



Full wwPDB EM Validation Report ⓘ

Mar 27, 2026 – 04:43 PM UTC

PDB ID : 7PAL / pdb_00007pal
EMDB ID : EMD-13276
Title : 70S ribosome with A- and P-site tRNAs in Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-07-30
Resolution : 4.70 Å(reported)
Based on initial models : 3J9W, 7OOD, 4V7C, 7OOC

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

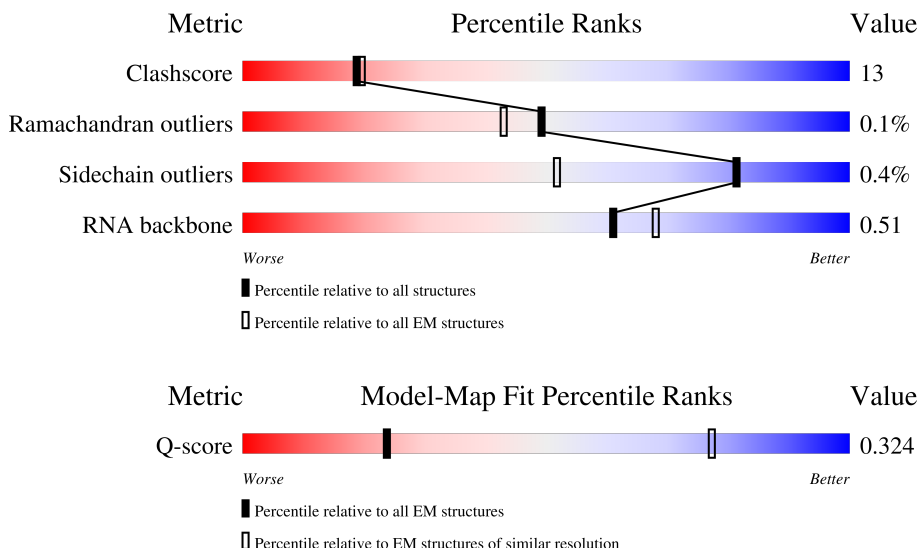
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.70 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	1989 (4.20 - 5.20)

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	0	48	
2	1	59	
3	2	37	

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Mol	Chain	Length	Quality of chain
4	A	294	
5	B	273	
6	C	205	
7	D	219	
8	E	215	
9	F	155	
10	G	142	
11	H	132	
12	I	108	
13	J	121	
14	K	139	
15	L	124	
16	M	61	
17	N	86	
18	O	94	
19	P	85	
20	Q	104	
21	R	87	
22	S	87	
23	T	60	
24	Z	5	
25	a	287	
26	b	287	
27	c	212	
28	d	180	

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Mol	Chain	Length	Quality of chain
29	e	184	
30	f	149	
31	g	161	
32	h	137	
33	i	146	
34	j	122	
35	k	151	
36	l	139	
37	m	124	
38	n	116	
39	o	119	
40	p	127	
41	q	100	
42	r	159	
43	s	237	
44	t	111	
45	u	104	
46	v	65	
47	w	111	
48	x	97	
49	y	57	
50	z	53	
51	3	2907	
52	4	108	
53	5	1520	

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Mol	Chain	Length	Quality of chain
54	6	76	5% 55% 30% 14%
54	7	76	43% 51% 34% 14%
55	Y	9	78% 22%

2 Entry composition

There are 55 unique types of molecules in this entry. The entry contains 146334 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	47	Total	C	N	O	S	0	0
			380	236	81	61	2		

- Molecule 2 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	59	Total	C	N	O	S	0	0
			477	300	99	77	1		

- Molecule 3 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	37	Total	C	N	O	S	0	0
			304	189	65	46	4		

- Molecule 4 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A	240	Total	C	N	O	S	0	0
			1921	1226	334	352	9		

- Molecule 5 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B	215	Total	C	N	O	S	0	0
			1698	1073	313	307	5		

- Molecule 6 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	C	203	Total	C	N	O	S	0	0
			1660	1051	314	290	5		

- Molecule 7 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	D	153	Total	C	N	O	S	0	0
			1173	742	226	202	3		

- Molecule 8 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	E	167	Total	C	N	O	S	0	0
			1362	857	240	263	2		

- Molecule 9 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	F	154	Total	C	N	O	S	0	0
			1246	785	239	216	6		

- Molecule 10 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	G	141	Total	C	N	O	S	0	0
			1110	723	193	192	2		

- Molecule 11 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	H	128	Total	C	N	O	S	0	0
			1028	655	191	181	1		

- Molecule 12 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	I	101	Total	C	N	O	S	0	0
			809	523	142	143	1		

- Molecule 13 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	J	114	Total	C	N	O	S	0	0
			829	514	153	156	6		

- Molecule 14 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	K	136	Total	C	N	O	S	0	0
			1076	680	213	181	2		

- Molecule 15 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	L	118	Total	C	N	O		0	0
			951	594	191	166			

- Molecule 16 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	M	60	Total	C	N	O	S	0	0
			474	302	96	72	4		

- Molecule 17 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	N	83	Total	C	N	O		0	0
			673	428	125	120			

- Molecule 18 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	O	80	Total	C	N	O	S	0	0
			646	414	119	111	2		

- Molecule 19 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	P	83	Total	C	N	O		0	0
			675	425	135	115			

- Molecule 20 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Q	65	Total	C	N	O	S	0	0
			535	342	103	86	4		

- Molecule 21 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	R	84	Total	C	N	O	S	0	0
			682	435	127	118	2		

- Molecule 22 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	S	77	Total	C	N	O	S	0	0
			629	383	135	111			

- Molecule 23 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	T	53	Total	C	N	O	S	0	0
			471	295	103	72	1		

- Molecule 24 is a protein called nascent peptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Z	5	Total	C	N	O	S	0	0
			31	20	5	6			

- Molecule 25 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	a	285	Total	C	N	O	S	0	0
			2225	1385	437	397	6		

- Molecule 26 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	b	229	Total	C	N	O	S	0	0
			1762	1119	318	318	7		

- Molecule 27 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	c	210	Total	C	N	O	S	0	0
			1644	1047	297	297	3		

- Molecule 28 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	d	175	Total	C	N	O	S	0	0
			1388	893	245	246	4		

- Molecule 29 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	e	176	Total	C	N	O	S	0	0
			1396	899	247	250			

- Molecule 30 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	f	145	Total	C	N	O	S	0	0
			1160	746	204	207	3		

- Molecule 31 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	g	126	Total	C	N	O	S	0	0
			960	612	167	178	3		

- Molecule 32 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	h	128	Total	C	N	O	S	0	0
			959	616	160	177	6		

- Molecule 33 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	i	144	Total	C	N	O	S	0	0
			1164	737	213	209	5		

- Molecule 34 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	j	122	Total	C	N	O	S	0	0
			944	595	178	167	4		

- Molecule 35 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	k	148	Total	C	N	O		
			1153	731	226	196	0	0

- Molecule 36 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	l	136	Total	C	N	O	S		
			1079	694	196	182	7	0	0

- Molecule 37 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	m	119	Total	C	N	O	S		
			958	609	175	171	3	0	0

- Molecule 38 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	n	112	Total	C	N	O	S		
			889	557	175	155	2	0	0

- Molecule 39 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	o	115	Total	C	N	O	S		
			938	592	180	165	1	0	0

- Molecule 40 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	p	114	Total	C	N	O	S		
			947	603	188	154	2	0	0

- Molecule 41 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	q	99	Total	C	N	O	S		
			811	525	148	134	4	0	0

- Molecule 42 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	r	139	Total	C	N	O	S	0	0
			1068	663	207	191	7		

- Molecule 43 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	s	92	Total	C	N	O	S	0	0
			720	475	122	122	1		

- Molecule 44 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	t	111	Total	C	N	O	S	0	0
			872	550	166	153	3		

- Molecule 45 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	u	86	Total	C	N	O	S	0	0
			657	409	130	117	1		

- Molecule 46 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	v	63	Total	C	N	O	S	0	0
			513	317	108	87	1		

- Molecule 47 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	w	100	Total	C	N	O	S	0	0
			818	517	153	148			

- Molecule 48 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	x	44	Total	C	N	O	S	0	0
			344	221	55	64	4		

- Molecule 49 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	y	56	Total	C	N	O	S	0	0
			452	274	98	75	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	z	50	Total	C	N	O	S	0	0
			408	255	81	68	4		

- Molecule 51 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	3	2878	Total	C	N	O	P	0	0
			61664	27558	11236	19995	2875		

- Molecule 52 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	4	105	Total	C	N	O	P	0	0
			2239	1003	409	724	103		

- Molecule 53 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	5	1493	Total	C	N	O	P	0	0
			31943	14279	5792	10382	1490		

- Molecule 54 is a RNA chain called tRNA-Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	6	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		
54	7	76	Total	C	N	O	P	0	0
			1618	723	289	531	75		

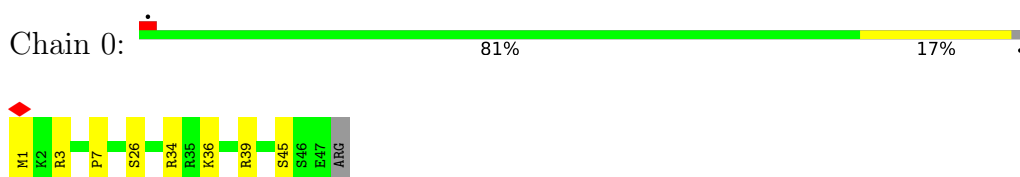
- Molecule 55 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Y	9	Total	C	N	O	P	0	0
			183	84	29	62	8		

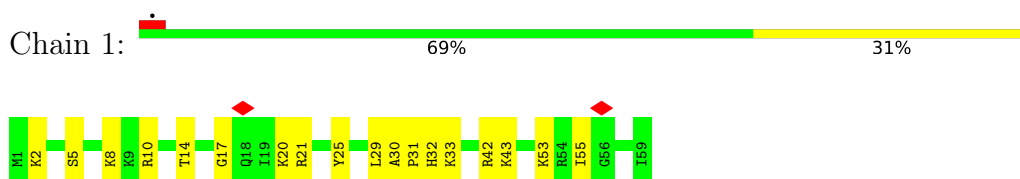
3 Residue-property plots [i](#)

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

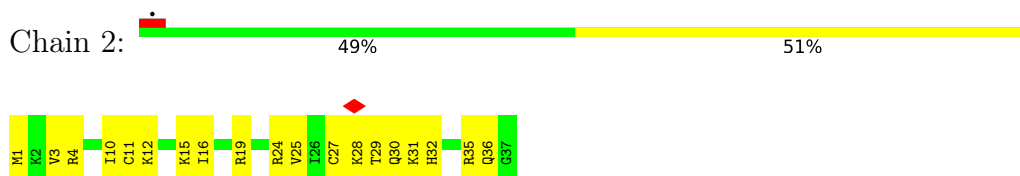
- Molecule 1: 50S ribosomal protein L34



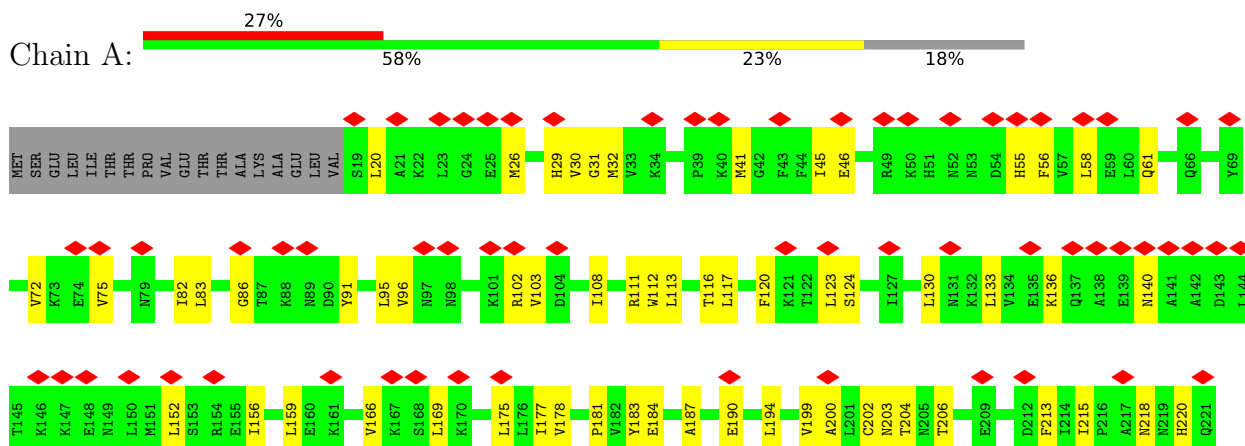
- Molecule 2: 50S ribosomal protein L35

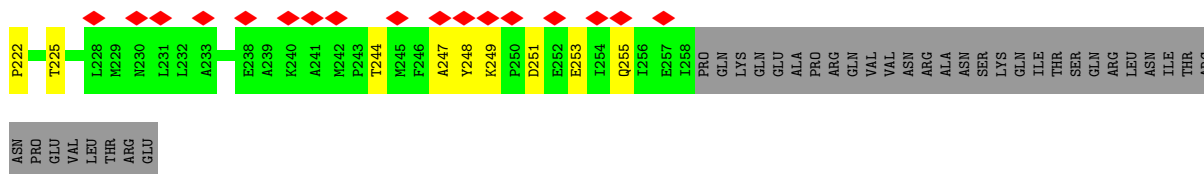


- Molecule 3: 50S ribosomal protein L36

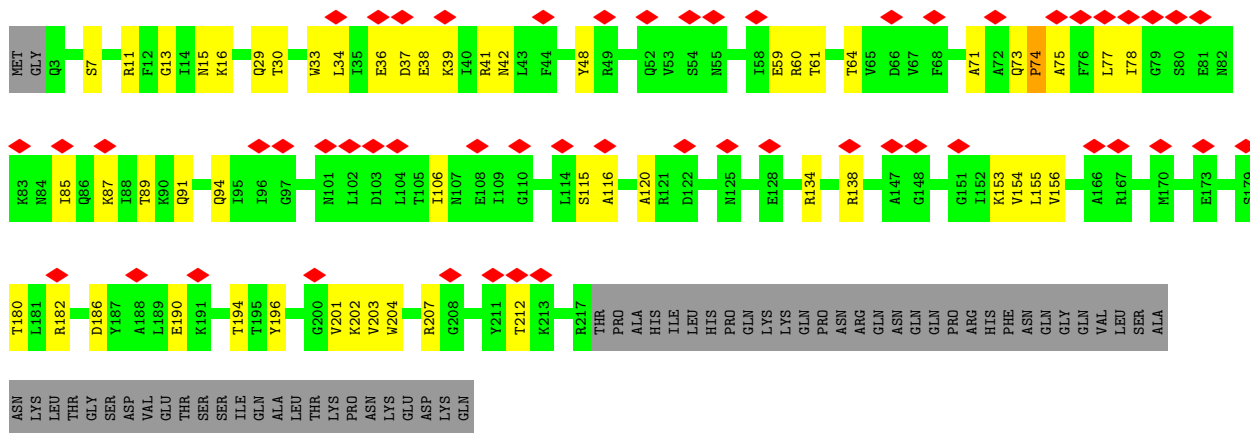


- Molecule 4: 30S ribosomal protein S2

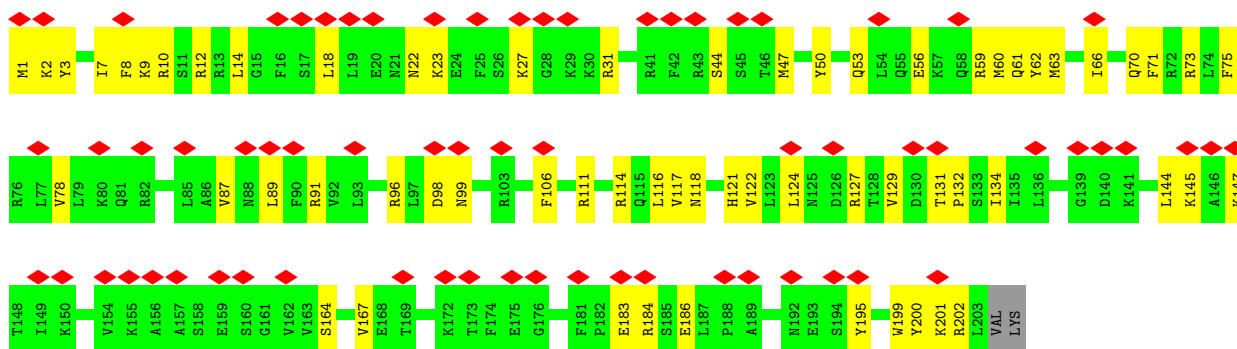




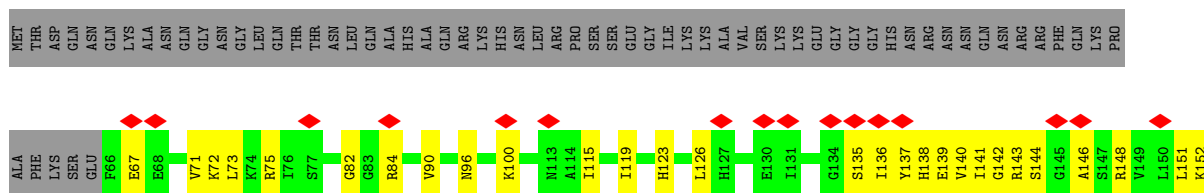
• Molecule 5: 30S ribosomal protein S3

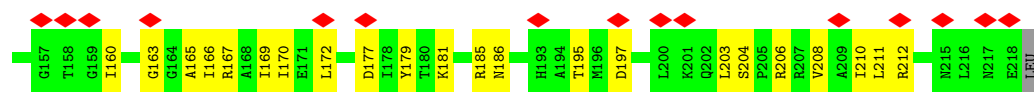


• Molecule 6: 30S ribosomal protein S4

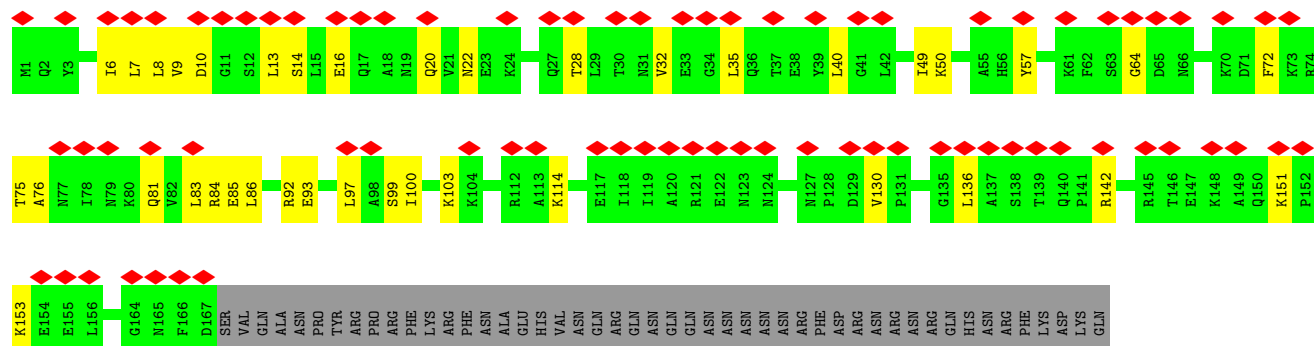


• Molecule 7: 30S ribosomal protein S5

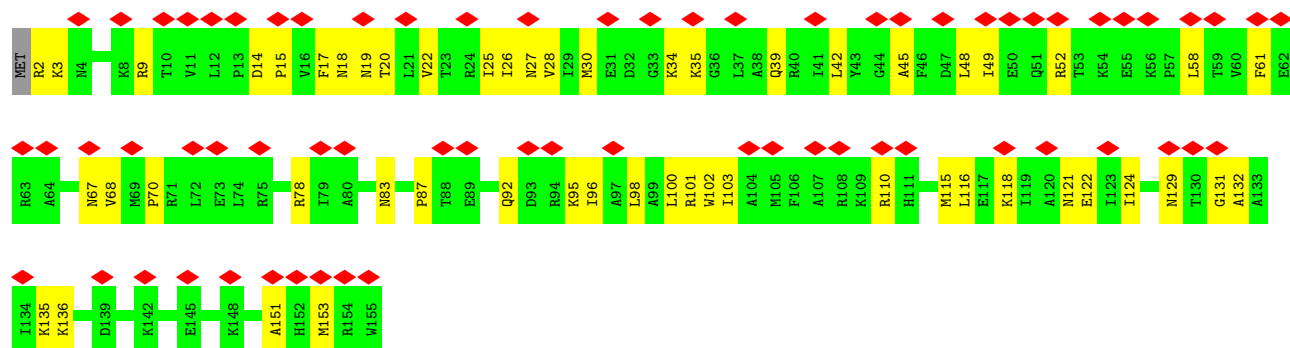
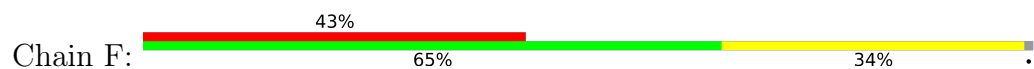




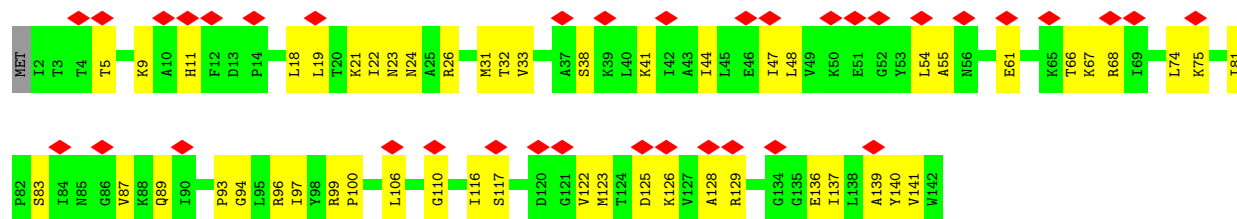
• Molecule 8: 30S ribosomal protein S6



• Molecule 9: 30S ribosomal protein S7

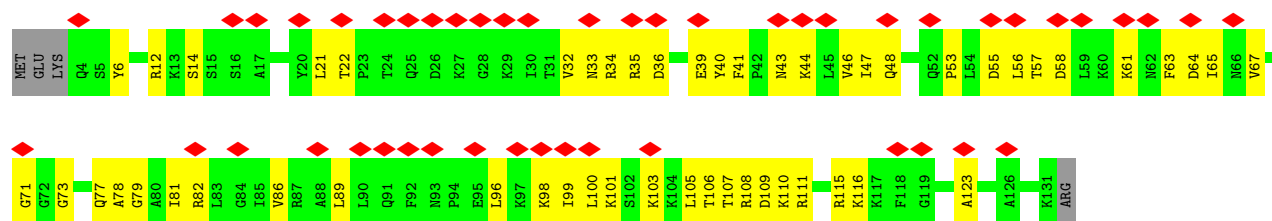


• Molecule 10: 30S ribosomal protein S8

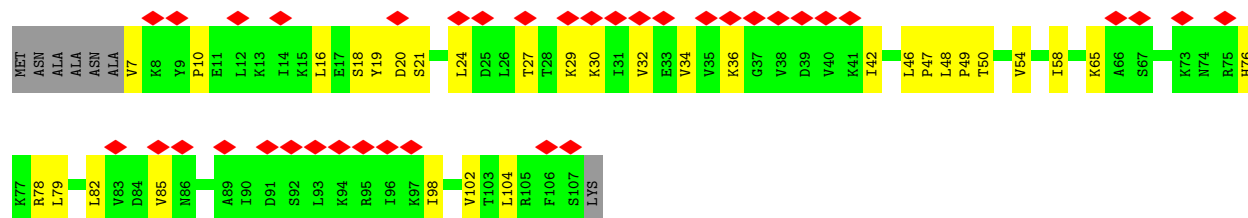


• Molecule 11: 30S ribosomal protein S9

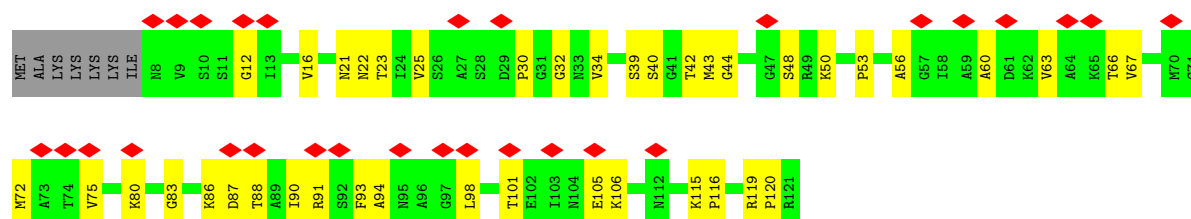




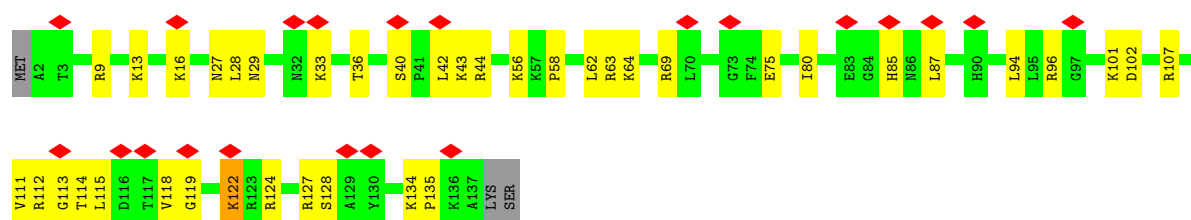
• Molecule 12: 30S ribosomal protein S10



• Molecule 13: 30S ribosomal protein S11

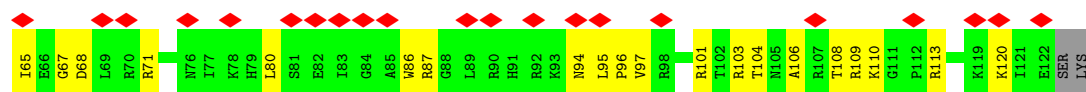


• Molecule 14: 30S ribosomal protein S12

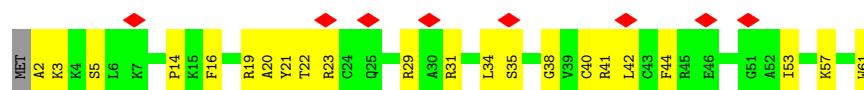


• Molecule 15: 30S ribosomal protein S13

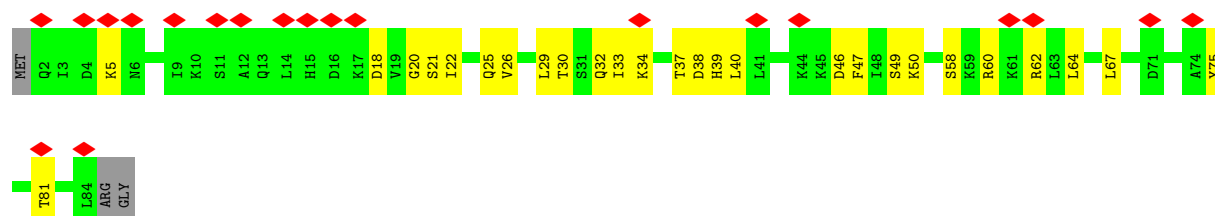




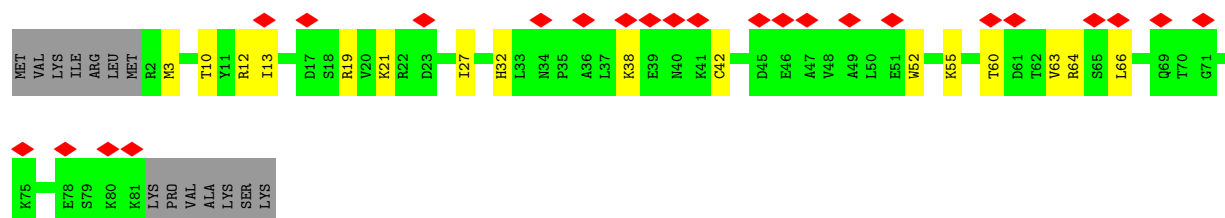
- Molecule 16: 30S ribosomal protein S14 type Z



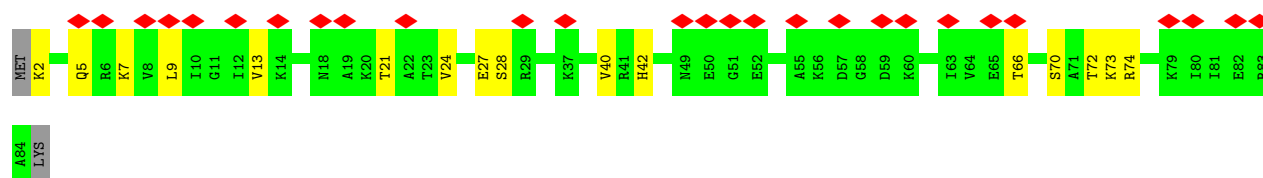
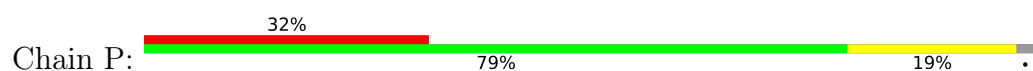
- Molecule 17: 30S ribosomal protein S15



- Molecule 18: 30S ribosomal protein S16

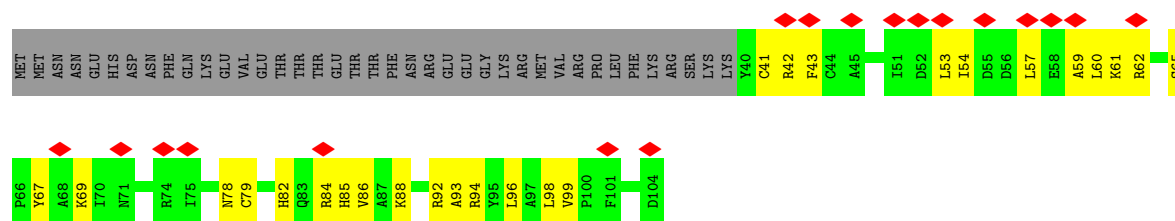


- Molecule 19: 30S ribosomal protein S17

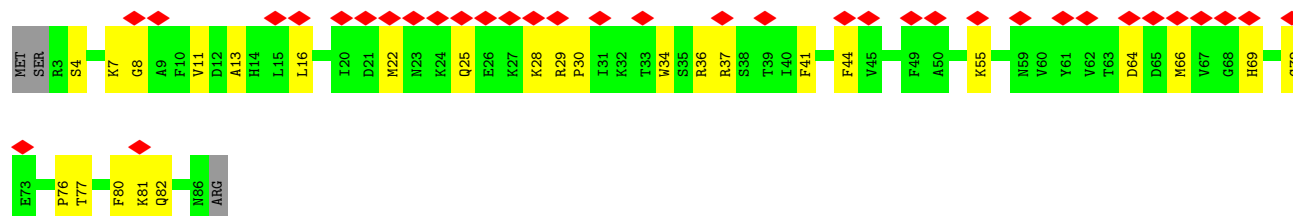
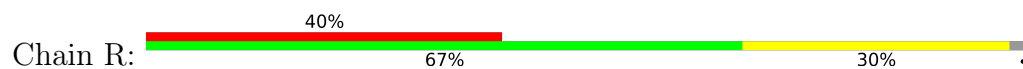


- Molecule 20: 30S ribosomal protein S18

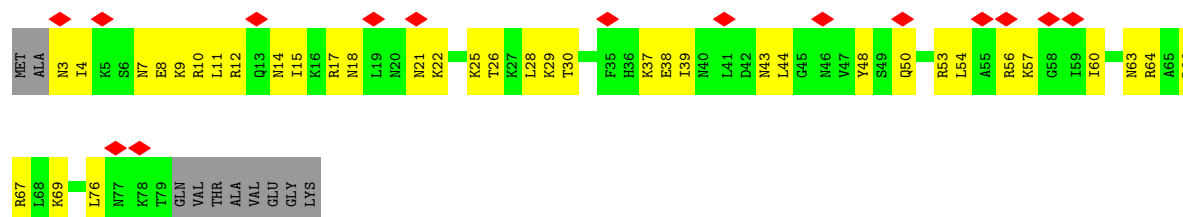




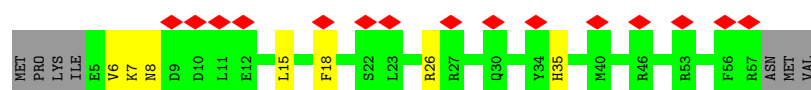
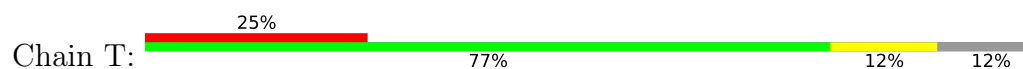
- Molecule 21: 30S ribosomal protein S19



- Molecule 22: 30S ribosomal protein S20



- Molecule 23: 30S ribosomal protein S21

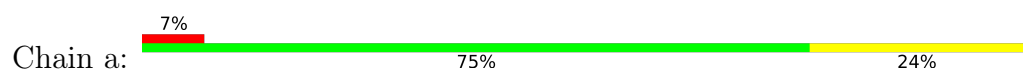


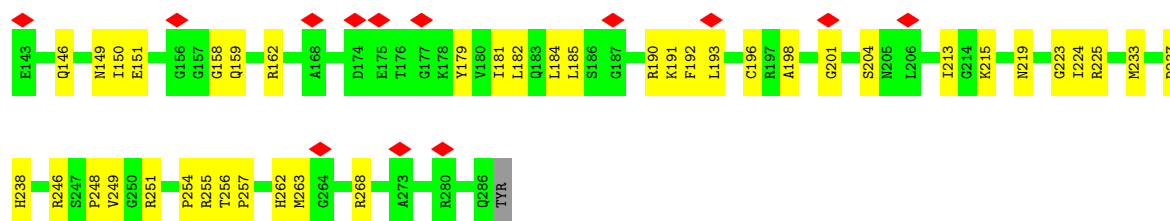
- Molecule 24: nascent peptide



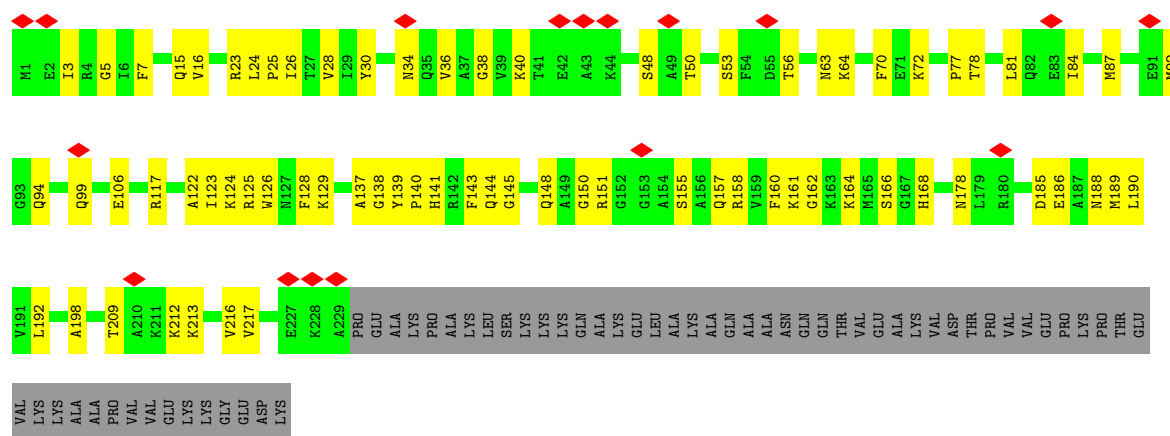
There are no outlier residues recorded for this chain.

- Molecule 25: 50S ribosomal protein L2

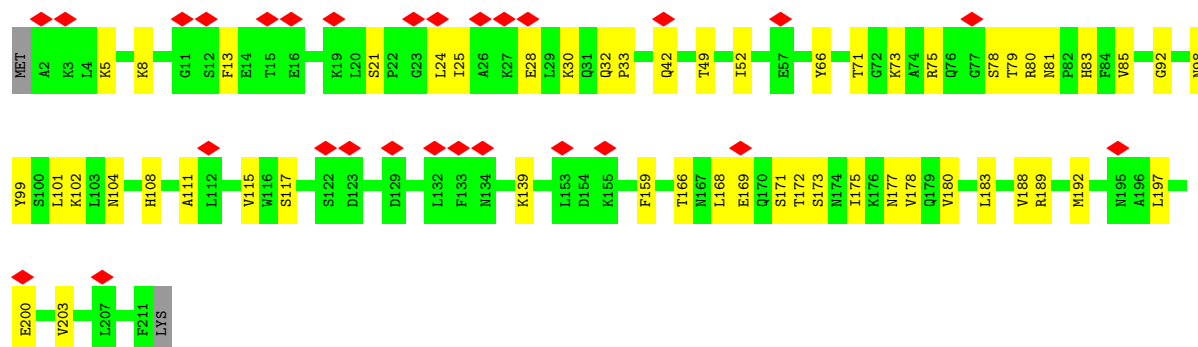




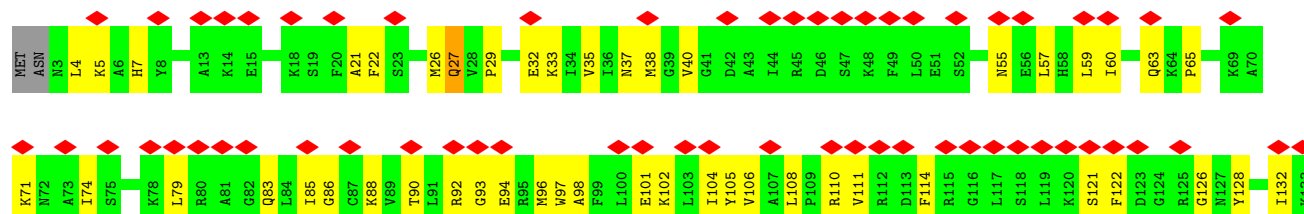
• Molecule 26: 50S ribosomal protein L3

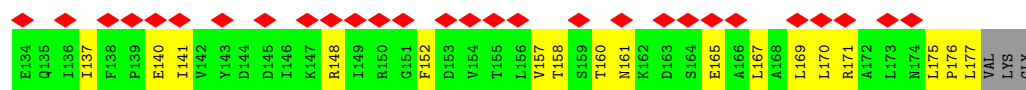


• Molecule 27: 50S ribosomal protein L4

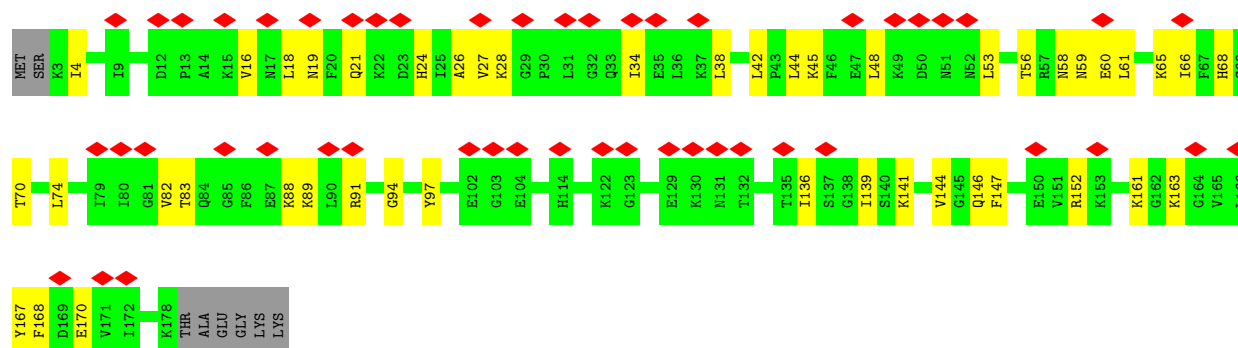


• Molecule 28: 50S ribosomal protein L5

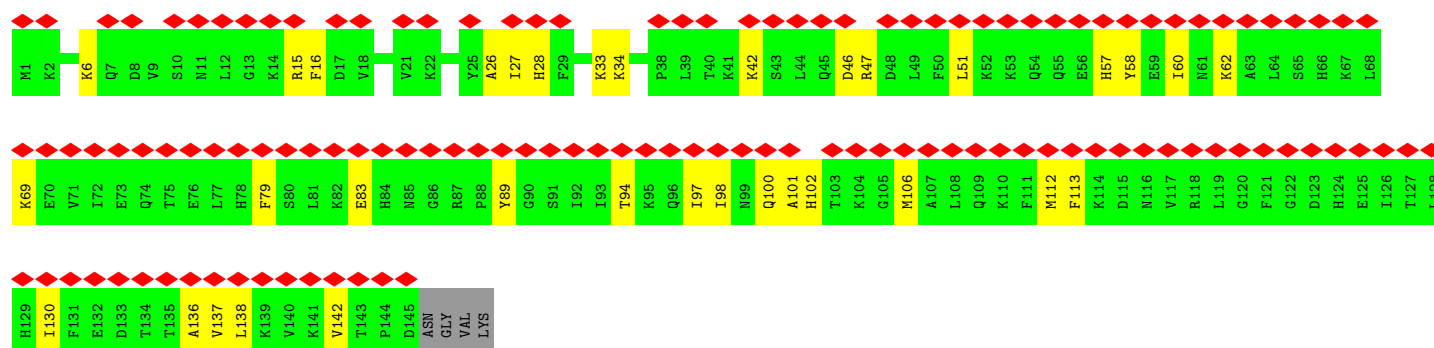
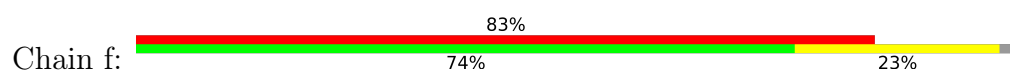




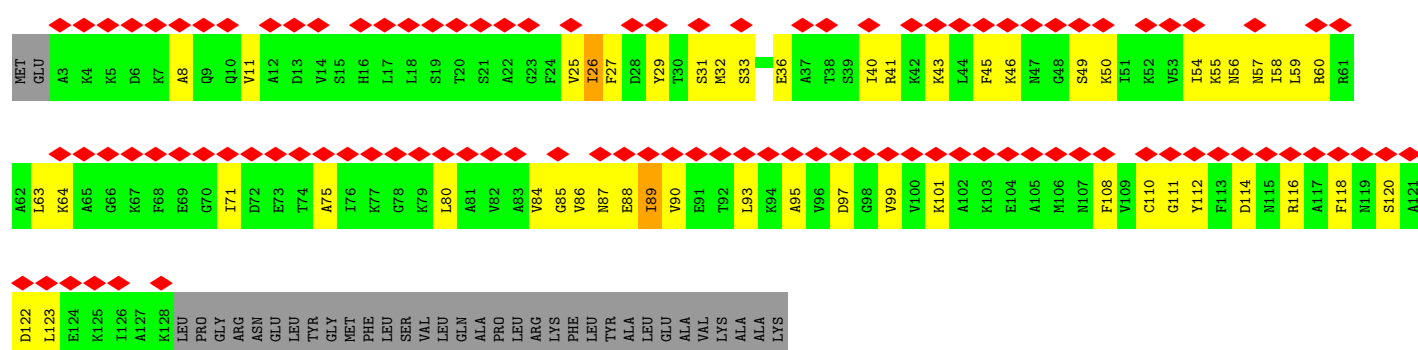
• Molecule 29: 50S ribosomal protein L6



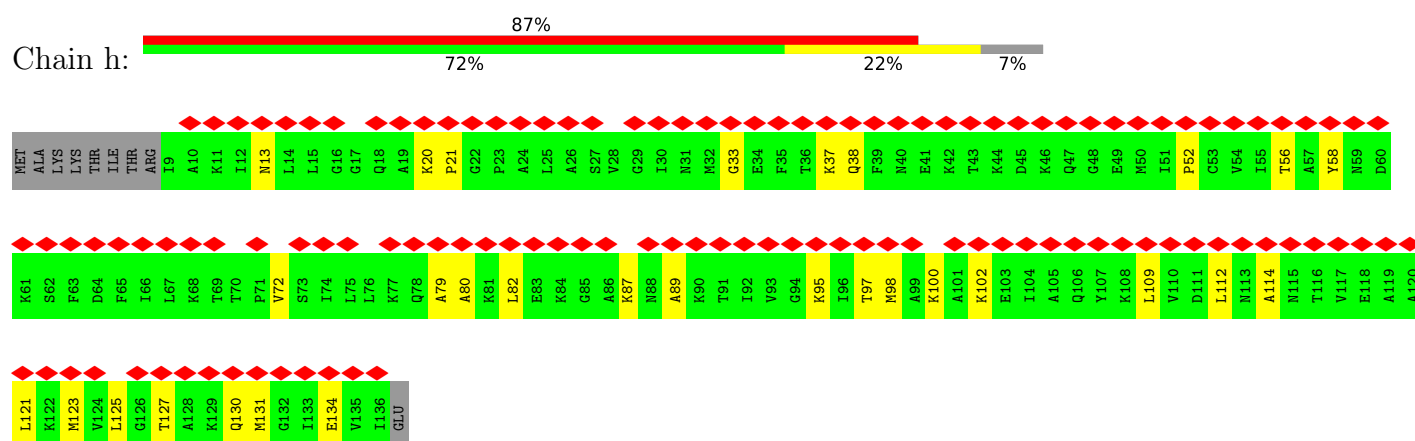
• Molecule 30: 50S ribosomal protein L9



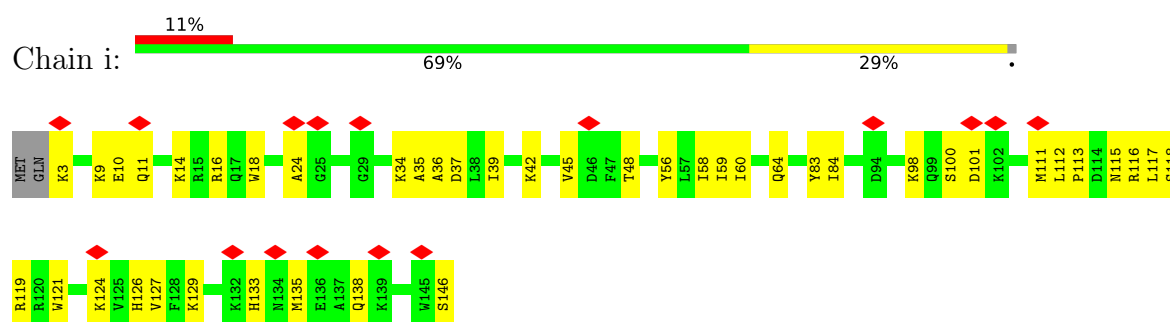
• Molecule 31: 50S ribosomal protein L10



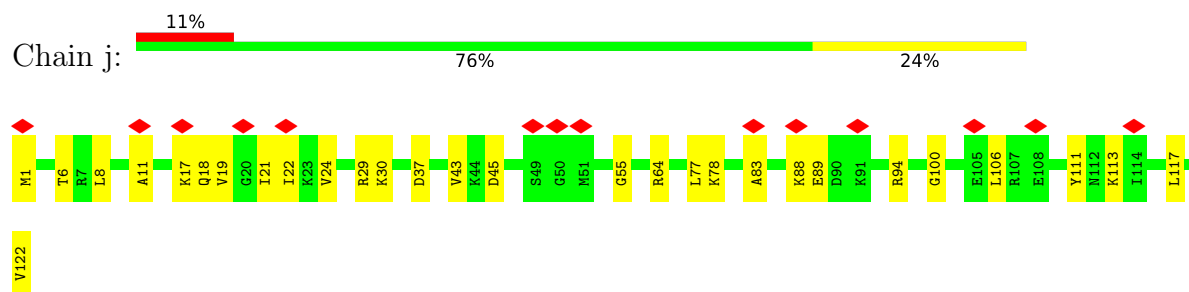
• Molecule 32: 50S ribosomal protein L11



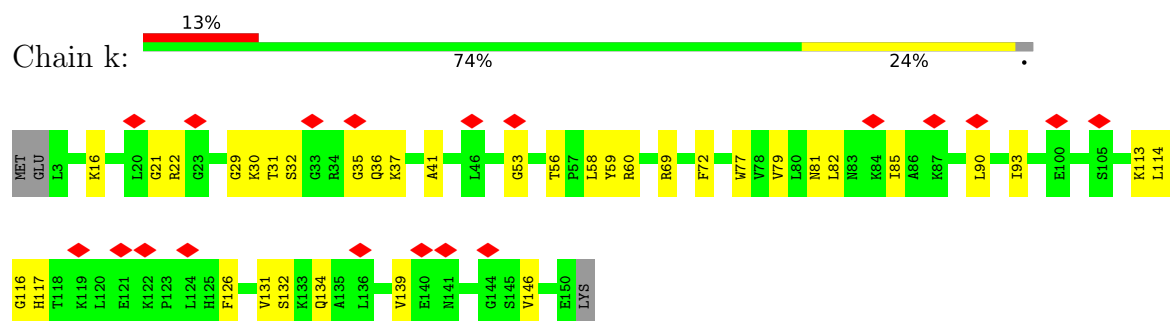
• Molecule 33: 50S ribosomal protein L13



• Molecule 34: 50S ribosomal protein L14

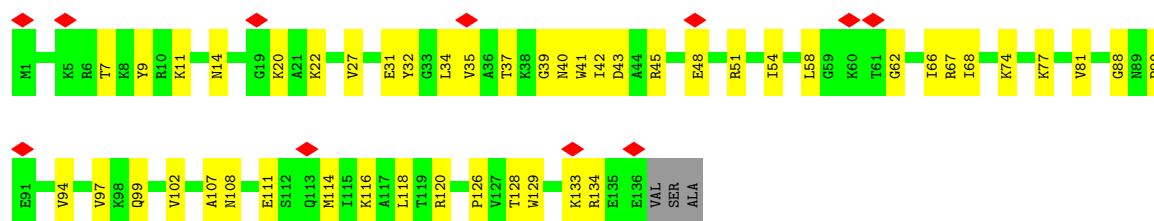


• Molecule 35: 50S ribosomal protein L15



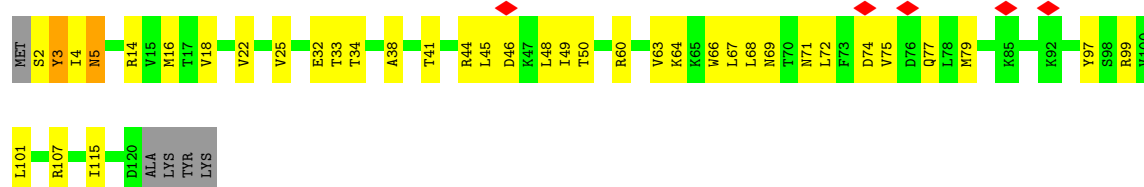
• Molecule 36: 50S ribosomal protein L16





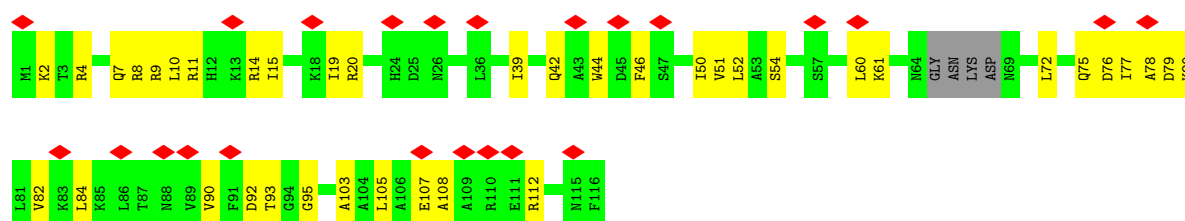
• Molecule 37: 50S ribosomal protein L17

Chain m: 65% 29%



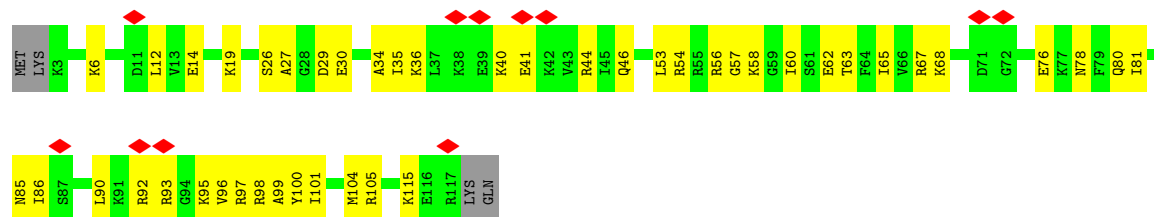
• Molecule 38: 50S ribosomal protein L18

Chain n: 20% 63% 34%



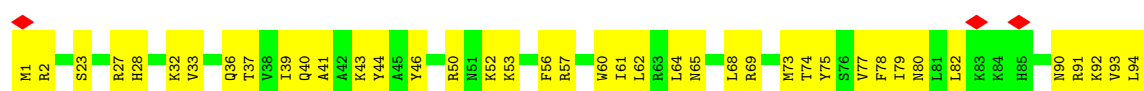
• Molecule 39: 50S ribosomal protein L19

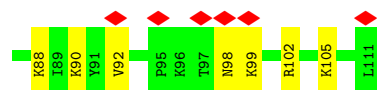
Chain o: 9% 59% 38%



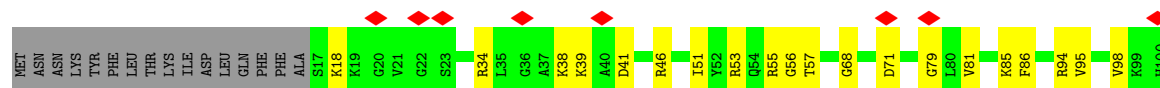
• Molecule 40: 50S ribosomal protein L20

Chain p: 5% 55% 35% 10%

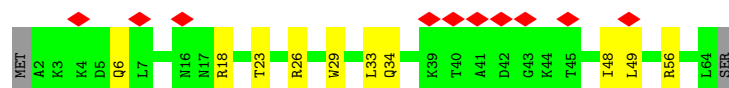
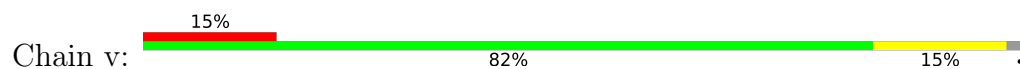




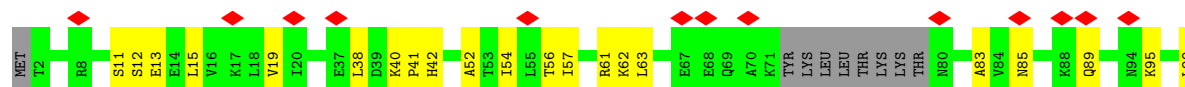
• Molecule 45: 50S ribosomal protein L27



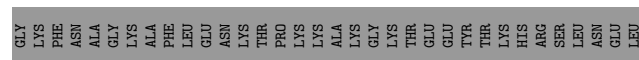
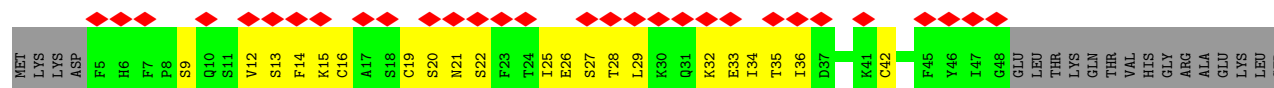
• Molecule 46: 50S ribosomal protein L28



• Molecule 47: 50S ribosomal protein L29

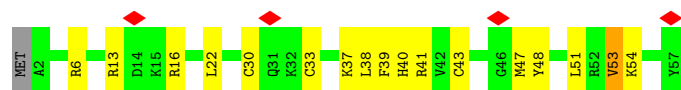


• Molecule 48: 50S ribosomal protein L31

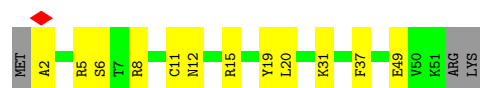


• Molecule 49: 50S ribosomal protein L32

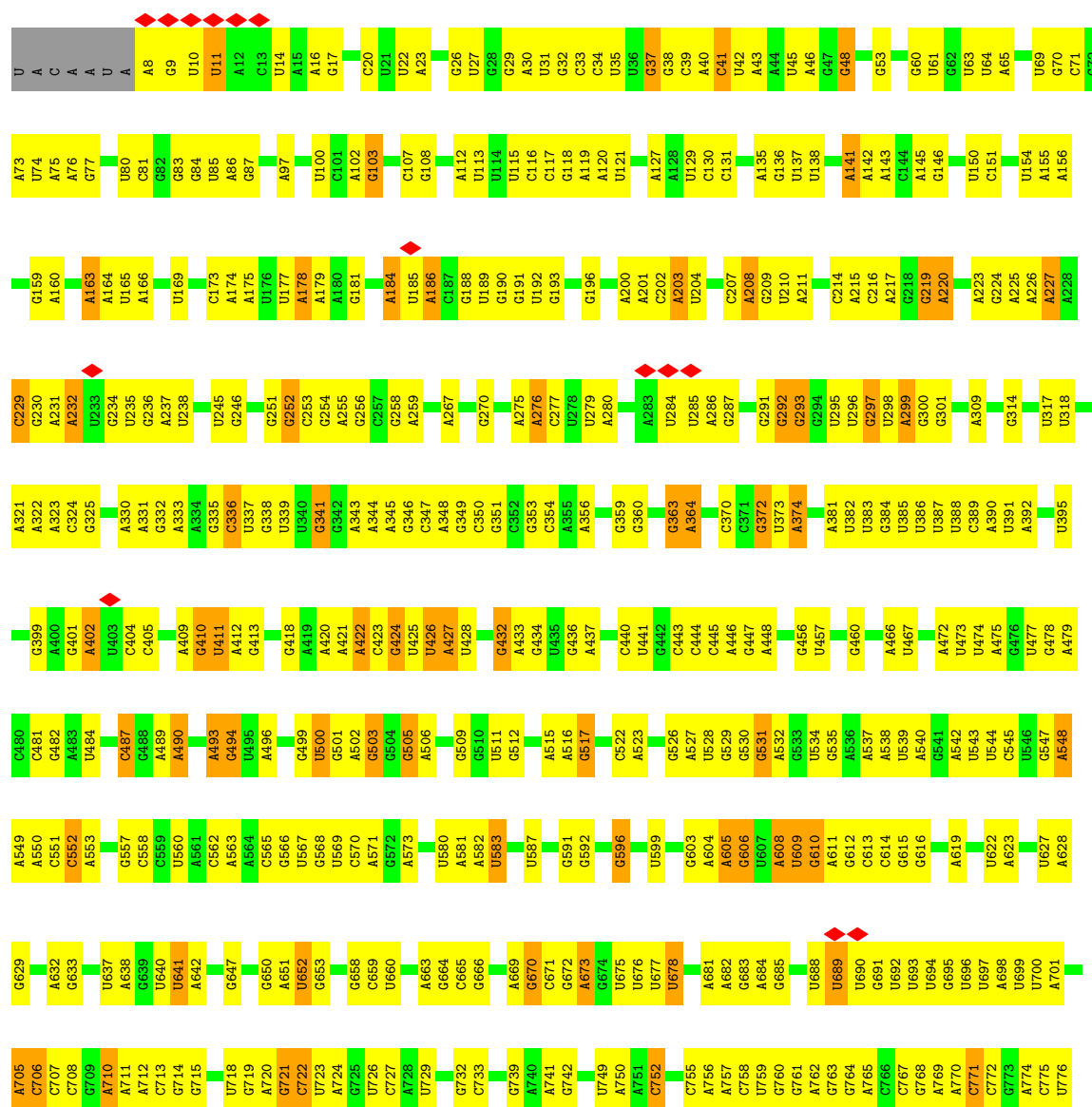




- Molecule 50: 50S ribosomal protein L33 1

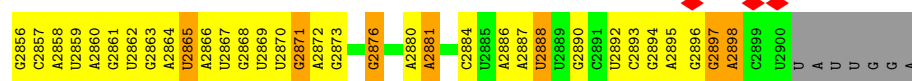


- Molecule 51: 23S ribosomal RNA

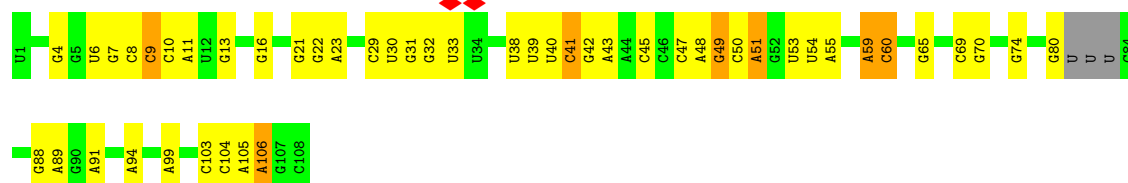


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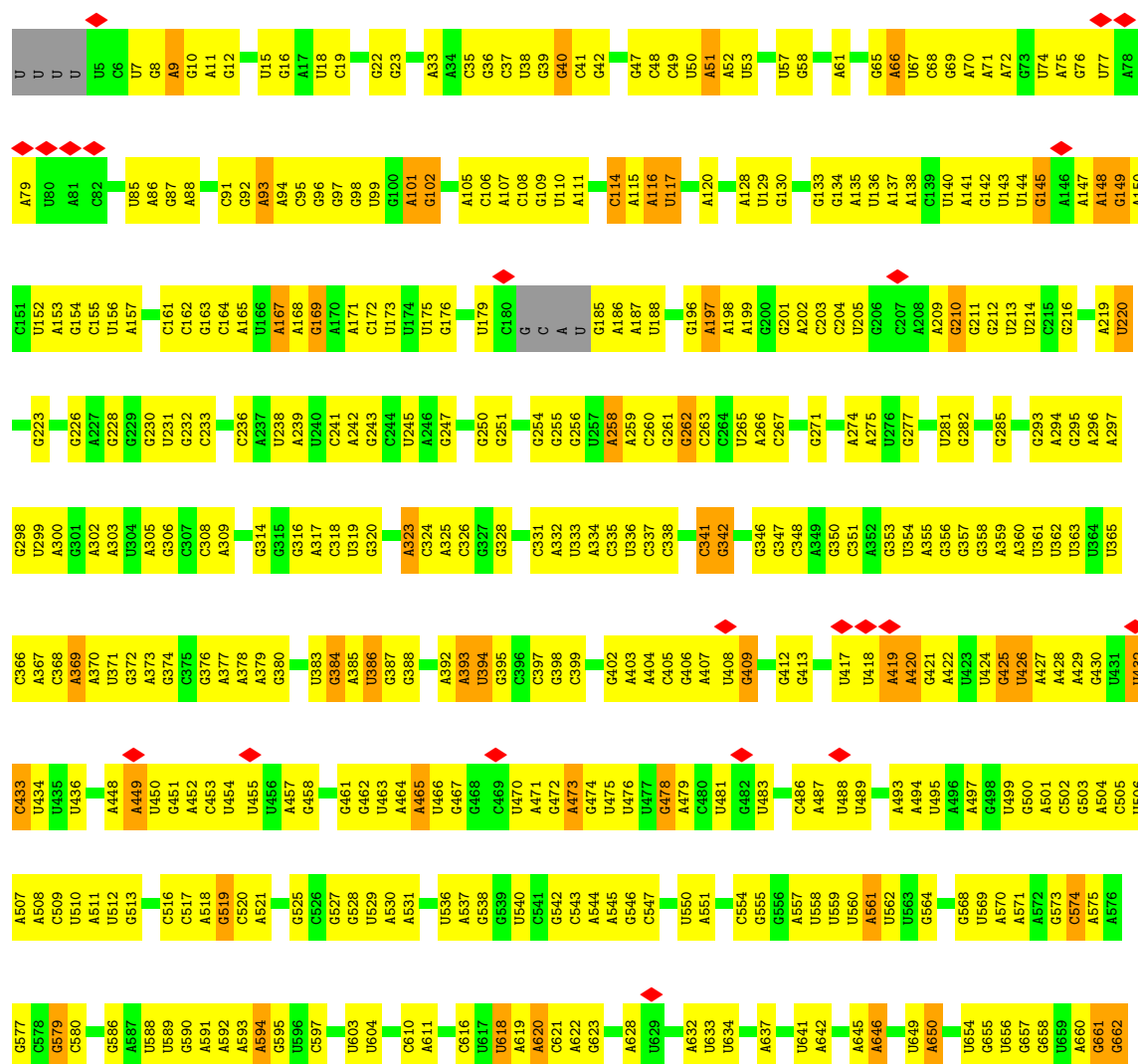
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						G2413	A2343		A2178	A2061	G1980		
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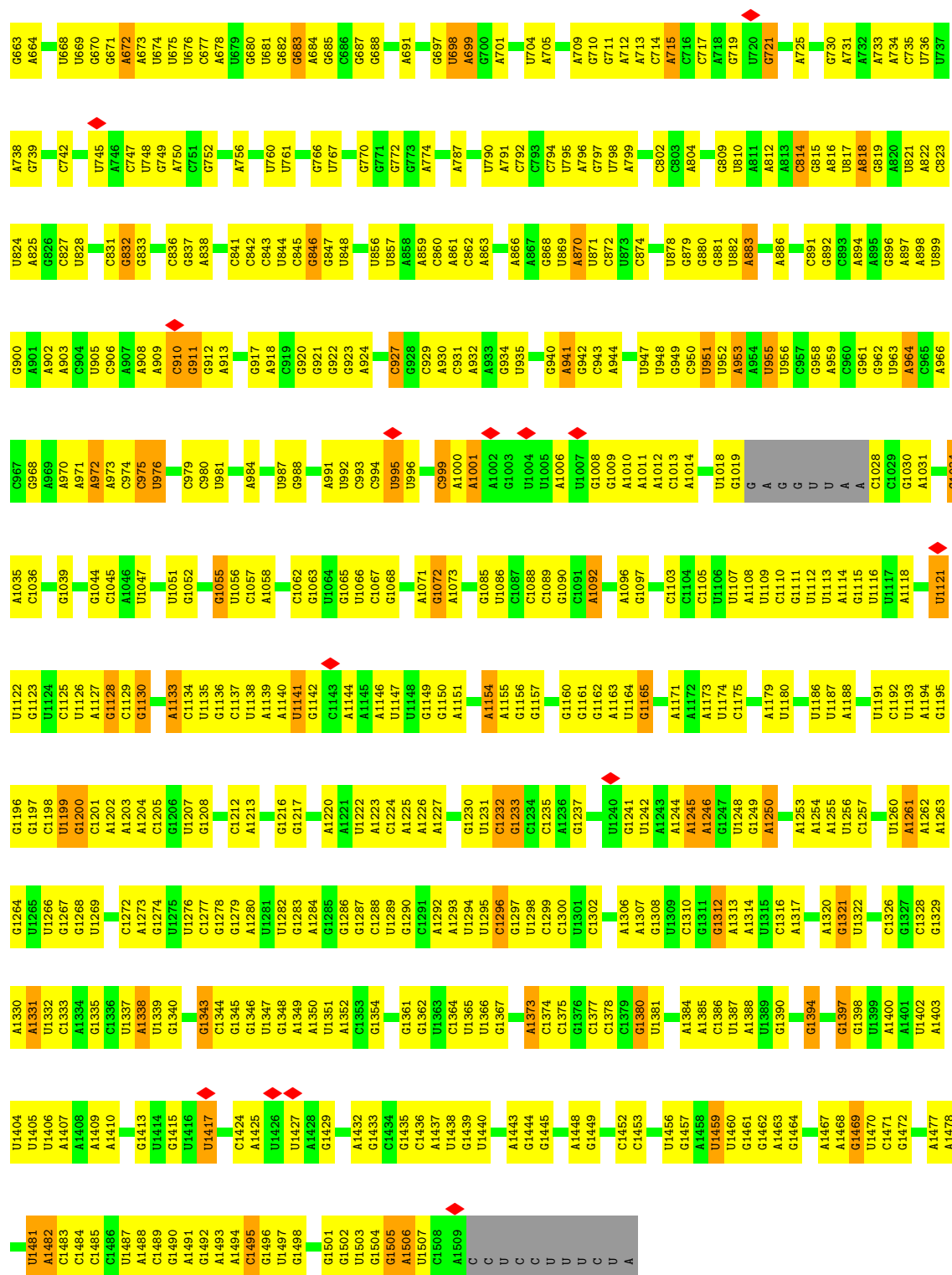


• Molecule 52: 5S ribosomal RNA



• Molecule 53: 16S ribosomal RNA



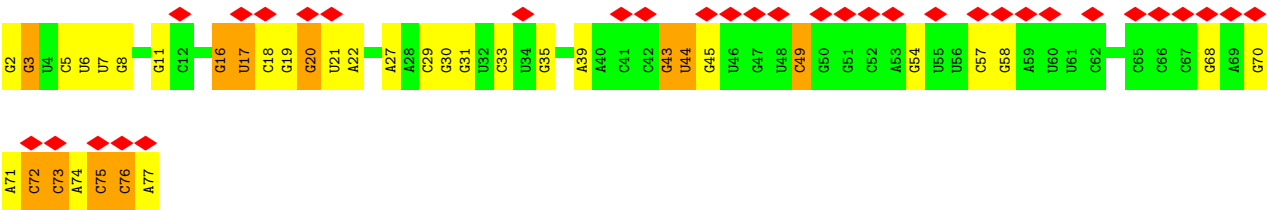
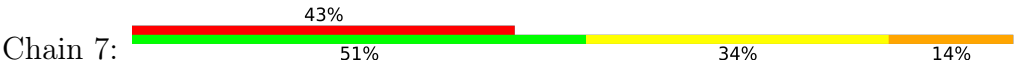


● Molecule 54: tRNA-Phe

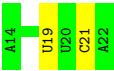
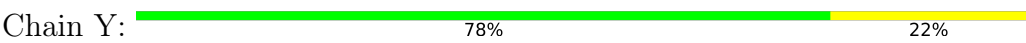




• Molecule 54: tRNA-Phe



• Molecule 55: mRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	32086	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	2.977	Depositor
Minimum map value	-1.334	Depositor
Average map value	0.025	Depositor
Map value standard deviation	0.150	Depositor
Recommended contour level	0.65	Depositor
Map size (Å)	435.328, 435.328, 435.328	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.7005, 1.7005, 1.7005	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.15	0/383	0.40	0/504
2	1	0.13	0/484	0.42	0/637
3	2	0.14	0/306	0.44	0/401
4	A	0.16	0/1954	0.43	0/2642
5	B	0.17	0/1721	0.51	1/2323 (0.0%)
6	C	0.19	0/1691	0.48	0/2267
7	D	0.17	0/1188	0.45	0/1593
8	E	0.15	0/1384	0.43	0/1867
9	F	0.17	0/1266	0.54	1/1700 (0.1%)
10	G	0.15	0/1126	0.50	0/1517
11	H	0.16	0/1044	0.45	0/1395
12	I	0.16	0/820	0.46	0/1103
13	J	0.15	0/844	0.40	0/1136
14	K	0.24	0/1094	0.61	0/1468
15	L	0.19	0/962	0.49	0/1289
16	M	0.15	0/483	0.42	0/643
17	N	0.13	0/679	0.37	0/907
18	O	0.15	0/659	0.43	0/885
19	P	0.14	0/684	0.46	0/913
20	Q	0.17	0/545	0.49	0/730
21	R	0.18	0/698	0.50	0/936
22	S	0.16	0/631	0.45	0/838
23	T	0.15	0/475	0.45	0/621
24	Z	0.15	0/30	0.44	0/41
25	a	0.14	0/2267	0.42	0/3044
26	b	0.16	0/1795	0.44	0/2412
27	c	0.13	0/1671	0.42	0/2246
28	d	0.17	0/1409	0.49	0/1894
29	e	0.16	0/1420	0.47	0/1912
30	f	0.13	0/1183	0.40	0/1587
31	g	0.41	0/969	0.71	0/1295
32	h	0.15	0/968	0.40	0/1298
33	i	0.20	0/1186	0.48	0/1592
34	j	0.14	0/953	0.43	0/1275

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	k	0.15	0/1170	0.44	0/1559
36	l	0.15	0/1104	0.43	0/1481
37	m	0.20	0/973	0.53	0/1309
38	n	0.15	0/897	0.47	0/1198
39	o	0.16	0/948	0.51	0/1262
40	p	0.19	0/961	0.55	2/1278 (0.2%)
41	q	0.17	0/828	0.50	0/1111
42	r	0.15	0/1077	0.40	0/1441
43	s	0.16	0/732	0.46	1/988 (0.1%)
44	t	0.15	0/879	0.40	0/1165
45	u	0.16	0/665	0.45	0/884
46	v	0.14	0/519	0.38	0/695
47	w	0.18	0/826	0.50	1/1104 (0.1%)
48	x	0.15	0/353	0.40	0/474
49	y	0.34	0/457	0.68	1/601 (0.2%)
50	z	0.14	0/412	0.45	0/547
51	3	0.09	0/69073	0.24	0/107710
52	4	0.10	0/2505	0.26	0/3902
53	5	0.09	0/35768	0.22	0/55764
54	6	0.11	0/1808	0.30	0/2817
54	7	0.11	0/1808	0.30	0/2817
55	Y	0.07	0/203	0.17	0/313
All	All	0.12	0/158938	0.32	7/237331 (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
6	C	0	1
21	R	0	1
31	g	0	1
37	m	0	1
All	All	0	4

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
47	w	41	PRO	CA-N-CD	-8.01	100.79	112.00
49	y	48	TYR	N-CA-C	-7.43	103.94	113.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
40	p	100	LYS	CA-C-N	-7.20	111.12	121.20
40	p	100	LYS	C-N-CA	-7.20	111.12	121.20
5	B	74	PRO	CA-N-CD	-5.77	103.92	112.00
9	F	132	ALA	N-CA-C	-5.05	108.87	114.62
43	s	3	VAL	N-CA-C	-5.01	108.62	113.53

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	C	1	MET	Peptide
21	R	25	GLN	Peptide
31	g	114	ASP	Peptide
37	m	3	TYR	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	8	0
2	1	477	0	530	16	0
3	2	304	0	350	13	0
4	A	1921	0	1973	41	0
5	B	1698	0	1768	41	0
6	C	1660	0	1719	51	0
7	D	1173	0	1267	41	0
8	E	1362	0	1377	36	0
9	F	1246	0	1308	41	0
10	G	1110	0	1226	43	0
11	H	1028	0	1094	50	0
12	I	809	0	894	23	0
13	J	829	0	855	35	0
14	K	1076	0	1170	32	0
15	L	951	0	1014	24	0
16	M	474	0	509	18	0
17	N	673	0	730	26	0
18	O	646	0	677	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
19	P	675	0	728	16	0
20	Q	535	0	562	20	0
21	R	682	0	691	22	0
22	S	629	0	681	34	0
23	T	471	0	522	9	0
24	Z	31	0	34	0	0
25	a	2225	0	2301	55	0
26	b	1762	0	1808	54	0
27	c	1644	0	1731	38	0
28	d	1388	0	1469	59	0
29	e	1396	0	1481	30	0
30	f	1160	0	1172	23	0
31	g	960	0	1014	26	0
32	h	959	0	1039	24	0
33	i	1164	0	1192	41	0
34	j	944	0	1019	22	0
35	k	1153	0	1256	34	0
36	l	1079	0	1134	41	0
37	m	958	0	1011	41	0
38	n	889	0	952	29	0
39	o	938	0	1008	39	0
40	p	947	0	1028	40	0
41	q	811	0	858	27	0
42	r	1068	0	1150	25	0
43	s	720	0	803	18	0
44	t	872	0	972	21	0
45	u	657	0	695	19	0
46	v	513	0	560	8	0
47	w	818	0	870	18	0
48	x	344	0	333	14	0
49	y	452	0	472	14	0
50	z	408	0	440	9	0
51	3	61664	0	30954	1230	0
52	4	2239	0	1137	26	0
53	5	31943	0	16058	715	0
54	6	1618	0	821	28	0
54	7	1618	0	821	31	0
55	Y	183	0	97	2	0
All	All	146334	0	99764	3058	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 13.

All (3058) 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)
54:6:16:G:N2	54:6:49:C:H42	1.52	1.06
54:7:16:G:N2	54:7:49:C:H42	1.52	1.06
54:7:16:G:H22	54:7:49:C:N4	1.54	1.05
54:6:16:G:H22	54:6:49:C:N4	1.54	1.05
53:5:205:U:H3	53:5:210:G:H1	1.01	0.97
53:5:661:G:H1	53:5:738:A:N6	1.62	0.96
53:5:1136:G:H1	53:5:1151:A:N6	1.66	0.94
53:5:1217:G:H1	53:5:1269:U:H3	1.14	0.92
53:5:365:U:H3	53:5:388:G:H1	1.13	0.92
45:u:79:GLY:HA3	45:u:98:VAL:O	1.71	0.90
53:5:69:G:H1	53:5:86:A:H61	1.14	0.90
54:7:7:U:H3	54:7:68:G:H1	0.91	0.90
53:5:1112:U:H3	53:5:1128:G:H1	1.18	0.88
14:K:113:GLY:HA2	14:K:119:GLY:H	1.38	0.87
54:6:7:U:H3	54:6:68:G:H1	0.91	0.87
51:3:2797:C:O2	51:3:2897:G:N2	2.08	0.86
53:5:661:G:H1	53:5:738:A:H61	0.89	0.86
37:m:60:ARG:HG3	37:m:79:MET:HE2	1.55	0.86
15:L:120:LYS:NZ	54:7:29:C:OP1	2.09	0.85
31:g:33:SER:HA	51:3:1090:G:H4'	1.57	0.84
53:5:1136:G:H1	53:5:1151:A:H61	0.86	0.84
48:x:15:LYS:HD2	48:x:35:THR:HG22	1.60	0.82
33:i:3:LYS:N	41:q:12:TYR:HH	1.76	0.82
25:a:151:GLU:HB2	25:a:196:CYS:HB3	1.62	0.82
26:b:99:GLN:NE2	26:b:186:GLU:OE1	2.14	0.81
54:6:16:G:H22	54:6:49:C:H42	0.82	0.81
39:o:92:ARG:HD3	39:o:115:LYS:HE3	1.62	0.81
51:3:652:U:H2'	51:3:653:G:H8	1.46	0.80
53:5:76:G:N2	53:5:79:A:N7	2.29	0.80
32:h:125:LEU:HD21	32:h:134:GLU:HG2	1.62	0.80
51:3:2113:U:H3	51:3:2191:G:H1	1.29	0.80
51:3:2360:A:N6	51:3:2373:G:H21	1.79	0.80
51:3:2797:C:N3	51:3:2897:G:N1	2.29	0.80
51:3:1128:G:H21	51:3:1133:A:H62	1.30	0.79
1:0:34:ARG:NH2	51:3:502:A:OP1	2.16	0.79
51:3:2823:A:O2'	51:3:2825:A:N7	2.15	0.79
51:3:2058:G:N2	51:3:2060:G:O6	2.15	0.78
54:7:16:G:H22	54:7:49:C:H42	0.81	0.78
53:5:372:G:H1	53:5:383:U:H3	1.30	0.78
53:5:518:A:H62	53:5:527:G:H21	1.32	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:24:ASN:ND2	53:5:823:C:O2	2.17	0.77
53:5:1436:C:N4	53:5:1437:A:N6	2.32	0.77
13:J:12:GLY:H	13:J:72:MET:HE1	1.50	0.77
53:5:361:U:H5''	53:5:362:U:H5'	1.67	0.77
40:p:39:ILE:HD13	41:q:71:ILE:HD12	1.67	0.76
25:a:190:ARG:HD3	25:a:192:PHE:HE2	1.51	0.76
37:m:33:THR:HG22	37:m:34:THR:H	1.51	0.76
53:5:242:A:N6	53:5:277:G:N2	2.34	0.76
53:5:733:A:H2'	53:5:734:A:H8	1.50	0.76
5:B:36:GLU:OE2	5:B:60:ARG:NH1	2.19	0.75
44:t:13:ILE:HG22	44:t:14:THR:HG23	1.67	0.75
11:H:106:THR:HG22	11:H:107:THR:H	1.51	0.75
51:3:2789:A:H5'	51:3:2790:A:H5'	1.68	0.75
41:q:41:LEU:HD12	41:q:42:ASP:H	1.50	0.75
10:G:96:ARG:HH11	53:5:641:U:H4'	1.52	0.75
36:l:67:ARG:NH1	51:3:943:A:O2'	2.19	0.75
27:c:175:ILE:HG22	27:c:177:ASN:H	1.51	0.75
32:h:123:MET:HE3	51:3:1116:U:H1'	1.69	0.75
51:3:1093:U:H3	51:3:1115:G:H1	1.35	0.75
21:R:22:MET:HE3	21:R:28:LYS:HB2	1.67	0.74
11:H:71:GLY:O	11:H:77:GLN:NE2	2.20	0.74
1:0:7:PRO:HA	51:3:721:G:H21	1.50	0.74
5:B:156:VAL:HG12	5:B:201:VAL:HG12	1.67	0.74
51:3:780:G:H21	51:3:785:A:H61	1.33	0.74
37:m:48:LEU:HD22	37:m:63:VAL:HG23	1.70	0.74
4:A:130:LEU:HD12	4:A:159:LEU:HB3	1.70	0.73
51:3:2360:A:H62	51:3:2373:G:N2	1.85	0.73
53:5:1009:G:N2	53:5:1012:A:OP2	2.20	0.73
5:B:38:GLU:OE2	5:B:42:ASN:ND2	2.20	0.73
34:j:78:LYS:HB2	39:o:76:GLU:HB2	1.70	0.73
51:3:2812:U:H1'	51:3:2813:A:H2'	1.71	0.73
40:p:91:ARG:HB3	40:p:94:LEU:HB2	1.69	0.73
45:u:86:PHE:HE2	45:u:94:ARG:HB2	1.54	0.73
51:3:915:A:OP2	51:3:936:G:N2	2.22	0.73
29:e:16:VAL:HA	29:e:28:LYS:O	1.89	0.73
37:m:3:TYR:O	37:m:5:ASN:N	2.22	0.73
20:Q:53:LEU:HD21	20:Q:92:ARG:HG2	1.69	0.73
33:i:112:LEU:HD12	33:i:121:TRP:CE3	2.24	0.72
51:3:2683:G:H1	51:3:2740:U:H3	1.35	0.72
53:5:1249:G:N2	53:5:1250:A:N7	2.37	0.72
36:l:34:LEU:HD11	36:l:129:TRP:HB2	1.72	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1330:A:H2'	53:5:1331:A:C8	2.25	0.72
14:K:56:LYS:HG3	14:K:58:PRO:HD2	1.70	0.72
51:3:911:U:H2'	51:3:912:A:H8	1.54	0.72
41:q:93:LYS:NZ	41:q:94:VAL:O	2.23	0.72
27:c:33:PRO:HB2	27:c:111:ALA:HB2	1.70	0.72
36:l:34:LEU:HB2	36:l:118:LEU:HD12	1.72	0.72
36:l:111:GLU:HA	36:l:114:MET:HE2	1.70	0.72
31:g:75:ALA:HB1	31:g:80:LEU:HD13	1.72	0.71
9:F:131:GLY:HA3	9:F:135:LYS:HE3	1.72	0.71
37:m:107:ARG:NH1	51:3:1355:C:O2'	2.23	0.71
13:J:101:THR:O	23:T:8:ASN:ND2	2.23	0.71
28:d:74:ILE:HB	28:d:79:LEU:HB2	1.71	0.71
51:3:2031:C:H2'	51:3:2032:G:H8	1.54	0.71
53:5:376:G:N2	53:5:379:A:OP2	2.23	0.71
10:G:31:MET:HG3	10:G:32:THR:HG23	1.73	0.71
15:L:6:GLY:HA2	15:L:57:ARG:HH11	1.56	0.71
12:I:98:ILE:HD12	12:I:102:VAL:HG23	1.72	0.71
31:g:11:VAL:HG22	31:g:58:ILE:HG13	1.73	0.71
51:3:17:G:H1	51:3:560:U:H3	1.36	0.71
8:E:76:ALA:HB1	8:E:85:GLU:HG2	1.71	0.70
28:d:35:VAL:HG12	28:d:90:THR:HG22	1.72	0.70
28:d:79:LEU:HA	28:d:83:GLN:NE2	2.05	0.70
37:m:99:ARG:NH1	51:3:2886:A:OP1	2.24	0.70
51:3:2829:G:N2	51:3:2829:G:OP2	2.23	0.70
7:D:142:GLY:O	7:D:148:ARG:HA	1.91	0.70
51:3:2861:G:N2	51:3:2864:A:OP2	2.24	0.70
53:5:242:A:N6	53:5:277:G:C2	2.60	0.70
51:3:990:G:H1	51:3:999:U:H3	1.40	0.70
5:B:194:THR:HG23	5:B:196:TYR:H	1.57	0.69
53:5:167:A:H61	53:5:197:A:H5'	1.55	0.69
34:j:106:LEU:HD21	34:j:111:TYR:HB2	1.74	0.69
51:3:2806:A:H2'	51:3:2807:G:H4'	1.73	0.69
3:2:30:GLN:HB3	51:3:2535:C:H5''	1.73	0.69
53:5:670:G:H2'	53:5:671:G:C8	2.27	0.69
53:5:821:U:H2'	53:5:822:A:C8	2.28	0.69
53:5:710:G:H2'	53:5:711:G:C8	2.28	0.69
53:5:1384:A:H2'	53:5:1385:A:H8	1.56	0.69
51:3:1011:A:H62	51:3:1025:G:H21	1.41	0.69
9:F:26:ILE:HD13	9:F:42:LEU:HD12	1.75	0.69
11:H:71:GLY:HA2	53:5:1225:A:H4'	1.73	0.69
50:z:11:CYS:SG	50:z:12:ASN:N	2.65	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:118:G:OP2	51:3:120:A:O2'	2.11	0.69
51:3:1232:U:H2'	51:3:1233:A:H8	1.58	0.69
6:C:134:ILE:HD13	53:5:618:U:H4'	1.74	0.69
13:J:21:ASN:OD1	13:J:50:LYS:NZ	2.26	0.69
28:d:40:VAL:HB	28:d:86:GLY:H	1.58	0.69
38:n:39:ILE:HD12	38:n:105:LEU:HD11	1.73	0.68
51:3:915:A:N6	51:3:936:G:O2'	2.26	0.68
6:C:132:PRO:HD2	53:5:399:C:H5''	1.74	0.68
51:3:1100:U:O2	51:3:1108:A:N6	2.25	0.68
31:g:85:GLY:HA3	31:g:89:ILE:HB	1.76	0.68
6:C:66:ILE:HD12	6:C:71:PHE:HB2	1.75	0.68
20:Q:94:ARG:HG3	20:Q:99:VAL:HG23	1.74	0.68
51:3:2299:U:H2'	51:3:2300:A:C8	2.29	0.68
53:5:320:G:N2	53:5:323:A:OP2	2.26	0.68
8:E:28:THR:HG21	8:E:75:THR:HG21	1.74	0.68
46:v:33:LEU:HD12	46:v:49:LEU:HB3	1.76	0.68
25:a:64:ARG:NH2	51:3:1601:A:OP1	2.26	0.68
31:g:60:ARG:O	31:g:64:LYS:NZ	2.23	0.68
45:u:53:ARG:HH21	51:3:2363:C:H1'	1.58	0.68
51:3:2106:G:H22	51:3:2198:G:H22	1.42	0.68
51:3:1128:G:N2	51:3:1133:A:H62	1.91	0.68
51:3:1507:G:O2'	51:3:1508:G:OP1	2.12	0.68
53:5:403:A:H2'	53:5:404:A:C8	2.28	0.68
53:5:1290:G:N1	53:5:1293:A:OP2	2.26	0.68
36:l:27:VAL:HG21	36:l:134:ARG:HG2	1.74	0.67
51:3:2104:A:H2'	51:3:2105:G:H8	1.57	0.67
53:5:145:G:N2	53:5:148:A:OP2	2.26	0.67
53:5:371:U:H3	53:5:385:A:H61	1.41	0.67
53:5:940:G:N2	53:5:1308:G:O2'	2.26	0.67
7:D:163:GLY:O	7:D:167:ARG:N	2.22	0.67
54:6:16:G:N1	54:6:49:C:N3	2.38	0.67
4:A:116:THR:HA	4:A:123:LEU:HD11	1.76	0.67
51:3:1837:C:H2'	51:3:1838:A:H8	1.58	0.67
53:5:1436:C:N4	53:5:1437:A:H62	1.90	0.67
19:P:74:ARG:HH22	53:5:230:G:H4'	1.60	0.67
34:j:88:LYS:HG3	34:j:89:GLU:H	1.57	0.67
51:3:1865:A:H62	51:3:1891:A:H8	1.40	0.67
51:3:2106:G:H1	51:3:2198:G:H1	1.42	0.67
53:5:649:U:O4	53:5:749:G:O2'	2.12	0.67
53:5:1331:A:H61	53:5:1340:G:H1	1.43	0.67
3:2:16:ILE:HG22	3:2:25:VAL:HG12	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:q:71:ILE:HG22	41:q:82:LYS:HG3	1.75	0.67
44:t:3:ARG:O	44:t:102:ARG:NH1	2.27	0.67
51:3:995:A:O2'	51:3:996:A:O4'	2.09	0.67
12:I:48:LEU:HB3	12:I:49:PRO:HD2	1.76	0.67
42:r:41:LYS:HE3	49:y:22:LEU:HD11	1.75	0.67
45:u:56:GLY:HA2	51:3:2338:G:H21	1.59	0.67
51:3:1138:A:OP2	51:3:1139:C:N4	2.23	0.67
53:5:1136:G:N2	53:5:1151:A:N1	2.35	0.67
53:5:1471:C:H2'	53:5:1472:G:C8	2.30	0.67
36:l:120:ARG:NH1	51:3:2477:A:OP1	2.28	0.67
51:3:755:C:H2'	51:3:756:A:H8	1.58	0.67
20:Q:67:TYR:HE1	23:T:6:VAL:H	1.41	0.66
33:i:16:ARG:NH1	33:i:56:TYR:OH	2.29	0.66
37:m:2:SER:O	51:3:1692:A:O2'	2.09	0.66
51:3:1444:C:O2	51:3:1445:U:N3	2.28	0.66
51:3:2637:A:O2'	51:3:2898:A:N7	2.28	0.66
53:5:1361:G:H2'	53:5:1362:G:H8	1.61	0.66
50:z:8:ARG:NH1	51:3:2427:U:O2'	2.28	0.66
53:5:662:G:H1'	53:5:730:G:H5'	1.76	0.66
26:b:139:TYR:CD2	26:b:140:PRO:HD3	2.30	0.66
27:c:32:GLN:HG3	51:3:632:A:H4'	1.77	0.66
51:3:11:U:N3	51:3:2637:A:N7	2.43	0.66
53:5:671:G:O6	53:5:713:A:N1	2.28	0.66
7:D:71:VAL:HG12	7:D:72:LYS:H	1.60	0.66
33:i:11:GLN:HA	51:3:573:A:H4'	1.76	0.66
3:2:11:CYS:SG	3:2:12:LYS:N	2.68	0.66
53:5:1314:A:H4'	54:7:33:C:H5''	1.77	0.66
8:E:92:ARG:NH2	8:E:93:GLU:OE1	2.27	0.66
53:5:512:U:H2'	53:5:513:G:H8	1.61	0.66
11:H:33:ASN:O	11:H:35:ARG:NH2	2.29	0.66
22:S:38:GLU:O	22:S:43:ASN:ND2	2.28	0.66
34:j:88:LYS:HB3	34:j:94:ARG:HE	1.60	0.66
51:3:780:G:N2	51:3:785:A:H61	1.93	0.66
51:3:1612:U:H2'	51:3:1613:A:H8	1.61	0.66
53:5:1417:U:H3	53:5:1435:G:H22	1.44	0.66
51:3:2025:C:H2'	51:3:2026:A:H8	1.60	0.65
53:5:69:G:H1	53:5:86:A:N6	1.91	0.65
4:A:26:MET:SD	4:A:29:HIS:ND1	2.64	0.65
39:o:100:TYR:OH	39:o:105:ARG:NH1	2.29	0.65
51:3:2552:G:H5'	51:3:2653:G:H21	1.61	0.65
53:5:1160:G:H2'	53:5:1161:G:H8	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:179:TYR:HE1	53:5:7:U:H2'	1.62	0.65
52:4:48:A:O2'	52:4:49:G:O5'	2.12	0.65
53:5:397:C:H2'	53:5:398:G:H8	1.62	0.65
10:G:93:PRO:HG2	53:5:872:C:H5'	1.79	0.65
26:b:148:GLN:NE2	26:b:150:GLY:O	2.30	0.65
51:3:1481:U:O2'	51:3:1483:G:OP2	2.15	0.65
14:K:127:ARG:HE	14:K:134:LYS:HB2	1.61	0.65
34:j:24:VAL:HG23	34:j:30:LYS:HB3	1.77	0.65
51:3:2812:U:O2'	51:3:2894:G:N2	2.30	0.65
53:5:711:G:H2'	53:5:712:A:C8	2.32	0.65
8:E:153:LYS:HG3	10:G:55:ALA:HB1	1.78	0.65
26:b:56:THR:HA	26:b:78:THR:HA	1.78	0.65
42:r:24:ILE:HD12	42:r:36:LEU:HD22	1.78	0.65
53:5:543:C:H2'	53:5:544:A:H8	1.62	0.65
53:5:1138:U:H2'	53:5:1139:A:H8	1.62	0.65
53:5:1193:U:H2'	53:5:1194:A:H8	1.61	0.65
20:Q:84:ARG:NH1	53:5:662:G:OP1	2.30	0.65
47:w:11:SER:HA	47:w:15:LEU:HD13	1.79	0.65
51:3:1262:G:H2'	51:3:1263:G:H8	1.61	0.65
21:R:81:LYS:NZ	53:5:1202:A:N7	2.45	0.65
26:b:7:PHE:H	26:b:34:ASN:HD21	1.42	0.65
35:k:21:GLY:O	35:k:22:ARG:NH2	2.29	0.65
48:x:9:SER:OG	48:x:27:SER:O	2.15	0.65
51:3:892:G:H2'	51:3:893:A:H8	1.60	0.65
52:4:105:A:H2'	52:4:106:A:C8	2.32	0.65
11:H:32:VAL:HG11	11:H:41:PHE:HE2	1.61	0.64
25:a:101:TYR:HB2	25:a:105:ALA:HB3	1.78	0.64
34:j:6:THR:HB	34:j:21:ILE:HD12	1.80	0.64
39:o:14:GLU:OE1	39:o:60:ILE:N	2.29	0.64
39:o:63:THR:HG22	39:o:80:GLN:HA	1.78	0.64
41:q:84:GLY:H	51:3:1254:U:H4'	1.62	0.64
54:7:16:G:N1	54:7:49:C:N3	2.38	0.64
5:B:155:LEU:HD11	5:B:202:LYS:HE3	1.79	0.64
51:3:2700:C:O2'	51:3:2851:U:O2'	2.14	0.64
4:A:32:MET:SD	4:A:203:ASN:ND2	2.71	0.64
48:x:12:VAL:HG13	48:x:32:LYS:HD2	1.79	0.64
7:D:84:ARG:NH2	53:5:16:G:O2'	2.30	0.64
51:3:2069:A:N7	51:3:2511:A:N6	2.46	0.64
22:S:17:ARG:O	22:S:21:ASN:ND2	2.30	0.64
29:e:48:LEU:HD12	29:e:53:LEU:HD12	1.78	0.64
37:m:18:VAL:HG21	37:m:44:ARG:HG3	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2743:U:H2'	51:3:2744:A:H8	1.62	0.64
52:4:31:G:O6	52:4:48:A:N6	2.31	0.64
9:F:25:ILE:HG12	9:F:100:LEU:HD13	1.80	0.64
13:J:16:VAL:HG12	13:J:25:VAL:HG12	1.80	0.64
47:w:38:LEU:HD23	47:w:40:LYS:H	1.62	0.64
51:3:615:G:H2'	51:3:616:G:H8	1.61	0.64
53:5:299:U:H2'	53:5:300:A:H8	1.63	0.64
53:5:510:U:H2'	53:5:511:A:H8	1.62	0.64
6:C:70:GLN:NE2	53:5:399:C:OP2	2.31	0.64
8:E:49:ILE:HD13	8:E:83:LEU:HB3	1.78	0.64
13:J:22:ASN:OD1	13:J:40:SER:OG	2.16	0.64
48:x:12:VAL:HG21	48:x:29:LEU:HA	1.80	0.64
51:3:2784:A:O2'	51:3:2790:A:N7	2.29	0.64
12:I:10:PRO:HA	12:I:85:VAL:HG12	1.79	0.64
13:J:32:GLY:O	53:5:680:G:N2	2.30	0.64
28:d:26:MET:HE1	52:4:53:U:H1'	1.78	0.64
35:k:36:GLN:HE21	51:3:979:U:H5''	1.62	0.64
51:3:1336:A:H62	51:3:1640:G:H21	1.44	0.64
51:3:2273:U:O2	51:3:2284:G:C2	2.51	0.64
53:5:448:A:N6	53:5:478:G:OP2	2.27	0.64
14:K:107:ARG:NH2	53:5:905:U:OP1	2.31	0.64
51:3:1221:G:H2'	51:3:1222:A:H8	1.64	0.64
7:D:96:ASN:HD21	7:D:100:LYS:HE2	1.63	0.63
8:E:8:LEU:HB2	8:E:84:ARG:H	1.62	0.63
13:J:91:ARG:HA	13:J:91:ARG:NH2	2.13	0.63
51:3:552:C:H2'	51:3:553:A:H8	1.61	0.63
51:3:823:A:OP1	51:3:826:C:N4	2.31	0.63
39:o:53:LEU:HB3	39:o:65:ILE:HB	1.80	0.63
46:v:33:LEU:HB3	46:v:49:LEU:HD12	1.80	0.63
51:3:2299:U:H2'	51:3:2300:A:H8	1.63	0.63
20:Q:59:ALA:HA	20:Q:62:ARG:HH21	1.62	0.63
34:j:30:LYS:HD2	51:3:2682:A:H4'	1.80	0.63
53:5:1402:U:H2'	53:5:1403:A:H8	1.62	0.63
3:2:15:LYS:NZ	51:3:2761:A:O2'	2.31	0.63
5:B:61:THR:HG1	5:B:64:THR:HG1	1.45	0.63
10:G:116:ILE:HG12	10:G:137:ILE:HG12	1.79	0.63
29:e:146:GLN:OE1	51:3:2752:G:N2	2.32	0.63
43:s:60:ARG:NH1	51:3:1367:G:OP2	2.31	0.63
20:Q:93:ALA:HB1	20:Q:98:LEU:HB2	1.81	0.63
36:l:42:ILE:HD11	36:l:68:ILE:HD11	1.79	0.63
51:3:1814:G:N2	51:3:1817:A:OP2	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2253:U:H5'	51:3:2254:G:H5'	1.78	0.63
53:5:772:G:N2	53:5:802:C:N3	2.47	0.63
6:C:96:ARG:NH1	6:C:132:PRO:O	2.31	0.63
12:I:46:LEU:HD23	12:I:79:LEU:HD22	1.80	0.63
22:S:22:LYS:HA	22:S:25:LYS:HD2	1.81	0.63
26:b:16:VAL:HG12	26:b:26:ILE:HD13	1.80	0.63
51:3:580:U:OP1	51:3:1249:A:O2'	2.16	0.63
53:5:1062:C:H2'	53:5:1063:G:H8	1.64	0.63
9:F:101:ARG:NH1	53:5:1350:A:O2'	2.31	0.63
16:M:35:SER:OG	53:5:1332:U:OP1	2.17	0.63
30:f:33:LYS:HG3	30:f:112:MET:HG2	1.80	0.63
48:x:19:CYS:HB2	48:x:42:CYS:HB2	1.81	0.63
51:3:2031:C:H2'	51:3:2032:G:C8	2.33	0.63
53:5:111:A:OP1	53:5:603:U:O2'	2.16	0.63
13:J:119:ARG:HD3	13:J:120:PRO:HD2	1.81	0.63
35:k:126:PHE:HB2	35:k:146:VAL:HG22	1.81	0.63
51:3:1552:C:H42	51:3:1579:G:H1	1.45	0.63
9:F:39:GLN:HG2	11:H:44:LYS:HG3	1.81	0.63
26:b:185:ASP:O	26:b:189:MET:N	2.32	0.63
28:d:63:GLN:HE21	52:4:41:C:H5'	1.63	0.63
38:n:8:ARG:HD2	38:n:95:GLY:HA3	1.80	0.63
51:3:1820:U:O2'	51:3:1821:G:OP1	2.16	0.63
53:5:662:G:O6	53:5:721:G:O6	2.15	0.63
11:H:22:THR:O	11:H:64:ASP:HB2	1.99	0.62
39:o:29:ASP:OD2	39:o:93:ARG:NH2	2.31	0.62
51:3:719:G:O2'	51:3:823:A:N7	2.31	0.62
51:3:2665:A:H62	51:3:2672:G:H21	1.46	0.62
6:C:50:TYR:HE1	6:C:199:TRP:HE1	1.45	0.62
53:5:704:U:H2'	53:5:705:A:H8	1.64	0.62
8:E:97:LEU:HD22	53:5:658:G:H4'	1.81	0.62
33:i:58:ILE:HG12	33:i:126:HIS:HB2	1.82	0.62
35:k:35:GLY:HA3	35:k:41:ALA:HB2	1.82	0.62
51:3:184:A:O2'	51:3:186:A:N7	2.33	0.62
51:3:2589:G:N2	51:3:2589:G:OP2	2.32	0.62
53:5:670:G:H2'	53:5:671:G:H8	1.62	0.62
53:5:767:U:H1'	53:5:894:A:H2	1.64	0.62
10:G:93:PRO:O	10:G:96:ARG:NH2	2.32	0.62
5:B:182:ARG:HH22	53:5:1103:C:H2'	1.64	0.62
39:o:30:GLU:HB3	39:o:92:ARG:HB2	1.81	0.62
53:5:845:C:N4	53:5:846:G:O6	2.32	0.62
1:0:7:PRO:HB2	51:3:1337:G:H4'	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:1:MET:N	51:3:2534:G:N3	2.48	0.62
42:r:34:ASN:O	42:r:38:ASN:ND2	2.32	0.62
51:3:1323:A:H2'	51:3:1324:A:C8	2.35	0.62
51:3:2254:G:H2'	51:3:2255:A:H8	1.64	0.62
7:D:139:GLU:HA	7:D:151:LEU:O	1.99	0.62
28:d:33:LYS:HA	28:d:92:ARG:HH12	1.65	0.62
51:3:2068:G:O2'	51:3:2070:C:N4	2.22	0.62
53:5:316:G:H2'	53:5:317:A:C8	2.35	0.62
6:C:118:ASN:ND2	53:5:399:C:O3'	2.32	0.62
9:F:110:ARG:HH22	9:F:122:GLU:HG3	1.65	0.62
14:K:128:SER:OG	53:5:500:G:OP1	2.15	0.62
41:q:77:LYS:HD3	51:3:1009:A:H5''	1.81	0.62
51:3:1786:U:OP2	51:3:1791:A:N6	2.25	0.62
10:G:125:ASP:OD1	10:G:126:LYS:N	2.31	0.62
51:3:246:G:N2	51:3:259:A:OP2	2.32	0.62
51:3:332:G:H21	51:3:374:A:H62	1.46	0.62
51:3:1028:C:H2'	51:3:1029:A:H8	1.65	0.62
51:3:2297:G:N2	51:3:2354:A:OP1	2.32	0.62
51:3:2321:C:H2'	51:3:2322:G:C8	2.35	0.62
26:b:157:GLN:O	51:3:2059:G:N2	2.33	0.61
45:u:68:GLY:O	45:u:71:ASP:N	2.33	0.61
51:3:1463:G:H2'	51:3:1464:G:C8	2.34	0.61
53:5:833:G:N2	53:5:844:U:O2	2.33	0.61
39:o:53:LEU:HD12	39:o:101:ILE:HG13	1.81	0.61
43:s:12:LEU:HD22	43:s:17:TYR:HE1	1.65	0.61
51:3:2223:C:H2'	51:3:2224:A:H8	1.65	0.61
51:3:2797:C:O2	51:3:2895:A:O2'	2.17	0.61
53:5:1471:C:H2'	53:5:1472:G:H8	1.65	0.61
51:3:322:A:H2'	51:3:323:A:C8	2.36	0.61
53:5:185:G:O2'	53:5:186:A:O4'	2.16	0.61
29:e:56:THR:HA	29:e:68:HIS:CE1	2.35	0.61
32:h:123:MET:HG2	51:3:1115:G:H21	1.64	0.61
51:3:31:U:O2	51:3:1245:G:O2'	2.18	0.61
51:3:1445:U:HO2'	51:3:1621:U:HO2'	1.39	0.61
51:3:1956:G:H2'	51:3:1957:G:H8	1.65	0.61
53:5:1154:A:H2'	53:5:1155:A:C8	2.35	0.61
6:C:201:LYS:HB3	53:5:9:A:H62	1.64	0.61
33:i:14:LYS:NZ	33:i:16:ARG:HH21	1.98	0.61
33:i:113:PRO:HD2	33:i:121:TRP:HZ3	1.63	0.61
39:o:56:ARG:HH22	51:3:2691:C:H5''	1.64	0.61
47:w:40:LYS:HD2	47:w:42:HIS:HE1	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:68:C:H2'	53:5:69:G:C8	2.36	0.61
27:c:101:LEU:HD22	51:3:695:G:H5''	1.82	0.61
29:e:18:LEU:HG	29:e:27:VAL:HG12	1.81	0.61
51:3:1262:G:H2'	51:3:1263:G:C8	2.36	0.61
51:3:1619:A:H2'	51:3:1620:A:C8	2.35	0.61
53:5:97:G:H21	53:5:350:G:H5'	1.66	0.61
2:1:10:ARG:NH2	51:3:254:G:OP2	2.34	0.61
11:H:53:PRO:HG3	11:H:82:ARG:HG3	1.82	0.61
51:3:666:G:N2	51:3:669:A:OP2	2.27	0.61
51:3:1180:U:H2'	51:3:1181:A:H8	1.63	0.61
51:3:2739:C:N4	51:3:2740:U:O4	2.34	0.61
53:5:85:U:O2	53:5:86:A:N6	2.31	0.61
11:H:44:LYS:O	11:H:47:ILE:HG22	2.00	0.61
14:K:13:LYS:NZ	53:5:238:U:OP1	2.33	0.61
21:R:66:MET:HE2	21:R:69:HIS:HB2	1.83	0.61
27:c:42:GLN:O	51:3:479:A:N6	2.33	0.61
53:5:1384:A:H2'	53:5:1385:A:C8	2.35	0.61
26:b:72:LYS:NZ	51:3:2794:U:OP1	2.34	0.61
15:L:113:ARG:NH2	53:5:1204:A:OP1	2.34	0.60
28:d:29:PRO:HG2	28:d:169:LEU:HD13	1.83	0.60
28:d:132:ILE:HB	28:d:152:PHE:HB2	1.83	0.60
53:5:770:G:O6	53:5:804:A:N6	2.34	0.60
40:p:46:TYR:OH	51:3:1028:C:OP1	2.13	0.60
51:3:2533:A:H2'	51:3:2534:G:H8	1.66	0.60
53:5:510:U:H2'	53:5:511:A:C8	2.37	0.60
53:5:1110:C:H2'	53:5:1111:G:H8	1.66	0.60
53:5:1330:A:H2'	53:5:1331:A:H8	1.64	0.60
28:d:33:LYS:HA	28:d:92:ARG:NH1	2.17	0.60
51:3:1508:G:OP2	51:3:1508:G:H4'	1.98	0.60
53:5:684:A:N1	53:5:697:G:O2'	2.34	0.60
5:B:74:PRO:HA	5:B:77:LEU:HD12	1.82	0.60
14:K:42:LEU:HD13	14:K:94:LEU:HD11	1.84	0.60
51:3:780:G:H21	51:3:785:A:N6	1.98	0.60
51:3:869:U:H2'	51:3:870:A:H8	1.66	0.60
51:3:1381:A:N7	51:3:1405:G:N2	2.50	0.60
51:3:1744:U:H2'	51:3:1745:A:H8	1.66	0.60
53:5:590:G:O6	53:5:645:A:N6	2.34	0.60
53:5:733:A:H2'	53:5:734:A:C8	2.36	0.60
5:B:153:LYS:HB3	5:B:204:TRP:HB2	1.83	0.60
27:c:83:HIS:O	51:3:1286:G:N2	2.33	0.60
51:3:2798:A:O3'	51:3:2896:G:N2	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:70:G:H21	52:4:94:A:H62	1.50	0.60
53:5:1405:U:H3	53:5:1445:G:H1	1.50	0.60
11:H:111:ARG:HB3	53:5:1321:G:C8	2.37	0.60
28:d:101:GLU:HG2	48:x:25:ILE:HD12	1.82	0.60
34:j:11:ALA:HB2	34:j:83:ALA:HB1	1.84	0.60
36:l:7:THR:HG22	36:l:9:TYR:H	1.67	0.60
53:5:341:C:H4'	53:5:342:G:H5''	1.84	0.60
1:0:39:ARG:NH2	51:3:503:G:N7	2.49	0.60
51:3:2751:C:OP2	51:3:2763:C:N4	2.35	0.60
11:H:6:TYR:HB2	11:H:21:LEU:HB2	1.83	0.60
38:n:61:LYS:HG2	38:n:72:LEU:HD11	1.84	0.60
51:3:2266:C:O2'	51:3:2435:C:OP2	2.20	0.60
53:5:1051:U:H2'	53:5:1052:G:H8	1.66	0.60
10:G:38:SER:H	10:G:41:LYS:HB2	1.66	0.60
22:S:30:THR:OG1	53:5:1432:A:OP1	2.19	0.60
39:o:57:GLY:HA3	39:o:62:GLU:HA	1.84	0.60
51:3:1237:G:H2'	51:3:1238:A:H8	1.66	0.60
51:3:1245:G:O6	51:3:1265:G:N2	2.34	0.60
51:3:2268:C:O2'	51:3:2396:A:O2'	2.16	0.60
53:5:358:G:O2'	53:5:359:A:N7	2.32	0.60
4:A:111:ARG:NH1	4:A:183:TYR:OH	2.35	0.60
29:e:94:GLY:HA3	29:e:97:TYR:HD2	1.67	0.60
33:i:115:ASN:O	33:i:119:ARG:NH1	2.35	0.60
51:3:2080:C:O2'	51:3:2606:A:O2'	2.17	0.60
53:5:164:C:H2'	53:5:165:A:H8	1.67	0.60
6:C:12:ARG:NH1	53:5:426:U:OP2	2.30	0.59
30:f:83:GLU:HG2	30:f:89:TYR:HB2	1.84	0.59
32:h:109:LEU:HA	32:h:112:LEU:HD13	1.84	0.59
51:3:822:C:H5''	51:3:823:A:H5'	1.84	0.59
51:3:1254:U:H2'	51:3:1255:G:C4	2.37	0.59
51:3:2137:A:H4'	51:3:2140:G:H1'	1.84	0.59
25:a:61:ARG:HD2	25:a:64:ARG:NH1	2.17	0.59
29:e:167:TYR:HB2	29:e:170:GLU:HB2	1.83	0.59
51:3:2847:C:H2'	51:3:2848:A:H8	1.67	0.59
53:5:57:U:H2'	53:5:58:G:H8	1.68	0.59
53:5:1225:A:H2'	53:5:1226:A:C8	2.37	0.59
4:A:184:GLU:HB3	4:A:187:ALA:HB3	1.84	0.59
28:d:57:LEU:HD23	28:d:65:PRO:HB3	1.83	0.59
49:y:6:ARG:NH1	51:3:2027:G:N7	2.49	0.59
51:3:1665:G:N2	51:3:1668:G:OP2	2.30	0.59
53:5:661:G:N2	53:5:738:A:N1	2.39	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:19:LEU:HD22	10:G:89:GLN:HB3	1.84	0.59
53:5:164:C:H2'	53:5:165:A:C8	2.37	0.59
10:G:23:ASN:OD1	10:G:26:ARG:NH1	2.35	0.59
13:J:53:PRO:HB3	13:J:88:THR:HG21	1.84	0.59
14:K:40:SER:OG	53:5:359:A:N1	2.30	0.59
28:d:104:ILE:HG13	28:d:105:TYR:HD1	1.67	0.59
47:w:62:LYS:HA	47:w:62:LYS:HE3	1.83	0.59
49:y:40:HIS:HD2	51:3:2888:U:H5	1.50	0.59
51:3:1798:A:N6	51:3:1835:G:O2'	2.35	0.59
51:3:2451:C:H2'	51:3:2452:G:H8	1.65	0.59
37:m:32:GLU:OE2	49:y:54:LYS:NZ	2.36	0.59
53:5:393:A:C6	53:5:546:G:C2	2.91	0.59
53:5:704:U:H2'	53:5:705:A:C8	2.38	0.59
9:F:45:ALA:HA	9:F:48:LEU:HD12	1.84	0.59
28:d:108:LEU:HD23	28:d:176:PRO:HG2	1.84	0.59
51:3:16:A:H2	51:3:2051:G:H21	1.50	0.59
53:5:589:U:H2'	53:5:590:G:H8	1.67	0.59
6:C:164:SER:HB2	6:C:167:VAL:HG12	1.85	0.59
30:f:58:TYR:O	30:f:62:LYS:HG2	2.02	0.59
40:p:60:TRP:O	40:p:64:LEU:HD23	2.03	0.59
50:z:2:ALA:N	51:3:2291:U:OP1	2.36	0.59
51:3:713:C:H2'	51:3:714:G:H8	1.67	0.59
51:3:732:G:H2'	51:3:733:C:C6	2.38	0.59
5:B:48:TYR:HE1	5:B:77:LEU:HA	1.67	0.59
28:d:175:LEU:HD12	28:d:176:PRO:HD2	1.83	0.59
32:h:102:LYS:HA	32:h:121:LEU:HD11	1.85	0.59
33:i:117:LEU:O	33:i:121:TRP:N	2.36	0.59
53:5:710:G:H2'	53:5:711:G:H8	1.66	0.59
4:A:177:ILE:HA	4:A:199:VAL:O	2.03	0.59
16:M:16:PHE:HB2	16:M:19:ARG:HG3	1.85	0.59
27:c:79:THR:HG23	27:c:80:ARG:HG2	1.85	0.59
51:3:2223:C:H2'	51:3:2224:A:C8	2.38	0.59
52:4:103:C:H2'	52:4:104:C:H6	1.68	0.59
17:N:47:PHE:CE2	53:5:761:U:H5'	2.38	0.58
26:b:117:ARG:HH21	26:b:117:ARG:HG2	1.67	0.58
51:3:30:A:H2'	51:3:31:U:C6	2.38	0.58
53:5:663:G:H2'	53:5:664:A:H8	1.67	0.58
13:J:83:GLY:O	23:T:26:ARG:NH1	2.36	0.58
14:K:96:ARG:HB2	14:K:111:VAL:HG23	1.86	0.58
16:M:2:ALA:N	53:5:1191:U:OP1	2.35	0.58
51:3:2845:U:H2'	51:3:2846:A:H8	1.66	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:3:TYR:HE1	6:C:114:ARG:HD3	1.68	0.58
26:b:53:SER:HB3	26:b:81:LEU:HD23	1.84	0.58
37:m:14:ARG:NH2	51:3:2009:U:OP1	2.33	0.58
42:r:6:LYS:HA	42:r:104:VAL:HG12	1.85	0.58
51:3:1307:G:H2'	51:3:1308:A:C8	2.39	0.58
53:5:1316:C:H2'	53:5:1317:A:C8	2.38	0.58
53:5:1505:G:O2'	53:5:1506:A:O5'	2.17	0.58
17:N:29:LEU:O	17:N:33:ILE:HG12	2.03	0.58
28:d:59:LEU:HB2	28:d:141:ILE:HG22	1.84	0.58
51:3:1837:C:H2'	51:3:1838:A:C8	2.38	0.58
51:3:2335:A:H2'	51:3:2336:A:C8	2.37	0.58
51:3:2706:U:H2'	51:3:2707:A:C8	2.38	0.58
53:5:711:G:H2'	53:5:712:A:H8	1.68	0.58
21:R:77:THR:HG21	53:5:1196:G:H4'	1.85	0.58
39:o:92:ARG:HD3	39:o:115:LYS:CE	2.32	0.58
51:3:755:C:H2'	51:3:756:A:C8	2.37	0.58
51:3:1182:U:H2'	51:3:1183:A:H8	1.67	0.58
51:3:1287:C:H2'	51:3:1288:C:C6	2.39	0.58
53:5:961:G:H21	54:7:35:G:H1'	1.68	0.58
28:d:110:ARG:NH1	28:d:137:ILE:O	2.35	0.58
35:k:53:GLY:O	51:3:866:G:N2	2.34	0.58
38:n:11:ARG:HA	38:n:14:ARG:HG2	1.84	0.58
51:3:847:C:HO2'	51:3:1256:A:HO2'	1.52	0.58
51:3:1129:U:N3	51:3:1132:C:OP2	2.36	0.58
51:3:2865:U:H2'	51:3:2866:A:H8	1.68	0.58
54:7:29:C:H2'	54:7:30:G:H8	1.69	0.58
4:A:83:LEU:HD11	4:A:108:ILE:HG13	1.85	0.58
28:d:57:LEU:HA	28:d:60:ILE:HG22	1.84	0.58
41:q:4:ILE:HD13	41:q:40:MET:O	2.04	0.58
51:3:842:U:O2'	51:3:2067:A:N1	2.34	0.58
13:J:12:GLY:HA2	13:J:30:PRO:HD3	1.85	0.58
25:a:268:ARG:HB3	51:3:1805:U:H5''	1.85	0.58
42:r:16:LYS:NZ	51:3:2018:U:OP2	2.29	0.58
51:3:2455:G:N2	51:3:2458:A:OP2	2.36	0.58
54:6:29:C:H2'	54:6:30:G:H8	1.69	0.58
9:F:52:ARG:NH2	9:F:121:ASN:OD1	2.35	0.58
4:A:31:GLY:O	4:A:218:ASN:ND2	2.35	0.58
25:a:179:TYR:HB3	25:a:191:LYS:HB3	1.85	0.58
53:5:250:G:H2'	53:5:251:G:H8	1.69	0.58
2:1:2:LYS:NZ	51:3:258:G:OP2	2.36	0.57
4:A:218:ASN:HD21	4:A:220:HIS:CE1	2.22	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:116:ALA:HB1	5:B:203:VAL:HG13	1.85	0.57
7:D:141:ILE:HD11	7:D:148:ARG:HB3	1.86	0.57
22:S:53:ARG:NH2	53:5:164:C:OP2	2.37	0.57
26:b:3:ILE:HG13	26:b:209:THR:HB	1.86	0.57
28:d:106:VAL:O	28:d:110:ARG:NE	2.33	0.57
35:k:81:ASN:ND2	51:3:663:A:N7	2.52	0.57
37:m:63:VAL:HG11	37:m:79:MET:HE1	1.86	0.57
45:u:86:PHE:CE2	45:u:94:ARG:HB2	2.38	0.57
51:3:1890:U:O2'	51:3:1891:A:O5'	2.22	0.57
51:3:2745:G:H2'	51:3:2746:A:H8	1.69	0.57
53:5:1055:G:N2	53:5:1165:G:O3'	2.37	0.57
53:5:1138:U:H2'	53:5:1139:A:C8	2.39	0.57
7:D:185:ARG:NH1	53:5:22:G:O6	2.38	0.57
9:F:48:LEU:HD11	9:F:116:LEU:HB3	1.86	0.57
51:3:61:U:H1'	51:3:75:A:H2'	1.86	0.57
51:3:852:C:H42	51:3:1221:G:H1	1.52	0.57
31:g:41:ARG:NH1	51:3:1118:U:OP1	2.37	0.57
51:3:2103:C:H2'	51:3:2104:A:C8	2.40	0.57
51:3:2552:G:H2'	51:3:2553:G:C8	2.39	0.57
53:5:186:A:H2'	53:5:187:A:C4	2.39	0.57
7:D:140:VAL:HG22	7:D:151:LEU:HB2	1.86	0.57
16:M:22:THR:OG1	53:5:1333:C:OP1	2.17	0.57
17:N:40:LEU:HD21	17:N:50:LYS:NZ	2.19	0.57
35:k:16:LYS:NZ	51:3:1224:G:N7	2.48	0.57
49:y:13:ARG:NH2	51:3:552:C:OP1	2.37	0.57
51:3:846:U:N3	51:3:1280:G:OP1	2.38	0.57
51:3:1558:A:OP2	51:3:1570:A:N6	2.38	0.57
53:5:331:C:H2'	53:5:332:A:H8	1.70	0.57
26:b:138:GLY:HA3	51:3:2587:U:H4'	1.85	0.57
28:d:79:LEU:HA	28:d:83:GLN:HE22	1.67	0.57
35:k:30:LYS:HG3	35:k:31:THR:HG23	1.85	0.57
39:o:54:ARG:HG3	39:o:100:TYR:HB2	1.86	0.57
51:3:1023:C:O2'	51:3:1036:A:N3	2.33	0.57
51:3:2145:A:H61	51:3:2160:U:H3	1.53	0.57
51:3:2308:U:H2'	51:3:2309:A:H8	1.67	0.57
3:2:29:THR:HG22	3:2:31:LYS:H	1.70	0.57
7:D:181:LYS:HD3	53:5:8:G:H21	1.68	0.57
13:J:16:VAL:HG11	13:J:93:PHE:HZ	1.68	0.57
13:J:90:ILE:HD13	23:T:15:LEU:HD13	1.85	0.57
26:b:24:LEU:HD12	26:b:25:PRO:HD2	1.87	0.57
51:3:1971:G:O2'	51:3:1974:U:OP2	2.23	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2598:C:H2'	51:3:2599:C:C6	2.40	0.57
51:3:2844:U:H2'	51:3:2845:U:C6	2.39	0.57
26:b:198:ALA:HA	51:3:2688:C:H5'	1.87	0.57
50:z:20:LEU:HD21	51:3:2427:U:H5''	1.86	0.57
51:3:1306:G:H2'	51:3:1307:G:H8	1.68	0.57
51:3:1860:A:N6	51:3:1896:A:N7	2.52	0.57
51:3:2312:G:H1	51:3:2320:U:H3	1.52	0.57
53:5:61:A:N1	53:5:92:G:O2'	2.30	0.57
53:5:219:A:H2'	53:5:220:U:O4'	2.04	0.57
54:6:7:U:H2'	54:6:8:G:C8	2.40	0.57
22:S:60:ILE:HD12	22:S:64:ARG:HE	1.69	0.57
47:w:40:LYS:HD2	47:w:42:HIS:CE1	2.40	0.57
53:5:152:U:H2'	53:5:153:A:C8	2.40	0.57
12:I:24:LEU:HA	12:I:27:THR:HG22	1.86	0.57
31:g:97:ASP:OD1	31:g:101:LYS:NZ	2.38	0.57
51:3:788:G:H2'	51:3:789:A:H8	1.69	0.57
51:3:985:A:H2'	51:3:986:G:H8	1.69	0.57
51:3:1061:A:H2'	51:3:1062:A:H8	1.69	0.57
51:3:2474:C:H2'	51:3:2475:C:C6	2.40	0.57
51:3:2593:U:OP1	54:7:77:A:N6	2.38	0.57
53:5:22:G:H2'	53:5:23:G:H8	1.70	0.57
4:A:30:VAL:HG12	4:A:56:PHE:HB2	1.87	0.57
13:J:34:VAL:O	53:5:681:U:O2'	2.21	0.57
16:M:53:ILE:H	16:M:53:ILE:HD12	1.70	0.57
51:3:164:A:OP2	51:3:165:U:O2'	2.22	0.57
51:3:733:C:O2'	51:3:769:A:N6	2.37	0.57
51:3:2802:C:OP2	51:3:2807:G:N2	2.38	0.57
54:7:7:U:H2'	54:7:8:G:C8	2.40	0.57
32:h:13:ASN:ND2	32:h:52:PRO:HA	2.20	0.56
33:i:118:SER:HA	33:i:121:TRP:HB2	1.86	0.56
51:3:154:U:H2'	51:3:155:A:H8	1.69	0.56
53:5:518:A:H62	53:5:527:G:N2	2.01	0.56
53:5:1438:U:H2'	53:5:1439:G:C8	2.39	0.56
8:E:16:GLU:O	8:E:20:GLN:HG2	2.05	0.56
28:d:29:PRO:HB2	28:d:169:LEU:HD22	1.87	0.56
51:3:2880:A:H2'	51:3:2881:A:C8	2.41	0.56
9:F:87:PRO:HG2	9:F:151:ALA:HB2	1.87	0.56
12:I:18:SER:OG	12:I:19:TYR:N	2.37	0.56
14:K:64:LYS:HG3	14:K:80:ILE:HB	1.86	0.56
17:N:18:ASP:HA	53:5:747:C:H4'	1.87	0.56
27:c:83:HIS:HB2	51:3:1286:G:N2	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:g:63:LEU:HD13	31:g:71:ILE:HD12	1.86	0.56
51:3:219:G:H1'	51:3:220:A:H4'	1.87	0.56
51:3:481:C:H2'	51:3:482:G:C8	2.40	0.56
51:3:849:C:H2'	51:3:850:G:H8	1.70	0.56
51:3:1440:U:H2'	51:3:1441:A:H8	1.71	0.56
51:3:1502:A:O2'	51:3:1541:A:N6	2.38	0.56
51:3:1514:U:H3	51:3:1525:G:H1	1.53	0.56
51:3:1744:U:H2'	51:3:1745:A:C8	2.40	0.56
51:3:1959:A:H2	51:3:2568:G:H1'	1.70	0.56
51:3:2376:C:H2'	51:3:2377:A:H8	1.69	0.56
51:3:2814:A:H2'	51:3:2815:G:O4'	2.06	0.56
53:5:70:A:H2'	53:5:71:A:C8	2.40	0.56
53:5:140:U:H2'	53:5:141:A:C8	2.41	0.56
53:5:1438:U:H2'	53:5:1439:G:H8	1.70	0.56
26:b:148:GLN:HG3	26:b:150:GLY:H	1.69	0.56
27:c:104:ASN:HD21	51:3:693:U:H1'	1.70	0.56
42:r:64:MET:HG3	42:r:69:LEU:HD21	1.87	0.56
43:s:8:LEU:HB2	43:s:30:VAL:HG13	1.86	0.56
51:3:1297:U:O2'	51:3:1298:A:OP1	2.23	0.56
51:3:2867:U:H2'	51:3:2868:G:C8	2.41	0.56
53:5:682:G:N2	53:5:701:A:OP2	2.35	0.56
53:5:859:A:N3	53:5:913:A:O2'	2.37	0.56
53:5:1482:A:H2'	53:5:1483:C:C6	2.40	0.56
53:5:1497:U:H2'	53:5:1498:G:H8	1.70	0.56
6:C:56:GLU:OE2	6:C:59:ARG:NH2	2.39	0.56
26:b:143:PHE:HD2	26:b:145:GLY:H	1.52	0.56
51:3:85:U:O4	51:3:103:G:O2'	2.23	0.56
51:3:254:G:H2'	51:3:255:A:C8	2.39	0.56
51:3:1231:G:H2'	51:3:1232:U:C6	2.41	0.56
22:S:29:LYS:NZ	53:5:1413:G:OP2	2.39	0.56
28:d:122:PHE:HE2	28:d:167:LEU:HB2	1.69	0.56
33:i:10:GLU:OE2	33:i:48:THR:OG1	2.23	0.56
51:3:1414:C:H2'	51:3:1415:A:C8	2.40	0.56
53:5:1115:G:N2	53:5:1116:U:O4	2.35	0.56
9:F:15:PRO:HB3	11:H:48:GLN:HG2	1.88	0.56
35:k:82:LEU:HB2	35:k:116:GLY:HA3	1.88	0.56
36:l:48:GLU:OE2	36:l:51:ARG:NH2	2.38	0.56
51:3:596:G:H1	51:3:611:A:H61	1.54	0.56
1:0:36:LYS:NZ	51:3:185:U:OP2	2.37	0.56
12:I:78:ARG:NH1	53:5:1128:G:OP1	2.39	0.56
28:d:4:LEU:H	48:x:25:ILE:HD11	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:42:LYS:HG3	30:f:46:ASP:HB3	1.87	0.56
31:g:25:VAL:HA	31:g:111:GLY:HA3	1.87	0.56
33:i:98:LYS:O	33:i:129:LYS:NZ	2.38	0.56
36:l:43:ASP:OD2	36:l:45:ARG:HG3	2.05	0.56
51:3:107:C:H2'	51:3:108:G:H8	1.71	0.56
6:C:9:LYS:NZ	53:5:540:U:OP1	2.23	0.56
14:K:9:ARG:HH12	53:5:874:C:H5''	1.71	0.56
17:N:40:LEU:HD21	17:N:50:LYS:HZ2	1.71	0.56
21:R:55:LYS:HB2	53:5:953:A:C2	2.41	0.56
28:d:92:ARG:NH1	28:d:96:MET:SD	2.79	0.56
31:g:49:SER:HB2	31:g:85:GLY:HA2	1.87	0.56
45:u:34:ARG:HG2	51:3:2279:G:H5'	1.88	0.56
51:3:640:U:O2	51:3:658:G:O6	2.24	0.56
51:3:700:U:H2'	51:3:701:A:H8	1.70	0.56
51:3:902:U:N3	51:3:941:C:OP2	2.38	0.56
51:3:2116:U:H3	51:3:2188:U:H3	1.54	0.56
51:3:2575:G:H2'	51:3:2576:A:H8	1.70	0.56
53:5:1000:A:H2'	53:5:1001:A:H8	1.71	0.56
2:1:14:THR:OG1	2:1:17:GLY:O	2.22	0.56
6:C:122:VAL:HA	6:C:144:LEU:HA	1.89	0.56
10:G:23:ASN:ND2	53:5:869:U:O2'	2.39	0.56
51:3:713:C:H2'	51:3:714:G:C8	2.40	0.56
51:3:2551:G:H2'	51:3:2552:G:C8	2.41	0.56
53:5:144:U:H3	53:5:149:G:H1	1.54	0.56
53:5:299:U:H2'	53:5:300:A:C8	2.40	0.56
12:I:47:PRO:HG2	53:5:1127:A:N3	2.21	0.55
32:h:72:VAL:O	51:3:1097:G:O2'	2.24	0.55
44:t:27:ILE:HG22	44:t:29:PRO:HD3	1.87	0.55
45:u:85:LYS:HE3	51:3:893:A:OP1	2.06	0.55
51:3:742:G:O6	51:3:760:G:N2	2.39	0.55
53:5:1406:U:H2'	53:5:1407:A:C8	2.42	0.55
25:a:21:ASP:OD1	25:a:22:TYR:N	2.39	0.55
36:l:11:LYS:HE3	36:l:90:PRO:HD3	1.88	0.55
43:s:20:GLN:NE2	43:s:26:LYS:O	2.33	0.55
51:3:840:G:OP2	51:3:841:C:N4	2.34	0.55
51:3:901:C:O2'	51:3:944:U:O4	2.23	0.55
51:3:1298:A:H62	51:3:2019:G:H21	1.54	0.55
51:3:1529:U:H2'	51:3:1530:G:H8	1.70	0.55
51:3:2461:A:H2	51:3:2512:U:H3	1.54	0.55
51:3:2572:A:C2	51:3:2655:U:H4'	2.40	0.55
51:3:2745:G:H2'	51:3:2746:A:C8	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:372:G:N2	53:5:383:U:O2	2.34	0.55
5:B:77:LEU:HD13	5:B:106:ILE:HG21	1.88	0.55
7:D:143:ARG:HH22	7:D:146:ALA:H	1.55	0.55
28:d:33:LYS:HA	28:d:92:ARG:HH22	1.71	0.55
28:d:160:THR:HG22	28:d:161:ASN:H	1.70	0.55
49:y:16:ARG:NH1	51:3:1294:G:OP1	2.37	0.55
51:3:410:G:N2	51:3:411:U:O4	2.40	0.55
51:3:496:A:H62	51:3:505:G:H21	1.53	0.55
51:3:1831:G:H2'	51:3:1832:G:H8	1.72	0.55
51:3:2447:A:O2'	51:3:2608:A:OP1	2.17	0.55
53:5:129:U:H3	53:5:216:G:H1	1.53	0.55
5:B:115:SER:HA	5:B:207:ARG:HH11	1.70	0.55
7:D:208:VAL:HA	7:D:211:LEU:HG	1.87	0.55
7:D:211:LEU:HD12	7:D:212:ARG:HG3	1.88	0.55
17:N:5:LYS:NZ	53:5:656:U:OP2	2.31	0.55
25:a:31:ASN:ND2	51:3:1602:G:OP2	2.32	0.55
44:t:39:LEU:HD12	44:t:40:ASN:H	1.71	0.55
51:3:1691:U:H2'	51:3:1692:A:C8	2.42	0.55
51:3:1919:A:O2'	53:5:1469:G:O2'	2.24	0.55
53:5:993:C:H42	53:5:1034:G:H1	1.55	0.55
5:B:87:LYS:HE2	5:B:91:GLN:NE2	2.22	0.55
19:P:70:SER:OG	53:5:250:G:OP1	2.23	0.55
27:c:171:SER:OG	27:c:172:THR:N	2.40	0.55
33:i:42:LYS:HE2	40:p:62:LEU:HD11	1.87	0.55
51:3:802:U:H2'	51:3:803:G:H8	1.72	0.55
51:3:824:A:H1'	51:3:1788:A:H61	1.72	0.55
51:3:1114:C:H2'	51:3:1115:G:C8	2.42	0.55
51:3:1890:U:O2'	51:3:1891:A:N3	2.39	0.55
51:3:2273:U:OP2	51:3:2274:A:O2'	2.16	0.55
53:5:709:A:H2'	53:5:710:G:C8	2.41	0.55
53:5:1463:A:H2'	53:5:1464:G:C8	2.41	0.55
3:2:35:ARG:NE	51:3:2750:A:OP1	2.40	0.55
11:H:111:ARG:HB3	53:5:1321:G:H8	1.71	0.55
18:O:12:ARG:HA	18:O:32:HIS:HA	1.87	0.55
18:O:27:ILE:HD12	18:O:52:TRP:HH2	1.71	0.55
26:b:137:ALA:HB1	26:b:141:HIS:HB3	1.89	0.55
28:d:122:PHE:CE2	28:d:167:LEU:HB2	2.42	0.55
51:3:20:C:O2'	51:3:587:U:OP1	2.24	0.55
51:3:1712:A:N3	51:3:1997:C:O2'	2.37	0.55
51:3:2157:A:H2'	51:3:2158:C:C6	2.42	0.55
51:3:2551:G:H21	51:3:2654:U:H5''	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2852:G:O2'	51:3:2871:G:N2	2.39	0.55
51:3:2863:G:O2'	51:3:2864:A:O4'	2.25	0.55
53:5:147:A:H2'	53:5:148:A:C4	2.42	0.55
8:E:142:ARG:H	10:G:5:THR:HA	1.71	0.55
12:I:16:LEU:HB3	12:I:104:LEU:HG	1.87	0.55
28:d:71:LYS:NZ	51:3:2306:A:OP1	2.40	0.55
39:o:35:ILE:HG22	39:o:46:GLN:HB2	1.89	0.55
51:3:389:C:H2'	51:3:390:A:H8	1.72	0.55
51:3:1307:G:H2'	51:3:1308:A:H8	1.70	0.55
8:E:92:ARG:HH12	20:Q:85:HIS:HA	1.71	0.55
15:L:80:LEU:HD22	15:L:87:ARG:HB3	1.88	0.55
38:n:103:ALA:O	38:n:107:GLU:HG2	2.06	0.55
40:p:91:ARG:NE	40:p:92:LYS:H	2.05	0.55
51:3:386:U:H2'	51:3:387:U:H6	1.70	0.55
51:3:1128:G:H21	51:3:1133:A:N6	2.02	0.55
51:3:1462:A:O2'	51:3:1463:G:O5'	2.25	0.55
20:Q:61:LYS:HA	20:Q:61:LYS:HE3	1.89	0.55
33:i:3:LYS:N	41:q:21:PHE:O	2.40	0.55
35:k:117:HIS:CD2	51:3:673:A:H2'	2.41	0.55
37:m:48:LEU:HD11	37:m:66:TRP:HB2	1.89	0.55
51:3:349:G:H2'	51:3:350:C:C6	2.42	0.55
51:3:384:G:H2'	51:3:385:U:C6	2.42	0.55
53:5:1254:A:O2'	53:5:1256:U:OP2	2.23	0.55
53:5:1506:A:H2'	53:5:1507:U:C6	2.41	0.55
9:F:70:PRO:HG3	9:F:98:LEU:HD11	1.89	0.55
22:S:14:ASN:HA	22:S:17:ARG:HD3	1.88	0.55
42:r:33:GLN:NE2	42:r:52:ASN:OD1	2.40	0.55
51:3:154:U:H2'	51:3:155:A:C8	2.42	0.55
51:3:500:U:N3	51:3:823:A:C6	2.70	0.55
51:3:1100:U:H2'	51:3:1101:U:C6	2.41	0.55
51:3:2057:C:H2'	51:3:2058:G:H8	1.72	0.55
51:3:2587:U:H2'	51:3:2588:U:C6	2.42	0.55
51:3:2867:U:H2'	51:3:2868:G:H8	1.72	0.55
53:5:472:G:H2'	53:5:473:A:H8	1.72	0.55
53:5:573:G:H4'	53:5:574:C:H5''	1.89	0.55
4:A:136:LYS:O	4:A:140:ASN:N	2.40	0.54
14:K:113:GLY:HA2	14:K:119:GLY:N	2.17	0.54
51:3:2072:C:H2'	51:3:2073:C:H6	1.72	0.54
51:3:2081:U:H2'	51:3:2082:U:C6	2.42	0.54
51:3:2309:A:H2'	51:3:2310:C:C6	2.42	0.54
53:5:409:G:N2	53:5:425:G:O3'	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:e:60:GLU:O	29:e:61:LEU:HD23	2.07	0.54
51:3:551:C:N4	51:3:552:C:N4	2.55	0.54
51:3:614:C:H2'	51:3:615:G:C8	2.42	0.54
51:3:2054:C:H2'	51:3:2055:A:H8	1.72	0.54
51:3:2436:G:H5''	51:3:2437:G:H5'	1.89	0.54
17:N:33:ILE:O	17:N:37:THR:HG23	2.07	0.54
28:d:33:LYS:HA	28:d:92:ARG:NH2	2.21	0.54
38:n:20:ARG:HG2	38:n:46:PHE:HE2	1.72	0.54
51:3:341:G:H21	51:3:364:A:H61	1.54	0.54
51:3:1507:G:H1'	51:3:1508:G:OP2	2.07	0.54
51:3:1520:A:H2	51:3:1612:U:H1'	1.72	0.54
53:5:242:A:H62	53:5:277:G:N2	2.04	0.54
53:5:589:U:H2'	53:5:590:G:C8	2.41	0.54
53:5:943:C:H2'	53:5:944:A:C8	2.42	0.54
53:5:1297:G:H2'	53:5:1298:U:C6	2.43	0.54
27:c:30:LYS:HE3	51:3:633:G:H5''	1.88	0.54
28:d:104:ILE:HG13	28:d:105:TYR:CD1	2.42	0.54
33:i:100:SER:H	33:i:129:LYS:HD3	1.73	0.54
34:j:64:ARG:HH21	34:j:100:GLY:HA3	1.71	0.54
51:3:774:A:H1'	51:3:775:C:H5	1.71	0.54
51:3:1107:C:N4	51:3:1133:A:OP2	2.35	0.54
51:3:1743:U:H2'	51:3:1744:U:C6	2.43	0.54
51:3:2057:C:H2'	51:3:2058:G:C8	2.43	0.54
51:3:2360:A:N6	51:3:2373:G:N2	2.45	0.54
53:5:15:U:N3	53:5:18:U:OP2	2.39	0.54
53:5:621:C:H2'	53:5:622:A:H8	1.72	0.54
53:5:951:U:H3	53:5:1200:G:H1	1.53	0.54
9:F:115:MET:HA	9:F:118:LYS:HE3	1.90	0.54
31:g:118:PHE:HE2	31:g:122:ASP:HB3	1.72	0.54
43:s:16:VAL:HG13	43:s:20:GLN:HE22	1.72	0.54
51:3:1182:U:H2'	51:3:1183:A:C8	2.43	0.54
51:3:2306:A:H62	51:3:2326:G:N2	2.05	0.54
25:a:158:GLY:O	25:a:162:ARG:NH1	2.39	0.54
39:o:34:ALA:HA	39:o:46:GLN:O	2.08	0.54
45:u:18:LYS:HD3	51:3:2261:G:H1	1.72	0.54
51:3:2275:A:H5''	51:3:2276:A:H5''	1.89	0.54
51:3:2845:U:H2'	51:3:2846:A:C8	2.41	0.54
53:5:528:G:O6	55:Y:21:C:O2'	2.20	0.54
2:1:43:LYS:NZ	51:3:2358:U:O5'	2.35	0.54
6:C:98:ASP:OD2	6:C:99:ASN:N	2.40	0.54
11:H:12:ARG:NH1	11:H:109:ASP:OD2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:50:THR:OG1	26:b:87:MET:O	2.25	0.54
27:c:75:ARG:NH2	51:3:2453:G:OP1	2.40	0.54
37:m:50:THR:HG21	51:3:2844:U:H5'	1.89	0.54
51:3:389:C:H2'	51:3:390:A:C8	2.43	0.54
51:3:1428:U:H2'	51:3:1429:G:C8	2.43	0.54
51:3:2736:U:O2'	51:3:2737:G:H8	1.91	0.54
53:5:22:G:H2'	53:5:23:G:C8	2.43	0.54
53:5:1432:A:H2'	53:5:1433:G:H8	1.72	0.54
54:6:16:G:O2'	54:6:17:U:O5'	2.26	0.54
17:N:47:PHE:CD2	53:5:761:U:H5'	2.42	0.54
25:a:251:ARG:HH21	25:a:255:ARG:HG3	1.72	0.54
27:c:66:TYR:HE2	27:c:73:LYS:HD2	1.72	0.54
51:3:605:A:HO2'	51:3:606:G:P	2.30	0.54
53:5:57:U:H2'	53:5:58:G:C8	2.43	0.54
53:5:107:A:H2'	53:5:108:C:O4'	2.08	0.54
53:5:167:A:O2'	53:5:169:G:O6	2.25	0.54
53:5:457:A:H2'	53:5:458:G:C8	2.42	0.54
53:5:1065:G:H2'	53:5:1066:U:C6	2.43	0.54
51:3:1691:U:H2'	51:3:1692:A:H8	1.73	0.54
51:3:2308:U:H2'	51:3:2309:A:C8	2.43	0.54
51:3:2451:C:H2'	51:3:2452:G:C8	2.41	0.54
53:5:714:C:O2'	53:5:731:A:O4'	2.21	0.54
53:5:1156:G:H1'	53:5:1157:G:C4	2.43	0.54
53:5:1245:A:H2'	53:5:1246:A:C8	2.43	0.54
39:o:98:ARG:HH22	51:3:1761:C:H5	1.54	0.54
48:x:34:ILE:HG23	48:x:36:ILE:HD11	1.90	0.54
51:3:615:G:H2'	51:3:616:G:C8	2.42	0.54
51:3:664:G:H2'	51:3:665:C:C6	2.43	0.54
53:5:372:G:H2'	53:5:373:A:H8	1.73	0.54
25:a:66:TYR:HA	25:a:91:ASN:HD21	1.73	0.53
37:m:69:ASN:HB3	37:m:75:VAL:HG23	1.90	0.53
42:r:47:ILE:HD11	42:r:103:LEU:HD13	1.90	0.53
51:3:330:A:H2'	51:3:331:A:C8	2.43	0.53
51:3:401:G:O2'	51:3:402:A:OP1	2.26	0.53
51:3:512:G:HO2'	51:3:537:A:H61	1.54	0.53
51:3:562:C:N4	51:3:2050:G:OP2	2.41	0.53
51:3:652:U:H2'	51:3:653:G:C8	2.35	0.53
51:3:1460:G:H2'	51:3:1461:A:C8	2.43	0.53
51:3:1860:A:H2'	51:3:1861:A:C8	2.44	0.53
53:5:1232:C:H4'	53:5:1233:G:H8	1.73	0.53
8:E:7:LEU:HD12	8:E:72:PHE:HZ	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:20:ASP:OD1	12:I:21:SER:N	2.38	0.53
15:L:97:VAL:HG22	53:5:1282:U:H5''	1.90	0.53
18:O:52:TRP:CG	18:O:55:LYS:HZ1	2.25	0.53
20:Q:65:SER:OG	20:Q:69:LYS:N	2.41	0.53
27:c:5:LYS:HE2	27:c:13:PHE:HB3	1.90	0.53
37:m:5:ASN:HD22	37:m:5:ASN:C	2.12	0.53
51:3:611:A:OP1	51:3:1285:U:O2'	2.26	0.53
51:3:1104:A:H4'	51:3:1105:A:H2'	1.91	0.53
51:3:2035:U:H2'	51:3:2036:G:C8	2.44	0.53
53:5:209:A:C5	53:5:210:G:H1'	2.43	0.53
53:5:911:G:H2'	53:5:912:G:H8	1.74	0.53
16:M:34:LEU:O	16:M:38:GLY:N	2.39	0.53
32:h:20:LYS:HB3	32:h:21:PRO:HD3	1.91	0.53
36:l:120:ARG:HE	51:3:2476:A:H5''	1.72	0.53
51:3:756:A:H2'	51:3:757:A:H8	1.73	0.53
51:3:1114:C:H2'	51:3:1115:G:H8	1.73	0.53
51:3:1766:A:H2'	51:3:1767:A:C8	2.43	0.53
53:5:245:U:O2	53:5:271:G:O6	2.26	0.53
53:5:409:G:H1'	53:5:425:G:H21	1.73	0.53
53:5:1278:G:H21	53:5:1307:A:H62	1.55	0.53
53:5:1328:C:H2'	53:5:1329:G:H8	1.73	0.53
10:G:31:MET:O	10:G:31:MET:HE3	2.09	0.53
25:a:223:GLY:O	25:a:224:ILE:HG13	2.09	0.53
38:n:20:ARG:HH21	52:4:7:G:H4'	1.73	0.53
38:n:76:ASP:OD1	38:n:77:ILE:N	2.41	0.53
41:q:64:LEU:HB2	41:q:86:ARG:HH11	1.74	0.53
51:3:641:U:H2'	51:3:642:A:H8	1.72	0.53
51:3:1230:U:H2'	51:3:1231:G:C8	2.44	0.53
51:3:1305:G:H2'	51:3:1306:G:C8	2.44	0.53
51:3:1331:G:H2'	51:3:1332:A:H8	1.73	0.53
51:3:1841:U:H5''	51:3:1842:G:H5'	1.91	0.53
7:D:137:TYR:OH	7:D:203:LEU:O	2.24	0.53
10:G:61:GLU:HB3	10:G:68:ARG:HG2	1.90	0.53
51:3:1417:G:H2'	51:3:1418:U:C6	2.43	0.53
51:3:1519:A:H2'	51:3:1520:A:C8	2.44	0.53
51:3:2591:G:H2'	51:3:2592:U:C6	2.43	0.53
51:3:2892:U:H2'	51:3:2893:C:C6	2.43	0.53
53:5:293:G:N2	53:5:296:A:OP2	2.42	0.53
53:5:951:U:H2'	53:5:952:U:C6	2.43	0.53
54:7:5:C:O2	54:7:70:G:N2	2.37	0.53
33:i:14:LYS:HZ2	33:i:16:ARG:HH21	1.55	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:s:69:SER:OG	43:s:71:PHE:O	2.27	0.53
51:3:297:G:H1	51:3:440:C:H5	1.56	0.53
51:3:1054:U:OP1	51:3:1070:U:O2'	2.25	0.53
51:3:2634:C:H2'	51:3:2635:G:H8	1.73	0.53
53:5:262:G:OP1	53:5:262:G:N2	2.35	0.53
11:H:115:ARG:NH2	53:5:1343:G:OP1	2.41	0.53
13:J:39:SER:O	13:J:42:THR:OG1	2.24	0.53
14:K:29:ASN:ND2	53:5:51:A:OP1	2.32	0.53
17:N:46:ASP:O	17:N:49:SER:OG	2.24	0.53
23:T:7:LYS:HZ1	23:T:18:PHE:HA	1.74	0.53
30:f:69:LYS:HZ1	30:f:137:VAL:HG12	1.73	0.53
43:s:6:VAL:HG23	43:s:7:LEU:HD12	1.90	0.53
44:t:31:ARG:HG3	44:t:33:GLN:OE1	2.09	0.53
45:u:46:ARG:HH12	51:3:2361:G:H4'	1.72	0.53
46:v:56:ARG:NH2	51:3:436:G:N7	2.57	0.53
51:3:1227:C:H2'	51:3:1228:G:H8	1.74	0.53
51:3:1451:A:H2'	51:3:1452:G:C8	2.44	0.53
52:4:21:G:O2'	52:4:22:G:O4'	2.27	0.53
53:5:87:G:H2'	53:5:88:A:H8	1.74	0.53
53:5:259:A:H2'	53:5:260:C:C6	2.43	0.53
53:5:973:A:N6	53:5:1290:G:O2'	2.42	0.53
7:D:115:ILE:O	7:D:119:ILE:HG12	2.08	0.53
16:M:14:PRO:HG3	16:M:20:ALA:HB2	1.90	0.53
32:h:56:THR:HG22	32:h:58:TYR:H	1.74	0.53
51:3:1230:U:H2'	51:3:1231:G:H8	1.74	0.53
51:3:1925:A:O2'	51:3:1927:C:N4	2.42	0.53
51:3:2040:A:O2'	51:3:2042:A:OP1	2.25	0.53
53:5:117:U:O2'	53:5:258:A:O2'	2.23	0.53
53:5:317:A:H2'	53:5:318:C:H6	1.73	0.53
53:5:920:G:H1'	53:5:1477:A:C4	2.43	0.53
53:5:1133:A:N7	53:5:1155:A:N6	2.57	0.53
53:5:1245:A:H2'	53:5:1246:A:H8	1.74	0.53
54:6:44:U:H2'	54:6:45:G:C8	2.43	0.53
54:7:44:U:H2'	54:7:45:G:C8	2.43	0.53
4:A:249:LYS:HE2	4:A:251:ASP:HB3	1.90	0.53
8:E:49:ILE:HG21	8:E:83:LEU:HD13	1.90	0.53
9:F:92:GLN:O	9:F:96:ILE:HG12	2.09	0.53
25:a:43:LYS:HE2	25:a:61:ARG:HE	1.74	0.53
38:n:20:ARG:NH2	52:4:7:G:O2'	2.41	0.53
39:o:6:LYS:HD3	51:3:2880:A:H4'	1.91	0.53
45:u:51:ILE:HD12	45:u:95:VAL:HG21	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:714:G:H2'	51:3:715:G:C8	2.44	0.53
51:3:1383:G:H2'	51:3:1384:C:H6	1.73	0.53
53:5:1225:A:H2	53:5:1345:G:H1'	1.73	0.53
5:B:91:GLN:HA	5:B:94:GLN:OE1	2.09	0.53
13:J:72:MET:HE3	13:J:75:VAL:HB	1.91	0.53
36:l:120:ARG:NE	51:3:2476:A:H5''	2.23	0.53
49:y:40:HIS:HD2	51:3:2888:U:C5	2.26	0.53
51:3:628:A:H2'	51:3:629:G:H8	1.74	0.53
51:3:1184:U:H2'	51:3:1185:U:C6	2.44	0.53
51:3:1518:C:H42	51:3:2219:U:H4'	1.74	0.53
51:3:1817:A:H8	51:3:1818:G:C8	2.27	0.53
53:5:260:C:H2'	53:5:261:G:O4'	2.08	0.53
53:5:1067:C:H2'	53:5:1068:G:C8	2.44	0.53
54:7:3:G:O6	54:7:72:C:N4	2.42	0.53
13:J:34:VAL:HG12	53:5:681:U:O2	2.08	0.52
14:K:124:ARG:HE	14:K:135:PRO:HG2	1.74	0.52
30:f:27:ILE:HD13	51:3:2101:A:H4'	1.90	0.52
35:k:117:HIS:HD2	51:3:673:A:H5''	1.74	0.52
41:q:40:MET:SD	41:q:45:ILE:HG12	2.49	0.52
43:s:50:ILE:HG12	47:w:83:ALA:HB2	1.90	0.52
51:3:330:A:H2'	51:3:331:A:H8	1.73	0.52
51:3:511:U:HO2'	51:3:540:A:HO2'	1.53	0.52
51:3:722:C:H42	51:3:822:C:H4'	1.73	0.52
51:3:1442:G:H1	51:3:1622:C:H42	1.57	0.52
51:3:2685:A:H2'	51:3:2686:C:C6	2.44	0.52
53:5:353:G:H2'	53:5:354:U:H6	1.74	0.52
53:5:818:A:H2'	53:5:819:G:C8	2.44	0.52
9:F:45:ALA:O	9:F:49:ILE:HG12	2.09	0.52
10:G:66:THR:HG23	10:G:67:LYS:HG3	1.91	0.52
11:H:107:THR:HG22	53:5:1154:A:O3'	2.10	0.52
14:K:63:ARG:NH1	14:K:102:ASP:OD2	2.42	0.52
36:l:35:VAL:HA	36:l:102:VAL:HA	1.91	0.52
37:m:101:LEU:HD12	49:y:53:VAL:HG21	1.90	0.52
51:3:331:A:H2'	51:3:332:G:O4'	2.09	0.52
51:3:605:A:O2'	51:3:606:G:OP1	2.24	0.52
51:3:1020:G:OP1	51:3:1021:C:N4	2.36	0.52
51:3:2072:C:H1'	51:3:2457:U:H3	1.74	0.52
51:3:2701:A:H2'	51:3:2702:G:H8	1.74	0.52
53:5:297:A:H2'	53:5:298:G:C8	2.44	0.52
53:5:511:A:H2'	53:5:512:U:H6	1.74	0.52
53:5:698:U:H5'	53:5:699:A:H2'	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1222:U:O2	53:5:1264:G:O6	2.26	0.52
8:E:35:LEU:HD23	8:E:35:LEU:H	1.73	0.52
12:I:42:ILE:HD12	12:I:82:LEU:HG	1.91	0.52
13:J:83:GLY:O	13:J:86:LYS:NZ	2.42	0.52
13:J:116:PRO:HD2	23:T:35:HIS:CD2	2.43	0.52
37:m:2:SER:OG	37:m:3:TYR:N	2.42	0.52
39:o:78:ASN:ND2	51:3:2692:U:H5''	2.25	0.52
53:5:1000:A:H2'	53:5:1001:A:C8	2.45	0.52
9:F:19:ASN:OD1	9:F:20:THR:N	2.42	0.52
28:d:93:GLY:N	28:d:96:MET:SD	2.83	0.52
50:z:11:CYS:O	50:z:15:ARG:NH2	2.43	0.52
51:3:383:U:H2'	51:3:384:G:H8	1.75	0.52
51:3:2407:G:H2'	51:3:2408:G:H8	1.74	0.52
51:3:2869:U:OP2	51:3:2870:U:O2'	2.23	0.52
53:5:1329:G:H2'	53:5:1330:A:C8	2.44	0.52
6:C:124:LEU:N	6:C:127:ARG:O	2.35	0.52
26:b:28:VAL:HG22	26:b:192:LEU:HG	1.91	0.52
28:d:111:VAL:HB	28:d:114:PHE:HB2	1.91	0.52
39:o:58:LYS:NZ	51:3:2729:A:OP1	2.39	0.52
51:3:1092:A:H62	51:3:1122:G:P	2.33	0.52
52:4:29:C:O2'	52:4:51:A:N1	2.42	0.52
53:5:1112:U:O2	53:5:1128:G:N2	2.31	0.52
7:D:165:ALA:O	7:D:169:ILE:HG12	2.10	0.52
37:m:115:ILE:HD11	49:y:54:LYS:HD2	1.90	0.52
47:w:42:HIS:ND1	51:3:97:A:O2'	2.36	0.52
51:3:494:G:O2'	51:3:505:G:O6	2.24	0.52
51:3:1440:U:H2'	51:3:1441:A:C8	2.45	0.52
51:3:1724:A:H62	51:3:1731:G:H21	1.58	0.52
53:5:772:G:N2	53:5:802:C:C2	2.78	0.52
53:5:1261:A:H2'	53:5:1262:A:C8	2.45	0.52
53:5:1501:G:H2'	53:5:1502:G:H8	1.74	0.52
54:7:16:G:H4'	54:7:17:U:OP1	2.09	0.52
37:m:74:ASP:OD1	37:m:75:VAL:N	2.35	0.52
38:n:4:ARG:NH1	52:4:45:C:OP1	2.43	0.52
42:r:61:ASN:OD1	51:3:531:G:O2'	2.18	0.52
51:3:45:U:H2'	51:3:46:A:O4'	2.09	0.52
51:3:251:G:O2'	51:3:424:G:N1	2.42	0.52
51:3:1065:G:O6	51:3:1160:G:N2	2.43	0.52
51:3:1414:C:H2'	51:3:1415:A:H8	1.75	0.52
51:3:1914:G:O6	51:3:1931:C:N4	2.42	0.52
51:3:2151:G:N1	51:3:2153:U:O2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:879:G:H2'	53:5:880:G:H8	1.75	0.52
54:6:3:G:O6	54:6:72:C:N4	2.42	0.52
8:E:49:ILE:HG23	8:E:50:LYS:H	1.75	0.52
28:d:102:LYS:O	28:d:106:VAL:HG12	2.08	0.52
39:o:95:LYS:NZ	51:3:2867:U:OP1	2.34	0.52
51:3:224:G:H21	51:3:237:A:H2	1.56	0.52
51:3:568:G:H2'	51:3:569:U:C6	2.45	0.52
51:3:714:G:H2'	51:3:715:G:H8	1.75	0.52
51:3:1106:G:H1'	51:3:1124:G:N7	2.24	0.52
51:3:1140:U:H2'	51:3:1141:U:C6	2.44	0.52
51:3:2515:C:N3	51:3:2591:G:N2	2.58	0.52
51:3:2588:U:H2'	51:3:2589:G:C4	2.45	0.52
51:3:2695:U:H2'	51:3:2696:G:O4'	2.09	0.52
51:3:2859:U:H2'	51:3:2860:A:H8	1.73	0.52
54:6:5:C:O2	54:6:70:G:N2	2.37	0.52
6:C:3:TYR:CE1	6:C:114:ARG:HD3	2.45	0.52
10:G:66:THR:O	53:5:650:A:N6	2.43	0.52
11:H:67:VAL:HG21	11:H:81:ILE:HG22	1.92	0.52
31:g:36:GLU:O	31:g:40:ILE:HG12	2.10	0.52
35:k:117:HIS:CD2	51:3:673:A:H5''	2.44	0.52
51:3:421:A:N6	51:3:423:C:H2'	2.25	0.52
51:3:1451:A:H2'	51:3:1452:G:H8	1.75	0.52
51:3:1743:U:H2'	51:3:1744:U:H6	1.75	0.52
51:3:1761:C:H2'	51:3:1762:A:O4'	2.10	0.52
52:4:59:A:O2'	52:4:60:C:OP1	2.27	0.52
53:5:392:A:H2'	53:5:394:U:H5	1.74	0.52
53:5:394:U:H2'	53:5:395:G:H8	1.74	0.52
2:1:31:PRO:HG3	50:z:6:SER:HB3	1.92	0.52
28:d:92:ARG:HD3	52:4:43:A:H5''	1.92	0.52
40:p:65:ASN:OD1	40:p:69:ARG:NH1	2.42	0.52
47:w:15:LEU:HD23	47:w:54:ILE:HD11	1.92	0.52
51:3:1061:A:H2'	51:3:1062:A:C8	2.45	0.52
51:3:2085:C:H2'	51:3:2086:U:C6	2.45	0.52
53:5:351:C:H1'	53:5:384:G:H1'	1.92	0.52
53:5:677:C:H2'	53:5:678:A:H8	1.75	0.52
54:6:16:G:H4'	54:6:17:U:OP1	2.09	0.52
8:E:8:LEU:HD11	8:E:57:TYR:CE2	2.45	0.51
8:E:86:LEU:HB2	20:Q:96:LEU:HD11	1.92	0.51
9:F:9:ARG:HH12	11:H:111:ARG:HH12	1.58	0.51
28:d:37:ASN:O	28:d:38:MET:HE2	2.11	0.51
30:f:26:ALA:HB3	30:f:28:HIS:CE1	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:3:LYS:N	41:q:12:TYR:OH	2.42	0.51
51:3:192:U:H2'	51:3:193:G:O4'	2.10	0.51
51:3:828:A:OP2	51:3:2078:A:O2'	2.28	0.51
51:3:1583:G:O2'	51:3:1584:U:OP1	2.25	0.51
51:3:1692:A:H2'	51:3:1693:U:C6	2.44	0.51
51:3:2575:G:H2'	51:3:2576:A:C8	2.44	0.51
53:5:432:U:H2'	53:5:433:C:H6	1.75	0.51
53:5:1150:G:H2'	53:5:1151:A:H8	1.75	0.51
11:H:53:PRO:HA	11:H:105:LEU:HD21	1.91	0.51
14:K:114:THR:O	14:K:115:LEU:HG	2.10	0.51
15:L:95:LEU:HB2	15:L:96:PRO:HD3	1.93	0.51
19:P:2:LYS:HE3	19:P:66:THR:HA	1.93	0.51
26:b:185:ASP:O	26:b:189:MET:CA	2.59	0.51
35:k:134:GLN:NE2	51:3:673:A:H5'	2.25	0.51
51:3:852:C:O2'	51:3:874:U:OP1	2.27	0.51
51:3:1261:U:H2'	51:3:1262:G:C8	2.45	0.51
51:3:1305:G:H2'	51:3:1306:G:H8	1.75	0.51
51:3:2298:G:H2'	51:3:2299:U:C6	2.46	0.51
53:5:168:A:H61	53:5:219:A:H1'	1.75	0.51
10:G:117:SER:HA	10:G:122:VAL:HG12	1.92	0.51
51:3:177:U:H2'	51:3:178:A:C8	2.46	0.51
51:3:664:G:H2'	51:3:665:C:H6	1.75	0.51
51:3:1201:A:H2'	51:3:1202:A:H8	1.75	0.51
51:3:1476:C:H2'	51:3:1477:A:C8	2.44	0.51
51:3:1543:U:H2'	51:3:1544:G:H8	1.75	0.51
51:3:2704:U:H2'	51:3:2705:G:C8	2.46	0.51
53:5:171:A:H2'	53:5:172:C:C6	2.45	0.51
53:5:499:U:H2'	53:5:500:G:C8	2.46	0.51
53:5:993:C:N4	53:5:1035:A:N1	2.58	0.51
54:7:2:G:H2'	54:7:3:G:C8	2.45	0.51
4:A:41:MET:HG3	4:A:204:THR:HA	1.92	0.51
32:h:79:ALA:HA	32:h:100:LYS:HB3	1.92	0.51
43:s:13:THR:HG22	43:s:16:VAL:HG23	1.90	0.51
51:3:322:A:H2'	51:3:323:A:H8	1.74	0.51
51:3:1323:A:H61	51:3:1679:U:H3	1.58	0.51
51:3:2407:G:H2'	51:3:2408:G:C8	2.46	0.51
53:5:136:U:H3	53:5:157:A:H62	1.57	0.51
53:5:1062:C:H2'	53:5:1063:G:C8	2.45	0.51
28:d:148:ARG:CZ	28:d:148:ARG:HA	2.40	0.51
37:m:48:LEU:HD21	37:m:66:TRP:CD1	2.45	0.51
51:3:960:A:H2'	51:3:961:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2037:A:N3	51:3:2507:C:H5''	2.25	0.51
53:5:1089:C:H2'	53:5:1090:G:C8	2.46	0.51
54:6:2:G:H2'	54:6:3:G:C8	2.45	0.51
5:B:16:LYS:NZ	5:B:186:ASP:OD1	2.44	0.51
5:B:61:THR:OG1	5:B:64:THR:OG1	2.16	0.51
12:I:7:VAL:HG12	12:I:10:PRO:HD3	1.93	0.51
22:S:39:ILE:HD11	22:S:76:LEU:HA	1.90	0.51
28:d:55:ASN:O	28:d:59:LEU:HG	2.11	0.51
33:i:18:TRP:CE2	33:i:138:GLN:HG2	2.46	0.51
35:k:79:VAL:HG13	35:k:115:ILE:HD12	1.92	0.51
51:3:253:C:OP2	51:3:2402:C:O2'	2.20	0.51
51:3:2634:C:H2'	51:3:2635:G:C8	2.45	0.51
51:3:2698:U:OP1	51:3:2876:G:N2	2.44	0.51
51:3:2781:C:H2'	51:3:2782:A:C8	2.45	0.51
53:5:142:G:H2'	53:5:143:U:C6	2.45	0.51
53:5:1241:G:N2	53:5:1244:A:OP2	2.34	0.51
53:5:1492:G:H2'	53:5:1493:A:C8	2.46	0.51
53:5:1495:C:H2'	53:5:1496:G:C8	2.46	0.51
4:A:120:PHE:O	4:A:124:SER:N	2.37	0.51
17:N:64:LEU:HD23	17:N:67:LEU:HD21	1.92	0.51
18:O:38:LYS:HE3	53:5:449:A:H5'	1.93	0.51
25:a:256:THR:HG23	25:a:262:HIS:HB2	1.93	0.51
38:n:15:ILE:O	38:n:19:ILE:HG12	2.11	0.51
43:s:67:GLY:N	51:3:1363:C:OP1	2.44	0.51
51:3:229:C:H3'	51:3:230:G:C8	2.46	0.51
51:3:353:G:H2'	51:3:354:C:C6	2.46	0.51
51:3:1436:C:H2'	51:3:1437:A:C8	2.46	0.51
51:3:2025:C:H2'	51:3:2026:A:C8	2.43	0.51
53:5:41:C:H2'	53:5:42:G:H8	1.76	0.51
53:5:259:A:H2'	53:5:260:C:H6	1.75	0.51
11:H:63:PHE:HB3	11:H:65:ILE:HD11	1.93	0.51
14:K:44:ARG:NH1	53:5:358:G:OP2	2.44	0.51
37:m:22:VAL:HA	37:m:25:VAL:HG12	1.93	0.51
51:3:2119:A:H62	51:3:2178:A:H61	1.57	0.51
51:3:2306:A:H62	51:3:2326:G:H21	1.57	0.51
53:5:1154:A:O2'	53:5:1155:A:O4'	2.24	0.51
3:2:4:ARG:O	3:2:36:GLN:HB3	2.11	0.51
8:E:84:ARG:HB3	20:Q:96:LEU:HG	1.92	0.51
21:R:29:ARG:HB2	21:R:30:PRO:HD3	1.93	0.51
32:h:130:GLN:HG2	51:3:1112:A:N3	2.25	0.51
44:t:1:MET:HE3	44:t:1:MET:HA	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1853:G:N2	51:3:1854:A:N1	2.59	0.51
51:3:2070:C:H2'	51:3:2071:C:H6	1.76	0.51
53:5:683:G:H21	53:5:701:A:H62	1.59	0.51
53:5:735:C:H2'	53:5:736:U:C6	2.46	0.51
53:5:748:U:H2'	53:5:749:G:O4'	2.11	0.51
4:A:253:GLU:OE1	4:A:255:GLN:NE2	2.44	0.51
27:c:173:SER:OG	51:3:356:A:OP1	2.23	0.51
51:3:1609:U:H2'	51:3:1610:U:C6	2.45	0.51
51:3:2130:A:H2'	51:3:2131:G:C8	2.46	0.51
51:3:2704:U:H2'	51:3:2705:G:H8	1.76	0.51
52:4:31:G:H2'	52:4:32:G:C8	2.46	0.51
53:5:656:U:H2'	53:5:657:G:C8	2.46	0.51
53:5:1329:G:H2'	53:5:1330:A:H8	1.75	0.51
7:D:67:GLU:HB2	7:D:172:LEU:HD11	1.92	0.50
7:D:160:ILE:HD12	7:D:177:ASP:HA	1.92	0.50
19:P:13:VAL:HA	19:P:24:VAL:HA	1.92	0.50
26:b:106:GLU:HB3	26:b:217:VAL:HG12	1.94	0.50
51:3:1011:A:H62	51:3:1025:G:N2	2.09	0.50
51:3:1270:C:H2'	51:3:1271:A:C8	2.46	0.50
51:3:1453:U:H2'	51:3:1454:G:O4'	2.11	0.50
51:3:1869:G:H2'	51:3:1870:G:H8	1.76	0.50
51:3:2032:G:H2'	51:3:2033:G:H8	1.76	0.50
51:3:2709:C:P	51:3:2710:G:H5''	2.52	0.50
53:5:50:U:H3	53:5:360:A:H62	1.59	0.50
53:5:242:A:C6	53:5:277:G:N2	2.78	0.50
53:5:886:A:H62	53:5:900:G:H21	1.58	0.50
21:R:66:MET:HG3	21:R:69:HIS:HB2	1.93	0.50
31:g:89:ILE:HG13	31:g:93:LEU:HG	1.93	0.50
51:3:279:U:H2'	51:3:280:A:H8	1.77	0.50
51:3:605:A:H61	51:3:2036:G:H21	1.59	0.50
51:3:756:A:H2'	51:3:757:A:C8	2.46	0.50
51:3:767:C:H2'	51:3:768:G:O4'	2.11	0.50
51:3:911:U:H2'	51:3:912:A:C8	2.42	0.50
51:3:1536:C:H2'	51:3:1537:A:C8	2.45	0.50
51:3:2372:C:H2'	51:3:2373:G:C8	2.46	0.50
53:5:331:C:H2'	53:5:332:A:C8	2.45	0.50
53:5:465:A:H2'	53:5:466:U:C6	2.46	0.50
54:7:16:G:O2'	54:7:17:U:O5'	2.26	0.50
54:7:16:G:O6	54:7:49:C:O2	2.29	0.50
2:1:55:ILE:HD11	35:k:58:LEU:HD23	1.92	0.50
6:C:8:PHE:CG	53:5:426:U:H5'	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:145:LYS:NZ	53:5:487:A:OP1	2.43	0.50
32:h:130:GLN:OE1	51:3:1123:A:N6	2.43	0.50
51:3:337:U:H2'	51:3:338:G:C8	2.46	0.50
51:3:1028:C:O2	51:3:1198:G:N1	2.45	0.50
51:3:1051:U:O4	51:3:1052:A:N6	2.44	0.50
51:3:1347:A:H2'	51:3:1348:C:C6	2.46	0.50
51:3:2119:A:H2'	51:3:2120:G:H8	1.76	0.50
51:3:2492:G:H2'	51:3:2493:G:H8	1.75	0.50
53:5:881:G:N1	53:5:905:U:C2	2.79	0.50
53:5:1113:U:H2'	53:5:1114:A:C8	2.47	0.50
6:C:117:VAL:HG22	6:C:122:VAL:HG11	1.93	0.50
7:D:71:VAL:HG12	7:D:72:LYS:N	2.25	0.50
9:F:25:ILE:HA	9:F:28:VAL:HG12	1.93	0.50
26:b:26:ILE:HG21	26:b:192:LEU:HB3	1.93	0.50
46:v:6:GLN:HB2	46:v:48:ILE:HD12	1.94	0.50
51:3:692:U:H2'	51:3:693:U:C6	2.46	0.50
51:3:1543:U:H2'	51:3:1544:G:C8	2.46	0.50
51:3:2254:G:H2'	51:3:2255:A:C8	2.44	0.50
51:3:2551:G:H2'	51:3:2552:G:H8	1.76	0.50
54:6:16:G:O6	54:6:49:C:O2	2.29	0.50
5:B:15:ASN:ND2	5:B:182:ARG:HB2	2.26	0.50
6:C:111:ARG:HH11	53:5:404:A:P	2.34	0.50
7:D:152:LYS:O	7:D:179:TYR:HB2	2.11	0.50
9:F:2:ARG:N	53:5:927:C:OP2	2.44	0.50
10:G:137:ILE:HG21	10:G:140:TYR:HE1	1.76	0.50
17:N:21:SER:O	17:N:25:GLN:HG2	2.11	0.50
25:a:263:MET:HE1	51:3:1832:G:H1'	1.93	0.50
37:m:71:ASN:OD1	37:m:72:LEU:N	2.45	0.50
40:p:97:LEU:HD23	40:p:97:LEU:O	2.12	0.50
51:3:1798:A:H61	51:3:1835:G:HO2'	1.58	0.50
51:3:2460:C:H2'	51:3:2461:A:C4	2.47	0.50
51:3:2793:U:H2'	51:3:2794:U:C6	2.47	0.50
53:5:250:G:H2'	53:5:251:G:C8	2.46	0.50
53:5:386:U:H2'	53:5:387:G:C8	2.47	0.50
53:5:512:U:H2'	53:5:513:G:C8	2.43	0.50
53:5:833:G:H1	53:5:844:U:H3	1.60	0.50
53:5:1501:G:H2'	53:5:1502:G:C8	2.47	0.50
6:C:184:ARG:O	6:C:184:ARG:NH2	2.38	0.50
25:a:64:ARG:HE	25:a:90:PRO:HB2	1.76	0.50
27:c:102:LYS:NZ	51:3:694:U:O5'	2.44	0.50
30:f:101:ALA:HB1	30:f:106:MET:HG3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:121:TRP:HA	33:i:124:LYS:HE2	1.94	0.50
51:3:2122:G:H2'	51:3:2124:A:N7	2.27	0.50
53:5:18:U:H2'	53:5:19:C:C6	2.47	0.50
53:5:580:C:H42	53:5:756:A:H62	1.59	0.50
53:5:961:G:H5''	53:5:964:A:N7	2.27	0.50
4:A:45:ILE:HG23	4:A:46:GLU:O	2.12	0.50
6:C:12:ARG:HD2	6:C:31:ARG:HD2	1.93	0.50
26:b:125:ARG:NH2	26:b:168:HIS:O	2.45	0.50
51:3:1829:U:H2'	51:3:1830:G:H8	1.77	0.50
51:3:2381:G:H2'	51:3:2382:A:H8	1.76	0.50
51:3:2610:A:H5''	54:7:76:C:H41	1.77	0.50
53:5:210:G:H2'	53:5:211:G:C8	2.47	0.50
53:5:621:C:H2'	53:5:622:A:C8	2.46	0.50
5:B:85:ILE:O	5:B:89:THR:OG1	2.25	0.50
10:G:54:LEU:HG	10:G:55:ALA:H	1.75	0.50
11:H:58:ASP:HB2	11:H:61:LYS:HB2	1.94	0.50
17:N:38:ASP:OD1	17:N:39:HIS:N	2.45	0.50
34:j:18:GLN:HB2	34:j:45:ASP:HB2	1.94	0.50
39:o:62:GLU:HB3	39:o:81:ILE:HD12	1.94	0.50
40:p:91:ARG:HG3	40:p:93:VAL:HG12	1.94	0.50
42:r:20:VAL:HG11	42:r:44:ALA:HB2	1.94	0.50
48:x:13:SER:OG	48:x:14:PHE:N	2.44	0.50
51:3:141:A:H2'	51:3:142:A:C4	2.47	0.50
51:3:1441:A:H2'	51:3:1442:G:C8	2.47	0.50
51:3:1710:A:C4	51:3:1711:A:C8	3.00	0.50
9:F:3:LYS:NZ	53:5:1352:A:N3	2.44	0.50
9:F:153:MET:HA	9:F:153:MET:HE3	1.92	0.50
10:G:68:ARG:HH11	10:G:68:ARG:HG3	1.75	0.50
11:H:98:LYS:HA	11:H:101:LYS:HZ2	1.77	0.50
20:Q:42:ARG:HD2	20:Q:42:ARG:O	2.12	0.50
51:3:276:A:O2'	51:3:405:C:O2'	2.15	0.50
51:3:1092:A:N6	51:3:1122:G:OP1	2.45	0.50
51:3:2078:A:H2'	51:3:2079:G:C8	2.47	0.50
51:3:2515:C:H2'	51:3:2516:G:O4'	2.11	0.50
51:3:2738:U:H2'	51:3:2739:C:C6	2.47	0.50
53:5:11:A:H2'	53:5:12:G:H8	1.77	0.50
53:5:369:A:N3	53:5:479:A:N6	2.60	0.50
53:5:1366:U:H2'	53:5:1367:G:C8	2.47	0.50
40:p:90:ASN:OD1	40:p:94:LEU:HD23	2.12	0.49
42:r:84:ARG:NH2	51:3:1350:A:O3'	2.44	0.49
51:3:608:A:O2'	51:3:2509:C:OP1	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:723:U:H2'	51:3:724:A:H8	1.77	0.49
51:3:1384:C:H2'	51:3:1385:U:C6	2.47	0.49
51:3:2728:U:C2	51:3:2729:A:C8	3.00	0.49
37:m:33:THR:HG22	37:m:34:THR:N	2.23	0.49
49:y:6:ARG:HG2	51:3:2027:G:N7	2.27	0.49
51:3:2078:A:H2'	51:3:2079:G:H8	1.77	0.49
51:3:2840:U:H2'	51:3:2841:A:H8	1.77	0.49
53:5:18:U:H1'	53:5:1071:A:N3	2.27	0.49
53:5:71:A:H2'	53:5:72:A:H8	1.76	0.49
53:5:346:G:H2'	53:5:347:G:C8	2.47	0.49
16:M:21:TYR:OH	16:M:23:ARG:NH1	2.42	0.49
22:S:67:ARG:HD2	53:5:259:A:OP1	2.12	0.49
25:a:233:MET:HE2	25:a:237:ASP:OD2	2.12	0.49
26:b:5:GLY:HA3	26:b:84:ILE:HD13	1.94	0.49
28:d:32:GLU:HB2	28:d:157:VAL:HG23	1.93	0.49
39:o:67:ARG:HH22	39:o:104:MET:C	2.21	0.49
51:3:445:C:H2'	51:3:446:A:C8	2.47	0.49
51:3:788:G:H2'	51:3:789:A:C8	2.48	0.49
51:3:2147:G:N2	51:3:2148:U:O4	2.45	0.49
51:3:2392:U:H5''	51:3:2394:A:OP1	2.12	0.49
53:5:114:C:H42	53:5:228:G:H1	1.60	0.49
53:5:175:U:H2'	53:5:176:G:H8	1.76	0.49
53:5:610:C:H2'	53:5:611:A:C8	2.46	0.49
53:5:1380:G:O2'	53:5:1494:A:H5'	2.12	0.49
7:D:96:ASN:HD21	7:D:100:LYS:HB2	1.77	0.49
42:r:23:LEU:HD21	42:r:35:ILE:HG12	1.95	0.49
43:s:45:GLU:HG2	43:s:46:LEU:HD22	1.94	0.49
44:t:3:ARG:CZ	51:3:370:C:H5''	2.42	0.49
44:t:36:VAL:HG12	44:t:69:ILE:HD13	1.94	0.49
51:3:665:C:H2'	51:3:666:G:C8	2.48	0.49
51:3:982:G:H2'	51:3:983:A:C8	2.47	0.49
51:3:1513:A:H2'	51:3:1514:U:O4'	2.12	0.49
51:3:1595:C:H2'	51:3:1596:U:C6	2.47	0.49
51:3:1999:G:N2	51:3:2003:C:O2'	2.46	0.49
53:5:281:U:H2'	53:5:282:G:C8	2.47	0.49
53:5:365:U:O2	53:5:388:G:N2	2.31	0.49
53:5:1344:C:H2'	53:5:1345:G:C8	2.47	0.49
53:5:1432:A:H2'	53:5:1433:G:C8	2.47	0.49
4:A:113:LEU:O	4:A:116:THR:OG1	2.25	0.49
6:C:106:PHE:CE2	6:C:144:LEU:HD11	2.47	0.49
7:D:84:ARG:HH22	53:5:16:G:H1'	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:123:MET:SD	10:G:128:ALA:HB2	2.52	0.49
11:H:55:ASP:OD1	11:H:56:LEU:N	2.46	0.49
31:g:45:PHE:HE2	32:h:114:ALA:HB1	1.78	0.49
51:3:107:C:H2'	51:3:108:G:C8	2.47	0.49
51:3:905:U:H2'	51:3:906:G:C8	2.48	0.49
53:5:882:U:H3'	53:5:883:A:H8	1.77	0.49
53:5:1387:U:H2'	53:5:1388:A:C8	2.47	0.49
11:H:32:VAL:HG11	11:H:41:PHE:CE2	2.46	0.49
18:O:19:ARG:O	53:5:95:C:O2'	2.29	0.49
31:g:95:ALA:O	31:g:99:VAL:HG23	2.12	0.49
35:k:30:LYS:HE2	51:3:599:U:H5''	1.94	0.49
51:3:338:G:H2'	51:3:339:U:C6	2.47	0.49
51:3:511:U:O2'	51:3:540:A:O2'	2.27	0.49
51:3:1306:G:H2'	51:3:1307:G:C8	2.46	0.49
51:3:1452:G:H2'	51:3:1453:U:C6	2.47	0.49
53:5:902:A:H2'	53:5:903:A:C8	2.48	0.49
3:2:27:CYS:SG	3:2:28:LYS:N	2.84	0.49
4:A:102:ARG:HE	4:A:103:VAL:HG23	1.77	0.49
6:C:199:TRP:O	6:C:202:ARG:NH2	2.39	0.49
37:m:3:TYR:OH	51:3:784:A:N7	2.46	0.49
38:n:77:ILE:O	38:n:80:LYS:HB2	2.12	0.49
51:3:155:A:H2'	51:3:156:A:H8	1.78	0.49
51:3:1662:G:H2'	51:3:1663:G:C8	2.48	0.49
53:5:891:C:H2'	53:5:892:G:C8	2.47	0.49
53:5:1110:C:H2'	53:5:1111:G:C8	2.48	0.49
6:C:111:ARG:HG2	53:5:403:A:H5''	1.94	0.49
35:k:29:GLY:O	35:k:32:SER:OG	2.26	0.49
40:p:39:ILE:HA	41:q:71:ILE:HD11	1.94	0.49
51:3:511:U:H4'	51:3:545:C:H5'	1.94	0.49
51:3:982:G:H2'	51:3:983:A:H8	1.77	0.49
53:5:37:C:H2'	53:5:38:U:C6	2.46	0.49
53:5:870:A:H2'	53:5:871:U:C6	2.48	0.49
53:5:1011:A:H2'	53:5:1012:A:N3	2.27	0.49
53:5:1484:C:H2'	53:5:1485:C:H6	1.78	0.49
14:K:63:ARG:HH12	53:5:520:C:H41	1.61	0.49
21:R:37:ARG:HB3	53:5:1292:A:O2'	2.13	0.49
36:l:54:ILE:O	36:l:58:LEU:HB2	2.13	0.49
51:3:603:G:H2'	51:3:2037:A:N7	2.28	0.49
51:3:1878:A:H2'	51:3:1879:A:O4'	2.13	0.49
51:3:2237:U:H2'	51:3:2238:G:H8	1.77	0.49
51:3:2336:A:H2'	51:3:2337:U:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2568:G:H2'	51:3:2569:A:C8	2.47	0.49
52:4:104:C:H2'	52:4:105:A:C8	2.48	0.49
53:5:205:U:O2	53:5:210:G:N2	2.33	0.49
53:5:1487:U:H2'	53:5:1488:A:C8	2.48	0.49
4:A:91:TYR:CE2	4:A:95:LEU:HG	2.48	0.49
22:S:56:ARG:HG3	22:S:57:LYS:HG2	1.94	0.49
25:a:131:LYS:HB2	25:a:134:PHE:HE2	1.77	0.49
51:3:420:A:H2'	51:3:421:A:O4'	2.13	0.49
51:3:610:G:H2'	51:3:611:A:C8	2.48	0.49
51:3:1110:C:H2'	51:3:1111:C:C6	2.48	0.49
51:3:2324:A:H2'	51:3:2325:U:C6	2.47	0.49
51:3:2892:U:H2'	51:3:2893:C:H6	1.77	0.49
53:5:308:C:H2'	53:5:309:A:C8	2.48	0.49
53:5:319:U:H3	53:5:323:A:H62	1.61	0.49
53:5:980:C:H2'	53:5:981:U:C6	2.48	0.49
8:E:7:LEU:HD22	8:E:22:ASN:HD21	1.78	0.48
16:M:19:ARG:HD3	53:5:974:C:O2	2.13	0.48
17:N:29:LEU:HA	17:N:32:GLN:HE21	1.78	0.48
18:O:10:THR:HG21	53:5:623:G:H4'	1.94	0.48
21:R:16:LEU:HD12	21:R:44:PHE:HE2	1.78	0.48
26:b:212:LYS:HE2	51:3:2741:A:C5	2.48	0.48
37:m:16:MET:HE1	51:3:1323:A:H1'	1.95	0.48
47:w:85:ASN:O	47:w:89:GLN:HG2	2.12	0.48
51:3:42:U:H2'	51:3:43:A:C8	2.48	0.48
51:3:117:C:H2'	51:3:118:G:O4'	2.12	0.48
51:3:526:G:H2'	51:3:527:A:C8	2.47	0.48
51:3:831:U:H2'	51:3:832:C:C6	2.47	0.48
51:3:998:C:H2'	51:3:999:U:C6	2.47	0.48
51:3:1232:U:H2'	51:3:1233:A:C8	2.44	0.48
51:3:1312:A:H2'	51:3:1313:G:C8	2.48	0.48
51:3:1539:U:H2'	51:3:1540:G:C8	2.48	0.48
51:3:1662:G:H2'	51:3:1663:G:H8	1.78	0.48
51:3:2529:C:H2'	51:3:2530:U:H6	1.77	0.48
51:3:2690:U:H2'	51:3:2691:C:H6	1.78	0.48
51:3:2701:A:H2'	51:3:2702:G:C8	2.47	0.48
53:5:201:G:H1	53:5:214:U:H3	1.61	0.48
53:5:610:C:H2'	53:5:611:A:H8	1.77	0.48
53:5:1133:A:N6	53:5:1155:A:N7	2.61	0.48
53:5:1138:U:H3	53:5:1149:G:H1	1.60	0.48
8:E:8:LEU:HB3	8:E:83:LEU:HB2	1.95	0.48
19:P:73:LYS:C	19:P:74:ARG:HD3	2.38	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Q:41:CYS:SG	20:Q:78:ASN:HA	2.53	0.48
51:3:894:G:N3	51:3:2276:A:H2'	2.28	0.48
51:3:1522:U:OP2	51:3:1523:C:N4	2.32	0.48
51:3:1716:A:H5'	51:3:1769:A:C4	2.48	0.48
51:3:2658:U:H2'	51:3:2659:U:C6	2.48	0.48
51:3:2808:A:O2'	51:3:2809:A:O5'	2.26	0.48
6:C:53:GLN:HB3	6:C:199:TRP:CD1	2.47	0.48
14:K:112:ARG:HG3	14:K:119:GLY:HA2	1.95	0.48
17:N:34:LYS:O	17:N:37:THR:OG1	2.29	0.48
27:c:115:VAL:HG21	27:c:188:VAL:HG13	1.94	0.48
31:g:45:PHE:HD1	31:g:45:PHE:HA	1.57	0.48
33:i:59:ILE:HB	33:i:127:VAL:HG12	1.94	0.48
33:i:64:GLN:HE21	33:i:64:GLN:C	2.20	0.48
51:3:230:G:H1'	51:3:232:A:H62	1.78	0.48
51:3:897:A:H62	51:3:953:G:H21	1.61	0.48
51:3:1994:U:H2'	51:3:1995:G:H8	1.79	0.48
51:3:2594:C:H5'	51:3:2616:G:H22	1.78	0.48
53:5:142:G:H2'	53:5:143:U:H6	1.79	0.48
53:5:356:G:H2'	53:5:357:G:C8	2.48	0.48
53:5:663:G:H2'	53:5:664:A:C8	2.48	0.48
2:1:42:ARG:NH1	51:3:2425:C:O3'	2.46	0.48
9:F:92:GLN:O	9:F:95:LYS:HG2	2.12	0.48
25:a:193:LEU:HB2	25:a:196:CYS:SG	2.53	0.48
36:l:22:LYS:HB2	51:3:899:A:OP1	2.13	0.48
42:r:93:SER:HB3	51:3:1648:A:N1	2.29	0.48
51:3:1002:A:H4'	51:3:2279:G:H22	1.79	0.48
51:3:2154:A:H2'	51:3:2155:G:C8	2.48	0.48
51:3:2155:G:H2'	51:3:2156:G:C8	2.48	0.48
53:5:308:C:H2'	53:5:309:A:H8	1.77	0.48
53:5:821:U:H2'	53:5:822:A:H8	1.73	0.48
3:2:19:ARG:NE	51:3:2764:U:OP2	2.41	0.48
5:B:87:LYS:HE2	5:B:91:GLN:HE22	1.78	0.48
13:J:63:VAL:HA	13:J:66:THR:HG22	1.95	0.48
15:L:16:GLU:HG3	15:L:34:LEU:HD13	1.96	0.48
19:P:27:GLU:HG2	19:P:42:HIS:CD2	2.49	0.48
26:b:189:MET:O	26:b:189:MET:HG3	2.13	0.48
39:o:99:ALA:HB2	51:3:2852:G:N7	2.29	0.48
51:3:34:C:H2'	51:3:35:U:C6	2.49	0.48
51:3:694:U:H2'	51:3:695:G:C8	2.49	0.48
51:3:901:C:H4'	51:3:902:U:O5'	2.14	0.48
51:3:1409:G:H2'	51:3:1410:A:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2791:U:H2'	51:3:2792:C:C6	2.48	0.48
53:5:412:G:H2'	53:5:413:G:H8	1.79	0.48
53:5:511:A:H2'	53:5:512:U:C6	2.48	0.48
53:5:537:A:H2'	53:5:538:G:C8	2.48	0.48
15:L:13:LYS:HG2	15:L:17:ILE:HD13	1.95	0.48
25:a:61:ARG:HB2	25:a:64:ARG:HH12	1.79	0.48
28:d:121:SER:HB2	28:d:128:TYR:CZ	2.49	0.48
39:o:36:LYS:HB2	39:o:85:ASN:HB3	1.95	0.48
42:r:57:ASN:HD21	51:3:529:G:H21	1.61	0.48
47:w:15:LEU:O	47:w:19:VAL:HG23	2.13	0.48
51:3:632:A:H2'	51:3:633:G:H8	1.78	0.48
51:3:1148:U:H2'	51:3:1149:G:H8	1.78	0.48
51:3:1495:A:H2'	51:3:1496:A:C8	2.49	0.48
51:3:2102:U:H2'	51:3:2103:C:C6	2.49	0.48
51:3:2400:A:OP2	51:3:2430:C:N4	2.47	0.48
53:5:470:U:H2'	53:5:471:A:C8	2.48	0.48
53:5:1065:G:H2'	53:5:1066:U:H6	1.79	0.48
53:5:1366:U:H2'	53:5:1367:G:H8	1.79	0.48
26:b:40:LYS:O	26:b:48:SER:HA	2.14	0.48
29:e:27:VAL:HG22	29:e:34:ILE:HB	1.94	0.48
47:w:54:ILE:HA	47:w:57:ILE:HG22	1.96	0.48
51:3:985:A:H2'	51:3:986:G:C8	2.47	0.48
51:3:993:A:N6	51:3:995:A:N1	2.60	0.48
51:3:1041:C:H2'	51:3:1042:C:C6	2.48	0.48
51:3:1298:A:H62	51:3:2019:G:N2	2.11	0.48
53:5:517:C:H2'	53:5:518:A:C8	2.49	0.48
53:5:1380:G:H1'	53:5:1494:A:H4'	1.95	0.48
4:A:190:GLU:OE2	53:5:1092:A:N6	2.46	0.48
14:K:63:ARG:HH22	53:5:520:C:H5	1.61	0.48
21:R:11:VAL:HG12	21:R:13:ALA:H	1.78	0.48
21:R:36:ARG:NH2	21:R:72:GLY:O	2.46	0.48
25:a:246:ARG:NH1	51:3:1979:G:OP2	2.47	0.48
33:i:115:ASN:ND2	51:3:592:G:OP1	2.47	0.48
35:k:90:LEU:HB3	35:k:93:ILE:HD11	1.95	0.48
41:q:38:VAL:HG13	41:q:50:LEU:HB2	1.95	0.48
51:3:71:C:O2	51:3:75:A:O2'	2.29	0.48
51:3:1876:G:N2	51:3:1879:A:OP2	2.38	0.48
51:3:2792:C:H2'	51:3:2793:U:C6	2.48	0.48
53:5:846:G:H2'	53:5:847:G:C8	2.49	0.48
53:5:1502:G:H2'	53:5:1503:U:C6	2.49	0.48
14:K:28:LEU:HD11	14:K:33:LYS:HD2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:47:PHE:CE2	17:N:50:LYS:HD3	2.49	0.48
22:S:44:LEU:HD12	22:S:76:LEU:HD13	1.96	0.48
26:b:123:ILE:HA	26:b:128:PHE:HB2	1.96	0.48
26:b:151:ARG:N	51:3:2580:A:OP2	2.24	0.48
40:p:91:ARG:HE	40:p:92:LYS:H	1.61	0.48
51:3:333:A:H61	51:3:373:U:H3	1.62	0.48
51:3:477:U:H2'	51:3:478:G:C8	2.49	0.48
51:3:1221:G:H2'	51:3:1222:A:C8	2.46	0.48
51:3:1587:U:O2'	51:3:1588:A:OP1	2.29	0.48
51:3:2797:C:H2'	51:3:2798:A:C4	2.49	0.48
53:5:836:C:H41	53:5:837:G:H21	1.62	0.48
53:5:1199:U:O2'	53:5:1296:C:OP1	2.31	0.48
11:H:46:VAL:HG23	11:H:78:ALA:HB2	1.94	0.48
33:i:9:LYS:HD3	33:i:48:THR:HG21	1.95	0.48
36:l:74:LYS:NZ	51:3:994:U:OP2	2.46	0.48
51:3:40:A:H2'	51:3:41:C:O4'	2.14	0.48
51:3:1201:A:H2'	51:3:1202:A:C8	2.48	0.48
51:3:1456:C:N4	51:3:1604:A:OP2	2.34	0.48
51:3:1692:A:H2'	51:3:1693:U:H6	1.78	0.48
51:3:2032:G:H2'	51:3:2033:G:C8	2.48	0.48
51:3:2332:U:H3'	51:3:2333:G:H5'	1.95	0.48
51:3:2399:G:C6	51:3:2435:C:H1'	2.49	0.48
51:3:2403:C:H2'	51:3:2404:G:C8	2.49	0.48
53:5:71:A:H2'	53:5:72:A:C8	2.49	0.48
15:L:17:ILE:O	15:L:20:THR:OG1	2.23	0.47
26:b:129:LYS:HE2	26:b:129:LYS:HB3	1.72	0.47
51:3:37:G:H1'	51:3:490:A:N3	2.28	0.47
51:3:697:U:H2'	51:3:698:A:C8	2.49	0.47
51:3:1416:G:H2'	51:3:1417:G:H8	1.79	0.47
51:3:1583:G:HO2'	51:3:1584:U:P	2.37	0.47
51:3:1828:A:H2'	51:3:1829:U:C6	2.49	0.47
53:5:356:G:H2'	53:5:357:G:H8	1.79	0.47
53:5:842:C:H2'	53:5:843:C:C6	2.49	0.47
53:5:1314:A:O2'	54:7:33:C:OP1	2.25	0.47
53:5:1316:C:H2'	53:5:1317:A:H8	1.78	0.47
5:B:15:ASN:HD22	5:B:182:ARG:HB2	1.78	0.47
21:R:37:ARG:NH1	53:5:1195:G:OP1	2.35	0.47
27:c:108:HIS:CD2	51:3:652:U:H5'	2.49	0.47
38:n:8:ARG:HH11	38:n:9:ARG:HG2	1.79	0.47
39:o:97:ARG:NH1	51:3:1760:G:OP1	2.47	0.47
51:3:207:C:OP2	51:3:208:A:O2'	2.24	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1202:A:H2'	51:3:1203:G:C8	2.49	0.47
51:3:1432:C:H2'	51:3:1433:U:H6	1.78	0.47
53:5:210:G:H2'	53:5:211:G:H8	1.79	0.47
53:5:787:A:OP1	54:7:39:A:O2'	2.28	0.47
53:5:1495:C:H2'	53:5:1496:G:H8	1.77	0.47
6:C:183:GLU:HB3	6:C:186:GLU:HG3	1.96	0.47
11:H:34:ARG:HG3	53:5:1121:U:C4	2.49	0.47
11:H:109:ASP:C	11:H:110:LYS:HG2	2.38	0.47
13:J:23:THR:HG21	13:J:56:ALA:HB2	1.96	0.47
33:i:60:ILE:HD12	33:i:133:HIS:HD2	1.78	0.47
36:l:45:ARG:HB3	51:3:2492:G:OP1	2.14	0.47
43:s:12:LEU:HD22	43:s:17:TYR:CE1	2.48	0.47
47:w:61:ARG:O	47:w:62:LYS:HD2	2.15	0.47
51:3:1127:C:H2'	51:3:1128:G:O4'	2.14	0.47
51:3:1709:C:C2	51:3:1710:A:C8	3.03	0.47
3:2:24:ARG:HG3	3:2:35:ARG:HB2	1.94	0.47
6:C:14:LEU:HD22	6:C:59:ARG:HG3	1.95	0.47
9:F:19:ASN:HD22	9:F:22:VAL:HG23	1.78	0.47
33:i:45:VAL:HB	40:p:99:ILE:HG21	1.95	0.47
42:r:110:ASN:C	42:r:112:ASN:H	2.23	0.47
51:3:1143:U:H2'	51:3:1144:C:O4'	2.15	0.47
51:3:1270:C:H2'	51:3:1271:A:H8	1.78	0.47
51:3:1579:G:H5''	51:3:1580:G:H5''	1.95	0.47
51:3:1759:C:H2'	51:3:1760:G:C8	2.50	0.47
51:3:1920:A:C8	53:5:1469:G:H4'	2.49	0.47
51:3:2332:U:H3'	51:3:2333:G:C5'	2.43	0.47
51:3:2639:G:H2'	51:3:2640:A:C8	2.49	0.47
53:5:11:A:H2'	53:5:12:G:C8	2.49	0.47
53:5:941:A:H2'	53:5:942:G:C8	2.49	0.47
5:B:37:ASP:OD1	5:B:41:ARG:NH1	2.47	0.47
15:L:15:ILE:HA	15:L:18:ALA:HB3	1.96	0.47
19:P:7:LYS:HB3	19:P:9:LEU:HD23	1.96	0.47
22:S:28:LEU:HD12	22:S:54:LEU:HD12	1.96	0.47
28:d:33:LYS:HA	28:d:92:ARG:CZ	2.44	0.47
29:e:45:LYS:HE3	29:e:56:THR:HG22	1.96	0.47
35:k:60:ARG:HD2	51:3:254:G:H5'	1.97	0.47
49:y:30:CYS:HB3	49:y:33:CYS:HB3	1.96	0.47
51:3:335:G:O2'	51:3:336:C:O5'	2.30	0.47
51:3:341:G:N1	51:3:344:A:OP2	2.26	0.47
51:3:347:C:H2'	51:3:348:A:C8	2.50	0.47
51:3:867:G:H2'	51:3:868:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1223:C:H2'	51:3:1224:G:H8	1.80	0.47
51:3:1229:U:H2'	51:3:1230:U:C6	2.49	0.47
51:3:1631:A:H5''	51:3:1632:C:H5'	1.96	0.47
51:3:2081:U:H1'	51:3:2606:A:N3	2.29	0.47
51:3:2600:G:H2'	51:3:2601:U:H6	1.80	0.47
52:4:69:C:H2'	52:4:70:G:O4'	2.14	0.47
53:5:230:G:H2'	53:5:231:U:C6	2.49	0.47
53:5:550:U:H2'	53:5:551:A:C8	2.49	0.47
53:5:856:U:H2'	53:5:857:U:C6	2.49	0.47
53:5:1115:G:HO2'	53:5:1116:U:H6	1.62	0.47
53:5:1226:A:O2'	53:5:1344:C:O2'	2.31	0.47
53:5:1347:U:H2'	53:5:1348:G:O4'	2.14	0.47
4:A:112:TRP:CZ2	4:A:116:THR:HB	2.50	0.47
8:E:76:ALA:CB	8:E:85:GLU:HG2	2.40	0.47
12:I:30:LYS:O	12:I:34:VAL:HG23	2.14	0.47
14:K:124:ARG:HA	14:K:127:ARG:HD3	1.97	0.47
28:d:92:ARG:CZ	28:d:92:ARG:HA	2.44	0.47
30:f:97:ILE:O	30:f:100:GLN:HG3	2.15	0.47
45:u:57:THR:O	51:3:2339:G:H4'	2.14	0.47
51:3:511:U:H2'	51:3:512:G:O4'	2.14	0.47
51:3:764:G:O2'	51:3:798:G:H4'	2.14	0.47
51:3:2418:G:H2'	51:3:2419:A:C8	2.49	0.47
51:3:2477:A:H2'	51:3:2478:G:O4'	2.14	0.47
51:3:2865:U:H2'	51:3:2866:A:C8	2.48	0.47
53:5:65:G:H4'	53:5:66:A:H3'	1.97	0.47
53:5:69:G:H21	53:5:138:A:H1'	1.78	0.47
53:5:766:G:H2'	53:5:767:U:C6	2.49	0.47
53:5:1163:A:H2'	53:5:1164:U:C6	2.49	0.47
53:5:1344:C:H2'	53:5:1345:G:H8	1.79	0.47
1:0:45:SER:OG	51:3:127:A:OP1	2.32	0.47
2:1:10:ARG:NE	35:k:59:TYR:O	2.43	0.47
4:A:222:PRO:O	4:A:225:THR:OG1	2.33	0.47
8:E:10:ASP:HB2	8:E:81:GLN:HA	1.97	0.47
8:E:97:LEU:HB3	8:E:100:ILE:HG13	1.97	0.47
10:G:117:SER:HB3	10:G:136:GLU:HG2	1.96	0.47
11:H:12:ARG:HD3	11:H:79:GLY:HA3	1.97	0.47
11:H:106:THR:HG22	11:H:107:THR:N	2.27	0.47
12:I:98:ILE:HD13	12:I:104:LEU:HD13	1.97	0.47
14:K:16:LYS:HD3	14:K:16:LYS:HA	1.79	0.47
15:L:28:SER:OG	53:5:1302:C:H5''	2.15	0.47
19:P:21:THR:HG23	19:P:73:LYS:HD2	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:b:126:TRP:CD1	26:b:164:LYS:HB3	2.50	0.47
28:d:98:ALA:O	28:d:101:GLU:HG3	2.15	0.47
29:e:136:ILE:HD13	29:e:147:PHE:CD1	2.49	0.47
30:f:6:LYS:HB3	30:f:34:LYS:HA	1.97	0.47
34:j:29:ARG:NH2	51:3:2683:G:O3'	2.47	0.47
35:k:69:ARG:HG2	35:k:72:PHE:HB2	1.96	0.47
36:l:31:GLU:HA	36:l:134:ARG:HG3	1.96	0.47
36:l:32:TYR:CZ	36:l:133:LYS:HG3	2.49	0.47
37:m:49:ILE:HD12	37:m:97:TYR:HD2	1.79	0.47
38:n:42:GLN:HG2	38:n:54:SER:OG	2.14	0.47
39:o:44:ARG:CZ	53:5:342:G:H4'	2.44	0.47
40:p:41:ALA:HB1	51:3:569:U:H5'	1.96	0.47
40:p:56:PHE:O	40:p:60:TRP:CD1	2.68	0.47
41:q:24:LYS:HA	41:q:90:THR:HG23	1.96	0.47
42:r:69:LEU:HA	42:r:108:SER:O	2.14	0.47
46:v:26:ARG:NH1	51:3:209:G:O6	2.48	0.47
46:v:34:GLN:HE21	51:3:2098:U:H1'	1.79	0.47
48:x:16:CYS:O	48:x:20:SER:N	2.48	0.47
51:3:567:U:H4'	51:3:568:G:C8	2.50	0.47
51:3:612:G:H5'	51:3:2024:C:H3'	1.96	0.47
51:3:771:C:H2'	51:3:772:C:H6	1.80	0.47
51:3:1713:U:H3'	51:3:1714:U:C5	2.50	0.47
51:3:2146:A:H2'	51:3:2147:G:H8	1.79	0.47
51:3:2214:A:H2'	51:3:2215:C:C6	2.50	0.47
51:3:2306:A:N6	51:3:2326:G:H21	2.12	0.47
51:3:2649:G:H2'	51:3:2650:A:H8	1.80	0.47
51:3:2857:C:H2'	51:3:2858:A:H8	1.79	0.47
53:5:110:U:H2'	53:5:111:A:C8	2.50	0.47
53:5:203:C:H2'	53:5:204:C:H6	1.80	0.47
53:5:633:U:H2'	53:5:634:U:C6	2.50	0.47
53:5:924:A:H61	53:5:1364:C:H42	1.63	0.47
53:5:991:A:H2'	53:5:992:U:C6	2.50	0.47
53:5:1212:C:H3'	53:5:1213:A:H5'	1.96	0.47
53:5:1225:A:C2	53:5:1345:G:H1'	2.50	0.47
53:5:1237:G:H1	53:5:1248:U:H3	1.63	0.47
6:C:10:ARG:HG2	6:C:62:TYR:CE2	2.50	0.47
6:C:145:LYS:O	6:C:147:LYS:N	2.48	0.47
9:F:27:ASN:HA	9:F:30:MET:HE2	1.97	0.47
44:t:90:LYS:HG2	44:t:92:VAL:HG12	1.97	0.47
51:3:112:A:H2'	51:3:113:U:C6	2.50	0.47
51:3:202:C:O2'	51:3:203:A:H5'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:299:A:H2'	51:3:300:G:H8	1.80	0.47
51:3:1509:U:H2'	51:3:1510:A:C8	2.49	0.47
51:3:2146:A:H2'	51:3:2147:G:C8	2.50	0.47
51:3:2893:C:H2'	51:3:2894:G:O4'	2.15	0.47
53:5:1488:A:H2'	53:5:1489:C:C6	2.49	0.47
53:5:1490:G:H2'	53:5:1491:A:C8	2.50	0.47
2:1:21:ARG:NH2	51:3:2368:A:OP1	2.46	0.47
22:S:9:LYS:HA	22:S:12:ARG:HH11	1.80	0.47
25:a:225:ARG:NH2	51:3:726:U:OP1	2.48	0.47
26:b:117:ARG:HG2	26:b:117:ARG:NH2	2.29	0.47
28:d:38:MET:O	28:d:86:GLY:HA2	2.15	0.47
37:m:48:LEU:HD21	37:m:66:TRP:HD1	1.80	0.47
39:o:90:LEU:HD21	39:o:93:ARG:HG3	1.97	0.47
47:w:12:SER:OG	47:w:13:GLU:OE2	2.30	0.47
51:3:204:U:H3	51:3:254:G:H1	1.61	0.47
51:3:299:A:H2'	51:3:300:G:C8	2.50	0.47
51:3:998:C:H2'	51:3:999:U:H6	1.80	0.47
51:3:1254:U:H2'	51:3:1255:G:C5	2.49	0.47
51:3:1331:G:H2'	51:3:1332:A:C8	2.49	0.47
51:3:1501:U:H2'	51:3:1502:A:O4'	2.14	0.47
52:4:74:G:H1	52:4:91:A:H61	1.62	0.47
53:5:544:A:H4'	53:5:546:G:H4'	1.95	0.47
25:a:213:ILE:HG21	25:a:219:ASN:HB2	1.97	0.47
26:b:36:VAL:HG12	26:b:94:GLN:H	1.80	0.47
36:l:39:GLY:HA2	36:l:97:VAL:O	2.15	0.47
38:n:75:GLN:O	38:n:78:ALA:HB3	2.15	0.47
51:3:332:G:N2	51:3:374:A:H62	2.12	0.47
51:3:771:C:H2'	51:3:772:C:C6	2.50	0.47
51:3:2852:G:HO2'	51:3:2853:U:P	2.38	0.47
53:5:69:G:H2'	53:5:70:A:O4'	2.14	0.47
53:5:317:A:H2'	53:5:318:C:C6	2.50	0.47
53:5:472:G:H2'	53:5:473:A:C8	2.49	0.47
53:5:588:U:H2'	53:5:589:U:C6	2.50	0.47
5:B:71:ALA:HB3	5:B:74:PRO:HD3	1.97	0.46
5:B:87:LYS:HD3	5:B:91:GLN:OE1	2.15	0.46
5:B:87:LYS:O	5:B:91:GLN:OE1	2.33	0.46
11:H:108:ARG:HD3	11:H:110:LYS:H	1.80	0.46
13:J:91:ARG:HH22	13:J:94:ALA:HB3	1.80	0.46
28:d:126:GLY:O	28:d:158:THR:HG22	2.15	0.46
33:i:16:ARG:NH1	33:i:56:TYR:CZ	2.82	0.46
44:t:44:ARG:HE	44:t:45:HIS:H	1.62	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:178:A:H2'	51:3:179:A:C8	2.50	0.46
51:3:1580:G:O2'	51:3:1581:U:O4'	2.32	0.46
51:3:1716:A:H2'	51:3:1717:C:C6	2.49	0.46
51:3:2118:U:O4	51:3:2151:G:O2'	2.32	0.46
53:5:794:C:H2'	53:5:795:U:C6	2.50	0.46
53:5:950:C:H2'	53:5:951:U:C6	2.49	0.46
53:5:1482:A:H2'	53:5:1483:C:H6	1.81	0.46
54:6:6:U:H2'	54:6:7:U:H6	1.80	0.46
16:M:3:LYS:HB3	53:5:1039:G:OP1	2.15	0.46
30:f:6:LYS:HA	30:f:16:PHE:HE1	1.80	0.46
31:g:55:LYS:O	31:g:59:LEU:HD23	2.16	0.46
36:l:116:LYS:O	36:l:120:ARG:HG2	2.15	0.46
37:m:45:LEU:O	37:m:49:ILE:HG12	2.15	0.46
45:u:34:ARG:HD2	51:3:2364:A:H4'	1.97	0.46
51:3:227:A:N1	51:3:443:C:O2'	2.39	0.46
51:3:683:G:H2'	51:3:684:A:C8	2.50	0.46
51:3:795:G:H2'	51:3:796:A:O4'	2.15	0.46
51:3:1416:G:H2'	51:3:1417:G:C8	2.50	0.46
51:3:1851:U:H2'	51:3:1852:G:C8	2.50	0.46
51:3:1961:A:O2'	51:3:1963:U:O4	2.28	0.46
51:3:2145:A:H2'	51:3:2146:A:H8	1.79	0.46
53:5:333:U:H2'	53:5:334:A:C8	2.50	0.46
53:5:961:G:H2'	53:5:962:G:C8	2.51	0.46
53:5:1267:G:H2'	53:5:1268:G:H8	1.80	0.46
53:5:1402:U:H2'	53:5:1403:A:C8	2.48	0.46
5:B:134:ARG:HH12	5:B:138:ARG:HH21	1.63	0.46
6:C:75:PHE:HA	6:C:78:VAL:HG22	1.96	0.46
6:C:200:TYR:HA	6:C:202:ARG:NH2	2.31	0.46
27:c:21:SER:HB3	27:c:24:LEU:HD23	1.97	0.46
27:c:200:GLU:O	27:c:203:VAL:HG12	2.15	0.46
30:f:94:THR:HA	30:f:97:ILE:HG12	1.98	0.46
30:f:130:ILE:HD13	30:f:136:ALA:HB3	1.96	0.46
43:s:51:LYS:NZ	51:3:1630:A:OP1	2.34	0.46
44:t:88:LYS:HB2	44:t:105:LYS:HB2	1.98	0.46
47:w:52:ALA:O	47:w:56:THR:HG23	2.15	0.46
51:3:874:U:H2'	51:3:875:G:H8	1.81	0.46
51:3:1406:A:O2'	51:3:1408:G:N7	2.41	0.46
53:5:760:U:H2'	53:5:761:U:C6	2.51	0.46
6:C:53:GLN:HG2	6:C:195:TYR:O	2.16	0.46
36:l:67:ARG:NH1	51:3:943:A:HO2'	2.12	0.46
37:m:69:ASN:HB2	37:m:74:ASP:HA	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:9:G:H2'	51:3:10:U:C6	2.50	0.46
51:3:14:U:O2	51:3:14:U:H2'	2.14	0.46
51:3:1324:A:OP1	51:3:2717:G:O2'	2.18	0.46
51:3:1384:C:H2'	51:3:1385:U:H6	1.79	0.46
51:3:1473:C:H2'	51:3:1474:C:H6	1.80	0.46
51:3:2134:G:O2'	51:3:2181:A:N1	2.44	0.46
53:5:108:C:H2'	53:5:109:G:H8	1.81	0.46
53:5:116:A:O2'	53:5:117:U:H5''	2.14	0.46
53:5:169:G:O2'	53:5:220:U:O2'	2.26	0.46
53:5:453:C:H2'	53:5:454:U:C6	2.50	0.46
53:5:917:G:H2'	53:5:918:A:C8	2.50	0.46
25:a:249:VAL:HG21	25:a:254:PRO:HB3	1.98	0.46
28:d:4:LEU:HD12	28:d:7:HIS:HB3	1.96	0.46
30:f:79:PHE:HB2	30:f:142:VAL:HG12	1.98	0.46
40:p:61:ILE:HD12	40:p:75:TYR:OH	2.15	0.46
51:3:190:G:H2'	51:3:191:G:H8	1.80	0.46
51:3:252:G:C4	51:3:2439:U:H4'	2.51	0.46
51:3:291:G:H2'	51:3:292:G:H8	1.81	0.46
51:3:359:G:H2'	51:3:360:G:C8	2.51	0.46
51:3:684:A:H2'	51:3:685:G:H8	1.80	0.46
51:3:1180:U:H2'	51:3:1181:A:C8	2.48	0.46
51:3:2092:U:H2'	51:3:2093:U:C6	2.51	0.46
51:3:2145:A:H2'	51:3:2146:A:C8	2.51	0.46
51:3:2383:G:N2	51:3:2386:A:OP2	2.48	0.46
51:3:2760:C:H2'	51:3:2761:A:O4'	2.15	0.46
53:5:98:G:H2'	53:5:99:U:C6	2.51	0.46
53:5:577:G:H5'	53:5:725:A:H1'	1.97	0.46
53:5:675:U:H2'	53:5:676:U:H6	1.81	0.46
54:7:6:U:H2'	54:7:7:U:H6	1.80	0.46
4:A:20:LEU:HG	4:A:248:TYR:CE1	2.50	0.46
9:F:98:LEU:O	9:F:102:TRP:HD1	1.98	0.46
32:h:37:LYS:HG3	32:h:38:GLN:H	1.80	0.46
32:h:89:ALA:HB2	51:3:1112:A:H4'	1.96	0.46
33:i:24:ALA:O	33:i:64:GLN:HG3	2.15	0.46
36:l:40:ASN:CG	36:l:41:TRP:H	2.23	0.46
42:r:21:CYS:HB3	42:r:74:CYS:HB3	1.60	0.46
51:3:622:U:H2'	51:3:623:A:H8	1.80	0.46
51:3:1048:A:H2'	51:3:1049:U:C6	2.50	0.46
51:3:1383:G:H2'	51:3:1384:C:C6	2.50	0.46
51:3:1994:U:H2'	51:3:1995:G:C8	2.50	0.46
51:3:2467:A:H2'	51:3:2468:U:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:537:A:H2'	53:5:538:G:H8	1.81	0.46
53:5:554:C:H2'	53:5:555:G:C8	2.50	0.46
4:A:86:GLY:HA3	4:A:96:VAL:HG21	1.98	0.46
4:A:244:THR:HG23	4:A:247:ALA:HB2	1.97	0.46
6:C:87:VAL:HG12	6:C:91:ARG:HE	1.80	0.46
10:G:11:HIS:CE1	53:5:870:A:H2	2.34	0.46
11:H:106:THR:O	11:H:107:THR:OG1	2.27	0.46
12:I:18:SER:HB3	12:I:24:LEU:HD21	1.95	0.46
25:a:44:HIS:NE2	51:3:1823:U:OP2	2.49	0.46
25:a:238:HIS:CD2	25:a:257:PRO:HA	2.50	0.46
27:c:85:VAL:O	27:c:85:VAL:HG13	2.15	0.46
36:l:27:VAL:HG21	36:l:134:ARG:HA	1.96	0.46
36:l:32:TYR:CE2	36:l:133:LYS:HG3	2.50	0.46
36:l:41:TRP:HB3	36:l:94:VAL:HG21	1.97	0.46
41:q:13:LEU:HD23	41:q:13:LEU:H	1.81	0.46
49:y:39:PHE:HD2	51:3:2819:C:H1'	1.80	0.46
51:3:401:G:O2'	51:3:402:A:O4'	2.32	0.46
51:3:496:A:H62	51:3:505:G:N2	2.13	0.46
52:4:8:C:C4	52:4:9:C:C4	3.04	0.46
53:5:239:A:N6	53:5:277:G:N3	2.63	0.46
53:5:712:A:H2'	53:5:713:A:C8	2.51	0.46
53:5:847:G:H2'	53:5:848:U:C6	2.51	0.46
53:5:909:A:O2'	53:5:910:C:H5'	2.15	0.46
53:5:1437:A:H2'	53:5:1438:U:C6	2.51	0.46
4:A:166:VAL:HG23	4:A:169:LEU:HD21	1.98	0.46
7:D:179:TYR:CE1	53:5:7:U:H2'	2.46	0.46
8:E:136:LEU:H	8:E:136:LEU:HD23	1.79	0.46
18:O:64:ARG:HH21	53:5:451:G:H5''	1.80	0.46
22:S:66:ARG:HA	22:S:69:LYS:HE3	1.97	0.46
40:p:57:ARG:O	40:p:60:TRP:HB2	2.15	0.46
51:3:86:A:N1	51:3:100:U:O2'	2.49	0.46
51:3:210:U:C2	51:3:211:A:C8	3.04	0.46
51:3:776:U:H2'	51:3:777:C:C6	2.51	0.46
51:3:861:U:H5''	51:3:2437:G:OP2	2.15	0.46
51:3:1603:A:H2'	51:3:1604:A:C8	2.51	0.46
51:3:1872:U:O2'	51:3:1882:G:N2	2.46	0.46
51:3:1954:C:H2'	51:3:1955:G:H8	1.81	0.46
51:3:2102:U:H2'	51:3:2103:C:H6	1.80	0.46
51:3:2465:U:H2'	51:3:2466:G:C8	2.51	0.46
52:4:49:G:H2'	52:4:50:C:C6	2.51	0.46
53:5:672:A:N6	53:5:712:A:H61	2.13	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:868:G:H2'	53:5:869:U:C6	2.51	0.46
53:5:1139:A:C6	53:5:1149:G:C6	3.04	0.46
53:5:1331:A:N6	53:5:1340:G:H1	2.13	0.46
10:G:106:LEU:HD23	10:G:110:GLY:HA3	1.98	0.46
13:J:90:ILE:HA	13:J:93:PHE:CD2	2.51	0.46
14:K:128:SER:O	53:5:36:G:O2'	2.19	0.46
20:Q:57:LEU:O	20:Q:61:LYS:HG2	2.16	0.46
27:c:49:THR:HB	51:3:40:A:N3	2.31	0.46
27:c:98:ASN:OD1	27:c:99:TYR:N	2.49	0.46
29:e:152:ARG:HD2	29:e:167:TYR:HE1	1.81	0.46
33:i:113:PRO:HD2	33:i:121:TRP:CZ3	2.49	0.46
36:l:51:ARG:HD3	36:l:66:ILE:HD11	1.98	0.46
51:3:216:C:H2'	51:3:217:A:O4'	2.15	0.46
51:3:608:A:H2'	51:3:609:U:O4'	2.16	0.46
51:3:841:C:O2	51:3:2452:G:O2'	2.34	0.46
51:3:855:A:N3	51:3:979:U:O2'	2.38	0.46
51:3:963:U:H2'	51:3:964:A:C8	2.51	0.46
51:3:1093:U:H2'	51:3:1094:G:C8	2.51	0.46
51:3:1730:C:H2'	51:3:1731:G:O4'	2.16	0.46
51:3:2100:G:H21	51:3:2206:A:N6	2.14	0.46
53:5:503:G:H2'	53:5:504:A:C8	2.51	0.46
53:5:862:C:H2'	53:5:863:A:O4'	2.16	0.46
53:5:905:U:H2'	53:5:906:C:C6	2.51	0.46
53:5:1299:C:H2'	53:5:1300:C:H6	1.81	0.46
53:5:1365:U:H2'	53:5:1366:U:H6	1.81	0.46
53:5:1452:C:H2'	53:5:1453:C:C6	2.50	0.46
4:A:178:VAL:HB	4:A:200:ALA:HB2	1.97	0.46
26:b:178:ASN:ND2	51:3:2739:C:OP1	2.41	0.46
26:b:185:ASP:O	26:b:189:MET:HA	2.16	0.46
28:d:21:ALA:C	28:d:22:PHE:HD2	2.24	0.46
30:f:113:PHE:HZ	30:f:138:LEU:HD21	1.81	0.46
41:q:65:GLN:HG3	41:q:89:TYR:CD1	2.51	0.46
42:r:61:ASN:HD21	51:3:530:G:H21	1.63	0.46
47:w:95:LYS:HE2	47:w:99:LEU:HD11	1.98	0.46
51:3:535:G:H21	51:3:540:A:H62	1.63	0.46
51:3:963:U:H2'	51:3:964:A:H8	1.81	0.46
51:3:2034:G:H2'	51:3:2035:U:C6	2.50	0.46
53:5:40:G:H2'	53:5:41:C:C6	2.51	0.46
53:5:372:G:H2'	53:5:373:A:C8	2.49	0.46
53:5:881:G:C2	53:5:905:U:O2	2.68	0.46
53:5:1057:C:H2'	53:5:1058:A:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:124:LEU:HD11	6:C:134:ILE:HG21	1.98	0.45
25:a:113:ASP:HB2	25:a:204:SER:HA	1.98	0.45
25:a:159:GLN:O	51:3:1825:U:O2'	2.24	0.45
25:a:184:LEU:HD23	25:a:185:LEU:N	2.31	0.45
26:b:106:GLU:HA	26:b:217:VAL:HA	1.98	0.45
33:i:64:GLN:O	33:i:64:GLN:NE2	2.36	0.45
35:k:56:THR:HG21	51:3:2437:G:N7	2.30	0.45
39:o:6:LYS:NZ	51:3:2881:A:O5'	2.49	0.45
39:o:26:SER:OG	39:o:27:ALA:N	2.49	0.45
43:s:44:PHE:HA	43:s:47:VAL:HG12	1.99	0.45
44:t:77:PHE:CE2	44:t:79:GLN:HB3	2.51	0.45
51:3:223:A:H2'	51:3:224:G:C8	2.51	0.45
51:3:333:A:N6	51:3:372:G:O6	2.46	0.45
51:3:776:U:H2'	51:3:777:C:H6	1.81	0.45
51:3:1534:A:O2'	51:3:1535:A:H8	1.99	0.45
51:3:1817:A:C8	51:3:1818:G:C8	3.04	0.45
51:3:1833:G:H2'	51:3:1834:U:C6	2.51	0.45
51:3:2036:G:N1	51:3:2040:A:OP2	2.42	0.45
51:3:2678:A:H2'	51:3:2679:G:C8	2.51	0.45
51:3:2700:C:H2'	51:3:2701:A:C8	2.51	0.45
51:3:2796:C:O2'	51:3:2812:U:O2	2.34	0.45
53:5:93:A:H5''	53:5:94:A:H5''	1.98	0.45
53:5:486:C:H2'	53:5:487:A:C8	2.51	0.45
53:5:505:C:OP2	53:5:506:U:O2'	2.28	0.45
53:5:878:U:H4'	53:5:879:G:H5''	1.97	0.45
53:5:1267:G:H2'	53:5:1268:G:C8	2.51	0.45
54:6:72:C:H2'	54:6:73:C:C6	2.51	0.45
54:7:72:C:H2'	54:7:73:C:C6	2.51	0.45
2:1:25:TYR:O	2:1:33:LYS:NZ	2.47	0.45
4:A:152:LEU:O	4:A:156:ILE:HG12	2.15	0.45
7:D:166:ILE:O	7:D:170:ILE:HG12	2.16	0.45
13:J:60:ALA:HB1	13:J:93:PHE:CE1	2.51	0.45
26:b:155:SER:HA	51:3:1165:U:C5	2.51	0.45
36:l:111:GLU:H	36:l:111:GLU:CD	2.24	0.45
41:q:79:HIS:NE2	51:3:1218:G:H5''	2.31	0.45
42:r:7:GLN:HB2	42:r:50:LEU:HD11	1.97	0.45
51:3:317:U:H2'	51:3:318:U:O4'	2.15	0.45
51:3:381:A:H2'	51:3:382:U:C6	2.51	0.45
51:3:694:U:H2'	51:3:695:G:H8	1.82	0.45
51:3:1711:A:H2'	51:3:1712:A:H8	1.81	0.45
51:3:1758:C:H2'	51:3:1759:C:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2406:U:H2'	51:3:2407:G:C8	2.52	0.45
51:3:2598:C:H2'	51:3:2599:C:H6	1.79	0.45
51:3:2840:U:H2'	51:3:2841:A:C8	2.50	0.45
53:5:519:G:C6	53:5:527:G:C2	3.04	0.45
53:5:1055:G:H21	53:5:1165:G:H1'	1.81	0.45
53:5:1193:U:H2'	53:5:1194:A:C8	2.46	0.45
53:5:1262:A:H2'	53:5:1263:A:C8	2.51	0.45
13:J:43:MET:SD	13:J:44:GLY:N	2.86	0.45
25:a:190:ARG:HD3	25:a:192:PHE:CE2	2.41	0.45
32:h:37:LYS:HG3	32:h:38:GLN:N	2.32	0.45
37:m:18:VAL:HG23	37:m:41:THR:HA	1.97	0.45
51:3:277:C:H42	51:3:293:G:H22	1.64	0.45
51:3:698:A:H2'	51:3:699:U:C6	2.51	0.45
51:3:758:C:H2'	51:3:759:U:H6	1.80	0.45
51:3:1577:A:H2'	51:3:1578:A:C8	2.51	0.45
51:3:1690:C:H2'	51:3:1691:U:H6	1.81	0.45
51:3:2073:C:N4	51:3:2074:G:O6	2.49	0.45
51:3:2470:C:H2'	51:3:2471:U:C6	2.51	0.45
51:3:2658:U:H2'	51:3:2659:U:H6	1.82	0.45
53:5:92:G:C2	53:5:93:A:H1'	2.51	0.45
53:5:201:G:H2'	53:5:202:A:C8	2.51	0.45
4:A:58:LEU:O	4:A:61:GLN:HG3	2.17	0.45
5:B:182:ARG:HH11	5:B:212:THR:H	1.64	0.45
8:E:130:VAL:HG21	53:5:841:C:C4	2.52	0.45
11:H:14:SER:OG	53:5:1346:G:OP1	2.34	0.45
25:a:61:ARG:HD2	25:a:64:ARG:HH11	1.79	0.45
25:a:65:LYS:NZ	51:3:1603:A:O3'	2.41	0.45
26:b:15:GLN:OE1	26:b:23:ARG:NH2	2.41	0.45
51:3:945:U:H2'	51:3:946:A:C8	2.50	0.45
51:3:1120:A:O2'	51:3:1139:C:O2	2.34	0.45
51:3:2214:A:H2'	51:3:2215:C:H6	1.81	0.45
51:3:2358:U:H2'	51:3:2359:G:O4'	2.17	0.45
51:3:2394:A:H2'	51:3:2395:U:C6	2.51	0.45
52:4:103:C:H2'	52:4:104:C:C6	2.47	0.45
53:5:134:G:H2'	53:5:135:A:C8	2.52	0.45
53:5:671:G:H1	53:5:713:A:H2	1.61	0.45
53:5:791:A:H2'	53:5:792:C:C6	2.51	0.45
53:5:943:C:H2'	53:5:944:A:H8	1.80	0.45
53:5:943:C:H5'	53:5:1280:A:H4'	1.97	0.45
5:B:154:VAL:HG22	5:B:203:VAL:HG23	1.98	0.45
6:C:10:ARG:HG2	6:C:62:TYR:CD2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:80:LYS:HA	13:J:106:LYS:O	2.16	0.45
21:R:80:PHE:HB2	21:R:82:GLN:OE1	2.16	0.45
28:d:171:ARG:HE	28:d:177:LEU:HD12	1.81	0.45
51:3:1065:G:C6	51:3:1160:G:N2	2.85	0.45
51:3:1381:A:H2'	51:3:1382:A:O4'	2.16	0.45
51:3:2070:C:H2'	51:3:2071:C:C6	2.52	0.45
53:5:101:A:H2'	53:5:102:G:O4'	2.16	0.45
53:5:254:G:H2'	53:5:255:G:H8	1.81	0.45
53:5:255:G:H2'	53:5:256:G:C8	2.51	0.45
53:5:409:G:H21	53:5:425:G:H1'	1.82	0.45
53:5:561:A:H5'	53:5:564:G:C2	2.52	0.45
53:5:1223:A:H2'	53:5:1224:C:C6	2.52	0.45
4:A:169:LEU:HD23	4:A:169:LEU:H	1.82	0.45
6:C:129:VAL:HG22	6:C:131:THR:H	1.81	0.45
7:D:206:ARG:O	7:D:210:ILE:HG12	2.17	0.45
8:E:6:ILE:HG23	8:E:86:LEU:HB3	1.98	0.45
9:F:78:ARG:HE	9:F:83:ASN:HB3	1.81	0.45
11:H:73:GLY:O	53:5:1224:C:O2'	2.33	0.45
12:I:54:VAL:HG11	16:M:61:TRP:CZ2	2.52	0.45
28:d:170:LEU:HD22	28:d:175:LEU:HD22	1.99	0.45
29:e:58:ASN:OD1	29:e:59:ASN:N	2.49	0.45
35:k:22:ARG:HD3	35:k:22:ARG:HA	1.78	0.45
36:l:20:LYS:HA	36:l:99:GLN:HE21	1.81	0.45
42:r:8:PHE:CD2	42:r:9:ARG:HG3	2.51	0.45
51:3:279:U:H2'	51:3:280:A:C8	2.52	0.45
51:3:391:U:H2'	51:3:392:A:H8	1.81	0.45
51:3:1507:G:O2'	51:3:1508:G:P	2.75	0.45
51:3:1640:G:O2'	51:3:1642:G:N1	2.47	0.45
51:3:2153:U:H4'	51:3:2154:A:C8	2.52	0.45
51:3:2738:U:H2'	51:3:2739:C:H6	1.81	0.45
53:5:373:A:H2'	53:5:374:G:H8	1.81	0.45
53:5:796:A:H3'	53:5:797:G:H8	1.82	0.45
53:5:798:U:H2'	53:5:799:A:C8	2.52	0.45
53:5:1322:U:O2	53:5:1349:A:N7	2.49	0.45
7:D:82:GLY:H	53:5:1373:A:H61	1.64	0.45
8:E:151:LYS:HE2	8:E:153:LYS:HE2	1.98	0.45
15:L:67:GLY:O	15:L:71:ARG:HG3	2.16	0.45
20:Q:79:CYS:HB2	20:Q:82:HIS:ND1	2.32	0.45
26:b:213:LYS:HB3	26:b:216:VAL:HG21	1.98	0.45
28:d:88:LYS:HE2	28:d:90:THR:HG23	1.98	0.45
36:l:62:GLY:HA2	36:l:108:ASN:HB2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:126:PRO:HB3	51:3:2493:G:O3'	2.17	0.45
51:3:385:U:H2'	51:3:386:U:C6	2.51	0.45
51:3:707:C:H2'	51:3:708:C:C6	2.52	0.45
51:3:1231:G:H2'	51:3:1232:U:H6	1.80	0.45
51:3:1784:U:H2'	51:3:1785:U:C6	2.52	0.45
51:3:1820:U:HO2'	51:3:1821:G:P	2.39	0.45
51:3:2104:A:H2'	51:3:2105:G:C8	2.46	0.45
51:3:2179:A:H1'	51:3:2180:U:C6	2.51	0.45
51:3:2541:C:H2'	51:3:2542:A:O4'	2.17	0.45
53:5:35:C:H2'	53:5:36:G:C8	2.52	0.45
53:5:154:G:H2'	53:5:155:C:O4'	2.16	0.45
53:5:975:C:H3'	53:5:976:U:C6	2.52	0.45
53:5:1217:G:O6	53:5:1269:U:O4	2.34	0.45
53:5:1406:U:O2'	53:5:1407:A:H5'	2.17	0.45
2:1:29:LEU:HD23	2:1:32:HIS:ND1	2.32	0.45
7:D:82:GLY:H	53:5:1373:A:N6	2.15	0.45
13:J:48:SER:HB2	53:5:691:A:OP1	2.17	0.45
15:L:94:ASN:C	15:L:109:ARG:HG2	2.42	0.45
16:M:5:SER:HB3	53:5:1192:C:OP1	2.17	0.45
17:N:39:HIS:ND1	53:5:736:U:O2'	2.50	0.45
38:n:8:ARG:NH1	52:4:6:U:OP1	2.50	0.45
51:3:26:G:H2'	51:3:27:U:C6	2.52	0.45
51:3:297:G:N7	51:3:457:U:H2'	2.32	0.45
51:3:531:G:C4	51:3:532:A:C8	3.05	0.45
51:3:2693:U:H2'	51:3:2694:A:H8	1.82	0.45
51:3:2696:G:N1	51:3:2728:U:OP2	2.38	0.45
53:5:36:G:O6	53:5:547:C:N4	2.50	0.45
53:5:500:G:H2'	53:5:501:A:C8	2.52	0.45
53:5:616:C:N3	53:5:620:A:N6	2.65	0.45
53:5:675:U:H2'	53:5:676:U:C6	2.51	0.45
53:5:961:G:H1	53:5:1375:C:H42	1.65	0.45
53:5:1424:C:H2'	53:5:1425:A:O4'	2.17	0.45
4:A:72:VAL:HA	4:A:75:VAL:HG22	1.98	0.45
4:A:117:LEU:HG	4:A:194:LEU:HD12	1.99	0.45
4:A:181:PRO:HG2	4:A:206:THR:HG21	1.98	0.45
14:K:40:SER:HB2	53:5:359:A:H61	1.82	0.45
15:L:104:THR:OG1	53:5:1205:C:N4	2.50	0.45
26:b:161:LYS:HE2	51:3:2627:U:OP1	2.17	0.45
51:3:229:C:H3'	51:3:230:G:H8	1.81	0.45
51:3:947:A:H1'	51:3:2272:C:O2'	2.17	0.45
51:3:2347:G:H2'	51:3:2348:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2776:U:H2'	51:3:2777:A:C8	2.52	0.45
51:3:2861:G:O2'	51:3:2863:G:O6	2.26	0.45
53:5:501:A:H2'	53:5:502:C:C6	2.52	0.45
53:5:543:C:H2'	53:5:544:A:C8	2.48	0.45
53:5:912:G:H2'	53:5:913:A:H8	1.81	0.45
53:5:1289:U:N3	53:5:1297:G:N1	2.65	0.45
54:6:29:C:H2'	54:6:30:G:C8	2.51	0.45
11:H:40:TYR:HE2	53:5:1223:A:H4'	1.81	0.45
11:H:43:ASN:C	11:H:44:LYS:HD3	2.42	0.45
22:S:8:GLU:H	22:S:8:GLU:CD	2.25	0.45
25:a:53:ILE:HG12	51:3:814:U:OP1	2.17	0.45
33:i:116:ARG:NE	51:3:563:A:H5''	2.32	0.45
37:m:60:ARG:HD2	51:3:1482:U:O4'	2.16	0.45
38:n:2:LYS:HG3	38:n:7:GLN:HG2	1.99	0.45
51:3:568:G:H2'	51:3:569:U:H6	1.82	0.45
51:3:612:G:H2'	51:3:613:C:C6	2.52	0.45
51:3:647:G:H21	51:3:651:A:H62	1.65	0.45
51:3:1104:A:H5''	51:3:1105:A:C8	2.52	0.45
51:3:1187:C:H2'	51:3:1188:C:C6	2.52	0.45
51:3:1475:C:H2'	51:3:1476:C:C6	2.52	0.45
51:3:2463:G:H2'	51:3:2464:C:C6	2.52	0.45
51:3:2683:G:H2'	51:3:2684:G:H8	1.82	0.45
52:4:47:C:N4	52:4:48:A:H62	2.15	0.45
53:5:87:G:H2'	53:5:88:A:C8	2.52	0.45
53:5:859:A:H2'	53:5:860:C:C6	2.52	0.45
53:5:1173:A:H2'	53:5:1174:U:C6	2.52	0.45
54:6:43:G:H3'	54:6:44:U:H5''	1.99	0.45
4:A:133:LEU:HB3	4:A:156:ILE:HD11	1.99	0.44
7:D:136:ILE:HG22	7:D:138:HIS:H	1.81	0.44
7:D:186:ASN:HB2	53:5:11:A:OP2	2.17	0.44
8:E:8:LEU:HD23	8:E:84:ARG:HB2	1.99	0.44
12:I:32:VAL:O	12:I:36:LYS:HG2	2.17	0.44
12:I:58:ILE:HD11	16:M:41:ARG:CZ	2.46	0.44
13:J:87:ASP:O	13:J:91:ARG:HG2	2.16	0.44
25:a:112:PRO:HG3	25:a:133:GLY:HA2	1.99	0.44
30:f:57:HIS:HA	30:f:60:ILE:HG22	1.98	0.44
36:l:11:LYS:HE2	36:l:88:GLY:O	2.17	0.44
38:n:108:ALA:O	38:n:112:ARG:HG2	2.17	0.44
43:s:76:LYS:HD2	51:3:60:G:P	2.57	0.44
51:3:159:G:H2'	51:3:160:A:C8	2.51	0.44
51:3:493:A:H61	51:3:506:A:H5''	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:670:G:H2'	51:3:671:C:C6	2.52	0.44
51:3:889:G:H2'	51:3:890:U:C6	2.52	0.44
51:3:1605:A:H2'	51:3:1606:A:C8	2.52	0.44
51:3:1784:U:H2'	51:3:1785:U:H6	1.81	0.44
51:3:2105:G:H2'	51:3:2106:G:C8	2.52	0.44
51:3:2781:C:H2'	51:3:2782:A:H8	1.83	0.44
53:5:281:U:H2'	53:5:282:G:H8	1.82	0.44
53:5:645:A:H2'	53:5:646:A:O4'	2.17	0.44
53:5:823:C:H2'	53:5:824:U:C6	2.52	0.44
53:5:1386:C:H2'	53:5:1387:U:C6	2.52	0.44
53:5:1436:C:H42	53:5:1437:A:N6	2.14	0.44
9:F:68:VAL:HG21	9:F:103:ILE:HD11	1.99	0.44
14:K:122:LYS:HA	14:K:122:LYS:HD2	1.36	0.44
22:S:4:ILE:HG21	22:S:7:ASN:HB2	1.99	0.44
25:a:57:HIS:HA	25:a:225:ARG:HB2	2.00	0.44
25:a:182:LEU:HD12	25:a:192:PHE:CE1	2.52	0.44
28:d:101:GLU:HA	28:d:104:ILE:HG12	1.99	0.44
44:t:44:ARG:NH1	51:3:517:G:O5'	2.51	0.44
51:3:277:C:H42	51:3:293:G:N2	2.15	0.44
51:3:603:G:H1	51:3:2507:C:P	2.41	0.44
51:3:659:C:H2'	51:3:660:U:C6	2.52	0.44
51:3:910:G:H2'	51:3:911:U:C6	2.52	0.44
51:3:1475:C:H2'	51:3:1476:C:H6	1.82	0.44
51:3:1778:G:H2'	51:3:1779:G:C8	2.51	0.44
51:3:1800:C:H2'	51:3:1801:U:C6	2.51	0.44
51:3:1913:G:H2'	51:3:1914:G:O4'	2.16	0.44
51:3:2597:A:H2'	51:3:2598:C:H6	1.83	0.44
51:3:2826:G:O2'	51:3:2828:C:OP2	2.22	0.44
53:5:232:G:H2'	53:5:233:C:C6	2.51	0.44
53:5:742:C:H5''	53:5:845:C:O2'	2.17	0.44
53:5:766:G:H2'	53:5:767:U:H6	1.82	0.44
53:5:1226:A:H2'	53:5:1227:A:C8	2.52	0.44
6:C:71:PHE:HE2	6:C:89:LEU:HD11	1.82	0.44
7:D:211:LEU:HD13	10:G:83:SER:HB3	1.99	0.44
10:G:18:LEU:HD22	10:G:41:LYS:HE3	1.99	0.44
11:H:44:LYS:O	11:H:46:VAL:N	2.50	0.44
13:J:116:PRO:HD2	23:T:35:HIS:HD2	1.83	0.44
17:N:22:ILE:O	17:N:26:VAL:HG23	2.18	0.44
19:P:28:SER:O	19:P:40:VAL:HA	2.18	0.44
22:S:3:ASN:HB3	22:S:4:ILE:H	1.59	0.44
22:S:17:ARG:NH1	53:5:320:G:H5'	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:25:LYS:O	22:S:29:LYS:HG2	2.17	0.44
25:a:146:GLN:O	25:a:201:GLY:N	2.42	0.44
51:3:116:C:H2'	51:3:117:C:H6	1.81	0.44
51:3:522:C:H2'	51:3:523:A:C8	2.53	0.44
51:3:762:A:H2'	51:3:763:G:C8	2.52	0.44
51:3:1070:U:H2'	51:3:1071:G:H8	1.82	0.44
51:3:1246:U:H2'	51:3:1247:C:C6	2.51	0.44
51:3:2086:U:H2'	51:3:2087:G:O4'	2.17	0.44
51:3:2106:G:N2	51:3:2198:G:H22	2.14	0.44
51:3:2552:G:H1'	51:3:2654:U:H4'	1.98	0.44
51:3:2655:U:H2'	51:3:2656:G:H8	1.82	0.44
53:5:369:A:H2'	53:5:370:A:H8	1.81	0.44
53:5:471:A:H2'	53:5:472:G:H8	1.82	0.44
53:5:671:G:H2'	53:5:672:A:C8	2.53	0.44
53:5:994:C:H2'	53:5:995:U:C5	2.52	0.44
53:5:1107:U:H2'	53:5:1108:A:C8	2.52	0.44
53:5:1332:U:H3	53:5:1338:A:H62	1.65	0.44
53:5:1415:G:C6	53:5:1437:A:N1	2.85	0.44
53:5:1459:U:H2'	53:5:1460:U:C6	2.51	0.44
2:1:20:LYS:NZ	51:3:666:G:OP1	2.32	0.44
9:F:35:LYS:HG3	53:5:1348:G:H5''	1.99	0.44
9:F:92:GLN:OE1	9:F:92:GLN:N	2.50	0.44
10:G:9:LYS:HD2	53:5:822:A:H5'	2.00	0.44
11:H:57:THR:HG21	11:H:89:LEU:HD11	1.99	0.44
15:L:106:ALA:HA	53:5:943:C:OP1	2.18	0.44
19:P:74:ARG:NH2	53:5:230:G:H4'	2.28	0.44
22:S:48:TYR:CE1	22:S:69:LYS:HB2	2.52	0.44
29:e:65:LYS:NZ	51:3:2758:A:OP2	2.38	0.44
37:m:77:GLN:H	37:m:77:GLN:CD	2.25	0.44
40:p:1:MET:SD	40:p:1:MET:N	2.86	0.44
51:3:173:C:H2'	51:3:174:A:H8	1.82	0.44
51:3:208:A:H4'	51:3:209:G:H4'	2.00	0.44
51:3:892:G:H2'	51:3:893:A:C8	2.48	0.44
51:3:1370:A:O2'	51:3:1372:U:OP2	2.34	0.44
51:3:1630:A:H2'	51:3:1631:A:C8	2.52	0.44
51:3:1633:C:H2'	51:3:1634:A:C8	2.53	0.44
51:3:2123:A:H5'	51:3:2124:A:C8	2.52	0.44
53:5:421:G:H2'	53:5:422:A:C8	2.51	0.44
53:5:519:G:C6	53:5:527:G:N1	2.86	0.44
53:5:568:G:H2'	53:5:569:U:C6	2.52	0.44
53:5:568:G:H5'	53:5:817:U:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:656:U:H2'	53:5:657:G:H8	1.82	0.44
53:5:999:C:N4	53:5:1028:C:O2	2.44	0.44
53:5:1018:U:H3'	53:5:1019:G:H8	1.82	0.44
53:5:1299:C:H2'	53:5:1300:C:C6	2.52	0.44
6:C:22:ASN:OD1	6:C:23:LYS:N	2.50	0.44
34:j:30:LYS:NZ	34:j:37:ASP:OD1	2.47	0.44
34:j:77:LEU:HD13	34:j:122:VAL:HG11	1.99	0.44
34:j:88:LYS:HG3	34:j:89:GLU:N	2.29	0.44
36:l:37:THR:OG1	36:l:128:THR:OG1	2.22	0.44
45:u:39:LYS:HD3	45:u:39:LYS:HA	1.84	0.44
51:3:984:C:O2'	51:3:1020:G:O2'	2.26	0.44
51:3:1432:C:H2'	51:3:1433:U:C6	2.53	0.44
51:3:1590:U:H2'	51:3:1591:C:C6	2.53	0.44
51:3:1932:C:H2'	51:3:1933:U:C6	2.53	0.44
53:5:140:U:H2'	53:5:141:A:H8	1.83	0.44
53:5:140:U:C2	53:5:154:G:N2	2.86	0.44
53:5:660:A:H61	53:5:739:G:H1	1.64	0.44
53:5:912:G:H2'	53:5:913:A:C8	2.52	0.44
53:5:1179:A:H2'	53:5:1180:U:O4'	2.18	0.44
53:5:1460:U:H2'	53:5:1461:G:H8	1.83	0.44
6:C:7:ILE:HG12	6:C:18:LEU:HD22	2.00	0.44
11:H:57:THR:OG1	11:H:58:ASP:N	2.50	0.44
40:p:60:TRP:HA	40:p:96:GLU:OE1	2.18	0.44
45:u:38:LYS:HD3	45:u:38:LYS:HA	1.77	0.44
51:3:137:U:H2'	51:3:138:U:C6	2.52	0.44
51:3:1187:C:H2'	51:3:1188:C:H6	1.83	0.44
51:3:1445:U:H2'	51:3:1446:G:O4'	2.18	0.44
51:3:1712:A:C2	51:3:1713:U:C5	3.06	0.44
51:3:1790:U:O2'	51:3:2615:G:O2'	2.33	0.44
51:3:1927:C:H2'	51:3:1928:G:H8	1.83	0.44
51:3:1956:G:HO2'	53:5:1394:G:HO2'	1.64	0.44
51:3:2173:G:H3'	51:3:2174:G:C8	2.52	0.44
51:3:2215:C:H2'	51:3:2216:U:C6	2.53	0.44
51:3:2408:G:H2'	51:3:2409:U:O4'	2.18	0.44
51:3:2853:U:H4'	51:3:2854:A:H5'	2.00	0.44
51:3:2857:C:H2'	51:3:2858:A:C8	2.52	0.44
51:3:2872:A:H2'	51:3:2873:G:C8	2.53	0.44
53:5:8:G:N3	53:5:294:A:N6	2.66	0.44
53:5:254:G:H2'	53:5:255:G:C8	2.52	0.44
53:5:654:U:C2	53:5:655:G:C8	3.06	0.44
53:5:760:U:H2'	53:5:761:U:H6	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:841:C:H2'	53:5:842:C:H6	1.83	0.44
54:7:29:C:H2'	54:7:30:G:C8	2.51	0.44
4:A:199:VAL:HG23	4:A:213:PHE:HB2	1.99	0.44
6:C:116:LEU:HG	6:C:121:HIS:HB2	2.00	0.44
7:D:137:TYR:OH	7:D:204:SER:HA	2.18	0.44
11:H:36:ASP:HB3	11:H:39:GLU:HG3	2.00	0.44
17:N:62:ARG:NH1	53:5:579:G:OP1	2.48	0.44
19:P:73:LYS:NZ	53:5:250:G:O3'	2.50	0.44
26:b:63:ASN:OD1	26:b:64:LYS:N	2.44	0.44
40:p:60:TRP:CZ2	40:p:93:VAL:HB	2.52	0.44
42:r:49:LYS:HE2	42:r:49:LYS:HB2	1.85	0.44
51:3:112:A:O2'	51:3:113:U:O4'	2.22	0.44
51:3:614:C:H2'	51:3:615:G:H8	1.83	0.44
51:3:1990:C:H2'	51:3:1991:U:C6	2.53	0.44
51:3:2209:U:H2'	51:3:2210:G:C8	2.53	0.44
51:3:2656:G:H2'	51:3:2657:C:C6	2.53	0.44
51:3:2796:C:H2'	51:3:2797:C:C6	2.53	0.44
53:5:212:G:H2'	53:5:213:U:C6	2.53	0.44
53:5:814:C:N4	53:5:816:A:N3	2.65	0.44
53:5:1312:G:H2'	53:5:1313:A:C4	2.53	0.44
53:5:1448:A:H2'	53:5:1449:G:C8	2.52	0.44
54:7:6:U:H2'	54:7:7:U:C6	2.53	0.44
5:B:11:ARG:NH2	5:B:180:THR:O	2.36	0.44
9:F:14:ASP:HB2	9:F:18:ASN:H	1.83	0.44
11:H:86:VAL:HG23	11:H:100:LEU:HD12	2.00	0.44
11:H:116:LYS:HA	11:H:123:ALA:HA	1.99	0.44
16:M:40:CYS:O	16:M:44:PHE:N	2.45	0.44
17:N:39:HIS:CE1	53:5:736:U:HO2'	2.35	0.44
25:a:110:ILE:HD11	25:a:149:ASN:HB2	2.00	0.44
26:b:124:LYS:NZ	51:3:2732:A:OP1	2.29	0.44
28:d:38:MET:HE1	28:d:152:PHE:CD1	2.53	0.44
33:i:35:ALA:O	33:i:39:ILE:HG13	2.18	0.44
34:j:64:ARG:NH2	34:j:100:GLY:HA3	2.32	0.44
41:q:38:VAL:HG13	41:q:50:LEU:HD12	2.00	0.44
44:t:3:ARG:O	44:t:76:LEU:HD11	2.18	0.44
44:t:18:LYS:NZ	51:3:344:A:OP1	2.40	0.44
48:x:21:ASN:OD1	48:x:22:SER:N	2.50	0.44
51:3:538:A:H4'	51:3:539:U:H5''	2.00	0.44
51:3:2088:U:H2'	51:3:2089:A:C8	2.52	0.44
51:3:2231:A:H3'	51:3:2232:G:H8	1.83	0.44
51:3:2548:G:H2'	51:3:2549:A:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2713:A:O2'	51:3:2856:G:OP1	2.35	0.44
52:4:29:C:H2'	52:4:30:U:C6	2.53	0.44
53:5:767:U:H1'	53:5:894:A:C2	2.49	0.44
53:5:899:U:H2'	53:5:900:G:O4'	2.17	0.44
53:5:1139:A:H2'	53:5:1140:A:H8	1.82	0.44
53:5:1140:A:H2'	53:5:1141:U:H5'	2.00	0.44
54:7:43:G:H3'	54:7:44:U:H5''	1.99	0.44
7:D:166:ILE:HD12	7:D:195:THR:OG1	2.18	0.44
15:L:86:TRP:HD1	21:R:76:PRO:HB3	1.83	0.44
22:S:8:GLU:O	22:S:12:ARG:NE	2.32	0.44
27:c:25:ILE:HA	27:c:117:SER:HB3	1.99	0.44
27:c:159:PHE:HB2	27:c:180:VAL:HG12	2.00	0.44
33:i:37:ASP:OD1	33:i:42:LYS:HB3	2.18	0.44
39:o:67:ARG:NH1	39:o:104:MET:HB3	2.33	0.44
40:p:43:LYS:HB3	40:p:43:LYS:HE2	1.83	0.44
51:3:32:G:H2'	51:3:33:C:C6	2.53	0.44
51:3:80:U:H2'	51:3:81:C:C6	2.52	0.44
51:3:174:A:H2'	51:3:175:A:H8	1.83	0.44
51:3:188:G:H2'	51:3:189:U:C6	2.53	0.44
51:3:757:A:H2'	51:3:758:C:C6	2.52	0.44
51:3:1671:C:H2'	51:3:1672:C:C6	2.52	0.44
51:3:1893:C:H2'	51:3:1894:U:H6	1.82	0.44
51:3:2321:C:H2'	51:3:2322:G:H8	1.82	0.44
53:5:503:G:H2'	53:5:504:A:H8	1.82	0.44
53:5:603:U:H2'	53:5:604:U:C6	2.53	0.44
53:5:1365:U:H2'	53:5:1366:U:C6	2.52	0.44
8:E:40:LEU:HD12	8:E:57:TYR:HB2	2.00	0.43
8:E:103:LYS:HD3	8:E:103:LYS:HA	1.73	0.43
11:H:103:LYS:HA	11:H:103:LYS:HD3	1.71	0.43
12:I:48:LEU:O	12:I:50:THR:HG23	2.18	0.43
30:f:94:THR:O	30:f:98:ILE:HG12	2.17	0.43
37:m:64:LYS:HE2	37:m:75:VAL:HG11	1.98	0.43
41:q:6:VAL:HG22	41:q:37:LYS:O	2.17	0.43
51:3:432:G:O6	51:3:433:A:N6	2.50	0.43
51:3:1289:G:H2'	51:3:1290:G:C8	2.53	0.43
51:3:1294:G:OP2	51:3:1295:A:H2'	2.18	0.43
51:3:1316:U:H5	51:3:1354:U:H3	1.64	0.43
51:3:1760:G:N2	51:3:1763:G:OP2	2.42	0.43
51:3:2384:A:H2'	51:3:2385:A:O4'	2.17	0.43
51:3:2561:G:H1	54:6:77:A:N6	2.16	0.43
51:3:2655:U:H2'	51:3:2656:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2895:A:O2'	51:3:2897:G:N2	2.51	0.43
53:5:940:G:H5'	53:5:1312:G:O6	2.17	0.43
53:5:1390:G:C6	53:5:1461:G:C6	3.06	0.43
54:6:6:U:H2'	54:6:7:U:C6	2.53	0.43
54:6:20:G:H5'	54:6:21:U:C5	2.53	0.43
4:A:82:ILE:HA	4:A:175:LEU:O	2.19	0.43
6:C:44:SER:HA	6:C:47:MET:SD	2.58	0.43
14:K:85:HIS:CD2	14:K:87:LEU:H	2.36	0.43
22:S:26:THR:HG22	53:5:1432:A:H5''	2.00	0.43
22:S:48:TYR:HE1	22:S:69:LYS:HB2	1.83	0.43
29:e:88:LYS:HD3	29:e:88:LYS:HA	1.80	0.43
35:k:81:ASN:O	35:k:85:ILE:HG12	2.18	0.43
38:n:60:LEU:HD23	38:n:60:LEU:HA	1.89	0.43
39:o:44:ARG:NH1	53:5:342:G:O3'	2.51	0.43
51:3:196:G:N2	51:3:837:A:O2'	2.51	0.43
51:3:758:C:H2'	51:3:759:U:C6	2.54	0.43
51:3:1202:A:H2'	51:3:1203:G:H8	1.83	0.43
51:3:1755:A:H2'	51:3:1756:A:C8	2.53	0.43
51:3:2565:G:H2'	51:3:2566:C:C6	2.52	0.43
51:3:2601:U:H2'	51:3:2602:C:H6	1.83	0.43
51:3:2649:G:H2'	51:3:2650:A:C8	2.53	0.43
53:5:47:G:OP1	53:5:303:A:H4'	2.18	0.43
53:5:91:C:H2'	53:5:92:G:O4'	2.17	0.43
53:5:265:U:H2'	53:5:266:A:C8	2.52	0.43
53:5:827:C:H2'	53:5:828:U:C6	2.53	0.43
53:5:882:U:H5''	53:5:883:A:H2'	1.99	0.43
53:5:1262:A:H2'	53:5:1263:A:H8	1.83	0.43
1:0:26:SER:OG	51:3:718:U:OP1	2.35	0.43
2:1:5:SER:HB2	2:1:8:LYS:HE2	1.99	0.43
8:E:9:VAL:HG11	8:E:22:ASN:OD1	2.18	0.43
9:F:19:ASN:ND2	9:F:22:VAL:HG23	2.33	0.43
17:N:30:THR:HA	17:N:60:ARG:HH11	1.84	0.43
18:O:13:ILE:HD13	18:O:66:LEU:HD23	1.99	0.43
35:k:134:GLN:HE21	51:3:673:A:H5'	1.83	0.43
36:l:20:LYS:HA	36:l:99:GLN:NE2	2.33	0.43
40:p:23:SER:HB2	40:p:28:HIS:HB3	2.00	0.43
51:3:275:A:H2'	51:3:276:A:N3	2.33	0.43
51:3:1426:C:H2'	51:3:1427:C:C6	2.53	0.43
51:3:1671:C:H5'	51:3:1767:A:O2'	2.17	0.43
51:3:1834:U:H2'	51:3:1835:G:O4'	2.18	0.43
51:3:2458:A:OP1	51:3:2505:A:O2'	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:133:G:H2'	53:5:134:G:C8	2.54	0.43
53:5:669:U:H2'	53:5:670:G:H8	1.83	0.43
53:5:860:C:C4	53:5:861:A:H1'	2.53	0.43
53:5:941:A:H2'	53:5:942:G:H8	1.83	0.43
53:5:1197:G:OP1	53:5:1295:U:O2'	2.25	0.43
10:G:68:ARG:HG3	10:G:68:ARG:NH1	2.32	0.43
29:e:21:GLN:N	29:e:24:HIS:O	2.44	0.43
30:f:47:ARG:HH22	30:f:51:LEU:HB2	1.83	0.43
51:3:214:C:H2'	51:3:215:A:H8	1.81	0.43
51:3:235:U:H2'	51:3:236:G:O4'	2.18	0.43
51:3:388:U:H2'	51:3:389:C:H6	1.82	0.43
51:3:942:A:H2'	51:3:943:A:O4'	2.18	0.43
51:3:1982:G:H2'	51:3:1983:U:O4'	2.18	0.43
51:3:2013:C:H2'	51:3:2014:U:C6	2.53	0.43
51:3:2125:U:O4	51:3:2156:G:H1'	2.17	0.43
51:3:2376:C:H2'	51:3:2377:A:C8	2.52	0.43
51:3:2470:C:H2'	51:3:2471:U:H6	1.84	0.43
51:3:2842:G:C4	51:3:2843:G:C8	3.05	0.43
53:5:337:C:H2'	53:5:338:C:H6	1.83	0.43
53:5:1287:G:H2'	53:5:1288:C:C6	2.54	0.43
8:E:32:VAL:HG11	8:E:64:GLY:HA2	2.00	0.43
8:E:97:LEU:HG	8:E:99:SER:H	1.82	0.43
10:G:19:LEU:HD21	10:G:139:ALA:HB1	1.99	0.43
11:H:110:LYS:HB3	53:5:1108:A:H1'	1.99	0.43
11:H:115:ARG:NH2	53:5:1343:G:H5'	2.33	0.43
15:L:95:LEU:HB3	15:L:110:LYS:HG2	2.00	0.43
40:p:2:ARG:HB2	51:3:1278:G:C5	2.53	0.43
40:p:32:LYS:O	51:3:1282:G:N2	2.52	0.43
40:p:50:ARG:NH1	51:3:1029:A:OP2	2.52	0.43
43:s:9:LYS:H	43:s:30:VAL:HG12	1.84	0.43
45:u:41:ASP:HA	45:u:81:VAL:HG13	2.01	0.43
51:3:38:G:H4'	51:3:487:C:C4	2.54	0.43
51:3:39:C:H2'	51:3:40:A:C8	2.53	0.43
51:3:383:U:H2'	51:3:384:G:C8	2.54	0.43
51:3:522:C:H2'	51:3:523:A:H8	1.83	0.43
51:3:627:U:H2'	51:3:628:A:C8	2.54	0.43
51:3:758:C:C2	51:3:759:U:C5	3.06	0.43
51:3:1539:U:H2'	51:3:1540:G:H8	1.83	0.43
51:3:1981:U:H2'	51:3:1982:G:C8	2.54	0.43
51:3:2072:C:H2'	51:3:2073:C:C6	2.52	0.43
51:3:2094:A:H2'	51:3:2095:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2644:U:H2'	51:3:2645:U:C6	2.53	0.43
51:3:2797:C:H2'	51:3:2798:A:C5	2.54	0.43
53:5:421:G:H2'	53:5:422:A:H8	1.84	0.43
53:5:486:C:H2'	53:5:487:A:H8	1.82	0.43
53:5:594:A:H2'	53:5:595:G:H8	1.83	0.43
53:5:715:A:OP2	53:5:717:C:N4	2.41	0.43
53:5:902:A:H2'	53:5:903:A:H8	1.82	0.43
53:5:911:G:H2'	53:5:912:G:C8	2.52	0.43
53:5:1088:C:H2'	53:5:1089:C:C6	2.54	0.43
53:5:1160:G:H2'	53:5:1161:G:C8	2.49	0.43
53:5:1266:U:H2'	53:5:1267:G:C8	2.54	0.43
53:5:1385:A:H2'	53:5:1386:C:C6	2.54	0.43
6:C:53:GLN:HB3	6:C:199:TRP:HD1	1.84	0.43
9:F:25:ILE:HG13	9:F:61:PHE:HZ	1.82	0.43
14:K:69:ARG:HD3	14:K:75:GLU:HG2	2.01	0.43
26:b:30:TYR:HA	26:b:190:LEU:HD23	2.00	0.43
27:c:52:ILE:HD11	27:c:92:GLY:HA3	2.00	0.43
34:j:17:LYS:HB3	34:j:17:LYS:HE2	1.83	0.43
35:k:22:ARG:NE	51:3:1280:G:OP2	2.50	0.43
38:n:11:ARG:O	38:n:14:ARG:HG2	2.19	0.43
41:q:89:TYR:OH	51:3:583:U:OP1	2.33	0.43
51:3:69:U:C2	51:3:70:G:C8	3.06	0.43
51:3:142:A:O2'	51:3:143:A:O4'	2.28	0.43
51:3:603:G:H1'	51:3:1019:A:N1	2.33	0.43
51:3:622:U:H2'	51:3:623:A:C8	2.53	0.43
51:3:1391:U:H3	51:3:1396:A:H61	1.65	0.43
51:3:1920:A:H4'	51:3:1921:C:H5''	2.01	0.43
51:3:2309:A:H2'	51:3:2310:C:H6	1.83	0.43
53:5:424:U:H3'	53:5:425:G:C8	2.53	0.43
53:5:1129:C:H2'	53:5:1130:G:O4'	2.19	0.43
53:5:1224:C:O2	53:5:1262:A:N6	2.52	0.43
53:5:1248:U:H2'	53:5:1249:G:O4'	2.19	0.43
53:5:1298:U:H2'	53:5:1299:C:C6	2.54	0.43
6:C:2:LYS:HA	6:C:2:LYS:HD3	1.88	0.43
6:C:60:MET:HE2	6:C:60:MET:HB3	1.74	0.43
12:I:76:HIS:HD1	12:I:78:ARG:HH12	1.67	0.43
31:g:54:ILE:HG23	31:g:59:LEU:HD21	2.00	0.43
31:g:112:TYR:HD2	31:g:116:ARG:H	1.65	0.43
38:n:50:ILE:HG22	38:n:51:VAL:N	2.34	0.43
51:3:130:C:H2'	51:3:131:C:C6	2.53	0.43
51:3:528:U:H2'	51:3:529:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:749:U:H1'	51:3:752:C:H5	1.83	0.43
51:3:757:A:H2'	51:3:758:C:H6	1.82	0.43
51:3:1083:A:H2'	51:3:1084:C:C6	2.54	0.43
51:3:2081:U:O2'	51:3:2605:G:H1'	2.19	0.43
51:3:2580:A:OP1	51:3:2582:G:H4'	2.18	0.43
53:5:409:G:H22	53:5:426:U:P	2.41	0.43
53:5:419:A:H4'	53:5:420:A:OP2	2.19	0.43
53:5:470:U:H2'	53:5:471:A:H8	1.84	0.43
53:5:818:A:H2'	53:5:819:G:H8	1.83	0.43
4:A:112:TRP:CE2	4:A:116:THR:HB	2.53	0.43
5:B:120:ALA:HB1	5:B:190:GLU:HB2	2.00	0.43
9:F:17:PHE:HZ	9:F:58:LEU:HA	1.83	0.43
9:F:101:ARG:HH12	53:5:1351:U:H5'	1.84	0.43
13:J:91:ARG:HA	13:J:91:ARG:HH21	1.82	0.43
19:P:73:LYS:HZ1	53:5:251:G:P	2.42	0.43
22:S:66:ARG:HH22	53:5:171:A:H4'	1.82	0.43
25:a:44:HIS:CE1	51:3:1820:U:H5''	2.54	0.43
25:a:124:SER:OG	25:a:125:GLU:N	2.52	0.43
26:b:70:PHE:CD2	26:b:77:PRO:HA	2.54	0.43
31:g:108:PHE:HB2	31:g:120:SER:HB2	1.99	0.43
32:h:127:THR:OG1	51:3:1094:G:N3	2.50	0.43
33:i:34:LYS:HD2	33:i:146:SER:HA	2.00	0.43
35:k:114:LEU:HB3	35:k:131:VAL:HG22	2.01	0.43
37:m:71:ASN:HD22	51:3:1306:G:H21	1.66	0.43
44:t:98:ASN:OD1	44:t:99:LYS:N	2.43	0.43
51:3:412:A:H2'	51:3:413:G:H8	1.84	0.43
51:3:433:A:H2'	51:3:434:G:C8	2.54	0.43
51:3:1675:A:H2'	51:3:1676:G:O4'	2.19	0.43
51:3:2240:U:H2'	51:3:2241:A:H8	1.83	0.43
51:3:2522:U:H2'	51:3:2523:C:C6	2.54	0.43
9:F:35:LYS:NZ	53:5:1349:A:OP1	2.52	0.43
14:K:27:ASN:OD1	14:K:36:THR:OG1	2.22	0.43
15:L:108:THR:OG1	53:5:942:G:O3'	2.37	0.43
22:S:37:LYS:HB3	22:S:37:LYS:HE2	1.73	0.43
26:b:162:GLY:HA3	33:i:83:TYR:HE2	1.83	0.43
27:c:139:LYS:NZ	51:3:354:C:OP1	2.33	0.43
29:e:44:LEU:HD22	29:e:68:HIS:HA	2.01	0.43
41:q:57:CYS:HB3	41:q:94:VAL:HG12	2.00	0.43
47:w:56:THR:HG22	51:3:74:U:H3	1.83	0.43
51:3:591:G:H2'	51:3:592:G:H8	1.83	0.43
51:3:741:A:H61	51:3:760:G:H1'	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1591:C:H2'	51:3:1592:A:N7	2.33	0.43
51:3:2812:U:O2'	51:3:2813:A:H5''	2.19	0.43
53:5:305:A:H2'	53:5:306:G:H8	1.84	0.43
53:5:337:C:H2'	53:5:338:C:C6	2.54	0.43
53:5:1072:G:H2'	53:5:1073:A:C8	2.54	0.43
5:B:212:THR:O	5:B:212:THR:HG22	2.19	0.43
6:C:73:ARG:CZ	53:5:619:A:H1'	2.49	0.43
9:F:49:ILE:HG23	9:F:124:ILE:HD11	2.00	0.43
10:G:81:ILE:O	10:G:81:ILE:HG13	2.18	0.43
13:J:115:LYS:HG3	23:T:35:HIS:CD2	2.54	0.43
25:a:179:TYR:HA	25:a:192:PHE:O	2.19	0.43
27:c:189:ARG:HA	27:c:192:MET:HE2	1.99	0.43
29:e:82:VAL:HA	29:e:139:ILE:HD11	2.01	0.43
29:e:161:LYS:HE3	29:e:163:LYS:HD2	2.01	0.43
30:f:15:ARG:HG2	30:f:16:PHE:H	1.84	0.43
31:g:26:ILE:HD11	31:g:110:CYS:HB2	2.01	0.43
31:g:57:ASN:ND2	51:3:1082:A:OP1	2.43	0.43
35:k:36:GLN:O	35:k:37:LYS:HB2	2.19	0.43
51:3:612:G:C2	51:3:1292:A:C6	3.07	0.43
51:3:719:G:N2	51:3:823:A:OP2	2.39	0.43
51:3:1142:G:H2'	51:3:1143:U:C6	2.54	0.43
51:3:1317:C:H2'	51:3:1318:U:C6	2.53	0.43
51:3:1615:G:H2'	51:3:1616:G:C8	2.53	0.43
51:3:1834:U:H5'	51:3:1978:U:H5''	2.00	0.43
51:3:2562:U:H2'	51:3:2563:U:C6	2.54	0.43
51:3:2859:U:H2'	51:3:2860:A:C8	2.52	0.43
53:5:74:U:H2'	53:5:75:A:C8	2.53	0.43
53:5:934:G:H2'	53:5:935:U:C6	2.54	0.43
53:5:973:A:N7	53:5:1335:G:N2	2.67	0.43
53:5:1230:G:H3'	53:5:1254:A:H61	1.84	0.43
54:7:20:G:H5'	54:7:21:U:C5	2.53	0.43
9:F:2:ARG:HA	9:F:2:ARG:HD3	1.73	0.42
9:F:98:LEU:O	9:F:102:TRP:CD1	2.72	0.42
10:G:44:ILE:HA	10:G:47:ILE:HG12	2.01	0.42
15:L:22:ILE:HG22	15:L:24:GLY:H	1.84	0.42
15:L:101:ARG:HH11	15:L:103:ARG:HB3	1.83	0.42
18:O:3:MET:N	18:O:3:MET:SD	2.92	0.42
20:Q:43:PHE:CD2	20:Q:82:HIS:HB3	2.54	0.42
21:R:7:LYS:HA	21:R:7:LYS:HD2	1.82	0.42
22:S:10:ARG:NH1	53:5:92:G:O6	2.52	0.42
22:S:11:LEU:O	22:S:15:ILE:HG12	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c:71:THR:HG22	27:c:73:LYS:H	1.84	0.42
28:d:38:MET:HE1	28:d:152:PHE:HD1	1.83	0.42
29:e:19:ASN:OD1	29:e:26:ALA:HB3	2.19	0.42
31:g:41:ARG:HH12	31:g:50:LYS:HE3	1.84	0.42
35:k:139:VAL:HG11	35:k:146:VAL:HG23	2.00	0.42
40:p:27:ARG:NH1	51:3:2026:A:N3	2.67	0.42
40:p:40:GLN:NE2	40:p:44:TYR:OH	2.37	0.42
46:v:29:TRP:NE1	51:3:2240:U:OP1	2.52	0.42
51:3:323:A:H2'	51:3:324:C:C6	2.54	0.42
51:3:381:A:H2'	51:3:382:U:H6	1.84	0.42
51:3:663:A:O3'	51:3:664:G:H8	2.02	0.42
51:3:683:G:H2'	51:3:684:A:H8	1.84	0.42
51:3:705:A:H4'	51:3:706:C:H5'	2.01	0.42
51:3:1039:G:H2'	51:3:1040:U:C6	2.54	0.42
51:3:1292:A:C6	51:3:1293:U:C4	3.07	0.42
51:3:1433:U:H2'	51:3:1434:U:C6	2.53	0.42
51:3:1802:C:H2'	51:3:1803:U:H6	1.83	0.42
51:3:2212:U:H2'	51:3:2213:A:C8	2.54	0.42
51:3:2615:G:H2'	51:3:2616:G:C8	2.53	0.42
51:3:2844:U:H2'	51:3:2845:U:H6	1.82	0.42
53:5:461:G:H3'	53:5:462:G:H8	1.84	0.42
53:5:979:C:H2'	53:5:980:C:C6	2.54	0.42
53:5:1128:G:H2'	53:5:1129:C:H6	1.84	0.42
53:5:1377:C:H2'	53:5:1378:C:O4'	2.19	0.42
53:5:1481:U:O2'	53:5:1482:A:H5'	2.19	0.42
4:A:30:VAL:HB	4:A:55:HIS:HA	2.01	0.42
8:E:92:ARG:NH1	20:Q:88:LYS:HB3	2.34	0.42
21:R:4:SER:H	21:R:8:GLY:HA2	1.83	0.42
26:b:148:GLN:OE1	51:3:2059:G:H4'	2.18	0.42
26:b:160:PHE:CD1	33:i:84:ILE:HD11	2.53	0.42
27:c:8:LYS:HE2	27:c:8:LYS:HB2	1.86	0.42
27:c:183:LEU:HD22	27:c:203:VAL:HG23	2.01	0.42
38:n:11:ARG:HG3	38:n:95:GLY:HA2	2.01	0.42
51:3:22:U:H2'	51:3:23:A:C8	2.54	0.42
51:3:388:U:H2'	51:3:389:C:C6	2.54	0.42
51:3:756:A:C2	51:3:757:A:C5	3.06	0.42
51:3:1318:U:H2'	51:3:1319:C:C6	2.54	0.42
51:3:1497:A:H2'	51:3:1498:U:H6	1.84	0.42
51:3:1633:C:H2'	51:3:1634:A:H8	1.85	0.42
51:3:1800:C:H2'	51:3:1801:U:H6	1.84	0.42
51:3:1802:C:H2'	51:3:1803:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2487:U:OP1	51:3:2545:U:O2'	2.36	0.42
51:3:2522:U:H2'	51:3:2523:C:H6	1.84	0.42
51:3:2665:A:H62	51:3:2672:G:N2	2.13	0.42
53:5:314:G:O2'	53:5:1443:A:O3'	2.36	0.42
53:5:1289:U:C2	53:5:1297:G:N1	2.87	0.42
7:D:123:HIS:O	7:D:126:LEU:HG	2.20	0.42
10:G:21:LYS:HB3	10:G:33:VAL:HG21	2.01	0.42
13:J:67:VAL:HG22	13:J:72:MET:HB2	2.01	0.42
15:L:65:ILE:HB	15:L:68:ASP:HB2	2.01	0.42
19:P:74:ARG:HG3	53:5:231:U:H5'	2.01	0.42
22:S:63:ASN:O	22:S:67:ARG:HG3	2.19	0.42
29:e:89:LYS:HD3	29:e:168:PHE:CD1	2.55	0.42
36:l:31:GLU:H	36:l:107:ALA:HB2	1.84	0.42
40:p:52:LYS:HG3	40:p:53:LYS:N	2.33	0.42
40:p:68:LEU:HD12	40:p:73:MET:SD	2.60	0.42
43:s:38:THR:HG21	51:3:145:A:H4'	2.01	0.42
44:t:49:ASP:OD2	44:t:58:GLN:NE2	2.52	0.42
51:3:347:C:H2'	51:3:348:A:H8	1.84	0.42
51:3:348:A:N6	51:3:349:G:O6	2.52	0.42
51:3:710:A:H2'	51:3:711:A:C8	2.53	0.42
51:3:727:C:HO2'	51:3:1382:A:HO2'	1.61	0.42
51:3:1550:G:H2'	51:3:1551:U:H6	1.84	0.42
51:3:1605:A:H2'	51:3:1606:A:H8	1.84	0.42
51:3:1699:A:N1	51:3:2003:C:N4	2.68	0.42
51:3:1930:U:H2'	51:3:1931:C:C6	2.54	0.42
51:3:2843:G:H2'	51:3:2844:U:C6	2.54	0.42
53:5:354:U:C2	53:5:355:A:C8	3.07	0.42
53:5:1231:U:H5'	53:5:1233:G:N3	2.34	0.42
53:5:1283:G:H2'	53:5:1284:A:H8	1.83	0.42
2:1:53:LYS:NZ	51:3:976:C:OP2	2.43	0.42
7:D:90:VAL:HG11	7:D:115:ILE:HD13	2.00	0.42
16:M:29:ARG:HG2	16:M:31:ARG:H	1.84	0.42
25:a:92:ARG:NH1	51:3:1824:G:H5''	2.35	0.42
29:e:4:ILE:HD12	51:3:2756:A:H5'	2.01	0.42
29:e:70:THR:HG21	51:3:2765:A:N1	2.34	0.42
30:f:79:PHE:HZ	30:f:100:GLN:HB3	1.84	0.42
33:i:36:ALA:HB2	33:i:111:MET:HB3	2.02	0.42
45:u:55:ARG:HH21	51:3:2395:U:H4'	1.84	0.42
51:3:341:G:H21	51:3:364:A:N6	2.17	0.42
51:3:1962:U:C5	51:3:2560:U:H1'	2.55	0.42
51:3:2088:U:H2'	51:3:2089:A:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2180:U:H3'	51:3:2181:A:C8	2.54	0.42
53:5:319:U:H3'	53:5:320:G:C8	2.54	0.42
53:5:366:C:H2'	53:5:367:A:C8	2.55	0.42
53:5:398:G:H4'	53:5:619:A:C2	2.55	0.42
53:5:673:A:H2'	53:5:674:U:H6	1.83	0.42
53:5:980:C:H2'	53:5:981:U:H6	1.84	0.42
53:5:1109:U:H2'	53:5:1110:C:C6	2.54	0.42
53:5:1128:G:H2'	53:5:1129:C:C6	2.53	0.42
53:5:1146:A:H2'	53:5:1147:U:C6	2.54	0.42
4:A:202:CYS:N	4:A:215:ILE:O	2.52	0.42
22:S:63:ASN:C	22:S:63:ASN:HD22	2.26	0.42
26:b:144:GLN:NE2	26:b:166:SER:OG	2.53	0.42
32:h:13:ASN:HD21	32:h:52:PRO:HA	1.85	0.42
34:j:22:ILE:HD12	51:3:1959:A:N7	2.34	0.42
36:l:77:LYS:HZ1	36:l:81:VAL:HG11	1.84	0.42
44:t:14:THR:HA	44:t:18:LYS:HE3	2.01	0.42
46:v:18:ARG:HA	46:v:23:THR:O	2.20	0.42
51:3:426:U:O2'	51:3:427:A:O5'	2.35	0.42
51:3:534:U:H2'	51:3:535:G:O4'	2.19	0.42
51:3:888:A:H2'	51:3:889:G:C8	2.54	0.42
51:3:1148:U:H2'	51:3:1149:G:C8	2.54	0.42
51:3:1464:G:N1	51:3:1591:C:O2	2.53	0.42
51:3:2093:U:H2'	51:3:2094:A:C8	2.55	0.42
51:3:2520:C:H2'	51:3:2521:A:O4'	2.20	0.42
51:3:2832:G:H2'	51:3:2833:A:H8	1.84	0.42
53:5:36:G:C5	53:5:37:C:N3	2.88	0.42
53:5:134:G:H2'	53:5:135:A:H8	1.83	0.42
53:5:357:G:H2'	53:5:358:G:O4'	2.19	0.42
53:5:366:C:H2'	53:5:367:A:H8	1.85	0.42
53:5:471:A:H2'	53:5:472:G:C8	2.54	0.42
53:5:790:U:O2	53:5:1491:A:O2'	2.31	0.42
53:5:809:G:OP1	53:5:897:A:H1'	2.19	0.42
53:5:1096:A:H2'	53:5:1097:G:H8	1.85	0.42
53:5:1468:A:O2'	55:Y:19:U:O2'	2.33	0.42
13:J:93:PHE:HB3	13:J:98:LEU:HD23	2.00	0.42
19:P:70:SER:HG	53:5:250:G:P	2.41	0.42
21:R:34:TRP:CD1	21:R:34:TRP:N	2.87	0.42
25:a:190:ARG:HG2	25:a:191:LYS:N	2.34	0.42
32:h:80:ALA:HB3	32:h:82:LEU:HD22	2.00	0.42
33:i:101:ASP:HB2	33:i:127:VAL:HG23	2.01	0.42
51:3:696:U:H2'	51:3:697:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:874:U:H2'	51:3:875:G:C8	2.55	0.42
51:3:914:G:H2'	51:3:936:G:H22	1.84	0.42
51:3:1186:A:H2'	51:3:1187:C:C6	2.54	0.42
51:3:1362:C:H2'	51:3:1363:C:C6	2.55	0.42
51:3:1415:A:C6	51:3:1429:G:N1	2.88	0.42
51:3:1423:A:H2'	51:3:1426:C:H41	1.85	0.42
51:3:1441:A:H2'	51:3:1442:G:H8	1.84	0.42
51:3:1459:A:H2'	51:3:1460:G:C8	2.54	0.42
51:3:1931:C:H2'	51:3:1932:C:O4'	2.19	0.42
51:3:2700:C:H2'	51:3:2701:A:H8	1.85	0.42
53:5:201:G:H2'	53:5:202:A:H8	1.83	0.42
53:5:319:U:O4	53:5:323:A:N7	2.52	0.42
5:B:13:GLY:HA3	16:M:57:LYS:HE2	2.01	0.42
5:B:29:GLN:O	5:B:33:TRP:HD1	2.02	0.42
10:G:47:ILE:HG21	10:G:122:VAL:O	2.20	0.42
25:a:41:LEU:HD21	25:a:66:TYR:HB2	2.01	0.42
33:i:116:ARG:HE	51:3:563:A:H5''	1.83	0.42
34:j:43:VAL:HG23	34:j:55:GLY:H	1.84	0.42
40:p:73:MET:HE1	40:p:78:PHE:HB2	2.01	0.42
42:r:18:ARG:HG2	42:r:22:GLN:HE22	1.85	0.42
51:3:42:U:H2'	51:3:43:A:H8	1.83	0.42
51:3:259:A:O2'	51:3:422:A:OP1	2.38	0.42
51:3:474:U:H2'	51:3:475:A:C8	2.55	0.42
51:3:549:A:H1'	51:3:614:C:O2'	2.19	0.42
51:3:557:G:H2'	51:3:558:C:C6	2.55	0.42
51:3:1345:G:H2'	51:3:1346:G:H8	1.84	0.42
51:3:1442:G:H2'	51:3:1443:A:C8	2.54	0.42
51:3:1544:G:O6	51:3:1545:A:N6	2.53	0.42
51:3:1625:G:H2'	51:3:1626:C:C6	2.54	0.42
51:3:1638:C:H2'	51:3:1639:C:C6	2.55	0.42
51:3:1803:U:H2'	51:3:1804:A:C8	2.55	0.42
51:3:1887:U:H2'	51:3:1888:U:C6	2.55	0.42
51:3:2506:C:O2'	51:3:2507:C:OP1	2.33	0.42
51:3:2820:G:H2'	51:3:2821:U:C6	2.55	0.42
53:5:266:A:H2'	53:5:267:C:C6	2.55	0.42
53:5:298:G:H2'	53:5:299:U:O4'	2.19	0.42
53:5:1197:G:OP2	53:5:1296:C:N4	2.53	0.42
7:D:96:ASN:ND2	7:D:100:LYS:HB2	2.34	0.42
18:O:21:LYS:HB3	53:5:96:G:H5''	2.02	0.42
20:Q:93:ALA:HB1	20:Q:98:LEU:CB	2.48	0.42
22:S:63:ASN:O	22:S:66:ARG:HG2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:g:120:SER:HA	31:g:123:LEU:HB3	2.02	0.42
33:i:113:PRO:HG3	51:3:1043:C:O3'	2.20	0.42
35:k:77:TRP:CE3	35:k:113:LYS:HB2	2.55	0.42
38:n:51:VAL:HB	52:4:103:C:O2'	2.20	0.42
39:o:53:LEU:HD23	39:o:65:ILE:HG21	2.01	0.42
44:t:40:ASN:HB3	44:t:67:ALA:HB3	2.01	0.42
51:3:500:U:O4	51:3:823:A:C4	2.73	0.42
51:3:549:A:O2'	51:3:550:A:O4'	2.29	0.42
51:3:1188:C:H2'	51:3:1189:G:C8	2.55	0.42
51:3:1489:G:H2'	51:3:1490:G:C8	2.55	0.42
51:3:1610:U:H2'	51:3:1611:C:C6	2.55	0.42
51:3:1738:G:H2'	51:3:1739:G:H8	1.84	0.42
53:5:41:C:H2'	53:5:42:G:C8	2.54	0.42
5:B:29:GLN:OE1	5:B:29:GLN:N	2.53	0.42
5:B:34:LEU:HD21	16:M:53:ILE:HG13	2.01	0.42
5:B:73:GLN:C	5:B:75:ALA:H	2.28	0.42
14:K:62:LEU:HB3	53:5:518:A:OP1	2.20	0.42
17:N:30:THR:HG21	17:N:81:THR:HG22	2.02	0.42
21:R:64:ASP:OD1	21:R:64:ASP:N	2.52	0.42
25:a:248:PRO:HB3	51:3:1978:U:H1'	2.02	0.42
39:o:98:ARG:HG3	51:3:2852:G:OP1	2.19	0.42
40:p:36:GLN:HE22	51:3:596:G:H21	1.68	0.42
51:3:141:A:H2'	51:3:142:A:C5	2.55	0.42
51:3:858:A:H2'	51:3:859:G:H8	1.85	0.42
51:3:1176:U:O2	51:3:1177:A:N6	2.52	0.42
51:3:1439:U:H2'	51:3:1440:U:C6	2.55	0.42
51:3:1773:A:H2'	51:3:1774:G:H8	1.84	0.42
51:3:1822:A:H4'	51:3:1823:U:H5'	2.02	0.42
51:3:1833:G:H2'	51:3:1834:U:H6	1.85	0.42
51:3:2601:U:H2'	51:3:2602:C:C6	2.55	0.42
51:3:2641:A:H2'	51:3:2642:G:O4'	2.20	0.42
53:5:961:G:H1	53:5:1375:C:N4	2.18	0.42
53:5:993:C:N4	53:5:1034:G:H22	2.18	0.42
9:F:34:LYS:HE3	9:F:34:LYS:HB2	1.68	0.42
10:G:48:LEU:HD11	10:G:54:LEU:HD22	2.01	0.42
28:d:27:GLN:HE21	28:d:27:GLN:HB3	1.71	0.42
28:d:165:GLU:N	28:d:165:GLU:OE2	2.53	0.42
29:e:16:VAL:HG21	29:e:83:THR:HG22	2.02	0.42
29:e:91:ARG:HD3	29:e:168:PHE:HD1	1.84	0.42
39:o:40:LYS:HG2	39:o:41:GLU:H	1.84	0.42
51:3:150:U:H2'	51:3:151:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:343:A:N3	51:3:363:G:O2'	2.43	0.42
51:3:472:A:H2'	51:3:473:U:C6	2.55	0.42
51:3:569:U:H2'	51:3:570:C:C6	2.54	0.42
51:3:939:U:H2'	51:3:940:A:C8	2.55	0.42
51:3:1183:A:H2'	51:3:1184:U:C6	2.55	0.42
51:3:1229:U:H2'	51:3:1230:U:H6	1.85	0.42
51:3:2069:A:O2'	51:3:2070:C:H5'	2.20	0.42
51:3:2115:A:N3	51:3:2115:A:H2'	2.35	0.42
51:3:2339:G:N2	51:3:2393:C:N3	2.67	0.42
51:3:2554:U:H5''	51:3:2555:U:H5'	2.01	0.42
52:4:6:U:H2'	52:4:7:G:H8	1.85	0.42
53:5:944:A:H61	53:5:1207:U:H3	1.67	0.42
53:5:947:U:H4'	53:5:959:A:N1	2.35	0.42
53:5:1262:A:O2'	53:5:1326:C:O2'	2.34	0.42
53:5:1483:C:H2'	53:5:1484:C:C6	2.55	0.42
17:N:67:LEU:HD13	17:N:75:TYR:HB3	2.01	0.41
21:R:41:PHE:HB2	21:R:44:PHE:HD2	1.85	0.41
33:i:112:LEU:HD12	33:i:121:TRP:CZ3	2.54	0.41
37:m:68:LEU:HD23	37:m:69:ASN:N	2.35	0.41
38:n:79:ASP:HA	38:n:82:VAL:HG22	2.02	0.41
40:p:91:ARG:HB2	41:q:11:GLN:OE1	2.20	0.41
51:3:276:A:H5'	51:3:277:C:OP2	2.20	0.41
51:3:548:A:C6	51:3:549:A:N1	2.88	0.41
51:3:1696:C:O2'	51:3:2695:U:H5''	2.20	0.41
51:3:1851:U:H2'	51:3:1852:G:H8	1.84	0.41
51:3:2310:C:H2'	51:3:2311:G:C8	2.55	0.41
51:3:2397:G:H5''	51:3:2398:U:O4'	2.20	0.41
53:5:42:G:C6	53:5:398:G:C6	3.08	0.41
53:5:386:U:H2'	53:5:387:G:H8	1.84	0.41
53:5:409:G:O3'	53:5:425:G:N2	2.52	0.41
53:5:827:C:H2'	53:5:828:U:H6	1.85	0.41
53:5:1266:U:H2'	53:5:1267:G:H8	1.85	0.41
53:5:1409:A:H2'	53:5:1410:A:C8	2.54	0.41
6:C:27:LYS:HD3	6:C:27:LYS:HA	1.81	0.41
9:F:136:LYS:HB3	9:F:136:LYS:HE2	1.78	0.41
11:H:99:ILE:H	11:H:99:ILE:HD12	1.85	0.41
27:c:168:LEU:HG	27:c:180:VAL:HG11	2.02	0.41
27:c:175:ILE:HB	27:c:178:VAL:HG22	2.02	0.41
30:f:69:LYS:HE2	30:f:136:ALA:HA	2.01	0.41
34:j:88:LYS:CG	34:j:89:GLU:H	2.30	0.41
40:p:79:ILE:HA	40:p:82:LEU:HD12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:p:94:LEU:HD11	41:q:4:ILE:HG12	2.03	0.41
41:q:38:VAL:HG22	41:q:50:LEU:HD12	2.02	0.41
51:3:48:G:OP2	51:3:219:G:H5''	2.20	0.41
51:3:237:A:H2'	51:3:238:U:O4'	2.20	0.41
51:3:650:G:H2'	51:3:651:A:C8	2.55	0.41
51:3:760:G:O5'	51:3:760:G:H8	2.03	0.41
51:3:1457:A:H61	51:3:1598:U:H3	1.66	0.41
51:3:2173:G:H3'	51:3:2174:G:H8	1.85	0.41
51:3:2240:U:H2'	51:3:2241:A:C8	2.55	0.41
51:3:2770:U:H2'	51:3:2771:G:O4'	2.19	0.41
53:5:161:C:H2'	53:5:162:C:H6	1.85	0.41
53:5:843:C:H2'	53:5:844:U:C6	2.55	0.41
2:1:30:ALA:N	2:1:31:PRO:HD2	2.35	0.41
6:C:66:ILE:CD1	6:C:71:PHE:HB2	2.45	0.41
7:D:75:ARG:HE	7:D:75:ARG:HB2	1.70	0.41
11:H:6:TYR:HB2	11:H:21:LEU:HD12	2.01	0.41
12:I:46:LEU:HA	12:I:47:PRO:HD3	1.91	0.41
12:I:65:LYS:NZ	53:5:968:G:OP1	2.32	0.41
15:L:10:PRO:HB3	15:L:21:TYR:CE2	2.55	0.41
19:P:5:GLN:HB2	53:5:633:U:H5''	2.03	0.41
22:S:18:ASN:HD22	22:S:18:ASN:C	2.29	0.41
40:p:80:ASN:ND2	51:3:1186:A:O2'	2.49	0.41
40:p:91:ARG:HH22	51:3:1033:A:H5'	1.84	0.41
42:r:113:GLU:HA	42:r:116:GLU:HG2	2.01	0.41
51:3:847:C:H2'	51:3:848:U:C6	2.55	0.41
51:3:851:U:H2'	51:3:852:C:H6	1.84	0.41
51:3:985:A:N6	51:3:1005:G:O6	2.53	0.41
51:3:1036:A:H2'	51:3:1037:A:C8	2.55	0.41
51:3:1499:C:H2'	51:3:1500:A:C8	2.55	0.41
51:3:2600:G:H2'	51:3:2601:U:C6	2.55	0.41
51:3:2821:U:O2'	51:3:2841:A:H1'	2.20	0.41
53:5:597:C:N4	53:5:637:A:H61	2.18	0.41
53:5:949:G:H21	53:5:1202:A:H62	1.67	0.41
53:5:955:U:H4'	53:5:956:U:H5''	2.02	0.41
53:5:1066:U:H2'	53:5:1067:C:C6	2.55	0.41
6:C:59:ARG:O	6:C:63:MET:HG2	2.20	0.41
13:J:115:LYS:HE3	23:T:35:HIS:CE1	2.55	0.41
17:N:58:SER:OG	53:5:579:G:H5'	2.20	0.41
26:b:188:ASN:OD1	39:o:12:LEU:HD21	2.20	0.41
27:c:28:GLU:OE2	27:c:30:LYS:HE2	2.20	0.41
36:l:77:LYS:NZ	36:l:81:VAL:HG21	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:90:VAL:HG23	51:3:2386:A:H1'	2.02	0.41
50:z:31:LYS:HB3	50:z:49:GLU:OE2	2.20	0.41
51:3:412:A:H2'	51:3:413:G:C8	2.56	0.41
51:3:456:G:H2'	51:3:457:U:C6	2.55	0.41
51:3:675:U:H2'	51:3:676:U:C6	2.55	0.41
51:3:677:U:H5''	51:3:678:U:OP2	2.19	0.41
51:3:812:G:H2'	51:3:813:G:H8	1.86	0.41
51:3:1016:A:N6	51:3:1017:A:N1	2.68	0.41
51:3:1047:A:O2'	51:3:1048:A:H5''	2.20	0.41
51:3:1343:C:H2'	51:3:1344:U:C6	2.54	0.41
51:3:1488:U:H2'	51:3:1489:G:C8	2.56	0.41
51:3:1714:U:H3'	51:3:1714:U:OP2	2.20	0.41
51:3:1793:A:N3	51:3:1945:A:N6	2.68	0.41
51:3:2027:G:N1	51:3:2029:U:O2	2.53	0.41
51:3:2162:U:H2'	51:3:2163:U:O4'	2.21	0.41
51:3:2227:U:H2'	51:3:2228:U:H6	1.85	0.41
51:3:2802:C:N4	51:3:2803:G:H21	2.18	0.41
53:5:558:U:H4'	53:5:559:U:H5''	2.02	0.41
53:5:1298:U:H2'	53:5:1299:C:H6	1.85	0.41
9:F:67:ASN:ND2	9:F:129:ASN:OD1	2.54	0.41
10:G:97:ILE:HD12	10:G:97:ILE:HA	1.96	0.41
18:O:19:ARG:HH12	53:5:226:G:H4'	1.86	0.41
18:O:60:THR:HB	18:O:63:VAL:HG23	2.02	0.41
25:a:219:ASN:ND2	51:3:1798:A:OP1	2.53	0.41
26:b:38:GLY:HA2	26:b:92:MET:HE1	2.02	0.41
26:b:126:TRP:CG	26:b:164:LYS:HB3	2.55	0.41
30:f:102:HIS:HB3	51:3:166:A:C5	2.55	0.41
37:m:5:ASN:C	37:m:5:ASN:ND2	2.75	0.41
38:n:52:LEU:HD23	38:n:84:LEU:HD12	2.01	0.41
50:z:5:ARG:HD3	50:z:5:ARG:HA	1.66	0.41
51:3:359:G:H2'	51:3:360:G:H8	1.86	0.41
51:3:989:G:N1	51:3:1001:C:N3	2.69	0.41
51:3:1265:G:H2'	51:3:1266:G:C4	2.54	0.41
51:3:2070:C:C2	51:3:2071:C:C5	3.09	0.41
51:3:2224:A:H2'	51:3:2225:G:H8	1.86	0.41
51:3:2342:U:H4'	51:3:2343:A:O5'	2.20	0.41
51:3:2561:G:H1	54:6:77:A:H61	1.68	0.41
51:3:2568:G:H2'	51:3:2569:A:H8	1.86	0.41
53:5:38:U:H2'	53:5:39:G:H8	1.85	0.41
53:5:394:U:H2'	53:5:395:G:C8	2.54	0.41
53:5:536:U:H2'	53:5:537:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:917:G:N2	53:5:1373:A:N3	2.68	0.41
53:5:1105:C:N4	53:5:1162:G:O6	2.54	0.41
53:5:1436:C:C4	53:5:1437:A:N6	2.86	0.41
54:6:5:C:H2'	54:6:6:U:C6	2.56	0.41
54:6:7:U:O4	54:6:68:G:O6	2.39	0.41
54:6:75:C:H3'	54:6:76:C:C6	2.56	0.41
7:D:73:LEU:HD23	7:D:73:LEU:H	1.86	0.41
8:E:114:LYS:HD3	8:E:114:LYS:HA	1.77	0.41
10:G:87:VAL:HG12	10:G:141:VAL:HG23	2.02	0.41
11:H:115:ARG:HG2	53:5:1344:C:OP1	2.19	0.41
17:N:64:LEU:HA	17:N:67:LEU:HG	2.02	0.41
20:Q:60:LEU:HD11	20:Q:86:VAL:HG22	2.02	0.41
21:R:36:ARG:HB3	21:R:72:GLY:HA3	2.02	0.41
25:a:78:ASN:OD1	30:f:89:TYR:OH	2.31	0.41
25:a:215:LYS:NZ	51:3:764:G:O5'	2.54	0.41
27:c:166:THR:HA	27:c:169:GLU:HG2	2.02	0.41
28:d:5:LYS:HB2	28:d:97:TRP:CD1	2.56	0.41
39:o:19:LYS:NZ	39:o:86:ILE:O	2.53	0.41
39:o:56:ARG:NH2	51:3:2692:U:OP2	2.54	0.41
44:t:46:LYS:HD2	44:t:60:THR:HG22	2.01	0.41
51:3:1158:C:H2'	51:3:1159:C:C6	2.55	0.41
51:3:1227:C:C2	51:3:1228:G:C8	3.09	0.41
51:3:1284:A:H5''	51:3:1285:U:H5'	2.03	0.41
51:3:1881:C:H2'	51:3:1882:G:O4'	2.21	0.41
51:3:1929:G:H2'	51:3:1930:U:C6	2.55	0.41
51:3:2593:U:O2'	51:3:2594:C:H5''	2.21	0.41
51:3:2645:U:H2'	51:3:2646:G:O4'	2.20	0.41
53:5:405:C:H2'	53:5:406:G:O4'	2.20	0.41
53:5:550:U:H2'	53:5:551:A:H8	1.85	0.41
53:5:660:A:H2'	53:5:661:G:O4'	2.20	0.41
5:B:7:SER:OG	5:B:11:ARG:NH1	2.35	0.41
5:B:59:GLU:HA	5:B:59:GLU:OE2	2.20	0.41
7:D:144:SER:HB2	7:D:197:ASP:OD2	2.20	0.41
8:E:13:LEU:HD12	8:E:14:SER:O	2.20	0.41
10:G:126:LYS:HA	10:G:129:ARG:HD3	2.03	0.41
11:H:107:THR:HA	53:5:1154:A:H4'	2.03	0.41
12:I:29:LYS:HE3	12:I:29:LYS:HB3	1.82	0.41
14:K:101:LYS:HB2	53:5:521:A:C2	2.56	0.41
25:a:149:ASN:OD1	25:a:158:GLY:HA3	2.19	0.41
27:c:197:LEU:HD23	27:c:197:LEU:HA	1.89	0.41
29:e:70:THR:O	29:e:74:LEU:HD23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:92:ASP:OD1	38:n:93:THR:N	2.54	0.41
40:p:74:THR:HB	40:p:77:VAL:HG23	2.02	0.41
45:u:79:GLY:CA	45:u:98:VAL:O	2.56	0.41
47:w:105:ARG:CZ	51:3:1498:U:H1'	2.50	0.41
48:x:15:LYS:HE3	48:x:33:GLU:HG2	2.02	0.41
51:3:174:A:H2'	51:3:175:A:C8	2.55	0.41
51:3:258:G:O2'	51:3:259:A:O4'	2.35	0.41
51:3:444:C:H2'	51:3:445:C:H6	1.86	0.41
51:3:1716:A:H2'	51:3:1717:C:H6	1.85	0.41
51:3:1934:A:H2'	51:3:1935:A:C8	2.56	0.41
51:3:2291:U:H2'	51:3:2292:A:C8	2.55	0.41
51:3:2683:G:H2'	51:3:2684:G:C8	2.54	0.41
53:5:149:G:O6	53:5:150:A:N6	2.53	0.41
53:5:335:C:H2'	53:5:336:U:H6	1.85	0.41
53:5:429:A:C4	53:5:430:G:C8	3.08	0.41
53:5:591:A:H2'	53:5:592:A:C8	2.56	0.41
53:5:931:C:H2'	53:5:932:A:O4'	2.20	0.41
53:5:1456:U:H2'	53:5:1457:G:H8	1.86	0.41
54:6:11:G:N2	54:6:27:A:H1'	2.36	0.41
54:6:30:G:H2'	54:6:31:G:H8	1.86	0.41
6:C:98:ASP:OD1	6:C:114:ARG:NH2	2.54	0.41
18:O:13:ILE:O	18:O:13:ILE:HG13	2.21	0.41
28:d:122:PHE:CD1	28:d:128:TYR:HD1	2.39	0.41
32:h:131:MET:HE2	32:h:131:MET:HA	2.02	0.41
35:k:35:GLY:H	51:3:978:G:H5''	1.86	0.41
36:l:14:ASN:HB3	36:l:41:TRP:HH2	1.86	0.41
37:m:38:ALA:HA	37:m:41:THR:HG22	2.02	0.41
37:m:46:ASP:HB2	51:3:2843:G:H4'	2.01	0.41
43:s:58:LEU:CD2	43:s:80:LEU:HB2	2.51	0.41
50:z:19:TYR:OH	50:z:37:PHE:O	2.25	0.41
51:3:129:U:H2'	51:3:130:C:C6	2.56	0.41
51:3:267:A:H1'	51:3:466:A:H1'	2.03	0.41
51:3:815:G:H5''	51:3:816:A:OP1	2.20	0.41
51:3:1155:G:H2'	51:3:1156:C:O4'	2.21	0.41
51:3:1861:A:C8	51:3:1862:A:C8	3.08	0.41
51:3:1954:C:H2'	51:3:1955:G:C8	2.55	0.41
51:3:2212:U:H2'	51:3:2213:A:H8	1.86	0.41
51:3:2607:G:H2'	51:3:2608:A:C8	2.56	0.41
53:5:479:A:P	53:5:479:A:H8	2.44	0.41
53:5:669:U:H2'	53:5:670:G:C8	2.56	0.41
53:5:1213:A:H2	53:5:1216:G:N3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:7:11:G:N2	54:7:27:A:H1'	2.36	0.41
54:7:30:G:H2'	54:7:31:G:H8	1.86	0.41
1:0:1:MET:SD	1:0:3:ARG:NH1	2.94	0.41
3:2:10:ILE:HD11	3:2:32:HIS:HA	2.02	0.41
5:B:30:THR:O	5:B:33:TRP:HB2	2.21	0.41
7:D:211:LEU:O	10:G:75:LYS:NZ	2.41	0.41
10:G:106:LEU:HB3	10:G:110:GLY:N	2.35	0.41
17:N:29:LEU:HA	17:N:32:GLN:NE2	2.36	0.41
18:O:42:CYS:SG	18:O:66:LEU:HG	2.61	0.41
25:a:63:LYS:NZ	51:3:729:U:OP1	2.44	0.41
25:a:150:ILE:HG23	25:a:198:ALA:HB2	2.03	0.41
26:b:122:ALA:HB2	26:b:144:GLN:NE2	2.36	0.41
29:e:141:LYS:HA	29:e:144:VAL:HG12	2.01	0.41
32:h:33:GLY:O	32:h:37:LYS:HG2	2.21	0.41
34:j:113:LYS:O	34:j:117:LEU:HD12	2.21	0.41
38:n:10:LEU:HD21	51:3:2342:U:C4	2.56	0.41
39:o:96:VAL:HG11	39:o:101:ILE:HG21	2.02	0.41
40:p:33:VAL:O	40:p:37:THR:HG23	2.20	0.41
42:r:88:ARG:NE	51:3:783:G:OP2	2.54	0.41
49:y:38:LEU:HB2	49:y:41:ARG:HB2	2.03	0.41
51:3:135:A:H2'	51:3:136:G:H8	1.85	0.41
51:3:163:A:H2'	51:3:164:A:C8	2.56	0.41
51:3:300:G:H2'	51:3:301:G:H8	1.85	0.41
51:3:410:G:H1'	51:3:411:U:OP2	2.21	0.41
51:3:489:A:N3	51:3:493:A:O2'	2.54	0.41
51:3:580:U:H5	51:3:1249:A:H2'	1.85	0.41
51:3:750:A:H8	51:3:750:A:OP1	2.04	0.41
51:3:893:A:H2'	51:3:894:G:C8	2.56	0.41
51:3:947:A:H2'	51:3:948:A:C8	2.56	0.41
51:3:990:G:H2'	51:3:991:G:H8	1.86	0.41
51:3:1006:U:H2'	51:3:1007:C:C6	2.56	0.41
51:3:1348:C:C5	51:3:1357:U:H5''	2.55	0.41
51:3:2137:A:H1'	51:3:2165:A:N1	2.35	0.41
51:3:2519:U:H2'	51:3:2520:C:C6	2.56	0.41
51:3:2820:G:H2'	51:3:2821:U:H6	1.85	0.41
51:3:2822:C:H4'	51:3:2841:A:H4'	2.03	0.41
53:5:137:A:C5	53:5:138:A:C8	3.08	0.41
53:5:373:A:H2'	53:5:374:G:C8	2.56	0.41
53:5:433:C:H2'	53:5:434:U:C6	2.55	0.41
53:5:457:A:H2'	53:5:458:G:H8	1.82	0.41
53:5:641:U:H2'	53:5:642:A:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:897:A:C2	53:5:898:A:C8	3.09	0.41
53:5:1088:C:O2'	53:5:1144:A:N3	2.49	0.41
53:5:1225:A:N3	53:5:1345:G:O2'	2.48	0.41
54:7:5:C:H2'	54:7:6:U:C6	2.56	0.41
10:G:22:ILE:HG13	10:G:74:LEU:HD21	2.02	0.41
14:K:43:LYS:HD3	14:K:43:LYS:HA	1.86	0.41
28:d:140:GLU:HG2	48:x:28:THR:HB	2.02	0.41
32:h:98:MET:SD	32:h:98:MET:N	2.94	0.41
34:j:8:LEU:HD23	34:j:19:VAL:O	2.21	0.41
35:k:36:GLN:NE2	51:3:979:U:H5''	2.30	0.41
37:m:74:ASP:CG	37:m:75:VAL:H	2.25	0.41
45:u:18:LYS:HE3	54:7:75:C:O2'	2.20	0.41
48:x:9:SER:OG	48:x:26:GLU:OE1	2.36	0.41
51:3:83:G:H2'	51:3:84:G:O4'	2.21	0.41
51:3:688:U:H3'	51:3:689:U:H5'	2.02	0.41
51:3:699:U:H2'	51:3:700:U:C6	2.56	0.41
51:3:899:A:N6	51:3:900:G:O6	2.53	0.41
51:3:1200:U:H2'	51:3:1201:A:H8	1.86	0.41
51:3:2388:C:H2'	51:3:2389:A:C8	2.56	0.41
51:3:2424:C:H2'	51:3:2425:C:C6	2.56	0.41
51:3:2463:G:H2'	51:3:2464:C:H6	1.85	0.41
51:3:2521:A:H2'	51:3:2522:U:C6	2.55	0.41
51:3:2597:A:H2'	51:3:2598:C:C6	2.55	0.41
53:5:923:G:O6	53:5:924:A:N6	2.54	0.41
53:5:1072:G:H2'	53:5:1073:A:H8	1.86	0.41
53:5:1225:A:C6	53:5:1226:A:C6	3.10	0.41
53:5:1287:G:H2'	53:5:1288:C:H6	1.86	0.41
54:6:20:G:H5'	54:6:21:U:H5	1.85	0.41
2:1:21:ARG:NH1	51:3:2369:G:OP2	2.53	0.40
5:B:39:LYS:HD2	5:B:39:LYS:HA	1.79	0.40
10:G:94:GLY:N	53:5:872:C:H5''	2.36	0.40
11:H:43:ASN:O	11:H:44:LYS:HD3	2.20	0.40
15:L:104:THR:HG21	53:5:1205:C:H42	1.86	0.40
16:M:41:ARG:HG3	16:M:42:LEU:N	2.37	0.40
17:N:20:GLY:HA3	53:5:747:C:O2	2.21	0.40
25:a:127:PRO:HG3	25:a:140:PHE:CD1	2.57	0.40
27:c:49:THR:OG1	51:3:478:G:N3	2.51	0.40
28:d:83:GLN:O	28:d:85:ILE:HG23	2.21	0.40
29:e:38:LEU:HD13	29:e:42:LEU:HD12	2.03	0.40
31:g:56:ASN:HA	31:g:75:ALA:HB3	2.03	0.40
36:l:22:LYS:HD2	51:3:899:A:OP2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:y:37:LYS:HB2	49:y:43:CYS:HB3	2.04	0.40
51:3:387:U:H2'	51:3:388:U:H6	1.87	0.40
51:3:1063:A:H2'	51:3:1064:A:C8	2.56	0.40
51:3:1368:U:H4'	51:3:1422:U:H1'	2.04	0.40
51:3:1537:A:H2'	51:3:1538:U:C6	2.56	0.40
51:3:1591:C:H2'	51:3:1592:A:C8	2.57	0.40
51:3:2589:G:H1'	51:3:2590:G:N7	2.36	0.40
51:3:2623:U:H2'	51:3:2624:C:C6	2.56	0.40
51:3:2663:G:O2'	51:3:2672:G:O6	2.26	0.40
53:5:747:C:H2'	53:5:748:U:H6	1.86	0.40
53:5:972:A:H8	53:5:1198:C:C2	2.40	0.40
53:5:1137:C:H2'	53:5:1138:U:H6	1.86	0.40
53:5:1397:G:H2'	53:5:1398:G:C8	2.56	0.40
4:A:133:LEU:HD12	4:A:152:LEU:HD11	2.03	0.40
7:D:135:SER:OG	7:D:136:ILE:N	2.54	0.40
21:R:55:LYS:HB2	53:5:953:A:N1	2.36	0.40
32:h:95:LYS:NZ	32:h:97:THR:HG22	2.36	0.40
34:j:1:MET:O	51:3:1699:A:O2'	2.39	0.40
35:k:69:ARG:NH2	51:3:2412:A:H4'	2.36	0.40
47:w:62:LYS:HB3	47:w:63:LEU:H	1.80	0.40
51:3:155:A:H2'	51:3:156:A:C8	2.55	0.40
51:3:671:C:H2'	51:3:672:G:H8	1.87	0.40
51:3:846:U:C4	51:3:1281:A:C6	3.10	0.40
51:3:851:U:H2'	51:3:852:C:C6	2.56	0.40
51:3:1070:U:H2'	51:3:1071:G:C8	2.55	0.40
51:3:1151:U:H2'	51:3:1152:U:C6	2.57	0.40
51:3:1261:U:H2'	51:3:1262:G:H8	1.85	0.40
51:3:1874:G:H2'	51:3:1875:C:H6	1.86	0.40
51:3:2034:G:H2'	51:3:2035:U:H6	1.86	0.40
51:3:2113:U:O2	51:3:2191:G:N2	2.44	0.40
51:3:2243:G:H2'	51:3:2244:U:C6	2.55	0.40
51:3:2545:U:H2'	51:3:2546:U:C6	2.57	0.40
51:3:2604:U:O4	51:3:2605:G:N2	2.54	0.40
51:3:2709:C:O5'	51:3:2710:G:H5''	2.21	0.40
53:5:294:A:H2'	53:5:295:G:C8	2.56	0.40
53:5:1126:U:O4	53:5:1127:A:N6	2.53	0.40
53:5:1133:A:C6	53:5:1155:A:N7	2.89	0.40
53:5:1295:U:H2'	53:5:1296:C:C5	2.56	0.40
3:2:3:VAL:O	3:2:4:ARG:HG3	2.21	0.40
10:G:99:ARG:HD3	10:G:100:PRO:HD2	2.03	0.40
15:L:42:ASP:HB3	15:L:45:VAL:HG23	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:S:56:ARG:HD2	53:5:197:A:OP1	2.21	0.40
26:b:158:ARG:HD3	51:3:2031:C:O3'	2.21	0.40
31:g:8:ALA:HB2	51:3:1081:A:H62	1.85	0.40
35:k:131:VAL:HG12	35:k:132:SER:O	2.21	0.40
37:m:67:LEU:HD23	37:m:67:LEU:HA	1.98	0.40
38:n:42:GLN:HB3	38:n:44:TRP:HE1	1.86	0.40
41:q:60:GLU:HB2	41:q:91:LYS:HG2	2.03	0.40
51:3:551:C:C4	51:3:552:C:N4	2.89	0.40
51:3:1192:U:H2'	51:3:1193:U:C6	2.56	0.40
51:3:1497:A:H2'	51:3:1498:U:C6	2.55	0.40
51:3:1528:G:H2'	51:3:1529:U:C6	2.56	0.40
51:3:2196:G:H2'	51:3:2197:U:O4'	2.21	0.40
51:3:2802:C:H5''	51:3:2806:A:H61	1.86	0.40
51:3:2842:G:H2'	51:3:2843:G:H8	1.86	0.40
53:5:295:G:H2'	53:5:296:A:C8	2.56	0.40
53:5:361:U:O2	53:5:361:U:H2'	2.19	0.40
53:5:682:G:H2'	53:5:683:G:C4	2.55	0.40
53:5:1010:A:C6	53:5:1011:A:C6	3.09	0.40
53:5:1030:G:H2'	53:5:1031:A:C8	2.56	0.40
53:5:1141:U:O2'	53:5:1142:G:H5''	2.21	0.40
53:5:1470:U:C2	53:5:1471:C:C5	3.09	0.40
20:Q:54:ILE:HG23	20:Q:54:ILE:O	2.21	0.40
21:R:81:LYS:HE3	53:5:950:C:O2	2.22	0.40
22:S:28:LEU:HA	22:S:50:GLN:HG2	2.03	0.40
25:a:181:ILE:O	25:a:182:LEU:HD23	2.22	0.40
25:a:190:ARG:NH1	51:3:1807:C:OP2	2.51	0.40
27:c:78:SER:HB2	27:c:81:ASN:OD1	2.21	0.40
29:e:21:GLN:HB2	29:e:24:HIS:H	1.87	0.40
37:m:46:ASP:HA	37:m:49:ILE:HG12	2.02	0.40
40:p:69:ARG:HH12	40:p:75:TYR:H	1.70	0.40
51:3:552:C:H2'	51:3:553:A:C8	2.48	0.40
51:3:671:C:H2'	51:3:672:G:C8	2.56	0.40
51:3:992:G:O2'	51:3:995:A:N6	2.31	0.40
51:3:1385:U:H2'	51:3:1386:G:O4'	2.21	0.40
51:3:1578:A:H2'	51:3:1579:G:O4'	2.21	0.40
51:3:1616:G:H2'	51:3:1617:U:C6	2.56	0.40
51:3:2157:A:H2'	51:3:2158:C:H6	1.84	0.40
53:5:427:A:H2'	53:5:428:A:H5'	2.02	0.40
53:5:474:G:H2'	53:5:475:U:C6	2.56	0.40
53:5:500:G:C6	53:5:542:G:O6	2.75	0.40
5:B:78:ILE:HD12	5:B:85:ILE:HD12	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:E:6:ILE:CG2	8:E:86:LEU:HB3	2.51	0.40
11:H:96:LEU:O	11:H:100:LEU:HD23	2.21	0.40
13:J:105:GLU:O	13:J:106:LYS:HD2	2.21	0.40
19:P:72:THR:O	19:P:72:THR:HG22	2.20	0.40
28:d:94:GLU:HA	28:d:97:TRP:HD1	1.87	0.40
29:e:66:ILE:HG12	51:3:2757:A:H1'	2.04	0.40
32:h:87:LYS:HA	32:h:131:MET:HE1	2.03	0.40
33:i:135:MET:HE1	51:3:8:A:H4'	2.03	0.40
36:l:114:MET:O	36:l:118:LEU:HD23	2.22	0.40
39:o:68:LYS:HE2	39:o:68:LYS:HB3	1.77	0.40
40:p:91:ARG:HG2	41:q:11:GLN:HB2	2.03	0.40
42:r:18:ARG:NE	42:r:22:GLN:HE22	2.19	0.40
44:t:44:ARG:NH2	51:3:516:A:OP2	2.54	0.40
51:3:220:A:N6	51:3:467:U:C2	2.89	0.40
51:3:1345:G:H2'	51:3:1346:G:C8	2.56	0.40
51:3:1557:G:N2	51:3:1574:G:O6	2.54	0.40
51:3:2216:U:H2'	51:3:2217:G:C8	2.56	0.40
51:3:2406:U:H2'	51:3:2407:G:H8	1.85	0.40
51:3:2651:G:H2'	51:3:2652:U:C6	2.57	0.40
51:3:2724:U:H2'	51:3:2725:G:C8	2.57	0.40
53:5:687:G:H2'	53:5:688:G:C8	2.56	0.40
53:5:831:C:H2'	53:5:832:G:C8	2.56	0.40
53:5:881:G:C2	53:5:905:U:C2	3.09	0.40
53:5:947:U:H2'	53:5:948:U:H6	1.86	0.40
53:5:995:U:H2'	53:5:996:U:C6	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	43 (96%)	2 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	1	57/59 (97%)	55 (96%)	2 (4%)	0	100	100
3	2	35/37 (95%)	35 (100%)	0	0	100	100
4	A	238/294 (81%)	214 (90%)	24 (10%)	0	100	100
5	B	213/273 (78%)	196 (92%)	17 (8%)	0	100	100
6	C	201/205 (98%)	187 (93%)	14 (7%)	0	100	100
7	D	151/219 (69%)	145 (96%)	6 (4%)	0	100	100
8	E	165/215 (77%)	144 (87%)	21 (13%)	0	100	100
9	F	152/155 (98%)	143 (94%)	9 (6%)	0	100	100
10	G	139/142 (98%)	126 (91%)	13 (9%)	0	100	100
11	H	126/132 (96%)	111 (88%)	15 (12%)	0	100	100
12	I	99/108 (92%)	89 (90%)	10 (10%)	0	100	100
13	J	112/121 (93%)	110 (98%)	2 (2%)	0	100	100
14	K	134/139 (96%)	119 (89%)	15 (11%)	0	100	100
15	L	116/124 (94%)	104 (90%)	12 (10%)	0	100	100
16	M	58/61 (95%)	57 (98%)	1 (2%)	0	100	100
17	N	81/86 (94%)	78 (96%)	3 (4%)	0	100	100
18	O	78/94 (83%)	72 (92%)	6 (8%)	0	100	100
19	P	81/85 (95%)	75 (93%)	6 (7%)	0	100	100
20	Q	63/104 (61%)	55 (87%)	8 (13%)	0	100	100
21	R	82/87 (94%)	70 (85%)	12 (15%)	0	100	100
22	S	75/87 (86%)	73 (97%)	2 (3%)	0	100	100
23	T	51/60 (85%)	49 (96%)	2 (4%)	0	100	100
24	Z	3/5 (60%)	2 (67%)	1 (33%)	0	100	100
25	a	283/287 (99%)	264 (93%)	19 (7%)	0	100	100
26	b	227/287 (79%)	216 (95%)	11 (5%)	0	100	100
27	c	208/212 (98%)	198 (95%)	10 (5%)	0	100	100
28	d	173/180 (96%)	157 (91%)	16 (9%)	0	100	100
29	e	174/184 (95%)	161 (92%)	13 (8%)	0	100	100
30	f	143/149 (96%)	131 (92%)	12 (8%)	0	100	100
31	g	124/161 (77%)	112 (90%)	11 (9%)	1 (1%)	16	53
32	h	126/137 (92%)	121 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	i	142/146 (97%)	135 (95%)	7 (5%)	0	100	100
34	j	120/122 (98%)	112 (93%)	8 (7%)	0	100	100
35	k	146/151 (97%)	134 (92%)	12 (8%)	0	100	100
36	l	134/139 (96%)	130 (97%)	4 (3%)	0	100	100
37	m	117/124 (94%)	109 (93%)	7 (6%)	1 (1%)	14	49
38	n	108/116 (93%)	100 (93%)	8 (7%)	0	100	100
39	o	113/119 (95%)	104 (92%)	9 (8%)	0	100	100
40	p	112/127 (88%)	107 (96%)	5 (4%)	0	100	100
41	q	97/100 (97%)	90 (93%)	7 (7%)	0	100	100
42	r	137/159 (86%)	127 (93%)	10 (7%)	0	100	100
43	s	90/237 (38%)	84 (93%)	6 (7%)	0	100	100
44	t	109/111 (98%)	104 (95%)	5 (5%)	0	100	100
45	u	84/104 (81%)	80 (95%)	4 (5%)	0	100	100
46	v	61/65 (94%)	57 (93%)	4 (7%)	0	100	100
47	w	96/111 (86%)	92 (96%)	4 (4%)	0	100	100
48	x	42/97 (43%)	34 (81%)	8 (19%)	0	100	100
49	y	54/57 (95%)	49 (91%)	4 (7%)	1 (2%)	6	32
50	z	48/53 (91%)	47 (98%)	1 (2%)	0	100	100
All	All	5823/6675 (87%)	5407 (93%)	413 (7%)	3 (0%)	49	83

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
37	m	4	ILE
49	y	53	VAL
31	g	87	ASN

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	40/41 (98%)	40 (100%)	0	100	100
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	35 (100%)	0	100	100
4	A	212/262 (81%)	212 (100%)	0	100	100
5	B	180/232 (78%)	180 (100%)	0	100	100
6	C	181/183 (99%)	180 (99%)	1 (1%)	78	81
7	D	123/178 (69%)	123 (100%)	0	100	100
8	E	150/196 (76%)	150 (100%)	0	100	100
9	F	131/132 (99%)	131 (100%)	0	100	100
10	G	123/124 (99%)	123 (100%)	0	100	100
11	H	111/115 (96%)	111 (100%)	0	100	100
12	I	95/99 (96%)	95 (100%)	0	100	100
13	J	91/97 (94%)	91 (100%)	0	100	100
14	K	117/120 (98%)	115 (98%)	2 (2%)	53	68
15	L	100/105 (95%)	100 (100%)	0	100	100
16	M	47/48 (98%)	47 (100%)	0	100	100
17	N	76/78 (97%)	76 (100%)	0	100	100
18	O	69/82 (84%)	69 (100%)	0	100	100
19	P	73/75 (97%)	73 (100%)	0	100	100
20	Q	56/94 (60%)	56 (100%)	0	100	100
21	R	74/77 (96%)	74 (100%)	0	100	100
22	S	70/77 (91%)	70 (100%)	0	100	100
23	T	49/56 (88%)	49 (100%)	0	100	100
24	Z	3/3 (100%)	3 (100%)	0	100	100
25	a	241/243 (99%)	241 (100%)	0	100	100
26	b	186/233 (80%)	186 (100%)	0	100	100
27	c	182/184 (99%)	182 (100%)	0	100	100
28	d	150/154 (97%)	149 (99%)	1 (1%)	76	79
29	e	153/159 (96%)	153 (100%)	0	100	100
30	f	123/134 (92%)	123 (100%)	0	100	100
31	g	101/129 (78%)	89 (88%)	12 (12%)	5	19
32	h	102/110 (93%)	102 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
33	i	126/128 (98%)	126 (100%)	0	100	100
34	j	103/103 (100%)	103 (100%)	0	100	100
35	k	123/126 (98%)	123 (100%)	0	100	100
36	l	113/115 (98%)	113 (100%)	0	100	100
37	m	105/109 (96%)	104 (99%)	1 (1%)	68	76
38	n	96/99 (97%)	96 (100%)	0	100	100
39	o	101/105 (96%)	101 (100%)	0	100	100
40	p	100/108 (93%)	100 (100%)	0	100	100
41	q	90/91 (99%)	90 (100%)	0	100	100
42	r	116/132 (88%)	116 (100%)	0	100	100
43	s	82/208 (39%)	82 (100%)	0	100	100
44	t	96/96 (100%)	96 (100%)	0	100	100
45	u	69/85 (81%)	69 (100%)	0	100	100
46	v	58/60 (97%)	58 (100%)	0	100	100
47	w	87/98 (89%)	87 (100%)	0	100	100
48	x	41/86 (48%)	41 (100%)	0	100	100
49	y	48/49 (98%)	46 (96%)	2 (4%)	26	49
50	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5096/5754 (89%)	5077 (100%)	19 (0%)	81	83

All (19) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	C	61	GLN
14	K	118	VAL
14	K	122	LYS
28	d	27	GLN
31	g	26	ILE
31	g	27	PHE
31	g	29	TYR
31	g	31	SER
31	g	32	MET
31	g	43	LYS
31	g	46	LYS
31	g	84	VAL
31	g	86	VAL

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Mol	Chain	Res	Type
31	g	88	GLU
31	g	89	ILE
31	g	90	VAL
37	m	5	ASN
49	y	47	MET
49	y	51	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (63) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	63	GLN
4	A	220	HIS
5	B	15	ASN
5	B	82	ASN
5	B	125	ASN
6	C	58	GLN
6	C	61	GLN
7	D	182	ASN
7	D	202	GLN
7	D	213	ASN
8	E	19	ASN
8	E	81	GLN
8	E	89	ASN
8	E	106	GLN
9	F	67	ASN
9	F	141	HIS
10	G	11	HIS
10	G	23	ASN
10	G	62	ASN
10	G	85	ASN
12	I	74	ASN
14	K	25	HIS
17	N	2	GLN
17	N	35	GLN
22	S	43	ASN
23	T	8	ASN
23	T	35	HIS
25	a	62	ASN
25	a	91	ASN
25	a	183	GLN
26	b	86	ASN
26	b	148	GLN

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Mol	Chain	Res	Type
26	b	157	GLN
26	b	225	GLN
27	c	170	GLN
28	d	37	ASN
28	d	83	GLN
28	d	174	ASN
32	h	40	ASN
33	i	51	GLN
33	i	70	ASN
33	i	82	GLN
33	i	115	ASN
35	k	24	HIS
35	k	36	GLN
35	k	75	GLN
35	k	102	GLN
35	k	117	HIS
36	l	13	HIS
36	l	108	ASN
39	o	78	ASN
40	p	71	GLN
41	q	17	ASN
41	q	34	GLN
41	q	78	HIS
41	q	87	GLN
42	r	33	GLN
42	r	38	ASN
42	r	62	HIS
43	s	56	ASN
45	u	64	ASN
46	v	62	ASN
50	z	47	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	3	2875/2907 (98%)	587 (20%)	25 (0%)
52	4	103/108 (95%)	24 (23%)	2 (1%)
53	5	1490/1520 (98%)	279 (18%)	5 (0%)
54	6	75/76 (98%)	18 (24%)	1 (1%)
54	7	75/76 (98%)	18 (24%)	1 (1%)
55	Y	8/9 (88%)	0	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
All	All	4626/4696 (98%)	926 (20%)	34 (0%)

All (926) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	3	11	U
51	3	29	G
51	3	37	G
51	3	41	C
51	3	48	G
51	3	53	G
51	3	63	U
51	3	64	U
51	3	65	A
51	3	73	A
51	3	76	A
51	3	77	G
51	3	87	G
51	3	102	A
51	3	103	G
51	3	115	U
51	3	119	A
51	3	121	U
51	3	141	A
51	3	146	G
51	3	163	A
51	3	169	U
51	3	178	A
51	3	181	G
51	3	184	A
51	3	186	A
51	3	200	A
51	3	201	A
51	3	203	A
51	3	208	A
51	3	219	G
51	3	220	A
51	3	225	A
51	3	226	A
51	3	227	A
51	3	229	C
51	3	231	A

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Mol	Chain	Res	Type
51	3	232	A
51	3	234	G
51	3	245	U
51	3	252	G
51	3	256	G
51	3	270	G
51	3	276	A
51	3	284	U
51	3	285	U
51	3	286	A
51	3	287	G
51	3	292	G
51	3	293	G
51	3	295	U
51	3	296	U
51	3	297	G
51	3	298	U
51	3	299	A
51	3	309	A
51	3	314	G
51	3	321	A
51	3	325	G
51	3	336	C
51	3	341	G
51	3	345	A
51	3	346	G
51	3	351	G
51	3	363	G
51	3	364	A
51	3	372	G
51	3	374	A
51	3	395	U
51	3	399	G
51	3	402	A
51	3	404	C
51	3	409	A
51	3	410	G
51	3	411	U
51	3	418	G
51	3	422	A
51	3	424	G
51	3	425	U

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Mol	Chain	Res	Type
51	3	426	U
51	3	427	A
51	3	428	U
51	3	432	G
51	3	437	A
51	3	441	U
51	3	447	G
51	3	448	A
51	3	460	G
51	3	484	U
51	3	487	C
51	3	490	A
51	3	493	A
51	3	494	G
51	3	499	G
51	3	501	G
51	3	503	G
51	3	505	G
51	3	509	G
51	3	515	A
51	3	517	G
51	3	531	G
51	3	542	A
51	3	543	U
51	3	544	U
51	3	547	G
51	3	548	A
51	3	552	C
51	3	565	C
51	3	566	G
51	3	571	A
51	3	581	A
51	3	582	A
51	3	583	U
51	3	596	G
51	3	604	A
51	3	605	A
51	3	606	G
51	3	608	A
51	3	609	U
51	3	610	G
51	3	619	A

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Mol	Chain	Res	Type
51	3	637	U
51	3	638	A
51	3	641	U
51	3	652	U
51	3	670	G
51	3	673	A
51	3	678	U
51	3	681	A
51	3	682	A
51	3	689	U
51	3	690	U
51	3	691	G
51	3	705	A
51	3	706	C
51	3	710	A
51	3	712	A
51	3	720	A
51	3	721	G
51	3	722	C
51	3	739	G
51	3	752	C
51	3	761	G
51	3	765	A
51	3	771	C
51	3	782	U
51	3	783	G
51	3	792	G
51	3	800	C
51	3	810	G
51	3	811	G
51	3	817	A
51	3	818	A
51	3	819	U
51	3	820	U
51	3	824	A
51	3	827	G
51	3	828	A
51	3	829	A
51	3	840	G
51	3	846	U
51	3	847	C
51	3	854	A

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Mol	Chain	Res	Type
51	3	862	U
51	3	881	A
51	3	882	C
51	3	883	A
51	3	885	A
51	3	887	A
51	3	896	U
51	3	902	U
51	3	904	C
51	3	906	G
51	3	914	G
51	3	917	G
51	3	932	U
51	3	933	A
51	3	944	U
51	3	947	A
51	3	949	C
51	3	952	U
51	3	953	G
51	3	981	A
51	3	982	G
51	3	997	G
51	3	1008	A
51	3	1010	G
51	3	1016	A
51	3	1019	A
51	3	1024	A
51	3	1026	A
51	3	1032	A
51	3	1033	A
51	3	1039	G
51	3	1045	A
51	3	1048	A
51	3	1049	U
51	3	1057	G
51	3	1059	G
51	3	1061	A
51	3	1068	U
51	3	1069	G
51	3	1075	G
51	3	1080	A
51	3	1081	A

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Mol	Chain	Res	Type
51	3	1082	A
51	3	1093	U
51	3	1095	U
51	3	1096	U
51	3	1102	A
51	3	1105	A
51	3	1106	G
51	3	1107	C
51	3	1114	C
51	3	1115	G
51	3	1123	A
51	3	1124	G
51	3	1126	G
51	3	1130	A
51	3	1131	A
51	3	1132	C
51	3	1137	C
51	3	1139	C
51	3	1147	G
51	3	1151	U
51	3	1154	U
51	3	1160	G
51	3	1166	G
51	3	1167	U
51	3	1168	A
51	3	1169	A
51	3	1170	C
51	3	1176	U
51	3	1177	A
51	3	1186	A
51	3	1204	A
51	3	1208	A
51	3	1209	U
51	3	1210	A
51	3	1212	C
51	3	1215	G
51	3	1217	G
51	3	1219	U
51	3	1234	U
51	3	1235	U
51	3	1242	G
51	3	1250	A

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Mol	Chain	Res	Type
51	3	1251	G
51	3	1255	G
51	3	1257	G
51	3	1265	G
51	3	1267	A
51	3	1268	U
51	3	1269	C
51	3	1277	A
51	3	1278	G
51	3	1281	A
51	3	1283	A
51	3	1284	A
51	3	1285	U
51	3	1286	G
51	3	1287	C
51	3	1295	A
51	3	1298	A
51	3	1301	G
51	3	1303	U
51	3	1304	U
51	3	1312	A
51	3	1317	C
51	3	1328	A
51	3	1329	U
51	3	1330	U
51	3	1333	C
51	3	1337	G
51	3	1339	U
51	3	1342	C
51	3	1349	C
51	3	1360	U
51	3	1361	U
51	3	1369	U
51	3	1375	G
51	3	1378	C
51	3	1380	U
51	3	1382	A
51	3	1393	A
51	3	1396	A
51	3	1406	A
51	3	1407	U
51	3	1408	G

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Mol	Chain	Res	Type
51	3	1414	C
51	3	1423	A
51	3	1424	U
51	3	1426	C
51	3	1431	A
51	3	1434	U
51	3	1437	A
51	3	1444	C
51	3	1445	U
51	3	1446	G
51	3	1453	U
51	3	1456	C
51	3	1463	G
51	3	1466	U
51	3	1467	U
51	3	1480	A
51	3	1481	U
51	3	1483	G
51	3	1487	U
51	3	1494	U
51	3	1502	A
51	3	1507	G
51	3	1508	G
51	3	1510	A
51	3	1513	A
51	3	1515	A
51	3	1518	C
51	3	1519	A
51	3	1523	C
51	3	1534	A
51	3	1535	A
51	3	1541	A
51	3	1557	G
51	3	1571	G
51	3	1580	G
51	3	1582	G
51	3	1584	U
51	3	1585	A
51	3	1588	A
51	3	1589	A
51	3	1592	A
51	3	1603	A

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Mol	Chain	Res	Type
51	3	1612	U
51	3	1618	U
51	3	1619	A
51	3	1622	C
51	3	1640	G
51	3	1641	A
51	3	1643	A
51	3	1644	A
51	3	1651	C
51	3	1652	A
51	3	1681	G
51	3	1682	C
51	3	1683	G
51	3	1688	A
51	3	1694	A
51	3	1697	C
51	3	1707	U
51	3	1708	G
51	3	1714	U
51	3	1715	A
51	3	1716	A
51	3	1723	A
51	3	1727	U
51	3	1728	A
51	3	1733	G
51	3	1735	A
51	3	1747	G
51	3	1748	U
51	3	1751	A
51	3	1752	A
51	3	1764	U
51	3	1766	A
51	3	1769	A
51	3	1770	A
51	3	1771	C
51	3	1780	A
51	3	1788	A
51	3	1791	A
51	3	1807	C
51	3	1808	C
51	3	1809	A
51	3	1821	G

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Mol	Chain	Res	Type
51	3	1823	U
51	3	1826	A
51	3	1827	U
51	3	1828	A
51	3	1836	A
51	3	1842	G
51	3	1845	C
51	3	1846	A
51	3	1873	A
51	3	1891	A
51	3	1896	A
51	3	1903	A
51	3	1906	G
51	3	1913	G
51	3	1914	G
51	3	1920	A
51	3	1936	G
51	3	1937	G
51	3	1938	U
51	3	1944	A
51	3	1952	G
51	3	1959	A
51	3	1962	U
51	3	1977	A
51	3	1979	G
51	3	1998	U
51	3	1999	G
51	3	2000	U
51	3	2009	U
51	3	2010	A
51	3	2013	C
51	3	2030	A
51	3	2038	A
51	3	2039	G
51	3	2040	A
51	3	2042	A
51	3	2043	C
51	3	2050	G
51	3	2053	G
51	3	2057	C
51	3	2059	G
51	3	2062	C

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Mol	Chain	Res	Type
51	3	2063	G
51	3	2067	A
51	3	2068	G
51	3	2069	A
51	3	2076	G
51	3	2084	A
51	3	2099	U
51	3	2100	G
51	3	2106	G
51	3	2111	U
51	3	2112	A
51	3	2114	C
51	3	2115	A
51	3	2118	U
51	3	2123	A
51	3	2124	A
51	3	2126	A
51	3	2128	G
51	3	2131	G
51	3	2133	A
51	3	2139	C
51	3	2140	G
51	3	2141	A
51	3	2145	A
51	3	2153	U
51	3	2154	A
51	3	2161	G
51	3	2166	U
51	3	2169	G
51	3	2178	A
51	3	2180	U
51	3	2181	A
51	3	2183	U
51	3	2193	U
51	3	2198	G
51	3	2206	A
51	3	2207	A
51	3	2219	U
51	3	2220	A
51	3	2221	U
51	3	2233	A
51	3	2246	G

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Mol	Chain	Res	Type
51	3	2247	G
51	3	2276	A
51	3	2286	A
51	3	2291	U
51	3	2294	A
51	3	2295	A
51	3	2305	C
51	3	2312	G
51	3	2313	U
51	3	2316	G
51	3	2317	A
51	3	2319	A
51	3	2330	A
51	3	2333	G
51	3	2335	A
51	3	2340	U
51	3	2341	G
51	3	2342	U
51	3	2343	A
51	3	2344	A
51	3	2353	G
51	3	2355	C
51	3	2358	U
51	3	2366	A
51	3	2369	G
51	3	2391	G
51	3	2393	C
51	3	2399	G
51	3	2410	C
51	3	2411	C
51	3	2414	U
51	3	2433	A
51	3	2436	G
51	3	2437	G
51	3	2438	A
51	3	2442	A
51	3	2449	U
51	3	2455	G
51	3	2456	A
51	3	2460	C
51	3	2472	G
51	3	2484	A

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Mol	Chain	Res	Type
51	3	2486	A
51	3	2488	C
51	3	2492	G
51	3	2499	U
51	3	2502	G
51	3	2505	A
51	3	2507	C
51	3	2509	C
51	3	2511	A
51	3	2512	U
51	3	2513	G
51	3	2514	U
51	3	2526	A
51	3	2527	U
51	3	2528	C
51	3	2540	G
51	3	2543	G
51	3	2562	U
51	3	2572	A
51	3	2574	A
51	3	2575	G
51	3	2581	C
51	3	2584	G
51	3	2586	G
51	3	2588	U
51	3	2590	G
51	3	2593	U
51	3	2594	C
51	3	2606	A
51	3	2607	G
51	3	2610	A
51	3	2611	G
51	3	2613	U
51	3	2617	U
51	3	2619	C
51	3	2621	U
51	3	2623	U
51	3	2629	G
51	3	2637	A
51	3	2638	G
51	3	2642	G
51	3	2647	A

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Mol	Chain	Res	Type
51	3	2654	U
51	3	2669	G
51	3	2676	G
51	3	2687	A
51	3	2690	U
51	3	2697	C
51	3	2721	C
51	3	2722	G
51	3	2737	G
51	3	2741	A
51	3	2750	A
51	3	2752	G
51	3	2756	A
51	3	2760	C
51	3	2764	U
51	3	2765	A
51	3	2769	G
51	3	2786	A
51	3	2788	U
51	3	2789	A
51	3	2798	A
51	3	2801	U
51	3	2803	G
51	3	2804	C
51	3	2805	A
51	3	2807	G
51	3	2808	A
51	3	2809	A
51	3	2810	A
51	3	2811	G
51	3	2812	U
51	3	2813	A
51	3	2824	A
51	3	2837	U
51	3	2853	U
51	3	2862	U
51	3	2865	U
51	3	2871	G
51	3	2876	G
51	3	2881	A
51	3	2884	C
51	3	2887	A

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Mol	Chain	Res	Type
51	3	2888	U
51	3	2890	G
51	3	2897	G
51	3	2898	A
52	4	4	G
52	4	9	C
52	4	10	C
52	4	11	A
52	4	13	G
52	4	16	G
52	4	23	A
52	4	33	U
52	4	38	U
52	4	39	U
52	4	40	U
52	4	41	C
52	4	42	G
52	4	49	G
52	4	51	A
52	4	54	U
52	4	55	A
52	4	60	C
52	4	65	G
52	4	80	G
52	4	88	G
52	4	89	A
52	4	99	A
52	4	106	A
53	5	9	A
53	5	10	G
53	5	33	A
53	5	40	G
53	5	48	C
53	5	49	C
53	5	51	A
53	5	52	A
53	5	53	U
53	5	66	A
53	5	67	U
53	5	77	U
53	5	93	A
53	5	101	A

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Mol	Chain	Res	Type
53	5	102	G
53	5	105	A
53	5	106	C
53	5	114	C
53	5	115	A
53	5	116	A
53	5	117	U
53	5	120	A
53	5	128	A
53	5	130	G
53	5	145	G
53	5	148	A
53	5	149	G
53	5	156	U
53	5	163	G
53	5	167	A
53	5	169	G
53	5	173	U
53	5	179	U
53	5	188	U
53	5	196	G
53	5	197	A
53	5	198	A
53	5	199	A
53	5	210	G
53	5	220	U
53	5	223	G
53	5	236	C
53	5	241	C
53	5	243	G
53	5	247	G
53	5	258	A
53	5	262	G
53	5	263	C
53	5	274	A
53	5	275	A
53	5	285	G
53	5	302	A
53	5	323	A
53	5	324	C
53	5	325	A
53	5	326	C

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Mol	Chain	Res	Type
53	5	328	G
53	5	341	C
53	5	342	G
53	5	348	C
53	5	363	U
53	5	368	C
53	5	369	A
53	5	377	A
53	5	378	A
53	5	380	G
53	5	384	G
53	5	386	U
53	5	393	A
53	5	394	U
53	5	402	G
53	5	407	A
53	5	408	U
53	5	409	G
53	5	417	U
53	5	418	U
53	5	419	A
53	5	420	A
53	5	425	G
53	5	426	U
53	5	432	U
53	5	433	C
53	5	436	U
53	5	449	A
53	5	450	U
53	5	452	A
53	5	455	U
53	5	463	U
53	5	464	A
53	5	465	A
53	5	467	G
53	5	473	A
53	5	476	U
53	5	478	G
53	5	481	U
53	5	483	U
53	5	488	U
53	5	489	U

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Mol	Chain	Res	Type
53	5	493	A
53	5	494	A
53	5	495	U
53	5	497	A
53	5	507	A
53	5	508	A
53	5	509	C
53	5	516	C
53	5	519	G
53	5	525	G
53	5	529	U
53	5	530	A
53	5	531	A
53	5	545	A
53	5	557	A
53	5	560	U
53	5	561	A
53	5	562	U
53	5	570	A
53	5	571	A
53	5	574	C
53	5	575	A
53	5	579	G
53	5	586	G
53	5	593	A
53	5	594	A
53	5	618	U
53	5	620	A
53	5	628	A
53	5	632	A
53	5	646	A
53	5	650	A
53	5	661	G
53	5	662	G
53	5	668	U
53	5	672	A
53	5	683	G
53	5	685	G
53	5	698	U
53	5	699	A
53	5	715	A
53	5	719	G

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Mol	Chain	Res	Type
53	5	721	G
53	5	745	U
53	5	750	A
53	5	752	G
53	5	774	A
53	5	810	U
53	5	812	A
53	5	814	C
53	5	815	G
53	5	818	A
53	5	825	A
53	5	832	G
53	5	838	A
53	5	846	G
53	5	866	A
53	5	870	A
53	5	883	A
53	5	896	G
53	5	908	A
53	5	910	C
53	5	911	G
53	5	921	G
53	5	922	G
53	5	927	C
53	5	929	C
53	5	930	A
53	5	941	A
53	5	951	U
53	5	953	A
53	5	955	U
53	5	958	G
53	5	963	U
53	5	964	A
53	5	966	A
53	5	970	A
53	5	971	A
53	5	972	A
53	5	975	C
53	5	976	U
53	5	984	A
53	5	987	U
53	5	988	G

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Mol	Chain	Res	Type
53	5	995	U
53	5	999	C
53	5	1001	A
53	5	1006	A
53	5	1008	G
53	5	1013	C
53	5	1014	A
53	5	1034	G
53	5	1036	C
53	5	1044	G
53	5	1045	C
53	5	1047	U
53	5	1055	G
53	5	1056	U
53	5	1072	G
53	5	1085	G
53	5	1086	U
53	5	1092	A
53	5	1118	A
53	5	1121	U
53	5	1122	U
53	5	1123	G
53	5	1125	C
53	5	1128	G
53	5	1130	G
53	5	1133	A
53	5	1134	C
53	5	1135	U
53	5	1141	U
53	5	1154	A
53	5	1165	G
53	5	1171	A
53	5	1175	C
53	5	1187	U
53	5	1188	A
53	5	1199	U
53	5	1200	G
53	5	1201	C
53	5	1203	A
53	5	1208	G
53	5	1220	A
53	5	1232	C

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Mol	Chain	Res	Type
53	5	1233	G
53	5	1235	C
53	5	1242	U
53	5	1245	A
53	5	1246	A
53	5	1250	A
53	5	1253	A
53	5	1255	A
53	5	1257	C
53	5	1260	U
53	5	1261	A
53	5	1272	C
53	5	1273	A
53	5	1274	G
53	5	1276	U
53	5	1277	C
53	5	1279	G
53	5	1286	G
53	5	1294	U
53	5	1296	C
53	5	1306	A
53	5	1310	C
53	5	1312	G
53	5	1320	A
53	5	1321	G
53	5	1331	A
53	5	1337	U
53	5	1338	A
53	5	1339	U
53	5	1343	G
53	5	1354	G
53	5	1373	A
53	5	1374	C
53	5	1380	G
53	5	1381	U
53	5	1394	G
53	5	1397	G
53	5	1400	A
53	5	1404	U
53	5	1417	U
53	5	1427	U
53	5	1429	G

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Mol	Chain	Res	Type
53	5	1440	U
53	5	1444	G
53	5	1459	U
53	5	1462	G
53	5	1467	A
53	5	1469	G
53	5	1478	A
53	5	1481	U
53	5	1482	A
53	5	1495	C
53	5	1504	G
53	5	1505	G
53	5	1506	A
54	6	3	G
54	6	17	U
54	6	18	C
54	6	19	G
54	6	20	G
54	6	22	A
54	6	43	G
54	6	44	U
54	6	49	C
54	6	54	G
54	6	57	C
54	6	58	G
54	6	71	A
54	6	72	C
54	6	73	C
54	6	74	A
54	6	75	C
54	6	76	C
54	7	3	G
54	7	17	U
54	7	18	C
54	7	19	G
54	7	20	G
54	7	22	A
54	7	43	G
54	7	44	U
54	7	49	C
54	7	54	G
54	7	57	C

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Mol	Chain	Res	Type
54	7	58	G
54	7	71	A
54	7	72	C
54	7	73	C
54	7	74	A
54	7	75	C
54	7	76	C

All (34) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	3	410	G
51	3	426	U
51	3	500	U
51	3	605	A
51	3	770	A
51	3	881	A
51	3	901	C
51	3	903	A
51	3	996	A
51	3	1048	A
51	3	1209	U
51	3	1297	U
51	3	1507	G
51	3	1583	G
51	3	1587	U
51	3	1588	A
51	3	1820	U
51	3	2342	U
51	3	2504	C
51	3	2506	C
51	3	2668	A
51	3	2764	U
51	3	2808	A
51	3	2823	A
51	3	2897	G
52	4	54	U
52	4	59	A
53	5	393	A
53	5	419	A
53	5	1186	U
53	5	1338	A

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Mol	Chain	Res	Type
53	5	1505	G
54	6	16	G
54	7	16	G

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](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

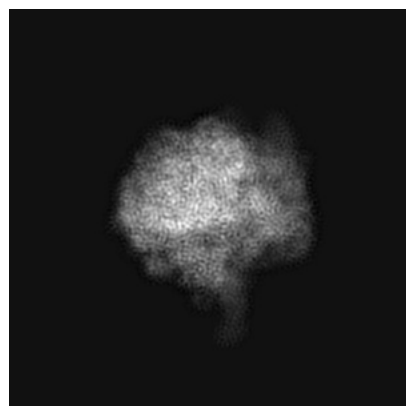
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13276. These allow visual inspection of the internal detail of the map and identification of artifacts.

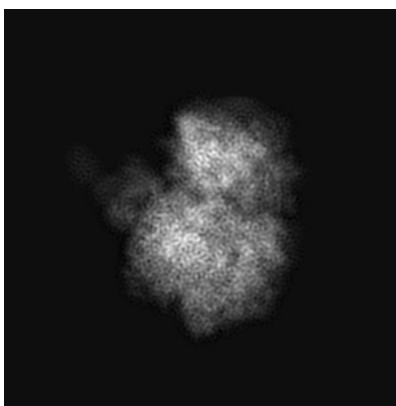
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

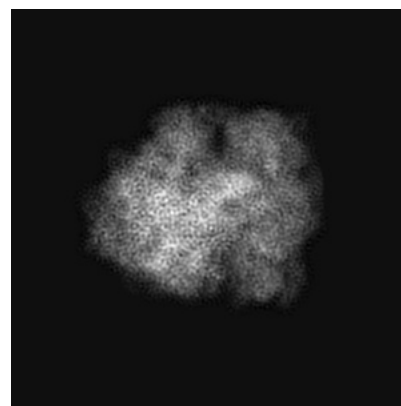
6.1.1 Primary map



X

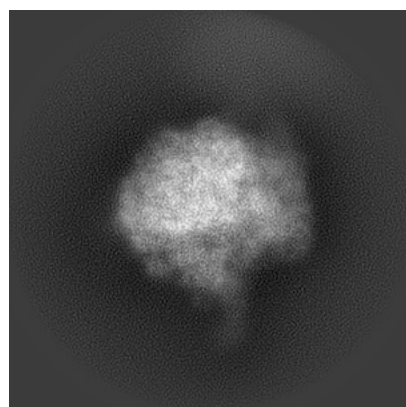


Y

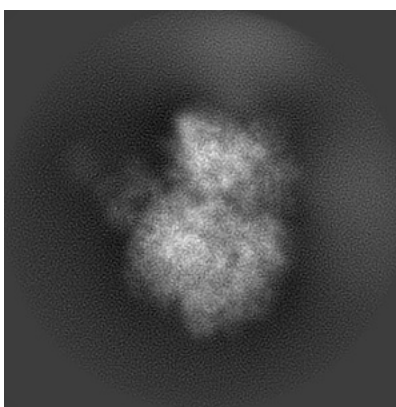


Z

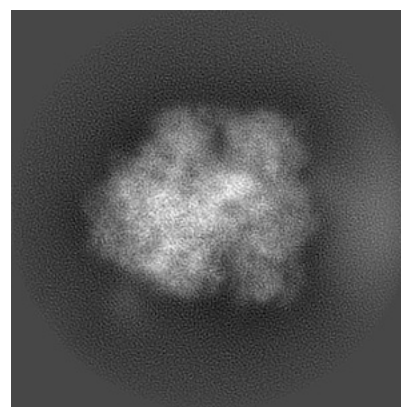
6.1.2 Raw map



X



Y

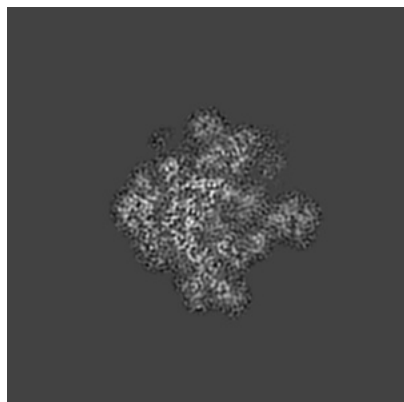


Z

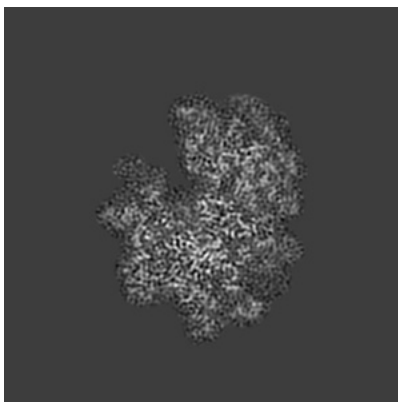
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

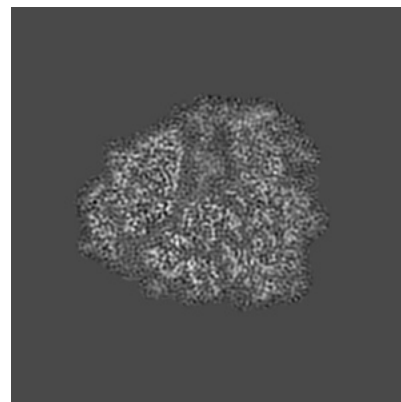
6.2.1 Primary map



X Index: 128

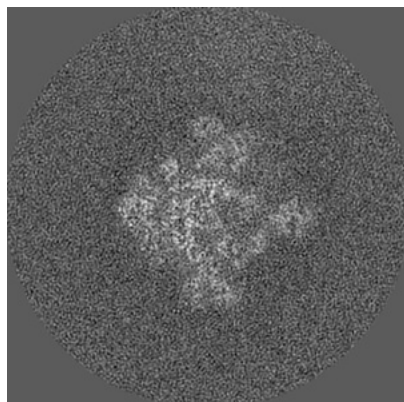


Y Index: 128

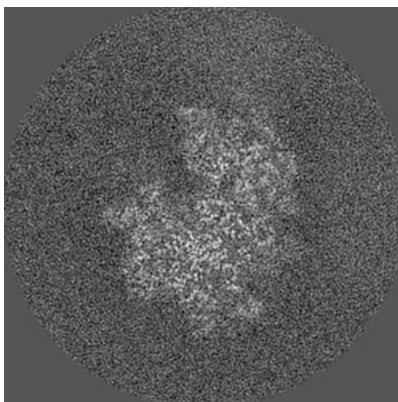


Z Index: 128

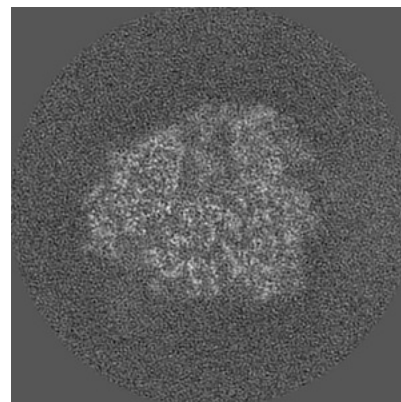
6.2.2 Raw map



X Index: 128



Y Index: 128

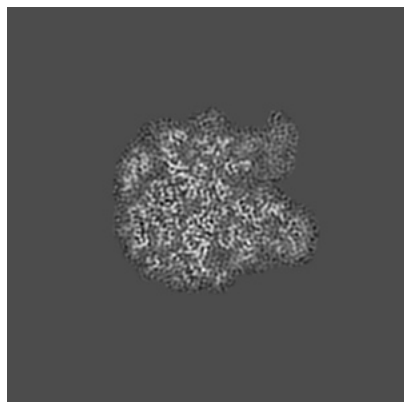


Z Index: 128

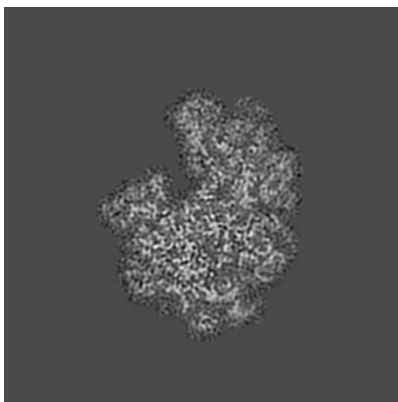
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

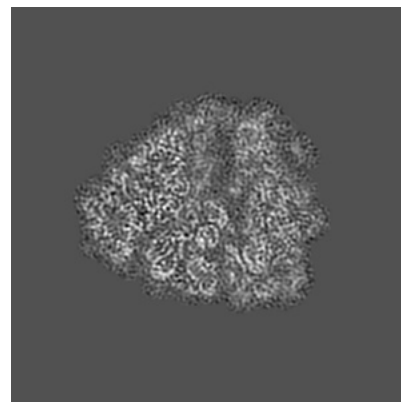
6.3.1 Primary map



X Index: 103

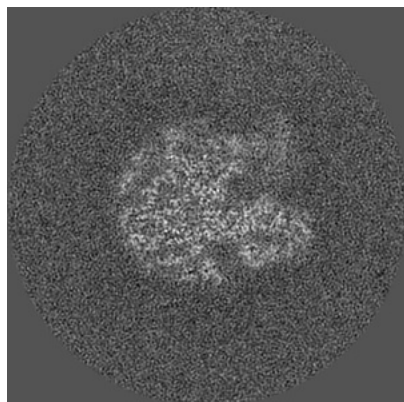


Y Index: 122

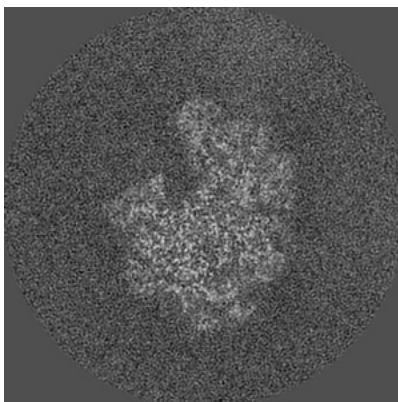


Z Index: 125

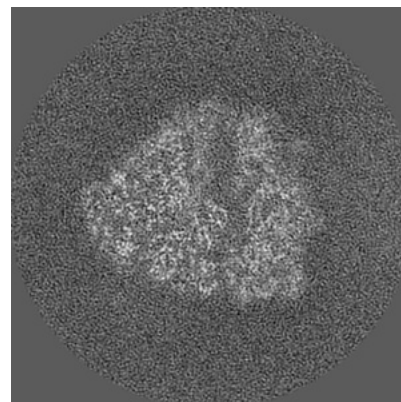
6.3.2 Raw map



X Index: 108



Y Index: 122

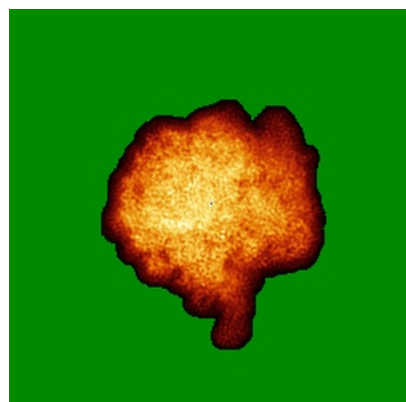


Z Index: 124

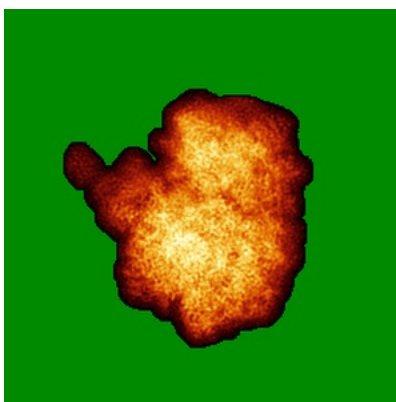
The images above show the largest variance slices of the map in three orthogonal directions.

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

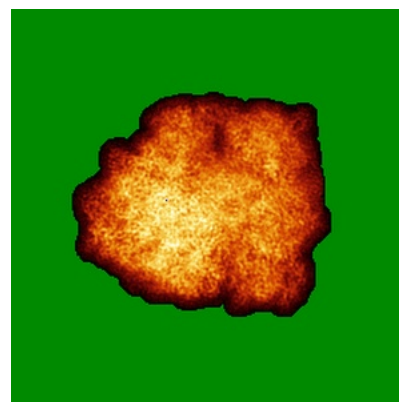
6.4.1 Primary map



X

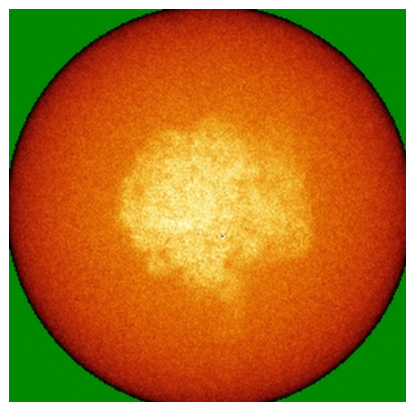


Y

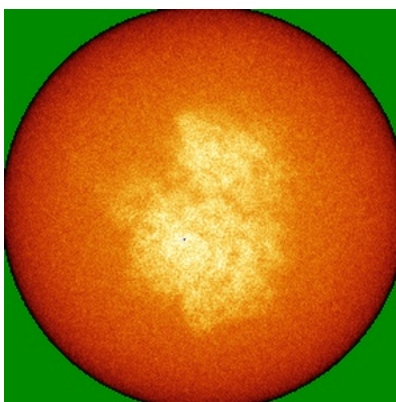


Z

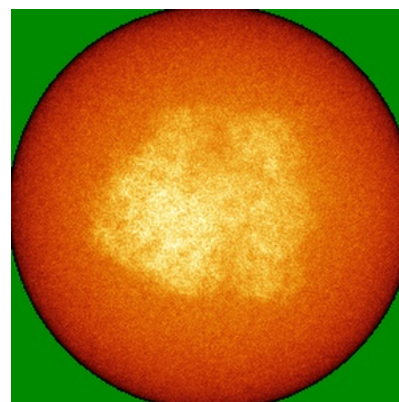
6.4.2 Raw map



X



Y

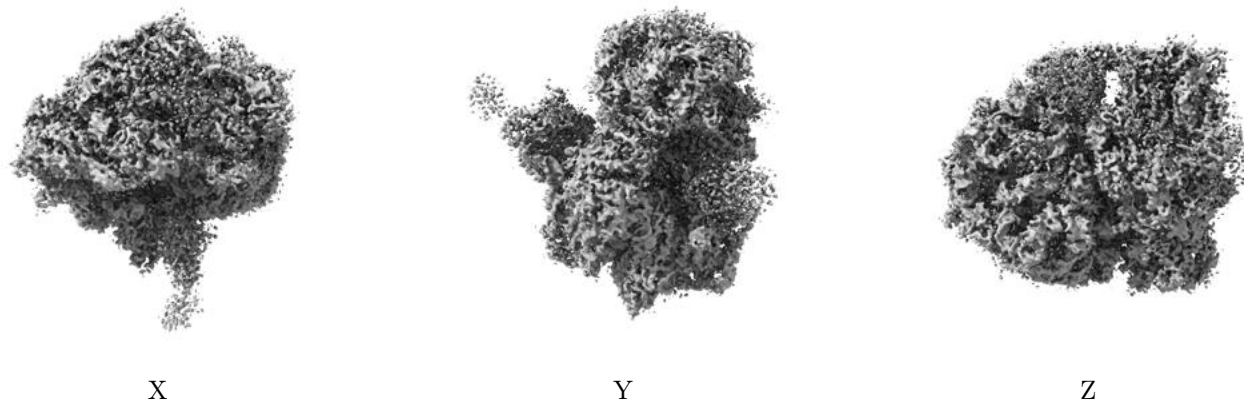


Z

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

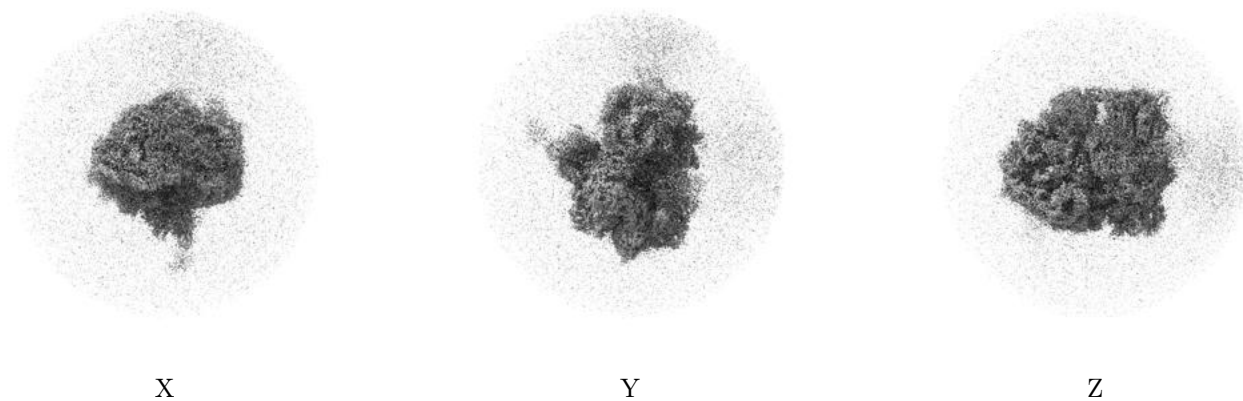
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.65. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

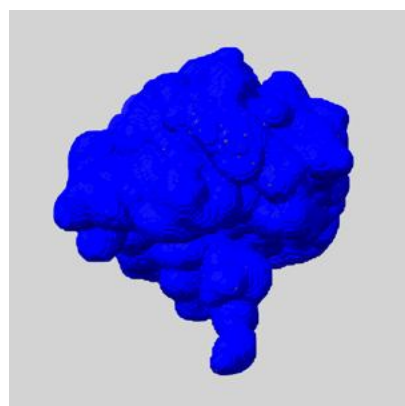
6.6 Mask visualisation [i](#)

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

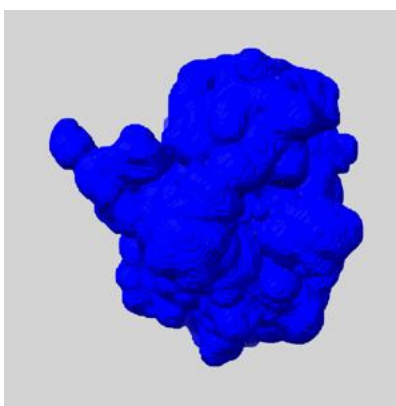
A mask typically either:

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

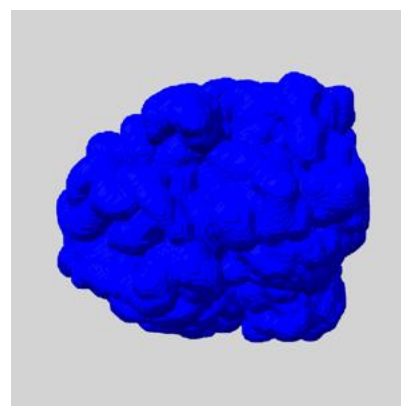
6.6.1 emd_13276_msk_1.map [i](#)



X



Y

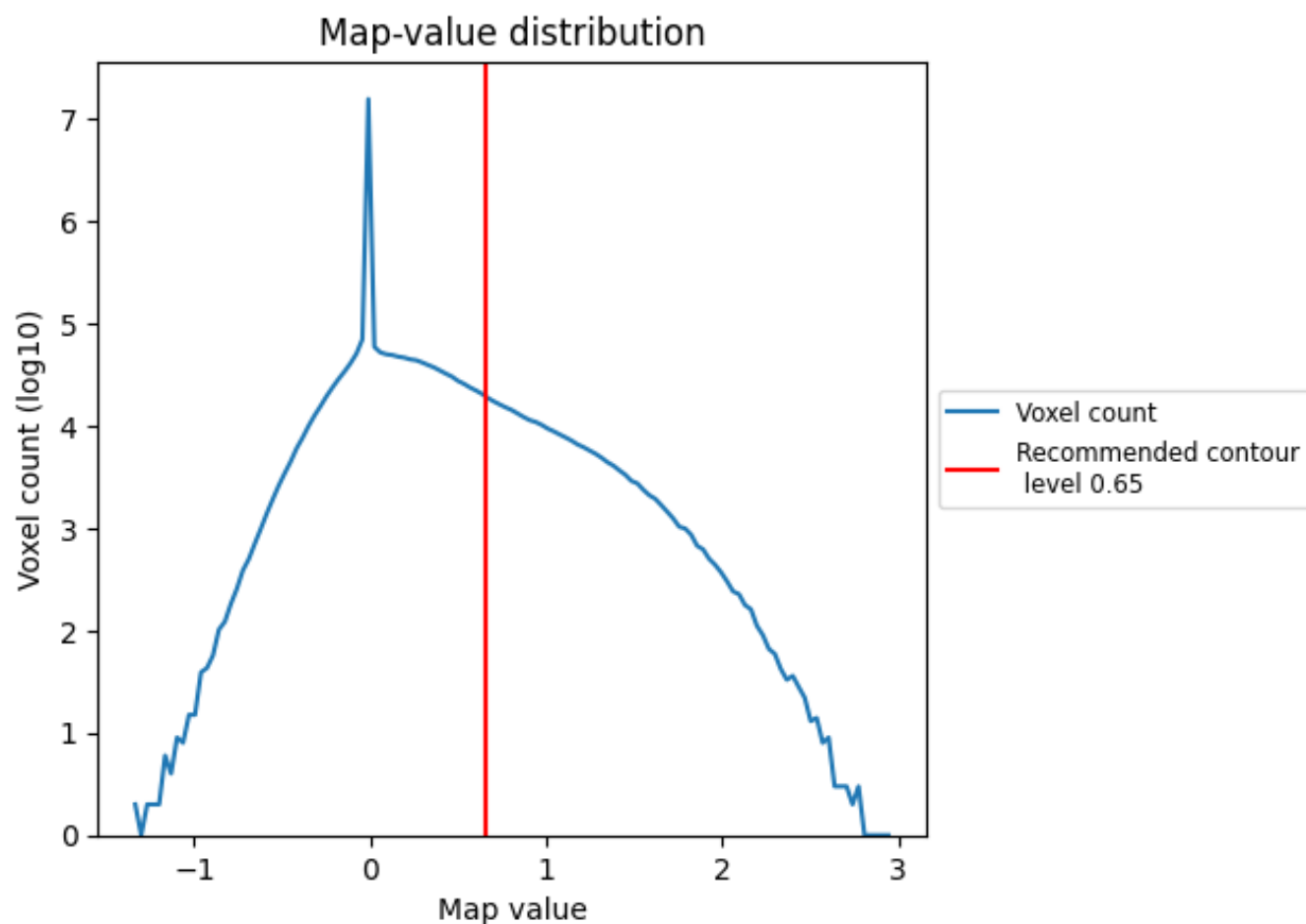


Z

7 Map analysis [i](#)

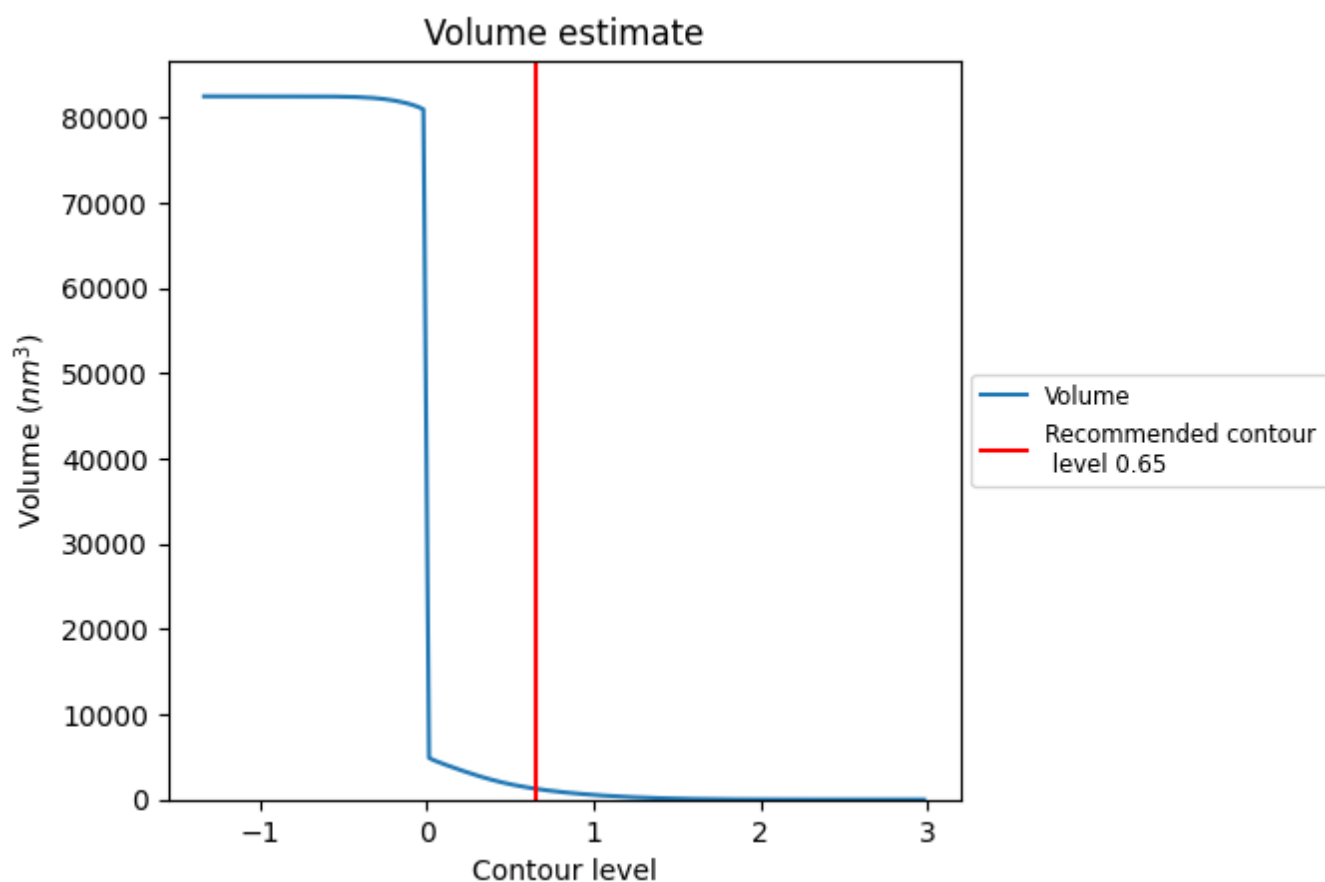
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

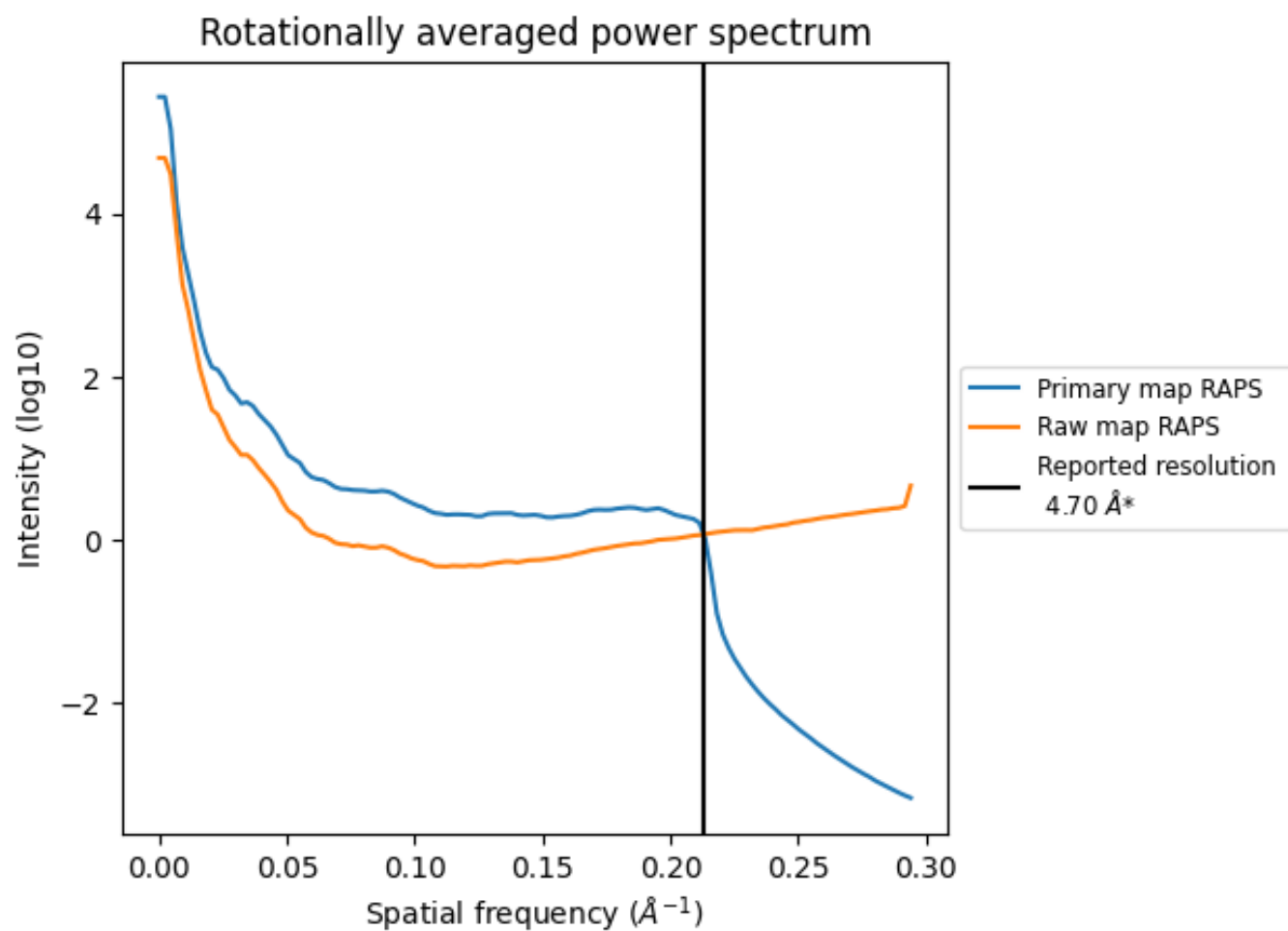
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1271 nm^3 ; this corresponds to an approximate mass of 1148 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 ⓘ

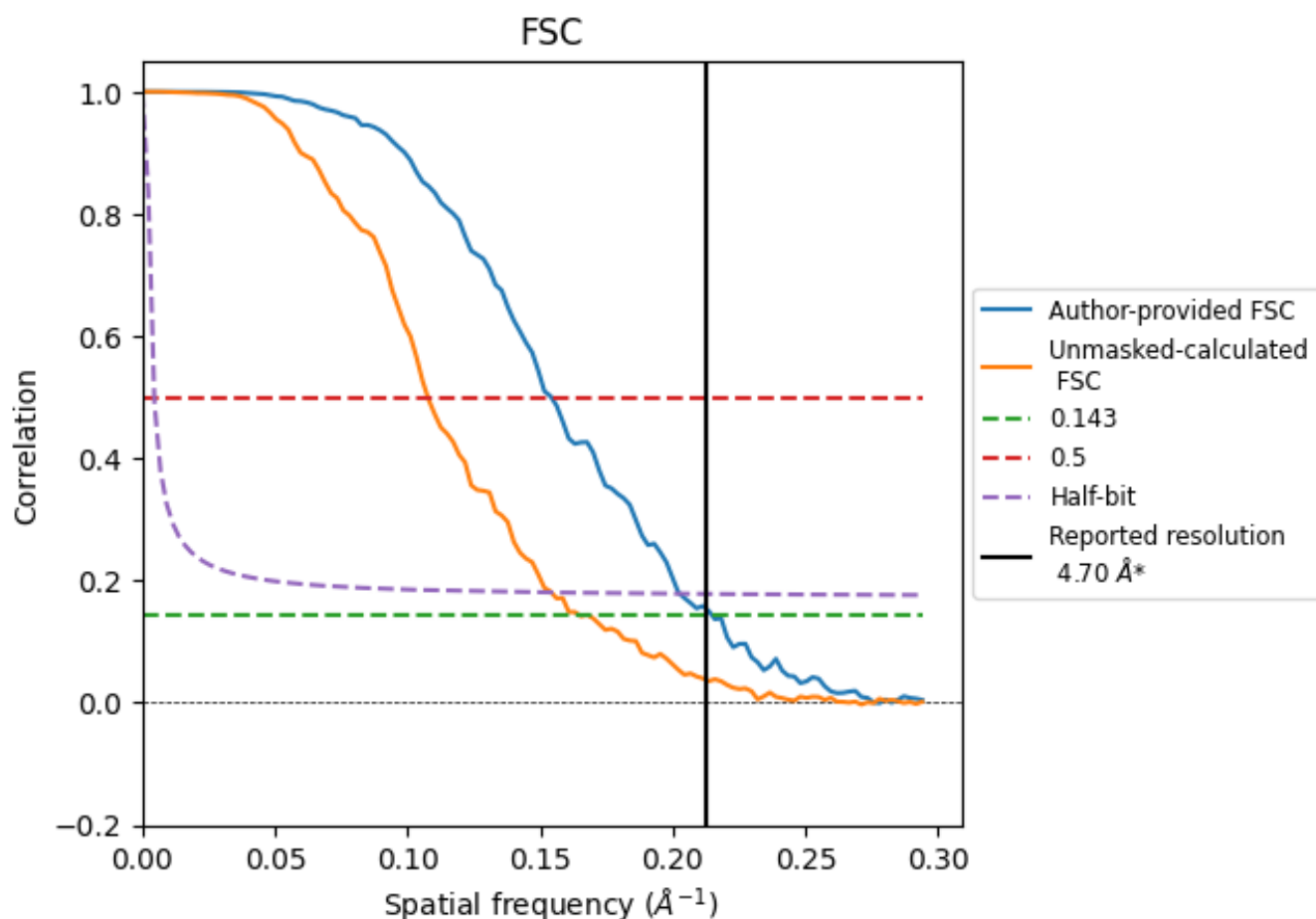


*Reported resolution corresponds to spatial frequency of 0.213 $\text{\AA}^{-1}$

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 0.213 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

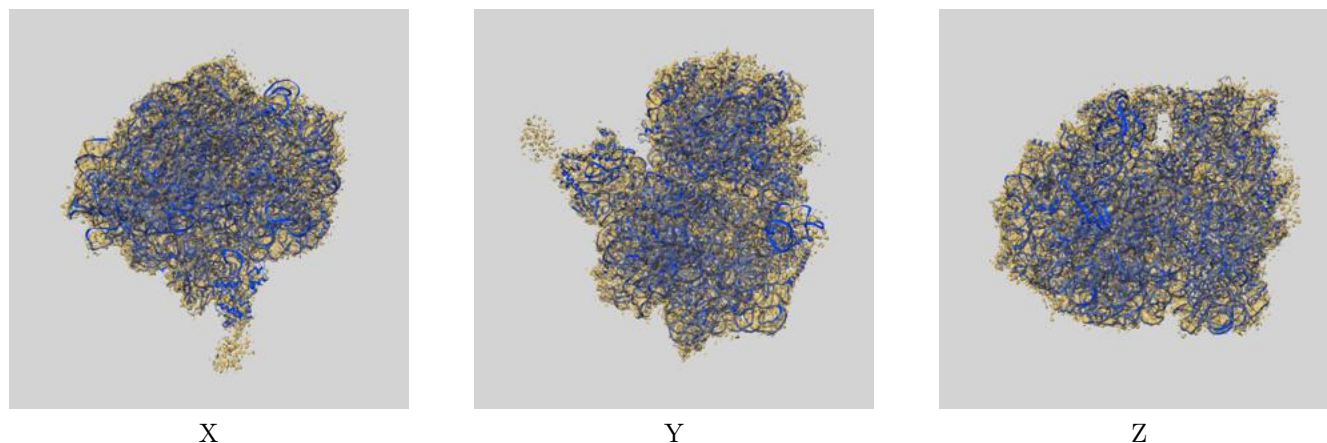
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.70	-	-
Author-provided FSC curve	4.66	6.49	4.93
Unmasked-calculated*	6.06	9.29	6.48

*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 6.06 differs from the reported value 4.7 by more than 10 %

9 Map-model fit [i](#)

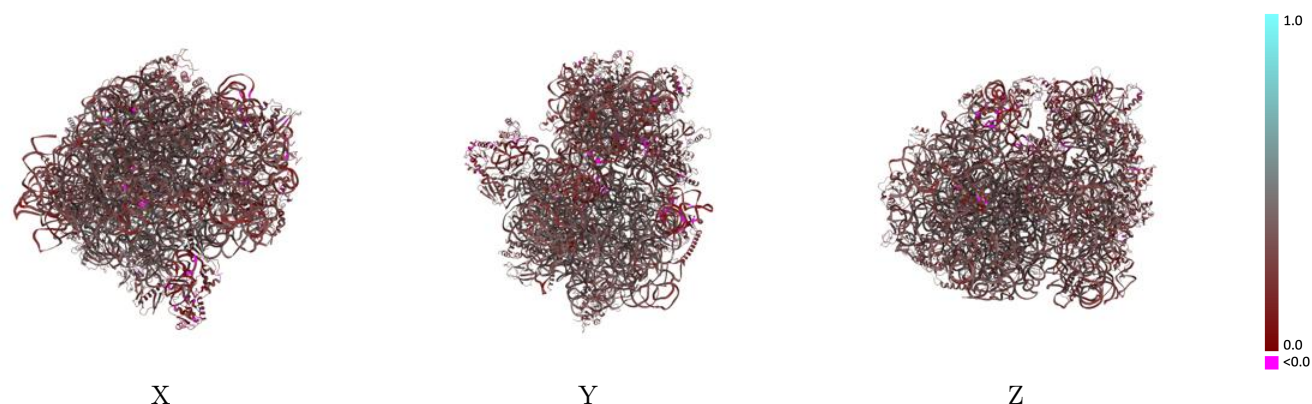
This section contains information regarding the fit between EMDB map EMD-13276 and PDB model 7PAL. Per-residue inclusion information can be found in [section 3](#) on [page 14](#).

9.1 Map-model overlay [i](#)



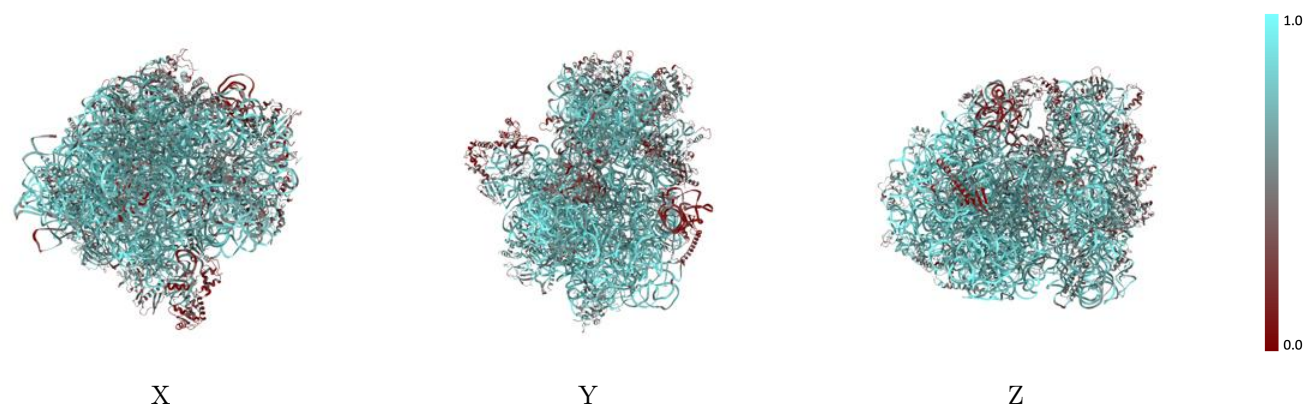
The images above show the 3D surface view of the map at the recommended contour level 0.65 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



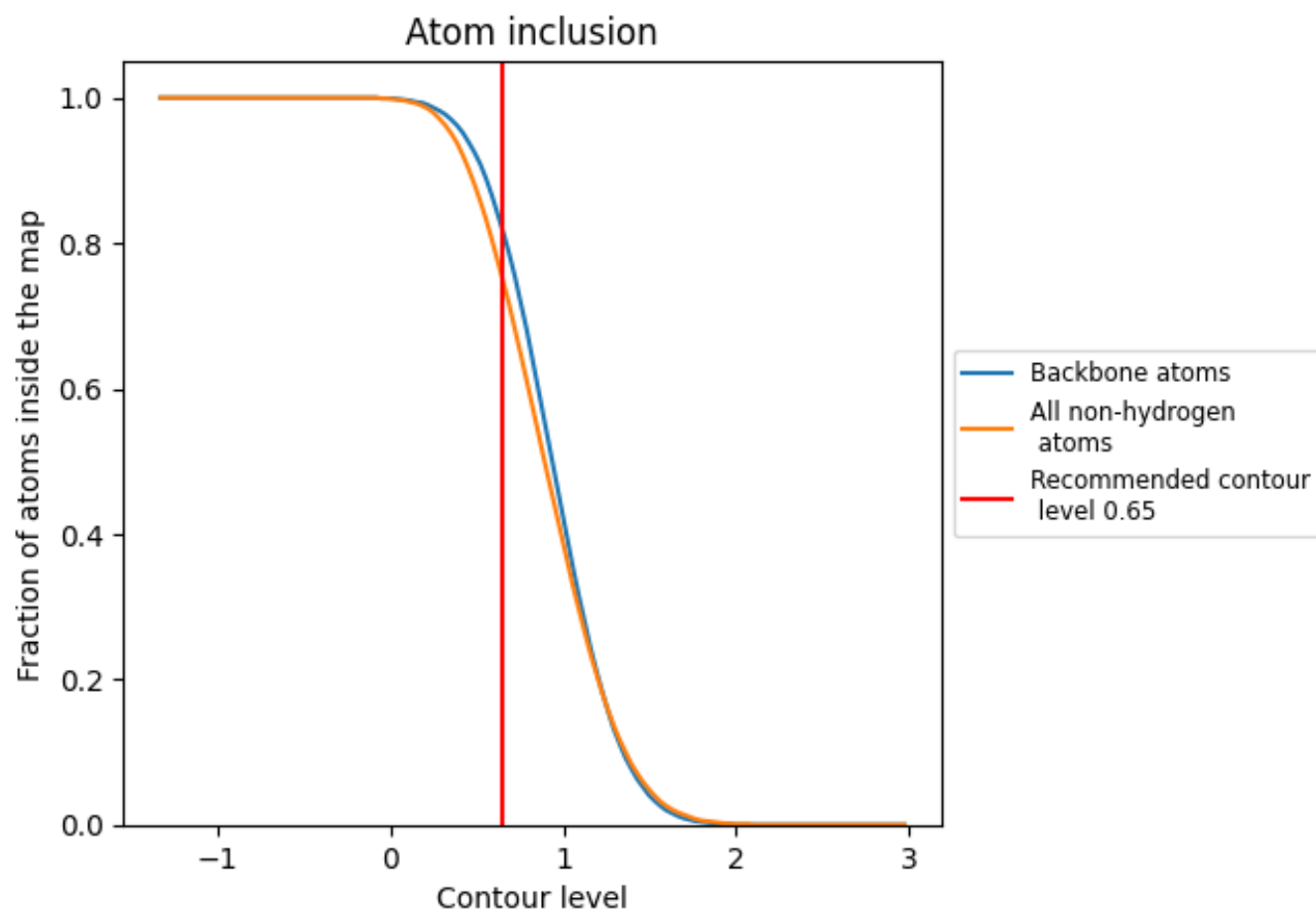
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.65).

9.4 Atom inclusion [i](#)



At the recommended contour level, 82% 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 (0.65) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7490	 0.3240
0	 0.7810	 0.3900
1	 0.7210	 0.3840
2	 0.7570	 0.3980
3	 0.8500	 0.3360
4	 0.8490	 0.3230
5	 0.8350	 0.3140
6	 0.7460	 0.2760
7	 0.4730	 0.1370
A	 0.4840	 0.2990
B	 0.5330	 0.3190
C	 0.5170	 0.2990
D	 0.5850	 0.3400
E	 0.4360	 0.3010
F	 0.4250	 0.2600
G	 0.5520	 0.3180
H	 0.4800	 0.2820
I	 0.5030	 0.3110
J	 0.5500	 0.3210
K	 0.6310	 0.3660
L	 0.3930	 0.2640
M	 0.6260	 0.3170
N	 0.5260	 0.2950
O	 0.5800	 0.3300
P	 0.5450	 0.3290
Q	 0.5430	 0.3020
R	 0.4550	 0.2820
S	 0.5820	 0.2880
T	 0.5220	 0.3260
Y	 0.8740	 0.3590
Z	 0.6770	 0.3370
a	 0.6940	 0.3750
b	 0.6780	 0.3660
c	 0.6310	 0.3570
d	 0.4230	 0.2450



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Chain	Atom inclusion	Q-score
e	 0.5340	 0.3210
f	 0.1870	 0.2380
g	 0.2460	 0.1980
h	 0.1330	 0.2190
i	 0.6580	 0.3570
j	 0.6510	 0.3830
k	 0.6730	 0.3660
l	 0.6870	 0.3700
m	 0.6860	 0.3480
n	 0.5960	 0.3230
o	 0.6440	 0.3610
p	 0.6940	 0.3200
q	 0.6520	 0.3790
r	 0.7230	 0.3710
s	 0.6600	 0.3730
t	 0.5120	 0.3540
u	 0.6780	 0.3620
v	 0.6830	 0.3710
w	 0.5870	 0.3380
x	 0.3410	 0.2780
y	 0.6750	 0.3620
z	 0.7080	 0.3670