Full wwPDB EM Validation Report

Mar 5, 2026 – 07:31 PM UTC

PDB ID	:	8P7Y / pdb_00008p7y
EMDB ID	:	EMD-17135
Title	:	Mycoplasma pneumoniae 70S ribosome with second S4 protein on large subunit
Authors	:	Schacherl, M.; Xue, L.; Spahn, C.M.T.; Mahamid, J.
Deposited on	:	2023-05-31
Resolution	:	3.70 Å(reported)
Based on initial models	:	7OOC, 7OOD

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:

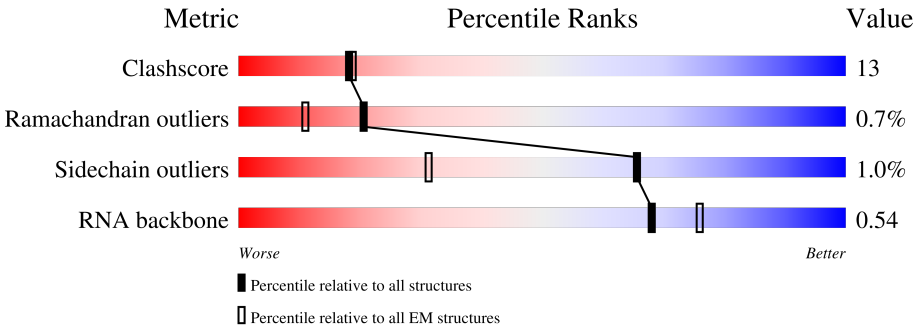
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data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

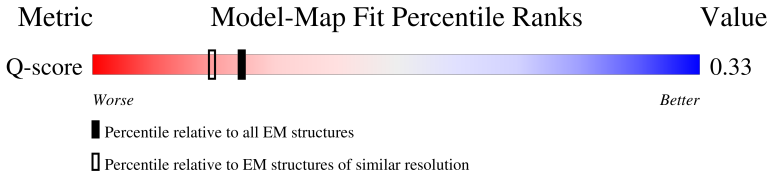
1 Overall quality at a glance

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

The reported resolution of this entry is 3.70 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	11569 (3.20 - 4.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	75% 23%
2	1	59	71% 29%
3	2	37	70% 27%

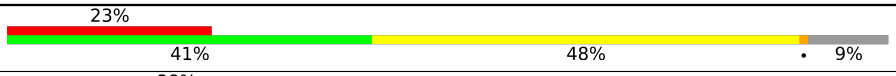
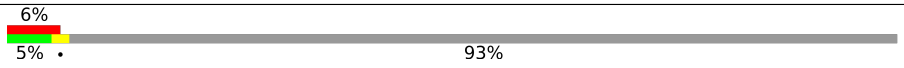
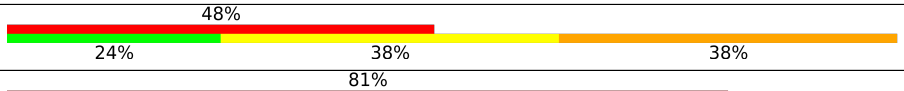
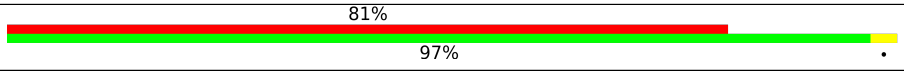
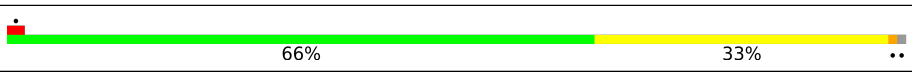
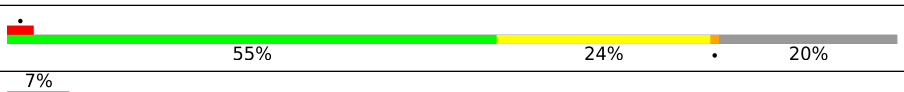
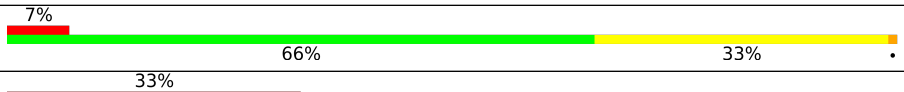
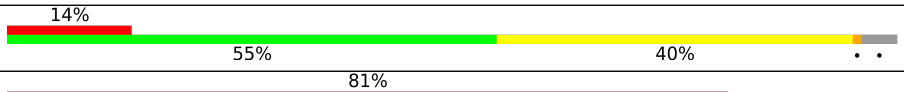
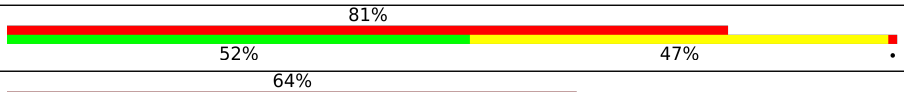
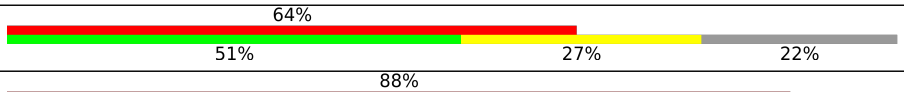
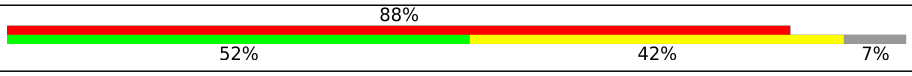
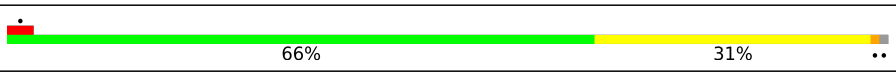
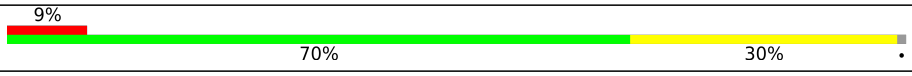
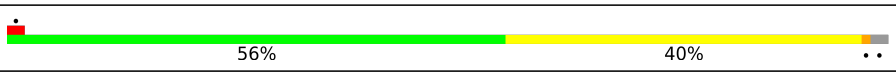
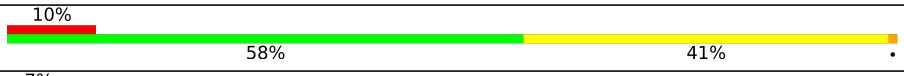
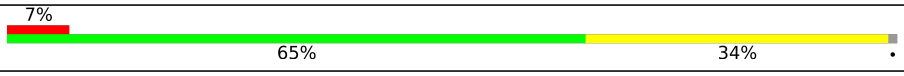
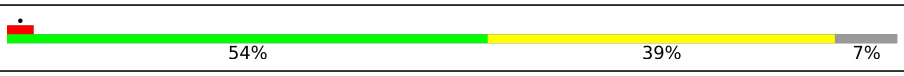
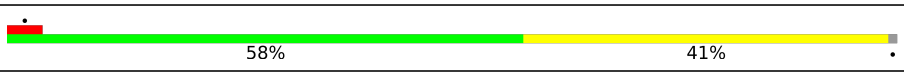
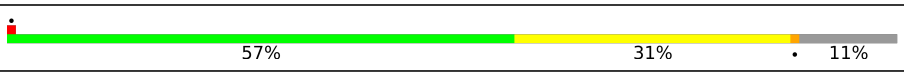
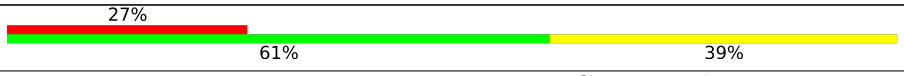
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
4	3	2907	5% 62% 32% 6%
5	4	108	60% 32% 7%
6	5	1520	7% 57% 35% 7%
7	6	76	97% 37% 39% 22%
8	7	75	5% 49% 37% 12%
9	8	76	55% 53% 41% 7%
10	A	294	48% 44% 45% 10%
11	B	273	26% 44% 39% 15%
12	C	205	54% 52% 47%
12	U	205	49% 37% 54% 8%
13	D	219	20% 41% 30% 29%
14	E	215	57% 43% 43% 14%
15	F	155	55% 45% 54%
16	G	142	41% 42% 56%
17	H	132	45% 54% 44%
18	I	108	49% 44% 52%
19	J	121	37% 44% 48% 6%
20	K	139	19% 57% 38%
21	L	124	60% 46% 51%
22	M	61	21% 48% 49%
23	N	86	37% 62% 37%
24	O	94	43% 47% 46% 7%
25	P	85	54% 48% 48%
26	Q	104	38% 36% 31% 32%
27	R	87	60% 48% 51%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
28	S	87	
29	T	60	
30	X	444	
31	Y	21	
32	Z	36	
33	a	287	
34	b	287	
35	c	212	
36	d	180	
37	e	184	
38	f	149	
39	g	161	
40	h	137	
41	i	146	
42	j	122	
43	k	151	
44	l	139	
45	m	124	
46	n	116	
47	o	119	
48	p	127	
49	q	100	
50	r	159	
51	s	237	
52	t	111	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
53	u	104	6% 57% 27% 15%
54	v	65	9% 38% 60%
55	w	111	17% 59% 39%
56	x	97	73% 63% 35%
57	y	57	75% 23%
58	z	53	6% 66% 28% 6%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
65	SPD	5	1601	-	-	X	-

2 Entry composition

There are 67 unique types of molecules in this entry. The entry contains 153255 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
			Total	C	N	O	S		
1	0	48	392	242	85	63	2	0	0

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

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

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

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

- Molecule 4 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	3	2893	61995	27704	11293	20105	2893	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	4	108	2305	1030	415	752	108	0	0

- Molecule 6 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	5	1507	32258	14420	5847	10484	1507	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
5	1003	A	G	conflict	GB 26117688

- Molecule 7 is a RNA chain called tRNA-Ala (E-site).

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	76	Total	C	N	O	P	0	0
			1620	723	287	534	76		

- Molecule 8 is a RNA chain called tRNA-Asp (P-site).

Mol	Chain	Residues	Atoms					AltConf	Trace
8	7	75	Total	C	N	O	P	0	0
			1599	712	279	533	75		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
7	17	G	-	insertion	GB 26117688
7	55	C	U	conflict	GB 26117688

- Molecule 9 is a RNA chain called tRNA-Lys (A-site).

Mol	Chain	Residues	Atoms					AltConf	Trace
9	8	76	Total	C	N	O	P	0	0
			1615	722	284	533	76		

- Molecule 10 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	A	266	Total	C	N	O	S	0	0
			2138	1359	376	394	9		

- Molecule 11 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	B	232	Total	C	N	O	S	0	0
			1835	1158	343	329	5		

- Molecule 12 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	C	204	Total	C	N	O	S	0	0
			1669	1057	316	292	4		
12	U	204	Total	C	N	O	S	0	0
			1669	1057	316	292	4		

- Molecule 13 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	D	155	Total	C	N	O	S	0	0
			1191	753	228	207	3		

- Molecule 14 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	E	184	Total	C	N	O	S	0	0
			1509	950	270	287	2		

- Molecule 15 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	F	155	Total	C	N	O	S	0	0
			1254	790	240	217	7		

- Molecule 16 is a protein called 30S ribosomal protein S8.

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

- Molecule 17 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	H	129	Total	C	N	O	S	0	0
			1040	661	195	183	1		

- Molecule 18 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	I	104	Total	C	N	O	S	0	0
			832	536	147	148	1		

- Molecule 19 is a protein called 30S ribosomal protein S11.

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

- Molecule 20 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	K	135	Total	C	N	O	S	0	0
			1071	677	212	180	2		

- Molecule 21 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	L	123	Total	C	N	O	0	0
			991	618	200	173		

- Molecule 22 is a protein called 30S ribosomal protein S14 type Z.

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

- Molecule 23 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	N	85	Total	C	N	O	0	0
			689	436	130	123		

- Molecule 24 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	O	87	Total	C	N	O	S	0	0
			705	453	130	118	4		

- Molecule 25 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	P	85	Total	C	N	O	S	0	0
			693	436	138	118	1		

- Molecule 26 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Q	71	Total	C	N	O	S	0	0
			590	378	115	93	4		

- Molecule 27 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	R	86	Total	C	N	O	S	0	0
			700	444	132	122	2		

- Molecule 28 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	S	79	Total	C	N	O	0	0
			643	391	138	114		

- Molecule 29 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	T	59	Total	C	N	O	S	0	0
			519	326	111	80	2		

- Molecule 30 is a protein called Trigger factor.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	X	30	Total	C	N	O	S	0	0
			242	155	43	43	1		

- Molecule 31 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Y	21	Total	C	N	O	P	0	0
			446	200	80	145	21		

- Molecule 32 is a protein called Nascent chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	Z	36	Total	C	N	O	0	0
			187	112	37	38		

- Molecule 33 is a protein called 50S ribosomal protein L2.

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

- Molecule 34 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	b	230	Total	C	N	O	S	0	0
			1769	1124	319	319	7		

- Molecule 35 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	c	211	Total	C	N	O	S	0	0
			1654	1053	299	299	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
36	d	179	Total	C	N	O	S	0	0
			1416	910	251	251	4		

- Molecule 37 is a protein called 50S ribosomal protein L6.

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

- Molecule 38 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	f	149	Total	C	N	O	S	0	0
			1210	780	212	215	3		

- Molecule 39 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	g	125	Total	C	N	O	S	0	0
			951	606	165	177	3		

- Molecule 40 is a protein called 50S ribosomal protein L11.

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

- Molecule 41 is a protein called 50S ribosomal protein L13.

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

- Molecule 42 is a protein called 50S ribosomal protein L14.

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

- Molecule 43 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	k	150	Total	C	N	O	S	0	0
			1170	741	228	200	1		

- Molecule 44 is a protein called 50S ribosomal protein L16.

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

- Molecule 45 is a protein called 50S ribosomal protein L17.

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

- Molecule 46 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	n	116	Total	C	N	O	S	0	0
			918	573	181	162	2		

- Molecule 47 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	o	118	Total	C	N	O	S	0	0
			966	609	186	170	1		

- Molecule 48 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	p	118	Total	C	N	O	S	0	0
			981	624	194	161	2		

- Molecule 49 is a protein called 50S ribosomal protein L21.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	r	142	Total	C	N	O	S	0	0
			1091	677	212	195	7		

- Molecule 51 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	s	95	Total	C	N	O	S	0	0
			740	486	125	128	1		

- Molecule 52 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	t	111	Total	C	N	O	S	0	0
			871	550	166	152	3		

- Molecule 53 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	u	88	Total	C	N	O	S	0	0
			670	416	132	121	1		

- Molecule 54 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	v	64	Total	C	N	O	S	0	0
			520	320	109	90	1		

- Molecule 55 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
55	w	110	Total	C	N	O	0	0
			906	576	168	162		

- Molecule 56 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	x	96	Total	C	N	O	S	0	0
			761	481	133	143	4		

- Molecule 57 is a protein called 50S ribosomal protein L32.

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

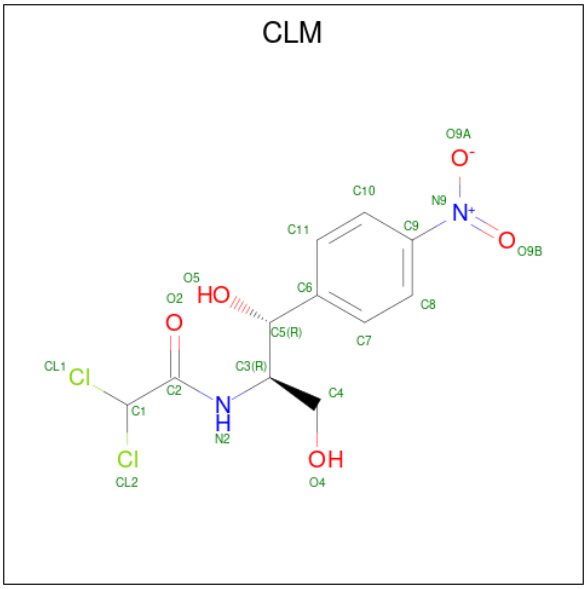
- Molecule 58 is a protein called 50S ribosomal protein L33 1.

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

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

Mol	Chain	Residues	Atoms		AltConf
59	2	1	Total	Zn	0
			1	1	
59	M	1	Total	Zn	0
			1	1	
59	Q	1	Total	Zn	0
			1	1	
59	x	1	Total	Zn	0
			1	1	
59	y	1	Total	Zn	0
			1	1	
59	z	1	Total	Zn	0
			1	1	

- Molecule 60 is CHLORAMPHENICOL (CCD ID: CLM) (formula: $C_{11}H_{12}Cl_2N_2O_5$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
60	3	1	Total	C	Cl	N	O	0
			20	11	2	2	5	

- Molecule 61 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
61	3	1	Total	K	0
			1	1	

- Molecule 62 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

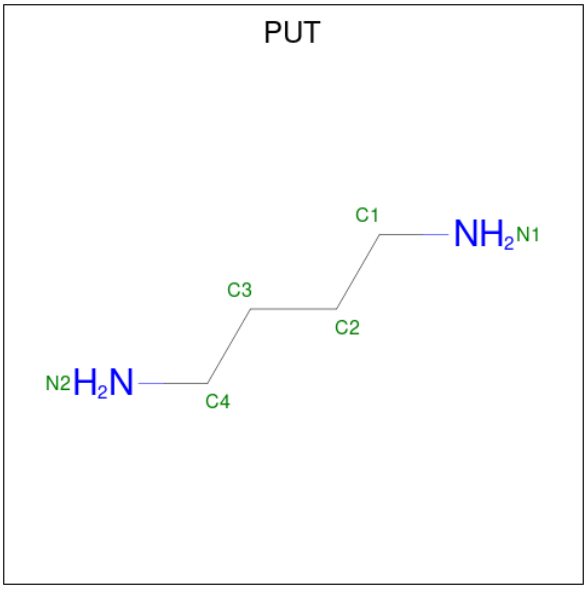
Mol	Chain	Residues	Atoms		AltConf
62	3	221	Total	Mg	0
			221	221	
62	4	1	Total	Mg	0
			1	1	
62	5	90	Total	Mg	0
			90	90	
62	6	1	Total	Mg	0
			1	1	
62	7	2	Total	Mg	0
			2	2	
62	8	2	Total	Mg	0
			2	2	

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf
62	K	1	Total Mg 1 1	0
62	P	1	Total Mg 1 1	0
62	Y	2	Total Mg 2 2	0
62	b	2	Total Mg 2 2	0
62	i	1	Total Mg 1 1	0
62	y	2	Total Mg 2 2	0

- Molecule 63 is 1,4-DIAMINOBUTANE (CCD ID: PUT) (formula: $C_4H_{12}N_2$).



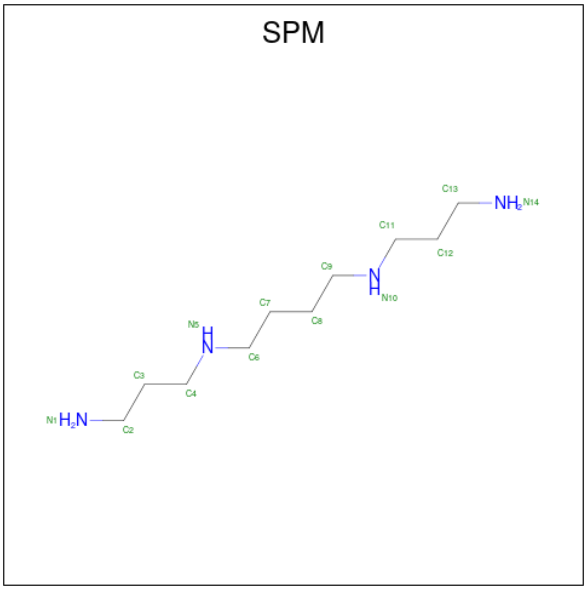
Mol	Chain	Residues	Atoms	AltConf
63	3	1	Total C N 6 4 2	0
63	3	1	Total C N 6 4 2	0
63	3	1	Total C N 6 4 2	0
63	3	1	Total C N 6 4 2	0
63	3	1	Total C N 6 4 2	0

Continued on next page...

Continued from previous page...

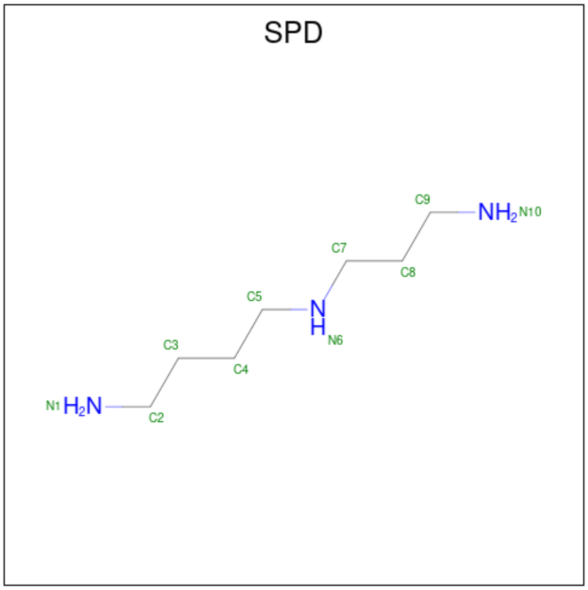
Mol	Chain	Residues	Atoms	AltConf
63	3	1	Total C N 6 4 2	0
63	3	1	Total C N 6 4 2	0
63	5	1	Total C N 6 4 2	0

- Molecule 64 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$).



Mol	Chain	Residues	Atoms	AltConf
64	3	1	Total C N 14 10 4	0
64	3	1	Total C N 14 10 4	0
64	3	1	Total C N 14 10 4	0
64	b	1	Total C N 14 10 4	0

- Molecule 65 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$).



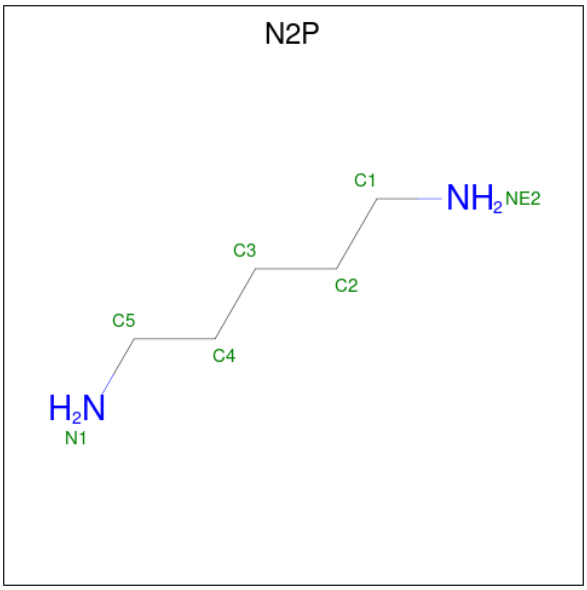
Mol	Chain	Residues	Atoms			AltConf
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0
65	3	1	Total 10	C 7	N 3	0

Continued on next page...

Continued from previous page...

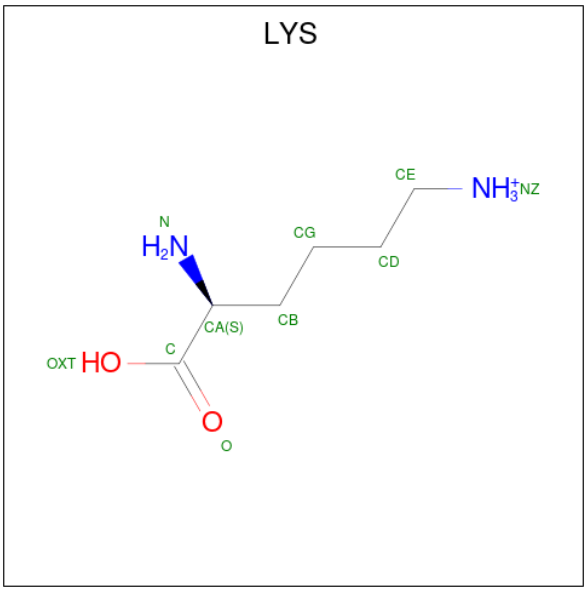
Mol	Chain	Residues	Atoms	AltConf
65	3	1	Total C N 10 7 3	0
65	3	1	Total C N 10 7 3	0
65	5	1	Total C N 10 7 3	0
65	5	1	Total C N 10 7 3	0

- Molecule 66 is PENTANE-1,5-DIAMINE (CCD ID: N2P) (formula: $C_5H_{14}N_2$).



Mol	Chain	Residues	Atoms	AltConf
66	3	1	Total C N 7 5 2	0
66	3	1	Total C N 7 5 2	0
66	3	1	Total C N 7 5 2	0
66	5	1	Total C N 7 5 2	0

- Molecule 67 is LYSINE (CCD ID: LYS) (formula: $C_6H_{15}N_2O_2$).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
67	8	1	9	6	2	1	0

3 Residue-property plots (i)

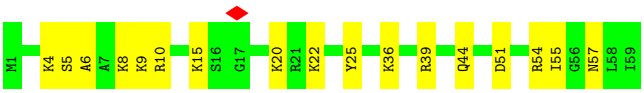
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: 50S ribosomal protein L34

Chain 0:

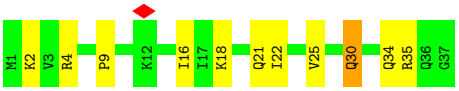
• Molecule 2: 50S ribosomal protein L35

Chain 1:



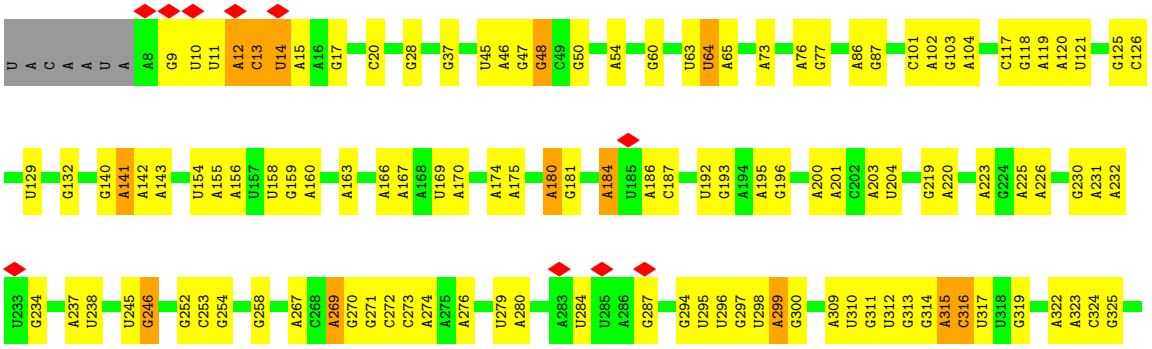
• Molecule 3: 50S ribosomal protein L36

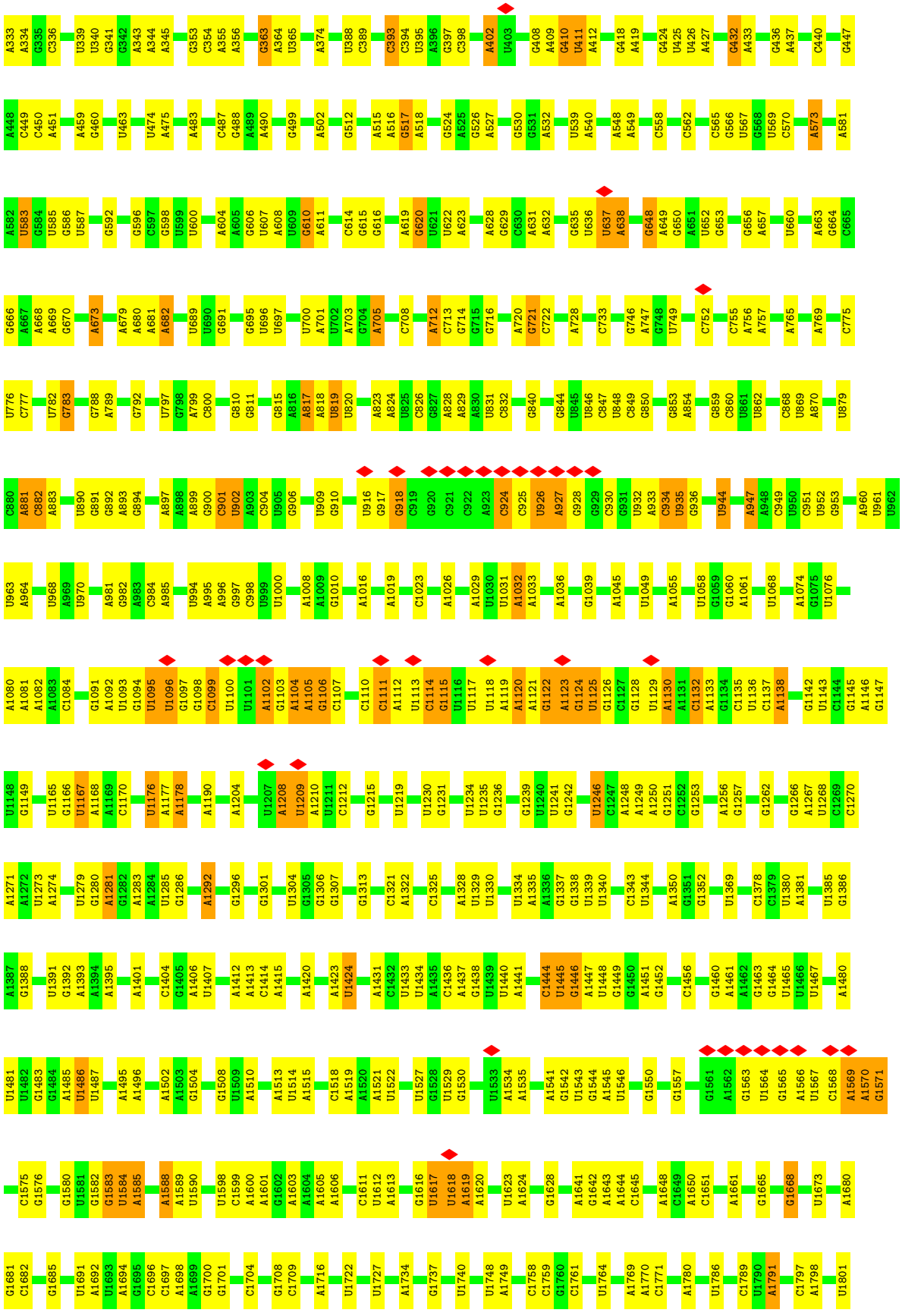
Chain 2:

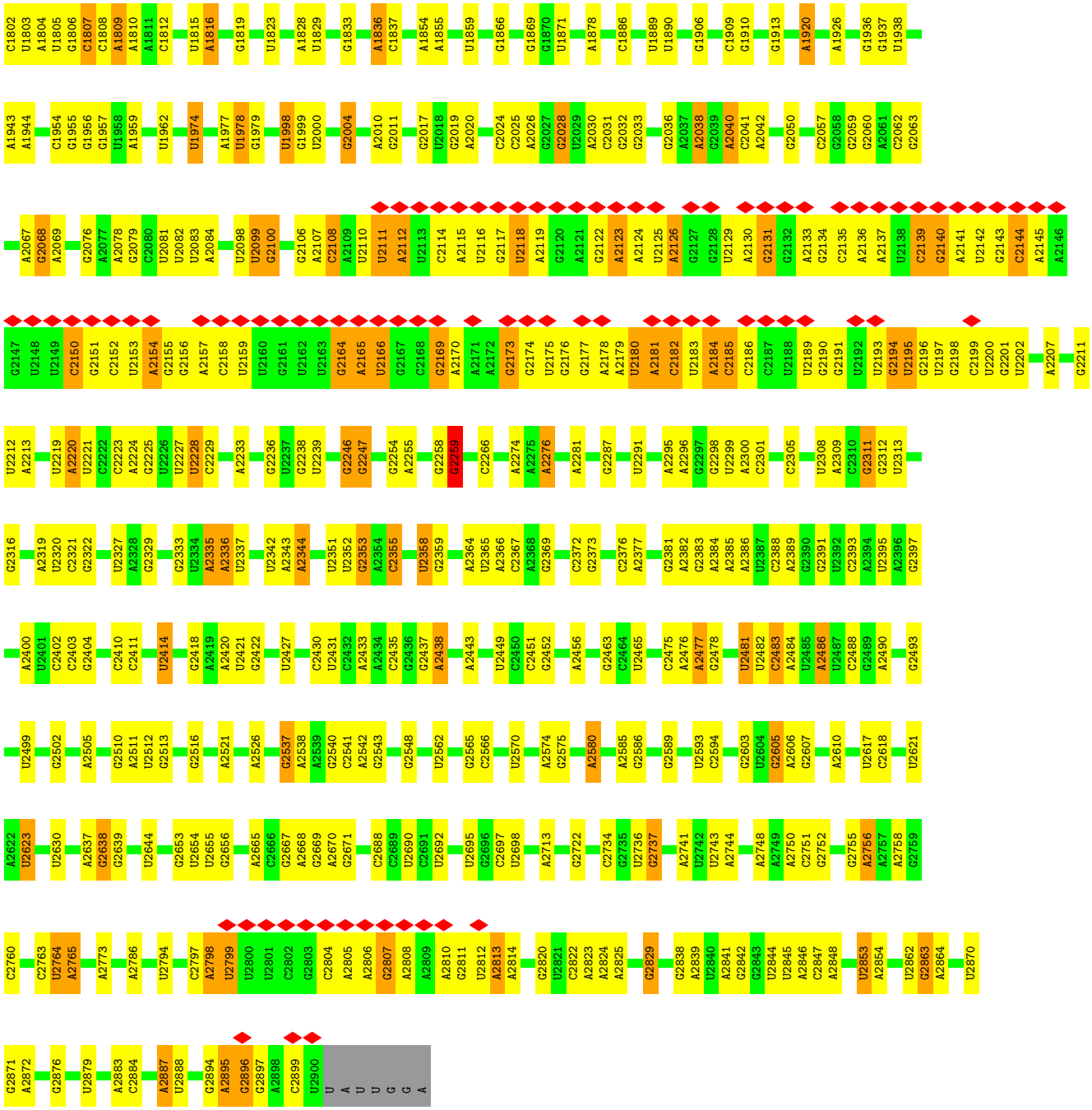


• Molecule 4: 23S ribosomal RNA

Chain 3:

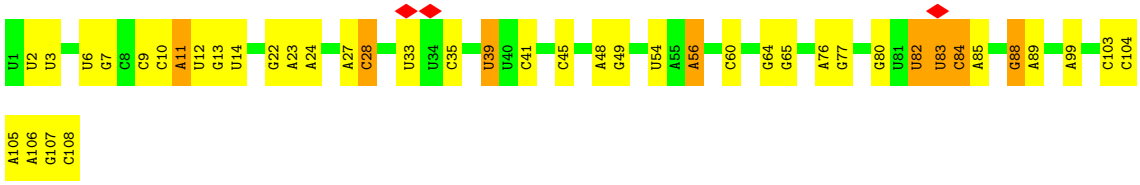






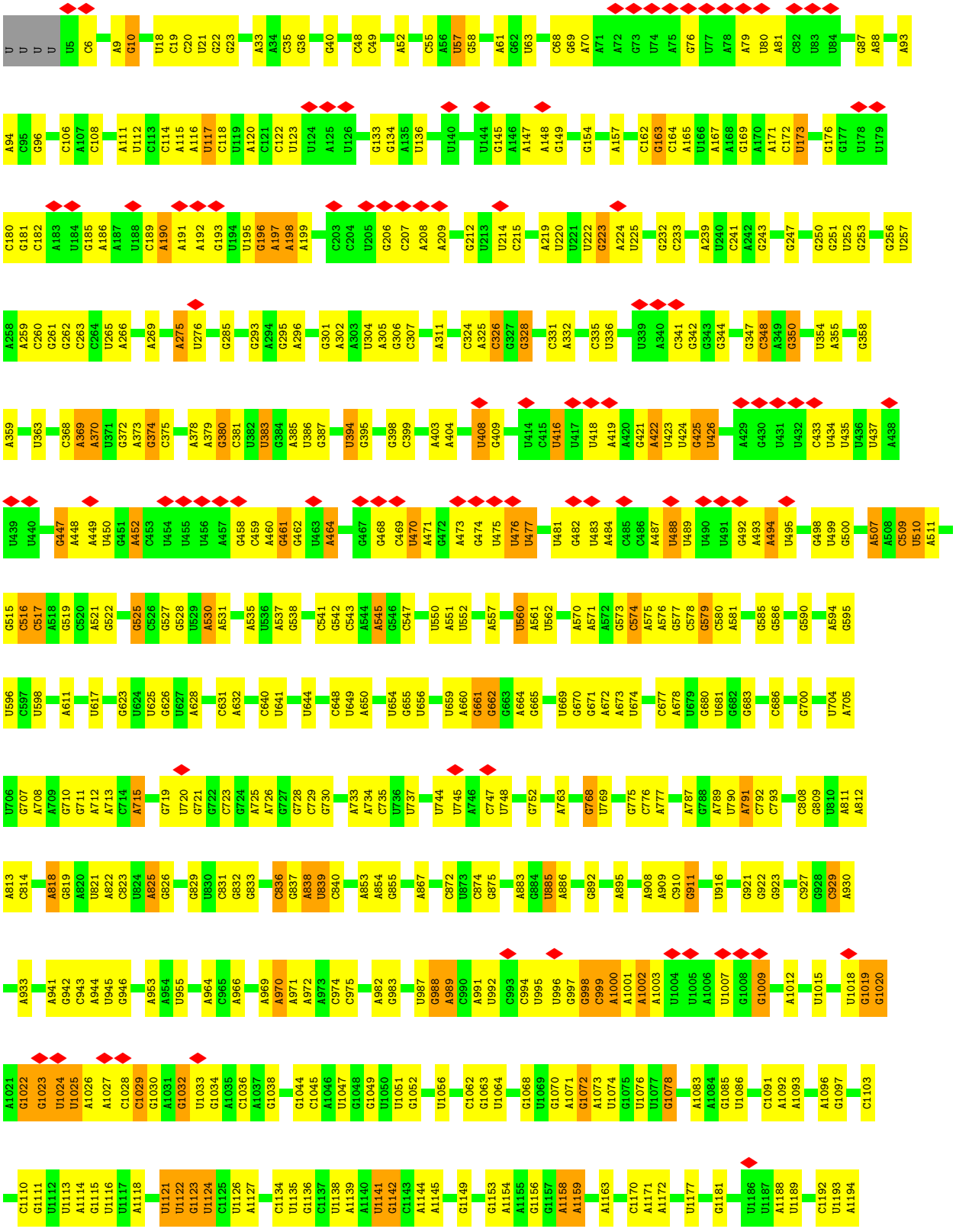
• Molecule 5: 5S ribosomal RNA

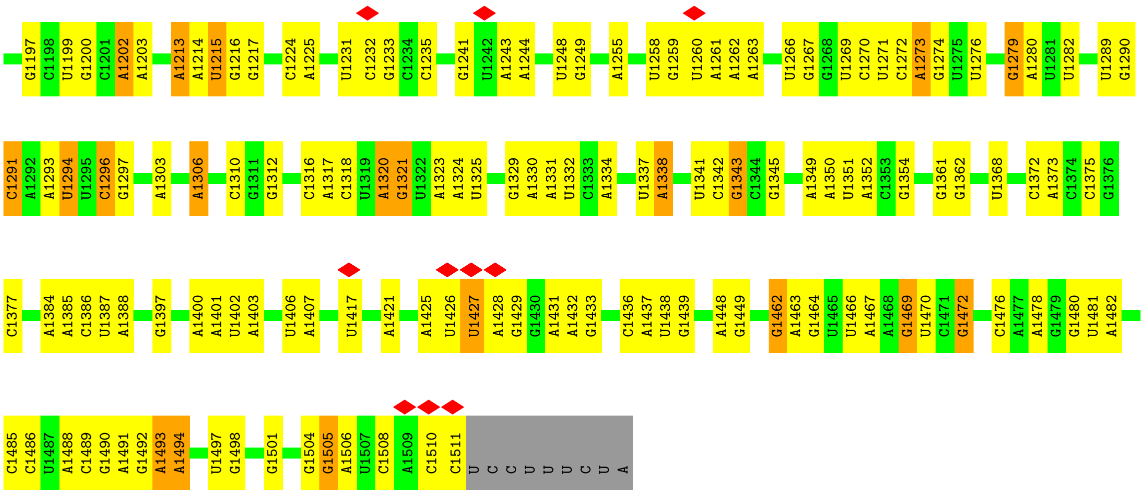
Chain 4:



• Molecule 6: 16S ribosomal RNA

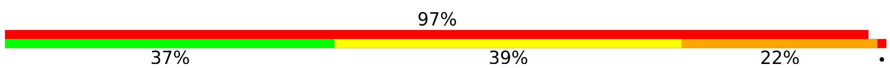
Chain 5:

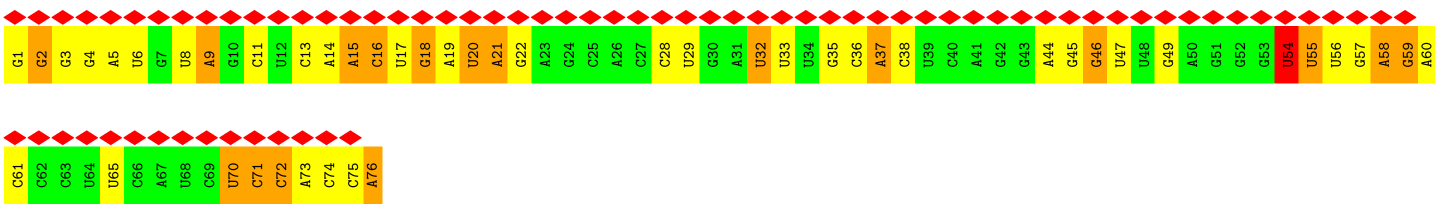




• Molecule 7: tRNA-Ala (E-site)

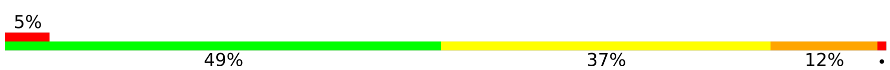
Chain 6:

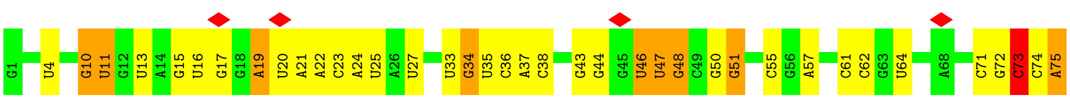




• Molecule 8: tRNA-Asp (P-site)

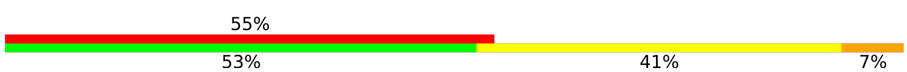
Chain 7:

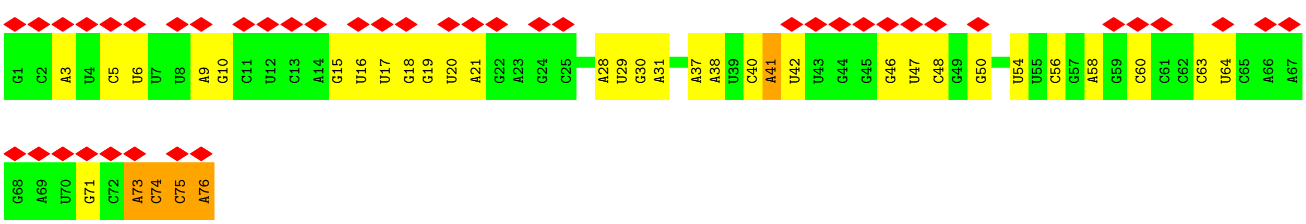




• Molecule 9: tRNA-Lys (A-site)

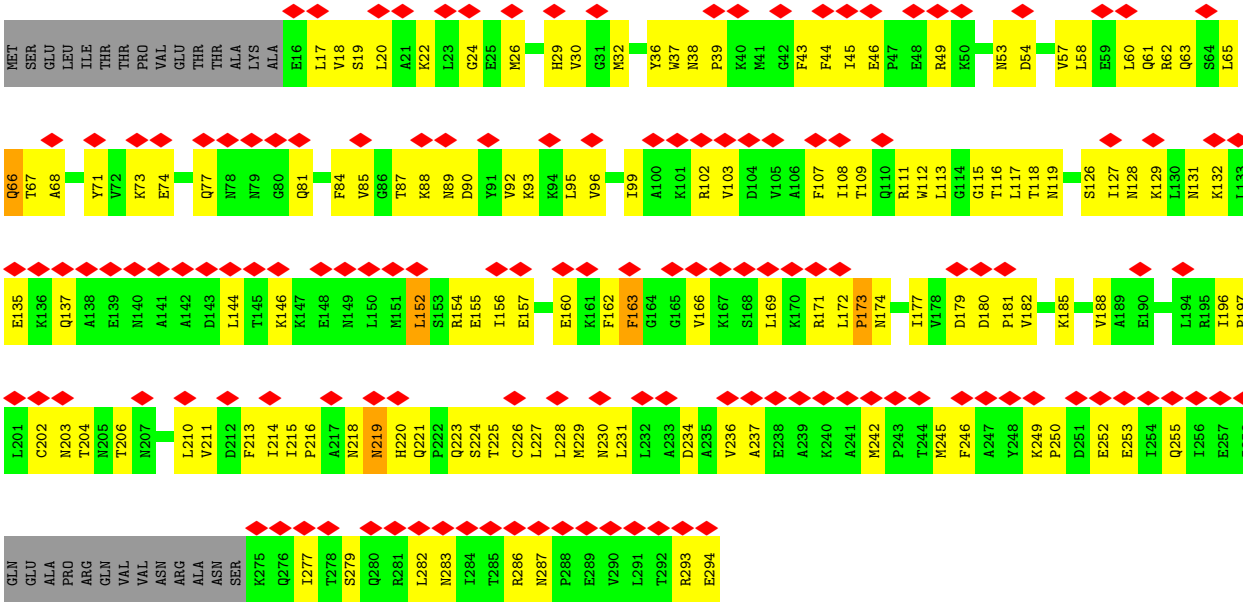
Chain 8:





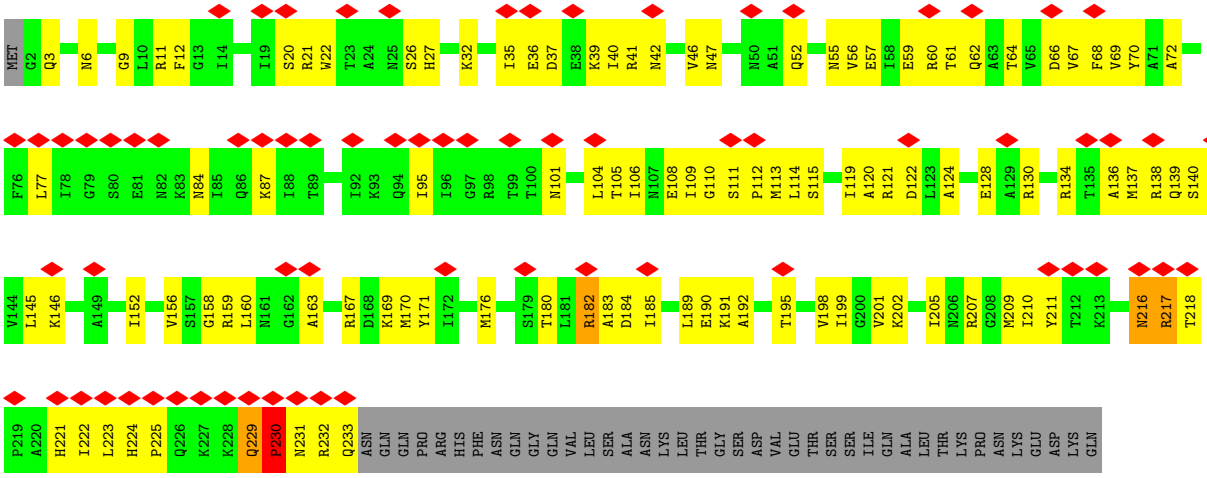
• Molecule 10: 30S ribosomal protein S2

Chain A:



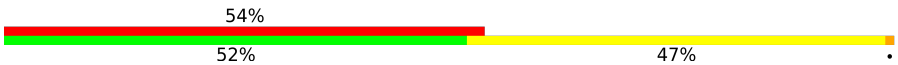
• Molecule 11: 30S ribosomal protein S3

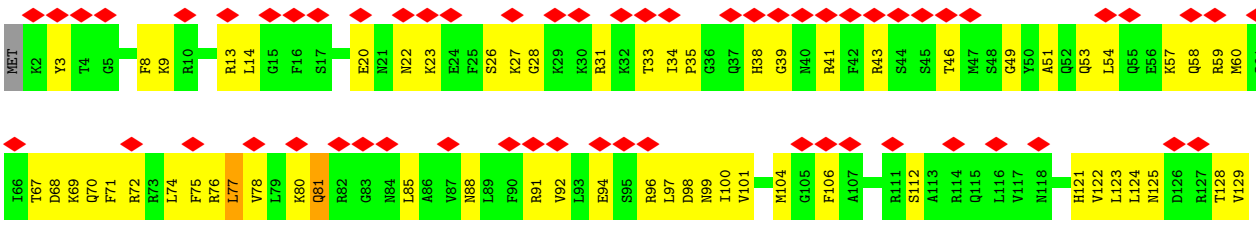
Chain B:

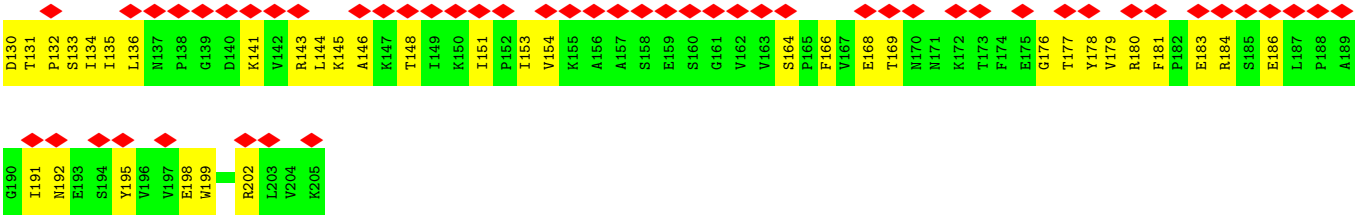


• Molecule 12: 30S ribosomal protein S4

Chain C:

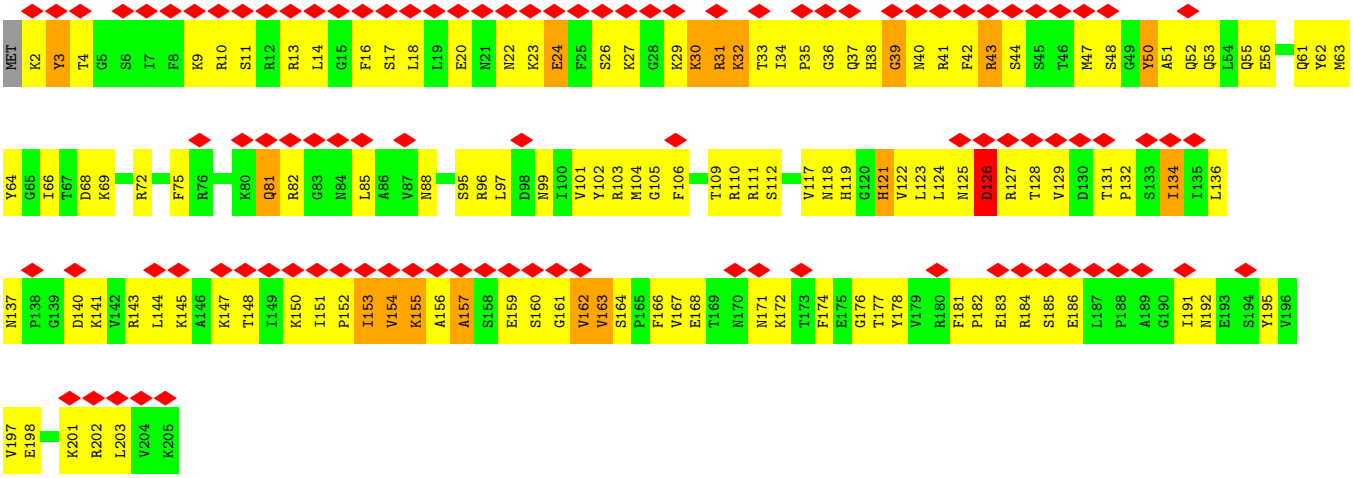






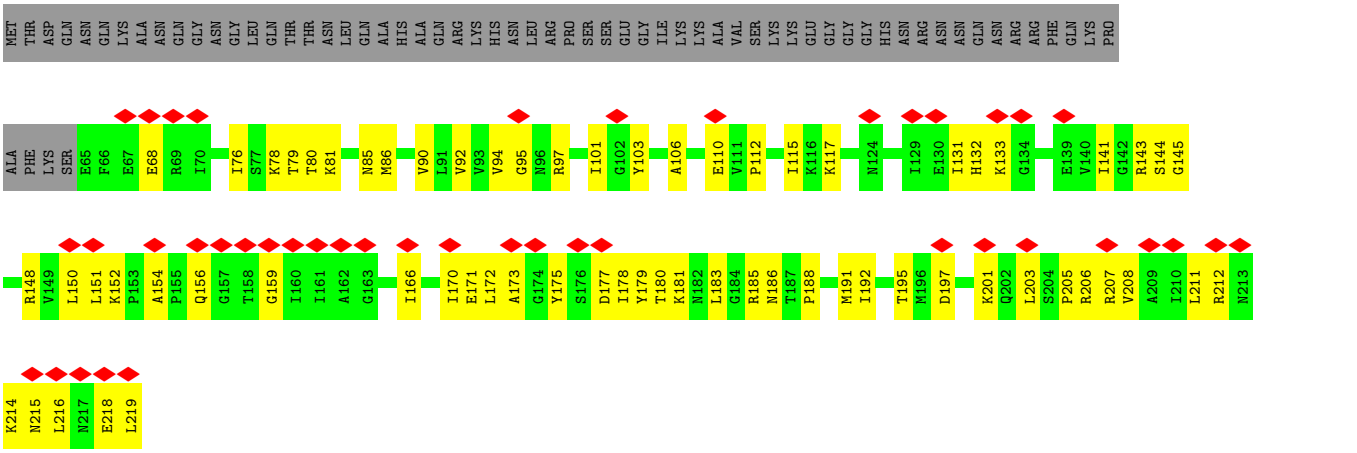
• Molecule 12: 30S ribosomal protein S4

Chain U:



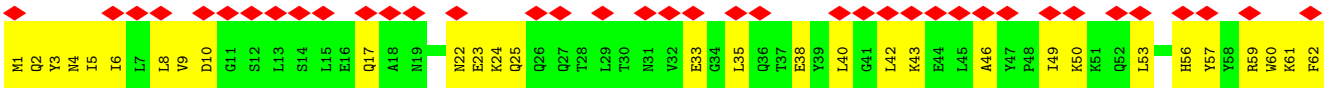
• Molecule 13: 30S ribosomal protein S5

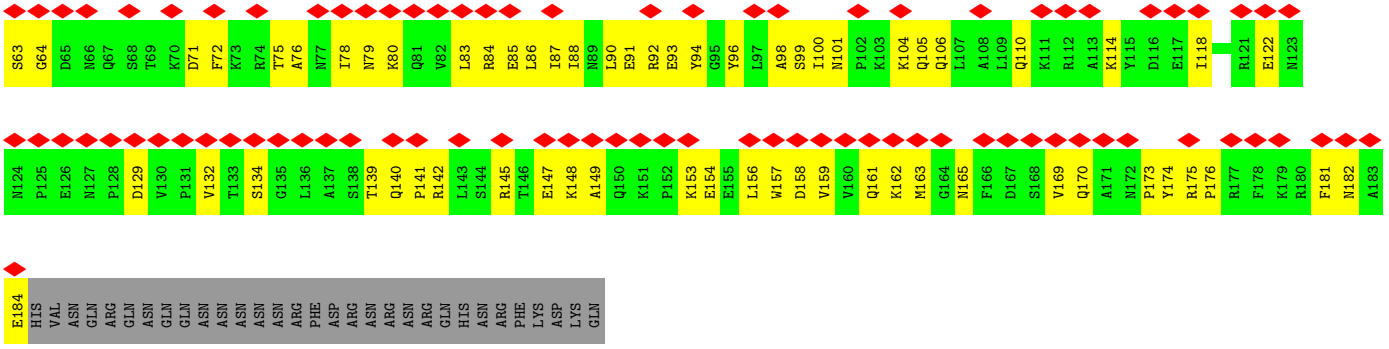
Chain D:



• Molecule 14: 30S ribosomal protein S6

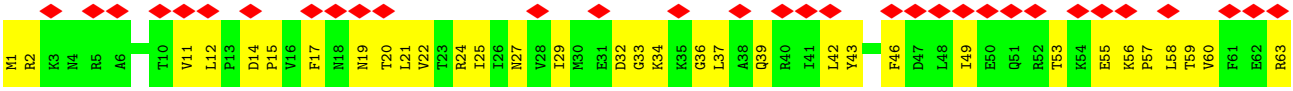
Chain E:





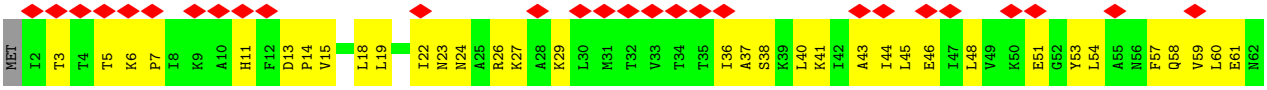
• Molecule 15: 30S ribosomal protein S7

Chain F:



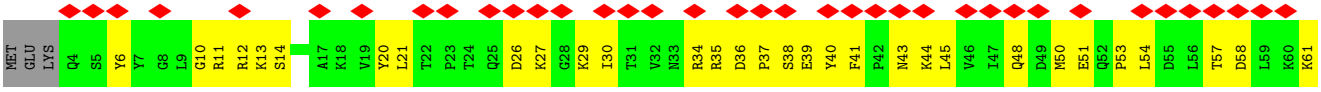
• Molecule 16: 30S ribosomal protein S8

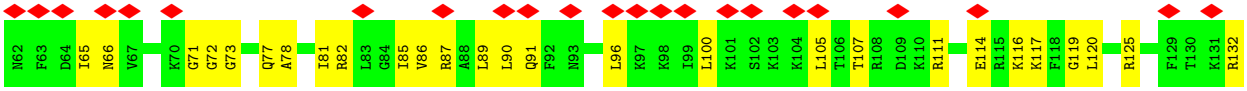
Chain G:



• Molecule 17: 30S ribosomal protein S9

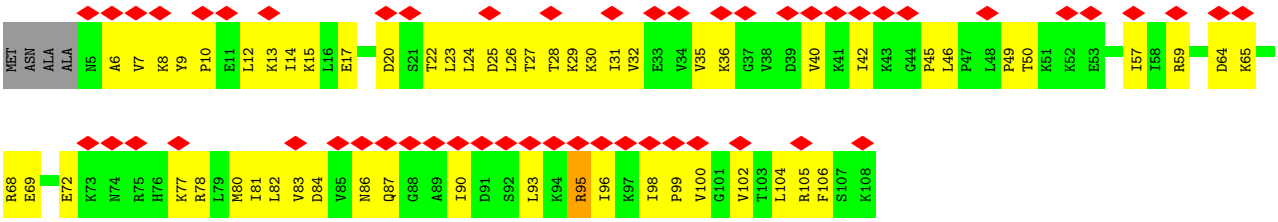
Chain H:





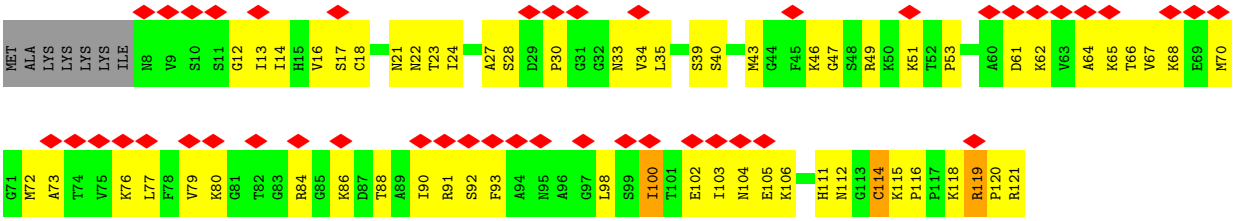
• Molecule 18: 30S ribosomal protein S10

Chain I:



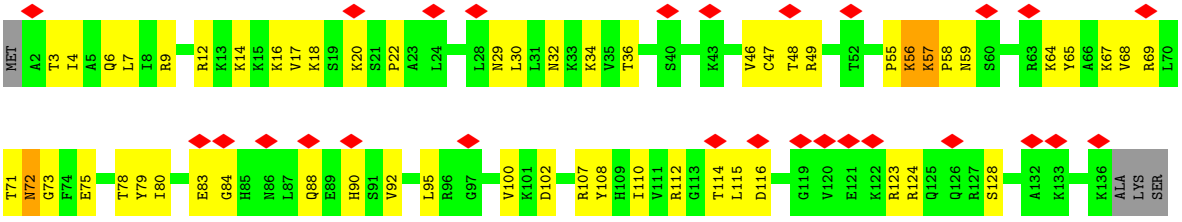
• Molecule 19: 30S ribosomal protein S11

Chain J:



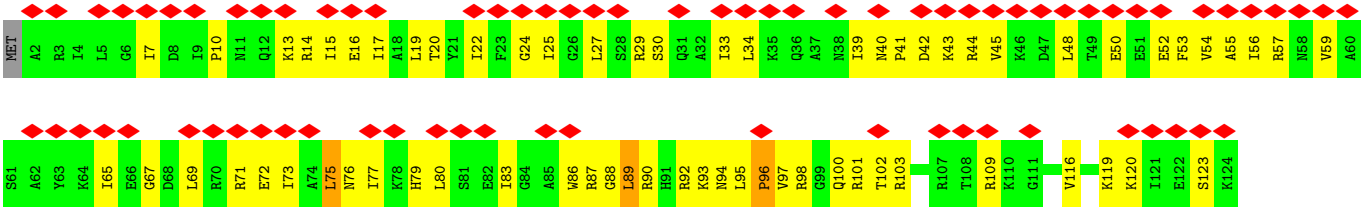
• Molecule 20: 30S ribosomal protein S12

Chain K:



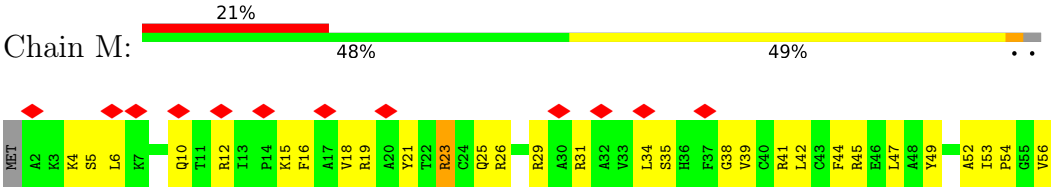
• Molecule 21: 30S ribosomal protein S13

Chain L:



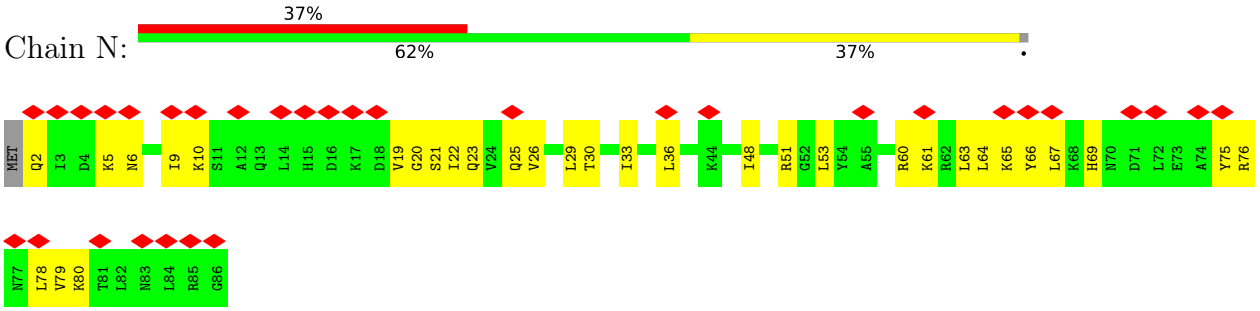
• Molecule 22: 30S ribosomal protein S14 type Z

Chain M:



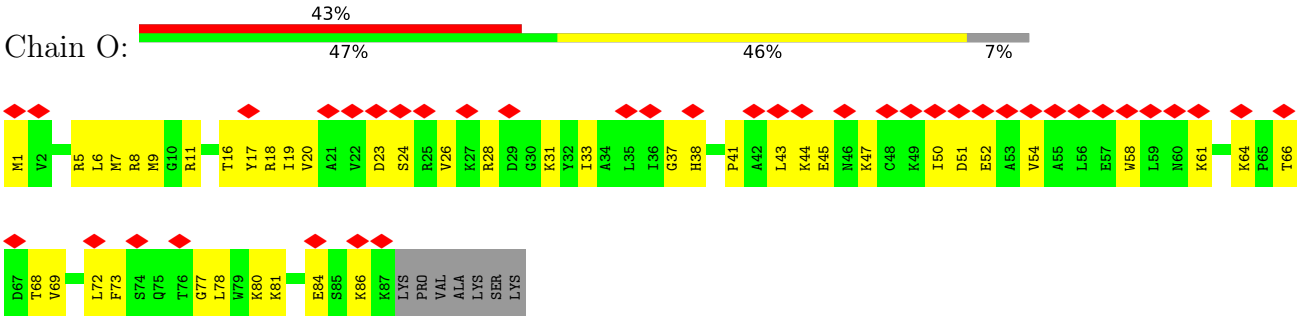
• Molecule 23: 30S ribosomal protein S15

Chain N:



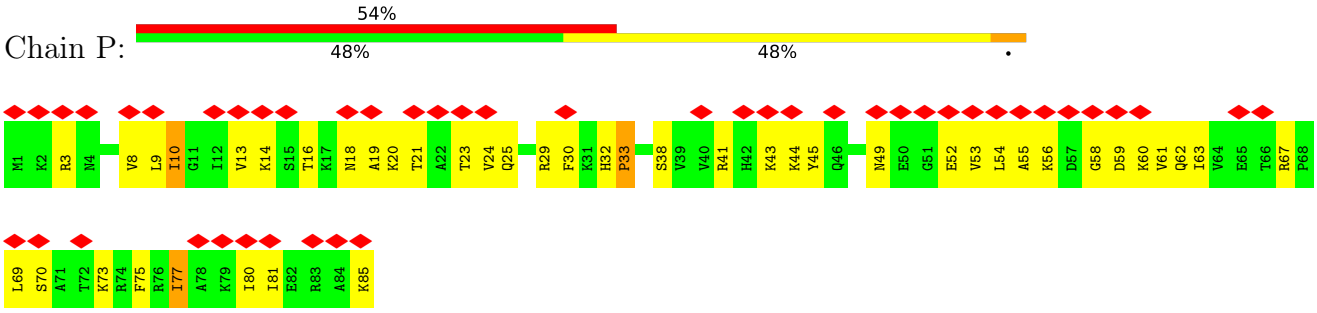
• Molecule 24: 30S ribosomal protein S16

Chain O:



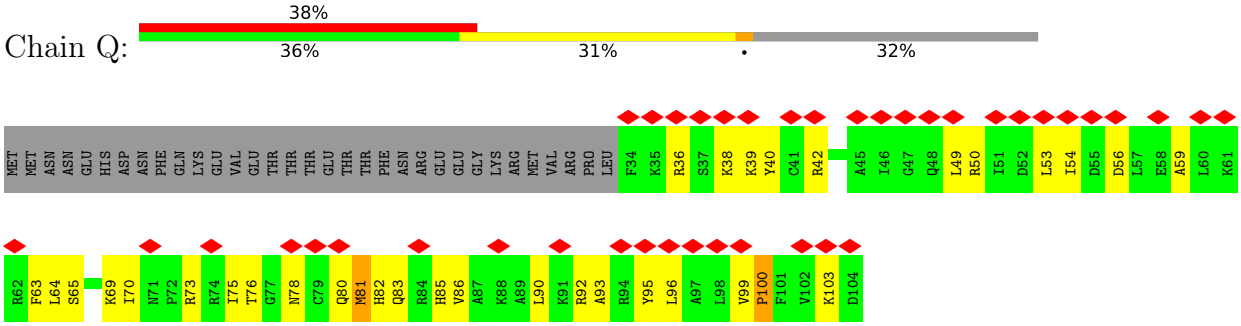
• Molecule 25: 30S ribosomal protein S17

Chain P:



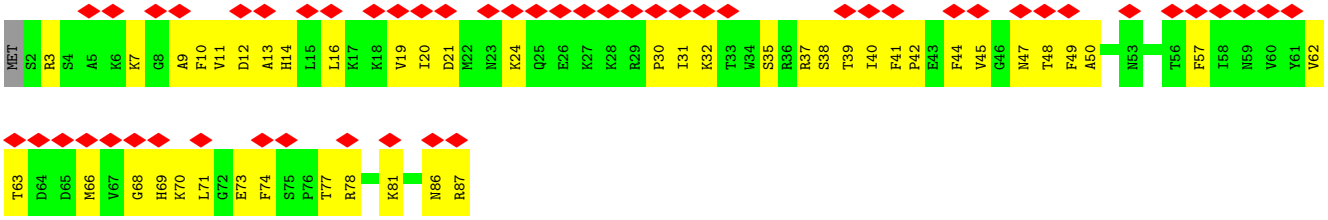
• Molecule 26: 30S ribosomal protein S18

Chain Q:



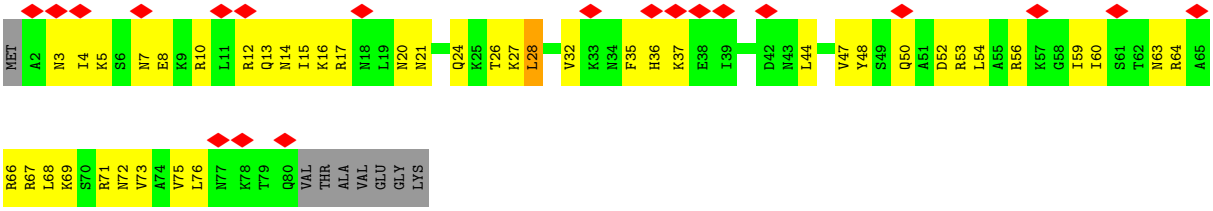
• Molecule 27: 30S ribosomal protein S19

Chain R:



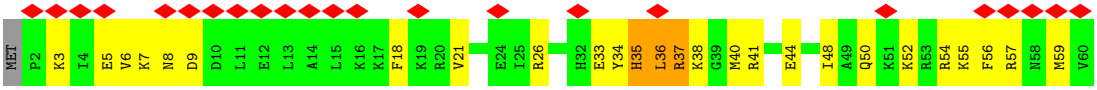
• Molecule 28: 30S ribosomal protein S20

Chain S:



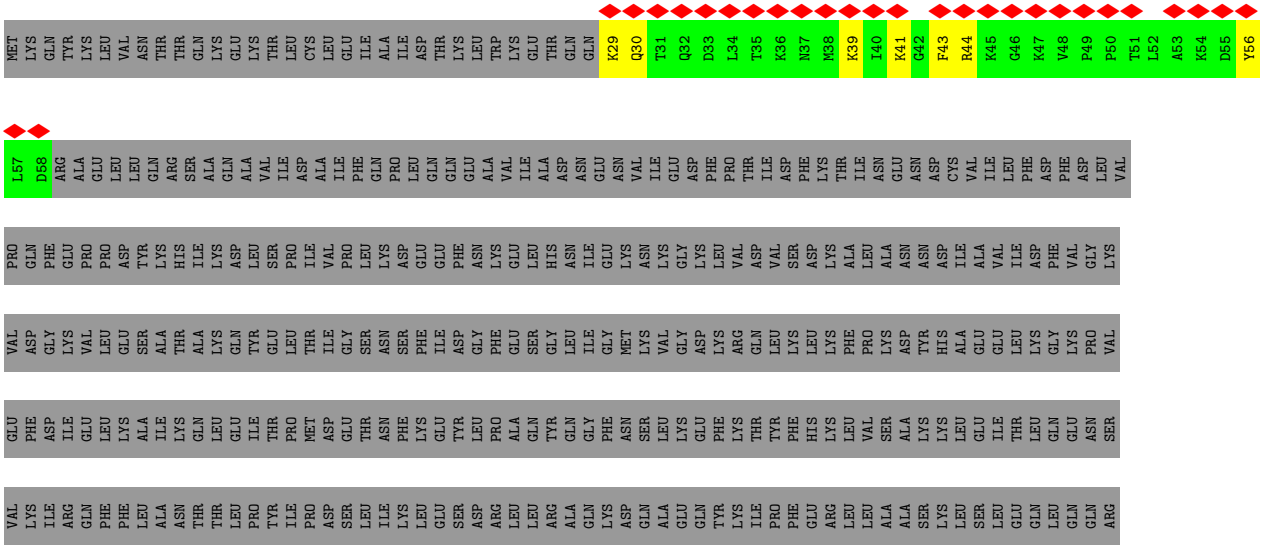
• Molecule 29: 30S ribosomal protein S21

Chain T:



• Molecule 30: Trigger factor

Chain X:

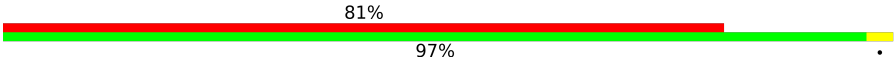


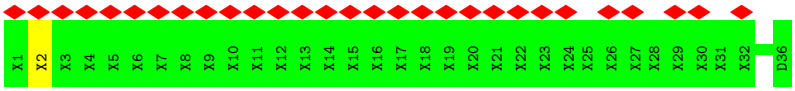
• Molecule 31: mRNA

Chain Y:

• Molecule 32: Nascent chain

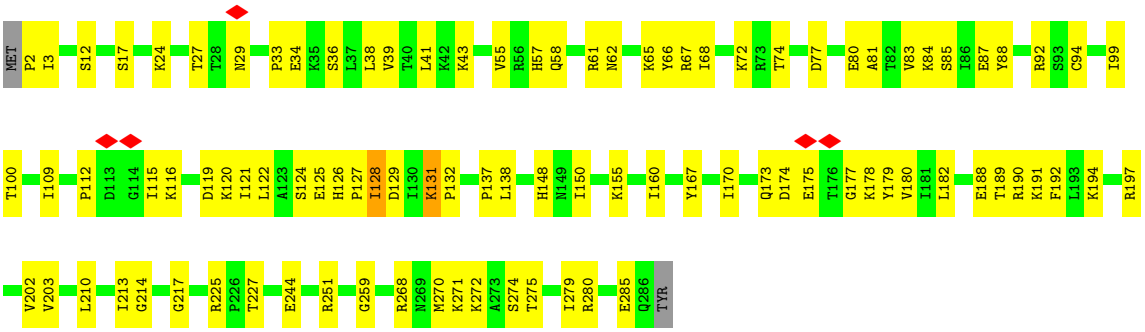
Chain Z:





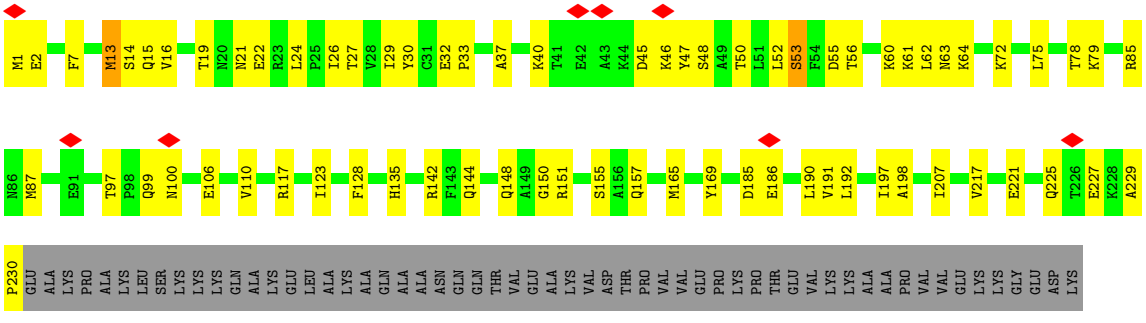
• Molecule 33: 50S ribosomal protein L2

Chain a:



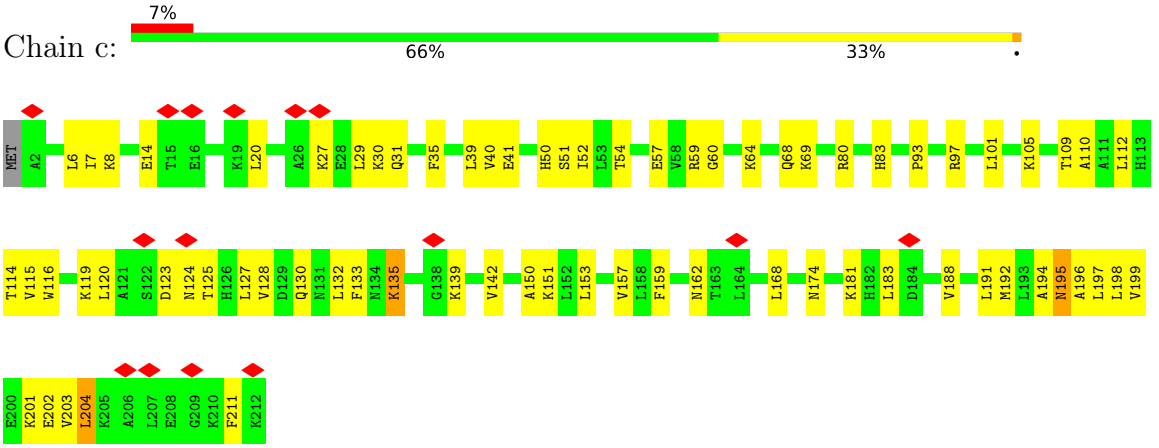
• Molecule 34: 50S ribosomal protein L3

Chain b:



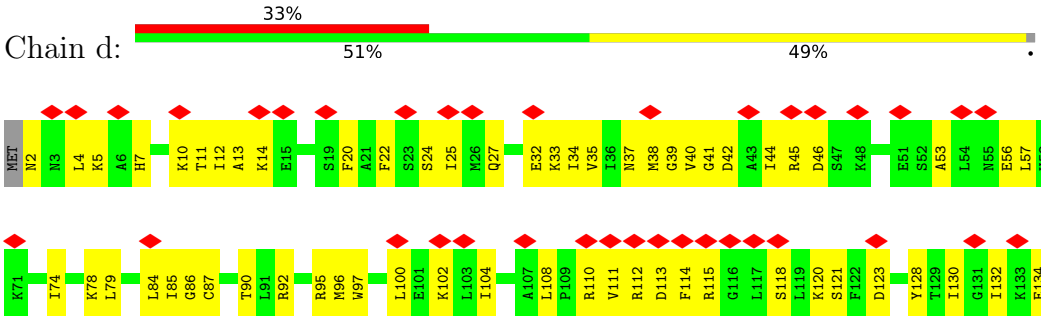
• Molecule 35: 50S ribosomal protein L4

Chain c:



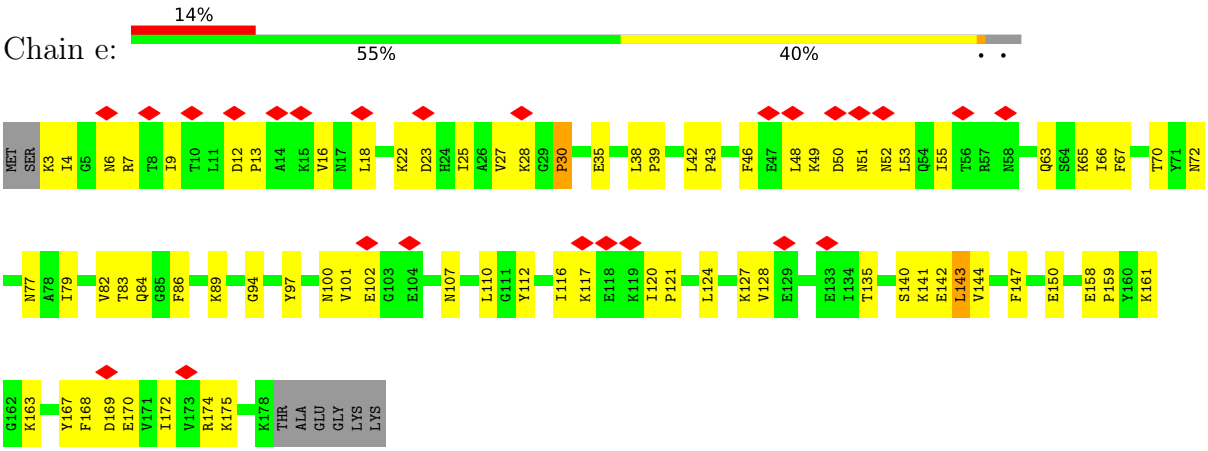
• Molecule 36: 50S ribosomal protein L5

Chain d:



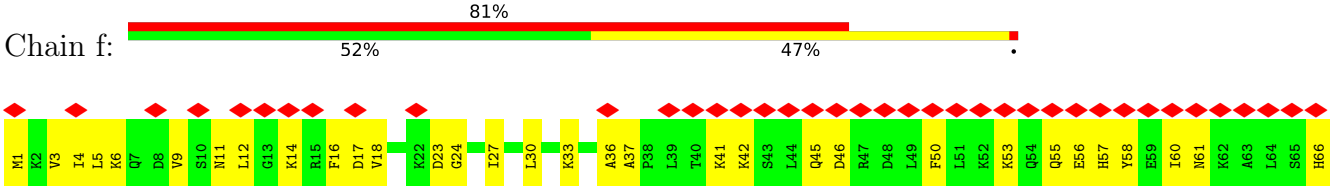
• Molecule 37: 50S ribosomal protein L6

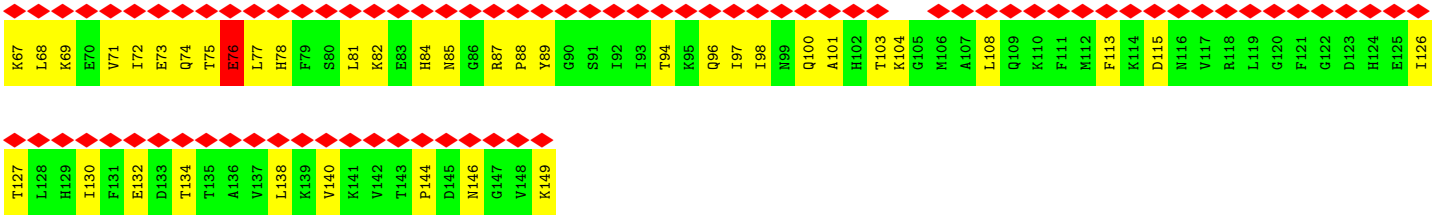
Chain e:



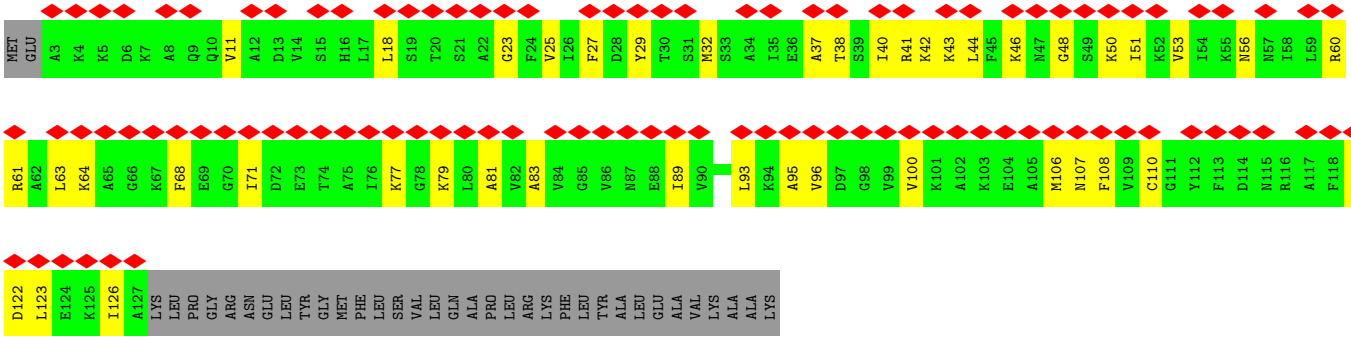
• Molecule 38: 50S ribosomal protein L9

Chain f:

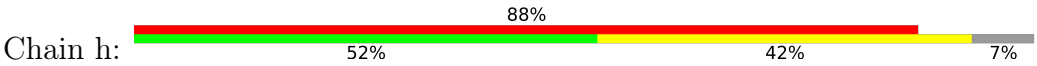




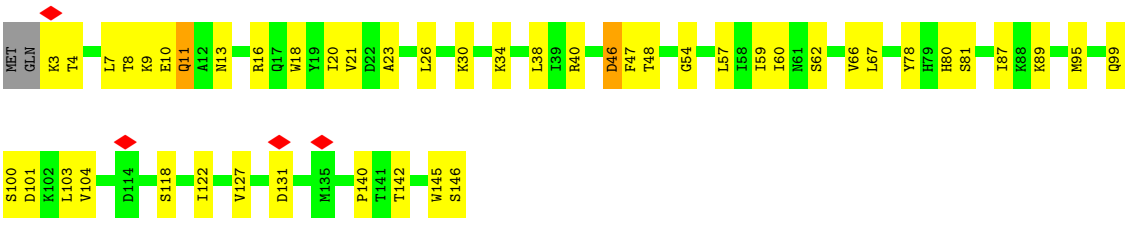
• Molecule 39: 50S ribosomal protein L10



• Molecule 40: 50S ribosomal protein L11

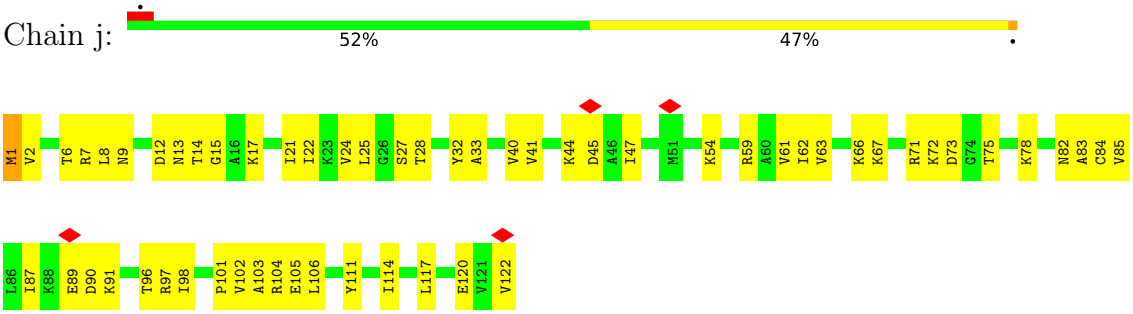


• Molecule 41: 50S ribosomal protein L13



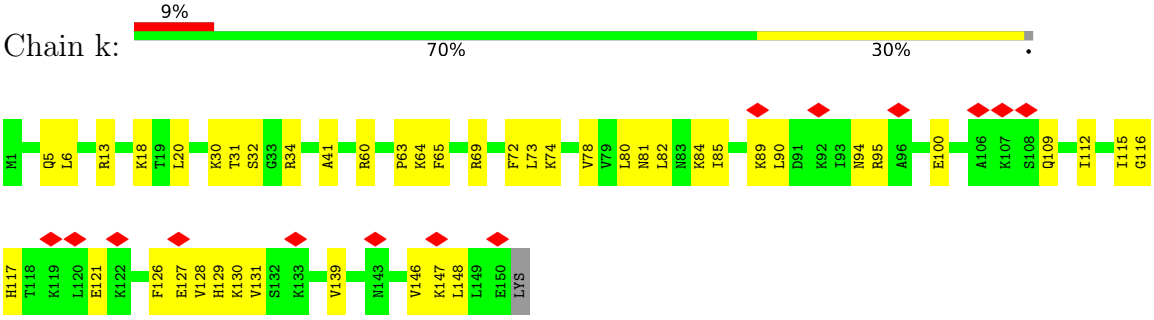
• Molecule 42: 50S ribosomal protein L14

Chain j:



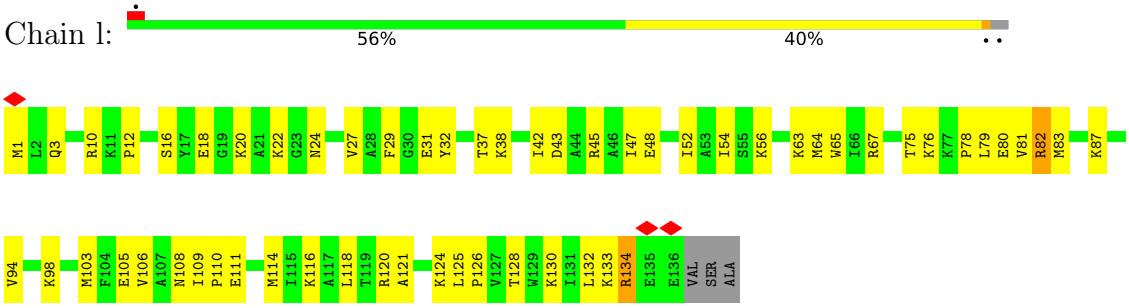
• Molecule 43: 50S ribosomal protein L15

Chain k:



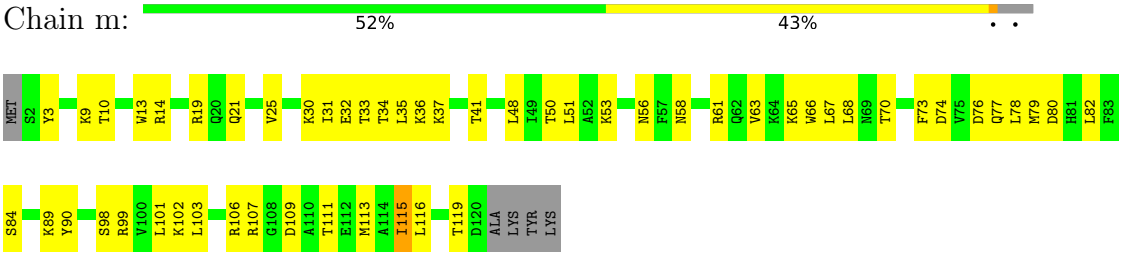
• Molecule 44: 50S ribosomal protein L16

Chain l:



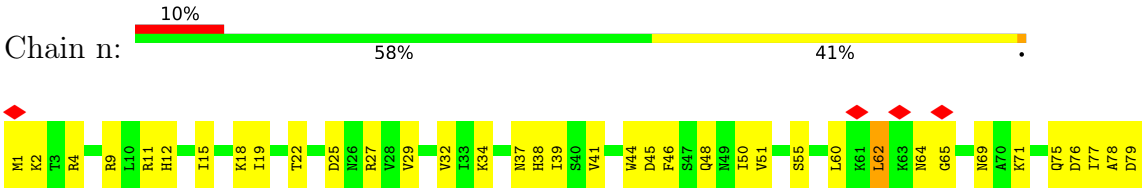
• Molecule 45: 50S ribosomal protein L17

Chain m:



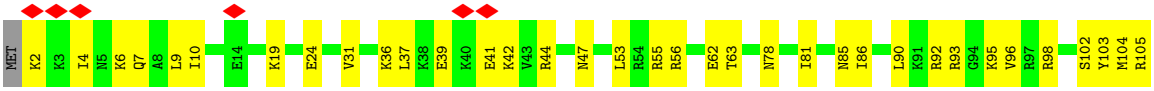
• Molecule 46: 50S ribosomal protein L18

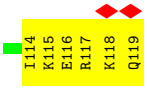
Chain n:



• Molecule 47: 50S ribosomal protein L19

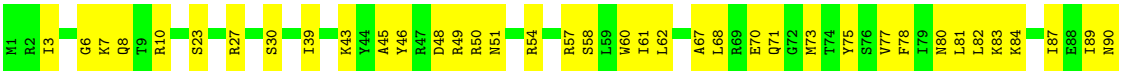
Chain o:

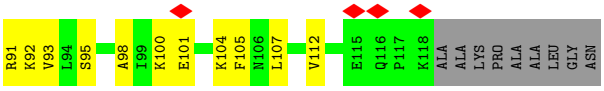




• Molecule 48: 50S ribosomal protein L20

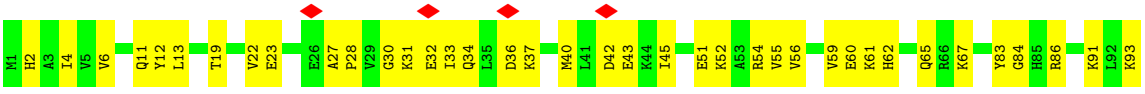
Chain p:

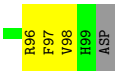




• Molecule 49: 50S ribosomal protein L21

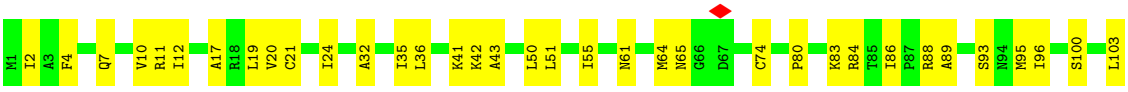
Chain q:

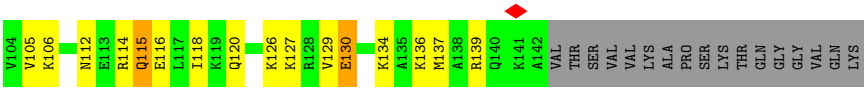




• Molecule 50: 50S ribosomal protein L22

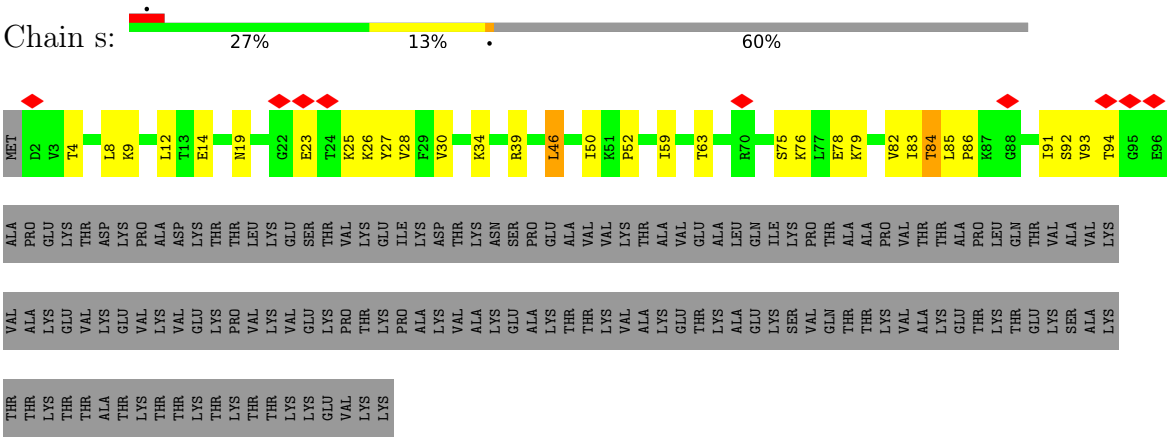
Chain r:





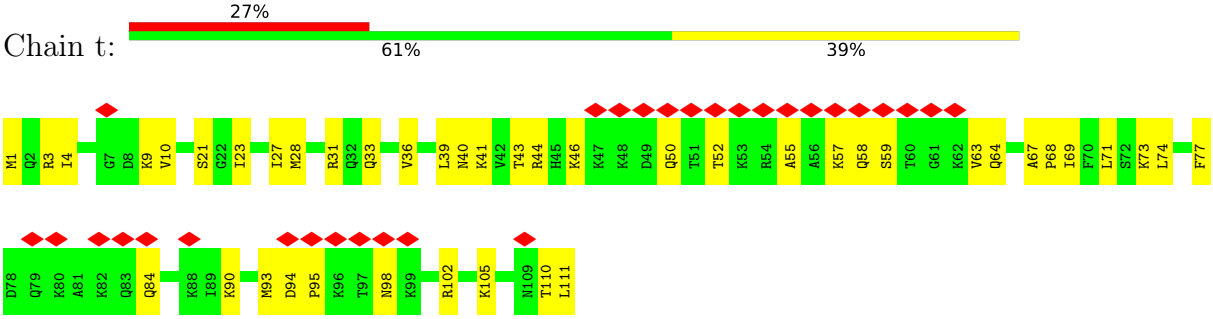
• Molecule 51: 50S ribosomal protein L23

Chain s:



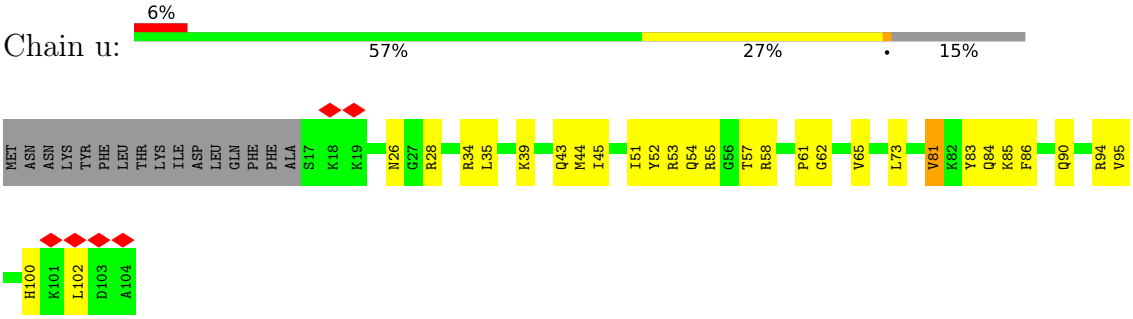
• Molecule 52: 50S ribosomal protein L24

Chain t:



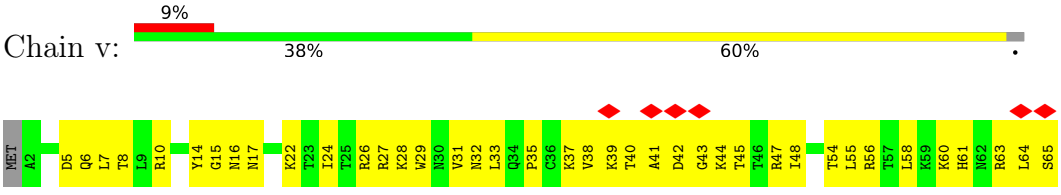
• Molecule 53: 50S ribosomal protein L27

Chain u:



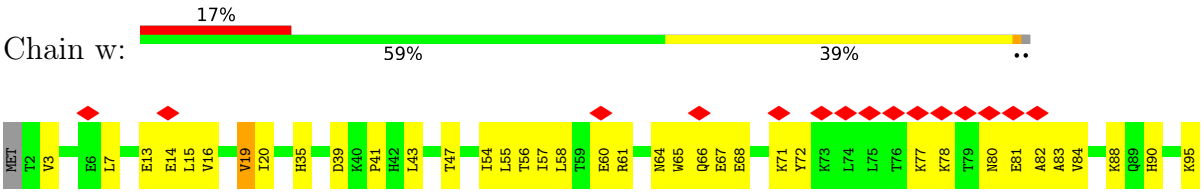
• Molecule 54: 50S ribosomal protein L28

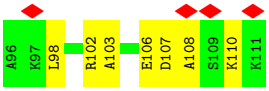
Chain v:



• Molecule 55: 50S ribosomal protein L29

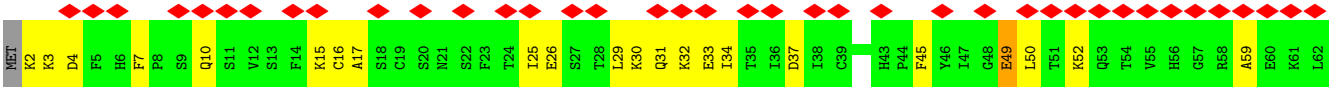
Chain w:

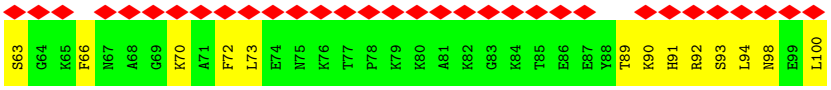




• Molecule 56: 50S ribosomal protein L31

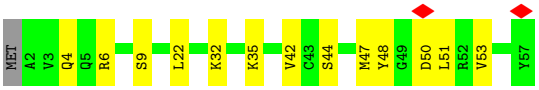
Chain x:





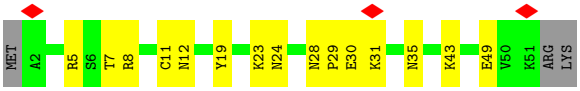
• Molecule 57: 50S ribosomal protein L32

Chain y:



• Molecule 58: 50S ribosomal protein L33 1

Chain z:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	10154	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; CTF estimation and 3D CTF correction are done in Warp	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	137	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3250	Depositor
Magnification	64000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	7.019	Depositor
Minimum map value	-3.485	Depositor
Average map value	0.033	Depositor
Map value standard deviation	0.273	Depositor
Recommended contour level	0.99	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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: CLM, 1MG, MG, 7MG, SPM, 5MC, SPD, ZN, MA6, OMG, B8T, N2P, 2MA, K, PUT

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	0.19	0/395	0.47	0/518
2	1	0.17	0/484	0.37	0/637
3	2	0.19	0/306	0.53	0/401
4	3	0.09	0/69363	0.22	5/108161 (0.0%)
5	4	0.08	0/2578	0.19	0/4016
6	5	0.09	0/35992	0.21	0/56111
7	6	0.31	0/1810	0.54	2/2817 (0.1%)
8	7	0.19	0/1785	0.37	1/2779 (0.0%)
9	8	0.23	1/1804 (0.1%)	0.34	0/2807
10	A	0.27	0/2172	0.68	1/2934 (0.0%)
11	B	0.26	0/1863	0.67	3/2516 (0.1%)
12	C	0.20	0/1700	0.59	0/2278
12	U	0.41	1/1700 (0.1%)	0.90	8/2278 (0.4%)
13	D	0.21	0/1206	0.57	0/1616
14	E	0.31	0/1536	0.73	1/2072 (0.0%)
15	F	0.25	0/1274	0.68	0/1710
16	G	0.29	0/1126	0.86	6/1517 (0.4%)
17	H	0.33	0/1056	0.72	0/1409
18	I	0.23	0/843	0.65	3/1132 (0.3%)
19	J	0.29	0/844	0.67	2/1136 (0.2%)
20	K	0.22	0/1089	0.57	0/1461
21	L	0.24	0/1002	0.74	3/1340 (0.2%)
22	M	0.26	0/483	0.64	0/643
23	N	0.17	0/695	0.59	0/926
24	O	0.28	0/718	0.76	1/962 (0.1%)
25	P	0.20	0/702	0.58	1/934 (0.1%)
26	Q	0.36	0/601	0.86	1/801 (0.1%)
27	R	0.34	0/716	0.66	0/958
28	S	0.23	0/645	0.60	0/857
29	T	0.37	0/524	0.77	0/685
30	X	0.16	0/245	0.45	0/325
31	Y	0.17	0/498	0.37	0/773

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	Z	0.90	0/26	1.70	0/33
33	a	0.18	0/2267	0.50	1/3044 (0.0%)
34	b	0.21	0/1803	0.46	1/2424 (0.0%)
35	c	0.17	0/1681	0.46	0/2257
36	d	0.21	0/1437	0.57	0/1931
37	e	0.19	0/1420	0.52	1/1912 (0.1%)
38	f	0.32	0/1233	0.64	0/1653
39	g	0.16	0/960	0.55	0/1284
40	h	0.18	0/968	0.60	3/1298 (0.2%)
41	i	0.23	0/1186	0.57	1/1592 (0.1%)
42	j	0.23	0/953	0.55	0/1275
43	k	0.20	0/1187	0.52	0/1581
44	l	0.30	0/1104	0.67	1/1481 (0.1%)
45	m	0.17	0/973	0.46	0/1309
46	n	0.24	0/927	0.66	0/1239
47	o	0.20	0/976	0.57	0/1296
48	p	0.21	0/996	0.50	0/1325
49	q	0.18	0/828	0.53	0/1111
50	r	0.24	0/1100	0.63	3/1471 (0.2%)
51	s	0.17	0/752	0.46	0/1015
52	t	0.22	0/878	0.64	4/1165 (0.3%)
53	u	0.19	0/678	0.50	0/902
54	v	0.35	0/526	0.73	0/703
55	w	0.15	0/916	0.45	0/1222
56	x	0.18	0/776	0.58	0/1033
57	y	0.16	0/457	0.53	0/601
58	z	0.22	0/412	0.49	0/547
All	All	0.16	2/165175 (0.0%)	0.38	53/246214 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
12	U	0	2
22	M	0	1
All	All	0	3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	U	31	ARG	CA-C	9.23	1.68	1.52
9	8	76	A	C6-N6	6.01	1.46	1.33

All (53) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
10	A	173	PRO	CA-N-CD	-11.78	95.50	112.00
26	Q	100	PRO	CA-N-CD	-10.62	97.13	112.00
16	G	14	PRO	CA-N-CD	-8.47	100.14	112.00
21	L	96	PRO	CA-N-CD	-7.95	100.87	112.00
7	6	32	U	P-O3'-C3'	-7.88	108.38	120.20
40	h	71	PRO	N-CD-CG	-7.78	91.54	103.20
11	B	182	ARG	CG-CD-NE	7.36	128.18	112.00
12	U	31	ARG	O-C-N	-7.26	110.80	122.41
40	h	71	PRO	CA-N-CD	-7.16	101.97	112.00
4	3	2184	A	C4'-C3'-O3'	7.10	123.65	113.00
11	B	230	PRO	CA-N-CD	-6.95	102.27	112.00
18	I	10	PRO	CA-N-CD	-6.88	102.37	112.00
52	t	95	PRO	CA-N-CD	-6.50	102.90	112.00
7	6	54	U	P-O3'-C3'	-6.41	110.59	120.20
8	7	73	C	P-O3'-C3'	-6.35	110.68	120.20
18	I	9	TYR	C-N-CD	-6.29	99.19	125.00
16	G	7	PRO	N-CD-CG	-6.12	94.02	103.20
50	r	129	VAL	N-CA-C	6.00	116.78	110.72
40	h	71	PRO	CA-CB-CG	-5.98	93.14	104.50
16	G	14	PRO	CB-CG-CD	-5.95	87.07	106.10
16	G	7	PRO	CA-N-CD	-5.91	103.72	112.00
12	U	31	ARG	CA-C-O	5.91	128.36	118.91
4	3	393	C	O3'-P-O5'	5.90	112.86	104.00
12	U	47	MET	CA-C-N	-5.79	113.06	122.26
12	U	47	MET	C-N-CA	-5.79	113.06	122.26
50	r	130	GLU	N-CA-CB	5.77	118.60	110.12
37	e	30	PRO	CA-N-CD	-5.74	103.97	112.00
44	l	82	ARG	N-CA-CB	-5.72	101.59	110.29
16	G	14	PRO	CA-CB-CG	-5.69	93.69	104.50
16	G	14	PRO	N-CD-CG	-5.68	94.68	103.20
12	U	32	LYS	CA-CB-CG	-5.67	102.75	114.10
4	3	2184	A	C5'-C4'-C3'	5.63	124.45	116.00
21	L	89	LEU	CA-CB-CG	5.57	135.80	116.30
34	b	13	MET	CB-CG-SD	-5.45	96.35	112.70
50	r	130	GLU	CA-CB-CG	5.43	124.96	114.10
24	O	41	PRO	CA-N-CD	-5.42	104.41	112.00
12	U	47	MET	N-CA-C	5.39	118.07	111.82

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	3	2184	A	C5'-C4'-O4'	5.38	117.86	109.80
25	P	33	PRO	CA-N-CD	-5.35	104.51	112.00
52	t	95	PRO	N-CD-CG	-5.31	95.24	103.20
41	i	11	GLN	CA-CB-CG	5.29	124.67	114.10
12	U	162	VAL	CA-C-N	5.25	131.42	121.97
12	U	162	VAL	C-N-CA	5.25	131.42	121.97
19	J	119	ARG	N-CA-CB	5.24	117.09	110.23
52	t	95	PRO	CB-CG-CD	-5.23	89.35	106.10
52	t	95	PRO	CA-CB-CG	-5.22	94.58	104.50
14	E	106	GLN	CA-CB-CG	5.21	124.51	114.10
21	L	75	LEU	CA-CB-CG	5.12	134.21	116.30
19	J	119	ARG	N-CA-C	5.09	116.32	109.24
4	3	2184	A	C2'-C3'-O3'	5.04	121.27	113.70
33	a	131	LYS	CB-CG-CD	5.04	122.90	111.30
18	I	95	ARG	CA-CB-CG	5.01	124.13	114.10
11	B	182	ARG	CA-CB-CG	5.01	124.11	114.10

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
22	M	23	ARG	Sidechain
12	U	121	HIS	Peptide
12	U	153	ILE	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	392	0	442	11	0
2	1	477	0	530	17	0
3	2	304	0	347	10	0
4	3	61995	0	31115	619	0
5	4	2305	0	1164	17	0
6	5	32258	0	16206	463	0
7	6	1620	0	818	28	0
8	7	1599	0	805	20	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	8	1615	0	816	15	0
10	A	2138	0	2204	119	0
11	B	1835	0	1909	110	0
12	C	1669	0	1729	90	0
12	U	1669	0	1729	159	0
13	D	1191	0	1284	57	0
14	E	1509	0	1520	102	0
15	F	1254	0	1320	96	0
16	G	1110	0	1226	96	0
17	H	1040	0	1107	71	0
18	I	832	0	918	51	0
19	J	829	0	855	69	0
20	K	1071	0	1165	56	0
21	L	991	0	1061	66	0
22	M	474	0	505	48	0
23	N	689	0	746	29	0
24	O	705	0	755	43	0
25	P	693	0	753	40	0
26	Q	590	0	626	38	0
27	R	700	0	709	43	0
28	S	643	0	694	42	0
29	T	519	0	578	42	0
30	X	242	0	263	7	0
31	Y	446	0	227	12	0
32	Z	187	0	68	1	0
33	a	2225	0	2301	80	0
34	b	1769	0	1815	65	0
35	c	1654	0	1744	66	0
36	d	1416	0	1500	83	0
37	e	1396	0	1481	59	0
38	f	1210	0	1259	53	0
39	g	951	0	1001	36	0
40	h	959	0	1039	42	0
41	i	1164	0	1192	42	0
42	j	944	0	1019	46	0
43	k	1170	0	1274	43	0
44	l	1079	0	1134	63	0
45	m	958	0	1011	41	0
46	n	918	0	979	50	0
47	o	966	0	1042	39	0
48	p	981	0	1062	52	0
49	q	811	0	858	39	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
50	r	1091	0	1178	40	0
51	s	740	0	819	26	0
52	t	871	0	972	37	0
53	u	670	0	704	31	0
54	v	520	0	565	49	0
55	w	906	0	981	32	0
56	x	761	0	766	31	0
57	y	452	0	471	11	0
58	z	408	0	436	14	0
59	2	1	0	0	0	0
59	M	1	0	0	0	0
59	Q	1	0	0	0	0
59	x	1	0	0	0	0
59	y	1	0	0	0	0
59	z	1	0	0	0	0
60	3	20	0	11	1	0
61	3	1	0	0	0	0
62	3	221	0	0	0	0
62	4	1	0	0	0	0
62	5	90	0	0	0	0
62	6	1	0	0	0	0
62	7	2	0	0	0	0
62	8	2	0	0	0	0
62	K	1	0	0	0	0
62	P	1	0	0	0	0
62	Y	2	0	0	0	0
62	b	2	0	0	0	0
62	i	1	0	0	0	0
62	y	2	0	0	0	0
63	3	42	0	84	2	0
63	5	6	0	12	0	0
64	3	42	0	78	7	0
64	b	14	0	26	3	0
65	3	160	0	304	3	0
65	5	20	0	38	7	0
66	3	21	0	42	0	0
66	5	7	0	14	0	0
67	8	9	0	12	0	0
All	All	153255	0	105418	3310	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 (3310) 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)
12:U:14:LEU:HA	54:v:63:ARG:NH1	1.67	1.08
33:a:131:LYS:HE3	33:a:132:PRO:HD3	1.35	1.07
6:5:974:C:H2'	22:M:19:ARG:HH12	1.18	1.04
47:o:37:LEU:HD11	47:o:44:ARG:HB3	1.42	1.01
6:5:172:C:H5"	28:S:66:ARG:HH11	1.21	1.00
8:7:34:G:H1	31:Y:42:U:H3	1.10	0.99
4:3:271:G:H5'	12:U:37:GLN:HE21	1.28	0.99
10:A:214:ILE:HG22	10:A:216:PRO:HD3	1.45	0.99
41:i:38:LEU:HD22	41:i:57:LEU:HD12	1.44	0.97
6:5:1324:A:OP2	17:H:125:ARG:NE	1.99	0.95
37:e:25:ILE:HG13	37:e:38:LEU:HD21	1.48	0.94
11:B:104:LEU:HG	11:B:231:ASN:ND2	1.82	0.94
4:3:1246:U:OP1	48:p:10:ARG:NH2	2.01	0.93
12:U:31:ARG:O	12:U:31:ARG:HD2	1.70	0.91
4:3:169:U:O2'	54:v:44:LYS:NZ	2.03	0.91
12:U:18:LEU:O	12:U:22:ASN:ND2	2.04	0.90
1:0:9:LYS:NZ	4:3:1338:G:OP2	2.05	0.89
27:R:30:PRO:HA	27:R:48:THR:HG23	1.55	0.88
55:w:7:LEU:HD22	55:w:54:ILE:HD11	1.54	0.88
6:5:715:A:N7	26:Q:69:LYS:NZ	2.22	0.87
16:G:97:ILE:HG13	16:G:99:ARG:HD3	1.57	0.86
13:D:152:LYS:HB3	13:D:179:TYR:HB2	1.57	0.86
53:u:26:ASN:HA	53:u:28:ARG:HH12	1.39	0.86
16:G:48:LEU:HD11	16:G:53:TYR:HB2	1.58	0.86
52:t:90:LYS:HG3	52:t:105:LYS:HG2	1.58	0.86
9:8:50:G:H1	9:8:64:U:H3	1.24	0.85
41:i:34:LYS:HD3	41:i:146:SER:HA	1.58	0.85
11:B:224:HIS:HB3	11:B:225:PRO:HD3	1.58	0.85
47:o:62:GLU:HB3	47:o:81:ILE:HD12	1.56	0.85
4:3:2258:G:H3'	44:l:82:ARG:HH12	1.39	0.85
2:1:51:ASP:OD1	2:1:54:ARG:NH2	2.10	0.85
15:F:110:ARG:HD3	15:F:112:GLU:HG3	1.59	0.85
6:5:577:G:O2'	23:N:51:ARG:NH1	2.10	0.84
4:3:2427:U:O2'	58:z:8:ARG:NH2	2.10	0.84
4:3:2165:A:H1'	4:3:2166:U:OP1	1.78	0.84
44:l:78:PRO:HG2	44:l:81:VAL:HG21	1.59	0.84
4:3:192:U:H5"	54:v:14:TYR:HD2	1.43	0.84
16:G:18:LEU:HD11	16:G:41:LYS:HB2	1.59	0.83
4:3:2312:G:H22	4:3:2320:U:H3	1.23	0.83
4:3:2879:U:H4'	47:o:7:GLN:NE2	1.93	0.83

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:x:10:GLN:HE22	56:x:31:GLN:HG2	1.43	0.83
21:L:24:GLY:O	21:L:29:ARG:NH2	2.11	0.82
28:S:68:LEU:O	28:S:72:ASN:ND2	2.13	0.82
41:i:23:ALA:HA	41:i:26:LEU:HD13	1.59	0.82
6:5:372:G:H5"	24:O:5:ARG:HD2	1.62	0.82
36:d:146:ILE:HG22	36:d:148:ARG:H	1.45	0.81
14:E:158:ASP:HB3	16:G:63:LYS:HE3	1.61	0.81
12:U:14:LEU:HA	54:v:63:ARG:HH12	1.40	0.81
21:L:92:ARG:HG2	21:L:93:LYS:HD2	1.62	0.81
47:o:7:GLN:OE1	47:o:7:GLN:N	2.14	0.81
17:H:30:ILE:HD12	17:H:65:ILE:HD11	1.63	0.81
4:3:271:G:H5'	12:U:37:GLN:NE2	1.95	0.81
4:3:2111:U:H3	4:3:2194:G:H1'	1.45	0.81
42:j:63:VAL:HG21	42:j:102:VAL:HG22	1.63	0.81
15:F:115:MET:HA	15:F:118:LYS:HB2	1.61	0.80
12:U:9:LYS:HE3	12:U:13:ARG:HH22	1.46	0.80
15:F:46:PHE:HA	15:F:49:ILE:HD12	1.61	0.80
19:J:119:ARG:NH2	29:T:33:GLU:OE2	2.15	0.80
46:n:19:ILE:HD11	46:n:46:PHE:HE2	1.48	0.80
46:n:25:ASP:OD1	46:n:27:ARG:HG3	1.82	0.80
4:3:316:C:H4'	12:U:31:ARG:HH22	1.46	0.79
11:B:6:ASN:HD22	22:M:49:TYR:HB3	1.46	0.79
54:v:17:ASN:HB2	54:v:27:ARG:HD2	1.63	0.79
52:t:9:LYS:HG2	52:t:77:PHE:HD2	1.47	0.79
6:5:1323:A:H5"	17:H:125:ARG:HD2	1.64	0.79
10:A:199:VAL:HG12	10:A:213:PHE:HB2	1.64	0.79
12:U:198:GLU:HA	12:U:201:LYS:HD3	1.65	0.79
36:d:108:LEU:HG	36:d:114:PHE:HE2	1.47	0.79
4:3:2236:G:OP1	33:a:271:LYS:NZ	2.15	0.79
28:S:17:ARG:O	28:S:21:ASN:ND2	2.15	0.79
6:5:256:G:OP1	28:S:64:ARG:NH2	2.15	0.79
46:n:64:ASN:OD1	46:n:65:GLY:N	2.16	0.79
26:Q:70:ILE:HD12	26:Q:90:LEU:HD21	1.65	0.78
4:3:47:G:H5"	4:3:48:G:H5'	1.64	0.78
6:5:640:C:H5'	16:G:40:LEU:HD21	1.66	0.78
6:5:1269:U:O2'	21:L:14:ARG:NH2	2.17	0.78
10:A:182:VAL:O	10:A:185:LYS:NZ	2.17	0.78
15:F:112:GLU:OE1	15:F:121:ASN:ND2	2.17	0.78
17:H:50:MET:H	17:H:50:MET:HE2	1.47	0.78
12:U:105:GLY:HA3	12:U:160:SER:HA	1.66	0.78
50:r:2:ILE:HG21	50:r:106:LYS:HE3	1.65	0.78

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:C:38:HIS:O	12:C:41:ARG:NH2	2.17	0.78
44:l:109:ILE:HD12	44:l:110:PRO:HD2	1.64	0.78
6:5:335:C:OP2	42:j:97:ARG:NH1	2.16	0.77
20:K:79:TYR:HD2	20:K:100:VAL:HG21	1.49	0.77
8:7:10:G:H1	8:7:25:U:H3	1.32	0.77
19:J:24:ILE:HD13	19:J:39:SER:HB2	1.64	0.77
4:3:192:U:H5"	54:v:14:TYR:CD2	2.18	0.77
6:5:681:U:H1'	19:J:33:ASN:HA	1.67	0.77
15:F:14:ASP:HB3	15:F:19:ASN:H	1.49	0.77
41:i:3:LYS:HG3	41:i:4:THR:H	1.50	0.77
50:r:24:ILE:HD11	50:r:32:ALA:HB1	1.65	0.77
4:3:1698:A:H2	42:j:1:MET:HE1	1.46	0.77
36:d:44:ILE:HD12	36:d:78:LYS:HB2	1.65	0.77
18:I:95:ARG:O	18:I:95:ARG:NH1	2.14	0.77
12:U:56:GLU:HB3	12:U:191:ILE:HD11	1.67	0.77
12:U:163:VAL:HG22	12:U:164:SER:H	1.50	0.77
40:h:59:ASN:OD1	40:h:61:LYS:NZ	2.18	0.77
46:n:98:TYR:HE1	46:n:103:ALA:HA	1.50	0.77
12:C:104:MET:HE3	12:C:169:THR:HG23	1.67	0.76
37:e:89:LYS:HD2	37:e:168:PHE:HD2	1.50	0.76
49:q:6:VAL:HG22	49:q:11:GLN:HG2	1.66	0.76
43:k:126:PHE:HB2	43:k:146:VAL:HG22	1.66	0.76
4:3:2140:G:N3	4:3:2165:A:N6	2.33	0.76
6:5:10:G:OP2	13:D:181:LYS:NZ	2.15	0.76
13:D:170:ILE:HG21	13:D:178:ILE:HG21	1.67	0.76
14:E:4:ASN:OD1	14:E:90:LEU:HD11	1.86	0.76
21:L:34:LEU:HD12	21:L:39:ILE:HG23	1.68	0.76
11:B:167:ARG:HD3	31:Y:49:U:H3	1.49	0.76
42:j:97:ARG:HA	42:j:117:LEU:HD11	1.67	0.76
6:5:1342:C:OP1	18:I:68:ARG:NH2	2.19	0.75
18:I:15:LYS:HB3	18:I:105:ARG:HB2	1.67	0.75
27:R:11:VAL:HG12	27:R:13:ALA:H	1.49	0.75
21:L:7:ILE:HG12	21:L:22:ILE:HG23	1.66	0.75
4:3:1262:G:O3'	50:r:127:LYS:NZ	2.19	0.75
11:B:209:MET:HE3	11:B:211:TYR:HE1	1.51	0.75
35:c:132:LEU:HA	35:c:135:LYS:HB2	1.68	0.75
3:2:30:GLN:OE1	3:2:30:GLN:N	2.20	0.75
37:e:77:ASN:HD21	37:e:141:LYS:HD2	1.52	0.75
11:B:221:HIS:ND1	11:B:221:HIS:O	2.19	0.75
14:E:140:GLN:HG2	14:E:141:PRO:HD2	1.66	0.75
50:r:115:GLN:OE1	50:r:115:GLN:N	2.19	0.75

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2692:U:OP2	47:o:56:ARG:NH2	2.20	0.75
42:j:2:VAL:HG11	42:j:62:ILE:HD13	1.69	0.75
44:l:32:TYR:OH	44:l:133:LYS:NZ	2.20	0.75
30:X:29:LYS:HE3	30:X:30:GLN:HG2	1.67	0.74
41:i:10:GLU:N	41:i:10:GLU:OE2	2.20	0.74
6:5:233:C:OP1	25:P:41:ARG:NH1	2.21	0.74
12:U:161:GLY:O	12:U:163:VAL:HG12	1.87	0.74
53:u:54:GLN:OE1	53:u:58:ARG:N	2.20	0.74
21:L:14:ARG:HD3	21:L:42:ASP:HA	1.67	0.74
4:3:2144:C:H2'	4:3:2145:A:H8	1.50	0.74
11:B:104:LEU:HG	11:B:231:ASN:HD22	1.53	0.74
18:I:27:THR:HG21	18:I:102:VAL:HG21	1.69	0.74
38:f:84:HIS:CD2	38:f:89:TYR:HB3	2.23	0.74
4:3:1340:U:H2'	51:s:63:THR:HG21	1.69	0.74
39:g:25:VAL:HG11	39:g:93:LEU:HD21	1.70	0.74
4:3:2258:G:O2'	4:3:2505:A:OP2	2.04	0.74
6:5:306:G:H4'	24:O:31:LYS:HD3	1.69	0.74
6:5:585:G:OP1	16:G:96:ARG:NH2	2.19	0.73
25:P:43:LYS:NZ	25:P:45:TYR:OH	2.21	0.73
36:d:38:MET:HB2	36:d:57:LEU:HD21	1.70	0.73
48:p:6:GLY:O	48:p:8:GLN:NE2	2.21	0.73
20:K:57:LYS:HB3	20:K:58:PRO:HD3	1.68	0.73
12:U:96:ARG:HB2	12:U:99:ASN:HB3	1.69	0.73
4:3:2427:U:H4'	58:z:8:ARG:HH12	1.52	0.73
65:5:1601:SPD:H51	65:5:1601:SPD:N1	2.02	0.73
43:k:82:LEU:HB2	43:k:116:GLY:HA3	1.71	0.73
11:B:61:THR:HG22	11:B:62:GLN:H	1.53	0.73
14:E:175:ARG:NH1	16:G:78:GLN:O	2.22	0.73
12:U:104:MET:SD	12:U:106:PHE:HD2	2.12	0.73
33:a:80:GLU:OE2	33:a:120:LYS:HB3	1.89	0.72
38:f:88:PRO:HG2	38:f:89:TYR:HD1	1.53	0.72
12:C:96:ARG:HH21	12:C:135:ILE:HG22	1.54	0.72
15:F:91:PRO:O	15:F:95:LYS:HG3	1.88	0.72
4:3:388:U:OP1	12:U:111:ARG:NH2	2.20	0.72
6:5:206:G:N2	6:5:209:A:OP2	2.22	0.72
6:5:560:U:OP2	20:K:14:LYS:NZ	2.21	0.72
6:5:1431:A:O2'	28:S:27:LYS:NZ	2.23	0.72
16:G:74:LEU:HD12	16:G:75:LYS:H	1.54	0.72
4:3:2111:U:H5'	4:3:2112:A:H5"	1.69	0.72
10:A:173:PRO:HD2	10:A:173:PRO:O	1.89	0.72
1:0:47:GLU:HG2	1:0:48:ARG:HG2	1.71	0.72

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:o:96:VAL:HG12	47:o:98:ARG:H	1.53	0.72
2:1:36:LYS:HA	2:1:39:ARG:HD3	1.71	0.72
34:b:56:THR:HA	34:b:78:THR:HG22	1.71	0.72
37:e:94:GLY:HA3	37:e:97:TYR:CD1	2.24	0.72
4:3:1111:C:H5"	40:h:87:LYS:HG3	1.71	0.72
14:E:46:ALA:HB1	26:Q:100:PRO:HD3	1.72	0.72
10:A:249:LYS:HG3	10:A:250:PRO:HD2	1.71	0.71
18:I:49:PRO:O	18:I:77:LYS:NZ	2.23	0.71
20:K:84:GLY:O	20:K:112:ARG:NH2	2.23	0.71
6:5:196:G:O2'	6:5:197:A:OP1	2.07	0.71
11:B:119:ILE:HD12	11:B:205:ILE:HD11	1.71	0.71
35:c:195:ASN:O	35:c:195:ASN:ND2	2.22	0.71
46:n:112:ARG:O	46:n:112:ARG:HG2	1.91	0.71
4:3:2713:A:H2	45:m:61:ARG:HH21	1.38	0.71
7:6:49:G:H1	7:6:65:U:H3	1.38	0.71
16:G:100:PRO:HD2	16:G:103:LYS:HE2	1.72	0.71
49:q:34:GLN:HE22	49:q:56:VAL:HG22	1.56	0.71
57:y:47:MET:HE1	57:y:50:ASP:HA	1.70	0.71
4:3:530:G:N3	50:r:61:ASN:ND2	2.39	0.71
49:q:54:ARG:HB2	49:q:98:VAL:HB	1.71	0.71
6:5:181:G:O2'	25:P:3:ARG:NH1	2.24	0.71
6:5:398:G:OP1	12:C:70:GLN:NE2	2.24	0.71
33:a:137:PRO:HA	33:a:197:ARG:HA	1.73	0.71
16:G:18:LEU:HD12	16:G:44:ILE:HD11	1.73	0.71
12:U:117:VAL:HG22	12:U:122:VAL:HG21	1.73	0.71
6:5:541:C:OP1	12:C:13:ARG:NH1	2.22	0.71
12:U:97:LEU:HD21	12:U:122:VAL:HG11	1.72	0.71
10:A:286:ARG:O	10:A:287:ASN:ND2	2.23	0.70
6:5:623:G:H4'	24:O:16:THR:HG21	1.72	0.70
16:G:26:ARG:HG3	16:G:82:PRO:HG3	1.73	0.70
47:o:95:LYS:HE2	47:o:118:LYS:HA	1.72	0.70
4:3:619:A:H62	4:3:1281:A:H2	1.39	0.70
33:a:65:LYS:O	33:a:67:ARG:NH1	2.24	0.70
33:a:80:GLU:OE1	33:a:122:LEU:HB2	1.91	0.70
46:n:34:LYS:HB2	46:n:39:ILE:HD12	1.72	0.70
4:3:1761:C:OP1	47:o:98:ARG:NH1	2.24	0.70
6:5:93:A:H5'	6:5:94:A:H5"	1.73	0.70
16:G:91:SER:HB2	16:G:97:ILE:HG22	1.72	0.70
56:x:3:LYS:HG3	56:x:4:ASP:H	1.57	0.70
10:A:46:GLU:OE1	10:A:46:GLU:N	2.23	0.70
11:B:140:SER:HA	11:B:143:LYS:HE3	1.72	0.70

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:H:86:VAL:HG22	17:H:100:LEU:HD21	1.72	0.70
33:a:34:GLU:OE2	33:a:36:SER:HB3	1.92	0.70
46:n:110:ARG:NH1	46:n:116:PHE:O	2.20	0.70
19:J:119:ARG:HD3	19:J:120:PRO:HD2	1.73	0.70
45:m:10:THR:HG23	45:m:13:TRP:H	1.57	0.70
6:5:399:C:H5"	12:C:132:PRO:HD2	1.73	0.70
38:f:68:LEU:HD22	38:f:108:LEU:HD21	1.73	0.70
6:5:1324:A:P	17:H:125:ARG:HE	2.15	0.70
12:U:14:LEU:HD13	54:v:63:ARG:HH11	1.57	0.70
36:d:13:ALA:HB1	36:d:25:ILE:HD11	1.74	0.70
4:3:2213:A:H1'	33:a:155:LYS:HE3	1.74	0.69
27:R:40:ILE:HG23	27:R:68:GLY:H	1.56	0.69
12:U:31:ARG:HD2	12:U:31:ARG:C	2.17	0.69
38:f:41:LYS:HB3	38:f:46:ASP:HB3	1.72	0.69
53:u:51:ILE:HD11	53:u:81:VAL:HG21	1.73	0.69
6:5:1270:C:H5'	21:L:14:ARG:NH2	2.07	0.69
36:d:136:ILE:HA	36:d:141:ILE:HD11	1.74	0.69
6:5:1009:G:N2	6:5:1012:A:OP2	2.23	0.69
65:5:1601:SPD:H21	17:H:125:ARG:NH1	2.08	0.69
12:U:11:SER:OG	12:U:23:LYS:NZ	2.20	0.69
6:5:136:U:H3	6:5:157:A:H62	1.39	0.69
6:5:1103:C:H1'	11:B:182:ARG:CZ	2.23	0.69
18:I:106:PHE:HE2	56:x:93:SER:H	1.40	0.69
19:J:119:ARG:HG2	29:T:34:TYR:CD1	2.26	0.69
39:g:110:CYS:HA	39:g:123:LEU:HD11	1.73	0.69
6:5:169:G:N2	6:5:219:A:O2'	2.25	0.69
6:5:257:U:OP2	28:S:64:ARG:NH1	2.25	0.69
17:H:35:ARG:HH11	17:H:40:TYR:HA	1.58	0.69
35:c:195:ASN:C	35:c:195:ASN:HD22	1.98	0.69
52:t:31:ARG:HG2	52:t:33:GLN:OE1	1.92	0.69
55:w:43:LEU:O	55:w:47:THR:HG23	1.91	0.69
6:5:598:U:H5"	16:G:101:PHE:HE2	1.58	0.69
15:F:117:GLU:O	15:F:121:ASN:ND2	2.26	0.69
16:G:36:ILE:O	16:G:41:LYS:NZ	2.25	0.69
4:3:1350:A:OP1	50:r:11:ARG:NH2	2.25	0.69
4:3:2137:A:O2'	4:3:2165:A:N6	2.24	0.69
10:A:65:LEU:HD21	10:A:231:LEU:HD13	1.73	0.69
17:H:119:GLY:H	18:I:68:ARG:HH21	1.40	0.69
19:J:72:MET:N	19:J:72:MET:SD	2.66	0.69
36:d:139:PRO:HG2	36:d:140:GLU:OE1	1.91	0.69
12:C:76:ARG:NH1	12:C:76:ARG:O	2.25	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:E:60:TRP:HE3	14:E:62:PHE:HE2	1.39	0.69
37:e:102:GLU:OE2	37:e:107:ASN:ND2	2.24	0.69
47:o:4:ILE:HD11	47:o:9:LEU:HD11	1.75	0.69
4:3:2026:A:OP2	57:y:6:ARG:NH2	2.26	0.69
4:3:2060:G:O2'	34:b:157:GLN:NE2	2.26	0.69
6:5:839:U:OP2	14:E:142:ARG:NH1	2.26	0.69
16:G:19:LEU:HD22	16:G:87:VAL:HG11	1.73	0.69
16:G:113:ILE:HG13	16:G:141:VAL:HG23	1.75	0.69
49:q:40:MET:HG2	49:q:45:ILE:HB	1.75	0.69
4:3:316:C:H4'	12:U:31:ARG:NH2	2.06	0.68
4:3:1807:C:OP2	33:a:190:ARG:NH2	2.26	0.68
6:5:452:A:N6	6:5:476:U:O2	2.26	0.68
37:e:83:THR:HG23	37:e:84:GLN:HG2	1.74	0.68
6:5:1241:G:N2	6:5:1244:A:OP2	2.24	0.68
6:5:1508:C:H42	10:A:294:GLU:HA	1.57	0.68
4:3:316:C:C4'	12:U:31:ARG:HH22	2.06	0.68
4:3:2355:C:O2'	58:z:19:TYR:OH	2.10	0.68
6:5:598:U:H5"	16:G:101:PHE:CE2	2.29	0.68
10:A:237:ALA:HA	10:A:242:MET:HE3	1.74	0.68
11:B:138:ARG:HA	11:B:141:LEU:HG	1.75	0.68
48:p:68:LEU:HD11	48:p:78:PHE:HD2	1.57	0.68
6:5:521:A:N6	20:K:102:ASP:OD2	2.24	0.68
6:5:933:A:O3'	15:F:94:ARG:NH2	2.27	0.68
8:7:48:G:H1	8:7:64:U:H3	1.40	0.68
16:G:87:VAL:HG22	16:G:141:VAL:HG12	1.75	0.68
33:a:55:VAL:HG12	33:a:58:GLN:HG3	1.75	0.68
37:e:127:LYS:NZ	37:e:135:THR:OG1	2.24	0.68
41:i:11:GLN:NE2	41:i:13:ASN:OD1	2.26	0.68
41:i:20:ILE:HD11	41:i:60:ILE:HD11	1.75	0.68
4:3:1446:G:O2'	4:3:1613:A:N6	2.27	0.68
6:5:369:A:O2'	6:5:448:A:N7	2.26	0.68
10:A:46:GLU:HB3	10:A:57:VAL:HG22	1.75	0.68
26:Q:86:VAL:HG22	26:Q:90:LEU:HD23	1.76	0.68
4:3:432:G:OP2	54:v:10:ARG:NH1	2.27	0.68
4:3:1344:U:O2'	30:X:44:ARG:NH2	2.26	0.68
5:4:83:U:H5'	5:4:84:C:H5'	1.76	0.68
15:F:112:GLU:HB2	15:F:118:LYS:HG2	1.76	0.68
4:3:1029:A:OP1	48:p:49:ARG:NH1	2.27	0.68
19:J:43:MET:HE1	19:J:62:LYS:HD2	1.75	0.68
27:R:9:ALA:HB1	27:R:39:THR:HG21	1.74	0.68
33:a:116:LYS:N	33:a:119:ASP:OD2	2.26	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2352:U:OP1	58:z:35:ASN:ND2	2.27	0.68
4:3:2794:U:H5"	34:b:72:LYS:HD2	1.74	0.68
6:5:172:C:H5"	28:S:66:ARG:NH1	2.04	0.68
25:P:43:LYS:HD3	25:P:45:TYR:CE1	2.28	0.68
44:l:109:ILE:HD12	44:l:110:PRO:CD	2.23	0.68
4:3:254:G:O5'	43:k:60:ARG:NH1	2.27	0.68
4:3:2111:U:H5"	4:3:2112:A:H8	1.58	0.68
18:I:90:ILE:HD12	18:I:93:LEU:HD23	1.76	0.68
15:F:11:VAL:HG21	15:F:24:ARG:HH11	1.59	0.67
16:G:48:LEU:CD1	16:G:53:TYR:HB2	2.24	0.67
10:A:45:ILE:HD11	10:A:204:THR:HG23	1.75	0.67
11:B:141:LEU:HD12	11:B:142:ILE:HG12	1.76	0.67
23:N:21:SER:O	23:N:25:GLN:HG2	1.94	0.67
36:d:135:GLN:HE22	36:d:149:ILE:HG22	1.58	0.67
53:u:39:LYS:HD2	53:u:45:ILE:HG22	1.76	0.67
21:L:54:VAL:HA	21:L:57:ARG:NE	2.09	0.67
4:3:2692:U:H5"	47:o:78:ASN:HD22	1.59	0.67
10:A:162:PHE:C	10:A:163:PHE:HD1	2.03	0.67
13:D:106:ALA:HB1	13:D:117:LYS:HE3	1.76	0.67
16:G:44:ILE:HG22	16:G:122:VAL:HG11	1.76	0.67
24:O:9:MET:HE1	24:O:18:ARG:HE	1.57	0.67
42:j:7:ARG:HH22	42:j:44:LYS:HD3	1.59	0.67
51:s:59:ILE:HD11	51:s:79:LYS:HE2	1.75	0.67
10:A:172:LEU:HG	10:A:173:PRO:HD3	1.77	0.67
49:q:51:GLU:O	49:q:52:LYS:HG3	1.95	0.67
4:3:2653:G:OP2	4:3:2653:G:N2	2.23	0.67
5:4:6:U:OP2	46:n:9:ARG:NH1	2.27	0.67
6:5:416:U:O2'	6:5:421:G:N2	2.28	0.67
24:O:18:ARG:HA	24:O:38:HIS:HA	1.77	0.67
4:3:656:G:H4'	4:3:657:A:H5'	1.77	0.67
10:A:181:PRO:HD3	10:A:200:ALA:HB1	1.77	0.67
11:B:46:VAL:HG23	11:B:47:ASN:H	1.59	0.67
46:n:109:ALA:HB1	46:n:114:LEU:HD12	1.75	0.67
11:B:21:ARG:NH1	11:B:57:GLU:OE1	2.28	0.67
13:D:212:ARG:HH21	16:G:83:SER:HB2	1.59	0.67
12:U:128:THR:HG22	12:U:129:VAL:H	1.58	0.67
37:e:27:VAL:HG12	37:e:82:VAL:HG21	1.77	0.67
41:i:4:THR:HA	49:q:12:TYR:HE1	1.60	0.67
6:5:775:G:O2'	19:J:114:CYS:SG	2.52	0.67
15:F:154:ARG:NH2	15:F:155:TRP:OXT	2.26	0.67
17:H:20:TYR:HB2	17:H:66:ASN:HB3	1.75	0.67

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:D:212:ARG:NH2	16:G:83:SER:HB2	2.10	0.67
14:E:38:GLU:OE2	14:E:59:ARG:NH2	2.27	0.67
6:5:1000:A:HO2'	6:5:1029:C:HO2'	1.42	0.66
10:A:107:PHE:CD1	10:A:109:THR:HG23	2.30	0.66
17:H:54:LEU:HD11	17:H:85:ILE:HG21	1.76	0.66
36:d:85:ILE:HG13	36:d:85:ILE:O	1.94	0.66
4:3:1806:G:OP1	33:a:268:ARG:NH1	2.28	0.66
4:3:2135:C:H2'	4:3:2136:A:H8	1.61	0.66
54:v:5:ASP:OD1	54:v:8:THR:N	2.28	0.66
4:3:2799:U:OP1	4:3:2896:G:N1	2.23	0.66
37:e:112:TYR:HB2	37:e:116:ILE:HD11	1.77	0.66
7:6:9:A:H5'	7:6:46:G:H1'	1.76	0.66
15:F:74:LEU:HD22	15:F:85:GLN:HB3	1.76	0.66
11:B:104:LEU:CG	11:B:231:ASN:ND2	2.58	0.66
4:3:394:C:O2'	12:U:33:THR:HA	1.95	0.66
18:I:87:GLN:HA	18:I:90:ILE:HG22	1.77	0.66
4:3:2688:C:H5'	34:b:198:ALA:HA	1.78	0.66
6:5:669:U:O2'	14:E:84:ARG:NH1	2.29	0.66
14:E:99:SER:O	14:E:105:GLN:NE2	2.23	0.66
54:v:35:PRO:HB3	54:v:47:ARG:HH11	1.61	0.66
12:U:9:LYS:O	12:U:13:ARG:HB2	1.95	0.66
4:3:195:A:H3'	4:3:196:G:H21	1.62	0.66
6:5:1114:A:H4'	18:I:45:PRO:HD2	1.78	0.66
7:6:3:G:H1	7:6:70:U:H3	1.44	0.66
13:D:141:ILE:HG12	13:D:150:LEU:HD13	1.77	0.66
46:n:48:GLN:HG2	46:n:50:ILE:HD13	1.78	0.66
28:S:35:PHE:HZ	28:S:76:LEU:HD11	1.61	0.65
34:b:169:TYR:HE1	64:b:303:SPM:H61	1.61	0.65
39:g:100:VAL:HG12	39:g:106:MET:HG3	1.76	0.65
39:g:25:VAL:HG23	39:g:83:ALA:HB3	1.78	0.65
4:3:315:A:N7	12:U:38:HIS:ND1	2.43	0.65
4:3:925:C:H4'	4:3:926:U:O4'	1.96	0.65
6:5:1091:C:OP2	10:A:111:ARG:NH1	2.29	0.65
12:C:121:HIS:HA	12:C:145:LYS:HD2	1.78	0.65
4:3:271:G:O2'	12:U:34:ILE:HA	1.96	0.65
4:3:2259:OMG:P	44:l:82:ARG:HH22	2.19	0.65
10:A:107:PHE:CE1	10:A:109:THR:HG23	2.31	0.65
23:N:76:ARG:HH21	23:N:80:LYS:HB3	1.61	0.65
29:T:6:VAL:HG12	29:T:8:ASN:H	1.60	0.65
4:3:1096:U:H1'	4:3:1105:A:H1'	1.78	0.65
4:3:2667:G:N2	4:3:2670:A:OP2	2.25	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1320:A:H62	6:5:1349:A:H5"	1.62	0.65
27:R:11:VAL:HG22	27:R:38:SER:HB3	1.79	0.65
33:a:179:TYR:HB3	33:a:191:LYS:HB3	1.78	0.65
21:L:15:ILE:O	21:L:19:LEU:HD22	1.96	0.65
43:k:89:LYS:HA	43:k:89:LYS:HE3	1.79	0.65
47:o:31:VAL:HG12	47:o:90:LEU:HA	1.79	0.65
4:3:393:C:C2	12:U:32:LYS:HD2	2.32	0.65
4:3:2690:U:C6	34:b:13:MET:HE2	2.32	0.65
16:G:5:THR:HG23	16:G:6:LYS:HG3	1.77	0.65
18:I:13:LYS:HG3	18:I:81:ILE:HG22	1.77	0.65
12:U:126:ASP:O	12:U:127:ARG:HD2	1.96	0.65
4:3:2589:G:N2	4:3:2589:G:OP2	2.30	0.65
50:r:83:LYS:C	50:r:84:ARG:HD3	2.21	0.65
6:5:1323:A:OP1	17:H:125:ARG:HD3	1.97	0.65
39:g:41:ARG:NH1	39:g:51:ILE:O	2.30	0.65
51:s:52:PRO:HB3	51:s:83:ILE:HG23	1.79	0.65
6:5:953:A:N6	27:R:77:THR:O	2.30	0.65
3:2:9:PRO:HG3	3:2:16:ILE:HD11	1.78	0.64
12:U:129:VAL:HG13	12:U:134:ILE:CD1	2.26	0.64
15:F:71:ARG:HA	15:F:95:LYS:HZ1	1.62	0.64
19:J:61:ASP:OD1	19:J:92:SER:OG	2.16	0.64
22:M:10:GLN:NE2	22:M:21:TYR:O	2.30	0.64
4:3:2427:U:H4'	58:z:8:ARG:NH1	2.12	0.64
19:J:65:LYS:HA	19:J:68:LYS:HE2	1.79	0.64
20:K:47:CYS:HA	20:K:68:VAL:HA	1.79	0.64
28:S:17:ARG:HA	28:S:20:ASN:HD21	1.63	0.64
4:3:487:C:N4	4:3:490:A:OP2	2.28	0.64
6:5:358:G:OP1	20:K:71:THR:OG1	2.14	0.64
35:c:64:LYS:NZ	35:c:68:GLN:OE1	2.31	0.64
36:d:110:ARG:NH1	36:d:137:ILE:O	2.30	0.64
38:f:115:ASP:HA	38:f:132:GLU:HA	1.79	0.64
57:y:32:LYS:HG3	57:y:47:MET:HE2	1.80	0.64
19:J:119:ARG:CZ	29:T:34:TYR:HB2	2.26	0.64
38:f:88:PRO:HG2	38:f:89:TYR:CD1	2.31	0.64
56:x:49:GLU:HG3	56:x:52:LYS:H	1.62	0.64
4:3:619:A:OP1	64:3:3229:SPM:N14	2.31	0.64
16:G:43:ALA:O	16:G:46:GLU:HG3	1.98	0.64
4:3:499:G:N2	4:3:502:A:OP2	2.27	0.64
14:E:161:GLN:HE22	16:G:59:VAL:H	1.43	0.64
12:U:144:LEU:HB3	12:U:174:PHE:HB2	1.78	0.64
12:U:166:PHE:HD1	12:U:186:GLU:HG2	1.63	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:U:177:THR:HG22	12:U:178:TYR:H	1.62	0.64
37:e:89:LYS:HD2	37:e:168:PHE:CD2	2.33	0.64
39:g:100:VAL:HG11	39:g:106:MET:HE2	1.79	0.64
53:u:44:MET:HE3	53:u:100:HIS:CE1	2.33	0.64
4:3:2141:A:H8	4:3:2164:G:H21	1.46	0.64
9:8:40:C:O3'	21:L:119:LYS:NZ	2.31	0.64
24:O:43:LEU:HD23	24:O:47:LYS:HA	1.80	0.64
35:c:29:LEU:HD13	35:c:114:THR:HB	1.79	0.64
44:l:43:ASP:OD2	44:l:45:ARG:NH1	2.30	0.64
20:K:29:ASN:ND2	20:K:32:ASN:OD1	2.31	0.64
11:B:184:ASP:OD1	11:B:207:ARG:NH2	2.31	0.64
18:I:32:VAL:O	18:I:36:LYS:HG2	1.98	0.64
49:q:83:TYR:HD1	49:q:84:GLY:H	1.43	0.64
4:3:1029:A:OP2	48:p:50:ARG:NH2	2.31	0.63
4:3:2823:A:O2'	4:3:2825:A:N7	2.30	0.63
10:A:144:LEU:HD13	10:A:152:LEU:HD21	1.80	0.63
10:A:293:ARG:HE	29:T:50:GLN:HG3	1.63	0.63
13:D:97:ARG:NH2	13:D:171:GLU:OE2	2.31	0.63
35:c:54:THR:N	35:c:57:GLU:OE1	2.26	0.63
57:y:51:LEU:HD23	57:y:53:VAL:HG22	1.80	0.63
12:U:64:TYR:HD1	12:U:110:ARG:HH12	1.45	0.63
36:d:4:LEU:HA	36:d:7:HIS:HB3	1.80	0.63
36:d:115:ARG:NH1	36:d:115:ARG:O	2.31	0.63
53:u:51:ILE:HD11	53:u:81:VAL:CG2	2.28	0.63
4:3:2122:G:H3'	4:3:2123:A:H5"	1.81	0.63
6:5:1009:G:H21	6:5:1012:A:H2	1.45	0.63
11:B:229:GLN:HB3	11:B:230:PRO:HD3	1.78	0.63
4:3:960:A:H5'	53:u:43:GLN:HE21	1.62	0.63
4:3:2098:U:H3'	4:3:2099:U:H5"	1.80	0.63
6:5:1068:G:N2	6:5:1071:A:OP2	2.23	0.63
12:U:202:ARG:HG2	12:U:203:LEU:HD12	1.80	0.63
45:m:51:LEU:HD11	45:m:63:VAL:HG23	1.81	0.63
25:P:30:PHE:HD2	25:P:41:ARG:HE	1.46	0.63
51:s:91:ILE:HD12	51:s:92:SER:H	1.63	0.63
4:3:267:A:OP2	12:U:69:LYS:NZ	2.31	0.63
6:5:823:C:O2	16:G:24:ASN:ND2	2.32	0.63
34:b:22:GLU:OE1	42:j:72:LYS:HB2	1.99	0.63
4:3:620:G:H5'	64:3:3229:SPM:H61	1.81	0.63
6:5:793:C:OP1	19:J:120:PRO:HA	1.97	0.63
10:A:126:SER:HB3	10:A:163:PHE:HE2	1.62	0.63
14:E:2:GLN:OE1	14:E:96:TYR:OH	2.16	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:U:95:SER:OG	12:U:136:LEU:N	2.32	0.63
30:X:41:LYS:HB2	30:X:56:TYR:HE2	1.62	0.63
35:c:39:LEU:HD11	43:k:13:ARG:HH12	1.64	0.63
9:8:54:U:H4'	44:l:52:ILE:HD12	1.81	0.63
18:I:12:LEU:HB3	18:I:82:LEU:HB2	1.80	0.63
12:U:102:TYR:HB3	12:U:110:ARG:HE	1.62	0.63
57:y:42:VAL:HG23	57:y:48:TYR:HB2	1.81	0.63
4:3:1601:A:OP2	33:a:88:TYR:OH	2.16	0.63
10:A:188:VAL:HG21	10:A:210:LEU:HD22	1.80	0.63
21:L:120:LYS:HG2	27:R:87:ARG:NE	2.14	0.63
36:d:148:ARG:HH21	36:d:149:ILE:HG12	1.63	0.63
40:h:50:MET:SD	40:h:52:PRO:HD3	2.39	0.63
44:l:31:GLU:HA	44:l:134:ARG:HB2	1.80	0.63
47:o:92:ARG:HH21	47:o:116:GLU:HB2	1.63	0.63
29:T:36:LEU:H	29:T:41:ARG:HH21	1.46	0.62
41:i:104:VAL:HG11	41:i:127:VAL:HG21	1.81	0.62
15:F:119:ILE:O	15:F:123:ILE:HG12	1.98	0.62
20:K:79:TYR:CD2	20:K:100:VAL:HG21	2.33	0.62
21:L:34:LEU:HD21	21:L:41:PRO:HB3	1.81	0.62
35:c:120:LEU:HA	35:c:125:THR:HG21	1.81	0.62
36:d:45:ARG:HG3	36:d:46:ASP:H	1.63	0.62
4:3:788:G:N2	45:m:3:TYR:OH	2.32	0.62
4:3:1518:C:N4	4:3:2220:A:OP1	2.32	0.62
13:D:206:ARG:HD2	13:D:206:ARG:O	1.99	0.62
16:G:36:ILE:HA	16:G:69:ILE:HG22	1.80	0.62
48:p:100:LYS:HB2	48:p:101:GLU:OE1	1.99	0.62
4:3:1123:A:N7	40:h:130:GLN:NE2	2.46	0.62
12:C:94:GLU:OE1	12:C:99:ASN:ND2	2.32	0.62
14:E:22:ASN:OD1	14:E:23:GLU:N	2.32	0.62
21:L:77:ILE:HA	21:L:80:LEU:HG	1.81	0.62
28:S:16:LYS:O	28:S:20:ASN:ND2	2.32	0.62
40:h:41:GLU:HG3	40:h:42:LYS:HG3	1.81	0.62
6:5:744:U:H5'	14:E:153:LYS:HZ1	1.64	0.62
11:B:182:ARG:CD	11:B:209:MET:HE1	2.30	0.62
12:U:166:PHE:CD2	12:U:182:PRO:HG3	2.34	0.62
47:o:7:GLN:H	47:o:7:GLN:CD	2.06	0.62
49:q:23:GLU:N	49:q:23:GLU:OE2	2.31	0.62
54:v:16:ASN:HD22	54:v:24:ILE:HG23	1.64	0.62
56:x:30:LYS:HD2	56:x:31:GLN:N	2.15	0.62
6:5:988:G:O2'	6:5:989:A:N7	2.31	0.62
39:g:106:MET:HE3	39:g:107:ASN:O	2.00	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:u:39:LYS:HD3	53:u:43:GLN:OE1	2.00	0.62
12:C:43:ARG:HH22	12:C:46:THR:HB	1.65	0.62
4:3:273:C:OP1	12:U:30:LYS:NZ	2.32	0.62
4:3:433:A:OP2	54:v:10:ARG:NH2	2.29	0.62
4:3:1600:A:N3	33:a:62:ASN:ND2	2.47	0.62
6:5:1438:U:H2'	6:5:1439:G:H8	1.65	0.62
14:E:98:ALA:HB3	26:Q:49:LEU:HD21	1.81	0.62
38:f:5:LEU:HA	38:f:36:ALA:HA	1.81	0.62
44:l:79:LEU:HD23	44:l:80:GLU:HG3	1.80	0.62
3:2:2:LYS:NZ	4:3:2486:A:OP2	2.31	0.62
6:5:1323:A:H3'	17:H:125:ARG:HH21	1.65	0.62
36:d:112:ARG:HH12	36:d:113:ASP:HB2	1.64	0.62
42:j:85:VAL:HG21	42:j:114:ILE:HD12	1.81	0.62
14:E:10:ASP:O	14:E:17:GLN:NE2	2.32	0.61
14:E:90:LEU:O	14:E:96:TYR:HD2	1.82	0.61
29:T:5:GLU:HG2	29:T:7:LYS:H	1.65	0.61
34:b:190:LEU:HD11	47:o:9:LEU:HB3	1.81	0.61
44:l:54:ILE:HD13	44:l:64:MET:SD	2.40	0.61
4:3:253:C:O2'	43:k:64:LYS:NZ	2.31	0.61
37:e:100:ASN:HA	37:e:128:VAL:HG11	1.81	0.61
39:g:29:TYR:HA	39:g:32:MET:HE1	1.81	0.61
4:3:1786:U:OP2	4:3:1791:A:N6	2.24	0.61
26:Q:76:THR:HG22	26:Q:78:ASN:OD1	2.01	0.61
27:R:40:ILE:HG22	27:R:69:HIS:O	1.99	0.61
38:f:71:VAL:O	38:f:74:GLN:HG3	2.00	0.61
41:i:59:ILE:HB	41:i:127:VAL:HG23	1.81	0.61
47:o:41:GLU:O	47:o:42:LYS:HG2	2.00	0.61
49:q:28:PRO:HD2	49:q:31:LYS:HE3	1.81	0.61
33:a:190:ARG:HD3	33:a:192:PHE:HE1	1.66	0.61
35:c:183:LEU:HD12	35:c:203:VAL:HG13	1.82	0.61
54:v:63:ARG:C	54:v:65:SER:H	2.07	0.61
10:A:218:ASN:O	10:A:219:ASN:ND2	2.34	0.61
36:d:102:LYS:HB2	56:x:25:ILE:HG21	1.81	0.61
37:e:79:ILE:O	37:e:83:THR:HG22	2.00	0.61
46:n:32:VAL:HG12	46:n:41:VAL:HG22	1.82	0.61
52:t:57:LYS:HE3	52:t:59:SER:HB3	1.81	0.61
4:3:2311:G:O2'	36:d:121:SER:O	2.15	0.61
6:5:744:U:H5'	14:E:153:LYS:NZ	2.15	0.61
15:F:71:ARG:HA	15:F:95:LYS:NZ	2.14	0.61
21:L:93:LYS:HA	21:L:93:LYS:HE3	1.81	0.61
25:P:29:ARG:HG2	25:P:38:SER:HB3	1.80	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Q:36:ARG:HD3	26:Q:38:LYS:HB3	1.81	0.61
53:u:51:ILE:HD13	53:u:95:VAL:HG21	1.82	0.61
17:H:81:ILE:O	17:H:85:ILE:HG12	2.01	0.61
25:P:59:ASP:O	25:P:61:VAL:HG13	2.00	0.61
4:3:720:A:OP1	4:3:721:G:N2	2.34	0.61
4:3:1129:U:N3	4:3:1132:C:OP2	2.26	0.61
19:J:77:LEU:HD22	19:J:103:ILE:HD12	1.83	0.61
19:J:104:ASN:OD1	19:J:106:LYS:NZ	2.33	0.61
20:K:3:THR:HG22	20:K:6:GLN:HB2	1.82	0.61
34:b:123:ILE:HD13	34:b:142:ARG:HD2	1.83	0.61
39:g:119:ASN:H	39:g:122:ASP:HB2	1.65	0.61
52:t:3:ARG:HB3	52:t:4:ILE:HD12	1.81	0.61
6:5:9:A:O2'	12:C:202:ARG:NH2	2.33	0.61
22:M:4:LYS:HG3	22:M:5:SER:N	2.15	0.61
24:O:1:MET:HG3	24:O:1:MET:O	2.01	0.61
24:O:66:THR:H	24:O:69:VAL:HB	1.66	0.61
4:3:620:G:H1	43:k:34:ARG:HH11	1.49	0.61
4:3:2805:A:H4'	4:3:2807:G:H5"	1.83	0.61
6:5:545:A:OP1	12:C:69:LYS:NZ	2.34	0.61
11:B:182:ARG:HD3	11:B:209:MET:HE1	1.83	0.61
11:B:216:ASN:C	11:B:218:THR:H	2.08	0.61
15:F:90:VAL:HG13	15:F:95:LYS:HG2	1.82	0.61
19:J:46:LYS:H	19:J:49:ARG:HH21	1.49	0.61
12:C:88:ASN:O	12:C:92:VAL:HG23	2.01	0.60
33:a:41:LEU:HG	33:a:66:TYR:HB2	1.83	0.60
33:a:83:VAL:HG12	33:a:99:ILE:HG22	1.83	0.60
4:3:2321:C:O4'	36:d:37:ASN:ND2	2.32	0.60
6:5:55:C:H2'	6:5:348:C:H41	1.66	0.60
6:5:1214:A:H62	6:5:1273:A:H62	1.48	0.60
6:5:1497:U:H2'	6:5:1498:G:H8	1.65	0.60
10:A:37:TRP:HB2	10:A:204:THR:HG22	1.82	0.60
14:E:90:LEU:HD12	14:E:90:LEU:H	1.64	0.60
16:G:98:TYR:C	16:G:99:ARG:HD2	2.26	0.60
17:H:114:GLU:N	17:H:114:GLU:OE2	2.34	0.60
12:U:63:MET:HA	12:U:63:MET:HE3	1.83	0.60
33:a:99:ILE:HG21	33:a:109:ILE:HD11	1.84	0.60
36:d:108:LEU:HG	36:d:114:PHE:CE2	2.34	0.60
4:3:2481:U:OP1	4:3:2483:C:N4	2.34	0.60
6:5:837:G:OP1	14:E:148:LYS:NZ	2.35	0.60
65:5:1601:SPD:C2	17:H:125:ARG:NH1	2.64	0.60
33:a:128:ILE:HG22	33:a:129:ASP:H	1.65	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:c:105:LYS:O	35:c:109:THR:HG23	2.01	0.60
12:C:143:ARG:HH22	12:C:146:ALA:HB2	1.67	0.60
14:E:96:TYR:HE1	14:E:100:ILE:HD11	1.67	0.60
24:O:23:ASP:HB3	24:O:26:VAL:HG23	1.83	0.60
14:E:175:ARG:NH2	16:G:79:ARG:HG3	2.17	0.60
17:H:6:TYR:HD2	17:H:21:LEU:HD22	1.66	0.60
18:I:93:LEU:HD12	18:I:96:ILE:HD12	1.83	0.60
19:J:100:ILE:H	19:J:100:ILE:HD12	1.65	0.60
20:K:69:ARG:NH1	20:K:72:ASN:O	2.27	0.60
37:e:168:PHE:HD1	37:e:169:ASP:N	2.00	0.60
4:3:619:A:N1	4:3:844:G:O2'	2.34	0.60
4:3:1619:A:H2'	4:3:1620:A:C8	2.37	0.60
4:3:2258:G:H3'	44:l:82:ARG:NH1	2.14	0.60
6:5:662:G:H1'	6:5:730:G:H5'	1.82	0.60
6:5:1153:G:N2	6:5:1156:G:OP2	2.33	0.60
22:M:45:ARG:HE	22:M:49:TYR:HE2	1.47	0.60
6:5:659:U:P	14:E:101:ASN:HD21	2.24	0.60
10:A:57:VAL:HB	10:A:60:LEU:HG	1.82	0.60
16:G:123:MET:SD	16:G:127:VAL:HG13	2.41	0.60
43:k:121:GLU:H	43:k:121:GLU:CD	2.09	0.60
6:5:164:C:H2'	6:5:165:A:H8	1.66	0.60
38:f:87:ARG:HB2	38:f:88:PRO:HD3	1.83	0.60
42:j:66:LYS:O	42:j:78:LYS:NZ	2.30	0.60
11:B:35:ILE:HG12	22:M:25:GLN:HB3	1.83	0.60
14:E:101:ASN:HD22	14:E:104:LYS:HD2	1.67	0.60
22:M:47:LEU:CD2	22:M:52:ALA:HB3	2.32	0.60
42:j:15:GLY:HA3	42:j:47:ILE:HG12	1.83	0.60
58:z:7:THR:HG21	58:z:23:LYS:HB3	1.83	0.60
4:3:1032:A:O3'	48:p:90:ASN:ND2	2.35	0.60
6:5:1321:G:C8	17:H:111:ARG:HG2	2.37	0.60
24:O:52:GLU:HG3	24:O:52:GLU:O	2.02	0.60
43:k:100:GLU:OE2	43:k:100:GLU:N	2.32	0.60
4:3:2756:A:H2	37:e:66:ILE:HD11	1.66	0.59
12:C:60:MET:HB2	12:C:191:ILE:HG12	1.83	0.59
12:C:68:ASP:OD1	12:C:69:LYS:N	2.34	0.59
29:T:57:ARG:HB3	29:T:57:ARG:NH1	2.16	0.59
37:e:97:TYR:HD2	37:e:110:LEU:HD12	1.67	0.59
10:A:26:MET:HG3	10:A:227:LEU:HD13	1.83	0.59
10:A:156:ILE:O	10:A:160:GLU:HG3	2.02	0.59
14:E:24:LYS:HZ1	14:E:76:ALA:HA	1.66	0.59
17:H:41:PHE:C	17:H:43:ASN:H	2.09	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:P:16:THR:OG1	25:P:21:THR:O	2.19	0.59
6:5:196:G:HO2'	6:5:197:A:P	2.25	0.59
6:5:1425:A:H2'	6:5:1427:U:H3	1.67	0.59
14:E:94:TYR:HB3	26:Q:85:HIS:CD2	2.38	0.59
34:b:50:THR:OG1	34:b:87:MET:O	2.18	0.59
42:j:103:ALA:HB1	42:j:105:GLU:OE1	2.02	0.59
44:l:18:GLU:OE2	44:l:18:GLU:N	2.32	0.59
49:q:33:ILE:HD12	49:q:34:GLN:H	1.66	0.59
4:3:13:C:H3'	4:3:14:U:H5'	1.85	0.59
4:3:1137:C:H2'	4:3:1138:A:H8	1.66	0.59
6:5:837:G:N2	6:5:839:U:OP1	2.31	0.59
10:A:252:GLU:HA	10:A:255:GLN:HE22	1.67	0.59
21:L:86:TRP:HA	21:L:89:LEU:HG	1.84	0.59
6:5:969:A:OP2	22:M:41:ARG:NH1	2.36	0.59
6:5:1049:G:H5"	11:B:189:LEU:HD11	1.83	0.59
6:5:1290:G:N1	6:5:1293:A:OP2	2.35	0.59
10:A:293:ARG:HH21	29:T:50:GLN:HG3	1.67	0.59
15:F:94:ARG:O	15:F:98:LEU:HD22	2.02	0.59
18:I:98:ILE:HD12	18:I:102:VAL:HG23	1.82	0.59
25:P:32:HIS:CD2	25:P:33:PRO:HD3	2.38	0.59
36:d:136:ILE:HA	36:d:141:ILE:CD1	2.32	0.59
50:r:12:ILE:HG12	50:r:43:ALA:HB2	1.83	0.59
4:3:881:A:H1'	4:3:882:C:H5"	1.85	0.59
19:J:22:ASN:OD1	19:J:23:THR:N	2.35	0.59
58:z:30:GLU:OE1	58:z:30:GLU:N	2.29	0.59
6:5:1321:G:O6	17:H:12:ARG:NH2	2.34	0.59
12:C:34:ILE:HG13	12:C:39:GLY:HA2	1.83	0.59
13:D:159:GLY:N	13:D:177:ASP:OD1	2.33	0.59
38:f:75:THR:O	38:f:76:GLU:C	2.46	0.59
45:m:37:LYS:O	45:m:41:THR:HG23	2.03	0.59
56:x:94:LEU:O	56:x:98:ASN:ND2	2.36	0.59
6:5:373:A:H2'	6:5:374:G:H8	1.67	0.59
10:A:18:VAL:HG12	10:A:19:SER:H	1.68	0.59
11:B:232:ARG:O	11:B:233:GLN:C	2.46	0.59
35:c:150:ALA:O	35:c:151:LYS:HG2	2.03	0.59
36:d:10:LYS:HG3	36:d:11:THR:N	2.18	0.59
1:0:29:LYS:O	1:0:33:LEU:HD23	2.03	0.59
4:3:2692:U:H5"	47:o:78:ASN:ND2	2.17	0.59
6:5:145:G:N2	6:5:148:A:OP2	2.32	0.59
6:5:1330:A:H2'	6:5:1331:A:C8	2.37	0.59
6:5:1448:A:H2'	6:5:1449:G:C8	2.38	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:6:54:U:H2'	7:6:55:U:C6	2.36	0.59
12:C:13:ARG:HH21	12:C:35:PRO:HG2	1.68	0.59
16:G:38:SER:O	16:G:41:LYS:HG2	2.03	0.59
16:G:74:LEU:HD12	16:G:75:LYS:N	2.17	0.59
18:I:98:ILE:HG13	18:I:98:ILE:O	2.03	0.59
31:Y:49:U:H4'	31:Y:50:U:O5'	2.03	0.59
35:c:20:LEU:HD21	35:c:204:LEU:HD11	1.84	0.59
47:o:95:LYS:CE	47:o:118:LYS:HA	2.33	0.59
10:A:26:MET:HE1	10:A:223:GLN:HB2	1.84	0.59
18:I:57:ILE:HG23	22:M:41:ARG:HB2	1.84	0.59
27:R:40:ILE:HD11	27:R:62:VAL:HG21	1.84	0.59
35:c:127:LEU:HD12	35:c:199:VAL:HG13	1.85	0.59
37:e:142:GLU:OE1	37:e:142:GLU:N	2.35	0.59
40:h:31:ASN:ND2	40:h:34:GLU:OE2	2.36	0.59
56:x:93:SER:OG	56:x:94:LEU:N	2.35	0.59
4:3:1279:U:H5'	48:p:3:ILE:HB	1.85	0.58
4:3:2308:U:H2'	4:3:2309:A:H8	1.67	0.58
11:B:143:LYS:HA	11:B:146:LYS:HE3	1.86	0.58
12:C:46:THR:O	12:C:46:THR:HG22	2.02	0.58
4:3:341:G:N1	4:3:344:A:OP2	2.32	0.58
4:3:436:G:O6	54:v:56:ARG:NH2	2.36	0.58
4:3:573:A:H4'	41:i:11:GLN:HB2	1.85	0.58
4:3:1716:A:H61	4:3:1740:U:H3	1.50	0.58
6:5:874:C:OP1	20:K:9:ARG:NH2	2.36	0.58
51:s:39:ARG:HG2	51:s:39:ARG:HH11	1.67	0.58
50:r:64:MET:HE3	50:r:65:ASN:N	2.18	0.58
12:C:3:TYR:CE1	12:C:65:GLY:HA2	2.37	0.58
12:C:97:LEU:HD12	12:C:136:LEU:HD21	1.86	0.58
12:C:195:TYR:HA	12:C:198:GLU:OE1	2.04	0.58
12:U:13:ARG:O	54:v:63:ARG:NH2	2.34	0.58
42:j:1:MET:SD	42:j:67:LYS:HG2	2.44	0.58
6:5:974:C:O2	22:M:19:ARG:NH1	2.37	0.58
8:7:27:U:H3	8:7:43:G:H1	1.52	0.58
13:D:207:ARG:O	13:D:211:LEU:HG	2.03	0.58
18:I:17:GLU:HB2	18:I:77:LYS:HG2	1.86	0.58
28:S:52:ASP:HB3	28:S:56:ARG:HH12	1.68	0.58
33:a:33:PRO:HB2	33:a:38:LEU:HD11	1.85	0.58
4:3:86:A:N6	4:3:101:C:O4'	2.37	0.58
4:3:600:U:OP2	43:k:30:LYS:NZ	2.35	0.58
6:5:735:C:OP2	14:E:92:ARG:NH2	2.37	0.58
6:5:1321:G:H3'	17:H:114:GLU:OE2	2.04	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:F:69:MET:HE1	15:F:95:LYS:HE3	1.85	0.58
12:U:38:HIS:O	12:U:40:ASN:N	2.37	0.58
40:h:24:ALA:O	40:h:27:SER:OG	2.22	0.58
42:j:89:GLU:CD	42:j:89:GLU:H	2.11	0.58
48:p:70:GLU:HG3	48:p:71:GLN:OE1	2.03	0.58
48:p:93:VAL:HG11	49:q:4:ILE:HD13	1.84	0.58
55:w:57:ILE:HG22	55:w:61:ARG:HH12	1.69	0.58
6:5:659:U:OP1	14:E:101:ASN:ND2	2.36	0.58
6:5:1324:A:C8	17:H:125:ARG:NH2	2.72	0.58
13:D:188:PRO:O	13:D:192:ILE:HG22	2.04	0.58
33:a:125:GLU:N	33:a:125:GLU:OE2	2.36	0.58
35:c:194:ALA:C	35:c:196:ALA:H	2.11	0.58
40:h:119:ALA:O	40:h:123:MET:HG2	2.03	0.58
4:3:334:A:OP2	52:t:105:LYS:NZ	2.37	0.58
4:3:960:A:H4'	53:u:43:GLN:HG2	1.85	0.58
12:C:124:LEU:HD23	12:C:125:ASN:H	1.69	0.58
27:R:47:ASN:O	27:R:62:VAL:HG12	2.03	0.58
45:m:106:ARG:NH2	45:m:109:ASP:OD2	2.36	0.58
56:x:30:LYS:HZ2	56:x:32:LYS:HG2	1.69	0.58
4:3:1557:G:O6	4:3:1571:G:O2'	2.21	0.58
6:5:1012:A:OP1	22:M:15:LYS:NZ	2.27	0.58
6:5:1501:G:OP2	29:T:37:ARG:NH1	2.37	0.58
12:C:81:GLN:HB2	12:C:85:LEU:HD11	1.84	0.58
15:F:49:ILE:HG21	15:F:60:VAL:HG21	1.86	0.58
15:F:118:LYS:O	15:F:122:GLU:HG2	2.03	0.58
24:O:5:ARG:HG2	24:O:6:LEU:H	1.68	0.58
46:n:15:ILE:O	46:n:19:ILE:HG23	2.04	0.58
4:3:388:U:P	12:U:111:ARG:HH12	2.26	0.58
4:3:900:G:OP2	44:l:22:LYS:HE2	2.04	0.58
6:5:792:C:O2'	19:J:121:ARG:OXT	2.17	0.58
6:5:983:G:H21	6:5:1012:A:H8	1.52	0.58
35:c:123:ASP:OD1	35:c:124:ASN:N	2.36	0.58
38:f:96:GLN:HG2	38:f:100:GLN:HE22	1.68	0.58
43:k:31:THR:O	43:k:32:SER:OG	2.19	0.58
4:3:1095:U:H1'	4:3:1096:U:H3'	1.85	0.57
6:5:672:A:H1'	19:J:111:HIS:ND1	2.17	0.57
37:e:4:ILE:HG23	37:e:7:ARG:NH2	2.19	0.57
6:5:1123:G:O2'	6:5:1124:U:O5'	2.23	0.57
8:7:19:A:H61	8:7:55:C:H42	1.50	0.57
10:A:203:ASN:HB2	10:A:219:ASN:OD1	2.04	0.57
15:F:63:ARG:HD2	15:F:63:ARG:O	2.04	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:892:G:H2'	4:3:893:A:C8	2.39	0.57
14:E:59:ARG:NH2	14:E:61:LYS:HB2	2.19	0.57
55:w:7:LEU:HD22	55:w:54:ILE:CD1	2.31	0.57
6:5:350:G:O2'	6:5:385:A:OP1	2.21	0.57
10:A:61:GLN:NE2	10:A:216:PRO:O	2.38	0.57
24:O:8:ARG:HB2	24:O:28:ARG:NH1	2.18	0.57
35:c:30:LYS:H	35:c:114:THR:HG21	1.68	0.57
45:m:98:SER:HB3	45:m:116:LEU:HD11	1.86	0.57
56:x:10:GLN:NE2	56:x:29:LEU:O	2.38	0.57
4:3:2189:U:H2'	4:3:2190:G:C8	2.40	0.57
7:6:33:U:H4'	15:F:82:SER:HA	1.86	0.57
11:B:77:LEU:HD22	11:B:106:ILE:HD13	1.85	0.57
18:I:32:VAL:HG23	18:I:42:ILE:HD12	1.85	0.57
19:J:76:LYS:HD3	19:J:102:GLU:HG2	1.86	0.57
44:l:1:MET:SD	44:l:3:GLN:HB2	2.44	0.57
4:3:1386:G:O2'	4:3:1401:A:N6	2.38	0.57
18:I:65:LYS:O	18:I:68:ARG:HD3	2.05	0.57
21:L:101:ARG:HG2	21:L:103:ARG:H	1.69	0.57
48:p:82:LEU:HD13	48:p:87:ILE:HB	1.85	0.57
4:3:1166:G:N2	4:3:1167:U:O4	2.37	0.57
4:3:1805:U:O2'	4:3:1809:A:N3	2.36	0.57
6:5:195:U:H2'	6:5:196:G:H8	1.70	0.57
6:5:1432:A:H5"	28:S:26:THR:HG22	1.87	0.57
33:a:280:ARG:NH1	33:a:285:GLU:OE2	2.35	0.57
47:o:37:LEU:HD13	47:o:39:GLU:OE2	2.05	0.57
6:5:550:U:H2'	6:5:551:A:H8	1.70	0.57
20:K:18:LYS:HA	20:K:18:LYS:HE3	1.85	0.57
22:M:29:ARG:NH1	22:M:31:ARG:HG3	2.20	0.57
28:S:35:PHE:CZ	28:S:76:LEU:HD11	2.40	0.57
28:S:72:ASN:O	28:S:75:VAL:HG22	2.05	0.57
40:h:46:LYS:HD3	40:h:51:ILE:HD11	1.86	0.57
41:i:95:MET:HG2	41:i:103:LEU:HB2	1.85	0.57
43:k:20:LEU:HB3	43:k:32:SER:HB2	1.87	0.57
52:t:46:LYS:HE3	52:t:63:VAL:HB	1.87	0.57
4:3:2854:A:N7	4:3:2872:A:O2'	2.36	0.57
10:A:84:PHE:HE2	10:A:99:ILE:HD12	1.70	0.57
12:C:13:ARG:HG3	12:C:34:ILE:HG22	1.87	0.57
12:C:20:GLU:OE2	12:C:22:ASN:HB2	2.04	0.57
12:C:106:PHE:CE2	12:C:144:LEU:HD22	2.40	0.57
14:E:157:TRP:CB	16:G:60:LEU:HD21	2.35	0.57
12:U:163:VAL:HG22	12:U:164:SER:N	2.17	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:g:40:ILE:O	39:g:44:LEU:HD23	2.05	0.57
46:n:34:LYS:HA	46:n:39:ILE:HG23	1.85	0.57
4:3:354:C:O2	35:c:174:ASN:ND2	2.36	0.56
4:3:410:G:H4'	4:3:411:U:O5'	2.04	0.56
4:3:1094:G:H5"	40:h:68:LYS:HZ1	1.69	0.56
4:3:1628:G:OP1	55:w:95:LYS:NZ	2.29	0.56
5:4:103:C:O2'	46:n:51:VAL:HG22	2.03	0.56
6:5:541:C:P	12:C:13:ARG:HH12	2.28	0.56
9:8:29:U:H3	9:8:41:A:H61	1.51	0.56
17:H:38:SER:HA	17:H:43:ASN:HD21	1.69	0.56
18:I:22:THR:O	18:I:26:LEU:HG	2.05	0.56
36:d:11:THR:HA	36:d:14:LYS:HE2	1.86	0.56
4:3:1698:A:C2	42:j:1:MET:HE1	2.36	0.56
4:3:1812:C:O2	4:3:1819:G:N2	2.32	0.56
4:3:2213:A:H1'	33:a:155:LYS:CE	2.34	0.56
4:3:2465:U:H3	4:3:2502:G:H1	1.53	0.56
6:5:96:G:H1	6:5:326:C:H41	1.52	0.56
10:A:95:LEU:HD11	10:A:226:CYS:HA	1.87	0.56
11:B:191:LYS:HG3	11:B:198:VAL:HG13	1.86	0.56
13:D:171:GLU:OE1	13:D:172:LEU:HD22	2.05	0.56
18:I:6:ALA:O	18:I:86:ASN:ND2	2.31	0.56
23:N:5:LYS:O	23:N:9:ILE:HG22	2.05	0.56
4:3:614:C:OP1	48:p:30:SER:OG	2.22	0.56
4:3:637:U:C5	43:k:84:LYS:HG2	2.40	0.56
4:3:648:G:O6	35:c:181:LYS:NZ	2.30	0.56
4:3:1055:A:N1	4:3:1176:U:O2'	2.33	0.56
4:3:2195:U:H2'	4:3:2196:G:C8	2.39	0.56
4:3:2296:A:H1'	65:3:3250:SPD:H91	1.86	0.56
6:5:813:A:OP1	6:5:1501:G:O2'	2.16	0.56
6:5:1051:U:H5'	22:M:45:ARG:HH12	1.70	0.56
6:5:1051:U:OP1	22:M:45:ARG:NH2	2.39	0.56
6:5:1192:C:OP1	22:M:5:SER:OG	2.20	0.56
13:D:214:LYS:HG3	13:D:215:ASN:H	1.68	0.56
14:E:162:LYS:HZ3	16:G:58:GLN:HB3	1.70	0.56
21:L:57:ARG:NH1	56:x:37:ASP:OD2	2.38	0.56
24:O:11:ARG:HH11	24:O:11:ARG:HG3	1.69	0.56
36:d:32:GLU:OE2	36:d:157:VAL:HG23	2.04	0.56
38:f:4:ILE:HG22	38:f:18:VAL:HG22	1.86	0.56
41:i:21:VAL:HG21	41:i:146:SER:OXT	2.06	0.56
42:j:27:SER:OG	42:j:28:THR:N	2.38	0.56
46:n:1:MET:SD	46:n:2:LYS:N	2.79	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:831:C:O3'	26:Q:80:GLN:NE2	2.37	0.56
10:A:87:THR:HA	10:A:93:LYS:HE3	1.87	0.56
11:B:121:ARG:HD2	11:B:190:GLU:HG3	1.86	0.56
15:F:24:ARG:HH21	15:F:96:ILE:HG12	1.70	0.56
15:F:39:GLN:HB3	15:F:43:TYR:HE2	1.69	0.56
29:T:37:ARG:HH21	29:T:40:MET:HE2	1.70	0.56
50:r:127:LYS:HA	50:r:130:GLU:OE2	2.06	0.56
4:3:517:G:OP2	52:t:44:ARG:HD3	2.05	0.56
4:3:695:G:H5"	35:c:101:LEU:HD22	1.88	0.56
4:3:2351:U:HO2'	4:3:2381:G:HO2'	1.52	0.56
4:3:2383:G:N2	4:3:2386:A:OP2	2.32	0.56
6:5:373:A:H2'	6:5:374:G:C8	2.40	0.56
6:5:1224:C:O2'	17:H:73:GLY:O	2.22	0.56
16:G:97:ILE:CG1	16:G:99:ARG:HD3	2.31	0.56
20:K:83:GLU:N	20:K:83:GLU:OE2	2.39	0.56
36:d:40:VAL:HG22	36:d:42:ASP:H	1.71	0.56
44:l:52:ILE:HG22	44:l:56:LYS:HE2	1.87	0.56
4:3:169:U:H4'	54:v:44:LYS:HZ2	1.71	0.56
4:3:2238:G:H1'	54:v:32:ASN:ND2	2.20	0.56
6:5:1330:A:H2'	6:5:1331:A:H8	1.71	0.56
11:B:137:MET:HE1	11:B:171:TYR:CE2	2.40	0.56
35:c:195:ASN:ND2	35:c:195:ASN:C	2.63	0.56
4:3:944:U:H4'	44:l:24:ASN:OD1	2.06	0.56
6:5:1110:C:H2'	6:5:1111:G:H8	1.71	0.56
6:5:1144:A:O3'	10:A:154:ARG:NH2	2.38	0.56
10:A:17:LEU:HD12	10:A:18:VAL:HG23	1.86	0.56
21:L:25:ILE:HA	21:L:29:ARG:HH21	1.69	0.56
12:U:97:LEU:HD12	12:U:136:LEU:HD21	1.86	0.56
40:h:112:LEU:HD11	40:h:123:MET:HE3	1.86	0.56
45:m:50:THR:HA	45:m:53:LYS:HE3	1.87	0.56
6:5:1197:G:OP2	6:5:1296:C:N4	2.38	0.56
65:5:1601:SPD:HN12	17:H:125:ARG:HH12	1.54	0.56
11:B:120:ALA:HB1	11:B:190:GLU:HG2	1.87	0.56
15:F:70:PRO:C	15:F:71:ARG:HD2	2.31	0.56
35:c:51:SER:O	35:c:52:ILE:HD13	2.05	0.56
36:d:65:PRO:HB2	36:d:87:CYS:HB2	1.87	0.56
4:3:343:A:N3	4:3:363:G:O2'	2.38	0.56
6:5:22:G:H2'	6:5:23:G:C8	2.41	0.56
6:5:519:G:H4'	20:K:83:GLU:OE1	2.05	0.56
33:a:174:ASP:OD1	33:a:175:GLU:N	2.39	0.56
34:b:26:ILE:HD12	34:b:192:LEU:HD22	1.87	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:c:201:LYS:HG3	35:c:202:GLU:OE2	2.06	0.56
4:3:585:U:H2'	4:3:586:G:H8	1.71	0.56
6:5:408:U:H1'	12:C:28:GLY:HA2	1.88	0.56
10:A:90:ASP:HA	10:A:93:LYS:HG2	1.89	0.56
12:C:14:LEU:HD13	12:C:59:ARG:HG2	1.88	0.56
17:H:50:MET:HE2	17:H:50:MET:N	2.18	0.56
23:N:66:TYR:HA	23:N:69:HIS:CE1	2.41	0.56
28:S:67:ARG:O	28:S:71:ARG:HG3	2.06	0.56
37:e:13:PRO:HD3	37:e:51:ASN:HD21	1.70	0.56
49:q:36:ASP:HA	49:q:54:ARG:HH21	1.69	0.56
10:A:67:THR:O	10:A:71:TYR:HD1	1.89	0.55
26:Q:56:ASP:HB2	26:Q:59:ALA:HB3	1.89	0.55
36:d:56:GLU:HG2	36:d:141:ILE:HG22	1.88	0.55
45:m:70:THR:HG23	45:m:73:PHE:H	1.71	0.55
6:5:838:A:OP2	14:E:110:GLN:NE2	2.40	0.55
6:5:1126:U:O4	6:5:1127:A:N6	2.40	0.55
6:5:1263:A:O3'	15:F:34:LYS:NZ	2.39	0.55
6:5:1324:A:OP2	17:H:125:ARG:CZ	2.53	0.55
10:A:134:VAL:O	10:A:137:GLN:HG3	2.06	0.55
14:E:40:LEU:H	14:E:40:LEU:HD12	1.70	0.55
19:J:90:ILE:HB	19:J:91:ARG:NH1	2.21	0.55
4:3:2004:G:OP2	65:3:3252:SPD:H41	2.06	0.55
6:5:354:U:H2'	6:5:355:A:H8	1.71	0.55
6:5:1354:G:O6	15:F:2:ARG:NH2	2.39	0.55
26:Q:39:LYS:NZ	26:Q:75:ILE:O	2.34	0.55
12:U:30:LYS:HE2	12:U:30:LYS:HA	1.89	0.55
47:o:53:LEU:HD11	47:o:104:MET:HB2	1.87	0.55
54:v:41:ALA:O	54:v:44:LYS:HG3	2.05	0.55
54:v:58:LEU:HB2	54:v:64:LEU:HD22	1.87	0.55
6:5:403:A:H4'	12:C:112:SER:HA	1.89	0.55
6:5:923:G:O2'	6:5:1508:C:OP1	2.24	0.55
10:A:73:LYS:O	10:A:77:GLN:HG2	2.06	0.55
10:A:177:ILE:HG21	10:A:229:MET:HE1	1.89	0.55
18:I:106:PHE:CE2	56:x:92:ARG:HB3	2.41	0.55
37:e:39:PRO:HG2	37:e:42:LEU:HD21	1.89	0.55
38:f:81:LEU:O	38:f:149:LYS:HE2	2.06	0.55
57:y:35:LYS:HE2	57:y:44:SER:HB3	1.87	0.55
6:5:1142:G:O2'	6:5:1144:A:N6	2.37	0.55
14:E:85:GLU:OE1	14:E:87:ILE:HG13	2.06	0.55
15:F:17:PHE:HB3	15:F:58:LEU:HD22	1.89	0.55
6:5:681:U:O2'	19:J:34:VAL:O	2.21	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1214:A:H2'	6:5:1272:C:H41	1.71	0.55
24:O:19:ILE:N	24:O:37:GLY:O	2.39	0.55
58:z:7:THR:CG2	58:z:23:LYS:HB3	2.37	0.55
4:3:592:G:N2	48:p:48:ASP:OD2	2.39	0.55
6:5:197:A:H2'	6:5:198:A:C8	2.42	0.55
6:5:394:U:H2'	6:5:395:G:H8	1.72	0.55
6:5:1294:U:C6	27:R:70:LYS:HE3	2.42	0.55
6:5:1332:U:H3	6:5:1338:A:N6	2.04	0.55
65:5:1601:SPD:H51	65:5:1601:SPD:HN11	1.71	0.55
13:D:166:ILE:H	13:D:166:ILE:HD12	1.72	0.55
15:F:102:TRP:HB3	15:F:106:PHE:CE2	2.41	0.55
20:K:55:PRO:HB3	20:K:102:ASP:HB3	1.89	0.55
37:e:168:PHE:HD1	37:e:169:ASP:H	1.51	0.55
45:m:48:LEU:HD21	45:m:67:LEU:HD21	1.89	0.55
48:p:68:LEU:HD11	48:p:78:PHE:CD2	2.41	0.55
50:r:64:MET:HE3	50:r:65:ASN:H	1.71	0.55
56:x:32:LYS:HE3	56:x:34:ILE:HG12	1.87	0.55
1:0:41:GLN:OE1	1:0:41:GLN:HA	2.06	0.55
4:3:196:G:N2	4:3:196:G:OP2	2.40	0.55
4:3:204:U:H4'	54:v:22:LYS:HB2	1.89	0.55
6:5:116:A:H5'	25:P:67:ARG:NH1	2.22	0.55
6:5:710:G:H2'	6:5:711:G:C8	2.42	0.55
14:E:165:ASN:OD1	16:G:58:GLN:NE2	2.35	0.55
24:O:77:GLY:O	24:O:81:LYS:NZ	2.31	0.55
24:O:78:LEU:HA	24:O:81:LYS:HE2	1.89	0.55
39:g:37:ALA:O	39:g:40:ILE:HG22	2.07	0.55
48:p:77:VAL:O	48:p:81:LEU:HG	2.06	0.55
52:t:93:MET:SD	52:t:98:ASN:HA	2.47	0.55
56:x:30:LYS:HD2	56:x:31:GLN:H	1.72	0.55
4:3:9:G:H2'	4:3:10:U:C6	2.42	0.55
4:3:201:A:N6	4:3:2438:A:O2'	2.40	0.55
6:5:510:U:H2'	6:5:511:A:H8	1.72	0.55
14:E:46:ALA:CB	26:Q:100:PRO:HD3	2.36	0.55
17:H:12:ARG:HE	17:H:13:LYS:HG3	1.71	0.55
17:H:87:ARG:O	17:H:90:LEU:HG	2.07	0.55
22:M:6:LEU:HB3	22:M:23:ARG:NH1	2.21	0.55
47:o:93:ARG:NH2	47:o:118:LYS:O	2.40	0.55
49:q:83:TYR:HD1	49:q:84:GLY:N	2.04	0.55
4:3:2570:U:OP1	42:j:59:ARG:NH2	2.40	0.55
4:3:2603:G:N2	4:3:2606:A:OP2	2.36	0.55
6:5:1062:C:H2'	6:5:1063:G:H8	1.72	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1323:A:H5"	17:H:125:ARG:CD	2.35	0.55
18:I:99:PRO:O	18:I:102:VAL:HG22	2.07	0.55
12:U:66:ILE:HD11	12:U:96:ARG:NH1	2.21	0.55
43:k:94:ASN:HA	43:k:127:GLU:HB2	1.89	0.55
46:n:62:LEU:HD22	46:n:69:ASN:HD22	1.72	0.55
4:3:393:C:H2'	12:U:32:LYS:HD2	1.89	0.54
4:3:733:C:O2'	4:3:769:A:N6	2.39	0.54
4:3:1583:G:O2'	4:3:1584:U:OP1	2.25	0.54
6:5:87:G:H2'	6:5:88:A:H8	1.72	0.54
6:5:975:C:O4'	22:M:19:ARG:NH1	2.40	0.54
6:5:1113:U:O4	6:5:1114:A:N6	2.40	0.54
6:5:1213:A:H5'	6:5:1310:C:H41	1.72	0.54
6:5:1261:A:H2'	6:5:1262:A:C8	2.43	0.54
11:B:134:ARG:HH11	11:B:134:ARG:HG3	1.72	0.54
36:d:175:LEU:HD12	36:d:176:PRO:HD2	1.89	0.54
52:t:77:PHE:HE1	52:t:84:GLN:HB2	1.71	0.54
6:5:617:U:H3	12:C:130:ASP:HB3	1.71	0.54
13:D:181:LYS:HE2	13:D:181:LYS:HA	1.90	0.54
20:K:68:VAL:HG11	20:K:95:LEU:HD11	1.89	0.54
12:U:14:LEU:HD12	12:U:17:SER:HB2	1.89	0.54
43:k:95:ARG:NH2	43:k:109:GLN:HA	2.22	0.54
43:k:117:HIS:ND1	43:k:117:HIS:O	2.40	0.54
43:k:130:LYS:HD3	43:k:131:VAL:H	1.72	0.54
4:3:433:A:H5"	54:v:32:ASN:HD22	1.72	0.54
4:3:1391:U:O2'	4:3:1816:A:N3	2.36	0.54
4:3:1909:C:O2'	33:a:251:ARG:O	2.22	0.54
4:3:2475:C:O2	44:l:124:LYS:NZ	2.37	0.54
11:B:223:LEU:HD12	11:B:224:HIS:N	2.21	0.54
14:E:161:GLN:NE2	16:G:59:VAL:HG12	2.23	0.54
19:J:102:GLU:OE1	29:T:5:GLU:HA	2.07	0.54
20:K:78:THR:HG23	20:K:108:TYR:HB2	1.89	0.54
34:b:110:VAL:HG11	34:b:197:ILE:HD12	1.87	0.54
45:m:99:ARG:HD3	45:m:101:LEU:HD11	1.89	0.54
55:w:19:VAL:HG23	55:w:54:ILE:HG21	1.89	0.54
33:a:150:ILE:HB	33:a:160:ILE:HB	1.89	0.54
35:c:128:VAL:HG11	35:c:198:LEU:HB3	1.89	0.54
42:j:17:LYS:N	42:j:45:ASP:O	2.37	0.54
46:n:64:ASN:CG	46:n:65:GLY:H	2.13	0.54
48:p:107:LEU:HD22	49:q:43:GLU:OE1	2.08	0.54
4:3:2068:G:OP1	35:c:69:LYS:NZ	2.31	0.54
6:5:1022:G:O2'	6:5:1023:G:O4'	2.26	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1291:C:O2	27:R:37:ARG:NH2	2.41	0.54
10:A:249:LYS:HG2	10:A:253:GLU:OE1	2.08	0.54
13:D:151:LEU:HD13	13:D:180:THR:HG22	1.88	0.54
19:J:104:ASN:C	19:J:106:LYS:HZ1	2.16	0.54
25:P:49:ASN:HA	25:P:77:ILE:HD11	1.88	0.54
12:U:68:ASP:OD1	12:U:69:LYS:N	2.41	0.54
33:a:128:ILE:HG22	33:a:129:ASP:N	2.22	0.54
34:b:148:GLN:OE1	34:b:150:GLY:N	2.41	0.54
45:m:76:ASP:OD1	45:m:77:GLN:NE2	2.40	0.54
4:3:1906:G:H21	4:3:1909:C:H41	1.53	0.54
6:5:145:G:O2'	6:5:147:A:N6	2.35	0.54
6:5:1019:G:O2'	6:5:1020:G:OP2	2.21	0.54
8:7:46:U:O2'	8:7:47:U:OP1	2.23	0.54
14:E:90:LEU:O	14:E:96:TYR:CD2	2.61	0.54
16:G:18:LEU:HD21	16:G:41:LYS:HE2	1.90	0.54
19:J:28:SER:HB3	19:J:34:VAL:HG12	1.90	0.54
22:M:16:PHE:HB2	22:M:19:ARG:HG2	1.90	0.54
12:U:53:GLN:NE2	12:U:198:GLU:OE1	2.40	0.54
12:U:172:LYS:HE2	12:U:172:LYS:HA	1.88	0.54
46:n:60:LEU:HB3	46:n:62:LEU:HD11	1.89	0.54
6:5:1332:U:OP1	22:M:35:SER:OG	2.25	0.54
12:C:74:LEU:O	12:C:78:VAL:HG22	2.08	0.54
12:C:101:VAL:HA	12:C:104:MET:HB2	1.90	0.54
12:C:180:ARG:HG3	12:C:180:ARG:O	2.07	0.54
14:E:61:LYS:O	14:E:61:LYS:HD3	2.08	0.54
18:I:83:VAL:HG13	18:I:84:ASP:H	1.72	0.54
35:c:115:VAL:HG21	35:c:188:VAL:HG13	1.89	0.54
40:h:12:ILE:HD11	40:h:14:LEU:HD23	1.89	0.54
44:l:37:THR:OG1	44:l:128:THR:O	2.21	0.54
44:l:43:ASP:HA	44:l:94:VAL:HA	1.89	0.54
44:l:133:LYS:HG2	44:l:134:ARG:H	1.73	0.54
45:m:21:GLN:O	45:m:25:VAL:HG12	2.08	0.54
4:3:916:U:H3	4:3:935:U:H3	1.56	0.54
4:3:1598:U:OP2	33:a:29:ASN:ND2	2.41	0.54
4:3:2688:C:OP2	34:b:117:ARG:NH2	2.27	0.54
6:5:737:U:OP2	23:N:2:GLN:NE2	2.40	0.54
12:C:151:ILE:O	12:C:154:VAL:HG23	2.08	0.54
17:H:12:ARG:NE	17:H:13:LYS:HG3	2.23	0.54
18:I:14:ILE:N	18:I:80:MET:O	2.41	0.54
12:U:66:ILE:HD11	12:U:96:ARG:HH12	1.73	0.54
34:b:53:SER:OG	34:b:78:THR:OG1	2.17	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:d:57:LEU:O	36:d:60:ILE:HG22	2.08	0.54
36:d:74:ILE:HD12	36:d:79:LEU:HD23	1.90	0.54
47:o:102:SER:O	47:o:105:ARG:HG2	2.08	0.54
48:p:58:SER:HA	48:p:61:ILE:HD12	1.90	0.54
48:p:67:ALA:HA	48:p:70:GLU:OE2	2.08	0.54
4:3:2813:A:H2'	4:3:2814:A:C8	2.43	0.54
13:D:203:LEU:HD21	16:G:85:ASN:ND2	2.22	0.54
14:E:24:LYS:HE3	14:E:79:ASN:ND2	2.23	0.54
14:E:93:GLU:N	14:E:93:GLU:OE1	2.41	0.54
41:i:3:LYS:HG3	41:i:4:THR:N	2.22	0.54
46:n:98:TYR:CE1	46:n:103:ALA:HA	2.36	0.54
4:3:1143:U:H5"	39:g:77:LYS:HA	1.88	0.54
4:3:2238:G:H1'	54:v:32:ASN:CG	2.33	0.54
8:7:50:G:H1	8:7:62:C:H42	1.56	0.54
20:K:124:ARG:O	20:K:124:ARG:HG2	2.07	0.54
36:d:5:LYS:HD3	36:d:97:TRP:CG	2.42	0.54
36:d:20:PHE:HB2	36:d:22:PHE:CD1	2.42	0.54
46:n:75:GLN:HB3	46:n:112:ARG:HH22	1.73	0.54
1:0:7:PRO:HG2	4:3:1337:G:H4'	1.90	0.53
4:3:1000:U:O2'	4:3:2281:A:N3	2.38	0.53
4:3:1292:A:H61	4:3:2024:C:H42	1.56	0.53
4:3:2400:A:OP2	4:3:2430:C:N4	2.38	0.53
11:B:209:MET:HE3	11:B:211:TYR:CE1	2.38	0.53
19:J:90:ILE:HB	19:J:91:ARG:HH12	1.72	0.53
44:l:67:ARG:NH1	44:l:105:GLU:OE2	2.41	0.53
45:m:19:ARG:NH1	45:m:65:LYS:O	2.41	0.53
48:p:61:ILE:HG23	48:p:75:TYR:CE2	2.43	0.53
2:1:10:ARG:NH1	4:3:254:G:OP2	2.37	0.53
4:3:823:A:OP1	4:3:826:C:N4	2.36	0.53
6:5:76:G:N2	6:5:79:A:OP2	2.41	0.53
6:5:426:U:H5'	12:C:8:PHE:CG	2.43	0.53
6:5:435:U:O2'	6:5:437:U:O4	2.24	0.53
6:5:590:G:H1	6:5:644:U:H3	1.56	0.53
6:5:1144:A:H2'	6:5:1145:A:C8	2.43	0.53
6:5:1406:U:O4	6:5:1407:A:N6	2.40	0.53
10:A:81:GLN:O	10:A:174:ASN:N	2.38	0.53
14:E:33:GLU:N	14:E:63:SER:O	2.37	0.53
18:I:40:VAL:HG11	18:I:82:LEU:CD1	2.37	0.53
27:R:40:ILE:HD12	27:R:44:PHE:HD2	1.72	0.53
34:b:16:VAL:HG13	34:b:26:ILE:HD13	1.89	0.53
40:h:58:TYR:CE1	40:h:60:ASP:HB3	2.44	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:i:80:HIS:ND1	41:i:81:SER:O	2.41	0.53
2:1:15:LYS:HD3	4:3:664:G:H5"	1.90	0.53
14:E:9:VAL:HG23	14:E:56:HIS:HB2	1.90	0.53
40:h:75:LEU:O	40:h:78:GLN:HG3	2.08	0.53
40:h:97:THR:HG23	40:h:99:ALA:H	1.72	0.53
46:n:25:ASP:OD1	46:n:25:ASP:C	2.52	0.53
52:t:52:THR:H	52:t:55:ALA:HB3	1.72	0.53
55:w:3:VAL:O	55:w:7:LEU:HD12	2.09	0.53
5:4:2:U:O2	5:4:107:G:N2	2.42	0.53
6:5:1138:U:H3	6:5:1149:G:H1	1.55	0.53
14:E:43:LYS:HE3	14:E:57:TYR:CD2	2.44	0.53
19:J:12:GLY:C	19:J:13:ILE:HD13	2.33	0.53
19:J:46:LYS:HG2	19:J:47:GLY:N	2.23	0.53
24:O:80:LYS:O	24:O:84:GLU:HG2	2.09	0.53
51:s:25:LYS:HB3	51:s:27:TYR:CE1	2.43	0.53
52:t:28:MET:N	52:t:28:MET:SD	2.82	0.53
4:3:960:A:C5'	53:u:43:GLN:HE21	2.22	0.53
4:3:1103:G:N2	4:3:1130:A:O2'	2.41	0.53
4:3:2135:C:H2'	4:3:2136:A:C8	2.41	0.53
4:3:2299:U:H2'	4:3:2300:A:C8	2.44	0.53
5:4:39:U:O4	36:d:69:LYS:HE2	2.09	0.53
11:B:110:GLY:HA3	11:B:225:PRO:HD2	1.89	0.53
14:E:170:GLN:O	16:G:80:ARG:NH2	2.41	0.53
25:P:10:ILE:HD11	25:P:60:LYS:HE2	1.91	0.53
27:R:19:VAL:HG11	27:R:44:PHE:CD1	2.43	0.53
37:e:23:ASP:OD1	37:e:23:ASP:N	2.41	0.53
40:h:11:LYS:HZ1	40:h:52:PRO:HB2	1.72	0.53
4:3:901:C:H4'	4:3:902:U:C5'	2.39	0.53
4:3:1798:A:O2'	33:a:213:ILE:O	2.21	0.53
4:3:2344:A:H61	53:u:57:THR:HG21	1.74	0.53
10:A:103:VAL:HG11	10:A:236:VAL:CG1	2.38	0.53
11:B:52:GLN:HB2	11:B:72:ALA:HB3	1.91	0.53
12:U:52:GLN:O	12:U:55:GLN:HG2	2.09	0.53
36:d:148:ARG:HE	36:d:149:ILE:H	1.56	0.53
38:f:1:MET:HE2	38:f:23:ASP:HB3	1.91	0.53
43:k:130:LYS:HD3	43:k:131:VAL:N	2.24	0.53
10:A:182:VAL:HG23	10:A:206:THR:HG22	1.90	0.53
11:B:32:LYS:O	11:B:36:GLU:HG2	2.08	0.53
11:B:113:MET:N	11:B:113:MET:SD	2.82	0.53
24:O:44:LYS:HG3	24:O:45:GLU:OE2	2.09	0.53
34:b:7:PHE:CE2	34:b:52:LEU:HD11	2.44	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:b:60:LYS:HE2	34:b:61:LYS:HE3	1.90	0.53
38:f:23:ASP:N	38:f:23:ASP:OD1	2.41	0.53
40:h:15:LEU:HD23	40:h:50:MET:HG2	1.91	0.53
41:i:8:THR:HG21	48:p:100:LYS:HD3	1.90	0.53
41:i:47:PHE:CD2	48:p:62:LEU:HD21	2.44	0.53
1:0:48:ARG:HH12	4:3:1339:U:H2'	1.74	0.53
4:3:933:A:O2'	9:8:56:C:N3	2.42	0.53
4:3:2266:C:O2'	4:3:2435:C:OP2	2.26	0.53
6:5:875:G:OP2	20:K:6:GLN:NE2	2.42	0.53
8:7:36:C:H2'	8:7:37:A:C8	2.43	0.53
10:A:49:ARG:HG3	10:A:49:ARG:HH11	1.72	0.53
11:B:61:THR:HB	11:B:64:THR:HG22	1.91	0.53
12:C:77:LEU:HD23	12:C:78:VAL:HG13	1.91	0.53
12:C:123:LEU:HD12	12:C:143:ARG:HH11	1.74	0.53
16:G:59:VAL:HA	16:G:70:VAL:HA	1.91	0.53
12:U:53:GLN:HG2	12:U:195:TYR:HD1	1.74	0.53
12:U:125:ASN:C	12:U:127:ARG:H	2.16	0.53
33:a:131:LYS:CE	33:a:132:PRO:HD3	2.23	0.53
50:r:83:LYS:HE3	50:r:95:MET:HE3	1.90	0.53
4:3:1142:G:H1'	39:g:79:LYS:NZ	2.24	0.53
4:3:2181:A:H3'	4:3:2182:C:C5	2.44	0.53
6:5:1071:A:H5"	13:D:76:ILE:HD12	1.91	0.53
8:7:36:C:H2'	8:7:37:A:H8	1.74	0.53
11:B:20:SER:HB2	22:M:52:ALA:O	2.09	0.53
37:e:49:LYS:HG3	37:e:50:ASP:N	2.24	0.53
44:l:32:TYR:HD1	44:l:132:LEU:O	1.92	0.53
50:r:134:LYS:O	50:r:137:MET:HG3	2.09	0.53
4:3:549:A:N3	4:3:614:C:O2'	2.42	0.53
4:3:615:G:H2'	4:3:616:G:H8	1.73	0.53
4:3:1111:C:H2'	4:3:1112:A:O4'	2.07	0.53
10:A:99:ILE:HA	10:A:102:ARG:HD2	1.90	0.53
12:C:145:LYS:HG2	12:C:146:ALA:H	1.73	0.53
23:N:48:ILE:H	23:N:48:ILE:HD12	1.73	0.53
33:a:72:LYS:HB3	33:a:74:THR:HG22	1.90	0.53
46:n:38:HIS:C	46:n:39:ILE:HD13	2.34	0.53
54:v:6:GLN:HB2	54:v:48:ILE:HD11	1.90	0.53
4:3:1092:A:N6	4:3:1122:G:OP1	2.42	0.52
4:3:1833:G:O2'	4:3:1978:U:OP2	2.27	0.52
6:5:1115:G:H1'	6:5:1116:U:H5	1.74	0.52
12:U:123:LEU:HD23	12:U:143:ARG:HD2	1.91	0.52
32:Z:2:UNK:HA	52:t:50:GLN:HB2	1.91	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:a:85:SER:OG	33:a:87:GLU:OE1	2.28	0.52
36:d:5:LYS:HD3	36:d:97:TRP:CD1	2.44	0.52
39:g:38:THR:O	39:g:42:LYS:HG2	2.09	0.52
44:l:75:THR:HG21	44:l:87:LYS:HE2	1.91	0.52
50:r:83:LYS:O	50:r:84:ARG:HD3	2.09	0.52
4:3:2196:G:H2'	4:3:2197:U:C6	2.44	0.52
6:5:304:U:H2'	6:5:305:A:H8	1.75	0.52
11:B:77:LEU:HD13	11:B:106:ILE:HD12	1.90	0.52
13:D:132:HIS:HE1	13:D:205:PRO:HD3	1.74	0.52
15:F:21:LEU:HG	15:F:24:ARG:NH2	2.25	0.52
28:S:48:TYR:CE1	28:S:69:LYS:HG3	2.44	0.52
37:e:30:PRO:HG2	37:e:83:THR:HA	1.91	0.52
38:f:97:ILE:HA	38:f:100:GLN:HB2	1.91	0.52
38:f:132:GLU:OE1	38:f:134:THR:HG23	2.09	0.52
40:h:14:LEU:HD13	40:h:19:ALA:HB2	1.91	0.52
42:j:8:LEU:HD11	42:j:84:CYS:SG	2.49	0.52
4:3:512:G:N1	4:3:515:A:OP2	2.38	0.52
4:3:2118:U:O4	4:3:2155:G:N2	2.42	0.52
4:3:2131:G:H8	4:3:2131:G:O5'	1.93	0.52
6:5:1096:A:H2'	6:5:1097:G:H8	1.75	0.52
6:5:1225:A:H4'	17:H:72:GLY:N	2.23	0.52
10:A:95:LEU:O	10:A:99:ILE:HG13	2.10	0.52
11:B:137:MET:HG3	11:B:138:ARG:N	2.24	0.52
16:G:51:GLU:HG2	16:G:113:ILE:HG21	1.91	0.52
18:I:98:ILE:HD13	18:I:104:LEU:HD23	1.92	0.52
20:K:46:VAL:HG22	20:K:92:VAL:HG22	1.91	0.52
22:M:39:VAL:HG13	22:M:44:PHE:HB2	1.90	0.52
37:e:140:SER:OG	37:e:143:LEU:HB2	2.08	0.52
39:g:23:GLY:HA3	39:g:89:ILE:HD12	1.91	0.52
48:p:80:ASN:O	48:p:84:LYS:HG2	2.09	0.52
53:u:35:LEU:HD13	53:u:53:ARG:HB3	1.89	0.52
4:3:1704:C:O2	34:b:135:HIS:NE2	2.41	0.52
10:A:18:VAL:O	10:A:62:ARG:NH2	2.39	0.52
14:E:4:ASN:CG	14:E:90:LEU:HD11	2.35	0.52
15:F:39:GLN:HB3	15:F:43:TYR:CE2	2.44	0.52
37:e:67:PHE:HA	37:e:70:THR:HG22	1.91	0.52
49:q:83:TYR:CD1	49:q:84:GLY:N	2.78	0.52
5:4:104:C:H2'	5:4:105:A:C8	2.45	0.52
6:5:250:G:H2'	6:5:251:G:H8	1.74	0.52
6:5:1282:U:H3'	21:L:98:ARG:HH21	1.74	0.52
14:E:17:GLN:HG3	14:E:56:HIS:CD2	2.45	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:F:25:ILE:O	15:F:29:ILE:HG12	2.09	0.52
28:S:28:LEU:O	28:S:32:VAL:HG12	2.08	0.52
55:w:15:LEU:HB3	55:w:58:LEU:HD21	1.90	0.52
55:w:103:ALA:HA	55:w:106:GLU:HG3	1.91	0.52
56:x:100:LEU:HD12	56:x:100:LEU:OXT	2.10	0.52
4:3:87:G:O2'	4:3:104:A:N1	2.30	0.52
4:3:652:U:H2'	4:3:653:G:H8	1.75	0.52
4:3:925:C:H2'	21:L:93:LYS:HZ1	1.74	0.52
15:F:63:ARG:HG3	15:F:127:SER:OG	2.10	0.52
28:S:17:ARG:HD3	28:S:17:ARG:N	2.24	0.52
34:b:169:TYR:CE1	64:b:303:SPM:H61	2.41	0.52
39:g:18:LEU:HD13	39:g:68:PHE:HE2	1.74	0.52
39:g:107:ASN:OD1	39:g:108:PHE:N	2.36	0.52
41:i:20:ILE:HG22	41:i:142:THR:HA	1.91	0.52
52:t:110:THR:OG1	52:t:111:LEU:HD22	2.09	0.52
6:5:1303:A:H5"	21:L:29:ARG:NH2	2.25	0.52
6:5:1321:G:O5'	17:H:111:ARG:HG3	2.09	0.52
10:A:18:VAL:HG12	10:A:19:SER:N	2.25	0.52
11:B:120:ALA:CB	11:B:190:GLU:HG2	2.39	0.52
13:D:166:ILE:HG23	13:D:195:THR:HG21	1.92	0.52
15:F:113:LYS:O	15:F:118:LYS:HE2	2.10	0.52
17:H:12:ARG:HD2	17:H:13:LYS:HG3	1.91	0.52
19:J:21:ASN:HD22	19:J:21:ASN:C	2.15	0.52
12:U:103:ARG:HE	12:U:166:PHE:HZ	1.56	0.52
35:c:41:GLU:OE2	35:c:41:GLU:HA	2.10	0.52
45:m:74:ASP:HB2	45:m:77:GLN:HE22	1.75	0.52
46:n:78:ALA:O	46:n:82:VAL:HG13	2.09	0.52
46:n:108:ALA:HA	46:n:111:GLU:OE2	2.10	0.52
4:3:673:A:OP2	43:k:115:ILE:HG13	2.10	0.52
4:3:897:A:N3	5:4:77:G:O2'	2.43	0.52
11:B:143:LYS:O	11:B:146:LYS:HG2	2.10	0.52
13:D:132:HIS:C	13:D:133:LYS:HD2	2.34	0.52
19:J:13:ILE:HG12	19:J:30:PRO:HA	1.92	0.52
25:P:62:GLN:O	25:P:63:ILE:HD13	2.10	0.52
29:T:56:PHE:HA	29:T:59:MET:HE2	1.90	0.52
55:w:77:LYS:HG2	55:w:78:LYS:H	1.75	0.52
4:3:54:A:OP2	4:3:118:G:N1	2.40	0.52
4:3:393:C:O2	12:U:32:LYS:HD2	2.10	0.52
4:3:1648:A:N1	50:r:93:SER:OG	2.43	0.52
4:3:2140:G:H2'	4:3:2164:G:H22	1.74	0.52
4:3:2477:A:H2'	4:3:2478:G:O4'	2.09	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:80:U:H2'	6:5:81:A:H8	1.75	0.52
13:D:103:TYR:HB3	13:D:192:ILE:HD11	1.92	0.52
14:E:98:ALA:HA	14:E:101:ASN:ND2	2.25	0.52
14:E:154:GLU:OE2	16:G:3:THR:HB	2.09	0.52
15:F:143:MET:HA	15:F:143:MET:HE3	1.92	0.52
29:T:35:HIS:ND1	29:T:35:HIS:C	2.68	0.52
29:T:55:LYS:HD2	29:T:59:MET:HE2	1.92	0.52
34:b:50:THR:HB	34:b:87:MET:HB3	1.92	0.52
36:d:39:GLY:HA2	36:d:86:GLY:HA2	1.92	0.52
36:d:111:VAL:HG22	36:d:137:ILE:HD12	1.91	0.52
44:l:48:GLU:O	44:l:52:ILE:HG12	2.10	0.52
45:m:99:ARG:NH2	45:m:119:THR:OG1	2.43	0.52
52:t:41:LYS:HG2	52:t:64:GLN:OE1	2.10	0.52
54:v:37:LYS:HE3	54:v:45:THR:HB	1.92	0.52
2:1:5:SER:HA	2:1:8:LYS:HE2	1.91	0.52
4:3:193:G:OP2	54:v:26:ARG:NH1	2.43	0.52
4:3:527:A:N1	50:r:7:GLN:NE2	2.58	0.52
4:3:666:G:N2	4:3:669:A:OP2	2.30	0.52
17:H:57:THR:HG21	17:H:96:LEU:HD11	1.92	0.52
17:H:89:LEU:HD13	17:H:96:LEU:HD21	1.91	0.52
25:P:53:VAL:O	25:P:55:ALA:N	2.43	0.52
29:T:56:PHE:HA	29:T:59:MET:CE	2.40	0.52
12:U:127:ARG:NE	12:U:127:ARG:HA	2.25	0.52
4:3:1125:U:H2'	4:3:1126:G:C8	2.45	0.51
4:3:2081:U:HO2'	4:3:2605:G:HO2'	1.54	0.51
6:5:190:A:H2'	6:5:191:A:H8	1.75	0.51
6:5:499:U:H2'	6:5:500:G:C8	2.46	0.51
6:5:1078:G:H5'	6:5:1078:G:H8	1.75	0.51
7:6:36:C:H2'	7:6:37:A:O4'	2.10	0.51
10:A:81:GLN:HE21	10:A:169:LEU:HB3	1.75	0.51
16:G:59:VAL:HG23	16:G:70:VAL:HB	1.91	0.51
18:I:35:VAL:HG11	18:I:42:ILE:HD11	1.90	0.51
25:P:60:LYS:HD2	25:P:81:ILE:HG13	1.90	0.51
12:U:163:VAL:CG2	12:U:164:SER:H	2.21	0.51
38:f:85:ASN:HB2	38:f:89:TYR:HB2	1.93	0.51
43:k:126:PHE:HB3	43:k:128:VAL:HG13	1.91	0.51
53:u:35:LEU:HD12	53:u:54:GLN:N	2.25	0.51
4:3:1806:G:C8	33:a:188:GLU:OE2	2.63	0.51
4:3:2173:G:H2'	4:3:2174:G:C8	2.45	0.51
4:3:2847:C:H2'	4:3:2848:A:H8	1.76	0.51
10:A:229:MET:HE3	10:A:229:MET:O	2.10	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:245:MET:HE2	10:A:246:PHE:CE2	2.46	0.51
22:M:47:LEU:HD21	22:M:52:ALA:HB3	1.91	0.51
23:N:63:LEU:HD12	23:N:64:LEU:N	2.26	0.51
26:Q:82:HIS:O	26:Q:86:VAL:HG12	2.11	0.51
12:U:168:GLU:OE1	12:U:177:THR:HB	2.10	0.51
35:c:40:VAL:HG22	35:c:101:LEU:HB2	1.90	0.51
44:l:32:TYR:HE2	44:l:111:GLU:OE1	1.94	0.51
46:n:75:GLN:CB	46:n:112:ARG:HH22	2.23	0.51
52:t:94:ASP:OD1	52:t:94:ASP:N	2.42	0.51
4:3:622:U:H2'	4:3:623:A:C8	2.45	0.51
4:3:2150:C:H2'	4:3:2151:G:C8	2.44	0.51
15:F:15:PRO:HG3	17:H:45:LEU:HD21	1.93	0.51
23:N:78:LEU:HD12	23:N:79:VAL:N	2.25	0.51
25:P:21:THR:HG22	25:P:73:LYS:NZ	2.24	0.51
27:R:50:ALA:HB1	27:R:57:PHE:HB3	1.92	0.51
28:S:36:HIS:ND1	28:S:36:HIS:O	2.43	0.51
12:U:17:SER:OG	12:U:18:LEU:N	2.42	0.51
35:c:112:LEU:HD23	35:c:211:PHE:HE1	1.74	0.51
35:c:159:PHE:CD2	35:c:168:LEU:HD11	2.45	0.51
38:f:50:PHE:CZ	38:f:53:LYS:HE2	2.46	0.51
51:s:12:LEU:HD12	51:s:12:LEU:O	2.11	0.51
51:s:12:LEU:HD23	55:w:35:HIS:CE1	2.46	0.51
6:5:1361:G:H2'	6:5:1362:G:H8	1.75	0.51
23:N:66:TYR:HA	23:N:69:HIS:ND1	2.25	0.51
12:U:13:ARG:HA	54:v:40:THR:HG21	1.92	0.51
12:U:38:HIS:O	12:U:39:GLY:C	2.53	0.51
36:d:165:GLU:OE2	36:d:165:GLU:N	2.29	0.51
52:t:28:MET:HE2	52:t:33:GLN:HB2	1.91	0.51
4:3:314:G:H1'	12:U:36:GLY:HA2	1.92	0.51
4:3:1033:A:OP2	48:p:57:ARG:NH1	2.43	0.51
4:3:2068:G:O6	60:3:3001:CLM:O4	2.24	0.51
6:5:399:C:H5'	12:C:131:THR:HG23	1.93	0.51
6:5:596:U:H4'	16:G:98:TYR:CG	2.45	0.51
6:5:671:G:H2'	6:5:672:A:H8	1.76	0.51
6:5:776:C:H1'	19:J:115:LYS:NZ	2.25	0.51
6:5:929:C:O2'	6:5:1318:C:OP2	2.21	0.51
7:6:1:G:H2'	7:6:2:G:C8	2.45	0.51
10:A:18:VAL:HG21	10:A:231:LEU:HD11	1.93	0.51
12:C:26:SER:OG	12:C:27:LYS:N	2.42	0.51
13:D:80:THR:OG1	13:D:81:LYS:N	2.43	0.51
15:F:42:LEU:HG	15:F:46:PHE:HE1	1.75	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:F:73:GLU:CD	15:F:90:VAL:HB	2.36	0.51
15:F:103:ILE:HD11	15:F:123:ILE:HG22	1.91	0.51
19:J:119:ARG:NH1	29:T:33:GLU:OE2	2.44	0.51
21:L:54:VAL:O	21:L:57:ARG:HG2	2.11	0.51
28:S:14:ASN:HA	28:S:17:ARG:HG2	1.92	0.51
12:U:157:ALA:O	12:U:160:SER:HB3	2.10	0.51
34:b:27:THR:HG21	34:b:197:ILE:HB	1.91	0.51
40:h:38:GLN:HB3	40:h:65:PHE:CZ	2.45	0.51
54:v:55:LEU:HD12	54:v:64:LEU:HD21	1.91	0.51
4:3:2036:G:N1	4:3:2040:A:OP2	2.28	0.51
6:5:409:G:H22	6:5:425:G:H1'	1.75	0.51
6:5:460:A:H2'	6:5:461:G:C8	2.45	0.51
13:D:101:ILE:HD13	13:D:173:ALA:HB2	1.93	0.51
27:R:21:ASP:O	27:R:24:LYS:HG2	2.10	0.51
12:U:128:THR:HG22	12:U:129:VAL:N	2.24	0.51
39:g:56:ASN:CG	39:g:60:ARG:HH21	2.19	0.51
40:h:123:MET:O	40:h:127:THR:HG22	2.10	0.51
50:r:19:LEU:HB3	57:y:22:LEU:HD11	1.91	0.51
4:3:2258:G:C3'	44:l:82:ARG:HH12	2.17	0.51
6:5:659:U:H4'	6:5:833:G:H5"	1.92	0.51
10:A:60:LEU:HD13	10:A:216:PRO:HG2	1.93	0.51
29:T:18:PHE:HA	29:T:21:VAL:HG12	1.92	0.51
48:p:39:ILE:HG22	48:p:43:LYS:HE3	1.93	0.51
4:3:272:C:OP2	12:U:37:GLN:NE2	2.44	0.51
4:3:2028:G:OP1	57:y:9:SER:OG	2.28	0.51
14:E:1:MET:O	14:E:63:SER:HB3	2.10	0.51
18:I:35:VAL:HG21	18:I:82:LEU:HD11	1.93	0.51
19:J:53:PRO:O	19:J:88:THR:HG21	2.11	0.51
41:i:104:VAL:CG1	41:i:127:VAL:HG21	2.41	0.51
4:3:1700:G:O2'	42:j:6:THR:OG1	2.24	0.51
6:5:670:G:H2'	6:5:671:G:C8	2.45	0.51
13:D:78:LYS:HG2	13:D:85:ASN:HB2	1.93	0.51
14:E:161:GLN:CD	16:G:59:VAL:HG12	2.35	0.51
15:F:15:PRO:HG2	17:H:45:LEU:HD11	1.92	0.51
12:U:9:LYS:CE	12:U:13:ARG:HH22	2.22	0.51
33:a:27:THR:HG21	33:a:85:SER:HA	1.93	0.51
37:e:12:ASP:OD1	37:e:12:ASP:N	2.43	0.51
37:e:120:ILE:HA	37:e:147:PHE:HE2	1.76	0.51
2:1:54:ARG:NH1	4:3:869:U:H5'	2.26	0.51
4:3:118:G:OP2	4:3:120:A:O2'	2.28	0.51
4:3:313:G:H21	12:U:36:GLY:HA3	1.75	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:892:G:O2'	53:u:83:TYR:HD2	1.94	0.51
4:3:1569:A:H2'	4:3:1570:A:C2	2.46	0.51
6:5:223:G:H21	24:O:61:LYS:HZ1	1.58	0.51
6:5:1193:U:H2'	6:5:1194:A:C8	2.46	0.51
6:5:1351:U:H2'	6:5:1352:A:C8	2.46	0.51
11:B:46:VAL:HG23	11:B:47:ASN:N	2.25	0.51
15:F:67:ASN:HD21	15:F:129:ASN:ND2	2.09	0.51
26:Q:93:ALA:HA	26:Q:96:LEU:HG	1.93	0.51
12:U:17:SER:C	12:U:18:LEU:HD22	2.36	0.51
12:U:44:SER:HA	12:U:51:ALA:HB1	1.93	0.51
36:d:24:SER:HB3	36:d:27:GLN:HG3	1.93	0.51
38:f:132:GLU:HG3	38:f:140:VAL:HB	1.94	0.51
42:j:106:LEU:HD22	42:j:106:LEU:H	1.75	0.51
45:m:35:LEU:HD12	45:m:102:LYS:HG2	1.93	0.51
4:3:869:U:H2'	4:3:870:A:H8	1.76	0.50
6:5:1214:A:H62	6:5:1273:A:N6	2.07	0.50
12:C:98:ASP:HA	12:C:101:VAL:HG22	1.92	0.50
12:C:146:ALA:C	12:C:148:THR:H	2.20	0.50
16:G:53:TYR:CE2	16:G:113:ILE:HG12	2.46	0.50
19:J:28:SER:HA	19:J:34:VAL:HA	1.93	0.50
33:a:120:LYS:O	33:a:121:ILE:HD13	2.10	0.50
4:3:2299:U:H2'	4:3:2300:A:H8	1.77	0.50
5:4:45:C:OP2	46:n:4:ARG:HD2	2.11	0.50
6:5:640:C:H5"	16:G:40:LEU:HD11	1.93	0.50
7:6:73:A:H2'	7:6:74:C:O4'	2.11	0.50
15:F:102:TRP:HA	15:F:105:MET:SD	2.51	0.50
16:G:26:ARG:HD3	16:G:84:ILE:HG13	1.92	0.50
37:e:107:ASN:HB3	37:e:117:LYS:HE3	1.93	0.50
4:3:788:G:H2'	4:3:789:A:H8	1.76	0.50
4:3:1031:U:O2'	41:i:4:THR:HG21	2.11	0.50
6:5:68:C:H2'	6:5:69:G:C8	2.46	0.50
6:5:1136:G:H4'	10:A:146:LYS:NZ	2.26	0.50
17:H:6:TYR:CD2	17:H:21:LEU:HD22	2.46	0.50
24:O:33:ILE:HD12	24:O:58:TRP:HH2	1.76	0.50
27:R:41:PHE:CE1	56:x:66:PHE:HB3	2.46	0.50
12:U:124:LEU:HG	12:U:125:ASN:H	1.76	0.50
35:c:153:LEU:HD23	35:c:153:LEU:H	1.77	0.50
40:h:11:LYS:HD3	40:h:54:VAL:HG22	1.93	0.50
45:m:9:LYS:HB3	45:m:14:ARG:HH21	1.77	0.50
45:m:74:ASP:HB2	45:m:77:GLN:NE2	2.27	0.50
55:w:16:VAL:O	55:w:20:ILE:HG13	2.11	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2630:U:O2'	4:3:2829:G:N7	2.44	0.50
6:5:654:U:H4'	23:N:25:GLN:OE1	2.10	0.50
13:D:143:ARG:NH2	13:D:145:GLY:O	2.44	0.50
16:G:123:MET:HE1	16:G:128:ALA:HA	1.91	0.50
21:L:48:LEU:HB2	21:L:53:PHE:CE1	2.45	0.50
21:L:98:ARG:CG	21:L:100:GLN:HE22	2.25	0.50
23:N:60:ARG:HE	23:N:61:LYS:HZ3	1.59	0.50
24:O:86:LYS:C	24:O:86:LYS:HD3	2.36	0.50
28:S:50:GLN:O	28:S:54:LEU:HD23	2.12	0.50
12:U:140:ASP:O	12:U:177:THR:HG23	2.11	0.50
45:m:109:ASP:HB3	45:m:111:THR:HG23	1.93	0.50
4:3:925:C:H5"	21:L:93:LYS:HZ1	1.76	0.50
4:3:1032:A:H4'	48:p:90:ASN:ND2	2.27	0.50
6:5:941:A:H2'	6:5:942:G:C8	2.47	0.50
6:5:1400:A:H2'	6:5:1401:A:C8	2.47	0.50
7:6:8:U:O2'	7:6:21:A:N1	2.41	0.50
14:E:139:THR:OG1	14:E:140:GLN:N	2.44	0.50
14:E:156:LEU:HD12	14:E:157:TRP:N	2.26	0.50
27:R:31:ILE:HD12	27:R:49:PHE:HE1	1.77	0.50
12:U:160:SER:OG	12:U:171:ASN:ND2	2.45	0.50
36:d:45:ARG:HG3	36:d:46:ASP:N	2.26	0.50
36:d:114:PHE:CD1	36:d:114:PHE:C	2.90	0.50
42:j:8:LEU:HB2	42:j:82:ASN:O	2.11	0.50
4:3:394:C:C1'	12:U:32:LYS:HD3	2.41	0.50
4:3:2844:U:H5"	45:m:50:THR:HG21	1.94	0.50
6:5:1323:A:H3'	17:H:125:ARG:NH2	2.27	0.50
10:A:213:PHE:CE1	14:E:176:PRO:HB3	2.47	0.50
11:B:142:ILE:HD13	11:B:145:LEU:HD21	1.92	0.50
27:R:12:ASP:OD2	27:R:14:HIS:HD2	1.95	0.50
27:R:35:SER:O	27:R:71:LEU:HD22	2.11	0.50
27:R:40:ILE:HG21	27:R:66:MET:O	2.11	0.50
39:g:46:LYS:HG2	39:g:48:GLY:H	1.77	0.50
52:t:3:ARG:NH2	52:t:74:LEU:O	2.45	0.50
54:v:14:TYR:HE1	54:v:28:LYS:HB2	1.76	0.50
4:3:1685:G:H4'	45:m:36:LYS:HG3	1.93	0.50
4:3:2254:G:H2'	4:3:2255:A:H8	1.77	0.50
6:5:1269:U:HO2'	21:L:14:ARG:NH2	2.10	0.50
6:5:1279:G:H21	6:5:1306:A:H2	1.59	0.50
7:6:76:A:C8	7:6:76:A:H5'	2.46	0.50
10:A:203:ASN:OD1	10:A:218:ASN:HA	2.12	0.50
11:B:42:ASN:O	11:B:46:VAL:HG22	2.12	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:E:40:LEU:CD2	26:Q:54:ILE:HG21	2.41	0.50
14:E:140:GLN:CG	14:E:141:PRO:HD2	2.38	0.50
19:J:86:LYS:NZ	29:T:26:ARG:HH21	2.09	0.50
48:p:98:ALA:HB2	48:p:105:PHE:CD2	2.47	0.50
2:1:22:LYS:HB2	43:k:63:PRO:HG2	1.94	0.50
4:3:652:U:H2'	4:3:653:G:C8	2.46	0.50
4:3:2111:U:N3	4:3:2194:G:H1'	2.22	0.50
6:5:510:U:H2'	6:5:511:A:C8	2.46	0.50
6:5:1045:C:H42	31:Y:46:G:H22	1.59	0.50
6:5:1163:A:O3'	22:M:58:LYS:NZ	2.45	0.50
10:A:103:VAL:HG11	10:A:236:VAL:HG12	1.92	0.50
10:A:152:LEU:HA	10:A:155:GLU:CD	2.37	0.50
12:C:91:ARG:HD2	12:C:181:PHE:HB2	1.92	0.50
13:D:154:ALA:HB3	13:D:177:ASP:HB3	1.92	0.50
13:D:203:LEU:HD21	16:G:85:ASN:HD21	1.77	0.50
21:L:14:ARG:HD2	21:L:16:GLU:OE2	2.11	0.50
21:L:40:ASN:O	21:L:43:LYS:HG3	2.12	0.50
24:O:44:LYS:HG3	24:O:45:GLU:CD	2.37	0.50
29:T:9:ASP:OD1	29:T:9:ASP:N	2.42	0.50
33:a:173:GLN:HG2	33:a:174:ASP:H	1.75	0.50
36:d:96:MET:SD	36:d:97:TRP:CD1	3.05	0.50
42:j:21:ILE:HA	42:j:41:VAL:HG12	1.94	0.50
46:n:107:GLU:OE2	46:n:110:ARG:HD2	2.11	0.50
4:3:1023:C:O2'	4:3:1036:A:N3	2.41	0.50
4:3:1106:G:N2	4:3:1124:G:O2'	2.45	0.50
6:5:821:U:O2	16:G:11:HIS:NE2	2.45	0.50
15:F:107:ALA:HB1	15:F:119:ILE:HG22	1.93	0.50
23:N:76:ARG:NH2	23:N:79:VAL:HG13	2.27	0.50
28:S:12:ARG:O	28:S:15:ILE:HG22	2.12	0.50
40:h:25:LEU:HB3	40:h:30:ILE:HD12	1.92	0.50
43:k:78:VAL:HG13	43:k:112:ILE:HA	1.94	0.50
49:q:34:GLN:NE2	49:q:56:VAL:HG22	2.25	0.50
2:1:25:TYR:CE2	4:3:2369:G:H4'	2.47	0.49
4:3:700:U:H2'	4:3:701:A:H8	1.77	0.49
4:3:1544:G:H2'	4:3:1545:A:H8	1.77	0.49
4:3:1588:A:H2'	4:3:1589:A:C8	2.47	0.49
6:5:424:U:OP2	12:C:31:ARG:NH1	2.44	0.49
6:5:974:C:H2'	22:M:19:ARG:NH1	2.04	0.49
6:5:1387:U:H2'	6:5:1388:A:C8	2.47	0.49
11:B:64:THR:HA	11:B:101:ASN:OD1	2.12	0.49
17:H:51:GLU:HG3	17:H:51:GLU:O	2.11	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:I:14:ILE:HD12	18:I:104:LEU:HD12	1.93	0.49
19:J:67:VAL:HA	19:J:70:MET:SD	2.52	0.49
34:b:1:MET:SD	34:b:1:MET:N	2.73	0.49
2:1:9:LYS:O	43:k:65:PHE:N	2.34	0.49
3:2:21:GLN:O	3:2:22:ILE:HD13	2.12	0.49
4:3:129:U:OP2	51:s:34:LYS:NZ	2.41	0.49
4:3:615:G:H2'	4:3:616:G:C8	2.47	0.49
4:3:924:C:H5"	21:L:92:ARG:NH2	2.26	0.49
4:3:2493:G:O3'	44:l:126:PRO:HB3	2.11	0.49
6:5:470:U:O4	6:5:471:A:N6	2.44	0.49
6:5:611:A:C5'	12:C:80:LYS:HE2	2.42	0.49
11:B:109:ILE:HA	11:B:222:ILE:HG23	1.94	0.49
16:G:106:LEU:HD12	16:G:109:ASN:HA	1.95	0.49
27:R:7:LYS:HE2	56:x:72:PHE:CE1	2.48	0.49
12:U:197:VAL:HG12	12:U:201:LYS:HD2	1.93	0.49
33:a:190:ARG:HD3	33:a:192:PHE:CE1	2.47	0.49
38:f:66:HIS:CE1	38:f:138:LEU:HD11	2.47	0.49
46:n:38:HIS:O	46:n:39:ILE:HD13	2.12	0.49
48:p:80:ASN:O	48:p:83:LYS:HG2	2.13	0.49
51:s:50:ILE:HG13	51:s:85:LEU:HD11	1.94	0.49
54:v:5:ASP:OD1	54:v:7:LEU:N	2.45	0.49
4:3:315:A:N7	12:U:38:HIS:CE1	2.80	0.49
4:3:411:U:H2'	4:3:412:A:H8	1.77	0.49
4:3:1617:U:H5"	4:3:1619:A:C4	2.47	0.49
6:5:57:U:H2'	6:5:58:G:H8	1.77	0.49
6:5:122:C:H4'	24:O:64:LYS:NZ	2.27	0.49
6:5:892:G:N2	6:5:895:A:OP2	2.45	0.49
9:8:28:A:H2'	9:8:29:U:C6	2.46	0.49
10:A:210:LEU:HD12	10:A:211:VAL:HG23	1.93	0.49
11:B:183:ALA:HB3	11:B:185:ILE:HD11	1.93	0.49
14:E:85:GLU:O	14:E:86:LEU:HD13	2.13	0.49
18:I:27:THR:HA	18:I:30:LYS:HE3	1.94	0.49
28:S:10:ARG:O	28:S:13:GLN:HG3	2.13	0.49
12:U:81:GLN:HB2	12:U:85:LEU:HD11	1.93	0.49
12:U:104:MET:SD	12:U:106:PHE:CD2	3.01	0.49
38:f:6:LYS:NZ	38:f:36:ALA:O	2.45	0.49
47:o:95:LYS:NZ	47:o:119:GLN:H	2.11	0.49
4:3:892:G:H2'	4:3:893:A:H8	1.76	0.49
6:5:192:A:H2'	6:5:193:G:H8	1.77	0.49
6:5:664:A:H2'	6:5:665:G:C8	2.47	0.49
6:5:686:C:OP1	19:J:39:SER:OG	2.28	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1490:G:H2'	6:5:1491:A:C8	2.47	0.49
13:D:183:LEU:O	13:D:183:LEU:HD23	2.13	0.49
21:L:101:ARG:HG2	21:L:102:THR:N	2.25	0.49
24:O:7:MET:SD	24:O:20:VAL:HG11	2.53	0.49
35:c:14:GLU:OE1	35:c:14:GLU:N	2.41	0.49
35:c:110:ALA:O	35:c:114:THR:HG23	2.12	0.49
40:h:76:LEU:HD11	40:h:127:THR:HG23	1.95	0.49
51:s:78:GLU:OE1	51:s:78:GLU:HA	2.12	0.49
6:5:998:G:H5'	6:5:999:C:C4	2.48	0.49
11:B:224:HIS:HB3	11:B:225:PRO:CD	2.39	0.49
15:F:14:ASP:HB3	15:F:19:ASN:N	2.24	0.49
22:M:29:ARG:NH2	22:M:41:ARG:HH12	2.10	0.49
34:b:45:ASP:O	34:b:46:LYS:HB2	2.12	0.49
51:s:28:VAL:HG22	51:s:82:VAL:HG22	1.94	0.49
52:t:36:VAL:HG23	52:t:39:LEU:HB2	1.94	0.49
54:v:63:ARG:C	54:v:65:SER:N	2.70	0.49
4:3:518:A:O2'	4:3:532:A:N1	2.42	0.49
4:3:917:G:H2'	4:3:918:G:C8	2.47	0.49
4:3:1076:U:H3	4:3:1149:G:H1	1.61	0.49
4:3:1270:C:H2'	4:3:1271:A:H8	1.77	0.49
6:5:134:G:O2'	6:5:1421:A:N3	2.42	0.49
6:5:224:A:O4'	24:O:61:LYS:HE3	2.13	0.49
6:5:433:C:H2'	6:5:434:U:C6	2.48	0.49
11:B:40:ILE:HD11	11:B:95:ILE:HG21	1.93	0.49
11:B:158:GLY:HA3	11:B:199:ILE:HD13	1.93	0.49
13:D:86:MET:HE1	31:Y:49:U:C6	2.48	0.49
13:D:212:ARG:NH1	16:G:53:TYR:CD1	2.81	0.49
18:I:31:ILE:O	18:I:35:VAL:HG12	2.13	0.49
21:L:55:ALA:O	21:L:59:VAL:HG22	2.12	0.49
21:L:65:ILE:HG22	21:L:67:GLY:H	1.77	0.49
25:P:14:LYS:HB2	25:P:25:GLN:OE1	2.12	0.49
37:e:159:PRO:HA	37:e:172:ILE:HD13	1.94	0.49
42:j:13:ASN:HD21	42:j:96:THR:H	1.61	0.49
44:l:42:ILE:CD1	44:l:47:ILE:HD11	2.42	0.49
46:n:41:VAL:N	46:n:55:SER:O	2.42	0.49
48:p:45:ALA:O	48:p:49:ARG:HG3	2.13	0.49
4:3:925:C:H2'	21:L:93:LYS:NZ	2.27	0.49
6:5:1269:U:H2'	6:5:1270:C:C6	2.47	0.49
8:7:10:G:O2'	8:7:11:U:OP1	2.25	0.49
9:8:5:C:H2'	9:8:6:U:H6	1.77	0.49
14:E:4:ASN:O	14:E:88:ILE:HG22	2.13	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:E:129:ASP:O	14:E:132:VAL:HG23	2.12	0.49
20:K:115:LEU:HG	20:K:116:ASP:H	1.77	0.49
21:L:7:ILE:H	21:L:7:ILE:HD12	1.78	0.49
24:O:78:LEU:HA	24:O:81:LYS:CE	2.43	0.49
44:l:43:ASP:HB3	44:l:94:VAL:HG12	1.95	0.49
54:v:54:THR:O	54:v:58:LEU:HG	2.11	0.49
4:3:2020:A:N3	50:r:88:ARG:NH2	2.61	0.49
4:3:2476:A:H5'	44:l:120:ARG:NH1	2.27	0.49
7:6:59:G:H2'	7:6:60:A:C8	2.47	0.49
15:F:100:LEU:O	15:F:103:ILE:HG22	2.12	0.49
15:F:102:TRP:HB3	15:F:106:PHE:CZ	2.48	0.49
15:F:128:ASN:O	15:F:130:THR:HG23	2.13	0.49
16:G:125:ASP:OD1	16:G:126:LYS:N	2.44	0.49
21:L:17:ILE:O	21:L:20:THR:OG1	2.24	0.49
21:L:86:TRP:O	21:L:89:LEU:HD12	2.10	0.49
35:c:52:ILE:HG13	35:c:93:PRO:HD2	1.95	0.49
35:c:188:VAL:O	35:c:192:MET:HG2	2.13	0.49
38:f:33:LYS:HD3	38:f:113:PHE:HB2	1.95	0.49
44:l:29:PHE:HB3	44:l:65:TRP:CE2	2.48	0.49
44:l:106:VAL:HG21	44:l:114:MET:HB3	1.94	0.49
44:l:114:MET:O	44:l:118:LEU:HG	2.13	0.49
49:q:6:VAL:HB	49:q:37:LYS:HB2	1.93	0.49
53:u:83:TYR:CD1	53:u:95:VAL:HG23	2.47	0.49
4:3:1178:A:N7	41:i:30:LYS:NZ	2.58	0.49
4:3:1306:G:H2'	4:3:1307:G:H8	1.78	0.49
9:8:40:C:H2'	9:8:41:A:C8	2.48	0.49
14:E:3:TYR:N	14:E:3:TYR:CD1	2.81	0.49
15:F:49:ILE:HD11	15:F:123:ILE:CD1	2.43	0.49
17:H:10:GLY:O	17:H:11:ARG:HD3	2.13	0.49
17:H:117:LYS:HB2	17:H:120:LEU:HD22	1.94	0.49
19:J:17:SER:OG	19:J:24:ILE:HB	2.13	0.49
31:Y:53:A:H2'	31:Y:54:A:C8	2.48	0.49
47:o:116:GLU:HG2	47:o:117:ARG:H	1.78	0.49
51:s:9:LYS:O	51:s:30:VAL:HG12	2.13	0.49
54:v:14:TYR:CE1	54:v:28:LYS:HB2	2.48	0.49
3:2:21:GLN:C	3:2:22:ILE:HD13	2.37	0.49
4:3:638:A:H62	4:3:660:U:H3	1.59	0.49
4:3:818:A:H2'	4:3:819:U:H4'	1.95	0.49
4:3:1529:U:H2'	4:3:1530:G:H8	1.78	0.49
4:3:2059:G:O3'	34:b:148:GLN:NE2	2.45	0.49
6:5:509:C:OP1	12:C:41:ARG:NH1	2.40	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:516:C:H4'	6:5:517:C:H5"	1.94	0.49
10:A:152:LEU:O	10:A:155:GLU:HG2	2.12	0.49
11:B:134:ARG:HD2	11:B:137:MET:HE2	1.95	0.49
13:D:156:GLN:HA	13:D:177:ASP:OD2	2.13	0.49
16:G:29:LYS:NZ	16:G:82:PRO:HD3	2.27	0.49
17:H:12:ARG:CD	17:H:13:LYS:HG3	2.43	0.49
17:H:14:SER:O	17:H:14:SER:OG	2.27	0.49
19:J:40:SER:HA	19:J:43:MET:HG2	1.95	0.49
12:U:104:MET:HE1	12:U:106:PHE:HB2	1.93	0.49
47:o:36:LYS:HB3	47:o:85:ASN:HB2	1.94	0.49
55:w:71:LYS:HG3	55:w:72:TYR:N	2.28	0.49
58:z:5:ARG:NH2	58:z:24:ASN:OD1	2.46	0.49
4:3:573:A:H4'	41:i:11:GLN:CB	2.43	0.48
6:5:433:C:H1'	12:C:153:ILE:HD11	1.95	0.48
6:5:998:G:O2'	6:5:1000:A:OP1	2.30	0.48
6:5:1022:G:O2'	6:5:1023:G:O5'	2.31	0.48
6:5:1049:G:OP1	11:B:202:LYS:HE3	2.13	0.48
11:B:59:GLU:HB2	11:B:66:ASP:HB2	1.94	0.48
22:M:53:ILE:O	22:M:56:VAL:HG22	2.13	0.48
29:T:5:GLU:HG2	29:T:7:LYS:N	2.28	0.48
29:T:54:ARG:HD3	29:T:57:ARG:NH1	2.28	0.48
12:U:29:LYS:C	12:U:31:ARG:N	2.69	0.48
35:c:116:TRP:CE2	35:c:191:LEU:HD11	2.48	0.48
37:e:167:TYR:HB2	37:e:170:GLU:OE1	2.13	0.48
49:q:61:LYS:HG2	49:q:91:LYS:HB3	1.94	0.48
50:r:41:LYS:HE3	57:y:22:LEU:HD21	1.95	0.48
4:3:2107:A:H3'	4:3:2108:C:C6	2.48	0.48
4:3:2142:U:H2'	4:3:2143:G:C8	2.48	0.48
4:3:2376:C:H2'	4:3:2377:A:H8	1.78	0.48
5:4:11:A:H2'	5:4:12:U:H5"	1.95	0.48
6:5:293:G:N2	6:5:296:A:OP2	2.41	0.48
6:5:394:U:H2'	6:5:395:G:C8	2.48	0.48
16:G:95:LEU:HG	20:K:4:ILE:HG13	1.94	0.48
17:H:41:PHE:C	17:H:43:ASN:N	2.71	0.48
19:J:119:ARG:CG	29:T:34:TYR:CD1	2.95	0.48
35:c:130:GLN:HA	35:c:133:PHE:HD2	1.77	0.48
4:3:324:C:OP1	12:U:147:LYS:NZ	2.24	0.48
4:3:1093:U:H3	4:3:1115:G:H1	1.60	0.48
4:3:2155:G:H2'	4:3:2156:G:C8	2.48	0.48
10:A:172:LEU:HG	10:A:173:PRO:CD	2.42	0.48
11:B:22:TRP:HH2	11:B:37:ASP:OD2	1.95	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:B:159:ARG:HE	11:B:159:ARG:HB3	1.53	0.48
15:F:49:ILE:O	15:F:53:THR:HG22	2.14	0.48
18:I:6:ALA:H	18:I:86:ASN:ND2	2.11	0.48
21:L:75:LEU:HB2	21:L:79:HIS:NE2	2.28	0.48
12:U:13:ARG:O	54:v:63:ARG:NH1	2.45	0.48
30:X:39:LYS:HG3	30:X:44:ARG:HA	1.94	0.48
31:Y:49:U:O2	31:Y:50:U:N3	2.46	0.48
36:d:92:ARG:O	36:d:95:ARG:HG2	2.13	0.48
38:f:56:GLU:O	38:f:60:ILE:HG12	2.14	0.48
40:h:112:LEU:HG	40:h:114:ALA:H	1.78	0.48
41:i:16:ARG:HG2	41:i:54:GLY:O	2.14	0.48
41:i:40:ARG:HG2	41:i:40:ARG:HH11	1.79	0.48
52:t:102:ARG:HH21	52:t:111:LEU:HD12	1.78	0.48
4:3:60:G:OP1	51:s:76:LYS:HD3	2.13	0.48
4:3:1601:A:H2'	33:a:88:TYR:HE2	1.76	0.48
4:3:2038:A:N3	4:3:2463:G:O2'	2.38	0.48
4:3:2169:G:O3'	4:3:2173:G:N2	2.47	0.48
4:3:2820:G:N3	4:3:2887:A:O2'	2.46	0.48
6:5:259:A:H2'	6:5:260:C:C6	2.49	0.48
6:5:625:U:H2'	6:5:626:G:H8	1.78	0.48
6:5:1158:A:O2'	6:5:1159:A:OP1	2.28	0.48
15:F:77:ARG:HE	15:F:155:TRP:HB3	1.78	0.48
20:K:48:THR:N	20:K:67:LYS:O	2.43	0.48
21:L:90:ARG:HD2	21:L:96:PRO:O	2.13	0.48
29:T:57:ARG:HB3	29:T:57:ARG:HH11	1.78	0.48
36:d:135:GLN:HA	36:d:152:PHE:CE2	2.48	0.48
53:u:100:HIS:HB3	53:u:102:LEU:HG	1.95	0.48
4:3:180:A:H5'	4:3:181:G:C8	2.48	0.48
4:3:2756:A:C2	37:e:66:ILE:HD11	2.47	0.48
6:5:223:G:N2	24:O:61:LYS:HZ1	2.12	0.48
6:5:447:G:H5"	6:5:448:A:H3'	1.95	0.48
11:B:84:ASN:HA	11:B:87:LYS:HE3	1.94	0.48
12:C:183:GLU:N	12:C:186:GLU:OE2	2.47	0.48
28:S:35:PHE:CD2	28:S:47:VAL:HG21	2.48	0.48
12:U:99:ASN:O	12:U:103:ARG:HG2	2.12	0.48
34:b:117:ARG:HD2	34:b:169:TYR:HE2	1.78	0.48
41:i:62:SER:OG	41:i:100:SER:OG	2.29	0.48
6:5:275:A:H5"	6:5:276:U:H3'	1.96	0.48
6:5:855:G:C1'	16:G:27:LYS:HZ1	2.26	0.48
6:5:872:C:H5"	16:G:93:PRO:HB2	1.96	0.48
6:5:1241:G:H21	6:5:1243:A:H8	1.62	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1350:A:P	15:F:27:ASN:HD22	2.37	0.48
11:B:67:VAL:HB	11:B:104:LEU:HA	1.95	0.48
13:D:90:VAL:HG21	13:D:115:ILE:HD13	1.95	0.48
14:E:162:LYS:NZ	16:G:58:GLN:HB3	2.28	0.48
15:F:69:MET:SD	15:F:95:LYS:HB3	2.53	0.48
20:K:79:TYR:O	20:K:110:ILE:HD12	2.14	0.48
28:S:44:LEU:HD11	28:S:48:TYR:CZ	2.47	0.48
12:U:4:THR:HG23	12:U:4:THR:O	2.13	0.48
12:U:48:SER:O	12:U:50:TYR:N	2.42	0.48
42:j:90:ASP:O	42:j:91:LYS:HB2	2.13	0.48
4:3:524:G:N2	4:3:527:A:OP2	2.30	0.48
4:3:2299:U:OP1	4:3:2388:C:O2'	2.31	0.48
4:3:2364:A:H4'	53:u:34:ARG:HD3	1.95	0.48
5:4:28:C:OP2	46:n:4:ARG:NH2	2.42	0.48
6:5:133:G:H2'	6:5:134:G:C8	2.48	0.48
10:A:22:LYS:O	10:A:26:MET:HB2	2.13	0.48
10:A:129:LYS:HA	10:A:132:LYS:HE2	1.95	0.48
14:E:175:ARG:HH12	16:G:78:GLN:C	2.20	0.48
18:I:35:VAL:CG1	18:I:42:ILE:HD11	2.43	0.48
21:L:73:ILE:O	21:L:77:ILE:HG12	2.14	0.48
26:Q:53:LEU:HD23	26:Q:53:LEU:H	1.77	0.48
12:U:64:TYR:HD1	12:U:110:ARG:NH1	2.11	0.48
41:i:78:TYR:CE1	41:i:89:LYS:HB3	2.49	0.48
41:i:101:ASP:HB2	41:i:127:VAL:HG13	1.95	0.48
2:1:57:ASN:OD1	2:1:57:ASN:N	2.42	0.48
4:3:933:A:H3'	4:3:934:C:O4'	2.14	0.48
6:5:173:U:H4'	28:S:73:VAL:HG11	1.95	0.48
6:5:704:U:H2'	6:5:705:A:H8	1.79	0.48
7:6:71:C:H3'	7:6:72:C:H6	1.79	0.48
10:A:131:ASN:O	10:A:135:GLU:HG2	2.14	0.48
16:G:18:LEU:O	16:G:22:ILE:HG12	2.13	0.48
20:K:20:LYS:HB2	20:K:20:LYS:NZ	2.28	0.48
12:U:96:ARG:NH1	12:U:96:ARG:HG3	2.28	0.48
33:a:112:PRO:HG2	33:a:115:ILE:HD13	1.94	0.48
34:b:14:SER:OG	34:b:15:GLN:N	2.46	0.48
35:c:119:LYS:HD2	35:c:119:LYS:HA	1.57	0.48
42:j:2:VAL:HG21	42:j:8:LEU:HD23	1.95	0.48
49:q:56:VAL:HG21	49:q:96:ARG:HH21	1.78	0.48
50:r:116:GLU:O	50:r:120:GLN:NE2	2.47	0.48
51:s:25:LYS:HB3	51:s:27:TYR:HE1	1.78	0.48
56:x:89:THR:O	56:x:89:THR:OG1	2.29	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1465:U:HO2'	4:3:1542:G:HO2'	1.59	0.48
4:3:1521:A:N3	4:3:1611:C:O2'	2.43	0.48
4:3:1618:U:H4'	4:3:1619:A:OP2	2.13	0.48
4:3:2427:U:C2'	58:z:8:ARG:HH22	2.27	0.48
7:6:76:A:H5'	7:6:76:A:H8	1.77	0.48
10:A:196:ILE:HD12	10:A:197:PRO:HD2	1.95	0.48
12:C:54:LEU:HA	12:C:57:LYS:HD3	1.94	0.48
17:H:53:PRO:HG3	17:H:105:LEU:HD12	1.95	0.48
12:U:183:GLU:CD	12:U:185:SER:H	2.21	0.48
33:a:77:ASP:N	33:a:77:ASP:OD1	2.47	0.48
35:c:139:LYS:O	35:c:142:VAL:HG12	2.13	0.48
37:e:35:GLU:N	37:e:35:GLU:OE1	2.46	0.48
37:e:159:PRO:O	37:e:174:ARG:HD3	2.13	0.48
38:f:84:HIS:NE2	38:f:89:TYR:HB3	2.28	0.48
47:o:63:THR:OG1	47:o:78:ASN:OD1	2.32	0.48
49:q:42:ASP:CG	49:q:43:GLU:N	2.71	0.48
2:1:51:ASP:O	2:1:55:ILE:HG12	2.14	0.48
4:3:169:U:H2'	4:3:170:A:H8	1.79	0.48
4:3:1722:U:O2'	4:3:1734:A:N7	2.43	0.48
5:4:2:U:H2'	5:4:3:U:C6	2.49	0.48
6:5:36:G:H21	20:K:128:SER:HG	1.59	0.48
6:5:250:G:H2'	6:5:251:G:C8	2.49	0.48
6:5:577:G:H5'	6:5:725:A:H1'	1.96	0.48
10:A:113:LEU:O	10:A:116:THR:OG1	2.32	0.48
10:A:227:LEU:HD23	10:A:228:LEU:HG	1.95	0.48
12:C:122:VAL:HG13	12:C:129:VAL:HB	1.96	0.48
13:D:208:VAL:HG21	16:G:111:LEU:CD1	2.44	0.48
13:D:212:ARG:NH1	16:G:53:TYR:CG	2.77	0.48
14:E:90:LEU:O	14:E:93:GLU:OE1	2.32	0.48
36:d:108:LEU:CG	36:d:114:PHE:HE2	2.21	0.48
37:e:3:LYS:HG2	37:e:6:ASN:H	1.79	0.48
39:g:96:VAL:O	39:g:100:VAL:HG22	2.13	0.48
50:r:51:LEU:O	50:r:55:ILE:HG13	2.14	0.48
52:t:31:ARG:HG2	52:t:33:GLN:CD	2.38	0.48
54:v:39:LYS:HB2	54:v:43:GLY:HA2	1.95	0.48
4:3:196:G:O2'	4:3:712:A:N1	2.44	0.47
4:3:313:G:H21	12:U:36:GLY:CA	2.27	0.47
4:3:394:C:O4'	12:U:32:LYS:HD3	2.14	0.47
4:3:408:G:OP2	4:3:459:A:N6	2.46	0.47
4:3:1031:U:O2'	48:p:92:LYS:NZ	2.47	0.47
4:3:1413:A:O2'	4:3:1424:U:O2	2.32	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1445:U:H2'	4:3:1446:G:O4'	2.13	0.47
4:3:2623:U:H1'	57:y:4:GLN:HB3	1.95	0.47
6:5:195:U:H2'	6:5:196:G:C8	2.48	0.47
6:5:403:A:H2'	6:5:404:A:C8	2.48	0.47
10:A:88:LYS:HG2	10:A:89:ASN:H	1.79	0.47
10:A:127:ILE:HG21	10:A:166:VAL:HG12	1.95	0.47
17:H:26:ASP:O	17:H:27:LYS:HB2	2.13	0.47
18:I:28:THR:HA	18:I:31:ILE:HG12	1.96	0.47
21:L:16:GLU:OE1	21:L:16:GLU:N	2.35	0.47
21:L:54:VAL:HA	21:L:57:ARG:HE	1.79	0.47
45:m:32:GLU:OE2	45:m:103:LEU:HD11	2.14	0.47
55:w:55:LEU:HA	55:w:58:LEU:HD12	1.96	0.47
4:3:831:U:H2'	4:3:832:C:C6	2.49	0.47
6:5:1263:A:C2'	15:F:34:LYS:HZ3	2.27	0.47
6:5:1282:U:OP1	21:L:97:VAL:HG22	2.15	0.47
15:F:85:GLN:HB2	15:F:147:ASN:ND2	2.29	0.47
27:R:13:ALA:HA	27:R:16:LEU:HB3	1.97	0.47
34:b:97:THR:HG23	34:b:99:GLN:H	1.78	0.47
35:c:8:LYS:HG3	35:c:14:GLU:OE2	2.15	0.47
36:d:20:PHE:HB2	36:d:22:PHE:CE1	2.50	0.47
42:j:2:VAL:HG23	42:j:6:THR:HG21	1.96	0.47
48:p:46:TYR:HA	48:p:49:ARG:NH1	2.29	0.47
48:p:67:ALA:O	48:p:70:GLU:HG2	2.14	0.47
49:q:36:ASP:HB3	49:q:37:LYS:HE2	1.96	0.47
51:s:4:THR:HG22	51:s:46:LEU:HD11	1.96	0.47
51:s:19:ASN:HB3	51:s:26:LYS:HB2	1.96	0.47
53:u:39:LYS:HB2	53:u:51:ILE:HG13	1.96	0.47
58:z:23:LYS:HE2	58:z:28:ASN:HB2	1.96	0.47
3:2:25:VAL:HG12	3:2:34:GLN:H	1.80	0.47
4:3:2476:A:P	44:l:120:ARG:HH12	2.36	0.47
6:5:469:C:O2'	24:O:80:LYS:NZ	2.44	0.47
6:5:680:G:H21	19:J:33:ASN:H	1.62	0.47
6:5:711:G:H2'	6:5:712:A:C8	2.49	0.47
11:B:192:ALA:HB3	11:B:199:ILE:HB	1.96	0.47
12:C:97:LEU:HD22	12:C:129:VAL:HG11	1.96	0.47
19:J:12:GLY:HA2	19:J:30:PRO:HD3	1.96	0.47
12:U:68:ASP:O	12:U:72:ARG:HG3	2.14	0.47
33:a:126:HIS:HB3	33:a:127:PRO:HD2	1.96	0.47
37:e:168:PHE:CD1	37:e:169:ASP:N	2.79	0.47
46:n:60:LEU:HD21	46:n:76:ASP:OD2	2.14	0.47
47:o:104:MET:HE2	47:o:114:ILE:HD11	1.95	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:p:101:GLU:OE1	48:p:101:GLU:N	2.47	0.47
53:u:51:ILE:HG22	53:u:73:LEU:HB2	1.95	0.47
4:3:703:A:H2'	4:3:705:A:H62	1.79	0.47
4:3:1414:C:H2'	4:3:1415:A:H8	1.80	0.47
10:A:162:PHE:O	10:A:163:PHE:HD1	1.98	0.47
11:B:221:HIS:O	11:B:221:HIS:CG	2.68	0.47
15:F:14:ASP:OD1	15:F:15:PRO:HD2	2.15	0.47
15:F:34:LYS:HB3	15:F:37:LEU:HB2	1.96	0.47
18:I:59:ARG:CZ	18:I:69:GLU:HB3	2.44	0.47
23:N:6:ASN:O	23:N:10:LYS:HG2	2.14	0.47
27:R:31:ILE:O	27:R:50:ALA:N	2.47	0.47
27:R:62:VAL:HA	27:R:66:MET:SD	2.54	0.47
33:a:190:ARG:NH2	33:a:274:SER:HB2	2.29	0.47
38:f:97:ILE:O	38:f:101:ALA:N	2.46	0.47
42:j:105:GLU:OE1	42:j:105:GLU:N	2.33	0.47
46:n:41:VAL:CG1	46:n:77:ILE:HG12	2.45	0.47
53:u:35:LEU:HD12	53:u:53:ARG:C	2.39	0.47
4:3:12:A:H2'	4:3:13:C:O4'	2.14	0.47
4:3:925:C:H5"	21:L:93:LYS:NZ	2.30	0.47
4:3:1440:U:H2'	4:3:1441:A:C8	2.50	0.47
4:3:1566:A:H2'	4:3:1567:U:O4'	2.15	0.47
4:3:2736:U:O2'	4:3:2737:G:H8	1.98	0.47
6:5:515:G:N2	6:5:528:G:OP1	2.45	0.47
6:5:808:C:O2'	6:5:895:A:N1	2.46	0.47
6:5:1138:U:H2'	6:5:1139:A:H8	1.80	0.47
10:A:157:GLU:HA	10:A:160:GLU:OE1	2.15	0.47
11:B:130:ARG:HH12	11:B:195:THR:HG22	1.78	0.47
12:C:60:MET:SD	12:C:71:PHE:HZ	2.38	0.47
12:C:148:THR:O	12:C:151:ILE:HG12	2.15	0.47
14:E:175:ARG:HH12	16:G:79:ARG:HA	1.79	0.47
19:J:21:ASN:O	19:J:21:ASN:ND2	2.32	0.47
21:L:25:ILE:HG23	21:L:29:ARG:HE	1.78	0.47
25:P:62:GLN:C	25:P:63:ILE:HD13	2.40	0.47
45:m:56:ASN:ND2	45:m:58:ASN:OD1	2.48	0.47
48:p:91:ARG:O	48:p:95:SER:OG	2.24	0.47
4:3:879:U:O4	4:3:968:U:O2'	2.31	0.47
4:3:963:U:H2'	4:3:964:A:H8	1.79	0.47
4:3:2813:A:H61	4:3:2894:G:H2'	1.78	0.47
6:5:1121:U:C4	17:H:34:ARG:HD3	2.50	0.47
11:B:136:ALA:O	11:B:139:GLN:HG2	2.15	0.47
13:D:131:ILE:HG22	13:D:175:TYR:CE1	2.50	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:J:17:SER:HA	19:J:80:LYS:HB3	1.96	0.47
22:M:56:VAL:HG23	22:M:56:VAL:O	2.15	0.47
28:S:35:PHE:HD2	28:S:47:VAL:HG21	1.79	0.47
12:U:150:LYS:O	12:U:152:PRO:HD3	2.15	0.47
39:g:40:ILE:HD12	39:g:40:ILE:HA	1.81	0.47
41:i:46:ASP:OD1	41:i:46:ASP:N	2.34	0.47
44:l:16:SER:HB2	44:l:18:GLU:OE2	2.15	0.47
4:3:299:A:H2'	4:3:300:G:H8	1.80	0.47
4:3:299:A:H2'	4:3:300:G:C8	2.50	0.47
4:3:1137:C:H2'	4:3:1138:A:C8	2.47	0.47
4:3:1166:G:O4'	41:i:80:HIS:HD2	1.98	0.47
4:3:1230:U:H1'	48:p:3:ILE:CD1	2.44	0.47
4:3:2254:G:H2'	4:3:2255:A:C8	2.50	0.47
4:3:2308:U:H2'	4:3:2309:A:C8	2.49	0.47
4:3:2879:U:H4'	47:o:7:GLN:HE22	1.73	0.47
5:4:3:U:O2'	5:4:24:A:N1	2.44	0.47
6:5:499:U:H2'	6:5:500:G:H8	1.80	0.47
6:5:527:G:O6	20:K:59:ASN:HA	2.14	0.47
6:5:677:C:H2'	6:5:678:A:H8	1.80	0.47
6:5:1038:G:O3'	22:M:4:LYS:HD3	2.14	0.47
10:A:84:PHE:HD1	10:A:85:VAL:N	2.11	0.47
11:B:67:VAL:O	11:B:105:THR:N	2.47	0.47
11:B:111:SER:HB2	11:B:114:LEU:HD21	1.97	0.47
12:C:168:GLU:N	12:C:168:GLU:OE1	2.47	0.47
13:D:144:SER:OG	13:D:197:ASP:OD2	2.32	0.47
15:F:19:ASN:O	15:F:22:VAL:HG23	2.14	0.47
20:K:56:LYS:HG3	20:K:102:ASP:O	2.14	0.47
12:U:82:ARG:O	12:U:82:ARG:NH1	2.46	0.47
33:a:189:THR:HB	33:a:279:ILE:HB	1.95	0.47
36:d:128:TYR:HE1	36:d:130:ILE:HG12	1.79	0.47
38:f:5:LEU:HD23	38:f:5:LEU:H	1.78	0.47
43:k:34:ARG:HB3	43:k:41:ALA:HA	1.97	0.47
44:l:32:TYR:CE2	44:l:111:GLU:OE1	2.68	0.47
4:3:15:A:O2'	4:3:17:G:N7	2.46	0.47
4:3:2538:A:N7	37:e:175:LYS:NZ	2.63	0.47
6:5:729:C:OP2	29:T:38:LYS:NZ	2.47	0.47
6:5:941:A:H2'	6:5:942:G:H8	1.78	0.47
11:B:115:SER:HB2	11:B:221:HIS:CE1	2.50	0.47
12:C:125:ASN:HA	12:C:141:LYS:O	2.14	0.47
14:E:75:THR:O	14:E:78:ILE:HG22	2.14	0.47
26:Q:81:MET:HE3	26:Q:82:HIS:N	2.30	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:U:14:LEU:CG	12:U:17:SER:HB2	2.45	0.47
36:d:32:GLU:OE1	36:d:159:SER:N	2.48	0.47
36:d:171:ARG:HA	36:d:171:ARG:CZ	2.45	0.47
38:f:73:GLU:O	38:f:76:GLU:HB2	2.13	0.47
45:m:33:THR:OG1	45:m:34:THR:N	2.48	0.47
54:v:27:ARG:HH11	54:v:27:ARG:HG3	1.80	0.47
55:w:71:LYS:HG3	55:w:72:TYR:H	1.80	0.47
4:3:755:C:H2'	4:3:756:A:H8	1.78	0.47
4:3:1096:U:C5	40:h:11:LYS:HG3	2.49	0.47
4:3:1974:U:OP1	63:3:3233:PUT:N1	2.48	0.47
10:A:255:GLN:OE1	10:A:255:GLN:N	2.34	0.47
22:M:47:LEU:HD23	22:M:52:ALA:HB3	1.95	0.47
27:R:12:ASP:CG	27:R:14:HIS:HD2	2.22	0.47
34:b:63:ASN:OD1	34:b:64:LYS:N	2.46	0.47
39:g:43:LYS:NZ	39:g:44:LEU:HD22	2.30	0.47
40:h:55:ILE:HD12	40:h:55:ILE:HA	1.83	0.47
50:r:19:LEU:HB3	57:y:22:LEU:CD1	2.45	0.47
50:r:136:LYS:HA	50:r:139:ARG:NH1	2.30	0.47
4:3:622:U:H2'	4:3:623:A:H8	1.80	0.47
4:3:901:C:H4'	4:3:902:U:O5'	2.15	0.47
4:3:909:U:H2'	4:3:910:G:C8	2.50	0.47
4:3:1806:G:H8	33:a:188:GLU:OE2	1.98	0.47
6:5:473:A:H2'	6:5:474:G:C8	2.50	0.47
6:5:1463:A:H2'	6:5:1464:G:C8	2.50	0.47
65:5:1601:SPD:N1	65:5:1601:SPD:C5	2.77	0.47
7:6:28:C:H2'	7:6:29:U:C6	2.50	0.47
12:C:49:GLY:O	12:C:53:GLN:HB2	2.15	0.47
13:D:148:ARG:NH1	13:D:183:LEU:HD22	2.30	0.47
15:F:102:TRP:O	15:F:105:MET:HG2	2.15	0.47
16:G:41:LYS:HA	16:G:44:ILE:HG12	1.97	0.47
21:L:89:LEU:O	21:L:92:ARG:HB3	2.15	0.47
25:P:14:LYS:HD2	25:P:44:LYS:HD3	1.96	0.47
25:P:56:LYS:H	25:P:56:LYS:HD2	1.79	0.47
45:m:19:ARG:HH11	45:m:66:TRP:HA	1.80	0.47
52:t:1:MET:HE2	52:t:102:ARG:HG3	1.96	0.47
4:3:174:A:H2'	4:3:175:A:H8	1.79	0.46
4:3:333:A:N3	4:3:353:G:O2'	2.43	0.46
4:3:394:C:H2'	4:3:395:U:O4'	2.15	0.46
4:3:1673:U:OP1	63:3:3228:PUT:N1	2.48	0.46
4:3:2813:A:H2'	4:3:2814:A:H8	1.79	0.46
6:5:832:G:H2'	6:5:833:G:H8	1.80	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:836:C:H1'	14:E:145:ARG:HG2	1.96	0.46
6:5:1022:G:H21	6:5:1026:A:H62	1.62	0.46
6:5:1038:G:H4'	22:M:4:LYS:CD	2.45	0.46
10:A:102:ARG:HH12	10:A:245:MET:HE1	1.80	0.46
14:E:25:GLN:O	14:E:25:GLN:NE2	2.44	0.46
14:E:147:GLU:C	14:E:149:ALA:H	2.23	0.46
21:L:29:ARG:O	21:L:33:ILE:HG12	2.14	0.46
23:N:66:TYR:HA	23:N:69:HIS:HD1	1.81	0.46
28:S:35:PHE:C	28:S:35:PHE:CD1	2.92	0.46
12:U:109:THR:HG23	12:U:112:SER:H	1.80	0.46
30:X:39:LYS:HE2	30:X:44:ARG:HA	1.97	0.46
50:r:24:ILE:HD11	50:r:32:ALA:CB	2.40	0.46
4:3:610:G:H2'	4:3:611:A:C8	2.50	0.46
4:3:1096:U:H5	40:h:11:LYS:HG3	1.78	0.46
4:3:2414:U:C2	43:k:72:PHE:HE1	2.33	0.46
6:5:483:U:H2'	6:5:484:A:H8	1.80	0.46
6:5:821:U:H2'	6:5:822:A:C8	2.51	0.46
14:E:96:TYR:HD1	14:E:96:TYR:O	1.97	0.46
15:F:136:LYS:O	15:F:140:THR:HG22	2.15	0.46
17:H:35:ARG:HG2	17:H:36:ASP:N	2.31	0.46
18:I:36:LYS:HD3	18:I:42:ILE:HD12	1.98	0.46
20:K:78:THR:HG21	20:K:95:LEU:HG	1.97	0.46
34:b:2:GLU:HG3	34:b:2:GLU:O	2.14	0.46
35:c:6:LEU:HA	35:c:127:LEU:HB3	1.97	0.46
40:h:72:VAL:HG11	40:h:108:LYS:HD2	1.97	0.46
40:h:127:THR:O	40:h:131:MET:HG2	2.16	0.46
43:k:112:ILE:HG23	43:k:129:HIS:H	1.80	0.46
44:l:63:LYS:HG2	44:l:108:ASN:OD1	2.15	0.46
52:t:69:ILE:HG23	52:t:73:LYS:HD3	1.96	0.46
4:3:1132:C:H3'	4:3:1133:A:H8	1.80	0.46
6:5:192:A:H2'	6:5:193:G:C8	2.51	0.46
6:5:232:G:H5"	25:P:45:TYR:OH	2.15	0.46
6:5:423:U:OP1	12:C:31:ARG:HD3	2.15	0.46
10:A:282:LEU:HB3	10:A:283:ASN:H	1.55	0.46
13:D:131:ILE:C	13:D:132:HIS:HD2	2.23	0.46
20:K:92:VAL:HG12	20:K:115:LEU:HD11	1.98	0.46
12:U:129:VAL:HG13	12:U:134:ILE:HD12	1.96	0.46
12:U:153:ILE:O	12:U:155:LYS:N	2.49	0.46
36:d:12:ILE:HD11	36:d:169:LEU:HD23	1.98	0.46
49:q:19:THR:HG22	49:q:93:LYS:HB2	1.97	0.46
49:q:32:GLU:HG3	49:q:32:GLU:O	2.15	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:q:34:GLN:OE1	49:q:34:GLN:HA	2.16	0.46
4:3:924:C:O2'	4:3:926:U:O2	2.29	0.46
4:3:1124:G:N2	4:3:1125:U:O4	2.47	0.46
4:3:1414:C:H2'	4:3:1415:A:C8	2.50	0.46
4:3:1437:A:H2'	4:3:1438:G:H8	1.81	0.46
4:3:1709:C:C4	34:b:135:HIS:CE1	3.04	0.46
4:3:1920:A:C8	6:5:1469:G:H4'	2.50	0.46
6:5:1294:U:P	27:R:70:LYS:HZ3	2.38	0.46
14:E:132:VAL:HG12	14:E:132:VAL:O	2.15	0.46
15:F:49:ILE:HD11	15:F:123:ILE:HD12	1.97	0.46
18:I:7:VAL:HG13	18:I:8:LYS:N	2.30	0.46
21:L:52:GLU:O	21:L:56:ILE:HG12	2.15	0.46
24:O:6:LEU:HD22	24:O:17:TYR:HB3	1.98	0.46
28:S:60:ILE:HD11	28:S:64:ARG:HG2	1.97	0.46
49:q:27:ALA:O	49:q:62:HIS:NE2	2.49	0.46
52:t:27:ILE:HD11	52:t:71:LEU:CD2	2.45	0.46
55:w:13:GLU:HG2	55:w:14:GLU:N	2.30	0.46
5:4:104:C:H2'	5:4:105:A:H8	1.80	0.46
6:5:36:G:N2	20:K:128:SER:OG	2.40	0.46
6:5:611:A:H5'	12:C:80:LYS:HE2	1.98	0.46
12:C:9:LYS:HE2	12:C:9:LYS:HB3	1.60	0.46
12:C:67:THR:HG21	12:C:69:LYS:HE2	1.97	0.46
12:C:135:ILE:HG13	12:C:135:ILE:O	2.15	0.46
15:F:57:PRO:O	15:F:60:VAL:HG22	2.15	0.46
19:J:67:VAL:HG22	19:J:72:MET:SD	2.56	0.46
12:U:140:ASP:C	12:U:177:THR:HG23	2.41	0.46
12:U:145:LYS:HB2	12:U:148:THR:HG23	1.96	0.46
48:p:78:PHE:CE1	48:p:112:VAL:HG21	2.51	0.46
4:3:1529:U:H2'	4:3:1530:G:C8	2.51	0.46
6:5:1091:C:OP2	10:A:111:ARG:HD2	2.15	0.46
11:B:182:ARG:O	11:B:210:ILE:HG12	2.15	0.46
15:F:142:LYS:HA	15:F:142:LYS:HD2	1.66	0.46
16:G:37:ALA:HB3	16:G:68:ARG:HB2	1.97	0.46
20:K:7:LEU:HD12	20:K:12:ARG:HG2	1.98	0.46
21:L:50:GLU:O	21:L:54:VAL:HG23	2.15	0.46
22:M:6:LEU:HB3	22:M:23:ARG:CZ	2.46	0.46
22:M:29:ARG:HH12	22:M:31:ARG:HG3	1.81	0.46
36:d:128:TYR:CE1	36:d:130:ILE:HG12	2.50	0.46
50:r:86:ILE:HB	50:r:96:ILE:CG1	2.46	0.46
4:3:679:A:N1	4:3:2377:A:O2'	2.48	0.46
4:3:728:A:O2'	4:3:1381:A:N3	2.43	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:868:C:H2'	4:3:869:U:C6	2.51	0.46
6:5:1289:U:O2'	6:5:1334:A:N3	2.47	0.46
10:A:171:ARG:HG2	10:A:172:LEU:H	1.80	0.46
12:C:31:ARG:HG2	12:C:33:THR:HG22	1.98	0.46
13:D:143:ARG:HE	13:D:148:ARG:HD3	1.80	0.46
15:F:69:MET:HE1	15:F:95:LYS:CE	2.46	0.46
21:L:14:ARG:HG2	21:L:44:ARG:HD3	1.97	0.46
23:N:22:ILE:H	23:N:22:ILE:HD12	1.80	0.46
27:R:35:SER:OG	27:R:38:SER:OG	2.19	0.46
12:U:125:ASN:ND2	12:U:141:LYS:HB3	2.31	0.46
33:a:182:LEU:HD12	33:a:192:PHE:CD2	2.50	0.46
34:b:56:THR:CA	34:b:78:THR:HG22	2.43	0.46
47:o:37:LEU:CD1	47:o:44:ARG:HB3	2.29	0.46
54:v:17:ASN:CB	54:v:27:ARG:HD2	2.42	0.46
55:w:81:GLU:H	55:w:81:GLU:CD	2.24	0.46
1:0:25:ALA:HA	1:0:28:ARG:NH1	2.31	0.46
4:3:1142:G:H1'	39:g:79:LYS:CE	2.46	0.46
4:3:2190:G:H2'	4:3:2191:G:C8	2.51	0.46
6:5:251:G:OP1	25:P:20:LYS:NZ	2.48	0.46
6:5:821:U:H2'	6:5:822:A:H8	1.80	0.46
6:5:991:A:H2'	6:5:992:U:C6	2.50	0.46
6:5:1136:G:H4'	10:A:146:LYS:HZ3	1.80	0.46
6:5:1343:G:H4'	22:M:61:TRP:CH2	2.51	0.46
12:C:8:PHE:HE2	12:C:26:SER:HB2	1.80	0.46
15:F:78:ARG:HB3	15:F:83:ASN:OD1	2.16	0.46
21:L:80:LEU:HD13	21:L:88:GLY:HA2	1.98	0.46
22:M:34:LEU:O	22:M:38:GLY:N	2.48	0.46
27:R:3:ARG:NH2	27:R:10:PHE:HB2	2.31	0.46
12:U:104:MET:HA	12:U:167:VAL:HG11	1.98	0.46
36:d:132:ILE:HG21	36:d:152:PHE:HD2	1.81	0.46
41:i:7:LEU:HD11	41:i:9:LYS:HE2	1.96	0.46
41:i:11:GLN:O	41:i:11:GLN:CD	2.59	0.46
42:j:104:ARG:HG3	42:j:122:VAL:O	2.15	0.46
44:l:63:LYS:HE2	44:l:63:LYS:HB2	1.82	0.46
46:n:29:VAL:HG11	46:n:46:PHE:CE2	2.51	0.46
46:n:75:GLN:HB3	46:n:112:ARG:NH2	2.30	0.46
50:r:35:ILE:HD12	50:r:36:LEU:N	2.30	0.46
54:v:15:GLY:HA3	54:v:29:TRP:HZ3	1.81	0.46
56:x:72:PHE:CD1	56:x:72:PHE:C	2.94	0.46
2:1:39:ARG:NH2	4:3:2358:U:H5	2.13	0.46
4:3:356:A:OP2	35:c:174:ASN:HB2	2.15	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1104:A:H5”	4:3:1105:A:C5	2.50	0.46
4:3:1117:U:H2’	4:3:1118:U:O4’	2.16	0.46
4:3:1343:C:O2’	4:3:1420:A:N3	2.42	0.46
4:3:1436:C:H2’	4:3:1437:A:C8	2.51	0.46
4:3:1437:A:H2’	4:3:1438:G:C8	2.51	0.46
4:3:2475:C:O3’	44:l:120:ARG:NH1	2.48	0.46
4:3:2863:G:H2’	4:3:2864:A:C8	2.51	0.46
6:5:1384:A:H2’	6:5:1385:A:C8	2.50	0.46
6:5:1432:A:H2’	6:5:1433:G:H8	1.79	0.46
10:A:230:ASN:O	10:A:234:ASP:N	2.48	0.46
11:B:134:ARG:HG3	11:B:134:ARG:NH1	2.31	0.46
12:C:68:ASP:O	12:C:72:ARG:HG3	2.15	0.46
14:E:60:TRP:HE3	14:E:62:PHE:CE2	2.26	0.46
22:M:25:GLN:OE1	22:M:25:GLN:HA	2.16	0.46
12:U:44:SER:HA	12:U:51:ALA:CB	2.46	0.46
12:U:171:ASN:HD22	12:U:171:ASN:N	2.14	0.46
37:e:124:LEU:HG	37:e:144:VAL:HG12	1.97	0.46
39:g:108:PHE:CE1	39:g:123:LEU:HD13	2.50	0.46
56:x:26:GLU:H	56:x:26:GLU:CD	2.23	0.46
4:3:166:A:N7	38:f:104:LYS:NZ	2.64	0.46
4:3:340:U:H2’	4:3:341:G:O4’	2.16	0.46
4:3:604:A:O2’	4:3:606:G:OP2	2.29	0.46
4:3:1485:A:H4’	4:3:1486:U:C4	2.51	0.46
4:3:2580:A:OP2	34:b:151:ARG:N	2.48	0.46
4:3:2644:U:O2’	34:b:47:TYR:OH	2.24	0.46
6:5:212:G:O2’	6:5:464:A:N6	2.29	0.46
6:5:640:C:C5’	16:G:40:LEU:HD21	2.41	0.46
6:5:943:C:H2’	6:5:944:A:H8	1.81	0.46
6:5:966:A:O2’	65:5:1603:SPD:N1	2.49	0.46
7:6:1:G:H2’	7:6:2:G:H8	1.81	0.46
14:E:86:LEU:HD11	26:Q:95:TYR:HE1	1.81	0.46
17:H:50:MET:SD	17:H:78:ALA:HB1	2.55	0.46
12:U:10:ARG:O	12:U:13:ARG:HB3	2.16	0.46
12:U:125:ASN:OD1	12:U:141:LYS:HB3	2.16	0.46
36:d:41:GLY:O	36:d:44:ILE:HG12	2.16	0.46
38:f:16:PHE:HE2	38:f:55:GLN:HA	1.81	0.46
54:v:63:ARG:CZ	54:v:63:ARG:HB3	2.42	0.46
58:z:11:CYS:SG	58:z:12:ASN:N	2.89	0.46
4:3:1081:A:H2	39:g:11:VAL:HG11	1.80	0.45
4:3:1296:G:O2’	4:3:2019:G:O6	2.28	0.45
4:3:2502:G:H4’	44:l:80:GLU:HG2	1.98	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2797:C:O2	4:3:2895:A:O2'	2.25	0.45
64:3:3251:SPM:H62	64:3:3251:SPM:H92	1.78	0.45
6:5:369:A:H2'	6:5:370:A:H8	1.81	0.45
6:5:789:A:O2'	6:5:791:A:N7	2.49	0.45
6:5:839:U:O2'	26:Q:40:TYR:CE1	2.67	0.45
6:5:927:C:N4	15:F:1:MET:HE2	2.31	0.45
9:8:73:A:H3'	9:8:73:A:C8	2.51	0.45
11:B:152:ILE:HD12	11:B:205:ILE:HG12	1.99	0.45
14:E:71:ASP:N	14:E:71:ASP:OD1	2.49	0.45
14:E:114:LYS:O	14:E:118:ILE:HD12	2.16	0.45
16:G:19:LEU:HD13	16:G:87:VAL:HG12	1.98	0.45
29:T:34:TYR:CZ	29:T:36:LEU:HD13	2.51	0.45
12:U:97:LEU:O	12:U:101:VAL:HG23	2.16	0.45
12:U:118:ASN:C	12:U:118:ASN:HD22	2.19	0.45
35:c:191:LEU:HD23	35:c:191:LEU:HA	1.77	0.45
45:m:99:ARG:HD3	45:m:101:LEU:CD1	2.46	0.45
50:r:17:ALA:O	50:r:20:VAL:HG12	2.15	0.45
4:3:849:C:H2'	4:3:850:G:H8	1.80	0.45
4:3:917:G:H2'	4:3:918:G:H8	1.81	0.45
4:3:947:A:H62	44:l:12:PRO:HA	1.80	0.45
4:3:1436:C:H2'	4:3:1437:A:H8	1.80	0.45
4:3:2665:A:O2'	37:e:163:LYS:NZ	2.49	0.45
6:5:576:A:O2'	6:5:725:A:N3	2.42	0.45
6:5:970:A:N1	6:5:1341:U:O2'	2.41	0.45
6:5:1472:G:H1'	6:5:1493:MA6:H2	1.99	0.45
11:B:159:ARG:NH2	11:B:163:ALA:O	2.43	0.45
15:F:46:PHE:HD2	15:F:57:PRO:HB2	1.81	0.45
21:L:90:ARG:O	21:L:90:ARG:HD3	2.16	0.45
23:N:9:ILE:HD11	23:N:19:VAL:HG23	1.97	0.45
29:T:44:GLU:O	29:T:48:ILE:HG23	2.16	0.45
12:U:154:VAL:C	12:U:156:ALA:N	2.72	0.45
33:a:57:HIS:HA	33:a:225:ARG:HB2	1.98	0.45
34:b:62:LEU:HD23	34:b:62:LEU:HA	1.86	0.45
35:c:20:LEU:HD23	35:c:20:LEU:HA	1.81	0.45
36:d:96:MET:SD	36:d:97:TRP:N	2.89	0.45
38:f:53:LYS:HE3	38:f:57:HIS:NE2	2.31	0.45
43:k:146:VAL:C	43:k:147:LYS:HD3	2.41	0.45
50:r:80:PRO:O	50:r:100:SER:OG	2.23	0.45
58:z:31:LYS:HG3	58:z:49:GLU:HB3	1.98	0.45
4:3:140:G:N2	4:3:143:A:OP2	2.31	0.45
4:3:1568:C:H3'	4:3:1569:A:C8	2.51	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2158:C:H2'	4:3:2159:U:C6	2.51	0.45
6:5:354:U:H2'	6:5:355:A:C8	2.51	0.45
6:5:378:A:H2'	6:5:379:A:C8	2.51	0.45
7:6:37:A:H2'	7:6:38:C:C6	2.51	0.45
11:B:156:VAL:HG22	11:B:201:VAL:HG12	1.98	0.45
11:B:169:LYS:HB3	11:B:171:TYR:HE1	1.81	0.45
11:B:182:ARG:HD2	11:B:209:MET:HE1	1.98	0.45
16:G:38:SER:H	16:G:41:LYS:HD3	1.81	0.45
17:H:30:ILE:HG23	17:H:37:PRO:HG3	1.99	0.45
20:K:34:LYS:HE2	20:K:36:THR:HG23	1.97	0.45
24:O:61:LYS:HA	24:O:61:LYS:HD2	1.68	0.45
12:U:119:HIS:HB2	12:U:121:HIS:CE1	2.51	0.45
38:f:58:TYR:HA	38:f:61:ASN:HD21	1.81	0.45
41:i:4:THR:HA	49:q:12:TYR:CE1	2.46	0.45
51:s:19:ASN:HB3	51:s:26:LYS:HD3	1.97	0.45
52:t:43:THR:HG22	52:t:64:GLN:HG2	1.98	0.45
2:1:20:LYS:NZ	2:1:44:GLN:OE1	2.48	0.45
4:3:1121:A:H5"	4:3:1122:G:H5'	1.97	0.45
4:3:2365:U:H2'	4:3:2367:C:OP2	2.17	0.45
4:3:2490:A:O2'	9:8:63:C:O2'	2.25	0.45
6:5:108:C:OP1	6:5:307:C:O2'	2.34	0.45
6:5:311:A:O2'	6:5:326:C:O2'	2.35	0.45
6:5:1024:U:O2'	6:5:1025:U:OP1	2.33	0.45
6:5:1343:G:H5"	17:H:116:LYS:HB3	1.97	0.45
14:E:158:ASP:HB3	16:G:63:LYS:CE	2.41	0.45
28:S:52:ASP:HB3	28:S:56:ARG:NH1	2.30	0.45
12:U:29:LYS:C	12:U:31:ARG:H	2.25	0.45
12:U:38:HIS:CG	12:U:39:GLY:N	2.84	0.45
36:d:110:ARG:HH12	36:d:139:PRO:N	2.13	0.45
36:d:112:ARG:NH1	36:d:113:ASP:HB2	2.31	0.45
54:v:38:VAL:O	54:v:45:THR:HA	2.17	0.45
56:x:70:LYS:HA	56:x:73:LEU:HG	1.98	0.45
4:3:388:U:H2'	4:3:389:C:C6	2.52	0.45
4:3:1583:G:H2'	4:3:1584:U:C6	2.52	0.45
6:5:265:U:H2'	6:5:266:A:C8	2.51	0.45
6:5:648:C:H2'	6:5:649:U:C6	2.52	0.45
9:8:28:A:H2'	9:8:29:U:H6	1.81	0.45
24:O:23:ASP:OD1	24:O:24:SER:N	2.48	0.45
25:P:8:VAL:C	25:P:9:LEU:HD12	2.41	0.45
29:T:34:TYR:O	29:T:41:ARG:NH2	2.49	0.45
33:a:182:LEU:HA	33:a:182:LEU:HD23	1.66	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1803:U:H2'	4:3:1804:A:C8	2.51	0.45
4:3:2032:G:H2'	4:3:2033:G:C8	2.51	0.45
4:3:2060:G:H4'	34:b:157:GLN:HG2	1.98	0.45
6:5:111:A:H2'	6:5:112:U:O4'	2.17	0.45
10:A:221:GLN:O	10:A:225:THR:HG22	2.16	0.45
38:f:68:LEU:HA	38:f:108:LEU:HD21	1.99	0.45
49:q:30:GLY:H	49:q:59:VAL:HG23	1.80	0.45
52:t:33:GLN:HB3	52:t:68:PRO:HB2	1.98	0.45
4:3:488:G:C8	35:c:59:ARG:HD2	2.52	0.45
4:3:708:C:H4'	35:c:83:HIS:HE1	1.80	0.45
6:5:561:A:H2	20:K:12:ARG:NH1	2.15	0.45
6:5:839:U:HO2'	26:Q:40:TYR:HE1	1.56	0.45
6:5:872:C:C5'	16:G:93:PRO:HB2	2.46	0.45
6:5:945:U:H2'	6:5:946:G:H8	1.81	0.45
10:A:202:CYS:SG	10:A:214:ILE:HG23	2.57	0.45
14:E:88:ILE:HD12	26:Q:92:ARG:HD2	1.98	0.45
15:F:103:ILE:HD11	15:F:123:ILE:CG2	2.46	0.45
15:F:147:ASN:OD1	15:F:150:PHE:HD1	1.99	0.45
21:L:100:GLN:H	21:L:100:GLN:CD	2.24	0.45
22:M:29:ARG:CZ	22:M:41:ARG:HH12	2.29	0.45
28:S:5:LYS:HA	28:S:8:GLU:HG3	1.99	0.45
12:U:102:TYR:CB	12:U:110:ARG:HE	2.29	0.45
33:a:80:GLU:OE1	33:a:80:GLU:HA	2.16	0.45
34:b:106:GLU:HA	34:b:217:VAL:HA	1.99	0.45
38:f:9:VAL:HG13	38:f:11:ASN:O	2.17	0.45
46:n:44:TRP:CD1	46:n:51:VAL:HG12	2.52	0.45
52:t:10:VAL:HG11	52:t:74:LEU:HD13	1.99	0.45
53:u:65:VAL:HG21	53:u:95:VAL:HG13	1.99	0.45
2:1:22:LYS:HZ2	2:1:22:LYS:HG3	1.50	0.45
4:3:50:G:H22	4:3:180:A:H5"	1.82	0.45
4:3:184:A:O2'	4:3:186:A:N7	2.36	0.45
4:3:274:A:OP2	4:3:294:G:N1	2.49	0.45
4:3:1344:U:HO2'	30:X:44:ARG:HH21	1.63	0.45
4:3:2111:U:H5"	4:3:2112:A:C8	2.46	0.45
4:3:2756:A:H5'	37:e:4:ILE:HG12	1.98	0.45
4:3:2853:U:O2'	4:3:2870:U:O2	2.30	0.45
8:7:33:U:O5'	17:H:132:ARG:NH2	2.50	0.45
11:B:57:GLU:OE2	11:B:59:GLU:HG2	2.17	0.45
19:J:79:VAL:HG13	19:J:105:GLU:HG3	1.99	0.45
12:U:81:GLN:OE1	12:U:88:ASN:ND2	2.50	0.45
34:b:47:TYR:HB2	34:b:85:ARG:HH21	1.82	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:c:27:LYS:HD2	35:c:27:LYS:C	2.42	0.45
35:c:157:VAL:HA	35:c:196:ALA:O	2.16	0.45
36:d:114:PHE:C	36:d:114:PHE:HD1	2.25	0.45
43:k:73:LEU:HD12	43:k:74:LYS:N	2.31	0.45
43:k:131:VAL:HG12	43:k:148:LEU:HD21	1.98	0.45
53:u:52:TYR:HD1	53:u:54:GLN:HG2	1.82	0.45
1:0:22:MET:HE1	1:0:28:ARG:HD3	1.99	0.45
3:2:25:VAL:HG11	3:2:34:GLN:OE1	2.16	0.45
4:3:1444:C:N4	4:3:1616:G:O6	2.50	0.45
4:3:2165:A:H1'	4:3:2166:U:P	2.57	0.45
4:3:2838:G:H2'	4:3:2883:A:H61	1.82	0.45
5:4:27:A:O2'	5:4:56:A:N6	2.42	0.45
5:4:76:A:H62	5:4:88:G:H21	1.65	0.45
6:5:386:U:H4'	24:O:28:ARG:HH21	1.81	0.45
6:5:507:A:H5"	12:C:51:ALA:HB2	1.97	0.45
6:5:535:A:H5"	20:K:123:ARG:NH2	2.31	0.45
6:5:725:A:H2'	6:5:726:A:C8	2.51	0.45
6:5:787:A:OP1	8:7:38:C:O2'	2.35	0.45
10:A:44:PHE:HA	10:A:60:LEU:HD21	1.99	0.45
11:B:56:VAL:HG22	11:B:69:VAL:HG22	1.99	0.45
15:F:96:ILE:HD12	15:F:96:ILE:HA	1.85	0.45
19:J:86:LYS:HB2	19:J:86:LYS:HE3	1.81	0.45
25:P:61:VAL:HG23	25:P:63:ILE:HD11	1.98	0.45
26:Q:103:LYS:HB3	29:T:3:LYS:HZ1	1.81	0.45
29:T:36:LEU:H	29:T:41:ARG:NH2	2.12	0.45
35:c:50:HIS:ND1	35:c:93:PRO:HB2	2.32	0.45
36:d:4:LEU:O	36:d:4:LEU:HD23	2.17	0.45
36:d:100:LEU:O	36:d:104:ILE:HG22	2.17	0.45
41:i:78:TYR:HE1	41:i:89:LYS:HB3	1.82	0.45
42:j:71:ARG:HD3	42:j:75:THR:HB	1.99	0.45
44:l:24:ASN:HA	44:l:67:ARG:HH21	1.82	0.45
45:m:30:LYS:HB2	45:m:115:ILE:HD11	1.97	0.45
6:5:331:C:H2'	6:5:332:A:C8	2.51	0.45
6:5:1019:G:OP2	6:5:1019:G:H8	2.00	0.45
6:5:1074:U:O2'	6:5:1093:A:OP2	2.29	0.45
14:E:3:TYR:HE1	14:E:64:GLY:H	1.64	0.45
20:K:22:PRO:HD2	20:K:107:ARG:HH21	1.82	0.45
12:U:2:LYS:O	12:U:3:TYR:HB3	2.17	0.45
33:a:39:VAL:O	33:a:66:TYR:N	2.50	0.45
33:a:138:LEU:HD22	33:a:170:ILE:HD11	1.99	0.45
35:c:31:GLN:OE1	35:c:31:GLN:N	2.50	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:c:162:ASN:O	35:c:162:ASN:ND2	2.38	0.45
37:e:18:LEU:HD21	37:e:48:LEU:CD1	2.47	0.45
37:e:101:VAL:HG23	37:e:128:VAL:HG12	1.98	0.45
38:f:78:HIS:CD2	38:f:103:THR:HG22	2.52	0.45
53:u:26:ASN:HA	53:u:28:ARG:NH1	2.20	0.45
54:v:42:ASP:CG	54:v:42:ASP:O	2.59	0.45
56:x:45:PHE:CE1	56:x:50:LEU:HB2	2.52	0.45
4:3:1092:A:H2'	4:3:1093:U:C6	2.52	0.44
4:3:2259:OMG:H1'	4:3:2259:OMG:HM23	1.59	0.44
4:3:2452:G:OP2	35:c:69:LYS:HD2	2.16	0.44
4:3:2797:C:H5'	4:3:2798:A:O5'	2.18	0.44
6:5:458:G:H2'	6:5:459:C:C6	2.52	0.44
6:5:1177:U:C2	22:M:42:LEU:HD23	2.53	0.44
11:B:11:ARG:CZ	11:B:185:ILE:HD13	2.48	0.44
12:U:23:LYS:O	12:U:24:GLU:C	2.59	0.44
35:c:6:LEU:HB3	35:c:14:GLU:CD	2.42	0.44
36:d:112:ARG:NH2	36:d:113:ASP:HB3	2.33	0.44
37:e:13:PRO:HD3	37:e:51:ASN:ND2	2.32	0.44
42:j:73:ASP:OD1	42:j:73:ASP:N	2.50	0.44
46:n:37:ASN:C	46:n:38:HIS:HD2	2.25	0.44
51:s:50:ILE:HG22	55:w:83:ALA:HB2	1.98	0.44
4:3:933:A:H2'	4:3:933:A:N3	2.33	0.44
4:3:1809:A:H2'	4:3:1810:A:C8	2.52	0.44
4:3:1954:C:H2'	4:3:1955:G:H8	1.81	0.44
6:5:581:A:P	23:N:65:LYS:HZ1	2.40	0.44
6:5:1214:A:H5'	15:F:115:MET:HE3	1.98	0.44
10:A:174:ASN:HA	10:A:196:ILE:HD11	1.98	0.44
11:B:20:SER:OG	11:B:41:ARG:NH1	2.46	0.44
21:L:75:LEU:O	21:L:79:HIS:N	2.34	0.44
25:P:52:GLU:HG2	25:P:52:GLU:O	2.15	0.44
27:R:31:ILE:HB	27:R:49:PHE:HD1	1.82	0.44
12:U:14:LEU:HB3	12:U:17:SER:HB2	1.99	0.44
34:b:29:ILE:HD13	34:b:207:ILE:HD11	1.99	0.44
34:b:150:GLY:HA3	34:b:155:SER:HB3	1.99	0.44
34:b:229:ALA:HB1	34:b:230:PRO:HD2	2.00	0.44
36:d:140:GLU:OE2	56:x:29:LEU:HD11	2.17	0.44
37:e:46:PHE:CE1	37:e:55:ILE:HG12	2.52	0.44
38:f:3:VAL:HG23	38:f:37:ALA:O	2.18	0.44
46:n:78:ALA:HB3	46:n:112:ARG:NH1	2.32	0.44
50:r:10:VAL:HG12	50:r:12:ILE:HG22	1.98	0.44
56:x:2:LYS:HG3	56:x:3:LYS:H	1.82	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:141:A:H2	4:3:1437:A:H1'	1.82	0.44
4:3:339:U:H2'	4:3:340:U:C6	2.52	0.44
4:3:427:A:H1'	4:3:447:G:O4'	2.17	0.44
4:3:1801:U:H2'	4:3:1802:C:C6	2.52	0.44
6:5:487:A:O2'	6:5:488:U:O3'	2.36	0.44
6:5:1045:C:H42	31:Y:46:G:N2	2.15	0.44
10:A:32:MET:HE2	10:A:36:TYR:HB2	1.99	0.44
11:B:68:PHE:CD1	11:B:105:THR:HB	2.52	0.44
12:C:144:LEU:HG	12:C:145:LYS:N	2.32	0.44
15:F:11:VAL:HG21	15:F:24:ARG:NH1	2.30	0.44
21:L:79:HIS:O	21:L:83:ILE:HG13	2.18	0.44
24:O:47:LYS:H	24:O:47:LYS:HG3	1.58	0.44
26:Q:73:ARG:HD2	26:Q:83:GLN:CD	2.42	0.44
12:U:75:PHE:C	12:U:75:PHE:CD1	2.95	0.44
36:d:24:SER:HB3	36:d:27:GLN:CG	2.48	0.44
37:e:55:ILE:CD1	37:e:72:ASN:HD22	2.30	0.44
42:j:1:MET:HB3	42:j:32:TYR:HB3	2.00	0.44
48:p:6:GLY:H	48:p:8:GLN:NE2	2.15	0.44
4:3:984:C:H2'	4:3:985:A:H8	1.82	0.44
4:3:1103:G:O2'	4:3:1104:A:H5'	2.17	0.44
4:3:1190:A:O3'	48:p:54:ARG:NH2	2.50	0.44
4:3:2017:G:H5"	50:r:42:LYS:HB2	2.00	0.44
4:3:2176:G:O2'	4:3:2178:A:N7	2.46	0.44
4:3:2185:C:H2'	4:3:2186:C:O4'	2.17	0.44
4:3:2239:U:H5"	54:v:29:TRP:HD1	1.82	0.44
4:3:2372:C:H2'	4:3:2373:G:O4'	2.17	0.44
6:5:57:U:H2'	6:5:58:G:C8	2.52	0.44
10:A:96:VAL:CG1	10:A:109:THR:HG22	2.47	0.44
10:A:128:ASN:HB3	10:A:132:LYS:NZ	2.32	0.44
15:F:15:PRO:CG	17:H:45:LEU:HD21	2.48	0.44
15:F:121:ASN:HA	15:F:124:ILE:HG12	1.98	0.44
16:G:18:LEU:HD21	16:G:41:LYS:CE	2.47	0.44
16:G:22:ILE:HD12	16:G:87:VAL:HG21	2.00	0.44
17:H:58:ASP:OD2	17:H:61:LYS:NZ	2.50	0.44
18:I:86:ASN:OD1	18:I:87:GLN:N	2.50	0.44
20:K:49:ARG:NE	20:K:65:TYR:OH	2.50	0.44
22:M:26:ARG:HG2	22:M:26:ARG:HH11	1.83	0.44
28:S:44:LEU:HD22	28:S:76:LEU:HD22	1.99	0.44
29:T:54:ARG:HD3	29:T:57:ARG:HH12	1.83	0.44
12:U:14:LEU:HD21	54:v:7:LEU:HD13	2.00	0.44
37:e:23:ASP:HA	37:e:38:LEU:HB2	1.98	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:l:121:ALA:O	44:l:125:LEU:HG	2.18	0.44
45:m:115:ILE:HD12	45:m:116:LEU:N	2.33	0.44
53:u:61:PRO:HB3	53:u:65:VAL:HG12	2.00	0.44
4:3:614:C:H2'	4:3:615:G:H8	1.83	0.44
4:3:2181:A:H8	4:3:2181:A:OP2	1.99	0.44
6:5:747:C:H2'	6:5:748:U:C6	2.53	0.44
10:A:177:ILE:HG21	10:A:229:MET:CE	2.48	0.44
14:E:50:LYS:HA	14:E:50:LYS:HD2	1.69	0.44
14:E:134:SER:CB	26:Q:38:LYS:HZ1	2.31	0.44
15:F:55:GLU:HG2	15:F:56:LYS:H	1.82	0.44
19:J:64:ALA:O	19:J:68:LYS:HG2	2.18	0.44
25:P:63:ILE:CG2	25:P:75:PHE:HB3	2.48	0.44
12:U:125:ASN:CG	12:U:141:LYS:HB3	2.42	0.44
12:U:156:ALA:O	12:U:159:GLU:N	2.51	0.44
34:b:169:TYR:HE1	64:b:303:SPM:C6	2.30	0.44
35:c:60:GLY:HA3	35:c:80:ARG:HD3	1.99	0.44
52:t:84:GLN:H	52:t:84:GLN:HG3	1.57	0.44
55:w:64:ASN:HB3	55:w:67:GLU:HG2	1.99	0.44
4:3:223:A:N3	4:3:238:U:O2'	2.43	0.44
4:3:569:U:H2'	4:3:570:C:C6	2.52	0.44
4:3:1460:G:H2'	4:3:1461:A:C8	2.53	0.44
4:3:2031:C:H2'	4:3:2032:G:H8	1.82	0.44
6:5:476:U:H5'	6:5:477:U:OP1	2.18	0.44
6:5:1215:U:OP1	15:F:115:MET:HG2	2.18	0.44
11:B:52:GLN:NE2	11:B:122:ASP:OD1	2.37	0.44
12:C:3:TYR:CZ	12:C:65:GLY:HA2	2.53	0.44
13:D:68:GLU:HB3	13:D:94:VAL:HG12	2.00	0.44
15:F:56:LYS:HD2	15:F:59:THR:HG23	2.00	0.44
16:G:48:LEU:C	16:G:48:LEU:HD12	2.42	0.44
23:N:36:LEU:HB3	23:N:53:LEU:HD13	1.99	0.44
27:R:7:LYS:HA	27:R:7:LYS:HD2	1.78	0.44
37:e:16:VAL:HA	37:e:28:LYS:O	2.18	0.44
38:f:30:LEU:HB3	38:f:36:ALA:HB3	2.00	0.44
46:n:11:ARG:O	46:n:15:ILE:HG12	2.17	0.44
4:3:2137:A:OP1	4:3:2139:C:O2'	2.33	0.44
6:5:916:U:O2	13:D:79:THR:OG1	2.30	0.44
6:5:1488:A:H2'	6:5:1489:C:C6	2.52	0.44
7:6:18:G:H1	7:6:55:U:H1'	1.83	0.44
7:6:20:U:O2'	7:6:21:A:H4'	2.18	0.44
16:G:124:THR:HG22	16:G:126:LYS:H	1.83	0.44
17:H:6:TYR:HD1	17:H:91:GLN:HG2	1.83	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:I:25:ASP:O	18:I:29:LYS:HE3	2.18	0.44
25:P:18:ASN:CG	25:P:19:ALA:H	2.26	0.44
12:U:109:THR:HG22	12:U:112:SER:HB3	1.99	0.44
38:f:45:GLN:OE1	38:f:45:GLN:N	2.51	0.44
40:h:51:ILE:HG23	40:h:68:LYS:O	2.17	0.44
40:h:116:THR:HG22	40:h:117:VAL:N	2.32	0.44
44:l:16:SER:HB2	44:l:18:GLU:CD	2.43	0.44
44:l:24:ASN:HA	44:l:67:ARG:NH2	2.32	0.44
48:p:51:ASN:O	48:p:54:ARG:HG2	2.17	0.44
55:w:16:VAL:HG21	55:w:68:GLU:OE1	2.18	0.44
4:3:314:G:N2	4:3:316:C:H1'	2.33	0.44
4:3:799:A:H5"	33:a:217:GLY:HA3	2.00	0.44
4:3:1091:G:H4'	4:3:1121:A:C8	2.53	0.44
4:3:1102:A:H2'	4:3:1102:A:N3	2.32	0.44
4:3:1623:U:H2'	4:3:1624:A:C8	2.53	0.44
4:3:2179:A:H1'	4:3:2180:U:C6	2.53	0.44
4:3:2548:G:O2'	4:3:2748:A:N3	2.46	0.44
6:5:260:C:H4'	25:P:67:ARG:HD2	2.00	0.44
6:5:825:A:N3	10:A:39:PRO:HG2	2.33	0.44
8:7:50:G:H2'	8:7:51:G:C8	2.53	0.44
11:B:170:MET:C	11:B:171:TYR:CD1	2.96	0.44
12:C:57:LYS:HD2	12:C:199:TRP:HE1	1.82	0.44
12:C:100:ILE:O	12:C:104:MET:N	2.51	0.44
16:G:115:ILE:HG22	16:G:138:LEU:HD13	1.99	0.44
19:J:14:ILE:HD12	19:J:27:ALA:HB2	1.98	0.44
23:N:75:TYR:HA	23:N:78:LEU:HG	2.00	0.44
25:P:60:LYS:O	25:P:80:ILE:HG23	2.18	0.44
33:a:3:ILE:HD13	33:a:210:LEU:HB2	2.00	0.44
35:c:125:THR:HG22	35:c:125:THR:O	2.18	0.44
44:l:133:LYS:HG2	44:l:134:ARG:N	2.33	0.44
3:2:2:LYS:HD3	3:2:4:ARG:NH2	2.33	0.44
4:3:154:U:H2'	4:3:155:A:H8	1.83	0.44
4:3:749:U:H1'	4:3:752:C:H5	1.81	0.44
4:3:1230:U:H2'	4:3:1231:G:C8	2.53	0.44
4:3:1926:A:N1	6:5:1470:U:O2'	2.47	0.44
64:3:3243:SPM:H92	64:3:3243:SPM:H121	1.79	0.44
6:5:117:U:H2'	6:5:118:C:C6	2.53	0.44
6:5:655:G:H2'	6:5:656:U:C6	2.52	0.44
8:7:23:C:H2'	8:7:24:A:C8	2.53	0.44
14:E:5:ILE:C	14:E:6:ILE:HD12	2.43	0.44
17:H:44:LYS:HA	17:H:44:LYS:HD2	1.81	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:P:58:GLY:HA3	25:P:85:LYS:HB3	2.00	0.44
26:Q:64:LEU:CD2	26:Q:99:VAL:HG11	2.48	0.44
12:U:61:GLN:OE1	12:U:68:ASP:HA	2.18	0.44
42:j:25:LEU:HD13	42:j:40:VAL:HG22	1.99	0.44
44:l:31:GLU:OE2	44:l:114:MET:HE1	2.18	0.44
44:l:48:GLU:OE1	44:l:48:GLU:HA	2.18	0.44
45:m:80:ASP:C	45:m:80:ASP:OD1	2.61	0.44
48:p:73:MET:HE1	48:p:78:PHE:CG	2.53	0.44
6:5:18:U:H2'	6:5:19:C:C6	2.52	0.43
6:5:223:G:H21	24:O:61:LYS:NZ	2.16	0.43
6:5:335:C:H2'	6:5:336:U:C6	2.53	0.43
6:5:403:A:H2'	6:5:404:A:H8	1.82	0.43
6:5:661:G:N2	6:5:723:C:O2'	2.45	0.43
6:5:715:A:C4	19:J:111:HIS:CD2	3.06	0.43
6:5:1154:A:O3'	17:H:107:THR:HG23	2.18	0.43
10:A:38:ASN:ND2	10:A:206:THR:O	2.51	0.43
10:A:210:LEU:CD1	10:A:211:VAL:HG23	2.47	0.43
11:B:84:ASN:HA	11:B:87:LYS:HG3	2.00	0.43
11:B:104:LEU:CG	11:B:231:ASN:HD21	2.29	0.43
17:H:29:LYS:C	17:H:29:LYS:HD2	2.43	0.43
18:I:7:VAL:HG13	18:I:8:LYS:H	1.83	0.43
24:O:26:VAL:HG11	24:O:31:LYS:O	2.18	0.43
27:R:41:PHE:HD1	27:R:42:PRO:HD2	1.83	0.43
33:a:125:GLU:HA	33:a:137:PRO:CD	2.48	0.43
44:l:31:GLU:HB3	44:l:134:ARG:HH21	1.83	0.43
52:t:9:LYS:HA	52:t:23:ILE:HD13	2.00	0.43
53:u:84:GLN:O	53:u:94:ARG:HG2	2.18	0.43
4:3:909:U:H2'	4:3:910:G:H8	1.83	0.43
4:3:1119:A:C4	39:g:53:VAL:HG21	2.52	0.43
4:3:1797:C:H2'	4:3:1798:A:C8	2.53	0.43
4:3:1828:A:H2'	4:3:1829:U:C6	2.53	0.43
4:3:2841:A:H2'	4:3:2842:G:H8	1.83	0.43
6:5:259:A:OP1	28:S:67:ARG:NH2	2.52	0.43
6:5:374:G:H2'	6:5:375:C:C6	2.53	0.43
6:5:768:G:H2'	6:5:769:U:C6	2.53	0.43
6:5:1325:U:O2'	15:F:32:ASP:OD1	2.25	0.43
10:A:115:GLY:HA2	10:A:118:THR:HG22	2.00	0.43
11:B:55:ASN:OD1	11:B:56:VAL:N	2.51	0.43
11:B:216:ASN:O	11:B:217:ARG:HG2	2.18	0.43
12:C:75:PHE:CD1	12:C:75:PHE:C	2.96	0.43
13:D:151:LEU:HD12	13:D:178:ILE:HD11	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:E:49:ILE:HG23	14:E:83:LEU:HD23	2.00	0.43
23:N:26:VAL:O	23:N:30:THR:HG23	2.19	0.43
24:O:9:MET:HE1	24:O:18:ARG:NE	2.27	0.43
33:a:148:HIS:CD2	33:a:203:VAL:HG22	2.53	0.43
34:b:40:LYS:O	34:b:48:SER:HA	2.18	0.43
34:b:117:ARG:HD2	34:b:169:TYR:CE2	2.52	0.43
37:e:49:LYS:HE3	37:e:52:ASN:HB2	2.00	0.43
42:j:12:ASP:OD1	42:j:14:THR:N	2.50	0.43
45:m:32:GLU:C	45:m:113:MET:HE1	2.43	0.43
46:n:79:ASP:O	46:n:82:VAL:HG22	2.18	0.43
47:o:6:LYS:O	47:o:10:ILE:HG12	2.18	0.43
48:p:60:TRP:CE2	48:p:92:LYS:HB2	2.54	0.43
49:q:65:GLN:O	49:q:86:ARG:NH2	2.51	0.43
51:s:26:LYS:NZ	51:s:84:THR:HB	2.33	0.43
4:3:449:C:H2'	4:3:450:C:C6	2.53	0.43
4:3:899:A:H2'	4:3:900:G:C8	2.54	0.43
4:3:1392:G:N2	4:3:1395:A:OP2	2.44	0.43
4:3:2336:A:H2'	4:3:2337:U:C6	2.53	0.43
6:5:640:C:H2'	6:5:641:U:C6	2.53	0.43
6:5:747:C:O2	23:N:20:GLY:HA3	2.18	0.43
7:6:15:A:H2'	7:6:16:C:C4	2.54	0.43
11:B:36:GLU:O	11:B:40:ILE:HG12	2.18	0.43
11:B:230:PRO:HB2	11:B:231:ASN:H	1.42	0.43
13:D:132:HIS:CE1	13:D:205:PRO:HD3	2.53	0.43
14:E:86:LEU:HD11	26:Q:95:TYR:CE1	2.54	0.43
20:K:64:LYS:O	20:K:80:ILE:HD12	2.17	0.43
23:N:76:ARG:NH2	23:N:80:LYS:HB3	2.31	0.43
25:P:10:ILE:CD1	25:P:60:LYS:HE2	2.48	0.43
12:U:41:ARG:O	12:U:42:PHE:HB3	2.17	0.43
12:U:43:ARG:NH1	12:U:44:SER:O	2.51	0.43
33:a:43:LYS:HG2	33:a:61:ARG:CZ	2.49	0.43
41:i:9:LYS:HG2	41:i:48:THR:HG22	1.99	0.43
46:n:48:GLN:O	46:n:48:GLN:HG3	2.19	0.43
48:p:78:PHE:O	48:p:82:LEU:HD23	2.18	0.43
51:s:93:VAL:HG13	51:s:94:THR:HG23	1.99	0.43
55:w:110:LYS:HE2	55:w:110:LYS:HB3	1.82	0.43
56:x:63:SER:HA	56:x:66:PHE:HD1	1.82	0.43
4:3:474:U:H2'	4:3:475:A:C8	2.53	0.43
4:3:853:G:N1	4:3:1219:U:OP2	2.35	0.43
4:3:1239:G:O2'	4:3:1267:A:N1	2.44	0.43
4:3:1696:C:O2'	4:3:2695:U:OP1	2.36	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2638:G:H2'	4:3:2639:G:H8	1.84	0.43
4:3:2845:U:H2'	4:3:2846:A:C8	2.54	0.43
6:5:530:A:N6	6:5:1181:G:O2'	2.51	0.43
6:5:1388:A:H2	6:5:1462:G:H22	1.66	0.43
6:5:1505:G:H2'	6:5:1506:A:C8	2.53	0.43
8:7:35:U:H2'	8:7:36:C:C6	2.53	0.43
9:8:74:C:OP1	9:8:75:C:H5'	2.19	0.43
10:A:43:PHE:CE2	14:E:173:PRO:HD2	2.53	0.43
16:G:44:ILE:CG2	16:G:122:VAL:HG11	2.46	0.43
17:H:35:ARG:NH1	17:H:40:TYR:HA	2.31	0.43
19:J:16:VAL:HG13	19:J:79:VAL:HA	1.99	0.43
19:J:24:ILE:CD1	19:J:39:SER:HB2	2.43	0.43
27:R:45:VAL:HG22	27:R:63:THR:O	2.18	0.43
12:U:150:LYS:C	12:U:152:PRO:HD3	2.43	0.43
12:U:159:GLU:O	12:U:162:VAL:HB	2.18	0.43
34:b:7:PHE:CD2	34:b:52:LEU:HD11	2.52	0.43
34:b:55:ASP:OD2	34:b:79:LYS:NZ	2.48	0.43
37:e:121:PRO:HG2	37:e:124:LEU:HD22	2.00	0.43
38:f:16:PHE:O	38:f:17:ASP:OD1	2.36	0.43
44:l:75:THR:OG1	44:l:76:LYS:N	2.51	0.43
51:s:8:LEU:HB2	51:s:30:VAL:HG13	1.99	0.43
55:w:88:LYS:HD3	55:w:88:LYS:HA	1.73	0.43
4:3:668:A:H4'	43:k:69:ARG:HG2	2.01	0.43
4:3:995:A:N3	4:3:2465:U:O2'	2.41	0.43
4:3:1128:G:H2'	4:3:1129:U:C6	2.54	0.43
4:3:1135:C:H2'	4:3:1136:U:O4'	2.18	0.43
4:3:1334:U:H2'	4:3:1335:A:H8	1.83	0.43
4:3:1959:A:C5	42:j:22:ILE:HD12	2.54	0.43
6:5:162:C:P	28:S:53:ARG:HH22	2.40	0.43
6:5:521:A:H61	20:K:102:ASP:CG	2.22	0.43
6:5:989:A:O2'	22:M:12:ARG:NH1	2.51	0.43
9:8:5:C:H2'	9:8:6:U:C6	2.53	0.43
12:C:131:THR:HB	12:C:134:ILE:HD11	2.00	0.43
13:D:141:ILE:HG12	13:D:150:LEU:CD1	2.45	0.43
15:F:145:GLU:O	15:F:148:LYS:HG3	2.18	0.43
17:H:78:ALA:O	17:H:82:ARG:HG2	2.18	0.43
20:K:3:THR:HG23	20:K:6:GLN:H	1.83	0.43
23:N:29:LEU:O	23:N:33:ILE:HG13	2.19	0.43
27:R:12:ASP:OD1	27:R:12:ASP:O	2.37	0.43
29:T:41:ARG:HD3	29:T:41:ARG:HA	1.81	0.43
12:U:42:PHE:CD1	12:U:55:GLN:HB2	2.53	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:a:67:ARG:NH1	33:a:67:ARG:HG2	2.34	0.43
37:e:94:GLY:HA3	37:e:97:TYR:HD1	1.80	0.43
37:e:147:PHE:HA	37:e:150:GLU:HG2	2.01	0.43
38:f:67:LYS:O	38:f:71:VAL:HG23	2.17	0.43
44:l:22:LYS:HA	44:l:22:LYS:HD2	1.80	0.43
48:p:23:SER:HG	48:p:27:ARG:C	2.26	0.43
51:s:59:ILE:HD13	51:s:59:ILE:HA	1.86	0.43
51:s:63:THR:H	51:s:75:SER:HB3	1.83	0.43
4:3:273:C:P	12:U:30:LYS:HZ2	2.40	0.43
4:3:635:G:HO2'	4:3:638:A:HO2'	1.65	0.43
4:3:783:1MG:C8	50:r:89:ALA:HB1	2.53	0.43
4:3:916:U:H2'	4:3:917:G:C8	2.54	0.43
6:5:369:A:H4'	6:5:448:A:H62	1.83	0.43
6:5:733:A:H2'	6:5:734:A:C8	2.53	0.43
6:5:825:A:H2'	6:5:826:G:O4'	2.19	0.43
6:5:1368:U:O2'	6:5:1476:C:O2'	2.34	0.43
6:5:1401:A:H2'	6:5:1402:U:H6	1.83	0.43
10:A:22:LYS:HD3	10:A:22:LYS:HA	1.76	0.43
11:B:141:LEU:CD1	11:B:142:ILE:HG12	2.47	0.43
13:D:208:VAL:O	13:D:212:ARG:HG2	2.18	0.43
16:G:13:ASP:O	16:G:13:ASP:OD1	2.37	0.43
16:G:118:THR:OG1	16:G:119:SER:N	2.51	0.43
19:J:27:ALA:O	19:J:35:LEU:HD23	2.19	0.43
20:K:88:GLN:C	20:K:90:HIS:H	2.27	0.43
28:S:3:ASN:C	28:S:4:ILE:HD13	2.44	0.43
29:T:37:ARG:NH2	29:T:40:MET:HG2	2.33	0.43
33:a:39:VAL:HG23	33:a:68:ILE:HD11	2.01	0.43
34:b:186:GLU:H	34:b:186:GLU:CD	2.25	0.43
36:d:118:SER:C	36:d:120:LYS:H	2.27	0.43
36:d:148:ARG:NE	36:d:149:ILE:H	2.16	0.43
38:f:27:ILE:HD11	54:v:64:LEU:O	2.19	0.43
47:o:36:LYS:HE2	47:o:85:ASN:HA	2.01	0.43
47:o:85:ASN:O	47:o:86:ILE:HD13	2.19	0.43
48:p:104:LYS:NZ	49:q:2:HIS:CE1	2.86	0.43
52:t:9:LYS:HD2	52:t:21:SER:OG	2.19	0.43
4:3:623:A:OP1	35:c:97:ARG:HD3	2.19	0.43
4:3:1691:U:H2'	4:3:1692:A:H8	1.84	0.43
4:3:2438:A:H2'	4:3:2438:A:N3	2.34	0.43
64:3:3243:SPM:H41	64:3:3243:SPM:H72	1.72	0.43
6:5:147:A:H2'	6:5:148:A:C8	2.54	0.43
6:5:295:G:H2'	6:5:296:A:C8	2.54	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:499:U:H3	6:5:542:G:H1	1.67	0.43
6:5:680:G:N2	19:J:33:ASN:H	2.17	0.43
7:6:32:U:O3'	15:F:83:ASN:ND2	2.52	0.43
10:A:92:VAL:O	10:A:96:VAL:HG12	2.18	0.43
11:B:22:TRP:H	22:M:54:PRO:HG3	1.83	0.43
13:D:81:LYS:HG3	13:D:81:LYS:O	2.19	0.43
16:G:40:LEU:O	16:G:44:ILE:HG23	2.19	0.43
20:K:16:LYS:HD2	20:K:16:LYS:HA	1.77	0.43
26:Q:56:ASP:OD1	26:Q:56:ASP:N	2.52	0.43
34:b:56:THR:OG1	47:o:2:LYS:HE2	2.17	0.43
34:b:144:GLN:NE2	34:b:165:MET:HG2	2.34	0.43
35:c:128:VAL:CG1	35:c:198:LEU:HB3	2.48	0.43
38:f:71:VAL:O	38:f:75:THR:HG23	2.19	0.43
41:i:99:GLN:O	41:i:99:GLN:HG2	2.19	0.43
42:j:9:ASN:O	42:j:83:ALA:HA	2.19	0.43
48:p:89:ILE:HD11	49:q:45:ILE:HD11	2.00	0.43
4:3:125:G:OP1	4:3:1404:C:O2'	2.31	0.43
4:3:606:G:N2	4:3:2038:A:OP1	2.50	0.43
4:3:1093:U:H3	4:3:1115:G:H22	1.67	0.43
4:3:1446:G:N2	4:3:1613:A:OP2	2.46	0.43
4:3:2177:G:H1'	7:6:56:U:OP1	2.18	0.43
4:3:2565:G:H2'	4:3:2566:C:C6	2.54	0.43
6:5:372:G:N2	6:5:383:U:O2	2.51	0.43
6:5:1070:G:H2'	6:5:1071:A:C8	2.54	0.43
6:5:1200:G:H4'	27:R:78:ARG:NH2	2.34	0.43
8:7:10:G:H2'	8:7:11:U:C6	2.53	0.43
9:8:41:A:H2'	9:8:42:U:O4'	2.19	0.43
10:A:32:MET:HE3	10:A:32:MET:HB2	1.65	0.43
10:A:218:ASN:OD1	10:A:220:HIS:N	2.44	0.43
12:C:8:PHE:CE1	12:C:23:LYS:HD2	2.54	0.43
16:G:131:LYS:O	16:G:133:ILE:HG23	2.19	0.43
22:M:16:PHE:O	22:M:19:ARG:HB2	2.19	0.43
25:P:20:LYS:O	25:P:20:LYS:HG2	2.18	0.43
29:T:36:LEU:N	29:T:41:ARG:HH21	2.15	0.43
12:U:126:ASP:N	12:U:126:ASP:OD1	2.52	0.43
33:a:272:LYS:O	33:a:275:THR:HG22	2.18	0.43
50:r:103:LEU:HD23	50:r:103:LEU:HA	1.87	0.43
55:w:80:ASN:O	55:w:84:VAL:HG13	2.19	0.43
4:3:63:U:O2'	4:3:64:U:O2	2.36	0.43
4:3:155:A:H2'	4:3:156:A:H8	1.82	0.43
4:3:558:C:H1'	4:3:587:U:H1'	2.01	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:756:A:H2'	4:3:757:A:H8	1.84	0.43
4:3:899:A:P	44:l:22:LYS:HD3	2.59	0.43
4:3:1575:C:H2'	4:3:1576:G:O4'	2.19	0.43
4:3:1585:A:N3	4:3:1585:A:H2'	2.33	0.43
4:3:1598:U:H2'	4:3:1599:C:C6	2.53	0.43
4:3:1871:U:OP1	4:3:2418:G:O2'	2.37	0.43
4:3:2154:A:H2'	4:3:2155:G:O4'	2.18	0.43
5:4:82:U:H2'	5:4:83:U:H4'	1.99	0.43
6:5:36:G:H5'	20:K:114:THR:HG22	2.00	0.43
6:5:328:G:OP1	28:S:7:ASN:ND2	2.51	0.43
6:5:409:G:N2	6:5:425:G:H1'	2.34	0.43
8:7:74:C:H5"	8:7:75:A:OP2	2.19	0.43
10:A:223:GLN:HE22	10:A:277:ILE:HD13	1.84	0.43
14:E:162:LYS:C	14:E:163:MET:HE3	2.44	0.43
14:E:173:PRO:HB2	14:E:174:TYR:CD1	2.53	0.43
16:G:15:VAL:O	16:G:19:LEU:HG	2.19	0.43
23:N:9:ILE:CD1	23:N:19:VAL:HG23	2.49	0.43
24:O:51:ASP:OD2	24:O:54:VAL:HG22	2.19	0.43
33:a:178:LYS:HA	33:a:194:LYS:HE2	2.01	0.43
33:a:270:MET:SD	33:a:270:MET:N	2.73	0.43
39:g:63:LEU:HD11	39:g:71:ILE:HB	2.00	0.43
41:i:78:TYR:CD1	41:i:87:ILE:HD11	2.54	0.43
42:j:24:VAL:HG13	42:j:33:ALA:HB2	2.00	0.43
42:j:61:VAL:HB	42:j:87:ILE:HD13	2.00	0.43
54:v:41:ALA:O	54:v:42:ASP:HB3	2.19	0.43
3:2:35:ARG:NH1	4:3:2750:A:OP1	2.52	0.43
4:3:530:G:H5"	50:r:4:PHE:CE1	2.54	0.43
4:3:1350:A:O3'	50:r:84:ARG:NH2	2.52	0.43
6:5:500:G:OP1	20:K:128:SER:HB3	2.19	0.43
6:5:664:A:H2'	6:5:665:G:H8	1.84	0.43
6:5:712:A:H2'	6:5:713:A:C8	2.53	0.43
6:5:1316:C:H2'	6:5:1317:A:C8	2.53	0.43
14:E:17:GLN:OE1	14:E:17:GLN:HA	2.18	0.43
14:E:91:GLU:HA	14:E:96:TYR:CD2	2.54	0.43
20:K:16:LYS:NZ	20:K:17:VAL:H	2.17	0.43
25:P:23:THR:O	25:P:23:THR:OG1	2.33	0.43
27:R:32:LYS:HA	27:R:50:ALA:HB3	2.00	0.43
30:X:43:PHE:HA	51:s:14:GLU:OE1	2.18	0.43
34:b:123:ILE:HG23	34:b:128:PHE:O	2.19	0.43
35:c:7:ILE:N	35:c:127:LEU:O	2.50	0.43
37:e:22:LYS:HA	37:e:22:LYS:HD2	1.95	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:j:90:ASP:C	42:j:90:ASP:OD1	2.62	0.43
44:l:79:LEU:CD2	44:l:80:GLU:HG3	2.48	0.43
54:v:31:VAL:HG23	54:v:33:LEU:HD21	2.01	0.43
55:w:56:THR:O	55:w:60:GLU:HG3	2.18	0.43
1:0:11:LYS:NZ	4:3:721:G:O5'	2.49	0.42
6:5:1026:A:N3	6:5:1026:A:H2'	2.34	0.42
6:5:1032:G:H2'	6:5:1033:U:O4'	2.19	0.42
6:5:1385:A:H2'	6:5:1386:C:C6	2.54	0.42
12:C:184:ARG:HD2	12:C:192:ASN:CG	2.44	0.42
14:E:25:GLN:CD	14:E:35:LEU:HD22	2.44	0.42
14:E:184:GLU:CD	14:E:184:GLU:H	2.27	0.42
15:F:96:ILE:O	15:F:100:LEU:HD13	2.19	0.42
16:G:61:GLU:HG3	16:G:67:LYS:O	2.19	0.42
17:H:44:LYS:O	17:H:45:LEU:HB3	2.19	0.42
19:J:67:VAL:O	19:J:72:MET:SD	2.77	0.42
26:Q:65:SER:N	26:Q:69:LYS:O	2.46	0.42
12:U:154:VAL:C	12:U:156:ALA:H	2.26	0.42
40:h:72:VAL:O	40:h:73:SER:OG	2.30	0.42
42:j:54:LYS:HE3	42:j:54:LYS:HB3	1.81	0.42
45:m:63:VAL:HG12	45:m:79:MET:HE1	2.00	0.42
47:o:24:GLU:HA	47:o:55:ARG:HH12	1.84	0.42
52:t:3:ARG:CZ	52:t:4:ILE:HD11	2.49	0.42
53:u:62:GLY:HA2	53:u:94:ARG:HH22	1.84	0.42
55:w:54:ILE:O	55:w:58:LEU:HG	2.19	0.42
4:3:1120:A:H2'	4:3:1121:A:N9	2.34	0.42
4:3:1691:U:H2'	4:3:1692:A:C8	2.54	0.42
6:5:1324:A:N7	17:H:125:ARG:NH2	2.68	0.42
10:A:63:GLN:O	10:A:66:GLN:HG3	2.19	0.42
12:C:69:LYS:HG2	12:C:70:GLN:N	2.35	0.42
20:K:69:ARG:HG3	20:K:75:GLU:HG3	2.01	0.42
12:U:141:LYS:HA	12:U:176:GLY:O	2.18	0.42
33:a:124:SER:OG	33:a:128:ILE:HD11	2.19	0.42
41:i:7:LEU:HD22	48:p:60:TRP:HE1	1.84	0.42
43:k:80:LEU:HB2	43:k:112:ILE:HD11	2.00	0.42
46:n:41:VAL:HG11	46:n:77:ILE:HG12	2.00	0.42
47:o:118:LYS:HG2	47:o:119:GLN:N	2.34	0.42
4:3:894:G:N3	4:3:2276:A:H2'	2.34	0.42
4:3:1527:U:OP1	33:a:84:LYS:NZ	2.45	0.42
4:3:2586:G:OP2	65:3:3241:SPD:N1	2.52	0.42
6:5:35:C:H2'	6:5:36:G:H8	1.84	0.42
6:5:214:U:H2'	6:5:215:C:H6	1.85	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1022:G:H2'	6:5:1023:G:C8	2.54	0.42
15:F:106:PHE:CE2	15:F:133:ALA:HA	2.54	0.42
16:G:57:PHE:O	16:G:57:PHE:CG	2.72	0.42
19:J:66:THR:O	19:J:70:MET:HG3	2.19	0.42
19:J:116:PRO:HB2	29:T:33:GLU:O	2.20	0.42
23:N:67:LEU:HD23	23:N:67:LEU:O	2.19	0.42
24:O:73:PHE:CD1	24:O:78:LEU:HD23	2.54	0.42
33:a:84:LYS:HE2	33:a:100:THR:HG21	2.01	0.42
34:b:21:ASN:OD1	42:j:73:ASP:HB3	2.19	0.42
34:b:29:ILE:CG2	34:b:191:VAL:HB	2.49	0.42
36:d:35:VAL:HG22	36:d:90:THR:HB	2.00	0.42
38:f:69:LYS:O	38:f:72:ILE:HG13	2.20	0.42
42:j:101:PRO:HB3	42:j:120:GLU:OE2	2.19	0.42
45:m:80:ASP:O	45:m:84:SER:HB2	2.20	0.42
45:m:109:ASP:CB	45:m:111:THR:HG23	2.49	0.42
50:r:74:CYS:HB2	50:r:105:VAL:HG23	2.00	0.42
55:w:65:TRP:CE2	55:w:66:GLN:HG3	2.54	0.42
56:x:16:CYS:SG	56:x:17:ALA:N	2.92	0.42
4:3:355:A:O2'	4:3:374:A:N3	2.51	0.42
4:3:668:A:H2'	4:3:669:A:C8	2.55	0.42
4:3:776:U:H2'	4:3:777:C:H6	1.85	0.42
4:3:960:A:H2'	4:3:961:U:C6	2.54	0.42
4:3:1091:G:H4'	4:3:1121:A:H8	1.84	0.42
4:3:1306:G:H4'	45:m:31:ILE:HD12	2.02	0.42
4:3:2181:A:H3'	4:3:2182:C:C6	2.54	0.42
4:3:2384:A:C4	46:n:98:TYR:HE2	2.38	0.42
4:3:2403:C:H2'	4:3:2404:G:C8	2.54	0.42
4:3:2516:G:HO2'	4:3:2562:U:HO2'	1.59	0.42
4:3:2537:G:H5"	4:3:2538:A:H5"	2.01	0.42
6:5:853:A:H2'	6:5:854:A:C8	2.55	0.42
6:5:1064:U:O2'	10:A:119:ASN:ND2	2.52	0.42
14:E:159:VAL:HG13	14:E:162:LYS:HE2	2.01	0.42
16:G:44:ILE:HA	16:G:122:VAL:HG21	2.01	0.42
25:P:20:LYS:HE2	25:P:20:LYS:HB3	1.87	0.42
35:c:159:PHE:CE2	35:c:168:LEU:HD11	2.54	0.42
36:d:33:LYS:HD2	36:d:92:ARG:NH2	2.34	0.42
37:e:63:GLN:O	37:e:66:ILE:HG22	2.20	0.42
42:j:104:ARG:HH11	42:j:104:ARG:HG2	1.84	0.42
45:m:35:LEU:HD23	45:m:36:LYS:HD2	2.01	0.42
46:n:98:TYR:HD1	46:n:102:ILE:HG22	1.83	0.42
47:o:93:ARG:CZ	47:o:118:LYS:HB3	2.48	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:t:27:ILE:HD12	52:t:27:ILE:HA	1.85	0.42
55:w:81:GLU:HG2	55:w:82:ALA:H	1.84	0.42
4:3:1697:C:HO2'	4:3:1698:A:H8	1.65	0.42
4:3:2025:C:H2'	4:3:2026:A:H8	1.84	0.42
6:5:80:U:H2'	6:5:81:A:C8	2.55	0.42
6:5:733:A:H2'	6:5:734:A:H8	1.85	0.42
6:5:763:A:OP2	6:5:809:G:N2	2.53	0.42
6:5:836:C:H4'	14:E:148:LYS:HE3	2.01	0.42
9:8:37:A:H3'	9:8:38:A:H8	1.83	0.42
10:A:171:ARG:HG2	10:A:172:LEU:N	2.35	0.42
10:A:179:ASP:OD1	10:A:180:ASP:N	2.53	0.42
15:F:94:ARG:HH11	15:F:94:ARG:HG3	1.84	0.42
18:I:87:GLN:HA	18:I:90:ILE:CG2	2.46	0.42
26:Q:63:PHE:HD2	26:Q:86:VAL:HG21	1.85	0.42
34:b:30:TYR:HA	34:b:190:LEU:HD23	2.00	0.42
36:d:67:ALA:HB1	36:d:84:LEU:HD13	2.00	0.42
36:d:179:LYS:HA	36:d:179:LYS:HE3	2.02	0.42
37:e:18:LEU:HD21	37:e:48:LEU:HD13	2.02	0.42
38:f:68:LEU:HD22	38:f:108:LEU:CD2	2.46	0.42
38:f:94:THR:O	38:f:98:ILE:HB	2.19	0.42
40:h:58:TYR:HE1	40:h:60:ASP:HB3	1.81	0.42
40:h:61:LYS:HA	40:h:63:PHE:CE1	2.54	0.42
44:l:38:LYS:HE2	44:l:38:LYS:HB3	1.88	0.42
44:l:109:ILE:HG23	44:l:114:MET:HG2	2.01	0.42
45:m:107:ARG:HD2	45:m:107:ARG:O	2.19	0.42
46:n:12:HIS:HA	46:n:15:ILE:HD11	2.01	0.42
4:3:246:G:O2'	4:3:258:G:O6	2.34	0.42
4:3:1464:G:H1	4:3:1590:U:H3	1.65	0.42
6:5:214:U:H2'	6:5:215:C:C6	2.54	0.42
6:5:483:U:H2'	6:5:484:A:C8	2.55	0.42
6:5:1199:U:O2'	6:5:1296:C:OP1	2.35	0.42
14:E:118:ILE:O	14:E:122:GLU:HG2	2.20	0.42
17:H:71:GLY:O	17:H:77:GLN:HG3	2.19	0.42
19:J:119:ARG:CZ	29:T:33:GLU:OE2	2.66	0.42
20:K:3:THR:CG2	20:K:6:GLN:H	2.32	0.42
21:L:45:VAL:HA	21:L:48:LEU:HG	2.01	0.42
33:a:38:LEU:HD23	33:a:38:LEU:HA	1.81	0.42
35:c:162:ASN:HD22	35:c:162:ASN:C	2.21	0.42
38:f:56:GLU:OE2	38:f:56:GLU:N	2.37	0.42
39:g:123:LEU:O	39:g:126:ILE:HG22	2.19	0.42
40:h:92:ILE:HG21	40:h:134:GLU:HG3	2.01	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:n:45:ASP:OD1	46:n:50:ILE:HG12	2.20	0.42
48:p:6:GLY:O	48:p:7:LYS:HB3	2.19	0.42
54:v:14:TYR:CE1	54:v:28:LYS:HD3	2.54	0.42
56:x:15:LYS:HE2	56:x:33:GLU:OE2	2.18	0.42
4:3:20:C:H5"	48:p:23:SER:O	2.19	0.42
4:3:756:A:H2'	4:3:757:A:C8	2.54	0.42
4:3:2384:A:C4	46:n:98:TYR:CE2	3.07	0.42
4:3:2798:A:O3'	4:3:2896:G:N2	2.53	0.42
6:5:707:G:H2'	6:5:708:A:H8	1.84	0.42
6:5:1202:A:N6	27:R:86:ASN:HD21	2.18	0.42
6:5:1324:A:H2	15:F:33:GLY:HA3	1.84	0.42
7:6:1:G:O2'	7:6:2:G:H5'	2.20	0.42
10:A:237:ALA:HB1	10:A:242:MET:HG2	2.02	0.42
11:B:35:ILE:O	11:B:39:LYS:HG2	2.20	0.42
12:C:100:ILE:O	12:C:104:MET:HB2	2.20	0.42
17:H:45:LEU:O	17:H:48:GLN:HG2	2.18	0.42
19:J:104:ASN:CG	19:J:106:LYS:NZ	2.77	0.42
21:L:72:GLU:CD	21:L:76:ASN:HD21	2.23	0.42
27:R:74:PHE:O	27:R:74:PHE:CG	2.73	0.42
12:U:9:LYS:HE2	12:U:9:LYS:HB3	1.82	0.42
12:U:153:ILE:CA	12:U:154:VAL:HG12	2.49	0.42
35:c:194:ALA:O	35:c:195:ASN:HB3	2.19	0.42
36:d:34:ILE:HG23	36:d:155:THR:O	2.19	0.42
36:d:59:LEU:HG	56:x:7:PHE:HE2	1.84	0.42
38:f:75:THR:O	38:f:77:LEU:N	2.53	0.42
39:g:60:ARG:O	39:g:64:LYS:HG2	2.20	0.42
40:h:106:GLN:OE1	40:h:106:GLN:N	2.52	0.42
43:k:69:ARG:HH11	43:k:69:ARG:HG3	1.84	0.42
46:n:37:ASN:C	46:n:38:HIS:CD2	2.97	0.42
49:q:12:TYR:CE2	49:q:22:VAL:HG12	2.55	0.42
50:r:126:LYS:O	50:r:130:GLU:OE1	2.38	0.42
55:w:84:VAL:O	55:w:88:LYS:HG2	2.19	0.42
56:x:66:PHE:O	56:x:70:LYS:HG3	2.20	0.42
4:3:158:U:H2'	4:3:159:G:C8	2.54	0.42
4:3:397:G:H2'	4:3:398:C:C6	2.55	0.42
4:3:1385:U:H2'	4:3:1386:G:O4'	2.19	0.42
4:3:1605:A:H2'	4:3:1606:A:H8	1.83	0.42
4:3:2420:A:H2'	4:3:2421:U:O4'	2.19	0.42
4:3:2655:U:H2'	4:3:2656:G:H8	1.85	0.42
4:3:2764:U:H1'	4:3:2765:A:H5"	2.02	0.42
6:5:18:U:H2'	6:5:19:C:H6	1.84	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:573:G:H4'	6:5:574:C:O5'	2.19	0.42
6:5:704:U:OP1	19:J:80:LYS:NZ	2.33	0.42
7:6:58:A:H4'	7:6:59:G:OP1	2.19	0.42
8:7:34:G:O6	31:Y:42:U:O4	2.38	0.42
11:B:9:GLY:HA2	11:B:12:PHE:HD2	1.83	0.42
11:B:21:ARG:NH1	11:B:59:GLU:OE2	2.42	0.42
14:E:72:PHE:CD1	14:E:72:PHE:C	2.96	0.42
19:J:18:CYS:HA	19:J:23:THR:HG22	2.02	0.42
19:J:84:ARG:HA	19:J:84:ARG:HD3	1.93	0.42
26:Q:42:ARG:HH21	26:Q:63:PHE:HE1	1.68	0.42
12:U:14:LEU:HD13	54:v:63:ARG:NH1	2.30	0.42
12:U:131:THR:HA	12:U:132:PRO:HD3	1.90	0.42
34:b:110:VAL:HG11	34:b:197:ILE:CD1	2.50	0.42
36:d:128:TYR:HD1	36:d:156:LEU:HD23	1.83	0.42
36:d:134:GLU:OE2	36:d:134:GLU:HA	2.19	0.42
41:i:118:SER:O	41:i:122:ILE:HG22	2.18	0.42
42:j:91:LYS:HE2	42:j:111:TYR:CZ	2.55	0.42
45:m:89:LYS:HD2	45:m:90:TYR:CZ	2.55	0.42
48:p:51:ASN:OD1	48:p:54:ARG:NH1	2.53	0.42
4:3:340:U:H1'	4:3:1241:U:H5	1.84	0.42
4:3:614:C:H2'	4:3:615:G:C8	2.55	0.42
4:3:848:U:H2'	4:3:849:C:C6	2.54	0.42
4:3:1761:C:H5	47:o:98:ARG:NH2	2.18	0.42
4:3:2078:A:H2'	4:3:2079:G:H8	1.84	0.42
4:3:2540:G:N2	4:3:2671:G:O2'	2.52	0.42
4:3:2863:G:H8	4:3:2863:G:OP2	2.03	0.42
5:4:6:U:H2'	5:4:7:G:C8	2.55	0.42
6:5:260:C:H2'	6:5:261:G:O4'	2.19	0.42
6:5:380:G:H2'	6:5:381:C:O4'	2.20	0.42
6:5:1258:U:H2'	6:5:1259:G:C8	2.55	0.42
6:5:1273:A:H2'	6:5:1273:A:N3	2.35	0.42
11:B:55:ASN:HB3	11:B:70:TYR:HD2	1.84	0.42
12:C:177:THR:OG1	12:C:178:TYR:N	2.53	0.42
13:D:197:ASP:O	13:D:201:LYS:HG2	2.20	0.42
15:F:117:GLU:H	15:F:117:GLU:CD	2.28	0.42
19:J:73:ALA:O	19:J:98:LEU:HD12	2.19	0.42
20:K:34:LYS:HE3	20:K:34:LYS:HB2	1.77	0.42
21:L:87:ARG:HB3	27:R:73:GLU:OE2	2.20	0.42
21:L:89:LEU:HA	21:L:92:ARG:HB3	2.02	0.42
12:U:16:PHE:O	12:U:20:GLU:HB3	2.20	0.42
36:d:110:ARG:HH22	36:d:139:PRO:HD3	1.85	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:d:114:PHE:HD1	36:d:114:PHE:O	2.03	0.42
48:p:101:GLU:HB3	48:p:104:LYS:HG2	2.02	0.42
52:t:40:ASN:HB3	52:t:67:ALA:HB3	2.02	0.42
4:3:279:U:H2'	4:3:280:A:C8	2.54	0.42
4:3:450:C:H2'	4:3:451:A:C8	2.55	0.42
4:3:1248:A:H2'	4:3:1249:A:C8	2.55	0.42
4:3:1274:A:O2'	43:k:6:LEU:HD11	2.20	0.42
4:3:1563:G:N2	4:3:1566:A:OP2	2.31	0.42
4:3:2224:A:H2'	4:3:2225:G:H8	1.84	0.42
6:5:580:C:O3'	23:N:65:LYS:NZ	2.53	0.42
6:5:991:A:H2'	6:5:992:U:H6	1.85	0.42
11:B:112:PRO:HG2	11:B:113:MET:SD	2.60	0.42
11:B:124:ALA:O	11:B:128:GLU:OE2	2.37	0.42
12:C:57:LYS:HG2	12:C:58:GLN:N	2.34	0.42
15:F:36:GLY:O	17:H:44:LYS:HE2	2.20	0.42
16:G:45:LEU:HD11	16:G:54:LEU:HD12	2.02	0.42
17:H:77:GLN:O	17:H:81:ILE:HG12	2.19	0.42
25:P:60:LYS:HD3	25:P:60:LYS:C	2.45	0.42
26:Q:49:LEU:HD23	26:Q:49:LEU:O	2.20	0.42
28:S:8:GLU:OE2	28:S:12:ARG:NH2	2.53	0.42
33:a:57:HIS:CE1	33:a:227:THR:HA	2.55	0.42
36:d:53:ALA:O	36:d:57:LEU:HD12	2.20	0.42
38:f:41:LYS:C	38:f:42:LYS:HD2	2.45	0.42
49:q:60:GLU:HB2	49:q:91:LYS:HD3	2.01	0.42
49:q:96:ARG:HD2	49:q:97:PHE:C	2.45	0.42
53:u:85:LYS:HG2	53:u:90:GLN:HB3	2.01	0.42
4:3:631:A:H2'	4:3:632:A:C8	2.55	0.41
4:3:924:C:H1'	4:3:927:A:H61	1.85	0.41
4:3:1447:A:O2'	4:3:1449:G:N7	2.43	0.41
4:3:1758:C:H2'	4:3:1759:C:C6	2.55	0.41
4:3:2247:G:H5'	33:a:259:GLY:HA3	2.01	0.41
4:3:2638:G:H2'	4:3:2639:G:C8	2.55	0.41
6:5:492:G:O2'	6:5:494:A:H1'	2.19	0.41
6:5:836:C:H3'	6:5:837:G:C8	2.54	0.41
6:5:839:U:O2'	26:Q:40:TYR:HE1	2.02	0.41
6:5:1001:A:N7	6:5:1020:G:N2	2.67	0.41
6:5:1052:G:H5'	18:I:64:ASP:OD2	2.20	0.41
6:5:1258:U:H2'	6:5:1259:G:H8	1.85	0.41
6:5:1402:U:H2'	6:5:1403:A:H8	1.85	0.41
6:5:1485:C:H2'	6:5:1486:C:C6	2.55	0.41
10:A:24:GLY:HA2	10:A:29:HIS:CE1	2.55	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:49:ARG:HG3	10:A:49:ARG:NH1	2.33	0.41
24:O:33:ILE:HD12	24:O:58:TRP:CH2	2.55	0.41
25:P:18:ASN:HB3	25:P:21:THR:OG1	2.19	0.41
25:P:53:VAL:HG23	25:P:80:ILE:HD11	2.02	0.41
26:Q:50:ARG:HB3	26:Q:50:ARG:CZ	2.50	0.41
31:Y:54:A:H1'	31:Y:55:A:C8	2.54	0.41
34:b:37:ALA:H	34:b:52:LEU:HA	1.85	0.41
37:e:9:ILE:HG21	37:e:53:LEU:HB3	2.01	0.41
40:h:20:LYS:N	40:h:21:PRO:HD2	2.35	0.41
40:h:94:GLY:C	40:h:133:ILE:HG23	2.45	0.41
2:1:4:LYS:HG2	2:1:6:ALA:H	1.85	0.41
4:3:230:G:H2'	4:3:231:A:C8	2.56	0.41
4:3:746:G:H2'	4:3:747:A:H8	1.85	0.41
4:3:2107:A:H3'	4:3:2108:C:H6	1.85	0.41
4:3:2751:C:OP2	4:3:2763:C:N4	2.53	0.41
6:5:369:A:H61	6:5:387:G:H1'	1.85	0.41
6:5:543:C:O2'	6:5:547:C:H5"	2.20	0.41
6:5:1127:A:H5"	18:I:50:THR:HG23	2.02	0.41
6:5:1248:U:H2'	6:5:1249:G:O4'	2.20	0.41
10:A:112:TRP:HZ2	10:A:117:LEU:HG	1.84	0.41
13:D:95:GLY:N	13:D:172:LEU:HD12	2.35	0.41
13:D:166:ILE:HG23	13:D:195:THR:CG2	2.49	0.41
14:E:3:TYR:O	14:E:4:ASN:OD1	2.37	0.41
15:F:63:ARG:HH11	15:F:67:ASN:HB2	1.84	0.41
15:F:83:ASN:O	15:F:85:GLN:NE2	2.53	0.41
18:I:72:GLU:O	22:M:56:VAL:HA	2.20	0.41
12:U:53:GLN:HG2	12:U:195:TYR:CD1	2.55	0.41
33:a:177:GLY:O	33:a:178:LYS:HG2	2.19	0.41
41:i:18:TRP:HB3	41:i:140:PRO:HB3	2.02	0.41
46:n:75:GLN:HA	46:n:112:ARG:HH12	1.85	0.41
49:q:4:ILE:HG13	49:q:40:MET:HB3	2.02	0.41
49:q:54:ARG:HB2	49:q:98:VAL:CB	2.47	0.41
4:3:526:G:H2'	4:3:527:A:C8	2.55	0.41
4:3:713:C:H2'	4:3:714:G:H8	1.86	0.41
4:3:2081:U:H2'	4:3:2082:U:C6	2.54	0.41
4:3:2321:C:H2'	4:3:2322:G:C8	2.55	0.41
4:3:2384:A:H2'	4:3:2385:A:O4'	2.20	0.41
4:3:2607:G:C5	33:a:244:GLU:OE1	2.73	0.41
12:C:123:LEU:HD22	12:C:128:THR:HG22	2.02	0.41
14:E:132:VAL:O	14:E:132:VAL:CG1	2.68	0.41
16:G:98:TYR:O	16:G:99:ARG:HD2	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:55:PRO:CB	20:K:102:ASP:HB3	2.50	0.41
26:Q:63:PHE:N	26:Q:63:PHE:CD1	2.87	0.41
29:T:34:TYR:OH	29:T:36:LEU:HD13	2.20	0.41
12:U:121:HIS:HD2	12:U:148:THR:HG22	1.85	0.41
12:U:151:ILE:HD13	12:U:151:ILE:HA	1.81	0.41
12:U:176:GLY:C	12:U:177:THR:HG1	2.27	0.41
33:a:167:TYR:HB3	33:a:202:VAL:HG12	2.02	0.41
35:c:35:PHE:HE1	43:k:13:ARG:HH12	1.66	0.41
35:c:135:LYS:HA	35:c:135:LYS:HD3	1.73	0.41
36:d:155:THR:O	36:d:156:LEU:HD13	2.20	0.41
37:e:158:GLU:OE2	37:e:161:LYS:N	2.41	0.41
41:i:66:VAL:O	41:i:67:LEU:HD23	2.19	0.41
43:k:90:LEU:HD23	43:k:90:LEU:HA	1.94	0.41
45:m:73:PHE:HB2	45:m:78:LEU:HD13	2.02	0.41
54:v:61:HIS:C	54:v:63:ARG:H	2.28	0.41
4:3:159:G:H2'	4:3:160:A:C8	2.56	0.41
4:3:696:U:H2'	4:3:697:U:C6	2.56	0.41
64:3:3229:SPM:H62	64:3:3229:SPM:H91	1.90	0.41
6:5:22:G:O6	13:D:185:ARG:NH2	2.51	0.41
6:5:578:C:H2'	6:5:579:G:O4'	2.21	0.41
10:A:107:PHE:CD1	10:A:107:PHE:C	2.96	0.41
10:A:221:GLN:NE2	10:A:279:SER:HB2	2.35	0.41
11:B:61:THR:HG22	11:B:62:GLN:N	2.28	0.41
11:B:160:LEU:HD23	11:B:160:LEU:HA	1.90	0.41
12:C:31:ARG:HE	12:C:31:ARG:HB2	1.64	0.41
15:F:21:LEU:O	15:F:25:ILE:HG22	2.20	0.41
19:J:51:LYS:HB3	19:J:51:LYS:HE2	1.77	0.41
23:N:76:ARG:HG3	23:N:80:LYS:NZ	2.36	0.41
24:O:68:THR:O	24:O:72:LEU:HG	2.20	0.41
25:P:67:ARG:O	25:P:69:LEU:HD22	2.20	0.41
26:Q:63:PHE:CD2	26:Q:86:VAL:HG21	2.55	0.41
27:R:3:ARG:NH2	27:R:7:LYS:HG3	2.35	0.41
29:T:52:LYS:HA	29:T:52:LYS:HD3	1.83	0.41
12:U:183:GLU:OE1	12:U:185:SER:OG	2.15	0.41
34:b:22:GLU:OE1	34:b:22:GLU:HA	2.20	0.41
34:b:32:GLU:CD	34:b:33:PRO:HD2	2.46	0.41
44:l:20:LYS:O	44:l:98:LYS:HB3	2.21	0.41
4:3:312:U:H2'	4:3:313:G:C8	2.55	0.41
4:3:628:A:H2'	4:3:629:G:H8	1.86	0.41
4:3:1273:U:H4'	43:k:5:GLN:HE22	1.85	0.41
4:3:1433:U:H2'	4:3:1434:U:C6	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:1543:U:H2'	4:3:1544:G:C8	2.56	0.41
4:3:1859:U:H5'	7:6:72:C:H5"	2.02	0.41
4:3:2322:G:N2	36:d:123:ASP:OD2	2.48	0.41
4:3:2335:A:H2'	4:3:2336:A:C8	2.56	0.41
4:3:2344:A:H61	53:u:57:THR:CG2	2.33	0.41
4:3:2743:U:H2'	4:3:2744:A:H8	1.85	0.41
4:3:2758:A:OP2	37:e:65:LYS:NZ	2.47	0.41
6:5:20:C:H2'	6:5:21:U:C6	2.56	0.41
6:5:425:G:H4'	6:5:426:U:O5'	2.20	0.41
6:5:909:A:O2'	6:5:911:G:H5"	2.19	0.41
6:5:1436:C:H2'	6:5:1437:A:H8	1.85	0.41
12:C:13:ARG:HB2	12:C:35:PRO:HD2	2.02	0.41
12:C:46:THR:O	12:C:46:THR:CG2	2.68	0.41
12:C:146:ALA:C	12:C:148:THR:N	2.77	0.41
15:F:56:LYS:O	15:F:60:VAL:HG13	2.21	0.41
15:F:108:ARG:HG2	15:F:108:ARG:O	2.19	0.41
19:J:65:LYS:HA	19:J:68:LYS:HG2	2.02	0.41
21:L:10:PRO:HB2	21:L:13:LYS:HB2	2.02	0.41
21:L:95:LEU:HB3	21:L:96:PRO:CD	2.51	0.41
23:N:23:GLN:OE1	23:N:23:GLN:N	2.45	0.41
26:Q:53:LEU:CD1	26:Q:96:LEU:HD21	2.50	0.41
33:a:67:ARG:HG2	33:a:67:ARG:HH11	1.85	0.41
38:f:130:ILE:HD12	38:f:144:PRO:HG3	2.03	0.41
43:k:18:LYS:HB3	43:k:18:LYS:HE2	1.94	0.41
48:p:78:PHE:CE1	48:p:82:LEU:HD21	2.55	0.41
50:r:21:CYS:O	50:r:24:ILE:HG22	2.20	0.41
50:r:50:LEU:HD23	50:r:50:LEU:HA	1.92	0.41
55:w:39:ASP:O	55:w:41:PRO:HD3	2.21	0.41
4:3:269:A:N1	4:3:463:U:O2'	2.53	0.41
4:3:1118:U:H5"	39:g:41:ARG:CZ	2.50	0.41
4:3:2083:U:OP2	4:3:2246:G:N2	2.45	0.41
6:5:35:C:H2'	6:5:36:G:C8	2.56	0.41
6:5:1024:U:HO2'	6:5:1025:U:P	2.44	0.41
6:5:1072:G:H2'	6:5:1073:A:H8	1.86	0.41
7:6:8:U:O2'	7:6:46:G:N2	2.54	0.41
7:6:37:A:H2'	7:6:38:C:H6	1.86	0.41
11:B:145:LEU:HD12	11:B:146:LYS:N	2.36	0.41
15:F:93:ASP:OD1	15:F:93:ASP:N	2.50	0.41
24:O:50:ILE:HG22	24:O:51:ASP:N	2.36	0.41
28:S:54:LEU:HB3	28:S:60:ILE:HG22	2.02	0.41
12:U:23:LYS:HE2	12:U:23:LYS:HB3	1.68	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:a:12:SER:O	33:a:12:SER:OG	2.28	0.41
34:b:19:THR:HB	34:b:221:GLU:HG2	2.02	0.41
35:c:35:PHE:HE1	35:c:39:LEU:HD11	1.85	0.41
36:d:2:ASN:HB3	36:d:5:LYS:HB2	2.03	0.41
36:d:68:THR:N	36:d:86:GLY:O	2.28	0.41
37:e:39:PRO:O	37:e:42:LEU:HG	2.20	0.41
41:i:34:LYS:NZ	41:i:145:TRP:O	2.40	0.41
42:j:2:VAL:HG11	42:j:62:ILE:CD1	2.43	0.41
43:k:82:LEU:HA	43:k:85:ILE:HG22	2.02	0.41
45:m:68:LEU:HD12	45:m:68:LEU:HA	1.84	0.41
55:w:107:ASP:OD1	55:w:108:ALA:N	2.53	0.41
1:0:6:GLN:O	4:3:721:G:H8	2.04	0.41
4:3:410:G:C8	54:v:60:LYS:HD2	2.56	0.41
4:3:1099:C:H3'	4:3:1100:U:H6	1.86	0.41
4:3:2451:C:OP1	35:c:69:LYS:HD3	2.20	0.41
6:5:307:C:OP1	24:O:31:LYS:NZ	2.54	0.41
6:5:537:A:P	20:K:124:ARG:NH1	2.94	0.41
10:A:202:CYS:HB3	10:A:206:THR:OG1	2.20	0.41
10:A:220:HIS:CE1	10:A:279:SER:HA	2.56	0.41
11:B:114:LEU:HD23	11:B:114:LEU:H	1.85	0.41
20:K:68:VAL:HG21	20:K:95:LEU:HD11	2.02	0.41
26:Q:38:LYS:O	26:Q:38:LYS:HD3	2.20	0.41
12:U:119:HIS:HB2	12:U:121:HIS:HE1	1.86	0.41
35:c:6:LEU:HD23	35:c:127:LEU:C	2.46	0.41
36:d:22:PHE:HD2	36:d:27:GLN:CB	2.34	0.41
49:q:55:VAL:HG22	49:q:97:PHE:CE1	2.55	0.41
52:t:55:ALA:HA	52:t:58:GLN:HB2	2.03	0.41
4:3:45:U:H2'	4:3:46:A:O4'	2.20	0.41
4:3:583:U:O4	41:i:3:LYS:HD3	2.21	0.41
4:3:2353:G:N3	4:3:2389:A:H2'	2.36	0.41
6:5:163:G:P	28:S:53:ARG:HH21	2.44	0.41
6:5:253:G:H1	6:5:265:U:H3	1.67	0.41
6:5:331:C:H2'	6:5:332:A:H8	1.85	0.41
6:5:348:C:H4'	6:5:350:G:OP1	2.21	0.41
6:5:399:C:OP1	12:C:133:SER:HB3	2.21	0.41
6:5:473:A:H2'	6:5:474:G:H8	1.84	0.41
6:5:617:U:N3	12:C:130:ASP:HB3	2.35	0.41
6:5:818:A:H2'	6:5:819:G:H8	1.85	0.41
6:5:1002:A:H2'	6:5:1003:A:O4'	2.21	0.41
6:5:1290:G:O2'	22:M:18:VAL:HG21	2.21	0.41
7:6:4:G:H2'	7:6:5:A:O4'	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:30:VAL:HG13	10:A:53:ASN:HB3	2.01	0.41
12:C:74:LEU:HD12	12:C:75:PHE:N	2.35	0.41
13:D:110:GLU:HB3	13:D:112:PRO:HD2	2.03	0.41
15:F:87:PRO:HD2	15:F:151:ALA:HA	2.03	0.41
16:G:73:ASN:N	16:G:73:ASN:OD1	2.54	0.41
19:J:14:ILE:HD13	19:J:93:PHE:CZ	2.56	0.41
19:J:106:LYS:HZ2	19:J:106:LYS:HG2	1.31	0.41
21:L:94:ASN:HA	21:L:109:ARG:HH12	1.85	0.41
24:O:66:THR:HB	24:O:69:VAL:CG2	2.51	0.41
29:T:6:VAL:C	29:T:8:ASN:H	2.29	0.41
34:b:97:THR:HG22	34:b:100:ASN:OD1	2.21	0.41
34:b:225:GLN:HE21	47:o:19:LYS:HD3	1.85	0.41
44:l:27:VAL:HG13	44:l:105:GLU:CD	2.46	0.41
45:m:78:LEU:HD12	45:m:78:LEU:HA	1.88	0.41
49:q:2:HIS:HB2	49:q:13:LEU:HD11	2.03	0.41
50:r:114:ARG:O	50:r:118:ILE:HG13	2.20	0.41
1:0:22:MET:HE1	1:0:28:ARG:CD	2.50	0.41
3:2:18:LYS:HD2	3:2:21:GLN:HA	2.02	0.41
4:3:270:G:O2'	12:U:38:HIS:CD2	2.74	0.41
4:3:313:G:H5"	12:U:62:TYR:CE2	2.56	0.41
4:3:558:C:O2	4:3:587:U:O2'	2.38	0.41
4:3:680:A:H2'	4:3:682:A:N7	2.36	0.41
4:3:799:A:H5"	33:a:217:GLY:CA	2.50	0.41
4:3:890:U:H2'	4:3:891:G:C8	2.55	0.41
4:3:1321:C:H2'	4:3:1322:A:O4'	2.21	0.41
4:3:1495:A:H2'	4:3:1496:A:C8	2.55	0.41
4:3:1619:A:H8	4:3:1619:A:H5"	1.84	0.41
4:3:1665:G:N1	4:3:1668:G:OP2	2.43	0.41
4:3:1836:A:H3'	4:3:1837:C:H6	1.86	0.41
4:3:1889:U:H2'	4:3:1890:U:C6	2.56	0.41
4:3:2755:G:OP1	37:e:77:ASN:ND2	2.54	0.41
6:5:190:A:H2'	6:5:191:A:C8	2.54	0.41
6:5:207:C:H2'	6:5:208:A:O4'	2.21	0.41
6:5:224:A:H2'	6:5:225:U:C6	2.56	0.41
6:5:251:G:H2'	6:5:252:U:C6	2.56	0.41
6:5:421:G:H5"	6:5:422:A:OP2	2.21	0.41
6:5:625:U:H2'	6:5:626:G:C8	2.56	0.41
6:5:631:C:H2'	6:5:632:A:C8	2.55	0.41
6:5:839:U:H3'	6:5:840:C:H6	1.86	0.41
6:5:885:U:H2'	6:5:886:A:H8	1.86	0.41
6:5:1272:C:C2	15:F:113:LYS:NZ	2.84	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:1329:G:H2'	6:5:1330:A:C8	2.56	0.41
8:7:61:C:H2'	8:7:62:C:H6	1.86	0.41
10:A:74:GLU:OE1	14:E:181:PHE:HB3	2.21	0.41
10:A:85:VAL:HA	10:A:108:ILE:HG23	2.03	0.41
10:A:223:GLN:HG2	10:A:224:SER:H	1.86	0.41
11:B:105:THR:HG21	11:B:232:ARG:HH21	1.85	0.41
11:B:176:MET:HE2	11:B:176:MET:HB2	1.90	0.41
11:B:185:ILE:HA	11:B:205:ILE:O	2.21	0.41
11:B:207:ARG:HH11	11:B:207:ARG:HG3	1.86	0.41
12:C:164:SER:OG	12:C:166:PHE:HD1	2.02	0.41
12:C:183:GLU:CD	12:C:184:ARG:H	2.29	0.41
14:E:8:LEU:HB3	14:E:83:LEU:HB2	2.03	0.41
14:E:9:VAL:CG2	14:E:56:HIS:HB2	2.51	0.41
14:E:42:LEU:HD12	14:E:42:LEU:HA	1.87	0.41
16:G:45:LEU:HD12	16:G:48:LEU:HD23	2.02	0.41
17:H:35:ARG:HD3	17:H:39:GLU:HB3	2.02	0.41
18:I:20:ASP:OD1	18:I:23:LEU:HB2	2.21	0.41
18:I:57:ILE:HD12	22:M:41:ARG:HB2	2.01	0.41
20:K:69:ARG:NH1	20:K:73:GLY:HA2	2.36	0.41
21:L:53:PHE:C	21:L:57:ARG:HH21	2.29	0.41
27:R:81:LYS:HE3	27:R:81:LYS:HB2	1.84	0.41
28:S:21:ASN:OD1	28:S:59:ILE:HG12	2.21	0.41
12:U:42:PHE:O	12:U:43:ARG:HB3	2.20	0.41
12:U:163:VAL:HG22	12:U:164:SER:O	2.21	0.41
31:Y:45:G:H2'	31:Y:46:G:O4'	2.19	0.41
34:b:37:ALA:HA	34:b:75:LEU:HD21	2.02	0.41
36:d:166:ALA:O	36:d:170:LEU:HG	2.21	0.41
37:e:42:LEU:HA	37:e:43:PRO:HD3	1.90	0.41
40:h:74:ILE:HD12	40:h:74:ILE:HA	1.88	0.41
44:l:10:ARG:HH11	44:l:10:ARG:HG2	1.86	0.41
46:n:71:LYS:O	46:n:75:GLN:HG3	2.21	0.41
49:q:67:LYS:HD2	49:q:86:ARG:HD2	2.01	0.41
51:s:86:PRO:HB3	55:w:90:HIS:CE1	2.56	0.41
53:u:86:PHE:CE1	53:u:94:ARG:HB3	2.55	0.41
56:x:90:LYS:HG3	56:x:91:HIS:H	1.85	0.41
58:z:29:PRO:HD2	58:z:30:GLU:OE1	2.20	0.41
4:3:1451:A:H2'	4:3:1452:G:C8	2.56	0.41
4:3:1709:C:C4	34:b:135:HIS:HE1	2.38	0.41
4:3:2126:A:C2	4:3:2178:A:H2'	2.56	0.41
4:3:2299:U:O2'	4:3:2382:A:N3	2.52	0.41
4:3:2300:A:H2'	4:3:2301:C:C6	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:2402:C:H5"	43:k:64:LYS:HE2	2.02	0.41
6:5:259:A:H2'	6:5:260:C:H6	1.86	0.41
6:5:660:A:H2'	6:5:661:G:O4'	2.20	0.41
6:5:673:A:H2'	6:5:674:U:H6	1.86	0.41
6:5:1343:G:OP1	22:M:61:TRP:CH2	2.73	0.41
11:B:9:GLY:HA3	22:M:49:TYR:CD1	2.56	0.41
11:B:20:SER:HB3	11:B:22:TRP:CZ3	2.56	0.41
14:E:5:ILE:HD11	14:E:62:PHE:HZ	1.84	0.41
14:E:157:TRP:HB3	16:G:60:LEU:HD21	2.03	0.41
15:F:14:ASP:OD2	15:F:17:PHE:N	2.54	0.41
18:I:24:LEU:HD21	18:I:78:ARG:HG2	2.03	0.41
18:I:40:VAL:HG11	18:I:82:LEU:HD13	2.03	0.41
28:S:20:ASN:O	28:S:24:GLN:HG2	2.20	0.41
12:U:125:ASN:O	12:U:127:ARG:N	2.53	0.41
31:Y:47:U:H3'	31:Y:48:C:H6	1.86	0.41
33:a:2:PRO:HB2	33:a:24:LYS:HZ1	1.86	0.41
33:a:17:SER:OG	33:a:214:GLY:HA3	2.21	0.41
33:a:138:LEU:HB3	33:a:180:VAL:HG11	2.02	0.41
34:b:55:ASP:CG	34:b:79:LYS:HZ3	2.29	0.41
40:h:39:PHE:CD1	40:h:39:PHE:N	2.88	0.41
52:t:40:ASN:HB2	52:t:69:ILE:HD11	2.02	0.41
56:x:26:GLU:CD	56:x:26:GLU:N	2.79	0.41
4:3:1081:A:C2	39:g:61:ARG:HD2	2.57	0.40
4:3:1208:A:H2'	4:3:1209:U:H4'	2.02	0.40
4:3:1564:U:H2'	4:3:1565:G:C8	2.56	0.40
4:3:1605:A:H2'	4:3:1606:A:C8	2.55	0.40
4:3:1815:U:O2'	4:3:1816:A:O4'	2.39	0.40
4:3:1956:G:H2'	4:3:1957:G:H8	1.86	0.40
4:3:2223:C:H2'	4:3:2224:A:H8	1.86	0.40
4:3:2896:G:H3'	4:3:2897:G:H5'	2.03	0.40
6:5:196:G:O2'	28:S:56:ARG:CZ	2.70	0.40
6:5:250:G:OP1	25:P:70:SER:OG	2.38	0.40
6:5:459:C:H2'	6:5:460:A:O4'	2.21	0.40
6:5:537:A:H2'	6:5:538:G:C8	2.56	0.40
6:5:537:A:OP1	20:K:124:ARG:HD3	2.21	0.40
6:5:777:A:H5"	19:J:118:LYS:HD2	2.03	0.40
6:5:1116:U:C4	18:I:46:LEU:HD21	2.56	0.40
13:D:90:VAL:HG22	13:D:92:VAL:HG13	2.03	0.40
13:D:218:GLU:O	13:D:219:LEU:C	2.64	0.40
14:E:80:LYS:H	14:E:80:LYS:HG2	1.70	0.40
16:G:44:ILE:HG13	16:G:45:LEU:N	2.36	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:H:45:LEU:HG	17:H:48:GLN:OE1	2.21	0.40
21:L:69:LEU:HA	21:L:72:GLU:HB3	2.01	0.40
25:P:13:VAL:HG22	25:P:24:VAL:HG12	2.03	0.40
27:R:19:VAL:HG11	27:R:44:PHE:HD1	1.82	0.40
29:T:7:LYS:HB2	29:T:9:ASP:OD1	2.21	0.40
33:a:173:GLN:CG	33:a:174:ASP:H	2.34	0.40
35:c:7:ILE:CG2	35:c:128:VAL:HG12	2.51	0.40
36:d:110:ARG:HG2	36:d:110:ARG:O	2.21	0.40
39:g:43:LYS:HE2	39:g:95:ALA:HB1	2.03	0.40
39:g:50:LYS:HD2	39:g:50:LYS:HA	1.98	0.40
40:h:96:ILE:HG22	40:h:133:ILE:HG22	2.03	0.40
43:k:112:ILE:HG22	43:k:129:HIS:ND1	2.35	0.40
44:l:109:ILE:CD1	44:l:110:PRO:HD2	2.43	0.40
46:n:18:LYS:O	46:n:22:THR:HG23	2.21	0.40
48:p:50:ARG:H	48:p:50:ARG:HG2	1.67	0.40
50:r:24:ILE:HD13	50:r:35:ILE:HD11	2.03	0.40
55:w:98:LEU:O	55:w:102:ARG:HG3	2.21	0.40
4:3:402:A:H8	4:3:402:A:OP2	2.04	0.40
4:3:516:A:OP2	52:t:44:ARG:NH2	2.54	0.40
4:3:815:G:C2	4:3:817:A:C2	3.09	0.40
4:3:859:G:H2'	4:3:860:C:C6	2.57	0.40
4:3:996:A:H61	44:l:83:MET:HE3	1.86	0.40
4:3:1142:G:H1'	39:g:79:LYS:HE2	2.02	0.40
4:3:1306:G:H2'	4:3:1307:G:C8	2.54	0.40
4:3:1761:C:H5'	47:o:103:TYR:CZ	2.57	0.40
4:3:2395:U:H4'	53:u:55:ARG:HH12	1.86	0.40
6:5:1279:G:HO2'	6:5:1280:A:H8	1.70	0.40
7:6:2:G:H2'	7:6:3:G:H8	1.86	0.40
12:C:104:MET:CE	12:C:176:GLY:HA2	2.51	0.40
13:D:186:ASN:HA	13:D:191:MET:HE2	2.03	0.40
15:F:147:ASN:OD1	15:F:150:PHE:CD1	2.75	0.40
21:L:20:THR:HG22	21:L:27:LEU:HA	2.03	0.40
29:T:37:ARG:H	29:T:37:ARG:HG3	1.73	0.40
12:U:125:ASN:OD1	12:U:141:LYS:HD3	2.20	0.40
33:a:92:ARG:HD3	33:a:94:CYS:SG	2.61	0.40
33:a:175:GLU:N	33:a:175:GLU:OE1	2.40	0.40
34:b:192:LEU:HD23	34:b:192:LEU:HA	1.83	0.40
43:k:128:VAL:HG21	43:k:131:VAL:HB	2.02	0.40
44:l:116:LYS:O	44:l:120:ARG:HG2	2.21	0.40
2:1:10:ARG:HG2	43:k:64:LYS:HA	2.03	0.40
4:3:117:C:H2'	4:3:118:G:O4'	2.20	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:166:A:H2'	4:3:167:A:O4'	2.22	0.40
4:3:620:G:H5'	64:3:3229:SPM:H82	2.03	0.40
4:3:1114:C:H3'	4:3:1115:G:H8	1.86	0.40
4:3:2228:U:H2'	4:3:2229:C:C6	2.57	0.40
4:3:2541:C:H2'	4:3:2542:A:O4'	2.21	0.40
4:3:2811:G:H2'	4:3:2812:U:C6	2.56	0.40
6:5:498:G:H2'	6:5:499:U:C6	2.56	0.40
6:5:537:A:O5'	20:K:124:ARG:NH1	2.54	0.40
6:5:551:A:H2'	6:5:552:U:C6	2.56	0.40
10:A:20:LEU:HD22	10:A:58:LEU:HB3	2.03	0.40
11:B:3:GLN:OE1	11:B:3:GLN:N	2.54	0.40
11:B:142:ILE:HA	11:B:145:LEU:HG	2.03	0.40
16:G:19:LEU:HD12	16:G:89:GLN:HB2	2.02	0.40
17:H:45:LEU:O	17:H:45:LEU:HD23	2.20	0.40
19:J:46:LYS:H	19:J:49:ARG:NH2	2.16	0.40
21:L:86:TRP:CD1	21:L:89:LEU:HD11	2.55	0.40
26:Q:54:ILE:O	26:Q:54:ILE:HG22	2.21	0.40
29:T:37:ARG:HH21	29:T:40:MET:HG2	1.86	0.40
12:U:134:ILE:H	12:U:134:ILE:HG13	1.67	0.40
33:a:81:ALA:HB1	33:a:99:ILE:HD12	2.02	0.40
34:b:185:ASP:HB3	34:b:190:LEU:HB2	2.03	0.40
36:d:60:ILE:HD12	36:d:60:ILE:HA	1.91	0.40
39:g:27:PHE:O	39:g:81:ALA:N	2.54	0.40
40:h:57:ALA:HA	40:h:63:PHE:CE2	2.55	0.40
52:t:10:VAL:HG11	52:t:74:LEU:HB3	2.04	0.40
2:1:39:ARG:NH2	4:3:2358:U:C5	2.89	0.40
4:3:322:A:H2'	4:3:323:A:C8	2.57	0.40
4:3:1701:G:O2'	4:3:1998:U:O4	2.38	0.40
4:3:2358:U:H2'	4:3:2359:G:O4'	2.21	0.40
6:5:69:G:H2'	6:5:70:A:O4'	2.21	0.40
6:5:945:U:H2'	6:5:946:G:C8	2.56	0.40
6:5:1141:U:O2'	6:5:1142:G:H8	2.04	0.40
6:5:1266:U:H2'	6:5:1267:G:H8	1.87	0.40
10:A:68:ALA:HB2	10:A:215:ILE:HD11	2.04	0.40
11:B:108:GLU:HG2	11:B:229:GLN:HG3	2.02	0.40
15:F:90:VAL:H	15:F:90:VAL:HG12	1.70	0.40
16:G:23:ASN:OD1	16:G:87:VAL:HB	2.21	0.40
22:M:4:LYS:CG	22:M:5:SER:N	2.84	0.40
12:U:166:PHE:CD1	12:U:186:GLU:HG2	2.51	0.40
12:U:184:ARG:HD2	12:U:192:ASN:CG	2.46	0.40
12:U:191:ILE:HG23	12:U:191:ILE:O	2.21	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:d:45:ARG:HB3	36:d:78:LYS:NZ	2.37	0.40
38:f:14:LYS:HD2	38:f:14:LYS:C	2.46	0.40
38:f:82:LYS:HZ1	38:f:146:ASN:HB3	1.87	0.40
39:g:27:PHE:H	39:g:81:ALA:HB3	1.86	0.40
43:k:81:ASN:HA	43:k:115:ILE:HG23	2.03	0.40
44:l:130:LYS:HE2	44:l:132:LEU:HD21	2.03	0.40
4:3:279:U:H2'	4:3:280:A:H8	1.87	0.40
4:3:2010:A:H2'	4:3:2011:G:O4'	2.22	0.40
4:3:2100:G:H4'	38:f:24:GLY:HA3	2.03	0.40
6:5:63:U:H1'	6:5:375:C:H1'	2.03	0.40
6:5:123:U:H3	6:5:222:U:H3	1.68	0.40
6:5:1121:U:H3'	6:5:1122:U:H5"	2.04	0.40
6:5:1216:G:H2'	6:5:1217:G:H8	1.87	0.40
6:5:1343:G:OP1	22:M:61:TRP:HH2	2.04	0.40
6:5:1436:C:H2'	6:5:1437:A:C8	2.55	0.40
8:7:72:G:H5'	8:7:73:C:O5'	2.22	0.40
11:B:11:ARG:NH1	11:B:180:THR:O	2.54	0.40
11:B:26:SER:OG	11:B:27:HIS:N	2.54	0.40
11:B:60:ARG:HE	11:B:60:ARG:HB2	1.61	0.40
13:D:216:LEU:HA	13:D:216:LEU:HD12	1.89	0.40
16:G:90:ILE:HG13	16:G:140:TYR:CE1	2.57	0.40
16:G:101:PHE:HD1	16:G:102:GLU:N	2.19	0.40
20:K:49:ARG:HE	20:K:65:TYR:HE2	1.70	0.40
21:L:19:LEU:HB2	21:L:30:SER:HB2	2.04	0.40
27:R:16:LEU:O	27:R:20:ILE:HG12	2.21	0.40
12:U:123:LEU:HB3	12:U:143:ARG:O	2.22	0.40
38:f:126:ILE:HG12	38:f:127:THR:H	1.86	0.40
42:j:17:LYS:NZ	42:j:47:ILE:HG22	2.36	0.40
42:j:104:ARG:HG2	42:j:104:ARG:NH1	2.36	0.40
47:o:115:LYS:HE3	47:o:115:LYS:HB3	1.90	0.40
48:p:93:VAL:CG1	49:q:4:ILE:HD13	2.52	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	46/48 (96%)	45 (98%)	1 (2%)	0	100	100
2	1	57/59 (97%)	57 (100%)	0	0	100	100
3	2	35/37 (95%)	35 (100%)	0	0	100	100
10	A	262/294 (89%)	236 (90%)	24 (9%)	2 (1%)	16	48
11	B	230/273 (84%)	203 (88%)	23 (10%)	4 (2%)	7	34
12	C	202/205 (98%)	167 (83%)	33 (16%)	2 (1%)	12	43
12	U	202/205 (98%)	147 (73%)	39 (19%)	16 (8%)	1	10
13	D	153/219 (70%)	143 (94%)	10 (6%)	0	100	100
14	E	182/215 (85%)	156 (86%)	25 (14%)	1 (0%)	24	56
15	F	153/155 (99%)	139 (91%)	12 (8%)	2 (1%)	9	38
16	G	139/142 (98%)	133 (96%)	6 (4%)	0	100	100
17	H	127/132 (96%)	113 (89%)	14 (11%)	0	100	100
18	I	102/108 (94%)	89 (87%)	12 (12%)	1 (1%)	12	43
19	J	112/121 (93%)	106 (95%)	5 (4%)	1 (1%)	14	45
20	K	133/139 (96%)	116 (87%)	14 (10%)	3 (2%)	5	30
21	L	121/124 (98%)	109 (90%)	10 (8%)	2 (2%)	7	34
22	M	58/61 (95%)	56 (97%)	2 (3%)	0	100	100
23	N	83/86 (96%)	78 (94%)	5 (6%)	0	100	100
24	O	85/94 (90%)	79 (93%)	6 (7%)	0	100	100
25	P	83/85 (98%)	73 (88%)	9 (11%)	1 (1%)	10	40
26	Q	69/104 (66%)	64 (93%)	5 (7%)	0	100	100
27	R	84/87 (97%)	78 (93%)	6 (7%)	0	100	100
28	S	77/87 (88%)	74 (96%)	2 (3%)	1 (1%)	9	38
29	T	57/60 (95%)	54 (95%)	3 (5%)	0	100	100
30	X	28/444 (6%)	25 (89%)	3 (11%)	0	100	100
32	Z	3/36 (8%)	3 (100%)	0	0	100	100
33	a	283/287 (99%)	269 (95%)	13 (5%)	1 (0%)	30	60
34	b	228/287 (79%)	219 (96%)	9 (4%)	0	100	100
35	c	209/212 (99%)	196 (94%)	13 (6%)	0	100	100
36	d	177/180 (98%)	171 (97%)	6 (3%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
37	e	174/184 (95%)	161 (92%)	13 (8%)	0	100 100
38	f	147/149 (99%)	133 (90%)	12 (8%)	2 (1%)	9 37
39	g	123/161 (76%)	119 (97%)	4 (3%)	0	100 100
40	h	126/137 (92%)	121 (96%)	5 (4%)	0	100 100
41	i	142/146 (97%)	134 (94%)	8 (6%)	0	100 100
42	j	120/122 (98%)	115 (96%)	5 (4%)	0	100 100
43	k	148/151 (98%)	138 (93%)	10 (7%)	0	100 100
44	l	134/139 (96%)	132 (98%)	2 (2%)	0	100 100
45	m	117/124 (94%)	113 (97%)	4 (3%)	0	100 100
46	n	114/116 (98%)	108 (95%)	6 (5%)	0	100 100
47	o	116/119 (98%)	108 (93%)	8 (7%)	0	100 100
48	p	116/127 (91%)	114 (98%)	2 (2%)	0	100 100
49	q	97/100 (97%)	92 (95%)	5 (5%)	0	100 100
50	r	140/159 (88%)	136 (97%)	4 (3%)	0	100 100
51	s	93/237 (39%)	89 (96%)	4 (4%)	0	100 100
52	t	109/111 (98%)	103 (94%)	6 (6%)	0	100 100
53	u	86/104 (83%)	83 (96%)	3 (4%)	0	100 100
54	v	62/65 (95%)	57 (92%)	5 (8%)	0	100 100
55	w	108/111 (97%)	104 (96%)	4 (4%)	0	100 100
56	x	94/97 (97%)	70 (74%)	22 (23%)	2 (2%)	5 31
57	y	54/57 (95%)	52 (96%)	2 (4%)	0	100 100
58	z	48/53 (91%)	47 (98%)	1 (2%)	0	100 100
All	All	6248/7355 (85%)	5762 (92%)	445 (7%)	41 (1%)	20 50

All (41) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
11	B	229	GLN
11	B	230	PRO
20	K	56	LYS
25	P	54	LEU
12	U	39	GLY
12	U	126	ASP
12	U	163	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
38	f	76	GLU
12	C	81	GLN
12	C	179	VAL
12	U	3	TYR
12	U	24	GLU
12	U	30	LYS
12	U	81	GLN
12	U	154	VAL
12	U	155	LYS
11	B	217	ARG
12	U	27	LYS
10	A	54	ASP
10	A	219	ASN
11	B	216	ASN
15	F	20	THR
20	K	57	LYS
20	K	72	ASN
28	S	37	LYS
12	U	157	ALA
12	U	181	PHE
33	a	128	ILE
38	f	12	LEU
56	x	49	GLU
56	x	59	ALA
14	E	169	VAL
15	F	12	LEU
19	J	114	CYS
21	L	123	SER
12	U	43	ARG
12	U	50	TYR
12	U	26	SER
18	I	100	VAL
21	L	116	VAL
12	U	35	PRO

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	41/41 (100%)	40 (98%)	1 (2%)	43	61
2	1	51/51 (100%)	51 (100%)	0	100	100
3	2	35/35 (100%)	34 (97%)	1 (3%)	37	57
10	A	238/262 (91%)	235 (99%)	3 (1%)	61	71
11	B	195/232 (84%)	195 (100%)	0	100	100
12	C	182/183 (100%)	181 (100%)	1 (0%)	81	80
12	U	182/183 (100%)	179 (98%)	3 (2%)	55	68
13	D	125/178 (70%)	125 (100%)	0	100	100
14	E	165/196 (84%)	163 (99%)	2 (1%)	63	72
15	F	132/132 (100%)	130 (98%)	2 (2%)	57	68
16	G	123/124 (99%)	121 (98%)	2 (2%)	55	68
17	H	112/115 (97%)	112 (100%)	0	100	100
18	I	97/99 (98%)	97 (100%)	0	100	100
19	J	91/97 (94%)	89 (98%)	2 (2%)	45	63
20	K	117/120 (98%)	116 (99%)	1 (1%)	70	75
21	L	104/105 (99%)	103 (99%)	1 (1%)	68	74
22	M	47/48 (98%)	47 (100%)	0	100	100
23	N	77/78 (99%)	77 (100%)	0	100	100
24	O	76/82 (93%)	76 (100%)	0	100	100
25	P	75/75 (100%)	73 (97%)	2 (3%)	39	59
26	Q	62/94 (66%)	61 (98%)	1 (2%)	55	68
27	R	76/77 (99%)	76 (100%)	0	100	100
28	S	71/77 (92%)	69 (97%)	2 (3%)	38	58
29	T	55/56 (98%)	52 (94%)	3 (6%)	19	46
30	X	27/406 (7%)	27 (100%)	0	100	100
32	Z	2/2 (100%)	2 (100%)	0	100	100
33	a	241/243 (99%)	241 (100%)	0	100	100
34	b	187/233 (80%)	184 (98%)	3 (2%)	55	68
35	c	183/184 (100%)	179 (98%)	4 (2%)	45	63
36	d	153/154 (99%)	153 (100%)	0	100	100
37	e	153/159 (96%)	151 (99%)	2 (1%)	61	71
38	f	134/134 (100%)	133 (99%)	1 (1%)	76	77

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
39	g	100/129 (78%)	100 (100%)	0	100	100
40	h	102/110 (93%)	102 (100%)	0	100	100
41	i	126/128 (98%)	124 (98%)	2 (2%)	55	68
42	j	103/103 (100%)	101 (98%)	2 (2%)	50	65
43	k	125/126 (99%)	124 (99%)	1 (1%)	73	76
44	l	113/115 (98%)	111 (98%)	2 (2%)	51	67
45	m	105/109 (96%)	103 (98%)	2 (2%)	50	65
46	n	99/99 (100%)	98 (99%)	1 (1%)	68	74
47	o	104/105 (99%)	103 (99%)	1 (1%)	68	74
48	p	104/108 (96%)	104 (100%)	0	100	100
49	q	90/91 (99%)	90 (100%)	0	100	100
50	r	118/132 (89%)	116 (98%)	2 (2%)	53	67
51	s	84/208 (40%)	81 (96%)	3 (4%)	31	54
52	t	96/96 (100%)	96 (100%)	0	100	100
53	u	70/85 (82%)	69 (99%)	1 (1%)	59	70
54	v	59/60 (98%)	59 (100%)	0	100	100
55	w	97/98 (99%)	96 (99%)	1 (1%)	68	74
56	x	85/86 (99%)	85 (100%)	0	100	100
57	y	48/49 (98%)	48 (100%)	0	100	100
58	z	47/50 (94%)	46 (98%)	1 (2%)	47	64
All	All	5484/6342 (86%)	5428 (99%)	56 (1%)	65	74

All (56) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	33	LEU
3	2	30	GLN
10	A	66	GLN
10	A	152	LEU
10	A	163	PHE
12	C	77	LEU
14	E	53	LEU
14	E	182	ASN
15	F	67	ASN
15	F	123	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
16	G	109	ASN
16	G	113	ILE
19	J	100	ILE
19	J	112	ASN
20	K	30	LEU
21	L	71	ARG
25	P	10	ILE
25	P	77	ILE
26	Q	81	MET
28	S	28	LEU
28	S	63	ASN
29	T	35	HIS
29	T	36	LEU
29	T	37	ARG
12	U	126	ASP
12	U	134	ILE
12	U	137	ASN
34	b	24	LEU
34	b	53	SER
34	b	227	GLU
35	c	135	LYS
35	c	195	ASN
35	c	197	LEU
35	c	204	LEU
37	e	86	PHE
37	e	143	LEU
38	f	76	GLU
41	i	46	ASP
41	i	131	ASP
42	j	1	MET
42	j	98	ILE
43	k	139	VAL
44	l	103	MET
44	l	134	ARG
45	m	82	LEU
45	m	115	ILE
46	n	62	LEU
47	o	47	ASN
50	r	112	ASN
50	r	115	GLN
51	s	23	GLU
51	s	46	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
51	s	84	THR
53	u	81	VAL
55	w	19	VAL
58	z	43	LYS

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

Mol	Chain	Res	Type
10	A	55	HIS
10	A	61	GLN
10	A	140	ASN
10	A	219	ASN
10	A	220	HIS
11	B	6	ASN
11	B	150	ASN
11	B	231	ASN
12	C	38	HIS
13	D	193	HIS
14	E	101	ASN
14	E	161	GLN
15	F	67	ASN
16	G	85	ASN
19	J	111	HIS
20	K	29	ASN
20	K	90	HIS
22	M	10	GLN
23	N	69	HIS
28	S	20	ASN
28	S	31	ASN
28	S	43	ASN
28	S	63	ASN
28	S	72	ASN
12	U	21	ASN
12	U	37	GLN
12	U	171	ASN
33	a	15	HIS
33	a	57	HIS
33	a	91	ASN
33	a	153	HIS
33	a	262	HIS
34	b	157	GLN
34	b	171	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	b	225	GLN
35	c	76	GLN
35	c	83	HIS
35	c	96	ASN
37	e	77	ASN
38	f	78	HIS
39	g	57	ASN
41	i	11	GLN
41	i	13	ASN
41	i	80	HIS
43	k	81	ASN
43	k	125	HIS
43	k	134	GLN
44	l	3	GLN
45	m	59	ASN
45	m	71	ASN
46	n	26	ASN
46	n	115	ASN
47	o	5	ASN
47	o	46	GLN
50	r	112	ASN
53	u	26	ASN
53	u	43	GLN
53	u	100	HIS
54	v	6	GLN
54	v	16	ASN
54	v	32	ASN
57	y	4	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
31	Y	20/21 (95%)	14 (70%)	4 (20%)
4	3	2892/2907 (99%)	520 (17%)	21 (0%)
5	4	107/108 (99%)	29 (27%)	0
6	5	1506/1520 (99%)	254 (16%)	7 (0%)
7	6	75/76 (98%)	30 (40%)	6 (8%)
8	7	74/75 (98%)	20 (27%)	2 (2%)
9	8	75/76 (98%)	23 (30%)	0
All	All	4749/4783 (99%)	890 (18%)	40 (0%)

All (890) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	3	11	U
4	3	12	A
4	3	13	C
4	3	14	U
4	3	28	G
4	3	37	G
4	3	48	G
4	3	64	U
4	3	65	A
4	3	73	A
4	3	76	A
4	3	77	G
4	3	102	A
4	3	103	G
4	3	119	A
4	3	121	U
4	3	126	C
4	3	132	G
4	3	141	A
4	3	142	A
4	3	163	A
4	3	180	A
4	3	184	A
4	3	187	C
4	3	200	A
4	3	203	A
4	3	219	G
4	3	220	A
4	3	225	A
4	3	226	A
4	3	232	A
4	3	234	G
4	3	237	A
4	3	245	U
4	3	246	G
4	3	252	G
4	3	269	A
4	3	276	A
4	3	284	U
4	3	287	G
4	3	295	U
4	3	296	U
4	3	297	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	298	U
4	3	299	A
4	3	309	A
4	3	310	U
4	3	311	G
4	3	315	A
4	3	316	C
4	3	317	U
4	3	319	G
4	3	325	G
4	3	336	C
4	3	345	A
4	3	363	G
4	3	364	A
4	3	365	U
4	3	402	A
4	3	409	A
4	3	410	G
4	3	411	U
4	3	418	G
4	3	419	A
4	3	424	G
4	3	425	U
4	3	426	U
4	3	432	G
4	3	437	A
4	3	440	C
4	3	460	G
4	3	483	A
4	3	517	G
4	3	539	U
4	3	540	A
4	3	548	A
4	3	562	C
4	3	565	C
4	3	566	G
4	3	567	U
4	3	573	A
4	3	581	A
4	3	583	U
4	3	596	G
4	3	598	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	607	U
4	3	608	A
4	3	610	G
4	3	620	G
4	3	636	U
4	3	637	U
4	3	638	A
4	3	648	G
4	3	649	A
4	3	650	G
4	3	663	A
4	3	670	G
4	3	673	A
4	3	681	A
4	3	682	A
4	3	689	U
4	3	691	G
4	3	705	A
4	3	712	A
4	3	716	G
4	3	721	G
4	3	722	C
4	3	765	A
4	3	775	C
4	3	782	U
4	3	792	G
4	3	797	U
4	3	800	C
4	3	810	G
4	3	811	G
4	3	817	A
4	3	819	U
4	3	820	U
4	3	824	A
4	3	828	A
4	3	829	A
4	3	840	G
4	3	846	U
4	3	847	C
4	3	854	A
4	3	862	U
4	3	881	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	882	C
4	3	883	A
4	3	901	C
4	3	902	U
4	3	904	C
4	3	906	G
4	3	918	G
4	3	924	C
4	3	926	U
4	3	927	A
4	3	928	G
4	3	930	C
4	3	932	U
4	3	934	C
4	3	935	U
4	3	936	G
4	3	944	U
4	3	947	A
4	3	949	C
4	3	951	C
4	3	952	U
4	3	953	G
4	3	970	U
4	3	981	A
4	3	982	G
4	3	994	U
4	3	997	G
4	3	998	C
4	3	1008	A
4	3	1010	G
4	3	1016	A
4	3	1019	A
4	3	1026	A
4	3	1032	A
4	3	1039	G
4	3	1045	A
4	3	1049	U
4	3	1058	U
4	3	1060	G
4	3	1061	A
4	3	1068	U
4	3	1074	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	1080	A
4	3	1082	A
4	3	1084	C
4	3	1095	U
4	3	1096	U
4	3	1097	G
4	3	1098	G
4	3	1099	C
4	3	1102	A
4	3	1104	A
4	3	1105	A
4	3	1106	G
4	3	1107	C
4	3	1110	C
4	3	1111	C
4	3	1113	U
4	3	1114	C
4	3	1115	G
4	3	1120	A
4	3	1122	G
4	3	1123	A
4	3	1125	U
4	3	1130	A
4	3	1132	C
4	3	1138	A
4	3	1145	G
4	3	1146	A
4	3	1147	G
4	3	1165	U
4	3	1167	U
4	3	1168	A
4	3	1170	C
4	3	1176	U
4	3	1177	A
4	3	1178	A
4	3	1204	A
4	3	1208	A
4	3	1209	U
4	3	1210	A
4	3	1212	C
4	3	1215	G
4	3	1234	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	1235	U
4	3	1236	G
4	3	1242	G
4	3	1246	U
4	3	1250	A
4	3	1251	G
4	3	1253	G
4	3	1256	A
4	3	1257	G
4	3	1266	G
4	3	1268	U
4	3	1280	G
4	3	1281	A
4	3	1283	A
4	3	1285	U
4	3	1286	G
4	3	1292	A
4	3	1301	G
4	3	1304	U
4	3	1313	G
4	3	1325	C
4	3	1328	A
4	3	1329	U
4	3	1330	U
4	3	1369	U
4	3	1378	C
4	3	1380	U
4	3	1388	G
4	3	1393	A
4	3	1406	A
4	3	1407	U
4	3	1412	A
4	3	1423	A
4	3	1424	U
4	3	1431	A
4	3	1444	C
4	3	1445	U
4	3	1446	G
4	3	1448	U
4	3	1456	C
4	3	1463	G
4	3	1467	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	1480	A
4	3	1481	U
4	3	1483	G
4	3	1486	U
4	3	1487	U
4	3	1502	A
4	3	1504	G
4	3	1508	G
4	3	1510	A
4	3	1513	A
4	3	1514	U
4	3	1515	A
4	3	1519	A
4	3	1522	U
4	3	1534	A
4	3	1535	A
4	3	1541	A
4	3	1546	U
4	3	1550	G
4	3	1569	A
4	3	1570	A
4	3	1571	G
4	3	1580	G
4	3	1582	G
4	3	1584	U
4	3	1585	A
4	3	1588	A
4	3	1603	A
4	3	1612	U
4	3	1617	U
4	3	1618	U
4	3	1619	A
4	3	1641	A
4	3	1642	G
4	3	1643	A
4	3	1644	A
4	3	1645	C
4	3	1650	A
4	3	1651	C
4	3	1661	A
4	3	1668	G
4	3	1680	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	1681	G
4	3	1682	C
4	3	1694	A
4	3	1708	G
4	3	1727	U
4	3	1737	G
4	3	1748	U
4	3	1749	A
4	3	1764	U
4	3	1769	A
4	3	1770	A
4	3	1771	C
4	3	1780	A
4	3	1789	C
4	3	1791	A
4	3	1807	C
4	3	1808	C
4	3	1809	A
4	3	1816	A
4	3	1823	U
4	3	1836	A
4	3	1854	A
4	3	1855	A
4	3	1866	G
4	3	1869	G
4	3	1878	A
4	3	1886	C
4	3	1910	G
4	3	1913	G
4	3	1920	A
4	3	1936	G
4	3	1937	G
4	3	1938	U
4	3	1943	A
4	3	1944	A
4	3	1962	U
4	3	1974	U
4	3	1977	A
4	3	1978	U
4	3	1979	G
4	3	1998	U
4	3	1999	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	2000	U
4	3	2004	G
4	3	2028	G
4	3	2030	A
4	3	2038	A
4	3	2040	A
4	3	2041	C
4	3	2042	A
4	3	2050	G
4	3	2057	C
4	3	2062	C
4	3	2063	G
4	3	2067	A
4	3	2068	G
4	3	2069	A
4	3	2076	G
4	3	2084	A
4	3	2099	U
4	3	2100	G
4	3	2106	G
4	3	2108	C
4	3	2110	U
4	3	2111	U
4	3	2112	A
4	3	2114	C
4	3	2115	A
4	3	2116	U
4	3	2117	G
4	3	2118	U
4	3	2119	A
4	3	2123	A
4	3	2124	A
4	3	2125	U
4	3	2126	A
4	3	2130	A
4	3	2131	G
4	3	2133	A
4	3	2134	G
4	3	2139	C
4	3	2140	G
4	3	2144	C
4	3	2150	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	2152	C
4	3	2153	U
4	3	2154	A
4	3	2157	A
4	3	2164	G
4	3	2166	U
4	3	2169	G
4	3	2170	A
4	3	2173	G
4	3	2175	U
4	3	2180	U
4	3	2181	A
4	3	2182	C
4	3	2183	U
4	3	2184	A
4	3	2185	C
4	3	2193	U
4	3	2194	G
4	3	2195	U
4	3	2198	G
4	3	2199	C
4	3	2200	U
4	3	2201	G
4	3	2202	U
4	3	2207	A
4	3	2211	G
4	3	2212	U
4	3	2219	U
4	3	2220	A
4	3	2221	U
4	3	2227	U
4	3	2228	U
4	3	2233	A
4	3	2246	G
4	3	2247	G
4	3	2259	OMG
4	3	2274	A
4	3	2276	A
4	3	2287	G
4	3	2291	U
4	3	2295	A
4	3	2298	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	2305	C
4	3	2311	G
4	3	2313	U
4	3	2316	G
4	3	2319	A
4	3	2327	U
4	3	2329	G
4	3	2333	G
4	3	2335	A
4	3	2336	A
4	3	2342	U
4	3	2343	A
4	3	2344	A
4	3	2353	G
4	3	2355	C
4	3	2358	U
4	3	2366	A
4	3	2391	G
4	3	2393	C
4	3	2397	G
4	3	2410	C
4	3	2411	C
4	3	2414	U
4	3	2422	G
4	3	2431	U
4	3	2433	A
4	3	2437	G
4	3	2438	A
4	3	2443	A
4	3	2449	U
4	3	2456	A
4	3	2477	A
4	3	2481	U
4	3	2482	U
4	3	2483	C
4	3	2484	A
4	3	2486	A
4	3	2488	C
4	3	2499	U
4	3	2510	G
4	3	2512	U
4	3	2513	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	2521	A
4	3	2526	A
4	3	2537	G
4	3	2543	G
4	3	2574	A
4	3	2575	G
4	3	2580	A
4	3	2585	A
4	3	2593	U
4	3	2594	C
4	3	2605	G
4	3	2610	A
4	3	2617	U
4	3	2618	C
4	3	2621	U
4	3	2623	U
4	3	2637	A
4	3	2638	G
4	3	2654	U
4	3	2668	A
4	3	2669	G
4	3	2697	C
4	3	2698	U
4	3	2722	G
4	3	2734	C
4	3	2737	G
4	3	2741	A
4	3	2752	G
4	3	2756	A
4	3	2760	C
4	3	2764	U
4	3	2765	A
4	3	2773	A
4	3	2786	A
4	3	2798	A
4	3	2799	U
4	3	2804	C
4	3	2806	A
4	3	2807	G
4	3	2808	A
4	3	2810	A
4	3	2813	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	3	2822	C
4	3	2824	A
4	3	2829	G
4	3	2839	A
4	3	2853	U
4	3	2862	U
4	3	2863	G
4	3	2871	G
4	3	2876	G
4	3	2884	C
4	3	2887	A
4	3	2888	U
4	3	2895	A
4	3	2896	G
4	3	2899	C
5	4	9	C
5	4	10	C
5	4	11	A
5	4	13	G
5	4	14	U
5	4	22	G
5	4	23	A
5	4	28	C
5	4	33	U
5	4	35	C
5	4	39	U
5	4	41	C
5	4	48	A
5	4	49	G
5	4	54	U
5	4	56	A
5	4	60	C
5	4	64	G
5	4	65	G
5	4	80	G
5	4	82	U
5	4	83	U
5	4	84	C
5	4	85	A
5	4	88	G
5	4	89	A
5	4	99	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
5	4	106	A
5	4	108	C
6	5	6	C
6	5	10	G
6	5	33	A
6	5	40	G
6	5	48	C
6	5	49	C
6	5	52	A
6	5	57	U
6	5	61	A
6	5	106	C
6	5	114	C
6	5	115	A
6	5	117	U
6	5	120	A
6	5	149	G
6	5	154	G
6	5	163	G
6	5	167	A
6	5	171	A
6	5	173	U
6	5	176	G
6	5	180	C
6	5	182	C
6	5	185	G
6	5	186	A
6	5	189	C
6	5	190	A
6	5	197	A
6	5	198	A
6	5	199	A
6	5	220	U
6	5	223	G
6	5	239	A
6	5	241	C
6	5	243	G
6	5	247	G
6	5	262	G
6	5	263	C
6	5	269	A
6	5	275	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	5	285	G
6	5	301	G
6	5	302	A
6	5	324	C
6	5	325	A
6	5	326	C
6	5	328	G
6	5	341	C
6	5	342	G
6	5	344	G
6	5	347	G
6	5	348	C
6	5	350	G
6	5	359	A
6	5	363	U
6	5	368	C
6	5	369	A
6	5	370	A
6	5	374	G
6	5	380	G
6	5	383	U
6	5	394	U
6	5	408	U
6	5	416	U
6	5	418	U
6	5	419	A
6	5	422	A
6	5	425	G
6	5	426	U
6	5	447	G
6	5	449	A
6	5	450	U
6	5	452	A
6	5	461	G
6	5	462	G
6	5	464	A
6	5	468	G
6	5	470	U
6	5	475	U
6	5	476	U
6	5	477	U
6	5	481	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	5	482	G
6	5	488	U
6	5	489	U
6	5	493	A
6	5	494	A
6	5	495	U
6	5	507	A
6	5	509	C
6	5	510	U
6	5	516	C
6	5	517	C
6	5	522	G
6	5	525	7MG
6	5	530	A
6	5	531	A
6	5	545	A
6	5	557	A
6	5	560	U
6	5	562	U
6	5	570	A
6	5	571	A
6	5	574	C
6	5	575	A
6	5	579	G
6	5	586	G
6	5	594	A
6	5	595	G
6	5	628	A
6	5	650	A
6	5	661	G
6	5	662	G
6	5	683	G
6	5	700	G
6	5	715	A
6	5	719	G
6	5	720	U
6	5	721	G
6	5	728	G
6	5	745	U
6	5	752	G
6	5	768	G
6	5	790	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	5	791	A
6	5	811	A
6	5	812	A
6	5	814	C
6	5	818	A
6	5	825	A
6	5	829	G
6	5	836	C
6	5	838	A
6	5	839	U
6	5	867	A
6	5	883	A
6	5	885	U
6	5	908	A
6	5	910	C
6	5	911	G
6	5	921	G
6	5	922	G
6	5	929	C
6	5	930	A
6	5	955	U
6	5	964	A
6	5	970	A
6	5	971	A
6	5	972	A
6	5	982	A
6	5	987	U
6	5	988	G
6	5	989	A
6	5	994	C
6	5	995	U
6	5	996	U
6	5	997	G
6	5	998	G
6	5	999	C
6	5	1000	A
6	5	1002	A
6	5	1007	U
6	5	1009	G
6	5	1015	U
6	5	1018	U
6	5	1019	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	5	1020	G
6	5	1022	G
6	5	1023	G
6	5	1024	U
6	5	1025	U
6	5	1027	A
6	5	1028	C
6	5	1029	C
6	5	1030	G
6	5	1032	G
6	5	1034	G
6	5	1036	C
6	5	1044	G
6	5	1047	U
6	5	1056	U
6	5	1072	G
6	5	1076	U
6	5	1078	G
6	5	1083	A
6	5	1085	G
6	5	1086	U
6	5	1092	A
6	5	1118	A
6	5	1121	U
6	5	1122	U
6	5	1123	G
6	5	1124	U
6	5	1134	C
6	5	1135	U
6	5	1141	U
6	5	1142	G
6	5	1158	A
6	5	1159	A
6	5	1170	C
6	5	1171	A
6	5	1172	A
6	5	1188	A
6	5	1189	U
6	5	1202	A
6	5	1203	A
6	5	1213	A
6	5	1215	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	5	1231	U
6	5	1232	C
6	5	1233	G
6	5	1235	C
6	5	1255	A
6	5	1260	U
6	5	1271	U
6	5	1273	A
6	5	1274	G
6	5	1276	U
6	5	1279	G
6	5	1291	C
6	5	1294	U
6	5	1296	C
6	5	1297	G
6	5	1306	A
6	5	1312	G
6	5	1320	A
6	5	1321	G
6	5	1337	U
6	5	1338	A
6	5	1343	G
6	5	1345	G
6	5	1372	C
6	5	1373	A
6	5	1397	G
6	5	1417	U
6	5	1426	U
6	5	1427	U
6	5	1428	A
6	5	1429	G
6	5	1462	G
6	5	1466	U
6	5	1467	A
6	5	1469	G
6	5	1472	G
6	5	1478	A
6	5	1480	G
6	5	1481	U
6	5	1482	A
6	5	1492	G
6	5	1494	MA6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	5	1504	G
6	5	1505	G
6	5	1510	C
6	5	1511	C
7	6	2	G
7	6	6	U
7	6	9	A
7	6	11	C
7	6	13	C
7	6	14	A
7	6	15	A
7	6	16	C
7	6	17	U
7	6	18	G
7	6	19	A
7	6	20	U
7	6	21	A
7	6	22	G
7	6	35	G
7	6	37	A
7	6	44	A
7	6	45	G
7	6	46	G
7	6	47	U
7	6	54	U
7	6	55	U
7	6	57	G
7	6	59	G
7	6	61	C
7	6	70	U
7	6	71	C
7	6	72	C
7	6	75	C
7	6	76	A
8	7	4	U
8	7	11	U
8	7	13	U
8	7	15	G
8	7	16	U
8	7	17	G
8	7	19	A
8	7	20	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
8	7	21	A
8	7	22	A
8	7	34	G
8	7	44	G
8	7	46	U
8	7	47	U
8	7	48	G
8	7	51	G
8	7	57	A
8	7	71	C
8	7	73	C
8	7	75	A
9	8	3	A
9	8	9	A
9	8	10	G
9	8	15	G
9	8	16	U
9	8	17	U
9	8	18	G
9	8	19	G
9	8	20	U
9	8	21	A
9	8	30	G
9	8	31	A
9	8	41	A
9	8	46	G
9	8	47	U
9	8	48	C
9	8	58	A
9	8	60	C
9	8	71	G
9	8	73	A
9	8	74	C
9	8	75	C
9	8	76	A
31	Y	36	U
31	Y	37	G
31	Y	40	G
31	Y	42	U
31	Y	43	A
31	Y	46	G
31	Y	47	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
31	Y	49	U
31	Y	50	U
31	Y	51	C
31	Y	52	A
31	Y	53	A
31	Y	54	A
31	Y	55	A

All (40) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
4	3	315	A
4	3	410	G
4	3	881	A
4	3	901	C
4	3	1124	G
4	3	1209	U
4	3	1352	G
4	3	1583	G
4	3	1618	U
4	3	2116	U
4	3	2117	G
4	3	2129	U
4	3	2130	A
4	3	2152	C
4	3	2165	A
4	3	2169	G
4	3	2182	C
4	3	2183	U
4	3	2184	A
4	3	2194	G
4	3	2764	U
6	5	196	G
6	5	994	C
6	5	995	U
6	5	1024	U
6	5	1123	G
6	5	1158	A
6	5	1273	A
7	6	17	U
7	6	18	G
7	6	46	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	6	54	U
7	6	58	A
7	6	71	C
8	7	10	G
8	7	46	U
31	Y	42	U
31	Y	49	U
31	Y	51	C
31	Y	54	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	OMG	3	2259	4,62,8	23,26,27	2.63	6 (26%)	32,38,41	2.46	11 (34%)
6	7MG	5	525	6	23,26,27	3.62	11 (47%)	27,39,42	2.17	9 (33%)
6	B8T	5	1377	6	19,22,23	3.33	8 (42%)	25,31,34	0.84	1 (4%)
4	2MA	3	2511	4,62	22,25,26	4.13	9 (40%)	32,37,40	3.56	12 (37%)
6	MA6	5	1493	6	23,26,27	1.40	3 (13%)	33,38,41	3.24	14 (42%)
6	5MC	5	1375	6	19,22,23	4.56	8 (42%)	26,32,35	1.01	2 (7%)
6	MA6	5	1494	6	23,26,27	1.40	3 (13%)	33,38,41	3.26	14 (42%)
4	1MG	3	783	4	23,26,27	3.04	6 (26%)	33,39,42	2.32	8 (24%)

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
4	OMG	3	2259	4,62,8	-	3/9/27/28	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	7MG	5	525	6	-	2/7/37/38	0/3/3/3
6	B8T	5	1377	6	-	1/7/27/28	0/2/2/2
4	2MA	3	2511	4,62	-	1/7/25/26	0/3/3/3
6	MA6	5	1493	6	-	0/11/29/30	0/3/3/3
6	5MC	5	1375	6	-	0/7/25/26	0/2/2/2
6	MA6	5	1494	6	-	3/11/29/30	0/3/3/3
4	1MG	3	783	4	-	0/7/25/26	0/3/3/3

All (54) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	3	2511	2MA	C4-N3	11.99	1.49	1.34
6	5	1375	5MC	C6-C5	10.10	1.51	1.34
6	5	1375	5MC	C5-C4	9.23	1.51	1.44
4	3	783	1MG	C2-N3	8.63	1.47	1.33
6	5	525	7MG	C8-N9	8.60	1.51	1.45
4	3	2511	2MA	C2-N3	8.12	1.48	1.34
6	5	1375	5MC	C4-N3	7.95	1.46	1.34
6	5	1377	B8T	C4-N3	7.52	1.45	1.32
4	3	2511	2MA	C6-N1	7.43	1.44	1.35
4	3	2259	OMG	C2-N2	7.34	1.51	1.34
6	5	525	7MG	C5-N7	7.27	1.44	1.35
6	5	1375	5MC	C2-N3	7.20	1.50	1.36
4	3	783	1MG	C4-N3	6.78	1.49	1.34
4	3	783	1MG	C2-N2	6.64	1.45	1.34
6	5	1377	B8T	C2-N3	6.62	1.49	1.36
4	3	2511	2MA	C2-N1	6.43	1.45	1.34
4	3	2259	OMG	C4-N3	6.27	1.48	1.34
6	5	1377	B8T	C6-C5	6.09	1.49	1.35
6	5	525	7MG	C2-N3	5.84	1.47	1.33
6	5	1375	5MC	C4-N4	5.80	1.49	1.34
6	5	525	7MG	C4-N3	5.77	1.47	1.34
6	5	1375	5MC	C6-N1	5.64	1.47	1.38
4	3	2511	2MA	C5-C6	5.36	1.55	1.41
6	5	525	7MG	C4-N9	5.32	1.44	1.37
4	3	2259	OMG	C2-N3	5.29	1.46	1.33
6	5	525	7MG	C2-N2	4.85	1.45	1.34
6	5	1375	5MC	C2-N1	4.69	1.49	1.40
6	5	1377	B8T	C4-N4	4.69	1.45	1.36
6	5	1377	B8T	C2-N1	4.42	1.49	1.40
6	5	1493	MA6	C6-N6	4.18	1.48	1.36
4	3	783	1MG	C2-N1	4.18	1.44	1.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	5	1494	MA6	C6-N6	4.12	1.48	1.36
6	5	525	7MG	C2-N1	3.92	1.47	1.37
6	5	525	7MG	C5-C6	3.71	1.52	1.43
6	5	1377	B8T	C5-C4	3.69	1.49	1.41
4	3	2511	2MA	C5-N7	-3.64	1.32	1.39
4	3	783	1MG	C5-C6	3.48	1.54	1.45
4	3	2511	2MA	C8-N7	3.40	1.38	1.31
4	3	2259	OMG	C2-N1	3.40	1.45	1.37
6	5	525	7MG	C6-N1	3.38	1.45	1.38
6	5	1377	B8T	C6-N1	3.14	1.45	1.38
6	5	1377	B8T	O2-C2	-2.65	1.18	1.23
4	3	783	1MG	C5-N7	-2.55	1.34	1.39
4	3	2259	OMG	C5-C6	2.49	1.53	1.44
6	5	525	7MG	O6-C6	-2.45	1.18	1.23
6	5	1493	MA6	C5-C4	-2.31	1.35	1.39
6	5	1494	MA6	C5-N7	-2.30	1.34	1.39
6	5	1493	MA6	C5-N7	-2.30	1.34	1.39
6	5	1494	MA6	C5-C4	-2.30	1.35	1.39
6	5	1375	5MC	O2-C2	-2.21	1.19	1.23
4	3	2259	OMG	C8-N7	2.16	1.38	1.32
4	3	2511	2MA	C6-N6	-2.13	1.28	1.34
6	5	525	7MG	C5-C4	2.04	1.44	1.37
4	3	2511	2MA	C4-N9	-2.02	1.33	1.37

All (71) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	3	2511	2MA	C1'-N9-C8	-12.59	99.15	127.09
4	3	2511	2MA	C4-N9-C1'	11.03	152.43	126.63
6	5	1494	MA6	N1-C6-N6	-10.42	104.16	116.86
6	5	1493	MA6	N1-C6-N6	-10.37	104.22	116.86
6	5	1493	MA6	C5-C6-N6	6.89	136.24	125.33
6	5	1494	MA6	C5-C6-N6	6.81	136.11	125.33
4	3	783	1MG	C1'-N9-C4	-6.73	106.62	126.49
4	3	2259	OMG	C1'-N9-C8	-6.52	108.21	126.73
4	3	783	1MG	C1'-N9-C8	6.33	144.70	126.73
4	3	2511	2MA	C5-C4-N3	-6.00	120.86	127.18
6	5	1494	MA6	N1-C2-N3	-5.65	120.03	128.58
6	5	1493	MA6	N1-C2-N3	-5.62	120.07	128.58
4	3	2259	OMG	C1'-N9-C4	5.47	142.65	126.49
6	5	1494	MA6	C1'-N9-C8	-5.33	115.27	127.09
6	5	1493	MA6	C1'-N9-C8	-5.31	115.31	127.09

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	3	783	1MG	C5-C4-N3	-5.20	120.11	128.39
6	5	525	7MG	C5-C6-N1	5.02	119.77	110.94
4	3	2259	OMG	C5-C4-N3	-4.94	120.53	128.39
6	5	1494	MA6	C5-C4-N3	-4.78	120.14	126.72
6	5	1493	MA6	C5-C4-N3	-4.75	120.17	126.72
6	5	525	7MG	C2-N3-C4	4.65	120.31	112.30
4	3	2259	OMG	C2-N3-C4	4.59	120.21	112.30
4	3	2511	2MA	N9-C8-N7	-4.52	107.52	113.94
6	5	1494	MA6	N9-C8-N7	-4.39	107.71	113.94
6	5	1493	MA6	N9-C8-N7	-4.23	107.93	113.94
6	5	1493	MA6	C4-N9-C1'	4.23	136.51	126.63
6	5	1494	MA6	C4-N9-C1'	4.17	136.38	126.63
6	5	525	7MG	C5-C4-N3	-4.14	120.36	128.13
6	5	1493	MA6	C4-C5-C6	3.98	120.02	115.91
6	5	1494	MA6	C4-C5-C6	3.88	119.92	115.91
6	5	525	7MG	C4-C5-N7	3.74	109.79	105.38
4	3	783	1MG	C2-N3-C4	3.60	120.08	111.98
4	3	2259	OMG	N9-C8-N7	-3.51	106.89	113.40
6	5	1493	MA6	C2-N1-C6	3.44	120.23	111.83
6	5	1494	MA6	C2-N1-C6	3.40	120.14	111.83
6	5	1494	MA6	C2-N3-C4	3.36	120.03	111.83
6	5	1493	MA6	C2-N3-C4	3.33	119.96	111.83
4	3	783	1MG	N9-C4-N3	3.25	132.46	125.95
4	3	2511	2MA	N3-C2-N1	-3.24	120.05	125.77
6	5	525	7MG	C5-C4-N9	3.14	110.35	106.33
4	3	783	1MG	N9-C8-N7	-3.06	107.73	113.40
6	5	1375	5MC	C5-C6-N1	-3.04	120.01	123.31
4	3	2511	2MA	N3-C4-N9	3.03	130.84	126.99
4	3	2259	OMG	C2-N1-C6	-3.03	119.62	125.11
6	5	1494	MA6	C5-N7-C8	2.98	108.14	103.45
4	3	2511	2MA	C5-N7-C8	2.94	108.06	103.45
6	5	1493	MA6	C5-N7-C8	2.90	108.01	103.45
4	3	2259	OMG	N9-C4-N3	2.85	131.65	125.95
6	5	525	7MG	O6-C6-C5	-2.84	120.64	127.62
6	5	525	7MG	C2-N1-C6	-2.84	119.96	125.11
6	5	1494	MA6	N3-C4-N9	2.84	132.00	127.17
6	5	1493	MA6	N3-C4-N9	2.78	131.90	127.17
4	3	783	1MG	C5-C6-N1	2.69	119.99	115.02
4	3	2259	OMG	C5-C6-N1	2.69	120.09	113.25
6	5	525	7MG	N9-C4-N3	2.61	129.28	125.46
4	3	2511	2MA	CM2-C2-N1	2.57	120.98	117.13
4	3	2511	2MA	C4-N9-C8	2.54	108.41	105.74

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	3	2511	2MA	C4-C5-N7	-2.51	107.71	110.58
4	3	2259	OMG	C8-N7-C5	2.49	108.70	104.26
6	5	1494	MA6	C4-N9-C8	2.48	108.35	105.74
6	5	1377	B8T	C6-C5-C4	2.46	119.97	117.00
4	3	2259	OMG	O6-C6-C5	-2.37	120.27	126.53
6	5	525	7MG	N9-C8-N7	2.34	106.68	103.37
6	5	1493	MA6	C4-N9-C8	2.32	108.17	105.74
6	5	1494	MA6	C4-C5-N7	-2.30	107.95	110.58
6	5	1493	MA6	C4-C5-N7	-2.30	107.96	110.58
4	3	2511	2MA	C5-C4-N9	2.28	108.30	105.81
4	3	2511	2MA	N6-C6-N1	2.24	120.05	117.03
4	3	783	1MG	C8-N7-C5	2.16	108.11	104.26
6	5	1375	5MC	CM5-C5-C6	-2.09	120.03	122.85
4	3	2259	OMG	C4-C5-N7	-2.03	107.45	110.67

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	3	2259	OMG	O4'-C4'-C5'-O5'
4	3	2259	OMG	C3'-C4'-C5'-O5'
4	3	2259	OMG	C1'-C2'-O2'-CM2
6	5	525	7MG	O4'-C4'-C5'-O5'
6	5	1494	MA6	O4'-C4'-C5'-O5'
6	5	525	7MG	C3'-C4'-C5'-O5'
6	5	1494	MA6	C3'-C4'-C5'-O5'
6	5	1494	MA6	C5-C6-N6-C10
6	5	1377	B8T	O4'-C4'-C5'-O5'
4	3	2511	2MA	C4'-C5'-O5'-P

There are no ring outliers.

3 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	3	2259	OMG	2	0
6	5	1493	MA6	1	0
4	3	783	1MG	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 369 ligands modelled in this entry, 333 are monoatomic - leaving 36 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
63	PUT	3	3225	-	5,5,5	0.23	0	4,4,4	0.52	0
64	SPM	3	3243	-	13,13,13	0.34	0	12,12,12	0.91	0
67	LYS	8	103	9	7,8,9	0.87	0	3,8,10	0.32	0
63	PUT	3	3228	-	5,5,5	0.24	0	4,4,4	0.52	0
64	SPM	3	3229	-	13,13,13	0.36	0	12,12,12	0.90	0
65	SPD	3	3230	-	9,9,9	0.33	0	8,8,8	0.86	0
63	PUT	3	3244	-	5,5,5	0.24	0	4,4,4	0.52	0
65	SPD	5	1603	-	9,9,9	0.32	0	8,8,8	0.74	0
63	PUT	3	3224	-	5,5,5	0.24	0	4,4,4	0.52	0
65	SPD	3	3234	-	9,9,9	0.34	0	8,8,8	0.78	0
65	SPD	3	3239	-	9,9,9	0.32	0	8,8,8	0.90	0
63	PUT	5	1604	-	5,5,5	0.23	0	4,4,4	0.52	0
65	SPD	3	3242	-	9,9,9	0.32	0	8,8,8	0.85	0
65	SPD	5	1601	-	9,9,9	0.42	0	8,8,8	1.41	2 (25%)
66	N2P	5	1602	-	6,6,6	0.24	0	5,5,5	0.63	0
65	SPD	3	3238	-	9,9,9	0.32	0	8,8,8	0.89	0
65	SPD	3	3247	-	9,9,9	0.32	0	8,8,8	0.89	0
65	SPD	3	3250	-	9,9,9	0.32	0	8,8,8	0.85	0
65	SPD	3	3248	-	9,9,9	0.32	0	8,8,8	0.86	0
64	SPM	3	3251	-	13,13,13	0.35	0	12,12,12	0.90	0
66	N2P	3	3249	-	6,6,6	0.24	0	5,5,5	0.64	0
63	PUT	3	3227	-	5,5,5	0.23	0	4,4,4	0.51	0
65	SPD	3	3237	-	9,9,9	0.32	0	8,8,8	0.86	0
65	SPD	3	3240	-	9,9,9	0.32	0	8,8,8	0.85	0
65	SPD	3	3241	-	9,9,9	0.31	0	8,8,8	0.84	0
65	SPD	3	3236	-	9,9,9	0.32	0	8,8,8	0.78	0
65	SPD	3	3252	-	9,9,9	0.18	0	8,8,8	0.18	0
65	SPD	3	3232	-	9,9,9	0.32	0	8,8,8	0.82	0
63	PUT	3	3226	-	5,5,5	0.23	0	4,4,4	0.52	0
65	SPD	3	3235	-	9,9,9	0.32	0	8,8,8	0.87	0
66	N2P	3	3245	-	6,6,6	0.24	0	5,5,5	0.64	0
66	N2P	3	3246	-	6,6,6	0.24	0	5,5,5	0.63	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
60	CLM	3	3001	-	20,20,20	2.07	2 (10%)	23,27,27	0.87	1 (4%)
65	SPD	3	3231	-	9,9,9	0.32	0	8,8,8	0.89	0
64	SPM	b	303	-	13,13,13	0.17	0	12,12,12	0.31	0
63	PUT	3	3233	-	5,5,5	0.24	0	4,4,4	0.51	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
63	PUT	3	3225	-	-	0/3/3/3	-
64	SPM	3	3243	-	-	2/11/11/11	-
67	LYS	8	103	9	-	3/6/7/9	-
63	PUT	3	3228	-	-	0/3/3/3	-
64	SPM	3	3229	-	-	4/11/11/11	-
65	SPD	3	3230	-	-	0/7/7/7	-
63	PUT	3	3244	-	-	0/3/3/3	-
65	SPD	5	1603	-	-	1/7/7/7	-
63	PUT	3	3224	-	-	0/3/3/3	-
65	SPD	3	3234	-	-	1/7/7/7	-
65	SPD	3	3239	-	-	1/7/7/7	-
63	PUT	5	1604	-	-	0/3/3/3	-
65	SPD	3	3242	-	-	0/7/7/7	-
65	SPD	5	1601	-	-	1/7/7/7	-
66	N2P	5	1602	-	-	3/4/4/4	-
65	SPD	3	3238	-	-	0/7/7/7	-
65	SPD	3	3247	-	-	0/7/7/7	-
65	SPD	3	3250	-	-	0/7/7/7	-
65	SPD	3	3248	-	-	1/7/7/7	-
64	SPM	3	3251	-	-	2/11/11/11	-
66	N2P	3	3249	-	-	1/4/4/4	-
63	PUT	3	3227	-	-	1/3/3/3	-
65	SPD	3	3237	-	-	0/7/7/7	-
65	SPD	3	3240	-	-	0/7/7/7	-
65	SPD	3	3241	-	-	2/7/7/7	-
65	SPD	3	3236	-	-	2/7/7/7	-
65	SPD	3	3252	-	-	0/7/7/7	-
65	SPD	3	3232	-	-	0/7/7/7	-
63	PUT	3	3226	-	-	0/3/3/3	-
65	SPD	3	3235	-	-	0/7/7/7	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
66	N2P	3	3245	-	-	1/4/4/4	-
66	N2P	3	3246	-	-	2/4/4/4	-
60	CLM	3	3001	-	-	3/20/22/22	0/1/1/1
65	SPD	3	3231	-	-	1/7/7/7	-
64	SPM	b	303	-	-	2/11/11/11	-
63	PUT	3	3233	-	-	0/3/3/3	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	3	3001	CLM	C2-N2	7.39	1.49	1.34
60	3	3001	CLM	O9B-N9	-2.64	1.18	1.22

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
65	5	1601	SPD	C4-C3-C2	-2.28	97.82	113.42
60	3	3001	CLM	C3-N2-C2	-2.20	119.42	123.25
65	5	1601	SPD	C4-C5-N6	-2.05	106.56	112.07

There are no chirality outliers.

All (34) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
67	8	103	LYS	O-C-CA-CB
67	8	103	LYS	N-CA-CB-CG
67	8	103	LYS	C-CA-CB-CG
65	5	1603	SPD	C8-C7-N6-C5
66	5	1602	N2P	C2-C3-C4-C5
66	3	3245	N2P	C2-C3-C4-C5
65	3	3231	SPD	N6-C7-C8-C9
64	3	3243	SPM	C7-C6-N5-C4
64	3	3229	SPM	C7-C8-C9-N10
66	3	3249	N2P	C2-C3-C4-C5
66	3	3246	N2P	C2-C3-C4-C5
64	3	3251	SPM	C6-C7-C8-C9
65	3	3236	SPD	C8-C7-N6-C5
64	3	3229	SPM	C7-C6-N5-C4
66	5	1602	N2P	C3-C4-C5-N1
65	3	3234	SPD	N1-C2-C3-C4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
65	3	3241	SPD	C8-C7-N6-C5
60	3	3001	CLM	N2-C3-C4-O4
65	3	3239	SPD	C8-C7-N6-C5
63	3	3227	PUT	C1-C2-C3-C4
65	5	1601	SPD	N1-C2-C3-C4
66	3	3246	N2P	C3-C4-C5-N1
66	5	1602	N2P	NE2-C1-C2-C3
64	b	303	SPM	C3-C4-N5-C6
64	3	3229	SPM	N10-C11-C12-C13
64	3	3243	SPM	N10-C11-C12-C13
60	3	3001	CLM	C5-C3-N2-C2
64	b	303	SPM	C7-C6-N5-C4
60	3	3001	CLM	C5-C3-C4-O4
65	3	3241	SPD	C2-C3-C4-C5
65	3	3236	SPD	C4-C5-N6-C7
64	3	3229	SPM	C6-C7-C8-C9
64	3	3251	SPM	C7-C8-C9-N10
65	3	3248	SPD	C3-C4-C5-N6

There are no ring outliers.

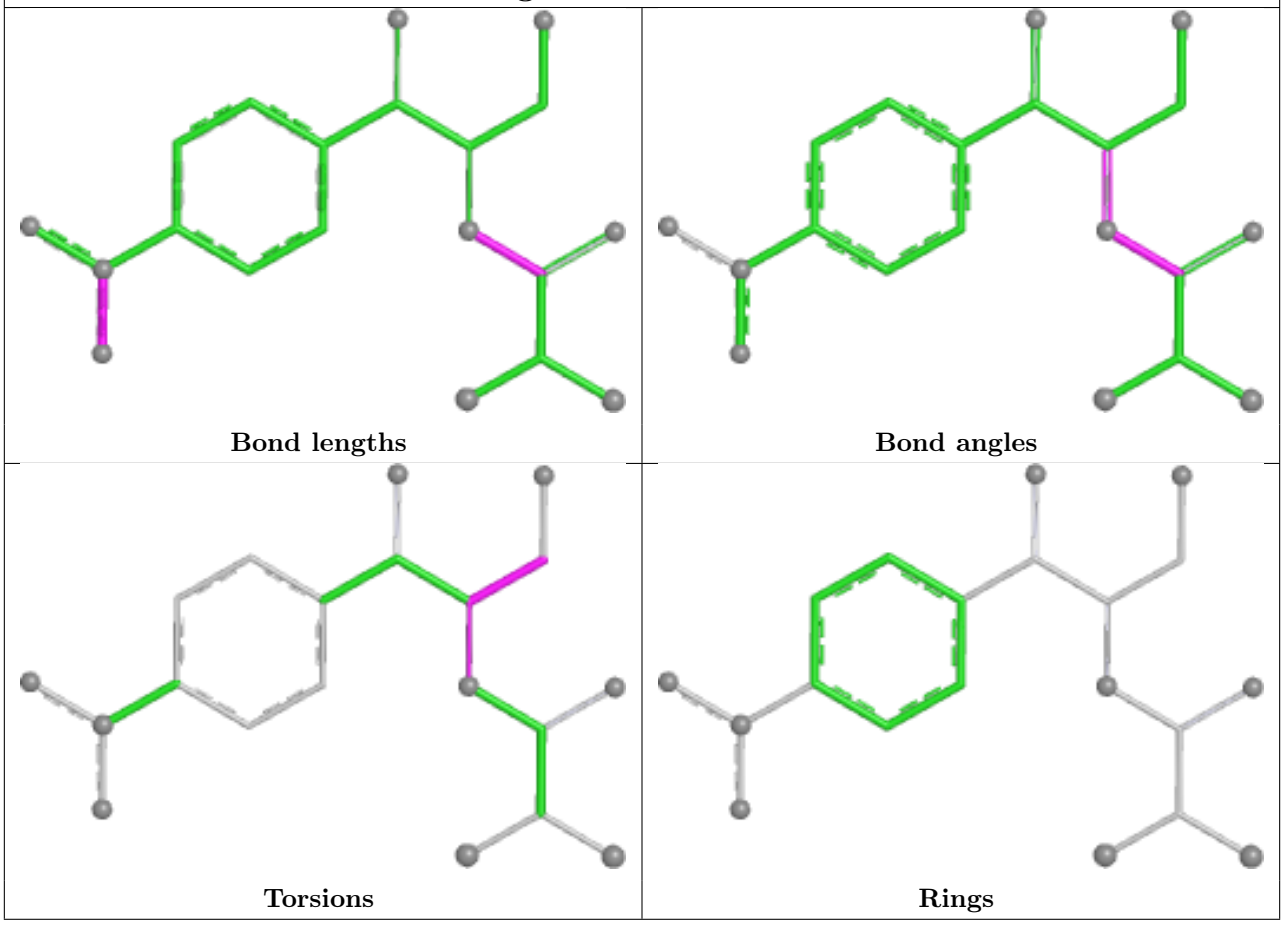
12 monomers are involved in 23 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
64	3	3243	SPM	2	0
63	3	3228	PUT	1	0
64	3	3229	SPM	4	0
65	5	1603	SPD	1	0
65	5	1601	SPD	6	0
65	3	3250	SPD	1	0
64	3	3251	SPM	1	0
65	3	3241	SPD	1	0
65	3	3252	SPD	1	0
60	3	3001	CLM	1	0
64	b	303	SPM	3	0
63	3	3233	PUT	1	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 then 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.

Ligand CLM 3 3001



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.

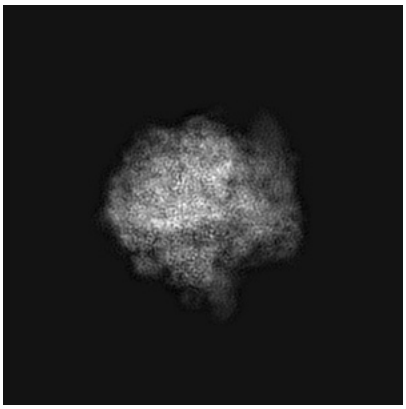
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-17135. These allow visual inspection of the internal detail of the map and identification of artifacts.

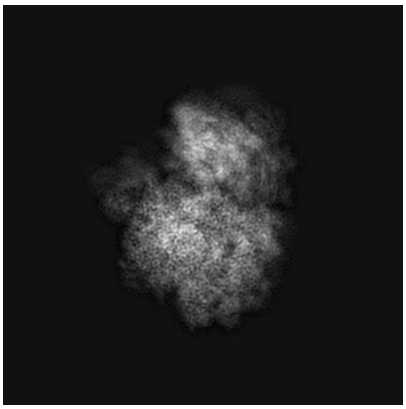
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

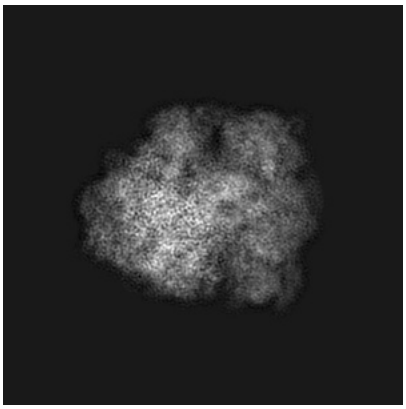
6.1.1 Primary map



X

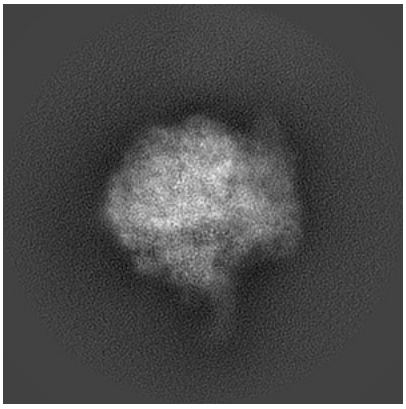


Y

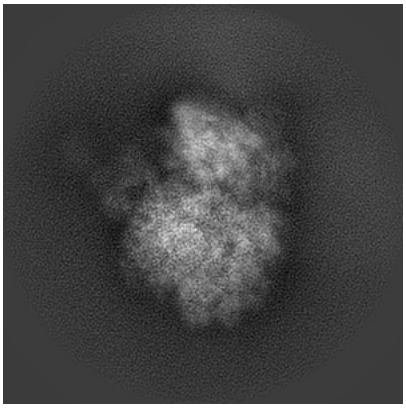


Z

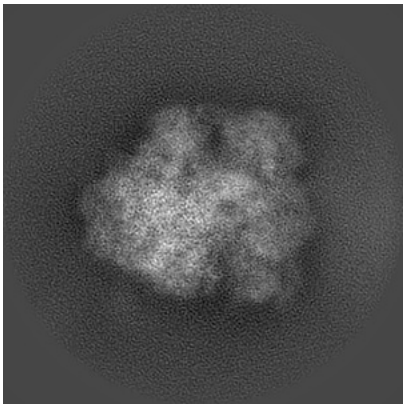
6.1.2 Raw map



X



Y

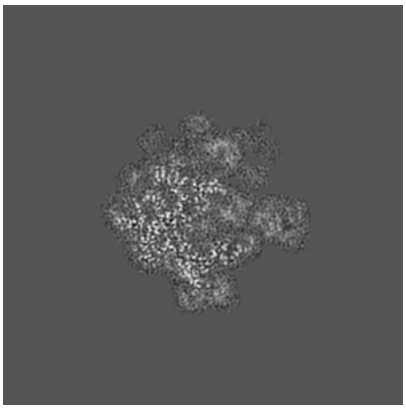


Z

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

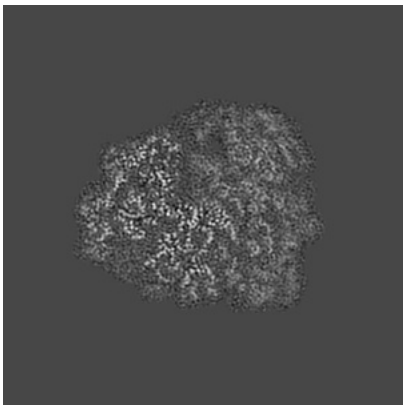
6.2 Central slices (i)

6.2.1 Primary map



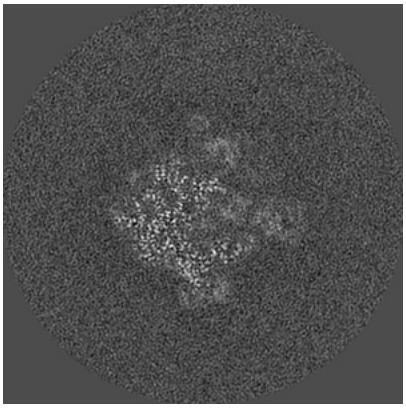
X Index: 128

Y Index: 128

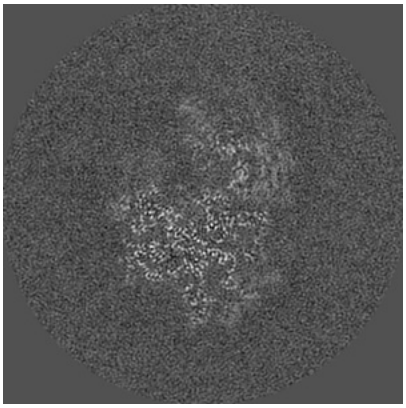


Z Index: 128

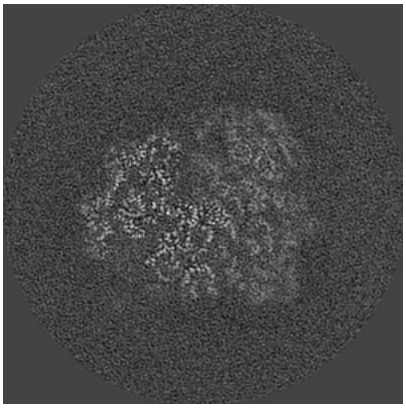
6.2.2 Raw map



X Index: 128



Y Index: 128

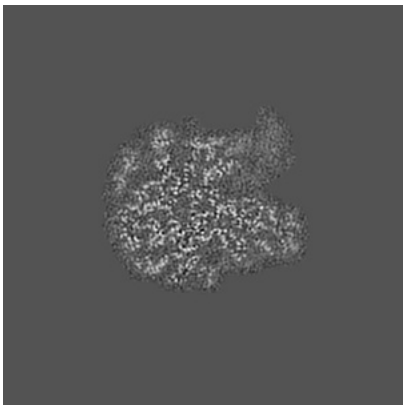


Z Index: 128

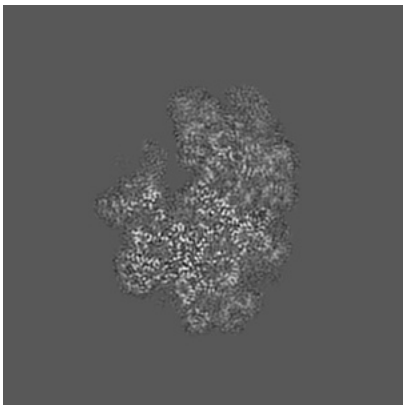
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

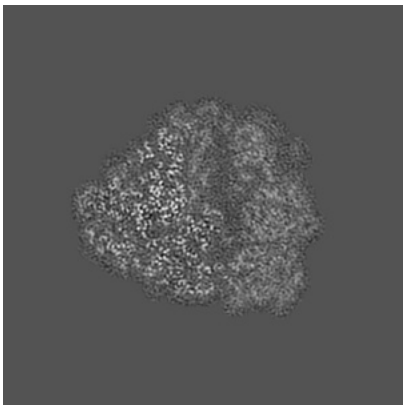
6.3.1 Primary map



X Index: 108

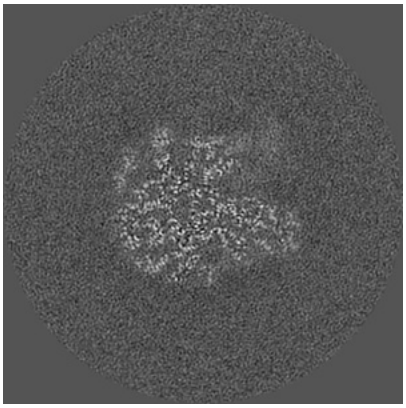


Y Index: 122

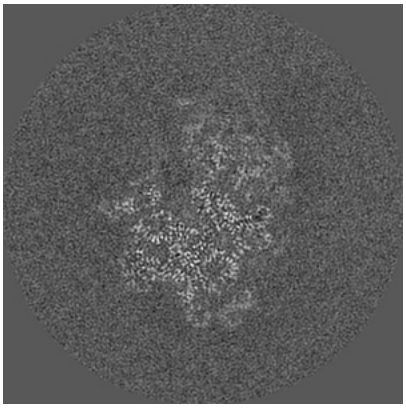


Z Index: 121

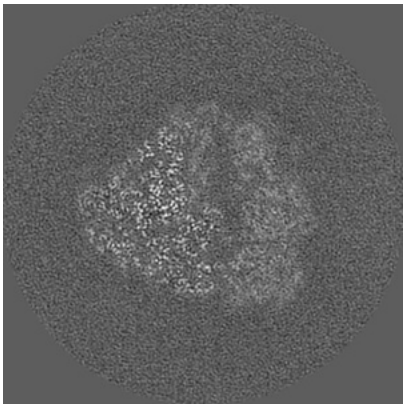
6.3.2 Raw map



X Index: 108



Y Index: 123

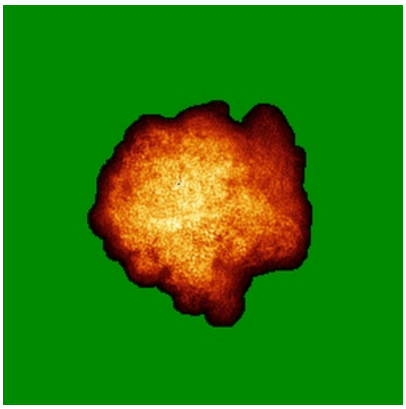


Z Index: 121

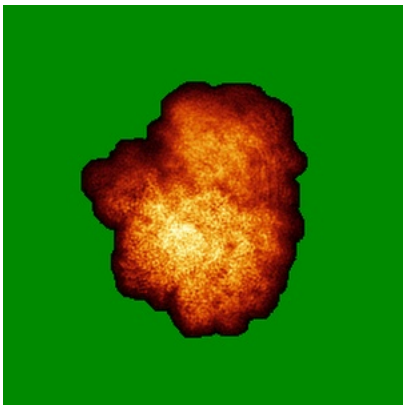
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

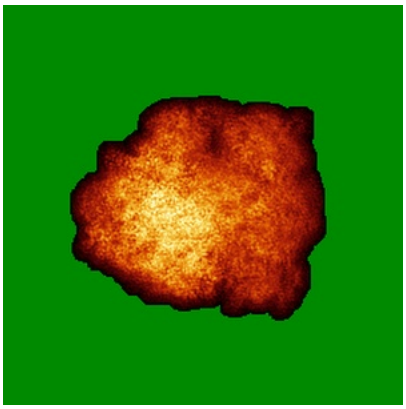
6.4.1 Primary map



X

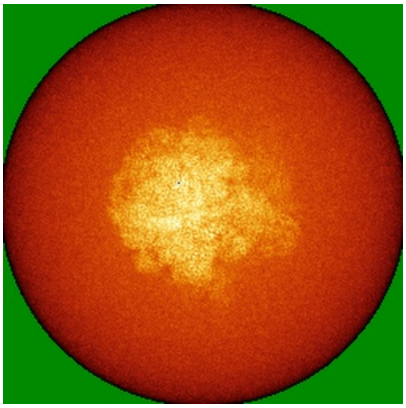


Y

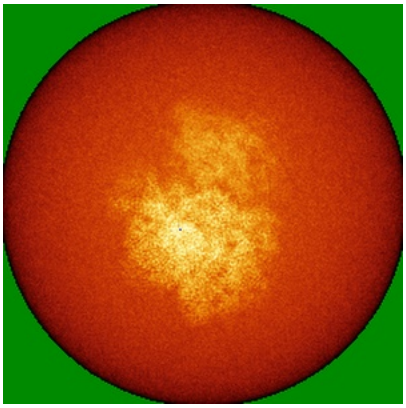


Z

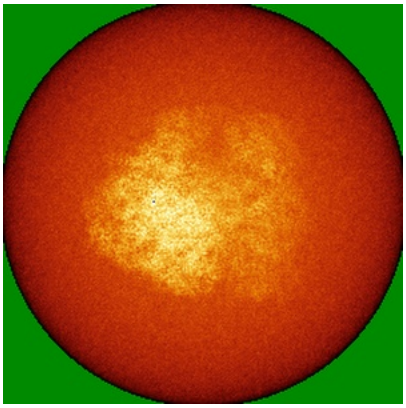
6.4.2 Raw map



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.

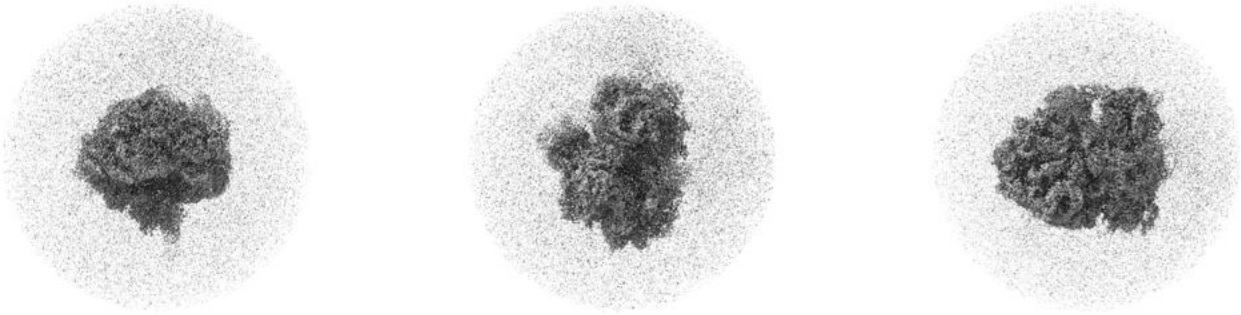
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.99. 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



X Y Z

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.

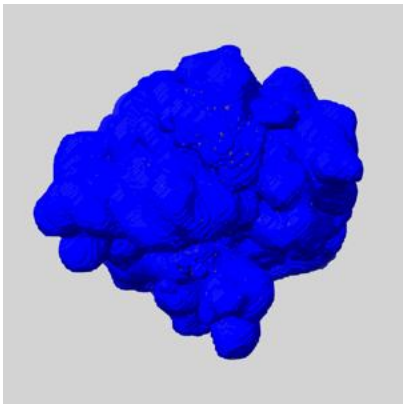
6.6 Mask visualisation

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

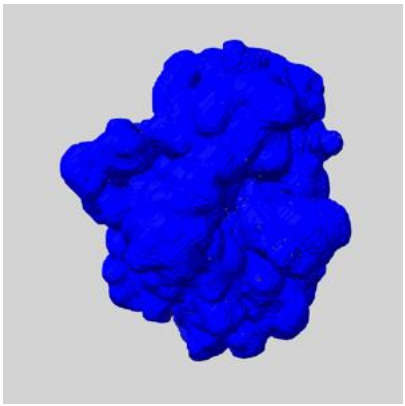
A mask typically either:

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

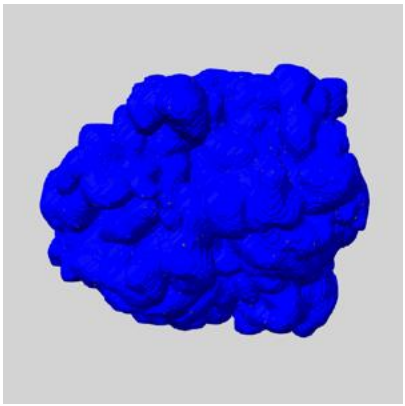
6.6.1 emd_17135_msk_1.map



X



Y

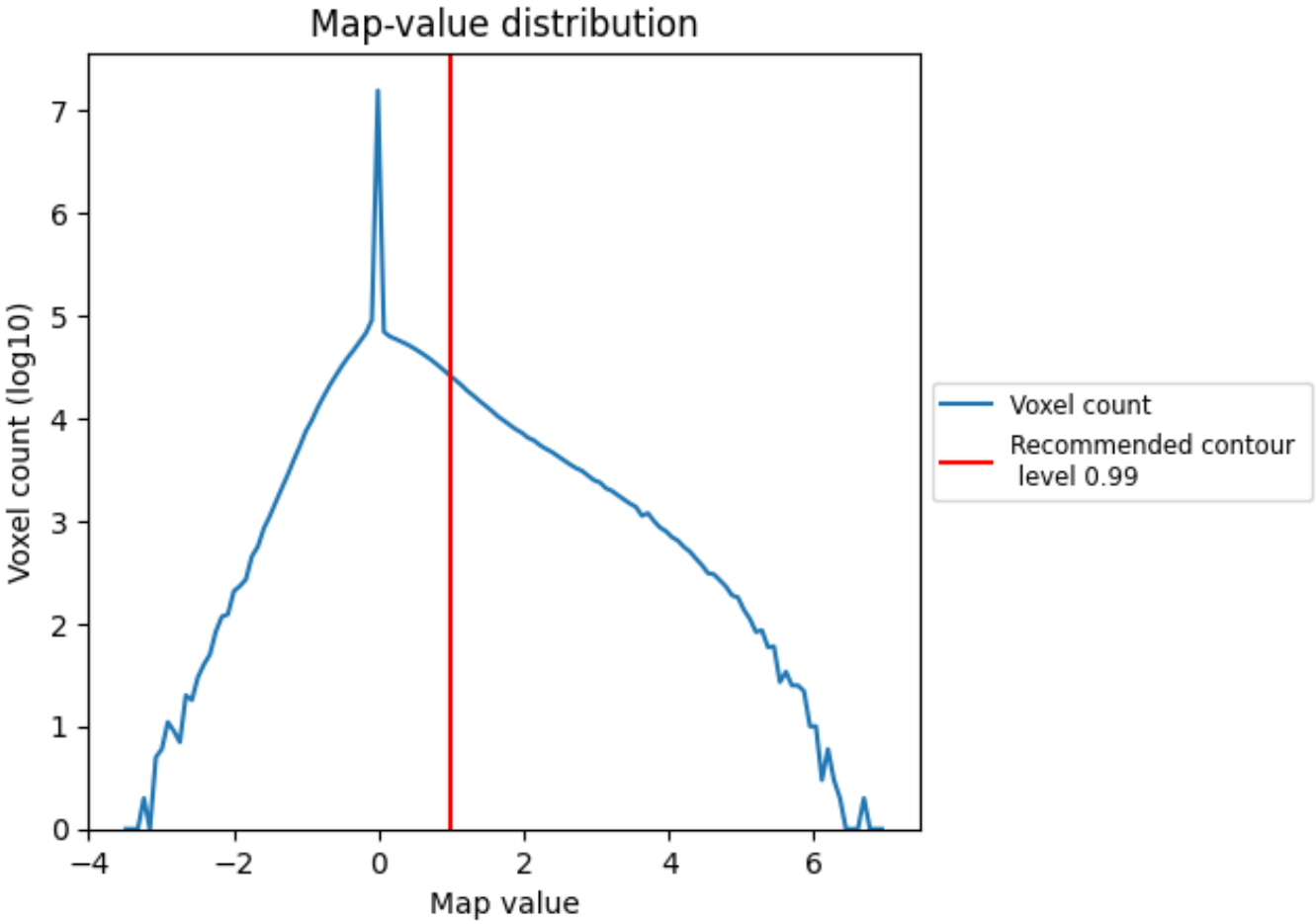


Z

7 Map analysis

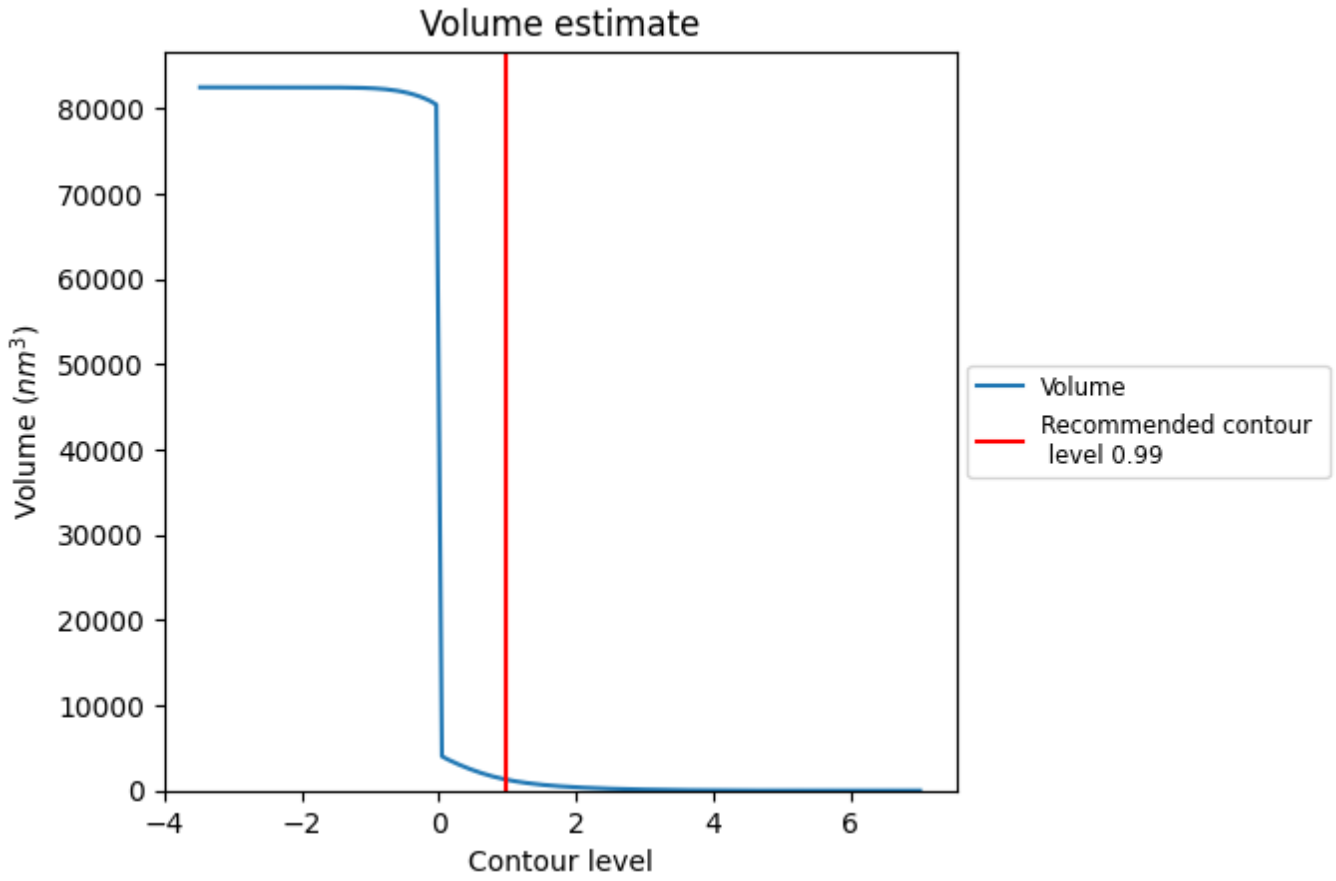
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

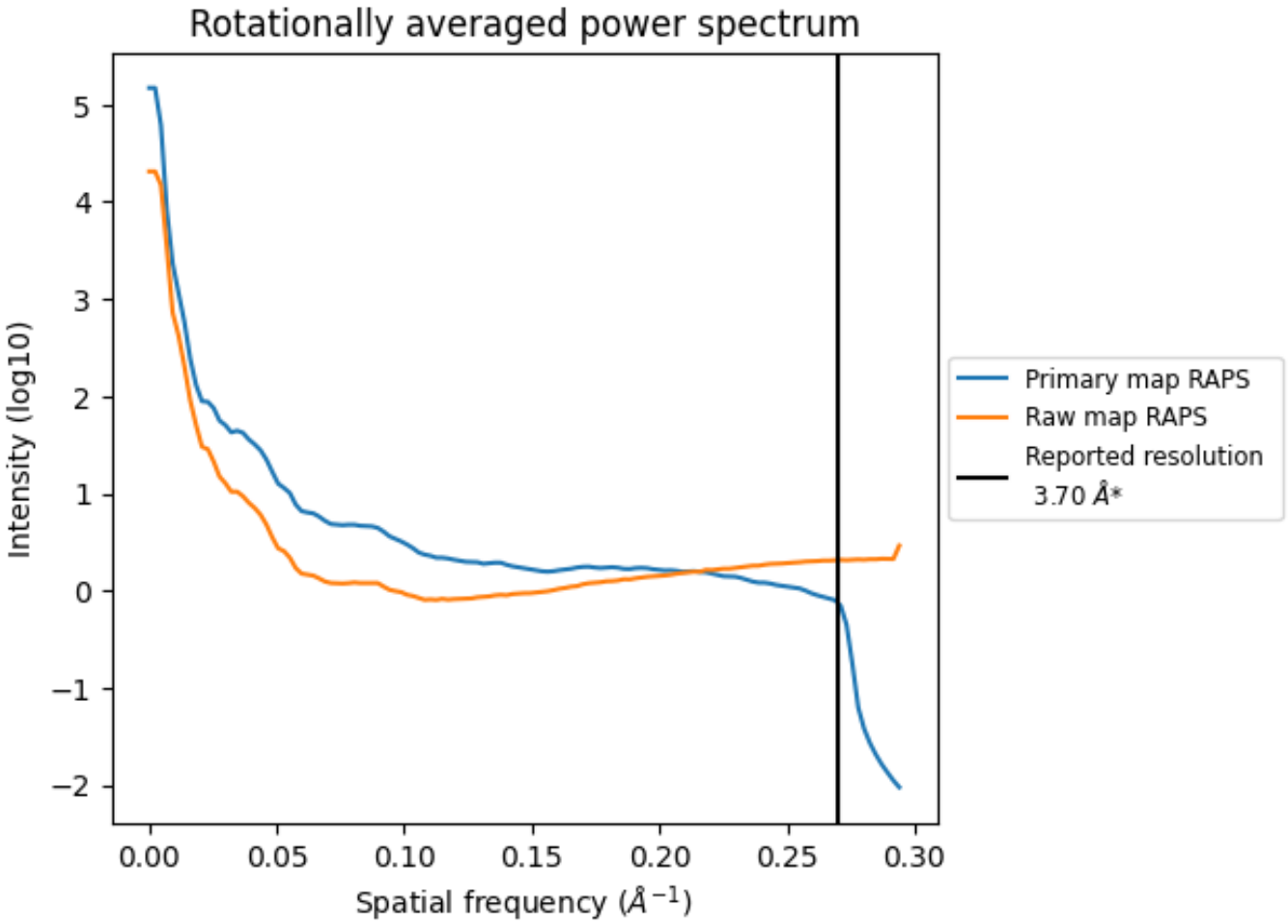
7.2 Volume estimate



The volume at the recommended contour level is 1276 nm^3; this corresponds to an approximate mass of 1153 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)

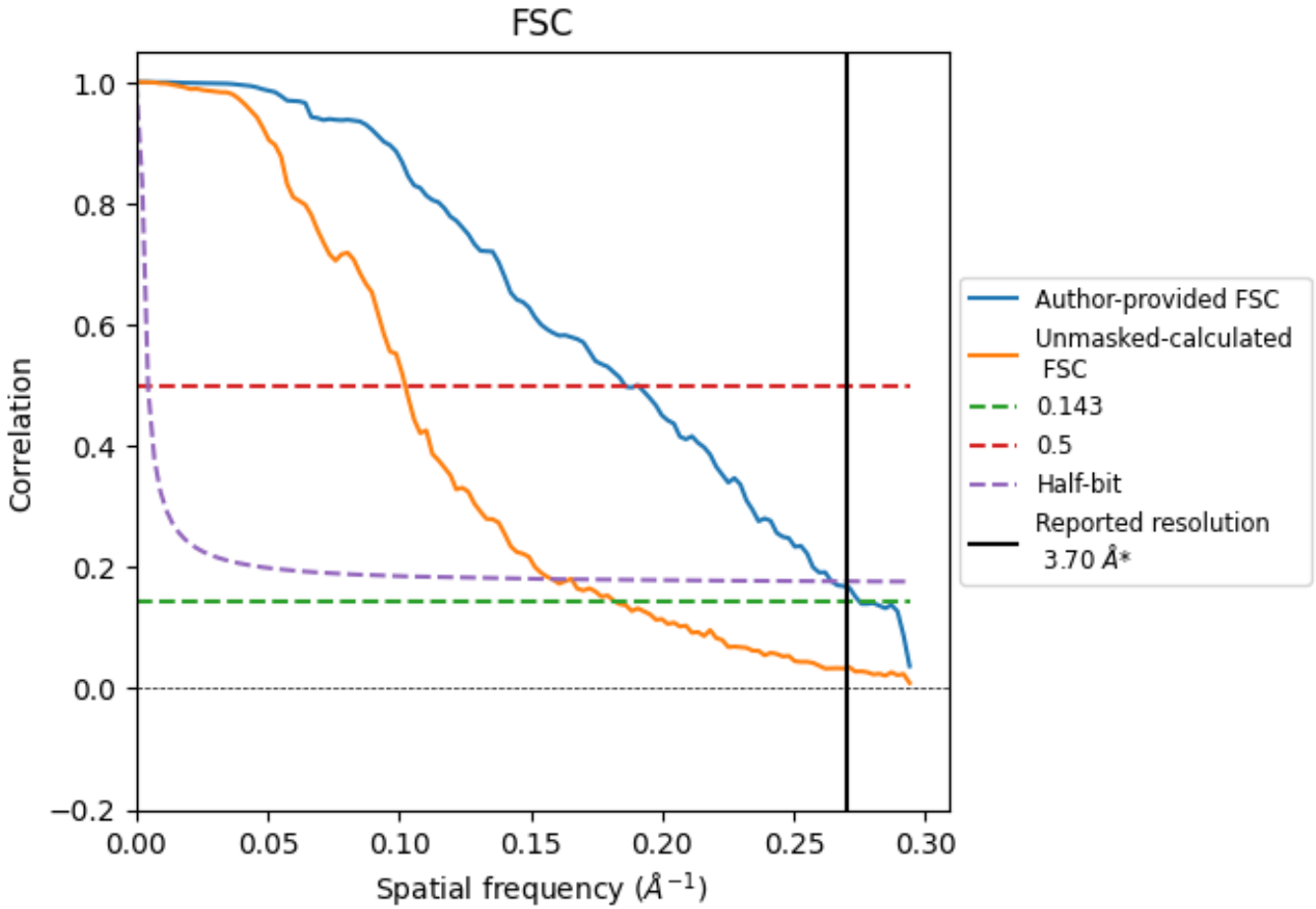


*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

8.2 Resolution estimates (i)

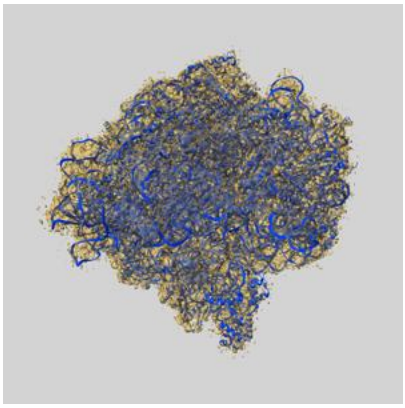
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	3.64	5.39	3.78
Unmasked-calculated*	5.49	9.78	6.32

*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 5.49 differs from the reported value 3.7 by more than 10 %

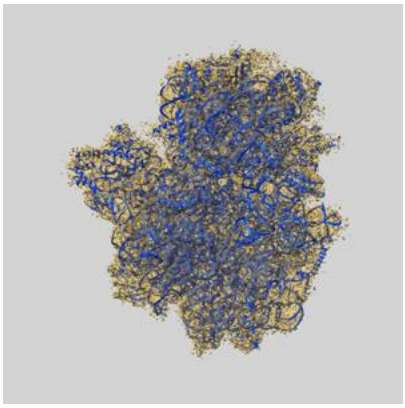
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-17135 and PDB model 8P7Y. Per-residue inclusion information can be found in section 3 on page 21.

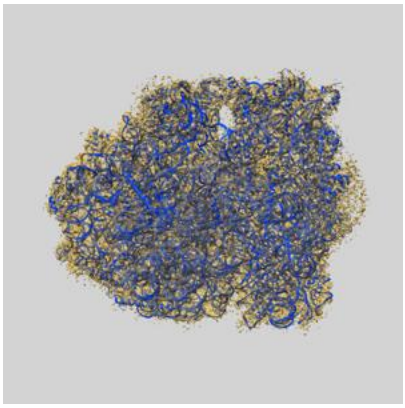
9.1 Map-model overlay



X



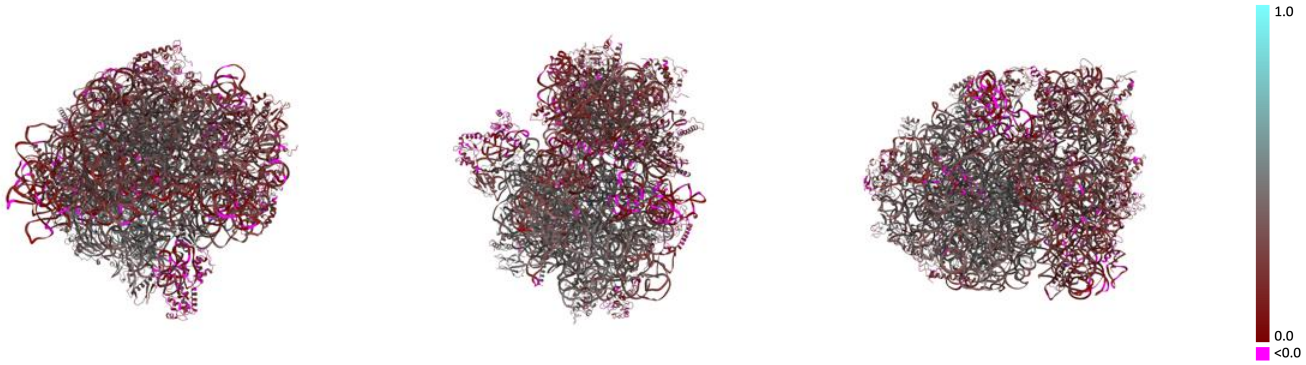
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.99 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.

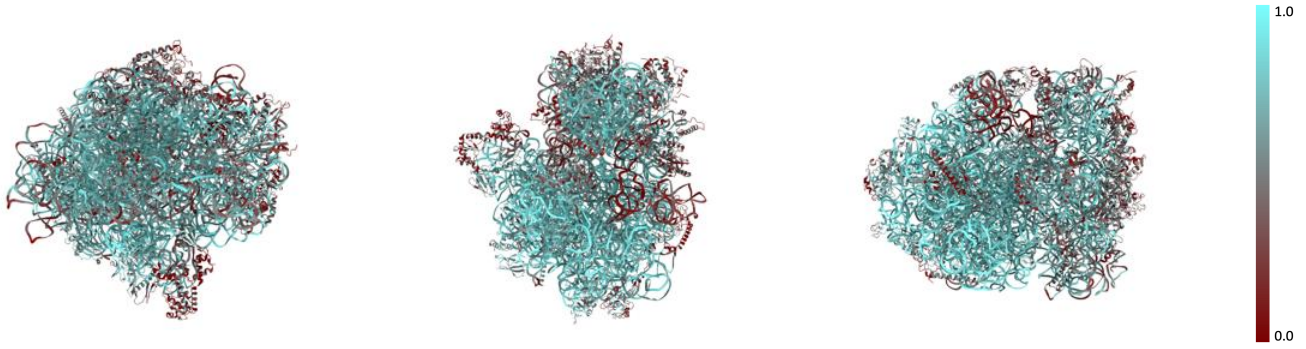
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

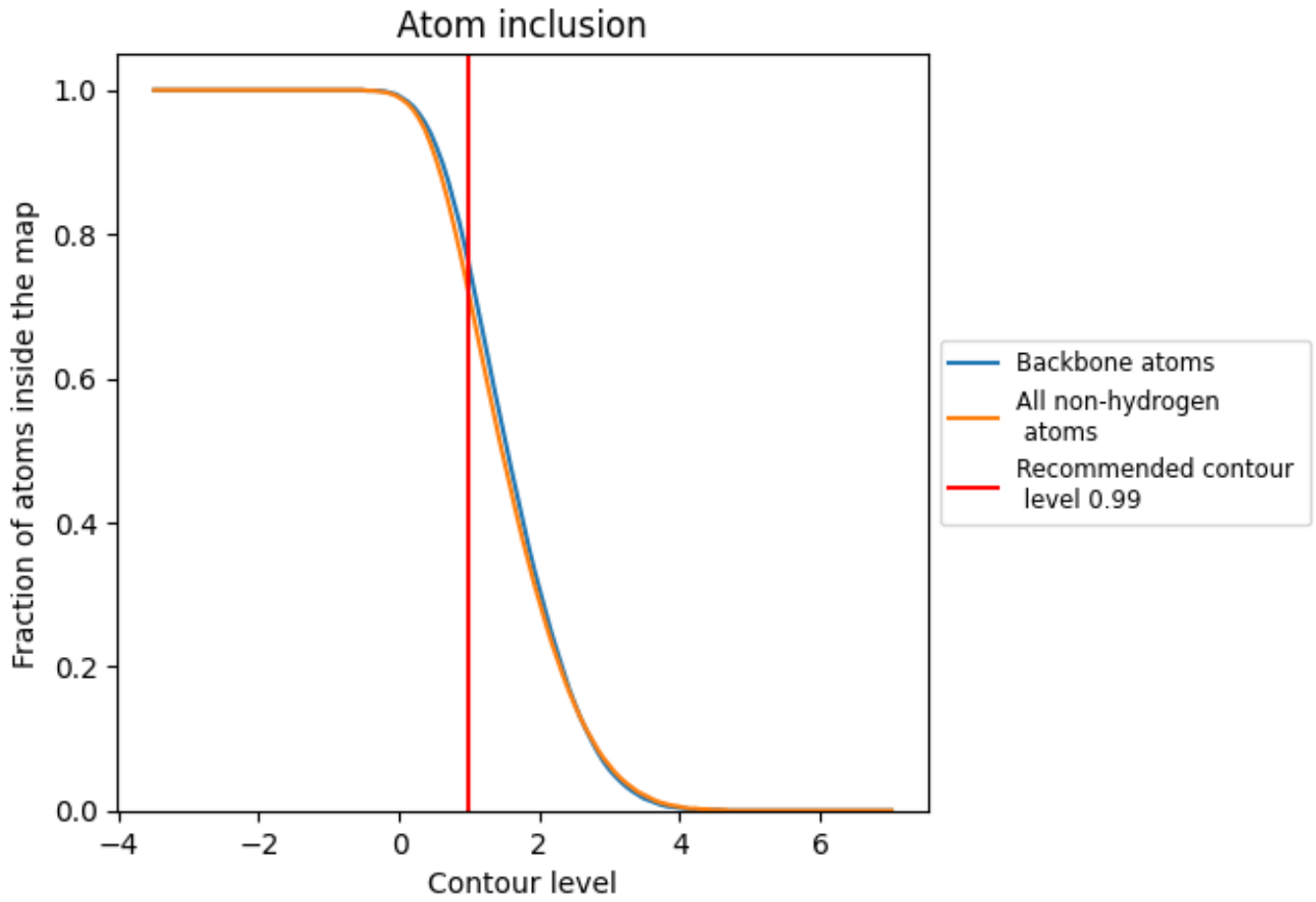
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.99).

9.4 Atom inclusion (i)



At the recommended contour level, 76% of all backbone atoms, 72% 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 (0.99) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7210	0.3300
0	0.8210	0.4660
1	0.7530	0.4350
2	0.7910	0.4480
3	0.8630	0.3880
4	0.8120	0.3110
5	0.7630	0.2720
6	0.0860	0.0460
7	0.7240	0.2390
8	0.4210	0.2310
A	0.3900	0.2460
B	0.4850	0.2990
C	0.3950	0.2110
D	0.5440	0.3410
E	0.3100	0.1970
F	0.3790	0.2120
G	0.4650	0.2610
H	0.4400	0.2320
I	0.4080	0.2670
J	0.4710	0.2480
K	0.5850	0.3300
L	0.3610	0.1790
M	0.5700	0.2930
N	0.4780	0.2240
O	0.4480	0.1960
P	0.3730	0.1870
Q	0.4190	0.2090
R	0.3380	0.1840
S	0.5290	0.2280
T	0.5040	0.2900
U	0.3900	0.2050
X	0.1210	0.1690
Y	0.5180	0.2230
Z	0.2730	0.1910
a	0.7740	0.4350

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
b	0.7490	0.4380
c	0.7160	0.4150
d	0.5080	0.2690
e	0.6090	0.3660
f	0.1700	0.1450
g	0.2200	0.1100
h	0.1010	0.0720
i	0.7720	0.4440
j	0.7270	0.4500
k	0.7210	0.4220
l	0.7490	0.4360
m	0.7840	0.4510
n	0.6730	0.3640
o	0.6900	0.4130
p	0.7640	0.4330
q	0.7370	0.4480
r	0.7650	0.4370
s	0.7080	0.3990
t	0.5520	0.3490
u	0.7400	0.4280
v	0.7610	0.4340
w	0.5780	0.3550
x	0.2470	0.1830
y	0.8120	0.4620
z	0.7460	0.4420