y	1631	A
20	Y	1632	G
20	Y	1635	A
20	Y	1637	G
20	Y	1639	G
20	Y	1640	A
20	Y	1641	U
20	Y	1649	C
20	Y	1672	C
20	Y	1674	G
20	Y	1675	U
20	Y	1676	G
20	Y	1678	U
20	Y	1679	A
20	Y	1680	A
20	Y	1681	U
20	Y	1688	G
20	Y	1703	G
20	Y	1705	C
20	Y	1709	U
20	Y	1710	A
20	Y	1713	U
20	Y	1714	A
20	Y	1716	A
20	Y	1717	U
20	Y	1724	G

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Mol	Chain	Res	Type
20	Y	1728	U
20	Y	1730	U
20	Y	1731	A
20	Y	1737	A
20	Y	1746	G
20	Y	1753	C
20	Y	1754	G
20	Y	1755	A
20	Y	1767	U
20	Y	1769	G
20	Y	1783	G
20	Y	1786	G
20	Y	1788	G
20	Y	1789	A
20	Y	1798	U
20	Y	1801	C
20	Y	1802	G
20	Y	1805	G
20	Y	1808	A
20	Y	1813	C
20	Y	1825	C
20	Y	1826	A
20	Y	1834	A
20	Y	1849	G
20	Y	1866	C
20	Y	1870	U
20	Y	1871	G
20	Y	1872	A
20	Y	1890	C
20	Y	1892	G
20	Y	1912	C
20	Y	1916	A
20	Y	1917	G
20	Y	1933	G
20	Y	1946	U
20	Y	1947	U
20	Y	1949	C
20	Y	1950	G
20	Y	1961	G
20	Y	1973	C
20	Y	1975	A
20	Y	1981	U

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Mol	Chain	Res	Type
20	Y	1985	A
20	Y	1990	A
20	Y	1998	C
20	Y	2000	A
20	Y	2002	A
20	Y	2009	G
20	Y	2017	C
20	Y	2018	G
20	Y	2025	C
20	Y	2026	A
20	Y	2033	U
20	Y	2038	A
20	Y	2046	A
20	Y	2050	C
20	Y	2074	G
20	Y	2075	G
20	Y	2085	C
20	Y	2086	U
20	Y	2088	C
20	Y	2089	C
20	Y	2090	U
20	Y	2091	U
20	Y	2092	U
20	Y	2093	G
20	Y	2094	G
20	Y	2095	G
20	Y	2096	G
20	Y	2101	A
20	Y	2104	G
20	Y	2106	A
20	Y	2107	G
20	Y	2110	U
20	Y	2112	U
20	Y	2130	G
20	Y	2131	G
20	Y	2137	A
20	Y	2138	C
20	Y	2140	A
20	Y	2145	C
20	Y	2147	U
20	Y	2153	G
20	Y	2154	G

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Mol	Chain	Res	Type
20	Y	2162	A
20	Y	2163	U
20	Y	2176	A
20	Y	2179	U
20	Y	2187	U
20	Y	2191	C
20	Y	2194	A
20	Y	2195	U
20	Y	2196	G
20	Y	2215	U
20	Y	2217	U
20	Y	2221	A
20	Y	2243	C
20	Y	2245	C
20	Y	2247	A
20	Y	2254	A
20	Y	2255	A
20	Y	2256	G
20	Y	2257	A
20	Y	2258	U
20	Y	2267	C
20	Y	2279	C
20	Y	2280	G
20	Y	2283	A
20	Y	2284	A
20	Y	2285	G
20	Y	2286	A
20	Y	2303	A
20	Y	2316	G
20	Y	2320	C
20	Y	2323	G
20	Y	2408	G
20	Y	2409	U
20	Y	2411	U
20	Y	2421	A
20	Y	2427	G
20	Y	2434	A
20	Y	2436	A
20	Y	2449	A
20	Y	2454	G
20	Y	2459	G
20	Y	2462	G

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Mol	Chain	Res	Type
20	Y	2463	G
20	Y	2467	U
20	Y	2473	U
20	Y	2490	A
20	Y	2503	G
20	Y	2507	C
20	Y	2510	A
20	Y	2511	A
20	Y	2527	G
20	Y	2528	G
20	Y	2529	A
20	Y	2531	G
20	Y	2532	G
20	Y	2533	C
20	Y	2534	A
20	Y	2536	U
20	Y	2538	A
20	Y	2540	G
20	Y	2541	U
20	Y	2542	G
20	Y	2543	U
20	Y	2544	U
20	Y	2548	U
20	Y	2551	A
20	Y	2559	A
20	Y	2571	C
20	Y	2573	G
20	Y	2574	C
20	Y	2577	G
20	Y	2581	G
20	Y	2585	U
20	Y	2606	G
20	Y	2607	G
20	Y	2609	A
20	Y	2627	C
20	Y	2630	A
20	Y	2631	G
20	Y	2634	G
20	Y	2641	U
20	Y	2646	C
20	Y	2647	U
20	Y	2648	C

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Mol	Chain	Res	Type
20	Y	2649	A
20	Y	2651	C
20	Y	2652	G
20	Y	2653	G
20	Y	2654	A
20	Y	2655	U
20	Y	2665	C
20	Y	2671	G
20	Y	2672	A
20	Y	2688	C
20	Y	2692	A
20	Y	2694	G
20	Y	2699	C
20	Y	2700	A
20	Y	2702	A
20	Y	2705	G
20	Y	2714	G
20	Y	2715	U
20	Y	2716	U
20	Y	2721	A
20	Y	2722	C
20	Y	2726	G
20	Y	2727	A
20	Y	2728	U
20	Y	2729	G
20	Y	2742	A
20	Y	2744	C
20	Y	2754	G
20	Y	2755	A
20	Y	2756	G
20	Y	2771	U
20	Y	2785	A
20	Y	2786	U
20	Y	2790	A
20	Y	2791	G
20	Y	2793	G
20	Y	2805	G
20	Y	2806	G
20	Y	2821	G
20	Y	2822	A
20	Y	2823	G
20	Y	2826	A

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Mol	Chain	Res	Type
20	Y	2833	U
20	Y	2837	U
20	Y	2853	C
20	Y	2854	A
20	Y	2860	U
20	Y	2870	C
20	Y	2876	C
20	Y	2878	A
20	Y	2894	G
20	Y	2910	G
20	Y	2913	U
20	Y	2915	C
20	Y	2926	A
20	Y	2936	C
20	Y	2937	G
20	Y	2942	G
20	Y	2950	C
20	Y	2953	U
20	Y	2956	G
20	Y	2957	A
20	Y	2968	G
20	Y	2972	A
20	Y	2974	A
20	Y	2976	C
20	Y	2981	A
20	Y	2982	A
20	Y	2985	G
20	Y	3002	A
20	Y	3004	C
20	Y	3009	U
20	Y	3014	A
20	Y	3016	C
20	Y	3021	A
20	Y	3022	G
20	Y	3039	C
20	Y	3042	A
20	Y	3046	C
20	Y	3060	A
20	Y	3081	A
20	Y	3088	C
20	Y	3093	A
20	Y	3098	G

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Mol	Chain	Res	Type
20	Y	3100	A
20	Y	3101	C
20	Y	3104	A
20	Y	3105	C
20	Y	3106	C
20	Y	3112	A
20	Y	3114	A
20	Y	3115	A
21	U	4	A
21	U	6	G
21	U	9	G
21	U	11	U
21	U	12	C
21	U	13	C
21	U	25	G
21	U	42	C
21	U	52	G
21	U	54	A
21	U	57	U
21	U	58	A
21	U	67	A
21	U	85	C
21	U	87	U
21	U	89	C
21	U	90	G
21	U	103	G
21	U	107	A
21	U	114	A
51	4	2330	U
51	4	2331	U
51	4	2334	U
51	4	2335	G
51	4	2337	A
51	4	2338	G
51	4	2340	A
51	4	2341	U
51	4	2342	A
51	4	2343	G
51	4	2354	G
51	4	2355	U
51	4	2356	G
51	4	2357	A

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Mol	Chain	Res	Type
51	4	2362	C
51	4	2368	C
51	4	2371	G
51	4	2382	G
51	4	2383	U
51	4	2384	C
51	4	2387	U
51	4	2388	G
51	4	2395	U
51	4	2396	A
51	4	2399	A
51	4	2401	U
51	4	2402	C

All (41) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	92	A
1	A	124	G
1	A	209	A
1	A	422	C
1	A	429	U
1	A	485	G
1	A	498	C
1	A	895	A
1	A	1058	U
1	A	1109	C
1	A	1117	U
1	A	1149	C
1	A	1477	A
1	A	1482	U
20	Y	97	U
20	Y	316	U
20	Y	336	C
20	Y	357	U
20	Y	445	U
20	Y	600	A
20	Y	617	U
20	Y	974	G
20	Y	981	U
20	Y	1004	C
20	Y	1010	U

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Mol	Chain	Res	Type
20	Y	1046	C
20	Y	1084	U
20	Y	1186	G
20	Y	1205	G
20	Y	1500	A
20	Y	1634	C
20	Y	1730	U
20	Y	1999	U
20	Y	2088	C
20	Y	2089	C
20	Y	2094	G
20	Y	2408	G
20	Y	2820	U
20	Y	3008	C
21	U	10	G
51	4	2381	A

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 629 ligands modelled in this entry, 629 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
20	Y	49
27	e	20
1	A	5
51	4	4

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	Y	2406:U	O3'	2407:C	P	20.52
1	Y	1549:G	O3'	1550:G	P	13.74
1	4	2385:G	O3'	2386:U	P	13.50
1	Y	1600:G	O3'	1601:G	P	12.53
1	Y	1008:G	O3'	1009:U	P	11.19
1	Y	1622:G	O3'	1623:U	P	10.97
1	4	2344:G	O3'	2345:U	P	9.83
1	e	22:PRO	C	23:ALA	N	9.74
1	Y	454:U	O3'	455:C	P	8.66
1	Y	2096:G	O3'	2097:G	P	8.65
1	e	15:ILE	C	16:GLN	N	8.54
1	Y	299:G	O3'	300:G	P	8.47
1	Y	996:G	O3'	997:G	P	8.45
1	e	54:ASN	C	55:VAL	N	8.05
1	A	1200:A	O3'	1201:G	P	7.82
1	Y	1001:C	O3'	1002:C	P	7.73
1	Y	2411:U	O3'	2412:U	P	7.72
1	4	2349:A	O3'	2350:G	P	6.92
1	e	42:LYS	C	43:ALA	N	6.76
1	e	124:ASP	C	125:ALA	N	6.57
1	e	118:LEU	C	119:ASN	N	6.56
1	Y	999:C	O3'	1000:C	P	6.38
1	e	25:PRO	C	26:VAL	N	6.09
1	4	2393:A	O3'	2394:A	P	6.06
1	Y	995:U	O3'	996:G	P	5.88
1	Y	1196:C	O3'	1197:C	P	5.66
1	A	1199:C	O3'	1200:A	P	5.40

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	e	125:ALA	C	126:ALA	N	5.31
1	A	1130:C	O3'	1131:G	P	4.90
1	Y	367:U	O3'	368:U	P	4.89
1	e	88:GLN	C	89:LYS	N	4.81
1	e	61:THR	C	62:VAL	N	4.73
1	Y	1019:C	O3'	1020:A	P	4.61
1	e	41:CYS	C	42:LYS	N	4.61
1	e	67:SER	C	68:PHE	N	4.50
1	Y	1005:A	O3'	1006:G	P	4.34
1	Y	1534:C	O3'	1535:C	P	4.32
1	e	24:PRO	C	25:PRO	N	4.32
1	Y	1000:C	O3'	1001:C	P	4.30
1	Y	2143:A	O3'	2144:C	P	4.28
1	Y	2140:A	O3'	2141:U	P	4.18
1	Y	1210:C	O3'	1211:G	P	4.12
1	e	39:GLU	C	40:PHE	N	4.12
1	Y	2135:U	O3'	2136:A	P	3.94
1	e	86:GLY	C	87:VAL	N	3.91
1	Y	1529:U	O3'	1530:G	P	3.89
1	Y	1545:C	O3'	1546:A	P	3.88
1	e	68:PHE	C	69:THR	N	3.83
1	Y	2142:A	O3'	2143:A	P	3.82
1	A	999:A	O3'	1000:U	P	3.73
1	Y	1200:U	O3'	1201:G	P	3.52
1	A	1000:U	O3'	1001:G	P	3.47
1	Y	1631:A	O3'	1632:G	P	3.46
1	Y	1499:A	O3'	1500:A	P	3.44
1	e	63:TYR	C	64:GLU	N	3.35
1	Y	2100:A	O3'	2101:A	P	3.30
1	Y	1599:U	O3'	1600:G	P	3.27
1	e	55:VAL	C	56:ILE	N	3.25
1	Y	988:U	O3'	989:G	P	3.24
1	Y	1170:C	O3'	1171:C	P	3.24
1	Y	1543:A	O3'	1544:U	P	3.24
1	Y	499:G	O3'	500:A	P	3.23
1	Y	437:G	O3'	438:U	P	3.22
1	Y	1542:A	O3'	1543:A	P	3.21
1	e	121:ASN	C	122:ASP	N	3.20
1	Y	2146:A	O3'	2147:U	P	3.19
1	Y	1800:G	O3'	1801:C	P	3.18
1	Y	279:U	O3'	280:G	P	3.17
1	e	13:LEU	C	14:GLN	N	3.15

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	Y	400:C	O3'	401:C	P	3.14
1	Y	2415:G	O3'	2416:C	P	3.13
1	Y	1016:C	O3'	1017:G	P	3.12
1	Y	1700:G	O3'	1701:G	P	3.12
1	Y	160:A	O3'	161:U	P	3.08
1	Y	1708:A	O3'	1709:U	P	3.08
1	Y	2087:C	O3'	2088:C	P	3.07
1	Y	500:A	O3'	501:C	P	3.06
1	Y	1399:A	O3'	1400:G	P	3.01

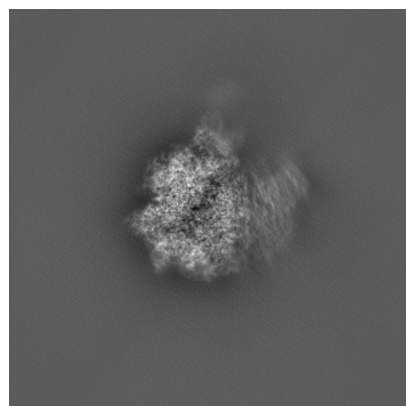
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44097. These allow visual inspection of the internal detail of the map and identification of artifacts.

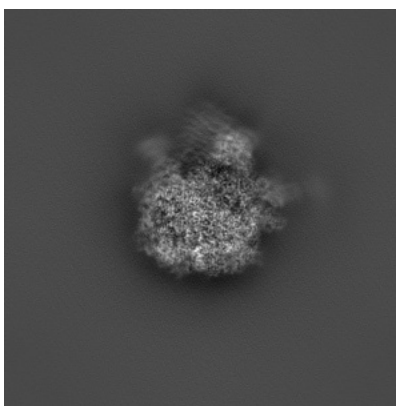
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

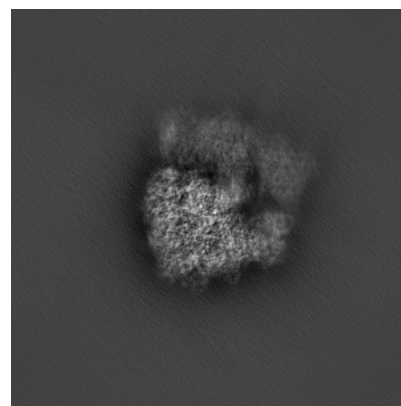
6.1.1 Primary map



X

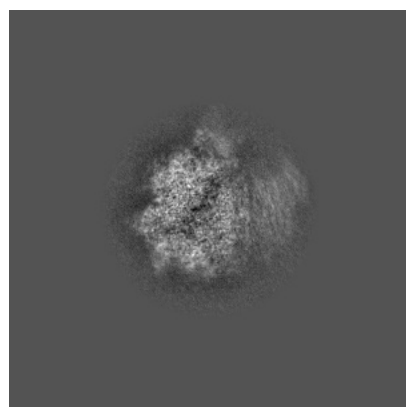


Y

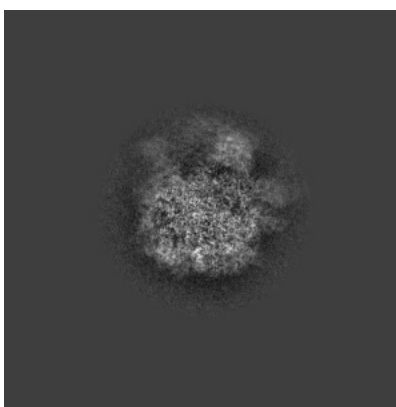


Z

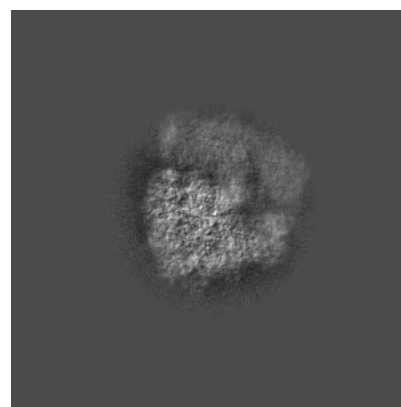
6.1.2 Raw map



X



Y

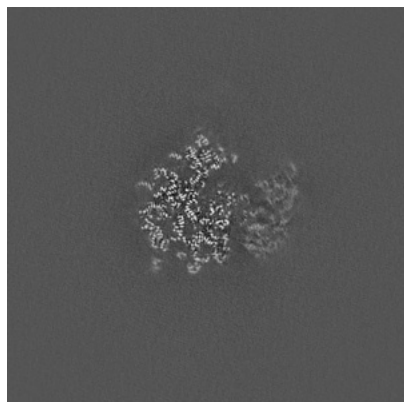


Z

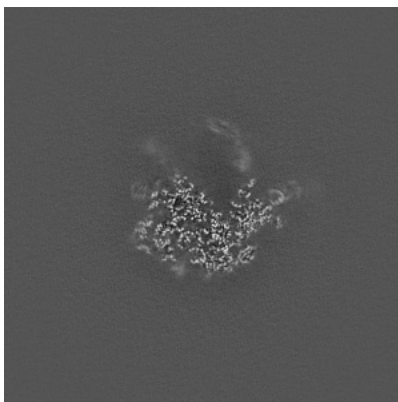
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

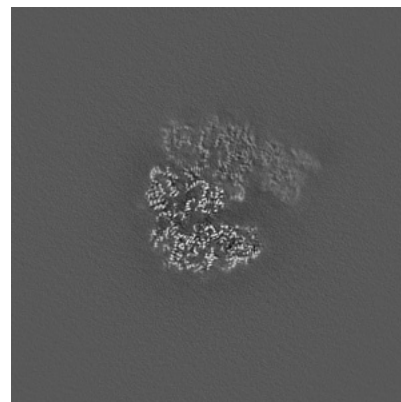
6.2.1 Primary map



X Index: 324

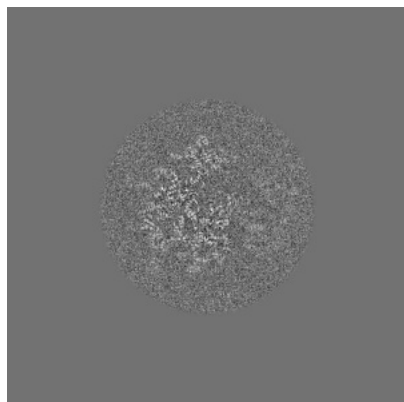


Y Index: 324

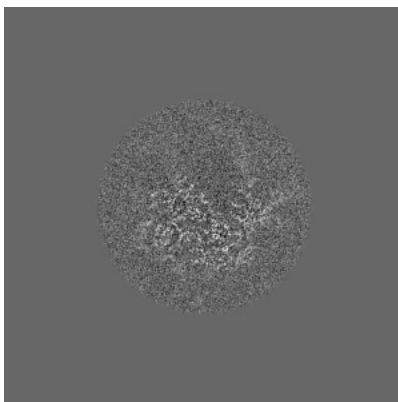


Z Index: 324

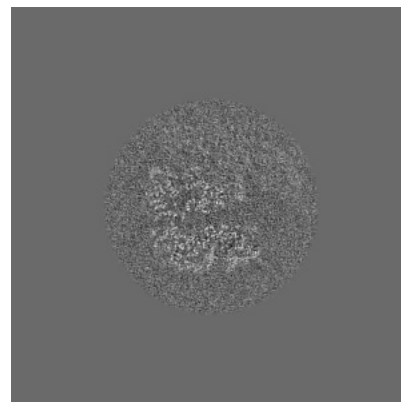
6.2.2 Raw map



X Index: 324



Y Index: 324

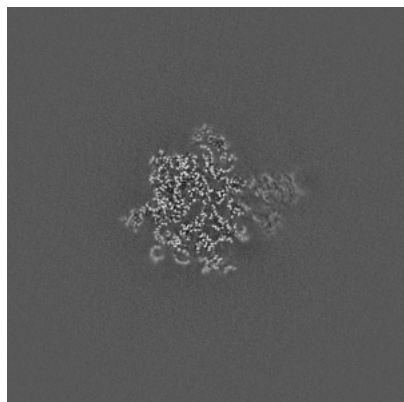


Z Index: 324

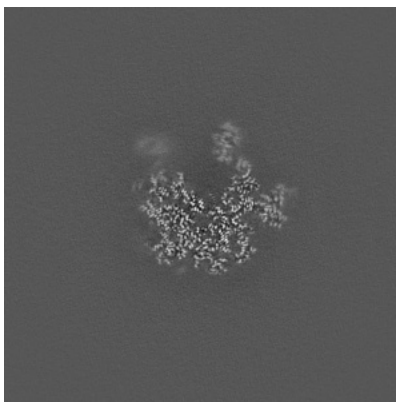
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

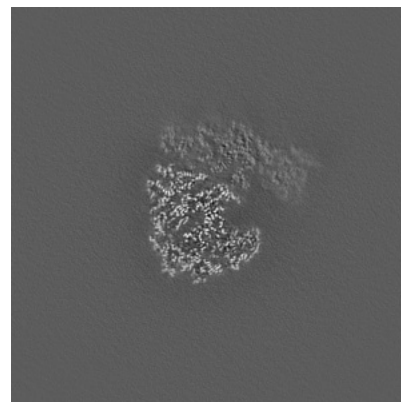
6.3.1 Primary map



X Index: 297

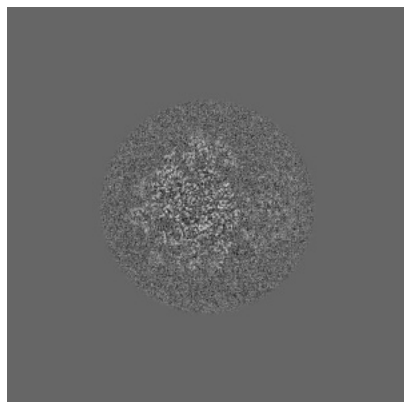


Y Index: 310

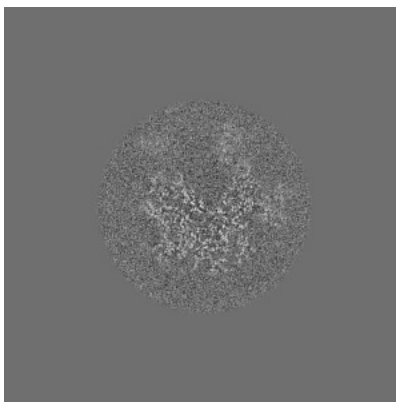


Z Index: 317

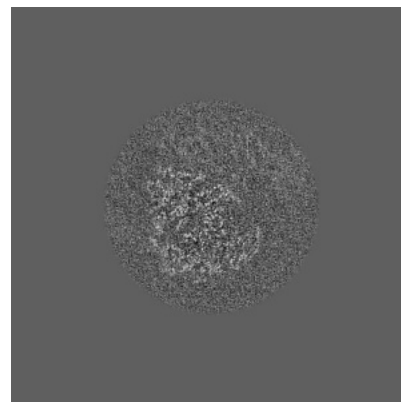
6.3.2 Raw map



X Index: 312



Y Index: 310

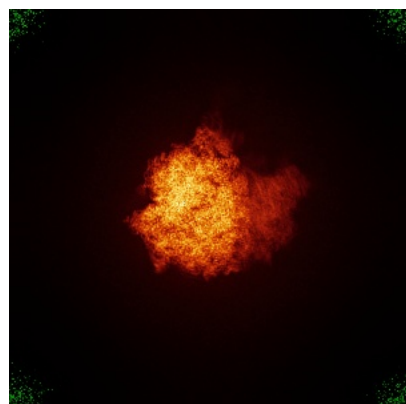


Z Index: 317

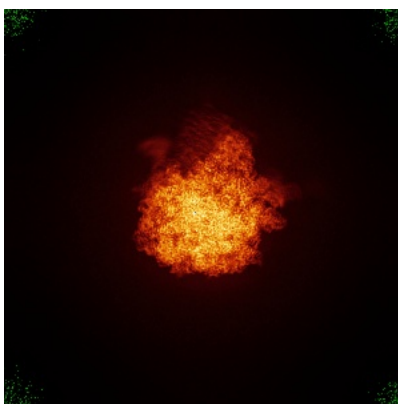
The images above show the largest variance slices of the map in three orthogonal directions.

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

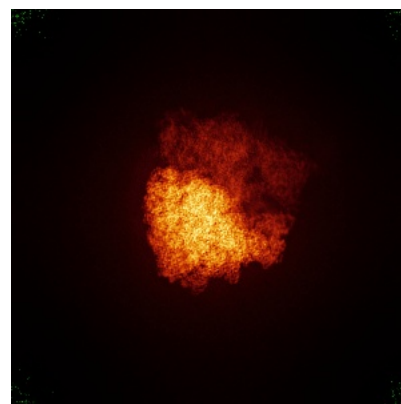
6.4.1 Primary map



X

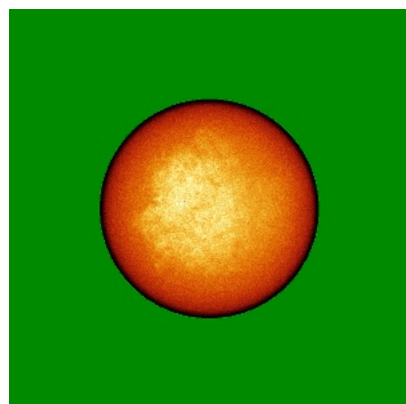


Y

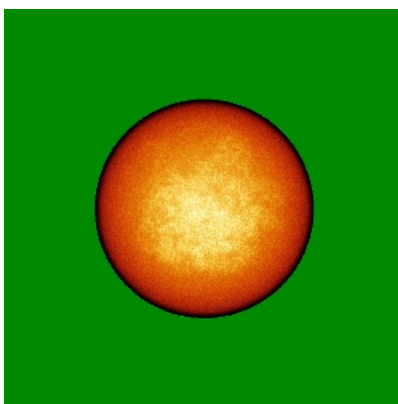


Z

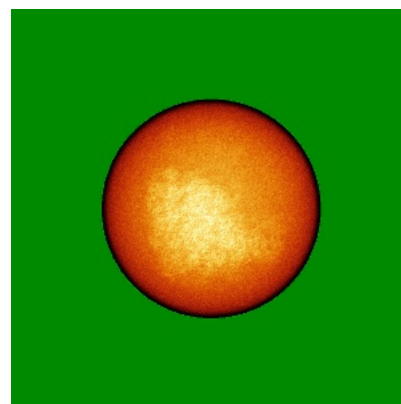
6.4.2 Raw map



X



Y

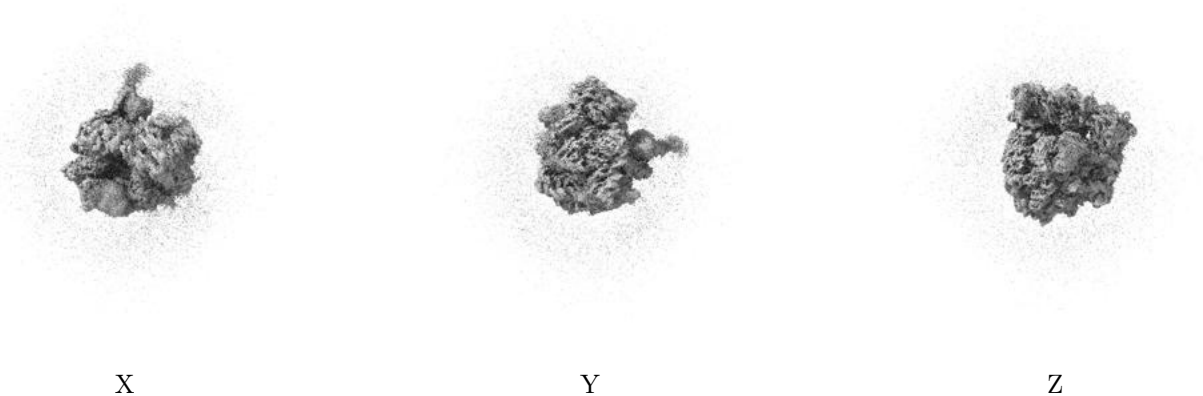


Z

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.

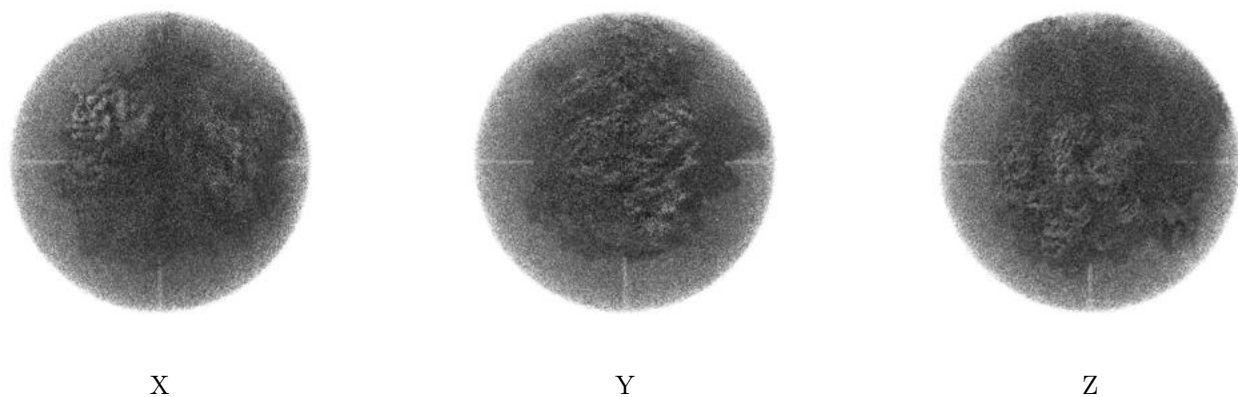
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 1.04. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

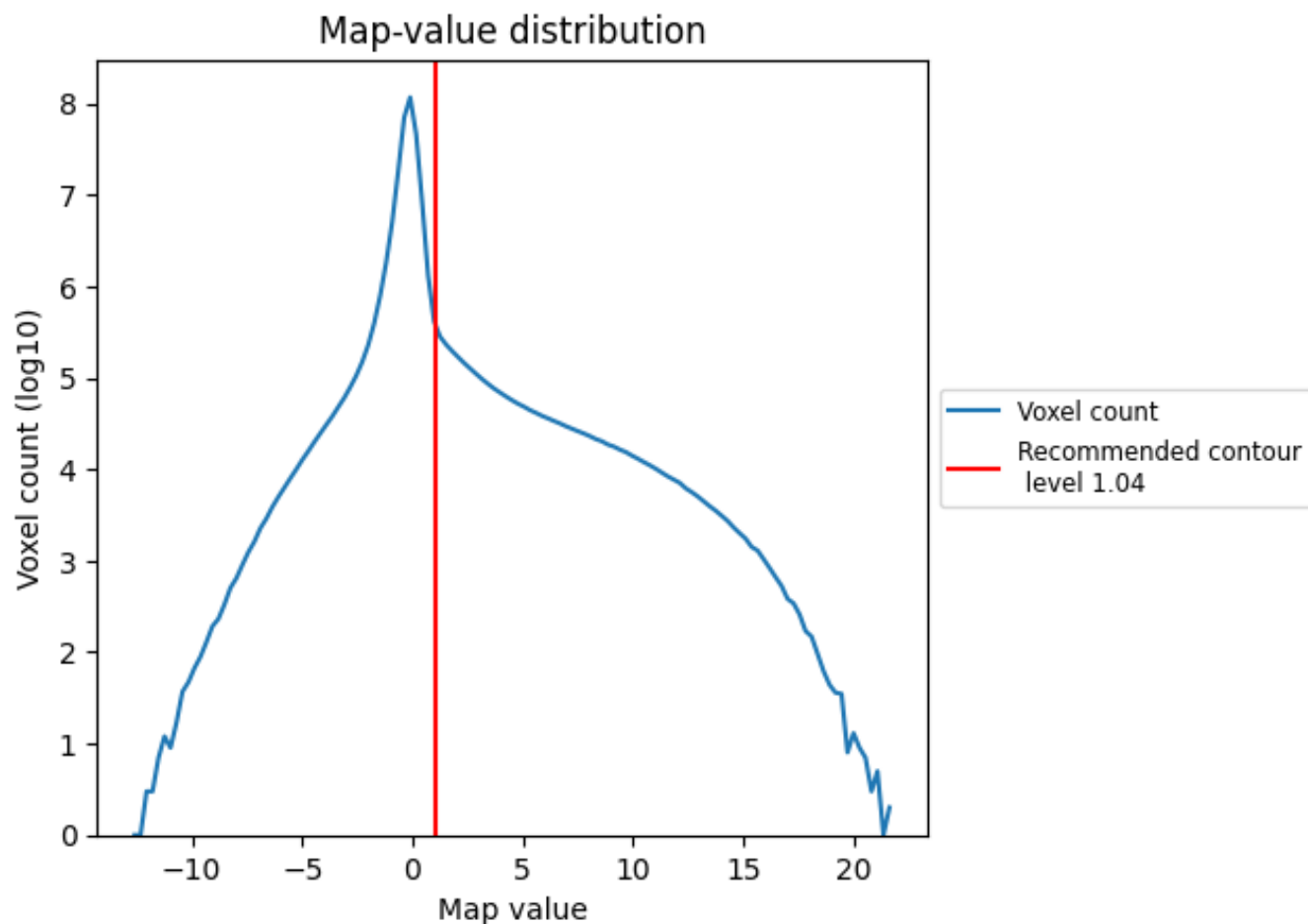
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

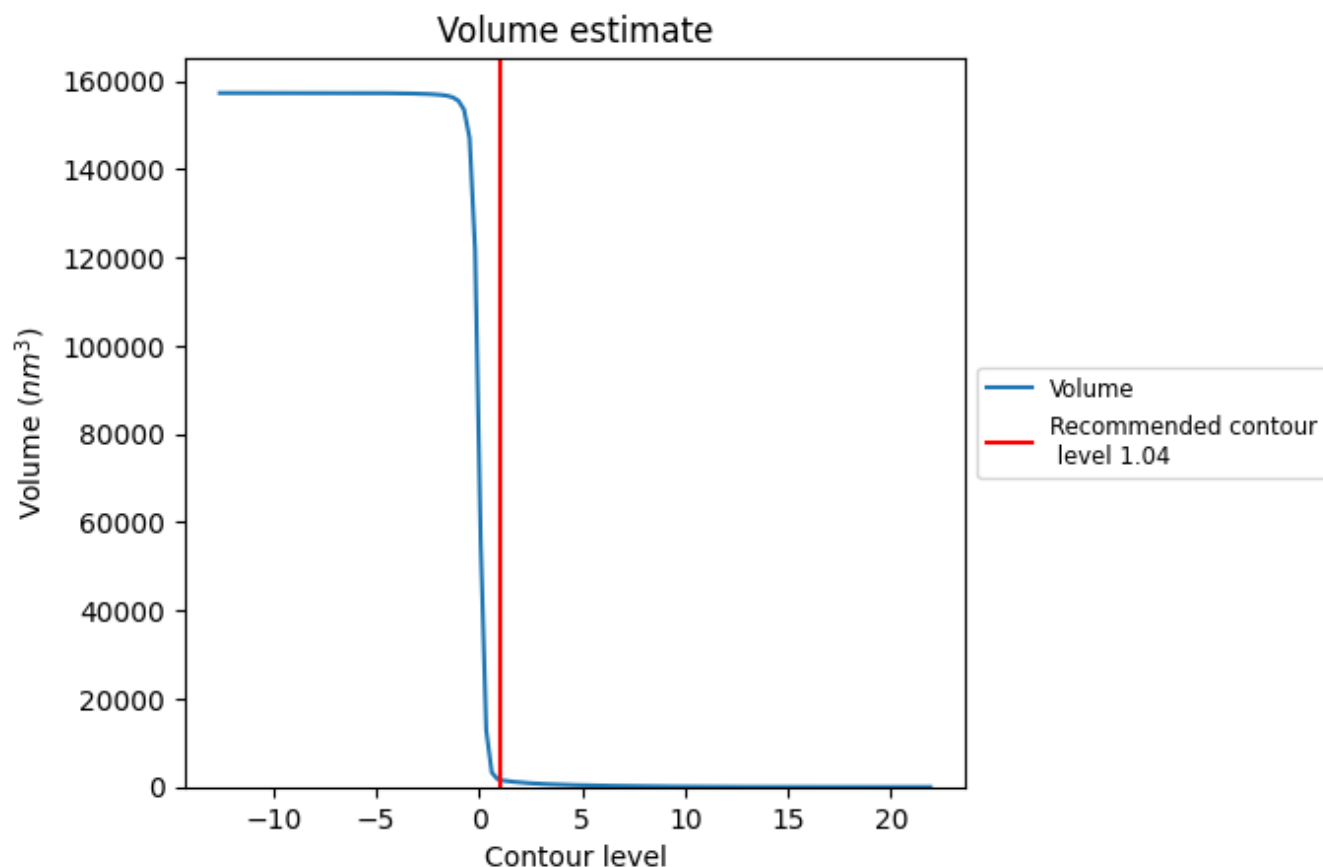
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

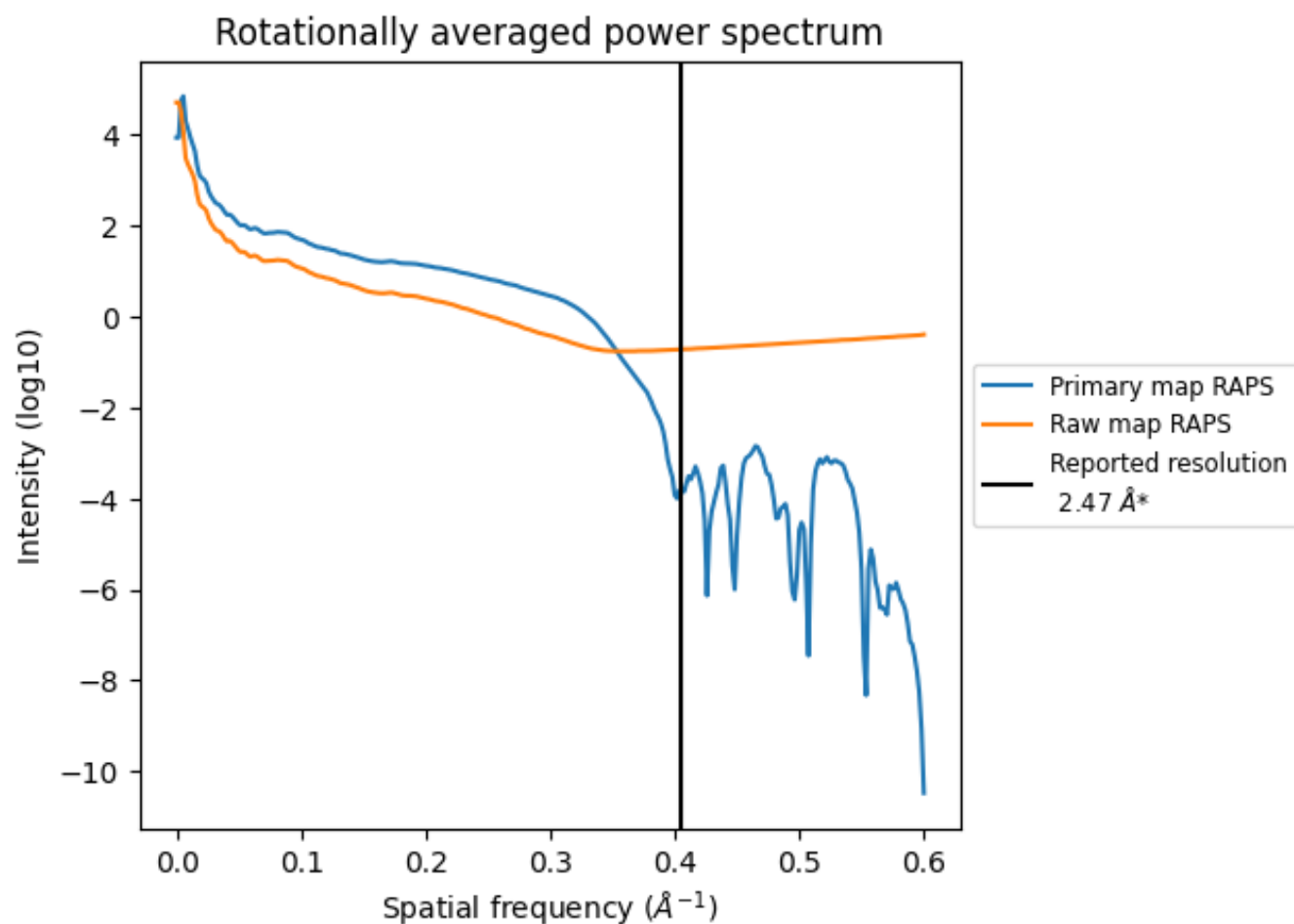
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1605 nm^3 ; this corresponds to an approximate mass of 1450 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 ⓘ

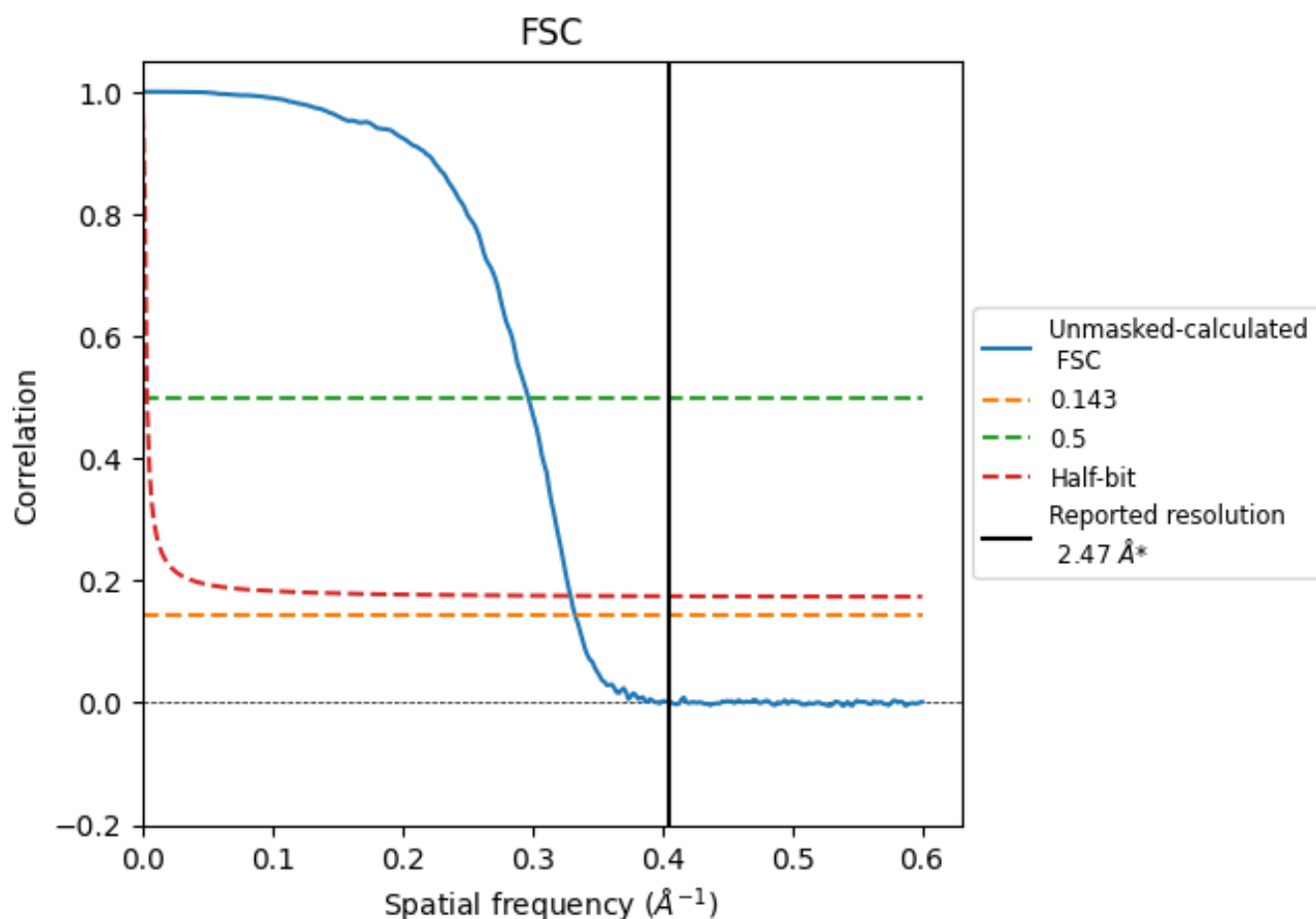


*Reported resolution corresponds to spatial frequency of 0.405 Å⁻¹

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 0.405 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

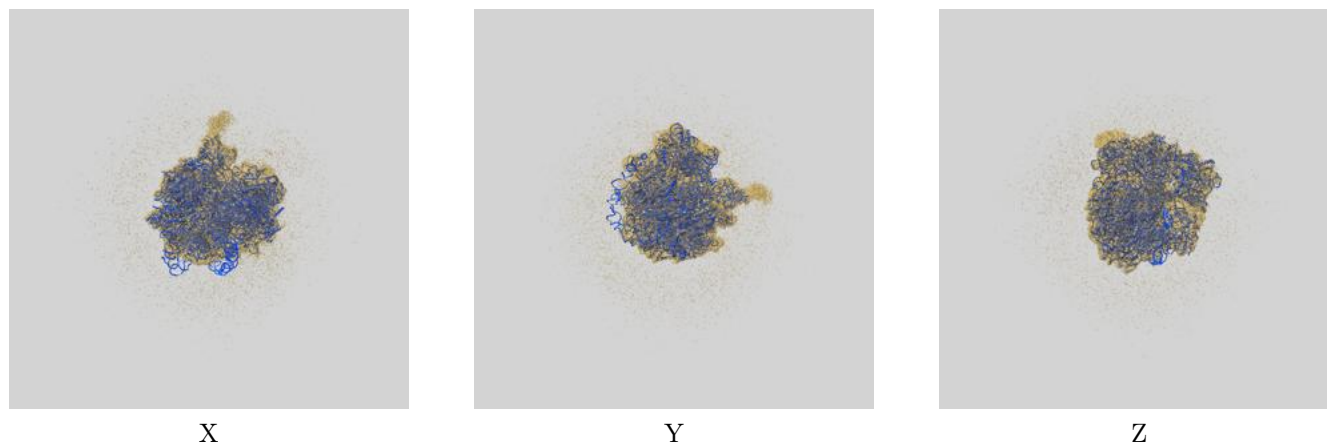
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.47	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.00	3.37	3.03

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.00 differs from the reported value 2.47 by more than 10 %

9 Map-model fit [i](#)

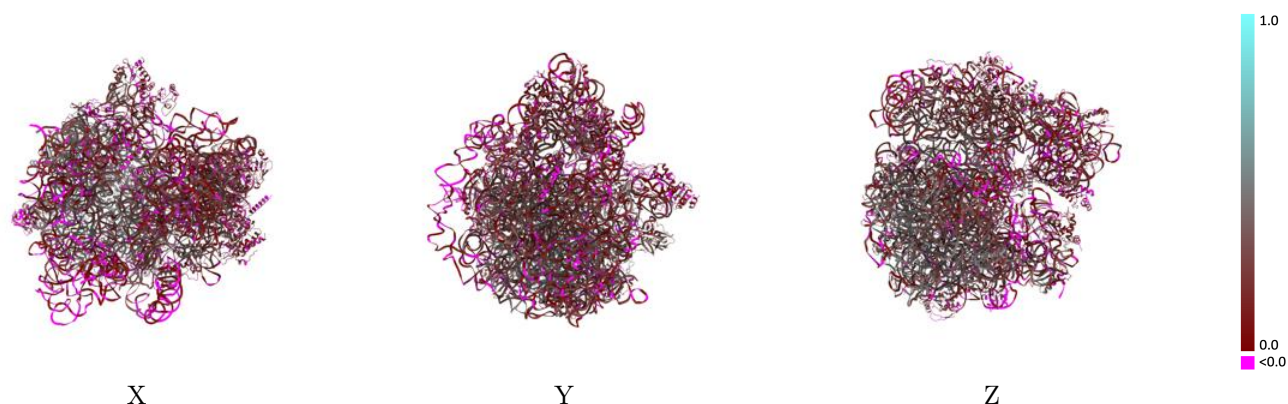
This section contains information regarding the fit between EMDB map EMD-44097 and PDB model 9B24. Per-residue inclusion information can be found in [section 3](#) on [page 14](#).

9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 1.04 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](#)

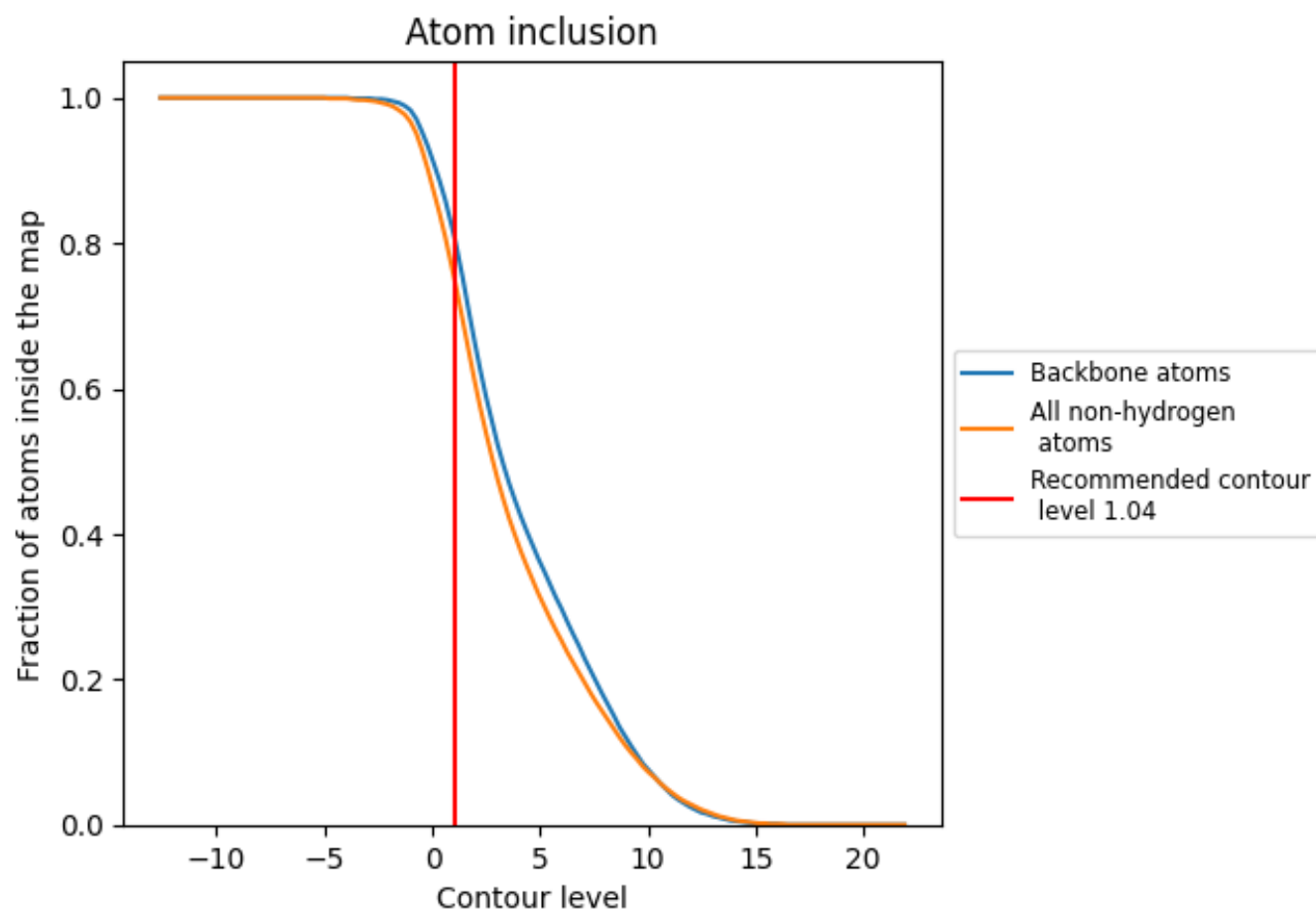


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

This section was not generated.

9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 75% 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 (1.04) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7490	 0.2410
1	 0.8130	 0.3200
2	 0.8510	 0.3230
4	 0.9120	 0.0500
A	 0.7240	 0.2050
C	 0.6050	 0.2110
D	 0.5390	 0.1860
E	 0.5760	 0.2020
F	 0.6200	 0.2140
G	 0.4150	 0.1640
H	 0.6190	 0.2510
I	 0.6350	 0.1550
J	 0.4300	 0.1870
K	 0.6980	 0.2580
L	 0.6120	 0.2430
M	 0.5920	 0.1490
N	 0.6250	 0.1600
O	 0.6780	 0.2800
P	 0.4420	 0.1110
Q	 0.5340	 0.1690
R	 0.6800	 0.1970
T	 0.6500	 0.2450
U	 0.8970	 0.2630
V	 0.4320	 0.1740
Y	 0.8060	 0.2690
Z	 0.7440	 0.2730
a	 0.7890	 0.3230
b	 0.7350	 0.2680
c	 0.8180	 0.1970
d	 0.8110	 0.2720
e	 0.6820	 0.0600
f	 0.8150	 0.3360
g	 0.7700	 0.2880
h	 0.6100	 0.1850
i	 0.7730	 0.2940



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Chain	Atom inclusion	Q-score
j	 0.7540	 0.3120
k	 0.7690	 0.2510
l	 0.4990	 0.0740
m	 0.7930	 0.3320
n	 0.8350	 0.3510
o	 0.7820	 0.3750
p	 0.7600	 0.2800
q	 0.8250	 0.3170
r	 0.4090	 0.1550
s	 0.7510	 0.2950
t	 0.7980	 0.2940
u	 0.6500	 0.1410
v	 0.7960	 0.1630
w	 0.7860	 0.3280
x	 0.6820	 0.2300
y	 0.7750	 0.2350
z	 0.7650	 0.3400