Full wwPDB EM Validation Report (i)

Dec 21, 2025 – 12:42 AM JST

PDB ID	:	9K0Z / pdb_00009k0z
EMDB ID	:	EMD-61959
Title	:	EF-G2 bound 70S ribosome complex of M. smegmatis
Authors	:	Sengupta, J.; Baid, P.
Deposited on	:	2024-10-16
Resolution	:	4.70 Å(reported)
Based on initial model	:	5O61

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 (i) 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 (i)) were used in the production of this report:

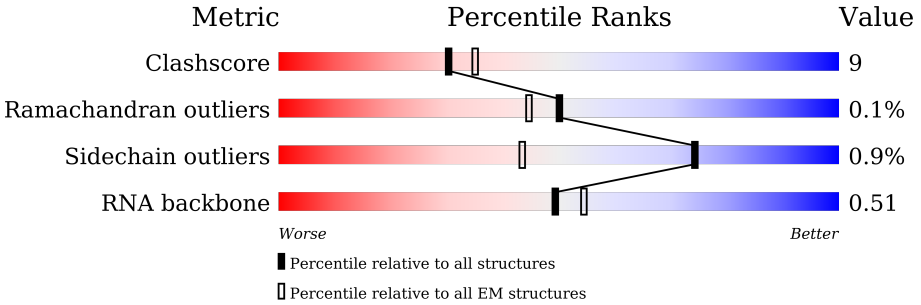
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive 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)	:	2.47

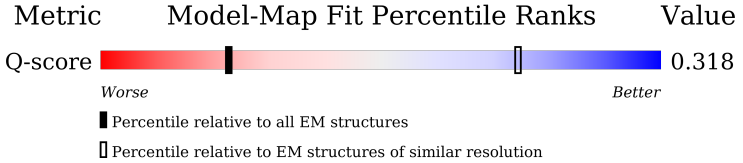
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.70 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	1989 (4.20 - 5.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	2	76	57% 38% 5%
2	3	23	74% 26%
3	4	18	6% 39% 50% 11%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
4	5	69	68% 80% 17%
5	7	709	24% 66% 33%
6	A	1511	54% 38% 8%
7	B	118	67% 25% 8%
8	C	208	69% 31%
9	D	200	63% 36%
10	E	180	72% 28%
11	F	96	52% 47%
12	G	155	72% 28%
13	H	131	74% 26%
14	I	126	65% 34%
15	J	99	61% 36%
16	K	115	71% 28%
17	L	122	66% 34%
18	M	116	67% 33%
19	N	60	73% 27%
20	O	88	73% 27%
21	P	113	66% 34%
22	Q	94	60% 40%
23	R	65	85% 15%
24	S	82	76% 23%
25	T	85	61% 38%
26	U	97	80% 20%
27	V	228	12% 67% 33%
28	W	192	8% 84% 16%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
29	X	79	82% 18%
30	Y	63	81% 19%
31	Z	64	73% 27%
32	a	59	76% 24%
33	b	54	85% 15%
34	c	49	67% 31%
35	d	46	76% 24%
36	e	63	83% 17%
37	f	37	84% 16%
38	g	48	63% 38%
39	i	275	80% 19%
40	j	214	81% 17%
41	k	209	85% 15%
42	l	182	58% 41%
43	m	176	77% 23%
44	n	151	79% 21%
45	o	126	65% 35%
46	p	133	62% 37%
47	q	146	81% 18%
48	r	122	77% 22%
49	s	145	82% 18%
50	t	136	79% 21%
51	u	118	79% 21%
52	v	126	76% 23%
53	w	113	79% 21%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
54	x	124	93% 7%
55	y	100	84% 16%
56	z	114	85% 15%
57	1	105	74% 18% 8%
58	h	3127	61% 31% 6% •

2 Entry composition (i)

There are 62 unique types of molecules in this entry. The entry contains 155552 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called P/P-site Phe-tRNA(Phe).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	2	76	1614	721	287	531	75	0	0

- Molecule 2 is a protein called 50S ribosomal protein bL37.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	3	23	189	111	50	28	0	0

- Molecule 3 is a RNA chain called mRNA fragment.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	4	18	390	176	80	117	17	0	0

- Molecule 4 is a protein called Large ribosomal subunit protein bL12.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	5	69	505	321	83	101	0	0

- Molecule 5 is a protein called Translation elongation factor EF-G.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	7	709	5299	3311	931	1039	18	0	0

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

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

- Molecule 7 is a RNA chain called 5S ribosomal RNA.

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

- Molecule 8 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 9 is a protein called Small ribosomal subunit protein uS4.

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

- Molecule 10 is a protein called Small ribosomal subunit protein uS5.

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

- Molecule 11 is a protein called Small ribosomal subunit protein bS6.

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

- Molecule 12 is a protein called Small ribosomal subunit protein uS7.

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

- Molecule 13 is a protein called Small ribosomal subunit protein uS8.

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

- Molecule 14 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 15 is a protein called Small ribosomal subunit protein uS10.

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

- Molecule 16 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 17 is a protein called Small ribosomal subunit protein uS12.

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

- Molecule 18 is a protein called Small ribosomal subunit protein uS13.

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

- Molecule 19 is a protein called Small ribosomal subunit protein uS14B.

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

- Molecule 20 is a protein called Small ribosomal subunit protein uS15.

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

- Molecule 21 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
21	P	113	891	570	162	159	0	0

- Molecule 22 is a protein called Small ribosomal subunit protein uS17.

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

- Molecule 23 is a protein called Small ribosomal subunit protein bS18B.

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

- Molecule 24 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	S	82	662	425	124	112	1	0	0

- Molecule 25 is a protein called Small ribosomal subunit protein bS20.

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

- Molecule 26 is a protein called Large ribosomal subunit protein uL23.

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

- Molecule 27 is a protein called Small ribosomal subunit protein uS2.

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

- Molecule 28 is a protein called Large ribosomal subunit protein bL25.

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

- Molecule 29 is a protein called Large ribosomal subunit protein bL27.

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

- Molecule 30 is a protein called Large ribosomal subunit protein bL28.

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

- Molecule 31 is a protein called Large ribosomal subunit protein uL29.

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

- Molecule 32 is a protein called Large ribosomal subunit protein uL30.

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

- Molecule 33 is a protein called Large ribosomal subunit protein bL32.

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

- Molecule 34 is a protein called Large ribosomal subunit protein bL33A.

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

- Molecule 35 is a protein called Large ribosomal subunit protein bL34.

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

- Molecule 36 is a protein called Large ribosomal subunit protein bL35.

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

- Molecule 37 is a protein called 50S ribosomal protein L36.

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

- Molecule 38 is a protein called Large ribosomal subunit protein bL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	g	48	364	225	63	71	5	0	0

- Molecule 39 is a protein called Large ribosomal subunit protein uL2.

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

- Molecule 40 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 41 is a protein called Large ribosomal subunit protein uL4.

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

- Molecule 42 is a protein called Large ribosomal subunit protein uL5.

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

- Molecule 43 is a protein called Large ribosomal subunit protein uL6.

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

- Molecule 44 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	n	151	1018	635	188	194	1	0	0

- Molecule 45 is a protein called Large ribosomal subunit protein uL10.

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

- Molecule 46 is a protein called Large ribosomal subunit protein uL11.

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

- Molecule 47 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 48 is a protein called 50S ribosomal protein L14.

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

- Molecule 49 is a protein called Large ribosomal subunit protein uL15.

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

- Molecule 50 is a protein called Large ribosomal subunit protein uL16.

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

- Molecule 51 is a protein called Large ribosomal subunit protein bL17.

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

- Molecule 52 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
52	v	126	956	586	199	171	0	0

- Molecule 53 is a protein called 50S ribosomal protein L19.

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

- Molecule 54 is a protein called Large ribosomal subunit protein bL20.

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

- Molecule 55 is a protein called Large ribosomal subunit protein bL21.

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

- Molecule 56 is a protein called Large ribosomal subunit protein uL22.

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

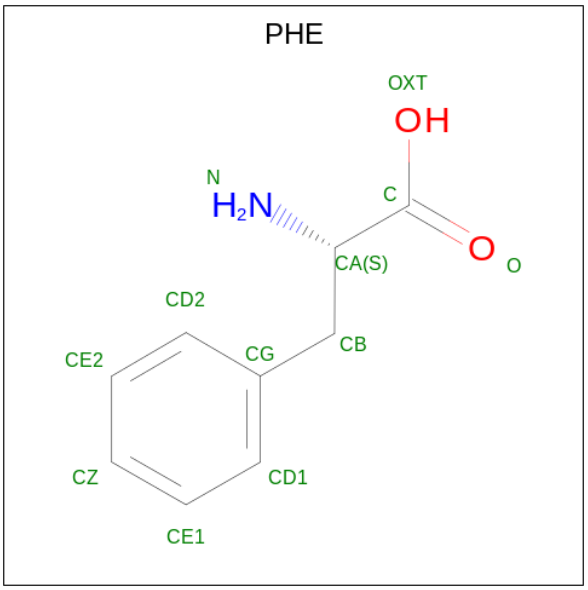
- Molecule 57 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	1	97	732	456	137	137	2	0	0

- Molecule 58 is a RNA chain called 23S ribosomal RNA.

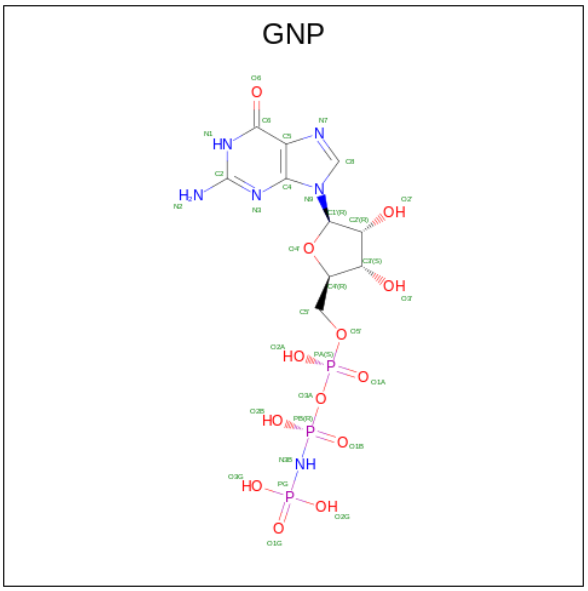
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
58	h	3071	65953	29397	12129	21356	3071	0	0

- Molecule 59 is PHENYLALANINE (CCD ID: PHE) (formula: $C_9H_{11}NO_2$).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
59	2	1	11	9	1	1	0

- Molecule 60 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (CCD ID: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
60	7	1	32	10	6	13	3	0

- Molecule 61 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
61	F	1	1	1	0
61	R	1	1	1	0
61	X	1	1	1	0
61	i	3	3	3	0
61	l	1	1	1	0
61	t	1	1	1	0
61	z	1	1	1	0
61	h	3	3	3	0

- Molecule 62 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
62	N	1	1	1	0
62	R	1	1	1	0
62	Y	1	1	1	0
62	c	1	1	1	0
62	f	1	1	1	0
62	g	1	1	1	0

3 Residue-property plots (i)

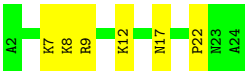
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: P/P-site Phe-tRNA(Phe)

Chain 2:

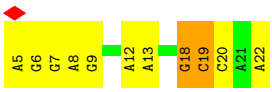
- Molecule 2: 50S ribosomal protein bL37

Chain 3:



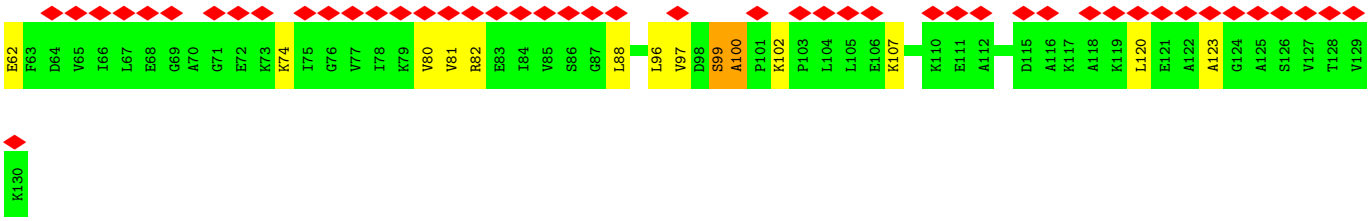
- Molecule 3: mRNA fragment

Chain 4:



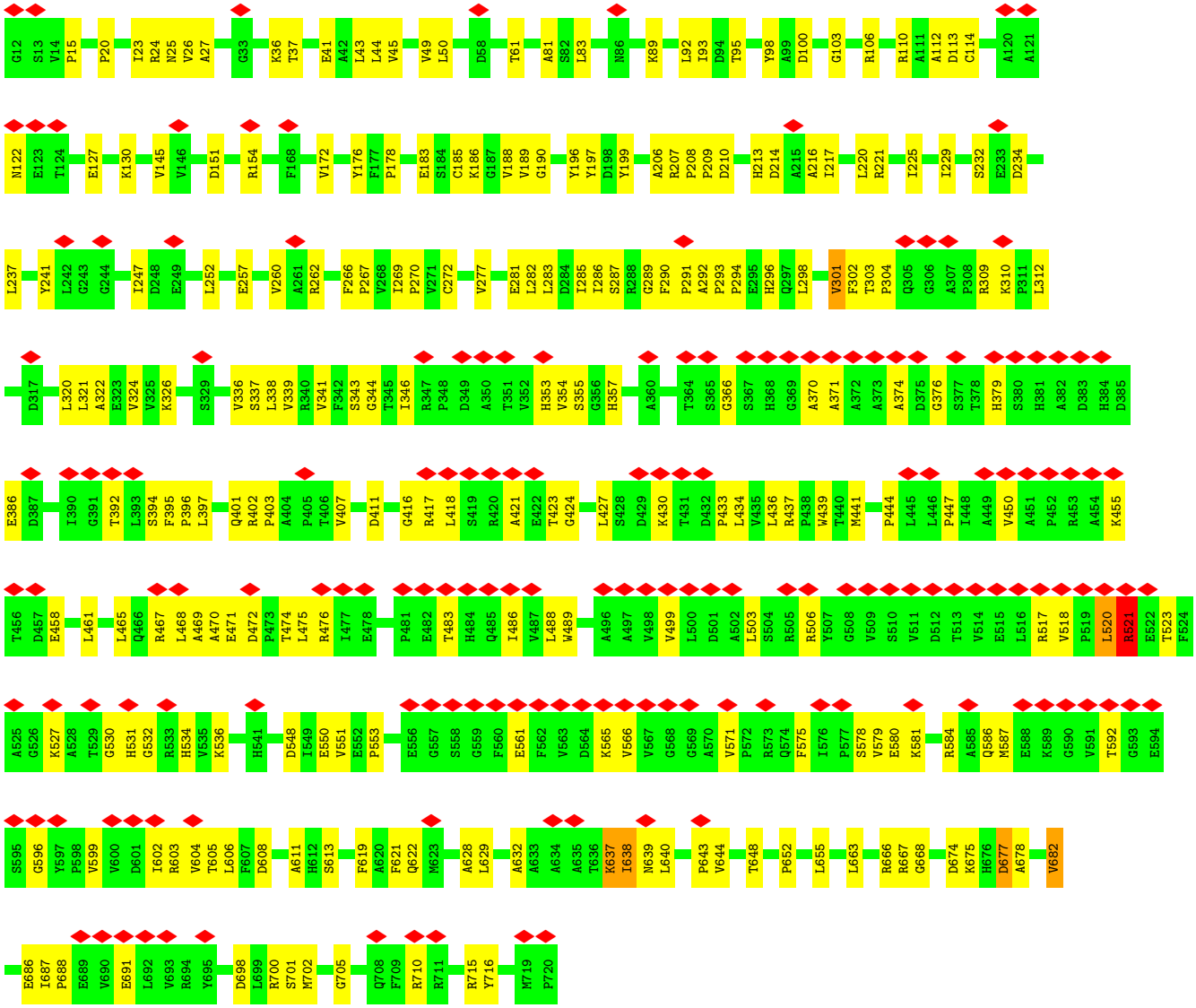
- Molecule 4: Large ribosomal subunit protein bL12

Chain 5:



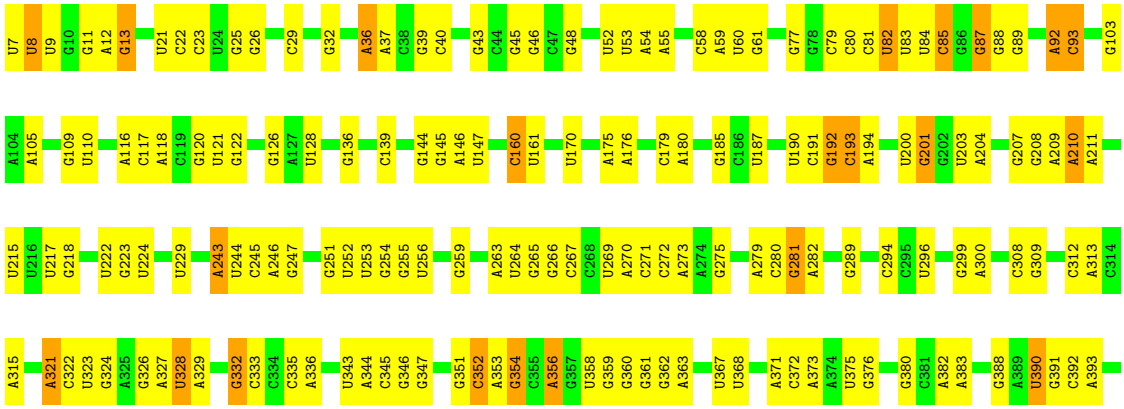
- Molecule 5: Translation elongation factor EF-G

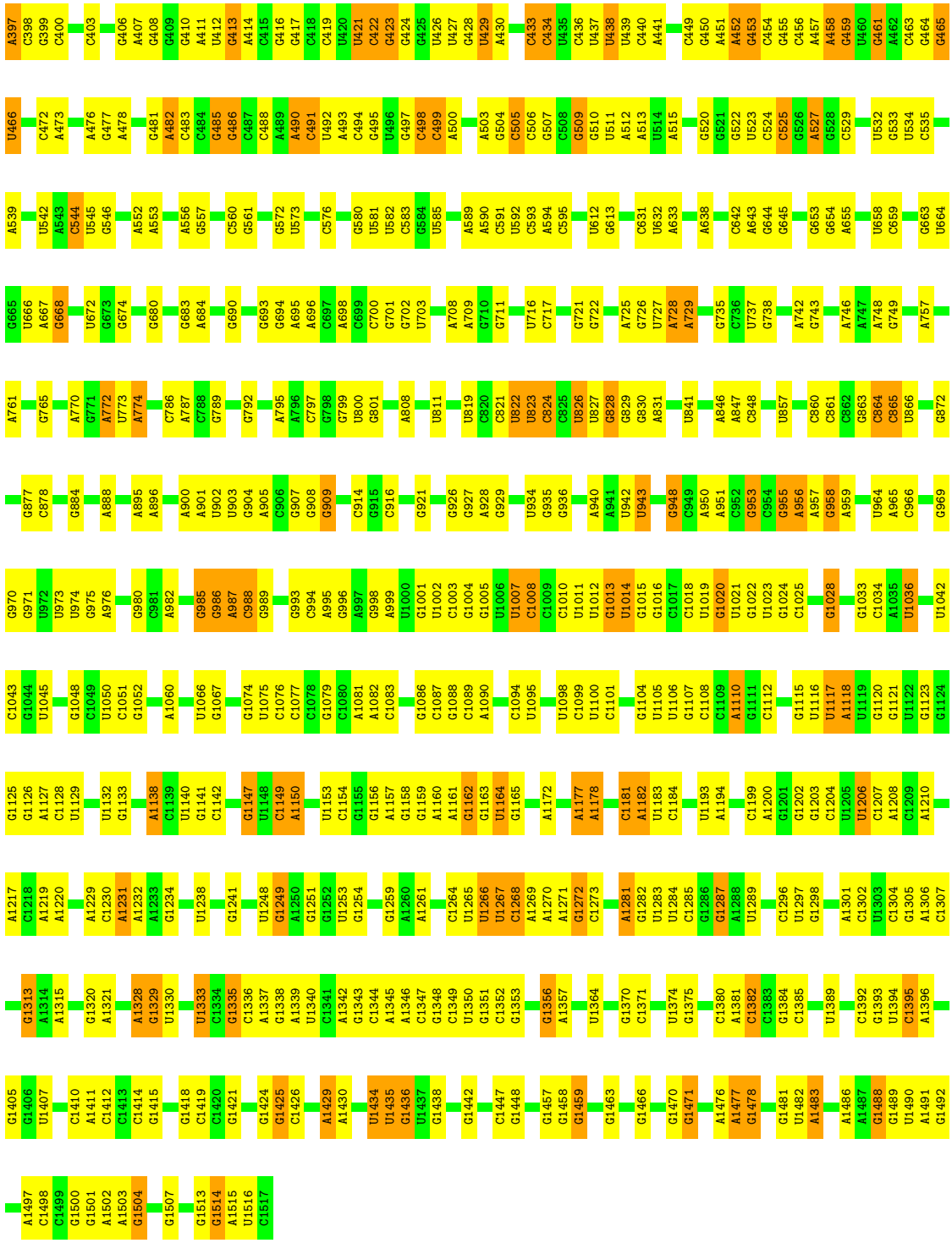
Chain 7:



- Molecule 6: 16S ribosomal RNA

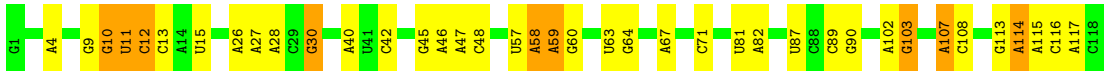
Chain A:





• Molecule 7: 5S ribosomal RNA

Chain B: 67% 25% 8%



• Molecule 8: Small ribosomal subunit protein uS3

Chain C: 69% 31%

G2 N6 G9 F10 R11 S20 Y23 K26 Q27 Y28 K29 D30 Y31 V32 K33 E34 D35 V36 A37 I38 R39 L42 I51 R58 T59 R60 D61 R62 V63 R64 I67 H68 P72 I76 T81 E82 A83 D84 R85 L90 E91 K96 Q97 V98 Q99

E104 V105 E109 L114 V119 Q122 N125 R126 V127 A128 F129 R130 R131 A132 M133 Q138 R142 Q143 P144 N145 C153 S163 R164 R169 L175 L178 A189 I196 G209

- Molecule 9: Small ribosomal subunit protein uS4

Chain D: 63% 36%

A2 R3 Y4 R10 K11 S12 R13 R14 L15 D23 Q24 Y31 E43 R47 Q48 Q49 L50 Q51 E52 K53 Q54 K55 A56 R57 F58 M63 Y71 E72 E73 A74 K80 I81 G82 D83 N84 L85 L86 L89 E90 S91 R92 L93 D94 N95 V96 R99 L102 A103 R104

T105 R106 R107 M108 Q111 V120 D126 I127 P128 S129 Y130 R131 V132 S133 D136 I137 I138 D139 V140 L145 N146 T147 L148 P149 F150 Q151 R154 W165 L166 I175 P181 E182 R183 A184 Q185 I186 D187 V188 P189 L190 T191 L194 L198 Y199 S200 K201

- Molecule 10: Small ribosomal subunit protein uS5

Chain E: 72% 28%

N35 R39 I43 V46 V49 T59 I63 M70 V73 K77 V81 P82 A83 K87 E90 R93 K94 N95 P100 T105 I106 A116 M120 G127 A132 G133 G134 A135 A136 R137 A138 V139 L140 E141 C142 D147 I148 L149 A150

S155 D156 N157 V161 V162 R174 P175 E176 E177 V178 A179 L184 P185 D188 P191 A192 G193 M194 L195 K196 A197 R198 A214

- Molecule 11: Small ribosomal subunit protein bS6

Chain F: 52% 47%

M1 E5 I9 L10 D11 P12 D15 E16 R17 T18 P21 S22 L23 F26 L27 N28 V29 I30 R31 T36 V40 D41 I42 W43 G44 R45 R46 R47 L48 A49 Y50 E51 I52 A53 K54 H55 A56 I59 Y60 I63 D64 V65 K66 E74 L75 D76 R77 Q78 N82

E83 S84 R87 T88 K89 D94 K95 H96

- Molecule 12: Small ribosomal subunit protein uS7

Chain G: 72% 28%

P2 K9 R10 L22 L26 E33 S37 L38 I42 V43 Y44 E48 Q49 A50 R51 E52 K53 T54 G55 T56 D57 P58 T61 A65 V69 L73 E74 V75 R79 T84 Y85 Q86 E90 D94 R95 L101 V105 R109 Q110 R111 R112 E113

K114 T115 E118 R119 N122 S134 V135 E139 M144 R155 W156

- Molecule 13: Small ribosomal subunit protein uS8

Chain H: 74% 26%

T2 D5 A8 D9 F10 L11 T12 R13 L14 R15 V25 T26 L27 K33 E38 I39 L40 K41 R42 S47 D48 Y49 E52 D53 V61 R70 L77 R78 R79 V80 S81 K82 P83 L98 L101 G102 V103 A104 I105 L112 L113 T114 D115 R116 W132

• Molecule 14: Small ribosomal subunit protein uS9

Chain I: 65% 34%

P25 R31 R32 V36 V37 R38 L41 V42 P43 G44 T45 G46 Q47 F48 N49 L50 R53 Y58 F59 H64 Q65 Q66 L67 I68 L72 V75 D76 R77 Q80 F81 D82 I83 Y84 A85 H86 L87 Q95 A96 G97 A98 L99 L107 V110 Q111 P112 E113 D114 R115

L118 K119 R126 D127 K134 K140 A141 R142 Y147 S148 K149 R150

• Molecule 15: Small ribosomal subunit protein uS10

Chain J: 61% 36%

G3 Q4 R7 I8 R9 L10 K11 H15 I18 R23 K24 I25 V26 E27 T30 T44 E45 C50 V51 I52 R53 S54 P55 H56 K57 Y58 K59 R62 E63 E66 K71 R72 L73 I74 L77 D78 P79 T80 P81 K82 T83 A86 L87 I90 D97

Q101

• Molecule 16: Small ribosomal subunit protein uS11

Chain K: 71% 28%

K23 H27 G28 N37 V41 T44 D45 P46 Q47 G48 N49 V50 H58 G63 K66 S67 A76 A80 E85 H86 K89 D92 V93 G97 R102 E103 I106 R107 S108 L109 Q110 V116 G117 T118 I119 H127 N128 R137

• Molecule 17: Small ribosomal subunit protein uS12

Chain L: 66% 34%

P2 T3 I4 Q5 Q6 L7 V8 R9 K25 G26 S27 R30 R31 G32 V33 C34 P42 K43 K44 P45 N46 R50 V55 K56 L57 T58 S59 Q60 V61 N73 E76 H77 L81 V82 R83 R86 V87 K88 D89 L90 R94 Y95 K96 Q105 R110 R114 S115

R116 A119 K123

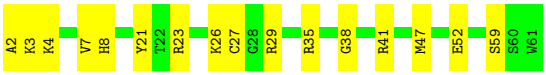
• Molecule 18: Small ribosomal subunit protein uS13

Chain M: 67% 33%

A2 V5 G6 V7 D8 L9 P10 R11 M15 E16 Y23 I33 I39 D40 K41 T45 L48 T49 D50 D51 Q52 V53 T54 V55 L56 Y59 I60 N63 L64 K65 D69 L70 R71 R72 I78 R79 I82 L90 R91 R94 G95 L96 Q101 R102 T103

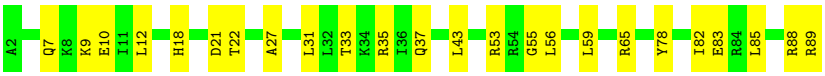
• Molecule 19: Small ribosomal subunit protein uS14B

Chain N:



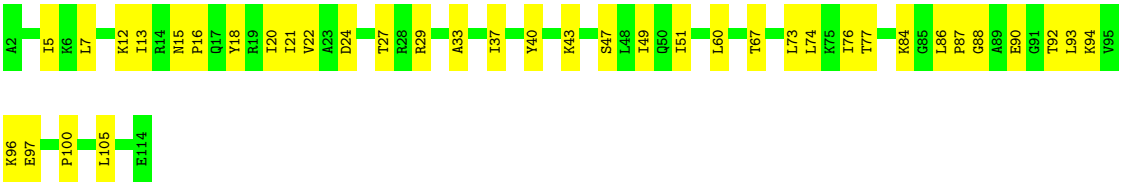
• Molecule 20: Small ribosomal subunit protein uS15

Chain O:



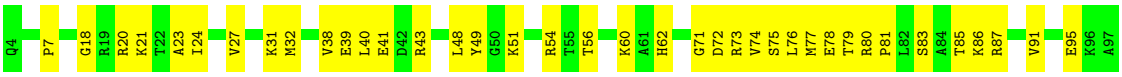
• Molecule 21: Small ribosomal subunit protein bS16

Chain P:



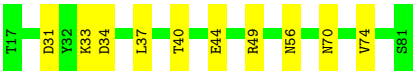
• Molecule 22: Small ribosomal subunit protein uS17

Chain Q:



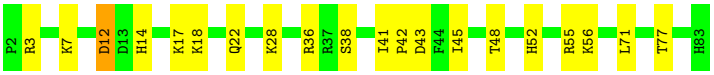
• Molecule 23: Small ribosomal subunit protein bS18B

Chain R:



• Molecule 24: Small ribosomal subunit protein uS19

Chain S:



• Molecule 25: Small ribosomal subunit protein bS20

Chain T: 61% 38%

A2 N3 I4 Q7 I8 K9 R10 R16 R17 R20 S26 S27 L28 R29 I32 F35 R36 V39 D45 K46 A47 S48 E49 L50 L51 H52 A53 T54 S55 R56 K57 L58 D59 K64 K75 K76 L79 L83 L86

• Molecule 26: Large ribosomal subunit protein uL23

Chain U: 80% 20%

A2 T3 I4 D9 I10 K19 S20 H34 P35 D36 S37 N38 I42 K43 E47 V54 V57 R62 K67 R68 R76 V84 A98

• Molecule 27: Small ribosomal subunit protein uS2

Chain V: 12% 67% 33%

M1 Q8 L9 L10 D11 S12 H15 F16 R21 K26 M27 K28 R29 F30 T33 D34 R35 N36 I41 D42 L43 Q44 Q45 T46 L47 T48 Y49 I50 D51 K52 A53 Y54 E55 F56 V57 V61 A62 H63 F69 T72 K73 Q77 E78 S79 I80 E83 R86 V87

V91 W96 G99 M100 L101 T102 N103 L111 Q112 R113 L117 M120 T123 F126 E127 G128 R129 E133 I134 L135 M136 L137 T138 R139 E140 K141 N142 K143 L144 E145 R146 G150 I151 R152 D153 M154 Q155 K156 V157 W162 T166 N167 H170 V173 R177

L187 N190 C191 D192 P193 D194 V195 V196 D197 Y198 P199 I200 P201 G202 N203 D204 R208 T214 K215 V216 I217 A218 S219 A220 E223 G224 L225 Q226 A227 R228

• Molecule 28: Large ribosomal subunit protein bL25

Chain W: 8% 84% 16%

T4 I7 V33 G39 D43 L49 V85 H86 P87 I88 N91 V99 R102 E109 L113 V114 E115 G116 D117 A118 T119 P120 G121 E132 L138 T145 V148 E149 E152 A153 T158 Q161 I162 S163 L164 P165 E166 G167 V168 P174 E175

V178 V179 E183 L190 E191 E192 E193 G194 A195

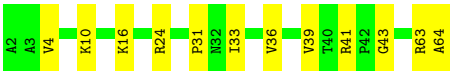
• Molecule 29: Large ribosomal subunit protein bL27

Chain X: 82% 18%

S8 R11 R14 D15 S16 R25 K32 E35 Q40 R41 G42 D56 D57 T58 P64 R75 P86

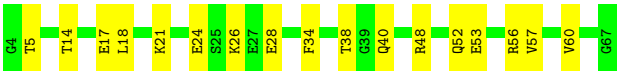
• Molecule 30: Large ribosomal subunit protein bL28

Chain Y: 81% 19%



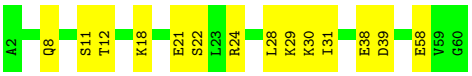
• Molecule 31: Large ribosomal subunit protein uL29

Chain Z: 73% 27%



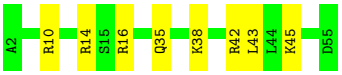
• Molecule 32: Large ribosomal subunit protein uL30

Chain a: 76% 24%



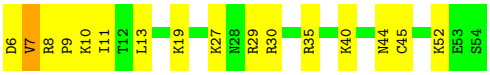
• Molecule 33: Large ribosomal subunit protein bL32

Chain b: 85% 15%



• Molecule 34: Large ribosomal subunit protein bL33A

Chain c: 67% 31%

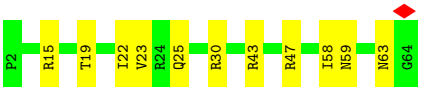


• Molecule 35: Large ribosomal subunit protein bL34

Chain d: 76% 24%

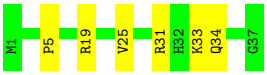
• Molecule 36: Large ribosomal subunit protein bL35

Chain e: 83% 17%



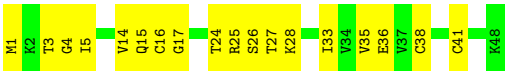
• Molecule 37: 50S ribosomal protein L36

Chain f: 84% 16%



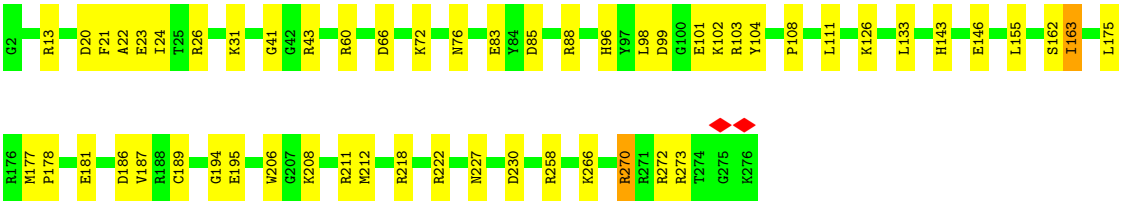
• Molecule 38: Large ribosomal subunit protein bL31

Chain g:



• Molecule 39: Large ribosomal subunit protein uL2

Chain i:

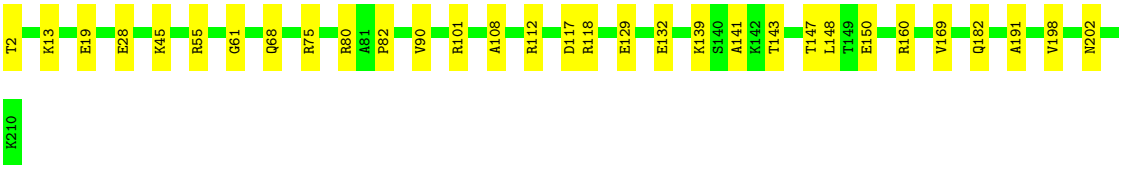


• Molecule 40: Large ribosomal subunit protein uL3

Chain j:

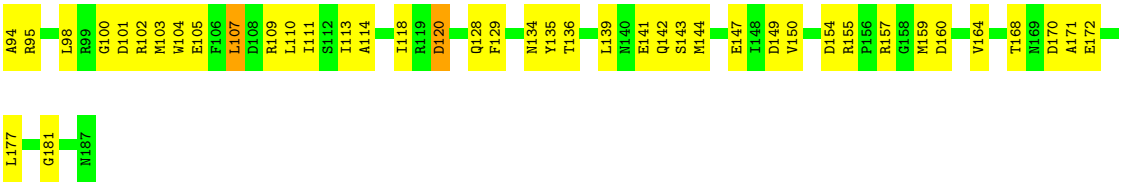
• Molecule 41: Large ribosomal subunit protein uL4

Chain k:



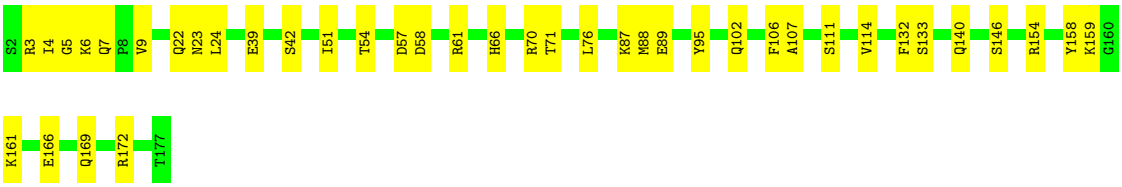
• Molecule 42: Large ribosomal subunit protein uL5

Chain l:



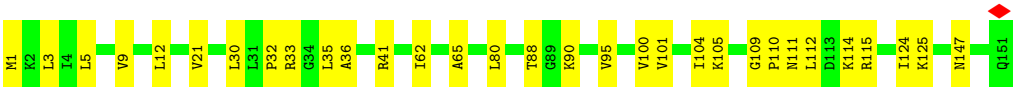
• Molecule 43: Large ribosomal subunit protein uL6

Chain m:



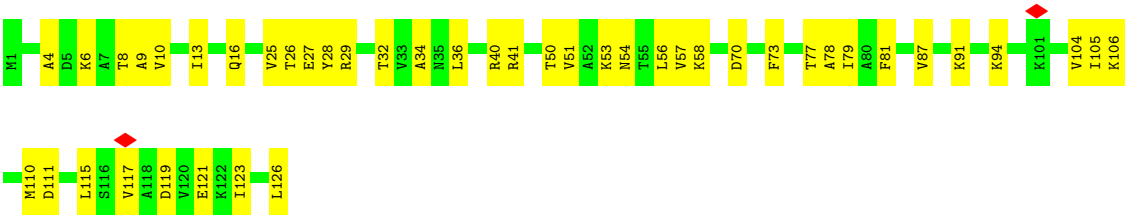
• Molecule 44: 50S ribosomal protein L9

Chain n:



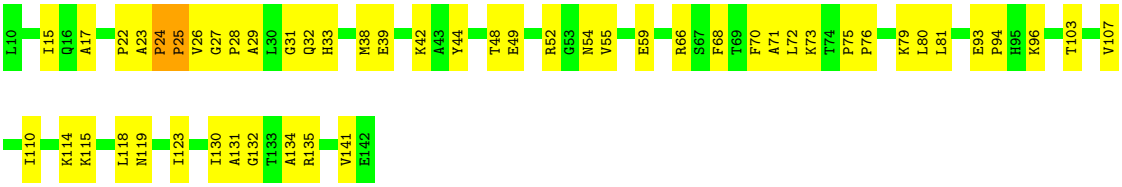
• Molecule 45: Large ribosomal subunit protein uL10

Chain o:



• Molecule 46: Large ribosomal subunit protein uL11

Chain p:



• Molecule 47: Large ribosomal subunit protein uL13

Chain q:

• Molecule 48: 50S ribosomal protein L14

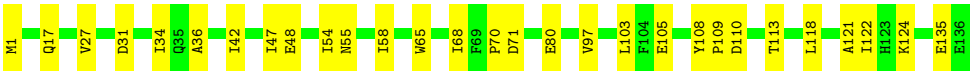
Chain r:

• Molecule 49: Large ribosomal subunit protein uL15

Chain s:

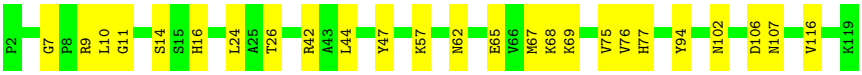
• Molecule 50: Large ribosomal subunit protein uL16

Chain t:



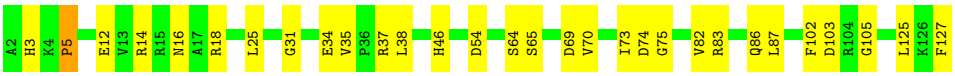
• Molecule 51: Large ribosomal subunit protein bL17

Chain u:



• Molecule 52: Large ribosomal subunit protein uL18

Chain v:

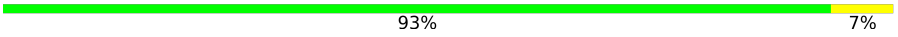


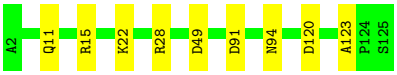
• Molecule 53: 50S ribosomal protein L19

Chain w:

• Molecule 54: Large ribosomal subunit protein bL20

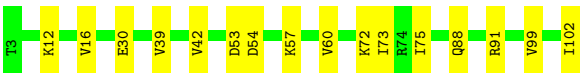
Chain x:





• Molecule 55: Large ribosomal subunit protein bL21

Chain y:

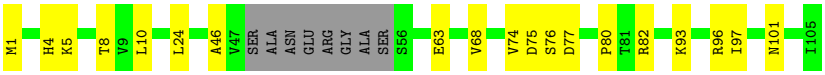


• Molecule 56: Large ribosomal subunit protein uL22

Chain z:

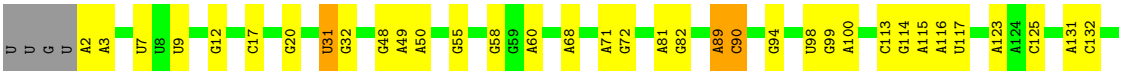
• Molecule 57: Large ribosomal subunit protein uL24

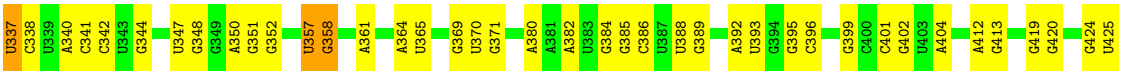
Chain 1:

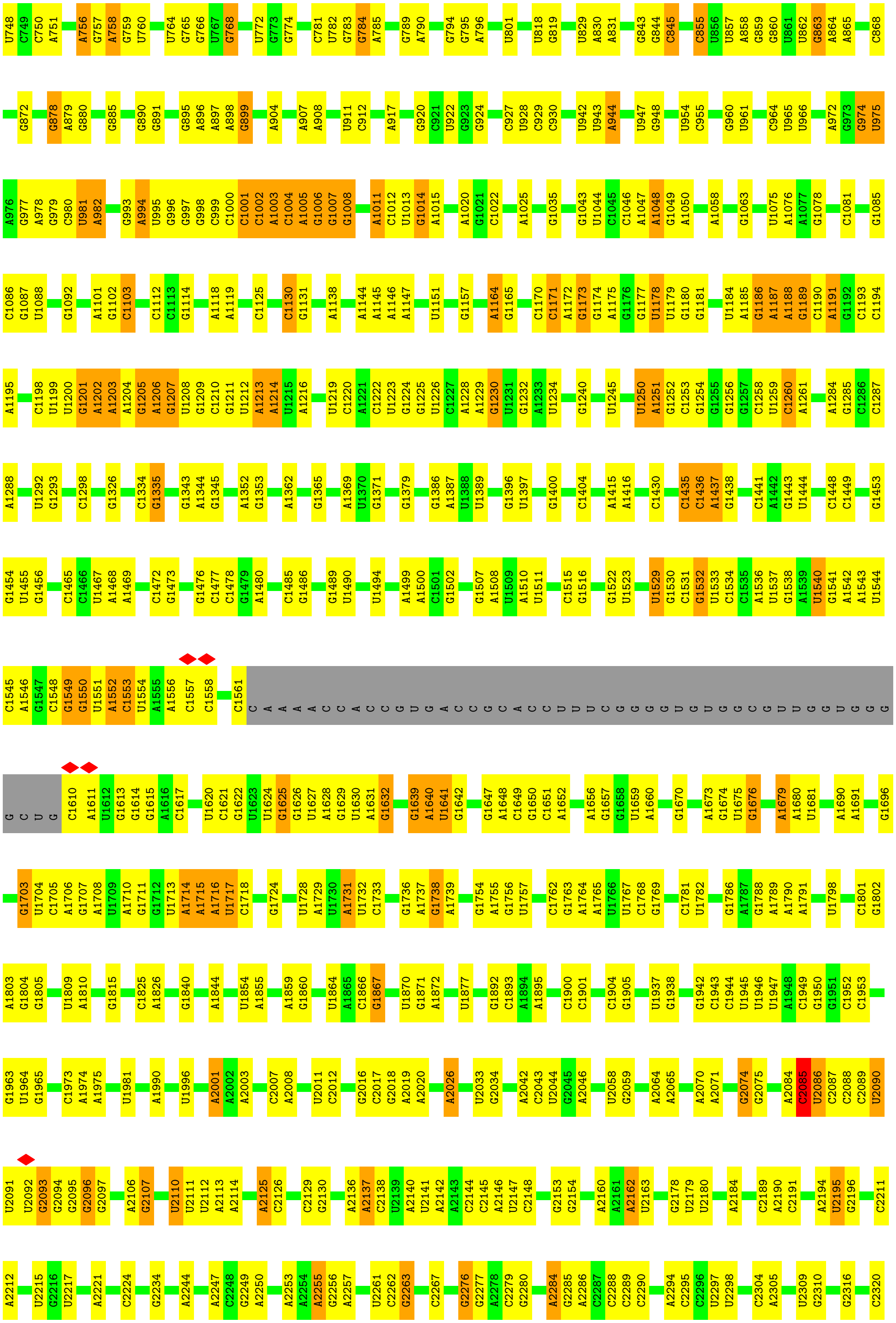


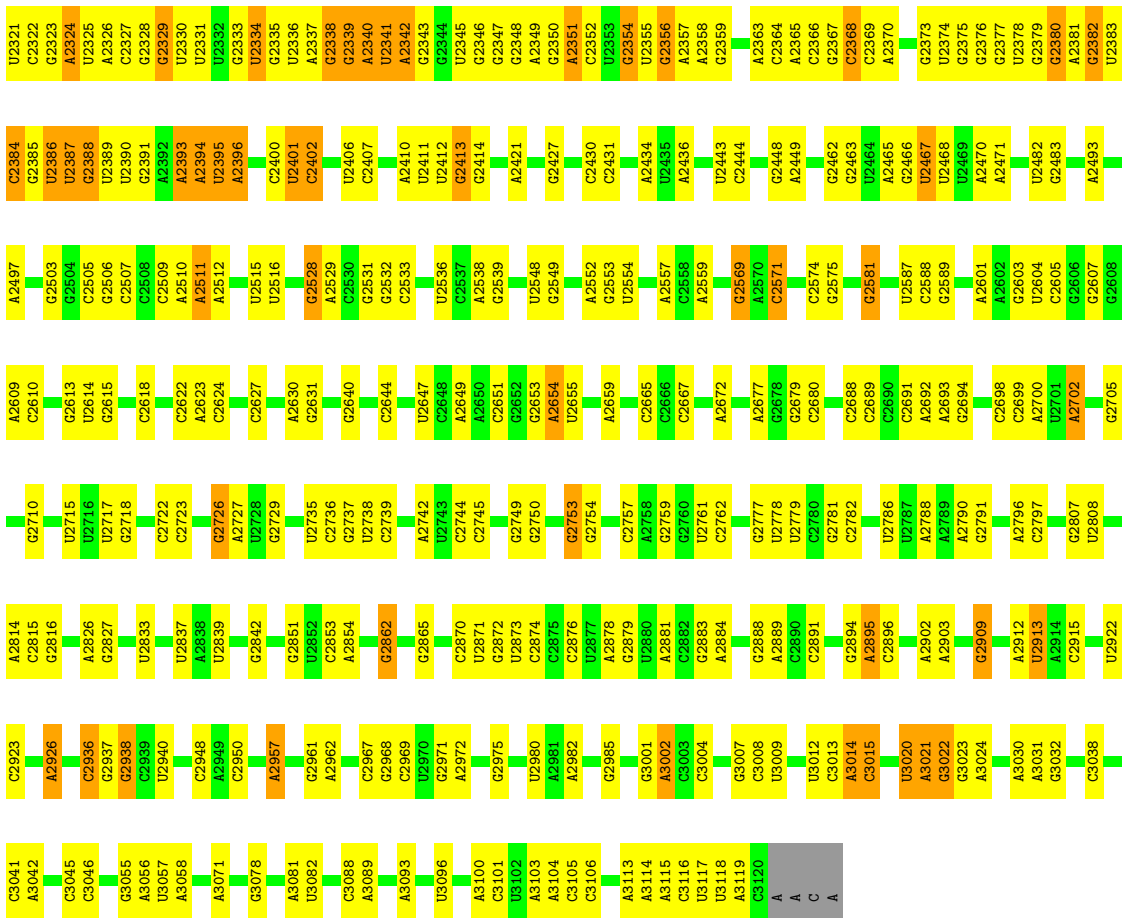
• Molecule 58: 23S ribosomal RNA

Chain h:






U748 C749 C750 A751 A756 G757 A758 G759 U760 U764 G765 C766 U767 G768 U772 G773 G774 C781 U782 G783 G784 A785 G789 A790 G794 G795 A796 U801 U818 G819 U829 A830 A831 G843 G844 C845 C855 U856 U857 A858 G859 G860 U861 U862 G863 A864 A865 C868
G872 G878 A879 G880 G885 G890 G891 G895 A896 A897 A898 G899 A904 A907 A908 U911 C912 A917 G920 C921 U922 G923 G924 C927 U928 C929 C930 U942 U943 A944 U947 G948 U954 C955 G960 U961 C964 U965 U966 A972 G973 G974 U975
A976 G977 A978 G979 C980 U981 A982 G993 A994 U995 G996 G997 G998 C999 C1000 C1001 C1002 A1003 C1004 A1005 G1006 G1007 G1008 A1011 C1012 U1013 G1014 A1015 A1020 G1021 C1022 A1025 G1035 G1043 U1044 C1045 C1046 A1047 A1048 G1049 A1050 A1058 G1063 U1075 A1076 A1077 G1078 C1081 G1085
C1086 G1087 U1088 G1092 A1101 G1102 C1103 C1112 C1113 G1114 A1118 A1119 C1125 C1130 G1131 A1138 A1144 A1145 A1146 A1147 U1151 G1157 A1164 G1165 C1170 C1171 A1172 G1173 G1174 A1175 G1176 G1177 U1178 U1179 G1180 G1181 U1184 A1185 G1186 A1187 A1188 G1189 C1190 A1191 G1192 C1193 C1194
A1195 C1198 U1199 U1200 G1201 A1202 A1203 A1204 G1205 A1206 G1207 U1208 G1209 C1210 G1211 U1212 A1213 A1214 U1215 A1216 U1219 C1220 A1221 C1222 U1223 G1224 G1225 U1226 C1227 A1228 A1229 G1230 U1231 G1232 A1233 U1234 G1240 U1245 U1250 A1251 G1252 C1253 G1254 G1255 G1256 G1257 C1258 U1259 C1260 A1261 A1284 G1285 C1286 C1287
A1288 U1292 G1293 C1298 G1326 C1334 G1335 G1343 A1344 G1345 A1352 G1353 A1362 G1365 A1369 U1370 G1371 G1379 G1386 A1387 U1388 U1389 G1396 U1397 G1400 C1404 A1415 A1416 C1430 C1435 C1436 A1437 G1438 C1441 A1442 G1443 U1444 C1448 C1449 G1453
G1454 U1455 G1456 C1465 C1466 U1467 A1468 A1469 C1472 G1473 G1476 C1477 C1478 G1479 A1480 C1485 G1486 G1489 U1490 U1494 A1499 A1500 C1501 G1502 G1507 A1508 U1509 A1510 U1511 C1515 G1516 G1522 U1523 U1529 G1530 C1531 G1532 U1533 C1534 C1535 A1536 U1537 G1538 A1539 U1540 G1541 A1542 A1543 U1544
C1545 A1546 G1547 C1548 G1549 G1550 U1551 A1552 C1553 U1554 A1555 A1556 C1557 C1558 C1561 C A A A C C A C C G U G A C C G C A C C U U U C G G G G U G U G G C G U U G G U G G G
G C U G C1610 A1611 U1612 G1613 G1614 G1615 A1616 C1617 U1620 C1621 G1622 U1623 U1624 G1625 G1626 U1627 A1628 G1629 U1630 A1631 G1632 G1639 A1640 U1641 G1642 G1647 A1648 C1649 G1650 C1651 A1652 A1656 G1657 G1658 U1659 A1660 G1670 A1673 G1674 U1675 G1676 A1679 A1680 U1681 A1690 A1691 G1696
G1703 U1704 C1705 A1706 G1707 A1708 U1709 A1710 G1711 G1712 U1713 A1714 A1715 A1716 U1717 C1718 G1724 U1728 A1729 U1730 A1731 U1732 C1733 G1736 A1737 G1738 A1739 G1754 A1755 G1756 U1757 C1762 G1763 A1764 A1765 U1766 U1767 C1768 G1769 C1781 U1782 G1786 A1787 G1788 A1789 A1790 A1791 U1798 C1801 G1802
A1803 G1804 G1805 U1809 A1810 G1815 C1825 A1826 G1840 A1844 U1854 A1855 A1859 G1860 U1864 A1865 C1866 G1867 U1870 G1871 A1872 U1877 G1892 C1893 A1894 A1895 C1900 C1901 C1904 G1905 U1937 G1938 G1942 C1943 C1944 U1945 U1946 U1947 A1948 C1949 G1950 G1951 C1952 C1953
G1963 U1964 G1965 C1973 A1974 A1975 U1981 A1990 U1996 A2001 A2002 A2003 C2007 A2008 U2011 C2012 G2016 C2017 G2018 A2019 A2020 A2026 U2033 C2034 A2042 C2043 U2044 G2045 A2046 U2058 G2059 A2064 A2065 A2070 A2071 G2074 G2075 A2084 C2085 U2086 C2087 C2088 C2089 U2090
U2091 U2092 G2093 G2094 G2095 G2096 G2097 A2106 G2107 U2110 U2111 U2112 A2113 A2114 A2125 C2126 C2129 G2130 A2136 A2137 C2138 U2139 A2140 U2141 A2142 A2143 C2144 C2145 A2146 U2147 C2148 G2153 G2154 A2160 A2161 A2162 U2163 G2178 U2179 U2180 A2184 C2189 A2190 C2191 A2194 U2195 G2196 C2211
A2212 U2215 G2216 U2217 A2221 C2224 G2234 A2244 A2247 C2248 G2249 A2250 A2253 A2254 A2255 G2256 A2257 U2261 C2262 G2263 C2267 G2276 G2277 A2278 C2279 G2280 A2284 G2285 A2286 C2287 C2288 C2289 C2290 A2294 C2295 C2296 U2297 U2298 C2304 A2305 U2309 G2310 G2316 C2320


U2321 C2322 G2323 A2324 U2325 A2326 C2327 G2328 G2329 U2330 U2331 U2332 G2333 U2334 G2335 U2336 A2337 G2338 G2339 A2340 U2341 A2342 G2343 G2344 U2345 G2346 G2347 G2348 A2349 G2350 A2351 C2352 U2353 G2354 U2355 G2356 A2357 A2358 G2359 A2363 C2364 A2365 C2366 G2367 C2368 C2369 A2370 G2373 U2374 G2375 G2376 G2377 U2378 G2379 G2380 A2381 G2382 U2383
C2384 G2385 U2386 U2387 G2388 U2389 U2390 G2391 A2392 A2393 A2394 U2395 A2396 C2400 U2401 C2402 U2406 C2407 A2410 U2411 U2412 G2413 G2414 A2421 G2427 C2430 C2431 A2434 U2435 A2436 U2443 C2444 G2448 A2449 G2462 G2463 U2464 A2465 G2466 U2467 U2468 U2469 A2470 A2471 U2482 G2483 A2493
A2497 G2503 G2504 C2505 G2506 C2507 C2508 C2509 A2510 A2511 A2512 U2515 U2516 G2528 A2529 C2530 G2531 G2532 C2533 U2536 C2537 A2538 G2539 U2548 G2549 A2552 G2553 U2554 A2557 C2558 A2559 G2569 A2570 C2571 C2574 G2575 G2581 U2587 C2588 G2589 A2601 A2602 G2603 U2604 C2605 G2606 G2607 G2608
A2609 C2610 G2613 U2614 G2615 C2618 C2622 A2623 C2624 C2627 A2630 G2631 G2640 C2644 U2647 C2648 A2649 A2650 C2651 G2652 G2653 A2654 U2655 A2659 C2665 C2666 C2667 A2672 A2677 G2678 G2679 C2680 C2688 C2689 C2690 C2691 A2692 A2693 G2694 C2698 C2699 A2700 U2701 A2702 G2705
G2710 U2715 U2716 U2717 G2718 C2722 C2723 G2726 A2727 U2728 G2729 U2735 C2736 G2737 U2738 C2739 A2742 U2743 C2744 C2745 G2749 G2750 G2753 G2754 C2757 A2758 G2759 G2760 U2761 C2762 G2777 U2778 U2779 C2780 G2781 C2782 U2786 U2787 A2788 A2789 A2790 G2791 A2796 C2797 G2807 U2808
A2814 C2815 G2816 A2826 G2827 U2833 U2837 A2838 U2839 G2842 G2851 U2852 C2853 A2854 G2862 G2865 C2870 U2871 G2872 U2873 C2874 C2875 C2876 U2877 A2878 G2879 U2880 A2881 C2882 G2883 A2884 G2888 A2889 C2890 C2891 G2894 A2895 C2896 A2902 A2903 G2909 A2912 U2913 A2914 C2915 U2922
C2923 A2926 C2936 G2937 G2938 C2939 U2940 C2948 A2949 C2950 A2957 G2961 A2962 C2967 G2968 C2969 U2970 G2971 A2972 G2975 U2980 A2981 A2982 G2985 G3001 A3002 C3003 C3004 G3007 C3008 U3009 U3012 C3013 A3014 C3015 U3020 A3021 G3022 G3023 A3024 A3030 A3031 G3032 C3038
C3041 A3042 C3045 C3046 G3055 A3056 U3057 A3058 A3071 G3078 A3081 U3082 C3088 A3089 A3093 U3096 A3100 C3101 U3102 A3103 A3104 C3105 C3106 A3113 A3114 A3115 C3116 U3117 U3118 A3119 C3120 A A C A

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	19431	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	54	Depositor
Minimum defocus (nm)	1800	Depositor
Maximum defocus (nm)	3300	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.090	Depositor
Minimum map value	-0.027	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.00715	Depositor
Map size (Å)	483.0, 483.0, 483.0	wwPDB
Map dimensions	350, 350, 350	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.38, 1.38, 1.38	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: MG, GNP, ZN

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	2	0.15	0/1802	0.29	0/2807
2	3	0.25	0/191	0.33	0/247
3	4	0.13	0/439	0.27	0/684
4	5	0.17	0/507	0.41	0/678
5	7	0.15	0/5405	0.36	1/7360 (0.0%)
6	A	0.24	0/36309	0.31	0/56657
7	B	0.25	0/2821	0.27	0/4396
8	C	0.20	0/1684	0.48	1/2261 (0.0%)
9	D	0.25	0/1672	0.55	0/2251
10	E	0.26	0/1312	0.45	0/1772
11	F	0.24	0/782	0.45	0/1059
12	G	0.32	1/1252 (0.1%)	0.63	4/1690 (0.2%)
13	H	0.25	0/1025	0.42	0/1385
14	I	0.25	0/1012	0.51	2/1362 (0.1%)
15	J	0.24	0/802	0.49	0/1086
16	K	0.24	0/873	0.49	0/1180
17	L	0.27	0/969	0.50	0/1294
18	M	0.25	0/942	0.51	0/1260
19	N	0.25	0/488	0.42	0/650
20	O	0.24	0/729	0.36	0/977
21	P	0.25	0/908	0.48	0/1226
22	Q	0.26	0/759	0.57	0/1016
23	R	0.24	0/518	0.42	0/693
24	S	0.20	0/680	0.41	0/915
25	T	0.24	0/663	0.48	0/882
26	U	0.28	0/766	0.42	0/1030
27	V	0.21	0/1822	0.53	3/2457 (0.1%)
28	W	0.21	0/1443	0.37	0/1970
29	X	0.28	0/595	0.34	0/798
30	Y	0.33	0/478	0.36	0/641
31	Z	0.24	0/534	0.38	0/713
32	a	0.28	0/477	0.36	0/640

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	b	0.30	0/427	0.41	0/572
34	c	0.22	0/413	0.39	0/553
35	d	0.30	0/380	0.32	0/500
36	e	0.26	0/507	0.37	0/672
37	f	0.25	0/303	0.30	0/401
38	g	0.21	0/372	0.44	0/503
39	i	0.32	0/2153	0.42	0/2895
40	j	0.30	0/1609	0.40	0/2165
41	k	0.28	0/1592	0.40	0/2153
42	l	0.25	0/1467	0.51	0/1973
43	m	0.21	0/1369	0.37	0/1848
44	n	0.19	0/1027	0.43	0/1398
45	o	0.13	0/925	0.33	0/1246
46	p	0.17	0/1006	0.42	0/1364
47	q	0.29	0/1157	0.37	0/1567
48	r	0.28	0/946	0.42	0/1268
49	s	0.29	0/1091	0.45	0/1457
50	t	0.28	0/1118	0.42	0/1506
51	u	0.28	0/945	0.37	0/1267
52	v	0.25	0/966	0.41	1/1298 (0.1%)
53	w	0.28	0/921	0.42	0/1236
54	x	0.30	0/1000	0.34	0/1341
55	y	0.27	0/764	0.32	0/1030
56	z	0.28	0/887	0.37	0/1204
57	1	0.24	0/738	0.41	0/987
58	h	0.31	1/73851 (0.0%)	0.32	3/115230 (0.0%)
All	All	0.27	2/168593 (0.0%)	0.35	15/251671 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
58	h	2894	G	O3'-P	-12.13	1.43	1.61
12	G	2	PRO	N-CD	5.76	1.55	1.47

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	G	2	PRO	CA-N-CD	-13.91	92.53	112.00
58	h	2895	A	O3'-P-O5'	10.16	119.24	104.00
27	V	199	PRO	N-CD-CG	-9.20	89.41	103.20
12	G	2	PRO	N-CD-CG	-8.55	90.37	103.20
14	I	43	PRO	CA-N-CD	-7.98	100.83	112.00

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	h	2895	A	P-O3'-C3'	-6.50	110.45	120.20
27	V	199	PRO	CA-N-CD	-6.00	103.60	112.00
5	7	521	ARG	N-CA-C	5.39	117.71	109.95
8	C	60	ARG	CB-CA-C	-5.35	109.95	117.23
14	I	43	PRO	N-CD-CG	-5.32	95.23	103.20
52	v	5	PRO	CA-N-CD	-5.30	104.58	112.00
12	G	9	LYS	CA-C-N	5.26	127.96	120.49
12	G	9	LYS	C-N-CA	5.26	127.96	120.49
27	V	157	VAL	CA-CB-CG2	5.11	119.08	110.40
58	h	2085	C	C2'-C3'-O3'	5.02	117.02	109.50

There are no chirality outliers.

There are no planarity outliers.

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	2	1614	0	823	19	0
2	3	189	0	205	5	0
3	4	390	0	198	6	0
4	5	505	0	545	10	0
5	7	5299	0	5230	181	0
6	A	32439	0	16321	470	0
7	B	2522	0	1285	19	0
8	C	1660	0	1707	47	0
9	D	1641	0	1668	66	0
10	E	1296	0	1360	36	0
11	F	771	0	797	31	0
12	G	1232	0	1282	31	0
13	H	1010	0	1046	23	0
14	I	994	0	1050	35	0
15	J	788	0	819	33	0
16	K	855	0	863	24	0
17	L	958	0	1045	42	0
18	M	935	0	986	31	0
19	N	477	0	499	15	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
20	O	720	0	760	18	0
21	P	891	0	935	31	0
22	Q	748	0	795	31	0
23	R	513	0	537	8	0
24	S	662	0	677	13	0
25	T	660	0	712	27	0
26	U	756	0	802	12	0
27	V	1793	0	1839	54	0
28	W	1428	0	1443	18	0
29	X	586	0	601	11	0
30	Y	470	0	480	8	0
31	Z	531	0	541	12	0
32	a	474	0	500	8	0
33	b	423	0	463	8	0
34	c	405	0	407	13	0
35	d	377	0	411	7	0
36	e	502	0	541	11	0
37	f	299	0	321	6	0
38	g	364	0	348	14	0
39	i	2110	0	2165	38	0
40	j	1587	0	1630	32	0
41	k	1569	0	1607	24	0
42	l	1445	0	1476	54	0
43	m	1348	0	1399	31	0
44	n	1018	0	988	25	0
45	o	918	0	959	31	0
46	p	990	0	1021	38	0
47	q	1130	0	1167	23	0
48	r	938	0	1000	20	0
49	s	1078	0	1151	20	0
50	t	1092	0	1128	18	0
51	u	928	0	972	15	0
52	v	956	0	991	21	0
53	w	907	0	938	17	0
54	x	988	0	1038	6	0
55	y	754	0	802	8	0
56	z	873	0	909	12	0
57	1	732	0	782	13	0
58	h	65953	0	33183	675	0
59	2	11	0	8	0	0
60	7	32	0	13	2	0
61	F	1	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
61	R	1	0	0	0	0
61	X	1	0	0	0	0
61	h	3	0	0	0	0
61	i	3	0	0	0	0
61	l	1	0	0	0	0
61	t	1	0	0	0	0
61	z	1	0	0	0	0
62	N	1	0	0	0	0
62	R	1	0	0	0	0
62	Y	1	0	0	0	0
62	c	1	0	0	0	0
62	f	1	0	0	0	0
62	g	1	0	0	0	0
All	All	155552	0	106169	2267	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 9.

All (2267) 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)
7:B:60:G:H4'	52:v:12:GLU:HG3	1.42	0.98
58:h:3013:C:H5'	58:h:3014:A:H5'	1.49	0.92
6:A:993:G:H1	6:A:1002:U:H3	1.14	0.89
58:h:1211:G:H21	58:h:1216:A:H62	1.19	0.86
58:h:2528:G:H22	58:h:2536:U:H3	1.20	0.85
6:A:483:C:OP1	17:L:116:ARG:NH1	2.10	0.84
6:A:1392:C:O2	58:h:2137:A:N6	2.10	0.84
6:A:772:A:O2'	6:A:774:A:N7	2.11	0.84
5:7:536:LYS:HE3	6:A:1478:G:H5'	1.59	0.83
43:m:57:ASP:OD1	43:m:58:ASP:N	2.11	0.83
58:h:1208:U:H3	58:h:1220:C:H1'	1.42	0.83
6:A:1014:U:H2'	6:A:1015:G:H8	1.44	0.82
26:U:67:LYS:HE2	26:U:76:ARG:HH21	1.43	0.81
37:f:31:ARG:NH2	58:h:2753:G:N7	2.27	0.81
58:h:334:G:H1	58:h:347:U:H3	1.26	0.81
9:D:43:GLU:HA	9:D:47:ARG:HH21	1.43	0.81
44:n:115:ARG:NH2	58:h:163:U:O2	2.13	0.81
41:k:198:VAL:O	41:k:202:ASN:ND2	2.15	0.80
6:A:1232:A:H62	6:A:1268:C:H42	1.28	0.80
57:1:75:ASP:OD1	57:1:76:SER:N	2.14	0.80

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:p:114:LYS:O	46:p:118:LEU:HB2	1.81	0.80
10:E:176:GLU:OE1	10:E:198:ARG:NH2	2.14	0.79
22:Q:23:ALA:HB1	22:Q:40:LEU:HD11	1.64	0.79
46:p:114:LYS:NZ	58:h:1177:G:O2'	2.12	0.79
58:h:289:A:H62	58:h:299:G:H22	1.28	0.79
58:h:1187:A:H4'	58:h:1188:A:H5"	1.65	0.79
6:A:1210:A:OP2	18:M:114:LYS:NZ	2.15	0.79
58:h:302:U:O2'	58:h:303:G:N7	2.15	0.79
21:P:49:ILE:HD12	21:P:73:LEU:HD22	1.65	0.78
12:G:9:LYS:NZ	12:G:10:ARG:O	2.15	0.78
8:C:35:ASP:OD1	8:C:58:ARG:NH2	2.17	0.77
33:b:45:LYS:NZ	58:h:3103:A:O3'	2.17	0.77
6:A:1421:G:OP2	25:T:29:ARG:NH1	2.16	0.77
6:A:1476:A:H2'	6:A:1477:A:H2'	1.67	0.77
5:7:441:MET:HE1	5:7:474:THR:HA	1.67	0.77
6:A:522:G:OP1	9:D:10:ARG:NH2	2.18	0.77
58:h:993:G:N2	58:h:1015:A:OP2	2.15	0.77
58:h:1825:C:N4	58:h:1840:G:OP2	2.18	0.76
5:7:110:ARG:HG3	5:7:439:TRP:HB3	1.64	0.76
6:A:728:A:O2'	6:A:729:A:N7	2.17	0.76
39:i:266:LYS:NZ	58:h:2448:G:OP1	2.18	0.76
58:h:1556:A:N1	58:h:1615:G:O6	2.18	0.76
48:r:112:MET:HA	48:r:112:MET:HE3	1.66	0.76
31:Z:21:LYS:NZ	31:Z:53:GLU:OE2	2.18	0.76
58:h:2340:A:H61	58:h:2389:U:H3	1.31	0.76
6:A:505:C:OP2	17:L:88:LYS:NZ	2.15	0.75
6:A:1486:A:H2	6:A:1489:G:H1	1.34	0.75
48:r:73:ASP:OD1	48:r:75:SER:OG	2.05	0.75
58:h:1544:U:H3	58:h:1626:G:H1	1.34	0.75
58:h:1001:C:H1'	58:h:1007:G:H22	1.52	0.74
21:P:86:LEU:HB2	21:P:87:PRO:HD3	1.68	0.74
38:g:36:GLU:OE1	38:g:36:GLU:N	2.19	0.74
58:h:365:U:H3	58:h:437:G:H1	1.32	0.74
58:h:2085:C:O2'	58:h:2086:U:O5'	2.05	0.74
58:h:1186:G:H21	58:h:1213:A:HO2'	1.34	0.74
30:Y:24:ARG:NH1	58:h:469:G:OP1	2.21	0.74
28:W:178:VAL:HG12	28:W:179:VAL:HG23	1.70	0.74
4:5:96:LEU:HD12	4:5:102:LYS:HE2	1.70	0.73
5:7:592:THR:HG22	5:7:638:ILE:HG21	1.70	0.73
39:i:258:ARG:NH1	58:h:2016:G:OP1	2.21	0.73
6:A:953:G:HO2'	6:A:1348:G:HO2'	1.24	0.73

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:C:58:ARG:HG3	8:C:63:VAL:HG22	1.71	0.73
5:7:312:LEU:HD12	5:7:321:LEU:HB2	1.71	0.73
6:A:1011:U:O2'	6:A:1013:G:N2	2.22	0.73
44:n:100:VAL:O	44:n:104:ILE:HD12	1.89	0.73
58:h:2342:A:N6	58:h:2390:U:O2'	2.21	0.73
6:A:644:G:H22	6:A:721:G:H1	1.34	0.73
18:M:79:ARG:NH2	58:h:1003:A:N1	2.36	0.73
51:u:106:ASP:OD2	58:h:1867:G:O2'	2.06	0.73
6:A:472:C:H2'	6:A:473:A:C8	2.23	0.73
6:A:653:G:H2'	6:A:654:G:C8	2.23	0.73
30:Y:41:ARG:HG3	30:Y:43:GLY:H	1.53	0.73
58:h:1188:A:N7	58:h:1214:A:O2'	2.21	0.73
58:h:1530:G:N2	58:h:1805:G:H1	1.87	0.73
6:A:1425:G:H5'	6:A:1426:C:H5	1.55	0.72
11:F:9:ILE:HD12	11:F:87:ARG:HB3	1.70	0.72
52:v:34:GLU:HG2	52:v:35:VAL:HG23	1.71	0.72
5:7:648:THR:HB	5:7:710:ARG:HB2	1.72	0.72
58:h:1186:G:N2	58:h:1213:A:O2'	2.15	0.72
58:h:981:U:O2'	58:h:982:A:OP2	2.07	0.72
29:X:11:ARG:O	29:X:14:ARG:NH2	2.23	0.71
58:h:2351:A:N3	58:h:2396:A:O2'	2.23	0.71
5:7:580:GLU:HG2	5:7:584:ARG:HE	1.55	0.71
34:c:6:ASP:O	34:c:8:ARG:N	2.21	0.71
57:1:63:GLU:N	57:1:63:GLU:OE1	2.24	0.71
58:h:681:C:H2'	58:h:682:A:H8	1.54	0.71
45:o:53:LYS:NZ	58:h:1224:G:O5'	2.23	0.71
5:7:36:LYS:NZ	5:7:95:THR:O	2.22	0.71
14:I:68:ILE:HD13	14:I:99:LEU:HD23	1.73	0.71
58:h:2351:A:H2'	58:h:2352:C:C6	2.26	0.71
50:t:135:GLU:N	50:t:135:GLU:OE1	2.24	0.71
6:A:654:G:H2'	6:A:655:A:H8	1.56	0.70
50:t:110:ASP:OD1	50:t:113:THR:OG1	2.05	0.70
58:h:2345:U:OP1	58:h:2391:G:N2	2.24	0.70
27:V:151:ILE:HA	27:V:154:MET:HB3	1.73	0.70
2:3:8:LYS:NZ	58:h:2253:A:OP2	2.22	0.70
34:c:8:ARG:NH1	58:h:2509:C:OP2	2.23	0.70
57:1:46:ALA:HB2	58:h:571:A:H4'	1.74	0.70
39:i:163:ILE:HD12	39:i:175:LEU:HB3	1.73	0.70
44:n:1:MET:N	44:n:21:VAL:O	2.24	0.70
6:A:722:G:OP2	20:O:35:ARG:NH2	2.25	0.70
8:C:61:ASP:HB2	8:C:96:LYS:HG2	1.74	0.70

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:G:49:GLN:OE1	12:G:53:LYS:NZ	2.25	0.70
35:d:36:ASN:ND2	58:h:555:G:OP1	2.25	0.70
6:A:1018:C:H2'	6:A:1019:U:H6	1.57	0.70
36:e:43:ARG:NH2	58:h:2587:U:OP2	2.25	0.69
44:n:95:VAL:HG12	44:n:124:ILE:HG21	1.74	0.69
6:A:1266:U:H2'	6:A:1267:U:H5"	1.73	0.69
6:A:408:G:O3'	9:D:104:ARG:NH1	2.24	0.69
8:C:125:ASN:O	8:C:126:ARG:NE	2.20	0.69
58:h:747:A:N6	58:h:768:G:O2'	2.25	0.69
3:4:18:G:O2'	3:4:19:C:OP2	2.11	0.69
42:l:144:MET:SD	42:l:144:MET:N	2.64	0.69
6:A:1338:G:H2'	6:A:1339:A:C8	2.27	0.69
13:H:48:ASP:OD1	13:H:49:TYR:N	2.25	0.69
53:w:51:GLY:HA2	53:w:56:GLU:HG3	1.73	0.69
58:h:1627:U:H2'	58:h:1628:A:H8	1.57	0.69
6:A:1375:G:N2	6:A:1486:A:H8	1.90	0.69
36:e:47:ARG:NH2	58:h:725:A:OP2	2.25	0.69
42:l:24:GLN:HE22	42:l:29:TYR:HB2	1.58	0.69
12:G:79:ARG:HA	12:G:84:THR:HA	1.74	0.69
6:A:427:U:OP1	9:D:13:ARG:NH2	2.26	0.69
21:P:12:LYS:NZ	21:P:15:ASN:OD1	2.25	0.69
6:A:438:U:O2'	6:A:439:U:O2	2.09	0.68
39:i:31:LYS:NZ	58:h:1647:G:N7	2.39	0.68
45:o:28:TYR:OH	58:h:1224:G:O2'	2.11	0.68
58:h:1706:A:H2'	58:h:1707:G:H8	1.55	0.68
6:A:1289:U:OP1	18:M:101:GLN:NE2	2.26	0.68
17:L:114:ARG:HG2	17:L:119:ALA:HB3	1.74	0.68
44:n:9:VAL:HG23	44:n:12:LEU:HB2	1.76	0.68
24:S:55:ARG:HG2	24:S:56:LYS:HE3	1.74	0.68
26:U:68:ARG:HH22	58:h:1449:C:H5"	1.57	0.68
4:5:82:ARG:NE	4:5:88:LEU:O	2.26	0.68
14:I:48:PHE:HE1	14:I:83:ILE:HD11	1.58	0.68
41:k:55:ARG:NH2	58:h:789:G:OP1	2.27	0.68
58:h:2552:A:H2'	58:h:2553:G:C8	2.29	0.68
27:V:135:LEU:HD22	27:V:139:ARG:HH22	1.56	0.68
15:J:45:GLU:OE1	15:J:71:LYS:NZ	2.27	0.68
51:u:57:LYS:O	51:u:62:ASN:ND2	2.26	0.68
5:7:324:VAL:O	5:7:424:GLY:N	2.27	0.68
35:d:28:ARG:NH2	58:h:210:G:OP1	2.25	0.67
6:A:23:C:OP1	10:E:155:SER:OG	2.12	0.67
5:7:677:ASP:OD1	5:7:678:ALA:N	2.27	0.67

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:o:32:THR:HG22	45:o:34:ALA:H	1.58	0.67
36:e:47:ARG:HH22	58:h:725:A:P	2.17	0.67
6:A:694:G:H2'	6:A:695:A:C8	2.30	0.67
45:o:26:THR:HG22	45:o:105:ILE:HA	1.76	0.67
6:A:1086:G:O2'	8:C:169:ARG:NH1	2.28	0.67
41:k:160:ARG:NH1	58:h:706:G:O2'	2.28	0.67
13:H:13:ARG:HD3	13:H:27:LEU:HD22	1.77	0.67
34:c:40:LYS:NZ	58:h:2571:C:OP1	2.28	0.67
5:7:520:LEU:HD11	5:7:640:LEU:HB3	1.76	0.66
6:A:136:G:O2'	22:Q:7:PRO:O	2.12	0.66
12:G:54:THR:HG1	12:G:56:THR:HG1	1.42	0.66
36:e:23:VAL:HG11	36:e:47:ARG:HD3	1.77	0.66
38:g:16:CYS:SG	38:g:38:CYS:HB3	2.35	0.66
5:7:575:PHE:O	5:7:578:SER:OG	2.14	0.66
49:s:31:LYS:HE3	58:h:658:U:H5'	1.75	0.66
7:B:58:A:O4'	42:l:31:ASN:ND2	2.28	0.66
8:C:62:ARG:NH2	8:C:99:GLN:OE1	2.29	0.66
43:m:140:GLN:NE2	58:h:2969:C:O2	2.28	0.66
58:h:1996:U:OP2	58:h:2001:A:N6	2.25	0.66
6:A:1159:G:N2	6:A:1162:G:OP2	2.29	0.66
6:A:1220:A:H62	6:A:1281:A:H62	1.43	0.66
6:A:1374:U:O2'	6:A:1516:U:OP1	2.12	0.66
9:D:183:ARG:NH1	9:D:183:ARG:O	2.29	0.66
27:V:16:PHE:O	27:V:203:ASN:ND2	2.28	0.66
58:h:993:G:O2'	58:h:994:A:O4'	2.13	0.66
58:h:994:A:N6	58:h:1014:G:O2'	2.29	0.66
58:h:996:G:H2'	58:h:997:G:H8	1.60	0.66
43:m:159:LYS:NZ	58:h:2883:G:OP1	2.28	0.66
58:h:218:A:N3	58:h:234:U:O2'	2.30	0.65
5:7:98:TYR:HD1	5:7:100:ASP:H	1.41	0.65
5:7:229:ILE:HD13	5:7:237:LEU:HB3	1.77	0.65
29:X:25:ARG:NH1	29:X:35:GLU:OE1	2.29	0.65
39:i:66:ASP:OD2	39:i:103:ARG:NH1	2.29	0.65
1:2:27:G:H2'	1:2:28:G:H8	1.61	0.65
6:A:408:G:O2'	9:D:104:ARG:NH2	2.28	0.65
11:F:10:LEU:HB2	11:F:59:ILE:HB	1.78	0.65
6:A:1375:G:H21	6:A:1486:A:H8	1.45	0.65
14:I:38:ARG:HG2	14:I:86:HIS:HB2	1.78	0.65
58:h:2356:G:H2'	58:h:2380:G:H1	1.60	0.65
6:A:943:U:OP2	6:A:1204:C:O2'	2.11	0.65
47:q:114:LEU:O	47:q:118:ILE:HG13	1.97	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:669:G:O2'	58:h:1369:A:OP1	2.15	0.65
16:K:47:GLN:OE1	16:K:47:GLN:N	2.28	0.65
48:r:34:GLY:N	48:r:37:ASP:OD2	2.29	0.65
5:7:178:PRO:HA	5:7:188:VAL:HA	1.78	0.65
42:l:52:ARG:NH2	42:l:85:LYS:HB2	2.12	0.65
42:l:95:ARG:NH2	58:h:2538:A:OP1	2.28	0.65
47:q:19:ASP:OD1	47:q:21:SER:OG	2.15	0.65
15:J:59:LYS:HE2	15:J:62:ARG:HH21	1.62	0.65
5:7:293:PRO:HA	5:7:296:HIS:HB3	1.79	0.64
41:k:118:ARG:NH1	41:k:191:ALA:O	2.29	0.64
6:A:92:A:O2'	6:A:93:C:O5'	2.14	0.64
27:V:135:LEU:HD22	27:V:139:ARG:NH2	2.12	0.64
27:V:143:LYS:HA	27:V:146:ARG:HE	1.63	0.64
50:t:124:LYS:NZ	58:h:2691:C:O2	2.30	0.64
58:h:1189:G:H1'	58:h:1207:G:H2'	1.79	0.64
6:A:259:G:OP1	25:T:36:ARG:NH2	2.30	0.64
9:D:51:GLN:O	9:D:55:LYS:HG3	1.97	0.64
13:H:103:VAL:HG23	13:H:114:THR:HG23	1.80	0.64
41:k:139:LYS:NZ	58:h:401:C:OP2	2.23	0.64
58:h:1550:G:O6	58:h:1620:U:O4	2.14	0.64
58:h:3014:A:O2'	58:h:3015:C:H5"	1.97	0.64
6:A:823:U:O4	6:A:826:U:N3	2.30	0.64
58:h:2249:G:H2'	58:h:2250:A:C8	2.33	0.64
6:A:146:A:H2'	6:A:147:U:C6	2.32	0.64
6:A:935:G:O6	18:M:104:LYS:NZ	2.30	0.64
47:q:116:ARG:HA	47:q:119:GLN:HG3	1.80	0.64
5:7:24:ARG:N	5:7:89:LYS:O	2.26	0.64
5:7:269:ILE:HG12	5:7:285:ILE:HD13	1.78	0.64
14:I:32:ARG:HD3	14:I:97:GLY:HA3	1.80	0.64
19:N:21:TYR:HE2	19:N:23:ARG:HE	1.46	0.64
46:p:23:ALA:HB3	46:p:24:PRO:HD3	1.80	0.64
58:h:324:C:O2	58:h:452:G:N2	2.31	0.64
5:7:103:GLY:HA3	5:7:474:THR:HG21	1.80	0.64
11:F:94:ASP:OD1	11:F:95:LYS:N	2.28	0.64
27:V:91:TYR:H	27:V:150:GLY:HA3	1.61	0.64
58:h:543:U:H3'	58:h:544:U:H5"	1.79	0.64
5:7:551:VAL:HG22	5:7:604:VAL:HG13	1.80	0.64
6:A:1410:C:H2'	6:A:1411:A:H8	1.63	0.64
6:A:1106:U:O4	15:J:9:ARG:NH1	2.31	0.64
6:A:1330:U:H4'	14:I:142:ARG:HD3	1.78	0.64
20:O:43:LEU:HD13	20:O:53:ARG:HG2	1.80	0.64

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:111:LEU:HD11	27:V:151:ILE:HG22	1.80	0.64
39:i:23:GLU:OE1	39:i:23:GLU:N	2.29	0.64
43:m:169:GLN:OE1	43:m:169:GLN:N	2.31	0.64
6:A:203:U:H2'	6:A:204:A:H8	1.63	0.63
26:U:34:HIS:ND1	26:U:36:ASP:OD1	2.31	0.63
40:j:94:GLU:OE1	40:j:94:GLU:N	2.25	0.63
5:7:346:ILE:HB	5:7:407:VAL:HB	1.80	0.63
58:h:380:A:N3	58:h:401:C:O2'	2.29	0.63
58:h:1710:A:H61	58:h:1716:A:H5"	1.63	0.63
58:h:2358:A:HO2'	58:h:2382:G:HO2'	1.46	0.63
51:u:14:SER:OG	58:h:2913:U:O2'	2.16	0.63
13:H:41:LYS:HZ3	13:H:48:ASP:HA	1.63	0.63
6:A:1418:G:H2'	6:A:1419:C:C6	2.33	0.63
18:M:23:TYR:HE2	18:M:70:LEU:HD22	1.62	0.63
58:h:639:C:HO2'	58:h:640:G:H8	1.46	0.63
15:J:54:SER:O	19:N:41:ARG:NH1	2.31	0.63
58:h:1710:A:N6	58:h:1716:A:OP2	2.31	0.63
6:A:928:A:H2'	6:A:929:G:C8	2.33	0.63
11:F:23:LEU:HD13	11:F:63:ILE:HD11	1.81	0.63
45:o:25:VAL:HG13	45:o:77:THR:HG23	1.80	0.63
27:V:139:ARG:HD3	27:V:139:ARG:N	2.14	0.63
58:h:2862:G:O2'	58:h:3002:A:N6	2.31	0.63
1:2:26:A:H61	1:2:44:G:H1	1.46	0.63
8:C:11:ARG:NH2	8:C:175:LEU:O	2.30	0.63
17:L:86:ARG:HD3	17:L:94:ARG:NH2	2.14	0.63
21:P:60:LEU:HD11	21:P:74:LEU:HD21	1.79	0.63
26:U:19:LYS:NZ	58:h:1455:U:OP1	2.31	0.63
43:m:88:MET:HE1	43:m:146:SER:HB3	1.81	0.63
58:h:1705:C:H2'	58:h:1706:A:H8	1.63	0.63
58:h:2410:A:H2'	58:h:2411:U:C6	2.33	0.63
5:7:81:ALA:HB3	5:7:92:LEU:HB2	1.81	0.62
15:J:26:VAL:O	15:J:30:THR:HG23	1.99	0.62
29:X:64:PRO:HB3	58:h:759:G:H1	1.64	0.62
38:g:15:GLN:OE1	38:g:15:GLN:N	2.32	0.62
35:d:14:ARG:NH2	58:h:885:G:OP2	2.32	0.62
50:t:54:ILE:HG13	50:t:121:ALA:HB2	1.80	0.62
58:h:1704:U:H2'	58:h:1705:C:C6	2.34	0.62
4:5:99:SER:O	4:5:100:ALA:C	2.42	0.62
5:7:677:ASP:CG	5:7:678:ALA:H	2.06	0.62
6:A:693:G:H2'	6:A:694:G:C8	2.34	0.62
6:A:1265:U:H5"	6:A:1266:U:H4'	1.81	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:127:GLY:N	10:E:147:ASP:OD2	2.33	0.62
43:m:23:ASN:OD1	43:m:24:LEU:N	2.33	0.62
58:h:1003:A:H1'	58:h:1004:C:H2'	1.80	0.62
45:o:54:ASN:ND2	45:o:73:PHE:O	2.32	0.62
47:q:116:ARG:NH2	58:h:615:A:OP2	2.32	0.62
58:h:2412:U:H2'	58:h:2413:G:C8	2.34	0.62
5:7:304:PRO:HG3	5:7:433:PRO:HG2	1.82	0.62
6:A:39:G:N3	17:L:115:SER:OG	2.32	0.62
12:G:113:GLU:OE1	12:G:122:ASN:ND2	2.32	0.62
58:h:1690:A:H2'	58:h:1691:A:C8	2.34	0.62
5:7:666:ARG:NH1	5:7:691:GLU:O	2.29	0.62
58:h:1544:U:O4	58:h:1626:G:O6	2.18	0.62
58:h:2902:A:H2'	58:h:2903:A:C8	2.34	0.62
6:A:1160:A:OP2	14:I:115:ARG:NH2	2.33	0.62
9:D:74:ALA:HB1	9:D:84:ASN:HB2	1.80	0.62
25:T:55:SER:HB3	25:T:76:LYS:HD3	1.81	0.62
28:W:158:THR:OG1	28:W:174:PRO:O	2.13	0.62
30:Y:36:VAL:HG12	30:Y:63:ARG:HH21	1.64	0.62
39:i:163:ILE:HG22	39:i:178:PRO:HD3	1.81	0.62
42:l:101:ASP:O	42:l:105:GLU:HG2	1.99	0.62
50:t:36:ALA:HB2	50:t:103:LEU:HD11	1.82	0.62
10:E:140:LEU:HD11	10:E:148:ILE:HD13	1.82	0.62
18:M:56:LEU:O	18:M:60:ILE:HG23	2.00	0.62
58:h:681:C:H2'	58:h:682:A:C8	2.34	0.62
58:h:2086:U:H3	58:h:2096:G:H1	1.48	0.62
6:A:380:G:N2	6:A:383:A:OP2	2.26	0.62
9:D:53:LYS:HD3	9:D:198:LEU:HD23	1.80	0.62
10:E:63:ILE:HG12	10:E:139:VAL:HG22	1.82	0.62
10:E:133:GLY:O	10:E:137:ARG:HB3	2.00	0.62
45:o:36:LEU:HD12	58:h:1203:A:H61	1.65	0.62
6:A:986:G:N2	6:A:1016:G:H1	1.98	0.62
11:F:16:GLU:OE1	11:F:16:GLU:N	2.31	0.62
13:H:8:ALA:O	13:H:12:THR:HG22	2.00	0.62
58:h:2364:C:H2'	58:h:2365:A:H8	1.65	0.62
6:A:207:G:H4'	25:T:56:ARG:HG2	1.81	0.61
16:K:27:HIS:NE2	16:K:92:ASP:OD1	2.31	0.61
37:f:25:VAL:HB	37:f:34:GLN:HG3	1.82	0.61
6:A:663:G:N2	16:K:49:ASN:OD1	2.32	0.61
10:E:136:ALA:O	10:E:140:LEU:HB2	2.00	0.61
47:q:68:LYS:NZ	58:h:1258:C:OP2	2.27	0.61
29:X:41:ARG:NH1	58:h:2610:C:O2'	2.33	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:1613:G:H2'	58:h:1614:G:C8	2.35	0.61
5:7:571:VAL:HG22	5:7:611:ALA:HB2	1.81	0.61
6:A:332:G:O4'	25:T:7:GLN:NE2	2.32	0.61
16:K:103:GLU:OE1	16:K:103:GLU:N	2.33	0.61
27:V:151:ILE:H	27:V:151:ILE:HD12	1.66	0.61
58:h:2470:A:H2'	58:h:2471:A:C8	2.36	0.61
58:h:2482:U:O2'	58:h:2651:C:OP2	2.18	0.61
5:7:394:SER:HB2	5:7:401:GLN:HB3	1.81	0.61
5:7:467:ARG:O	5:7:471:GLU:HG3	2.00	0.61
6:A:926:G:N1	6:A:1320:G:OP2	2.26	0.61
6:A:1158:G:OP2	14:I:119:LYS:NZ	2.33	0.61
58:h:1223:U:H2'	58:h:1224:G:H8	1.64	0.61
6:A:988:C:H2'	6:A:989:G:O4'	2.01	0.61
45:o:53:LYS:HB2	45:o:56:LEU:HB2	1.83	0.61
46:p:55:VAL:HG22	46:p:79:LYS:HD2	1.83	0.61
6:A:146:A:H2'	6:A:147:U:H6	1.66	0.61
14:I:48:PHE:CE1	14:I:83:ILE:HD11	2.36	0.61
15:J:66:GLU:HB3	19:N:59:SER:HB2	1.82	0.61
40:j:111:TYR:CE1	40:j:181:LYS:HG3	2.36	0.61
45:o:51:VAL:HG22	45:o:78:ALA:HA	1.83	0.61
6:A:1328:A:OP1	14:I:142:ARG:NH2	2.25	0.61
8:C:62:ARG:HH22	8:C:64:ARG:HB2	1.66	0.61
13:H:5:ASP:OD1	13:H:79:ARG:NH1	2.34	0.61
58:h:217:G:H22	58:h:235:U:H4'	1.65	0.61
58:h:2106:A:H3'	58:h:2107:G:H5"	1.83	0.61
6:A:208:G:H4'	25:T:59:ASP:HB3	1.83	0.60
6:A:452:A:H62	21:P:93:LEU:HA	1.66	0.60
31:Z:14:THR:N	31:Z:17:GLU:OE1	2.33	0.60
39:i:96:HIS:CE1	39:i:102:LYS:HD3	2.36	0.60
41:k:150:GLU:OE1	41:k:150:GLU:N	2.32	0.60
45:o:6:LYS:O	45:o:10:VAL:HG23	2.01	0.60
39:i:88:ARG:NH2	58:h:2034:G:OP1	2.33	0.60
58:h:2354:G:O2'	58:h:2356:G:N3	2.32	0.60
58:h:2922:U:H2'	58:h:2923:C:C6	2.36	0.60
9:D:105:THR:HG23	9:D:108:MET:H	1.66	0.60
5:7:322:ALA:HB3	5:7:427:LEU:HB2	1.82	0.60
30:Y:39:VAL:HG21	30:Y:64:ALA:HB3	1.83	0.60
58:h:1199:U:H2'	58:h:1200:U:C6	2.35	0.60
4:5:100:ALA:HB1	4:5:102:LYS:NZ	2.16	0.60
5:7:534:HIS:HE1	5:7:536:LYS:HD3	1.65	0.60
52:v:127:PHE:O	58:h:2601:A:O2'	2.18	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:21:U:H2'	6:A:22:C:C6	2.36	0.60
6:A:1477:A:H4'	6:A:1478:G:OP1	2.01	0.60
9:D:85:LEU:O	9:D:89:LEU:HG	2.00	0.60
10:E:39:ARG:HG3	10:E:142:CYS:SG	2.41	0.60
28:W:43:ASP:OD1	28:W:43:ASP:N	2.34	0.60
39:i:230:ASP:OD1	58:h:895:G:N1	2.31	0.60
58:h:327:U:O2	58:h:449:G:N2	2.33	0.60
58:h:2339:G:O6	58:h:2394:A:N6	2.35	0.60
5:7:110:ARG:NH2	5:7:437:ARG:O	2.35	0.60
6:A:187:U:O2	6:A:201:G:O6	2.20	0.60
6:A:819:U:H3	6:A:829:G:H22	1.48	0.60
6:A:936:G:H21	6:A:1208:A:H62	1.49	0.60
52:v:12:GLU:O	52:v:16:ASN:ND2	2.35	0.60
6:A:1184:C:OP1	19:N:2:ALA:N	2.35	0.60
17:L:25:LYS:HD2	17:L:59:SER:HB3	1.84	0.60
24:S:12:ASP:OD1	24:S:12:ASP:N	2.34	0.60
49:s:32:THR:HG22	49:s:35:ARG:H	1.67	0.60
5:7:700:ARG:HD2	5:7:705:GLY:HA2	1.84	0.60
6:A:1298:G:N1	6:A:1301:A:OP2	2.33	0.60
36:e:19:THR:HG23	58:h:745:G:H5"	1.82	0.60
5:7:354:VAL:HB	5:7:386:GLU:HB3	1.82	0.59
6:A:1220:A:H62	6:A:1281:A:N6	1.99	0.59
6:A:1229:A:H4'	14:I:53:ARG:HH12	1.67	0.59
8:C:96:LYS:HG3	8:C:97:GLN:H	1.66	0.59
11:F:30:ILE:HD11	11:F:75:LEU:HD13	1.84	0.59
27:V:219:SER:O	27:V:223:GLU:HG2	2.00	0.59
31:Z:48:ARG:O	31:Z:52:GLN:HG2	2.01	0.59
9:D:93:LEU:HD12	9:D:130:TYR:HB3	1.83	0.59
46:p:132:GLY:HA2	46:p:135:ARG:HD2	1.83	0.59
58:h:1441:C:O2'	58:h:2234:G:O2'	2.21	0.59
5:7:322:ALA:N	5:7:427:LEU:O	2.34	0.59
6:A:1177:A:O2'	6:A:1178:A:OP1	2.21	0.59
10:E:174:ARG:HB2	10:E:177:GLU:HG3	1.83	0.59
58:h:357:U:H4'	58:h:358:G:O5'	2.02	0.59
58:h:470:G:H22	58:h:480:U:H3	1.51	0.59
58:h:3012:U:O2'	58:h:3030:A:N3	2.35	0.59
58:h:928:U:H2'	58:h:929:C:C6	2.38	0.59
58:h:1553:C:H5"	58:h:1554:U:H5	1.67	0.59
58:h:1624:U:HO2'	58:h:1625:G:H8	1.50	0.59
5:7:27:ALA:HA	5:7:93:ILE:HB	1.85	0.59
5:7:371:ALA:HB2	5:7:476:ARG:HD3	1.85	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:60:U:H2'	6:A:61:G:H8	1.66	0.59
9:D:102:LEU:HD12	9:D:102:LEU:H	1.68	0.59
39:i:85:ASP:OD2	39:i:88:ARG:NH1	2.33	0.59
6:A:275:G:OP1	22:Q:31:LYS:NZ	2.36	0.59
16:K:37:ASN:HA	16:K:67:SER:HB3	1.83	0.59
25:T:53:ALA:O	25:T:57:LYS:HG3	2.03	0.59
33:b:10:ARG:O	33:b:14:ARG:HG3	2.02	0.59
58:h:1627:U:H2'	58:h:1628:A:C8	2.36	0.59
58:h:2338:G:H4'	58:h:2388:G:H22	1.67	0.59
5:7:395:PHE:N	5:7:402:ARG:O	2.35	0.59
18:M:59:TYR:O	18:M:63:ASN:ND2	2.34	0.59
34:c:10:LYS:NZ	58:h:2644:C:OP1	2.36	0.59
46:p:17:ALA:HB1	46:p:48:THR:HB	1.85	0.59
49:s:70:ARG:NH1	58:h:2630:A:C6	2.71	0.59
8:C:32:VAL:O	8:C:36:VAL:HG23	2.02	0.59
10:E:132:ALA:O	10:E:137:ARG:NH1	2.35	0.59
43:m:111:SER:OG	58:h:2891:C:N3	2.33	0.59
58:h:1468:A:H2'	58:h:1469:A:C8	2.37	0.59
6:A:481:G:H2'	6:A:482:A:H8	1.67	0.59
8:C:51:ILE:HD12	8:C:67:ILE:HD11	1.84	0.59
10:E:192:ALA:O	10:E:196:LYS:HG3	2.02	0.59
6:A:708:A:H2'	6:A:709:A:C8	2.37	0.59
9:D:138:ILE:HB	9:D:175:ILE:HB	1.83	0.59
21:P:16:PRO:HB2	21:P:18:TYR:CE1	2.38	0.59
58:h:1937:U:H2'	58:h:1938:G:O4'	2.03	0.59
6:A:928:A:H2'	6:A:929:G:H8	1.68	0.58
58:h:499:G:OP2	58:h:2630:A:O2'	2.19	0.58
58:h:857:U:H2'	58:h:858:A:C8	2.39	0.58
58:h:1186:G:H2'	58:h:1187:A:C5	2.38	0.58
58:h:1613:G:H2'	58:h:1614:G:H8	1.68	0.58
11:F:5:GLU:OE2	23:R:33:LYS:NZ	2.24	0.58
17:L:73:ASN:ND2	17:L:105:GLN:HG3	2.18	0.58
45:o:51:VAL:N	58:h:1202:A:OP1	2.36	0.58
58:h:1208:U:N3	58:h:1220:C:H1'	2.15	0.58
5:7:534:HIS:CE1	5:7:536:LYS:HD3	2.38	0.58
6:A:175:A:H2'	6:A:176:A:H8	1.67	0.58
6:A:826:U:H2'	6:A:828:G:H5'	1.84	0.58
8:C:34:GLU:OE1	8:C:58:ARG:NH1	2.36	0.58
16:K:41:VAL:HG11	16:K:76:ALA:HA	1.85	0.58
58:h:1170:C:H2'	58:h:1171:C:C6	2.37	0.58
6:A:1305:G:H2'	6:A:1306:A:C8	2.39	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:191:PRO:HD2	10:E:194:MET:HE3	1.86	0.58
15:J:80:THR:HB	15:J:83:THR:HG23	1.85	0.58
42:l:13:GLN:O	42:l:17:GLU:HG2	2.04	0.58
46:p:114:LYS:O	46:p:118:LEU:CB	2.51	0.58
56:z:18:ARG:NE	58:h:1436:C:O2'	2.37	0.58
5:7:468:LEU:O	5:7:472:ASP:N	2.22	0.58
25:T:52:HIS:O	25:T:56:ARG:HG3	2.04	0.58
30:Y:16:LYS:HD2	30:Y:24:ARG:HB3	1.86	0.58
46:p:49:GLU:HA	46:p:52:ARG:HH21	1.69	0.58
58:h:997:G:H21	58:h:1011:A:H61	1.51	0.58
5:7:338:LEU:HD11	5:7:396:PRO:HG3	1.86	0.58
6:A:335:C:H2'	6:A:336:A:H8	1.69	0.58
6:A:857:U:O2'	13:H:15:ARG:NH1	2.35	0.58
27:V:44:GLN:OE1	27:V:44:GLN:N	2.29	0.58
35:d:38:ARG:HG3	35:d:45:LEU:HD21	1.86	0.58
42:l:87:ARG:H	42:l:90:MET:HE3	1.67	0.58
58:h:2745:C:O2'	58:h:2788:A:N3	2.34	0.58
6:A:642:C:H2'	6:A:643:A:C8	2.39	0.58
21:P:40:TYR:CD2	21:P:73:LEU:HD11	2.39	0.58
45:o:41:ARG:NH2	46:p:119:ASN:HA	2.19	0.58
46:p:114:LYS:HG3	46:p:130:ILE:HD11	1.86	0.58
6:A:32:G:O2'	6:A:296:U:OP1	2.21	0.58
6:A:461:G:O2'	6:A:463:C:N4	2.37	0.58
9:D:99:ARG:HB3	9:D:166:LEU:HD12	1.85	0.58
18:M:5:VAL:HG11	18:M:60:ILE:HD11	1.86	0.58
22:Q:21:LYS:HB2	22:Q:78:GLU:HG3	1.85	0.58
5:7:586:GLN:HB3	5:7:629:LEU:HD23	1.86	0.57
6:A:481:G:H2'	6:A:482:A:C8	2.39	0.57
6:A:654:G:H2'	6:A:655:A:C8	2.37	0.57
6:A:1163:G:H4'	6:A:1164:U:H5'	1.86	0.57
53:w:19:PHE:O	53:w:49:ARG:NH1	2.37	0.57
58:h:680:U:H2'	58:h:681:C:C6	2.39	0.57
6:A:505:C:H2'	6:A:506:C:C6	2.39	0.57
6:A:523:U:OP2	9:D:10:ARG:NH1	2.36	0.57
14:I:41:LEU:HD12	14:I:42:VAL:N	2.19	0.57
45:o:9:ALA:O	45:o:13:ILE:HG13	2.04	0.57
58:h:1002:C:H2'	58:h:1003:A:H5"	1.85	0.57
13:H:115:ASP:N	13:H:115:ASP:OD1	2.37	0.57
27:V:120:MET:HE1	27:V:129:ARG:HH21	1.69	0.57
28:W:109:GLU:OE2	28:W:132:GLU:HB3	2.03	0.57
49:s:15:GLU:OE1	58:h:691:U:O2'	2.12	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2255:A:N3	58:h:2679:G:O2'	2.33	0.57
1:2:38:A:O2'	6:A:770:A:OP1	2.20	0.57
2:3:17:ASN:ND2	58:h:1103:C:O2	2.36	0.57
58:h:1706:A:H2'	58:h:1707:G:C8	2.38	0.57
6:A:690:G:OP1	11:F:54:LYS:NZ	2.35	0.57
6:A:904:G:H2'	6:A:905:A:C8	2.39	0.57
6:A:995:A:OP1	24:S:17:LYS:NZ	2.37	0.57
12:G:65:ALA:O	12:G:69:VAL:HG23	2.05	0.57
45:o:53:LYS:HZ2	58:h:1224:G:C5'	2.18	0.57
58:h:2334:U:O2'	58:h:2341:U:O2'	2.14	0.57
6:A:490:A:HO2'	6:A:522:G:HO2'	1.51	0.57
6:A:986:G:H22	6:A:1016:G:H1	1.50	0.57
38:g:16:CYS:SG	38:g:17:GLY:N	2.78	0.57
58:h:1224:G:H2'	58:h:1225:G:H8	1.70	0.57
1:2:41:C:O2'	6:A:1320:G:N3	2.38	0.57
6:A:1199:C:H2'	6:A:1200:A:C8	2.40	0.57
6:A:1410:C:H2'	6:A:1411:A:C8	2.39	0.57
27:V:135:LEU:HB3	27:V:139:ARG:NH2	2.20	0.57
28:W:39:GLY:HA3	28:W:99:VAL:HB	1.86	0.57
58:h:337:U:H5'	58:h:338:C:H5"	1.87	0.57
58:h:1468:A:H2'	58:h:1469:A:H8	1.68	0.57
5:7:25:ASN:HB2	5:7:113:ASP:H	1.68	0.57
16:K:93:VAL:HG11	16:K:106:ILE:HD11	1.85	0.57
25:T:35:PHE:O	25:T:39:VAL:HG12	2.04	0.57
39:i:108:PRO:HD2	39:i:111:LEU:HD22	1.85	0.57
47:q:27:ARG:NH1	58:h:1130:C:O2	2.38	0.57
58:h:1530:G:H21	58:h:1805:G:H1	1.53	0.57
58:h:2726:G:H5"	58:h:2727:A:H5"	1.86	0.57
9:D:165:TRP:CE2	9:D:181:PRO:HB3	2.40	0.57
58:h:2364:C:H2'	58:h:2365:A:C8	2.39	0.57
2:3:7:LYS:NZ	58:h:1252:G:O4'	2.38	0.57
5:7:110:ARG:HH22	5:7:436:LEU:HB3	1.68	0.57
5:7:450:VAL:HG23	5:7:486:ILE:HG23	1.87	0.57
6:A:872:G:O2'	6:A:888:A:N6	2.38	0.57
10:E:59:THR:HG22	10:E:77:LYS:HB3	1.85	0.56
38:g:35:VAL:HG11	42:l:113:ILE:HD12	1.87	0.56
27:V:187:LEU:HD11	27:V:199:PRO:HB3	1.85	0.56
5:7:301:VAL:HG11	5:7:434:LEU:HD13	1.86	0.56
5:7:523:THR:HG23	5:7:639:ASN:HD22	1.70	0.56
6:A:269:U:H2'	6:A:270:A:H8	1.69	0.56
45:o:87:VAL:O	45:o:91:LYS:HG3	2.05	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:q:108:MET:SD	58:h:1256:G:N2	2.64	0.56
58:h:2304:C:H2'	58:h:2305:A:H8	1.70	0.56
5:7:652:PRO:HD2	5:7:655:LEU:HD12	1.86	0.56
6:A:725:A:H2'	6:A:726:G:C8	2.40	0.56
9:D:57:ARG:HH21	9:D:63:MET:HA	1.70	0.56
14:I:49:ASN:HD22	14:I:84:TYR:HD1	1.52	0.56
41:k:118:ARG:NH2	49:s:4:ILE:O	2.38	0.56
58:h:303:G:H2'	58:h:304:U:O4'	2.05	0.56
6:A:725:A:H2'	6:A:726:G:H8	1.70	0.56
6:A:1207:C:H2'	18:M:103:THR:HG22	1.87	0.56
17:L:76:GLU:O	17:L:77:HIS:ND1	2.38	0.56
52:v:73:ILE:HG22	52:v:75:GLY:H	1.71	0.56
6:A:695:A:H2'	6:A:696:A:C8	2.40	0.56
14:I:50:LEU:HD12	14:I:58:TYR:HB3	1.87	0.56
16:K:97:GLY:O	16:K:102:ARG:NH1	2.38	0.56
58:h:334:G:H2'	58:h:335:G:C8	2.41	0.56
58:h:447:A:H2'	58:h:448:U:C6	2.41	0.56
4:5:62:GLU:HG2	4:5:107:LYS:HB2	1.86	0.56
6:A:390:U:H2'	6:A:391:G:C8	2.41	0.56
39:i:83:GLU:OE2	39:i:104:TYR:OH	2.17	0.56
58:h:138:A:H2'	58:h:139:U:O2	2.06	0.56
58:h:3020:U:H1'	58:h:3022:G:O6	2.06	0.56
5:7:15:PRO:HB2	5:7:89:LYS:HE3	1.88	0.56
9:D:11:LYS:HD3	9:D:58:PHE:CD2	2.41	0.56
22:Q:27:VAL:O	22:Q:71:GLY:N	2.37	0.56
37:f:19:ARG:NE	58:h:2980:U:OP2	2.34	0.56
58:h:2019:A:H2'	58:h:2020:A:C8	2.41	0.56
58:h:2387:U:H3'	58:h:2388:G:H8	1.71	0.56
9:D:96:VAL:HG21	9:D:132:VAL:HG11	1.86	0.56
21:P:86:LEU:HB2	21:P:87:PRO:CD	2.36	0.56
44:n:3:LEU:HD13	44:n:36:ALA:HB1	1.88	0.56
45:o:29:ARG:NH1	58:h:1171:C:O2	2.37	0.56
53:w:62:LYS:HE2	53:w:64:SER:HB2	1.86	0.56
58:h:2297:U:H2'	58:h:2298:U:C6	2.41	0.56
6:A:269:U:H2'	6:A:270:A:C8	2.41	0.55
6:A:436:C:H5"	9:D:148:LEU:HD12	1.88	0.55
11:F:40:VAL:HG22	11:F:63:ILE:HG12	1.89	0.55
45:o:110:MET:SD	45:o:111:ASP:N	2.79	0.55
5:7:324:VAL:HG22	5:7:339:VAL:HG22	1.88	0.55
9:D:190:LEU:HD12	9:D:191:THR:H	1.71	0.55
7:B:10:G:O2'	7:B:11:U:OP1	2.22	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:108:MET:HA	9:D:108:MET:HE2	1.88	0.55
15:J:24:LYS:NZ	15:J:90:ILE:HG23	2.22	0.55
15:J:86:ALA:O	15:J:90:ILE:HG13	2.06	0.55
24:S:41:ILE:HG22	24:S:43:ASP:H	1.71	0.55
6:A:392:C:H5'	21:P:13:ILE:HD11	1.88	0.55
6:A:416:G:H2'	6:A:417:G:H8	1.71	0.55
43:m:158:TYR:O	43:m:172:ARG:NH2	2.33	0.55
6:A:500:A:H62	6:A:509:G:H8	1.53	0.55
6:A:1203:G:OP2	6:A:1304:C:N4	2.37	0.55
15:J:11:LYS:HD3	15:J:71:LYS:HG2	1.88	0.55
52:v:64:SER:OG	52:v:65:SER:N	2.40	0.55
58:h:551:G:N2	58:h:554:A:OP2	2.36	0.55
58:h:756:A:H3'	58:h:757:G:H21	1.72	0.55
5:7:292:ALA:O	5:7:296:HIS:N	2.38	0.55
6:A:449:C:O2	21:P:43:LYS:NZ	2.34	0.55
6:A:1051:C:H2'	6:A:1052:G:H8	1.72	0.55
6:A:1248:U:O2'	6:A:1249:G:O5'	2.25	0.55
27:V:72:THR:O	27:V:77:GLN:NE2	2.38	0.55
58:h:1537:U:H2'	58:h:1538:G:H8	1.71	0.55
5:7:23:ILE:HD13	5:7:411:ASP:HB2	1.89	0.55
6:A:1028:G:OP1	19:N:4:LYS:N	2.28	0.55
7:B:48:C:OP2	52:v:14:ARG:NH1	2.39	0.55
22:Q:39:GLU:OE1	22:Q:39:GLU:N	2.40	0.55
39:i:143:HIS:ND1	39:i:194:GLY:O	2.22	0.55
49:s:63:LYS:HD2	58:h:2618:C:H5"	1.88	0.55
58:h:1174:G:H4'	58:h:1204:A:H8	1.71	0.55
58:h:2329:G:H1	58:h:2406:U:H3	1.53	0.55
6:A:39:G:H2'	6:A:40:C:C6	2.42	0.55
42:l:80:SER:OG	42:l:87:ARG:HA	2.07	0.55
5:7:531:HIS:ND1	5:7:548:ASP:OD2	2.40	0.55
6:A:900:A:H2'	6:A:901:A:C8	2.42	0.55
6:A:1011:U:H1'	6:A:1013:G:H1	1.72	0.55
6:A:1374:U:H2'	6:A:1375:G:C8	2.42	0.55
20:O:78:TYR:O	20:O:82:ILE:HG23	2.06	0.55
40:j:6:ILE:CD1	40:j:31:ALA:HB1	2.36	0.55
42:l:168:THR:OG1	52:v:3:HIS:NE2	2.40	0.55
5:7:186:LYS:O	5:7:199:TYR:N	2.40	0.55
6:A:144:G:H2'	6:A:145:G:C8	2.41	0.55
6:A:593:C:H2'	6:A:594:A:H8	1.72	0.55
9:D:126:ASP:OD1	9:D:126:ASP:N	2.39	0.55
17:L:31:ARG:O	17:L:58:THR:OG1	2.24	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:S:36:ARG:HD3	24:S:52:HIS:O	2.06	0.55
38:g:3:THR:OG1	38:g:4:GLY:N	2.39	0.55
46:p:33:HIS:O	46:p:66:ARG:NH2	2.39	0.55
58:h:1007:G:O2'	58:h:1008:G:O5'	2.19	0.55
58:h:1204:A:H4'	58:h:1205:G:N7	2.22	0.55
58:h:2288:C:H2'	58:h:2289:C:H6	1.72	0.55
5:7:320:LEU:HA	5:7:344:GLY:HA3	1.88	0.54
5:7:675:LYS:HE3	46:p:27:GLY:C	2.31	0.54
6:A:1476:A:H5"	17:L:44:LYS:NZ	2.22	0.54
29:X:14:ARG:NH1	58:h:2503:G:N7	2.55	0.54
58:h:1229:A:H8	58:h:1230:G:H1'	1.72	0.54
5:7:394:SER:HA	5:7:403:PRO:HA	1.89	0.54
5:7:458:GLU:HG2	17:L:77:HIS:CD2	2.41	0.54
6:A:956:A:OP1	19:N:29:ARG:NH2	2.39	0.54
11:F:30:ILE:HD13	11:F:65:VAL:HG11	1.88	0.54
32:a:11:SER:OG	32:a:12:THR:N	2.40	0.54
44:n:114:LYS:NZ	58:h:282:A:OP1	2.40	0.54
58:h:1675:U:O2'	58:h:1676:G:N7	2.40	0.54
5:7:24:ARG:NH2	5:7:287:SER:O	2.37	0.54
5:7:37:THR:OG1	60:7:801:GNP:O1B	2.22	0.54
6:A:1478:G:HO2'	58:h:2136:A:HO2'	1.55	0.54
17:L:46:ASN:HD22	17:L:89:ASP:CG	2.14	0.54
46:p:110:ILE:O	46:p:114:LYS:HG2	2.06	0.54
47:q:102:GLU:OE2	58:h:3004:C:N4	2.39	0.54
1:2:27:G:H2'	1:2:28:G:C8	2.42	0.54
9:D:24:GLN:N	9:D:24:GLN:OE1	2.41	0.54
22:Q:39:GLU:HB3	22:Q:56:THR:HG23	1.89	0.54
27:V:135:LEU:HB3	27:V:139:ARG:HH21	1.73	0.54
58:h:1223:U:H2'	58:h:1224:G:C8	2.42	0.54
58:h:2261:U:H2'	58:h:2262:C:C6	2.43	0.54
6:A:203:U:H2'	6:A:204:A:C8	2.42	0.54
18:M:52:GLN:O	18:M:55:VAL:HG22	2.07	0.54
26:U:10:ILE:HD11	26:U:37:SER:HB3	1.88	0.54
38:g:25:ARG:O	42:l:109:ARG:NH1	2.41	0.54
5:7:257:GLU:HG2	5:7:289:GLY:HA2	1.89	0.54
6:A:1350:U:OP2	14:I:134:LYS:NZ	2.36	0.54
31:Z:34:PHE:O	31:Z:38:THR:HG23	2.08	0.54
58:h:978:A:H2'	58:h:979:G:C8	2.42	0.54
5:7:282:LEU:HA	5:7:285:ILE:HD12	1.88	0.54
5:7:644:VAL:HA	5:7:688:PRO:HA	1.90	0.54
6:A:1202:G:O3'	24:S:77:THR:HG21	2.08	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:I:31:ARG:HG2	14:I:36:VAL:HG12	1.89	0.54
27:V:79:SER:O	27:V:83:GLU:HG2	2.07	0.54
33:b:45:LYS:NZ	58:h:3104:A:P	2.81	0.54
41:k:141:ALA:HB1	41:k:169:VAL:HG12	1.89	0.54
46:p:103:THR:O	46:p:107:VAL:HG23	2.07	0.54
6:A:403:C:H5"	9:D:128:PRO:HD2	1.89	0.54
16:K:85:GLU:OE1	16:K:86:HIS:ND1	2.23	0.54
27:V:187:LEU:HD21	27:V:196:VAL:HG21	1.90	0.54
58:h:1476:G:H2'	58:h:1477:C:C6	2.43	0.54
58:h:3023:G:H2'	58:h:3024:A:O4'	2.08	0.54
15:J:59:LYS:HE2	15:J:62:ARG:NH2	2.22	0.54
27:V:166:THR:HG23	27:V:173:VAL:HG11	1.90	0.54
28:W:165:PRO:HD2	28:W:168:VAL:HG21	1.90	0.54
5:7:309:ARG:NE	5:7:310:LYS:O	2.40	0.54
6:A:1018:C:H2'	6:A:1019:U:C6	2.39	0.54
13:H:15:ARG:NH2	13:H:77:LEU:O	2.35	0.54
41:k:143:THR:O	41:k:147:THR:HG23	2.08	0.54
55:y:12:LYS:NZ	58:h:1112:C:O2	2.40	0.54
58:h:196:A:H62	58:h:2654:A:H2'	1.73	0.54
6:A:21:U:H2'	6:A:22:C:H6	1.72	0.53
6:A:716:U:H2'	6:A:717:C:C6	2.43	0.53
7:B:116:C:H2'	7:B:117:A:C8	2.43	0.53
8:C:76:ILE:HG22	8:C:83:ALA:HB2	1.89	0.53
9:D:4:TYR:CZ	9:D:11:LYS:HE2	2.43	0.53
9:D:55:LYS:HB2	9:D:190:LEU:HD22	1.90	0.53
16:K:28:GLY:HA2	16:K:46:PRO:HD3	1.88	0.53
6:A:1098:U:H2'	6:A:1099:C:H6	1.73	0.53
26:U:43:LYS:NZ	58:h:1815:G:OP2	2.38	0.53
42:l:141:GLU:HG3	42:l:143:SER:H	1.73	0.53
58:h:2294:A:H2'	58:h:2295:C:C6	2.43	0.53
5:7:272:CYS:HB2	5:7:277:VAL:HB	1.90	0.53
6:A:122:G:OP1	6:A:585:U:O2'	2.22	0.53
6:A:193:C:N4	22:Q:18:GLY:O	2.39	0.53
27:V:140:GLU:O	27:V:144:LEU:HG	2.08	0.53
40:j:88:ASP:OD1	40:j:88:ASP:N	2.41	0.53
58:h:1177:G:H3'	58:h:1178:U:H2'	1.89	0.53
58:h:2178:G:O2'	58:h:2180:U:O4	2.24	0.53
58:h:2374:U:H2'	58:h:2375:G:C8	2.43	0.53
6:A:1013:G:H2'	6:A:1014:U:O4'	2.08	0.53
8:C:96:LYS:HG3	8:C:97:GLN:N	2.22	0.53
47:q:60:ASP:OD1	47:q:60:ASP:N	2.32	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:287:A:N6	58:h:299:G:O2'	2.42	0.53
58:h:1729:A:H2'	58:h:1731:A:C8	2.44	0.53
6:A:87:G:H2'	6:A:88:G:H8	1.73	0.53
6:A:335:C:H2'	6:A:336:A:C8	2.44	0.53
6:A:1019:U:C2	6:A:1020:G:C8	2.96	0.53
6:A:1457:G:H2'	6:A:1458:G:C8	2.43	0.53
8:C:133:MET:HE2	8:C:153:CYS:SG	2.47	0.53
17:L:4:ILE:O	17:L:8:VAL:HG13	2.08	0.53
22:Q:75:SER:O	22:Q:76:LEU:HD23	2.08	0.53
58:h:2288:C:H2'	58:h:2289:C:C6	2.43	0.53
9:D:165:TRP:NE1	9:D:181:PRO:HB3	2.23	0.53
40:j:63:ILE:HD11	58:h:3032:G:H5"	1.89	0.53
49:s:97:GLU:O	49:s:101:LYS:HG2	2.08	0.53
6:A:433:C:H2'	6:A:434:C:C6	2.43	0.53
6:A:1296:C:H2'	6:A:1297:U:C6	2.44	0.53
43:m:102:GLN:H	43:m:102:GLN:CD	2.16	0.53
47:q:49:ASP:HB3	47:q:114:LEU:HD11	1.90	0.53
58:h:1556:A:H2	58:h:1615:G:H1	1.57	0.53
12:G:51:ARG:HE	12:G:58:PRO:HD3	1.74	0.53
27:V:69:PHE:HB3	27:V:80:ILE:HG23	1.91	0.53
27:V:73:LYS:O	27:V:77:GLN:HG3	2.09	0.53
58:h:2224:C:O2'	58:h:2913:U:OP2	2.27	0.53
58:h:2538:A:H2'	58:h:2539:G:H8	1.73	0.53
5:7:196:TYR:N	5:7:207:ARG:O	2.41	0.53
11:F:26:PHE:O	11:F:29:VAL:HG12	2.08	0.53
58:h:1548:C:N4	58:h:1549:G:O6	2.42	0.53
58:h:2515:U:H2'	58:h:2516:U:C6	2.44	0.53
6:A:955:G:OP1	15:J:59:LYS:NZ	2.29	0.53
9:D:140:VAL:HG21	9:D:145:LEU:HD13	1.91	0.53
10:E:176:GLU:OE1	10:E:176:GLU:N	2.33	0.53
12:G:113:GLU:OE2	12:G:118:GLU:HB3	2.09	0.53
22:Q:83:SER:O	22:Q:87:ARG:NH1	2.41	0.53
6:A:485:G:H2'	6:A:486:G:C8	2.43	0.52
14:I:72:LEU:HD23	14:I:107:LEU:HD11	1.90	0.52
15:J:56:HIS:O	15:J:57:LYS:HG2	2.08	0.52
58:h:1211:G:N2	58:h:1216:A:H62	1.97	0.52
14:I:64:HIS:O	14:I:68:ILE:HG13	2.09	0.52
15:J:80:THR:HG22	15:J:82:LYS:H	1.73	0.52
58:h:279:U:H2'	58:h:280:G:H8	1.72	0.52
58:h:1710:A:N6	58:h:1716:A:H5"	2.23	0.52
58:h:2936:C:OP1	58:h:2938:G:H4'	2.09	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:26:LYS:NZ	27:V:194:ASP:OD2	2.40	0.52
45:o:53:LYS:O	45:o:57:VAL:HG23	2.10	0.52
46:p:94:PRO:HD2	58:h:1194:C:H1'	1.92	0.52
58:h:1704:U:H2'	58:h:1705:C:H6	1.74	0.52
6:A:544:C:C6	22:Q:48:LEU:HD21	2.45	0.52
6:A:927:G:C2	6:A:928:A:C8	2.97	0.52
54:x:120:ASP:OD1	54:x:123:ALA:N	2.41	0.52
58:h:2902:A:H2'	58:h:2903:A:H8	1.73	0.52
6:A:416:G:H2'	6:A:417:G:C8	2.44	0.52
6:A:505:C:P	17:L:88:LYS:HZ1	2.28	0.52
6:A:1014:U:H2'	6:A:1015:G:C8	2.34	0.52
9:D:120:VAL:HG22	9:D:138:ILE:HG12	1.90	0.52
11:F:52:ILE:HD12	11:F:87:ARG:CZ	2.40	0.52
25:T:45:ASP:N	25:T:45:ASP:OD1	2.42	0.52
27:V:30:PHE:HD2	27:V:201:PRO:HG3	1.74	0.52
52:v:31:GLY:N	52:v:54:ASP:OD2	2.37	0.52
55:y:39:VAL:HG11	55:y:42:VAL:HG23	1.92	0.52
58:h:1193:C:H2'	58:h:1194:C:C6	2.44	0.52
5:7:127:GLU:HA	5:7:130:LYS:HD2	1.90	0.52
6:A:81:C:H3'	6:A:82:U:H5"	1.91	0.52
6:A:103:G:N7	25:T:10:ARG:NH2	2.57	0.52
6:A:863:G:OP2	17:L:6:GLN:NE2	2.40	0.52
7:B:10:G:O2'	7:B:11:U:H5'	2.10	0.52
27:V:12:SER:HA	27:V:208:ARG:HH21	1.75	0.52
29:X:41:ARG:HG3	58:h:2553:G:H21	1.72	0.52
58:h:1011:A:C6	58:h:1012:C:H1'	2.44	0.52
6:A:436:C:O2'	9:D:149:PRO:HG3	2.09	0.52
6:A:522:G:H5"	9:D:10:ARG:HH22	1.75	0.52
18:M:90:LEU:O	18:M:94:ARG:HG2	2.10	0.52
27:V:54:TYR:CE1	27:V:220:ALA:HB2	2.45	0.52
29:X:56:ASP:OD1	29:X:58:THR:HG23	2.09	0.52
40:j:161:PHE:CD1	47:q:81:PRO:HG3	2.45	0.52
50:t:80:GLU:OE2	58:h:2717:U:O2'	2.23	0.52
58:h:277:U:H2'	58:h:278:A:C8	2.45	0.52
58:h:2367:G:H2'	58:h:2369:C:H5'	1.91	0.52
58:h:3022:G:H2'	58:h:3023:G:O4'	2.10	0.52
5:7:213:HIS:HB3	5:7:216:ALA:HB3	1.91	0.52
5:7:553:PRO:HA	5:7:602:ILE:HG22	1.91	0.52
6:A:191:C:H2'	6:A:192:G:O4'	2.09	0.52
6:A:498:C:H2'	6:A:510:G:C8	2.45	0.52
6:A:1153:U:H2'	6:A:1154:C:C6	2.45	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:43:GLU:OE1	9:D:47:ARG:NH2	2.42	0.52
26:U:47:GLU:HG3	26:U:54:VAL:HG12	1.91	0.52
50:t:71:ASP:OD1	50:t:71:ASP:N	2.33	0.52
58:h:3078:G:N2	58:h:3081:A:OP2	2.26	0.52
1:2:18:G:O2'	1:2:57:G:N2	2.36	0.52
5:7:241:TYR:CD1	5:7:247:ILE:HG12	2.45	0.52
9:D:182:GLU:O	9:D:185:GLN:N	2.40	0.52
42:l:8:LEU:HD12	42:l:9:PRO:HD2	1.92	0.52
51:u:24:LEU:HB3	51:u:44:LEU:HD22	1.91	0.52
58:h:2961:G:H2'	58:h:2962:A:C8	2.45	0.52
5:7:592:THR:OG1	5:7:596:GLY:HA2	2.10	0.52
6:A:737:U:O2'	6:A:861:C:O2	2.27	0.52
6:A:1042:U:H2'	6:A:1043:C:C6	2.45	0.52
20:O:18:HIS:CE1	20:O:21:ASP:HB3	2.44	0.52
57:1:75:ASP:OD2	57:1:101:ASN:HB2	2.10	0.52
58:h:1550:G:O6	58:h:1620:U:C4	2.63	0.52
58:h:2470:A:H2'	58:h:2471:A:H8	1.75	0.52
5:7:458:GLU:HA	5:7:461:LEU:HB2	1.92	0.51
6:A:1199:C:H2'	6:A:1200:A:H8	1.76	0.51
6:A:1232:A:N3	6:A:1352:C:O2'	2.42	0.51
9:D:74:ALA:HB3	9:D:85:LEU:HD22	1.91	0.51
20:O:88:ARG:NH1	58:h:831:A:OP2	2.42	0.51
33:b:45:LYS:HZ1	58:h:3104:A:P	2.33	0.51
39:i:212:MET:HG3	58:h:2008:A:H5"	1.92	0.51
39:i:218:ARG:NH2	58:h:896:A:OP1	2.41	0.51
58:h:667:A:OP2	58:h:2723:C:O2'	2.28	0.51
5:7:475:LEU:HD13	5:7:499:VAL:HG21	1.90	0.51
7:B:15:U:OP2	7:B:71:C:O2'	2.28	0.51
9:D:52:GLU:HG3	9:D:194:LEU:HD12	1.92	0.51
9:D:190:LEU:HD12	9:D:191:THR:N	2.24	0.51
40:j:148:PRO:O	58:h:2735:U:O2'	2.23	0.51
47:q:102:GLU:O	47:q:106:ILE:HG12	2.10	0.51
5:7:579:VAL:HG22	5:7:621:PHE:HB3	1.91	0.51
6:A:638:A:O4'	20:O:22:THR:HG21	2.10	0.51
6:A:653:G:H2'	6:A:654:G:H8	1.75	0.51
6:A:672:U:O2'	6:A:674:G:N7	2.30	0.51
8:C:6:ASN:OD1	8:C:9:GLY:N	2.32	0.51
19:N:47:MET:HG2	19:N:52:GLU:OE1	2.09	0.51
27:V:63:HIS:ND1	27:V:63:HIS:O	2.43	0.51
48:r:13:ASN:OD1	48:r:97:ARG:HG2	2.11	0.51
58:h:1540:U:H3	58:h:1632:G:H1	1.57	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:11:U:O2'	7:B:12:C:H5'	2.11	0.51
39:i:20:ASP:O	39:i:22:ALA:N	2.44	0.51
58:h:1435:C:C5	58:h:1444:U:H5"	2.45	0.51
24:S:18:LYS:O	24:S:22:GLN:HG3	2.09	0.51
25:T:20:ARG:HH22	25:T:64:LYS:HB3	1.75	0.51
28:W:119:THR:OG1	28:W:152:GLU:OE2	2.28	0.51
58:h:1087:G:H2'	58:h:1088:U:C6	2.46	0.51
5:7:44:LEU:HB3	5:7:49:VAL:HB	1.93	0.51
6:A:356:A:N3	6:A:368:U:O2'	2.37	0.51
6:A:485:G:H2'	6:A:486:G:H8	1.76	0.51
6:A:1395:C:H2'	6:A:1396:A:C8	2.45	0.51
37:f:33:LYS:NZ	58:h:2967:C:OP1	2.44	0.51
43:m:106:PHE:HB2	43:m:114:VAL:HG13	1.91	0.51
58:h:297:G:H2'	58:h:298:G:C8	2.46	0.51
58:h:621:U:H2'	58:h:622:C:C6	2.45	0.51
58:h:1696:G:O2'	58:h:1736:G:O6	2.28	0.51
5:7:353:HIS:CD2	5:7:355:SER:HB2	2.46	0.51
34:c:30:ARG:HH11	34:c:30:ARG:HG3	1.74	0.51
42:l:15:TYR:HA	42:l:19:ILE:HG13	1.92	0.51
58:h:389:G:N1	58:h:392:A:OP2	2.38	0.51
58:h:2538:A:H2'	58:h:2539:G:C8	2.46	0.51
5:7:366:GLY:HA3	5:7:370:ALA:HA	1.91	0.51
6:A:1036:U:H5'	8:C:163:SER:OG	2.10	0.51
14:I:75:VAL:HG13	14:I:77:ARG:H	1.76	0.51
42:l:111:ILE:HD11	42:l:181:GLY:C	2.35	0.51
58:h:2383:U:C4	58:h:2384:C:H1'	2.46	0.51
6:A:737:U:H2'	6:A:738:G:O4'	2.10	0.51
6:A:1007:U:O2'	6:A:1008:C:O5'	2.29	0.51
12:G:26:LEU:HD13	12:G:101:LEU:HD22	1.93	0.51
42:l:172:GLU:H	42:l:172:GLU:CD	2.19	0.51
47:q:102:GLU:HG2	47:q:124:VAL:HG11	1.93	0.51
58:h:705:C:H2'	58:h:706:G:H5"	1.93	0.51
5:7:20:PRO:HB2	5:7:294:PRO:HD3	1.93	0.51
6:A:411:A:N6	6:A:413:G:H21	2.08	0.51
6:A:800:U:H4'	6:A:801:G:OP2	2.11	0.51
43:m:87:LYS:HG3	43:m:166:GLU:HB2	1.93	0.51
43:m:161:LYS:NZ	58:h:2881:A:O2'	2.44	0.51
46:p:54:ASN:HB3	46:p:79:LYS:HD3	1.93	0.51
50:t:1:MET:N	50:t:48:GLU:OE1	2.44	0.51
56:z:32:ARG:NH1	56:z:81:VAL:O	2.44	0.51
58:h:2074:G:N2	58:h:2110:U:O4	2.43	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:7:296:HIS:ND1	5:7:298:LEU:HD23	2.27	0.50
13:H:114:THR:HG22	13:H:116:ARG:H	1.75	0.50
35:d:21:PHE:HB2	35:d:46:THR:HG21	1.93	0.50
42:l:134:ASN:OD1	42:l:164:VAL:HG13	2.11	0.50
57:1:82:ARG:NH2	58:h:382:A:OP2	2.44	0.50
58:h:277:U:H2'	58:h:278:A:H8	1.76	0.50
58:h:1673:A:H5"	58:h:1674:G:H5"	1.92	0.50
1:2:16:U:O3'	1:2:17:C:H2'	2.11	0.50
6:A:534:U:H2'	6:A:535:C:C6	2.46	0.50
6:A:1486:A:H2	6:A:1489:G:N1	2.07	0.50
38:g:1:MET:HE2	38:g:1:MET:HA	1.94	0.50
46:p:39:GLU:O	46:p:42:LYS:HG3	2.10	0.50
48:r:9:LYS:HB2	48:r:9:LYS:NZ	2.25	0.50
54:x:22:LYS:NZ	58:h:17:C:OP1	2.40	0.50
58:h:998:G:H2'	58:h:999:C:C6	2.46	0.50
58:h:2044:U:H5'	58:h:2195:U:H5'	1.93	0.50
58:h:2327:C:H2'	58:h:2328:G:H8	1.75	0.50
6:A:1060:A:H4'	10:E:46:VAL:HG21	1.91	0.50
21:P:51:ILE:HG21	21:P:77:THR:HG21	1.93	0.50
42:l:41:VAL:HG13	42:l:98:LEU:HB2	1.92	0.50
44:n:62:ILE:H	44:n:65:ALA:HB3	1.76	0.50
58:h:2515:U:OP1	58:h:2604:U:O2'	2.29	0.50
5:7:321:LEU:HB3	5:7:343:SER:HB3	1.94	0.50
5:7:376:GLY:O	5:7:379:HIS:N	2.38	0.50
60:7:801:GNP:H8	60:7:801:GNP:O5'	2.11	0.50
6:A:1329:G:O6	14:I:32:ARG:NH2	2.43	0.50
58:h:49:A:H2'	58:h:50:A:C8	2.47	0.50
58:h:1165:G:N3	58:h:1228:A:C6	2.80	0.50
58:h:2443:U:H2'	58:h:2444:C:H6	1.76	0.50
5:7:565:LYS:N	5:7:606:LEU:O	2.35	0.50
6:A:746:A:OP2	6:A:792:G:N2	2.45	0.50
6:A:1447:C:H2'	6:A:1448:G:H8	1.77	0.50
8:C:105:VAL:HG21	8:C:114:LEU:HD11	1.93	0.50
40:j:173:ASP:OD1	40:j:173:ASP:N	2.42	0.50
58:h:1690:A:H2'	58:h:1691:A:H8	1.76	0.50
58:h:2815:C:H2'	58:h:2816:G:H8	1.76	0.50
4:5:96:LEU:HA	4:5:100:ALA:HB3	1.94	0.50
6:A:987:A:H2'	6:A:988:C:C6	2.46	0.50
6:A:1076:C:H2'	6:A:1077:C:C6	2.46	0.50
47:q:13:ARG:NH1	47:q:121:LYS:HE2	2.27	0.50
48:r:68:GLU:HG2	48:r:78:LYS:HD2	1.93	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:60:U:H2'	6:A:61:G:C8	2.45	0.50
58:h:1640:A:O2'	58:h:1641:U:OP1	2.27	0.50
6:A:299:G:H2'	6:A:300:A:C8	2.47	0.50
10:E:185:PRO:HG2	10:E:188:ASP:OD2	2.12	0.50
29:X:15:ASP:OD1	29:X:16:SER:N	2.45	0.50
45:o:26:THR:HA	45:o:106:LYS:H	1.77	0.50
58:h:300:G:O2'	58:h:302:U:O4'	2.27	0.50
58:h:1002:C:H2'	58:h:1003:A:H3'	1.93	0.50
58:h:1284:A:H2'	58:h:1285:G:H8	1.77	0.50
58:h:1703:G:H2'	58:h:1704:U:C6	2.46	0.50
5:7:322:ALA:HA	5:7:341:VAL:HA	1.93	0.50
5:7:465:LEU:HA	5:7:468:LEU:HD12	1.94	0.50
6:A:363:A:N7	17:L:27:SER:OG	2.40	0.50
6:A:698:A:H5'	16:K:128:ASN:HB2	1.94	0.50
6:A:1337:A:H2'	6:A:1338:G:H8	1.77	0.50
8:C:129:PHE:O	8:C:133:MET:HG3	2.11	0.50
15:J:53:ARG:NH1	15:J:63:GLU:HB2	2.27	0.50
44:n:5:LEU:HD13	44:n:9:VAL:HG22	1.94	0.50
50:t:65:TRP:HB2	50:t:105:GLU:HB2	1.94	0.50
58:h:672:C:H2'	58:h:673:C:C6	2.47	0.50
58:h:1343:G:H2'	58:h:1345:G:C8	2.46	0.50
58:h:1790:A:H2'	58:h:1791:A:C8	2.47	0.50
5:7:151:ASP:HA	5:7:183:GLU:O	2.11	0.49
5:7:172:VAL:HG22	5:7:266:PHE:HB2	1.93	0.49
5:7:455:LYS:HD3	17:L:33:VAL:HG13	1.94	0.49
6:A:986:G:N1	6:A:1016:G:O6	2.45	0.49
12:G:75:VAL:HG21	12:G:144:MET:HG2	1.94	0.49
13:H:79:ARG:NH2	13:H:81:SER:O	2.45	0.49
24:S:28:LYS:N	24:S:28:LYS:HD3	2.27	0.49
39:i:99:ASP:C	39:i:99:ASP:OD1	2.55	0.49
52:v:18:ARG:NH1	52:v:105:GLY:O	2.45	0.49
58:h:1396:G:H2'	58:h:1397:U:C6	2.47	0.49
58:h:1515:C:H2'	58:h:1516:G:H8	1.76	0.49
58:h:1614:G:H2'	58:h:1615:G:H8	1.76	0.49
58:h:2106:A:OP2	58:h:2106:A:H8	1.96	0.49
58:h:2321:U:H2'	58:h:2322:C:C6	2.47	0.49
5:7:81:ALA:O	5:7:92:LEU:N	2.36	0.49
6:A:846:A:H2'	6:A:847:A:C8	2.47	0.49
6:A:958:G:OP2	6:A:1340:U:O2'	2.29	0.49
6:A:1497:A:H2'	6:A:1498:C:C6	2.48	0.49
27:V:136:MET:HE2	27:V:136:MET:HA	1.95	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:l:100:GLY:N	42:l:103:MET:HE2	2.27	0.49
44:n:105:LYS:NZ	44:n:111:ASN:OD1	2.40	0.49
44:n:124:ILE:HG22	44:n:125:LYS:N	2.26	0.49
58:h:742:G:O2'	58:h:2575:G:OP1	2.26	0.49
58:h:795:G:H2'	58:h:796:A:C8	2.47	0.49
58:h:858:A:O2'	58:h:1877:U:OP1	2.26	0.49
5:7:423:THR:OG1	5:7:470:ALA:O	2.20	0.49
8:C:62:ARG:NH2	8:C:99:GLN:HB3	2.28	0.49
9:D:90:GLU:O	9:D:95:ASN:ND2	2.45	0.49
10:E:132:ALA:HB2	10:E:150:ALA:HB3	1.94	0.49
47:q:37:ARG:NH1	58:h:1125:C:OP1	2.45	0.49
58:h:1343:G:H2'	58:h:1345:G:N7	2.27	0.49
5:7:550:GLU:O	5:7:605:THR:N	2.45	0.49
6:A:811:U:H5'	27:V:21:ARG:HG2	1.95	0.49
6:A:1133:G:H4'	15:J:15:HIS:NE2	2.26	0.49
11:F:28:ASN:HA	11:F:31:ARG:HG2	1.95	0.49
17:L:34:CYS:HA	17:L:55:VAL:HA	1.94	0.49
46:p:28:PRO:HG2	58:h:1213:A:H61	1.78	0.49
5:7:527:LYS:HD2	5:7:550:GLU:HG2	1.94	0.49
6:A:185:G:C6	6:A:204:A:C6	3.00	0.49
8:C:68:HIS:HB3	8:C:105:VAL:HG13	1.93	0.49
13:H:70:ARG:HG3	13:H:70:ARG:O	2.13	0.49
14:I:66:GLN:HA	14:I:66:GLN:OE1	2.13	0.49
58:h:89:A:O2'	58:h:90:C:OP1	2.30	0.49
58:h:263:G:H2'	58:h:264:G:O4'	2.13	0.49
58:h:978:A:H2'	58:h:979:G:H8	1.77	0.49
58:h:995:U:H2'	58:h:996:G:C8	2.47	0.49
58:h:2757:C:OP1	58:h:2889:A:O2'	2.28	0.49
58:h:2778:U:H2'	58:h:2779:U:C6	2.47	0.49
58:h:2851:G:N2	58:h:3001:G:OP2	2.45	0.49
6:A:352:C:O2'	6:A:354:G:OP1	2.25	0.49
6:A:1425:G:H5'	6:A:1426:C:C5	2.41	0.49
8:C:36:VAL:HG11	19:N:26:LYS:HG3	1.95	0.49
21:P:73:LEU:O	21:P:77:THR:HG22	2.12	0.49
50:t:58:ILE:HD11	50:t:108:TYR:CG	2.48	0.49
53:w:1:MET:HE1	53:w:3:THR:HA	1.93	0.49
5:7:674:ASP:O	5:7:682:VAL:N	2.34	0.49
6:A:422:C:H4'	6:A:423:G:O5'	2.11	0.49
6:A:1281:A:H2'	6:A:1281:A:N3	2.27	0.49
6:A:1411:A:H2'	6:A:1412:C:H6	1.78	0.49
6:A:1458:G:H2'	6:A:1459:G:O4'	2.12	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:71:TYR:CG	9:D:199:TYR:HD2	2.30	0.49
39:i:72:LYS:HE2	39:i:101:GLU:OE1	2.12	0.49
43:m:4:ILE:HD11	58:h:2975:G:H4'	1.95	0.49
58:h:2376:G:H2'	58:h:2377:G:H8	1.77	0.49
2:3:9:ARG:O	2:3:12:LYS:HB3	2.13	0.49
5:7:444:PRO:HG3	5:7:476:ARG:H	1.78	0.49
6:A:190:U:H2'	6:A:191:C:C6	2.47	0.49
10:E:176:GLU:CD	10:E:198:ARG:HH22	2.21	0.49
14:I:41:LEU:HD12	14:I:42:VAL:H	1.77	0.49
20:O:82:ILE:HG13	20:O:83:GLU:N	2.27	0.49
27:V:8:GLN:O	27:V:12:SER:HB3	2.12	0.49
39:i:41:GLY:O	39:i:43:ARG:NH1	2.46	0.49
43:m:71:THR:HG21	58:h:2971:G:H5'	1.94	0.49
44:n:41:ARG:HD2	58:h:306:U:H5"	1.95	0.49
56:z:95:ARG:HG3	56:z:101:PHE:CD2	2.48	0.49
58:h:301:U:H5'	58:h:302:U:O5'	2.13	0.49
58:h:1859:A:H2'	58:h:1860:G:O4'	2.13	0.49
58:h:2386:U:OP1	58:h:2393:A:O2'	2.30	0.49
58:h:3071:A:N7	58:h:3089:A:O2'	2.39	0.49
5:7:455:LYS:HZ3	17:L:34:CYS:C	2.21	0.49
6:A:863:G:P	17:L:9:ARG:HH22	2.36	0.49
6:A:1414:C:H2'	6:A:1415:G:O4'	2.12	0.49
9:D:165:TRP:CD1	9:D:165:TRP:H	2.29	0.49
42:l:128:GLN:NE2	58:h:2528:G:O5'	2.37	0.49
43:m:3:ARG:HA	43:m:6:LYS:NZ	2.28	0.49
51:u:77:HIS:CE1	58:h:1674:G:C5	3.01	0.49
58:h:543:U:H3'	58:h:544:U:C5'	2.42	0.49
58:h:639:C:O2'	58:h:640:G:H8	1.95	0.49
5:7:214:ASP:N	5:7:214:ASP:OD1	2.46	0.48
5:7:234:ASP:HB3	5:7:237:LEU:HD12	1.95	0.48
6:A:109:G:H2'	6:A:110:U:C6	2.48	0.48
13:H:98:LEU:HD11	13:H:132:TRP:CD1	2.48	0.48
28:W:117:ASP:H	28:W:149:GLU:HG2	1.78	0.48
28:W:190:LEU:O	50:t:55:ASN:ND2	2.46	0.48
48:r:76:TYR:HB2	53:w:72:THR:CG2	2.43	0.48
58:h:673:C:H2'	58:h:674:U:C6	2.48	0.48
58:h:1194:C:H2'	58:h:1195:A:C8	2.48	0.48
58:h:1707:G:H2'	58:h:1708:A:H8	1.78	0.48
5:7:637:LYS:HD3	5:7:638:ILE:H	1.79	0.48
6:A:194:A:N6	22:Q:20:ARG:HH12	2.11	0.48
6:A:254:G:H2'	6:A:255:G:H8	1.78	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1066:U:H3	6:A:1079:G:H22	1.61	0.48
9:D:189:PRO:O	9:D:190:LEU:HG	2.13	0.48
12:G:54:THR:OG1	12:G:56:THR:OG1	2.22	0.48
21:P:93:LEU:H	21:P:93:LEU:HD12	1.77	0.48
44:n:9:VAL:HG21	44:n:12:LEU:HD12	1.94	0.48
58:h:728:G:H2'	58:h:729:C:C6	2.49	0.48
58:h:1146:A:H2'	58:h:1147:A:C8	2.48	0.48
58:h:2351:A:H2'	58:h:2352:C:H6	1.77	0.48
58:h:2378:U:H3'	58:h:2379:G:H8	1.78	0.48
3:4:7:G:H2'	3:4:8:A:H8	1.78	0.48
5:7:483:THR:HG21	5:7:517:ARG:HD3	1.96	0.48
6:A:449:C:H2'	6:A:450:G:O4'	2.12	0.48
6:A:819:U:H3	6:A:829:G:H1	1.61	0.48
6:A:904:G:H2'	6:A:905:A:H8	1.77	0.48
6:A:1149:C:O2'	6:A:1150:A:OP2	2.24	0.48
14:I:50:LEU:HB3	14:I:87:LEU:HD11	1.94	0.48
17:L:50:ARG:HG3	17:L:90:LEU:HD21	1.95	0.48
21:P:96:LYS:HD3	21:P:97:GLU:N	2.28	0.48
42:l:82:ALA:C	42:l:85:LYS:H	2.21	0.48
58:h:1005:A:H2'	58:h:1006:G:O4'	2.12	0.48
6:A:437:U:H2'	6:A:438:U:O4'	2.13	0.48
6:A:1132:U:O2'	6:A:1133:G:H5"	2.14	0.48
10:E:191:PRO:HD2	10:E:194:MET:CE	2.43	0.48
40:j:42:THR:OG1	40:j:89:GLU:OE2	2.17	0.48
49:s:105:ARG:HH11	58:h:720:C:N4	2.10	0.48
53:w:48:ARG:NH2	58:h:2909:G:OP1	2.40	0.48
58:h:290:C:H2'	58:h:301:U:C5	2.47	0.48
58:h:1157:G:H1	58:h:1234:U:H3	1.62	0.48
58:h:1542:A:H2'	58:h:1543:A:H8	1.77	0.48
58:h:1656:A:H2'	58:h:1657:G:C8	2.49	0.48
58:h:1963:G:H2'	58:h:1964:U:H6	1.78	0.48
6:A:84:U:H3'	6:A:85:C:H6	1.78	0.48
6:A:397:A:N7	6:A:527:A:O2'	2.43	0.48
6:A:948:G:O2'	14:I:149:LYS:O	2.32	0.48
16:K:44:THR:HA	16:K:50:VAL:HA	1.95	0.48
17:L:76:GLU:OE1	17:L:77:HIS:ND1	2.34	0.48
42:l:170:ASP:OD1	42:l:171:ALA:N	2.47	0.48
47:q:113:LYS:HD3	58:h:615:A:H5'	1.94	0.48
53:w:33:GLU:O	53:w:36:LYS:HG2	2.13	0.48
58:h:2761:U:H2'	58:h:2762:C:C6	2.48	0.48
5:7:678:ALA:O	46:p:31:GLY:HA3	2.13	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:532:U:H2'	6:A:533:G:H8	1.78	0.48
15:J:87:LEU:HD23	15:J:90:ILE:HD12	1.95	0.48
27:V:61:VAL:HG13	27:V:224:GLY:HA3	1.94	0.48
28:W:7:ILE:H	28:W:7:ILE:HD12	1.78	0.48
46:p:81:LEU:HD21	46:p:134:ALA:HB2	1.94	0.48
49:s:94:GLY:H	49:s:97:GLU:CD	2.22	0.48
58:h:701:A:H2'	58:h:702:A:C8	2.49	0.48
58:h:1542:A:H2'	58:h:1543:A:C8	2.49	0.48
58:h:2510:A:H4'	58:h:2511:A:O4'	2.13	0.48
58:h:2569:G:N3	58:h:2605:C:H2'	2.28	0.48
5:7:581:LYS:HD3	5:7:622:GLN:HE21	1.79	0.48
6:A:23:C:H5"	10:E:116:ALA:HB3	1.95	0.48
6:A:1349:C:O2'	15:J:62:ARG:NH1	2.47	0.48
8:C:119:VAL:HG13	8:C:132:ALA:HB1	1.94	0.48
41:k:160:ARG:NH1	58:h:706:G:HO2'	2.11	0.48
47:q:27:ARG:NH2	58:h:1260:C:O2'	2.46	0.48
55:y:75:ILE:HB	55:y:88:GLN:HB3	1.94	0.48
58:h:138:A:N3	58:h:1523:U:O2'	2.34	0.48
58:h:855:C:H5'	58:h:2001:A:H3'	1.95	0.48
58:h:1550:G:H1	58:h:1620:U:H3	1.61	0.48
5:7:26:VAL:HG22	5:7:114:CYS:HB3	1.95	0.48
6:A:492:U:H2'	6:A:493:A:H8	1.78	0.48
6:A:727:U:H2'	6:A:728:A:O4'	2.14	0.48
6:A:1253:U:H2'	6:A:1254:G:O4'	2.13	0.48
12:G:74:GLU:OE2	12:G:95:ARG:NH1	2.46	0.48
43:m:7:GLN:HB2	43:m:70:ARG:NH1	2.28	0.48
58:h:489:A:H2'	58:h:490:A:C8	2.49	0.48
58:h:1515:C:H2'	58:h:1516:G:C8	2.49	0.48
6:A:485:G:O2'	6:A:486:G:OP1	2.29	0.48
6:A:589:A:C5	6:A:590:A:C8	3.02	0.48
6:A:1411:A:H2'	6:A:1412:C:C6	2.48	0.48
9:D:49:GLN:HB3	9:D:198:LEU:HB2	1.96	0.48
27:V:10:LEU:HD23	27:V:15:HIS:CD2	2.49	0.48
56:z:69:GLU:HB2	56:z:71:LEU:HG	1.94	0.48
58:h:979:G:H2'	58:h:980:C:C6	2.49	0.48
4:5:80:VAL:HG21	4:5:123:ALA:HB2	1.95	0.48
5:7:324:VAL:HG11	5:7:421:ALA:HB1	1.94	0.48
5:7:638:ILE:HD13	5:7:639:ASN:H	1.79	0.48
6:A:312:C:H2'	6:A:313:A:C8	2.49	0.48
6:A:1269:A:H2	6:A:1335:G:H1'	1.79	0.48
58:h:2622:C:H2'	58:h:2623:A:H8	1.79	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1231:A:H2'	6:A:1232:A:C8	2.48	0.47
24:S:38:SER:O	24:S:71:LEU:HD23	2.14	0.47
28:W:175:GLU:OE1	28:W:175:GLU:N	2.47	0.47
43:m:4:ILE:O	43:m:70:ARG:HG2	2.14	0.47
51:u:10:LEU:HD12	51:u:10:LEU:HA	1.74	0.47
52:v:82:VAL:O	52:v:86:GLN:HG3	2.14	0.47
58:h:691:U:H2'	58:h:692:C:C6	2.49	0.47
58:h:996:G:H2'	58:h:997:G:C8	2.45	0.47
58:h:1715:A:H2'	58:h:1716:A:C8	2.49	0.47
58:h:2412:U:H2'	58:h:2413:G:H8	1.78	0.47
5:7:397:LEU:HD22	5:7:402:ARG:HD3	1.94	0.47
5:7:444:PRO:HG2	5:7:476:ARG:HB3	1.95	0.47
6:A:407:A:OP1	9:D:107:ARG:NH1	2.47	0.47
6:A:822:U:H2'	6:A:824:C:H1'	1.96	0.47
14:I:45:THR:OG1	14:I:46:GLY:N	2.43	0.47
18:M:16:GLU:HB3	18:M:41:LYS:HB2	1.96	0.47
27:V:10:LEU:HD23	27:V:15:HIS:HD2	1.78	0.47
50:t:17:GLN:HG3	58:h:1075:U:O4	2.15	0.47
57:1:8:THR:O	57:1:74:VAL:HG12	2.14	0.47
58:h:974:G:O2'	58:h:975:U:P	2.72	0.47
58:h:1146:A:N3	58:h:2710:G:O2'	2.41	0.47
58:h:2289:C:H2'	58:h:2290:C:C6	2.50	0.47
58:h:2368:C:H2'	58:h:2370:A:C6	2.48	0.47
58:h:3007:G:H2'	58:h:3008:C:C6	2.49	0.47
3:4:22:A:O2'	6:A:1177:A:N6	2.47	0.47
6:A:1013:G:H2'	6:A:1014:U:C4'	2.44	0.47
8:C:62:ARG:HH21	8:C:99:GLN:HB3	1.79	0.47
20:O:12:LEU:HG	20:O:31:LEU:HD21	1.96	0.47
45:o:94:LYS:HE2	45:o:121:GLU:HA	1.94	0.47
45:o:115:LEU:HB3	45:o:119:ASP:HB2	1.96	0.47
58:h:273:A:H62	58:h:313:G:H21	1.61	0.47
58:h:1952:C:H2'	58:h:1953:C:C6	2.49	0.47
58:h:3020:U:O2'	58:h:3021:A:O5'	2.28	0.47
58:h:3055:G:H2'	58:h:3100:A:H61	1.79	0.47
6:A:252:U:H2'	6:A:253:U:C6	2.49	0.47
6:A:1514:G:H2'	6:A:1515:A:C8	2.49	0.47
15:J:51:VAL:HG13	19:N:41:ARG:HB2	1.96	0.47
17:L:57:LEU:HD21	17:L:82:VAL:HG21	1.95	0.47
18:M:49:THR:HB	18:M:52:GLN:HG3	1.97	0.47
45:o:105:ILE:HB	45:o:117:VAL:HG13	1.96	0.47
46:p:15:ILE:HD11	46:p:22:PRO:HG3	1.96	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:p:24:PRO:HD2	46:p:25:PRO:HD3	1.95	0.47
51:u:26:THR:HG23	51:u:75:VAL:HG21	1.95	0.47
58:h:999:C:H2'	58:h:1000:C:O4'	2.14	0.47
58:h:1201:G:H2'	58:h:1202:A:H2'	1.96	0.47
58:h:1204:A:H4'	58:h:1205:G:C8	2.49	0.47
58:h:1659:U:H2'	58:h:1660:A:H8	1.79	0.47
58:h:1900:C:H2'	58:h:1901:C:C6	2.49	0.47
58:h:2365:A:H2'	58:h:2366:C:C6	2.49	0.47
58:h:2401:U:H2'	58:h:2402:C:C6	2.49	0.47
6:A:79:C:H2'	6:A:80:C:C6	2.50	0.47
6:A:481:G:H1'	6:A:529:C:H1'	1.97	0.47
9:D:13:ARG:HD2	9:D:31:TYR:O	2.14	0.47
12:G:75:VAL:HG13	12:G:86:GLN:HB3	1.96	0.47
12:G:75:VAL:HG11	12:G:86:GLN:HE21	1.79	0.47
22:Q:73:ARG:HB3	22:Q:95:GLU:HB3	1.96	0.47
25:T:4:ILE:O	25:T:8:ILE:HG13	2.13	0.47
26:U:57:VAL:HG12	26:U:84:VAL:HG13	1.95	0.47
40:j:169:ARG:NH2	58:h:3046:C:H41	2.13	0.47
56:z:72:ASP:OD1	56:z:74:SER:OG	2.30	0.47
58:h:781:C:H2'	58:h:782:U:C6	2.50	0.47
58:h:954:U:H2'	58:h:955:C:C6	2.50	0.47
58:h:1543:A:N1	58:h:1628:A:O2'	2.40	0.47
58:h:1716:A:H2'	58:h:1718:C:C5	2.50	0.47
58:h:2622:C:H2'	58:h:2623:A:C8	2.49	0.47
5:7:189:VAL:HG22	5:7:196:TYR:HB2	1.97	0.47
5:7:232:SER:HA	5:7:262:ARG:HH22	1.80	0.47
6:A:407:A:O4'	9:D:111:GLN:NE2	2.45	0.47
6:A:408:G:H4'	9:D:104:ARG:HH22	1.80	0.47
33:b:16:ARG:NH1	58:h:1379:G:OP1	2.43	0.47
42:l:18:GLU:N	42:l:18:GLU:OE1	2.48	0.47
45:o:50:THR:O	45:o:79:ILE:N	2.41	0.47
58:h:1195:A:N6	58:h:1206:A:O2'	2.41	0.47
58:h:1614:G:H2'	58:h:1615:G:C8	2.50	0.47
58:h:2058:U:C2	58:h:2059:G:C8	3.02	0.47
58:h:2815:C:H2'	58:h:2816:G:C8	2.49	0.47
2:3:22:PRO:HB3	58:h:1102:G:H2'	1.97	0.47
5:7:668:GLY:HA2	5:7:687:ILE:HG12	1.97	0.47
6:A:426:U:OP1	9:D:31:TYR:OH	2.26	0.47
6:A:465:G:O2'	6:A:466:U:H6	1.98	0.47
6:A:532:U:C2	6:A:533:G:C8	3.03	0.47
6:A:903:U:O2	10:E:49:VAL:HG22	2.14	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:994:C:H2'	6:A:995:A:H8	1.79	0.47
6:A:1098:U:H2'	6:A:1099:C:C6	2.49	0.47
6:A:1370:G:H2'	6:A:1371:C:C6	2.50	0.47
6:A:1384:G:H2'	6:A:1385:C:O4'	2.14	0.47
6:A:1442:G:H5"	25:T:26:SER:OG	2.14	0.47
13:H:25:VAL:O	13:H:61:VAL:HA	2.13	0.47
13:H:101:LEU:HD23	13:H:101:LEU:HA	1.76	0.47
17:L:59:SER:HB2	17:L:61:VAL:HG22	1.97	0.47
19:N:3:LYS:O	19:N:7:VAL:HG23	2.15	0.47
40:j:50:VAL:HG12	40:j:84:LEU:HB3	1.97	0.47
40:j:160:VAL:O	40:j:160:VAL:HG12	2.13	0.47
41:k:82:PRO:HB3	41:k:90:VAL:HG23	1.97	0.47
42:l:149:ASP:OD1	42:l:150:VAL:N	2.47	0.47
44:n:124:ILE:HG22	44:n:125:LYS:H	1.80	0.47
46:p:15:ILE:HG23	46:p:44:TYR:OH	2.13	0.47
58:h:1650:G:H2'	58:h:1651:C:C6	2.50	0.47
58:h:1717:U:H5"	58:h:1718:C:H5	1.79	0.47
58:h:2879:G:O2'	58:h:2888:G:O6	2.32	0.47
5:7:260:VAL:HG12	5:7:291:PRO:HD3	1.97	0.47
6:A:332:G:H2'	6:A:333:C:H6	1.80	0.47
6:A:362:G:H5"	17:L:58:THR:HG21	1.97	0.47
6:A:716:U:H2'	6:A:717:C:H6	1.80	0.47
6:A:786:C:H2'	6:A:787:A:H8	1.79	0.47
15:J:50:CYS:SG	15:J:62:ARG:HD3	2.54	0.47
32:a:8:GLN:HE21	32:a:31:ILE:HA	1.80	0.47
39:i:13:ARG:HD2	58:h:843:G:H4'	1.96	0.47
40:j:6:ILE:HD11	40:j:31:ALA:HB1	1.97	0.47
42:l:44:ASN:OD1	42:l:160:ASP:HB2	2.15	0.47
44:n:104:ILE:HD12	44:n:104:ILE:H	1.79	0.47
58:h:1544:U:H2'	58:h:1545:C:C6	2.50	0.47
58:h:1944:C:H2'	58:h:1945:U:H6	1.79	0.47
58:h:2467:U:H2'	58:h:2468:U:C6	2.50	0.47
58:h:3115:A:H2'	58:h:3116:C:H6	1.80	0.47
5:7:666:ARG:NH2	5:7:698:ASP:OD2	2.48	0.47
6:A:458:A:H4'	6:A:459:G:O4'	2.15	0.47
6:A:980:G:H1	6:A:1023:U:H3	1.62	0.47
6:A:1500:G:N2	6:A:1503:A:OP2	2.46	0.47
17:L:42:PRO:HB3	17:L:89:ASP:HB3	1.97	0.47
58:h:2326:A:N6	58:h:2410:A:C6	2.83	0.47
5:7:302:PHE:CE2	5:7:437:ARG:HG2	2.50	0.47
5:7:337:SER:HB2	5:7:418:LEU:HD12	1.95	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:243:A:N1	6:A:281:G:O2'	2.41	0.47
6:A:403:C:OP1	9:D:129:SER:HB3	2.15	0.47
6:A:452:A:N6	21:P:94:LYS:H	2.13	0.47
6:A:505:C:H5"	17:L:88:LYS:HE3	1.97	0.47
6:A:994:C:H2'	6:A:995:A:C8	2.50	0.47
23:R:37:LEU:O	23:R:40:THR:OG1	2.32	0.47
32:a:8:GLN:NE2	32:a:30:LYS:O	2.48	0.47
42:l:139:LEU:HD12	42:l:139:LEU:HA	1.67	0.47
48:r:8:LEU:HD22	48:r:84:ALA:HB2	1.97	0.47
58:h:137:G:H2'	58:h:138:A:C8	2.50	0.47
58:h:1537:U:H2'	58:h:1538:G:C8	2.49	0.47
58:h:2873:U:H2'	58:h:2874:C:H6	1.80	0.47
3:4:8:A:H2'	3:4:9:G:H8	1.81	0.46
5:7:41:GLU:HG3	5:7:61:THR:HG22	1.97	0.46
5:7:461:LEU:HD11	5:7:503:LEU:HD21	1.96	0.46
6:A:29:C:H5'	6:A:504:G:HO2'	1.80	0.46
6:A:413:G:H2'	6:A:428:G:H21	1.80	0.46
6:A:1337:A:H2'	6:A:1338:G:C8	2.50	0.46
9:D:80:LYS:HD3	9:D:83:ASP:OD2	2.15	0.46
9:D:133:SER:N	9:D:136:ASP:OD2	2.46	0.46
24:S:42:PRO:O	24:S:45:ILE:HD12	2.15	0.46
34:c:44:ASN:OD1	34:c:45:CYS:N	2.47	0.46
39:i:76:ASN:HB2	39:i:98:LEU:HD22	1.97	0.46
42:l:79:LYS:HG2	42:l:80:SER:H	1.80	0.46
6:A:84:U:H3'	6:A:85:C:C6	2.51	0.46
6:A:493:A:H2'	6:A:494:C:C6	2.50	0.46
6:A:1488:G:OP1	6:A:1491:A:H4'	2.15	0.46
8:C:72:PRO:HD3	8:C:104:GLU:HG2	1.96	0.46
43:m:88:MET:HB2	43:m:132:PHE:CE1	2.50	0.46
48:r:47:ILE:HG22	48:r:50:GLY:H	1.81	0.46
58:h:2:A:H2'	58:h:3:A:C8	2.51	0.46
58:h:672:C:H2'	58:h:673:C:H6	1.80	0.46
58:h:965:U:H2'	58:h:966:U:H6	1.80	0.46
58:h:1553:C:H5"	58:h:1554:U:C5	2.48	0.46
6:A:582:U:H2'	6:A:583:C:C6	2.50	0.46
12:G:58:PRO:HA	12:G:61:THR:HG22	1.97	0.46
12:G:69:VAL:HG11	12:G:134:SER:HB2	1.98	0.46
22:Q:72:ASP:O	22:Q:74:VAL:HG23	2.15	0.46
42:l:110:LEU:HD12	42:l:114:ALA:HB3	1.98	0.46
58:h:443:C:H2'	58:h:444:U:O4'	2.15	0.46
58:h:1436:C:O2'	58:h:1437:A:OP1	2.31	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2738:U:H2'	58:h:2739:C:C6	2.51	0.46
6:A:437:U:OP1	9:D:147:THR:OG1	2.34	0.46
6:A:1050:U:H2'	6:A:1051:C:C6	2.50	0.46
44:n:88:THR:HG22	44:n:90:LYS:HG3	1.96	0.46
55:y:72:LYS:HD2	55:y:91:ARG:HG3	1.98	0.46
58:h:222:A:O2'	58:h:508:G:N3	2.47	0.46
58:h:586:U:H2'	58:h:587:G:O4'	2.15	0.46
58:h:844:G:O2'	58:h:878:G:H4'	2.15	0.46
58:h:974:G:O2'	58:h:975:U:O5'	2.31	0.46
1:2:21:A:N6	1:2:46:G:O2'	2.48	0.46
1:2:50:U:H2'	1:2:51:U:H6	1.80	0.46
5:7:176:TYR:CE2	5:7:281:GLU:HB2	2.51	0.46
5:7:521:ARG:HD2	5:7:716:TYR:CE2	2.50	0.46
6:A:13:G:H5'	10:E:133:GLY:HA3	1.97	0.46
6:A:263:A:H2'	6:A:264:U:C6	2.51	0.46
6:A:390:U:H2'	6:A:391:G:H8	1.80	0.46
9:D:139:ASP:OD1	9:D:140:VAL:N	2.45	0.46
17:L:5:GLN:HB2	22:Q:51:LYS:HZ2	1.79	0.46
21:P:21:ILE:HD11	21:P:33:ALA:HB1	1.98	0.46
31:Z:56:ARG:O	31:Z:60:VAL:HG12	2.15	0.46
32:a:29:LYS:NZ	58:h:1048:A:OP1	2.42	0.46
38:g:14:VAL:HG22	38:g:33:ILE:HB	1.98	0.46
38:g:28:LYS:NZ	42:l:147:GLU:HA	2.30	0.46
44:n:80:LEU:N	44:n:147:ASN:O	2.43	0.46
58:h:489:A:H2'	58:h:490:A:H8	1.80	0.46
58:h:2443:U:H2'	58:h:2444:C:C6	2.50	0.46
1:2:34:C:H5'	6:A:948:G:N2	2.31	0.46
5:7:49:VAL:HG23	5:7:83:LEU:HD13	1.97	0.46
5:7:520:LEU:HD21	5:7:640:LEU:HB3	1.97	0.46
5:7:663:LEU:O	5:7:667:ARG:N	2.48	0.46
6:A:272:C:H2'	6:A:273:A:H8	1.81	0.46
6:A:592:U:C2	6:A:593:C:C5	3.03	0.46
6:A:1117:U:H1'	6:A:1118:A:H5"	1.97	0.46
6:A:1183:U:O2'	19:N:27:CYS:SG	2.64	0.46
6:A:1259:G:H8	8:C:26:LYS:NZ	2.14	0.46
9:D:91:SER:HB3	9:D:131:ARG:HG3	1.95	0.46
30:Y:4:VAL:HA	30:Y:10:LYS:O	2.14	0.46
57:1:1:MET:HE2	57:1:68:VAL:HG21	1.98	0.46
58:h:385:G:H2'	58:h:386:C:C6	2.51	0.46
58:h:911:U:H2'	58:h:912:C:C6	2.50	0.46
58:h:1500:A:O2'	58:h:1511:U:O2	2.33	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:7:106:ARG:HB3	5:7:439:TRP:CD1	2.51	0.46
13:H:38:GLU:HG3	13:H:49:TYR:OH	2.16	0.46
24:S:43:ASP:N	24:S:43:ASP:OD1	2.49	0.46
30:Y:31:PRO:HB2	30:Y:33:ILE:HG13	1.97	0.46
35:d:6:ARG:O	35:d:9:GLN:NE2	2.47	0.46
45:o:58:LYS:HG2	45:o:70:ASP:OD1	2.15	0.46
47:q:125:TYR:HH	47:q:132:HIS:HE2	1.59	0.46
52:v:37:ARG:NH1	52:v:103:ASP:OD2	2.47	0.46
58:h:740:A:O2'	58:h:741:G:OP2	2.30	0.46
58:h:818:U:H2'	58:h:819:G:O4'	2.15	0.46
58:h:2323:G:H2'	58:h:2324:A:H8	1.81	0.46
3:4:5:A:H2'	3:4:6:G:H8	1.81	0.46
5:7:458:GLU:HG2	17:L:77:HIS:NE2	2.31	0.46
5:7:686:GLU:CD	5:7:715:ARG:HH12	2.24	0.46
6:A:1021:U:H2'	6:A:1022:G:O4'	2.15	0.46
10:E:135:ALA:HB1	10:E:162:VAL:HG23	1.98	0.46
11:F:47:ARG:HH12	11:F:56:ALA:HB1	1.81	0.46
15:J:101:GLN:OE1	15:J:101:GLN:N	2.49	0.46
34:c:9:PRO:HD2	34:c:27:LYS:O	2.16	0.46
38:g:26:SER:OG	38:g:27:THR:N	2.48	0.46
44:n:109:GLY:N	44:n:110:PRO:HD2	2.30	0.46
49:s:6:LEU:HD23	49:s:6:LEU:HA	1.78	0.46
49:s:22:VAL:HG23	49:s:29:LYS:HD2	1.98	0.46
53:w:102:LEU:C	53:w:103:ARG:HD3	2.41	0.46
54:x:28:ARG:HE	58:h:619:C:H2'	1.80	0.46
58:h:302:U:H4'	58:h:303:G:OP1	2.15	0.46
58:h:429:A:H2'	58:h:430:A:C8	2.51	0.46
58:h:997:G:N2	58:h:1011:A:N1	2.64	0.46
58:h:1223:U:C2	58:h:1224:G:C8	3.04	0.46
5:7:176:TYR:CD1	5:7:190:GLY:HA2	2.50	0.46
6:A:452:A:O2'	6:A:453:G:OP1	2.33	0.46
6:A:1370:G:H2'	6:A:1371:C:H6	1.81	0.46
8:C:38:ILE:O	8:C:42:LEU:HG	2.15	0.46
8:C:109:GLU:HB2	8:C:143:GLN:OE1	2.16	0.46
10:E:63:ILE:HD12	10:E:63:ILE:N	2.30	0.46
18:M:95:GLY:O	18:M:96:LEU:HD23	2.16	0.46
38:g:38:CYS:H	38:g:41:CYS:HB2	1.81	0.46
46:p:73:LYS:NZ	58:h:1177:G:OP1	2.44	0.46
51:u:7:GLY:O	51:u:9:ARG:NH1	2.49	0.46
58:h:334:G:N2	58:h:347:U:O2	2.39	0.46
58:h:947:U:H2'	58:h:948:G:C8	2.51	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:1003:A:OP1	58:h:1003:A:H2'	2.15	0.46
58:h:2304:C:H2'	58:h:2305:A:C8	2.48	0.46
58:h:2350:G:O2'	58:h:2351:A:OP1	2.28	0.46
1:2:50:U:H2'	1:2:51:U:C6	2.51	0.46
6:A:392:C:H2'	6:A:393:A:H8	1.81	0.46
9:D:182:GLU:O	9:D:186:ILE:HD12	2.15	0.46
24:S:3:ARG:HH21	24:S:7:LYS:HD3	1.82	0.46
40:j:65:PRO:O	40:j:69:GLN:HG3	2.16	0.46
41:k:45:LYS:HD2	58:h:709:U:O4	2.15	0.46
42:l:15:TYR:OH	42:l:36:PRO:O	2.33	0.46
45:o:4:ALA:O	45:o:8:THR:HG23	2.16	0.46
58:h:321:G:H2'	58:h:322:A:H8	1.82	0.46
58:h:1145:A:H61	58:h:1245:U:H5	1.64	0.46
58:h:1529:U:H3'	58:h:1530:G:C8	2.50	0.46
58:h:1963:G:H2'	58:h:1964:U:C6	2.50	0.46
58:h:2323:G:H1	58:h:2412:U:H3	1.64	0.46
5:7:303:THR:HG23	5:7:309:ARG:HB2	1.98	0.45
5:7:698:ASP:O	5:7:702:MET:HG3	2.15	0.45
6:A:1050:U:H2'	6:A:1051:C:H6	1.80	0.45
9:D:186:ILE:HD12	9:D:186:ILE:H	1.81	0.45
14:I:41:LEU:HD11	14:I:81:PHE:HD2	1.80	0.45
16:K:63:GLY:O	16:K:66:LYS:HG2	2.16	0.45
25:T:46:LYS:HE2	25:T:46:LYS:HB2	1.64	0.45
27:V:30:PHE:O	27:V:42:ASP:HB2	2.16	0.45
5:7:106:ARG:HB3	5:7:439:TRP:HD1	1.81	0.45
5:7:521:ARG:HD2	5:7:716:TYR:HE2	1.82	0.45
6:A:255:G:H2'	6:A:256:U:C6	2.52	0.45
6:A:323:U:H2'	6:A:324:G:O4'	2.15	0.45
6:A:1125:G:N2	6:A:1127:A:H62	2.15	0.45
6:A:1156:G:H2'	6:A:1157:A:H8	1.80	0.45
6:A:1393:G:H2'	6:A:1394:U:H6	1.81	0.45
7:B:113:G:H2'	7:B:114:A:H8	1.79	0.45
9:D:186:ILE:HG22	9:D:188:VAL:HG13	1.98	0.45
16:K:128:ASN:HD22	16:K:128:ASN:HA	1.64	0.45
18:M:51:ASP:O	18:M:54:THR:OG1	2.25	0.45
39:i:26:ARG:HD3	39:i:83:GLU:OE1	2.16	0.45
45:o:27:GLU:HB3	45:o:104:VAL:H	1.81	0.45
46:p:29:ALA:HA	46:p:32:GLN:NE2	2.32	0.45
58:h:2365:A:N1	58:h:2373:G:N1	2.64	0.45
58:h:2376:G:H2'	58:h:2377:G:C8	2.51	0.45
58:h:2552:A:H2'	58:h:2553:G:H8	1.77	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2922:U:H2'	58:h:2923:C:H6	1.81	0.45
6:A:504:G:H2'	6:A:505:C:C5	2.52	0.45
6:A:708:A:H2'	6:A:709:A:H8	1.79	0.45
12:G:113:GLU:HG2	12:G:113:GLU:O	2.17	0.45
21:P:100:PRO:HB2	21:P:105:LEU:HD11	1.98	0.45
40:j:6:ILE:HD12	40:j:31:ALA:HB1	1.98	0.45
41:k:101:ARG:O	58:h:774:G:H4'	2.16	0.45
42:l:129:PHE:CE1	42:l:135:TYR:HB2	2.51	0.45
51:u:42:ARG:NH2	58:h:3038:C:OP1	2.48	0.45
58:h:256:A:H2'	58:h:257:A:C8	2.51	0.45
58:h:829:U:O2'	58:h:831:A:N7	2.44	0.45
58:h:980:C:O2'	58:h:981:U:O5'	2.31	0.45
58:h:1326:G:H1'	58:h:1352:A:N6	2.31	0.45
58:h:2553:G:H2'	58:h:2554:U:C6	2.51	0.45
58:h:2873:U:H2'	58:h:2874:C:C6	2.51	0.45
1:2:51:U:H3	1:2:63:G:H1	1.63	0.45
5:7:217:ILE:O	5:7:221:ARG:HG3	2.16	0.45
6:A:668:G:H5'	16:K:58:HIS:HA	1.97	0.45
6:A:1100:U:H2'	6:A:1101:C:C6	2.51	0.45
6:A:1206:U:O2	6:A:1206:U:H2'	2.15	0.45
6:A:1338:G:H2'	6:A:1339:A:H8	1.78	0.45
39:i:186:ASP:OD1	39:i:187:VAL:N	2.50	0.45
40:j:153:GLY:O	58:h:2276:G:H4'	2.17	0.45
42:l:9:PRO:HG3	42:l:101:ASP:HB2	1.98	0.45
57:1:5:LYS:HG3	57:1:24:LEU:O	2.16	0.45
58:h:860:G:O2'	58:h:863:G:O2'	2.20	0.45
58:h:1679:A:H4'	58:h:1679:A:OP1	2.17	0.45
58:h:2378:U:H2'	58:h:2379:G:O4'	2.16	0.45
58:h:2781:G:H2'	58:h:2782:C:C6	2.52	0.45
1:2:63:G:H2'	1:2:64:A:C8	2.51	0.45
6:A:209:A:N3	6:A:222:U:O2'	2.41	0.45
6:A:472:C:H2'	6:A:473:A:H8	1.79	0.45
18:M:72:ARG:NH2	42:l:120:ASP:OD2	2.50	0.45
22:Q:60:LYS:HZ1	22:Q:85:THR:HG21	1.81	0.45
38:g:5:ILE:HG13	42:l:71:LYS:HD3	1.98	0.45
41:k:129:GLU:OE2	41:k:132:GLU:HA	2.17	0.45
49:s:79:ASN:HA	49:s:113:LEU:O	2.16	0.45
58:h:929:C:H2'	58:h:930:C:H6	1.81	0.45
58:h:1472:C:H2'	58:h:1473:G:O4'	2.16	0.45
58:h:2070:A:H2'	58:h:2071:A:C8	2.52	0.45
6:A:1271:A:H2'	6:A:1272:G:H5'	1.98	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:72:GLU:OE1	9:D:72:GLU:HA	2.16	0.45
10:E:90:GLU:OE1	10:E:93:ARG:NH1	2.50	0.45
12:G:38:LEU:O	12:G:42:ILE:HG13	2.17	0.45
16:K:89:LYS:HE2	16:K:89:LYS:HB2	1.81	0.45
40:j:160:VAL:HG21	58:h:2842:G:H21	1.81	0.45
41:k:117:ASP:OD1	41:k:117:ASP:C	2.59	0.45
44:n:101:VAL:HG23	44:n:112:LEU:HB2	1.97	0.45
51:u:65:GLU:HA	51:u:68:LYS:HD2	1.98	0.45
52:v:38:LEU:HD23	52:v:102:PHE:HD1	1.81	0.45
53:w:1:MET:HB3	58:h:3096:U:O2'	2.17	0.45
54:x:91:ASP:OD1	54:x:94:ASN:ND2	2.50	0.45
58:h:639:C:O2'	58:h:640:G:O5'	2.34	0.45
58:h:898:A:N3	58:h:899:G:H5"	2.31	0.45
58:h:1640:A:H2'	58:h:1642:G:N7	2.32	0.45
58:h:1714:A:H2'	58:h:1715:A:C8	2.51	0.45
5:7:225:ILE:HG12	5:7:252:LEU:HD22	1.98	0.45
5:7:225:ILE:HG23	5:7:229:ILE:HD12	1.99	0.45
5:7:475:LEU:HD11	5:7:488:LEU:HD22	1.98	0.45
6:A:252:U:H2'	6:A:253:U:H6	1.82	0.45
6:A:1011:U:O2'	6:A:1012:U:O5'	2.28	0.45
6:A:1125:G:H2'	6:A:1126:G:H5"	1.99	0.45
13:H:10:PHE:HD2	13:H:33:LYS:HD3	1.81	0.45
14:I:134:LYS:HG3	14:I:140:LYS:HA	1.99	0.45
25:T:51:LEU:HD22	25:T:83:LEU:HD23	1.97	0.45
27:V:53:ALA:O	27:V:57:VAL:HG12	2.17	0.45
31:Z:24:GLU:O	31:Z:28:GLU:HG2	2.16	0.45
57:1:96:ARG:C	57:1:97:ILE:HD13	2.42	0.45
58:h:206:A:H2'	58:h:207:C:O4'	2.17	0.45
58:h:1732:U:H2'	58:h:1733:C:C6	2.51	0.45
5:7:220:LEU:HD23	5:7:220:LEU:HA	1.84	0.45
6:A:255:G:H2'	6:A:256:U:H6	1.81	0.45
6:A:592:U:H2'	6:A:593:C:C6	2.51	0.45
6:A:1001:G:H2'	6:A:1002:U:C6	2.52	0.45
6:A:1320:G:H2'	6:A:1321:A:C8	2.52	0.45
6:A:1393:G:H2'	6:A:1394:U:C6	2.52	0.45
35:d:18:VAL:O	35:d:23:LEU:HD22	2.17	0.45
42:l:159:MET:HE3	42:l:159:MET:HB2	1.68	0.45
48:r:92:ASP:N	48:r:92:ASP:OD1	2.47	0.45
58:h:256:A:H2'	58:h:257:A:H8	1.81	0.45
58:h:1043:G:H2'	58:h:1044:U:H6	1.82	0.45
58:h:1165:G:C4	58:h:1228:A:N6	2.85	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:1250:U:H3'	58:h:1251:A:H5"	1.99	0.45
58:h:1546:A:N1	58:h:1625:G:C6	2.85	0.45
58:h:2113:A:H2'	58:h:2114:A:C8	2.50	0.45
5:7:197:TYR:HD1	5:7:206:ALA:HA	1.81	0.45
6:A:79:C:H2'	6:A:80:C:H6	1.82	0.45
6:A:246:A:C2	6:A:282:A:C5	3.05	0.45
6:A:323:U:H4'	25:T:17:ARG:HB3	1.98	0.45
6:A:728:A:H8	6:A:728:A:OP2	2.00	0.45
6:A:819:U:H3	6:A:829:G:N2	2.14	0.45
6:A:969:G:H2'	6:A:970:G:C8	2.51	0.45
14:I:72:LEU:HA	14:I:75:VAL:HG12	1.99	0.45
20:O:7:GLN:OE1	20:O:7:GLN:N	2.34	0.45
28:W:86:HIS:CE1	28:W:88:ILE:HB	2.52	0.45
33:b:38:LYS:HB2	56:z:41:ASP:OD2	2.17	0.45
40:j:85:ARG:NH2	58:h:2862:G:OP1	2.28	0.45
45:o:36:LEU:O	45:o:40:ARG:HD3	2.16	0.45
52:v:83:ARG:NH1	52:v:87:LEU:HD13	2.32	0.45
57:1:10:LEU:HD23	57:1:80:PRO:HG3	1.99	0.45
58:h:316:U:O2'	58:h:317:G:OP1	2.28	0.45
58:h:997:G:C6	58:h:998:G:C6	3.05	0.45
58:h:1639:G:H5'	58:h:1640:A:OP1	2.17	0.45
58:h:2623:A:H2'	58:h:2624:C:C6	2.51	0.45
5:7:145:VAL:N	5:7:267:PRO:O	2.45	0.45
6:A:1076:C:H2'	6:A:1077:C:H6	1.80	0.45
11:F:27:LEU:HD11	11:F:63:ILE:HG21	1.99	0.45
18:M:52:GLN:HA	18:M:55:VAL:HG22	1.98	0.45
21:P:5:ILE:O	21:P:67:THR:HG23	2.17	0.45
22:Q:79:THR:HG23	22:Q:80:ARG:O	2.17	0.45
29:X:32:LYS:HB3	58:h:759:G:C6	2.51	0.45
32:a:8:GLN:HB2	32:a:28:LEU:HD22	1.99	0.45
36:e:59:ASN:O	36:e:63:ASN:ND2	2.50	0.45
40:j:63:ILE:HG23	40:j:65:PRO:HD2	1.99	0.45
52:v:125:LEU:HD23	52:v:125:LEU:HA	1.76	0.45
58:h:131:A:H2'	58:h:132:C:C6	2.52	0.45
58:h:451:U:H2'	58:h:452:G:C8	2.52	0.45
58:h:483:G:H2'	58:h:484:C:C6	2.52	0.45
58:h:2895:A:C6	58:h:2896:C:C4	3.05	0.45
5:7:520:LEU:HD21	5:7:640:LEU:HD22	1.99	0.44
6:A:928:A:O2'	6:A:1315:A:N3	2.46	0.44
6:A:1181:C:H4'	6:A:1182:A:H5'	1.99	0.44
6:A:1329:G:O2'	6:A:1356:G:O6	2.26	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1350:U:H5'	15:J:62:ARG:NH1	2.32	0.44
7:B:81:U:H2'	7:B:82:A:C8	2.52	0.44
8:C:82:GLU:HA	8:C:85:ARG:HG3	1.99	0.44
8:C:122:GLN:HG2	8:C:127:VAL:HG21	1.99	0.44
8:C:128:ALA:HB1	8:C:130:ARG:HH12	1.81	0.44
12:G:155:ARG:HA	12:G:155:ARG:HD3	1.74	0.44
16:K:103:GLU:HB3	16:K:107:ARG:HH22	1.82	0.44
20:O:12:LEU:HD23	20:O:27:ALA:HB1	1.99	0.44
23:R:49:ARG:HG2	23:R:49:ARG:HH11	1.81	0.44
23:R:49:ARG:HG2	23:R:49:ARG:NH1	2.31	0.44
25:T:32:ILE:HD11	25:T:75:LYS:HG2	1.98	0.44
49:s:105:ARG:HH11	58:h:720:C:H42	1.65	0.44
53:w:26:ASN:OD1	53:w:84:ASP:HB2	2.17	0.44
58:h:680:U:H2'	58:h:681:C:H6	1.80	0.44
58:h:2125:A:O2'	58:h:2126:C:OP2	2.27	0.44
58:h:2753:G:H5"	58:h:2754:G:H5"	1.98	0.44
5:7:272:CYS:N	5:7:277:VAL:O	2.50	0.44
5:7:357:HIS:CE1	5:7:424:GLY:HA3	2.52	0.44
5:7:458:GLU:HG3	5:7:458:GLU:O	2.17	0.44
6:A:382:A:H2'	6:A:383:A:C8	2.52	0.44
6:A:1394:U:H2'	6:A:1395:C:C6	2.52	0.44
29:X:75:ARG:NH2	58:h:2557:A:OP1	2.50	0.44
31:Z:38:THR:OG1	31:Z:40:GLN:HG3	2.17	0.44
44:n:33:ARG:HB3	44:n:35:LEU:HD13	1.99	0.44
58:h:502:C:H2'	58:h:503:A:C8	2.52	0.44
58:h:703:C:H2'	58:h:704:C:H6	1.81	0.44
58:h:747:A:H2'	58:h:748:U:O4'	2.16	0.44
58:h:1732:U:H2'	58:h:1733:C:H6	1.82	0.44
58:h:2084:A:H2'	58:h:2085:C:O4'	2.18	0.44
58:h:2211:C:H2'	58:h:2212:A:H8	1.80	0.44
58:h:2871:U:H2'	58:h:2872:G:H8	1.82	0.44
5:7:122:ASN:HD22	5:7:154:ARG:HH21	1.65	0.44
6:A:433:C:C2	6:A:434:C:C5	3.06	0.44
6:A:510:G:H2'	6:A:510:G:N3	2.31	0.44
6:A:996:G:N2	6:A:999:A:OP2	2.43	0.44
6:A:1004:G:H2'	6:A:1005:G:H8	1.83	0.44
12:G:101:LEU:HD23	12:G:101:LEU:HA	1.82	0.44
17:L:83:ARG:N	17:L:96:LYS:O	2.49	0.44
21:P:20:ILE:HG22	21:P:37:ILE:HB	2.00	0.44
42:l:11:LEU:HD23	42:l:11:LEU:HA	1.71	0.44
43:m:89:GLU:OE1	43:m:89:GLU:N	2.50	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:n:124:ILE:CG2	44:n:125:LYS:H	2.29	0.44
46:p:59:GLU:HB3	46:p:71:ALA:HB3	1.99	0.44
58:h:1178:U:C2	58:h:1180:G:H5'	2.53	0.44
58:h:1762:C:H2'	58:h:1763:G:O4'	2.17	0.44
58:h:2381:A:H4'	58:h:2382:G:O5'	2.18	0.44
6:A:492:U:H2'	6:A:493:A:C8	2.53	0.44
6:A:847:A:H2'	6:A:848:C:C6	2.52	0.44
7:B:63:U:H2'	7:B:64:G:H8	1.83	0.44
8:C:81:THR:O	8:C:85:ARG:HG3	2.16	0.44
20:O:56:LEU:HD21	58:h:830:A:C2	2.52	0.44
25:T:28:LEU:HD11	25:T:58:LEU:HA	2.00	0.44
25:T:35:PHE:HA	25:T:50:LEU:HD11	1.98	0.44
46:p:93:GLU:HB3	46:p:96:LYS:HB2	2.00	0.44
50:t:108:TYR:CD1	50:t:109:PRO:HD2	2.53	0.44
52:v:38:LEU:HD23	52:v:102:PHE:CD1	2.52	0.44
58:h:31:U:O2'	58:h:32:G:H5'	2.18	0.44
58:h:287:A:P	58:h:287:A:H8	2.39	0.44
58:h:610:C:O2	58:h:646:U:O2'	2.35	0.44
5:7:444:PRO:CG	5:7:476:ARG:HB3	2.47	0.44
6:A:45:G:H2'	6:A:46:G:H8	1.83	0.44
6:A:48:G:OP2	21:P:13:ILE:HB	2.17	0.44
6:A:343:U:O2'	6:A:346:G:O6	2.30	0.44
6:A:375:U:C2	6:A:376:G:C8	3.06	0.44
10:E:140:LEU:CD1	10:E:148:ILE:HD13	2.48	0.44
40:j:89:GLU:HA	40:j:92:VAL:HB	2.00	0.44
40:j:185:VAL:HG12	40:j:192:LEU:HD23	1.99	0.44
47:q:29:ALA:HB3	47:q:108:MET:HE3	2.00	0.44
48:r:34:GLY:HA3	48:r:69:ARG:HH21	1.81	0.44
58:h:193:G:H2'	58:h:194:A:O4'	2.17	0.44
58:h:782:U:H2'	58:h:783:G:O4'	2.18	0.44
58:h:1485:C:H2'	58:h:1486:G:O4'	2.18	0.44
5:7:185:CYS:HB3	5:7:272:CYS:SG	2.58	0.44
5:7:471:GLU:OE1	5:7:506:ARG:NH1	2.51	0.44
5:7:701:SER:HA	58:h:2884:A:N7	2.32	0.44
6:A:523:U:H2'	6:A:524:C:C6	2.52	0.44
8:C:91:GLU:OE1	8:C:91:GLU:HA	2.17	0.44
8:C:138:GLN:O	8:C:142:ARG:HG3	2.16	0.44
9:D:82:GLY:O	9:D:86:LEU:HG	2.17	0.44
27:V:47:LEU:HD13	27:V:47:LEU:HA	1.79	0.44
27:V:83:GLU:O	27:V:87:VAL:HG23	2.18	0.44
41:k:68:GLN:NE2	41:k:75:ARG:HD2	2.31	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:l:101:ASP:OD1	42:l:102:ARG:N	2.51	0.44
58:h:1193:C:H2'	58:h:1194:C:H6	1.82	0.44
58:h:2359:G:H1	58:h:2379:G:H1'	1.83	0.44
6:A:1105:U:C2	6:A:1107:G:C8	3.06	0.44
27:V:133:GLU:O	27:V:137:LEU:HG	2.18	0.44
37:f:31:ARG:NH1	58:h:2702:A:OP1	2.51	0.44
58:h:1198:C:H2'	58:h:1199:U:C6	2.53	0.44
58:h:1656:A:H2'	58:h:1657:G:H8	1.82	0.44
6:A:264:U:H2'	6:A:265:G:O4'	2.17	0.44
6:A:491:C:C2	6:A:492:U:C5	3.06	0.44
10:E:157:ASN:O	10:E:161:VAL:HG23	2.18	0.44
15:J:23:ARG:O	15:J:27:GLU:HG2	2.17	0.44
20:O:78:TYR:OH	20:O:89:ARG:O	2.20	0.44
26:U:9:ASP:OD1	26:U:9:ASP:C	2.61	0.44
27:V:52:LYS:HE2	27:V:198:TYR:CE1	2.52	0.44
50:t:68:ILE:HD13	50:t:68:ILE:HA	1.81	0.44
52:v:83:ARG:HD2	52:v:83:ARG:HA	1.76	0.44
58:h:487:U:H2'	58:h:488:G:O4'	2.18	0.44
58:h:965:U:H2'	58:h:966:U:C6	2.51	0.44
58:h:1189:G:N3	58:h:1207:G:O2'	2.40	0.44
58:h:1942:G:H2'	58:h:1943:C:H6	1.82	0.44
5:7:374:ALA:HA	5:7:469:ALA:HB1	2.00	0.44
5:7:643:PRO:HA	5:7:716:TYR:HA	2.00	0.44
6:A:294:C:OP1	6:A:590:A:O2'	2.33	0.44
6:A:631:C:H2'	6:A:632:U:C6	2.53	0.44
6:A:964:U:H4'	6:A:965:A:O4'	2.18	0.44
16:K:93:VAL:HB	16:K:119:ILE:HD12	2.00	0.44
23:R:44:GLU:OE1	23:R:44:GLU:N	2.48	0.44
33:b:35:GLN:N	33:b:35:GLN:OE1	2.51	0.44
40:j:213:LYS:HD3	58:h:2957:A:C4	2.53	0.44
42:l:142:GLN:HB3	42:l:157:ARG:O	2.17	0.44
48:r:71:ARG:HH22	48:r:122:LEU:C	2.25	0.44
52:v:74:ASP:N	52:v:74:ASP:OD1	2.49	0.44
58:h:2359:G:N1	58:h:2379:G:H1'	2.33	0.44
58:h:2895:A:C5	58:h:2896:C:C5	3.05	0.44
5:7:561:GLU:HB3	5:7:603:ARG:HG3	1.99	0.43
5:7:663:LEU:HA	5:7:666:ARG:HB2	2.00	0.43
6:A:321:A:H2'	6:A:322:C:H6	1.83	0.43
6:A:399:G:H2'	6:A:400:C:C6	2.53	0.43
6:A:410:G:H2'	6:A:429:U:C4	2.53	0.43
15:J:77:LEU:HD23	15:J:78:ASP:N	2.33	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:K:80:ALA:HB2	16:K:109:LEU:HD23	2.00	0.43
34:c:6:ASP:OD1	34:c:7:VAL:N	2.48	0.43
39:i:181:GLU:HB2	39:i:270:ARG:O	2.17	0.43
43:m:95:TYR:HA	43:m:107:ALA:O	2.18	0.43
48:r:110:LYS:HB3	48:r:110:LYS:HE2	1.79	0.43
49:s:95:VAL:O	49:s:99:VAL:HG13	2.17	0.43
52:v:3:HIS:CE1	52:v:5:PRO:HD3	2.53	0.43
53:w:12:LEU:HD23	53:w:12:LEU:HA	1.84	0.43
58:h:113:C:O2'	58:h:123:A:N3	2.47	0.43
58:h:159:A:H2'	58:h:160:A:C8	2.53	0.43
58:h:844:G:H5'	58:h:845:C:H5"	1.98	0.43
58:h:2515:U:H2'	58:h:2516:U:H6	1.82	0.43
6:A:591:C:C2	6:A:592:U:C5	3.07	0.43
6:A:902:U:H2'	6:A:903:U:C6	2.53	0.43
6:A:1110:A:H61	6:A:1125:G:H1'	1.82	0.43
6:A:1296:C:H2'	6:A:1297:U:H6	1.82	0.43
19:N:8:HIS:CD2	19:N:8:HIS:C	2.96	0.43
30:Y:64:ALA:HA	44:n:32:PRO:HB3	2.00	0.43
40:j:155:ALA:H	58:h:2277:G:H5'	1.83	0.43
53:w:71:ARG:HG2	53:w:73:PHE:CZ	2.53	0.43
58:h:113:C:H2'	58:h:114:G:O4'	2.17	0.43
58:h:296:A:N6	58:h:297:G:O6	2.51	0.43
58:h:388:U:H2'	58:h:389:G:O4'	2.18	0.43
58:h:664:A:H5"	58:h:665:G:OP2	2.19	0.43
58:h:1001:C:H1'	58:h:1007:G:N2	2.28	0.43
58:h:1532:G:N2	58:h:1804:G:C4	2.86	0.43
58:h:1541:G:N2	58:h:1631:A:N1	2.66	0.43
58:h:2326:A:H2'	58:h:2327:C:C6	2.53	0.43
58:h:2347:G:O6	58:h:2348:G:N2	2.47	0.43
58:h:2588:C:H2'	58:h:2589:G:O4'	2.19	0.43
58:h:3116:C:H2'	58:h:3117:U:H6	1.83	0.43
5:7:455:LYS:HB3	17:L:33:VAL:HG11	2.00	0.43
6:A:358:U:H2'	6:A:359:G:H8	1.83	0.43
6:A:907:G:C2	6:A:909:G:C8	3.06	0.43
6:A:993:G:H2'	6:A:994:C:C6	2.53	0.43
11:F:26:PHE:CZ	11:F:82:ASN:ND2	2.86	0.43
39:i:60:ARG:HA	58:h:1788:G:H5'	2.00	0.43
41:k:108:ALA:O	41:k:112:ARG:HD3	2.18	0.43
44:n:30:LEU:HB3	44:n:36:ALA:HB3	2.00	0.43
48:r:66:VAL:O	48:r:78:LYS:HG3	2.18	0.43
48:r:105:GLU:HA	48:r:108:GLU:OE1	2.18	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:y:16:VAL:HB	55:y:99:VAL:HG21	2.01	0.43
56:z:79:ALA:HB2	56:z:115:GLU:HG3	1.99	0.43
58:h:2145:C:H2'	58:h:2146:A:H8	1.83	0.43
58:h:2373:G:H2'	58:h:2374:U:C6	2.54	0.43
58:h:3014:A:N6	58:h:3113:A:OP2	2.51	0.43
6:A:321:A:H2'	6:A:322:C:C6	2.53	0.43
6:A:324:G:N1	6:A:327:A:OP2	2.49	0.43
6:A:590:A:C5	6:A:591:C:C5	3.06	0.43
6:A:654:G:H21	16:K:127:HIS:HB2	1.82	0.43
16:K:102:ARG:HB2	16:K:103:GLU:OE1	2.19	0.43
39:i:21:PHE:HB3	39:i:24:ILE:HG13	2.00	0.43
46:p:115:LYS:HD2	46:p:123:ILE:HG12	1.99	0.43
51:u:94:TYR:O	51:u:116:VAL:HG22	2.18	0.43
56:z:37:GLU:H	56:z:37:GLU:CD	2.26	0.43
58:h:175:G:O2'	58:h:176:G:H5'	2.19	0.43
58:h:340:A:H2'	58:h:341:C:C6	2.54	0.43
58:h:2679:G:H2'	58:h:2680:C:C6	2.54	0.43
5:7:550:GLU:HB3	5:7:605:THR:HB	2.00	0.43
6:A:308:C:C2	6:A:309:G:C8	3.06	0.43
6:A:452:A:H2	21:P:47:SER:HB2	1.84	0.43
6:A:742:A:H2'	6:A:743:G:H8	1.83	0.43
6:A:998:G:H2'	6:A:999:A:C8	2.53	0.43
8:C:164:ARG:NH1	8:C:164:ARG:HB2	2.34	0.43
10:E:175:PRO:HG2	10:E:198:ARG:HH21	1.82	0.43
11:F:11:ASP:N	11:F:84:SER:O	2.52	0.43
11:F:30:ILE:HG22	11:F:36:THR:HG21	1.99	0.43
13:H:105:ILE:HD11	13:H:112:LEU:HD13	2.01	0.43
20:O:85:LEU:HD23	20:O:85:LEU:HA	1.82	0.43
21:P:21:ILE:HA	21:P:21:ILE:HD12	1.75	0.43
25:T:75:LYS:HE2	25:T:75:LYS:HB2	1.85	0.43
49:s:51:GLU:OE1	49:s:56:PRO:HA	2.18	0.43
56:z:65:ALA:HB1	56:z:71:LEU:HD12	2.00	0.43
58:h:131:A:H2'	58:h:132:C:H6	1.84	0.43
58:h:270:U:H1'	58:h:512:G:N2	2.33	0.43
58:h:1400:G:N2	58:h:1443:G:H5"	2.34	0.43
58:h:2096:G:H2'	58:h:2097:G:H8	1.83	0.43
1:2:26:A:N6	1:2:44:G:H1	2.15	0.43
6:A:407:A:H2'	6:A:408:G:C8	2.54	0.43
6:A:490:A:N3	6:A:523:U:H1'	2.34	0.43
6:A:503:A:H61	17:L:89:ASP:HB2	1.84	0.43
6:A:560:C:H2'	6:A:561:G:O4'	2.19	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1138:A:N1	6:A:1161:A:N6	2.65	0.43
6:A:1259:G:H8	8:C:26:LYS:HZ3	1.67	0.43
6:A:1382:C:C2	6:A:1486:A:N6	2.87	0.43
8:C:29:LYS:HE3	19:N:38:GLY:HA3	2.00	0.43
10:E:83:ALA:O	10:E:87:LYS:HG2	2.18	0.43
18:M:15:MET:HE2	18:M:15:MET:HB2	1.93	0.43
26:U:4:ILE:O	31:Z:26:LYS:NZ	2.51	0.43
27:V:162:TRP:HE1	27:V:214:THR:HG22	1.84	0.43
29:X:40:GLN:HG3	29:X:42:GLY:O	2.18	0.43
34:c:30:ARG:HG3	34:c:30:ARG:NH1	2.33	0.43
36:e:15:ARG:NH2	36:e:47:ARG:HH21	2.17	0.43
42:l:79:LYS:HG2	42:l:80:SER:N	2.34	0.43
52:v:69:ASP:OD1	52:v:70:VAL:N	2.51	0.43
58:h:1165:G:C2	58:h:1228:A:C5	3.07	0.43
58:h:1529:U:H3'	58:h:1530:G:H8	1.83	0.43
58:h:1626:G:H2'	58:h:1627:U:O4'	2.18	0.43
58:h:1707:G:H2'	58:h:1708:A:C8	2.53	0.43
5:7:176:TYR:CE1	5:7:190:GLY:HA2	2.54	0.43
5:7:587:MET:O	5:7:599:VAL:HG23	2.19	0.43
6:A:120:G:H2'	6:A:121:U:C6	2.54	0.43
6:A:1333:U:H4'	12:G:33:GLU:OE2	2.18	0.43
6:A:1436:G:H3'	6:A:1436:G:OP2	2.17	0.43
8:C:61:ASP:OD1	8:C:61:ASP:N	2.35	0.43
8:C:178:LEU:HA	8:C:178:LEU:HD23	1.83	0.43
17:L:5:GLN:OE1	22:Q:51:LYS:NZ	2.47	0.43
31:Z:18:LEU:HD23	31:Z:18:LEU:HA	1.76	0.43
34:c:35:ARG:HE	34:c:52:LYS:HG2	1.83	0.43
36:e:23:VAL:HG13	36:e:47:ARG:HB3	2.00	0.43
40:j:151:ILE:HD13	40:j:151:ILE:HA	1.84	0.43
42:l:118:ILE:HD13	42:l:144:MET:HG2	1.99	0.43
46:p:131:ALA:HA	46:p:141:VAL:HG11	2.01	0.43
55:y:60:VAL:HG23	55:y:102:ILE:HG13	1.99	0.43
56:z:49:ALA:HB2	58:h:2234:G:H5"	2.00	0.43
58:h:943:U:H2'	58:h:944:A:C8	2.52	0.43
58:h:1944:C:H2'	58:h:1945:U:C6	2.54	0.43
5:7:178:PRO:HD3	5:7:270:PRO:HG3	2.00	0.43
6:A:25:G:H2'	6:A:26:G:C8	2.53	0.43
6:A:1476:A:H5"	17:L:44:LYS:HZ2	1.83	0.43
20:O:55:GLY:O	20:O:59:LEU:HG	2.18	0.43
21:P:5:ILE:HG12	21:P:22:VAL:HG22	2.00	0.43
27:V:57:VAL:O	27:V:61:VAL:HG12	2.19	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:i:111:LEU:HD12	39:i:111:LEU:HA	1.71	0.43
50:t:34:ILE:HD13	50:t:122:ILE:HG13	2.00	0.43
58:h:461:U:H2'	58:h:462:A:H8	1.83	0.43
58:h:981:U:HO2'	58:h:982:A:P	2.35	0.43
58:h:1659:U:H2'	58:h:1660:A:C8	2.54	0.43
58:h:1705:C:H2'	58:h:1706:A:C8	2.48	0.43
58:h:1764:A:H2'	58:h:1765:A:C8	2.54	0.43
58:h:2309:U:H2'	58:h:2310:G:C8	2.53	0.43
5:7:530:GLY:HA3	5:7:632:ALA:HB2	2.00	0.43
6:A:185:G:H1	6:A:203:U:H3	1.65	0.43
6:A:509:G:H5'	6:A:510:G:OP2	2.18	0.43
6:A:1336:C:H2'	6:A:1337:A:H8	1.83	0.43
8:C:27:GLN:OE1	8:C:27:GLN:N	2.51	0.43
12:G:115:THR:HB	12:G:118:GLU:HG3	2.00	0.43
13:H:39:ILE:HD13	13:H:42:ARG:NH2	2.33	0.43
22:Q:27:VAL:HG22	22:Q:38:VAL:HG22	2.01	0.43
22:Q:62:HIS:HB2	22:Q:86:LYS:NZ	2.34	0.43
22:Q:77:MET:HE3	22:Q:91:VAL:HG11	2.01	0.43
27:V:96:TRP:CH2	27:V:101:LEU:HD13	2.53	0.43
46:p:15:ILE:HD13	46:p:26:VAL:HG23	2.00	0.43
58:h:334:G:H2'	58:h:335:G:H8	1.80	0.43
58:h:2096:G:H2'	58:h:2097:G:C8	2.54	0.43
58:h:2366:C:H2'	58:h:2367:G:O4'	2.19	0.43
58:h:2394:A:H5'	58:h:2396:A:N7	2.34	0.43
58:h:2411:U:H2'	58:h:2412:U:O4'	2.19	0.43
6:A:411:A:C6	6:A:429:U:C4	3.07	0.43
6:A:533:G:H2'	6:A:534:U:C6	2.54	0.43
6:A:860:C:H5'	13:H:83:PRO:HG2	2.00	0.43
6:A:1470:G:H2'	6:A:1471:G:O4'	2.19	0.43
12:G:73:LEU:HD12	12:G:73:LEU:HA	1.81	0.43
15:J:15:HIS:O	15:J:18:ILE:HG22	2.19	0.43
17:L:77:HIS:O	17:L:77:HIS:CG	2.71	0.43
39:i:146:GLU:HB2	39:i:189:CYS:HB3	2.00	0.43
46:p:15:ILE:CD1	46:p:25:PRO:HG2	2.49	0.43
46:p:118:LEU:HG	46:p:119:ASN:H	1.83	0.43
48:r:78:LYS:HD3	53:w:70:GLU:OE1	2.19	0.43
58:h:273:A:H62	58:h:313:G:N2	2.17	0.43
58:h:483:G:H2'	58:h:484:C:H6	1.83	0.43
58:h:594:U:H5'	58:h:595:A:H5"	2.01	0.43
58:h:654:U:H6	58:h:654:U:H2'	1.64	0.43
58:h:1334:C:H2'	58:h:1335:G:O4'	2.18	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2871:U:H2'	58:h:2872:G:C8	2.54	0.43
58:h:3007:G:H2'	58:h:3008:C:H6	1.84	0.43
5:7:566:VAL:HG22	5:7:608:ASP:C	2.44	0.42
6:A:1132:U:H5"	15:J:44:THR:HG23	2.01	0.42
10:E:105:THR:HG23	10:E:106:ILE:O	2.18	0.42
11:F:89:LYS:HE2	11:F:89:LYS:HB2	1.83	0.42
25:T:20:ARG:NH2	25:T:64:LYS:HB3	2.34	0.42
27:V:52:LYS:HE2	27:V:198:TYR:HE1	1.83	0.42
34:c:6:ASP:OD1	34:c:29:ARG:NH1	2.52	0.42
39:i:272:ARG:O	39:i:273:ARG:NH1	2.52	0.42
42:l:154:ASP:OD1	42:l:155:ARG:N	2.51	0.42
43:m:22:GLN:OE1	43:m:22:GLN:HA	2.19	0.42
43:m:87:LYS:HA	43:m:133:SER:HA	1.99	0.42
46:p:80:LEU:HD23	46:p:80:LEU:HA	1.90	0.42
58:h:445:U:H4'	58:h:446:G:O5'	2.19	0.42
58:h:2007:C:H2'	58:h:2008:A:C8	2.54	0.42
9:D:15:LEU:HD13	9:D:55:LYS:HG2	2.00	0.42
10:E:70:MET:HE3	10:E:70:MET:HB3	1.85	0.42
18:M:65:LYS:HB3	18:M:69:ASP:OD2	2.20	0.42
27:V:111:LEU:HD22	27:V:152:ARG:HA	2.00	0.42
27:V:139:ARG:HD3	27:V:139:ARG:H	1.82	0.42
58:h:1165:G:O2'	58:h:1228:A:N1	2.49	0.42
58:h:2003:A:H1'	58:h:2162:A:N6	2.34	0.42
58:h:2262:C:H2'	58:h:2263:G:O4'	2.19	0.42
6:A:667:A:C2	6:A:684:A:C5	3.07	0.42
6:A:863:G:H2'	6:A:864:C:O4'	2.19	0.42
8:C:23:TYR:HD2	15:J:97:ASP:HB2	1.85	0.42
14:I:80:GLN:HB2	14:I:81:PHE:CE1	2.53	0.42
23:R:34:ASP:HB3	23:R:37:LEU:HB3	2.01	0.42
27:V:47:LEU:HA	27:V:50:ILE:HB	2.02	0.42
28:W:85:VAL:HG13	28:W:91:ASN:O	2.19	0.42
28:W:118:ALA:HB2	28:W:148:VAL:HG22	2.01	0.42
41:k:182:GLN:HE22	58:h:706:G:H1'	1.84	0.42
42:l:177:LEU:HD23	42:l:177:LEU:HA	1.69	0.42
43:m:22:GLN:NE2	43:m:39:GLU:HA	2.35	0.42
43:m:154:ARG:NH1	58:h:2750:G:OP2	2.52	0.42
47:q:55:ILE:HA	47:q:123:LYS:O	2.19	0.42
49:s:31:LYS:HE3	58:h:658:U:C5'	2.45	0.42
58:h:580:G:H2'	58:h:581:G:O4'	2.19	0.42
58:h:1478:C:O2'	58:h:2026:A:N3	2.49	0.42
58:h:1561:C:N3	58:h:1610:C:N4	2.66	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2777:G:C2	58:h:2807:G:H1'	2.55	0.42
5:7:581:LYS:HD3	5:7:622:GLN:NE2	2.35	0.42
6:A:592:U:H2'	6:A:593:C:H6	1.84	0.42
14:I:118:LEU:HD23	14:I:118:LEU:HA	1.84	0.42
40:j:13:MET:HE3	40:j:13:MET:HB2	1.79	0.42
42:l:76:ARG:HB3	42:l:89:GLY:HA2	2.00	0.42
58:h:2297:U:H2'	58:h:2298:U:H6	1.84	0.42
1:2:4:C:H2'	1:2:5:G:C8	2.54	0.42
5:7:25:ASN:O	5:7:112:ALA:HB1	2.20	0.42
6:A:45:G:H2'	6:A:46:G:C8	2.54	0.42
6:A:105:A:C6	6:A:326:G:C6	3.07	0.42
6:A:1018:C:C2	6:A:1019:U:C5	3.07	0.42
10:E:73:VAL:HG21	10:E:162:VAL:HG11	2.01	0.42
25:T:48:SER:O	25:T:52:HIS:ND1	2.52	0.42
25:T:50:LEU:O	25:T:54:THR:HG23	2.19	0.42
28:W:158:THR:HG22	28:W:161:GLN:OE1	2.20	0.42
53:w:59:THR:OG1	53:w:72:THR:HB	2.19	0.42
58:h:1673:A:C5	58:h:2926:A:C8	3.06	0.42
58:h:1809:U:H2'	58:h:1810:A:C8	2.54	0.42
58:h:2483:G:C8	58:h:2651:C:C4	3.07	0.42
58:h:2581:G:H8	58:h:2581:G:OP2	2.03	0.42
58:h:3045:C:H2'	58:h:3046:C:O4'	2.18	0.42
58:h:3116:C:H2'	58:h:3117:U:C6	2.55	0.42
5:7:701:SER:HB2	58:h:2884:A:N6	2.34	0.42
6:A:360:G:C6	6:A:361:G:C6	3.08	0.42
7:B:115:A:H2'	7:B:116:C:C6	2.54	0.42
11:F:17:ARG:H	11:F:17:ARG:HG2	1.61	0.42
41:k:148:LEU:HD23	41:k:148:LEU:HA	1.81	0.42
42:l:74:VAL:HG11	42:l:91:PRO:HB3	2.02	0.42
42:l:103:MET:O	42:l:107:LEU:HD22	2.19	0.42
51:u:11:GLY:O	51:u:16:HIS:ND1	2.47	0.42
58:h:453:U:H2'	58:h:454:U:C6	2.55	0.42
58:h:565:A:H2'	58:h:566:A:C8	2.55	0.42
58:h:757:G:H4'	58:h:758:A:H5'	2.02	0.42
58:h:2912:A:H5"	58:h:2937:G:O6	2.20	0.42
5:7:532:GLY:HA3	5:7:628:ALA:HB2	2.01	0.42
6:A:264:U:O2'	22:Q:81:PRO:O	2.36	0.42
6:A:545:U:H3'	6:A:546:G:H2'	2.02	0.42
6:A:865:C:O2'	6:A:866:U:H5'	2.19	0.42
6:A:1147:G:H22	6:A:1150:A:H3'	1.84	0.42
6:A:1424:G:H5'	6:A:1425:G:OP1	2.20	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:40:A:C2	7:B:45:G:C2	3.08	0.42
10:E:100:PRO:HB3	10:E:174:ARG:HG3	2.00	0.42
10:E:179:ALA:HB1	10:E:184:LEU:O	2.19	0.42
15:J:24:LYS:HZ2	15:J:90:ILE:HG23	1.83	0.42
16:K:110:GLN:OE1	16:K:116:VAL:HG13	2.20	0.42
17:L:30:ARG:O	17:L:81:LEU:HD12	2.20	0.42
18:M:69:ASP:C	18:M:69:ASP:OD1	2.62	0.42
20:O:33:THR:O	20:O:37:GLN:HG3	2.20	0.42
21:P:24:ASP:O	21:P:27:THR:OG1	2.37	0.42
27:V:192:ASP:HB3	27:V:195:VAL:HG22	2.01	0.42
31:Z:18:LEU:HD22	31:Z:57:VAL:HG13	2.01	0.42
36:e:22:ILE:HG21	36:e:58:ILE:HG21	2.02	0.42
47:q:65:SER:OG	58:h:1259:U:OP2	2.37	0.42
51:u:67:MET:HG2	51:u:76:VAL:HG21	2.00	0.42
58:h:502:C:H2'	58:h:503:A:H8	1.83	0.42
58:h:673:C:H2'	58:h:674:U:H6	1.84	0.42
58:h:928:U:H2'	58:h:929:C:H6	1.84	0.42
58:h:977:G:H2'	58:h:978:A:O4'	2.19	0.42
58:h:2814:A:H2'	58:h:2815:C:H6	1.85	0.42
5:7:113:ASP:HB2	5:7:296:HIS:CG	2.55	0.42
6:A:312:C:H2'	6:A:313:A:H8	1.85	0.42
6:A:1007:U:O2'	6:A:1008:C:P	2.78	0.42
6:A:1305:G:H2'	6:A:1306:A:H8	1.84	0.42
7:B:26:A:H2'	7:B:27:A:C8	2.54	0.42
9:D:151:GLN:HA	9:D:154:ARG:HG2	2.00	0.42
14:I:111:GLN:HB3	14:I:113:GLU:OE1	2.20	0.42
22:Q:27:VAL:HG23	22:Q:74:VAL:HG21	2.01	0.42
32:a:21:GLU:OE1	32:a:24:ARG:NH2	2.41	0.42
39:i:222:ARG:NH1	58:h:2044:U:OP2	2.46	0.42
45:o:91:LYS:HB3	45:o:91:LYS:HE3	1.80	0.42
53:w:3:THR:OG1	53:w:4:LEU:N	2.52	0.42
58:h:1172:A:H2'	58:h:1173:G:O4'	2.20	0.42
58:h:1179:U:O2	58:h:1187:A:H5"	2.19	0.42
58:h:1854:U:H2'	58:h:1855:A:C8	2.54	0.42
5:7:43:LEU:HD22	5:7:283:LEU:HG	2.01	0.42
6:A:1230:C:O2'	14:I:95:GLN:NE2	2.32	0.42
6:A:1515:A:H8	6:A:1515:A:O5'	2.03	0.42
9:D:183:ARG:HD2	9:D:183:ARG:HA	1.80	0.42
13:H:14:LEU:HD23	13:H:14:LEU:HA	1.83	0.42
19:N:27:CYS:SG	19:N:29:ARG:HB2	2.60	0.42
20:O:9:LYS:HG3	20:O:10:GLU:N	2.33	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:j:154:CYS:C	40:j:156:THR:H	2.27	0.42
41:k:101:ARG:NH1	58:h:774:G:OP1	2.52	0.42
42:l:50:ALA:HA	42:l:56:LEU:HD12	2.02	0.42
48:r:76:TYR:HB2	53:w:72:THR:HG23	2.02	0.42
53:w:27:VAL:HG23	53:w:80:ILE:HG23	2.02	0.42
54:x:49:ASP:OD2	58:h:621:U:O2'	2.23	0.42
58:h:1476:G:H2'	58:h:1477:C:H6	1.83	0.42
58:h:2011:U:H2'	58:h:2012:C:H6	1.84	0.42
58:h:2147:U:H2'	58:h:2148:C:C6	2.55	0.42
58:h:2613:G:H5"	58:h:2614:U:O4'	2.20	0.42
5:7:286:ILE:HG23	5:7:290:PHE:CD2	2.55	0.42
5:7:326:LYS:HB3	5:7:338:LEU:HB2	2.02	0.42
5:7:701:SER:HB2	58:h:2884:A:H62	1.85	0.42
6:A:390:U:H4'	21:P:29:ARG:NH2	2.35	0.42
6:A:408:G:H4'	9:D:104:ARG:NH2	2.35	0.42
6:A:455:G:C2	6:A:459:G:C6	3.07	0.42
6:A:658:U:H2'	6:A:659:C:H6	1.84	0.42
7:B:46:A:C4	7:B:47:A:C8	3.08	0.42
14:I:126:ARG:NH1	14:I:127:ASP:O	2.53	0.42
15:J:7:ARG:C	15:J:8:ILE:HD13	2.45	0.42
16:K:118:THR:O	16:K:119:ILE:HD13	2.19	0.42
18:M:11:ARG:O	18:M:45:THR:HB	2.19	0.42
21:P:88:GLY:O	21:P:90:GLU:HG3	2.20	0.42
28:W:113:LEU:O	28:W:145:THR:HA	2.20	0.42
36:e:25:GLN:HE22	49:s:65:LYS:HG2	1.84	0.42
37:f:5:PRO:HD2	58:h:2689:C:O3'	2.20	0.42
39:i:206:TRP:O	39:i:211:ARG:HD3	2.20	0.42
46:p:55:VAL:HG13	46:p:79:LYS:HE2	2.02	0.42
51:u:102:ASN:ND2	51:u:107:ASN:OD1	2.34	0.42
58:h:419:G:C5	58:h:420:G:H1'	2.55	0.42
58:h:964:C:H2'	58:h:965:U:C6	2.55	0.42
58:h:1222:C:H2'	58:h:1223:U:C6	2.55	0.42
58:h:1436:C:HO2'	58:h:1437:A:P	2.43	0.42
58:h:1964:U:H2'	58:h:1965:G:H8	1.85	0.42
5:7:45:VAL:HA	5:7:50:LEU:O	2.20	0.41
6:A:581:U:H2'	6:A:582:U:C6	2.55	0.41
6:A:593:C:H2'	6:A:594:A:C8	2.53	0.41
6:A:1138:A:H62	6:A:1159:G:H21	1.67	0.41
11:F:18:THR:C	11:F:21:PRO:HD2	2.45	0.41
42:l:12:LYS:HG3	42:l:104:TRP:CD1	2.55	0.41
42:l:67:ILE:HA	42:l:147:GLU:OE1	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:t:118:LEU:HD23	50:t:118:LEU:HA	1.83	0.41
55:y:30:GLU:H	55:y:30:GLU:HG3	1.67	0.41
58:h:289:A:C6	58:h:290:C:H5	2.38	0.41
58:h:718:C:O2'	58:h:772:U:OP1	2.35	0.41
58:h:1002:C:O2'	58:h:1003:A:OP1	2.24	0.41
58:h:1138:A:N1	58:h:1259:U:H2'	2.35	0.41
58:h:1904:C:H2'	58:h:1905:G:O4'	2.20	0.41
5:7:643:PRO:HB3	5:7:716:TYR:CE1	2.55	0.41
6:A:223:G:H2'	6:A:224:U:O4'	2.20	0.41
6:A:436:C:H2'	6:A:437:U:C6	2.55	0.41
6:A:877:G:H2'	6:A:878:C:C6	2.55	0.41
6:A:1020:G:H2'	6:A:1020:G:N3	2.36	0.41
6:A:1394:U:H2'	6:A:1395:C:H6	1.84	0.41
7:B:107:A:H2'	7:B:108:C:C6	2.55	0.41
8:C:30:ASP:HA	8:C:33:LYS:HG2	2.01	0.41
17:L:110:ARG:HE	17:L:110:ARG:HB2	1.73	0.41
18:M:59:TYR:CD1	18:M:59:TYR:C	2.97	0.41
18:M:90:LEU:HD23	18:M:90:LEU:HA	1.86	0.41
27:V:117:LEU:HD13	27:V:141:LYS:HG3	2.02	0.41
31:Z:48:ARG:NH2	58:h:58:G:OP1	2.54	0.41
40:j:37:THR:OG1	40:j:51:GLN:HG2	2.20	0.41
46:p:68:PHE:CZ	46:p:70:PHE:HB3	2.55	0.41
47:q:96:HIS:HA	47:q:97:PRO:HD3	1.86	0.41
50:t:47:ILE:HD12	50:t:70:PRO:HG3	2.01	0.41
58:h:217:G:N2	58:h:235:U:H4'	2.34	0.41
58:h:1186:G:N2	58:h:1213:A:HO2'	2.04	0.41
58:h:1187:A:C5	58:h:1191:A:H2	2.37	0.41
58:h:1287:C:H2'	58:h:1288:A:H8	1.85	0.41
58:h:1430:C:C2	58:h:1453:G:N2	2.88	0.41
58:h:1610:C:C2	58:h:1611:A:C8	3.08	0.41
58:h:1738:G:C2	58:h:1739:A:C8	3.08	0.41
5:7:326:LYS:HD3	5:7:338:LEU:HD23	2.01	0.41
5:7:353:HIS:HB2	5:7:430:LYS:HA	2.01	0.41
6:A:7:U:H5'	6:A:8:U:OP1	2.20	0.41
6:A:109:G:H2'	6:A:110:U:H6	1.86	0.41
6:A:209:A:H2'	6:A:210:A:C8	2.54	0.41
6:A:498:C:H4'	6:A:499:C:O5'	2.18	0.41
6:A:934:U:H2'	6:A:935:G:H8	1.85	0.41
6:A:1207:C:OP1	18:M:91:ARG:NH2	2.34	0.41
6:A:1297:U:H2'	6:A:1298:G:O4'	2.19	0.41
8:C:29:LYS:HE2	8:C:29:LYS:HB3	1.82	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:G:22:LEU:HD23	12:G:22:LEU:HA	1.77	0.41
12:G:57:ASP:OD1	12:G:58:PRO:HD2	2.20	0.41
25:T:2:ALA:HB1	25:T:8:ILE:HG12	2.02	0.41
28:W:33:VAL:N	28:W:49:LEU:O	2.46	0.41
41:k:61:GLY:HA3	41:k:80:ARG:HG2	2.02	0.41
43:m:22:GLN:HE21	43:m:39:GLU:HA	1.83	0.41
44:n:124:ILE:CG2	44:n:125:LYS:N	2.84	0.41
58:h:498:G:H8	58:h:498:G:H5"	1.85	0.41
5:7:232:SER:HA	5:7:262:ARG:HH12	1.86	0.41
5:7:575:PHE:CZ	5:7:613:SER:HA	2.55	0.41
5:7:674:ASP:HB2	5:7:682:VAL:HB	2.01	0.41
6:A:522:G:C5'	9:D:10:ARG:HH22	2.34	0.41
6:A:1273:C:OP1	12:G:37:SER:OG	2.30	0.41
6:A:1297:U:O2'	6:A:1342:A:N3	2.45	0.41
6:A:1342:A:OP2	19:N:35:ARG:NH2	2.54	0.41
8:C:189:ALA:N	8:C:196:ILE:O	2.45	0.41
11:F:48:LEU:HD13	11:F:52:ILE:HG22	2.01	0.41
15:J:8:ILE:HB	15:J:74:ILE:HB	2.01	0.41
22:Q:23:ALA:O	22:Q:24:ILE:HD13	2.20	0.41
27:V:99:GLY:O	27:V:103:ASN:HB3	2.20	0.41
27:V:216:VAL:O	27:V:219:SER:OG	2.37	0.41
28:W:102:ARG:HG3	28:W:138:LEU:HD12	2.02	0.41
54:x:11:GLN:O	54:x:15:ARG:HG3	2.20	0.41
58:h:1048:A:C6	58:h:1050:A:C8	3.09	0.41
58:h:1210:C:H2'	58:h:1211:G:C8	2.55	0.41
4:5:81:VAL:HG23	4:5:120:LEU:HD21	2.01	0.41
6:A:39:G:H2'	6:A:40:C:H6	1.81	0.41
6:A:969:G:H2'	6:A:970:G:H8	1.85	0.41
6:A:1287:G:H22	6:A:1313:G:H1'	1.85	0.41
7:B:30:G:H21	7:B:59:A:N6	2.18	0.41
12:G:105:VAL:O	12:G:109:ARG:HG3	2.20	0.41
14:I:58:TYR:HD1	14:I:59:PHE:CD1	2.37	0.41
18:M:78:ILE:O	18:M:82:ILE:HG22	2.20	0.41
20:O:7:GLN:H	20:O:7:GLN:CD	2.19	0.41
22:Q:41:GLU:OE2	22:Q:54:ARG:NH2	2.38	0.41
25:T:35:PHE:CD2	25:T:79:LEU:HD13	2.56	0.41
40:j:3:ARG:CZ	40:j:212:ILE:HG12	2.50	0.41
48:r:93:PRO:HG3	48:r:114:ILE:HD12	2.02	0.41
58:h:1035:G:H21	58:h:2493:A:H8	1.67	0.41
58:h:1781:C:H2'	58:h:1782:U:C6	2.55	0.41
58:h:2289:C:H2'	58:h:2290:C:H6	1.84	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2466:G:H2'	58:h:2467:U:O4'	2.20	0.41
1:2:63:G:H2'	1:2:64:A:H8	1.86	0.41
6:A:421:U:H3'	6:A:422:C:H5'	2.02	0.41
6:A:452:A:O2'	21:P:76:ILE:HD11	2.21	0.41
6:A:965:A:H5'	6:A:966:C:OP2	2.21	0.41
7:B:102:A:H2'	7:B:103:G:O4'	2.20	0.41
8:C:129:PHE:HD1	8:C:133:MET:HE3	1.85	0.41
11:F:74:GLU:O	11:F:78:GLN:HG2	2.20	0.41
15:J:57:LYS:HG3	15:J:58:TYR:N	2.35	0.41
17:L:94:ARG:HB2	17:L:95:TYR:CE1	2.56	0.41
21:P:84:LYS:HA	21:P:84:LYS:HD3	1.62	0.41
27:V:120:MET:HE2	27:V:120:MET:HB3	1.89	0.41
40:j:108:ASP:N	40:j:108:ASP:OD1	2.52	0.41
51:u:47:TYR:OH	51:u:69:LYS:HD2	2.21	0.41
58:h:980:C:HO2'	58:h:981:U:P	2.44	0.41
58:h:2090:U:O2	58:h:2093:G:C2	2.74	0.41
58:h:2761:U:H2'	58:h:2762:C:H6	1.84	0.41
4:5:62:GLU:HA	4:5:107:LYS:HA	2.03	0.41
5:7:423:THR:HG22	5:7:439:TRP:HH2	1.85	0.41
5:7:439:TRP:H	5:7:439:TRP:HE3	1.66	0.41
6:A:92:A:O2'	6:A:93:C:H6	2.04	0.41
6:A:194:A:H61	22:Q:20:ARG:HH12	1.67	0.41
6:A:580:G:H2'	6:A:581:U:C6	2.56	0.41
6:A:940:A:C6	24:S:55:ARG:HB2	2.56	0.41
6:A:985:G:H1	6:A:1018:C:H42	1.68	0.41
6:A:1100:U:H2'	6:A:1101:C:H6	1.86	0.41
6:A:1229:A:H4'	14:I:53:ARG:NH1	2.33	0.41
6:A:1269:A:H2'	6:A:1270:A:C8	2.56	0.41
6:A:1429:A:O2'	6:A:1430:A:H5'	2.20	0.41
11:F:46:ARG:HB2	11:F:60:TYR:CE2	2.56	0.41
11:F:50:TYR:OH	11:F:87:ARG:NH1	2.54	0.41
14:I:147:TYR:OH	14:I:149:LYS:HB3	2.20	0.41
17:L:33:VAL:O	17:L:56:LYS:N	2.46	0.41
23:R:56:ASN:OD1	23:R:56:ASN:N	2.48	0.41
39:i:133:LEU:HB2	39:i:189:CYS:O	2.20	0.41
39:i:162:SER:HB3	39:i:195:GLU:HG3	2.02	0.41
40:j:104:GLU:H	40:j:104:GLU:HG2	1.63	0.41
46:p:70:PHE:HD2	46:p:72:LEU:HG	1.84	0.41
58:h:81:A:C2	58:h:100:A:C5	3.08	0.41
58:h:1185:A:O2'	58:h:1186:G:O4'	2.39	0.41
58:h:2042:A:H2'	58:h:2043:C:C6	2.55	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2374:U:H2'	58:h:2375:G:H8	1.85	0.41
58:h:2736:C:H2'	58:h:2737:G:O4'	2.21	0.41
58:h:2807:G:H2'	58:h:2808:U:O4'	2.20	0.41
58:h:3057:U:H2'	58:h:3058:A:C8	2.56	0.41
1:2:34:C:H5'	6:A:948:G:C2	2.55	0.41
1:2:56:C:O4'	42:l:80:SER:HB3	2.21	0.41
4:5:74:LYS:NZ	4:5:97:VAL:HG13	2.35	0.41
5:7:210:ASP:N	5:7:210:ASP:OD1	2.52	0.41
5:7:336:VAL:HA	5:7:416:GLY:HA2	2.02	0.41
5:7:441:MET:HE3	5:7:441:MET:C	2.46	0.41
6:A:1105:U:HO2'	6:A:1106:U:P	2.43	0.41
6:A:1306:A:H2'	6:A:1307:C:H6	1.85	0.41
6:A:1491:A:H2'	6:A:1492:G:C8	2.55	0.41
40:j:27:THR:OG1	40:j:196:GLY:O	2.38	0.41
42:l:141:GLU:HG3	42:l:142:GLN:N	2.35	0.41
43:m:76:LEU:HA	43:m:76:LEU:HD12	1.86	0.41
58:h:395:G:H2'	58:h:396:C:C6	2.56	0.41
58:h:563:U:H4'	58:h:597:C:H5'	2.03	0.41
58:h:844:G:H4'	58:h:878:G:H5'	2.01	0.41
58:h:1556:A:N1	58:h:1615:G:C6	2.88	0.41
58:h:1854:U:H2'	58:h:1855:A:H8	1.86	0.41
58:h:2011:U:H2'	58:h:2012:C:C6	2.56	0.41
58:h:3118:U:H2'	58:h:3119:A:C8	2.55	0.41
5:7:392:THR:HG23	5:7:417:ARG:NE	2.36	0.41
6:A:200:U:H6	6:A:200:U:H2'	1.72	0.41
6:A:323:U:O3'	25:T:17:ARG:HG2	2.21	0.41
6:A:561:G:OP1	20:O:65:ARG:NH2	2.53	0.41
6:A:594:A:H2'	6:A:595:C:H6	1.86	0.41
6:A:664:U:O2	16:K:50:VAL:HG12	2.21	0.41
6:A:993:G:H2'	6:A:994:C:H6	1.85	0.41
6:A:1082:A:H2'	6:A:1083:C:C6	2.56	0.41
6:A:1087:C:C4	6:A:1088:G:C8	3.08	0.41
6:A:1264:C:C4	6:A:1265:U:C4	3.09	0.41
8:C:20:SER:HB3	8:C:39:ARG:NH2	2.36	0.41
9:D:23:ASP:OD1	9:D:23:ASP:C	2.64	0.41
11:F:44:GLY:O	11:F:46:ARG:NH1	2.54	0.41
11:F:83:GLU:N	11:F:83:GLU:OE1	2.53	0.41
12:G:44:TYR:O	12:G:48:GLU:HG2	2.21	0.41
13:H:52:GLU:HG2	13:H:53:ASP:N	2.35	0.41
18:M:48:LEU:HD12	18:M:49:THR:H	1.85	0.41
21:P:92:THR:HG22	21:P:92:THR:O	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Q:77:MET:HG3	22:Q:91:VAL:HG11	2.02	0.41
27:V:27:MET:SD	27:V:193:PRO:HD3	2.61	0.41
27:V:45:GLN:O	27:V:49:TYR:HD2	2.04	0.41
33:b:42:ARG:HB3	33:b:43:LEU:HD12	2.03	0.41
34:c:11:ILE:HD12	34:c:13:LEU:HD21	2.01	0.41
40:j:28:VAL:HG22	40:j:193:LEU:HD22	2.03	0.41
41:k:28:GLU:N	41:k:28:GLU:OE1	2.51	0.41
42:l:58:ASN:O	42:l:61:ILE:HG12	2.21	0.41
45:o:123:ILE:HA	45:o:126:LEU:HD12	2.02	0.41
46:p:38:MET:H	46:p:38:MET:HG2	1.74	0.41
46:p:75:PRO:HA	46:p:76:PRO:HD3	1.97	0.41
49:s:80:VAL:HG22	49:s:114:GLY:HA2	2.02	0.41
55:y:53:ASP:O	55:y:57:LYS:HG2	2.21	0.41
57:1:77:ASP:OD1	57:1:77:ASP:N	2.54	0.41
58:h:194:A:H61	58:h:197:C:H3'	1.84	0.41
58:h:678:A:N1	58:h:924:G:O2'	2.39	0.41
58:h:784:G:H2'	58:h:784:G:N3	2.36	0.41
58:h:859:G:H2'	58:h:860:G:O4'	2.21	0.41
58:h:929:C:H2'	58:h:930:C:C6	2.56	0.41
58:h:1177:G:P	58:h:1178:U:H3'	2.61	0.41
58:h:1552:A:H2'	58:h:1617:C:N4	2.35	0.41
58:h:2413:G:C2	58:h:2414:G:C8	3.09	0.41
58:h:2691:C:H2'	58:h:2692:A:O4'	2.20	0.41
5:7:353:HIS:O	5:7:427:LEU:HA	2.21	0.41
5:7:619:PHE:CZ	6:A:1477:A:H2	2.39	0.41
6:A:1089:C:C2	6:A:1090:A:C8	3.08	0.41
6:A:1264:C:H2'	6:A:1265:U:C6	2.56	0.41
10:E:43:ILE:HD12	10:E:81:VAL:HG13	2.03	0.41
12:G:111:ARG:HB3	12:G:119:ARG:HD2	2.03	0.41
15:J:7:ARG:HH21	15:J:73:LEU:HD21	1.85	0.41
17:L:5:GLN:HB2	22:Q:51:LYS:NZ	2.36	0.41
17:L:7:LEU:HD23	22:Q:49:TYR:CE1	2.56	0.41
18:M:7:VAL:HG12	18:M:9:LEU:HD23	2.03	0.41
22:Q:43:ARG:HH11	22:Q:43:ARG:HG2	1.86	0.41
26:U:62:ARG:NH1	58:h:1454:G:N7	2.69	0.41
31:Z:5:THR:HG21	31:Z:21:LYS:HE3	2.03	0.41
39:i:155:LEU:HG	39:i:177:MET:HE1	2.03	0.41
43:m:5:GLY:HA3	43:m:66:HIS:ND1	2.36	0.41
50:t:42:ILE:HD12	50:t:97:VAL:HG21	2.02	0.41
56:z:77:VAL:HG21	56:z:117:ARG:HH11	1.86	0.41
58:h:750:C:H2'	58:h:751:A:C8	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:1002:C:C2'	58:h:1003:A:H5"	2.51	0.41
58:h:1489:G:H2'	58:h:1490:U:O4'	2.21	0.41
58:h:1651:C:H2'	58:h:1652:A:C8	2.55	0.41
58:h:1651:C:H2'	58:h:1652:A:H8	1.85	0.41
58:h:2086:U:H2'	58:h:2087:C:C6	2.56	0.41
58:h:2142:A:O2'	58:h:2144:C:N4	2.54	0.41
58:h:2323:G:N2	58:h:2412:U:O2	2.44	0.41
58:h:2465:A:H2'	58:h:2466:G:C8	2.56	0.41
58:h:2505:C:O2'	58:h:2506:G:H5'	2.21	0.41
5:7:309:ARG:NH2	5:7:312:LEU:HG	2.36	0.40
5:7:447:PRO:HA	5:7:489:TRP:HA	2.03	0.40
6:A:160:C:H2'	6:A:161:U:O4'	2.22	0.40
6:A:572:G:H2'	6:A:573:U:C6	2.56	0.40
6:A:749:G:H4'	6:A:1497:A:H4'	2.02	0.40
6:A:830:G:H2'	6:A:831:A:H8	1.85	0.40
18:M:33:ILE:HG12	18:M:59:TYR:CE1	2.56	0.40
23:R:70:ASN:O	23:R:74:VAL:HG22	2.21	0.40
26:U:38:ASN:O	26:U:42:ILE:HG13	2.21	0.40
43:m:42:SER:OG	43:m:54:THR:HB	2.22	0.40
44:n:41:ARG:HH11	58:h:306:U:H5"	1.86	0.40
58:h:790:A:N3	58:h:2667:C:O2'	2.51	0.40
58:h:3115:A:H2'	58:h:3116:C:C6	2.56	0.40
5:7:208:PRO:HA	5:7:209:PRO:HD3	1.91	0.40
5:7:520:LEU:HG	5:7:521:ARG:N	2.36	0.40
6:A:315:A:N7	6:A:328:U:H5	2.20	0.40
6:A:494:C:H2'	6:A:495:G:H8	1.86	0.40
6:A:1266:U:C4	6:A:1267:U:H5	2.40	0.40
10:E:191:PRO:O	10:E:195:LEU:HG	2.22	0.40
11:F:12:PRO:O	11:F:45:ARG:NH1	2.54	0.40
11:F:77:ARG:NH1	39:i:126:LYS:HE3	2.36	0.40
39:i:227:ASN:OD1	58:h:899:G:H5'	2.20	0.40
43:m:9:VAL:HG22	43:m:51:ILE:HB	2.02	0.40
47:q:13:ARG:CZ	47:q:121:LYS:HE2	2.51	0.40
48:r:113:LYS:HA	48:r:113:LYS:HD2	1.80	0.40
57:1:4:HIS:NE2	58:h:81:A:OP1	2.53	0.40
58:h:247:G:H4'	58:h:474:G:C5	2.57	0.40
58:h:908:A:OP2	58:h:2294:A:O2'	2.38	0.40
58:h:922:U:O2'	58:h:2284:A:N1	2.50	0.40
58:h:979:G:H2'	58:h:980:C:H6	1.86	0.40
58:h:1224:G:N3	58:h:1225:G:C8	2.89	0.40
58:h:2323:G:H2'	58:h:2324:A:C8	2.56	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2394:A:O2'	58:h:2395:U:H5'	2.21	0.40
6:A:440:C:C2	6:A:441:A:C8	3.10	0.40
6:A:748:A:H4'	6:A:1507:G:N2	2.36	0.40
6:A:1153:U:H2'	6:A:1154:C:H6	1.84	0.40
6:A:1483:A:H1'	6:A:1504:G:H5'	2.02	0.40
11:F:36:THR:HB	11:F:66:LYS:O	2.21	0.40
18:M:39:ILE:HD13	18:M:52:GLN:HB3	2.02	0.40
18:M:117:ILE:HD13	18:M:117:ILE:HA	1.89	0.40
27:V:134:ILE:HD13	27:V:134:ILE:HA	1.85	0.40
34:c:19:LYS:HE3	34:c:19:LYS:HB3	1.86	0.40
36:e:30:ARG:HA	36:e:30:ARG:HD2	1.85	0.40
38:g:24:THR:OG1	38:g:25:ARG:N	2.54	0.40
42:l:70:GLN:HE21	42:l:102:ARG:HD3	1.86	0.40
42:l:72:PRO:HB2	42:l:94:ALA:HB1	2.03	0.40
43:m:61:ARG:CZ	43:m:61:ARG:HB3	2.51	0.40
45:o:6:LYS:NZ	58:h:1164:A:O3'	2.53	0.40
45:o:16:GLN:HB3	45:o:81:PHE:CE2	2.57	0.40
49:s:77:VAL:HA	49:s:111:LYS:O	2.21	0.40
58:h:278:A:H2'	58:h:279:U:C6	2.57	0.40
58:h:579:A:H2'	58:h:580:G:O4'	2.21	0.40
58:h:735:U:H2'	58:h:736:G:O4'	2.21	0.40
58:h:864:A:C2	58:h:865:A:C8	3.09	0.40
58:h:1086:C:H4'	58:h:1086:C:OP2	2.22	0.40
58:h:1610:C:C4	58:h:1611:A:N7	2.89	0.40
58:h:3030:A:H2'	58:h:3031:A:C8	2.56	0.40
3:4:7:G:H2'	3:4:8:A:C8	2.56	0.40
6:A:36:A:H2'	6:A:37:A:C8	2.57	0.40
6:A:229:U:O2'	21:P:24:ASP:OD1	2.39	0.40
6:A:253:U:O2'	22:Q:32:MET:HE1	2.21	0.40
6:A:1118:A:OP1	6:A:1118:A:C8	2.75	0.40
6:A:1141:G:C2	6:A:1142:C:C6	3.09	0.40
7:B:28:A:H5'	52:v:46:HIS:CD2	2.57	0.40
8:C:90:LEU:HD13	8:C:98:VAL:HG11	2.02	0.40
9:D:92:ARG:HH12	9:D:129:SER:HB2	1.86	0.40
12:G:135:VAL:O	12:G:139:GLU:HG2	2.21	0.40
21:P:7:LEU:HB3	21:P:18:TYR:HD2	1.86	0.40
39:i:208:LYS:HB2	58:h:844:G:C5	2.56	0.40
41:k:2:THR:HB	41:k:19:GLU:OE1	2.21	0.40
41:k:139:LYS:HE2	58:h:402:G:N7	2.36	0.40
58:h:159:A:N3	58:h:2431:C:O2'	2.46	0.40
58:h:1557:C:H2'	58:h:1558:C:C6	2.57	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:h:2363:A:H61	58:h:2374:U:H3	1.68	0.40
58:h:2603:G:H2'	58:h:2604:U:C6	2.56	0.40
1:2:30:G:OP1	6:A:1210:A:O2'	2.36	0.40
6:A:270:A:H2'	6:A:271:C:C6	2.57	0.40
6:A:525:C:O2'	6:A:529:C:OP1	2.37	0.40
6:A:829:G:C2	6:A:830:G:C8	3.10	0.40
6:A:1066:U:C2	6:A:1067:G:C8	3.10	0.40
6:A:1094:C:H2'	6:A:1095:U:H6	1.86	0.40
6:A:1207:C:N4	18:M:104:LYS:HD2	2.35	0.40
6:A:1434:U:O2'	6:A:1435:U:H5"	2.21	0.40
11:F:43:TRP:HB2	11:F:46:ARG:NH2	2.37	0.40
12:G:90:GLU:H	12:G:90:GLU:HG3	1.75	0.40
13:H:41:LYS:NZ	13:H:47:SER:O	2.55	0.40
15:J:4:GLN:O	15:J:79:PRO:HD3	2.21	0.40
17:L:43:LYS:HE3	17:L:43:LYS:HA	2.02	0.40
32:a:18:LYS:O	32:a:22:SER:OG	2.27	0.40
32:a:38:GLU:HG3	32:a:39:ASP:H	1.86	0.40
43:m:23:ASN:OD1	43:m:23:ASN:C	2.64	0.40
48:r:24:VAL:HG13	48:r:33:ALA:HB2	2.04	0.40
49:s:106:LYS:H	49:s:106:LYS:HG2	1.70	0.40
56:z:18:ARG:NH1	56:z:18:ARG:HG2	2.35	0.40
57:1:93:LYS:HE3	57:1:93:LYS:HB3	1.79	0.40
58:h:257:A:H2'	58:h:258:G:O4'	2.22	0.40
58:h:321:G:H2'	58:h:322:A:C8	2.56	0.40
58:h:750:C:H2'	58:h:751:A:H8	1.87	0.40
58:h:1081:C:O2'	58:h:2497:A:N3	2.48	0.40
58:h:1118:A:H2'	58:h:1119:A:C8	2.57	0.40
58:h:1225:G:C5	58:h:1226:U:C4	3.09	0.40
58:h:1437:A:C5	58:h:1438:G:N7	2.89	0.40
58:h:1621:C:H2'	58:h:1622:G:H8	1.86	0.40
58:h:1964:U:H2'	58:h:1965:G:C8	2.56	0.40
58:h:2147:U:H2'	58:h:2148:C:H6	1.86	0.40
58:h:2365:A:H2'	58:h:2366:C:H6	1.85	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	3	21/23 (91%)	20 (95%)	1 (5%)	0	100	100
4	5	67/69 (97%)	61 (91%)	4 (6%)	2 (3%)	3	22
5	7	707/709 (100%)	673 (95%)	33 (5%)	1 (0%)	48	83
8	C	206/208 (99%)	192 (93%)	14 (7%)	0	100	100
9	D	198/200 (99%)	186 (94%)	12 (6%)	0	100	100
10	E	178/180 (99%)	168 (94%)	10 (6%)	0	100	100
11	F	94/96 (98%)	90 (96%)	4 (4%)	0	100	100
12	G	153/155 (99%)	149 (97%)	4 (3%)	0	100	100
13	H	129/131 (98%)	127 (98%)	2 (2%)	0	100	100
14	I	124/126 (98%)	116 (94%)	8 (6%)	0	100	100
15	J	97/99 (98%)	92 (95%)	4 (4%)	1 (1%)	13	49
16	K	113/115 (98%)	110 (97%)	3 (3%)	0	100	100
17	L	120/122 (98%)	111 (92%)	9 (8%)	0	100	100
18	M	114/116 (98%)	107 (94%)	7 (6%)	0	100	100
19	N	58/60 (97%)	50 (86%)	8 (14%)	0	100	100
20	O	86/88 (98%)	85 (99%)	1 (1%)	0	100	100
21	P	111/113 (98%)	103 (93%)	8 (7%)	0	100	100
22	Q	92/94 (98%)	87 (95%)	5 (5%)	0	100	100
23	R	63/65 (97%)	61 (97%)	2 (3%)	0	100	100
24	S	80/82 (98%)	77 (96%)	3 (4%)	0	100	100
25	T	83/85 (98%)	81 (98%)	2 (2%)	0	100	100
26	U	95/97 (98%)	92 (97%)	3 (3%)	0	100	100
27	V	226/228 (99%)	215 (95%)	10 (4%)	1 (0%)	30	68
28	W	190/192 (99%)	183 (96%)	7 (4%)	0	100	100
29	X	77/79 (98%)	71 (92%)	6 (8%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	Y	61/63 (97%)	59 (97%)	2 (3%)	0	100	100
31	Z	62/64 (97%)	61 (98%)	1 (2%)	0	100	100
32	a	57/59 (97%)	56 (98%)	1 (2%)	0	100	100
33	b	52/54 (96%)	50 (96%)	2 (4%)	0	100	100
34	c	47/49 (96%)	45 (96%)	1 (2%)	1 (2%)	5	30
35	d	44/46 (96%)	44 (100%)	0	0	100	100
36	e	61/63 (97%)	60 (98%)	1 (2%)	0	100	100
37	f	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
38	g	46/48 (96%)	43 (94%)	3 (6%)	0	100	100
39	i	273/275 (99%)	261 (96%)	12 (4%)	0	100	100
40	j	212/214 (99%)	200 (94%)	12 (6%)	0	100	100
41	k	207/209 (99%)	201 (97%)	6 (3%)	0	100	100
42	l	180/182 (99%)	170 (94%)	10 (6%)	0	100	100
43	m	174/176 (99%)	169 (97%)	5 (3%)	0	100	100
44	n	149/151 (99%)	138 (93%)	11 (7%)	0	100	100
45	o	124/126 (98%)	118 (95%)	6 (5%)	0	100	100
46	p	131/133 (98%)	123 (94%)	6 (5%)	2 (2%)	8	39
47	q	144/146 (99%)	141 (98%)	3 (2%)	0	100	100
48	r	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
49	s	143/145 (99%)	126 (88%)	17 (12%)	0	100	100
50	t	134/136 (98%)	126 (94%)	8 (6%)	0	100	100
51	u	116/118 (98%)	114 (98%)	2 (2%)	0	100	100
52	v	124/126 (98%)	123 (99%)	1 (1%)	0	100	100
53	w	111/113 (98%)	105 (95%)	6 (5%)	0	100	100
54	x	122/124 (98%)	120 (98%)	2 (2%)	0	100	100
55	y	98/100 (98%)	94 (96%)	4 (4%)	0	100	100
56	z	112/114 (98%)	111 (99%)	1 (1%)	0	100	100
57	1	93/105 (89%)	92 (99%)	1 (1%)	0	100	100
All	All	6714/6830 (98%)	6408 (95%)	298 (4%)	8 (0%)	50	83

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	5	99	SER
34	c	7	VAL
27	V	155	GLN
5	7	677	ASP
15	J	57	LYS
4	5	100	ALA
46	p	24	PRO
46	p	25	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	
2	3	18/18 (100%)	18 (100%)	0	100	100
4	5	53/53 (100%)	53 (100%)	0	100	100
5	7	564/564 (100%)	557 (99%)	7 (1%)	67	79
8	C	170/170 (100%)	169 (99%)	1 (1%)	84	88
9	D	175/175 (100%)	174 (99%)	1 (1%)	84	88
10	E	127/127 (100%)	125 (98%)	2 (2%)	58	75
11	F	85/85 (100%)	82 (96%)	3 (4%)	31	52
12	G	131/131 (100%)	130 (99%)	1 (1%)	79	85
13	H	107/107 (100%)	107 (100%)	0	100	100
14	I	102/102 (100%)	100 (98%)	2 (2%)	50	69
15	J	89/89 (100%)	87 (98%)	2 (2%)	47	66
16	K	89/89 (100%)	87 (98%)	2 (2%)	47	66
17	L	103/103 (100%)	103 (100%)	0	100	100
18	M	99/99 (100%)	99 (100%)	0	100	100
19	N	49/49 (100%)	49 (100%)	0	100	100
20	O	76/76 (100%)	76 (100%)	0	100	100
21	P	92/92 (100%)	92 (100%)	0	100	100
22	Q	80/80 (100%)	80 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
23	R	55/55 (100%)	54 (98%)	1 (2%)	54	71
24	S	73/73 (100%)	70 (96%)	3 (4%)	26	48
25	T	69/69 (100%)	67 (97%)	2 (3%)	37	58
26	U	83/83 (100%)	82 (99%)	1 (1%)	67	79
27	V	191/191 (100%)	190 (100%)	1 (0%)	86	90
28	W	155/155 (100%)	155 (100%)	0	100	100
29	X	58/58 (100%)	58 (100%)	0	100	100
30	Y	50/50 (100%)	50 (100%)	0	100	100
31	Z	58/58 (100%)	58 (100%)	0	100	100
32	a	52/52 (100%)	51 (98%)	1 (2%)	52	70
33	b	43/43 (100%)	43 (100%)	0	100	100
34	c	47/47 (100%)	47 (100%)	0	100	100
35	d	35/35 (100%)	35 (100%)	0	100	100
36	e	53/53 (100%)	53 (100%)	0	100	100
37	f	35/35 (100%)	35 (100%)	0	100	100
38	g	43/43 (100%)	43 (100%)	0	100	100
39	i	215/215 (100%)	213 (99%)	2 (1%)	75	83
40	j	160/160 (100%)	156 (98%)	4 (2%)	42	62
41	k	169/169 (100%)	168 (99%)	1 (1%)	84	88
42	l	151/151 (100%)	148 (98%)	3 (2%)	50	69
43	m	148/148 (100%)	148 (100%)	0	100	100
44	n	90/116 (78%)	90 (100%)	0	100	100
45	o	89/89 (100%)	89 (100%)	0	100	100
46	p	102/102 (100%)	102 (100%)	0	100	100
47	q	119/119 (100%)	116 (98%)	3 (2%)	42	62
48	r	100/100 (100%)	99 (99%)	1 (1%)	73	82
49	s	112/112 (100%)	112 (100%)	0	100	100
50	t	114/114 (100%)	112 (98%)	2 (2%)	54	71
51	u	97/97 (100%)	97 (100%)	0	100	100
52	v	93/93 (100%)	92 (99%)	1 (1%)	70	80
53	w	100/100 (100%)	100 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
54	x	97/97 (100%)	97 (100%)	0	100	100
55	y	81/81 (100%)	79 (98%)	2 (2%)	42	62
56	z	90/90 (100%)	90 (100%)	0	100	100
57	1	81/86 (94%)	81 (100%)	0	100	100
All	All	5517/5548 (99%)	5468 (99%)	49 (1%)	74	83

All (49) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	7	301	VAL
5	7	518	VAL
5	7	520	LEU
5	7	521	ARG
5	7	637	LYS
5	7	638	ILE
5	7	682	VAL
8	C	145	ASN
9	D	85	LEU
10	E	95	ASN
10	E	120	MET
11	F	15	ASP
11	F	41	ASP
11	F	52	ILE
12	G	94	ASP
14	I	110	VAL
14	I	147	TYR
15	J	82	LYS
15	J	87	LEU
16	K	128	ASN
16	K	137	ARG
23	R	31	ASP
24	S	12	ASP
24	S	14	HIS
24	S	48	THR
25	T	16	ARG
25	T	79	LEU
26	U	20	SER
27	V	41	ILE
32	a	58	GLU
39	i	163	ILE
39	i	270	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
40	j	104	GLU
40	j	151	ILE
40	j	173	ASP
40	j	205	LEU
41	k	13	LYS
42	l	107	LEU
42	l	120	ASP
42	l	136	THR
47	q	69	LEU
47	q	96	HIS
47	q	108	MET
48	r	47	ILE
50	t	27	VAL
50	t	31	ASP
52	v	25	LEU
55	y	54	ASP
55	y	73	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
2	3	23	ASN
5	7	586	GLN
5	7	612	HIS
5	7	639	ASN
8	C	125	ASN
9	D	48	GLN
9	D	173	GLN
12	G	86	GLN
18	M	101	GLN
19	N	49	HIS
24	S	26	ASN
24	S	29	GLN
27	V	45	GLN
28	W	180	ASN
31	Z	31	ASN
31	Z	44	ASN
32	a	8	GLN
32	a	42	GLN
33	b	12	ASN
36	e	25	GLN
39	i	96	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
40	j	21	ASN
40	j	76	ASN
40	j	130	HIS
41	k	91	HIS
41	k	202	ASN
42	l	70	GLN
43	m	98	GLN
47	q	58	ASN
49	s	69	ASN
50	t	9	HIS
51	u	62	ASN
52	v	16	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	75/76 (98%)	16 (21%)	0
3	4	17/18 (94%)	4 (23%)	1 (5%)
58	h	3069/3127 (98%)	563 (18%)	0
6	A	1510/1511 (99%)	299 (19%)	11 (0%)
7	B	117/118 (99%)	17 (14%)	1 (0%)
All	All	4788/4850 (98%)	899 (18%)	13 (0%)

All (899) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	16	U
1	2	17	C
1	2	19	G
1	2	20	U
1	2	21	A
1	2	22	G
1	2	23	A
1	2	42	C
1	2	43	C
1	2	46	G
1	2	47	U
1	2	48	C
1	2	52	G
1	2	69	G
1	2	70	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	2	76	A
3	4	12	A
3	4	13	A
3	4	19	C
3	4	20	C
6	A	8	U
6	A	9	U
6	A	11	G
6	A	12	A
6	A	13	G
6	A	36	A
6	A	43	G
6	A	52	U
6	A	53	U
6	A	54	A
6	A	55	A
6	A	58	C
6	A	59	A
6	A	77	G
6	A	82	U
6	A	83	U
6	A	85	C
6	A	87	G
6	A	89	G
6	A	93	C
6	A	116	A
6	A	117	C
6	A	118	A
6	A	126	G
6	A	128	U
6	A	139	C
6	A	160	C
6	A	170	U
6	A	179	C
6	A	180	A
6	A	192	G
6	A	193	C
6	A	201	G
6	A	210	A
6	A	211	A
6	A	215	U
6	A	217	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	A	218	G
6	A	243	A
6	A	244	U
6	A	245	C
6	A	247	G
6	A	251	G
6	A	266	G
6	A	267	C
6	A	279	A
6	A	280	C
6	A	281	G
6	A	289	G
6	A	321	A
6	A	328	U
6	A	329	A
6	A	332	G
6	A	344	A
6	A	345	C
6	A	347	G
6	A	351	G
6	A	352	C
6	A	353	A
6	A	354	G
6	A	356	A
6	A	367	U
6	A	371	A
6	A	372	C
6	A	373	A
6	A	388	G
6	A	390	U
6	A	397	A
6	A	398	C
6	A	406	G
6	A	412	U
6	A	413	G
6	A	414	A
6	A	419	C
6	A	421	U
6	A	422	C
6	A	423	G
6	A	424	G
6	A	429	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	A	430	A
6	A	433	C
6	A	434	C
6	A	438	U
6	A	451	A
6	A	452	A
6	A	453	G
6	A	454	C
6	A	456	C
6	A	457	A
6	A	458	A
6	A	459	G
6	A	461	G
6	A	464	G
6	A	465	G
6	A	466	U
6	A	476	A
6	A	477	G
6	A	478	A
6	A	482	A
6	A	485	G
6	A	486	G
6	A	488	C
6	A	490	A
6	A	491	C
6	A	497	G
6	A	498	C
6	A	499	C
6	A	505	C
6	A	507	G
6	A	509	G
6	A	511	U
6	A	512	A
6	A	513	A
6	A	515	A
6	A	520	G
6	A	525	C
6	A	527	A
6	A	539	A
6	A	542	U
6	A	544	C
6	A	552	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	A	553	A
6	A	556	A
6	A	557	G
6	A	576	C
6	A	612	U
6	A	613	G
6	A	633	A
6	A	645	G
6	A	666	U
6	A	668	G
6	A	680	G
6	A	683	G
6	A	700	C
6	A	701	G
6	A	702	G
6	A	703	U
6	A	711	G
6	A	728	A
6	A	729	A
6	A	735	G
6	A	757	A
6	A	761	A
6	A	765	G
6	A	772	A
6	A	773	U
6	A	774	A
6	A	789	G
6	A	795	A
6	A	797	C
6	A	799	G
6	A	808	A
6	A	821	C
6	A	822	U
6	A	823	U
6	A	824	C
6	A	826	U
6	A	827	U
6	A	828	G
6	A	841	U
6	A	864	C
6	A	865	C
6	A	884	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	A	896	A
6	A	908	G
6	A	909	G
6	A	914	C
6	A	916	C
6	A	921	G
6	A	942	U
6	A	943	U
6	A	948	G
6	A	950	A
6	A	951	A
6	A	953	G
6	A	955	G
6	A	956	A
6	A	957	A
6	A	958	G
6	A	959	A
6	A	971	G
6	A	973	U
6	A	974	U
6	A	975	G
6	A	976	A
6	A	982	A
6	A	985	G
6	A	986	G
6	A	987	A
6	A	988	C
6	A	1003	C
6	A	1007	U
6	A	1008	C
6	A	1010	C
6	A	1013	G
6	A	1014	U
6	A	1020	G
6	A	1024	G
6	A	1025	C
6	A	1028	G
6	A	1033	G
6	A	1034	C
6	A	1036	U
6	A	1045	U
6	A	1048	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	A	1074	G
6	A	1075	U
6	A	1081	A
6	A	1104	G
6	A	1108	C
6	A	1110	A
6	A	1112	C
6	A	1115	G
6	A	1116	U
6	A	1117	U
6	A	1118	A
6	A	1120	G
6	A	1121	G
6	A	1123	G
6	A	1128	C
6	A	1129	U
6	A	1138	A
6	A	1140	U
6	A	1147	G
6	A	1149	C
6	A	1150	A
6	A	1162	G
6	A	1164	U
6	A	1165	G
6	A	1172	A
6	A	1177	A
6	A	1178	A
6	A	1181	C
6	A	1182	A
6	A	1193	U
6	A	1194	A
6	A	1206	U
6	A	1217	A
6	A	1219	A
6	A	1231	A
6	A	1234	G
6	A	1238	U
6	A	1241	G
6	A	1249	G
6	A	1251	G
6	A	1261	A
6	A	1266	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	A	1267	U
6	A	1268	C
6	A	1272	G
6	A	1281	A
6	A	1282	G
6	A	1283	U
6	A	1284	U
6	A	1285	C
6	A	1287	G
6	A	1302	C
6	A	1313	G
6	A	1328	A
6	A	1329	G
6	A	1333	U
6	A	1335	G
6	A	1343	G
6	A	1344	C
6	A	1345	A
6	A	1346	A
6	A	1347	C
6	A	1351	G
6	A	1353	G
6	A	1356	G
6	A	1357	A
6	A	1364	U
6	A	1380	C
6	A	1381	A
6	A	1382	C
6	A	1389	U
6	A	1395	C
6	A	1405	G
6	A	1407	U
6	A	1425	G
6	A	1429	A
6	A	1434	U
6	A	1435	U
6	A	1436	G
6	A	1438	G
6	A	1459	G
6	A	1463	G
6	A	1466	G
6	A	1471	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	A	1478	G
6	A	1481	G
6	A	1483	A
6	A	1488	G
6	A	1490	U
6	A	1501	G
6	A	1502	A
6	A	1504	G
6	A	1513	G
6	A	1514	G
7	B	4	A
7	B	9	G
7	B	11	U
7	B	12	C
7	B	13	C
7	B	30	G
7	B	42	C
7	B	57	U
7	B	58	A
7	B	59	A
7	B	67	A
7	B	87	U
7	B	89	C
7	B	90	G
7	B	103	G
7	B	107	A
7	B	114	A
58	h	7	U
58	h	9	U
58	h	12	G
58	h	20	G
58	h	31	U
58	h	48	G
58	h	55	G
58	h	60	A
58	h	68	A
58	h	71	A
58	h	72	G
58	h	82	G
58	h	89	A
58	h	90	C
58	h	94	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	98	U
58	h	99	G
58	h	115	A
58	h	116	A
58	h	117	U
58	h	125	C
58	h	136	U
58	h	148	A
58	h	161	U
58	h	162	A
58	h	164	A
58	h	172	C
58	h	180	A
58	h	195	A
58	h	198	A
58	h	212	A
58	h	214	G
58	h	215	A
58	h	221	A
58	h	227	A
58	h	229	U
58	h	230	G
58	h	231	U
58	h	248	G
58	h	275	C
58	h	283	U
58	h	285	U
58	h	286	G
58	h	288	U
58	h	290	C
58	h	292	G
58	h	296	A
58	h	297	G
58	h	299	G
58	h	300	G
58	h	301	U
58	h	302	U
58	h	303	G
58	h	305	G
58	h	314	G
58	h	315	U
58	h	317	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	318	U
58	h	319	G
58	h	322	A
58	h	324	C
58	h	326	A
58	h	330	U
58	h	331	U
58	h	336	C
58	h	337	U
58	h	342	C
58	h	344	G
58	h	348	G
58	h	350	A
58	h	351	G
58	h	352	G
58	h	357	U
58	h	358	G
58	h	361	A
58	h	364	A
58	h	369	G
58	h	370	U
58	h	371	G
58	h	384	G
58	h	393	U
58	h	399	G
58	h	404	A
58	h	412	A
58	h	413	G
58	h	424	G
58	h	425	U
58	h	434	G
58	h	437	G
58	h	445	U
58	h	446	G
58	h	447	A
58	h	449	G
58	h	450	G
58	h	452	G
58	h	453	U
58	h	454	U
58	h	460	G
58	h	474	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	489	A
58	h	490	A
58	h	493	U
58	h	494	G
58	h	498	G
58	h	505	C
58	h	512	G
58	h	543	U
58	h	544	U
58	h	566	A
58	h	567	A
58	h	569	G
58	h	581	G
58	h	589	A
58	h	591	G
58	h	592	A
58	h	594	U
58	h	595	A
58	h	596	C
58	h	616	A
58	h	617	U
58	h	618	C
58	h	619	C
58	h	620	G
58	h	634	C
58	h	635	G
58	h	636	U
58	h	637	G
58	h	638	U
58	h	639	C
58	h	640	G
58	h	642	G
58	h	644	G
58	h	647	G
58	h	655	G
58	h	658	U
58	h	665	G
58	h	666	A
58	h	667	A
58	h	678	A
58	h	679	G
58	h	684	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	685	G
58	h	696	A
58	h	706	G
58	h	707	G
58	h	708	G
58	h	721	A
58	h	728	G
58	h	731	A
58	h	738	A
58	h	740	A
58	h	756	A
58	h	758	A
58	h	760	U
58	h	764	U
58	h	765	G
58	h	766	G
58	h	768	G
58	h	784	G
58	h	785	A
58	h	794	G
58	h	801	U
58	h	845	C
58	h	855	C
58	h	862	U
58	h	863	G
58	h	868	C
58	h	872	G
58	h	878	G
58	h	879	A
58	h	880	G
58	h	890	G
58	h	891	G
58	h	897	A
58	h	899	G
58	h	904	A
58	h	907	A
58	h	917	A
58	h	920	G
58	h	927	C
58	h	942	U
58	h	944	A
58	h	960	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	961	U
58	h	972	A
58	h	974	G
58	h	975	U
58	h	981	U
58	h	982	A
58	h	994	A
58	h	1001	C
58	h	1002	C
58	h	1003	A
58	h	1004	C
58	h	1005	A
58	h	1006	G
58	h	1007	G
58	h	1008	G
58	h	1011	A
58	h	1013	U
58	h	1014	G
58	h	1020	A
58	h	1022	C
58	h	1025	A
58	h	1046	C
58	h	1047	A
58	h	1048	A
58	h	1049	G
58	h	1058	A
58	h	1063	G
58	h	1076	A
58	h	1078	G
58	h	1085	G
58	h	1092	G
58	h	1101	A
58	h	1103	C
58	h	1114	G
58	h	1130	C
58	h	1131	G
58	h	1144	A
58	h	1151	U
58	h	1164	A
58	h	1171	C
58	h	1173	G
58	h	1175	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	1178	U
58	h	1181	G
58	h	1184	U
58	h	1186	G
58	h	1187	A
58	h	1188	A
58	h	1189	G
58	h	1190	C
58	h	1191	A
58	h	1201	G
58	h	1202	A
58	h	1203	A
58	h	1205	G
58	h	1206	A
58	h	1207	G
58	h	1209	G
58	h	1212	U
58	h	1213	A
58	h	1214	A
58	h	1219	U
58	h	1230	G
58	h	1232	G
58	h	1240	G
58	h	1250	U
58	h	1251	A
58	h	1253	C
58	h	1254	G
58	h	1260	C
58	h	1261	A
58	h	1292	U
58	h	1293	G
58	h	1298	C
58	h	1335	G
58	h	1344	A
58	h	1353	G
58	h	1362	A
58	h	1365	G
58	h	1371	G
58	h	1386	G
58	h	1387	A
58	h	1389	U
58	h	1404	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	1415	A
58	h	1416	A
58	h	1435	C
58	h	1436	C
58	h	1437	A
58	h	1448	C
58	h	1456	G
58	h	1465	C
58	h	1467	U
58	h	1480	A
58	h	1494	U
58	h	1499	A
58	h	1502	G
58	h	1507	G
58	h	1508	A
58	h	1510	A
58	h	1522	G
58	h	1529	U
58	h	1531	C
58	h	1532	G
58	h	1533	U
58	h	1534	C
58	h	1536	A
58	h	1540	U
58	h	1549	G
58	h	1550	G
58	h	1551	U
58	h	1552	A
58	h	1553	C
58	h	1625	G
58	h	1629	G
58	h	1630	U
58	h	1632	G
58	h	1639	G
58	h	1640	A
58	h	1641	U
58	h	1648	A
58	h	1649	C
58	h	1670	G
58	h	1676	G
58	h	1679	A
58	h	1680	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	1681	U
58	h	1703	G
58	h	1711	G
58	h	1713	U
58	h	1714	A
58	h	1715	A
58	h	1716	A
58	h	1717	U
58	h	1724	G
58	h	1728	U
58	h	1731	A
58	h	1737	A
58	h	1738	G
58	h	1754	G
58	h	1755	A
58	h	1756	G
58	h	1757	U
58	h	1767	U
58	h	1768	C
58	h	1769	G
58	h	1786	G
58	h	1789	A
58	h	1798	U
58	h	1801	C
58	h	1802	G
58	h	1803	A
58	h	1826	A
58	h	1844	A
58	h	1864	U
58	h	1866	C
58	h	1867	G
58	h	1870	U
58	h	1871	G
58	h	1872	A
58	h	1892	G
58	h	1893	C
58	h	1895	A
58	h	1946	U
58	h	1947	U
58	h	1949	C
58	h	1950	G
58	h	1973	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	1974	A
58	h	1975	A
58	h	1981	U
58	h	1990	A
58	h	2001	A
58	h	2017	C
58	h	2018	G
58	h	2026	A
58	h	2033	U
58	h	2046	A
58	h	2064	A
58	h	2065	A
58	h	2074	G
58	h	2075	G
58	h	2085	C
58	h	2086	U
58	h	2088	C
58	h	2089	C
58	h	2090	U
58	h	2091	U
58	h	2092	U
58	h	2093	G
58	h	2094	G
58	h	2095	G
58	h	2096	G
58	h	2107	G
58	h	2110	U
58	h	2111	U
58	h	2112	U
58	h	2125	A
58	h	2129	C
58	h	2130	G
58	h	2137	A
58	h	2138	C
58	h	2140	A
58	h	2141	U
58	h	2153	G
58	h	2154	G
58	h	2160	A
58	h	2162	A
58	h	2163	U
58	h	2179	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	2184	A
58	h	2189	C
58	h	2190	A
58	h	2191	C
58	h	2194	A
58	h	2195	U
58	h	2196	G
58	h	2215	U
58	h	2217	U
58	h	2221	A
58	h	2244	A
58	h	2247	A
58	h	2255	A
58	h	2256	G
58	h	2257	A
58	h	2263	G
58	h	2267	C
58	h	2276	G
58	h	2279	C
58	h	2280	G
58	h	2284	A
58	h	2285	G
58	h	2286	A
58	h	2316	G
58	h	2320	C
58	h	2324	A
58	h	2325	U
58	h	2329	G
58	h	2330	U
58	h	2331	U
58	h	2333	G
58	h	2334	U
58	h	2335	G
58	h	2336	U
58	h	2337	A
58	h	2338	G
58	h	2339	G
58	h	2340	A
58	h	2341	U
58	h	2342	A
58	h	2343	G
58	h	2346	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	2349	A
58	h	2351	A
58	h	2354	G
58	h	2355	U
58	h	2356	G
58	h	2357	A
58	h	2368	C
58	h	2380	G
58	h	2382	G
58	h	2384	C
58	h	2385	G
58	h	2386	U
58	h	2387	U
58	h	2388	G
58	h	2393	A
58	h	2394	A
58	h	2395	U
58	h	2396	A
58	h	2400	C
58	h	2401	U
58	h	2402	C
58	h	2407	C
58	h	2413	G
58	h	2421	A
58	h	2427	G
58	h	2430	C
58	h	2434	A
58	h	2436	A
58	h	2449	A
58	h	2462	G
58	h	2463	G
58	h	2467	U
58	h	2507	C
58	h	2511	A
58	h	2512	A
58	h	2528	G
58	h	2529	A
58	h	2531	G
58	h	2532	G
58	h	2533	C
58	h	2548	U
58	h	2549	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	2559	A
58	h	2569	G
58	h	2571	C
58	h	2574	C
58	h	2581	G
58	h	2607	G
58	h	2609	A
58	h	2615	G
58	h	2627	C
58	h	2631	G
58	h	2640	G
58	h	2647	U
58	h	2649	A
58	h	2653	G
58	h	2654	A
58	h	2655	U
58	h	2659	A
58	h	2665	C
58	h	2672	A
58	h	2677	A
58	h	2688	C
58	h	2693	A
58	h	2694	G
58	h	2698	C
58	h	2699	C
58	h	2700	A
58	h	2702	A
58	h	2705	G
58	h	2715	U
58	h	2718	G
58	h	2722	C
58	h	2726	G
58	h	2729	G
58	h	2742	A
58	h	2744	C
58	h	2749	G
58	h	2753	G
58	h	2759	G
58	h	2786	U
58	h	2790	A
58	h	2791	G
58	h	2796	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	2797	C
58	h	2826	A
58	h	2827	G
58	h	2833	U
58	h	2837	U
58	h	2839	U
58	h	2853	C
58	h	2854	A
58	h	2862	G
58	h	2865	G
58	h	2870	C
58	h	2876	C
58	h	2878	A
58	h	2909	G
58	h	2913	U
58	h	2915	C
58	h	2926	A
58	h	2936	C
58	h	2938	G
58	h	2940	U
58	h	2948	C
58	h	2950	C
58	h	2957	A
58	h	2968	G
58	h	2972	A
58	h	2982	A
58	h	2985	G
58	h	3002	A
58	h	3009	U
58	h	3014	A
58	h	3015	C
58	h	3020	U
58	h	3021	A
58	h	3022	G
58	h	3041	C
58	h	3042	A
58	h	3056	A
58	h	3082	U
58	h	3088	C
58	h	3093	A
58	h	3101	C
58	h	3105	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
58	h	3106	C
58	h	3114	A

All (13) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	4	18	G
6	A	92	A
6	A	422	C
6	A	429	U
6	A	485	G
6	A	498	C
6	A	895	A
6	A	1007	U
6	A	1117	U
6	A	1149	C
6	A	1477	A
6	A	1482	U
7	B	10	G

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 20 ligands modelled in this entry, 18 are monoatomic - leaving 2 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	$\#\|Z\| > 2$
59	PHE	2	101	-	10,11,12	0.38	0	10,13,15	0.19	0
60	GNP	7	801	-	29,34,34	1.61	7 (24%)	33,54,54	2.11	6 (18%)

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
59	PHE	2	101	-	-	1/5/6/8	0/1/1/1
60	GNP	7	801	-	-	5/14/38/38	0/3/3/3

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	7	801	GNP	PB-O3A	4.31	1.64	1.59
60	7	801	GNP	C6-N1	3.15	1.38	1.33
60	7	801	GNP	PG-N3B	3.02	1.71	1.63
60	7	801	GNP	PB-O1B	3.00	1.50	1.46
60	7	801	GNP	PG-O1G	2.75	1.50	1.46
60	7	801	GNP	PB-O2B	-2.23	1.50	1.56
60	7	801	GNP	C5-C6	2.05	1.44	1.41

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
60	7	801	GNP	C5-C6-N1	-8.41	111.92	123.43
60	7	801	GNP	C2-N1-C6	5.79	125.14	115.93
60	7	801	GNP	PB-O3A-PA	-2.80	122.74	132.62
60	7	801	GNP	N3-C2-N1	-2.70	123.62	127.22
60	7	801	GNP	C4-C5-C6	-2.55	118.36	120.80
60	7	801	GNP	C2-N3-C4	-2.21	112.83	115.36

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
59	2	101	PHE	O-C-CA-CB
60	7	801	GNP	PG-N3B-PB-O1B
60	7	801	GNP	O4'-C4'-C5'-O5'
60	7	801	GNP	C3'-C4'-C5'-O5'

Continued on next page...

Continued from previous page...

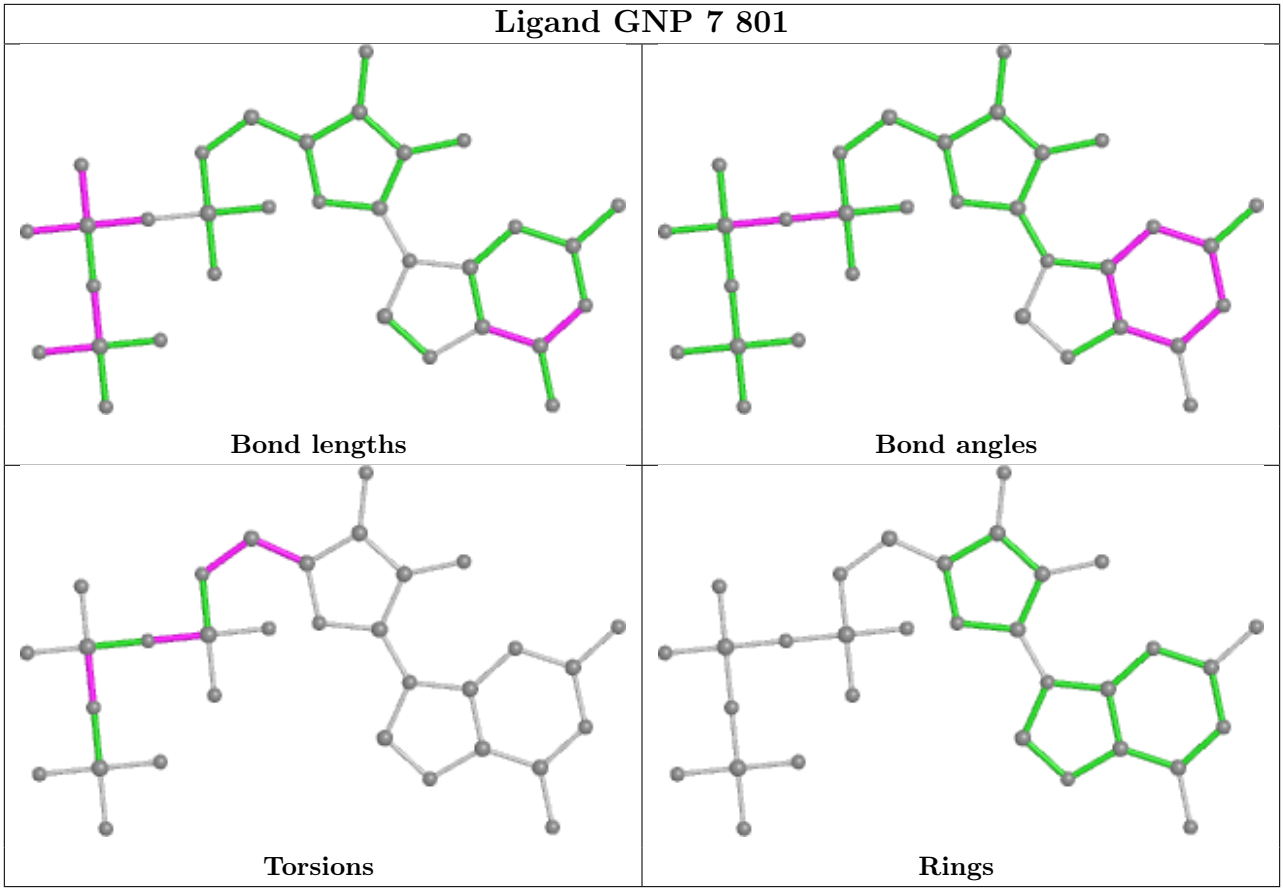
Mol	Chain	Res	Type	Atoms
60	7	801	GNP	C4'-C5'-O5'-PA
60	7	801	GNP	PB-O3A-PA-O1A

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
60	7	801	GNP	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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.



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

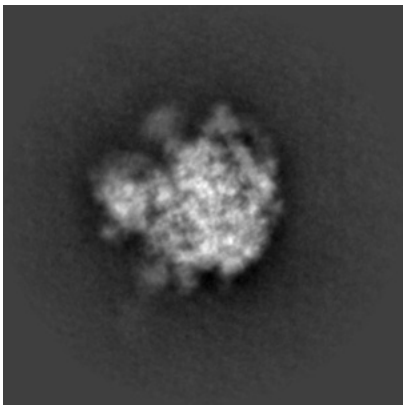
6 Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-61959. These allow visual inspection of the internal detail of the map and identification of artifacts.

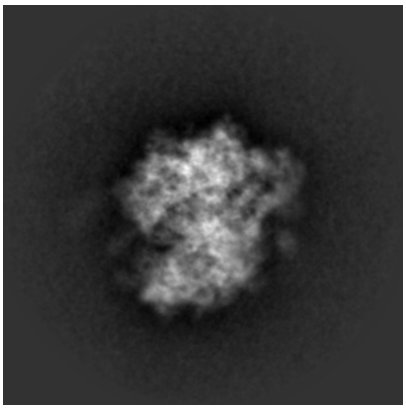
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections (i)

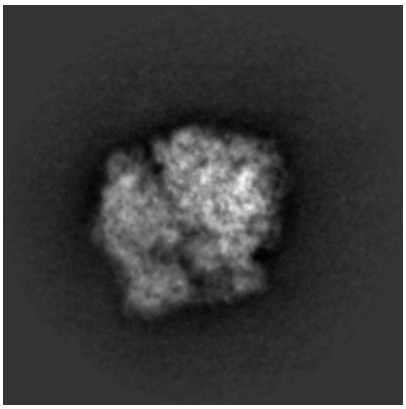
6.1.1 Primary map



X

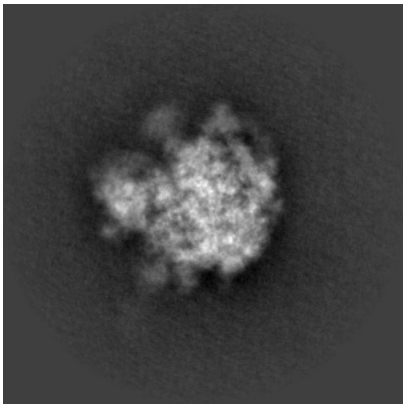


Y

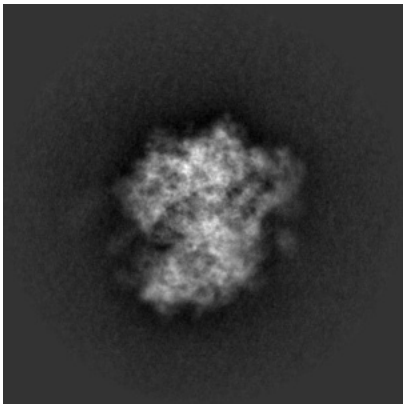


Z

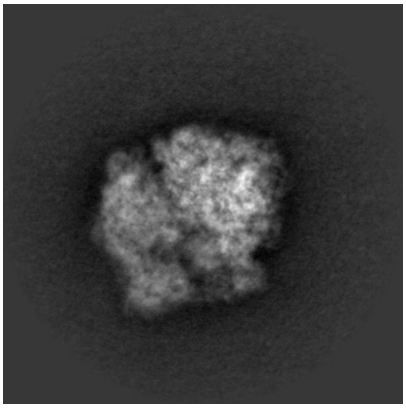
6.1.2 Raw map



X



Y

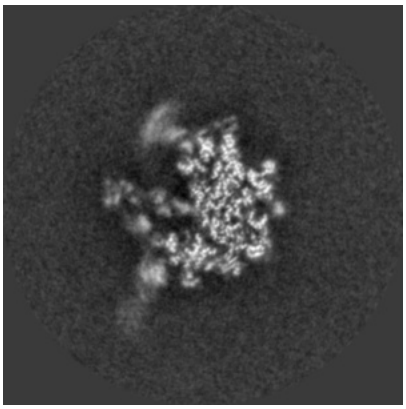


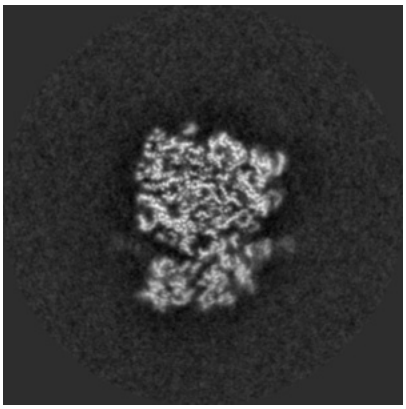
Z

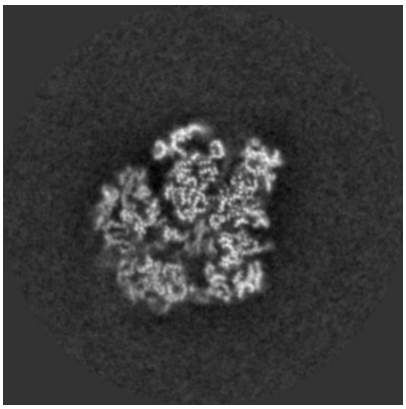
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

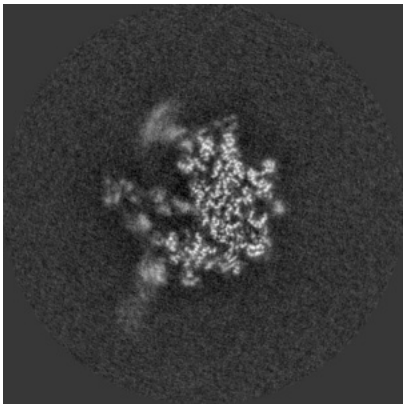
6.2.1 Primary map

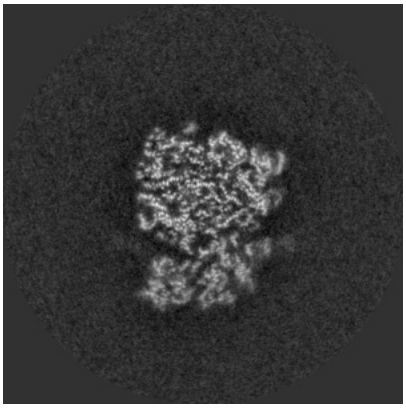

X Index: 175

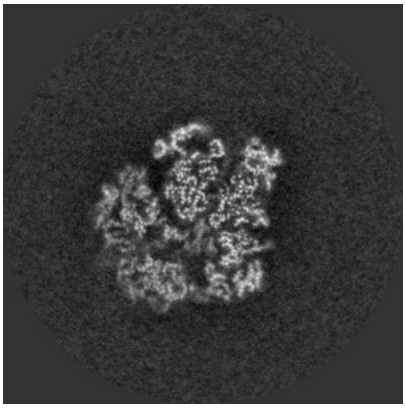

Y Index: 175


Z Index: 175

6.2.2 Raw map


X Index: 175

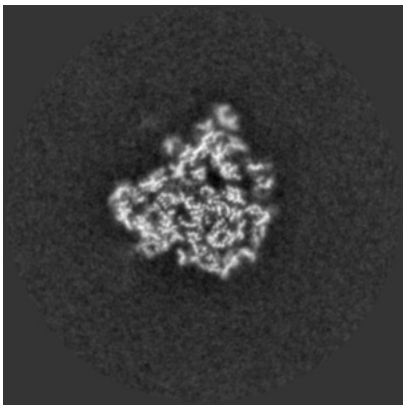

Y Index: 175

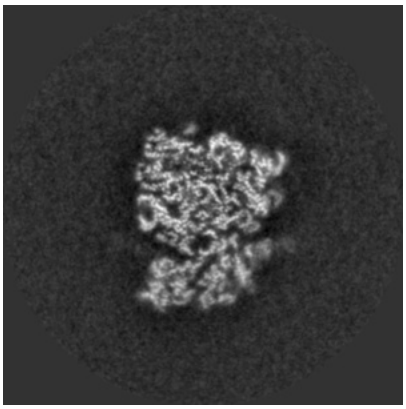

Z Index: 175

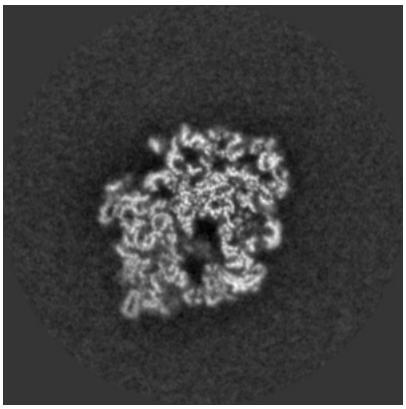
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

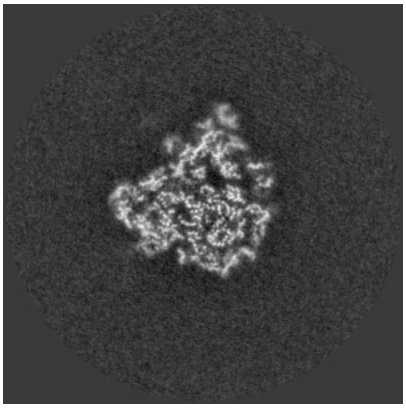
6.3.1 Primary map

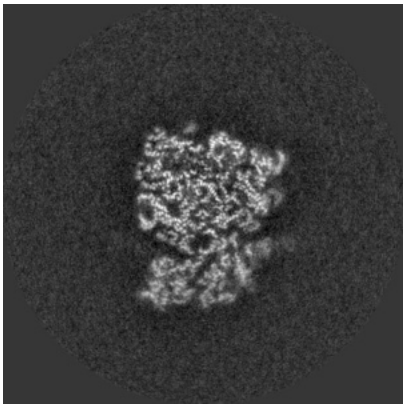

X Index: 210

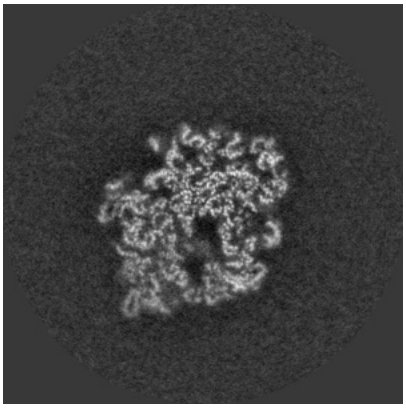

Y Index: 176


Z Index: 188

6.3.2 Raw map


X Index: 210

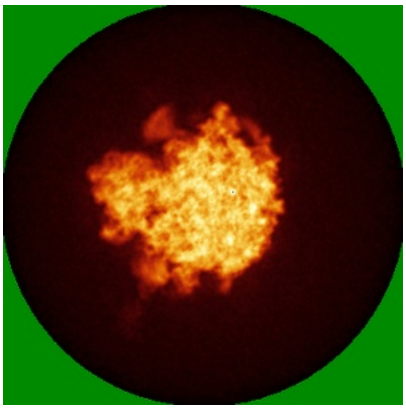

Y Index: 176

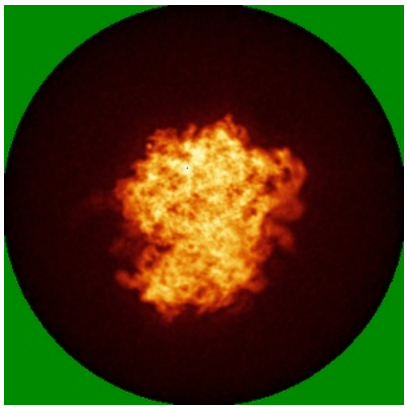

Z Index: 187

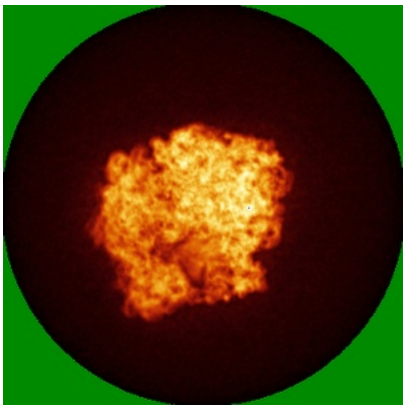
The images above show the largest variance slices of the map in three orthogonal directions.

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

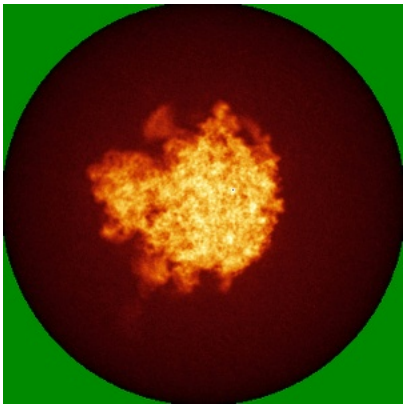
6.4.1 Primary map

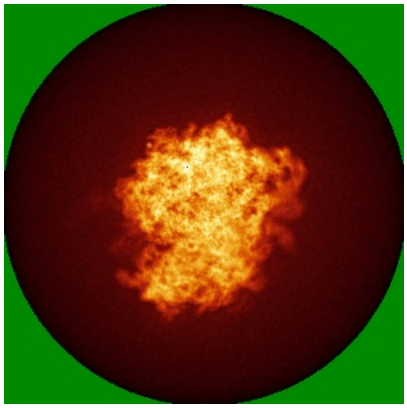

X

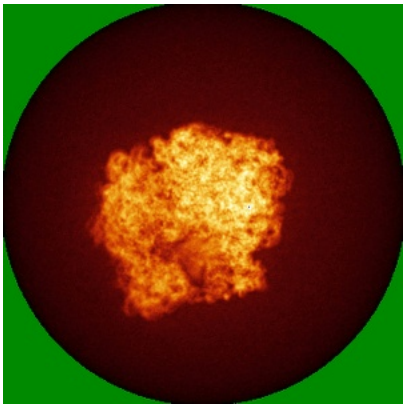

Y


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.

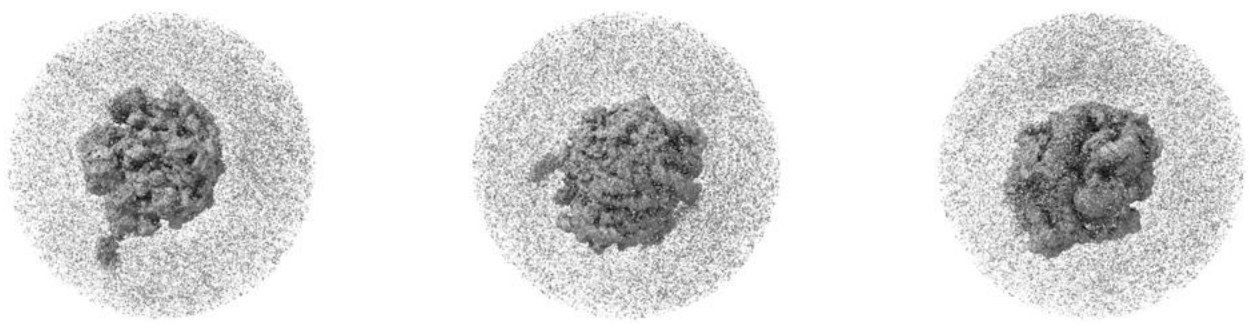
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00715. 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.

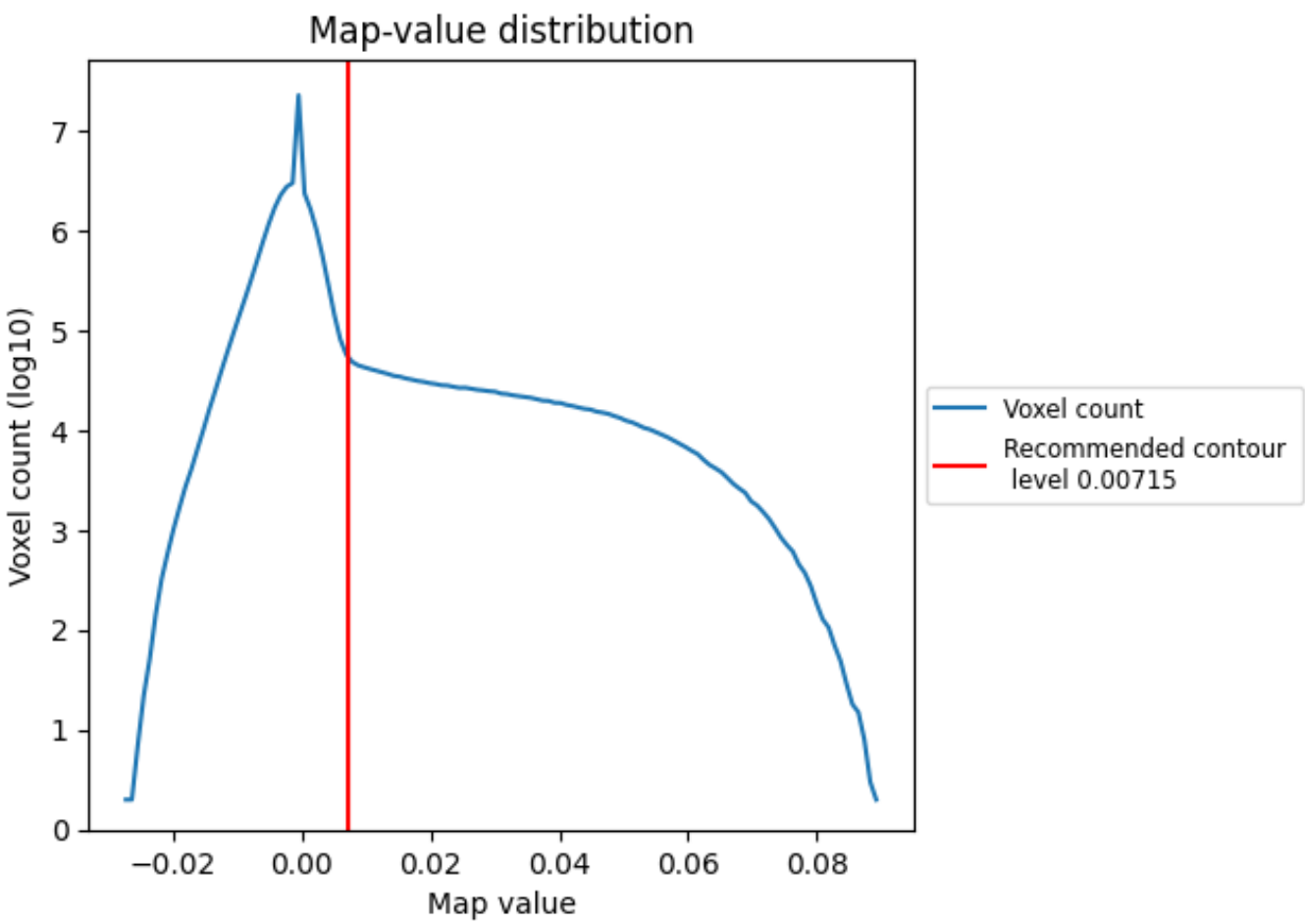
6.6 Mask visualisation (i)

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

7 Map analysis (i)

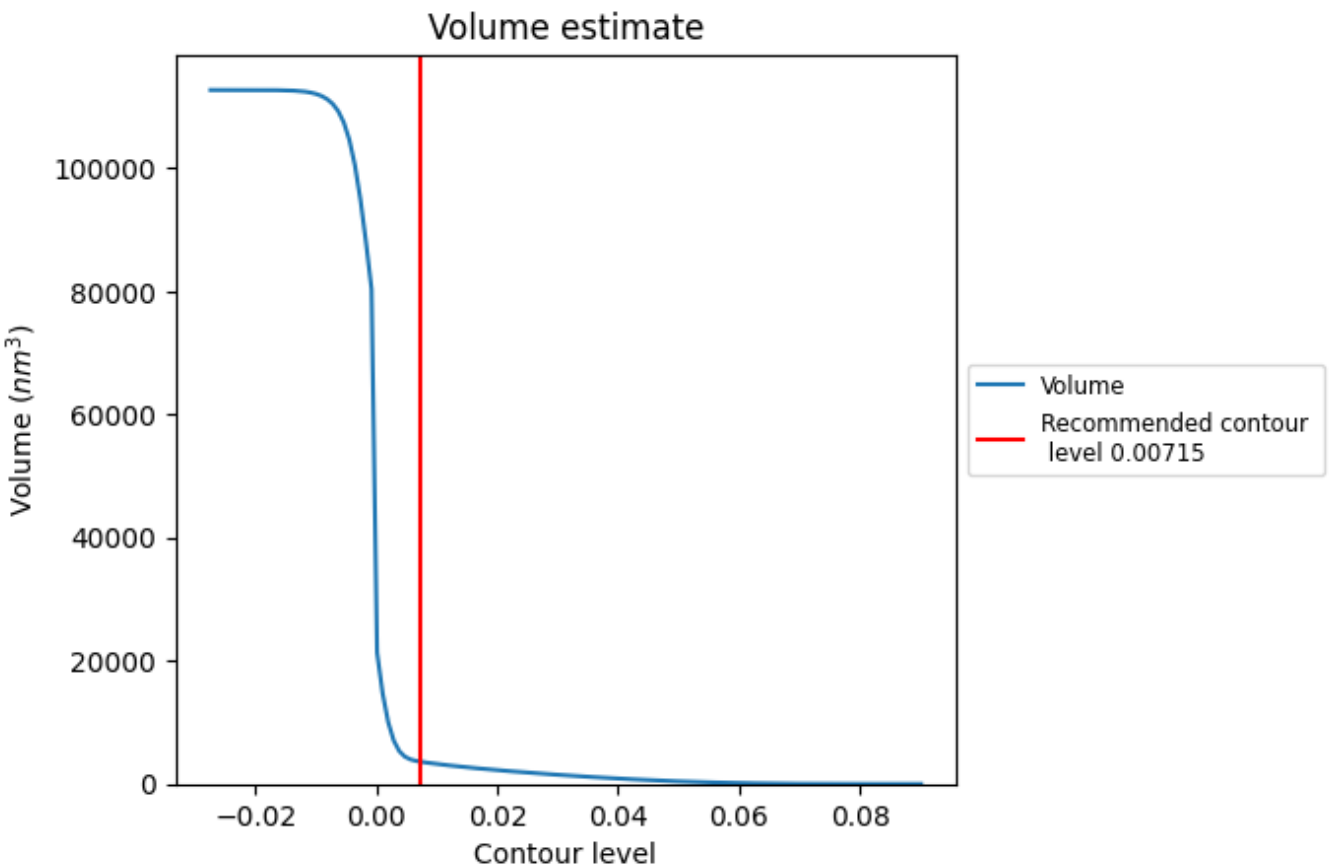
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution (i)



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

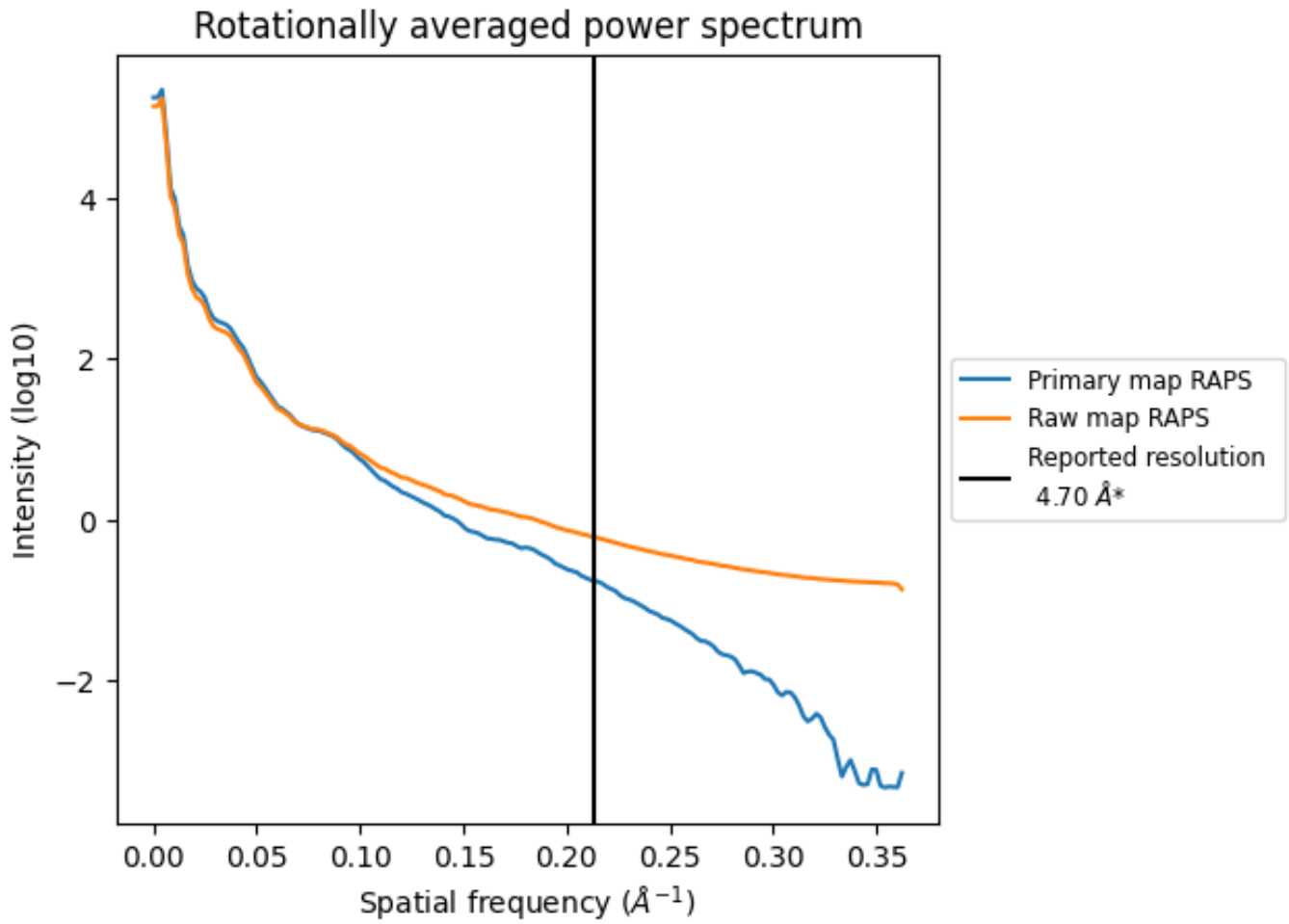
7.2 Volume estimate (i)



The volume at the recommended contour level is 3647 nm^3; this corresponds to an approximate mass of 3295 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)

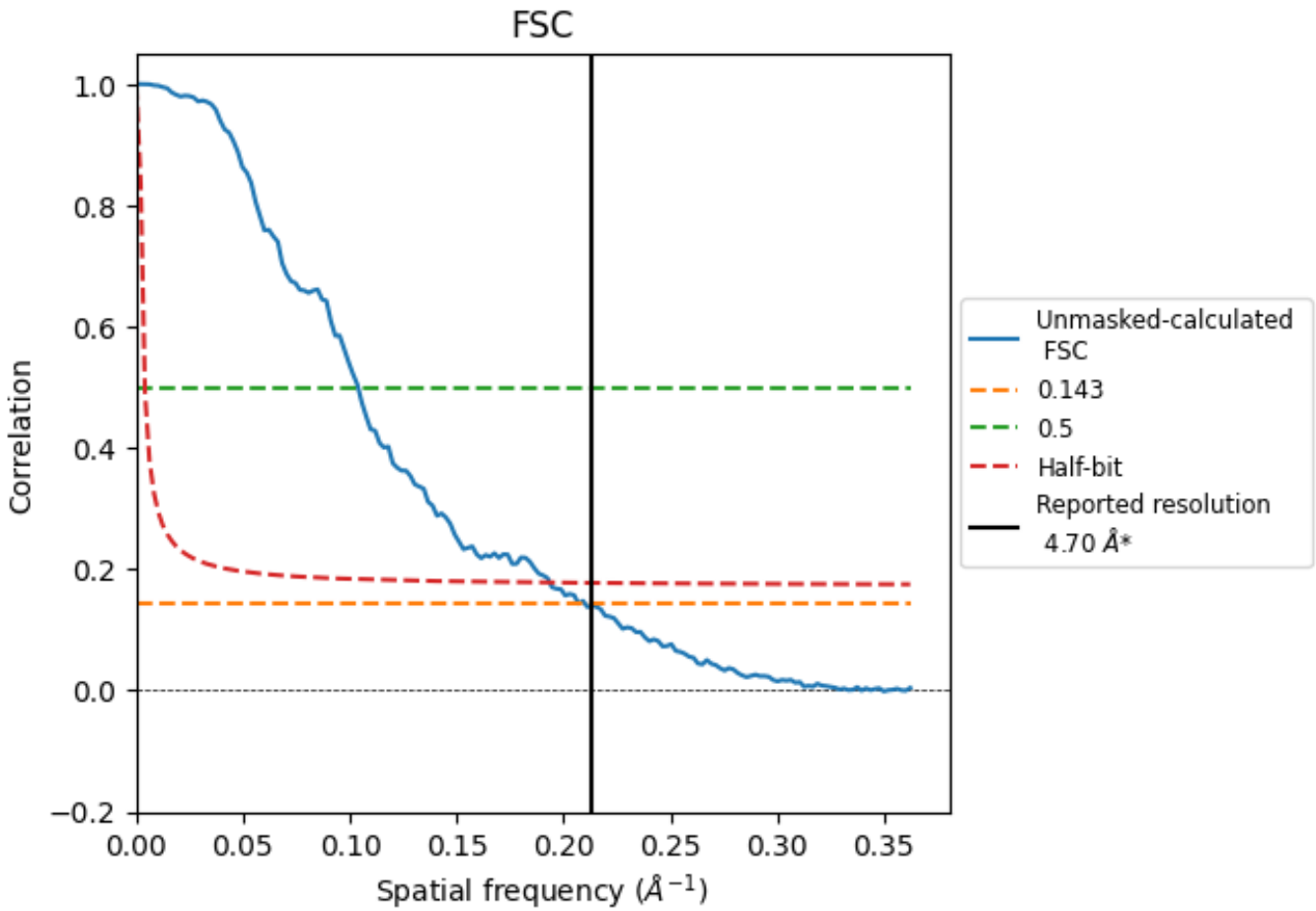


*Reported resolution corresponds to spatial frequency of 0.213 Å^{-1}

8 Fourier-Shell correlation (i)

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

8.1 FSC (i)



*Reported resolution corresponds to spatial frequency of 0.213 Å^{-1}

8.2 Resolution estimates (i)

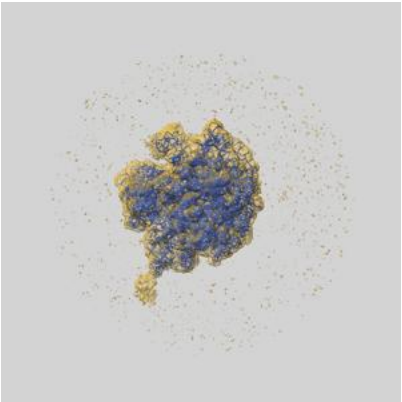
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.83	9.63	5.17

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

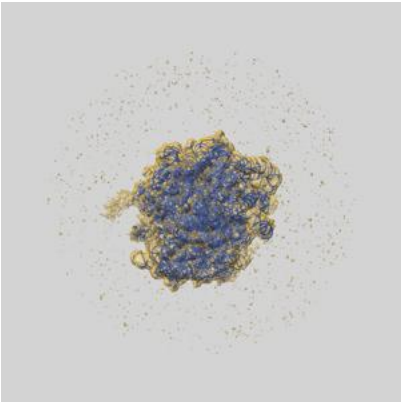
9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-61959 and PDB model 9K0Z. Per-residue inclusion information can be found in section 3 on page 17.

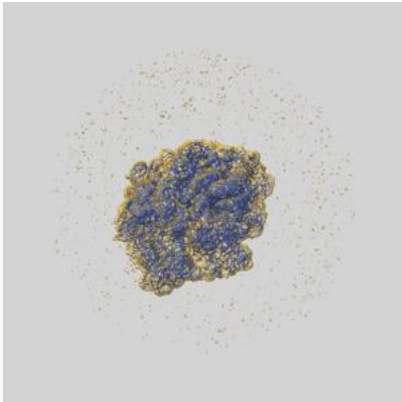
9.1 Map-model overlay (i)



X



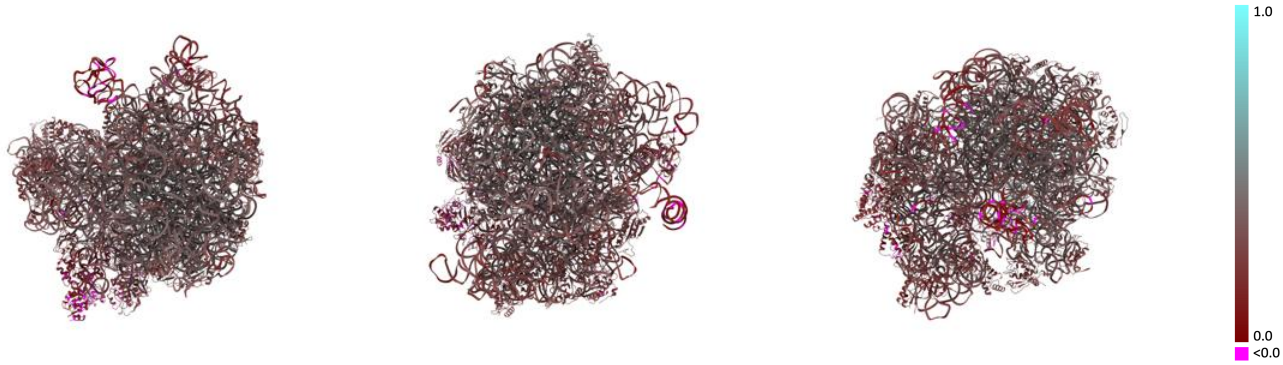
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00715 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.

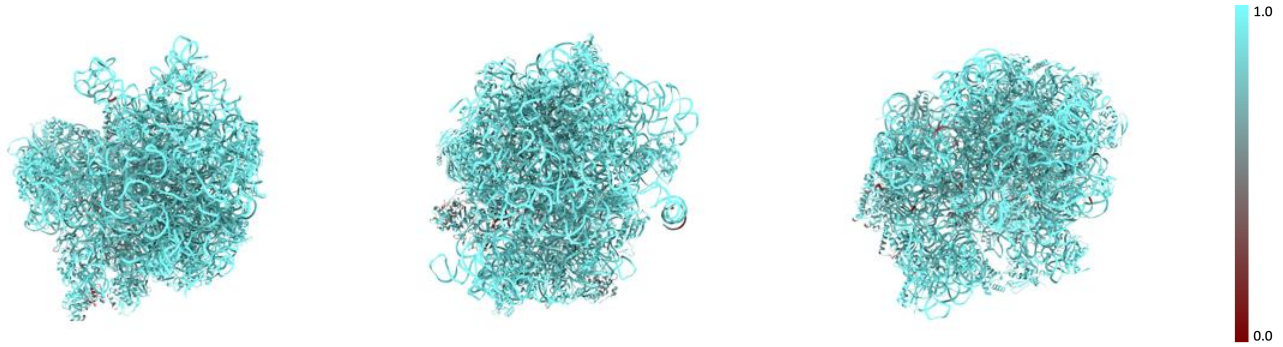
9.2 Q-score mapped to coordinate model (i)



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.

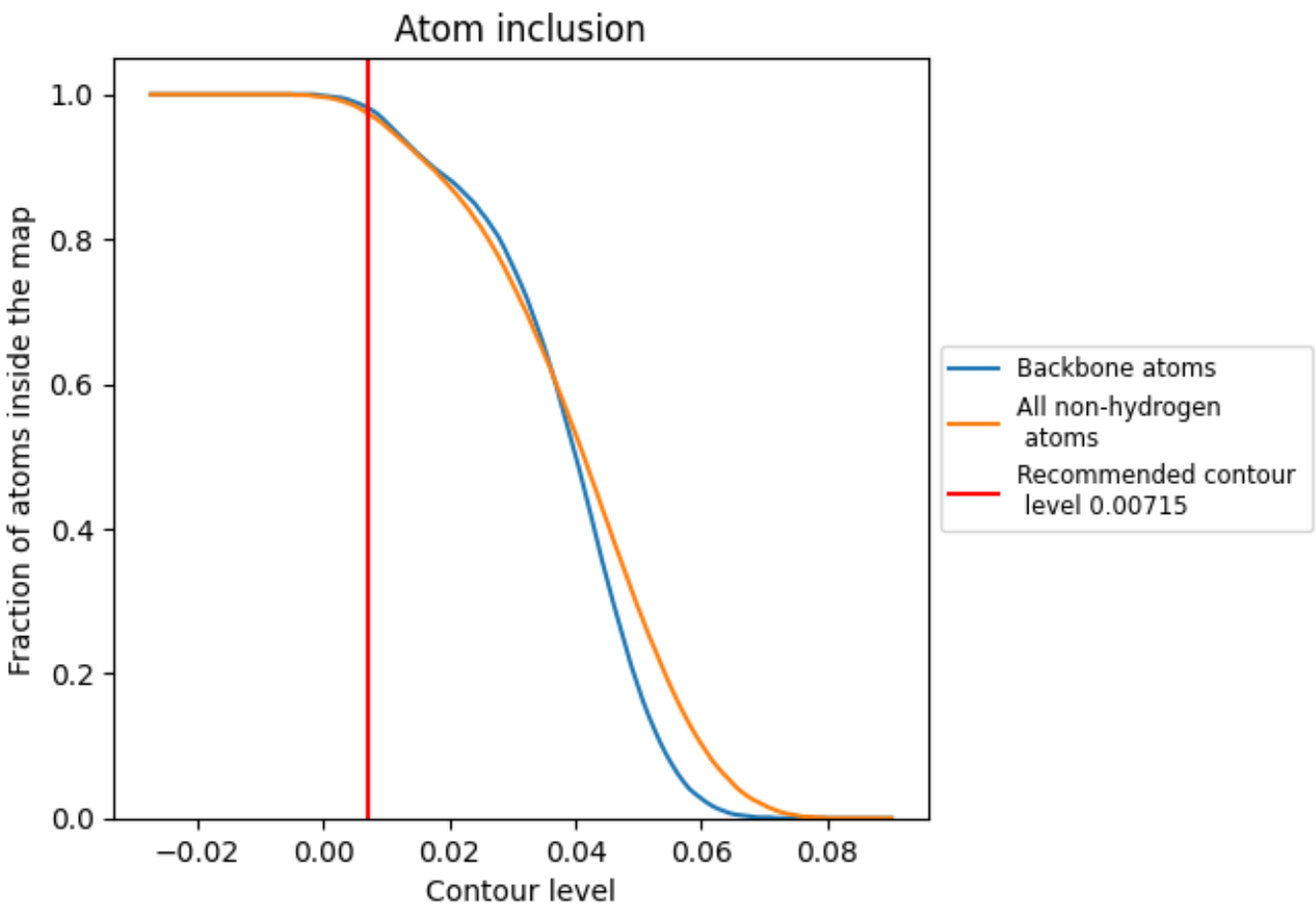
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.00715).

9.4 Atom inclusion (i)



At the recommended contour level, 98% of all backbone atoms, 97% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.00715) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9730	0.3180
1	0.9880	0.2940
2	0.9910	0.3160
3	0.9940	0.3320
4	0.9180	0.1900
5	0.3080	0.0730
7	0.6530	0.1680
A	0.9990	0.3140
B	0.9990	0.3430
C	0.9790	0.2540
D	0.9850	0.2430
E	0.9570	0.2700
F	0.9550	0.2750
G	0.9780	0.2500
H	0.9920	0.2790
I	0.9970	0.2400
J	0.9920	0.2580
K	0.9920	0.2920
L	0.9580	0.2980
M	0.9930	0.2600
N	0.9890	0.2880
O	0.9630	0.2720
P	0.9700	0.2650
Q	0.9630	0.2720
R	0.9960	0.2770
S	0.9880	0.2570
T	0.9560	0.2300
U	0.9850	0.3260
V	0.7190	0.1700
W	0.8560	0.2780
X	0.9980	0.3770
Y	0.9910	0.3660
Z	0.9960	0.2740
a	0.9870	0.3390
b	0.9880	0.3750

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
c	0.9620	0.3280
d	0.9860	0.3590
e	0.8790	0.2660
f	0.9970	0.3430
g	0.9970	0.2760
h	0.9960	0.3540
i	0.9760	0.3580
j	0.9940	0.3700
k	0.9860	0.3490
l	0.9890	0.2730
m	0.9860	0.2940
n	0.9410	0.2660
o	0.9000	0.0890
p	0.9690	0.1050
q	0.9870	0.3570
r	0.9770	0.3520
s	0.9950	0.3370
t	0.9860	0.3660
u	0.9890	0.3480
v	0.9960	0.3020
w	0.9770	0.3520
x	0.9920	0.3360
y	0.9950	0.3840
z	0.9880	0.3700