



Full wwPDB EM Validation Report ⓘ

Mar 17, 2026 – 04:33 PM UTC

PDB ID : 7PHB / pdb_00007phb
EMDB ID : EMD-13412
Title : 70S ribosome with A- and P-site tRNAs in chloramphenicol-treated Mycoplasma pneumoniae cells
Authors : Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on : 2021-08-16
Resolution : 4.90 Å (reported)
Based on initial models : 3J9W, 7OOD, 7OOC, 4V7C

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

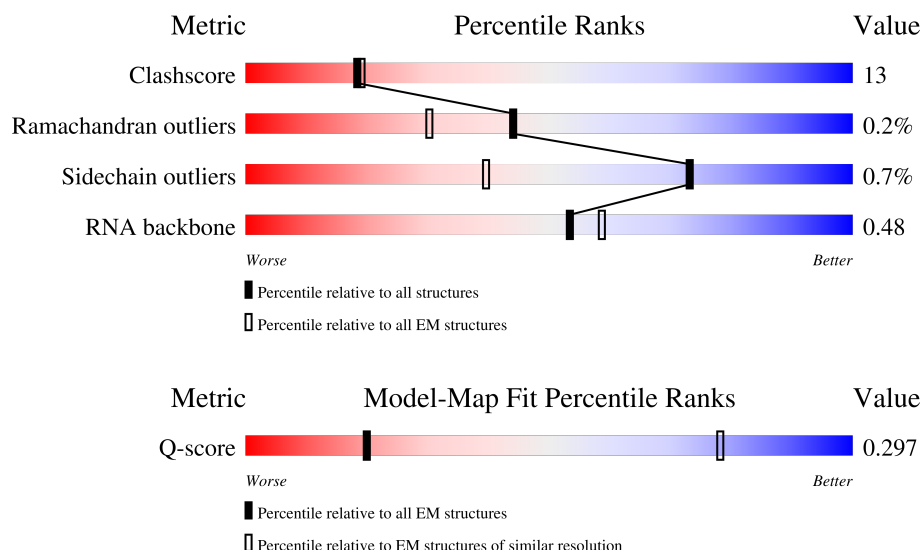
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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

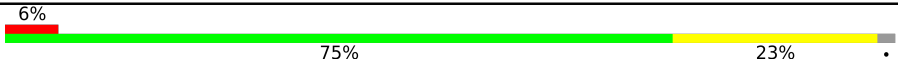
The reported resolution of this entry is 4.90 Å.

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	1274 (4.40 - 5.40)

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	

Continued on next page...

Continued from previous page...

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	

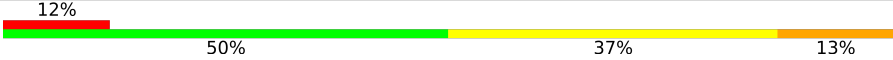
Continued on next page...

Continued from previous page...

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	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
54	6	76	
54	7	76	
55	Y	40	

2 Entry composition

There are 56 unique types of molecules in this entry. The entry contains 146364 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
			25	15	5	5			

- 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
			1182	763	206	210	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	0	0
			1153	731	226	196		

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

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

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

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

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

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

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

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

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

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

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

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

- 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		

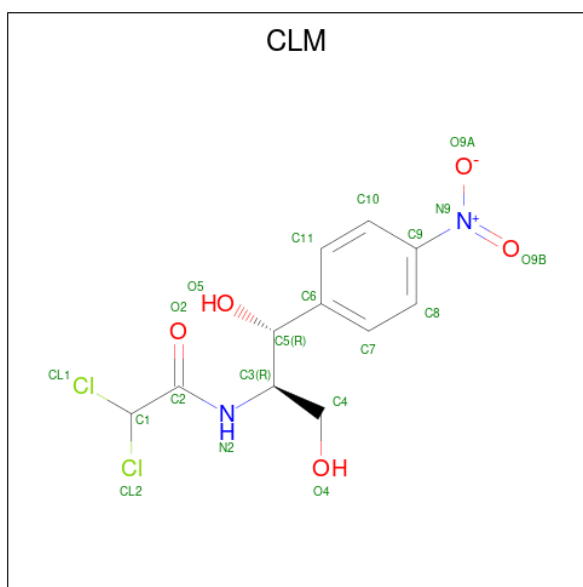
- Molecule 54 is a RNA chain called tRNA-Phe.

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
			177	81	18	70	8		

- Molecule 56 is CHLORAMPHENICOL (CCD ID: CLM) (formula: C₁₁H₁₂Cl₂N₂O₅) (labeled as "Ligand of Interest" by depositor).

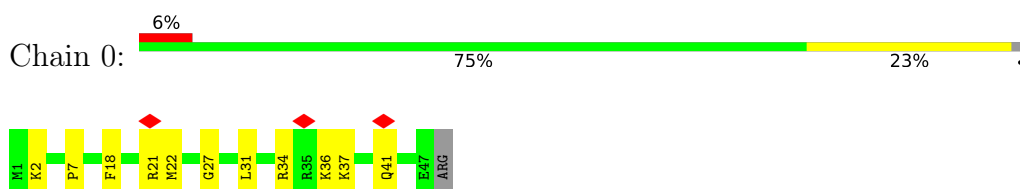


Mol	Chain	Residues	Atoms					AltConf
			Total	C	Cl	N	O	
56	3	1	20	11	2	2	5	0

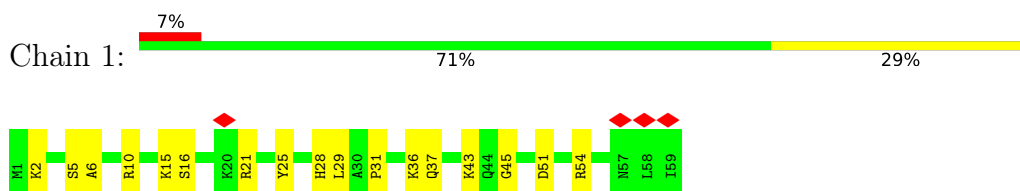
3 Residue-property plots

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

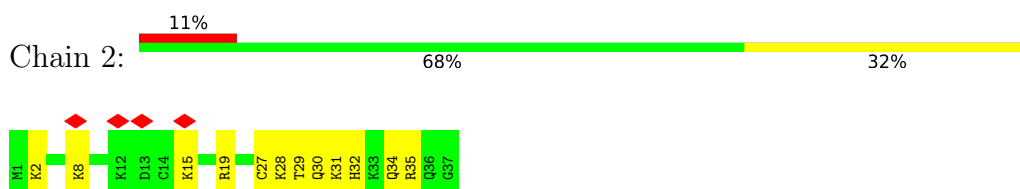
- Molecule 1: 50S ribosomal protein L34



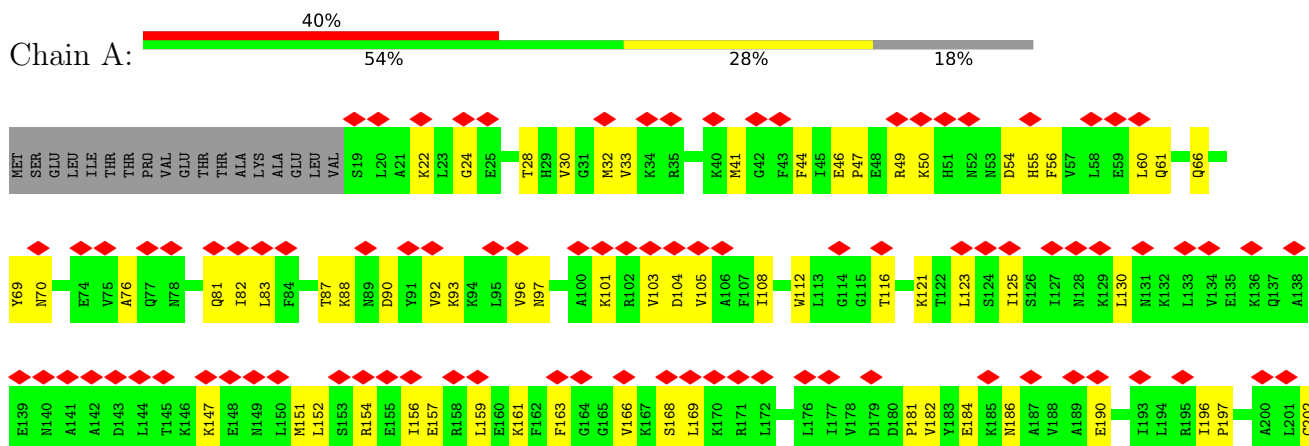
- Molecule 2: 50S ribosomal protein L35

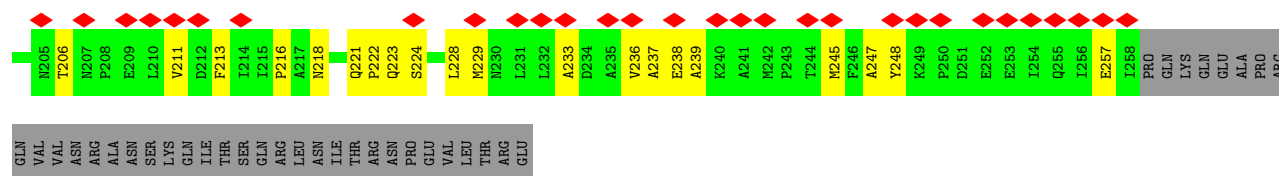


- Molecule 3: 50S ribosomal protein L36

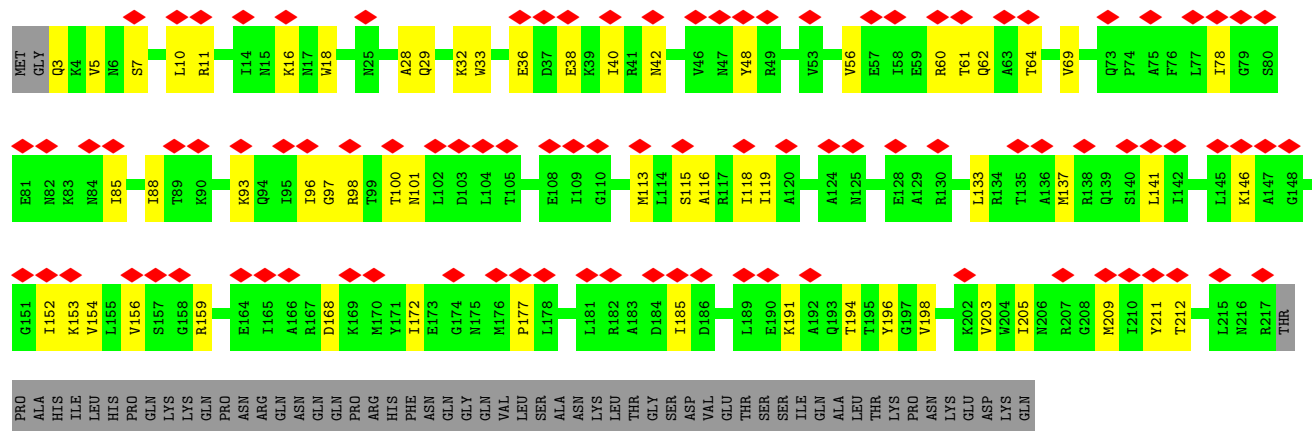


- Molecule 4: 30S ribosomal protein S2

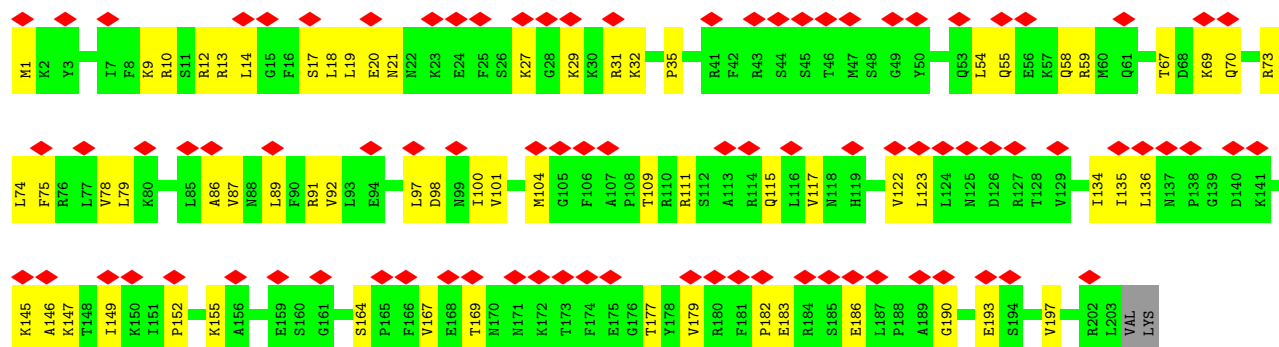
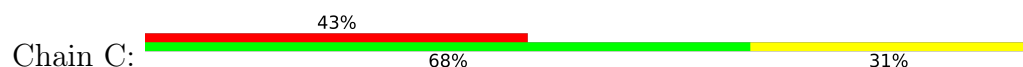




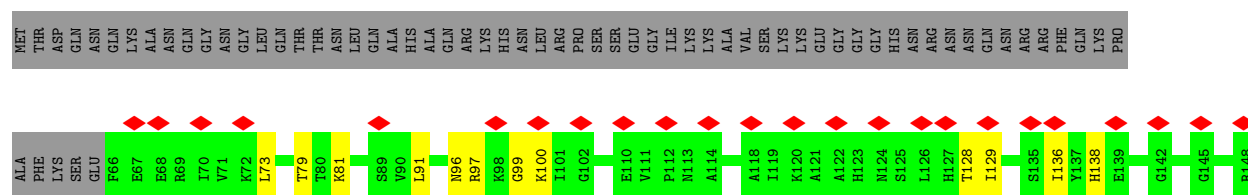
• Molecule 5: 30S ribosomal protein S3

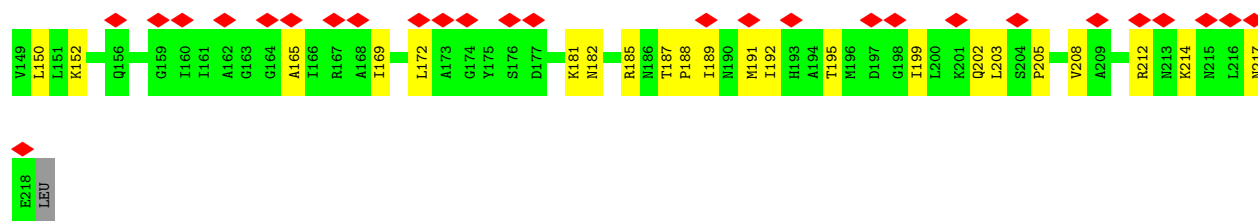


• Molecule 6: 30S ribosomal protein S4

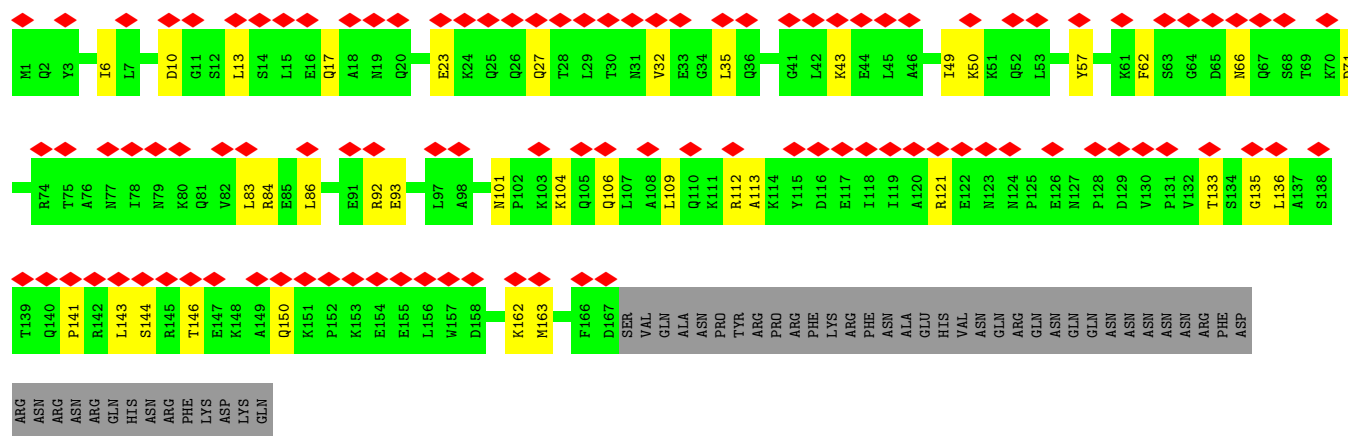


• Molecule 7: 30S ribosomal protein S5

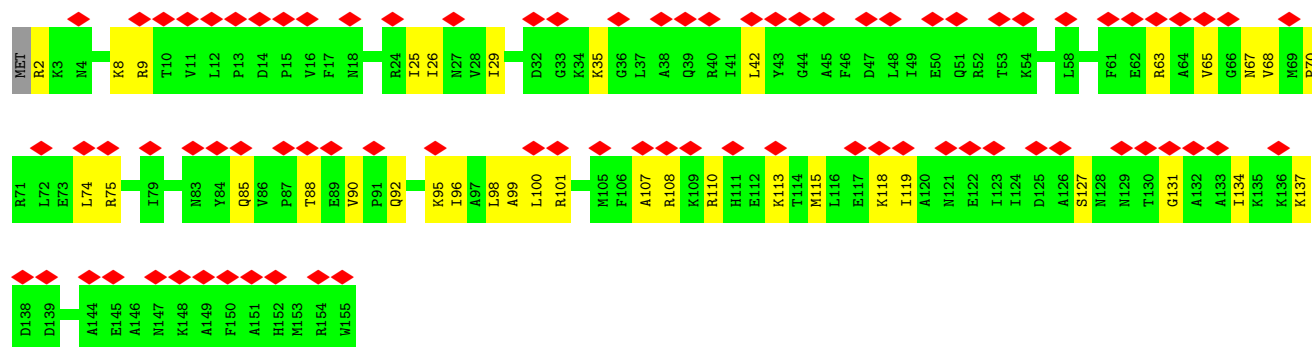
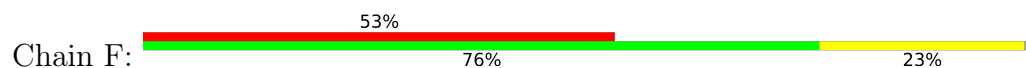




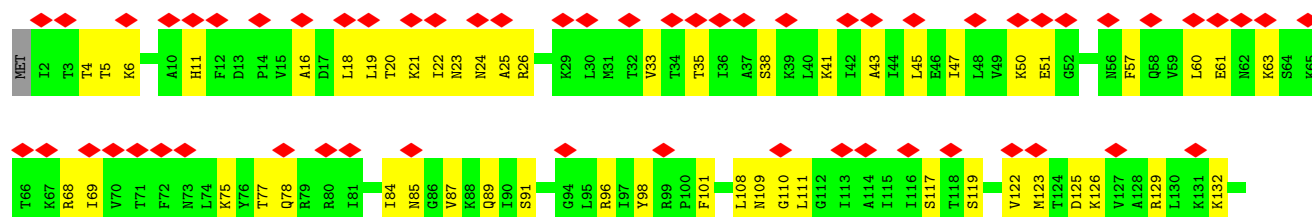
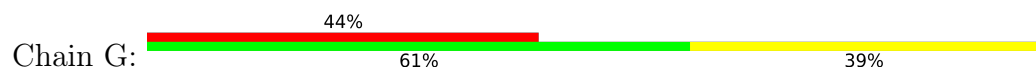
• Molecule 8: 30S ribosomal protein S6

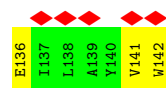


• Molecule 9: 30S ribosomal protein S7

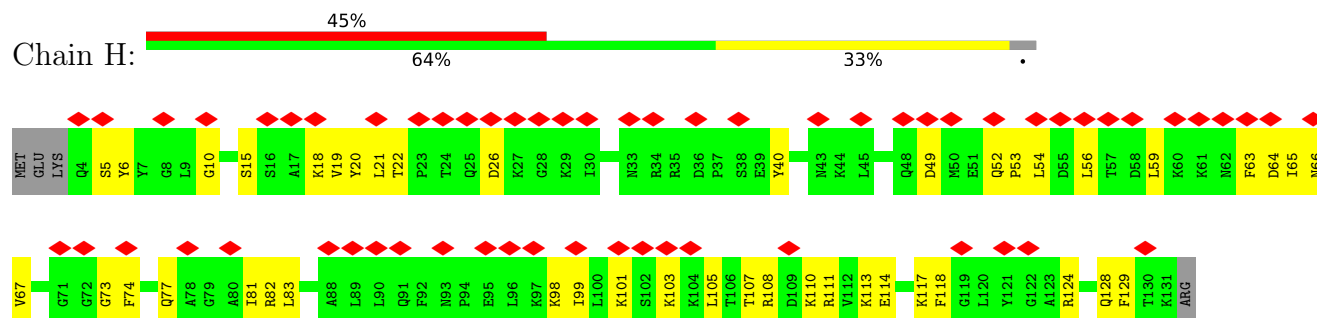


• Molecule 10: 30S ribosomal protein S8

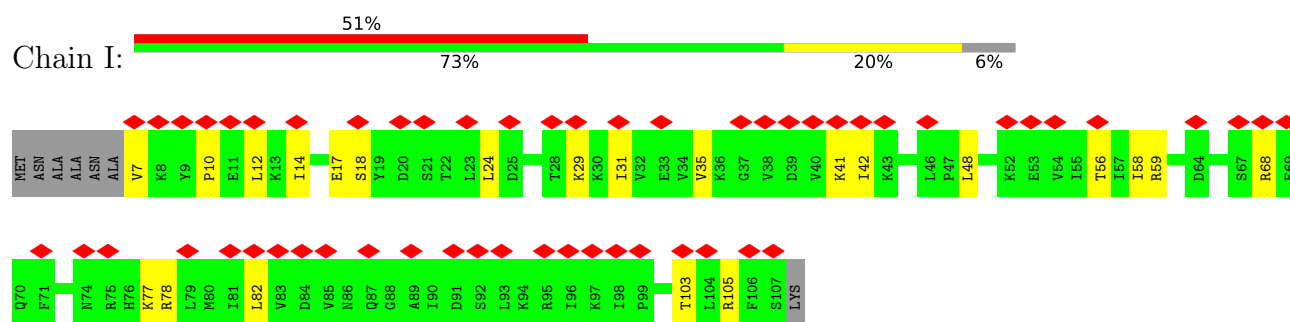




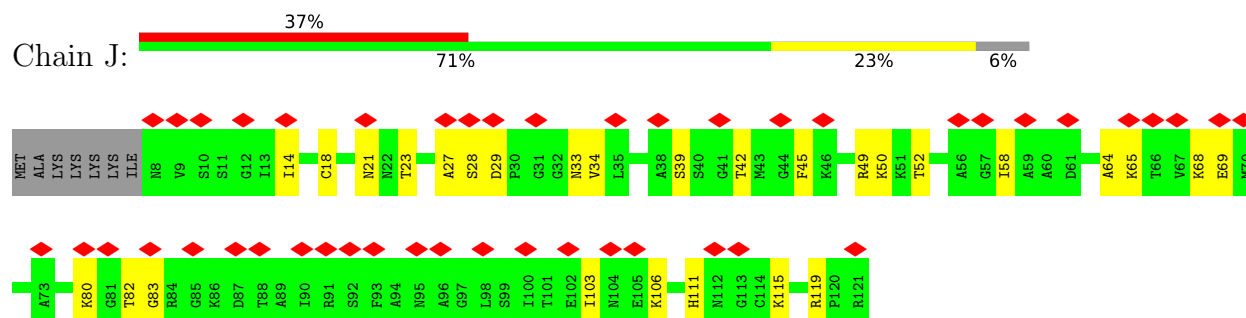
- Molecule 11: 30S ribosomal protein S9



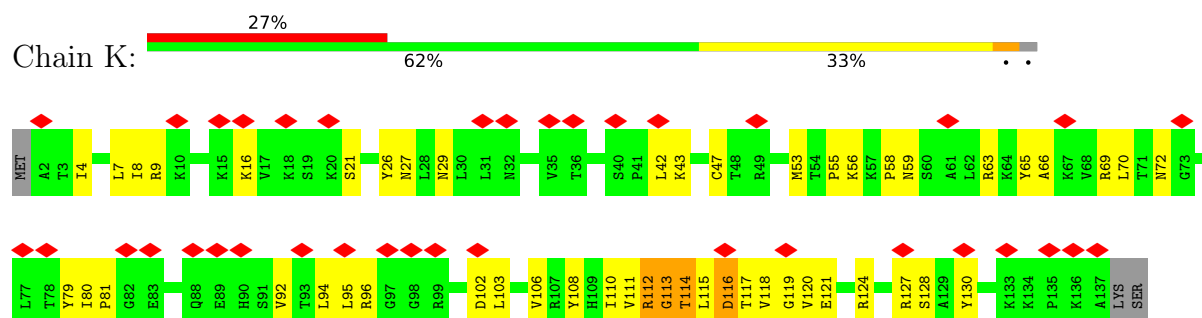
- Molecule 12: 30S ribosomal protein S10



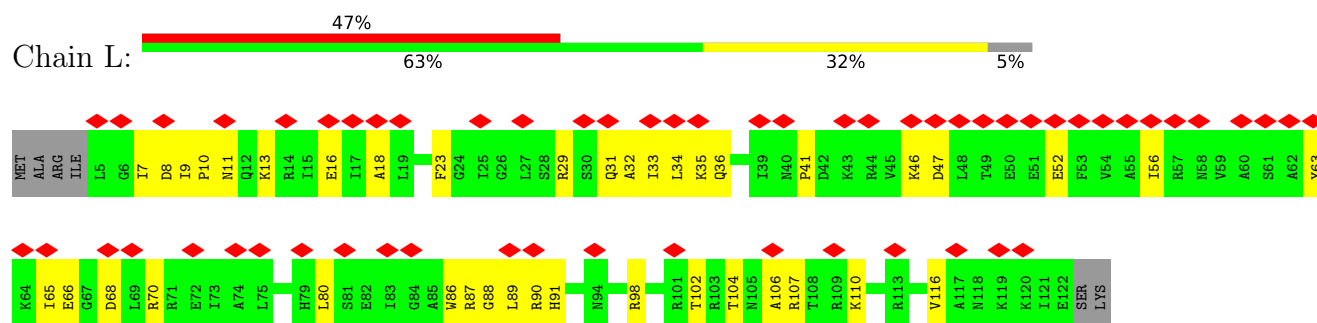
- Molecule 13: 30S ribosomal protein S11



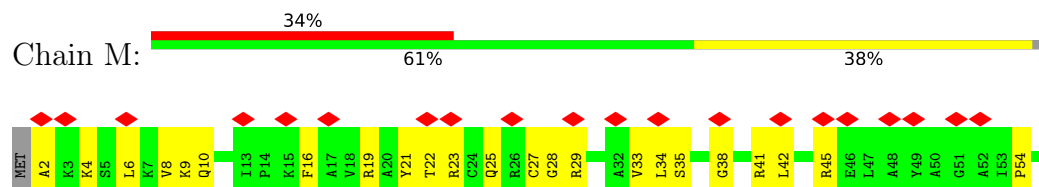
- Molecule 14: 30S ribosomal protein S12



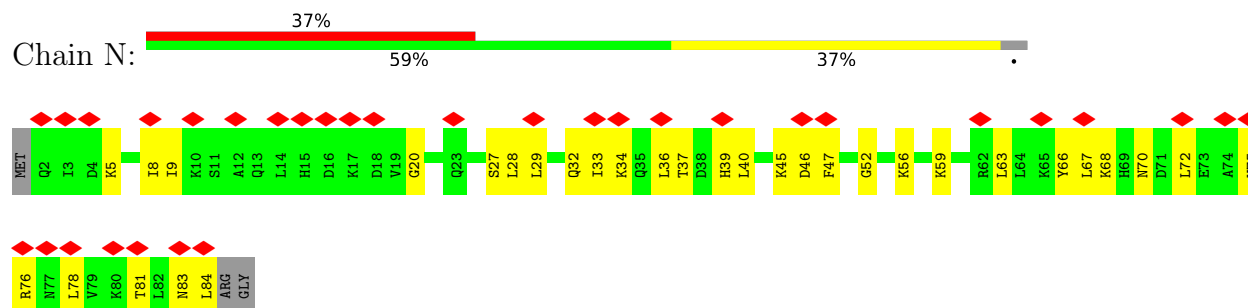
- Molecule 15: 30S ribosomal protein S13



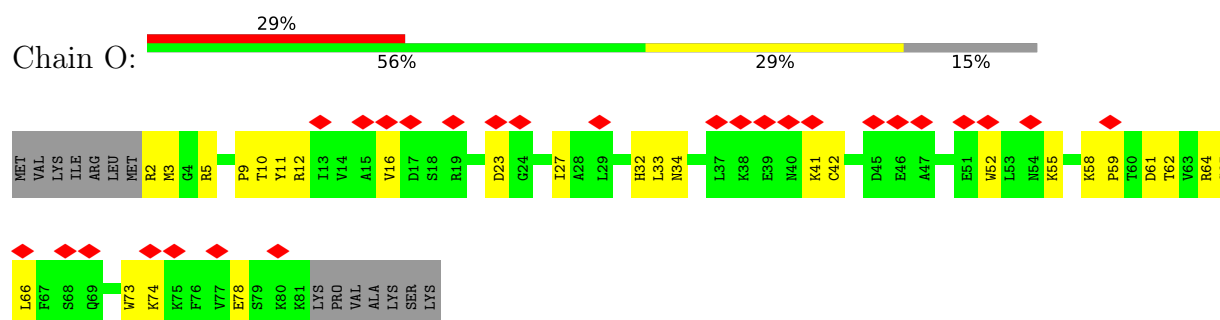
- Molecule 16: 30S ribosomal protein S14 type Z



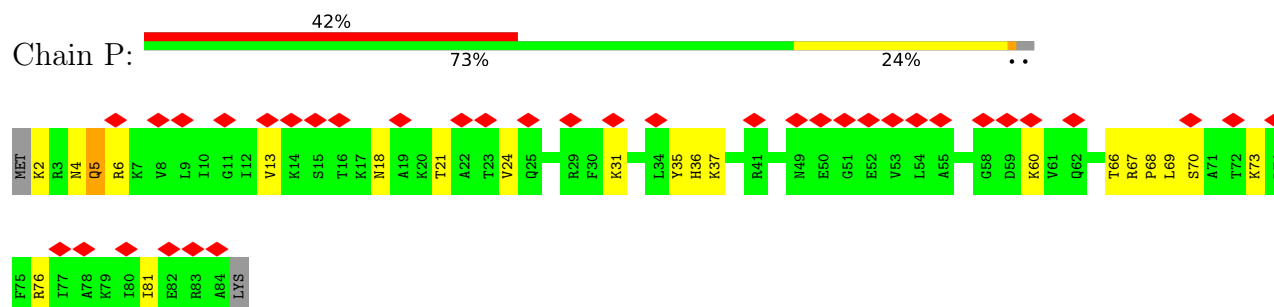
- Molecule 17: 30S ribosomal protein S15



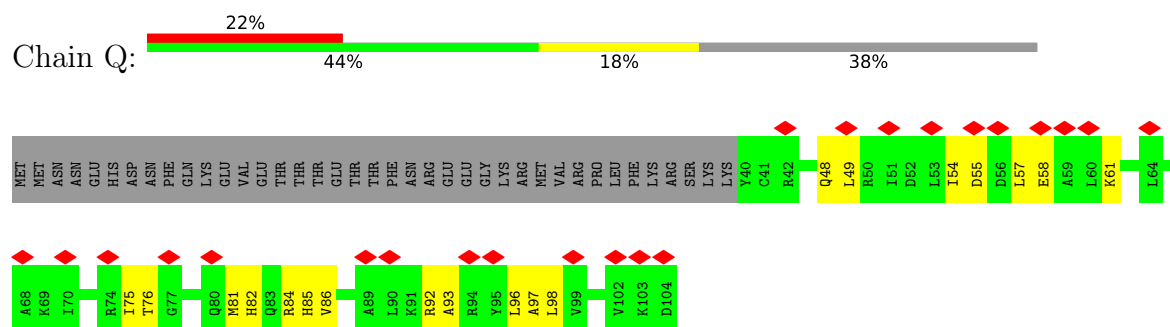
- Molecule 18: 30S ribosomal protein S16



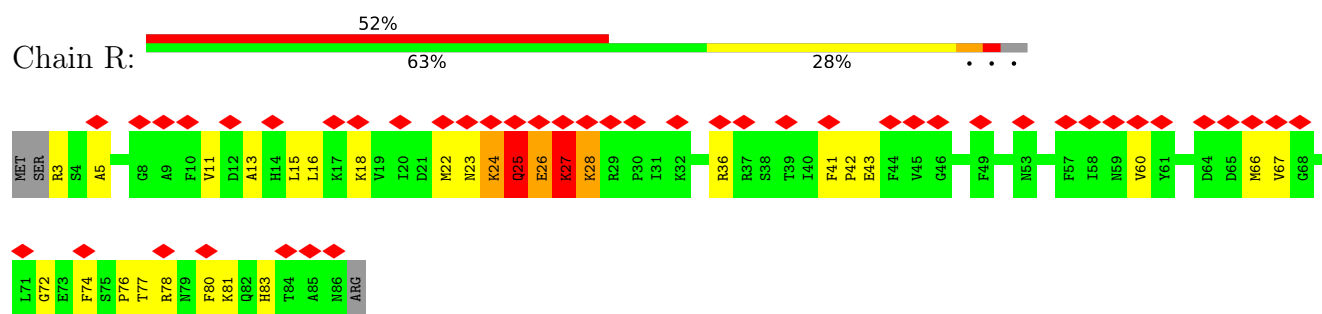
- Molecule 19: 30S ribosomal protein S17



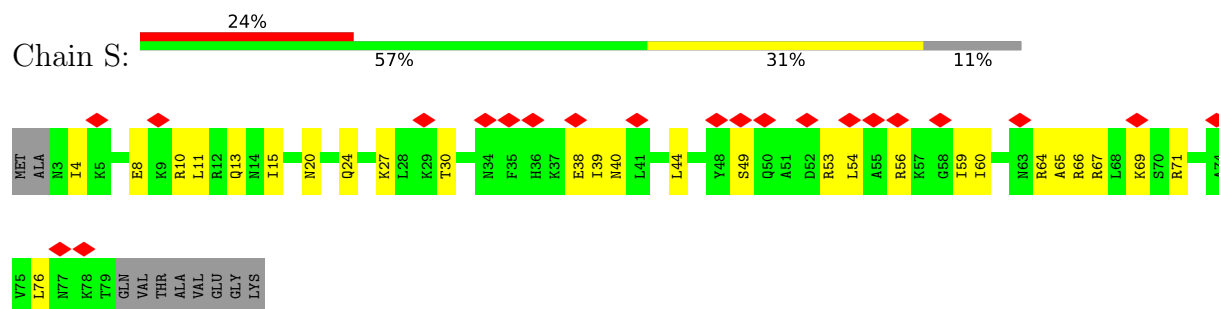
- Molecule 20: 30S ribosomal protein S18



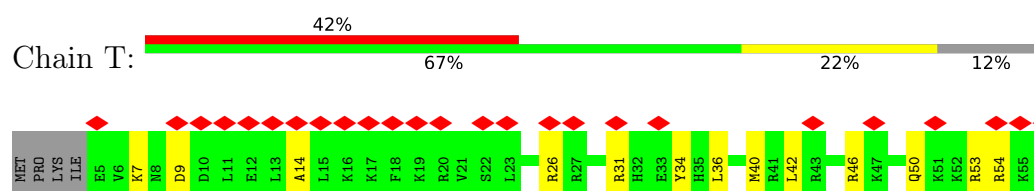
- Molecule 21: 30S ribosomal protein S19



- Molecule 22: 30S ribosomal protein S20



- Molecule 23: 30S ribosomal protein S21

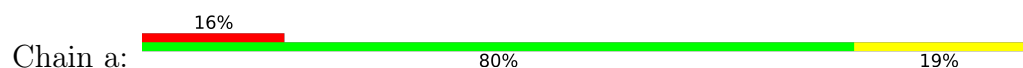


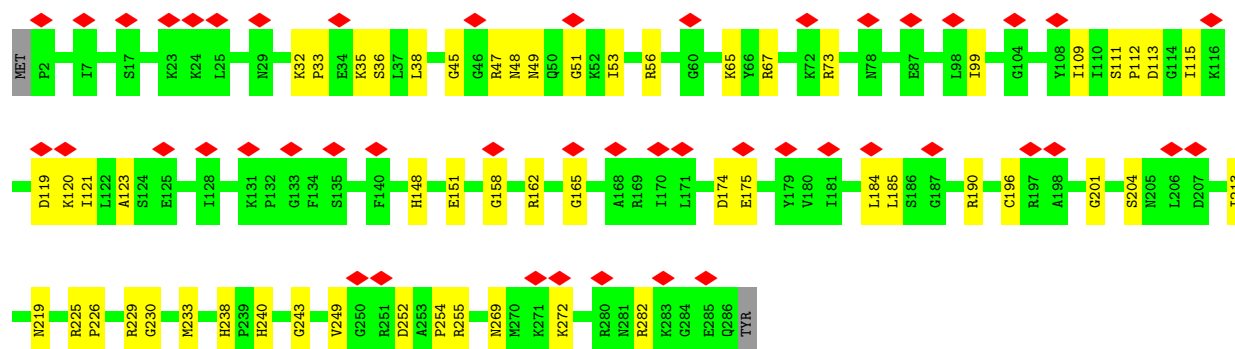
- Molecule 24: nascent peptide



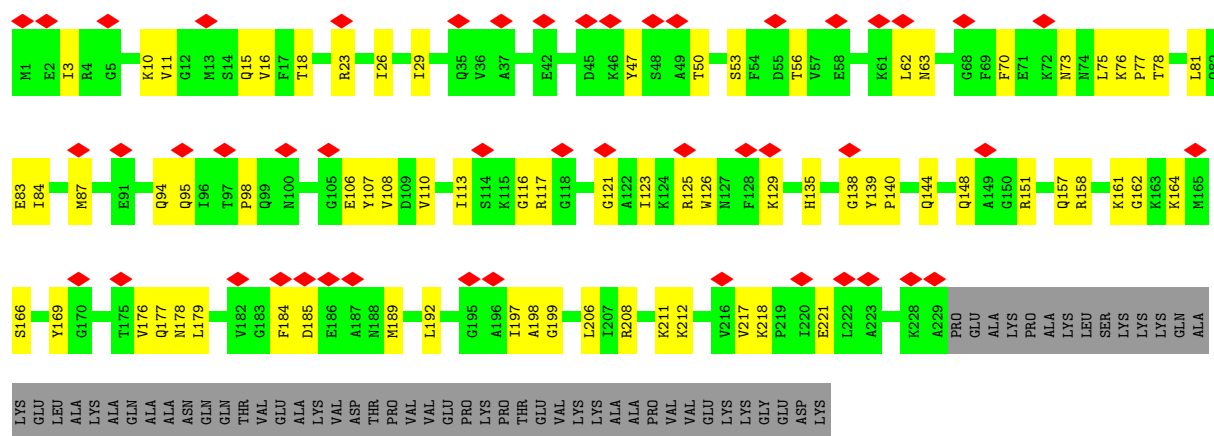
There are no outlier residues recorded for this chain.

- Molecule 25: 50S ribosomal protein L2

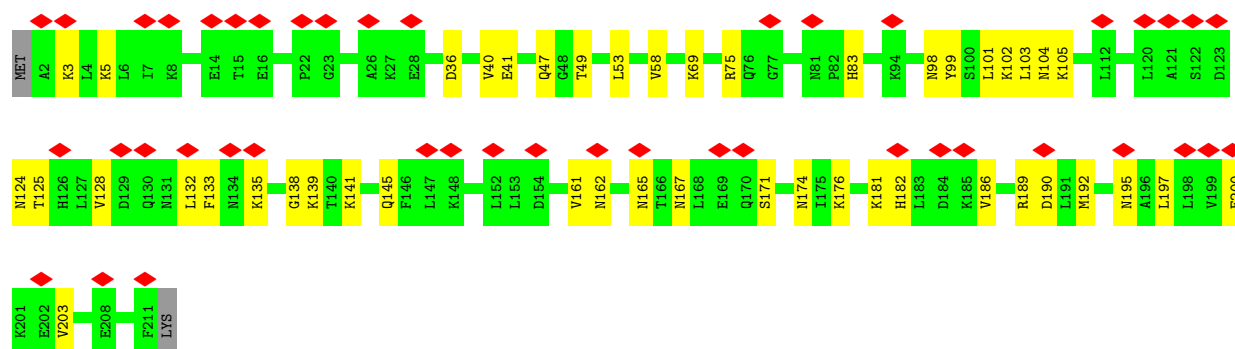




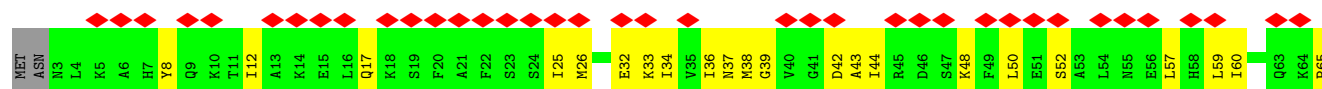
• Molecule 26: 50S ribosomal protein L3

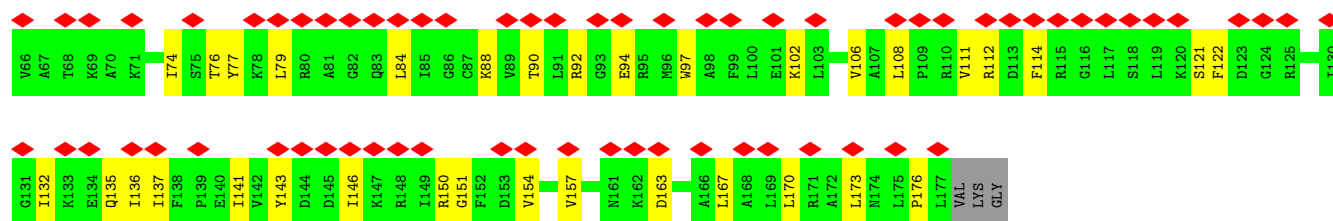


• Molecule 27: 50S ribosomal protein L4

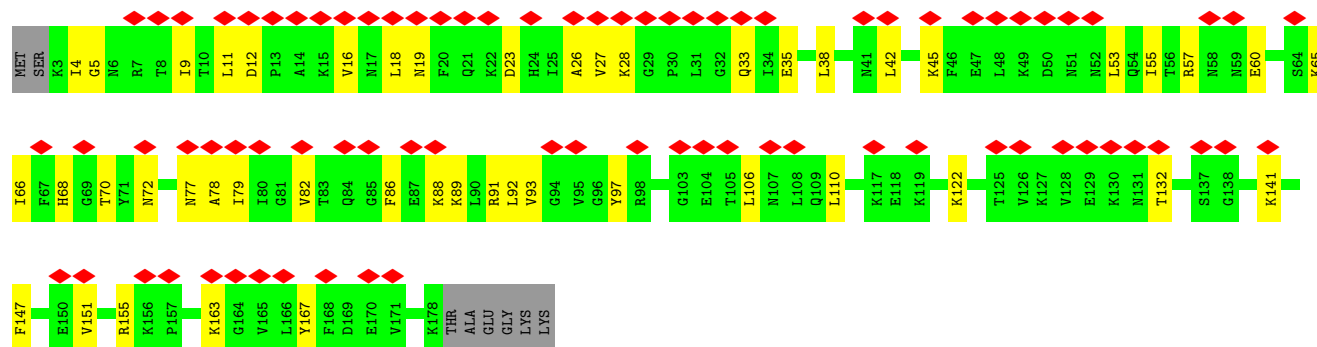
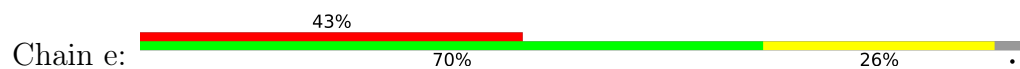


• Molecule 28: 50S ribosomal protein L5

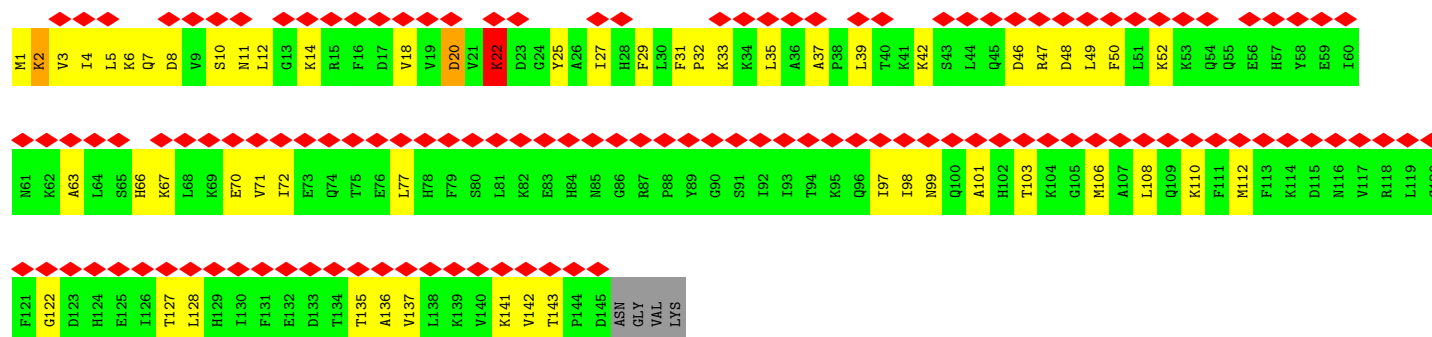
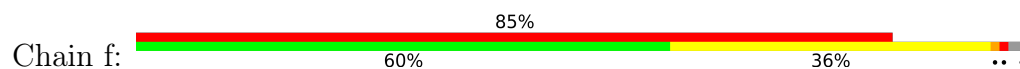




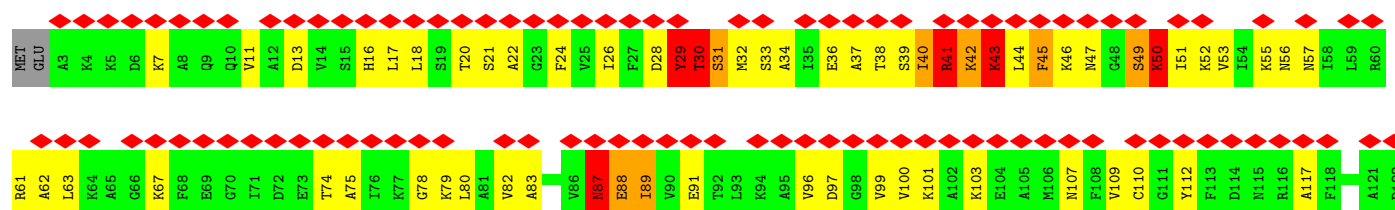
• Molecule 29: 50S ribosomal protein L6

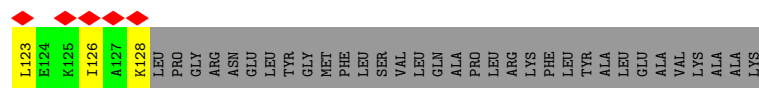


• Molecule 30: 50S ribosomal protein L9

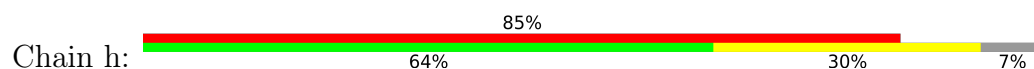


• Molecule 31: 50S ribosomal protein L10

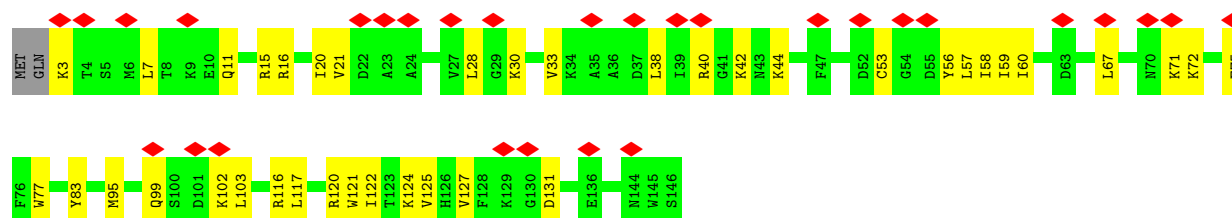




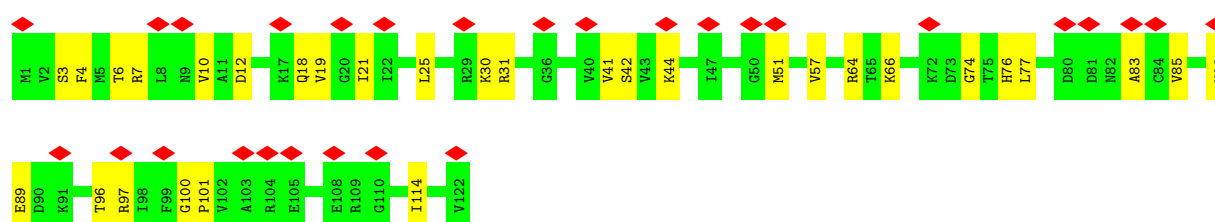
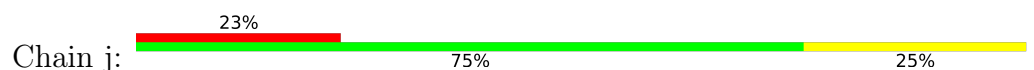
- Molecule 32: 50S ribosomal protein L11



- Molecule 33: 50S ribosomal protein L13

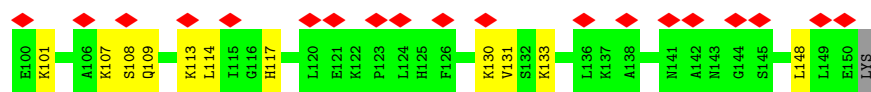


- Molecule 34: 50S ribosomal protein L14

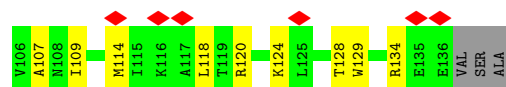
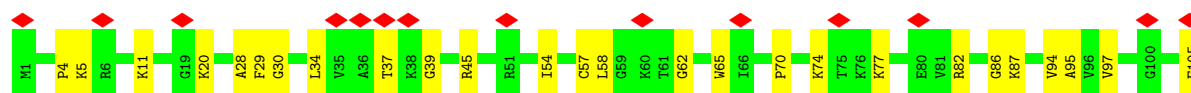


- Molecule 35: 50S ribosomal protein L15

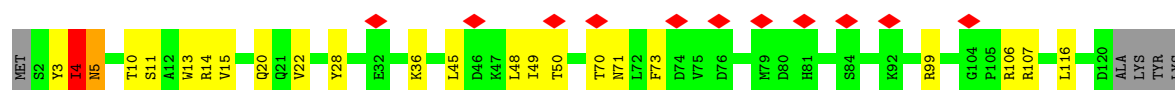
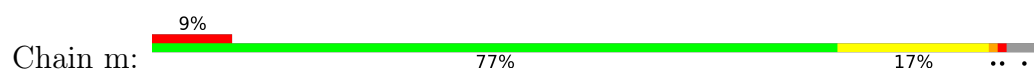




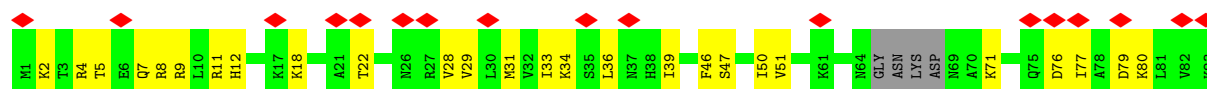
- Molecule 36: 50S ribosomal protein L16



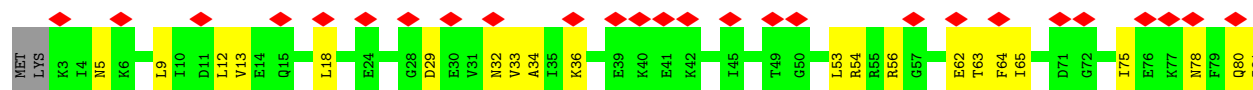
- Molecule 37: 50S ribosomal protein L17



- Molecule 38: 50S ribosomal protein L18

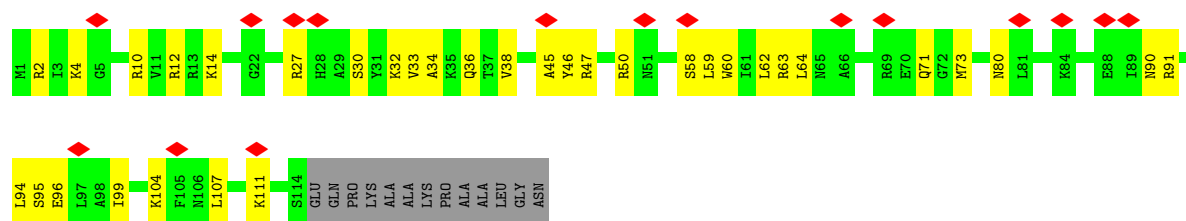


- Molecule 39: 50S ribosomal protein L19

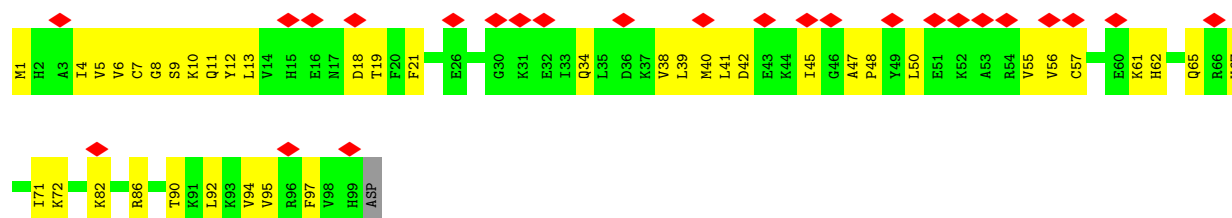


- Molecule 40: 50S ribosomal protein L20

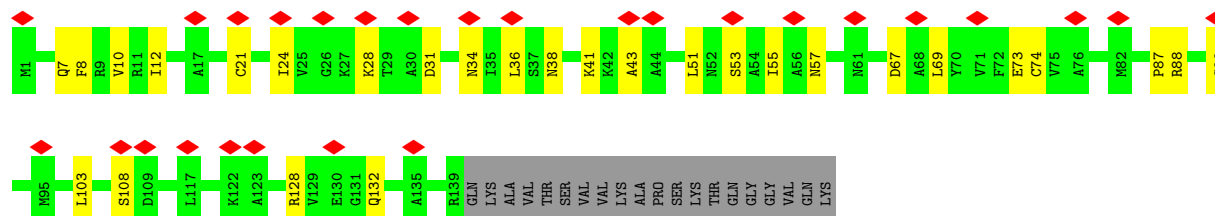




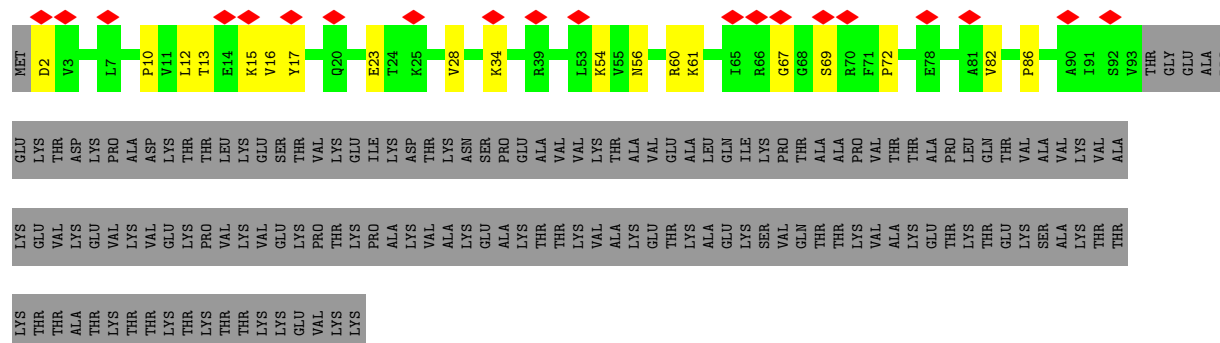
• Molecule 41: 50S ribosomal protein L21



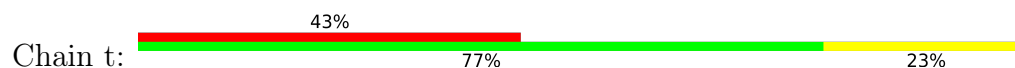
• Molecule 42: 50S ribosomal protein L22

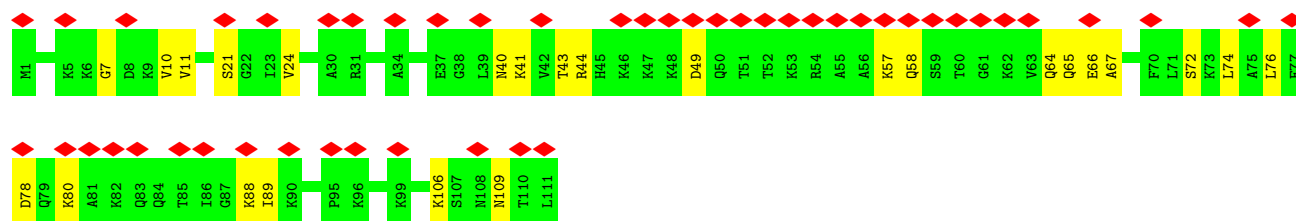


• Molecule 43: 50S ribosomal protein L23

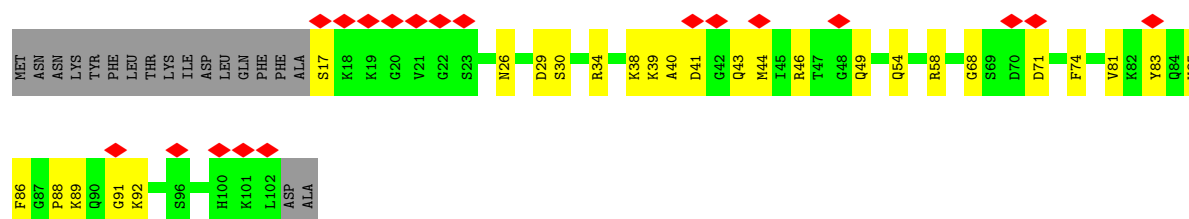


• Molecule 44: 50S ribosomal protein L24

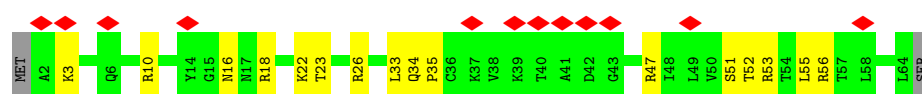
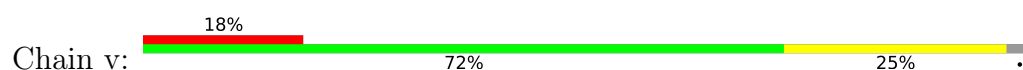




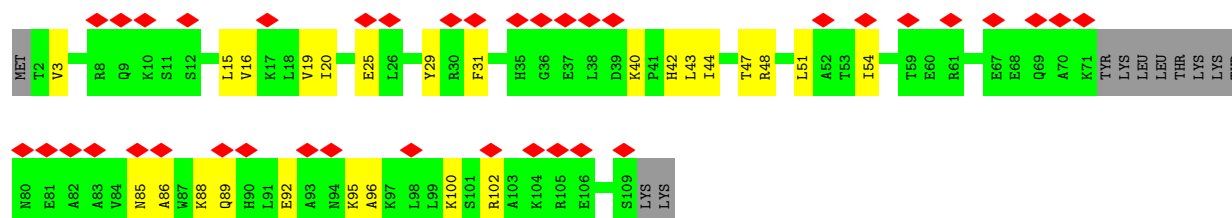
• Molecule 45: 50S ribosomal protein L27



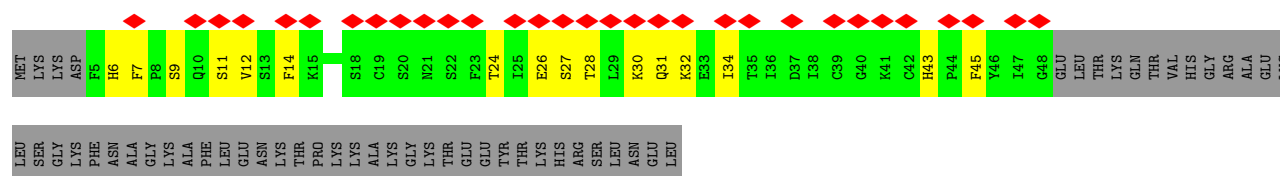
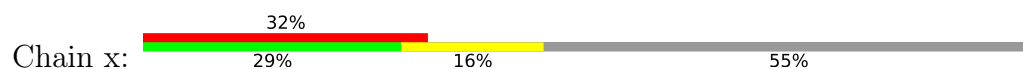
• Molecule 46: 50S ribosomal protein L28



• Molecule 47: 50S ribosomal protein L29

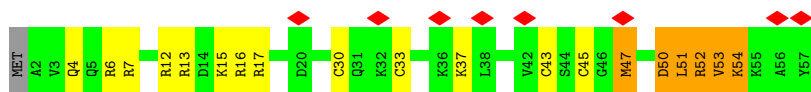


• Molecule 48: 50S ribosomal protein L31

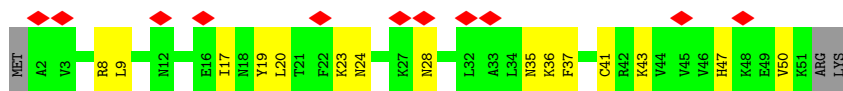


• Molecule 49: 50S ribosomal protein L32

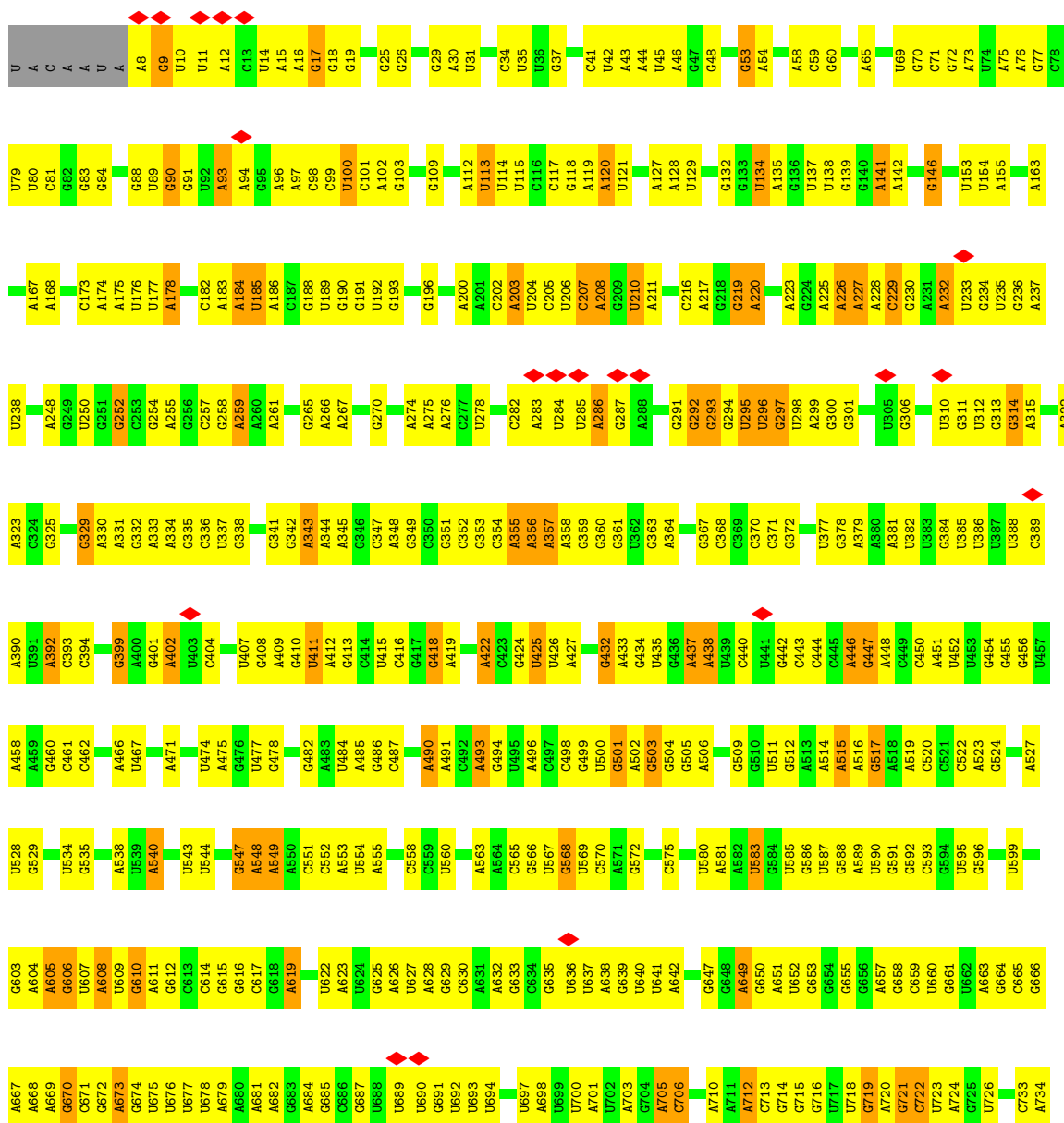




• Molecule 50: 50S ribosomal protein L33 1

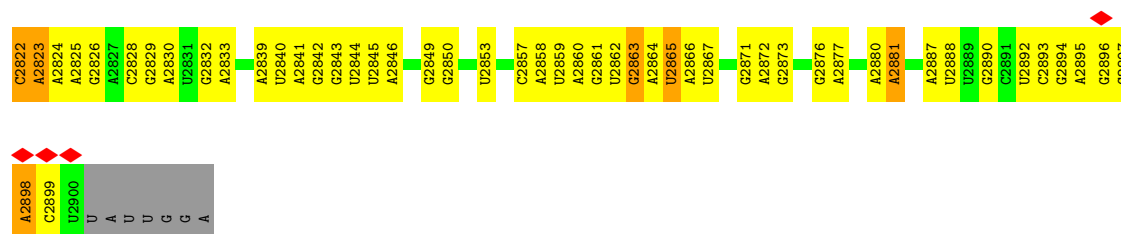


• Molecule 51: 23S ribosomal RNA



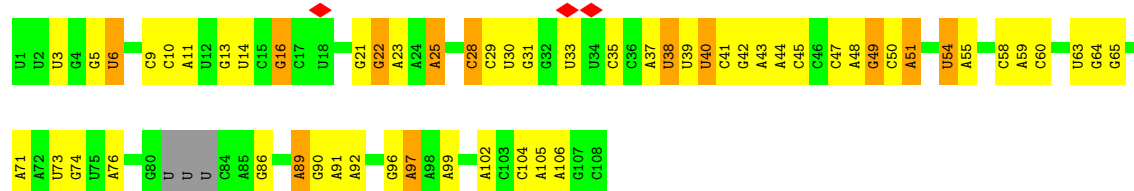






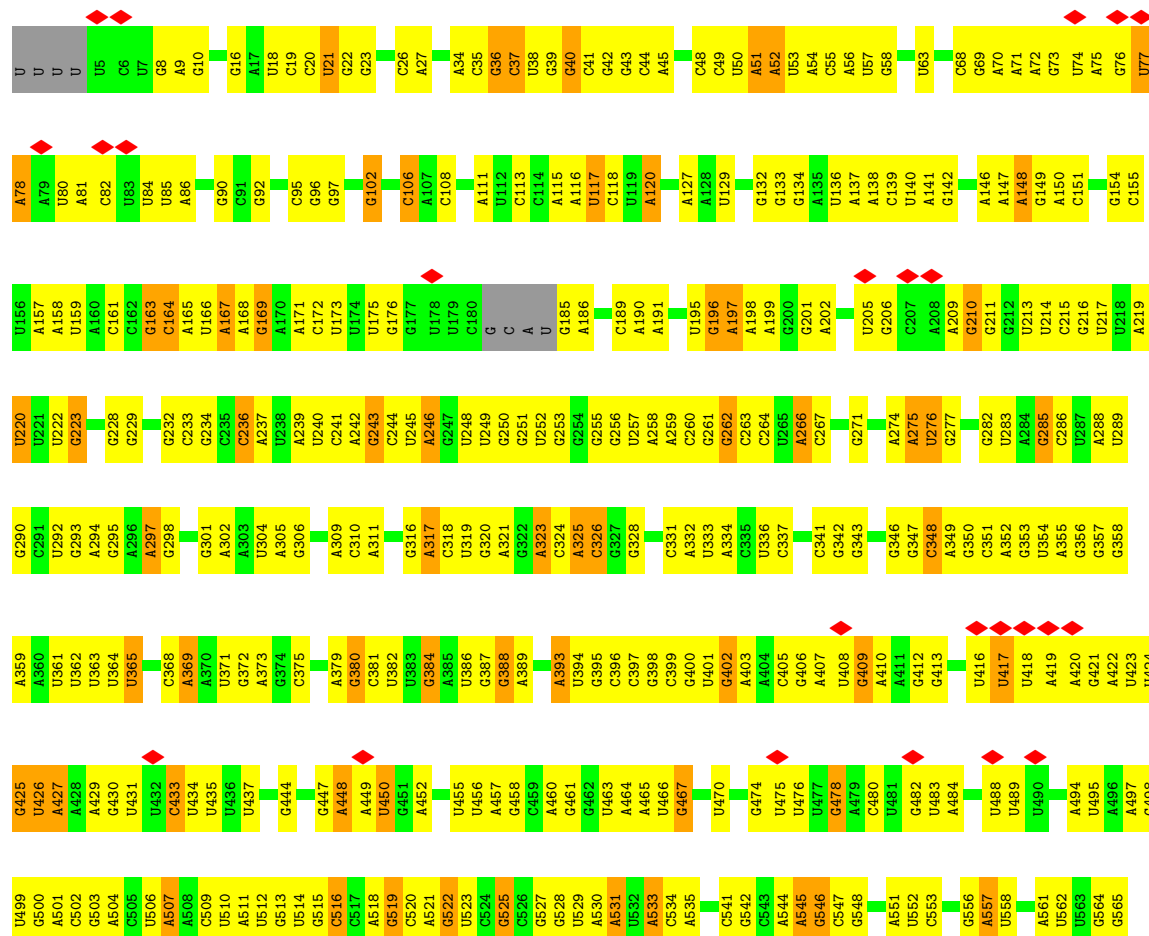
• Molecule 52: 5S ribosomal RNA

Chain 4: 44% 42% 11%

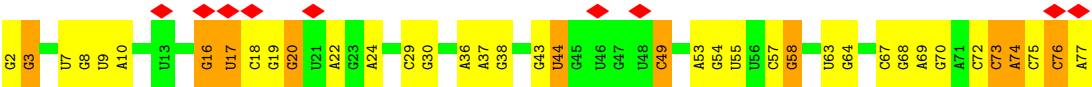


• Molecule 53: 16S ribosomal RNA

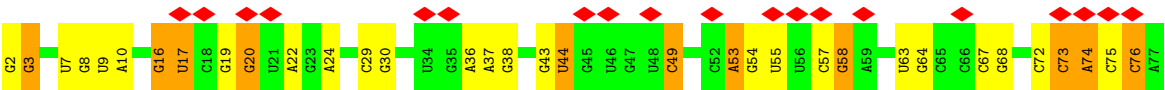
Chain 5: 36% 53% 9%







• 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	12915	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	2.826	Depositor
Minimum map value	-1.600	Depositor
Average map value	0.024	Depositor
Map value standard deviation	0.152	Depositor
Recommended contour level	0.7	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 ⓘ

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

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	0.42	0/504
2	1	0.16	0/484	0.40	0/637
3	2	0.15	0/306	0.38	0/401
4	A	0.15	0/1954	0.41	0/2642
5	B	0.14	0/1721	0.44	0/2323
6	C	0.14	0/1691	0.40	0/2267
7	D	0.16	0/1188	0.44	0/1593
8	E	0.14	0/1384	0.38	0/1867
9	F	0.13	0/1266	0.44	0/1700
10	G	0.14	0/1126	0.45	0/1517
11	H	0.16	0/1044	0.44	0/1395
12	I	0.15	0/820	0.42	0/1103
13	J	0.13	0/844	0.37	0/1136
14	K	0.27	0/1094	0.66	1/1468 (0.1%)
15	L	0.15	0/962	0.45	0/1289
16	M	0.14	0/483	0.40	0/643
17	N	0.12	0/679	0.37	0/907
18	O	0.14	0/659	0.43	0/885
19	P	0.15	0/684	0.40	0/913
20	Q	0.14	0/545	0.45	0/730
21	R	0.24	0/698	0.64	2/936 (0.2%)
22	S	0.15	0/631	0.37	0/838
23	T	0.13	0/475	0.43	0/621
25	a	0.15	0/2267	0.41	0/3044
26	b	0.13	0/1795	0.40	0/2412
27	c	0.12	0/1671	0.36	0/2246
28	d	0.15	0/1409	0.46	1/1894 (0.1%)
29	e	0.14	0/1420	0.39	0/1912
30	f	0.23	0/1205	0.47	0/1616
31	g	0.49	0/969	0.93	5/1295 (0.4%)
32	h	0.15	0/968	0.40	0/1298
33	i	0.12	0/1186	0.35	0/1592

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
34	j	0.15	0/953	0.39	0/1275
35	k	0.14	0/1170	0.42	0/1559
36	l	0.15	0/1104	0.40	0/1481
37	m	0.22	0/973	0.45	0/1309
38	n	0.13	0/897	0.43	0/1198
39	o	0.22	0/948	0.51	0/1262
40	p	0.12	0/961	0.36	0/1278
41	q	0.13	0/828	0.40	0/1111
42	r	0.17	0/1077	0.37	0/1441
43	s	0.14	0/732	0.42	0/988
44	t	0.13	0/879	0.36	0/1165
45	u	0.14	0/665	0.45	0/884
46	v	0.15	0/519	0.42	0/695
47	w	0.12	0/826	0.41	0/1104
48	x	0.13	0/353	0.32	0/474
49	y	0.39	0/457	0.77	0/601
50	z	0.14	0/412	0.40	0/547
51	3	0.09	0/69073	0.23	1/107710 (0.0%)
52	4	0.08	0/2505	0.21	0/3902
53	5	0.09	0/35768	0.21	0/55764
54	6	0.13	0/1808	0.35	0/2817
54	7	0.12	0/1808	0.35	0/2817
55	Y	0.51	1/194 (0.5%)	0.57	0/298
All	All	0.12	1/158921 (0.0%)	0.30	10/237304 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	Y	22	U	C1'-N1	6.26	1.57	1.48

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
51	3	2512	U	C2'-C3'-O3'	-11.09	97.06	113.70
14	K	116	ASP	CB-CA-C	9.23	125.42	111.85
31	g	50	LYS	N-CA-C	8.29	119.18	108.24
28	d	137	ILE	N-CA-C	-6.46	107.57	113.71
31	g	40	ILE	CB-CA-C	-6.33	103.89	111.81
21	R	25	GLN	N-CA-C	-6.14	104.50	111.07
31	g	30	THR	CB-CA-C	5.96	122.33	111.06
31	g	29	TYR	N-CA-C	-5.66	98.75	110.80
31	g	87	ASN	CB-CA-C	5.35	121.07	110.42

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	R	27	LYS	CA-C-O	-5.22	113.05	120.51

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	380	0	429	10	0
2	1	477	0	530	18	0
3	2	304	0	350	11	0
4	A	1921	0	1973	52	0
5	B	1698	0	1768	43	0
6	C	1660	0	1719	46	0
7	D	1173	0	1267	30	0
8	E	1362	0	1377	33	0
9	F	1246	0	1308	29	0
10	G	1110	0	1226	42	0
11	H	1028	0	1094	36	0
12	I	809	0	894	16	0
13	J	829	0	855	19	0
14	K	1076	0	1170	40	0
15	L	951	0	1014	29	0
16	M	474	0	509	21	0
17	N	673	0	730	24	0
18	O	646	0	677	21	0
19	P	675	0	728	18	0
20	Q	535	0	562	14	0
21	R	682	0	691	29	0
22	S	629	0	681	23	0
23	T	471	0	522	14	0
24	Z	25	0	8	0	0
25	a	2225	0	2301	42	0
26	b	1762	0	1808	54	0
27	c	1644	0	1731	37	0
28	d	1388	0	1469	41	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
29	e	1396	0	1481	33	0
30	f	1182	0	1227	72	0
31	g	960	0	1014	65	0
32	h	959	0	1039	27	0
33	i	1164	0	1192	36	0
34	j	944	0	1019	26	0
35	k	1153	0	1256	36	0
36	l	1079	0	1134	28	0
37	m	958	0	1011	18	0
38	n	889	0	952	30	0
39	o	938	0	1008	29	0
40	p	947	0	1028	35	0
41	q	811	0	858	31	0
42	r	1068	0	1150	20	0
43	s	720	0	803	18	0
44	t	872	0	972	17	0
45	u	657	0	695	22	0
46	v	513	0	560	15	0
47	w	818	0	870	17	0
48	x	344	0	333	11	0
49	y	452	0	472	17	0
50	z	408	0	440	12	0
51	3	61664	0	30954	1260	0
52	4	2239	0	1137	36	0
53	5	31943	0	16058	722	0
54	6	1618	0	821	20	0
54	7	1618	0	821	20	0
55	Y	177	0	92	10	0
56	3	20	0	11	2	0
All	All	146364	0	99799	3083	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 (3083) 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)
30:f:2:LYS:NZ	30:f:4:ILE:CB	1.96	1.24
30:f:2:LYS:NZ	30:f:4:ILE:HB	1.51	1.18
30:f:2:LYS:HE3	30:f:6:LYS:HE3	1.16	1.11
30:f:2:LYS:HE3	30:f:6:LYS:CE	1.84	1.08

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:661:G:H1	53:5:738:A:H61	1.07	1.02
53:5:1136:G:H1	53:5:1151:A:N6	1.57	1.02
31:g:41:ARG:HB3	31:g:41:ARG:CZ	1.87	1.02
30:f:2:LYS:CE	30:f:4:ILE:HB	1.91	0.99
51:3:2665:A:H62	51:3:2672:G:N2	1.61	0.98
33:i:3:LYS:N	41:q:12:TYR:HH	1.62	0.98
30:f:5:LEU:CD1	30:f:14:LYS:CD	2.42	0.97
53:5:444:G:N2	53:5:484:A:H62	1.62	0.97
51:3:1128:G:H21	51:3:1133:A:H62	1.07	0.96
51:3:2683:G:H1	51:3:2740:U:H3	1.10	0.96
53:5:1112:U:H3	53:5:1128:G:H1	1.08	0.96
51:3:1128:G:H21	51:3:1133:A:N6	1.63	0.96
51:3:1496:A:H62	51:3:1547:G:H21	1.10	0.95
21:R:23:ASN:HA	21:R:27:LYS:HA	1.48	0.95
30:f:5:LEU:CD1	30:f:14:LYS:HD2	1.95	0.95
51:3:2665:A:N6	51:3:2672:G:H21	1.66	0.93
53:5:1393:A:H62	53:5:1457:G:H21	1.11	0.92
30:f:2:LYS:HE2	30:f:50:PHE:CE2	2.05	0.92
30:f:5:LEU:HD11	30:f:14:LYS:CD	2.00	0.91
53:5:444:G:H21	53:5:484:A:N6	1.68	0.91
51:3:2749:A:H62	51:3:2771:G:H21	1.19	0.91
53:5:1278:G:H21	53:5:1307:A:H62	1.14	0.91
51:3:1128:G:N2	51:3:1133:A:H62	1.68	0.89
51:3:748:G:H21	51:3:753:A:H62	1.15	0.89
53:5:504:A:H61	53:5:523:U:H3	1.22	0.87
53:5:201:G:H1	53:5:214:U:H3	1.22	0.87
51:3:667:A:H2	51:3:2424:C:H4'	1.41	0.86
36:l:37:THR:HG1	36:l:128:THR:HG1	1.24	0.85
30:f:2:LYS:HE2	30:f:50:PHE:HE2	1.38	0.85
28:d:132:ILE:O	28:d:151:GLY:HA3	1.78	0.84
51:3:2090:G:H1	51:3:2244:U:H3	1.25	0.84
51:3:2811:G:N2	51:3:2896:G:N7	2.25	0.83
51:3:535:G:H21	51:3:540:A:H62	1.24	0.83
30:f:2:LYS:CE	30:f:6:LYS:HE3	2.06	0.83
53:5:444:G:H21	53:5:484:A:H62	0.85	0.83
30:f:5:LEU:HD13	30:f:14:LYS:HD2	1.61	0.83
51:3:2068:G:O6	56:3:3001:CLM:O4	1.95	0.83
51:3:1382:A:N6	51:3:1405:G:N2	2.28	0.82
53:5:76:G:C2	53:5:78:A:N7	2.47	0.82
51:3:1869:G:H1	51:3:1887:U:H3	1.27	0.82
30:f:3:VAL:O	30:f:3:VAL:HG12	1.79	0.81

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:34:LEU:HD11	36:l:129:TRP:HB2	1.62	0.81
21:r:22:MET:HB3	21:r:28:LYS:HB2	1.63	0.81
51:3:274:A:H62	51:3:295:U:H3	1.27	0.81
31:g:41:ARG:HB3	31:g:41:ARG:NH2	1.96	0.81
51:3:2299:U:H3	51:3:2349:G:H1	1.26	0.81
51:3:2823:A:O2'	51:3:2825:A:N7	2.14	0.80
30:f:5:LEU:CD1	30:f:14:LYS:HD3	2.11	0.80
51:3:53:G:H21	51:3:119:A:H62	1.28	0.80
29:e:141:LYS:HE2	51:3:2754:U:H5''	1.63	0.80
14:k:112:ARG:CZ	14:k:112:ARG:HB2	2.12	0.80
28:d:17:GLN:HG3	28:d:25:ILE:HA	1.63	0.79
9:f:74:LEU:HD11	9:f:85:GLN:HB3	1.65	0.79
14:k:128:SER:OG	53:5:36:G:N2	2.16	0.79
30:f:5:LEU:HD13	30:f:14:LYS:CD	2.13	0.79
51:3:1382:A:H62	51:3:1405:G:N2	1.81	0.79
53:5:1278:G:N2	53:5:1307:A:H62	1.81	0.78
30:f:5:LEU:HD11	30:f:14:LYS:HD3	1.65	0.78
51:3:2665:A:H62	51:3:2672:G:H21	0.85	0.78
51:3:748:G:H21	51:3:753:A:N6	1.81	0.77
51:3:1496:A:H62	51:3:1547:G:N2	1.82	0.77
51:3:897:A:H62	51:3:953:G:H21	1.33	0.77
51:3:569:U:H3	51:3:592:G:H1	1.29	0.77
51:3:2104:A:H61	51:3:2200:U:H3	1.32	0.77
26:b:16:VAL:HG12	26:b:26:ILE:HG13	1.67	0.77
31:g:28:ASP:HB3	31:g:107:ASN:HB3	1.67	0.77
53:5:1049:G:N2	53:5:1177:U:O4	2.18	0.77
51:3:674:G:C6	51:3:687:G:C2	2.73	0.77
54:7:7:U:H3	54:7:68:G:H1	1.32	0.77
22:s:59:ILE:HG23	22:s:60:ILE:HG12	1.65	0.77
53:5:137:A:OP2	53:5:155:C:N4	2.18	0.77
32:h:20:LYS:HG3	32:h:32:MET:HB2	1.67	0.76
53:5:1330:A:H2'	53:5:1331:A:H8	1.50	0.76
52:4:22:G:N3	52:4:25:A:N6	2.34	0.76
10:g:24:ASN:ND2	53:5:823:C:O2	2.19	0.75
51:3:10:U:O2	51:3:2898:A:N6	2.19	0.75
54:6:7:U:H3	54:6:68:G:H1	1.32	0.75
53:5:661:G:H1	53:5:738:A:N6	1.81	0.75
35:k:30:LYS:HG3	35:k:31:THR:HG23	1.68	0.75
5:b:38:GLU:OE2	5:b:42:ASN:ND2	2.20	0.74
30:f:5:LEU:HD11	30:f:14:LYS:HD2	1.60	0.74
53:5:460:A:N1	53:5:467:G:O6	2.20	0.74

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:9:LYS:NZ	53:5:975:C:O2'	2.21	0.74
51:3:2113:U:O2	51:3:2191:G:N2	2.19	0.74
51:3:2299:U:H1'	51:3:2382:A:H1'	1.69	0.74
53:5:1393:A:N6	53:5:1457:G:H21	1.85	0.74
54:7:29:C:H2'	54:7:30:G:H8	1.52	0.74
49:y:47:MET:N	49:y:47:MET:SD	2.61	0.74
51:3:1382:A:N6	51:3:1405:G:H21	1.86	0.74
8:E:6:ILE:HG12	20:Q:96:LEU:HD21	1.69	0.74
50:z:20:LEU:HD21	51:3:2427:U:H5''	1.68	0.74
53:5:21:U:O2'	53:5:571:A:N6	2.20	0.74
51:3:2360:A:N6	51:3:2373:G:N2	2.36	0.73
53:5:670:G:H2'	53:5:671:G:C8	2.23	0.73
53:5:1393:A:H62	53:5:1457:G:N2	1.84	0.73
51:3:748:G:N2	51:3:753:A:H62	1.86	0.73
9:F:70:PRO:HG3	9:F:98:LEU:HD11	1.70	0.73
49:y:6:ARG:NH2	51:3:2026:A:N7	2.35	0.73
30:f:33:LYS:HE3	30:f:112:MET:HA	1.71	0.73
51:3:2789:A:H5'	51:3:2790:A:H5'	1.71	0.73
31:g:7:LYS:NZ	51:3:1079:U:OP1	2.21	0.73
51:3:1587:U:HO2'	51:3:1588:A:H8	1.36	0.73
53:5:660:A:H61	53:5:739:G:H1	1.36	0.73
5:B:159:ARG:NH1	5:B:196:TYR:O	2.22	0.72
32:h:92:ILE:HG12	32:h:133:ILE:HD13	1.71	0.72
51:3:210:U:H2'	51:3:211:A:H8	1.55	0.72
54:6:29:C:H2'	54:6:30:G:H8	1.52	0.72
1:0:22:MET:HE1	1:0:31:LEU:HD11	1.71	0.72
30:f:2:LYS:NZ	30:f:4:ILE:H	1.87	0.72
43:s:67:GLY:HA3	43:s:72:PRO:HA	1.71	0.72
5:B:93:LYS:HD2	5:B:98:ARG:HA	1.70	0.72
51:3:1414:C:H2'	51:3:1415:A:H8	1.55	0.72
53:5:319:U:H3	53:5:323:A:H62	1.37	0.72
20:Q:84:ARG:NH2	53:5:662:G:OP1	2.23	0.72
54:6:20:G:H21	54:6:58:G:H1	1.37	0.72
36:l:34:LEU:HB2	36:l:118:LEU:HD11	1.72	0.71
53:5:1432:A:H2'	53:5:1433:G:H8	1.54	0.71
28:d:170:LEU:HA	28:d:173:LEU:HD12	1.71	0.71
33:i:44:LYS:NZ	33:i:53:CYS:SG	2.62	0.71
51:3:2829:G:OP2	51:3:2829:G:N2	2.19	0.71
53:5:499:U:H2'	53:5:500:G:C8	2.25	0.71
53:5:733:A:H2'	53:5:734:A:H8	1.53	0.71
46:v:22:LYS:NZ	51:3:425:U:OP2	2.23	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:722:C:H42	51:3:822:C:H4'	1.54	0.71
53:5:845:C:H2'	53:5:846:G:H8	1.55	0.71
51:3:2059:G:H1	51:3:2625:U:H3	1.39	0.71
54:7:20:G:H21	54:7:58:G:H1	1.37	0.71
21:R:3:ARG:NH2	53:5:1287:G:N7	2.39	0.71
20:Q:84:ARG:HH22	53:5:661:G:H5''	1.55	0.71
21:R:77:THR:HG21	53:5:1196:G:H4'	1.73	0.71
33:i:59:ILE:HB	33:i:127:VAL:HG12	1.71	0.71
45:u:26:ASN:ND2	51:3:2286:A:OP2	2.23	0.71
40:p:46:TYR:OH	51:3:1028:C:OP1	2.09	0.71
51:3:535:G:N2	51:3:540:A:H62	1.89	0.71
4:A:151:MET:SD	4:A:154:ARG:NH1	2.64	0.70
51:3:742:G:O6	51:3:760:G:N2	2.24	0.70
11:H:101:LYS:NZ	53:5:1153:G:OP2	2.25	0.70
43:s:60:ARG:NH1	51:3:1367:G:OP2	2.24	0.70
9:F:35:LYS:HD2	53:5:1348:G:H5''	1.73	0.70
14:K:29:ASN:ND2	53:5:51:A:N7	2.38	0.70
30:f:11:ASN:ND2	30:f:27:ILE:HG21	2.06	0.70
30:f:2:LYS:HG2	30:f:4:ILE:H	1.55	0.70
53:5:1487:U:H3	53:5:1498:G:H1	1.39	0.70
30:f:2:LYS:CE	30:f:50:PHE:CE2	2.74	0.70
51:3:755:C:H2'	51:3:756:A:H8	1.55	0.70
2:1:28:HIS:HB3	2:1:29:LEU:HD12	1.73	0.70
51:3:2360:A:N6	51:3:2373:G:H21	1.90	0.70
51:3:2589:G:O2'	51:3:2591:G:O6	2.10	0.70
51:3:733:C:O2'	51:3:769:A:N6	2.25	0.70
53:5:1438:U:H2'	53:5:1439:G:H8	1.56	0.70
54:6:16:G:H22	54:6:49:C:H42	1.40	0.70
51:3:632:A:H2'	51:3:633:G:H8	1.57	0.70
51:3:865:A:H61	51:3:2453:G:H21	1.40	0.70
51:3:1442:G:H1	51:3:1622:C:H42	1.39	0.70
51:3:2287:G:O2'	51:3:2335:A:O2'	2.10	0.70
15:L:29:ARG:HH11	15:L:33:ILE:HD11	1.57	0.69
25:a:65:LYS:NZ	51:3:1603:A:OP1	2.25	0.69
26:b:63:ASN:HD21	51:3:2815:G:H5''	1.56	0.69
1:0:37:LYS:NZ	51:3:504:G:OP2	2.25	0.69
39:o:36:LYS:HB2	39:o:85:ASN:HB3	1.75	0.69
51:3:2483:C:C4	51:3:2537:G:N2	2.60	0.69
51:3:622:U:H2'	51:3:623:A:H8	1.55	0.69
51:3:780:G:H21	51:3:785:A:H61	1.41	0.69
5:B:11:ARG:HG3	5:B:16:LYS:HD2	1.74	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:67:LEU:HD13	33:i:71:LYS:HB2	1.74	0.69
4:A:87:THR:OG1	4:A:184:GLU:OE1	2.10	0.69
49:y:16:ARG:NH2	51:3:1294:G:OP1	2.24	0.69
51:3:1841:U:H5''	51:3:1842:G:H5'	1.72	0.69
52:4:58:C:H2'	52:4:59:A:C8	2.28	0.69
54:7:16:G:H22	54:7:49:C:H42	1.40	0.69
29:e:155:ARG:NH2	51:3:2674:C:O2	2.25	0.69
53:5:790:U:O4	53:5:1493:A:N6	2.24	0.69
25:a:282:ARG:NH2	51:3:1805:U:OP2	2.25	0.68
35:k:13:ARG:NH1	51:3:1275:C:OP1	2.26	0.68
40:p:47:ARG:NH1	51:3:593:C:O2'	2.26	0.68
41:q:40:MET:HE1	41:q:45:ILE:HG23	1.73	0.68
37:m:5:ASN:OD1	37:m:5:ASN:N	2.26	0.68
51:3:734:A:N6	51:3:768:G:H21	1.91	0.68
27:c:69:LYS:NZ	51:3:2069:A:OP1	2.27	0.68
48:x:12:VAL:HB	48:x:27:SER:HB2	1.75	0.68
53:5:108:C:H42	53:5:234:G:H1	1.41	0.68
53:5:1110:C:H2'	53:5:1111:G:H8	1.58	0.68
10:G:77:THR:HG22	10:G:78:GLN:H	1.57	0.68
25:a:219:ASN:ND2	51:3:1798:A:OP1	2.27	0.68
51:3:780:G:N2	51:3:785:A:H61	1.91	0.68
51:3:1079:U:O2'	51:3:1146:A:N1	2.26	0.68
51:3:2455:G:N2	51:3:2458:A:OP2	2.26	0.68
51:3:585:U:H2'	51:3:586:G:H8	1.59	0.68
11:H:19:VAL:HG12	11:H:67:VAL:HG12	1.75	0.68
51:3:1324:A:OP1	51:3:2717:G:O2'	2.09	0.68
51:3:1507:G:O2'	51:3:1508:G:OP1	2.11	0.68
9:F:92:GLN:HA	9:F:95:LYS:HD2	1.74	0.68
15:L:66:GLU:OE2	15:L:70:ARG:NH2	2.27	0.68
15:L:80:LEU:HD11	15:L:87:ARG:HD2	1.76	0.68
34:j:6:THR:HG1	51:3:1700:G:HO2'	1.41	0.68
43:s:28:VAL:HG22	43:s:82:VAL:HG12	1.76	0.67
30:f:2:LYS:NZ	30:f:4:ILE:N	2.20	0.67
51:3:734:A:H62	51:3:768:G:N2	1.91	0.67
51:3:2083:U:OP2	51:3:2246:G:N2	2.25	0.67
51:3:2078:A:H2'	51:3:2079:G:H8	1.58	0.67
53:5:320:G:N2	53:5:323:A:OP2	2.28	0.67
14:K:56:LYS:HG3	14:K:58:PRO:HD2	1.76	0.67
29:e:16:VAL:HA	29:e:28:LYS:O	1.93	0.67
53:5:166:U:N3	53:5:197:A:N7	2.43	0.67
53:5:749:G:H1'	53:5:751:C:H41	1.59	0.67

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:90:VAL:HG13	9:F:95:LYS:HE3	1.76	0.67
51:3:2749:A:H62	51:3:2771:G:N2	1.89	0.67
10:G:87:VAL:HG12	10:G:141:VAL:HG12	1.76	0.67
14:K:96:ARG:NH1	14:K:130:TYR:OH	2.28	0.67
51:3:452:U:H3	51:3:2415:A:H61	1.40	0.67
53:5:140:U:H2'	53:5:141:A:H8	1.60	0.67
23:T:9:ASP:HB2	23:T:14:ALA:HB2	1.77	0.67
51:3:433:A:O2'	51:3:2238:G:N2	2.27	0.67
53:5:1402:U:H2'	53:5:1403:A:H8	1.59	0.67
42:r:69:LEU:HA	42:r:108:SER:O	1.95	0.67
53:5:649:U:O4	53:5:749:G:O2'	2.11	0.67
26:b:3:ILE:HD11	26:b:208:ARG:HB3	1.76	0.67
41:q:41:LEU:H	41:q:50:LEU:HD11	1.60	0.67
51:3:1071:G:H1	51:3:1154:U:H3	1.43	0.67
53:5:1062:C:H2'	53:5:1063:G:H8	1.59	0.67
53:5:1378:C:N4	55:Y:18:U:OP1	2.27	0.66
15:L:90:ARG:NH2	53:5:1201:C:OP1	2.29	0.66
53:5:76:G:N2	53:5:78:A:C5	2.63	0.66
51:3:1054:U:OP1	51:3:1070:U:O2'	2.12	0.66
51:3:1239:G:O2'	51:3:1267:A:N1	2.29	0.66
53:5:1487:U:H2'	53:5:1488:A:H8	1.61	0.66
5:B:28:ALA:O	5:B:32:LYS:NZ	2.27	0.66
51:3:118:G:OP2	51:3:120:A:O2'	2.13	0.66
51:3:358:A:N6	51:3:372:G:O2'	2.28	0.66
11:H:108:ARG:HD3	11:H:110:LYS:H	1.61	0.66
14:K:112:ARG:HA	14:K:117:THR:HB	1.77	0.66
51:3:734:A:H62	51:3:768:G:H21	1.42	0.66
18:O:2:ARG:N	18:O:23:ASP:OD2	2.28	0.66
36:l:30:GLY:HA3	36:l:105:GLU:HB2	1.77	0.66
51:3:184:A:O2'	51:3:186:A:N7	2.29	0.66
53:5:644:U:H2'	53:5:645:A:H8	1.61	0.66
3:2:8:LYS:NZ	51:3:2475:C:OP1	2.28	0.66
3:2:29:THR:HG22	3:2:31:LYS:H	1.60	0.66
51:3:500:U:O4	51:3:501:G:N2	2.29	0.66
53:5:711:G:H2'	53:5:712:A:C8	2.31	0.66
51:3:892:G:H2'	51:3:893:A:H8	1.60	0.66
51:3:2116:U:H5''	51:3:2156:G:H21	1.61	0.66
35:k:30:LYS:HE2	51:3:599:U:H5''	1.77	0.65
39:o:29:ASP:HA	39:o:93:ARG:HA	1.78	0.65
42:r:88:ARG:HB2	42:r:92:SER:HB2	1.77	0.65
51:3:1441:A:H61	51:3:1623:U:H3	1.44	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:181:LYS:HD3	53:5:8:G:H21	1.61	0.65
26:b:144:GLN:NE2	51:3:2057:C:O2'	2.28	0.65
30:f:127:THR:HA	30:f:137:VAL:HG12	1.79	0.65
35:k:69:ARG:NH1	51:3:2412:A:O2'	2.30	0.65
11:H:73:GLY:O	11:H:77:GLN:NE2	2.27	0.65
50:z:19:TYR:OH	50:z:37:PHE:O	2.13	0.65
51:3:2145:A:H2'	51:3:2146:A:C8	2.32	0.65
6:C:70:GLN:NE2	53:5:399:C:OP2	2.28	0.65
33:i:42:LYS:NZ	51:3:1043:C:OP1	2.29	0.65
51:3:2716:U:H2'	51:3:2717:G:H8	1.61	0.65
53:5:35:C:H2'	53:5:36:G:C8	2.31	0.65
7:D:96:ASN:HD21	7:D:100:LYS:HB3	1.61	0.65
20:Q:93:ALA:HB1	20:Q:98:LEU:HB2	1.79	0.65
32:h:18:GLN:HB2	32:h:40:ASN:HD22	1.59	0.65
37:m:3:TYR:HE2	51:3:789:A:H1'	1.61	0.65
51:3:1495:A:OP2	51:3:1548:A:N6	2.28	0.65
51:3:2299:U:H2'	51:3:2300:A:C8	2.31	0.65
12:I:58:ILE:HA	12:I:68:ARG:HG2	1.78	0.65
40:p:50:ARG:NH1	51:3:1029:A:OP2	2.30	0.65
53:5:210:G:H2'	53:5:211:G:H8	1.62	0.65
14:K:69:ARG:NH2	14:K:70:LEU:O	2.30	0.65
26:b:121:GLY:HA2	26:b:166:SER:HB2	1.79	0.65
27:c:124:ASN:ND2	27:c:195:ASN:O	2.29	0.65
31:g:41:ARG:HD2	31:g:50:LYS:HB2	1.79	0.65
43:s:2:ASP:N	51:3:146:G:O2'	2.30	0.65
51:3:1543:U:H2'	51:3:1544:G:H8	1.61	0.65
51:3:2253:U:H5''	51:3:2254:G:H5'	1.78	0.65
53:5:1112:U:O4	53:5:1128:G:O6	2.14	0.65
13:J:64:ALA:O	13:J:68:LYS:HG2	1.97	0.65
25:a:249:VAL:HG21	25:a:254:PRO:HB3	1.77	0.65
36:l:124:LYS:NZ	51:3:2475:C:O2	2.29	0.65
51:3:1100:U:O2	51:3:1108:A:N6	2.29	0.65
2:1:37:GLN:NE2	51:3:2371:U:OP1	2.29	0.65
26:b:56:THR:HA	26:b:78:THR:HA	1.78	0.65
51:3:2176:G:O2'	51:3:2178:A:N6	2.22	0.65
51:3:2598:C:H2'	51:3:2599:C:C6	2.32	0.65
53:5:499:U:H2'	53:5:500:G:H8	1.61	0.65
8:E:162:LYS:HG3	8:E:163:MET:H	1.61	0.64
51:3:275:A:H62	51:3:294:G:N2	1.95	0.64
51:3:1865:A:H62	51:3:1891:A:H8	1.44	0.64
34:j:76:HIS:HB3	39:o:78:ASN:HD22	1.62	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:76:G:C2	53:5:78:A:C5	2.85	0.64
53:5:1384:A:H2'	53:5:1385:A:H8	1.62	0.64
51:3:25:G:H2'	51:3:26:G:C8	2.31	0.64
51:3:853:G:H21	51:3:1220:A:H62	1.44	0.64
51:3:1097:G:H2'	51:3:1098:G:C8	2.33	0.64
51:3:2483:C:N4	51:3:2537:G:N2	2.45	0.64
4:A:130:LEU:HD12	4:A:159:LEU:HB3	1.79	0.64
17:N:67:LEU:HD23	17:N:75:TYR:HB3	1.80	0.64
36:l:11:LYS:HD3	36:l:87:LYS:HD2	1.80	0.64
53:5:164:C:H2'	53:5:165:A:C8	2.33	0.64
53:5:394:U:H2'	53:5:395:G:H8	1.62	0.64
3:2:30:GLN:HB3	51:3:2535:C:H5''	1.78	0.64
46:v:33:LEU:O	46:v:34:GLN:NE2	2.30	0.64
48:x:12:VAL:HG13	48:x:32:LYS:HD2	1.79	0.64
51:3:552:C:H2'	51:3:553:A:H8	1.61	0.64
53:5:767:U:H2'	53:5:768:G:H8	1.60	0.64
45:u:85:LYS:HD2	45:u:91:GLY:HA2	1.78	0.64
8:E:106:GLN:HE21	53:5:838:A:H4'	1.61	0.64
28:d:32:GLU:OE2	28:d:92:ARG:NH2	2.31	0.64
51:3:278:U:O2	51:3:291:G:O6	2.16	0.64
53:5:1136:G:H1	53:5:1151:A:H61	0.77	0.64
6:C:164:SER:HB3	6:C:167:VAL:HG22	1.80	0.64
17:N:9:ILE:HD11	17:N:28:LEU:HD13	1.80	0.64
30:f:2:LYS:HB3	30:f:37:ALA:HB3	1.79	0.64
45:u:83:TYR:HB2	51:3:892:G:H4'	1.78	0.63
51:3:1063:A:H61	51:3:1160:G:H2'	1.63	0.63
6:C:12:ARG:HB3	6:C:35:PRO:HD3	1.79	0.63
14:K:26:TYR:HB2	14:K:72:ASN:HD22	1.62	0.63
29:e:92:LEU:O	29:e:132:THR:OG1	2.15	0.63
53:5:68:C:H2'	53:5:69:G:C8	2.32	0.63
51:3:955:A:OP2	51:3:2276:A:N6	2.31	0.63
51:3:1024:A:O2'	51:3:1025:G:O4'	2.15	0.63
15:L:31:GLN:HG2	15:L:35:LYS:HE2	1.80	0.63
22:S:10:ARG:HD3	22:S:13:GLN:HE21	1.63	0.63
31:g:37:ALA:O	31:g:41:ARG:HB2	1.97	0.63
51:3:1807:C:H42	51:3:1824:G:H22	1.45	0.63
51:3:2155:G:H2'	51:3:2156:G:C8	2.34	0.63
51:3:2353:G:O2'	51:3:2389:A:N3	2.32	0.63
50:z:8:ARG:HD2	50:z:17:ILE:HG21	1.80	0.63
51:3:53:G:N2	51:3:119:A:H62	1.97	0.63
51:3:2360:A:H62	51:3:2373:G:N2	1.97	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1247:C:N4	51:3:1248:A:N6	2.46	0.63
6:C:97:LEU:HD21	6:C:122:VAL:HG11	1.80	0.63
6:C:100:ILE:HG13	6:C:136:LEU:HD22	1.80	0.63
9:F:113:LYS:O	53:5:1272:C:N4	2.32	0.63
36:l:5:LYS:NZ	51:3:908:A:OP1	2.32	0.63
51:3:1588:A:H2'	51:3:1589:A:C8	2.34	0.63
51:3:2106:G:H1	51:3:2198:G:H1	1.45	0.63
53:5:111:A:OP1	53:5:603:U:O2'	2.17	0.63
53:5:763:A:OP2	53:5:809:G:N2	2.31	0.63
53:5:1009:G:H21	53:5:1012:A:H2	1.47	0.63
32:h:52:PRO:HD3	32:h:71:PRO:HD3	1.80	0.63
40:p:10:ARG:NH2	51:3:548:A:O2'	2.32	0.63
51:3:2299:U:H2'	51:3:2300:A:H8	1.64	0.63
53:5:660:A:N6	53:5:739:G:H1	1.96	0.63
30:f:7:GLN:HE22	30:f:33:LYS:HB3	1.64	0.62
51:3:499:G:N2	51:3:502:A:OP2	2.28	0.62
51:3:524:G:N2	51:3:527:A:OP2	2.31	0.62
51:3:2589:G:OP2	51:3:2589:G:N2	2.25	0.62
5:B:177:PRO:HD2	5:B:185:ILE:HD11	1.80	0.62
51:3:733:C:H5''	51:3:734:A:H5'	1.81	0.62
40:p:2:ARG:HH22	51:3:485:A:H1'	1.63	0.62
53:5:354:U:H2'	53:5:355:A:H8	1.63	0.62
53:5:716:C:OP2	53:5:717:C:N4	2.32	0.62
5:B:29:GLN:HA	5:B:32:LYS:HD3	1.81	0.62
6:C:59:ARG:NH1	6:C:190:GLY:O	2.32	0.62
21:R:3:ARG:N	53:5:1293:A:OP1	2.32	0.62
30:f:63:ALA:O	30:f:67:LYS:HG3	1.99	0.62
51:3:2223:C:H2'	51:3:2224:A:H8	1.63	0.62
51:3:2857:C:H2'	51:3:2858:A:C8	2.34	0.62
5:B:36:GLU:HB3	5:B:96:ILE:HD12	1.81	0.62
6:C:86:ALA:HB1	6:C:193:GLU:HB3	1.79	0.62
21:R:78:ARG:HE	53:5:1197:G:H5''	1.64	0.62
51:3:780:G:H21	51:3:785:A:N6	1.96	0.62
51:3:1221:G:H2'	51:3:1222:A:H8	1.63	0.62
32:h:68:LYS:HD3	32:h:111:ASP:HA	1.81	0.62
43:s:34:LYS:NZ	51:3:129:U:OP2	2.32	0.62
45:u:34:ARG:HG2	51:3:2279:G:H5'	1.82	0.62
51:3:206:U:O2'	51:3:207:C:O5'	2.16	0.62
51:3:715:G:H2'	51:3:716:G:H8	1.64	0.62
53:5:995:U:O2	53:5:1032:G:N2	2.33	0.62
53:5:1031:A:H2'	53:5:1032:G:C8	2.35	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:21:LYS:HD2	10:G:35:THR:HG22	1.80	0.62
26:b:83:GLU:OE1	51:3:2643:A:O2'	2.18	0.62
31:g:88:GLU:HB3	31:g:91:GLU:HB3	1.81	0.62
51:3:1820:U:O2'	51:3:1821:G:OP1	2.18	0.62
37:m:28:TYR:OH	37:m:71:ASN:OD1	2.18	0.62
53:5:406:G:O6	53:5:426:U:O2'	2.16	0.62
12:I:12:LEU:HB2	12:I:82:LEU:HD12	1.80	0.62
18:O:61:ASP:O	18:O:64:ARG:HB2	1.99	0.62
44:t:88:LYS:NZ	51:3:335:G:OP2	2.32	0.62
45:u:17:SER:N	51:3:2502:G:OP1	2.33	0.62
51:3:96:A:H2'	51:3:97:A:C8	2.35	0.62
51:3:1265:G:H2'	51:3:1266:G:C4	2.34	0.62
4:A:81:GLN:NE2	4:A:168:SER:O	2.33	0.62
10:G:43:ALA:HB1	10:G:122:VAL:HG21	1.81	0.62
31:g:30:THR:HA	31:g:79:LYS:O	2.00	0.62
41:q:10:LYS:NZ	51:3:1030:U:O2	2.33	0.62
51:3:1937:G:H4'	51:3:1938:U:H5'	1.82	0.62
54:6:29:C:H2'	54:6:30:G:C8	2.35	0.62
2:1:36:LYS:NZ	51:3:2359:G:O6	2.33	0.61
16:M:10:GLN:NE2	16:M:21:TYR:O	2.31	0.61
51:3:788:G:H2'	51:3:789:A:H8	1.64	0.61
51:3:1837:C:H2'	51:3:1838:A:H8	1.63	0.61
53:5:288:A:O2'	53:5:607:A:N6	2.33	0.61
29:e:88:LYS:NZ	29:e:167:TYR:OH	2.30	0.61
51:3:1028:C:H2'	51:3:1029:A:H8	1.66	0.61
51:3:2599:C:H2'	51:3:2600:G:H8	1.65	0.61
53:5:711:G:H2'	53:5:712:A:H8	1.65	0.61
4:A:30:VAL:O	4:A:218:ASN:ND2	2.32	0.61
13:J:14:ILE:HD12	13:J:27:ALA:HB2	1.80	0.61
43:s:10:PRO:HD3	47:w:31:PHE:HD1	1.64	0.61
46:v:56:ARG:NH1	51:3:435:U:OP2	2.34	0.61
53:5:97:G:H21	53:5:350:G:H5'	1.65	0.61
54:6:2:G:H2'	54:6:3:G:C8	2.35	0.61
32:h:87:LYS:HA	32:h:131:MET:HA	1.82	0.61
44:t:41:LYS:HA	44:t:65:GLN:O	2.00	0.61
51:3:1053:C:O2'	51:3:1155:G:N2	2.31	0.61
51:3:1866:G:H2'	51:3:1867:G:H8	1.65	0.61
51:3:2483:C:N3	51:3:2537:G:N1	2.48	0.61
52:4:58:C:H2'	52:4:59:A:H8	1.64	0.61
53:5:239:A:N6	53:5:277:G:N3	2.48	0.61
51:3:401:G:O2'	51:3:402:A:OP1	2.19	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:487:C:N4	51:3:490:A:OP2	2.34	0.61
51:3:1814:G:O2'	51:3:1816:A:N6	2.30	0.61
53:5:22:G:H2'	53:5:23:G:H8	1.65	0.61
53:5:592:A:H2'	53:5:593:A:C4	2.36	0.61
54:7:2:G:H2'	54:7:3:G:C8	2.35	0.61
40:p:91:ARG:NH1	51:3:1032:A:O2'	2.34	0.61
47:w:96:ALA:O	47:w:100:LYS:HG2	2.01	0.61
51:3:647:G:H21	51:3:651:A:H62	1.46	0.61
6:C:111:ARG:NH1	53:5:403:A:OP1	2.33	0.61
8:E:49:ILE:HG23	8:E:50:LYS:H	1.64	0.61
53:5:790:U:O2	53:5:1491:A:O2'	2.18	0.61
13:J:82:THR:HA	23:T:26:ARG:HH11	1.66	0.61
51:3:705:A:H4'	51:3:706:C:H5'	1.83	0.61
51:3:1414:C:H2'	51:3:1415:A:C8	2.34	0.61
53:5:358:G:O2'	53:5:359:A:N7	2.30	0.61
19:P:2:LYS:NZ	53:5:113:C:O2'	2.34	0.61
30:f:2:LYS:HZ3	30:f:4:ILE:H	1.48	0.61
30:f:110:LYS:NZ	51:3:2227:U:OP1	2.34	0.61
35:k:75:GLN:NE2	35:k:76:GLU:O	2.34	0.61
35:k:117:HIS:HB2	51:3:673:A:H5''	1.83	0.61
51:3:1464:G:N2	51:3:1590:U:O2	2.29	0.61
30:f:98:ILE:HG22	30:f:108:LEU:HD23	1.83	0.61
32:h:87:LYS:O	51:3:1111:C:O2'	2.19	0.61
53:5:1462:G:H2'	53:5:1463:A:H8	1.66	0.61
2:1:54:ARG:NH1	35:k:52:GLU:OE2	2.34	0.60
5:B:33:TRP:O	5:B:60:ARG:NH1	2.34	0.60
8:E:13:LEU:HD13	8:E:17:GLN:HB2	1.82	0.60
53:5:515:G:N2	53:5:531:A:OP2	2.33	0.60
53:5:541:C:H2'	53:5:542:G:H8	1.66	0.60
14:K:21:SER:HB3	14:K:108:TYR:HE1	1.66	0.60
22:S:38:GLU:OE2	22:S:40:ASN:ND2	2.34	0.60
36:l:65:TRP:HB2	36:l:105:GLU:HG3	1.82	0.60
51:3:755:C:H2'	51:3:756:A:C8	2.36	0.60
51:3:1270:C:H2'	51:3:1271:A:H8	1.66	0.60
52:4:64:G:H4'	52:4:65:G:H5'	1.81	0.60
53:5:219:A:H2'	53:5:220:U:O4'	2.01	0.60
53:5:236:C:H2'	53:5:237:A:C8	2.36	0.60
53:5:248:U:O2	53:5:271:G:N2	2.33	0.60
53:5:844:U:H2'	53:5:845:C:C6	2.35	0.60
18:O:42:CYS:HB2	18:O:66:LEU:HD22	1.84	0.60
51:3:1162:A:H62	51:3:2496:G:H1'	1.66	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2575:G:H2'	51:3:2576:A:C8	2.36	0.60
51:3:2857:C:H2'	51:3:2858:A:H8	1.66	0.60
11:H:20:TYR:HB2	11:H:66:ASN:HB2	1.82	0.60
25:a:53:ILE:HD11	25:a:56:ARG:HA	1.83	0.60
51:3:1141:U:H2'	51:3:1142:G:H8	1.66	0.60
53:5:945:U:H2'	53:5:946:G:H8	1.65	0.60
10:G:26:ARG:NH2	10:G:84:ILE:O	2.33	0.60
33:i:71:LYS:NZ	51:3:1175:C:OP2	2.33	0.60
36:l:28:ALA:O	36:l:134:ARG:NH2	2.34	0.60
51:3:548:A:N6	51:3:549:A:N1	2.49	0.60
5:B:154:VAL:HG13	5:B:203:VAL:HG12	1.84	0.60
6:C:69:LYS:NZ	53:5:545:A:OP1	2.26	0.60
15:L:116:VAL:HB	53:5:1202:A:H2	1.66	0.60
28:d:37:ASN:ND2	51:3:2320:U:O2	2.33	0.60
29:e:9:ILE:HB	29:e:53:LEU:HB2	1.82	0.60
41:q:34:GLN:HG2	41:q:56:VAL:HG12	1.83	0.60
51:3:1838:A:H61	51:3:1981:U:H3	1.47	0.60
53:5:525:G:O2'	53:5:533:A:N1	2.31	0.60
53:5:1334:A:H2'	53:5:1335:G:C8	2.36	0.60
8:E:66:ASN:ND2	53:5:736:U:OP1	2.34	0.60
53:5:304:U:H2'	53:5:305:A:H8	1.67	0.60
38:n:2:LYS:HD2	38:n:7:GLN:HB3	1.82	0.60
51:3:784:A:H61	51:3:788:G:H1'	1.65	0.60
53:5:892:G:N2	53:5:895:A:OP2	2.35	0.60
53:5:1245:A:H2'	53:5:1246:A:H8	1.66	0.60
28:d:90:THR:HB	52:4:40:U:H3	1.64	0.60
29:e:57:ARG:NH1	29:e:60:GLU:OE2	2.35	0.60
51:3:265:G:H2'	51:3:266:A:H8	1.67	0.60
51:3:1872:U:OP1	51:3:2417:G:N2	2.35	0.60
53:5:712:A:H2'	53:5:713:A:C8	2.36	0.60
4:A:196:ILE:HD12	4:A:197:PRO:HD2	1.83	0.60
30:f:3:VAL:HG13	30:f:20:ASP:HB2	1.84	0.60
36:l:20:LYS:HD3	52:4:76:A:H5''	1.83	0.60
51:3:454:G:H2'	51:3:455:G:H8	1.67	0.60
51:3:1603:A:H2'	51:3:1604:A:C8	2.37	0.60
51:3:1765:G:OP1	51:3:1767:A:N6	2.35	0.60
52:4:48:A:O2'	52:4:49:G:O5'	2.20	0.60
53:5:372:G:H2'	53:5:373:A:H8	1.66	0.60
22:S:44:LEU:HD13	22:S:76:LEU:HD22	1.84	0.59
31:g:29:TYR:HD1	31:g:31:SER:H	1.49	0.59
32:h:43:THR:O	32:h:47:GLN:NE2	2.34	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:292:G:O2'	51:3:293:G:OP1	2.20	0.59
1:0:34:ARG:NH2	1:0:41:GLN:O	2.34	0.59
6:C:54:LEU:O	6:C:58:GLN:HG2	2.02	0.59
27:c:102:LYS:NZ	51:3:693:U:O2'	2.35	0.59
32:h:109:LEU:HD11	32:h:115:ASN:HB3	1.85	0.59
40:p:91:ARG:NH1	51:3:1033:A:O5'	2.35	0.59
51:3:1063:A:C5	51:3:1160:G:N2	2.69	0.59
51:3:1077:G:N7	51:3:1149:G:N1	2.50	0.59
53:5:1136:G:N2	53:5:1151:A:N1	2.35	0.59
30:f:3:VAL:O	30:f:3:VAL:CG1	2.50	0.59
33:i:20:ILE:HG12	33:i:58:ILE:HB	1.83	0.59
53:5:833:G:H1	53:5:844:U:H3	1.50	0.59
7:D:182:ASN:ND2	7:D:191:MET:SD	2.75	0.59
27:c:162:ASN:HB2	27:c:203:VAL:HG22	1.84	0.59
50:z:8:ARG:HB3	50:z:17:ILE:HD12	1.84	0.59
51:3:615:G:H2'	51:3:616:G:H8	1.67	0.59
8:E:144:SER:HB3	10:G:60:LEU:HD13	1.84	0.59
28:d:60:ILE:HB	28:d:141:ILE:HD11	1.85	0.59
38:n:110:ARG:NH2	51:3:2384:A:N3	2.50	0.59
53:5:503:G:H2'	53:5:504:A:H8	1.67	0.59
53:5:999:C:O2'	53:5:1000:A:O4'	2.20	0.59
21:R:23:ASN:HA	21:R:27:LYS:CA	2.28	0.59
49:y:13:ARG:HD2	49:y:17:ARG:HH12	1.67	0.59
51:3:1011:A:N7	51:3:1025:G:N2	2.51	0.59
53:5:1058:A:N1	53:5:1099:G:O2'	2.35	0.59
53:5:1384:A:H2'	53:5:1385:A:C8	2.37	0.59
5:B:36:GLU:OE1	5:B:60:ARG:NH2	2.34	0.59
30:f:101:ALA:HA	30:f:106:MET:HE3	1.85	0.59
47:w:3:VAL:HG21	51:3:79:U:H5''	1.84	0.59
51:3:2098:U:O2	51:3:2236:G:O6	2.19	0.59
53:5:1068:G:O2'	53:5:1070:G:O6	2.14	0.59
53:5:1226:A:N3	53:5:1344:C:O2'	2.35	0.59
22:S:24:GLN:HA	22:S:27:LYS:HE2	1.84	0.59
35:k:34:ARG:NH1	35:k:42:ARG:O	2.36	0.59
51:3:196:G:H4'	51:3:712:A:H2	1.66	0.59
51:3:2078:A:H2'	51:3:2079:G:C8	2.36	0.59
51:3:2291:U:O2	51:3:2333:G:O6	2.20	0.59
31:g:112:TYR:HE1	31:g:123:LEU:HB2	1.67	0.59
38:n:12:HIS:NE2	38:n:31:MET:SD	2.72	0.59
51:3:1496:A:N6	51:3:1547:G:H21	1.91	0.59
51:3:2801:U:O4	51:3:2808:A:N6	2.35	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:90:G:N2	53:5:375:C:O3'	2.36	0.59
53:5:1417:U:H2'	53:5:1418:G:H8	1.67	0.59
4:A:97:ASN:O	4:A:101:LYS:HG2	2.01	0.59
12:I:56:THR:OG1	53:5:970:A:N6	2.36	0.59
51:3:275:A:N6	51:3:294:G:H21	2.00	0.59
51:3:674:G:C5	51:3:687:G:N2	2.71	0.59
51:3:1508:G:OP2	51:3:1508:G:H4'	2.03	0.59
4:A:28:THR:O	4:A:224:SER:OG	2.15	0.58
17:N:47:PHE:HB3	53:5:761:U:H4'	1.84	0.58
35:k:79:VAL:HG12	35:k:113:LYS:HB3	1.85	0.58
51:3:2745:G:H2'	51:3:2746:A:C8	2.37	0.58
53:5:1368:U:O2'	53:5:1476:C:O2'	2.20	0.58
25:a:252:ASP:O	25:a:255:ARG:NH2	2.36	0.58
27:c:128:VAL:HG23	27:c:132:LEU:HD21	1.85	0.58
35:k:88:LEU:HD21	35:k:101:LYS:HE2	1.85	0.58
41:q:47:ALA:HB3	41:q:48:PRO:HD3	1.84	0.58
51:3:334:A:O2'	51:3:352:C:O2	2.18	0.58
53:5:934:G:H21	53:5:1350:A:H2	1.50	0.58
21:R:18:LYS:NZ	53:5:1010:A:OP2	2.34	0.58
21:R:81:LYS:NZ	53:5:1201:C:O2	2.35	0.58
30:f:2:LYS:HA	30:f:39:LEU:HD21	1.85	0.58
51:3:1437:A:H61	51:3:1627:U:H3	1.51	0.58
53:5:139:C:H2'	53:5:140:U:C6	2.38	0.58
53:5:949:G:N2	53:5:1202:A:H62	2.01	0.58
15:L:86:TRP:HD1	21:R:76:PRO:HB3	1.68	0.58
51:3:869:U:H2'	51:3:870:A:H8	1.68	0.58
9:F:63:ARG:NH1	9:F:127:SER:O	2.31	0.58
10:G:110:GLY:O	10:G:126:LYS:NZ	2.35	0.58
51:3:660:U:H2'	51:3:661:G:H8	1.67	0.58
51:3:1793:A:H1'	51:3:1945:A:H61	1.68	0.58
54:7:29:C:H2'	54:7:30:G:C8	2.35	0.58
54:7:43:G:H3'	54:7:44:U:H5''	1.86	0.58
33:i:3:LYS:N	41:q:21:PHE:O	2.37	0.58
51:3:254:G:O2'	51:3:255:A:O4'	2.17	0.58
51:3:615:G:H2'	51:3:616:G:C8	2.38	0.58
51:3:993:A:N6	51:3:995:A:N1	2.51	0.58
53:5:70:A:H2'	53:5:71:A:H8	1.68	0.58
53:5:1051:U:H2'	53:5:1052:G:H8	1.69	0.58
31:g:18:LEU:HG	31:g:24:PHE:HZ	1.67	0.58
37:m:3:TYR:CE2	51:3:789:A:H1'	2.38	0.58
51:3:982:G:H2'	51:3:983:A:C8	2.38	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1587:U:O2'	51:3:1588:A:H8	1.86	0.58
25:a:162:ARG:HB2	51:3:1825:U:H2'	1.84	0.58
33:i:11:GLN:OE1	33:i:11:GLN:N	2.37	0.58
51:3:2512:U:C3'	51:3:2512:U:C6	2.87	0.58
51:3:2655:U:H2'	51:3:2656:G:H8	1.69	0.58
8:E:143:LEU:HG	10:G:63:LYS:HE3	1.86	0.58
14:K:55:PRO:HB3	14:K:102:ASP:HB3	1.85	0.58
36:l:29:PHE:O	36:l:134:ARG:NH1	2.37	0.58
46:v:34:GLN:OE1	51:3:2098:U:O2'	2.21	0.58
53:5:167:A:H61	53:5:197:A:H5'	1.69	0.58
53:5:361:U:H5''	53:5:362:U:H5'	1.85	0.58
53:5:1001:A:H5''	53:5:1030:G:H5'	1.84	0.58
53:5:1199:U:O2'	53:5:1296:C:OP1	2.21	0.58
20:Q:81:MET:HE1	53:5:660:A:H5''	1.86	0.58
28:d:135:GLN:NE2	28:d:146:ILE:O	2.37	0.58
43:s:56:ASN:HB2	43:s:82:VAL:HG22	1.84	0.58
51:3:1248:A:N1	51:3:1262:G:C6	2.72	0.58
51:3:2304:U:C2	51:3:2343:A:N6	2.71	0.58
53:5:1150:G:H2'	53:5:1151:A:H8	1.69	0.58
14:K:80:ILE:HG12	14:K:110:ILE:HD12	1.86	0.57
21:R:36:ARG:NH2	21:R:72:GLY:O	2.37	0.57
51:3:2800:U:OP2	51:3:2810:A:N6	2.34	0.57
22:S:11:LEU:O	22:S:15:ILE:HG13	2.04	0.57
51:3:2337:U:H2'	51:3:2338:G:H8	1.69	0.57
51:3:2610:A:O5'	54:7:76:C:N4	2.37	0.57
53:5:206:G:N2	53:5:209:A:OP2	2.25	0.57
53:5:381:C:H2'	53:5:382:U:C6	2.38	0.57
53:5:845:C:H2'	53:5:846:G:C8	2.38	0.57
54:6:63:U:H2'	54:6:64:G:H8	1.69	0.57
50:z:17:ILE:HD11	50:z:50:VAL:HB	1.87	0.57
53:5:134:G:N2	53:5:161:C:O2	2.38	0.57
5:B:36:GLU:HB2	5:B:60:ARG:HH12	1.70	0.57
51:3:920:G:N2	51:3:930:C:O2	2.36	0.57
51:3:1110:C:H2'	51:3:1111:C:C6	2.39	0.57
53:5:56:A:OP2	53:5:348:C:N4	2.37	0.57
29:e:38:LEU:HD22	29:e:42:LEU:HD22	1.85	0.57
48:x:43:HIS:CE1	48:x:45:PHE:HB3	2.39	0.57
51:3:297:G:H1	51:3:440:C:H5	1.52	0.57
51:3:877:G:H2'	51:3:878:A:C8	2.40	0.57
18:O:3:MET:O	18:O:10:THR:OG1	2.23	0.57
43:s:2:ASP:N	51:3:146:G:HO2'	2.02	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2268:C:H2'	51:3:2269:C:H6	1.69	0.57
53:5:304:U:H2'	53:5:305:A:C8	2.40	0.57
53:5:579:G:N2	53:5:756:A:OP2	2.38	0.57
13:J:103:ILE:O	23:T:7:LYS:N	2.37	0.57
30:f:2:LYS:HZ3	30:f:4:ILE:N	2.01	0.57
31:g:33:SER:HA	51:3:1090:G:H4'	1.87	0.57
51:3:334:A:H2'	51:3:368:C:H1'	1.86	0.57
51:3:2551:G:C6	51:3:2773:A:N7	2.73	0.57
51:3:2706:U:H2'	51:3:2707:A:C8	2.40	0.57
53:5:63:U:O2'	53:5:375:C:O2	2.22	0.57
53:5:319:U:O4	53:5:323:A:N7	2.38	0.57
54:7:63:U:H2'	54:7:64:G:H8	1.69	0.57
6:C:10:ARG:NH2	53:5:541:C:OP1	2.37	0.57
26:b:157:GLN:NE2	51:3:2041:C:OP2	2.38	0.57
40:p:62:LEU:HD21	51:3:1045:A:H5''	1.86	0.57
51:3:232:A:O2'	51:3:233:U:H5''	2.04	0.57
51:3:2321:C:H2'	51:3:2322:G:H8	1.68	0.57
51:3:2826:G:O2'	51:3:2828:C:OP2	2.16	0.57
53:5:979:C:N3	53:5:1197:G:N2	2.53	0.57
31:g:52:LYS:H	31:g:82:VAL:HG12	1.68	0.57
38:n:50:ILE:HG22	38:n:51:VAL:H	1.70	0.57
41:q:6:VAL:HG22	41:q:11:GLN:HG2	1.86	0.57
45:u:46:ARG:HH22	51:3:2361:G:H4'	1.70	0.57
51:3:9:G:H2'	51:3:10:U:C6	2.40	0.57
51:3:914:G:O2'	51:3:937:A:N6	2.37	0.57
12:I:58:ILE:HD11	16:M:41:ARG:HD2	1.86	0.57
51:3:641:U:H2'	51:3:642:A:H8	1.70	0.57
51:3:2137:A:H1'	51:3:2165:A:H61	1.70	0.57
53:5:669:U:H2'	53:5:670:G:H8	1.70	0.57
53:5:1116:U:H2'	53:5:1118:A:H2	1.70	0.57
11:H:73:GLY:C	11:H:77:GLN:HE22	2.12	0.56
30:f:2:LYS:HD2	30:f:50:PHE:CE2	2.40	0.56
51:3:849:C:H2'	51:3:850:G:H8	1.70	0.56
51:3:982:G:H2'	51:3:983:A:H8	1.68	0.56
51:3:2124:A:O2'	51:3:2126:A:OP2	2.17	0.56
51:3:2504:C:O2'	51:3:2505:A:OP1	2.23	0.56
18:O:55:LYS:O	53:5:223:G:N2	2.38	0.56
25:a:269:ASN:HB3	25:a:272:LYS:HE3	1.87	0.56
38:n:18:LYS:O	38:n:22:THR:OG1	2.17	0.56
40:p:94:LEU:HD22	41:q:13:LEU:HG	1.86	0.56
53:5:1298:U:H2'	53:5:1299:C:C6	2.40	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:6:43:G:H3'	54:6:44:U:H5''	1.86	0.56
6:C:109:THR:HG22	6:C:111:ARG:H	1.71	0.56
7:D:152:LYS:HD2	53:5:8:G:O6	2.05	0.56
21:R:24:LYS:CE	21:R:24:LYS:HA	2.35	0.56
22:S:67:ARG:NH2	53:5:257:U:OP2	2.35	0.56
34:j:88:LYS:HG3	34:j:89:GLU:H	1.70	0.56
39:o:63:THR:HG22	39:o:80:GLN:HA	1.86	0.56
51:3:1132:C:H3'	51:3:1133:A:H8	1.69	0.56
51:3:2337:U:H2'	51:3:2338:G:C8	2.40	0.56
51:3:2587:U:H2'	51:3:2588:U:C6	2.39	0.56
51:3:2803:G:N2	51:3:2808:A:O2'	2.38	0.56
53:5:133:G:H2'	53:5:134:G:C8	2.41	0.56
53:5:386:U:H2'	53:5:387:G:H8	1.70	0.56
53:5:949:G:H21	53:5:1202:A:H62	1.51	0.56
25:a:238:HIS:NE2	25:a:240:HIS:HB2	2.20	0.56
35:k:42:ARG:HH12	51:3:842:U:H5	1.51	0.56
51:3:275:A:N6	51:3:294:G:N2	2.53	0.56
51:3:1507:G:H1'	51:3:1508:G:OP2	2.06	0.56
51:3:1813:C:H2'	51:3:1814:G:C8	2.41	0.56
51:3:2118:U:O4	51:3:2151:G:O2'	2.22	0.56
52:4:54:U:H4'	52:4:55:A:H8	1.71	0.56
37:m:14:ARG:NH1	51:3:2009:U:OP1	2.39	0.56
38:n:71:LYS:HD3	38:n:104:ALA:HB1	1.88	0.56
51:3:2032:G:H2'	51:3:2033:G:C8	2.41	0.56
53:5:69:G:H1	53:5:86:A:H61	1.54	0.56
6:C:91:ARG:HG2	6:C:182:PRO:HG2	1.86	0.56
8:E:141:PRO:HA	10:G:5:THR:HA	1.88	0.56
10:G:18:LEU:HB2	10:G:41:LYS:HE2	1.87	0.56
34:j:64:ARG:HB2	34:j:83:ALA:H	1.71	0.56
39:o:53:LEU:HB2	39:o:65:ILE:HB	1.85	0.56
51:3:333:A:N6	51:3:356:A:N3	2.54	0.56
51:3:1699:A:N1	51:3:2003:C:N4	2.53	0.56
22:S:65:ALA:O	22:S:69:LYS:HG2	2.05	0.56
27:c:125:THR:HA	27:c:197:LEU:O	2.06	0.56
31:g:31:SER:O	31:g:103:LYS:NZ	2.35	0.56
40:p:59:LEU:HG	40:p:63:ARG:HH21	1.70	0.56
51:3:2299:U:O2	51:3:2382:A:O2'	2.24	0.56
53:5:43:G:H1	53:5:396:C:H42	1.51	0.56
53:5:210:G:H2'	53:5:211:G:C8	2.40	0.56
19:P:13:VAL:HA	19:P:24:VAL:HA	1.88	0.56
51:3:2516:G:O2'	51:3:2562:U:O2'	2.22	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:933:A:H2'	53:5:934:G:C8	2.41	0.56
13:J:29:ASP:OD1	13:J:33:ASN:N	2.39	0.56
34:j:101:PRO:HG2	39:o:75:ILE:HD11	1.88	0.56
35:k:81:ASN:ND2	51:3:663:A:N7	2.54	0.56
51:3:670:G:H2'	51:3:671:C:C6	2.41	0.56
53:5:76:G:C2	53:5:80:U:O2	2.59	0.56
53:5:409:G:H21	53:5:425:G:H1'	1.71	0.56
3:2:19:ARG:HH21	51:3:2763:C:H5''	1.70	0.56
5:B:3:GLN:NE2	53:5:1166:A:OP2	2.39	0.56
31:g:29:TYR:HD2	31:g:100:VAL:HA	1.71	0.56
51:3:774:A:H1'	51:3:775:C:H5	1.71	0.56
51:3:984:C:H2'	51:3:985:A:H8	1.70	0.56
53:5:1262:A:O2'	53:5:1326:C:O2'	2.16	0.56
53:5:1372:C:C5	55:Y:22:U:C5	2.93	0.56
53:5:1487:U:H2'	53:5:1488:A:C8	2.39	0.56
2:1:25:TYR:HA	51:3:2400:A:H5''	1.86	0.55
17:N:83:ASN:OD1	17:N:84:LEU:N	2.39	0.55
31:g:32:MET:HE2	31:g:79:LYS:HE2	1.87	0.55
37:m:3:TYR:OH	51:3:784:A:N6	2.38	0.55
51:3:903:A:O2'	51:3:904:C:OP1	2.23	0.55
51:3:1149:G:O2'	51:3:1150:U:O4'	2.22	0.55
51:3:1372:U:OP1	51:3:1373:C:N4	2.26	0.55
51:3:1583:G:O2'	51:3:1584:U:OP1	2.23	0.55
51:3:2339:G:H21	51:3:2344:A:H8	1.52	0.55
51:3:2701:A:H2'	51:3:2702:G:H8	1.71	0.55
53:5:70:A:H2'	53:5:71:A:C8	2.40	0.55
30:f:18:VAL:HG13	30:f:47:ARG:HH12	1.71	0.55
51:3:474:U:H2'	51:3:475:A:C8	2.40	0.55
51:3:496:A:H62	51:3:505:G:H21	1.53	0.55
51:3:1019:A:H2'	51:3:1020:G:C4	2.42	0.55
51:3:2072:C:H2'	51:3:2073:C:C6	2.42	0.55
53:5:770:G:O6	53:5:804:A:N6	2.39	0.55
1:0:7:PRO:HA	51:3:721:G:H21	1.72	0.55
10:G:11:HIS:HE1	53:5:821:U:O2	1.89	0.55
11:H:107:THR:HG23	53:5:1154:A:H4'	1.89	0.55
31:g:40:ILE:O	31:g:42:LYS:N	2.40	0.55
44:t:66:GLU:OE1	44:t:66:GLU:N	2.40	0.55
51:3:451:A:O2'	51:3:1873:A:OP1	2.20	0.55
51:3:1662:G:H2'	51:3:1663:G:H8	1.71	0.55
53:5:416:U:H2'	53:5:417:U:O4'	2.06	0.55
53:5:671:G:H2'	53:5:672:A:C8	2.41	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:710:G:H21	53:5:774:A:H1'	1.70	0.55
53:5:1226:A:H2'	53:5:1227:A:C8	2.41	0.55
53:5:1274:G:N2	53:5:1275:U:O4	2.34	0.55
2:1:10:ARG:NH1	35:k:59:TYR:O	2.39	0.55
21:R:77:THR:O	53:5:953:A:N6	2.39	0.55
28:d:8:TYR:HA	28:d:12:ILE:HB	1.88	0.55
30:f:31:PHE:HB3	30:f:33:LYS:HD3	1.89	0.55
30:f:33:LYS:HG3	30:f:112:MET:HG2	1.89	0.55
51:3:18:G:H2'	51:3:19:G:H8	1.70	0.55
51:3:274:A:N7	51:3:295:U:O4	2.39	0.55
8:E:101:ASN:O	8:E:104:LYS:HG3	2.06	0.55
14:K:102:ASP:HB2	53:5:521:A:H61	1.72	0.55
28:d:94:GLU:HA	28:d:97:TRP:HE3	1.71	0.55
31:g:28:ASP:HB2	31:g:109:VAL:CG2	2.37	0.55
45:u:43:GLN:OE1	51:3:960:A:O2'	2.16	0.55
51:3:259:A:O2'	51:3:422:A:OP1	2.23	0.55
53:5:435:U:O2'	53:5:437:U:O4	2.20	0.55
53:5:1330:A:H2'	53:5:1331:A:C8	2.35	0.55
11:H:117:LYS:HE3	53:5:1162:G:H5'	1.87	0.55
27:c:53:LEU:HD13	27:c:58:VAL:HG12	1.87	0.55
30:f:25:TYR:HD1	30:f:29:PHE:HD2	1.54	0.55
51:3:282:C:N3	51:3:286:A:O2'	2.39	0.55
51:3:1949:C:OP2	51:3:1950:U:O2'	2.16	0.55
51:3:2695:U:H2'	51:3:2696:G:O4'	2.06	0.55
1:0:36:LYS:NZ	51:3:185:U:OP2	2.39	0.55
14:K:59:ASN:ND2	53:5:525:G:O6	2.40	0.55
37:m:20:GLN:NE2	51:3:1305:G:N3	2.52	0.55
51:3:667:A:C2	51:3:2424:C:H4'	2.32	0.55
51:3:984:C:H2'	51:3:985:A:C8	2.42	0.55
51:3:1187:C:H2'	51:3:1188:C:C6	2.42	0.55
51:3:1409:G:H2'	51:3:1410:A:C8	2.42	0.55
51:3:1464:G:H1	51:3:1590:U:H3	1.54	0.55
51:3:1476:C:H2'	51:3:1477:A:C8	2.42	0.55
53:5:803:C:H2'	53:5:804:A:H8	1.71	0.55
53:5:1066:U:H2'	53:5:1067:C:C6	2.42	0.55
4:A:50:LYS:NZ	53:5:842:C:O2'	2.31	0.55
40:p:34:ALA:O	40:p:38:VAL:HG22	2.07	0.55
49:y:43:CYS:SG	49:y:45:CYS:SG	3.04	0.55
51:3:1588:A:H2'	51:3:1589:A:H8	1.68	0.55
53:5:1279:G:H1'	53:5:1305:G:H22	1.71	0.55
5:B:191:LYS:HB3	5:B:198:VAL:HG23	1.88	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:123:LEU:HD21	6:C:145:LYS:HE2	1.87	0.55
8:E:49:ILE:HD13	8:E:83:LEU:HB3	1.88	0.55
38:n:33:ILE:HD13	52:4:5:G:H4'	1.89	0.55
44:t:72:SER:OG	51:3:361:G:N2	2.39	0.55
48:x:14:PHE:HB3	48:x:24:THR:HB	1.89	0.55
51:3:138:U:H2'	51:3:139:G:H8	1.71	0.55
51:3:632:A:H2'	51:3:633:G:C8	2.41	0.55
51:3:1201:A:H2'	51:3:1202:A:H8	1.71	0.55
53:5:572:A:O2'	53:5:876:C:O2'	2.20	0.55
53:5:1288:C:H2'	53:5:1289:U:H6	1.71	0.55
54:7:67:C:H2'	54:7:68:G:H8	1.72	0.55
6:C:117:VAL:HG12	6:C:122:VAL:HG21	1.87	0.55
17:N:32:GLN:O	17:N:36:LEU:HG	2.07	0.55
23:T:54:ARG:NH2	53:5:1509:A:O3'	2.40	0.55
31:g:63:LEU:HD12	31:g:74:THR:HG21	1.88	0.55
38:n:4:ARG:NH1	52:4:28:C:OP2	2.40	0.55
51:3:226:A:N6	51:3:236:G:H1'	2.22	0.55
4:A:152:LEU:O	4:A:156:ILE:HG12	2.08	0.54
51:3:622:U:H2'	51:3:623:A:C8	2.40	0.54
51:3:697:U:H2'	51:3:698:A:C8	2.42	0.54
51:3:760:G:H2'	51:3:761:G:C4	2.42	0.54
51:3:1807:C:H42	51:3:1824:G:N2	2.05	0.54
51:3:2105:G:H2'	51:3:2106:G:C8	2.42	0.54
53:5:38:U:H2'	53:5:39:G:H8	1.72	0.54
53:5:388:G:HO2'	53:5:480:C:HO2'	1.48	0.54
6:C:115:GLN:NE2	53:5:402:G:N3	2.53	0.54
15:L:9:ILE:HD12	15:L:18:ALA:HB1	1.87	0.54
25:a:213:ILE:HD12	51:3:1798:A:H5''	1.88	0.54
37:m:106:ARG:NH1	51:3:1315:A:O4'	2.39	0.54
39:o:62:GLU:HB3	39:o:81:ILE:HD12	1.89	0.54
50:z:35:ASN:ND2	51:3:2352:U:OP1	2.38	0.54
51:3:1633:C:H2'	51:3:1634:A:H8	1.72	0.54
51:3:2115:A:N6	51:3:2188:U:O4	2.40	0.54
51:3:2324:A:H2'	51:3:2325:U:C6	2.43	0.54
53:5:733:A:H2'	53:5:734:A:C8	2.40	0.54
13:J:49:ARG:HD3	13:J:52:THR:HG21	1.88	0.54
25:a:230:GLY:HA2	25:a:233:MET:HE2	1.90	0.54
40:p:10:ARG:NH1	51:3:548:A:N3	2.54	0.54
51:3:330:A:H2'	51:3:331:A:H8	1.72	0.54
51:3:1230:U:H2'	51:3:1231:G:C8	2.42	0.54
51:3:2541:C:H2'	51:3:2542:A:O4'	2.08	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:394:U:H2'	53:5:395:G:C8	2.41	0.54
54:6:67:C:H2'	54:6:68:G:H8	1.72	0.54
11:H:111:ARG:HB3	53:5:1321:G:H8	1.71	0.54
16:M:35:SER:OG	53:5:1332:U:OP1	2.18	0.54
51:3:713:C:H2'	51:3:714:G:C8	2.42	0.54
51:3:739:G:O2'	51:3:761:G:N1	2.41	0.54
53:5:947:U:H2'	53:5:948:U:C6	2.42	0.54
28:d:74:ILE:HB	28:d:79:LEU:HB3	1.88	0.54
31:g:28:ASP:HB2	31:g:109:VAL:HG23	1.89	0.54
45:u:39:LYS:HD2	45:u:43:GLN:HE21	1.73	0.54
46:v:35:PRO:HB3	46:v:47:ARG:HD3	1.90	0.54
53:5:674:U:H3	53:5:710:G:H22	1.55	0.54
27:c:176:LYS:NZ	51:3:357:A:O2'	2.40	0.54
31:g:52:LYS:H	31:g:82:VAL:CG1	2.20	0.54
51:3:1198:G:H2'	51:3:1199:A:C8	2.41	0.54
51:3:1807:C:N4	51:3:1824:G:H22	2.05	0.54
51:3:2048:U:H2'	51:3:2049:A:C8	2.43	0.54
51:3:2557:G:H2'	51:3:2558:G:H8	1.72	0.54
53:5:141:A:H2'	53:5:142:G:H8	1.73	0.54
53:5:621:C:H2'	53:5:622:A:H8	1.72	0.54
53:5:780:U:O4	53:5:797:G:N2	2.35	0.54
53:5:1347:U:H2'	53:5:1348:G:O4'	2.08	0.54
4:A:30:VAL:HB	4:A:55:HIS:HA	1.89	0.54
7:D:212:ARG:NH1	7:D:217:ASN:OD1	2.41	0.54
17:N:76:ARG:O	17:N:76:ARG:NE	2.41	0.54
26:b:108:VAL:N	26:b:179:LEU:O	2.41	0.54
29:e:18:LEU:HD11	29:e:79:ILE:HD11	1.90	0.54
29:e:77:ASN:ND2	51:3:2755:G:OP1	2.40	0.54
36:l:120:ARG:NH1	51:3:2477:A:OP1	2.40	0.54
51:3:1229:U:H2'	51:3:1230:U:C6	2.42	0.54
51:3:1475:C:O2'	51:3:1577:A:N3	2.38	0.54
53:5:680:G:O6	53:5:705:A:N6	2.40	0.54
53:5:682:G:O2'	53:5:683:G:O4'	2.20	0.54
53:5:1104:C:H2'	53:5:1105:C:C6	2.42	0.54
53:5:1219:C:H2'	53:5:1220:A:H8	1.73	0.54
14:K:63:ARG:HH12	53:5:520:C:H41	1.56	0.54
21:R:78:ARG:NE	53:5:1197:G:OP1	2.41	0.54
25:a:229:ARG:N	51:3:1796:A:OP1	2.33	0.54
36:l:11:LYS:NZ	51:3:2286:A:OP1	2.39	0.54
39:o:103:TYR:HE1	39:o:113:LYS:HE3	1.73	0.54
51:3:788:G:H2'	51:3:789:A:C8	2.43	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:865:A:H62	51:3:2073:C:H1'	1.71	0.54
51:3:1015:G:N2	51:3:1018:G:N7	2.56	0.54
51:3:1140:U:H2'	51:3:1141:U:H6	1.72	0.54
53:5:319:U:H3'	53:5:320:G:C8	2.42	0.54
53:5:1329:G:H2'	53:5:1330:A:H8	1.71	0.54
7:D:91:LEU:HD13	7:D:189:ILE:HG13	1.90	0.54
12:I:59:ARG:HB3	53:5:1051:U:H5''	1.89	0.54
25:a:119:ASP:OD1	25:a:120:LYS:N	2.39	0.54
27:c:75:ARG:NH1	51:3:2453:G:OP1	2.41	0.54
36:l:82:ARG:NH2	51:3:2259:G:O6	2.41	0.54
51:3:2596:A:N6	51:3:2615:G:O6	2.41	0.54
53:5:76:G:H2'	53:5:78:A:H62	1.73	0.54
53:5:1468:A:H4'	53:5:1469:G:OP2	2.08	0.54
9:F:67:ASN:O	9:F:137:LYS:NZ	2.41	0.54
17:N:66:TYR:O	17:N:70:ASN:HB2	2.08	0.54
25:a:45:GLY:O	25:a:47:ARG:NH1	2.41	0.54
26:b:98:PRO:HB2	26:b:184:PHE:HE1	1.72	0.54
29:e:93:VAL:HG13	29:e:163:LYS:HA	1.90	0.54
51:3:756:A:H2'	51:3:757:A:H8	1.73	0.54
51:3:868:C:H2'	51:3:869:U:C6	2.43	0.54
51:3:1201:A:H2'	51:3:1202:A:C8	2.43	0.54
51:3:2072:C:H1'	51:3:2457:U:H3	1.72	0.54
51:3:2701:A:H2'	51:3:2702:G:C8	2.43	0.54
53:5:63:U:O2	53:5:375:C:O2'	2.25	0.54
11:H:49:ASP:HA	11:H:52:GLN:HG2	1.90	0.53
11:H:82:ARG:HD2	11:H:105:LEU:HD12	1.88	0.53
18:O:12:ARG:HA	18:O:32:HIS:HA	1.89	0.53
26:b:70:PHE:HD2	26:b:77:PRO:HA	1.73	0.53
38:n:110:ARG:HH22	51:3:2384:A:H1'	1.73	0.53
42:r:10:VAL:HG21	42:r:103:LEU:HG	1.90	0.53
47:w:85:ASN:O	47:w:89:GLN:HG2	2.07	0.53
51:3:173:C:H2'	51:3:174:A:H8	1.73	0.53
51:3:306:G:N1	51:3:399:G:N7	2.56	0.53
51:3:1557:G:H1'	51:3:1574:G:H22	1.72	0.53
51:3:2861:G:N2	51:3:2864:A:OP2	2.40	0.53
53:5:36:G:N7	53:5:37:C:N4	2.56	0.53
53:5:709:A:H2'	53:5:710:G:C8	2.43	0.53
53:5:710:G:H2'	53:5:711:G:C8	2.43	0.53
53:5:1173:A:H2'	53:5:1174:U:C6	2.44	0.53
53:5:1278:G:OP2	53:5:1279:G:N2	2.41	0.53
53:5:1283:G:H2'	53:5:1284:A:H8	1.73	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1432:A:H2'	53:5:1433:G:C8	2.41	0.53
5:B:5:VAL:HG11	53:5:1164:U:H5'	1.90	0.53
51:3:713:C:H2'	51:3:714:G:H8	1.73	0.53
51:3:1435:A:H61	51:3:1629:U:H3	1.57	0.53
51:3:2602:C:N4	51:3:2603:G:O6	2.40	0.53
53:5:76:G:H3'	53:5:77:U:H5'	1.89	0.53
53:5:106:C:N4	53:5:232:G:OP2	2.35	0.53
5:B:133:LEU:O	5:B:137:MET:HG2	2.09	0.53
9:F:107:ALA:HB1	9:F:115:MET:HE1	1.90	0.53
14:K:63:ARG:NH2	14:K:79:TYR:OH	2.41	0.53
17:N:68:LYS:HG2	17:N:75:TYR:CZ	2.43	0.53
22:S:66:ARG:HD3	53:5:171:A:H4'	1.89	0.53
33:i:7:LEU:HD21	40:p:63:ARG:HH22	1.73	0.53
45:u:46:ARG:NH1	51:3:2361:G:O3'	2.39	0.53
51:3:313:G:H2'	51:3:314:G:C8	2.43	0.53
51:3:1073:A:H2'	51:3:1074:A:H8	1.73	0.53
51:3:2336:A:H2'	51:3:2337:U:C6	2.44	0.53
53:5:941:A:H2'	53:5:942:G:C8	2.42	0.53
11:H:98:LYS:NZ	53:5:1152:G:OP1	2.39	0.53
32:h:78:GLN:O	32:h:100:LYS:NZ	2.39	0.53
42:r:24:ILE:HD12	42:r:36:LEU:HB2	1.90	0.53
51:3:407:U:H5''	51:3:408:G:H5'	1.91	0.53
51:3:1007:C:H2'	51:3:1008:A:O4'	2.08	0.53
51:3:1416:G:H2'	51:3:1417:G:H8	1.72	0.53
51:3:1950:U:O4'	51:3:1952:G:H5''	2.08	0.53
53:5:318:C:H42	53:5:325:A:H62	1.55	0.53
4:A:166:VAL:HG23	4:A:169:LEU:HD21	1.90	0.53
9:F:2:ARG:N	53:5:1355:U:OP2	2.42	0.53
13:J:119:ARG:HA	23:T:34:TYR:HB2	1.90	0.53
14:K:63:ARG:NH1	53:5:519:G:N7	2.57	0.53
25:a:184:LEU:HD23	25:a:185:LEU:N	2.24	0.53
51:3:205:C:H2'	51:3:206:U:C6	2.44	0.53
51:3:996:A:HO2'	51:3:2464:C:HO2'	1.54	0.53
51:3:1141:U:H2'	51:3:1142:G:C8	2.43	0.53
51:3:1416:G:H2'	51:3:1417:G:C8	2.44	0.53
53:5:35:C:H2'	53:5:36:G:H8	1.74	0.53
53:5:197:A:O2'	53:5:198:A:O4'	2.24	0.53
53:5:1316:C:H2'	53:5:1317:A:H8	1.73	0.53
55:Y:14:U:O2	55:Y:14:U:H2'	2.08	0.53
4:A:61:GLN:NE2	4:A:216:PRO:O	2.41	0.53
4:A:83:LEU:HD11	4:A:108:ILE:HG13	1.90	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:14:LEU:HD22	6:C:55:GLN:HG3	1.89	0.53
42:r:128:ARG:HG3	51:3:1262:G:H1'	1.90	0.53
47:w:48:ARG:O	47:w:51:LEU:HB2	2.08	0.53
48:x:11:SER:HA	48:x:26:GLU:HA	1.89	0.53
51:3:330:A:H2'	51:3:331:A:C8	2.43	0.53
51:3:585:U:H2'	51:3:586:G:C8	2.43	0.53
53:5:873:U:H2'	53:5:874:C:H6	1.73	0.53
53:5:1248:U:H2'	53:5:1249:G:O4'	2.08	0.53
54:7:63:U:H2'	54:7:64:G:C8	2.44	0.53
55:Y:20:U:H2'	55:Y:21:U:C6	2.43	0.53
4:A:88:LYS:HG2	4:A:92:VAL:HG11	1.91	0.53
29:e:55:ILE:HD11	29:e:72:ASN:HB2	1.91	0.53
36:l:70:PRO:HA	36:l:95:ALA:HB2	1.90	0.53
44:t:44:ARG:NH2	51:3:517:G:O5'	2.41	0.53
51:3:190:G:H2'	51:3:191:G:H8	1.74	0.53
51:3:852:C:O2'	51:3:874:U:OP1	2.25	0.53
51:3:1287:C:H2'	51:3:1288:C:C6	2.44	0.53
51:3:1453:U:H2'	51:3:1454:G:O4'	2.09	0.53
51:3:2880:A:H2'	51:3:2881:A:C8	2.43	0.53
53:5:510:U:H2'	53:5:511:A:H8	1.72	0.53
53:5:621:C:H2'	53:5:622:A:C8	2.44	0.53
53:5:1007:U:H3	53:5:1014:A:H61	1.57	0.53
5:B:7:SER:HA	5:B:10:LEU:HD12	1.89	0.53
34:j:66:LYS:HD3	51:3:1699:A:H5''	1.91	0.53
46:v:10:ARG:NH1	51:3:432:G:OP2	2.42	0.53
51:3:219:G:H1'	51:3:220:A:H4'	1.91	0.53
51:3:776:U:H2'	51:3:777:C:H6	1.73	0.53
51:3:1061:A:H2'	51:3:1062:A:H8	1.74	0.53
51:3:2084:A:H2'	51:3:2085:C:H6	1.74	0.53
53:5:447:G:H5''	53:5:448:A:H3'	1.91	0.53
53:5:1361:G:H2'	53:5:1362:G:H8	1.73	0.53
26:b:73:ASN:HB3	26:b:75:LEU:HG	1.91	0.53
30:f:42:LYS:HA	30:f:46:ASP:HB3	1.90	0.53
35:k:87:LYS:NZ	51:3:636:U:O2'	2.42	0.53
39:o:107:ARG:HH11	39:o:111:ALA:HB1	1.74	0.53
51:3:192:U:H2'	51:3:193:G:O4'	2.09	0.53
51:3:941:C:H2'	51:3:942:A:H8	1.74	0.53
51:3:1129:U:N3	51:3:1132:C:OP2	2.41	0.53
51:3:1619:A:H2'	51:3:1620:A:C8	2.44	0.53
53:5:708:A:H2'	53:5:709:A:H8	1.73	0.53
12:I:42:ILE:HD12	12:I:82:LEU:HD22	1.90	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:117:THR:O	14:K:117:THR:OG1	2.21	0.53
30:f:2:LYS:HB2	30:f:39:LEU:HD21	1.90	0.53
51:3:300:G:H2'	51:3:301:G:H8	1.73	0.53
51:3:652:U:H2'	51:3:653:G:H8	1.74	0.53
51:3:1391:U:H2'	51:3:1392:G:C8	2.44	0.53
51:3:1851:U:H2'	51:3:1852:G:C8	2.44	0.53
51:3:2209:U:H2'	51:3:2210:G:C8	2.44	0.53
51:3:2254:G:H2'	51:3:2255:A:H8	1.74	0.53
53:5:76:G:N2	53:5:78:A:C6	2.77	0.53
34:j:64:ARG:HH21	34:j:100:GLY:HA3	1.74	0.52
51:3:608:A:O2'	51:3:2509:C:OP1	2.25	0.52
51:3:874:U:O2'	51:3:1222:A:N3	2.42	0.52
51:3:1524:C:H2'	51:3:1525:G:H8	1.73	0.52
51:3:1954:C:H2'	51:3:1955:G:H8	1.74	0.52
51:3:1973:U:O2	51:3:2600:G:O2'	2.26	0.52
51:3:2084:A:H2'	51:3:2085:C:C6	2.45	0.52
53:5:346:G:H2'	53:5:347:G:C8	2.43	0.52
28:d:59:LEU:HD13	48:x:30:LYS:HE2	1.91	0.52
31:g:43:LYS:NZ	31:g:43:LYS:HB3	2.23	0.52
36:l:54:ILE:O	36:l:58:LEU:HB2	2.09	0.52
41:q:82:LYS:N	51:3:849:C:OP1	2.34	0.52
51:3:1828:A:H2'	51:3:1829:U:C6	2.45	0.52
51:3:2072:C:H2'	51:3:2073:C:H6	1.73	0.52
51:3:2316:G:H1	51:3:2319:A:H62	1.57	0.52
51:3:2388:C:H2'	51:3:2389:A:C8	2.45	0.52
51:3:2512:U:C5	56:3:3001:CLM:H42	2.45	0.52
53:5:660:A:N1	53:5:739:G:N2	2.54	0.52
54:6:16:G:H4'	54:6:17:U:OP1	2.09	0.52
29:e:11:LEU:HD12	29:e:53:LEU:HD11	1.90	0.52
31:g:41:ARG:NH2	31:g:41:ARG:CB	2.71	0.52
51:3:1019:A:O2'	51:3:1020:G:O4'	2.19	0.52
53:5:253:G:O6	53:5:266:A:N6	2.42	0.52
53:5:331:C:H2'	53:5:332:A:C8	2.45	0.52
6:C:9:LYS:HD3	53:5:425:G:H5''	1.92	0.52
13:J:39:SER:O	13:J:42:THR:OG1	2.26	0.52
44:t:49:ASP:HB2	44:t:58:GLN:HB2	1.91	0.52
51:3:650:G:H2'	51:3:651:A:C8	2.44	0.52
51:3:963:U:H2'	51:3:964:A:C8	2.45	0.52
53:5:1293:A:C8	53:5:1297:G:C5	2.98	0.52
54:7:16:G:H4'	54:7:17:U:OP1	2.10	0.52
4:A:92:VAL:O	4:A:96:VAL:HG23	2.10	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:a:158:GLY:O	25:a:162:ARG:NH2	2.33	0.52
26:b:15:GLN:OE1	26:b:23:ARG:NH2	2.40	0.52
34:j:42:SER:HB2	34:j:57:VAL:HG12	1.90	0.52
45:u:88:PRO:HD2	45:u:92:LYS:HD3	1.91	0.52
51:3:2054:C:H2'	51:3:2055:A:H8	1.74	0.52
51:3:2533:A:H2'	51:3:2534:G:H8	1.74	0.52
51:3:2845:U:H2'	51:3:2846:A:C8	2.43	0.52
27:c:192:MET:HE3	35:k:5:GLN:HB3	1.92	0.52
32:h:78:GLN:NE2	32:h:100:LYS:HD2	2.24	0.52
51:3:37:G:H21	51:3:486:G:H21	1.57	0.52
51:3:572:G:H21	51:3:589:A:H62	1.57	0.52
51:3:2131:G:O6	51:3:2182:C:N4	2.42	0.52
51:3:2336:A:H2'	51:3:2337:U:H6	1.75	0.52
53:5:709:A:H2'	53:5:710:G:H8	1.74	0.52
53:5:787:A:N6	53:5:1473:U:OP1	2.41	0.52
53:5:1372:C:C4	55:Y:22:U:C5	2.98	0.52
2:1:15:LYS:NZ	51:3:689:U:O2	2.36	0.52
9:F:115:MET:HE3	9:F:119:ILE:HB	1.92	0.52
25:a:226:PRO:HB3	51:3:1797:C:H5'	1.92	0.52
51:3:610:G:H2'	51:3:611:A:C8	2.45	0.52
51:3:2360:A:C6	51:3:2373:G:N2	2.77	0.52
51:3:2799:U:OP2	51:3:2896:G:N2	2.43	0.52
53:5:22:G:H2'	53:5:23:G:C8	2.44	0.52
53:5:662:G:H21	53:5:729:C:H3'	1.75	0.52
53:5:920:G:H1'	53:5:1477:A:C4	2.45	0.52
53:5:1005:U:H2'	53:5:1006:A:C8	2.44	0.52
54:6:63:U:H2'	54:6:64:G:C8	2.44	0.52
4:A:54:ASP:OD1	4:A:54:ASP:N	2.43	0.52
5:B:56:VAL:HG12	5:B:69:VAL:HG22	1.90	0.52
5:B:116:ALA:HB1	5:B:203:VAL:HG23	1.92	0.52
8:E:136:LEU:HG	53:5:835:G:H21	1.75	0.52
9:F:26:ILE:HG13	9:F:42:LEU:HD13	1.90	0.52
15:L:34:LEU:HG	15:L:41:PRO:HG3	1.91	0.52
34:j:51:MET:SD	34:j:51:MET:N	2.71	0.52
42:r:92:SER:O	51:3:1648:A:N6	2.41	0.52
50:z:9:LEU:HB3	50:z:19:TYR:HB2	1.90	0.52
50:z:36:LYS:C	50:z:47:HIS:HE2	2.17	0.52
51:3:53:G:H21	51:3:119:A:N6	2.02	0.52
51:3:1624:A:H2'	51:3:1625:G:C8	2.44	0.52
51:3:1813:C:N4	51:3:1814:G:O6	2.42	0.52
51:3:2254:G:H2'	51:3:2255:A:C8	2.44	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:61:THR:N	5:B:64:THR:O	2.43	0.52
9:F:110:ARG:O	9:F:118:LYS:NZ	2.42	0.52
48:x:31:GLN:HG3	48:x:32:LYS:H	1.75	0.52
51:3:828:A:OP2	51:3:2078:A:O2'	2.27	0.52
51:3:1391:U:H2'	51:3:1392:G:H8	1.74	0.52
51:3:1414:C:OP2	51:3:1424:U:N3	2.43	0.52
51:3:1934:A:H2'	51:3:1935:A:C8	2.45	0.52
51:3:2697:C:OP2	51:3:2727:G:N2	2.42	0.52
53:5:146:A:H3'	53:5:147:A:C8	2.45	0.52
53:5:1154:A:O2'	53:5:1155:A:O4'	2.16	0.52
8:E:109:LEU:O	8:E:112:ARG:HB3	2.10	0.52
27:c:174:ASN:ND2	51:3:354:C:O2'	2.30	0.52
31:g:83:ALA:HB2	31:g:96:VAL:HG21	1.92	0.52
51:3:502:A:N3	51:3:718:U:H1'	2.25	0.52
51:3:992:G:N2	51:3:996:A:OP2	2.43	0.52
53:5:41:C:H2'	53:5:42:G:H8	1.74	0.52
53:5:297:A:H2'	53:5:298:G:C8	2.45	0.52
53:5:1220:A:N6	53:5:1267:G:O6	2.43	0.52
41:q:1:MET:SD	41:q:1:MET:N	2.78	0.51
43:s:13:THR:H	43:s:16:VAL:HG12	1.75	0.51
51:3:446:A:O2'	51:3:2415:A:OP2	2.23	0.51
51:3:1071:G:H2'	51:3:1072:A:H8	1.75	0.51
51:3:1180:U:H2'	51:3:1181:A:H8	1.75	0.51
51:3:2301:C:H2'	51:3:2302:C:H6	1.75	0.51
53:5:513:G:H2'	53:5:514:U:H6	1.75	0.51
53:5:1297:G:H2'	53:5:1298:U:O4'	2.09	0.51
2:1:10:ARG:HG2	35:k:64:LYS:HA	1.93	0.51
16:M:23:ARG:O	16:M:25:GLN:NE2	2.43	0.51
30:f:32:PRO:HG2	30:f:112:MET:HG3	1.91	0.51
42:r:34:ASN:O	42:r:38:ASN:ND2	2.40	0.51
51:3:1744:U:O2'	51:3:2863:G:N2	2.43	0.51
51:3:1851:U:H2'	51:3:1852:G:H8	1.75	0.51
51:3:2126:A:H61	51:3:2176:G:H1'	1.76	0.51
51:3:2323:U:H2'	51:3:2324:A:C8	2.45	0.51
53:5:577:G:H5'	53:5:725:A:H1'	1.92	0.51
53:5:1138:U:H2'	53:5:1139:A:H8	1.75	0.51
53:5:1471:C:H2'	53:5:1472:G:C8	2.44	0.51
9:F:25:ILE:O	9:F:29:ILE:HG12	2.10	0.51
26:b:18:THR:OG1	26:b:221:GLU:O	2.28	0.51
26:b:50:THR:OG1	26:b:87:MET:O	2.29	0.51
27:c:102:LYS:NZ	51:3:694:U:O5'	2.41	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:79:ASP:OD2	38:n:112:ARG:NH1	2.34	0.51
51:3:188:G:H2'	51:3:189:U:C6	2.44	0.51
51:3:1230:U:H2'	51:3:1231:G:H8	1.76	0.51
51:3:1347:A:H2'	51:3:1348:C:C6	2.45	0.51
51:3:2048:U:H2'	51:3:2049:A:H8	1.75	0.51
51:3:2407:G:H2'	51:3:2408:G:C8	2.45	0.51
51:3:2487:U:OP1	51:3:2545:U:O2'	2.20	0.51
53:5:656:U:H2'	53:5:657:G:H8	1.74	0.51
30:f:141:LYS:HZ1	30:f:143:THR:HG22	1.76	0.51
33:i:67:LEU:HD21	33:i:72:LYS:HD3	1.91	0.51
47:w:42:HIS:ND1	51:3:97:A:O2'	2.33	0.51
51:3:2634:C:H2'	51:3:2635:G:H8	1.75	0.51
53:5:1219:C:H2'	53:5:1220:A:C8	2.44	0.51
17:N:52:GLY:O	17:N:56:LYS:HG2	2.10	0.51
21:R:15:LEU:HA	21:R:18:LYS:HB2	1.92	0.51
28:d:88:LYS:NZ	51:3:2321:C:O3'	2.31	0.51
36:l:77:LYS:HG3	51:3:992:G:H5''	1.93	0.51
51:3:41:C:O2'	51:3:649:A:N1	2.42	0.51
51:3:141:A:H2'	51:3:142:A:C4	2.45	0.51
51:3:207:C:OP2	51:3:208:A:H2'	2.11	0.51
51:3:606:G:N2	51:3:2038:A:OP1	2.42	0.51
51:3:676:U:H2'	51:3:677:U:C6	2.45	0.51
53:5:37:C:H2'	53:5:38:U:C6	2.45	0.51
53:5:859:A:H2'	53:5:860:C:C6	2.46	0.51
53:5:877:C:H2'	53:5:878:U:C6	2.46	0.51
28:d:112:ARG:HH21	28:d:112:ARG:HG3	1.74	0.51
30:f:71:VAL:HG21	30:f:106:MET:HB3	1.92	0.51
31:g:112:TYR:HB3	31:g:117:ALA:HA	1.91	0.51
43:s:61:LYS:HZ1	51:3:1635:G:H5''	1.76	0.51
51:3:477:U:H2'	51:3:478:G:C8	2.46	0.51
51:3:603:G:H1	51:3:2507:C:P	2.33	0.51
51:3:829:A:H2'	51:3:830:A:C8	2.46	0.51
51:3:1370:A:H62	51:3:1635:G:H22	1.59	0.51
51:3:1544:G:H2'	51:3:1545:A:H8	1.76	0.51
51:3:2122:G:H21	51:3:2179:A:H61	1.56	0.51
53:5:76:G:N3	53:5:78:A:N7	2.58	0.51
53:5:316:G:H2'	53:5:317:A:C8	2.45	0.51
53:5:1012:A:H5'	53:5:1013:C:C5	2.46	0.51
7:D:187:THR:O	7:D:191:MET:HG2	2.11	0.51
38:n:28:VAL:HG23	38:n:89:VAL:HG22	1.93	0.51
51:3:196:G:O2'	51:3:837:A:N3	2.43	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1165:U:N3	51:3:2032:G:OP1	2.43	0.51
51:3:1692:A:H2'	51:3:1693:U:C6	2.45	0.51
51:3:2163:U:H2'	51:3:2164:G:H8	1.75	0.51
51:3:2567:C:H2'	51:3:2568:G:H8	1.75	0.51
52:4:35:C:H42	52:4:47:C:H1'	1.76	0.51
53:5:140:U:H2'	53:5:141:A:C8	2.42	0.51
53:5:393:A:N1	53:5:545:A:O2'	2.42	0.51
53:5:698:U:H4'	53:5:699:A:H2'	1.93	0.51
53:5:1501:G:H2'	53:5:1502:G:H8	1.74	0.51
6:C:98:ASP:N	6:C:98:ASP:OD1	2.43	0.51
8:E:43:LYS:HB2	8:E:57:TYR:HE1	1.75	0.51
22:S:56:ARG:HH22	53:5:198:A:H5'	1.76	0.51
32:h:124:VAL:HA	32:h:127:THR:HG22	1.92	0.51
35:k:82:LEU:HA	35:k:85:ILE:HG22	1.93	0.51
51:3:885:A:H61	51:3:965:U:H3	1.59	0.51
51:3:1413:A:H1'	51:3:1414:C:C6	2.46	0.51
53:5:147:A:H2'	53:5:148:A:C4	2.46	0.51
53:5:503:G:H2'	53:5:504:A:C8	2.46	0.51
53:5:1216:G:H2'	53:5:1217:G:H8	1.76	0.51
13:J:45:PHE:HE2	13:J:58:ILE:HG21	1.76	0.51
51:3:2031:C:H2'	51:3:2032:G:H8	1.75	0.51
51:3:2094:A:H2'	51:3:2095:A:C8	2.46	0.51
52:4:3:U:OP1	52:4:59:A:O2'	2.25	0.51
53:5:1448:A:H2'	53:5:1449:G:C8	2.46	0.51
2:1:5:SER:OG	51:3:250:U:O4	2.22	0.51
4:A:46:GLU:OE1	4:A:49:ARG:NH1	2.43	0.51
5:B:93:LYS:NZ	5:B:100:THR:O	2.44	0.51
7:D:81:LYS:NZ	53:5:1060:C:OP1	2.41	0.51
31:g:43:LYS:HB2	31:g:91:GLU:HG3	1.92	0.51
51:3:348:A:H2'	51:3:349:G:C8	2.45	0.51
51:3:411:U:O2	51:3:411:U:H2'	2.11	0.51
51:3:611:A:OP1	51:3:1285:U:O2'	2.26	0.51
51:3:1790:U:H1'	51:3:2615:G:H21	1.76	0.51
51:3:2683:G:O6	51:3:2740:U:O4	2.29	0.51
53:5:102:G:H22	53:5:309:A:H1'	1.77	0.51
10:G:50:LYS:HG3	10:G:51:GLU:HG2	1.92	0.50
30:f:66:HIS:O	30:f:70:GLU:HG2	2.11	0.50
31:g:29:TYR:CD2	31:g:100:VAL:HG23	2.46	0.50
36:l:86:GLY:N	51:3:2284:G:OP2	2.44	0.50
51:3:329:G:O6	51:3:377:U:O2	2.28	0.50
51:3:1202:A:H2'	51:3:1203:G:H8	1.77	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2085:C:H2'	51:3:2086:U:C6	2.46	0.50
51:3:2224:A:H2'	51:3:2225:G:H8	1.76	0.50
51:3:2515:C:N3	51:3:2591:G:N2	2.59	0.50
53:5:236:C:H2'	53:5:237:A:H8	1.72	0.50
53:5:1278:G:H21	53:5:1307:A:N6	1.95	0.50
5:B:153:LYS:HD2	5:B:172:ILE:HD13	1.93	0.50
9:F:70:PRO:HD2	9:F:95:LYS:HB3	1.93	0.50
18:O:62:THR:OG1	53:5:371:U:OP1	2.29	0.50
30:f:1:MET:HA	30:f:35:LEU:O	2.10	0.50
31:g:112:TYR:CB	31:g:117:ALA:HA	2.40	0.50
32:h:121:LEU:O	32:h:125:LEU:HG	2.11	0.50
38:n:98:TYR:CE1	38:n:103:ALA:HA	2.46	0.50
51:3:1619:A:H2'	51:3:1620:A:H8	1.76	0.50
51:3:2104:A:N6	51:3:2201:G:O6	2.44	0.50
53:5:534:C:H2'	53:5:535:A:C8	2.46	0.50
5:B:116:ALA:HB2	5:B:205:ILE:HG22	1.92	0.50
42:r:12:ILE:HG12	42:r:43:ALA:HB2	1.93	0.50
51:3:605:A:O2'	51:3:606:G:OP1	2.24	0.50
51:3:1120:A:O2'	51:3:1121:A:O4'	2.20	0.50
51:3:2030:A:H5'	51:3:2625:U:H4'	1.93	0.50
51:3:2504:C:HO2'	51:3:2505:A:P	2.34	0.50
53:5:518:A:H62	53:5:527:G:H21	1.58	0.50
53:5:864:U:H4'	53:5:865:U:H3'	1.93	0.50
8:E:71:ASP:N	8:E:71:ASP:OD1	2.45	0.50
32:h:46:LYS:HE3	32:h:51:ILE:HD12	1.94	0.50
32:h:88:ASN:HB3	32:h:90:LYS:HG2	1.92	0.50
51:3:880:C:H4'	51:3:881:A:H5'	1.94	0.50
51:3:1510:A:H2'	51:3:1511:C:C6	2.47	0.50
51:3:1683:G:H2'	51:3:1684:A:H8	1.76	0.50
52:4:104:C:H2'	52:4:105:A:H8	1.75	0.50
4:A:61:GLN:HE22	4:A:216:PRO:HG2	1.76	0.50
11:H:49:ASP:OD2	11:H:82:ARG:NH1	2.38	0.50
22:S:24:GLN:O	22:S:27:LYS:HG2	2.10	0.50
26:b:139:TYR:CD1	26:b:140:PRO:HD3	2.46	0.50
51:3:392:A:H2'	51:3:393:C:C6	2.46	0.50
51:3:916:U:H2'	51:3:917:G:H8	1.75	0.50
51:3:1866:G:H2'	51:3:1867:G:C8	2.46	0.50
51:3:2076:G:H2'	51:3:2077:A:H8	1.77	0.50
51:3:2568:G:H2'	51:3:2569:A:C8	2.47	0.50
53:5:215:C:H2'	53:5:216:G:C8	2.47	0.50
53:5:732:A:H2'	53:5:733:A:C8	2.47	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1246:A:H5'	53:5:1288:C:H5''	1.94	0.50
53:5:1257:C:H2'	53:5:1258:U:C6	2.47	0.50
53:5:1414:U:H2'	53:5:1415:G:C8	2.46	0.50
5:B:61:THR:HG22	5:B:62:GLN:H	1.76	0.50
19:P:2:LYS:HE3	19:P:66:THR:HA	1.94	0.50
49:y:7:ARG:NH2	51:3:2026:A:O3'	2.44	0.50
51:3:112:A:H2'	51:3:113:U:C6	2.46	0.50
51:3:134:U:H2'	51:3:135:A:C8	2.47	0.50
51:3:714:G:H2'	51:3:715:G:H8	1.76	0.50
51:3:1231:G:H2'	51:3:1232:U:C6	2.47	0.50
51:3:1382:A:N6	51:3:1405:G:C2	2.79	0.50
51:3:2892:U:H2'	51:3:2893:C:C6	2.46	0.50
52:4:96:G:H2'	52:4:97:A:C4	2.47	0.50
53:5:214:U:H2'	53:5:215:C:C6	2.46	0.50
53:5:716:C:O2'	53:5:717:C:OP1	2.30	0.50
2:1:31:PRO:HG3	50:z:20:LEU:HD23	1.93	0.50
3:2:2:LYS:O	3:2:35:ARG:N	2.41	0.50
4:A:247:ALA:O	4:A:248:TYR:HB2	2.12	0.50
10:G:61:GLU:HG2	10:G:68:ARG:HE	1.77	0.50
14:K:9:ARG:NH1	53:5:874:C:OP1	2.40	0.50
31:g:78:GLY:HA2	51:3:1142:G:H1'	1.92	0.50
35:k:39:GLN:OE1	51:3:866:G:O2'	2.30	0.50
51:3:227:A:N1	51:3:458:A:N6	2.59	0.50
51:3:1694:A:H2'	51:3:1695:G:C8	2.47	0.50
53:5:331:C:H2'	53:5:332:A:H8	1.76	0.50
53:5:600:G:H1	53:5:633:U:H3	1.60	0.50
53:5:896:G:H2'	53:5:897:A:H8	1.76	0.50
53:5:1249:G:N2	53:5:1250:A:N7	2.60	0.50
53:5:1266:U:H2'	53:5:1267:G:H8	1.77	0.50
8:E:10:ASP:OD1	8:E:10:ASP:N	2.44	0.50
9:F:98:LEU:HA	9:F:101:ARG:HD2	1.94	0.50
46:v:53:ARG:NH2	51:3:435:U:O4	2.45	0.50
51:3:138:U:H2'	51:3:139:G:C8	2.47	0.50
51:3:514:A:N6	51:3:535:G:O2'	2.45	0.50
51:3:569:U:H2'	51:3:570:C:C6	2.47	0.50
51:3:1813:C:H2'	51:3:1814:G:H8	1.77	0.50
51:3:2201:G:H2'	51:3:2202:U:C6	2.46	0.50
51:3:2267:G:H2'	51:3:2268:C:H6	1.77	0.50
51:3:2267:G:H2'	51:3:2268:C:C6	2.47	0.50
53:5:74:U:H2'	53:5:75:A:C8	2.47	0.50
53:5:85:U:H1'	53:5:86:A:N7	2.27	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:256:G:H2'	53:5:257:U:C6	2.47	0.50
53:5:259:A:H2'	53:5:260:C:C6	2.47	0.50
53:5:988:G:O2'	53:5:989:A:N7	2.35	0.50
2:1:2:LYS:NZ	51:3:257:C:OP2	2.42	0.50
4:A:221:GLN:OE1	4:A:223:GLN:HG2	2.12	0.50
30:f:2:LYS:CD	30:f:50:PHE:CE2	2.95	0.50
31:g:57:ASN:OD1	31:g:61:ARG:NE	2.44	0.50
38:n:46:PHE:O	38:n:47:SER:OG	2.28	0.50
40:p:96:GLU:O	40:p:99:ILE:HG12	2.12	0.50
47:w:102:ARG:NH2	51:3:1627:U:OP1	2.33	0.50
51:3:1180:U:H2'	51:3:1181:A:C8	2.46	0.50
51:3:2094:A:H2'	51:3:2095:A:H8	1.75	0.50
51:3:2678:A:H2'	51:3:2679:G:C8	2.47	0.50
51:3:2832:G:H2'	51:3:2833:A:H8	1.75	0.50
53:5:52:A:H61	53:5:310:C:H1'	1.75	0.50
53:5:573:G:H4'	53:5:574:C:H5''	1.94	0.50
4:A:44:PHE:HD1	4:A:60:LEU:HD21	1.76	0.49
14:K:124:ARG:O	14:K:127:ARG:NH2	2.39	0.49
25:a:73:ARG:HH21	25:a:123:ALA:HB2	1.77	0.49
25:a:111:SER:O	25:a:204:SER:OG	2.26	0.49
28:d:42:ASP:OD1	28:d:42:ASP:N	2.45	0.49
51:3:173:C:H2'	51:3:174:A:C8	2.46	0.49
51:3:341:G:N2	51:3:344:A:OP2	2.45	0.49
51:3:1543:U:H2'	51:3:1544:G:C8	2.45	0.49
51:3:2634:C:H2'	51:3:2635:G:C8	2.47	0.49
52:4:38:U:H1'	52:4:43:A:N6	2.26	0.49
53:5:777:A:N6	53:5:798:U:OP2	2.42	0.49
53:5:1081:U:O2'	53:5:1146:A:O2'	2.26	0.49
53:5:1214:A:H2'	53:5:1272:C:H42	1.77	0.49
53:5:1214:A:N6	53:5:1271:U:O4'	2.46	0.49
25:a:238:HIS:HE2	25:a:240:HIS:HB2	1.76	0.49
31:g:45:PHE:CG	31:g:45:PHE:O	2.64	0.49
32:h:129:LYS:NZ	51:3:1114:C:O2'	2.33	0.49
39:o:29:ASP:CB	39:o:93:ARG:HA	2.42	0.49
47:w:15:LEU:O	47:w:19:VAL:HG23	2.12	0.49
51:3:54:A:H62	51:3:120:A:H62	1.60	0.49
51:3:226:A:H61	51:3:236:G:H1'	1.76	0.49
51:3:801:U:H2'	51:3:802:U:O4'	2.12	0.49
51:3:1896:A:H2'	51:3:1897:A:C8	2.47	0.49
51:3:2388:C:H2'	51:3:2389:A:H8	1.78	0.49
53:5:190:A:H2'	53:5:191:A:C8	2.47	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:516:C:OP2	53:5:528:G:O2'	2.28	0.49
53:5:1306:A:H2'	53:5:1307:A:O4'	2.12	0.49
53:5:1471:C:H2'	53:5:1472:G:H8	1.77	0.49
7:D:138:HIS:CD2	10:G:108:LEU:HD23	2.47	0.49
8:E:32:VAL:HG11	8:E:62:PHE:CD1	2.47	0.49
28:d:36:ILE:HG12	28:d:154:VAL:HG22	1.94	0.49
36:l:39:GLY:CA	36:l:97:VAL:O	2.60	0.49
51:3:331:A:H2'	51:3:332:G:O4'	2.12	0.49
51:3:998:C:H2'	51:3:999:U:C6	2.48	0.49
51:3:1104:A:H5'	51:3:1131:A:H4'	1.93	0.49
51:3:2223:C:H2'	51:3:2224:A:C8	2.46	0.49
51:3:2806:A:N6	51:3:2808:A:N3	2.60	0.49
53:5:57:U:H2'	53:5:58:G:C8	2.47	0.49
53:5:506:U:O2	53:5:507:A:N6	2.38	0.49
53:5:1225:A:H2	53:5:1345:G:H1'	1.77	0.49
28:d:38:MET:HE2	28:d:57:LEU:HD22	1.93	0.49
30:f:10:SER:OG	30:f:14:LYS:NZ	2.44	0.49
33:i:3:LYS:N	41:q:12:TYR:OH	2.36	0.49
44:t:76:LEU:HD12	44:t:89:ILE:HD11	1.95	0.49
50:z:23:LYS:NZ	50:z:24:ASN:O	2.46	0.49
51:3:849:C:H2'	51:3:850:G:C8	2.47	0.49
51:3:2323:U:H2'	51:3:2324:A:H8	1.77	0.49
51:3:2335:A:H2'	51:3:2336:A:C8	2.47	0.49
51:3:2781:C:H2'	51:3:2782:A:C8	2.47	0.49
51:3:2808:A:H2'	51:3:2809:A:C8	2.46	0.49
53:5:725:A:H2'	53:5:726:A:C8	2.48	0.49
53:5:1225:A:C2	53:5:1345:G:H1'	2.47	0.49
6:C:14:LEU:HD13	6:C:59:ARG:HG3	1.95	0.49
11:H:77:GLN:O	11:H:81:ILE:HG12	2.12	0.49
13:J:80:LYS:HA	13:J:106:LYS:O	2.13	0.49
42:r:7:GLN:NE2	42:r:8:PHE:O	2.45	0.49
51:3:898:A:O2'	52:4:76:A:N3	2.35	0.49
51:3:1546:U:H2'	51:3:1547:G:O4'	2.13	0.49
51:3:1926:A:O2'	53:5:1492:G:N3	2.41	0.49
51:3:2081:U:H2'	51:3:2082:U:C6	2.46	0.49
51:3:2342:U:H4'	51:3:2343:A:O5'	2.12	0.49
51:3:2435:C:H5''	51:3:2437:G:H5'	1.95	0.49
51:3:2845:U:H2'	51:3:2846:A:H8	1.75	0.49
15:L:47:ASP:N	15:L:47:ASP:OD1	2.46	0.49
31:g:52:LYS:N	31:g:82:VAL:HG12	2.28	0.49
39:o:9:LEU:HA	39:o:12:LEU:HB3	1.95	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:r:31:ASP:OD1	42:r:31:ASP:N	2.45	0.49
47:w:29:TYR:HE2	47:w:47:THR:HG21	1.78	0.49
51:3:554:U:H2'	51:3:555:A:C8	2.46	0.49
51:3:714:G:H2'	51:3:715:G:C8	2.47	0.49
51:3:756:A:H2'	51:3:757:A:C8	2.47	0.49
51:3:822:C:H5''	51:3:823:A:H5'	1.95	0.49
51:3:1020:G:H5''	51:3:1021:C:H5	1.77	0.49
51:3:1446:G:O2'	51:3:1612:U:O4	2.31	0.49
51:3:1760:G:N2	51:3:1763:G:OP2	2.42	0.49
51:3:2021:A:O2'	51:3:2022:A:O4'	2.23	0.49
51:3:2025:C:H2'	51:3:2026:A:H8	1.76	0.49
53:5:201:G:H2'	53:5:202:A:C8	2.47	0.49
53:5:393:A:C6	53:5:546:G:N2	2.81	0.49
53:5:656:U:H2'	53:5:657:G:C8	2.48	0.49
53:5:1463:A:H2'	53:5:1464:G:C8	2.47	0.49
7:D:97:ARG:HG2	7:D:172:LEU:HA	1.94	0.49
16:M:23:ARG:HD3	16:M:28:GLY:HA2	1.94	0.49
51:3:1723:A:H2'	51:3:1724:A:H8	1.78	0.49
53:5:72:A:H2'	53:5:73:G:C8	2.48	0.49
53:5:84:U:O4	53:5:85:U:O4	2.31	0.49
7:D:169:ILE:HD11	7:D:192:ILE:HD13	1.95	0.49
10:G:91:SER:OG	10:G:96:ARG:NH2	2.46	0.49
18:O:2:ARG:HH22	53:5:387:G:H5''	1.77	0.49
26:b:211:LYS:NZ	51:3:2780:U:OP1	2.44	0.49
51:3:389:C:H2'	51:3:390:A:C8	2.48	0.49
51:3:675:U:N3	51:3:676:U:O4	2.45	0.49
51:3:715:G:H2'	51:3:716:G:C8	2.47	0.49
51:3:1237:G:H2'	51:3:1238:A:H8	1.78	0.49
51:3:2528:C:H2'	51:3:2529:C:H6	1.78	0.49
53:5:311:A:O2'	53:5:326:C:O2'	2.28	0.49
53:5:372:G:H2'	53:5:373:A:C8	2.47	0.49
53:5:1138:U:H3	53:5:1149:G:H1	1.61	0.49
5:B:194:THR:HG23	5:B:196:TYR:H	1.77	0.49
15:L:52:GLU:O	15:L:56:ILE:HG12	2.13	0.49
40:p:2:ARG:HB2	51:3:1278:G:C5	2.48	0.49
51:3:1801:U:H2'	51:3:1802:C:C6	2.48	0.49
51:3:1820:U:HO2'	51:3:1821:G:P	2.36	0.49
51:3:2470:C:H2'	51:3:2471:U:C6	2.48	0.49
51:3:2655:U:H2'	51:3:2656:G:C8	2.47	0.49
53:5:782:G:H2'	53:5:783:G:H8	1.78	0.49
53:5:834:G:H2'	53:5:835:G:H8	1.78	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:905:U:H2'	53:5:906:C:C6	2.47	0.49
6:C:1:MET:N	53:5:545:A:O5'	2.46	0.49
18:O:16:VAL:HG23	18:O:27:ILE:HD12	1.95	0.49
21:R:11:VAL:HG12	21:R:13:ALA:H	1.78	0.49
27:c:102:LYS:HG2	51:3:694:U:H4'	1.94	0.49
29:e:92:LEU:HD11	29:e:97:TYR:HB3	1.94	0.49
36:l:30:GLY:HA2	36:l:107:ALA:HB2	1.95	0.49
36:l:57:CYS:SG	36:l:120:ARG:NH2	2.86	0.49
38:n:90:VAL:HG23	51:3:2386:A:H1'	1.95	0.49
49:y:52:ARG:CZ	49:y:52:ARG:HB2	2.42	0.49
51:3:248:A:H62	51:3:258:G:H21	1.60	0.49
51:3:913:U:H2'	51:3:914:G:O4'	2.13	0.49
51:3:1853:G:O2'	51:3:1854:A:N7	2.45	0.49
51:3:2122:G:H4'	51:3:2174:G:O2'	2.13	0.49
51:3:2146:A:H2'	51:3:2147:G:C8	2.48	0.49
51:3:2575:G:H2'	51:3:2576:A:H8	1.76	0.49
51:3:2840:U:H2'	51:3:2841:A:H8	1.78	0.49
53:5:386:U:H2'	53:5:387:G:C8	2.47	0.49
53:5:397:C:H2'	53:5:398:G:H8	1.77	0.49
53:5:1245:A:H2'	53:5:1246:A:C8	2.46	0.49
5:B:18:TRP:CD1	16:M:54:PRO:HA	2.48	0.48
9:F:68:VAL:HG13	9:F:99:ALA:HB1	1.94	0.48
26:b:177:GLN:HG3	26:b:212:LYS:HZ2	1.78	0.48
32:h:122:LYS:HB3	51:3:1115:G:O2'	2.13	0.48
51:3:503:G:H2'	51:3:504:G:H8	1.78	0.48
51:3:697:U:H2'	51:3:698:A:H8	1.78	0.48
51:3:1744:U:H2'	51:3:1745:A:C8	2.48	0.48
53:5:8:G:C4	53:5:294:A:N1	2.81	0.48
53:5:1360:G:H2'	53:5:1361:G:C8	2.48	0.48
16:M:27:CYS:HB3	53:5:1177:U:O2'	2.13	0.48
21:R:81:LYS:HE3	21:R:83:HIS:CG	2.48	0.48
30:f:46:ASP:HA	30:f:49:LEU:HD12	1.94	0.48
34:j:64:ARG:NH2	34:j:100:GLY:HA3	2.27	0.48
51:3:1420:A:N6	51:3:1421:A:N1	2.61	0.48
51:3:1475:C:H2'	51:3:1476:C:C6	2.48	0.48
51:3:2077:A:H2'	51:3:2078:A:C8	2.49	0.48
51:3:2571:U:O2	51:3:2574:A:C6	2.66	0.48
53:5:573:G:H21	53:5:574:C:H5	1.59	0.48
53:5:1459:U:H2'	53:5:1460:U:C6	2.48	0.48
14:K:53:MET:HE3	14:K:65:TYR:CG	2.48	0.48
17:N:5:LYS:NZ	53:5:655:G:OP1	2.32	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:O:52:TRP:CD1	18:O:55:LYS:HZ1	2.31	0.48
23:T:31:ARG:NH1	53:5:716:C:OP1	2.47	0.48
27:c:3:LYS:O	27:c:5:LYS:NZ	2.41	0.48
27:c:105:LYS:NZ	51:3:655:G:O6	2.36	0.48
32:h:69:THR:OG1	32:h:107:TYR:O	2.31	0.48
34:j:18:GLN:HB2	34:j:44:LYS:HB2	1.96	0.48
36:l:39:GLY:HA3	36:l:97:VAL:O	2.13	0.48
51:3:134:U:H2'	51:3:135:A:H8	1.79	0.48
51:3:154:U:H2'	51:3:155:A:C8	2.48	0.48
51:3:154:U:H2'	51:3:155:A:H8	1.78	0.48
51:3:664:G:H2'	51:3:665:C:C6	2.48	0.48
51:3:739:G:N2	51:3:761:G:O2'	2.47	0.48
51:3:776:U:H2'	51:3:777:C:C6	2.48	0.48
51:3:1677:G:H2'	51:3:1678:U:C6	2.48	0.48
51:3:2324:A:H2'	51:3:2325:U:H6	1.78	0.48
51:3:2499:U:H5'	51:3:2578:A:H5''	1.95	0.48
51:3:2599:C:H2'	51:3:2600:G:C8	2.48	0.48
51:3:2697:C:P	51:3:2727:G:H22	2.36	0.48
53:5:953:A:O2'	53:5:954:A:O4'	2.26	0.48
53:5:1463:A:H2'	53:5:1464:G:H8	1.79	0.48
3:2:27:CYS:HG	3:2:32:HIS:HD1	1.61	0.48
6:C:75:PHE:O	6:C:79:LEU:HG	2.14	0.48
21:R:27:LYS:O	21:R:28:LYS:C	2.55	0.48
26:b:185:ASP:O	26:b:189:MET:N	2.46	0.48
26:b:198:ALA:HA	51:3:2688:C:H5'	1.96	0.48
41:q:57:CYS:HB3	41:q:92:LEU:HD21	1.94	0.48
49:y:50:ASP:OD1	49:y:50:ASP:N	2.39	0.48
51:3:803:G:N2	51:3:1407:U:H1'	2.28	0.48
51:3:1083:A:H2'	51:3:1084:C:C6	2.47	0.48
51:3:1348:C:H42	51:3:1359:C:H5	1.60	0.48
51:3:1529:U:H2'	51:3:1530:G:C8	2.48	0.48
51:3:2041:C:H2'	51:3:2042:A:C8	2.48	0.48
51:3:2696:G:O2'	51:3:2729:A:N6	2.45	0.48
51:3:2832:G:H2'	51:3:2833:A:C8	2.48	0.48
53:5:189:C:H2'	53:5:190:A:C8	2.48	0.48
53:5:669:U:H2'	53:5:670:G:C8	2.48	0.48
53:5:832:G:H2'	53:5:833:G:H8	1.78	0.48
53:5:1193:U:H2'	53:5:1194:A:C8	2.48	0.48
9:F:25:ILE:HD11	9:F:100:LEU:HD22	1.94	0.48
37:m:22:VAL:HG21	37:m:48:LEU:HD12	1.95	0.48
51:3:877:G:H2'	51:3:878:A:H8	1.79	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1627:U:H2'	51:3:1628:G:H8	1.79	0.48
51:3:2822:C:H2'	51:3:2823:A:C8	2.49	0.48
11:H:107:THR:HG21	53:5:1155:A:H5'	1.95	0.48
14:K:27:ASN:ND2	53:5:50:U:O2'	2.46	0.48
15:L:16:GLU:HG2	15:L:34:LEU:HD23	1.96	0.48
27:c:103:LEU:HD12	27:c:104:ASN:H	1.79	0.48
34:j:21:ILE:HA	34:j:41:VAL:HG12	1.95	0.48
39:o:94:GLY:HA2	39:o:115:LYS:HA	1.96	0.48
45:u:54:GLN:HE22	45:u:58:ARG:H	1.60	0.48
51:3:153:U:H2'	51:3:154:U:H6	1.79	0.48
51:3:412:A:H2'	51:3:413:G:H8	1.79	0.48
51:3:437:A:H2'	51:3:438:A:O4'	2.14	0.48
51:3:640:U:O2	51:3:658:G:O6	2.31	0.48
51:3:724:A:N3	51:3:814:U:O2'	2.44	0.48
51:3:1036:A:OP2	51:3:1189:G:N1	2.40	0.48
51:3:2065:A:N6	51:3:2066:A:N1	2.61	0.48
51:3:2259:G:H2'	51:3:2260:G:H8	1.77	0.48
53:5:534:C:H2'	53:5:535:A:H8	1.77	0.48
53:5:990:C:H2'	53:5:991:A:C8	2.48	0.48
53:5:1316:C:H2'	53:5:1317:A:C8	2.48	0.48
53:5:1380:G:H2'	53:5:1381:U:C6	2.48	0.48
4:A:181:PRO:HA	4:A:184:GLU:HB2	1.95	0.48
7:D:165:ALA:O	7:D:169:ILE:HG12	2.12	0.48
8:E:6:ILE:HD11	8:E:57:TYR:HB3	1.95	0.48
22:S:4:ILE:O	22:S:8:GLU:HG2	2.14	0.48
25:a:51:GLY:HA3	51:3:808:U:H4'	1.95	0.48
29:e:97:TYR:HB3	29:e:110:LEU:HD22	1.96	0.48
30:f:2:LYS:CE	30:f:4:ILE:CB	2.71	0.48
33:i:56:TYR:HE2	51:3:9:G:H4'	1.79	0.48
42:r:28:LYS:NZ	42:r:67:ASP:O	2.37	0.48
42:r:53:SER:O	42:r:57:ASN:ND2	2.47	0.48
51:3:80:U:H3	51:3:109:G:H1	1.62	0.48
51:3:401:G:H3'	51:3:402:A:H5''	1.95	0.48
51:3:1295:A:N6	51:3:2021:A:OP2	2.47	0.48
52:4:43:A:C4	52:4:44:A:C8	3.02	0.48
53:5:551:A:H2'	53:5:552:U:C6	2.48	0.48
53:5:712:A:H2'	53:5:713:A:H8	1.78	0.48
4:A:182:VAL:HG23	4:A:206:THR:HG22	1.96	0.48
11:H:54:LEU:HB2	11:H:59:LEU:HD13	1.96	0.48
26:b:110:VAL:HG11	26:b:197:ILE:HD12	1.96	0.48
26:b:123:ILE:H	26:b:123:ILE:HD12	1.78	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c:75:ARG:NH1	51:3:2067:A:N7	2.61	0.48
31:g:55:LYS:HD3	31:g:57:ASN:HB3	1.95	0.48
33:i:42:LYS:HE2	40:p:62:LEU:HD22	1.96	0.48
51:3:894:G:N3	51:3:2276:A:H2'	2.28	0.48
51:3:2812:U:H1'	51:3:2813:A:H2'	1.96	0.48
53:5:773:G:N2	53:5:799:A:OP2	2.38	0.48
53:5:1111:G:H2'	53:5:1112:U:C6	2.49	0.48
53:5:1113:U:H2'	53:5:1114:A:H8	1.78	0.48
16:M:45:ARG:HH22	53:5:1050:U:H4'	1.78	0.48
19:P:4:ASN:ND2	19:P:5:GLN:O	2.46	0.48
30:f:2:LYS:HE2	30:f:4:ILE:HB	1.89	0.48
51:3:89:U:H5''	51:3:90:G:H5'	1.95	0.48
51:3:519:A:OP2	51:3:520:C:N4	2.44	0.48
51:3:1418:U:H3	51:3:1423:A:H62	1.62	0.48
51:3:1484:G:H2'	51:3:1485:A:C8	2.48	0.48
51:3:1485:A:H2'	51:3:1486:U:H5'	1.96	0.48
51:3:2149:U:H2'	51:3:2150:C:C6	2.48	0.48
51:3:2406:U:H2'	51:3:2407:G:C8	2.48	0.48
53:5:1061:U:H2'	53:5:1062:C:H6	1.79	0.48
53:5:1089:C:H2'	53:5:1090:G:C8	2.49	0.48
18:O:74:LYS:NZ	18:O:78:GLU:OE1	2.41	0.48
19:P:67:ARG:NH2	53:5:260:C:H4'	2.29	0.48
51:3:515:A:O2'	51:3:517:G:H5'	2.14	0.48
51:3:1382:A:C6	51:3:1405:G:N2	2.80	0.48
51:3:1671:C:H2'	51:3:1672:C:C6	2.49	0.48
51:3:1913:G:H2'	51:3:1914:G:O4'	2.13	0.48
51:3:2640:A:H2'	51:3:2641:A:C8	2.49	0.48
53:5:351:C:H1'	53:5:384:G:H1'	1.95	0.48
53:5:622:A:H2'	53:5:623:G:C8	2.49	0.48
53:5:760:U:H2'	53:5:761:U:C6	2.49	0.48
7:D:138:HIS:CE1	7:D:202:GLN:HB2	2.49	0.47
15:L:23:PHE:HB3	15:L:66:GLU:HG2	1.96	0.47
17:N:20:GLY:HA3	53:5:747:C:O2	2.15	0.47
26:b:158:ARG:NH1	51:3:2031:C:O2'	2.47	0.47
28:d:102:LYS:O	28:d:106:VAL:HG12	2.13	0.47
33:i:38:LEU:HD22	33:i:57:LEU:HB2	1.96	0.47
39:o:34:ALA:HB3	39:o:87:SER:OG	2.14	0.47
51:3:293:G:H2'	51:3:294:G:C8	2.49	0.47
51:3:1096:U:O2	51:3:1131:A:O2'	2.30	0.47
51:3:1132:C:H3'	51:3:1133:A:C8	2.49	0.47
51:3:1311:G:H1'	51:3:1357:U:H3	1.78	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1627:U:H2'	51:3:1628:G:C8	2.49	0.47
51:3:1903:A:H2'	51:3:1904:G:C8	2.49	0.47
51:3:2840:U:H2'	51:3:2841:A:C8	2.49	0.47
53:5:201:G:H2'	53:5:202:A:H8	1.79	0.47
53:5:662:G:H1'	53:5:730:G:H5'	1.95	0.47
4:A:103:VAL:HG21	4:A:237:ALA:HB2	1.95	0.47
6:C:183:GLU:HB2	6:C:186:GLU:HG3	1.96	0.47
20:Q:82:HIS:O	20:Q:86:VAL:HG22	2.14	0.47
27:c:41:GLU:HG2	27:c:189:ARG:HB3	1.95	0.47
34:j:30:LYS:O	34:j:31:ARG:HG2	2.14	0.47
39:o:18:LEU:HD12	39:o:82:HIS:CE1	2.49	0.47
48:x:6:HIS:CD2	48:x:7:PHE:H	2.32	0.47
50:z:41:CYS:HB3	50:z:43:LYS:HE2	1.96	0.47
53:5:282:G:H2'	53:5:283:U:C6	2.49	0.47
53:5:405:C:H2'	53:5:406:G:O4'	2.14	0.47
53:5:834:G:H2'	53:5:835:G:C8	2.49	0.47
53:5:1138:U:H2'	53:5:1139:A:C8	2.49	0.47
53:5:1294:U:H2'	53:5:1295:U:C6	2.49	0.47
3:2:2:LYS:HB2	3:2:34:GLN:HA	1.95	0.47
13:J:18:CYS:HA	13:J:23:THR:HG22	1.96	0.47
26:b:47:TYR:HH	51:3:2644:U:HO2'	1.62	0.47
40:p:32:LYS:O	51:3:1282:G:N2	2.47	0.47
40:p:111:LYS:HG2	41:q:45:ILE:HD13	1.96	0.47
51:3:1227:C:H2'	51:3:1228:G:H8	1.80	0.47
51:3:1473:C:H2'	51:3:1474:C:C6	2.50	0.47
51:3:1954:C:H2'	51:3:1955:G:C8	2.49	0.47
51:3:2260:G:H2'	51:3:2261:G:C8	2.50	0.47
53:5:150:A:H2'	53:5:151:C:C6	2.49	0.47
53:5:748:U:H3'	53:5:749:G:H8	1.79	0.47
53:5:818:A:H2'	53:5:819:G:C8	2.49	0.47
53:5:919:C:H2'	53:5:920:G:C8	2.49	0.47
53:5:1062:C:H2'	53:5:1063:G:C8	2.45	0.47
53:5:1191:U:H2'	53:5:1192:C:C6	2.48	0.47
55:Y:15:U:O2	55:Y:15:U:O4'	2.32	0.47
1:0:27:GLY:O	1:0:31:LEU:HG	2.14	0.47
25:a:38:LEU:HD22	25:a:67:ARG:HG3	1.96	0.47
34:j:25:LEU:HD21	51:3:2570:U:H4'	1.97	0.47
43:s:56:ASN:HB2	43:s:82:VAL:CG2	2.44	0.47
47:w:95:LYS:NZ	51:3:1627:U:O3'	2.43	0.47
51:3:210:U:H2'	51:3:211:A:C8	2.43	0.47
51:3:1063:A:H2'	51:3:1064:A:C8	2.49	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1396:A:H2'	51:3:1397:G:C8	2.50	0.47
51:3:1544:G:H2'	51:3:1545:A:C8	2.50	0.47
51:3:2268:C:H2'	51:3:2269:C:C6	2.47	0.47
51:3:2611:G:C6	51:3:2612:G:C6	3.02	0.47
53:5:556:G:OP2	53:5:557:A:O2'	2.25	0.47
53:5:823:C:H2'	53:5:824:U:C6	2.49	0.47
53:5:1322:U:N3	53:5:1349:A:N7	2.62	0.47
4:A:104:ASP:OD1	4:A:104:ASP:N	2.45	0.47
29:e:78:ALA:O	29:e:82:VAL:HG23	2.15	0.47
30:f:72:ILE:HG21	30:f:136:ALA:HB1	1.97	0.47
33:i:15:ARG:HD3	33:i:15:ARG:H	1.79	0.47
34:j:10:VAL:HG22	34:j:19:VAL:HG23	1.95	0.47
39:o:29:ASP:CA	39:o:93:ARG:HA	2.43	0.47
46:v:52:THR:HA	46:v:55:LEU:HB3	1.96	0.47
51:3:30:A:O2'	51:3:31:U:O4'	2.23	0.47
51:3:2321:C:H2'	51:3:2322:G:C8	2.48	0.47
53:5:72:A:H2'	53:5:73:G:H8	1.78	0.47
53:5:1180:U:H5''	53:5:1181:G:OP1	2.13	0.47
53:5:1298:U:H4'	53:5:1336:C:H4'	1.95	0.47
53:5:1434:C:C2	53:5:1435:G:C8	3.03	0.47
53:5:1468:A:O2'	55:Y:19:U:H1'	2.13	0.47
53:5:1474:A:H1'	53:5:1494:A:H2'	1.97	0.47
15:L:29:ARG:HH12	15:L:63:TYR:HD2	1.62	0.47
16:M:29:ARG:NH2	53:5:1040:U:O4	2.47	0.47
20:Q:54:ILE:HG12	20:Q:55:ASP:H	1.79	0.47
25:a:35:LYS:HG2	25:a:36:SER:H	1.80	0.47
31:g:40:ILE:HG12	31:g:99:VAL:HG11	1.97	0.47
45:u:29:ASP:OD1	45:u:30:SER:N	2.43	0.47
51:3:1408:G:H21	51:3:1604:A:H61	1.61	0.47
51:3:1473:C:H2'	51:3:1474:C:H6	1.79	0.47
51:3:1860:A:N6	51:3:1896:A:N7	2.63	0.47
51:3:2366:A:H2'	51:3:2367:C:C6	2.50	0.47
53:5:425:G:C8	53:5:427:A:C4	3.03	0.47
53:5:506:U:H1'	53:5:507:A:C6	2.49	0.47
4:A:66:GLN:NE2	4:A:70:ASN:OD1	2.42	0.47
4:A:82:ILE:HG13	4:A:105:VAL:HG23	1.96	0.47
4:A:96:VAL:HG22	4:A:229:MET:HE1	1.96	0.47
4:A:157:GLU:O	4:A:161:LYS:HG2	2.15	0.47
4:A:222:PRO:HG3	4:A:257:GLU:HB2	1.97	0.47
5:B:78:ILE:HD13	5:B:85:ILE:HD12	1.96	0.47
6:C:134:ILE:HD13	53:5:618:U:H4'	1.97	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:146:ALA:O	6:C:149:ILE:HG23	2.15	0.47
7:D:79:THR:OG1	53:5:16:G:N3	2.45	0.47
8:E:84:ARG:NH1	53:5:670:G:H4'	2.29	0.47
10:G:98:TYR:HD2	53:5:596:U:H4'	1.80	0.47
18:O:73:TRP:HB3	53:5:470:U:H5''	1.95	0.47
25:a:213:ILE:HG21	25:a:219:ASN:HB2	1.96	0.47
38:n:110:ARG:HG2	38:n:116:PHE:CZ	2.49	0.47
39:o:93:ARG:CB	39:o:93:ARG:CZ	2.92	0.47
40:p:36:GLN:NE2	51:3:1282:G:H22	2.13	0.47
43:s:54:LYS:NZ	51:3:1426:C:OP1	2.43	0.47
51:3:235:U:H2'	51:3:236:G:O4'	2.15	0.47
51:3:322:A:H2'	51:3:323:A:C8	2.49	0.47
51:3:337:U:H2'	51:3:338:G:C8	2.50	0.47
51:3:1140:U:H2'	51:3:1141:U:C6	2.48	0.47
51:3:1458:A:H2'	51:3:1459:A:C8	2.49	0.47
51:3:1743:U:H2'	51:3:1744:U:C6	2.50	0.47
51:3:1777:G:H2'	51:3:1778:G:C8	2.50	0.47
51:3:1869:G:N2	51:3:1887:U:O2	2.41	0.47
51:3:2304:U:N3	51:3:2343:A:N6	2.62	0.47
51:3:2749:A:N6	51:3:2771:G:H21	2.00	0.47
53:5:40:G:H2'	53:5:41:C:C6	2.49	0.47
53:5:393:A:N6	53:5:545:A:O3'	2.47	0.47
53:5:643:U:H2'	53:5:644:U:O4'	2.15	0.47
53:5:760:U:H2'	53:5:761:U:H6	1.80	0.47
53:5:945:U:H2'	53:5:946:G:C8	2.47	0.47
54:6:67:C:H2'	54:6:68:G:C8	2.50	0.47
10:G:101:PHE:CE2	10:G:132:LYS:HG3	2.50	0.47
10:G:119:SER:HA	53:5:639:A:N7	2.30	0.47
25:a:48:ASN:OD1	25:a:49:ASN:N	2.45	0.47
31:g:96:VAL:HA	31:g:99:VAL:HG22	1.97	0.47
51:3:710:A:N6	51:3:838:U:N3	2.60	0.47
51:3:1044:C:O2	51:3:1045:A:N6	2.47	0.47
51:3:1063:A:C5	51:3:1160:G:C2	3.03	0.47
51:3:1699:A:H2'	51:3:1700:G:H8	1.80	0.47
51:3:2702:G:H2'	51:3:2703:U:O4'	2.14	0.47
53:5:356:G:H2'	53:5:357:G:C8	2.50	0.47
53:5:379:A:H5''	53:5:380:G:H8	1.79	0.47
53:5:973:A:C4	53:5:1293:A:C2	3.02	0.47
53:5:1061:U:H2'	53:5:1062:C:C6	2.49	0.47
8:E:150:GLN:HB2	10:G:57:PHE:CE1	2.50	0.47
15:L:7:ILE:HG13	15:L:8:ASP:H	1.80	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:25:GLN:OE1	21:R:25:GLN:HA	2.06	0.47
25:a:174:ASP:OD1	25:a:175:GLU:N	2.43	0.47
25:a:225:ARG:NH2	51:3:726:U:OP1	2.47	0.47
28:d:32:GLU:HB3	28:d:157:VAL:HG13	1.96	0.47
29:e:5:GLY:O	29:e:68:HIS:NE2	2.48	0.47
30:f:128:LEU:O	30:f:135:THR:OG1	2.28	0.47
35:k:95:ARG:O	35:k:99:ILE:HG23	2.15	0.47
44:t:40:ASN:HB3	44:t:67:ALA:HB3	1.97	0.47
47:w:16:VAL:O	47:w:20:ILE:HG12	2.15	0.47
51:3:252:G:H5''	51:3:254:G:O6	2.13	0.47
51:3:283:A:H61	51:3:285:U:H6	1.62	0.47
51:3:746:G:C6	51:3:756:A:C6	3.03	0.47
51:3:1188:C:H2'	51:3:1189:G:O4'	2.15	0.47
51:3:2077:A:H2'	51:3:2078:A:H8	1.79	0.47
51:3:2157:A:H2'	51:3:2158:C:C6	2.50	0.47
51:3:2399:G:O2'	51:3:2432:C:N4	2.47	0.47
51:3:2425:C:H2'	51:3:2426:A:C8	2.50	0.47
53:5:305:A:H2'	53:5:306:G:C8	2.49	0.47
53:5:416:U:C4	53:5:421:G:C2	3.03	0.47
53:5:423:U:H2'	53:5:424:U:C6	2.49	0.47
53:5:590:G:H2'	53:5:591:A:H8	1.80	0.47
54:7:67:C:H2'	54:7:68:G:C8	2.50	0.47
10:G:19:LEU:HA	10:G:22:ILE:HG12	1.97	0.47
11:H:5:SER:HA	11:H:21:LEU:O	2.15	0.47
11:H:129:PHE:HD2	53:5:1316:C:H5''	1.79	0.47
30:f:33:LYS:HA	30:f:112:MET:HE3	1.96	0.47
35:k:54:GLY:HA3	51:3:861:U:O2'	2.14	0.47
41:q:61:LYS:NZ	51:3:583:U:OP2	2.48	0.47
47:w:25:GLU:HG3	47:w:29:TYR:CZ	2.49	0.47
51:3:117:C:H2'	51:3:118:G:O4'	2.14	0.47
51:3:1306:G:H2'	51:3:1307:G:C8	2.50	0.47
51:3:1761:C:N3	51:3:2724:U:O2'	2.47	0.47
51:3:2633:C:H2'	51:3:2634:C:C6	2.49	0.47
51:3:2825:A:O2'	51:3:2830:A:N1	2.46	0.47
52:4:47:C:N4	52:4:48:A:H62	2.13	0.47
53:5:1127:A:O2'	53:5:1128:G:O5'	2.30	0.47
4:A:87:THR:HG21	4:A:112:TRP:H	1.80	0.46
7:D:150:LEU:HD13	53:5:8:G:H1	1.80	0.46
8:E:143:LEU:HD12	8:E:144:SER:H	1.80	0.46
20:Q:57:LEU:O	20:Q:61:LYS:HG3	2.16	0.46
21:R:66:MET:HG3	21:R:67:VAL:H	1.81	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:k:64:LYS:HE3	35:k:64:LYS:HB2	1.64	0.46
41:q:41:LEU:HD12	41:q:42:ASP:H	1.80	0.46
51:3:80:U:H2'	51:3:81:C:C6	2.50	0.46
51:3:381:A:H2'	51:3:382:U:C6	2.50	0.46
51:3:558:C:H5''	51:3:575:C:O2'	2.14	0.46
51:3:869:U:O2'	51:3:2366:A:H1'	2.15	0.46
51:3:1018:G:N2	51:3:2036:G:OP1	2.48	0.46
51:3:1187:C:H2'	51:3:1188:C:H6	1.79	0.46
51:3:1261:U:H2'	51:3:1262:G:H8	1.80	0.46
51:3:1318:U:H2'	51:3:1319:C:C6	2.50	0.46
53:5:252:U:H2'	53:5:253:G:C8	2.50	0.46
1:0:21:ARG:HB2	1:0:22:MET:HE2	1.97	0.46
5:B:48:TYR:CE2	5:B:88:ILE:HD11	2.51	0.46
29:e:4:ILE:HG13	51:3:2759:G:H1'	1.96	0.46
30:f:7:GLN:NE2	30:f:33:LYS:HB3	2.30	0.46
32:h:78:GLN:HE21	32:h:100:LYS:HD2	1.80	0.46
51:3:616:G:H2'	51:3:617:C:H6	1.79	0.46
51:3:752:C:H3'	51:3:753:A:H8	1.79	0.46
51:3:1927:C:H2'	51:3:1928:G:C8	2.50	0.46
51:3:2532:G:H2'	51:3:2533:A:C8	2.50	0.46
53:5:20:C:H2'	53:5:21:U:C6	2.50	0.46
53:5:409:G:H22	53:5:426:U:P	2.38	0.46
53:5:957:C:H2'	53:5:958:G:H8	1.81	0.46
9:F:115:MET:HA	9:F:118:LYS:HG3	1.96	0.46
14:K:128:SER:N	53:5:500:G:OP1	2.42	0.46
28:d:121:SER:HA	51:3:2311:G:H4'	1.96	0.46
30:f:122:GLY:H	30:f:142:VAL:HG23	1.80	0.46
33:i:120:ARG:NH2	51:3:2788:U:OP2	2.49	0.46
42:r:132:GLN:NE2	51:3:580:U:O4'	2.48	0.46
51:3:1289:G:H2'	51:3:1290:G:H8	1.79	0.46
51:3:1589:A:H2'	51:3:1590:U:C6	2.50	0.46
51:3:2383:G:N2	51:3:2386:A:OP2	2.45	0.46
53:5:213:U:H2'	53:5:214:U:H6	1.80	0.46
53:5:634:U:H2'	53:5:635:G:H8	1.80	0.46
53:5:752:G:H2'	53:5:753:C:C6	2.49	0.46
53:5:767:U:H2'	53:5:768:G:C8	2.47	0.46
53:5:1499:G:H2'	53:5:1500:G:C8	2.51	0.46
7:D:199:ILE:O	7:D:202:GLN:HG2	2.15	0.46
10:G:25:ALA:HB2	10:G:33:VAL:HG11	1.97	0.46
11:H:128:GLN:NE2	53:5:1208:G:OP2	2.48	0.46
29:e:57:ARG:HE	29:e:65:LYS:HG3	1.80	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:e:97:TYR:HA	29:e:110:LEU:HA	1.96	0.46
51:3:83:G:H2'	51:3:84:G:C8	2.51	0.46
51:3:511:U:H2'	51:3:512:G:O4'	2.15	0.46
51:3:756:A:C2	51:3:757:A:C5	3.04	0.46
51:3:2470:C:H2'	51:3:2471:U:H6	1.79	0.46
51:3:2736:U:H2'	51:3:2737:G:H8	1.80	0.46
53:5:832:G:H2'	53:5:833:G:C8	2.50	0.46
53:5:1112:U:H2'	53:5:1113:U:C6	2.50	0.46
54:7:16:G:N2	54:7:49:C:H42	2.11	0.46
4:A:32:MET:SD	4:A:33:VAL:HG22	2.56	0.46
4:A:116:THR:HG22	4:A:123:LEU:HD11	1.98	0.46
14:K:43:LYS:HB2	14:K:70:LEU:HD22	1.96	0.46
15:L:88:GLY:O	15:L:91:HIS:N	2.48	0.46
17:N:29:LEU:HD11	17:N:56:LYS:HE2	1.97	0.46
18:O:3:MET:N	18:O:3:MET:SD	2.88	0.46
25:a:99:ILE:HG12	25:a:121:ILE:HD11	1.98	0.46
31:g:21:SER:OG	31:g:22:ALA:N	2.48	0.46
39:o:32:ASN:OD1	39:o:33:VAL:N	2.48	0.46
45:u:41:ASP:HA	45:u:81:VAL:HG13	1.98	0.46
46:v:3:LYS:HB3	51:3:1393:A:OP2	2.16	0.46
51:3:337:U:H2'	51:3:338:G:H8	1.80	0.46
51:3:1016:A:N6	51:3:1171:G:H5'	2.30	0.46
51:3:2163:U:H2'	51:3:2164:G:C8	2.50	0.46
51:3:2301:C:H2'	51:3:2302:C:C6	2.50	0.46
53:5:74:U:H2'	53:5:75:A:H8	1.80	0.46
53:5:364:U:H3'	53:5:365:U:H5'	1.98	0.46
53:5:510:U:H2'	53:5:511:A:C8	2.50	0.46
53:5:568:G:H2'	53:5:569:U:C6	2.51	0.46
55:Y:16:U:O2'	55:Y:17:U:O4'	2.27	0.46
1:0:2:LYS:NZ	51:3:722:C:O5'	2.49	0.46
13:J:111:HIS:H	53:5:672:A:H2	1.61	0.46
18:O:11:TYR:O	18:O:33:LEU:N	2.26	0.46
31:g:13:ASP:O	31:g:17:LEU:HG	2.15	0.46
45:u:74:PHE:CZ	51:3:2373:G:H4'	2.50	0.46
51:3:96:A:H2'	51:3:97:A:H8	1.78	0.46
51:3:142:A:O2'	51:3:1436:C:O3'	2.33	0.46
51:3:535:G:N1	51:3:538:A:OP2	2.38	0.46
51:3:679:A:N1	51:3:2377:A:O2'	2.44	0.46
51:3:719:G:N2	51:3:823:A:OP2	2.48	0.46
51:3:2571:U:C2	51:3:2574:A:N6	2.83	0.46
51:3:2692:U:H2'	51:3:2693:U:C6	2.51	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:4:91:A:H2'	52:4:92:A:H8	1.81	0.46
53:5:214:U:H2'	53:5:215:C:H6	1.80	0.46
53:5:1048:G:H2'	53:5:1049:G:O4'	2.16	0.46
12:I:77:LYS:O	12:I:78:ARG:HD3	2.15	0.46
25:a:112:PRO:HG2	25:a:115:ILE:HG21	1.97	0.46
26:b:126:TRP:CD1	26:b:164:LYS:HB3	2.50	0.46
30:f:67:LYS:O	30:f:71:VAL:HG22	2.16	0.46
34:j:3:SER:OG	34:j:4:PHE:N	2.49	0.46
38:n:4:ARG:HE	52:4:45:C:P	2.38	0.46
39:o:100:TYR:OH	39:o:105:ARG:NH2	2.48	0.46
48:x:9:SER:HB3	48:x:28:THR:HA	1.97	0.46
51:3:802:U:H2'	51:3:803:G:C8	2.51	0.46
51:3:1704:C:O2	51:3:2000:U:O2'	2.22	0.46
51:3:1920:A:C8	53:5:1469:G:H4'	2.51	0.46
51:3:1931:C:H2'	51:3:1932:C:C6	2.51	0.46
51:3:2100:G:H2'	51:3:2101:A:H8	1.81	0.46
53:5:406:G:H21	53:5:429:A:H62	1.64	0.46
53:5:873:U:H2'	53:5:874:C:C6	2.50	0.46
53:5:948:U:OP1	53:5:959:A:N6	2.48	0.46
53:5:954:A:O2'	53:5:979:C:O2'	2.25	0.46
53:5:977:U:N3	53:5:1198:C:N3	2.63	0.46
53:5:1150:G:C2	53:5:1151:A:N7	2.84	0.46
11:H:6:TYR:HB2	11:H:21:LEU:HB2	1.98	0.46
25:a:99:ILE:HD13	25:a:109:ILE:HG12	1.97	0.46
27:c:132:LEU:HD23	27:c:132:LEU:H	1.81	0.46
28:d:88:LYS:HE2	28:d:90:THR:OG1	2.15	0.46
29:e:23:ASP:HB2	29:e:38:LEU:HB2	1.97	0.46
49:y:4:GLN:HA	51:3:2623:U:C2	2.51	0.46
51:3:137:U:H2'	51:3:138:U:C6	2.50	0.46
51:3:502:A:H8	51:3:503:G:O4'	1.99	0.46
51:3:1777:G:H1	51:3:1989:U:H3	1.63	0.46
51:3:2407:G:H2'	51:3:2408:G:H8	1.81	0.46
52:4:91:A:H2'	52:4:92:A:C8	2.50	0.46
53:5:430:G:H2'	53:5:431:U:C6	2.51	0.46
53:5:870:A:H2'	53:5:871:U:C6	2.51	0.46
53:5:1406:U:O4	53:5:1407:A:N6	2.48	0.46
6:C:20:GLU:N	6:C:20:GLU:OE2	2.49	0.46
8:E:146:THR:HA	10:G:60:LEU:HA	1.97	0.46
14:K:16:LYS:HA	14:K:16:LYS:HD3	1.74	0.46
26:b:151:ARG:HG2	51:3:2580:A:C8	2.51	0.46
30:f:99:ASN:O	30:f:103:THR:HG23	2.16	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:j:12:ASP:N	34:j:12:ASP:OD1	2.48	0.46
35:k:93:ILE:HD12	35:k:93:ILE:H	1.81	0.46
44:t:7:GLY:H	44:t:24:VAL:HG13	1.81	0.46
51:3:1173:G:C5	51:3:1174:G:H1'	2.50	0.46
51:3:1202:A:H2'	51:3:1203:G:C8	2.50	0.46
51:3:1704:C:H2'	51:3:1705:U:O4'	2.16	0.46
51:3:1896:A:H2'	51:3:1897:A:H8	1.81	0.46
51:3:2685:A:H2'	51:3:2686:C:C6	2.51	0.46
53:5:132:G:H2'	53:5:133:G:C8	2.51	0.46
53:5:336:U:H2'	53:5:337:C:C6	2.51	0.46
53:5:747:C:H2'	53:5:748:U:H6	1.81	0.46
53:5:1398:G:H2'	53:5:1399:U:C6	2.51	0.46
7:D:138:HIS:CE1	7:D:203:LEU:HD23	2.51	0.46
10:G:43:ALA:O	10:G:47:ILE:HG23	2.15	0.46
14:K:92:VAL:O	14:K:116:ASP:HB3	2.15	0.46
19:P:66:THR:HG21	19:P:76:ARG:HD3	1.97	0.46
20:Q:48:GLN:O	20:Q:49:LEU:HG	2.16	0.46
25:a:99:ILE:HG21	25:a:121:ILE:HD11	1.97	0.46
31:g:34:ALA:O	31:g:38:THR:HG23	2.16	0.46
31:g:123:LEU:HD12	31:g:126:ILE:HD12	1.98	0.46
33:i:7:LEU:HD22	40:p:60:TRP:HE1	1.80	0.46
51:3:153:U:H2'	51:3:154:U:C6	2.51	0.46
51:3:1028:C:H2'	51:3:1029:A:C8	2.47	0.46
51:3:1694:A:H2'	51:3:1695:G:H8	1.80	0.46
51:3:2154:A:H2'	51:3:2155:G:C8	2.51	0.46
51:3:2471:U:H2'	51:3:2472:G:O4'	2.16	0.46
51:3:2539:A:H1'	51:3:2667:G:H5'	1.97	0.46
53:5:40:G:C6	53:5:400:G:C6	3.03	0.46
53:5:228:G:H2'	53:5:229:G:H8	1.81	0.46
53:5:512:U:C2	53:5:513:G:C8	3.04	0.46
53:5:1401:A:H2'	53:5:1402:U:C6	2.51	0.46
4:A:30:VAL:HG12	4:A:56:PHE:HB2	1.98	0.45
5:B:118:ILE:HG13	5:B:119:ILE:N	2.31	0.45
10:G:60:LEU:HD11	10:G:69:ILE:HG12	1.97	0.45
16:M:19:ARG:NH2	53:5:1194:A:OP1	2.43	0.45
38:n:7:GLN:O	38:n:11:ARG:HG2	2.15	0.45
40:p:63:ARG:NH1	40:p:96:GLU:OE2	2.50	0.45
51:3:69:U:C2	51:3:70:G:C8	3.04	0.45
51:3:385:U:H2'	51:3:386:U:C6	2.51	0.45
51:3:652:U:H2'	51:3:653:G:C8	2.51	0.45
51:3:1317:C:H2'	51:3:1318:U:H6	1.80	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1383:G:H2'	51:3:1384:C:H6	1.81	0.45
51:3:1504:G:H1	51:3:1539:U:H3	1.64	0.45
51:3:1779:G:N2	51:3:1781:C:H5'	2.31	0.45
51:3:1831:G:H2'	51:3:1832:G:H8	1.81	0.45
51:3:2030:A:H2'	51:3:2031:C:C6	2.50	0.45
53:5:34:A:H2'	53:5:35:C:C6	2.51	0.45
53:5:141:A:H2'	53:5:142:G:C8	2.51	0.45
53:5:289:U:H2'	53:5:290:G:H8	1.80	0.45
53:5:644:U:H2'	53:5:645:A:C8	2.46	0.45
53:5:919:C:H2'	53:5:920:G:H8	1.80	0.45
4:A:211:VAL:HG12	4:A:213:PHE:H	1.81	0.45
16:M:22:THR:HG23	16:M:33:VAL:HG11	1.98	0.45
18:O:11:TYR:HB3	18:O:33:LEU:HB3	1.98	0.45
26:b:53:SER:HB2	26:b:81:LEU:HD13	1.97	0.45
34:j:25:LEU:HD23	34:j:25:LEU:HA	1.85	0.45
40:p:90:ASN:OD1	40:p:95:SER:OG	2.31	0.45
42:r:73:GLU:OE1	51:3:554:U:O2'	2.28	0.45
51:3:88:G:H2'	51:3:89:U:C6	2.50	0.45
51:3:207:C:OP2	51:3:207:C:H3'	2.15	0.45
51:3:614:C:H2'	51:3:615:G:C8	2.50	0.45
51:3:1289:G:H2'	51:3:1290:G:C8	2.51	0.45
51:3:2676:G:H2'	51:3:2677:A:H8	1.80	0.45
53:5:175:U:H2'	53:5:176:G:C8	2.51	0.45
53:5:199:A:N6	53:5:217:U:H4'	2.31	0.45
53:5:205:U:H3	53:5:210:G:H1	1.64	0.45
53:5:205:U:O2	53:5:210:G:N2	2.44	0.45
53:5:1182:C:H2'	53:5:1183:C:C6	2.51	0.45
53:5:1366:U:H2'	53:5:1367:G:C8	2.51	0.45
6:C:97:LEU:O	6:C:101:VAL:HG23	2.16	0.45
6:C:104:MET:SD	6:C:169:THR:HB	2.56	0.45
10:G:117:SER:OG	10:G:136:GLU:OE2	2.24	0.45
15:L:102:THR:HG22	15:L:106:ALA:HB3	1.99	0.45
25:a:243:GLY:N	51:3:2607:G:OP2	2.42	0.45
28:d:88:LYS:HD3	51:3:2321:C:H4'	1.98	0.45
29:e:147:PHE:O	29:e:151:VAL:HG12	2.16	0.45
31:g:39:SER:OG	31:g:40:ILE:N	2.47	0.45
33:i:16:ARG:HE	33:i:56:TYR:HE1	1.63	0.45
40:p:27:ARG:HH22	51:3:567:U:H5''	1.81	0.45
49:y:54:LYS:HB3	49:y:54:LYS:HE2	1.40	0.45
50:z:23:LYS:NZ	50:z:28:ASN:O	2.30	0.45
51:3:499:G:O2'	51:3:501:G:O6	2.34	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:667:A:C8	51:3:668:A:C6	3.04	0.45
51:3:1121:A:O2'	51:3:1122:G:N7	2.48	0.45
51:3:1821:G:OP2	51:3:1822:A:H3'	2.17	0.45
51:3:2754:U:H2'	51:3:2755:G:O4'	2.17	0.45
51:3:2814:A:H2'	51:3:2815:G:O4'	2.16	0.45
53:5:409:G:N2	53:5:425:G:O3'	2.49	0.45
53:5:592:A:H8	53:5:592:A:OP2	1.99	0.45
53:5:754:U:H4'	53:5:819:G:H21	1.81	0.45
53:5:1079:G:H2'	53:5:1080:G:H8	1.80	0.45
53:5:1469:G:H2'	53:5:1470:U:H6	1.81	0.45
14:K:4:ILE:HA	14:K:7:LEU:HB3	1.97	0.45
16:M:4:LYS:O	16:M:8:VAL:HG23	2.16	0.45
28:d:26:MET:HE3	28:d:26:MET:HB2	1.84	0.45
30:f:101:ALA:HB1	30:f:106:MET:HG3	1.99	0.45
31:g:16:HIS:O	31:g:20:THR:OG1	2.32	0.45
33:i:99:GLN:HB2	33:i:102:LYS:HB2	1.99	0.45
36:l:109:ILE:O	36:l:114:MET:HE2	2.16	0.45
46:v:18:ARG:HB2	51:3:418:G:OP1	2.17	0.45
51:3:127:A:O2'	51:3:128:A:O4'	2.23	0.45
51:3:474:U:H2'	51:3:475:A:H8	1.80	0.45
51:3:659:C:H2'	51:3:660:U:C6	2.52	0.45
51:3:995:A:O2'	51:3:996:A:O4'	2.13	0.45
51:3:1608:C:H2'	51:3:1609:U:C6	2.51	0.45
51:3:1808:C:O2'	51:3:1809:A:H5'	2.16	0.45
51:3:2353:G:H1'	51:3:2389:A:H2'	1.99	0.45
51:3:2728:U:O4	51:3:2729:A:N6	2.49	0.45
53:5:662:G:N3	53:5:729:C:H2'	2.32	0.45
5:B:64:THR:HA	5:B:101:ASN:HB3	1.98	0.45
8:E:113:ALA:O	8:E:121:ARG:NH1	2.36	0.45
22:S:71:ARG:NH2	53:5:255:G:OP2	2.50	0.45
27:c:165:ASN:HD21	27:c:167:ASN:HB2	1.81	0.45
29:e:33:GLN:HE22	29:e:35:GLU:HB2	1.81	0.45
31:g:29:TYR:CD2	31:g:100:VAL:HA	2.51	0.45
36:l:4:PRO:HB3	51:3:907:A:H4'	1.97	0.45
42:r:41:LYS:HD3	42:r:41:LYS:HA	1.75	0.45
51:3:17:G:H1	51:3:560:U:H3	1.62	0.45
51:3:190:G:H2'	51:3:191:G:C8	2.52	0.45
51:3:300:G:H2'	51:3:301:G:C8	2.52	0.45
51:3:482:G:H21	51:3:490:A:H61	1.64	0.45
51:3:1077:G:O6	51:3:1148:U:O2	2.35	0.45
51:3:1384:C:H2'	51:3:1385:U:H6	1.82	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1461:A:N1	51:3:1462:A:N6	2.65	0.45
51:3:2071:C:H2'	51:3:2072:C:H6	1.81	0.45
51:3:2419:A:H2'	51:3:2420:A:C8	2.51	0.45
53:5:571:A:H2'	53:5:572:A:C4	2.51	0.45
53:5:990:C:H2'	53:5:991:A:H8	1.80	0.45
4:A:76:ALA:HB1	4:A:239:ALA:HB2	1.99	0.45
8:E:35:LEU:HD23	8:E:35:LEU:H	1.82	0.45
11:H:65:ILE:HG22	11:H:67:VAL:HG13	1.97	0.45
15:L:102:THR:N	53:5:1200:G:OP1	2.44	0.45
40:p:59:LEU:HA	40:p:62:LEU:HD12	1.99	0.45
51:3:627:U:H2'	51:3:628:A:C8	2.51	0.45
51:3:947:A:H2'	51:3:948:A:C8	2.52	0.45
51:3:1039:G:H2'	51:3:1040:U:C6	2.51	0.45
51:3:1507:G:HO2'	51:3:1508:G:P	2.39	0.45
51:3:1620:A:H2'	51:3:1621:U:O4'	2.16	0.45
51:3:2034:G:H2'	51:3:2035:U:C6	2.51	0.45
51:3:2093:U:H2'	51:3:2094:A:C8	2.52	0.45
51:3:2692:U:N3	51:3:2735:G:H1'	2.32	0.45
53:5:1385:A:H2'	53:5:1386:C:C6	2.51	0.45
54:6:16:G:N2	54:6:49:C:H42	2.11	0.45
6:C:18:LEU:HG	6:C:19:LEU:HD23	1.99	0.45
7:D:205:PRO:HA	7:D:208:VAL:HG22	1.99	0.45
27:c:165:ASN:ND2	27:c:167:ASN:HB2	2.32	0.45
29:e:11:LEU:HD23	29:e:12:ASP:N	2.31	0.45
41:q:61:LYS:HE3	41:q:61:LYS:HB2	1.79	0.45
42:r:88:ARG:NH2	51:3:783:G:OP1	2.49	0.45
45:u:86:PHE:O	45:u:92:LYS:HB2	2.17	0.45
49:y:15:LYS:HD3	51:3:2052:C:H5''	1.99	0.45
51:3:347:C:H2'	51:3:348:A:H8	1.81	0.45
51:3:522:C:H2'	51:3:523:A:C8	2.51	0.45
51:3:2064:G:H2'	51:3:2065:A:C8	2.51	0.45
53:5:922:G:H2'	53:5:923:G:H8	1.82	0.45
53:5:975:C:HO2'	53:5:976:U:P	2.39	0.45
53:5:1247:G:H2'	53:5:1248:U:H6	1.82	0.45
5:B:40:ILE:HD11	5:B:96:ILE:HD13	1.98	0.45
6:C:27:LYS:HA	6:C:27:LYS:HD3	1.82	0.45
12:I:14:ILE:HD12	12:I:105:ARG:O	2.17	0.45
34:j:76:HIS:HB3	39:o:78:ASN:ND2	2.28	0.45
36:l:45:ARG:HB3	51:3:2492:G:OP1	2.16	0.45
51:3:189:U:H2'	51:3:190:G:C8	2.52	0.45
51:3:433:A:N6	51:3:434:G:O6	2.49	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:959:C:H2'	51:3:960:A:C8	2.52	0.45
51:3:1701:G:N2	51:3:1999:G:OP2	2.45	0.45
51:3:1893:C:H2'	51:3:1894:U:H6	1.82	0.45
51:3:2000:U:H2'	51:3:2001:C:O4'	2.17	0.45
51:3:2339:G:H2'	51:3:2340:U:C6	2.52	0.45
51:3:2483:C:O2'	51:3:2484:A:H5'	2.17	0.45
51:3:2728:U:H2'	51:3:2729:A:C8	2.52	0.45
53:5:54:A:H2'	53:5:55:C:O4'	2.16	0.45
53:5:704:U:H2'	53:5:705:A:C8	2.52	0.45
53:5:753:C:H2'	53:5:754:U:O4'	2.16	0.45
53:5:1111:G:H2'	53:5:1112:U:H6	1.81	0.45
53:5:1193:U:H2'	53:5:1194:A:H8	1.82	0.45
53:5:1495:C:H2'	53:5:1496:G:C8	2.52	0.45
3:2:2:LYS:NZ	51:3:2486:A:H5'	2.31	0.45
4:A:228:LEU:HD23	4:A:228:LEU:HA	1.86	0.45
22:S:56:ARG:NH2	53:5:197:A:O3'	2.50	0.45
26:b:117:ARG:HG3	26:b:169:TYR:HD2	1.81	0.45
43:s:67:GLY:C	43:s:69:SER:H	2.24	0.45
47:w:44:ILE:O	47:w:48:ARG:N	2.46	0.45
51:3:639:G:H2'	51:3:640:U:O4'	2.17	0.45
51:3:1094:G:H2'	51:3:1095:U:C5	2.52	0.45
51:3:1507:G:O6	51:3:1537:A:N6	2.50	0.45
51:3:1523:C:H2'	51:3:1524:C:C6	2.52	0.45
51:3:2210:G:O2'	51:3:2212:U:OP2	2.30	0.45
51:3:2224:A:H2'	51:3:2225:G:C8	2.52	0.45
51:3:2512:U:C6	51:3:2512:U:H3'	2.51	0.45
53:5:465:A:H2'	53:5:466:U:C6	2.51	0.45
53:5:1225:A:H2'	53:5:1226:A:C8	2.51	0.45
7:D:181:LYS:HD3	53:5:8:G:N2	2.29	0.45
11:H:98:LYS:HB2	11:H:98:LYS:HE2	1.79	0.45
11:H:113:LYS:HB3	11:H:113:LYS:HE3	1.70	0.45
12:I:7:VAL:HA	12:I:10:PRO:HG3	1.99	0.45
17:N:37:THR:HG22	51:3:750:A:N3	2.31	0.45
20:Q:58:GLU:HA	20:Q:61:LYS:HE2	1.99	0.45
28:d:39:GLY:H	51:3:2313:U:H3	1.66	0.45
33:i:95:MET:SD	33:i:103:LEU:HD13	2.57	0.45
35:k:133:LYS:NZ	51:3:672:G:OP1	2.50	0.45
42:r:51:LEU:O	42:r:55:ILE:HG12	2.16	0.45
45:u:40:ALA:H	45:u:43:GLN:HE22	1.65	0.45
51:3:1345:G:H2'	51:3:1346:G:H8	1.82	0.45
51:3:1850:C:H2'	51:3:1851:U:C6	2.52	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2770:U:H2'	51:3:2771:G:O4'	2.17	0.45
52:4:21:G:H2'	52:4:22:G:C8	2.52	0.45
53:5:1360:G:H2'	53:5:1361:G:H8	1.82	0.45
53:5:1398:G:H2'	53:5:1399:U:H6	1.80	0.45
6:C:13:ARG:HG2	6:C:14:LEU:HD23	1.99	0.44
6:C:152:PRO:HA	6:C:155:LYS:HE3	1.98	0.44
9:F:92:GLN:O	9:F:96:ILE:HG12	2.17	0.44
13:J:34:VAL:HG12	53:5:681:U:O2	2.17	0.44
15:L:104:THR:OG1	53:5:1205:C:N4	2.50	0.44
23:T:53:ARG:NH2	53:5:720:U:OP1	2.49	0.44
29:e:11:LEU:HD11	29:e:18:LEU:HD13	1.99	0.44
51:3:1119:A:H2	51:3:1140:U:H1'	1.82	0.44
51:3:1349:C:H2'	51:3:1350:A:C8	2.53	0.44
51:3:1699:A:H2'	51:3:1700:G:C8	2.52	0.44
51:3:2893:C:H2'	51:3:2894:G:O4'	2.18	0.44
53:5:922:G:H1	53:5:1365:U:H3	1.63	0.44
53:5:1130:G:H2'	53:5:1131:A:H8	1.81	0.44
54:7:16:G:H22	54:7:49:C:N4	2.12	0.44
5:B:11:ARG:NH2	5:B:185:ILE:H	2.15	0.44
6:C:1:MET:HG2	53:5:544:A:C5	2.52	0.44
11:H:53:PRO:HD3	11:H:82:ARG:HD3	1.99	0.44
33:i:71:LYS:HB3	33:i:75:GLU:HB2	1.98	0.44
38:n:77:ILE:O	38:n:80:LYS:HB2	2.17	0.44
40:p:30:SER:O	40:p:34:ALA:N	2.39	0.44
41:q:7:CYS:SG	41:q:8:GLY:N	2.91	0.44
41:q:18:ASP:OD1	41:q:19:THR:N	2.50	0.44
51:3:292:G:HO2'	51:3:293:G:P	2.40	0.44
51:3:454:G:H2'	51:3:455:G:C8	2.51	0.44
51:3:626:A:H2'	51:3:627:U:C6	2.52	0.44
51:3:793:C:H2'	51:3:794:G:C8	2.52	0.44
51:3:1032:A:H2'	51:3:1033:A:H8	1.82	0.44
51:3:1111:C:H2'	51:3:1112:A:C4	2.52	0.44
51:3:2677:A:H2'	51:3:2678:A:C8	2.53	0.44
53:5:500:G:H2'	53:5:501:A:C8	2.52	0.44
54:6:16:G:H22	54:6:49:C:N4	2.12	0.44
14:K:117:THR:O	14:K:119:GLY:N	2.50	0.44
15:L:86:TRP:CD1	21:R:76:PRO:HB3	2.51	0.44
20:Q:75:ILE:HG23	20:Q:76:THR:HG23	1.99	0.44
27:c:40:VAL:HG23	27:c:101:LEU:HB2	1.98	0.44
31:g:109:VAL:HG12	31:g:110:CYS:SG	2.58	0.44
47:w:40:LYS:HB3	47:w:43:LEU:HG	1.99	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:x:31:GLN:HG2	48:x:34:ILE:HG22	2.00	0.44
51:3:322:A:H2'	51:3:323:A:H8	1.83	0.44
51:3:522:C:H2'	51:3:523:A:H8	1.81	0.44
51:3:2721:C:O2'	51:3:2723:C:OP2	2.28	0.44
53:5:102:G:N2	53:5:309:A:O2'	2.51	0.44
53:5:1285:G:H2'	53:5:1286:G:O4'	2.17	0.44
1:0:18:PHE:CE1	1:0:22:MET:HE3	2.52	0.44
14:K:21:SER:HB3	14:K:108:TYR:CE1	2.49	0.44
14:K:63:ARG:HH12	53:5:520:C:N4	2.15	0.44
31:g:33:SER:H	31:g:36:GLU:HB3	1.82	0.44
51:3:360:G:H2'	51:3:361:G:H8	1.83	0.44
51:3:371:C:H2'	51:3:372:G:O4'	2.18	0.44
51:3:1032:A:H2'	51:3:1033:A:C8	2.53	0.44
51:3:1092:A:N7	51:3:1121:A:H2'	2.32	0.44
51:3:1691:U:O4	51:3:1692:A:N6	2.50	0.44
51:3:2330:A:H2'	51:3:2331:G:C8	2.53	0.44
53:5:588:U:H2'	53:5:589:U:C6	2.52	0.44
53:5:664:A:H2'	53:5:665:G:C8	2.53	0.44
53:5:973:A:H4'	53:5:1296:C:C2	2.52	0.44
53:5:1288:C:H2'	53:5:1289:U:C6	2.52	0.44
12:I:31:ILE:O	12:I:35:VAL:HG13	2.18	0.44
14:K:103:LEU:HD23	14:K:106:VAL:HG21	2.00	0.44
23:T:42:LEU:O	23:T:46:ARG:HG2	2.18	0.44
26:b:106:GLU:HB3	26:b:217:VAL:HG12	1.99	0.44
29:e:66:ILE:O	29:e:70:THR:HG23	2.17	0.44
41:q:5:VAL:HG23	41:q:38:VAL:HG12	1.99	0.44
49:y:51:LEU:O	49:y:51:LEU:HG	2.18	0.44
51:3:347:C:H2'	51:3:348:A:C8	2.52	0.44
51:3:353:G:H2'	51:3:354:C:C6	2.53	0.44
51:3:1016:A:H2'	51:3:1017:A:C8	2.53	0.44
51:3:2372:C:H2'	51:3:2373:G:C8	2.52	0.44
53:5:81:A:H2'	53:5:82:C:C6	2.52	0.44
53:5:120:A:N1	53:5:321:A:N6	2.66	0.44
53:5:169:G:N2	53:5:220:U:OP1	2.47	0.44
53:5:610:C:H2'	53:5:611:A:H8	1.83	0.44
53:5:1266:U:H2'	53:5:1267:G:C8	2.52	0.44
53:5:1464:G:H2'	53:5:1465:U:C6	2.52	0.44
53:5:1490:G:O2'	53:5:1491:A:O4'	2.17	0.44
9:F:96:ILE:O	9:F:100:LEU:HG	2.17	0.44
10:G:119:SER:HA	53:5:639:A:C5	2.53	0.44
11:H:114:GLU:OE1	11:H:124:ARG:NH1	2.50	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:18:LYS:O	21:R:22:MET:HG2	2.17	0.44
38:n:92:ASP:CG	38:n:94:GLY:H	2.26	0.44
51:3:360:G:H2'	51:3:361:G:C8	2.53	0.44
51:3:1006:U:H2'	51:3:1007:C:C6	2.52	0.44
51:3:1539:U:H2'	51:3:1540:G:C8	2.52	0.44
51:3:1664:A:H3'	51:3:1665:G:H8	1.83	0.44
51:3:2113:U:O2	51:3:2191:G:C2	2.70	0.44
51:3:2205:U:H1'	51:3:2206:A:C8	2.52	0.44
51:3:2399:G:N1	51:3:2433:A:OP1	2.42	0.44
51:3:2892:U:H2'	51:3:2893:C:H6	1.82	0.44
52:4:89:A:C4	52:4:90:G:C8	3.06	0.44
53:5:169:G:H21	53:5:220:U:P	2.39	0.44
53:5:737:U:H2'	53:5:738:A:H8	1.82	0.44
53:5:1086:U:H2'	53:5:1087:C:C6	2.53	0.44
53:5:1456:U:H2'	53:5:1457:G:C8	2.53	0.44
4:A:163:PHE:HD1	4:A:166:VAL:HG13	1.83	0.44
10:G:41:LYS:O	10:G:45:LEU:HG	2.17	0.44
17:N:59:LYS:O	17:N:63:LEU:HG	2.18	0.44
17:N:78:LEU:HD13	17:N:81:THR:HG21	1.99	0.44
30:f:3:VAL:CG1	30:f:20:ASP:HB2	2.46	0.44
31:g:29:TYR:HD2	31:g:100:VAL:HG23	1.82	0.44
33:i:40:ARG:NH2	51:3:1042:C:O2'	2.51	0.44
43:s:56:ASN:HB3	51:3:1369:U:H1'	2.00	0.44
44:t:11:VAL:HG12	44:t:21:SER:HA	2.00	0.44
47:w:51:LEU:HA	47:w:54:ILE:HG22	1.99	0.44
51:3:12:A:N6	51:3:2636:U:OP1	2.51	0.44
51:3:766:C:H2'	51:3:767:C:C6	2.52	0.44
51:3:892:G:H2'	51:3:893:A:C8	2.46	0.44
51:3:1417:G:H2'	51:3:1418:U:H6	1.83	0.44
51:3:1937:G:H1'	51:3:1975:G:H1	1.82	0.44
51:3:2044:C:H2'	51:3:2045:C:C6	2.53	0.44
53:5:1489:C:H2'	53:5:1490:G:C8	2.52	0.44
2:1:10:ARG:HE	35:k:64:LYS:HG2	1.82	0.44
2:1:15:LYS:HB2	51:3:664:G:H5''	2.00	0.44
8:E:133:THR:HG23	8:E:135:GLY:H	1.82	0.44
10:G:23:ASN:O	10:G:26:ARG:HG2	2.18	0.44
14:K:4:ILE:HD11	19:P:37:LYS:HD3	1.99	0.44
17:N:33:ILE:O	17:N:37:THR:HG23	2.18	0.44
19:P:2:LYS:O	19:P:6:ARG:NH1	2.51	0.44
21:R:43:GLU:OE1	21:R:43:GLU:N	2.51	0.44
22:S:30:THR:OG1	53:5:1432:A:OP1	2.32	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:k:50:GLY:O	35:k:59:TYR:OH	2.28	0.44
40:p:12:ARG:NH1	51:3:1257:G:OP1	2.51	0.44
41:q:55:VAL:HG23	41:q:97:PHE:HB3	1.99	0.44
51:3:1385:U:H2'	51:3:1386:G:O4'	2.17	0.44
51:3:1557:G:H21	51:3:1573:A:H62	1.66	0.44
51:3:2146:A:H2'	51:3:2147:G:H8	1.83	0.44
51:3:2380:U:H2'	51:3:2381:G:C8	2.52	0.44
53:5:292:U:H2'	53:5:293:G:C8	2.53	0.44
53:5:412:G:H2'	53:5:413:G:H8	1.83	0.44
6:C:73:ARG:NE	53:5:398:G:OP1	2.32	0.44
11:H:21:LEU:HD22	11:H:63:PHE:HB3	2.00	0.44
14:K:81:PRO:O	14:K:112:ARG:NH2	2.51	0.44
23:T:46:ARG:O	23:T:50:GLN:HG2	2.18	0.44
25:a:73:ARG:NH2	25:a:123:ALA:HB2	2.32	0.44
26:b:218:LYS:HE2	26:b:218:LYS:HB2	1.84	0.44
28:d:111:VAL:HB	28:d:114:PHE:HB2	2.00	0.44
32:h:61:LYS:HA	32:h:61:LYS:HD3	1.83	0.44
37:m:11:SER:O	37:m:15:VAL:HG23	2.18	0.44
41:q:86:ARG:NH2	51:3:1253:G:OP2	2.51	0.44
51:3:30:A:H2'	51:3:31:U:C6	2.52	0.44
51:3:415:U:H2'	51:3:416:C:C6	2.53	0.44
51:3:748:G:H2'	51:3:749:U:C6	2.53	0.44
51:3:2677:A:H2'	51:3:2678:A:H8	1.82	0.44
53:5:18:U:O2'	53:5:1070:G:O2'	2.27	0.44
53:5:26:C:H2'	53:5:27:A:H8	1.83	0.44
53:5:259:A:H2'	53:5:260:C:H6	1.83	0.44
53:5:474:G:H2'	53:5:475:U:C6	2.52	0.44
53:5:1057:C:H2'	53:5:1058:A:O4'	2.17	0.44
6:C:177:THR:HG22	6:C:179:VAL:HB	1.99	0.43
8:E:6:ILE:HG23	8:E:86:LEU:HB3	2.00	0.43
10:G:96:ARG:HG3	10:G:98:TYR:CE1	2.52	0.43
21:R:13:ALA:HA	21:R:16:LEU:HB2	2.00	0.43
22:S:64:ARG:HD2	53:5:257:U:OP1	2.19	0.43
28:d:74:ILE:HG22	28:d:77:TYR:H	1.82	0.43
29:e:122:LYS:HD3	29:e:122:LYS:HA	1.82	0.43
31:g:18:LEU:HD11	31:g:63:LEU:HD23	2.00	0.43
38:n:7:GLN:OE1	38:n:11:ARG:NH1	2.51	0.43
51:3:267:A:H1'	51:3:466:A:H1'	2.00	0.43
51:3:455:G:H2'	51:3:456:G:C8	2.52	0.43
51:3:534:U:H2'	51:3:535:G:O4'	2.18	0.43
51:3:684:A:H2'	51:3:685:G:H8	1.82	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1001:C:H2'	51:3:1002:A:H8	1.83	0.43
51:3:1927:C:H2'	51:3:1928:G:H8	1.83	0.43
53:5:640:C:H2'	53:5:641:U:C6	2.53	0.43
53:5:791:A:H2'	53:5:792:C:C6	2.52	0.43
53:5:1097:G:H2'	53:5:1098:C:C6	2.53	0.43
53:5:1136:G:O6	53:5:1157:G:O6	2.36	0.43
53:5:1416:U:H2'	53:5:1417:U:C6	2.53	0.43
54:7:73:C:H2'	54:7:74:A:H5''	2.00	0.43
1:0:36:LYS:HE2	1:0:36:LYS:HB2	1.88	0.43
6:C:74:LEU:HD11	6:C:135:ILE:HD11	2.00	0.43
17:N:72:LEU:HA	17:N:75:TYR:HE1	1.82	0.43
25:a:190:ARG:NH2	51:3:1807:C:OP2	2.52	0.43
29:e:89:LYS:NZ	29:e:91:ARG:HD3	2.33	0.43
30:f:2:LYS:CD	30:f:4:ILE:HB	2.45	0.43
35:k:90:LEU:HD22	35:k:101:LYS:HG3	1.99	0.43
37:m:45:LEU:O	37:m:49:ILE:HG12	2.17	0.43
38:n:98:TYR:CG	51:3:2384:A:N6	2.86	0.43
44:t:43:THR:HG22	44:t:64:GLN:OE1	2.19	0.43
51:3:80:U:H2'	51:3:81:C:H6	1.82	0.43
51:3:614:C:H2'	51:3:615:G:H8	1.83	0.43
51:3:703:A:N6	51:3:705:A:O2'	2.49	0.43
51:3:1306:G:H2'	51:3:1307:G:H8	1.84	0.43
51:3:1452:G:H2'	51:3:1453:U:C6	2.54	0.43
51:3:1887:U:H2'	51:3:1888:U:C6	2.52	0.43
51:3:2186:C:H2'	51:3:2187:C:O4'	2.17	0.43
51:3:2650:A:H2'	51:3:2651:G:C8	2.53	0.43
53:5:44:C:H2'	53:5:45:A:C8	2.53	0.43
53:5:912:G:H2'	53:5:913:A:C8	2.53	0.43
53:5:1226:A:H2'	53:5:1227:A:H8	1.81	0.43
4:A:186:ASN:O	4:A:190:GLU:HG3	2.17	0.43
8:E:92:ARG:NH2	8:E:93:GLU:OE1	2.52	0.43
8:E:93:GLU:HB3	20:Q:85:HIS:CE1	2.53	0.43
22:S:49:SER:O	22:S:53:ARG:HB2	2.18	0.43
45:u:44:MET:SD	45:u:44:MET:N	2.73	0.43
51:3:228:A:H2'	51:3:229:C:O4'	2.18	0.43
51:3:1159:C:H2'	51:3:1160:G:C8	2.53	0.43
51:3:1609:U:H2'	51:3:1610:U:O4'	2.17	0.43
51:3:1730:C:H2'	51:3:1731:G:O4'	2.19	0.43
51:3:1791:A:H2'	51:3:1791:A:N3	2.33	0.43
51:3:2424:C:C2	51:3:2425:C:C5	3.07	0.43
51:3:2656:G:H2'	51:3:2657:C:C6	2.53	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:228:G:H2'	53:5:229:G:C8	2.54	0.43
4:A:123:LEU:HD22	4:A:163:PHE:HE1	1.83	0.43
13:J:83:GLY:H	23:T:26:ARG:NE	2.17	0.43
16:M:21:TYR:OH	16:M:23:ARG:NH1	2.52	0.43
28:d:48:LYS:HG3	28:d:52:SER:HB3	2.01	0.43
32:h:117:VAL:O	32:h:121:LEU:HG	2.18	0.43
34:j:85:VAL:HG21	34:j:114:ILE:HD12	2.00	0.43
34:j:96:THR:OG1	34:j:97:ARG:N	2.51	0.43
35:k:87:LYS:HB3	35:k:87:LYS:HE2	1.69	0.43
51:3:71:C:H2'	51:3:72:G:C8	2.53	0.43
51:3:276:A:N7	51:3:293:G:N2	2.66	0.43
51:3:928:G:H2'	51:3:929:G:C8	2.53	0.43
51:3:1798:A:N6	51:3:1835:G:O2'	2.44	0.43
51:3:2315:G:H22	51:3:2319:A:H2'	1.82	0.43
51:3:2397:G:H5''	51:3:2398:U:O4'	2.18	0.43
51:3:2764:U:H4'	51:3:2765:A:OP1	2.17	0.43
53:5:137:A:C5	53:5:138:A:C8	3.06	0.43
53:5:501:A:H2'	53:5:502:C:C6	2.53	0.43
53:5:557:A:H4'	53:5:558:U:H3'	1.98	0.43
53:5:1345:G:H2'	53:5:1346:G:H8	1.83	0.43
54:6:73:C:H2'	54:6:74:A:H5''	2.00	0.43
11:H:118:PHE:HE2	12:I:68:ARG:H	1.65	0.43
17:N:8:ILE:HG12	17:N:27:SER:HB2	2.00	0.43
18:O:34:ASN:HB3	18:O:41:LYS:HB3	2.01	0.43
19:P:18:ASN:HB2	19:P:21:THR:OG1	2.18	0.43
26:b:129:LYS:NZ	51:3:2002:U:OP1	2.30	0.43
32:h:31:ASN:HD21	32:h:34:GLU:HB2	1.83	0.43
40:p:14:LYS:HB2	40:p:14:LYS:HE2	1.74	0.43
40:p:80:ASN:HD21	51:3:1186:A:H4'	1.83	0.43
41:q:57:CYS:SG	41:q:94:VAL:HG12	2.59	0.43
42:r:87:PRO:HB3	51:3:1648:A:N7	2.33	0.43
43:s:15:LYS:HD3	51:3:1421:A:H62	1.84	0.43
43:s:86:PRO:HB2	47:w:86:ALA:HB1	2.00	0.43
44:t:88:LYS:HG3	51:3:370:C:OP1	2.18	0.43
51:3:257:C:H2'	51:3:258:G:C8	2.54	0.43
51:3:1675:A:H2'	51:3:1676:G:O4'	2.18	0.43
51:3:2477:A:H2'	51:3:2478:G:O4'	2.19	0.43
51:3:2729:A:H2'	51:3:2730:G:C8	2.54	0.43
53:5:661:G:N2	53:5:738:A:N1	2.51	0.43
53:5:789:A:H1'	53:5:791:A:N7	2.34	0.43
53:5:894:A:H2'	53:5:895:A:C4	2.53	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:Y:19:U:H2'	55:Y:20:U:C5	2.54	0.43
5:B:93:LYS:HA	5:B:96:ILE:HG22	2.01	0.43
19:P:73:LYS:HE2	19:P:73:LYS:HB3	1.78	0.43
21:R:60:VAL:HG11	21:R:74:PHE:HB3	2.00	0.43
30:f:5:LEU:HG	30:f:20:ASP:OD1	2.18	0.43
31:g:41:ARG:HH11	51:3:1117:U:H4'	1.84	0.43
51:3:188:G:H2'	51:3:189:U:H6	1.84	0.43
51:3:1071:G:H2'	51:3:1072:A:C8	2.53	0.43
51:3:1120:A:H2'	51:3:1121:A:C4	2.53	0.43
51:3:2213:A:H2'	51:3:2214:A:H8	1.83	0.43
51:3:2232:G:H4'	51:3:2234:C:H1'	1.99	0.43
51:3:2533:A:HO2'	51:3:2750:A:HO2'	1.61	0.43
51:3:2596:A:H2'	51:3:2597:A:O4'	2.19	0.43
51:3:2865:U:H2'	51:3:2866:A:C8	2.53	0.43
53:5:1257:C:H2'	53:5:1258:U:H6	1.84	0.43
55:Y:14:U:C6	55:Y:14:U:H5'	2.54	0.43
2:1:15:LYS:O	2:1:16:SER:OG	2.30	0.43
5:B:115:SER:OG	5:B:118:ILE:HG12	2.19	0.43
7:D:212:ARG:NH2	10:G:51:GLU:OE1	2.52	0.43
12:I:48:LEU:HB2	12:I:77:LYS:O	2.19	0.43
15:L:65:ILE:HG12	15:L:66:GLU:H	1.83	0.43
17:N:46:ASP:OD1	53:5:664:A:O2'	2.37	0.43
27:c:139:LYS:HE2	27:c:139:LYS:HB2	1.81	0.43
37:m:10:THR:H	37:m:13:TRP:HB3	1.84	0.43
51:3:177:U:H2'	51:3:178:A:C8	2.53	0.43
51:3:915:A:C5	51:3:916:U:H1'	2.54	0.43
51:3:1363:C:H2'	51:3:1364:A:H8	1.84	0.43
51:3:1534:A:HO2'	51:3:1535:A:H8	1.66	0.43
51:3:1536:C:H2'	51:3:1537:A:C8	2.53	0.43
51:3:2057:C:H2'	51:3:2058:G:C8	2.54	0.43
51:3:2800:U:H2'	51:3:2801:U:H5'	2.00	0.43
53:5:734:A:H2'	53:5:735:C:C6	2.54	0.43
8:E:133:THR:HG21	53:5:836:C:H4'	2.00	0.43
9:F:2:ARG:NH2	53:5:1355:U:O2'	2.47	0.43
10:G:123:MET:HE3	10:G:123:MET:HB2	1.88	0.43
11:H:56:LEU:HD12	11:H:103:LYS:HE2	2.00	0.43
23:T:36:LEU:HD23	23:T:40:MET:HE2	2.01	0.43
26:b:10:LYS:HB2	26:b:29:ILE:HG12	2.00	0.43
27:c:36:ASP:HB3	27:c:103:LEU:HD22	2.00	0.43
28:d:43:ALA:HB1	28:d:50:LEU:HB2	2.01	0.43
31:g:26:ILE:HG13	31:g:82:VAL:HG23	2.01	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:o:54:ARG:HB2	39:o:100:TYR:CD1	2.53	0.43
41:q:71:ILE:HG12	41:q:82:LYS:HG2	2.00	0.43
43:s:23:GLU:OE1	43:s:23:GLU:N	2.52	0.43
51:3:993:A:H8	51:3:993:A:OP1	2.02	0.43
51:3:1927:C:H5''	53:5:1492:G:C6	2.53	0.43
51:3:2347:G:H2'	51:3:2348:U:C6	2.54	0.43
51:3:2392:U:H5''	51:3:2394:A:OP1	2.19	0.43
53:5:185:G:H2'	53:5:186:A:C8	2.54	0.43
53:5:233:C:H2'	53:5:234:G:C8	2.53	0.43
53:5:608:G:O6	53:5:628:A:N6	2.43	0.43
53:5:1055:G:H21	53:5:1165:G:H1'	1.84	0.43
53:5:1113:U:H2'	53:5:1114:A:C8	2.54	0.43
53:5:1324:A:H2'	53:5:1325:U:O4'	2.19	0.43
53:5:1389:U:H2'	53:5:1390:G:H8	1.84	0.43
7:D:214:LYS:HB3	7:D:214:LYS:HE3	1.81	0.43
11:H:99:ILE:H	11:H:99:ILE:HD12	1.83	0.43
12:I:17:GLU:HG3	12:I:103:THR:HB	2.01	0.43
12:I:41:LYS:HD3	12:I:41:LYS:HA	1.79	0.43
16:M:29:ARG:HD2	16:M:29:ARG:HA	1.87	0.43
20:Q:93:ALA:O	20:Q:97:ALA:N	2.52	0.43
26:b:138:GLY:HA3	51:3:2587:U:H4'	2.01	0.43
26:b:161:LYS:HD2	51:3:2627:U:H5''	2.00	0.43
27:c:47:GLN:HB3	27:c:49:THR:HG23	1.99	0.43
28:d:44:ILE:HD12	28:d:79:LEU:HD13	2.00	0.43
28:d:122:PHE:CE2	28:d:167:LEU:HD13	2.53	0.43
31:g:101:LYS:HG2	31:g:128:LYS:HE3	2.00	0.43
33:i:16:ARG:CZ	33:i:124:LYS:HD3	2.49	0.43
33:i:122:ILE:O	33:i:125:VAL:HG22	2.19	0.43
38:n:76:ASP:O	38:n:80:LYS:N	2.52	0.43
51:3:427:A:H1'	51:3:447:G:O4'	2.18	0.43
51:3:625:G:H2'	51:3:626:A:H8	1.84	0.43
51:3:710:A:N3	51:3:2451:C:O2'	2.51	0.43
51:3:720:A:N1	51:3:822:C:H1'	2.34	0.43
51:3:797:U:H3	51:3:1459:A:H5''	1.84	0.43
51:3:866:G:H2'	51:3:867:G:H8	1.83	0.43
51:3:1298:A:H2'	51:3:1299:A:O4'	2.19	0.43
51:3:1551:U:H2'	51:3:1552:C:O4'	2.19	0.43
51:3:2080:C:O2'	51:3:2606:A:O2'	2.34	0.43
51:3:2496:G:H2'	51:3:2497:U:C6	2.54	0.43
51:3:2508:U:O2	51:3:2512:U:C4	2.72	0.43
53:5:305:A:H2'	53:5:306:G:H8	1.84	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:422:A:C6	53:5:423:U:C4	3.07	0.43
53:5:708:A:H2'	53:5:709:A:C8	2.52	0.43
5:B:156:VAL:O	5:B:168:ASP:HB2	2.19	0.43
7:D:195:THR:O	7:D:199:ILE:HG12	2.19	0.43
26:b:70:PHE:HE2	26:b:78:THR:H	1.67	0.43
32:h:51:ILE:HG12	32:h:67:LEU:HD22	2.00	0.43
33:i:30:LYS:HA	33:i:33:VAL:HG22	2.01	0.43
38:n:29:VAL:HG12	38:n:90:VAL:HG13	2.01	0.43
49:y:52:ARG:CZ	49:y:52:ARG:CB	2.97	0.43
51:3:167:A:H2'	51:3:168:A:O4'	2.19	0.43
51:3:388:U:H2'	51:3:389:C:C6	2.54	0.43
51:3:633:G:O6	51:3:692:U:O2	2.36	0.43
51:3:919:C:C2	51:3:920:G:C8	3.07	0.43
51:3:2425:C:H2'	51:3:2426:A:H8	1.83	0.43
51:3:2465:U:H2'	51:3:2466:G:C8	2.54	0.43
53:5:213:U:H2'	53:5:214:U:C6	2.54	0.43
53:5:262:G:H1'	53:5:264:C:OP2	2.19	0.43
53:5:500:G:H2'	53:5:501:A:H8	1.84	0.43
53:5:680:G:H2'	53:5:681:U:C6	2.54	0.43
53:5:1110:C:H2'	53:5:1111:G:C8	2.47	0.43
53:5:1402:U:H2'	53:5:1403:A:C8	2.48	0.43
4:A:41:MET:N	4:A:41:MET:SD	2.92	0.42
6:C:75:PHE:HA	6:C:78:VAL:HG22	2.00	0.42
27:c:138:GLY:O	27:c:171:SER:OG	2.35	0.42
28:d:33:LYS:HA	28:d:92:ARG:HG2	2.00	0.42
31:g:112:TYR:CE1	31:g:123:LEU:HB2	2.52	0.42
33:i:117:LEU:O	33:i:121:TRP:N	2.47	0.42
37:m:107:ARG:NH1	51:3:1355:C:O2'	2.45	0.42
40:p:4:LYS:HD3	51:3:31:U:H5''	2.01	0.42
41:q:9:SER:HB3	51:3:1196:U:H1'	2.01	0.42
41:q:67:LYS:HB3	41:q:67:LYS:HE3	1.82	0.42
51:3:359:G:H2'	51:3:360:G:C8	2.54	0.42
51:3:1090:G:N1	51:3:1140:U:O4	2.51	0.42
51:3:1431:A:H2'	51:3:1432:C:C6	2.53	0.42
51:3:1538:U:H2'	51:3:1539:U:H6	1.83	0.42
51:3:1989:U:H2'	51:3:1990:C:C6	2.54	0.42
51:3:2408:G:H2'	51:3:2409:U:O4'	2.19	0.42
52:4:6:U:H3	52:4:102:A:H61	1.67	0.42
52:4:71:A:H2'	52:4:71:A:N3	2.34	0.42
53:5:388:G:H2'	53:5:389:A:H8	1.84	0.42
53:5:868:G:H2'	53:5:869:U:C6	2.54	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:5:1244:A:H1'	53:5:1300:C:H1'	2.01	0.42
53:5:1329:G:H2'	53:5:1330:A:C8	2.54	0.42
53:5:1351:U:H2'	53:5:1352:A:C8	2.54	0.42
4:A:202:CYS:O	4:A:216:PRO:HA	2.19	0.42
7:D:136:ILE:HG22	7:D:138:HIS:H	1.85	0.42
9:F:29:ILE:HA	9:F:108:ARG:HH22	1.82	0.42
16:M:16:PHE:CD2	16:M:19:ARG:HD2	2.54	0.42
17:N:68:LYS:NZ	17:N:75:TYR:OH	2.48	0.42
27:c:181:LYS:NZ	27:c:190:ASP:OD2	2.51	0.42
29:e:106:LEU:HD12	29:e:106:LEU:HA	1.89	0.42
33:i:116:ARG:HD3	51:3:591:G:OP2	2.19	0.42
38:n:34:LYS:HD2	38:n:101:ARG:HH11	1.83	0.42
39:o:29:ASP:CG	39:o:93:ARG:HB3	2.44	0.42
41:q:4:ILE:HB	41:q:39:LEU:O	2.19	0.42
46:v:16:ASN:OD1	46:v:26:ARG:NH2	2.52	0.42
51:3:1457:A:H2'	51:3:1458:A:C8	2.55	0.42
51:3:1765:G:O6	51:3:2703:U:H4'	2.19	0.42
51:3:1824:G:H2'	51:3:1824:G:N3	2.34	0.42
51:3:1991:U:H2'	51:3:1992:C:C6	2.54	0.42
51:3:2071:C:H2'	51:3:2072:C:C6	2.54	0.42
51:3:2325:U:H2'	51:3:2326:G:O4'	2.18	0.42
51:3:2752:G:C6	51:3:2769:G:C5	3.08	0.42
51:3:2866:A:H2'	51:3:2867:U:C6	2.53	0.42
53:5:233:C:H2'	53:5:234:G:H8	1.84	0.42
53:5:467:G:N3	53:5:467:G:H2'	2.34	0.42
53:5:707:G:H2'	53:5:708:A:H8	1.84	0.42
53:5:1197:G:H2'	53:5:1198:C:C6	2.54	0.42
53:5:1326:C:H2'	53:5:1327:G:C8	2.54	0.42
53:5:1377:C:H2'	53:5:1378:C:O4'	2.19	0.42
5:B:113:MET:HA	5:B:118:ILE:HD11	2.00	0.42
10:G:125:ASP:O	10:G:129:ARG:HG3	2.19	0.42
13:J:28:SER:HB2	13:J:34:VAL:HA	2.01	0.42
13:J:65:LYS:NZ	13:J:69:GLU:OE1	2.39	0.42
14:K:42:LEU:HD22	14:K:95:LEU:O	2.19	0.42
15:L:10:PRO:HG2	15:L:13:LYS:HD3	2.01	0.42
19:P:31:LYS:HD2	19:P:36:HIS:HA	2.02	0.42
26:b:10:LYS:NZ	26:b:197:ILE:O	2.52	0.42
27:c:98:ASN:OD1	27:c:99:TYR:N	2.52	0.42
33:i:44:LYS:HE2	33:i:44:LYS:HB3	1.84	0.42
35:k:23:GLY:HA2	51:3:846:U:H3'	2.01	0.42
40:p:71:GLN:HB2	40:p:73:MET:SD	2.59	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:223:A:H2	51:3:238:U:H1'	1.84	0.42
51:3:710:A:H62	51:3:838:U:H3	1.66	0.42
51:3:963:U:H2'	51:3:964:A:H8	1.83	0.42
51:3:1470:C:H2'	51:3:1471:A:C8	2.54	0.42
51:3:1507:G:O2'	51:3:1508:G:P	2.78	0.42
51:3:1881:C:H2'	51:3:1882:G:O4'	2.19	0.42
51:3:2420:A:H2'	51:3:2421:U:O4'	2.20	0.42
51:3:2699:C:H2'	51:3:2700:C:H6	1.85	0.42
51:3:2849:G:H2'	51:3:2850:G:C8	2.54	0.42
53:5:356:G:H2'	53:5:357:G:H8	1.84	0.42
53:5:702:U:H2'	53:5:703:A:O4'	2.19	0.42
53:5:957:C:H2'	53:5:958:G:C8	2.55	0.42
53:5:1104:C:H2'	53:5:1105:C:H6	1.83	0.42
53:5:1247:G:H2'	53:5:1248:U:C6	2.55	0.42
53:5:1268:G:H2'	53:5:1269:U:C6	2.53	0.42
2:1:6:ALA:O	2:1:10:ARG:NH1	2.53	0.42
4:A:46:GLU:HG3	4:A:47:PRO:HD2	2.01	0.42
5:B:211:TYR:CD2	5:B:212:THR:HG23	2.54	0.42
7:D:188:PRO:O	7:D:192:ILE:HG13	2.19	0.42
23:T:54:ARG:NH2	53:5:1509:A:O2'	2.52	0.42
26:b:84:ILE:HD11	26:b:206:LEU:HD11	2.02	0.42
27:c:138:GLY:O	51:3:355:A:H5'	2.18	0.42
30:f:7:GLN:HG2	30:f:8:ASP:H	1.84	0.42
40:p:104:LYS:HD3	40:p:107:LEU:HD12	2.00	0.42
51:3:889:G:H2'	51:3:890:U:C6	2.55	0.42
51:3:1071:G:N2	51:3:1154:U:O2	2.47	0.42
51:3:1229:U:H2'	51:3:1230:U:H6	1.83	0.42
51:3:1293:U:H3'	51:3:1294:G:C8	2.54	0.42
51:3:1470:C:H2'	51:3:1471:A:H8	1.84	0.42
51:3:1516:G:H2'	51:3:1517:G:C8	2.55	0.42
51:3:1583:G:HO2'	51:3:1584:U:P	2.42	0.42
51:3:1676:G:H2'	51:3:1677:G:C8	2.54	0.42
51:3:1702:A:N3	51:3:1704:C:N4	2.67	0.42
51:3:1757:G:H2'	51:3:1758:C:C6	2.54	0.42
51:3:2607:G:H2'	51:3:2608:A:H8	1.84	0.42
52:4:30:U:C2	52:4:49:G:N2	2.87	0.42
53:5:18:U:H2'	53:5:19:C:C6	2.54	0.42
53:5:26:C:H2'	53:5:27:A:C8	2.54	0.42
53:5:209:A:C5	53:5:210:G:H1'	2.54	0.42
53:5:904:C:H2'	53:5:905:U:C6	2.54	0.42
53:5:1493:A:O2'	53:5:1494:A:O4'	2.15	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:100:LYS:HD3	7:D:128:THR:HG22	2.02	0.42
8:E:92:ARG:NH2	8:E:93:GLU:HB2	2.34	0.42
10:G:38:SER:H	10:G:41:LYS:HB2	1.84	0.42
10:G:85:ASN:HB3	10:G:142:TRP:CD1	2.54	0.42
13:J:115:LYS:HB3	53:5:775:G:N2	2.34	0.42
15:L:107:ARG:HA	15:L:110:LYS:HD3	2.01	0.42
25:a:148:HIS:ND1	25:a:201:GLY:O	2.52	0.42
35:k:114:LEU:HD23	35:k:131:VAL:HG13	2.01	0.42
37:m:36:LYS:HD3	37:m:36:LYS:HA	1.71	0.42
41:q:62:HIS:ND1	41:q:90:THR:HG22	2.34	0.42
46:v:34:GLN:HE22	51:3:2236:G:H22	1.67	0.42
51:3:248:A:H62	51:3:258:G:N2	2.17	0.42
51:3:332:G:O2'	51:3:356:A:N1	2.46	0.42
51:3:455:G:H2'	51:3:456:G:H8	1.85	0.42
51:3:493:A:H61	51:3:506:A:H5''	1.83	0.42
51:3:612:G:C2	51:3:1292:A:C6	3.07	0.42
51:3:1317:C:H2'	51:3:1318:U:C6	2.54	0.42
51:3:2659:U:H2'	51:3:2660:C:C6	2.54	0.42
51:3:2683:G:H2'	51:3:2684:G:C8	2.54	0.42
51:3:2872:A:H2'	51:3:2873:G:C8	2.54	0.42
53:5:243:G:H2'	53:5:244:C:C6	2.54	0.42
53:5:245:U:H2'	53:5:246:A:C4	2.54	0.42
53:5:1386:C:H2'	53:5:1387:U:C6	2.53	0.42
54:6:7:U:H2'	54:6:8:G:C8	2.54	0.42
54:7:36:A:H2'	54:7:37:A:H8	1.85	0.42
7:D:99:GLY:O	7:D:129:ILE:N	2.52	0.42
9:F:8:LYS:HD2	9:F:9:ARG:O	2.20	0.42
11:H:40:TYR:CE1	53:5:1223:A:H4'	2.54	0.42
14:K:8:ILE:HA	19:P:35:TYR:HE2	1.84	0.42
28:d:65:PRO:HD3	48:x:6:HIS:CE1	2.55	0.42
32:h:105:ALA:HA	32:h:124:VAL:HG21	2.01	0.42
38:n:86:LEU:HD23	38:n:86:LEU:HA	1.91	0.42
45:u:68:GLY:O	45:u:71:ASP:N	2.52	0.42
49:y:12:ARG:NH1	51:3:2029:U:OP2	2.42	0.42
49:y:30:CYS:HB3	49:y:33:CYS:O	2.19	0.42
51:3:379:A:N3	51:3:381:A:N6	2.67	0.42
51:3:710:A:N6	51:3:838:U:C2	2.87	0.42
51:3:918:G:O2'	54:6:18:C:N4	2.52	0.42
51:3:1184:U:H2'	51:3:1185:U:C6	2.54	0.42
51:3:1396:A:H2'	51:3:1397:G:H8	1.84	0.42
51:3:1465:U:H2'	51:3:1466:U:C6	2.55	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1662:G:H2'	51:3:1663:G:C8	2.51	0.42
51:3:2338:G:C6	51:3:2339:G:C6	3.08	0.42
51:3:2704:U:H2'	51:3:2705:G:C8	2.54	0.42
51:3:2752:G:C5	51:3:2769:G:C6	3.07	0.42
53:5:140:U:C2	53:5:154:G:N2	2.87	0.42
53:5:603:U:H2'	53:5:604:U:C6	2.54	0.42
53:5:1079:G:H2'	53:5:1080:G:C8	2.55	0.42
53:5:1261:A:H2'	53:5:1262:A:C8	2.55	0.42
10:G:125:ASP:OD1	10:G:125:ASP:N	2.52	0.42
12:I:18:SER:HB3	12:I:24:LEU:HG	2.02	0.42
27:c:133:PHE:HE2	27:c:161:VAL:HG21	1.83	0.42
51:3:45:U:H2'	51:3:46:A:O4'	2.20	0.42
51:3:117:C:O2'	51:3:127:A:H1'	2.19	0.42
51:3:175:A:H2'	51:3:176:U:C6	2.55	0.42
51:3:499:G:H21	51:3:501:G:H8	1.66	0.42
51:3:1221:G:H2'	51:3:1222:A:C8	2.50	0.42
51:3:2070:C:O2	51:3:2070:C:H2'	2.19	0.42
51:3:2376:C:H2'	51:3:2377:A:H8	1.85	0.42
51:3:2647:A:H2'	51:3:2648:A:O4'	2.19	0.42
51:3:2859:U:H2'	51:3:2860:A:H8	1.85	0.42
53:5:250:G:H2'	53:5:251:G:C8	2.55	0.42
53:5:847:G:H2'	53:5:848:U:C6	2.54	0.42
53:5:915:U:H2'	53:5:916:U:C6	2.54	0.42
53:5:1066:U:H2'	53:5:1067:C:H6	1.82	0.42
53:5:1177:U:H2'	53:5:1178:C:O4'	2.20	0.42
53:5:1179:A:H2'	53:5:1180:U:O4'	2.19	0.42
53:5:1223:A:H2	53:5:1263:A:H62	1.64	0.42
54:7:7:U:H2'	54:7:8:G:C8	2.54	0.42
4:A:181:PRO:HG3	4:A:202:CYS:SG	2.59	0.42
10:G:4:THR:C	10:G:6:LYS:H	2.28	0.42
10:G:77:THR:HG22	10:G:78:GLN:N	2.30	0.42
11:H:10:GLY:HA2	11:H:83:LEU:HD23	2.02	0.42
18:O:58:LYS:HA	18:O:59:PRO:HD3	1.89	0.42
25:a:33:PRO:HB2	25:a:38:LEU:HD11	2.02	0.42
25:a:113:ASP:HB2	25:a:204:SER:HA	2.02	0.42
25:a:151:GLU:HB2	25:a:196:CYS:HB3	2.02	0.42
27:c:128:VAL:O	27:c:200:GLU:HA	2.20	0.42
30:f:48:ASP:O	30:f:52:LYS:HG2	2.19	0.42
31:g:40:ILE:HG23	31:g:99:VAL:HG21	2.02	0.42
51:3:59:C:H2'	51:3:60:G:C8	2.55	0.42
51:3:189:U:H2'	51:3:190:G:H8	1.84	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:384:G:H2'	51:3:385:U:C6	2.55	0.42
51:3:587:U:H2'	51:3:588:G:C8	2.54	0.42
51:3:619:A:N7	51:3:845:U:O2'	2.43	0.42
51:3:710:A:N7	51:3:838:U:O4	2.53	0.42
51:3:1005:G:H2'	51:3:1006:U:C6	2.54	0.42
51:3:1355:C:H2'	51:3:1356:G:O4'	2.20	0.42
51:3:1462:A:O2'	51:3:1463:G:O5'	2.37	0.42
51:3:1683:G:H2'	51:3:1684:A:C8	2.55	0.42
51:3:1884:A:H2'	51:3:1885:G:C8	2.55	0.42
51:3:2030:A:H2'	51:3:2031:C:H6	1.83	0.42
52:4:29:C:H1'	52:4:51:A:H61	1.84	0.42
53:5:77:U:H5''	53:5:78:A:C8	2.55	0.42
53:5:111:A:H4'	53:5:602:G:N2	2.34	0.42
53:5:163:G:OP2	53:5:163:G:N2	2.38	0.42
53:5:393:A:H62	53:5:546:G:H5''	1.84	0.42
53:5:1283:G:H2'	53:5:1284:A:C8	2.53	0.42
53:5:1389:U:H2'	53:5:1390:G:C8	2.55	0.42
54:6:36:A:H2'	54:6:37:A:H8	1.85	0.42
2:1:51:ASP:OD1	2:1:51:ASP:N	2.52	0.42
4:A:121:LYS:O	4:A:125:ILE:HG12	2.19	0.42
6:C:32:LYS:HD3	6:C:32:LYS:HA	1.81	0.42
11:H:74:PHE:HE1	53:5:1263:A:N1	2.18	0.42
17:N:34:LYS:O	17:N:37:THR:OG1	2.37	0.42
19:P:68:PRO:O	53:5:260:C:O2'	2.28	0.42
28:d:76:THR:HG21	51:3:2317:A:H61	1.85	0.42
30:f:77:LEU:HD23	30:f:97:ILE:HG22	2.01	0.42
33:i:3:LYS:HD2	41:q:65:GLN:HE22	1.83	0.42
37:m:70:THR:HG23	37:m:73:PHE:H	1.85	0.42
44:t:57:LYS:HB3	44:t:57:LYS:HE2	1.75	0.42
51:3:802:U:H2'	51:3:803:G:H8	1.85	0.42
51:3:818:A:H2'	51:3:819:U:H4'	2.02	0.42
51:3:965:U:H2'	51:3:966:U:C6	2.54	0.42
51:3:1498:U:H2'	51:3:1499:C:C6	2.55	0.42
51:3:1595:C:H2'	51:3:1596:U:C6	2.54	0.42
51:3:1612:U:H2'	51:3:1613:A:H8	1.85	0.42
51:3:1743:U:H2'	51:3:1744:U:H6	1.84	0.42
51:3:1803:U:H2'	51:3:1804:A:C8	2.55	0.42
51:3:2088:U:H2'	51:3:2089:A:H8	1.83	0.42
51:3:2100:G:H2'	51:3:2101:A:C8	2.54	0.42
51:3:2553:G:H2'	51:3:2554:U:O4'	2.20	0.42
51:3:2564:C:H3'	51:3:2565:G:H8	1.85	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2709:C:O5'	51:3:2710:G:H5''	2.20	0.42
51:3:2859:U:H2'	51:3:2860:A:C8	2.55	0.42
53:5:821:U:H2'	53:5:822:A:C8	2.55	0.42
53:5:1012:A:O2'	53:5:1192:C:O2'	2.30	0.42
53:5:1408:A:H2'	53:5:1409:A:C8	2.55	0.42
53:5:1458:A:H8	53:5:1459:U:C6	2.38	0.42
8:E:109:LEU:HD12	8:E:109:LEU:HA	1.88	0.42
17:N:39:HIS:ND1	53:5:736:U:O2'	2.44	0.42
17:N:40:LEU:HD23	51:3:750:A:N1	2.35	0.42
22:S:10:ARG:NH1	53:5:92:G:N7	2.68	0.42
26:b:107:TYR:HD1	26:b:178:ASN:HA	1.85	0.42
26:b:192:LEU:HD21	39:o:13:VAL:HG11	2.01	0.42
33:i:21:VAL:HG12	33:i:57:LEU:HD11	2.02	0.42
38:n:39:ILE:HD11	38:n:101:ARG:HD3	2.02	0.42
39:o:100:TYR:HD2	51:3:2726:G:H4'	1.84	0.42
51:3:1625:G:H2'	51:3:1626:C:C6	2.55	0.42
51:3:1714:U:O2	51:3:1771:C:O2'	2.34	0.42
51:3:1860:A:N1	51:3:1896:A:C5	2.87	0.42
51:3:1950:U:H4'	51:3:1951:A:H3'	2.02	0.42
51:3:2016:G:H2'	51:3:2017:G:H8	1.85	0.42
51:3:2138:U:H4'	51:3:2140:G:N7	2.35	0.42
51:3:2209:U:H2'	51:3:2210:G:H8	1.82	0.42
51:3:2226:U:H2'	51:3:2227:U:H6	1.85	0.42
51:3:2376:C:H2'	51:3:2377:A:C8	2.55	0.42
51:3:2580:A:OP1	51:3:2582:G:H4'	2.20	0.42
51:3:2764:U:H1'	51:3:2765:A:H5''	2.01	0.42
52:4:29:C:H2'	52:4:30:U:C6	2.55	0.42
53:5:552:U:H2'	53:5:553:C:C6	2.54	0.42
53:5:909:A:O2'	53:5:911:G:H5''	2.20	0.42
53:5:1139:A:C6	53:5:1149:G:C6	3.07	0.42
4:A:147:LYS:HE3	4:A:151:MET:HE3	2.02	0.41
6:C:29:LYS:HG2	6:C:31:ARG:HG2	2.02	0.41
7:D:185:ARG:NH2	53:5:22:G:O6	2.53	0.41
11:H:26:ASP:HB3	11:H:64:ASP:OD1	2.20	0.41
16:M:42:LEU:HD13	53:5:1177:U:C4	2.55	0.41
19:P:69:LEU:HD11	19:P:73:LYS:HZ3	1.85	0.41
22:S:67:ARG:NH1	53:5:259:A:OP1	2.49	0.41
29:e:45:LYS:HE3	29:e:45:LYS:HB3	1.79	0.41
30:f:110:LYS:HE2	30:f:110:LYS:HB3	1.88	0.41
34:j:7:ARG:HH21	34:j:44:LYS:HE3	1.85	0.41
45:u:54:GLN:NE2	45:u:58:ARG:H	2.18	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:1063:A:C6	51:3:1160:G:C2	3.08	0.41
51:3:1348:C:OP2	51:3:1357:U:H5''	2.20	0.41
52:4:54:U:H4'	52:4:55:A:C8	2.54	0.41
53:5:686:C:H2'	53:5:687:G:C8	2.55	0.41
53:5:782:G:H2'	53:5:783:G:C8	2.55	0.41
53:5:1081:U:HO2'	53:5:1146:A:HO2'	1.64	0.41
53:5:1220:A:C6	53:5:1267:G:C6	3.08	0.41
5:B:141:LEU:HD12	5:B:152:ILE:HD12	2.01	0.41
14:K:94:LEU:O	14:K:111:VAL:HG12	2.20	0.41
26:b:162:GLY:HA3	33:i:83:TYR:HE2	1.84	0.41
27:c:83:HIS:HA	51:3:1286:G:H21	1.84	0.41
27:c:141:LYS:O	27:c:145:GLN:HG2	2.19	0.41
29:e:19:ASN:ND2	29:e:26:ALA:HB3	2.35	0.41
31:g:41:ARG:NH2	31:g:49:SER:O	2.52	0.41
31:g:88:GLU:HB3	31:g:91:GLU:CB	2.48	0.41
31:g:89:ILE:HD12	31:g:89:ILE:O	2.20	0.41
33:i:60:ILE:HG23	33:i:131:ASP:HA	2.01	0.41
49:y:37:LYS:HD3	49:y:43:CYS:HB3	2.02	0.41
51:3:34:C:H2'	51:3:35:U:C6	2.54	0.41
51:3:183:A:O2'	51:3:184:A:H3'	2.20	0.41
51:3:223:A:N3	51:3:238:U:O2'	2.48	0.41
51:3:310:U:H4'	51:3:311:G:C8	2.55	0.41
51:3:519:A:H3'	51:3:520:C:H6	1.85	0.41
51:3:2105:G:C2	51:3:2106:G:C4	3.08	0.41
51:3:2226:U:H2'	51:3:2227:U:C6	2.56	0.41
53:5:120:A:C6	53:5:321:A:C6	3.09	0.41
53:5:336:U:H2'	53:5:337:C:H6	1.85	0.41
53:5:778:A:H2'	53:5:778:A:N3	2.35	0.41
53:5:917:G:H2'	53:5:918:A:H8	1.85	0.41
53:5:1010:A:H2'	53:5:1011:A:C4	2.56	0.41
53:5:1100:C:C2	53:5:1101:A:C8	3.08	0.41
53:5:1241:G:N1	53:5:1245:A:C6	2.89	0.41
2:1:21:ARG:O	2:1:45:GLY:N	2.49	0.41
5:B:61:THR:HG22	5:B:62:GLN:N	2.35	0.41
7:D:185:ARG:NH1	53:5:22:G:N7	2.68	0.41
9:F:2:ARG:NH1	53:5:928:G:O6	2.53	0.41
11:H:18:LYS:NZ	11:H:20:TYR:OH	2.51	0.41
26:b:116:GLY:HA3	51:3:2825:A:H5''	2.02	0.41
31:g:29:TYR:HD1	31:g:30:THR:N	2.17	0.41
34:j:77:LEU:HD12	34:j:77:LEU:HA	1.92	0.41
35:k:107:LYS:HG2	35:k:108:SER:H	1.86	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:12:HIS:ND1	38:n:94:GLY:HA2	2.35	0.41
39:o:64:PHE:CZ	39:o:88:ILE:HG12	2.55	0.41
41:q:56:VAL:HG23	41:q:95:VAL:HG23	2.01	0.41
42:r:88:ARG:HH21	51:3:782:U:H2'	1.84	0.41
44:t:106:LYS:NZ	51:3:335:G:OP1	2.37	0.41
51:3:177:U:H2'	51:3:178:A:H8	1.85	0.41
51:3:415:U:H2'	51:3:416:C:H6	1.85	0.41
51:3:998:C:H2'	51:3:999:U:H6	1.85	0.41
51:3:1261:U:H2'	51:3:1262:G:C8	2.55	0.41
51:3:1311:G:N2	51:3:1314:A:OP2	2.53	0.41
51:3:1679:U:H4'	51:3:1680:A:H5'	2.02	0.41
51:3:1766:A:N6	51:3:2705:G:H1'	2.35	0.41
51:3:1772:G:C6	51:3:1995:G:O6	2.73	0.41
51:3:1976:A:H2'	51:3:1979:G:H21	1.85	0.41
51:3:2054:C:H2'	51:3:2055:A:C8	2.55	0.41
51:3:2631:G:H2'	51:3:2632:C:C6	2.55	0.41
51:3:2657:C:H2'	51:3:2658:U:C6	2.54	0.41
51:3:2822:C:H2'	51:3:2823:A:H8	1.86	0.41
52:4:73:U:H2'	52:4:74:G:C8	2.55	0.41
53:5:81:A:H2'	53:5:82:C:H6	1.85	0.41
53:5:157:A:H2'	53:5:158:A:C8	2.56	0.41
53:5:501:A:H2'	53:5:502:C:H6	1.84	0.41
53:5:806:A:H2'	53:5:807:C:C6	2.55	0.41
53:5:842:C:H2'	53:5:843:C:C6	2.54	0.41
53:5:1133:A:H5'	53:5:1134:C:C6	2.54	0.41
6:C:17:SER:HB2	6:C:21:ASN:HA	2.02	0.41
14:K:114:THR:H	14:K:117:THR:HG21	1.85	0.41
15:L:32:ALA:O	15:L:36:GLN:HB2	2.20	0.41
16:M:45:ARG:NH1	53:5:1051:U:OP1	2.53	0.41
18:O:65:SER:HB3	53:5:450:U:O3'	2.20	0.41
19:P:67:ARG:HH22	53:5:260:C:H4'	1.84	0.41
25:a:32:LYS:HD3	25:a:32:LYS:HA	1.81	0.41
26:b:76:LYS:HD3	26:b:77:PRO:HD2	2.02	0.41
28:d:84:LEU:HD12	28:d:84:LEU:H	1.85	0.41
30:f:12:LEU:HB2	30:f:14:LYS:HZ1	1.84	0.41
30:f:25:TYR:HB3	51:3:2099:U:H4'	2.02	0.41
31:g:56:ASN:OD1	31:g:75:ALA:HB3	2.21	0.41
47:w:88:LYS:O	47:w:92:GLU:HG2	2.20	0.41
51:3:1119:A:C2	51:3:1140:U:H1'	2.55	0.41
51:3:1318:U:H2'	51:3:1319:C:H6	1.84	0.41
51:3:1629:U:H2'	51:3:1630:A:C8	2.55	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2353:G:C2	51:3:2389:A:C5	3.08	0.41
51:3:2546:U:H2'	51:3:2547:C:C6	2.55	0.41
51:3:2688:C:H2'	51:3:2689:C:C6	2.55	0.41
51:3:2704:U:H2'	51:3:2705:G:H8	1.84	0.41
52:4:73:U:H2'	52:4:74:G:H8	1.84	0.41
53:5:457:A:H2'	53:5:458:G:C8	2.56	0.41
53:5:516:C:H5''	53:5:528:G:H1'	2.02	0.41
53:5:1496:G:H2'	53:5:1497:U:C6	2.56	0.41
10:G:16:ALA:O	10:G:20:THR:HG23	2.21	0.41
10:G:109:ASN:HB3	10:G:111:LEU:HD22	2.01	0.41
14:K:113:GLY:H	14:K:117:THR:HG21	1.85	0.41
15:L:11:ASN:HD22	15:L:46:LYS:HD3	1.85	0.41
19:P:70:SER:OG	53:5:250:G:OP1	2.32	0.41
21:R:5:ALA:HB1	53:5:1287:G:O5'	2.19	0.41
26:b:176:VAL:HG12	26:b:179:LEU:HD21	2.02	0.41
26:b:212:LYS:NZ	51:3:2739:C:H4'	2.36	0.41
31:g:11:VAL:HG13	31:g:62:ALA:HB2	2.03	0.41
35:k:130:LYS:HD2	35:k:130:LYS:HA	1.85	0.41
37:m:4:ILE:O	37:m:4:ILE:HG22	2.20	0.41
38:n:36:LEU:HD12	52:4:29:C:H41	1.85	0.41
46:v:22:LYS:O	51:3:204:U:H5''	2.21	0.41
51:3:29:G:N2	51:3:547:G:H1'	2.35	0.41
51:3:99:C:H2'	51:3:100:U:O4'	2.21	0.41
51:3:393:C:H2'	51:3:394:C:C6	2.56	0.41
51:3:528:U:H2'	51:3:529:G:C8	2.56	0.41
51:3:590:U:H2'	51:3:591:G:H8	1.85	0.41
51:3:899:A:O2'	52:4:90:G:N3	2.53	0.41
51:3:1160:G:O6	51:3:1161:A:N6	2.52	0.41
51:3:1758:C:H2'	51:3:1759:C:C6	2.55	0.41
51:3:2055:A:H2'	51:3:2056:A:C8	2.56	0.41
51:3:2106:G:H22	51:3:2198:G:H22	1.68	0.41
51:3:2171:A:H4'	51:3:2181:A:N7	2.35	0.41
51:3:2678:A:H2'	51:3:2679:G:H8	1.86	0.41
53:5:246:A:H8	53:5:248:U:C2	2.38	0.41
53:5:255:G:N1	53:5:264:C:N3	2.68	0.41
53:5:511:A:H2'	53:5:512:U:H6	1.84	0.41
53:5:570:A:H5''	53:5:912:G:H4'	2.02	0.41
53:5:1160:G:H2'	53:5:1161:G:H8	1.85	0.41
2:1:43:LYS:NZ	51:3:2358:U:O5'	2.54	0.41
6:C:78:VAL:HG12	6:C:92:VAL:HG21	2.02	0.41
9:F:131:GLY:HA2	9:F:134:ILE:HB	2.03	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:75:LYS:HA	10:G:75:LYS:HD2	1.72	0.41
11:H:22:THR:OG1	11:H:64:ASP:HB2	2.19	0.41
15:L:11:ASN:HB2	15:L:46:LYS:HG2	2.03	0.41
16:M:2:ALA:HB3	16:M:6:LEU:HD23	2.02	0.41
29:e:18:LEU:HG	29:e:27:VAL:HG12	2.02	0.41
51:3:142:A:N3	51:3:1437:A:H1'	2.36	0.41
51:3:342:G:H2'	51:3:343:A:C8	2.55	0.41
51:3:741:A:H2'	51:3:742:G:O4'	2.20	0.41
51:3:848:U:O2'	51:3:1255:G:O2'	2.34	0.41
51:3:1061:A:OP2	51:3:1169:A:O2'	2.28	0.41
51:3:1748:U:N3	51:3:1751:A:N7	2.69	0.41
51:3:2142:U:O2'	51:3:2167:G:O5'	2.39	0.41
51:3:2171:A:H4'	51:3:2181:A:C8	2.56	0.41
51:3:2261:G:N2	54:7:74:A:O2'	2.50	0.41
51:3:2412:A:N6	51:3:2422:G:C6	2.88	0.41
51:3:2840:U:O4	51:3:2887:A:N6	2.54	0.41
51:3:2842:G:C4	51:3:2843:G:C8	3.09	0.41
52:4:16:G:H1	52:4:63:U:H3	1.69	0.41
53:5:26:C:H5'	53:5:522:G:O2'	2.21	0.41
53:5:95:C:H2'	53:5:96:G:O4'	2.21	0.41
53:5:233:C:C2	53:5:234:G:C8	3.08	0.41
53:5:1001:A:N7	53:5:1019:G:N2	2.68	0.41
53:5:1501:G:H2'	53:5:1502:G:C8	2.54	0.41
5:B:146:LYS:HE2	5:B:146:LYS:HB2	1.86	0.41
6:C:145:LYS:O	6:C:147:LYS:N	2.53	0.41
12:I:29:LYS:HD2	12:I:29:LYS:HA	1.86	0.41
15:L:89:LEU:HD22	21:R:80:PHE:HZ	1.85	0.41
16:M:9:LYS:HZ1	53:5:975:C:HO2'	1.60	0.41
22:S:69:LYS:HD3	53:5:172:C:H1'	2.02	0.41
31:g:29:TYR:CD1	31:g:30:THR:N	2.89	0.41
31:g:75:ALA:HB1	31:g:80:LEU:HD11	2.02	0.41
32:h:26:ALA:HA	32:h:30:ILE:HG22	2.01	0.41
32:h:69:THR:HB	32:h:108:LYS:HD2	2.02	0.41
34:j:44:LYS:HD3	34:j:44:LYS:HA	1.83	0.41
35:k:148:LEU:H	35:k:148:LEU:HD23	1.85	0.41
38:n:8:ARG:HG3	38:n:11:ARG:HH21	1.86	0.41
39:o:54:ARG:NH1	51:3:2693:U:OP1	2.46	0.41
43:s:12:LEU:HD12	43:s:17:TYR:HE1	1.85	0.41
45:u:49:GLN:HG2	51:3:2362:A:H4'	2.02	0.41
51:3:71:C:O2	51:3:75:A:O2'	2.37	0.41
51:3:296:U:C6	51:3:300:G:H1'	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:333:A:N1	51:3:356:A:C4	2.89	0.41
51:3:568:G:H2'	51:3:569:U:C6	2.56	0.41
51:3:700:U:H2'	51:3:701:A:H8	1.85	0.41
51:3:1432:C:H2'	51:3:1433:U:H6	1.86	0.41
51:3:1538:U:H2'	51:3:1539:U:C6	2.55	0.41
51:3:1553:G:H21	51:3:1578:A:H62	1.69	0.41
51:3:1869:G:H2'	51:3:1870:G:C8	2.55	0.41
51:3:1989:U:H2'	51:3:1990:C:H6	1.86	0.41
51:3:1995:G:C2	51:3:1996:A:C5	3.08	0.41
53:5:333:U:H2'	53:5:334:A:C8	2.56	0.41
53:5:421:G:C2	53:5:422:A:N7	2.89	0.41
53:5:675:U:H2'	53:5:676:U:H6	1.86	0.41
53:5:705:A:H2'	53:5:706:U:C6	2.55	0.41
53:5:1329:G:N3	53:5:1330:A:C8	2.89	0.41
53:5:1359:C:H2'	53:5:1360:G:C8	2.55	0.41
4:A:90:ASP:HA	4:A:93:LYS:HG2	2.03	0.41
15:L:65:ILE:HG22	15:L:68:ASP:HB2	2.03	0.41
15:L:98:ARG:NH1	53:5:1283:G:N7	2.68	0.41
23:T:34:TYR:CE2	23:T:36:LEU:HD11	2.55	0.41
26:b:94:GLN:NE2	26:b:95:GLN:O	2.54	0.41
31:g:67:LYS:HA	31:g:67:LYS:HD3	1.79	0.41
35:k:5:GLN:NE2	51:3:1234:U:O2'	2.53	0.41
35:k:95:ARG:NH1	35:k:109:GLN:HA	2.36	0.41
51:3:665:C:N4	51:3:666:G:O6	2.53	0.41
51:3:1381:A:H2'	51:3:1382:A:C8	2.55	0.41
51:3:1745:A:H2'	51:3:1746:U:C6	2.56	0.41
51:3:2360:A:C5	51:3:2373:G:N2	2.89	0.41
51:3:2469:A:H1'	51:3:2500:U:N3	2.36	0.41
51:3:2809:A:N6	51:3:2811:G:O6	2.54	0.41
53:5:788:G:H1	53:5:789:A:H62	1.69	0.41
4:A:69:TYR:OH	4:A:238:GLU:OE2	2.30	0.41
5:B:209:MET:HE3	5:B:209:MET:HB3	1.91	0.41
6:C:87:VAL:HG11	6:C:91:ARG:HH11	1.86	0.41
8:E:23:GLU:O	8:E:27:GLN:HG2	2.21	0.41
9:F:134:ILE:HA	9:F:137:LYS:HB2	2.02	0.41
13:J:21:ASN:O	13:J:50:LYS:HG3	2.21	0.41
21:R:41:PHE:CG	21:R:42:PRO:HD2	2.55	0.41
22:S:24:GLN:HB3	22:S:54:LEU:HD21	2.01	0.41
25:a:165:GLY:HA3	51:3:1827:U:C4	2.56	0.41
27:c:182:HIS:O	27:c:186:VAL:HG13	2.20	0.41
28:d:57:LEU:HD23	28:d:65:PRO:HB3	2.03	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:f:3:VAL:HG22	30:f:22:LYS:HG2	2.03	0.41
31:g:97:ASP:HA	31:g:100:VAL:HG12	2.02	0.41
33:i:28:LEU:HD21	51:3:1174:G:H5'	2.03	0.41
35:k:64:LYS:HD3	51:3:2402:C:H5''	2.03	0.41
36:l:65:TRP:HB2	36:l:105:GLU:CG	2.51	0.41
36:l:74:LYS:HG3	36:l:94:VAL:HG11	2.02	0.41
39:o:92:ARG:HB3	39:o:115:LYS:NZ	2.35	0.41
40:p:33:VAL:HA	40:p:36:GLN:HE21	1.86	0.41
40:p:45:ALA:HA	51:3:569:U:O2'	2.21	0.41
40:p:58:SER:OG	51:3:1045:A:H5'	2.21	0.41
44:t:80:LYS:HB3	44:t:109:ASN:ND2	2.36	0.41
45:u:38:LYS:HG3	51:3:2363:C:H4'	2.03	0.41
51:3:8:A:N6	51:3:2791:U:OP1	2.53	0.41
51:3:58:A:H2'	51:3:59:C:C6	2.56	0.41
51:3:90:G:OP2	51:3:93:A:N6	2.50	0.41
51:3:202:C:O2'	51:3:203:A:H8	2.03	0.41
51:3:207:C:P	51:3:208:A:H2'	2.60	0.41
51:3:498:C:H2'	51:3:499:G:C8	2.56	0.41
51:3:669:A:O2'	51:3:2412:A:OP1	2.33	0.41
51:3:703:A:H2'	51:3:705:A:H62	1.86	0.41
51:3:722:C:H2'	51:3:723:U:O4'	2.21	0.41
51:3:854:A:N1	51:3:1220:A:C6	2.89	0.41
51:3:883:A:H2'	51:3:884:A:C8	2.55	0.41
51:3:1149:G:H2'	51:3:1150:U:C6	2.55	0.41
51:3:1459:A:H2'	51:3:1460:G:C8	2.56	0.41
51:3:1489:G:H2'	51:3:1490:G:C8	2.56	0.41
51:3:1493:A:H2'	51:3:1494:U:O4'	2.21	0.41
51:3:1993:U:H2'	51:3:1994:U:O4'	2.21	0.41
51:3:2031:C:H2'	51:3:2032:G:C8	2.55	0.41
51:3:2081:U:H1'	51:3:2606:A:N3	2.35	0.41
51:3:2105:G:H2'	51:3:2106:G:H8	1.85	0.41
51:3:2461:A:H3'	51:3:2461:A:C8	2.56	0.41
51:3:2700:C:H2'	51:3:2701:A:C8	2.55	0.41
52:4:38:U:H1'	52:4:43:A:H61	1.85	0.41
53:5:379:A:C5	53:5:380:G:H1'	2.55	0.41
53:5:749:G:H1'	53:5:751:C:N4	2.30	0.41
53:5:778:A:H5'	53:5:779:A:OP2	2.21	0.41
53:5:1194:A:H2'	53:5:1195:G:C8	2.56	0.41
53:5:1265:U:H2'	53:5:1266:U:C6	2.56	0.41
53:5:1328:C:H2'	53:5:1329:G:H8	1.86	0.41
53:5:1338:A:H1'	53:5:1340:G:C8	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:233:ALA:HA	4:A:236:VAL:HG22	2.03	0.41
4:A:245:MET:H	4:A:245:MET:HG2	1.72	0.41
7:D:203:LEU:HD23	7:D:203:LEU:H	1.86	0.41
17:N:45:LYS:HD2	53:5:805:C:OP1	2.20	0.41
26:b:50:THR:HB	26:b:87:MET:HB3	2.03	0.41
27:c:69:LYS:HD2	51:3:2452:G:OP2	2.21	0.41
27:c:135:LYS:HE3	27:c:135:LYS:HB2	1.90	0.41
28:d:52:SER:OG	28:d:150:ARG:NH2	2.54	0.41
28:d:136:ILE:HD12	28:d:143:TYR:HD1	1.86	0.41
29:e:86:PHE:CD2	29:e:141:LYS:HG3	2.55	0.41
36:l:62:GLY:HA3	36:l:109:ILE:HG12	2.04	0.41
40:p:64:LEU:HD23	40:p:64:LEU:HA	1.88	0.41
41:q:72:LYS:HE3	41:q:72:LYS:HB2	1.88	0.41
51:3:377:U:H2'	51:3:378:G:C8	2.56	0.41
51:3:625:G:H2'	51:3:626:A:C8	2.56	0.41
51:3:629:G:H2'	51:3:630:C:C6	2.55	0.41
51:3:746:G:H2'	51:3:747:A:H8	1.86	0.41
51:3:937:A:C6	51:3:938:A:C6	3.09	0.41
51:3:1078:C:H2'	51:3:1079:U:O4'	2.21	0.41
51:3:1786:U:OP2	51:3:1791:A:N6	2.50	0.41
51:3:2598:C:H2'	51:3:2599:C:O4'	2.21	0.41
51:3:2624:C:H2'	51:3:2625:U:C6	2.56	0.41
53:5:42:G:H2'	53:5:43:G:C8	2.56	0.41
53:5:75:A:H2'	53:5:76:G:O4'	2.21	0.41
53:5:285:G:H2'	53:5:286:C:C6	2.56	0.41
53:5:369:A:O2'	53:5:478:G:N2	2.54	0.41
53:5:381:C:H2'	53:5:382:U:H6	1.86	0.41
53:5:779:A:N6	53:5:797:G:O2'	2.49	0.41
53:5:1037:A:H3'	53:5:1038:G:H8	1.85	0.41
6:C:89:LEU:HD13	6:C:197:VAL:HG22	2.03	0.40
10:G:89:GLN:H	10:G:89:GLN:HG2	1.69	0.40
18:O:2:ARG:HE	18:O:9:PRO:HB3	1.86	0.40
19:P:5:GLN:HE21	19:P:5:GLN:HB2	1.71	0.40
25:a:229:ARG:HD2	51:3:1834:U:OP2	2.21	0.40
26:b:113:ILE:O	26:b:199:GLY:HA2	2.20	0.40
26:b:148:GLN:HB2	51:3:2059:G:H4'	2.03	0.40
28:d:108:LEU:HD21	28:d:176:PRO:HG3	2.01	0.40
30:f:2:LYS:CG	30:f:4:ILE:HB	2.51	0.40
30:f:12:LEU:HD23	30:f:12:LEU:HA	1.92	0.40
32:h:80:ALA:O	32:h:81:LYS:HB3	2.21	0.40
39:o:56:ARG:NH2	51:3:2692:U:OP2	2.54	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:t:78:ASP:OD2	44:t:109:ASN:ND2	2.54	0.40
45:u:89:LYS:HD2	45:u:89:LYS:HA	1.87	0.40
46:v:18:ARG:HA	46:v:23:THR:O	2.21	0.40
49:y:17:ARG:NE	51:3:1296:G:OP2	2.33	0.40
51:3:182:C:H2'	51:3:183:A:C8	2.57	0.40
51:3:779:C:N4	51:3:780:G:O6	2.54	0.40
51:3:2145:A:N7	51:3:2161:G:N1	2.69	0.40
51:3:2299:U:O2'	51:3:2382:A:N3	2.49	0.40
53:5:266:A:H2'	53:5:267:C:C6	2.56	0.40
53:5:917:G:H2'	53:5:918:A:C8	2.56	0.40
53:5:1116:U:H2'	53:5:1118:A:C2	2.54	0.40
53:5:1223:A:H2'	53:5:1224:C:C6	2.55	0.40
53:5:1228:C:H2'	53:5:1229:A:C8	2.56	0.40
53:5:1331:A:C4	53:5:1332:U:C5	3.10	0.40
53:5:1497:U:H2'	53:5:1498:G:H8	1.86	0.40
9:F:65:VAL:HA	9:F:68:VAL:HG12	2.03	0.40
31:g:18:LEU:HG	31:g:24:PHE:CZ	2.53	0.40
31:g:41:ARG:NE	51:3:1117:U:O3'	2.44	0.40
31:g:53:VAL:HG11	31:g:79:LYS:HG3	2.03	0.40
33:i:77:TRP:CZ2	33:i:103:LEU:HD11	2.57	0.40
51:3:17:G:H2'	51:3:18:G:O4'	2.22	0.40
51:3:227:A:N1	51:3:443:C:O2'	2.54	0.40
51:3:669:A:N3	51:3:2411:C:H4'	2.36	0.40
51:3:1244:A:H61	51:3:1265:G:H1'	1.86	0.40
51:3:2106:G:N2	51:3:2198:G:H22	2.19	0.40
51:3:2251:U:H2'	51:3:2252:U:C6	2.56	0.40
53:5:39:G:H22	53:5:393:A:H5''	1.86	0.40
53:5:305:A:O2'	53:5:605:A:N1	2.40	0.40
53:5:393:A:C5	53:5:546:G:C2	3.09	0.40
53:5:400:G:C6	53:5:401:U:C4	3.09	0.40
54:7:53:A:C6	54:7:64:G:C6	3.09	0.40
5:B:97:GLY:O	5:B:100:THR:HG22	2.21	0.40
6:C:86:ALA:HA	6:C:197:VAL:HG21	2.03	0.40
8:E:92:ARG:HG3	8:E:93:GLU:N	2.35	0.40
11:H:15:SER:O	11:H:15:SER:OG	2.37	0.40
16:M:34:LEU:O	16:M:38:GLY:N	2.40	0.40
18:O:2:ARG:HH22	53:5:387:G:C5'	2.34	0.40
22:S:20:ASN:O	22:S:24:GLN:HG2	2.21	0.40
26:b:23:ARG:HD3	34:j:74:GLY:HA2	2.02	0.40
26:b:62:LEU:HD12	26:b:63:ASN:H	1.87	0.40
26:b:125:ARG:HH12	51:3:2629:G:P	2.44	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:d:34:ILE:HD13	28:d:34:ILE:HA	1.91	0.40
31:g:7:LYS:HB3	31:g:61:ARG:HH12	1.86	0.40
38:n:5:THR:HG22	38:n:9:ARG:HH11	1.86	0.40
44:t:10:VAL:HG21	44:t:74:LEU:HB3	2.04	0.40
46:v:51:SER:O	46:v:55:LEU:N	2.47	0.40
51:3:1231:G:H2'	51:3:1232:U:H6	1.86	0.40
51:3:1803:U:H2'	51:3:1804:A:H8	1.86	0.40
51:3:2100:G:N7	51:3:2233:A:H2'	2.37	0.40
51:3:2208:U:H2'	51:3:2209:U:C6	2.57	0.40
51:3:2266:C:O2'	51:3:2434:A:H4'	2.21	0.40
51:3:2467:A:H2'	51:3:2468:U:O4'	2.22	0.40
51:3:2658:U:H2'	51:3:2659:U:C6	2.55	0.40
53:5:275:A:H5''	53:5:276:U:H3'	2.02	0.40
53:5:872:C:H2'	53:5:873:U:C6	2.56	0.40
53:5:886:A:H62	53:5:900:G:H21	1.70	0.40
53:5:941:A:C2	53:5:1307:A:H2	2.40	0.40
53:5:952:U:O2	53:5:1200:G:N2	2.53	0.40
53:5:1209:C:H2'	53:5:1210:U:O4'	2.21	0.40
53:5:1467:A:H1'	53:5:1468:A:C4	2.56	0.40
3:2:19:ARG:NH2	51:3:2763:C:H5''	2.35	0.40
3:2:27:CYS:SG	3:2:28:LYS:N	2.95	0.40
4:A:22:LYS:HG3	4:A:24:GLY:H	1.86	0.40
5:B:93:LYS:HA	5:B:93:LYS:HD3	1.84	0.40
7:D:73:LEU:H	7:D:73:LEU:HD23	1.86	0.40
14:K:47:CYS:SG	14:K:66:ALA:HB1	2.62	0.40
14:K:127:ARG:HE	53:5:499:U:P	2.45	0.40
18:O:5:ARG:NH1	53:5:43:G:O2'	2.54	0.40
20:Q:92:ARG:O	20:Q:96:LEU:N	2.54	0.40
21:R:66:MET:HG3	21:R:67:VAL:N	2.36	0.40
26:b:135:HIS:CE1	51:3:1705:U:H1'	2.56	0.40
26:b:140:PRO:HG2	51:3:2587:U:H5'	2.04	0.40
27:c:53:LEU:HD12	51:3:487:C:H5'	2.04	0.40
34:j:7:ARG:HA	34:j:19:VAL:O	2.22	0.40
37:m:50:THR:HG21	51:3:2844:U:H5''	2.03	0.40
37:m:99:ARG:O	37:m:116:LEU:HD12	2.21	0.40
39:o:97:ARG:HA	39:o:97:ARG:HD2	1.80	0.40
51:3:42:U:H2'	51:3:43:A:C8	2.57	0.40
51:3:216:C:H2'	51:3:217:A:O4'	2.21	0.40
51:3:341:G:H22	51:3:344:A:P	2.43	0.40
51:3:477:U:H2'	51:3:478:G:H8	1.85	0.40
51:3:569:U:H2'	51:3:570:C:H6	1.87	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:674:G:C6	51:3:687:G:N2	2.90	0.40
51:3:1248:A:N1	51:3:1262:G:N1	2.70	0.40
51:3:1777:G:O6	51:3:1990:C:N4	2.54	0.40
51:3:2374:A:H3'	51:3:2375:A:H8	1.85	0.40
51:3:2555:U:H2'	51:3:2556:C:C6	2.57	0.40
51:3:2565:G:H2'	51:3:2566:C:C6	2.57	0.40
51:3:2651:G:H2'	51:3:2652:U:C6	2.56	0.40
51:3:2736:U:H2'	51:3:2737:G:C8	2.56	0.40
51:3:2800:U:H3'	51:3:2801:U:H6	1.86	0.40
52:4:49:G:H2'	52:4:50:C:C6	2.57	0.40
53:5:117:U:H2'	53:5:118:C:H6	1.87	0.40
53:5:195:U:H2'	53:5:196:G:C8	2.56	0.40
53:5:433:C:H2'	53:5:434:U:C6	2.57	0.40
53:5:640:C:H2'	53:5:641:U:H6	1.86	0.40
53:5:655:G:C6	53:5:746:A:C6	3.10	0.40
53:5:1000:A:H2'	53:5:1001:A:H8	1.86	0.40
53:5:1065:G:H2'	53:5:1066:U:C6	2.56	0.40
53:5:1277:C:H2'	53:5:1278:G:O4'	2.21	0.40
54:6:76:C:H2'	54:6:77:A:C4	2.57	0.40
3:2:15:LYS:HE3	3:2:15:LYS:HB3	1.98	0.40
6:C:1:MET:SD	6:C:67:THR:HG21	2.62	0.40
9:F:75:ARG:HD2	9:F:88:THR:HG21	2.04	0.40
13:J:83:GLY:H	23:T:26:ARG:CZ	2.35	0.40
14:K:112:ARG:HB2	14:K:112:ARG:NH2	2.35	0.40
19:P:60:LYS:O	19:P:81:ILE:HB	2.21	0.40
22:S:39:ILE:HG23	22:S:76:LEU:HD12	2.03	0.40
25:a:67:ARG:HD2	25:a:67:ARG:N	2.37	0.40
26:b:11:VAL:HG11	39:o:5:ASN:ND2	2.37	0.40
28:d:122:PHE:O	51:3:2310:C:O2'	2.34	0.40
28:d:163:ASP:N	28:d:163:ASP:OD1	2.54	0.40
33:i:16:ARG:NH2	33:i:124:LYS:HD3	2.36	0.40
35:k:11:LYS:N	35:k:11:LYS:HD3	2.37	0.40
42:r:21:CYS:HB3	42:r:74:CYS:HB3	1.80	0.40
51:3:412:A:H2'	51:3:413:G:C8	2.56	0.40
51:3:443:C:H2'	51:3:444:C:C6	2.57	0.40
51:3:461:C:H2'	51:3:462:C:C6	2.57	0.40
51:3:1344:U:H2'	51:3:1345:G:C8	2.56	0.40
51:3:1462:A:O2'	51:3:1463:G:H8	2.03	0.40
51:3:2122:G:N1	51:3:2126:A:OP1	2.48	0.40
51:3:2554:U:H5''	51:3:2555:U:H5'	2.04	0.40
51:3:2560:U:H2'	51:3:2562:U:O5'	2.21	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:3:2738:U:H2'	51:3:2739:C:C6	2.57	0.40
53:5:510:U:C2	53:5:511:A:C8	3.10	0.40
53:5:799:A:H3'	53:5:800:G:C8	2.56	0.40
54:6:69:A:H2'	54:6:70:G:C8	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	45/48 (94%)	45 (100%)	0	0	100	100
2	1	57/59 (97%)	54 (95%)	3 (5%)	0	100	100
3	2	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
4	A	238/294 (81%)	220 (92%)	18 (8%)	0	100	100
5	B	213/273 (78%)	201 (94%)	12 (6%)	0	100	100
6	C	201/205 (98%)	185 (92%)	16 (8%)	0	100	100
7	D	151/219 (69%)	146 (97%)	5 (3%)	0	100	100
8	E	165/215 (77%)	153 (93%)	12 (7%)	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%)	109 (86%)	17 (14%)	0	100	100
12	I	99/108 (92%)	89 (90%)	10 (10%)	0	100	100
13	J	112/121 (93%)	111 (99%)	1 (1%)	0	100	100
14	K	134/139 (96%)	115 (86%)	16 (12%)	3 (2%)	5	28
15	L	116/124 (94%)	102 (88%)	14 (12%)	0	100	100
16	M	58/61 (95%)	57 (98%)	1 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	N	81/86 (94%)	77 (95%)	4 (5%)	0	100	100
18	O	78/94 (83%)	70 (90%)	8 (10%)	0	100	100
19	P	81/85 (95%)	75 (93%)	6 (7%)	0	100	100
20	Q	63/104 (61%)	57 (90%)	6 (10%)	0	100	100
21	R	82/87 (94%)	74 (90%)	5 (6%)	3 (4%)	2	19
22	S	75/87 (86%)	74 (99%)	1 (1%)	0	100	100
23	T	51/60 (85%)	49 (96%)	2 (4%)	0	100	100
25	a	283/287 (99%)	263 (93%)	20 (7%)	0	100	100
26	b	227/287 (79%)	216 (95%)	11 (5%)	0	100	100
27	c	208/212 (98%)	201 (97%)	7 (3%)	0	100	100
28	d	173/180 (96%)	163 (94%)	10 (6%)	0	100	100
29	e	174/184 (95%)	164 (94%)	10 (6%)	0	100	100
30	f	143/149 (96%)	128 (90%)	14 (10%)	1 (1%)	18	55
31	g	124/161 (77%)	106 (86%)	13 (10%)	5 (4%)	2	18
32	h	126/137 (92%)	113 (90%)	13 (10%)	0	100	100
33	i	142/146 (97%)	136 (96%)	6 (4%)	0	100	100
34	j	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
35	k	146/151 (97%)	137 (94%)	9 (6%)	0	100	100
36	l	134/139 (96%)	129 (96%)	5 (4%)	0	100	100
37	m	117/124 (94%)	112 (96%)	4 (3%)	1 (1%)	14	49
38	n	108/116 (93%)	101 (94%)	7 (6%)	0	100	100
39	o	113/119 (95%)	104 (92%)	9 (8%)	0	100	100
40	p	112/127 (88%)	109 (97%)	3 (3%)	0	100	100
41	q	97/100 (97%)	92 (95%)	5 (5%)	0	100	100
42	r	137/159 (86%)	132 (96%)	5 (4%)	0	100	100
43	s	90/237 (38%)	82 (91%)	8 (9%)	0	100	100
44	t	109/111 (98%)	107 (98%)	2 (2%)	0	100	100
45	u	84/104 (81%)	80 (95%)	4 (5%)	0	100	100
46	v	61/65 (94%)	60 (98%)	1 (2%)	0	100	100
47	w	96/111 (86%)	92 (96%)	4 (4%)	0	100	100
48	x	42/97 (43%)	37 (88%)	5 (12%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
49	y	54/57 (95%)	48 (89%)	5 (9%)	1 (2%)	6	31
50	z	48/53 (91%)	48 (100%)	0	0	100	100
All	All	5820/6670 (87%)	5441 (94%)	365 (6%)	14 (0%)	44	77

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
14	K	118	VAL
21	R	27	LYS
31	g	41	ARG
31	g	87	ASN
30	f	22	LYS
31	g	29	TYR
49	y	53	VAL
14	K	113	GLY
21	R	26	GLU
21	R	28	LYS
31	g	43	LYS
14	K	120	VAL
31	g	49	SER
37	m	4	ILE

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	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%)	181 (100%)	0	100	100
7	D	123/178 (69%)	123 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	113 (97%)	4 (3%)	32	54
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%)	72 (99%)	1 (1%)	59	72
20	Q	56/94 (60%)	56 (100%)	0	100	100
21	R	74/77 (96%)	70 (95%)	4 (5%)	20	42
22	S	70/77 (91%)	70 (100%)	0	100	100
23	T	49/56 (88%)	49 (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%)	150 (100%)	0	100	100
29	e	153/159 (96%)	153 (100%)	0	100	100
30	f	131/134 (98%)	128 (98%)	3 (2%)	44	63
31	g	101/129 (78%)	86 (85%)	15 (15%)	3	14
32	h	102/110 (93%)	102 (100%)	0	100	100
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%)	103 (98%)	2 (2%)	50	66
38	n	96/99 (97%)	96 (100%)	0	100	100
39	o	101/105 (96%)	98 (97%)	3 (3%)	36	57

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	42 (88%)	6 (12%)	4	17
50	z	47/50 (94%)	47 (100%)	0	100	100
All	All	5101/5751 (89%)	5063 (99%)	38 (1%)	73	79

All (38) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
14	K	112	ARG
14	K	114	THR
14	K	115	LEU
14	K	121	GLU
19	P	5	GLN
21	R	24	LYS
21	R	25	GLN
21	R	26	GLU
21	R	27	LYS
30	f	2	LYS
30	f	20	ASP
30	f	22	LYS
31	g	29	TYR
31	g	30	THR
31	g	31	SER
31	g	41	ARG
31	g	42	LYS
31	g	43	LYS
31	g	44	LEU
31	g	45	PHE
31	g	46	LYS
31	g	47	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
31	g	50	LYS
31	g	51	ILE
31	g	87	ASN
31	g	88	GLU
31	g	89	ILE
37	m	4	ILE
37	m	5	ASN
39	o	91	LYS
39	o	92	ARG
39	o	93	ARG
49	y	47	MET
49	y	50	ASP
49	y	51	LEU
49	y	52	ARG
49	y	53	VAL
49	y	54	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (62) such sidechains are listed below:

Mol	Chain	Res	Type
2	1	37	GLN
3	2	36	GLN
4	A	61	GLN
4	A	81	GLN
5	B	17	ASN
5	B	47	ASN
5	B	62	GLN
5	B	125	ASN
5	B	193	GLN
6	C	118	ASN
7	D	96	ASN
7	D	138	HIS
8	E	4	ASN
8	E	56	HIS
8	E	106	GLN
8	E	150	GLN
11	H	93	ASN
14	K	72	ASN
15	L	11	ASN
17	N	2	GLN
17	N	23	GLN
22	S	7	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
22	S	13	GLN
23	T	30	GLN
25	a	16	HIS
25	a	58	GLN
25	a	91	ASN
25	a	146	GLN
25	a	159	GLN
25	a	262	HIS
25	a	286	GLN
26	b	63	ASN
26	b	67	GLN
26	b	94	GLN
26	b	144	GLN
26	b	157	GLN
27	c	126	HIS
27	c	177	ASN
28	d	63	GLN
28	d	72	ASN
29	e	24	HIS
29	e	33	GLN
30	f	11	ASN
30	f	99	ASN
30	f	100	GLN
32	h	13	ASN
32	h	40	ASN
32	h	113	ASN
33	i	138	GLN
34	j	70	GLN
35	k	102	GLN
36	l	13	HIS
36	l	108	ASN
39	o	82	HIS
40	p	40	GLN
42	r	7	GLN
42	r	52	ASN
42	r	102	ASN
42	r	121	GLN
44	t	65	GLN
44	t	109	ASN
46	v	30	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	3	2875/2907 (98%)	614 (21%)	24 (0%)
52	4	103/108 (95%)	28 (27%)	0
53	5	1490/1520 (98%)	308 (20%)	8 (0%)
54	6	75/76 (98%)	22 (29%)	2 (2%)
54	7	75/76 (98%)	22 (29%)	2 (2%)
55	Y	9/40 (22%)	4 (44%)	1 (11%)
All	All	4627/4727 (97%)	998 (21%)	37 (0%)

All (998) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	3	9	G
51	3	11	U
51	3	14	U
51	3	15	A
51	3	16	A
51	3	17	G
51	3	44	A
51	3	48	G
51	3	53	G
51	3	65	A
51	3	73	A
51	3	76	A
51	3	77	G
51	3	90	G
51	3	91	G
51	3	93	A
51	3	94	A
51	3	98	C
51	3	100	U
51	3	101	C
51	3	102	A
51	3	103	G
51	3	113	U
51	3	114	U
51	3	115	U
51	3	120	A
51	3	121	U
51	3	132	G
51	3	134	U
51	3	141	A
51	3	146	G
51	3	163	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	178	A
51	3	184	A
51	3	185	U
51	3	200	A
51	3	203	A
51	3	207	C
51	3	208	A
51	3	210	U
51	3	219	G
51	3	220	A
51	3	225	A
51	3	227	A
51	3	229	C
51	3	230	G
51	3	232	A
51	3	234	G
51	3	237	A
51	3	252	G
51	3	259	A
51	3	261	A
51	3	270	G
51	3	284	U
51	3	286	A
51	3	287	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	312	U
51	3	314	G
51	3	315	A
51	3	325	G
51	3	329	G
51	3	336	C
51	3	343	A
51	3	345	A
51	3	351	G
51	3	355	A
51	3	356	A
51	3	357	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	363	G
51	3	364	A
51	3	367	G
51	3	392	A
51	3	399	G
51	3	402	A
51	3	404	C
51	3	409	A
51	3	411	U
51	3	418	G
51	3	419	A
51	3	422	A
51	3	424	G
51	3	425	U
51	3	426	U
51	3	432	G
51	3	437	A
51	3	438	A
51	3	442	G
51	3	446	A
51	3	447	G
51	3	448	A
51	3	450	C
51	3	460	G
51	3	467	U
51	3	471	A
51	3	484	U
51	3	490	A
51	3	491	A
51	3	493	A
51	3	494	G
51	3	501	G
51	3	503	G
51	3	509	G
51	3	515	A
51	3	516	A
51	3	517	G
51	3	540	A
51	3	543	U
51	3	544	U
51	3	547	G
51	3	548	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	549	A
51	3	551	C
51	3	563	A
51	3	565	C
51	3	566	G
51	3	568	G
51	3	581	A
51	3	583	U
51	3	595	U
51	3	596	G
51	3	604	A
51	3	605	A
51	3	606	G
51	3	607	U
51	3	608	A
51	3	609	U
51	3	610	G
51	3	619	A
51	3	635	G
51	3	637	U
51	3	638	A
51	3	649	A
51	3	657	A
51	3	670	G
51	3	673	A
51	3	678	U
51	3	681	A
51	3	682	A
51	3	690	U
51	3	691	G
51	3	705	A
51	3	706	C
51	3	712	A
51	3	719	G
51	3	721	G
51	3	722	C
51	3	735	G
51	3	739	G
51	3	752	C
51	3	761	G
51	3	762	A
51	3	765	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	768	G
51	3	771	C
51	3	782	U
51	3	784	A
51	3	787	C
51	3	799	A
51	3	800	C
51	3	810	G
51	3	811	G
51	3	812	G
51	3	817	A
51	3	818	A
51	3	819	U
51	3	820	U
51	3	827	G
51	3	828	A
51	3	832	C
51	3	840	G
51	3	841	C
51	3	847	C
51	3	854	A
51	3	862	U
51	3	881	A
51	3	882	C
51	3	883	A
51	3	896	U
51	3	902	U
51	3	904	C
51	3	906	G
51	3	916	U
51	3	917	G
51	3	932	U
51	3	934	C
51	3	938	A
51	3	940	A
51	3	944	U
51	3	947	A
51	3	949	C
51	3	951	C
51	3	952	U
51	3	953	G
51	3	981	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	982	G
51	3	994	U
51	3	995	A
51	3	997	G
51	3	1009	A
51	3	1010	G
51	3	1011	A
51	3	1021	C
51	3	1026	A
51	3	1032	A
51	3	1033	A
51	3	1041	C
51	3	1044	C
51	3	1045	A
51	3	1049	U
51	3	1057	G
51	3	1060	G
51	3	1068	U
51	3	1075	G
51	3	1080	A
51	3	1081	A
51	3	1082	A
51	3	1092	A
51	3	1093	U
51	3	1095	U
51	3	1097	G
51	3	1102	A
51	3	1105	A
51	3	1106	G
51	3	1107	C
51	3	1117	U
51	3	1119	A
51	3	1123	A
51	3	1124	G
51	3	1125	U
51	3	1126	G
51	3	1132	C
51	3	1142	G
51	3	1147	G
51	3	1151	U
51	3	1154	U
51	3	1167	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	1168	A
51	3	1170	C
51	3	1172	G
51	3	1176	U
51	3	1177	A
51	3	1186	A
51	3	1190	A
51	3	1203	G
51	3	1204	A
51	3	1210	A
51	3	1234	U
51	3	1235	U
51	3	1240	U
51	3	1241	U
51	3	1250	A
51	3	1251	G
51	3	1257	G
51	3	1265	G
51	3	1266	G
51	3	1267	A
51	3	1268	U
51	3	1278	G
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	1296	G
51	3	1297	U
51	3	1298	A
51	3	1301	G
51	3	1304	U
51	3	1306	G
51	3	1328	A
51	3	1329	U
51	3	1339	U
51	3	1340	U
51	3	1342	C
51	3	1357	U
51	3	1359	C
51	3	1360	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	1361	U
51	3	1369	U
51	3	1380	U
51	3	1393	A
51	3	1406	A
51	3	1407	U
51	3	1412	A
51	3	1414	C
51	3	1423	A
51	3	1424	U
51	3	1426	C
51	3	1431	A
51	3	1437	A
51	3	1444	C
51	3	1452	G
51	3	1453	U
51	3	1455	A
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	1486	U
51	3	1487	U
51	3	1507	G
51	3	1508	G
51	3	1510	A
51	3	1514	U
51	3	1523	C
51	3	1534	A
51	3	1541	A
51	3	1548	A
51	3	1550	G
51	3	1571	G
51	3	1579	G
51	3	1580	G
51	3	1582	G
51	3	1584	U
51	3	1585	A
51	3	1588	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	1597	U
51	3	1612	U
51	3	1615	G
51	3	1618	U
51	3	1619	A
51	3	1622	C
51	3	1637	A
51	3	1641	A
51	3	1643	A
51	3	1651	C
51	3	1681	G
51	3	1682	C
51	3	1683	G
51	3	1687	G
51	3	1688	A
51	3	1694	A
51	3	1708	G
51	3	1713	U
51	3	1714	U
51	3	1715	A
51	3	1716	A
51	3	1727	U
51	3	1729	G
51	3	1732	A
51	3	1733	G
51	3	1734	A
51	3	1735	A
51	3	1747	G
51	3	1748	U
51	3	1752	A
51	3	1764	U
51	3	1765	G
51	3	1766	A
51	3	1769	A
51	3	1770	A
51	3	1771	C
51	3	1774	G
51	3	1780	A
51	3	1788	A
51	3	1791	A
51	3	1805	U
51	3	1807	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	1809	A
51	3	1815	U
51	3	1821	G
51	3	1823	U
51	3	1836	A
51	3	1845	C
51	3	1872	U
51	3	1876	G
51	3	1891	A
51	3	1906	G
51	3	1910	G
51	3	1913	G
51	3	1914	G
51	3	1920	A
51	3	1922	U
51	3	1933	U
51	3	1936	G
51	3	1937	G
51	3	1938	U
51	3	1943	A
51	3	1944	A
51	3	1952	G
51	3	1958	U
51	3	1962	U
51	3	1971	G
51	3	1977	A
51	3	1978	U
51	3	1979	G
51	3	1996	A
51	3	1998	U
51	3	1999	G
51	3	2000	U
51	3	2004	G
51	3	2009	U
51	3	2010	A
51	3	2027	G
51	3	2030	A
51	3	2038	A
51	3	2039	G
51	3	2040	A
51	3	2041	C
51	3	2043	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	2050	G
51	3	2053	G
51	3	2057	C
51	3	2058	G
51	3	2059	G
51	3	2062	C
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	2107	A
51	3	2108	C
51	3	2110	U
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	2125	U
51	3	2127	G
51	3	2131	G
51	3	2132	G
51	3	2138	U
51	3	2139	C
51	3	2140	G
51	3	2141	A
51	3	2144	C
51	3	2145	A
51	3	2153	U
51	3	2159	U
51	3	2165	A
51	3	2166	U
51	3	2171	A
51	3	2177	G
51	3	2178	A
51	3	2180	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	2187	C
51	3	2195	U
51	3	2196	G
51	3	2198	G
51	3	2202	U
51	3	2206	A
51	3	2207	A
51	3	2222	C
51	3	2233	A
51	3	2246	G
51	3	2247	G
51	3	2274	A
51	3	2276	A
51	3	2277	A
51	3	2286	A
51	3	2288	G
51	3	2291	U
51	3	2294	A
51	3	2295	A
51	3	2305	C
51	3	2307	G
51	3	2309	A
51	3	2316	G
51	3	2327	U
51	3	2329	G
51	3	2333	G
51	3	2335	A
51	3	2341	G
51	3	2342	U
51	3	2343	A
51	3	2353	G
51	3	2354	A
51	3	2355	C
51	3	2358	U
51	3	2366	A
51	3	2369	G
51	3	2388	C
51	3	2391	G
51	3	2393	C
51	3	2399	G
51	3	2410	C
51	3	2411	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	2414	U
51	3	2419	A
51	3	2420	A
51	3	2422	G
51	3	2431	U
51	3	2433	A
51	3	2435	C
51	3	2437	G
51	3	2438	A
51	3	2441	A
51	3	2449	U
51	3	2450	C
51	3	2455	G
51	3	2456	A
51	3	2457	U
51	3	2458	A
51	3	2460	C
51	3	2472	G
51	3	2477	A
51	3	2483	C
51	3	2484	A
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	2506	C
51	3	2507	C
51	3	2508	U
51	3	2510	G
51	3	2511	A
51	3	2512	U
51	3	2513	G
51	3	2521	A
51	3	2526	A
51	3	2527	U
51	3	2528	C
51	3	2539	A
51	3	2540	G
51	3	2543	G
51	3	2550	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	2551	G
51	3	2561	G
51	3	2562	U
51	3	2564	C
51	3	2572	A
51	3	2574	A
51	3	2575	G
51	3	2577	G
51	3	2580	A
51	3	2581	C
51	3	2584	G
51	3	2586	G
51	3	2590	G
51	3	2593	U
51	3	2594	C
51	3	2595	A
51	3	2606	A
51	3	2610	A
51	3	2611	G
51	3	2614	U
51	3	2617	U
51	3	2619	C
51	3	2621	U
51	3	2623	U
51	3	2629	G
51	3	2638	G
51	3	2647	A
51	3	2649	G
51	3	2655	U
51	3	2664	U
51	3	2668	A
51	3	2669	G
51	3	2681	G
51	3	2687	A
51	3	2690	U
51	3	2697	C
51	3	2698	U
51	3	2715	C
51	3	2722	G
51	3	2740	U
51	3	2741	A
51	3	2752	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	3	2756	A
51	3	2760	C
51	3	2763	C
51	3	2765	A
51	3	2773	A
51	3	2774	A
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	2812	U
51	3	2813	A
51	3	2822	C
51	3	2824	A
51	3	2839	A
51	3	2853	U
51	3	2862	U
51	3	2863	G
51	3	2865	U
51	3	2871	G
51	3	2876	G
51	3	2877	A
51	3	2881	A
51	3	2888	U
51	3	2890	G
51	3	2895	A
51	3	2897	G
51	3	2898	A
51	3	2899	C
52	4	6	U
52	4	9	C
52	4	10	C
52	4	11	A
52	4	13	G
52	4	14	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
52	4	16	G
52	4	22	G
52	4	23	A
52	4	25	A
52	4	28	C
52	4	31	G
52	4	33	U
52	4	37	A
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	60	C
52	4	86	G
52	4	89	A
52	4	97	A
52	4	99	A
52	4	106	A
53	5	9	A
53	5	10	G
53	5	21	U
53	5	36	G
53	5	37	C
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	77	U
53	5	78	A
53	5	102	G
53	5	106	C
53	5	115	A
53	5	116	A
53	5	117	U
53	5	120	A
53	5	127	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
53	5	129	U
53	5	136	U
53	5	148	A
53	5	149	G
53	5	159	U
53	5	163	G
53	5	164	C
53	5	167	A
53	5	168	A
53	5	169	G
53	5	173	U
53	5	197	A
53	5	210	G
53	5	220	U
53	5	222	U
53	5	223	G
53	5	236	C
53	5	241	C
53	5	242	A
53	5	243	G
53	5	246	A
53	5	249	U
53	5	258	A
53	5	261	G
53	5	262	G
53	5	263	C
53	5	266	A
53	5	274	A
53	5	275	A
53	5	276	U
53	5	285	G
53	5	295	G
53	5	297	A
53	5	301	G
53	5	302	A
53	5	317	A
53	5	323	A
53	5	324	C
53	5	325	A
53	5	326	C
53	5	328	G
53	5	341	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
53	5	342	G
53	5	343	G
53	5	348	C
53	5	349	A
53	5	352	A
53	5	353	G
53	5	363	U
53	5	365	U
53	5	368	C
53	5	369	A
53	5	380	G
53	5	384	G
53	5	388	G
53	5	393	A
53	5	402	G
53	5	407	A
53	5	408	U
53	5	409	G
53	5	410	A
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	427	A
53	5	433	C
53	5	448	A
53	5	449	A
53	5	450	U
53	5	452	A
53	5	455	U
53	5	456	U
53	5	461	G
53	5	463	U
53	5	464	A
53	5	467	G
53	5	476	U
53	5	478	G
53	5	482	G
53	5	483	U
53	5	488	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
53	5	489	U
53	5	494	A
53	5	495	U
53	5	497	A
53	5	498	G
53	5	507	A
53	5	509	C
53	5	516	C
53	5	519	G
53	5	522	G
53	5	525	G
53	5	529	U
53	5	530	A
53	5	531	A
53	5	533	A
53	5	545	A
53	5	546	G
53	5	547	C
53	5	548	G
53	5	557	A
53	5	561	A
53	5	562	U
53	5	564	G
53	5	565	G
53	5	570	A
53	5	571	A
53	5	572	A
53	5	574	C
53	5	575	A
53	5	585	G
53	5	586	G
53	5	591	A
53	5	592	A
53	5	593	A
53	5	594	A
53	5	618	U
53	5	620	A
53	5	628	A
53	5	629	U
53	5	632	A
53	5	650	A
53	5	662	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
53	5	672	A
53	5	673	A
53	5	682	G
53	5	699	A
53	5	716	C
53	5	717	C
53	5	718	A
53	5	719	G
53	5	721	G
53	5	724	G
53	5	731	A
53	5	745	U
53	5	751	C
53	5	752	G
53	5	774	A
53	5	775	G
53	5	790	U
53	5	810	U
53	5	812	A
53	5	814	C
53	5	825	A
53	5	838	A
53	5	840	C
53	5	841	C
53	5	849	A
53	5	866	A
53	5	870	A
53	5	882	U
53	5	883	A
53	5	895	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	929	C
53	5	930	A
53	5	934	G
53	5	937	G
53	5	950	C
53	5	951	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
53	5	953	A
53	5	955	U
53	5	961	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	976	U
53	5	987	U
53	5	988	G
53	5	999	C
53	5	1000	A
53	5	1001	A
53	5	1008	G
53	5	1012	A
53	5	1013	C
53	5	1014	A
53	5	1016	A
53	5	1018	U
53	5	1031	A
53	5	1034	G
53	5	1036	C
53	5	1041	G
53	5	1044	G
53	5	1045	C
53	5	1047	U
53	5	1056	U
53	5	1057	C
53	5	1061	U
53	5	1069	U
53	5	1072	G
53	5	1085	G
53	5	1086	U
53	5	1092	A
53	5	1115	G
53	5	1117	U
53	5	1118	A
53	5	1119	C
53	5	1121	U
53	5	1122	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
53	5	1123	G
53	5	1124	U
53	5	1125	C
53	5	1128	G
53	5	1130	G
53	5	1134	C
53	5	1135	U
53	5	1141	U
53	5	1159	A
53	5	1165	G
53	5	1171	A
53	5	1172	A
53	5	1173	A
53	5	1176	A
53	5	1181	G
53	5	1186	U
53	5	1187	U
53	5	1188	A
53	5	1200	G
53	5	1202	A
53	5	1203	A
53	5	1208	G
53	5	1211	A
53	5	1214	A
53	5	1233	G
53	5	1235	C
53	5	1253	A
53	5	1255	A
53	5	1260	U
53	5	1261	A
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	1313	A
53	5	1314	A
53	5	1315	U
53	5	1320	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
53	5	1321	G
53	5	1326	C
53	5	1331	A
53	5	1337	U
53	5	1338	A
53	5	1343	G
53	5	1349	A
53	5	1353	C
53	5	1354	G
53	5	1369	A
53	5	1372	C
53	5	1373	A
53	5	1374	C
53	5	1375	C
53	5	1376	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
53	5	1459	U
53	5	1464	G
53	5	1466	U
53	5	1467	A
53	5	1469	G
53	5	1474	A
53	5	1478	A
53	5	1481	U
53	5	1482	A
53	5	1492	G
53	5	1495	C
53	5	1504	G
53	5	1505	G
54	6	3	G
54	6	9	U
54	6	10	A
54	6	16	G
54	6	17	U
54	6	19	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
54	6	20	G
54	6	22	A
54	6	24	A
54	6	38	G
54	6	44	U
54	6	49	C
54	6	53	A
54	6	54	G
54	6	55	U
54	6	57	C
54	6	58	G
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	9	U
54	7	10	A
54	7	16	G
54	7	17	U
54	7	19	G
54	7	20	G
54	7	22	A
54	7	24	A
54	7	38	G
54	7	44	U
54	7	49	C
54	7	53	A
54	7	54	G
54	7	55	U
54	7	57	C
54	7	58	G
54	7	72	C
54	7	73	C
54	7	74	A
54	7	75	C
54	7	76	C
55	Y	15	U
55	Y	16	U
55	Y	19	U
55	Y	20	U

All (37) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	3	226	A
51	3	292	G
51	3	410	G
51	3	605	A
51	3	881	A
51	3	901	C
51	3	903	A
51	3	996	A
51	3	1048	A
51	3	1081	A
51	3	1209	U
51	3	1297	U
51	3	1507	G
51	3	1583	G
51	3	1587	U
51	3	1820	U
51	3	1936	G
51	3	2342	U
51	3	2504	C
51	3	2506	C
51	3	2512	U
51	3	2764	U
51	3	2823	A
51	3	2862	U
53	5	196	G
53	5	240	U
53	5	463	U
53	5	619	A
53	5	716	C
53	5	839	U
53	5	975	C
53	5	1468	A
54	6	16	G
54	6	57	C
54	7	16	G
54	7	57	C
55	Y	14	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
56	CLM	3	3001	-	20,20,20	1.29	1 (5%)	23,27,27	0.91	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
56	CLM	3	3001	-	-	0/20/22/22	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	3	3001	CLM	C9-N9	-4.34	1.34	1.45

There are no bond angle outliers.

There are no chirality outliers.

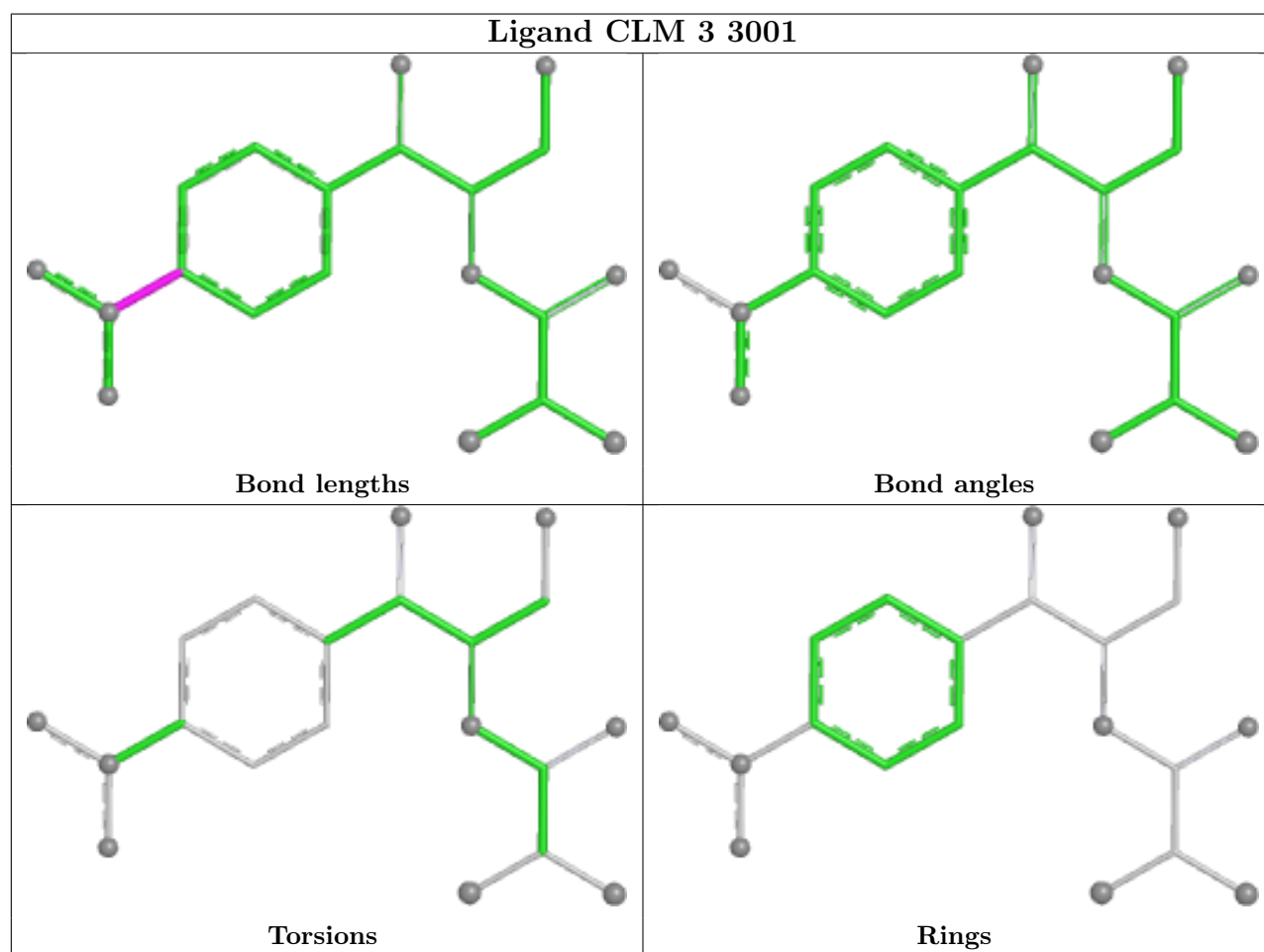
There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
56	3	3001	CLM	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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.

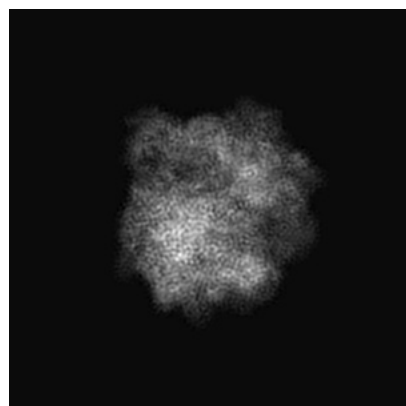
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13412. These allow visual inspection of the internal detail of the map and identification of artifacts.

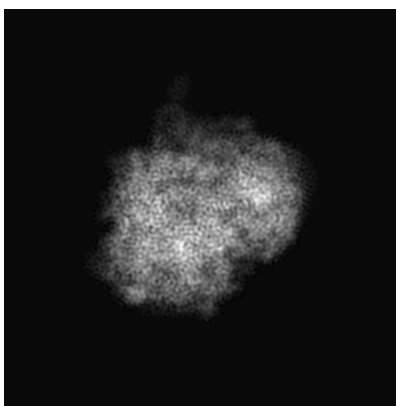
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

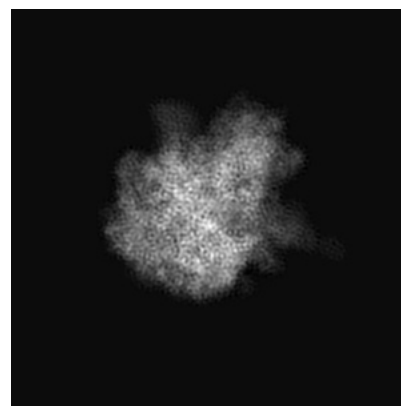
6.1.1 Primary map



X

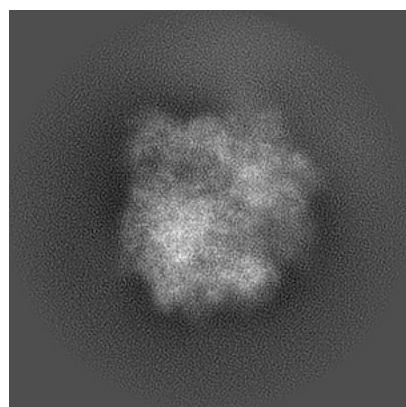


Y

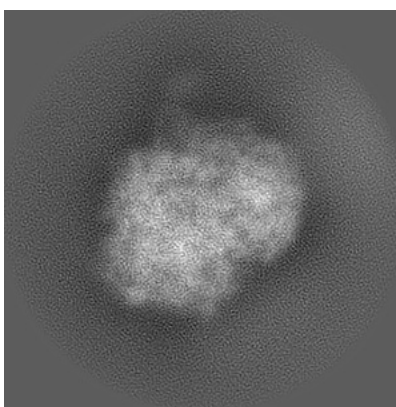


Z

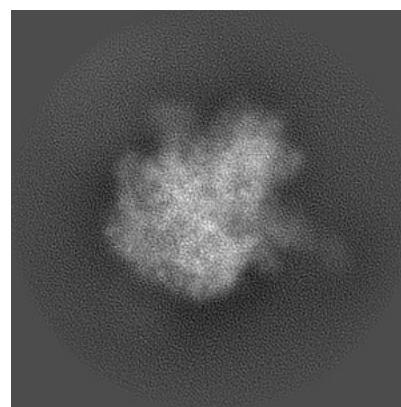
6.1.2 Raw map



X



Y

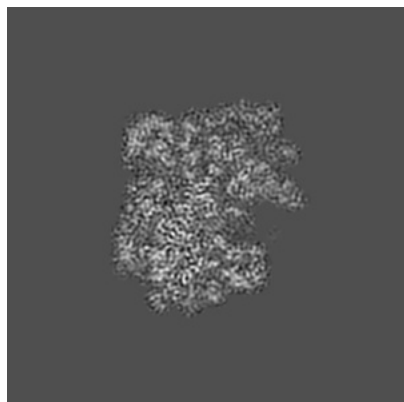


Z

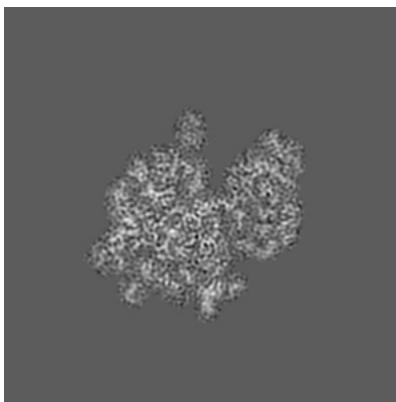
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

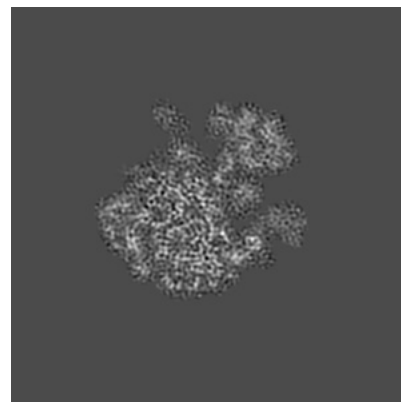
6.2.1 Primary map



X Index: 128

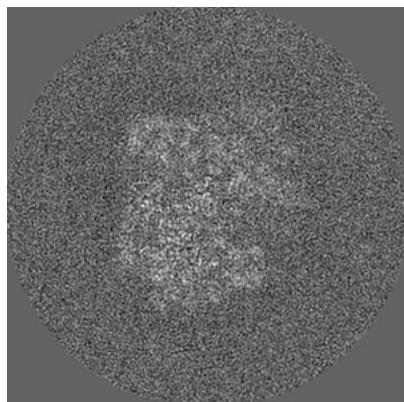


Y Index: 128

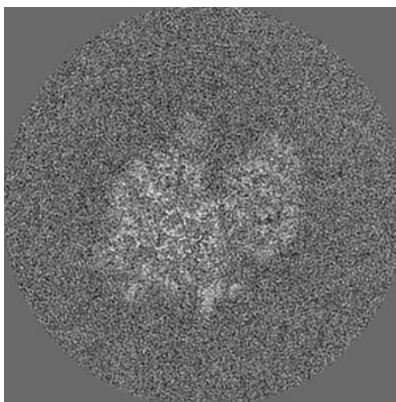


Z Index: 128

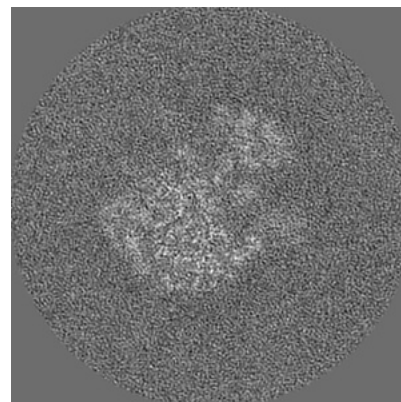
6.2.2 Raw map



X Index: 128



Y Index: 128

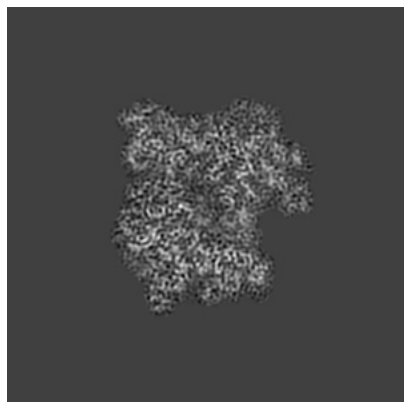


Z Index: 128

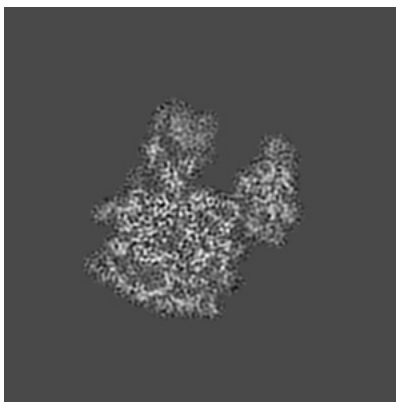
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 135

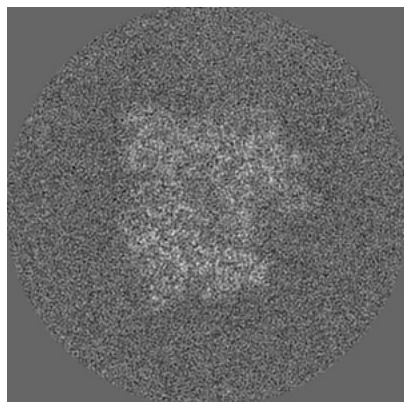


Y Index: 116

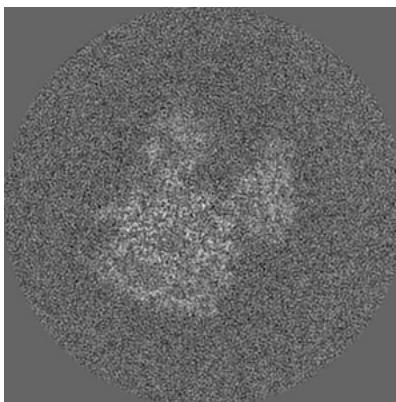


Z Index: 113

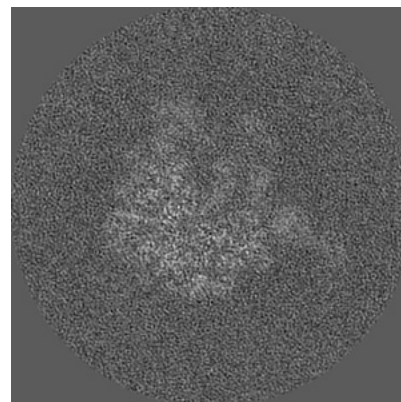
6.3.2 Raw map



X Index: 135



Y Index: 116

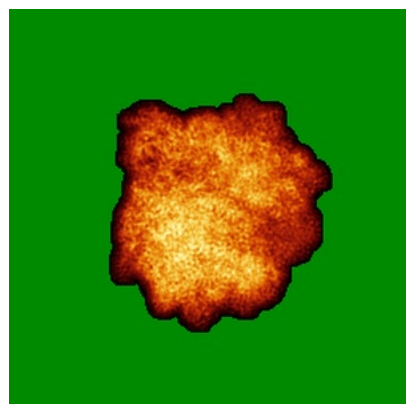


Z Index: 113

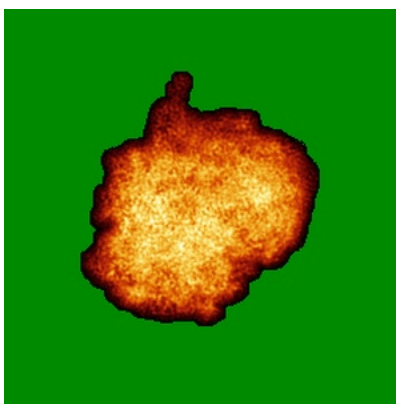
The images above show the largest variance slices of the map in three orthogonal directions.

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

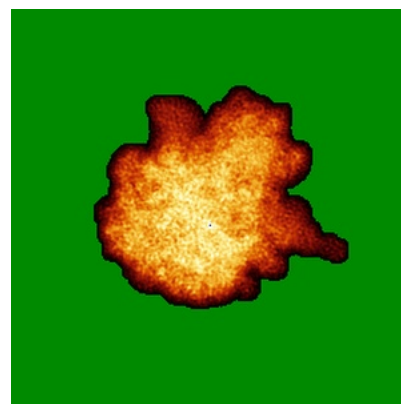
6.4.1 Primary map



X

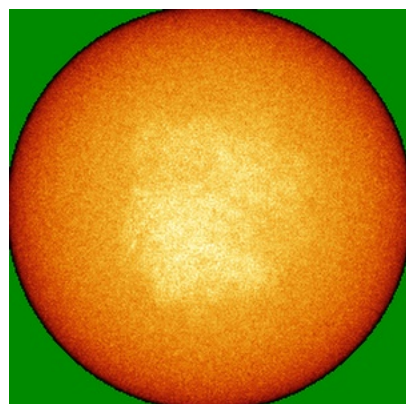


Y

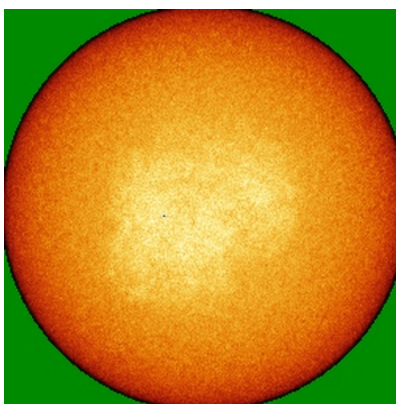


Z

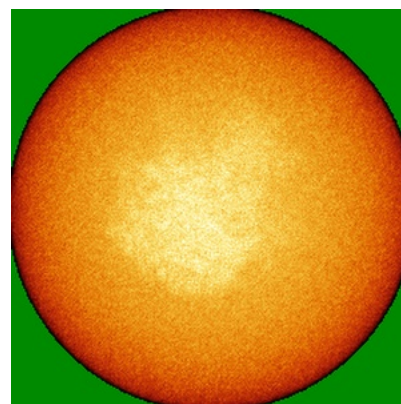
6.4.2 Raw map



X



Y

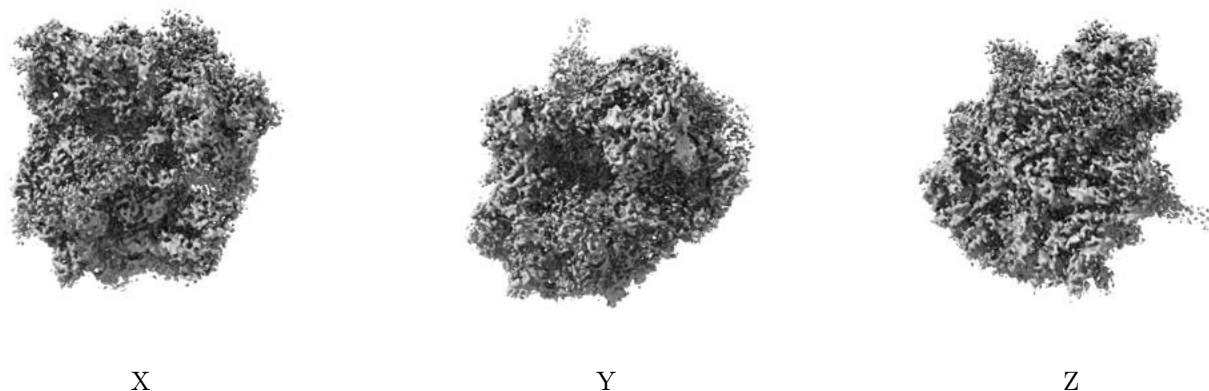


Z

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.

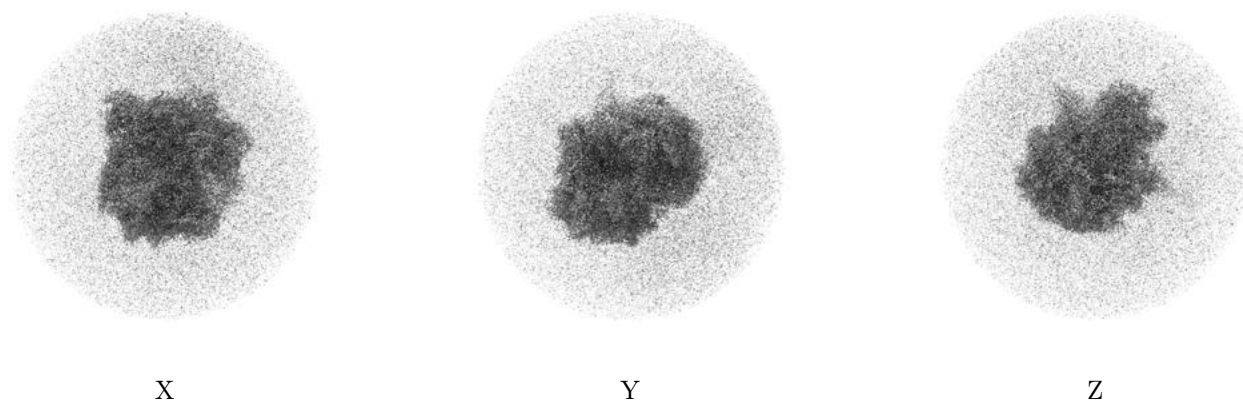
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.7. 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.

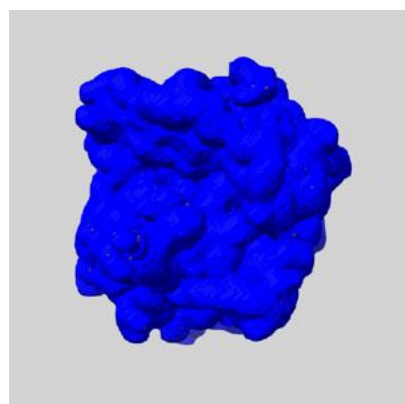
6.6 Mask visualisation [i](#)

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

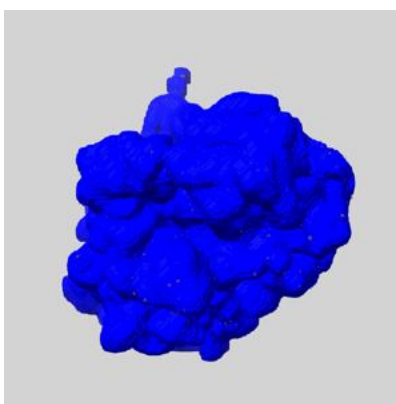
A mask typically either:

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

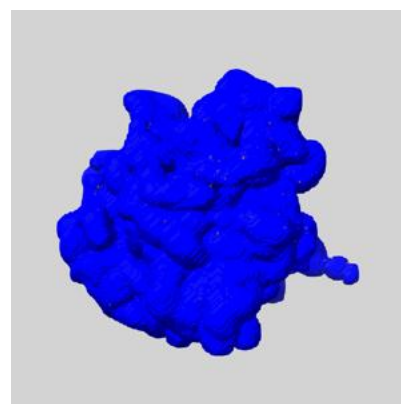
6.6.1 emd_13412_msk_1.map [i](#)



X



Y

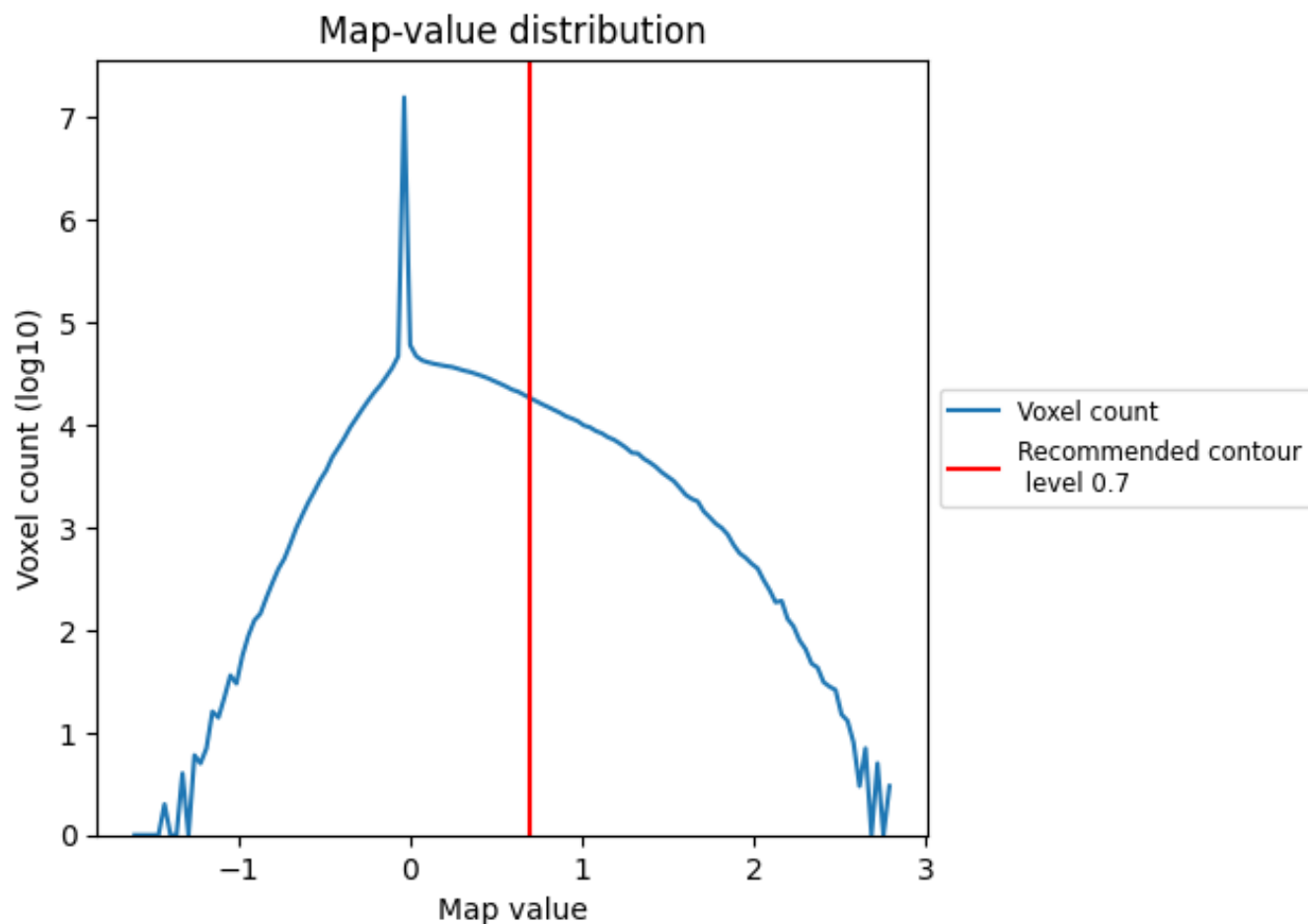


Z

7 Map analysis [i](#)

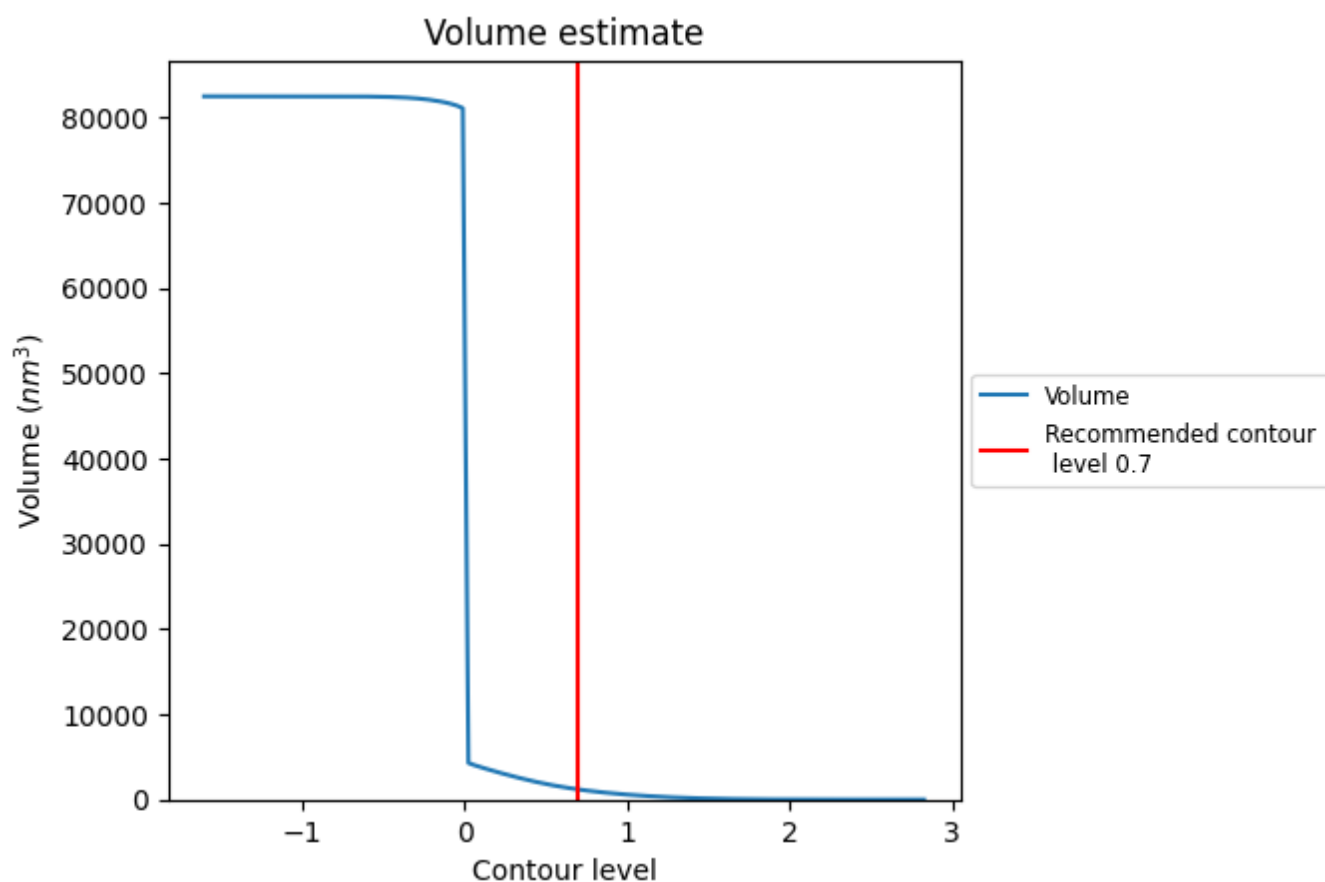
This section contains the results of statistical analysis of the map.

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.

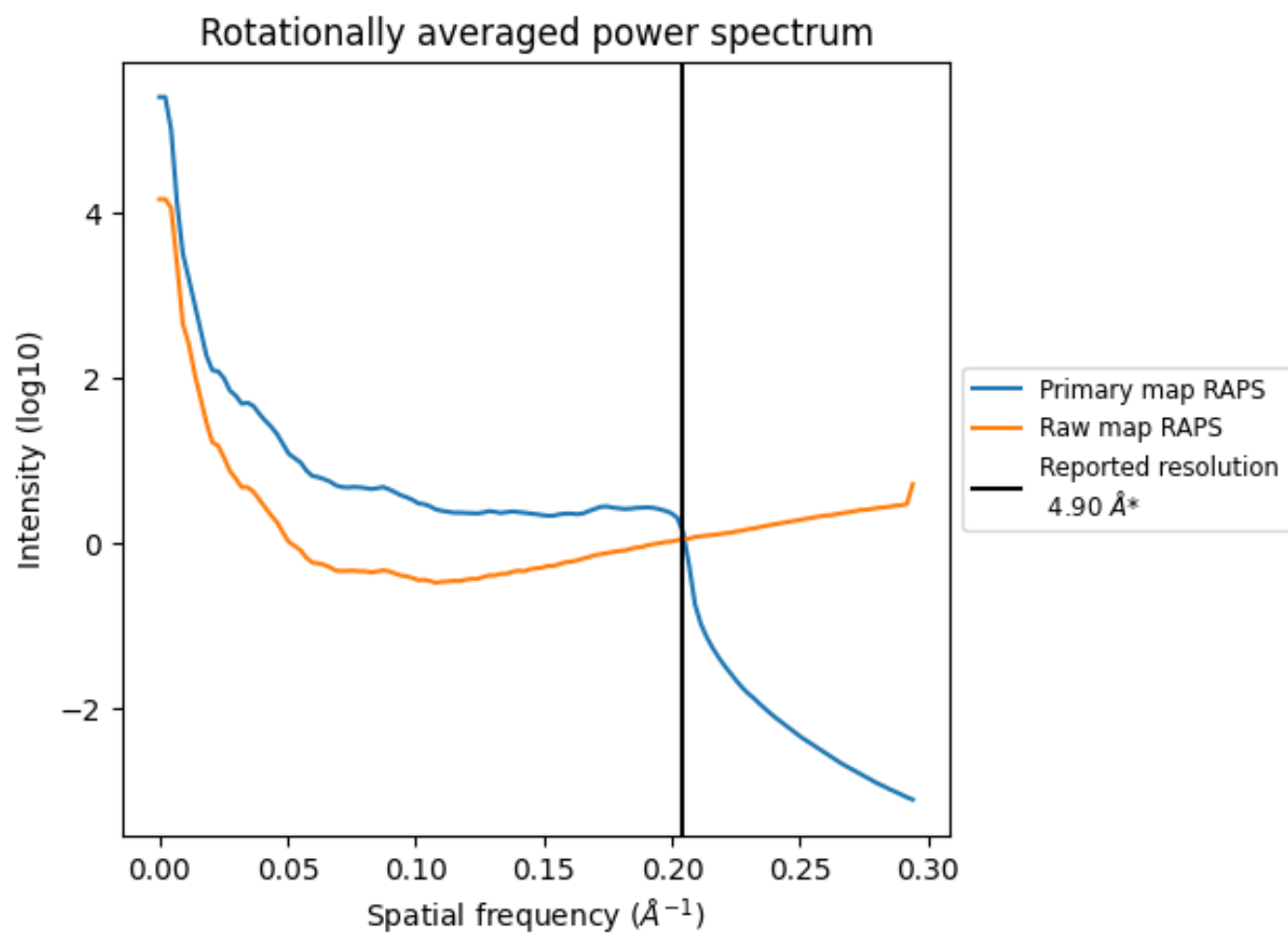
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1192 nm³; this corresponds to an approximate mass of 1076 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)

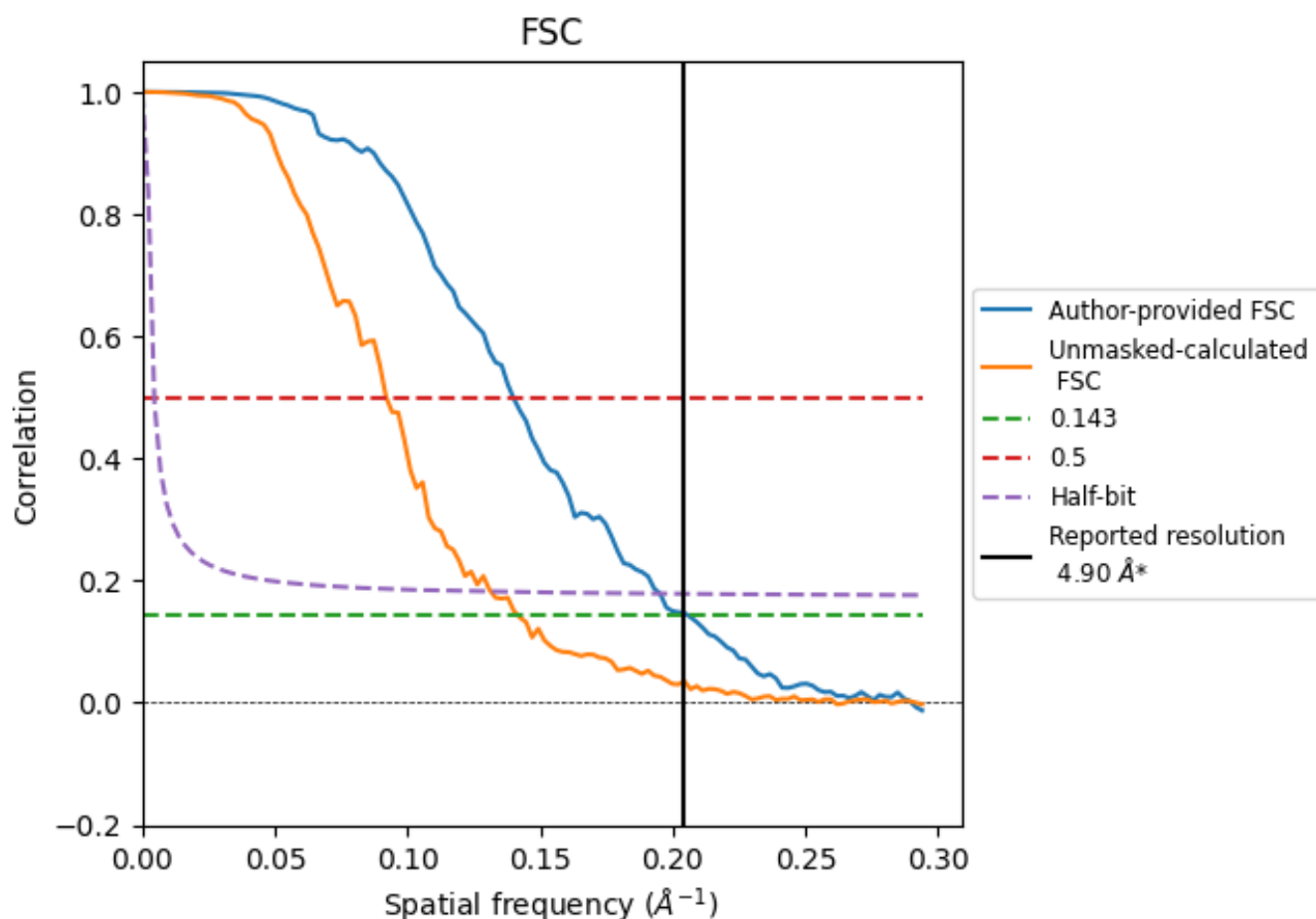


*Reported resolution corresponds to spatial frequency of 0.204 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.204 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

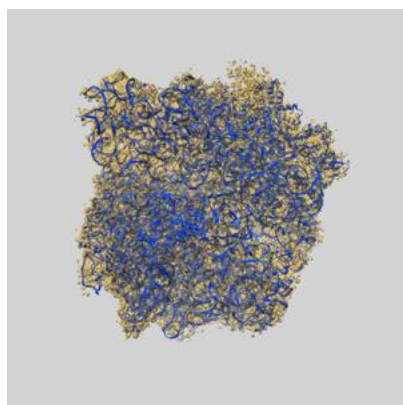
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.90	-	-
Author-provided FSC curve	4.86	7.15	5.12
Unmasked-calculated*	7.06	10.87	7.60

*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 7.06 differs from the reported value 4.9 by more than 10 %

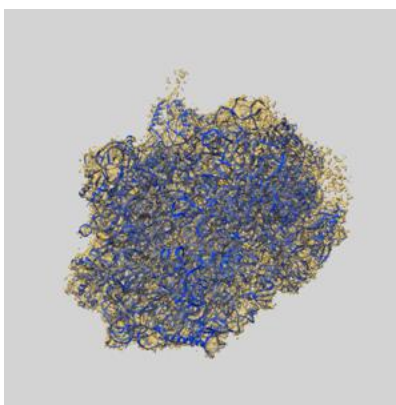
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13412 and PDB model 7PHB. Per-residue inclusion information can be found in section 3 on page 15.

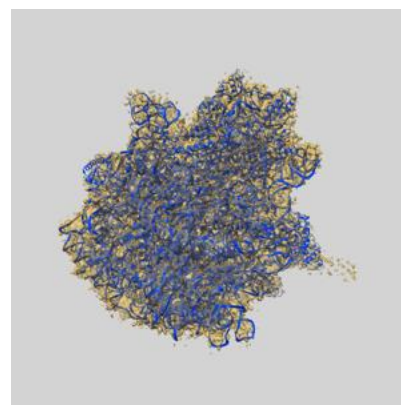
9.1 Map-model overlay [i](#)



X



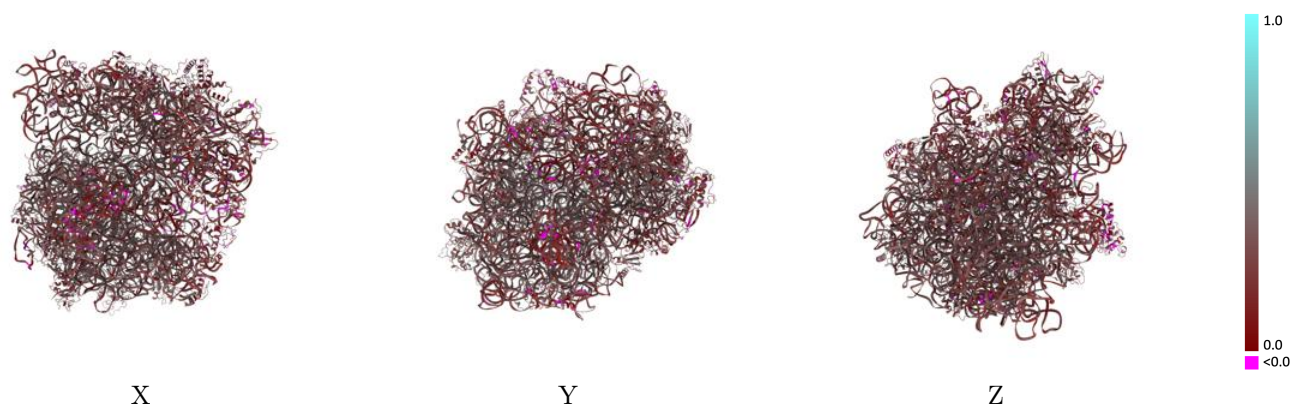
Y



Z

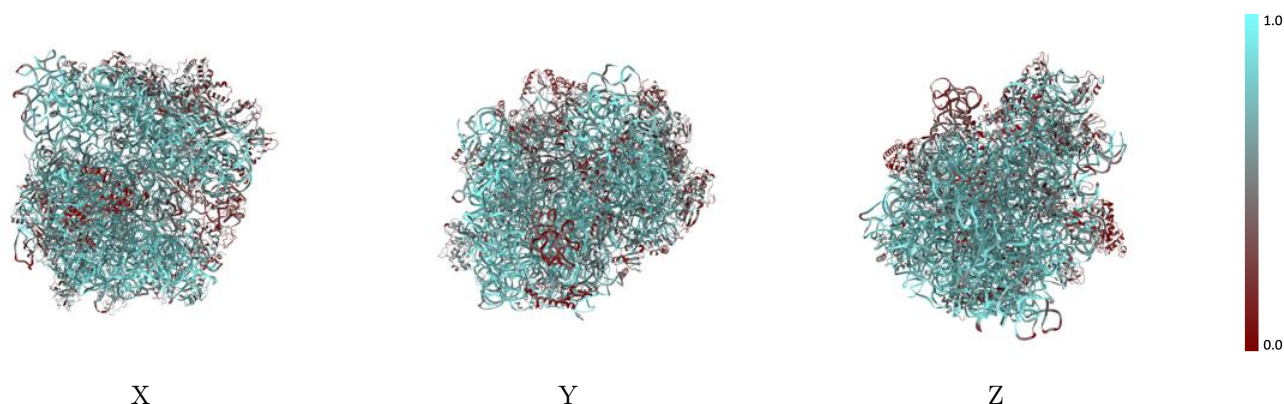
The images above show the 3D surface view of the map at the recommended contour level 0.7 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



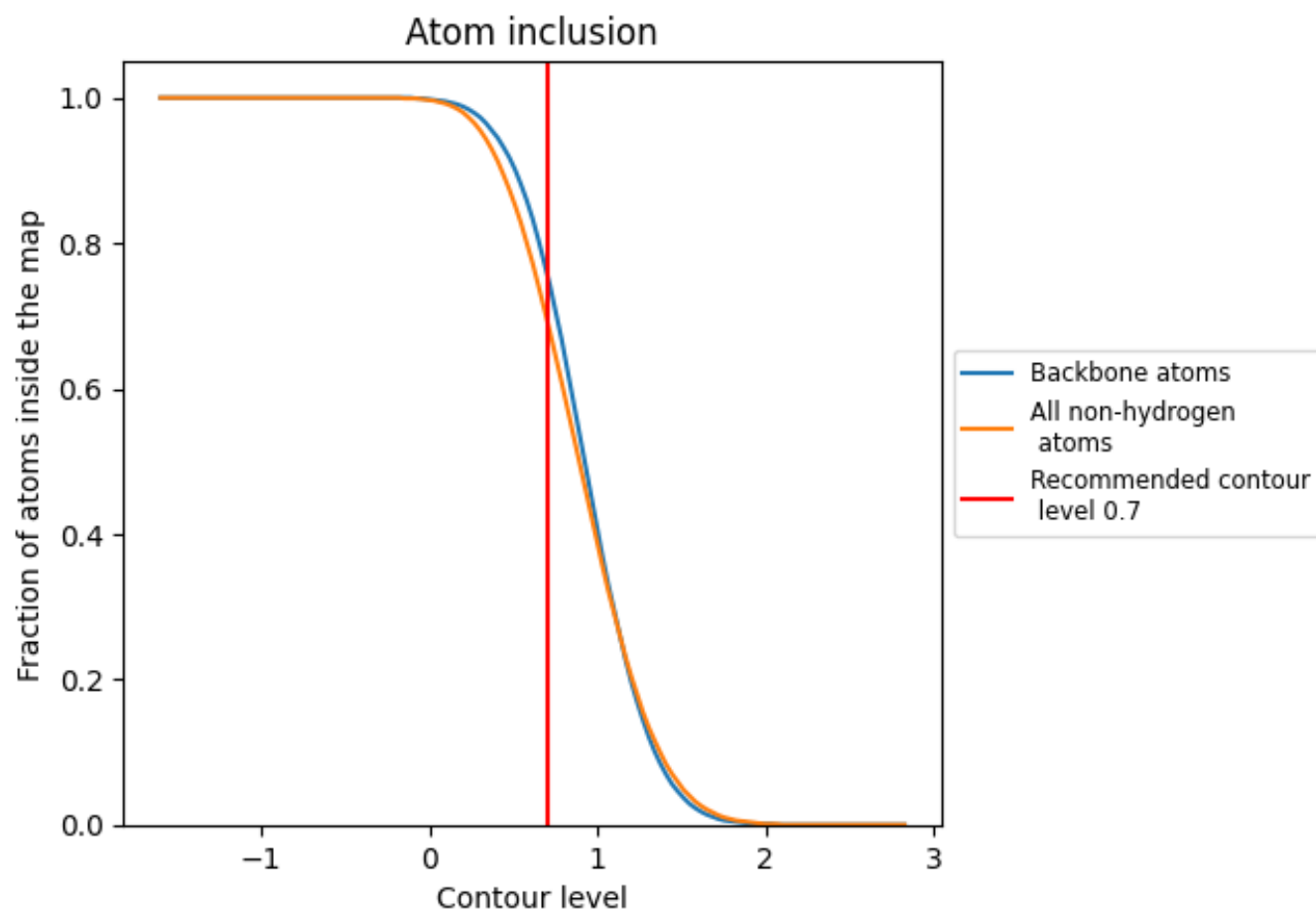
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.7).

9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 69% 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 (0.7) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6930	 0.2970
0	 0.6710	 0.3510
1	 0.6460	 0.3330
2	 0.6550	 0.3400
3	 0.8070	 0.3080
4	 0.7660	 0.2840
5	 0.7860	 0.2890
6	 0.6450	 0.2580
7	 0.5340	 0.1350
A	 0.4020	 0.2670
B	 0.4540	 0.2930
C	 0.4390	 0.2770
D	 0.4950	 0.3030
E	 0.3330	 0.2720
F	 0.3780	 0.2420
G	 0.4480	 0.2670
H	 0.4150	 0.2730
I	 0.3890	 0.2680
J	 0.4590	 0.2930
K	 0.5490	 0.3310
L	 0.4120	 0.2730
M	 0.4990	 0.2860
N	 0.4670	 0.2640
O	 0.5150	 0.2760
P	 0.4340	 0.2850
Q	 0.5120	 0.2710
R	 0.4130	 0.2480
S	 0.5560	 0.2660
T	 0.4350	 0.2730
Y	 0.8640	 0.3470
Z	 0.8800	 0.4790
a	 0.6150	 0.3320
b	 0.5810	 0.3240
c	 0.5610	 0.3290
d	 0.3600	 0.2420



Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
e	 0.4400	 0.3080
f	 0.1410	 0.2150
g	 0.2020	 0.2110
h	 0.1250	 0.2030
i	 0.5770	 0.3220
j	 0.5690	 0.3440
k	 0.5730	 0.3430
l	 0.6000	 0.3290
m	 0.6350	 0.3220
n	 0.5580	 0.2840
o	 0.5460	 0.3320
p	 0.5870	 0.2830
q	 0.5730	 0.3410
r	 0.6030	 0.3380
s	 0.5710	 0.3240
t	 0.4120	 0.3200
u	 0.5830	 0.3290
v	 0.6080	 0.3440
w	 0.4930	 0.2840
x	 0.2830	 0.2270
y	 0.6340	 0.3500
z	 0.5590	 0.3290