Full wwPDB EM Validation Report

May 4, 2026 – 07:09 PM JST

PDB ID	:	9KDT / pdb_00009kdt
EMDB ID	:	EMD-62285
Title	:	Cryo-EM structure of 80S ribosome
Authors	:	Lu, Y.; Wang, X.; Qin, Y.; Cao, Y.
Deposited on	:	2024-11-04
Resolution	:	2.63 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

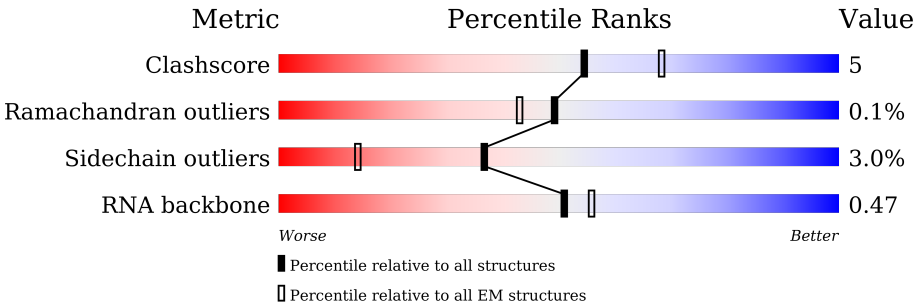
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

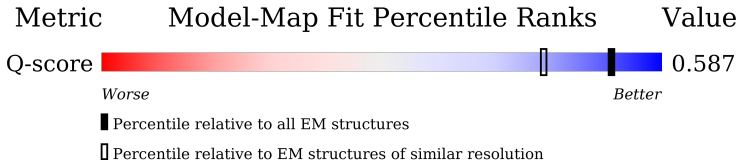
1 Overall quality at a glance

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

The reported resolution of this entry is 2.63 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	8888 (2.13 - 3.13)

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	L5	4731	49% 18% 5% 28%
2	L7	120	82% 14%
3	L8	158	63% 28%

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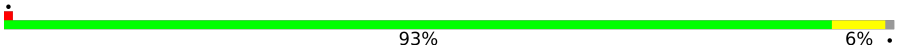
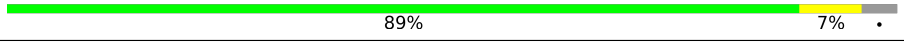
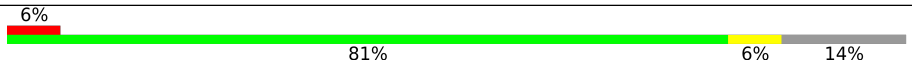
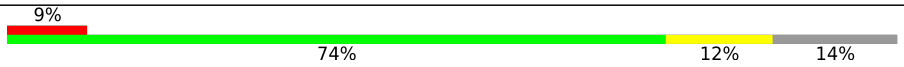
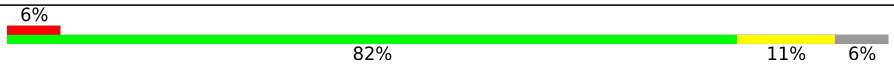
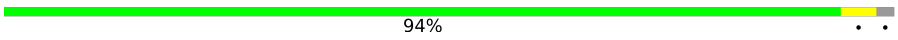
Mol	Chain	Length	Quality of chain
4	La	148	
5	LA	257	
6	Lb	160	
7	LB	403	
8	Lc	115	
9	LC	419	
10	Ld	125	
11	LD	297	
12	Le	135	
13	LE	296	
14	Lf	110	
15	LF	270	
16	Lg	117	
17	LG	266	
18	Lh	123	
19	LH	190	
20	Li	105	
21	LI	214	
22	Lj	97	
23	LJ	178	
24	Lk	70	
25	Ll	51	
26	LL	211	
27	Lm	128	
28	LM	217	

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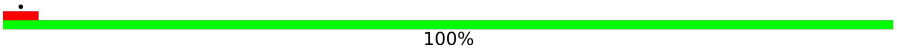
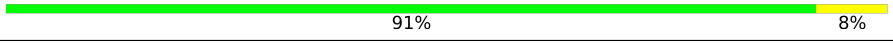
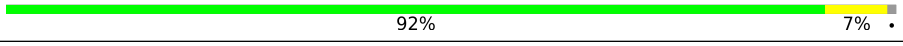
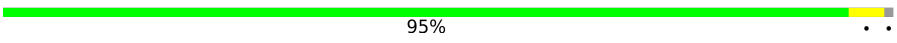
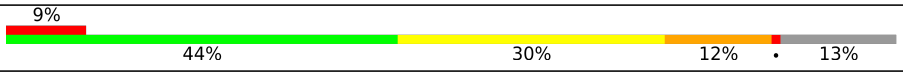
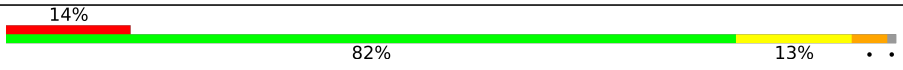
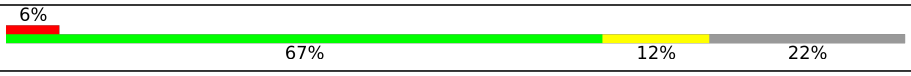
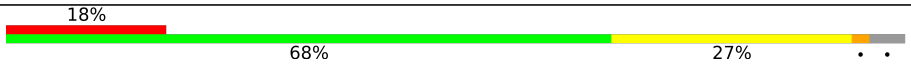
Mol	Chain	Length	Quality of chain
29	Ln	25	
30	LN	204	
31	Lo	106	
32	LO	203	
33	Lp	92	
34	LP	184	
35	LQ	188	
36	Lr	137	
37	LR	196	
38	LS	176	
39	LT	160	
40	LU	128	
41	LV	140	
42	LW	157	
43	LX	156	
44	LY	145	
45	LZ	136	
46	S2	1870	
47	Sa	115	
48	SA	295	
49	Sb	84	
50	SB	264	
51	Sc	69	
52	SC	293	
53	Sd	56	

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Mol	Chain	Length	Quality of chain
54	SD	243	9% 69% 16% 14%
55	Se	133	31% 5% 64%
56	SE	263	76% 21%
57	SF	204	76% 12% 12%
58	Sg	317	16% 63% 24% 13%
59	SG	249	19% 61% 20% 18%
60	SH	194	19% 68% 23% 7%
61	SI	208	71% 17% 12%
62	SJ	194	57% 14% 29%
63	SK	165	19% 39% 15% 45%
64	SL	158	76% 9% 15%
65	SN	151	93% 5%
66	SO	151	76% 12% 11%
67	SP	145	14% 63% 18% 19%
68	SQ	146	73% 21% 5%
69	SR	135	19% 74% 22%
70	SS	152	76% 14% 8%
71	ST	145	80% 15%
72	SU	119	24% 58% 21% 20%
73	SV	83	6% 83% 14%
74	SW	130	88% 10%
75	Sx	10	30% 50% 40% 10%
76	SX	143	82% 13%
77	SY	133	11% 57% 26% 17%
78	SZ	125	42% 15% 42%

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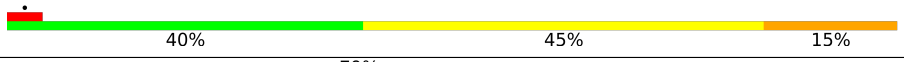
Mol	Chain	Length	Quality of chain
79	S6	75	
79	S7	75	
80	Z	24	

2 Entry composition (i)

There are 82 unique types of molecules in this entry. The entry contains 204155 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 Mus musculus 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	L5	3399	72884	32460	13325	23701	3398	0	0

- Molecule 2 is a RNA chain called Mus musculus 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	L7	120	2558	1141	456	842	119	0	0

- Molecule 3 is a RNA chain called Mus musculus 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	L8	151	3210	1433	567	1060	150	0	0

- Molecule 4 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	La	147	1164	736	239	185	4	0	0

- Molecule 5 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	LA	248	1898	1189	389	314	6	0	0

- Molecule 6 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	Lb	99	807	505	174	124	4	0	0

- Molecule 7 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	LB	397	Total	C	N	O	S	0	0
			3202	2039	603	546	14		

- Molecule 8 is a protein called Large ribosomal subunit protein eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	Lc	94	Total	C	N	O	S	0	0
			732	465	130	131	6		

- Molecule 9 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	LC	357	Total	C	N	O	S	0	0
			2857	1797	571	474	15		

- Molecule 10 is a protein called Large ribosomal subunit protein eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	Ld	108	Total	C	N	O	S	0	0
			896	566	172	156	2		

- Molecule 11 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LD	293	Total	C	N	O	S	0	0
			2389	1509	441	425	14		

- Molecule 12 is a protein called Large ribosomal subunit protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Le	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 13 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	LE	216	Total	C	N	O	S	0	0
			1743	1115	332	292	4		

- Molecule 14 is a protein called Large ribosomal subunit protein eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	Lf	109	Total	C	N	O	S	0	0
			876	555	174	143	4		

- Molecule 15 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	LF	214	Total	C	N	O	S	0	0
			1771	1139	337	287	8		

- Molecule 16 is a protein called Large ribosomal subunit protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Lg	110	Total	C	N	O	S	0	0
			873	546	180	141	6		

- Molecule 17 is a protein called Large ribosomal subunit protein eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LG	229	Total	C	N	O	S	0	0
			1848	1179	354	311	4		

- Molecule 18 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Lh	122	Total	C	N	O	S	0	0
			1015	643	204	167	1		

- Molecule 19 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	LH	190	Total	C	N	O	S	0	0
			1519	956	284	273	6		

- Molecule 20 is a protein called Large ribosomal subunit protein eL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Li	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 21 is a protein called Large ribosomal subunit protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	LI	201	Total	C	N	O	S	0	0
			1631	1037	316	267	11		

- Molecule 22 is a protein called Large ribosomal subunit protein eL37.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Lj	86	Total	C	N	O	S	0	0
			705	434	155	111	5		

- Molecule 23 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	LJ	167	Total	C	N	O	S	0	0
			1340	848	250	236	6		

- Molecule 24 is a protein called Large ribosomal subunit protein eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Lk	69	Total	C	N	O	S	0	0
			568	365	103	99	1		

- Molecule 25 is a protein called Large ribosomal subunit protein eL39-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Ll	50	Total	C	N	O	S	0	0
			438	279	93	64	2		

- Molecule 26 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	LL	206	Total	C	N	O	S	0	0
			1667	1043	343	277	4		

- Molecule 27 is a protein called Ubiquitin-ribosomal protein eL40 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Lm	51	Total	C	N	O	S	0	0
			419	260	88	65	6		

- Molecule 28 is a protein called Large ribosomal subunit protein eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	LM	136	Total	C	N	O	S	0	0
			1125	721	218	179	7		

- Molecule 29 is a protein called Small ribosomal subunit protein eS32.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Ln	25	Total	C	N	O	S	0	0
			239	145	64	27	3		

- Molecule 30 is a protein called Large ribosomal subunit protein eL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	LN	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 31 is a protein called Large ribosomal subunit protein eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Lo	103	Total	C	N	O	S	0	0
			842	528	172	136	6		

- Molecule 32 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	LO	201	Total	C	N	O	S	0	0
			1640	1055	320	259	6		

- Molecule 33 is a protein called Large ribosomal subunit protein eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Lp	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 34 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	LP	154	Total	C	N	O	S	0	0
			1251	782	243	217	9		

- Molecule 35 is a protein called Large ribosomal subunit protein eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	LQ	187	Total	C	N	O	S	0	0
			1515	948	314	249	4		

- Molecule 36 is a protein called Large ribosomal subunit protein eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Lr	124	Total	C	N	O	S	0	0
			994	616	206	167	5		

- Molecule 37 is a protein called Large ribosomal subunit protein eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	LR	174	Total	C	N	O	S	0	0
			1457	901	316	231	9		

- Molecule 38 is a protein called Large ribosomal subunit protein eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	LS	175	Total	C	N	O	S	0	0
			1451	924	283	234	10		

- Molecule 39 is a protein called Large ribosomal subunit protein eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	LT	160	Total	C	N	O	S	0	0
			1307	829	253	218	7		

- Molecule 40 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	LU	100	Total	C	N	O	S	0	0
			817	523	143	149	2		

- Molecule 41 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	LV	130	Total	C	N	O	S	0	0
			973	615	183	170	5		

- Molecule 42 is a protein called Large ribosomal subunit protein eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	LW	62	Total	C	N	O	S	0	0
			519	332	101	83	3		

- Molecule 43 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	LX	118	Total	C	N	O	S	0	0
			967	618	181	167	1		

- Molecule 44 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	LY	132	Total	C	N	O	S	0	0
			1102	692	223	184	3		

- Molecule 45 is a protein called Large ribosomal subunit protein eL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	LZ	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 46 is a RNA chain called Mus musculus 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	S2	1628	Total	C	N	O	P	0	0
			34749	15516	6241	11365	1627		

- Molecule 47 is a protein called Small ribosomal subunit protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Sa	99	Total	C	N	O	S	0	0
			792	492	165	130	5		

- Molecule 48 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	SA	207	Total	C	N	O	S	0	0
			1636	1042	288	298	8		

- Molecule 49 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Sb	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 50 is a protein called Small ribosomal subunit protein eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	SB	213	Total	C	N	O	S	0	0
			1729	1098	309	308	14		

- Molecule 51 is a protein called Small ribosomal subunit protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Sc	54	Total	C	N	O	S	0	0
			416	257	80	77	2		

- Molecule 52 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	SC	215	Total	C	N	O	S	0	0
			1665	1080	285	291	9		

- Molecule 53 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	Sd	54	Total	C	N	O	S	0	0
			455	284	93	73	5		

- Molecule 54 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SD	209	Total	C	N	O	S	0	0
			1626	1036	296	287	7		

- Molecule 55 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Se	48	Total	C	N	O	S	0	0
			384	234	86	63	1		

- Molecule 56 is a protein called Small ribosomal subunit protein eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	SE	258	Total	C	N	O	S	0	0
			2050	1311	381	350	8		

- Molecule 57 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	SF	179	Total	C	N	O	S	0	0
			1416	888	262	259	7		

- Molecule 58 is a protein called Small ribosomal subunit protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Sg	276	Total	C	N	O	S	0	0
			2148	1357	378	401	12		

- Molecule 59 is a protein called Small ribosomal subunit protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	SG	204	Total	C	N	O	S	0	0
			1645	1029	330	280	6		

- Molecule 60 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	SH	180	Total	C	N	O	S	0	0
			1449	924	266	258	1		

- Molecule 61 is a protein called Small ribosomal subunit protein eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	SI	183	Total	C	N	O	S	0	0
			1499	943	293	258	5		

- Molecule 62 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	SJ	138	Total	C	N	O	S	0	0
			1162	743	230	187	2		

- Molecule 63 is a protein called Small ribosomal subunit protein eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	SK	90	Total	C	N	O	S	0	0
			760	495	135	124	6		

- Molecule 64 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	SL	135	Total	C	N	O	S	0	0
			1110	708	207	189	6		

- Molecule 65 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	SN	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 66 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	SO	134	Total	C	N	O	S	0	0
			1002	612	197	187	6		

- Molecule 67 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	SP	118	Total	C	N	O	S	0	0
			981	625	183	166	7		

- Molecule 68 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	SQ	139	Total	C	N	O	S	0	0
			1109	704	210	192	3		

- Molecule 69 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	SR	131	Total	C	N	O	S	0	0
			1064	668	198	194	4		

- Molecule 70 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SS	140	Total	C	N	O	S	0	0
			1157	728	231	197	1		

- Molecule 71 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	ST	140	Total	C	N	O	S	0	0
			1090	681	212	195	2		

- Molecule 72 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	SU	95	Total	C	N	O	S	0	0
			753	471	142	136	4		

- Molecule 73 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	SV	81	Total	C	N	O	S	0	0
			619	379	116	119	5		

- Molecule 74 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	SW	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 75 is a RNA chain called RNA (5'-R(P*AP*UP*CP*AP*UP*GP*AP*AP*GP*U)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
75	Sx	10	Total	C	N	O	P	0	0
			214	96	39	69	10		

- Molecule 76 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	SX	139	Total	C	N	O	S	0	0
			1080	682	214	181	3		

- Molecule 77 is a protein called Small ribosomal subunit protein eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	SY	110	Total	C	N	O	S	0	0
			891	565	173	149	4		

- Molecule 78 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	SZ	72	Total	C	N	O	S	0	0
			574	368	104	101	1		

- Molecule 79 is a RNA chain called P/P, E/E tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	S6	75	Total	C	N	O	P	0	0
			1604	717	298	515	74		
79	S7	75	Total	C	N	O	P	0	0
			1604	717	298	515	74		

- Molecule 80 is a protein called Nascent peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
80	Z	24	Total	C	N	O	0	0
			119	71	24	24		

- Molecule 81 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
81	L5	94	Total	Mg	0
			94	94	
81	L7	1	Total	Mg	0
			1	1	
81	LN	1	Total	Mg	0
			1	1	
81	LP	1	Total	Mg	0
			1	1	

- Molecule 82 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
82	Lj	1	Total	Zn	0
			1	1	

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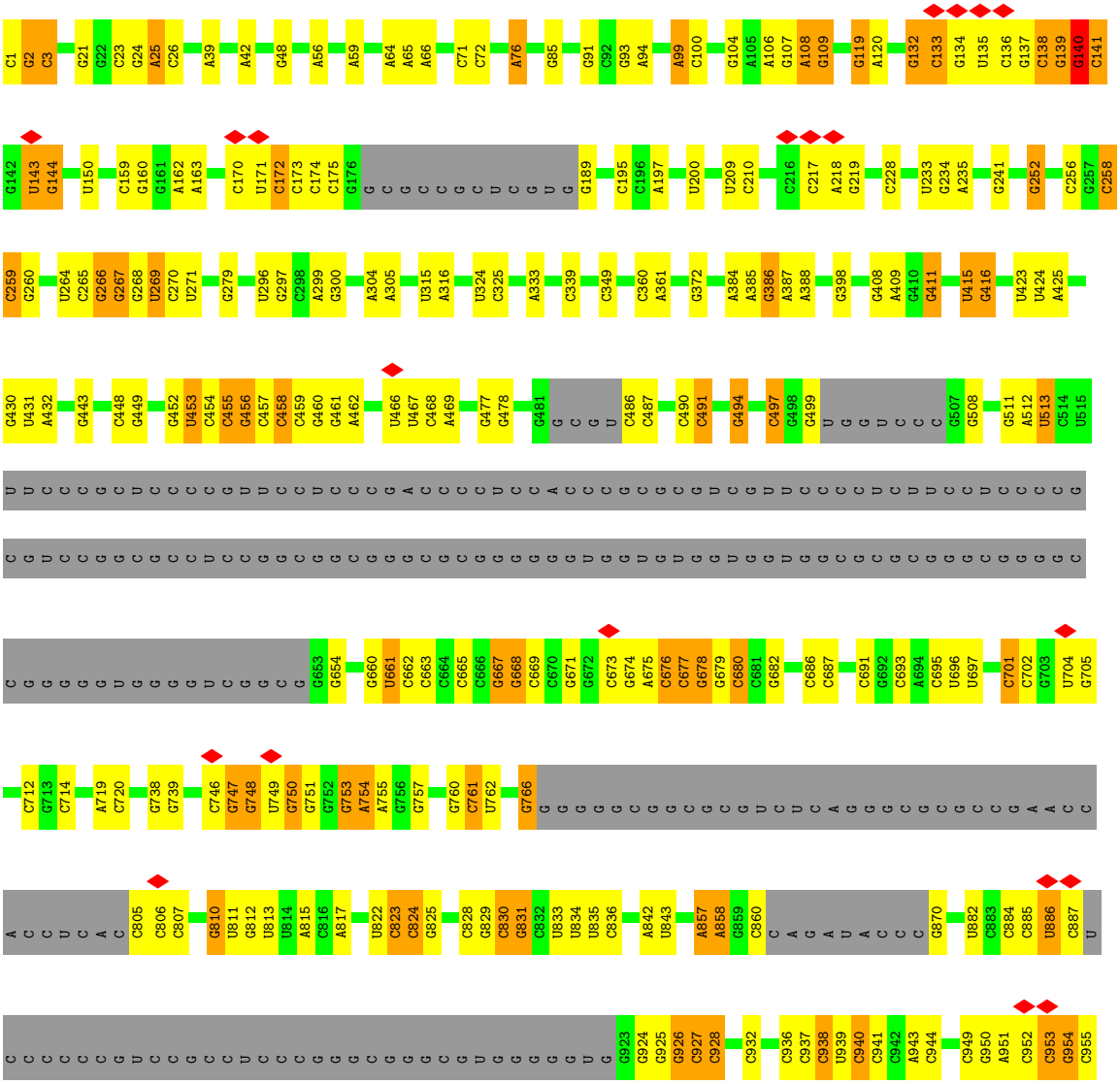
Mol	Chain	Residues	Atoms	AltConf
82	Lm	1	Total Zn 1 1	0
82	Lp	1	Total Zn 1 1	0

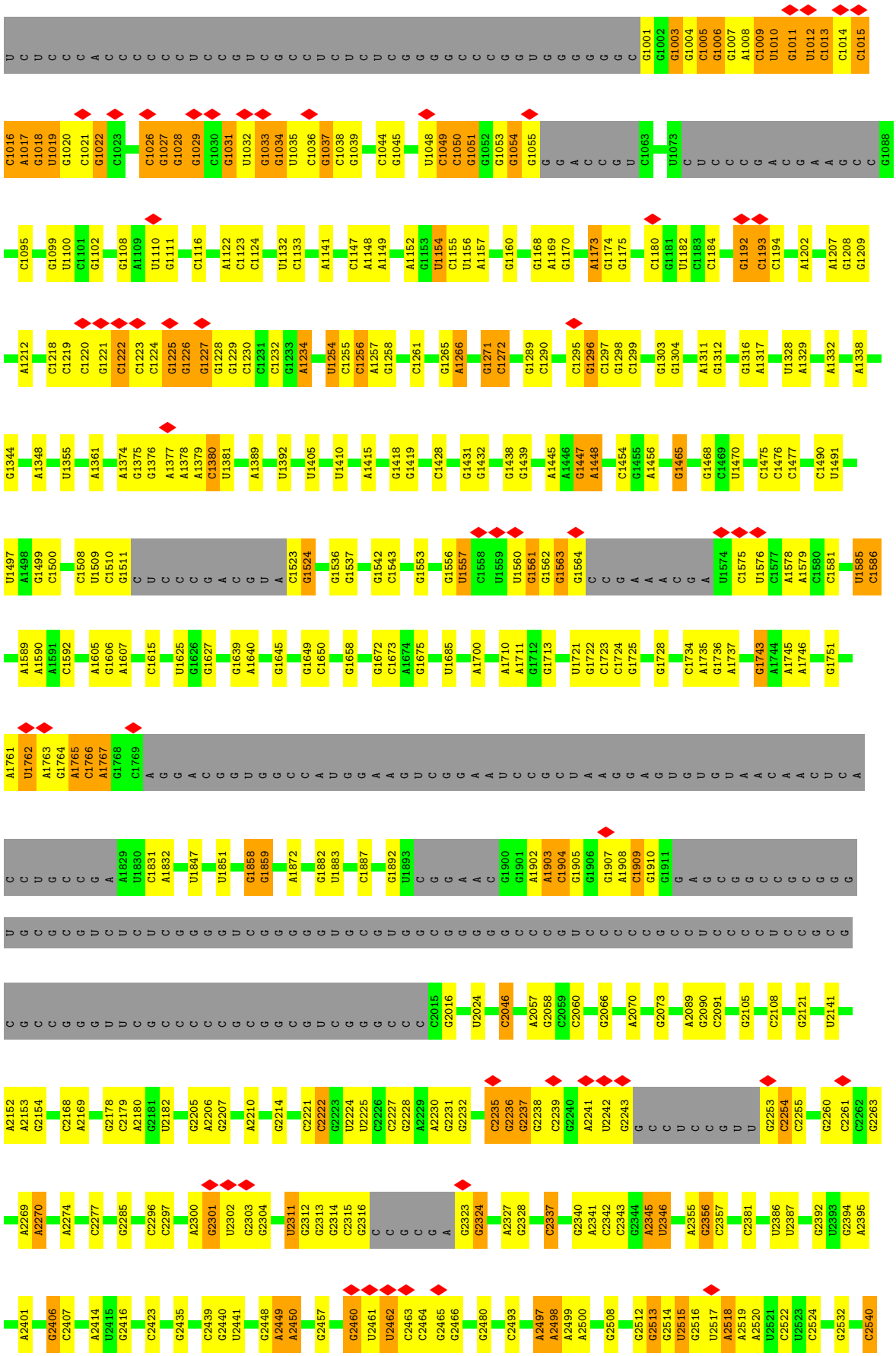
3 Residue-property plots (i)

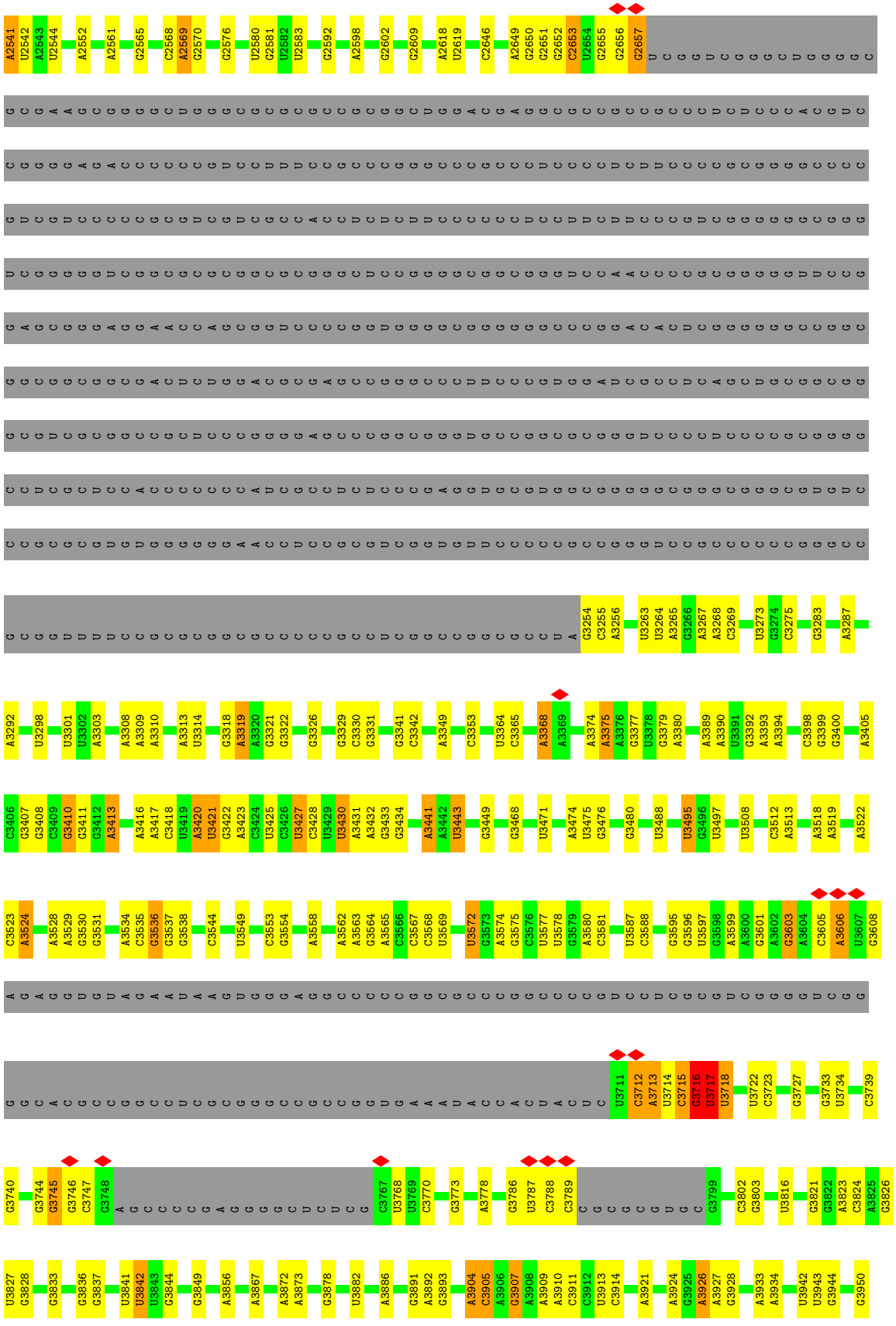
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

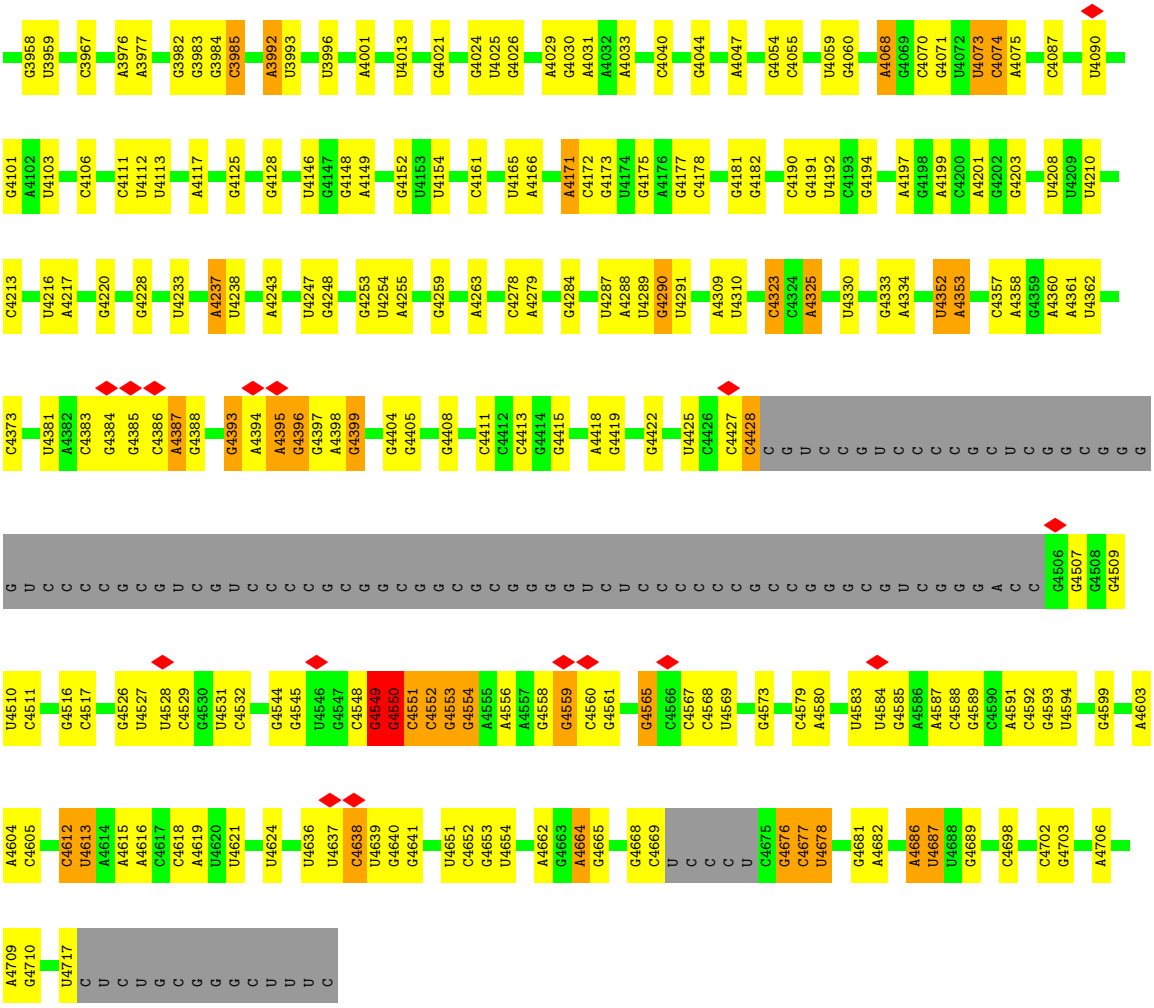
• Molecule 1: Mus musculus 28S ribosomal RNA

Chain L5:



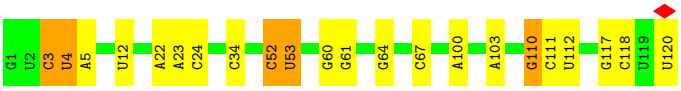






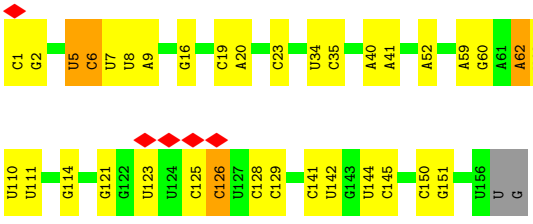
• Molecule 2: Mus musculus 5S ribosomal RNA

Chain L7:



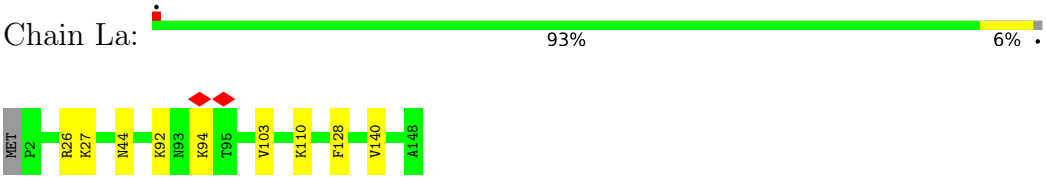
• Molecule 3: Mus musculus 5.8S ribosomal RNA

Chain L8:



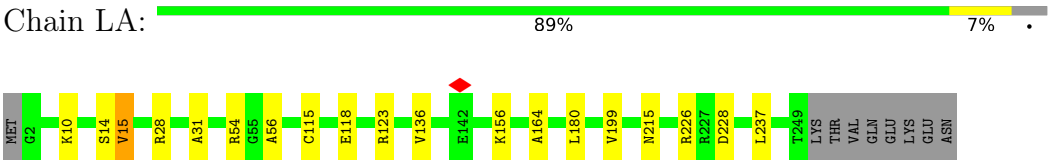
• Molecule 4: Large ribosomal subunit protein uL15

Chain La:



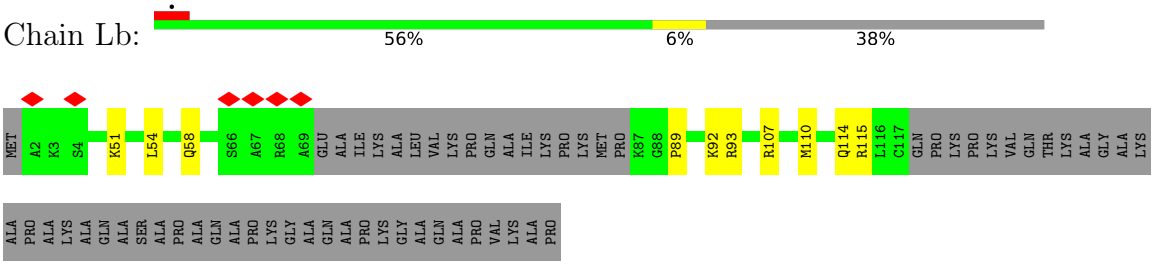
• Molecule 5: Large ribosomal subunit protein uL2

Chain LA:



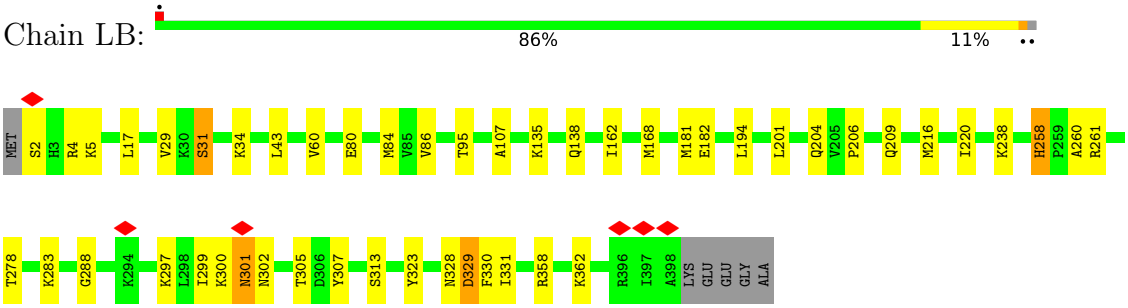
• Molecule 6: Large ribosomal subunit protein eL29

Chain Lb:



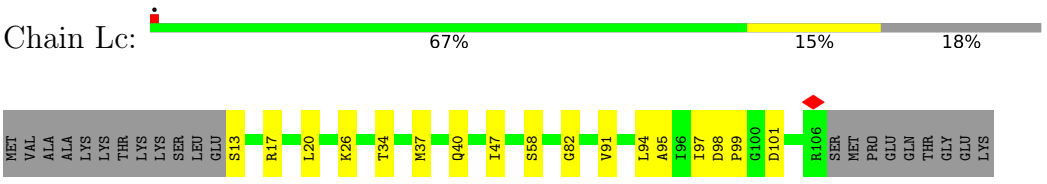
• Molecule 7: Large ribosomal subunit protein uL3

Chain LB:



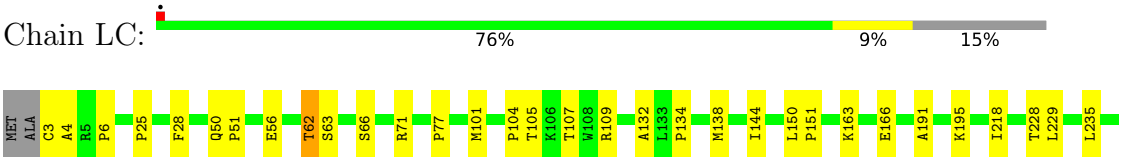
• Molecule 8: Large ribosomal subunit protein eL30

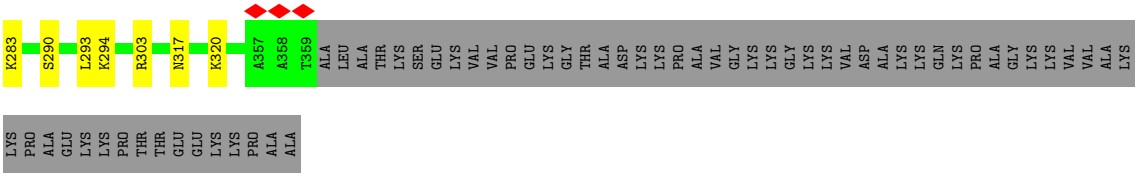
Chain Lc:



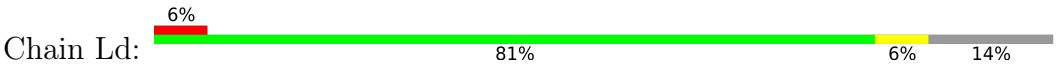
• Molecule 9: Large ribosomal subunit protein uL4

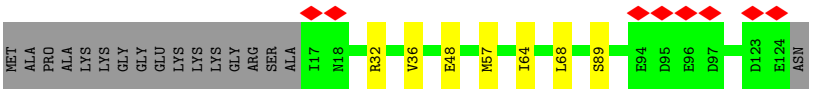
Chain LC:



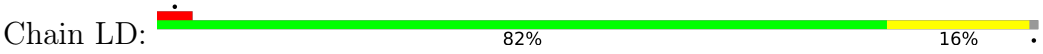


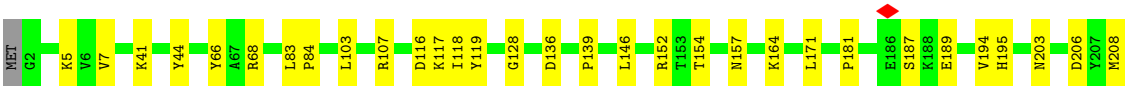
• Molecule 10: Large ribosomal subunit protein eL31

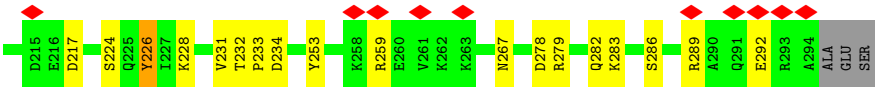




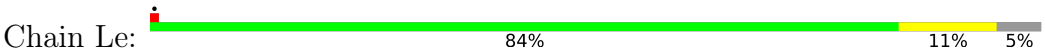
• Molecule 11: Large ribosomal subunit protein uL18

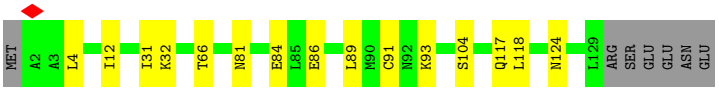




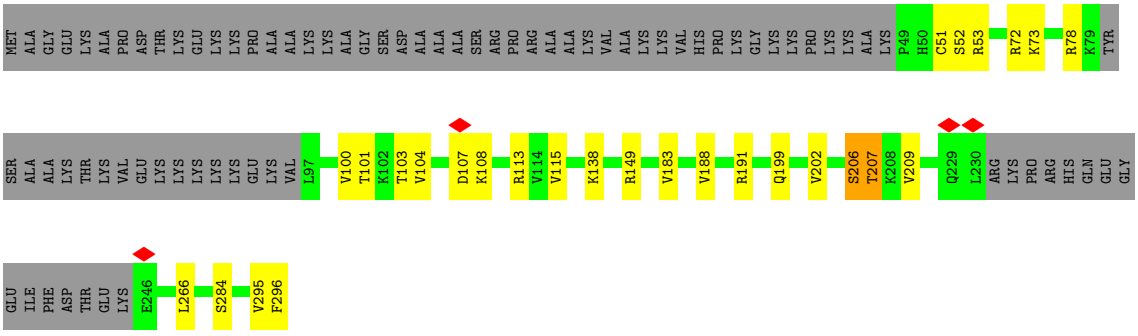


• Molecule 12: Large ribosomal subunit protein eL32

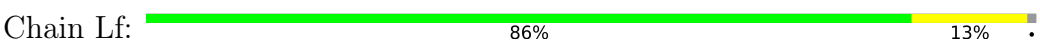


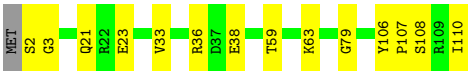


• Molecule 13: Large ribosomal subunit protein eL6



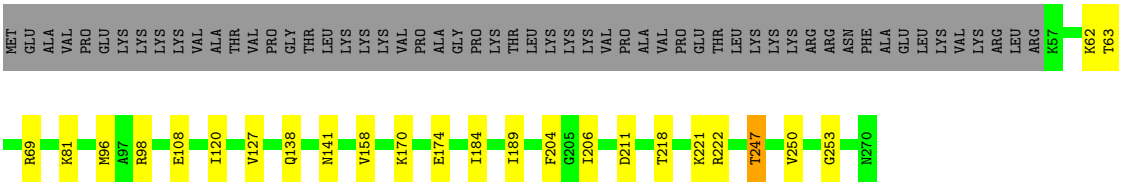
• Molecule 14: Large ribosomal subunit protein eL33





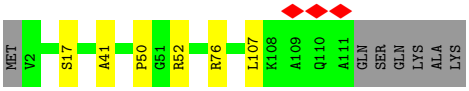
• Molecule 15: Large ribosomal subunit protein uL30

Chain LF:



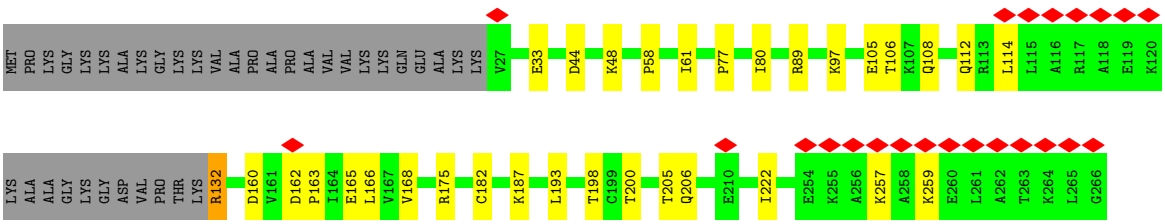
• Molecule 16: Large ribosomal subunit protein eL34

Chain Lg:



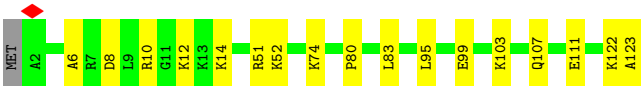
• Molecule 17: Large ribosomal subunit protein eL8

Chain LG:



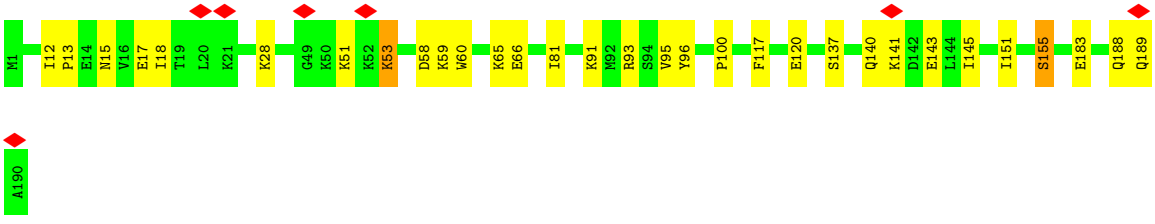
• Molecule 18: Large ribosomal subunit protein uL29

Chain Lh:



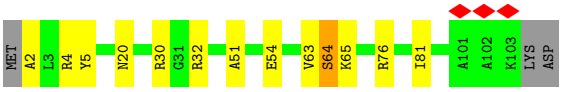
• Molecule 19: Large ribosomal subunit protein uL6

Chain LH:



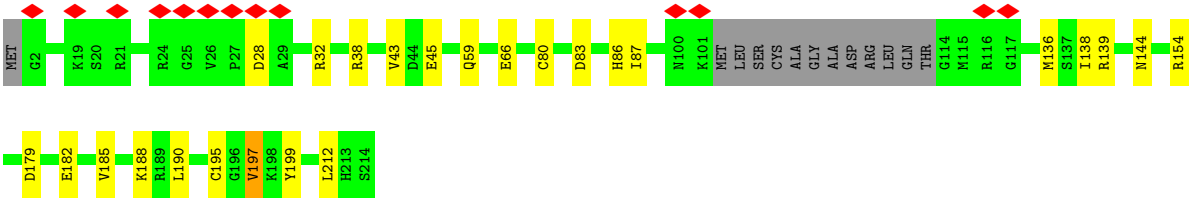
• Molecule 20: Large ribosomal subunit protein eL36

Chain Li:



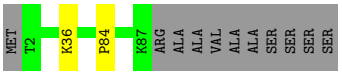
• Molecule 21: Large ribosomal subunit protein uL16-like

Chain LI:



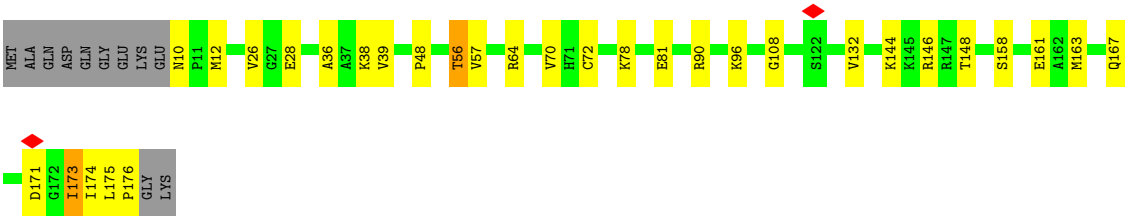
• Molecule 22: Large ribosomal subunit protein eL37

Chain Lj:



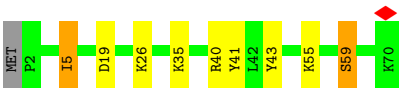
• Molecule 23: Large ribosomal subunit protein uL5

Chain LJ:



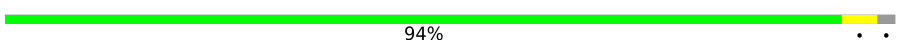
• Molecule 24: Large ribosomal subunit protein eL38

Chain Lk:



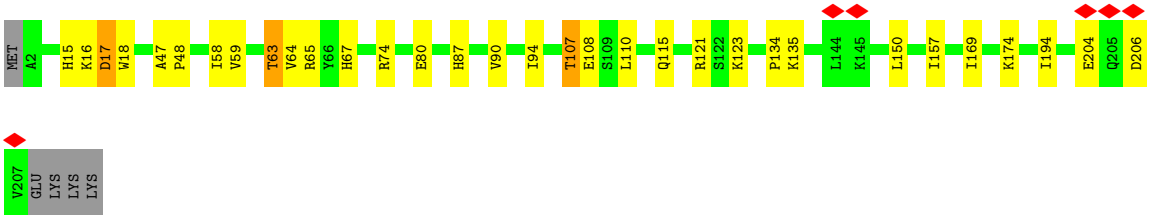
• Molecule 25: Large ribosomal subunit protein eL39-like

Chain Ll:



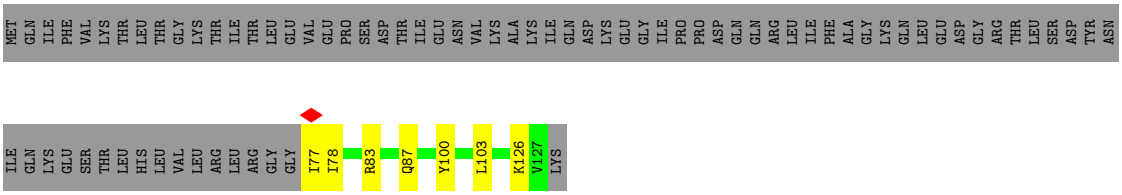
• Molecule 26: Large ribosomal subunit protein eL13

Chain LL:



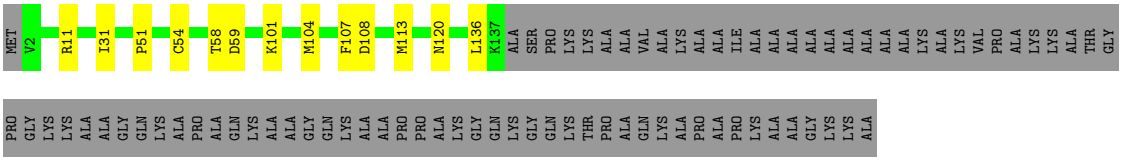
• Molecule 27: Ubiquitin-ribosomal protein eL40 fusion protein

Chain Lm:



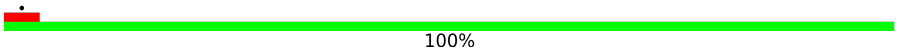
• Molecule 28: Large ribosomal subunit protein eL14

Chain LM:



• Molecule 29: Small ribosomal subunit protein eS32

Chain Ln:

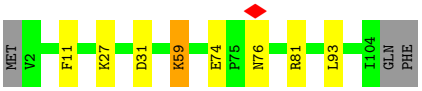


• Molecule 30: Large ribosomal subunit protein eL15

Chain LN:

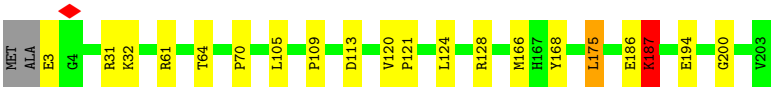
• Molecule 31: Large ribosomal subunit protein eL42

Chain Lo:



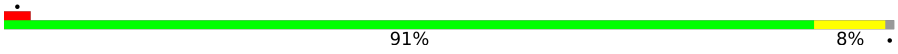
• Molecule 32: Large ribosomal subunit protein uL13

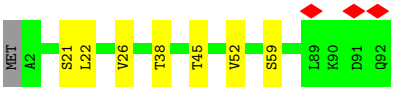
Chain LO:



• Molecule 33: Large ribosomal subunit protein eL43

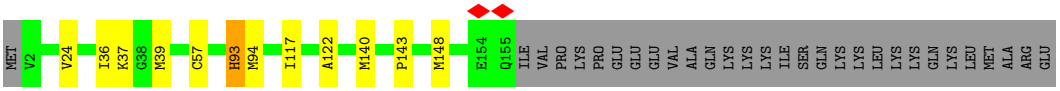
Chain Lp:





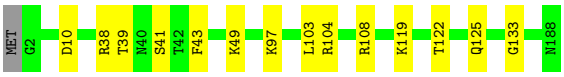
• Molecule 34: Large ribosomal subunit protein uL22

Chain LP:



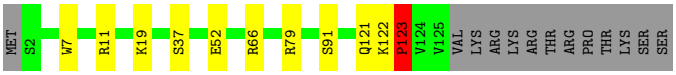
• Molecule 35: Large ribosomal subunit protein eL18

Chain LQ:



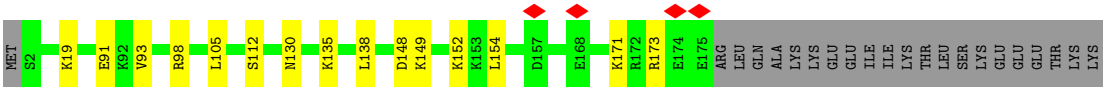
• Molecule 36: Large ribosomal subunit protein eL28

Chain Lr:



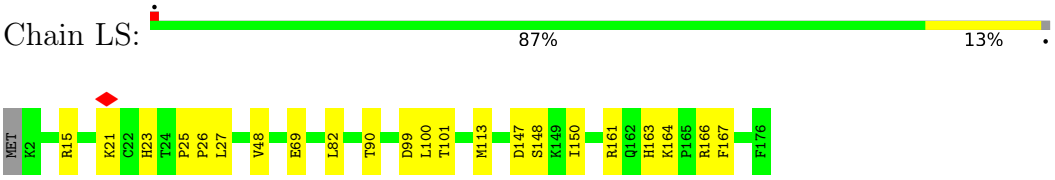
• Molecule 37: Large ribosomal subunit protein eL19

Chain LR:



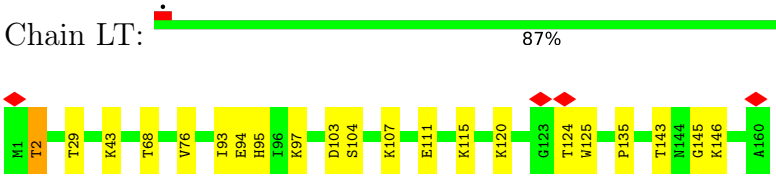
• Molecule 38: Large ribosomal subunit protein eL20

Chain LS:



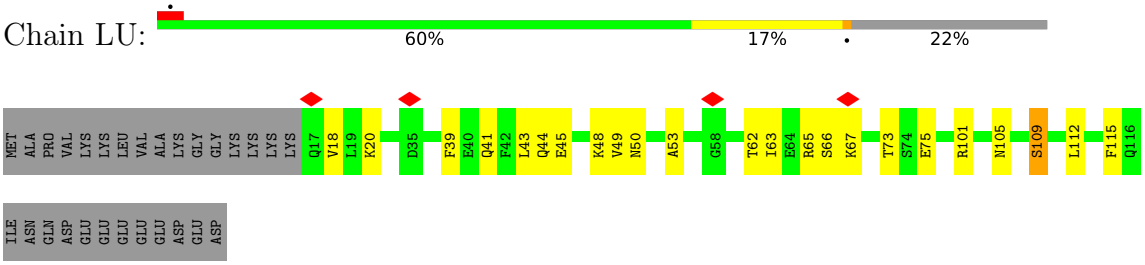
• Molecule 39: Large ribosomal subunit protein eL21

Chain LT:



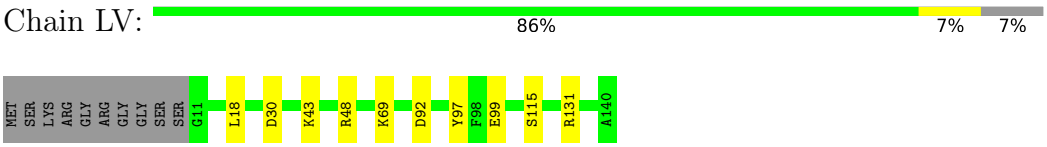
• Molecule 40: Large ribosomal subunit protein eL22

Chain LU:



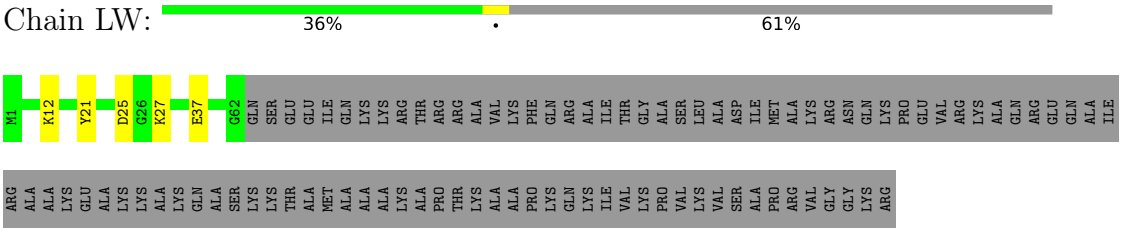
• Molecule 41: Large ribosomal subunit protein uL14

Chain LV:



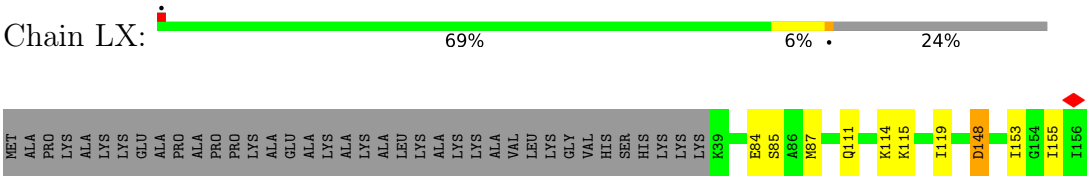
• Molecule 42: Large ribosomal subunit protein eL24

Chain LW:



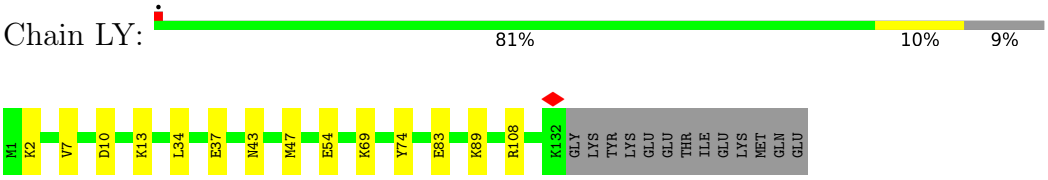
• Molecule 43: Large ribosomal subunit protein uL23

Chain LX:



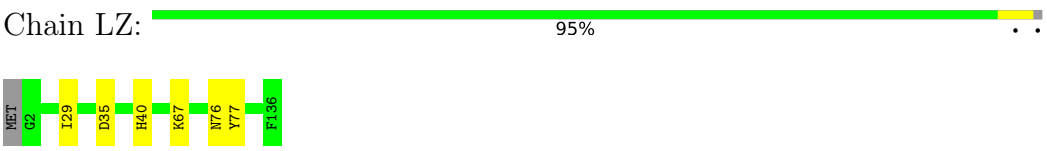
• Molecule 44: Large ribosomal subunit protein uL24

Chain LY:



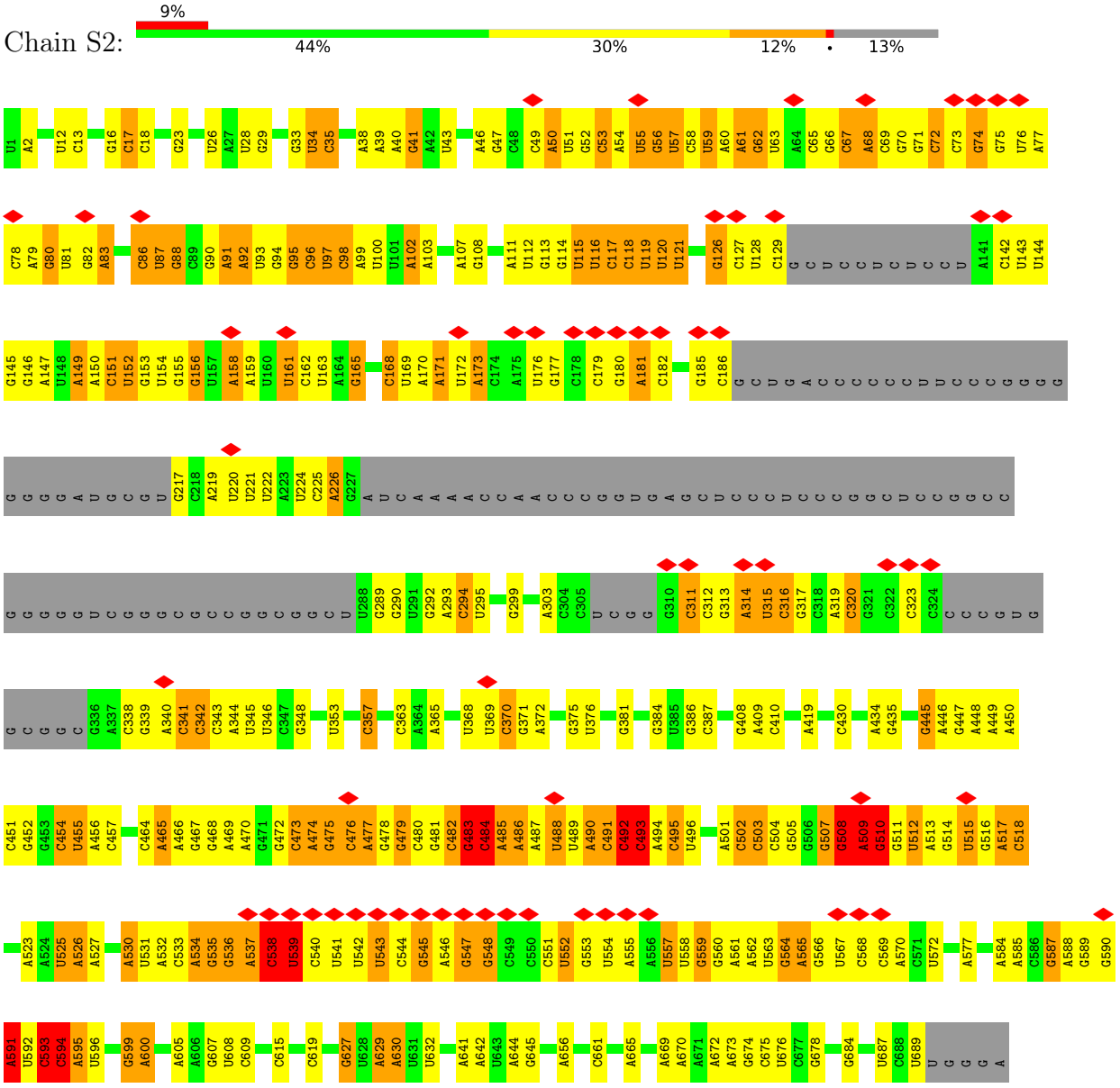
• Molecule 45: Large ribosomal subunit protein eL27

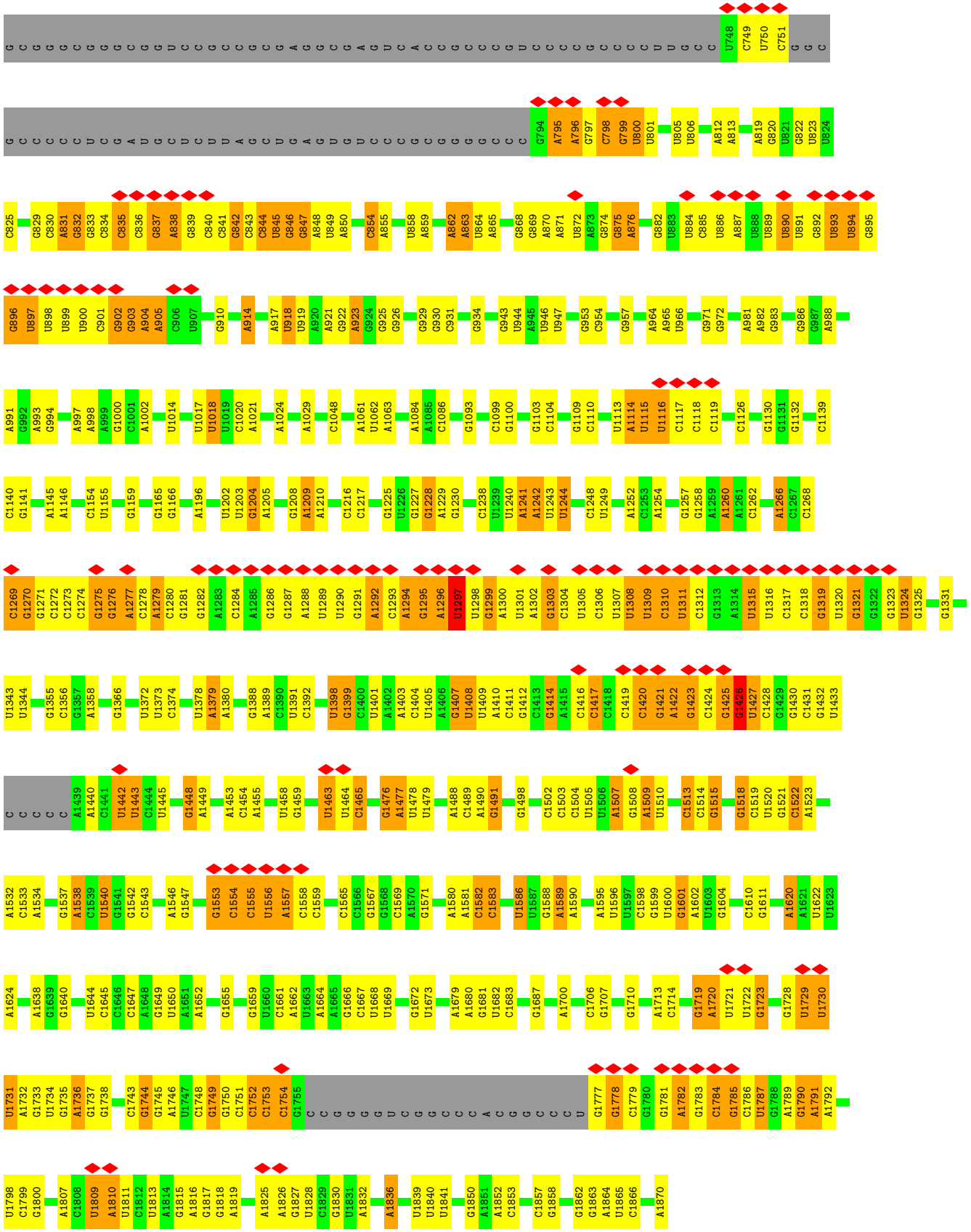
Chain LZ:



• Molecule 46: Mus musculus 18S ribosomal RNA

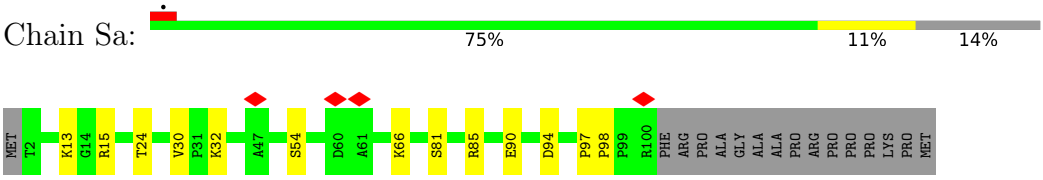
Chain S2:





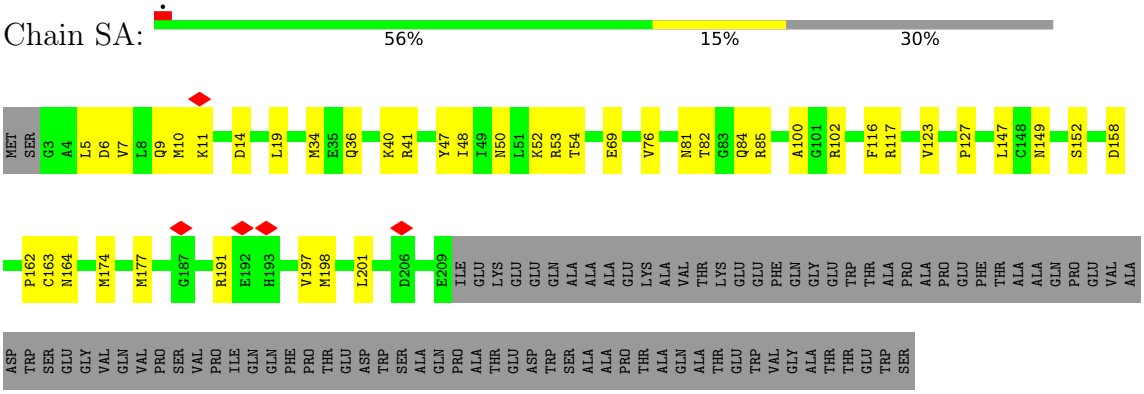
• Molecule 47: Small ribosomal subunit protein eS26

Chain Sa:



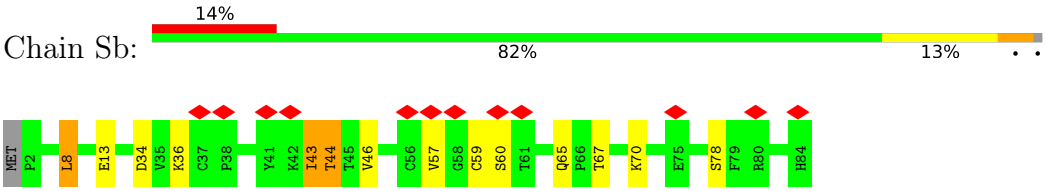
• Molecule 48: Small ribosomal subunit protein uS2

Chain SA:



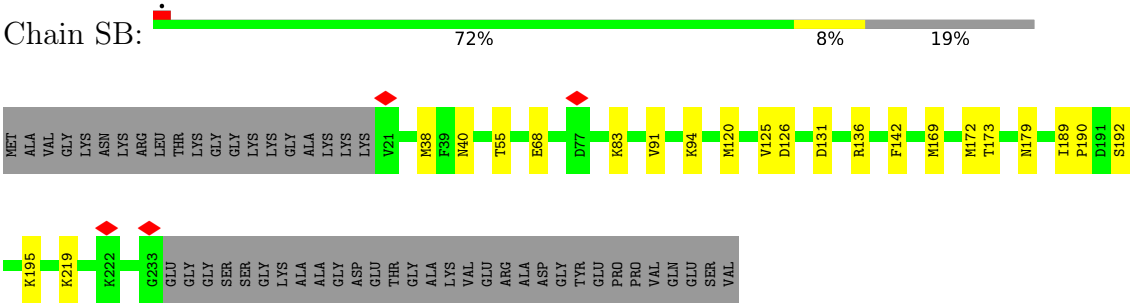
• Molecule 49: Small ribosomal subunit protein eS27

Chain Sb:



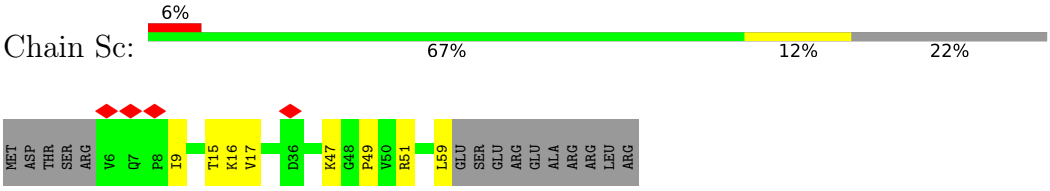
• Molecule 50: Small ribosomal subunit protein eS1

Chain SB:



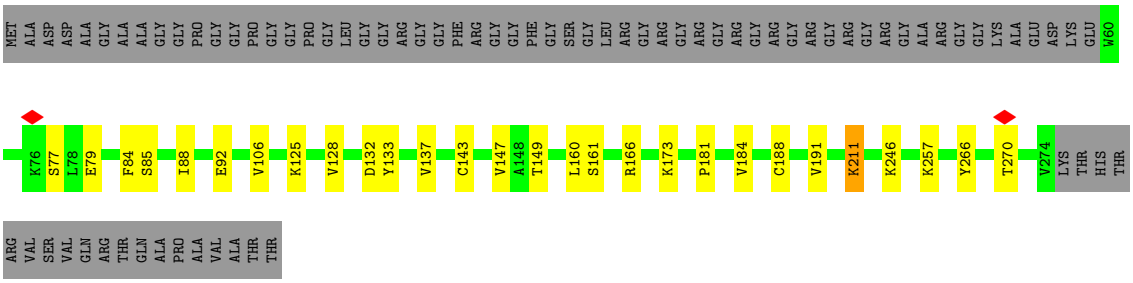
• Molecule 51: Small ribosomal subunit protein eS28

Chain Sc:



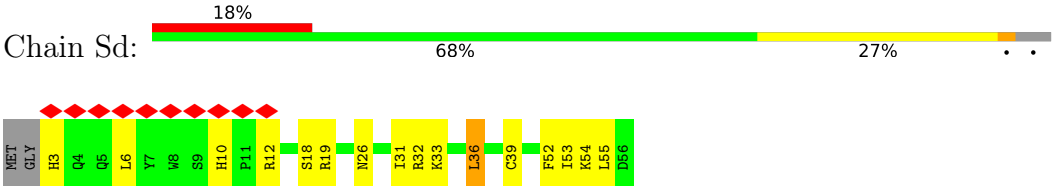
• Molecule 52: Small ribosomal subunit protein uS5

Chain SC:



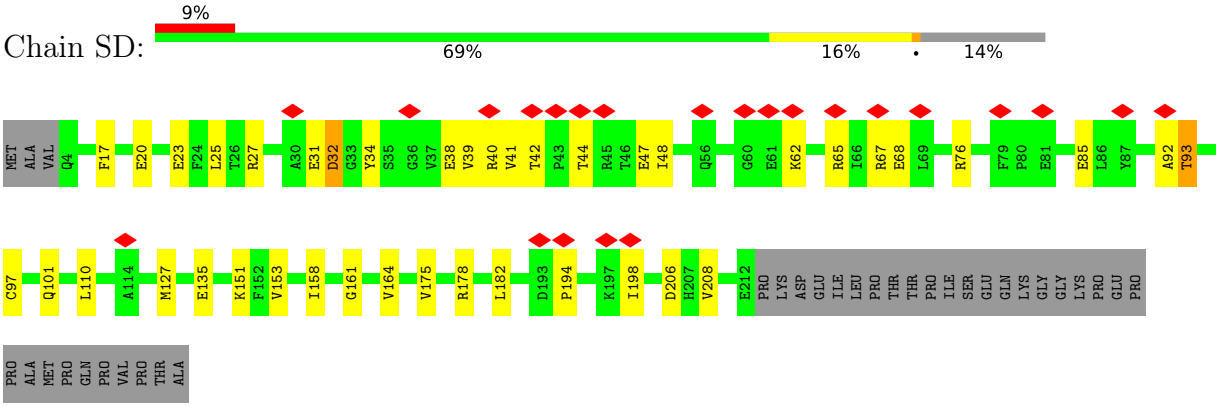
• Molecule 53: Small ribosomal subunit protein uS14

Chain Sd:



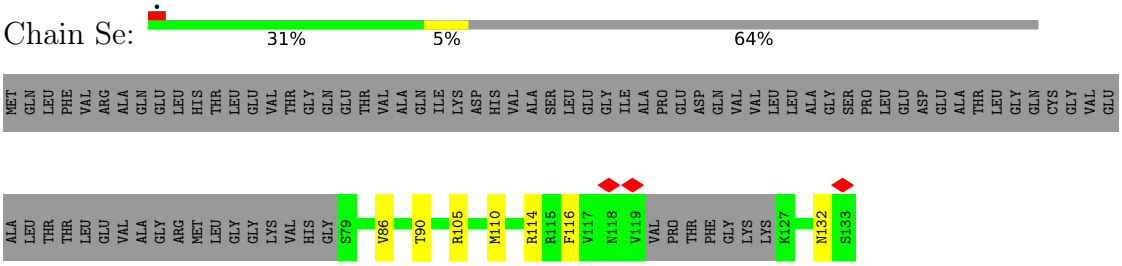
• Molecule 54: Small ribosomal subunit protein uS3

Chain SD:



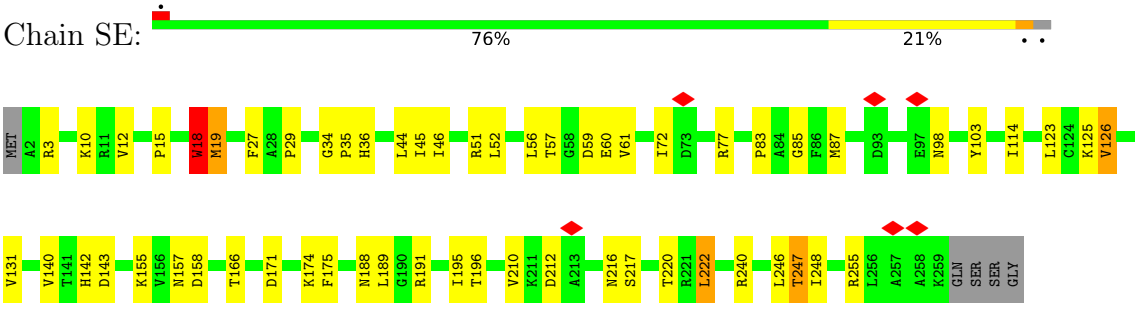
• Molecule 55: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein

Chain Se:



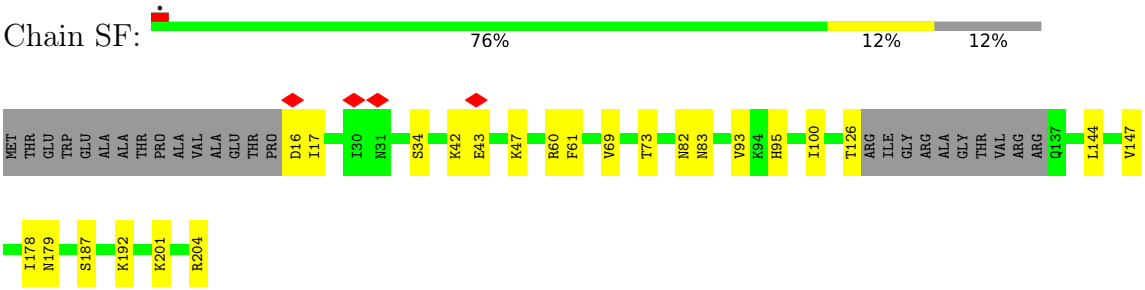
• Molecule 56: Small ribosomal subunit protein eS4

Chain SE:



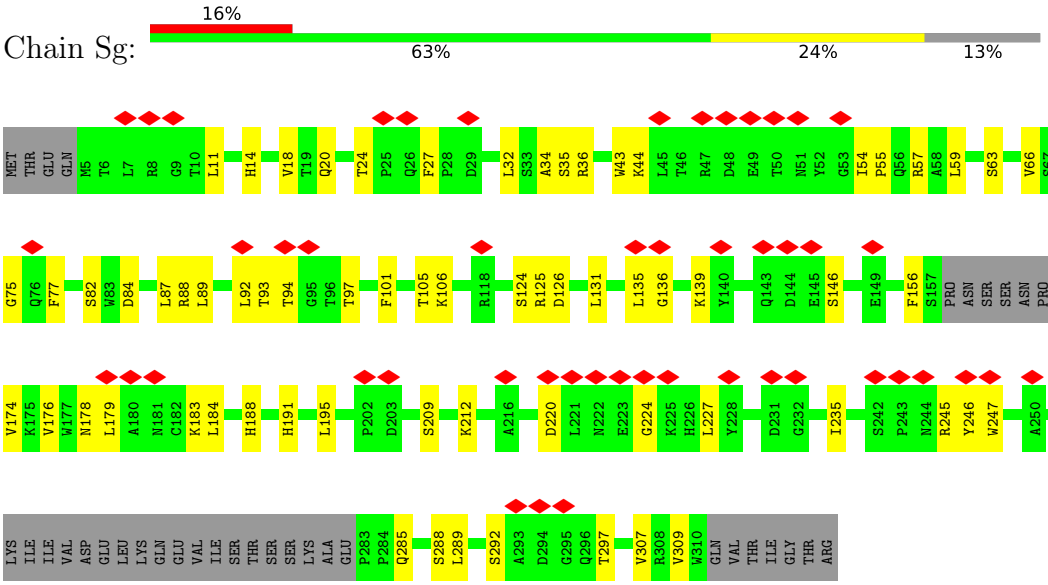
• Molecule 57: Small ribosomal subunit protein uS7

Chain SF:



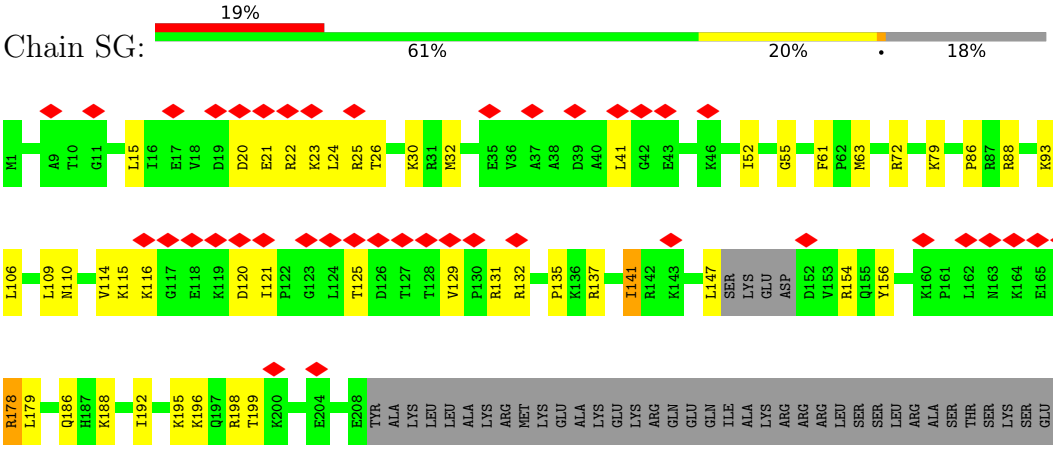
• Molecule 58: Small ribosomal subunit protein RACK1

Chain Sg:



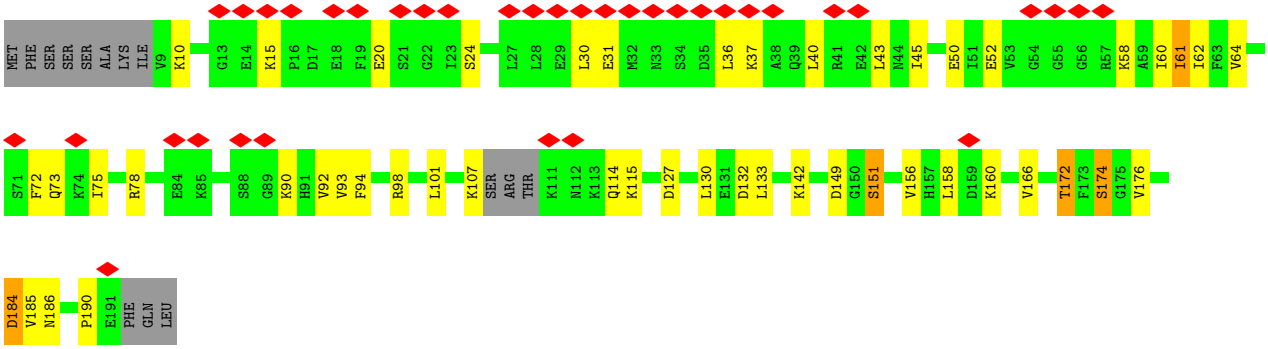
• Molecule 59: Small ribosomal subunit protein eS6

Chain SG:



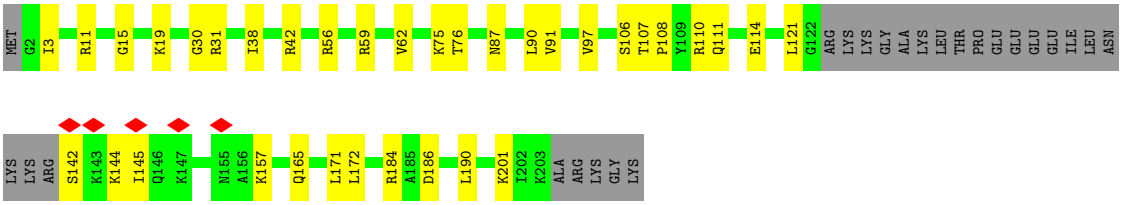
• Molecule 60: Small ribosomal subunit protein eS7

Chain SH:



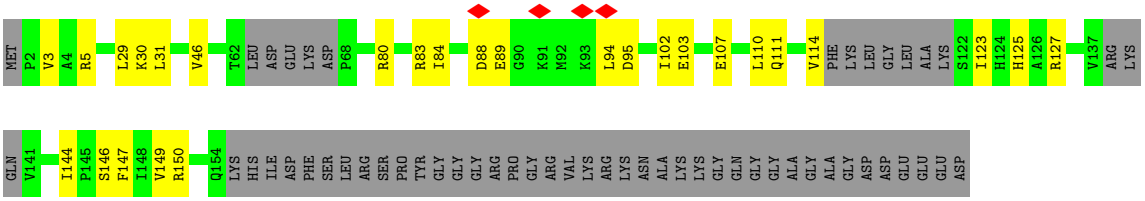
• Molecule 61: Small ribosomal subunit protein eS8

Chain SI:



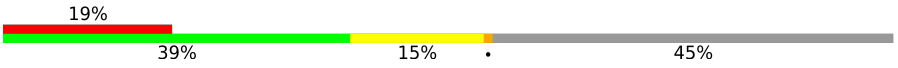
• Molecule 62: Small ribosomal subunit protein uS4

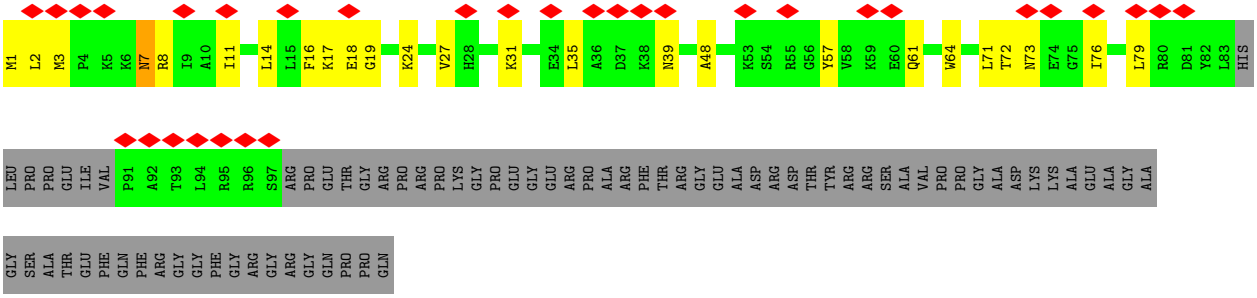
Chain SJ:



• Molecule 63: Small ribosomal subunit protein eS10

Chain SK:

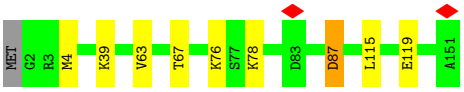




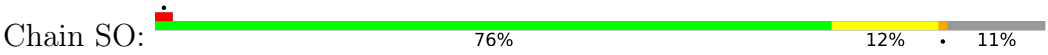
• Molecule 64: Small ribosomal subunit protein uS17

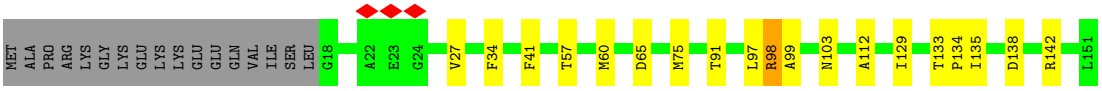
Chain SL:

• Molecule 65: Small ribosomal subunit protein uS15

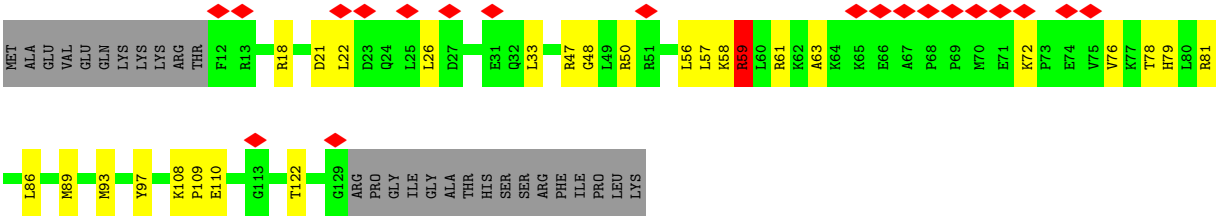


• Molecule 66: Small ribosomal subunit protein uS11

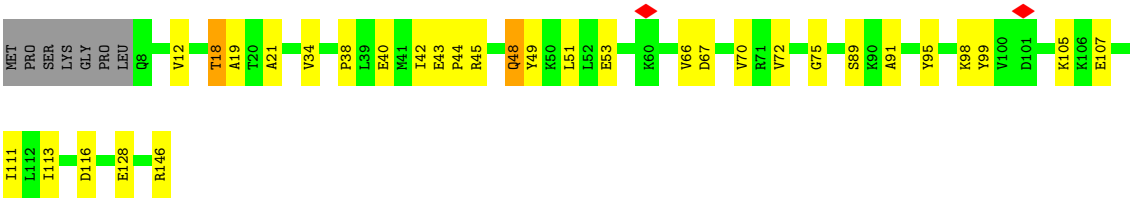




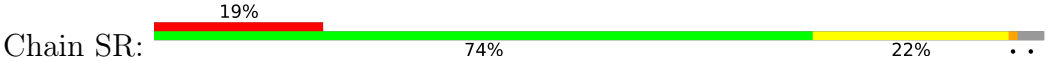
• Molecule 67: Small ribosomal subunit protein uS19

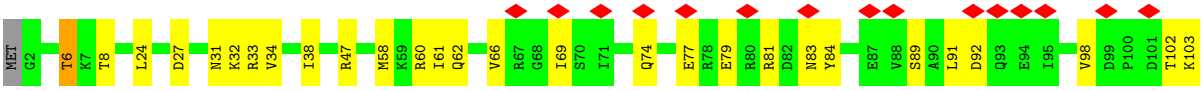


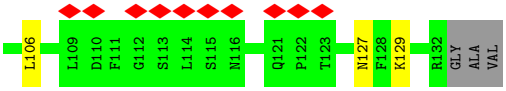
• Molecule 68: Small ribosomal subunit protein uS9



• Molecule 69: Small ribosomal subunit protein eS17

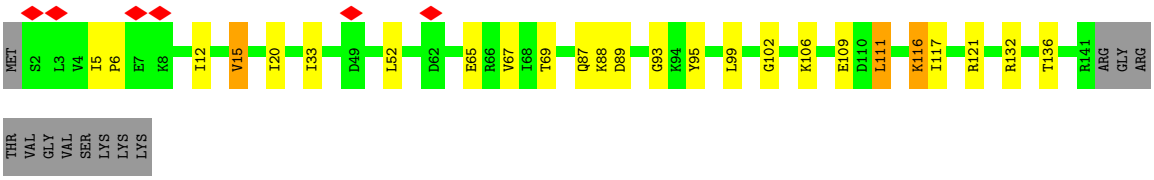






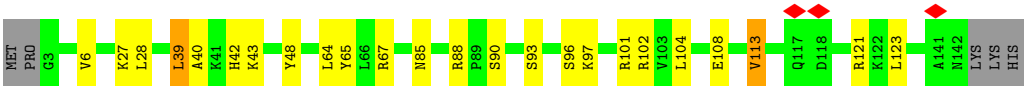
• Molecule 70: Small ribosomal subunit protein uS13

Chain SS:



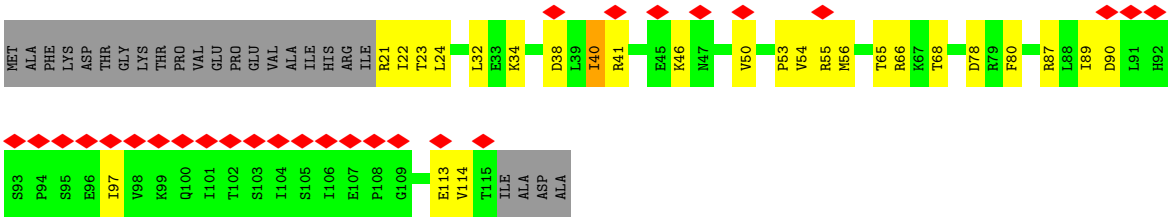
• Molecule 71: Small ribosomal subunit protein eS19

Chain ST:



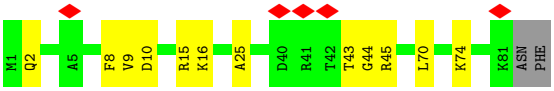
• Molecule 72: Small ribosomal subunit protein uS10

Chain SU:



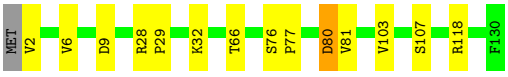
• Molecule 73: Small ribosomal subunit protein eS21

Chain SV:



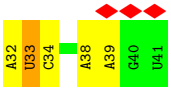
• Molecule 74: Small ribosomal subunit protein uS8

Chain SW:



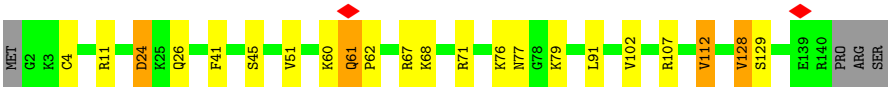
• Molecule 75: RNA (5'-R(P*AP*UP*CP*AP*UP*GP*AP*AP*GP*U)-3')

Chain Sx:



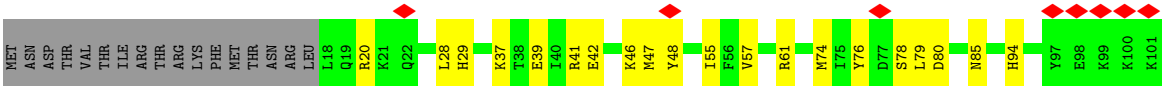
• Molecule 76: Small ribosomal subunit protein uS12

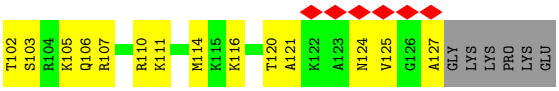
Chain SX:



• Molecule 77: Small ribosomal subunit protein eS24

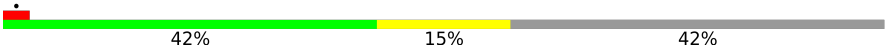
Chain SY:

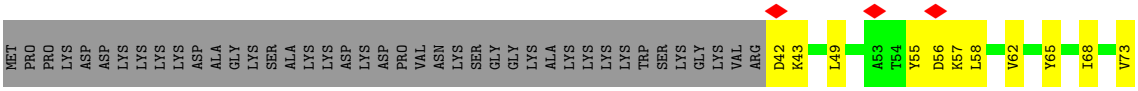


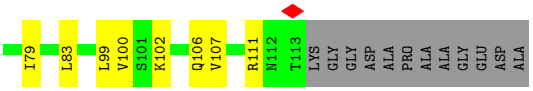


• Molecule 78: Small ribosomal subunit protein eS25

Chain SZ:

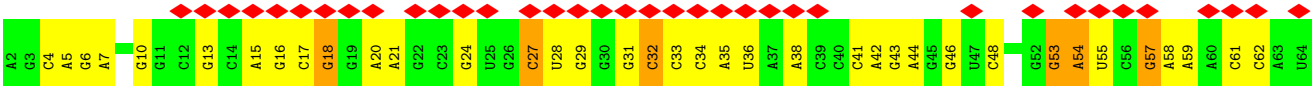


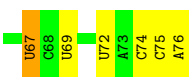




• Molecule 79: P/P, E/E tRNA

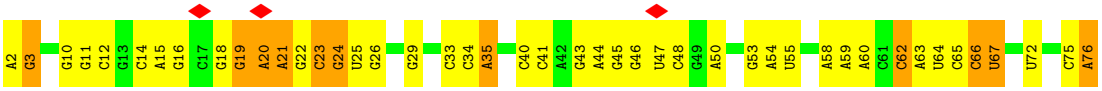
Chain S6:



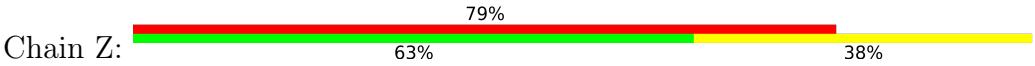


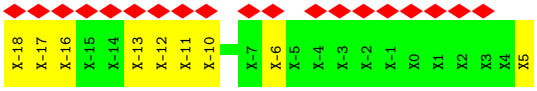
• Molecule 79: P/P, E/E tRNA

Chain S7:



• Molecule 80: Nascent peptide





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	217714	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	9.612	Depositor
Minimum map value	-4.282	Depositor
Average map value	-0.006	Depositor
Map value standard deviation	0.230	Depositor
Recommended contour level	0.8	Depositor
Map size (Å)	616.0, 616.0, 616.0	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, 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	L5	0.15	0/81527	0.34	21/127149 (0.0%)
2	L7	0.11	0/2858	0.28	0/4455
3	L8	0.12	0/3584	0.29	0/5582
4	La	0.19	0/1193	0.39	0/1593
5	LA	0.15	0/1936	0.42	0/2596
6	Lb	0.24	0/821	0.41	0/1082
7	LB	0.21	1/3269 (0.0%)	0.44	0/4375
8	Lc	0.30	0/742	0.53	0/996
9	LC	0.22	0/2911	0.42	0/3907
10	Ld	0.19	0/911	0.41	0/1227
11	LD	0.23	0/2435	0.46	0/3260
12	Le	0.20	0/1071	0.38	0/1429
13	LE	0.18	0/1775	0.39	0/2381
14	Lf	0.17	0/895	0.39	0/1198
15	LF	0.26	0/1805	0.44	0/2408
16	Lg	0.18	0/883	0.36	0/1178
17	LG	0.30	0/1880	0.48	0/2531
18	Lh	0.31	0/1023	0.44	0/1350
19	LH	0.22	0/1537	0.44	0/2065
20	Li	0.25	0/843	0.42	0/1115
21	LI	0.25	0/1669	0.43	0/2227
22	Lj	0.19	0/720	0.38	0/952
23	LJ	0.25	0/1363	0.49	2/1824 (0.1%)
24	Lk	0.22	0/574	0.43	0/760
25	Ll	0.19	0/448	0.33	0/592
26	LL	0.38	2/1698 (0.1%)	0.62	3/2274 (0.1%)
27	Lm	0.21	0/425	0.41	0/564
28	LM	0.29	0/1146	0.51	0/1531
29	Ln	0.34	0/240	0.45	0/305
30	LN	0.21	0/1746	0.44	0/2338
31	Lo	0.18	0/855	0.40	0/1128
32	LO	0.36	0/1670	0.59	2/2232 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	Lp	0.23	0/718	0.41	0/953
34	LP	0.25	0/1277	0.46	0/1712
35	LQ	0.21	0/1539	0.40	0/2053
36	Lr	0.34	0/1009	0.56	3/1353 (0.2%)
37	LR	0.31	0/1473	0.47	0/1947
38	LS	0.47	4/1491 (0.3%)	0.58	0/2000
39	LT	0.16	0/1335	0.37	0/1781
40	LU	0.25	0/831	0.52	0/1115
41	LV	0.14	0/987	0.38	0/1324
42	LW	0.20	0/532	0.42	0/708
43	LX	0.19	0/984	0.40	0/1323
44	LY	0.23	0/1119	0.41	0/1488
45	LZ	0.20	0/1130	0.39	0/1507
46	S2	0.21	2/38859 (0.0%)	0.45	55/60556 (0.1%)
47	Sa	0.64	2/805 (0.2%)	0.63	2/1079 (0.2%)
48	SA	0.24	0/1673	0.48	0/2275
49	Sb	0.15	0/665	0.42	0/891
50	SB	0.20	0/1756	0.41	0/2350
51	Sc	0.18	0/418	0.47	0/562
52	SC	0.21	0/1701	0.46	0/2300
53	Sd	0.18	0/466	0.36	0/618
54	SD	0.27	0/1651	0.53	0/2219
55	Se	0.17	0/386	0.41	0/504
56	SE	0.20	0/2092	0.48	0/2816
57	SF	0.27	0/1436	0.47	0/1930
58	Sg	0.19	0/2199	0.52	0/2989
59	SG	0.21	0/1666	0.40	0/2222
60	SH	0.23	0/1470	0.47	0/1968
61	SI	0.18	0/1526	0.41	0/2038
62	SJ	0.24	0/1178	0.45	0/1574
63	SK	0.19	0/780	0.43	0/1046
64	SL	0.13	0/1130	0.34	0/1514
65	SN	0.32	0/1232	0.43	0/1656
66	SO	0.23	0/1015	0.46	0/1361
67	SP	0.33	0/1000	0.69	5/1335 (0.4%)
68	SQ	0.22	0/1126	0.49	0/1506
69	SR	0.26	0/1078	0.49	0/1447
70	SS	0.18	0/1175	0.34	0/1575
71	ST	0.25	0/1108	0.41	0/1486
72	SU	0.25	0/762	0.51	0/1023
73	SV	0.18	0/625	0.40	0/836
74	SW	0.24	0/1051	0.44	0/1406
75	Sx	0.09	0/239	0.25	0/370

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	SX	0.21	0/1097	0.46	0/1464
77	SY	0.27	0/907	0.57	0/1204
78	SZ	0.22	0/580	0.48	0/780
79	S6	0.19	0/1795	0.39	1/2798 (0.0%)
79	S7	0.13	0/1795	0.31	0/2798
All	All	0.20	11/219320 (0.0%)	0.41	94/322364 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
56	SE	0	1
60	SH	0	1
All	All	0	2

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
47	Sa	98	PRO	CA-C	15.29	1.60	1.51
38	LS	167	PHE	C-O	-7.07	1.15	1.24
47	Sa	97	PRO	CA-C	6.83	1.56	1.52
38	LS	164	LYS	C-O	-6.57	1.17	1.24
46	S2	485	A	O3'-P	-6.55	1.51	1.61
7	LB	301	ASN	CA-C	-6.09	1.44	1.52
26	LL	18	TRP	C-O	-5.85	1.16	1.24
38	LS	166	ARG	C-O	-5.65	1.17	1.24
38	LS	163	HIS	C-O	-5.43	1.16	1.24
26	LL	15	HIS	C-O	-5.10	1.17	1.24
46	S2	594	C	O3'-P	5.01	1.68	1.61

All (94) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	S2	593	C	C4'-C3'-O3'	13.58	133.37	113.00
46	S2	482	C	C2'-C3'-O3'	-13.56	93.36	113.70
26	LL	16	LYS	CB-CA-C	-12.30	92.19	111.74
46	S2	492	C	C4'-C3'-O3'	12.02	131.03	113.00
47	Sa	98	PRO	O-C-N	11.96	126.81	121.31
46	S2	115	U	C2'-C3'-O3'	-11.08	92.89	109.50
32	LO	186	GLU	CB-CA-C	-11.04	94.17	111.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	S2	483	G	C2'-C3'-O3'	10.52	129.48	113.70
46	S2	495	C	C1'-C2'-O2'	10.38	127.36	111.80
46	S2	484	C	N1-C1'-C2'	9.63	126.45	112.00
46	S2	594	C	C4'-C3'-O3'	-9.60	95.00	109.40
46	S2	483	G	C4'-C3'-C2'	-9.50	93.10	102.60
46	S2	539	U	C2'-C3'-O3'	-9.50	99.46	113.70
46	S2	508	G	C1'-C2'-O2'	9.30	122.35	108.40
46	S2	482	C	C4'-C3'-O3'	9.23	126.85	113.00
46	S2	483	G	O4'-C4'-C3'	-8.82	95.18	104.00
46	S2	115	U	C4'-C3'-O3'	8.77	122.55	109.40
46	S2	116	U	C1'-C2'-O2'	8.70	124.84	111.80
46	S2	538	C	N1-C1'-C2'	8.43	124.64	112.00
46	S2	485	A	C4'-C3'-O3'	8.28	125.42	113.00
46	S2	1297	U	C2'-C3'-O3'	-8.12	97.32	109.50
46	S2	486	A	C2'-C3'-O3'	8.05	125.78	113.70
46	S2	508	G	C2'-C3'-O3'	-7.87	101.90	113.70
46	S2	1414	G	C4'-C3'-C2'	-7.71	94.89	102.60
46	S2	591	A	C4'-C3'-O3'	7.64	124.46	113.00
1	L5	3410	G	C4'-C3'-O3'	7.50	120.65	109.40
46	S2	539	U	C3'-C2'-O2'	-7.50	99.45	110.70
46	S2	483	G	C4'-C3'-O3'	7.45	124.18	113.00
1	L5	4549	G	C4'-C3'-O3'	7.39	120.49	109.40
46	S2	1426	G	C4'-C3'-C2'	-7.38	95.22	102.60
1	L5	455	C	C4'-C3'-O3'	7.27	120.31	109.40
46	S2	1308	U	C2'-C3'-O3'	7.17	120.26	109.50
47	Sa	97	PRO	O-C-N	7.15	124.51	121.15
26	LL	17	ASP	N-CA-C	7.11	121.33	111.74
46	S2	508	G	C4'-C3'-O3'	7.11	123.66	113.00
1	L5	3716	G	C2'-C3'-O3'	-6.99	103.21	113.70
46	S2	117	C	C4'-C3'-O3'	-6.96	102.57	113.00
67	SP	59	ARG	CB-CG-CD	6.95	127.28	111.30
1	L5	3427	U	C1'-C2'-O2'	6.94	118.81	108.40
46	S2	492	C	C2'-C3'-O3'	-6.86	103.41	113.70
46	S2	116	U	O4'-C1'-C2'	-6.61	99.19	105.80
46	S2	1414	G	C2'-C3'-O3'	6.57	123.56	113.70
46	S2	482	C	C3'-C2'-O2'	-6.57	100.85	110.70
79	S6	72	U	C2'-C3'-O3'	-6.50	103.95	113.70
1	L5	3717	U	C2'-C3'-O3'	-6.46	99.80	109.50
1	L5	456	G	C4'-C3'-C2'	-6.44	96.16	102.60
46	S2	594	C	C2'-C3'-O3'	6.42	119.13	109.50
1	L5	453	U	P-O3'-C3'	6.42	129.82	120.20
46	S2	485	A	C1'-C2'-O2'	6.29	117.83	108.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	S2	1454	C	N1-C1'-C2'	6.24	121.35	112.00
32	LO	186	GLU	CA-C-O	-6.21	114.89	122.41
1	L5	458	C	C2'-C3'-O3'	6.21	123.02	113.70
1	L5	456	G	C4'-C3'-O3'	6.21	118.71	109.40
46	S2	593	C	C4'-C3'-C2'	-6.18	96.42	102.60
46	S2	1543	C	C2'-C3'-O3'	-6.12	104.53	113.70
46	S2	483	G	O4'-C1'-N9	6.09	117.63	108.50
1	L5	456	G	C1'-C2'-O2'	5.99	120.79	111.80
46	S2	593	C	O4'-C4'-C3'	-5.96	98.04	104.00
1	L5	3410	G	N9-C1'-C2'	-5.95	105.08	114.00
46	S2	509	A	C3'-C2'-O2'	5.80	119.40	110.70
46	S2	510	G	C2'-C3'-O3'	-5.80	105.00	113.70
1	L5	140	G	C4'-C3'-O3'	-5.76	104.35	113.00
36	Lr	123	PRO	N-CA-CB	-5.75	97.21	103.25
67	SP	56	LEU	N-CA-C	-5.74	105.00	112.23
23	LJ	57	VAL	CA-C-N	5.72	132.47	121.54
23	LJ	57	VAL	C-N-CA	5.72	132.47	121.54
46	S2	493	C	C1'-C2'-O2'	5.68	120.31	111.80
46	S2	508	G	C3'-C2'-O2'	-5.67	102.19	110.70
46	S2	495	C	C4'-C3'-O3'	5.65	117.88	109.40
1	L5	3413	A	C4'-C3'-O3'	5.60	121.40	113.00
36	Lr	121	GLN	CB-CA-C	-5.54	103.64	112.05
46	S2	1454	C	C4'-C3'-O3'	-5.46	104.81	113.00
1	L5	4551	C	O4'-C1'-C2'	-5.44	100.36	105.80
26	LL	16	LYS	CA-C-O	-5.42	111.72	122.23
46	S2	485	A	C2'-C3'-O3'	5.37	121.75	113.70
1	L5	3427	U	N1-C1'-C2'	-5.36	103.96	112.00
46	S2	357	C	N1-C1'-C2'	5.35	120.02	112.00
46	S2	491	C	C2'-C3'-O3'	-5.34	105.69	113.70
1	L5	3427	U	C4'-C3'-O3'	5.33	121.00	113.00
46	S2	483	G	C3'-C2'-C1'	-5.33	95.97	101.30
46	S2	1297	U	C4'-C3'-O3'	5.32	117.38	109.40
1	L5	455	C	C2'-C3'-O3'	-5.26	101.61	109.50
1	L5	3717	U	C1'-C2'-O2'	5.26	119.68	111.80
67	SP	59	ARG	CB-CA-C	5.20	121.18	110.31
46	S2	512	U	C2'-C3'-O3'	5.20	121.50	113.70
1	L5	4550	G	C1'-O4'-C4'	-5.19	104.71	109.90
36	Lr	121	GLN	CA-C-O	-5.16	116.31	122.13
46	S2	117	C	C2'-C3'-O3'	5.15	121.42	113.70
46	S2	1752	C	C3'-C2'-O2'	5.14	118.41	110.70
67	SP	63	ALA	CA-C-N	-5.08	113.08	120.29
67	SP	63	ALA	C-N-CA	-5.08	113.08	120.29

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
46	S2	594	C	C5'-C4'-C3'	5.06	122.78	115.20
46	S2	1598	C	C4'-C3'-O3'	-5.03	105.46	113.00
1	L5	3427	U	O4'-C1'-C2'	-5.02	102.58	107.60

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
56	SE	18	TRP	Peptide
60	SH	15	LYS	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	L5	72884	0	36803	455	0
2	L7	2558	0	1296	13	0
3	L8	3210	0	1630	25	0
4	La	1164	0	1213	5	0
5	LA	1898	0	1993	11	0
6	Lb	807	0	875	7	0
7	LB	3202	0	3347	32	0
8	Lc	732	0	769	9	0
9	LC	2857	0	3030	29	0
10	Ld	896	0	941	2	0
11	LD	2389	0	2420	28	0
12	Le	1053	0	1147	7	0
13	LE	1743	0	1880	16	0
14	Lf	876	0	912	9	0
15	LF	1771	0	1886	16	0
16	Lg	873	0	961	4	0
17	LG	1848	0	1981	21	0
18	Lh	1015	0	1156	11	0
19	LH	1519	0	1603	17	0
20	Li	832	0	917	9	0
21	LI	1631	0	1682	13	0
22	Lj	705	0	737	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
23	LJ	1340	0	1377	15	0
24	Lk	568	0	635	6	0
25	Ll	438	0	474	1	0
26	LL	1667	0	1771	15	0
27	Lm	419	0	452	4	0
28	LM	1125	0	1202	8	0
29	Ln	239	0	289	0	0
30	LN	1701	0	1749	10	0
31	Lo	842	0	916	6	0
32	LO	1640	0	1792	13	0
33	Lp	708	0	756	3	0
34	LP	1251	0	1282	7	0
35	LQ	1515	0	1639	10	0
36	Lr	994	0	1057	5	0
37	LR	1457	0	1601	8	0
38	LS	1451	0	1488	7	0
39	LT	1307	0	1380	15	0
40	LU	817	0	839	14	0
41	LV	973	0	1034	7	0
42	LW	519	0	533	4	0
43	LX	967	0	1040	6	0
44	LY	1102	0	1189	8	0
45	LZ	1107	0	1182	4	0
46	S2	34749	0	17548	459	0
47	Sa	792	0	845	7	0
48	SA	1636	0	1641	27	0
49	Sb	651	0	672	5	0
50	SB	1729	0	1803	13	0
51	Sc	416	0	445	5	0
52	SC	1665	0	1753	17	0
53	Sd	455	0	449	12	0
54	SD	1626	0	1714	26	0
55	Se	384	0	422	6	0
56	SE	2050	0	2156	38	0
57	SF	1416	0	1458	20	0
58	Sg	2148	0	2108	47	0
59	SG	1645	0	1780	39	0
60	SH	1449	0	1539	29	0
61	SI	1499	0	1561	19	0
62	SJ	1162	0	1252	22	0
63	SK	760	0	783	18	0
64	SL	1110	0	1165	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
65	SN	1208	0	1294	6	0
66	SO	1002	0	1023	10	0
67	SP	981	0	1026	19	0
68	SQ	1109	0	1174	16	0
69	SR	1064	0	1118	21	0
70	SS	1157	0	1213	14	0
71	ST	1090	0	1116	16	0
72	SU	753	0	815	21	0
73	SV	619	0	620	7	0
74	SW	1034	0	1080	11	0
75	Sx	214	0	108	5	0
76	SX	1080	0	1147	16	0
77	SY	891	0	948	28	0
78	SZ	574	0	627	19	0
79	S6	1604	0	816	17	0
79	S7	1604	0	816	20	0
80	Z	119	0	36	9	0
81	L5	94	0	0	0	0
81	L7	1	0	0	0	0
81	LN	1	0	0	0	0
81	LP	1	0	0	0	0
82	Lj	1	0	0	0	0
82	Lm	1	0	0	0	0
82	Lp	1	0	0	0	0
All	All	204155	0	150927	1780	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 5.

All (1780) 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)
46:S2:1720:A:H62	46:S2:1815:G:N2	1.36	1.22
46:S2:1720:A:N6	46:S2:1815:G:H21	1.41	1.17
46:S2:159:A:C2	46:S2:468:G:N2	2.26	1.01
79:S7:76:A:O3'	80:Z:5:UNK:C	2.08	1.01
46:S2:1744:G:H21	46:S2:1792:A:H62	1.15	0.94
54:SD:194:PRO:HG3	54:SD:198:ILE:HG22	1.57	0.85
46:S2:1749:G:H1	46:S2:1787:U:H3	1.20	0.85
26:LL:63:THR:HG22	26:LL:65:ARG:H	1.41	0.85
59:SG:98:ARG:NH2	59:SG:101:ILE:O	2.09	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:Sx:38:A:H2'	75:Sx:39:A:H8	1.44	0.82
46:S2:1272:C:H42	46:S2:1513:C:H42	1.25	0.81
58:Sg:87:LEU:HB2	58:Sg:101:PHE:HB2	1.63	0.81
46:S2:159:A:H2	46:S2:468:G:N2	1.78	0.81
46:S2:1262:C:O2	53:Sd:10:HIS:NE2	2.14	0.81
1:L5:1013:C:OP1	1:L5:1015:C:N4	2.13	0.81
48:SA:163:CYS:O	48:SA:164:ASN:ND2	2.10	0.80
46:S2:1421:G:H1'	46:S2:1422:A:H4'	1.64	0.80
46:S2:1442:U:N3	46:S2:1445:U:O4	2.13	0.79
9:LC:71:ARG:HH21	80:Z:-6:UNK:CB	1.95	0.79
46:S2:225:C:HO2'	46:S2:226:A:H8	1.32	0.78
46:S2:536:G:H2'	46:S2:538:C:H1'	1.65	0.78
46:S2:516:G:H5"	46:S2:517:A:H5'	1.64	0.78
46:S2:534:A:H2'	46:S2:535:G:C8	2.18	0.77
1:L5:2656:G:N2	1:L5:3255:C:N3	2.32	0.77
40:LU:48:LYS:HG2	40:LU:53:ALA:HB2	1.65	0.77
46:S2:527:A:HO2'	62:SJ:125:HIS:HD1	1.32	0.77
1:L5:3408:G:H21	1:L5:3432:A:H8	1.33	0.76
46:S2:145:G:H2'	46:S2:146:G:C8	2.20	0.76
69:SR:24:LEU:HB2	69:SR:58:MET:HE3	1.67	0.76
72:SU:55:ARG:HG3	72:SU:87:ARG:NH2	2.01	0.76
24:Lk:5:ILE:HD11	24:Lk:43:TYR:HB3	1.67	0.76
40:LU:20:LYS:HB3	40:LU:73:THR:HG22	1.68	0.76
46:S2:57:U:H3	46:S2:88:G:H22	1.32	0.75
46:S2:435:G:H21	46:S2:474:A:H2	1.34	0.75
1:L5:858:A:H3'	1:L5:870:G:H22	1.52	0.74
46:S2:83:A:N1	46:S2:150:A:O2'	2.20	0.74
46:S2:1744:G:N2	46:S2:1792:A:H62	1.86	0.74
1:L5:497:C:H42	1:L5:665:C:H42	1.34	0.74
8:Lc:20:LEU:HD23	8:Lc:101:ASP:HB3	1.69	0.74
1:L5:3298:U:OP2	1:L5:3303:A:N6	2.21	0.73
7:LB:216:MET:HE2	7:LB:283:LYS:HD3	1.70	0.73
66:SO:57:THR:H	66:SO:60:MET:HE2	1.51	0.73
46:S2:1522:C:OP2	70:SS:136:THR:OG1	2.06	0.73
60:SH:31:GLU:HA	60:SH:37:LYS:HD2	1.71	0.73
46:S2:95:G:H1	46:S2:435:G:H22	1.36	0.72
1:L5:4399:G:H1	1:L5:4603:A:H62	1.34	0.72
46:S2:1366:G:N2	46:S2:1463:U:O4	2.22	0.72
80:Z:-17:UNK:O	80:Z:-16:UNK:C	2.37	0.72
69:SR:79:GLU:OE1	69:SR:83:ASN:ND2	2.23	0.72
46:S2:820:G:H4'	56:SE:255:ARG:HH22	1.52	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:1557:U:H3	1:L5:1579:A:H61	1.37	0.71
46:S2:889:U:H4'	46:S2:890:U:H5'	1.72	0.71
79:S6:7:A:H62	79:S6:67:U:H3	1.38	0.71
46:S2:165:G:H1'	59:SG:110:ASN:HD22	1.56	0.71
1:L5:189:G:H22	1:L5:252:G:H22	1.38	0.71
46:S2:1753:C:H4'	46:S2:1783:G:H22	1.56	0.70
72:SU:55:ARG:HG3	72:SU:87:ARG:HH21	1.54	0.70
15:LF:127:VAL:HG13	15:LF:158:VAL:HG12	1.72	0.70
46:S2:537:A:H3'	46:S2:538:C:H4'	1.72	0.70
1:L5:4323:C:O2'	1:L5:4325:A:OP2	2.08	0.70
46:S2:41:G:H22	46:S2:481:G:N2	1.89	0.70
46:S2:1753:C:H3'	46:S2:1754:C:H4'	1.74	0.70
48:SA:34:MET:HE1	48:SA:162:PRO:HB3	1.74	0.70
1:L5:1009:C:H42	1:L5:1017:A:H61	1.39	0.70
17:LG:162:ASP:HB2	17:LG:163:PRO:HD3	1.74	0.70
1:L5:4560:C:H2'	1:L5:4561:G:C8	2.26	0.70
77:SY:37:LYS:NZ	77:SY:57:VAL:O	2.25	0.69
1:L5:761:C:H5	1:L5:810:G:H1	1.39	0.69
1:L5:3374:A:H2'	1:L5:3375:A:C8	2.28	0.69
56:SE:45:ILE:HG13	56:SE:61:VAL:HG11	1.75	0.69
46:S2:482:C:H4'	46:S2:483:G:H5'	1.74	0.69
68:SQ:42:ILE:HD11	68:SQ:51:LEU:HD21	1.73	0.69
1:L5:2237:G:N2	1:L5:2238:G:O6	2.26	0.68
46:S2:1268:C:OP1	46:S2:1269:C:N4	2.27	0.68
21:LI:80:CYS:SG	21:LI:144:ASN:ND2	2.66	0.68
1:L5:1743:G:N2	1:L5:4087:C:OP1	2.23	0.68
46:S2:896:G:H2'	46:S2:897:U:H4'	1.76	0.68
46:S2:1601:G:H4'	78:SZ:43:LYS:HE2	1.75	0.68
8:Lc:26:LYS:HD2	8:Lc:98:ASP:HB3	1.75	0.68
46:S2:514:G:H3'	46:S2:515:U:H6	1.59	0.68
54:SD:62:LYS:O	54:SD:67:ARG:NH2	2.26	0.68
46:S2:1489:C:O2'	46:S2:1491:G:OP2	2.11	0.68
58:Sg:57:ARG:HD2	58:Sg:94:THR:HA	1.75	0.68
1:L5:766:G:H22	1:L5:805:C:H42	1.42	0.68
56:SE:87:MET:HE2	56:SE:123:LEU:HB2	1.76	0.68
58:Sg:24:THR:HB	58:Sg:71:ILE:HG21	1.76	0.68
46:S2:1229:A:H2'	46:S2:1230:G:C8	2.29	0.67
19:LH:51:LYS:HD2	19:LH:51:LYS:H	1.59	0.67
52:SC:92:GLU:OE1	52:SC:92:GLU:N	2.24	0.67
1:L5:508:G:H1	1:L5:661:U:H3	1.40	0.67
1:L5:1470:U:OP2	4:La:26:ARG:NH2	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:4640:G:H2'	1:L5:4641:G:C8	2.30	0.67
46:S2:1553:G:N2	53:Sd:32:ARG:O	2.28	0.66
23:LJ:96:LYS:HE2	23:LJ:163:MET:HE1	1.78	0.66
46:S2:833:G:H22	46:S2:842:G:H22	1.44	0.66
46:S2:1417:C:H42	46:S2:1425:G:H1	1.42	0.66
58:Sg:57:ARG:HG3	58:Sg:59:LEU:HD23	1.77	0.66
46:S2:1270:G:H1	46:S2:1515:G:H1	1.42	0.66
69:SR:98:VAL:HG13	69:SR:102:THR:HG23	1.77	0.66
46:S2:1673:U:OP1	68:SQ:18:THR:OG1	2.14	0.66
64:SL:48:LYS:NZ	64:SL:52:GLU:OE1	2.29	0.65
46:S2:63:U:O2'	46:S2:170:A:N3	2.27	0.65
46:S2:126:G:N7	46:S2:180:G:N2	2.45	0.65
1:L5:4553:G:H2'	1:L5:4554:G:C8	2.31	0.65
1:L5:4664:A:H2	1:L5:4681:G:H21	1.42	0.65
46:S2:54:A:OP2	46:S2:452:G:N2	2.29	0.65
54:SD:31:GLU:N	54:SD:31:GLU:OE2	2.30	0.65
1:L5:4573:G:N2	1:L5:4573:G:OP2	2.27	0.65
9:LC:56:GLU:CD	9:LC:56:GLU:H	2.05	0.65
19:LH:15:ASN:HD21	19:LH:81:ILE:HG12	1.61	0.65
1:L5:719:A:H2'	1:L5:720:C:C6	2.32	0.65
46:S2:1723:G:O6	46:S2:1813:U:O2	2.14	0.64
57:SF:42:LYS:HE2	57:SF:42:LYS:HA	1.79	0.64
1:L5:1338:A:H62	1:L5:1465:G:H1	1.44	0.64
46:S2:914:A:N6	60:SH:98:ARG:O	2.24	0.64
46:S2:435:G:O2'	46:S2:474:A:N6	2.20	0.64
1:L5:3326:G:H21	1:L5:3329:G:N2	1.96	0.64
46:S2:1745:G:O2'	46:S2:1791:A:N6	2.30	0.64
7:LB:300:LYS:HD3	7:LB:301:ASN:N	2.13	0.64
46:S2:982:A:H2'	46:S2:983:G:C8	2.32	0.64
1:L5:386:G:O2'	1:L5:411:G:O6	2.11	0.64
46:S2:168:C:OP1	59:SG:131:ARG:NH2	2.29	0.64
46:S2:530:A:N6	46:S2:558:U:O4	2.31	0.64
77:SY:42:GLU:O	77:SY:46:LYS:NZ	2.31	0.64
46:S2:353:U:O2	64:SL:71:ARG:NH1	2.30	0.64
21:LI:28:ASP:OD2	21:LI:32:ARG:NH1	2.31	0.63
46:S2:1241:A:O2'	46:S2:1242:A:OP1	2.15	0.63
46:S2:833:G:H22	46:S2:842:G:N2	1.96	0.63
52:SC:161:SER:O	52:SC:161:SER:OG	2.16	0.63
46:S2:830:C:O3'	46:S2:846:G:N2	2.31	0.63
6:Lb:93:ARG:HH11	6:Lb:93:ARG:HG2	1.63	0.63
1:L5:1170:G:OP1	35:LQ:108:ARG:NH2	2.28	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S2:477:A:H4'	46:S2:488:U:H2'	1.81	0.63
46:S2:1611:G:OP1	70:SS:121:ARG:NH1	2.31	0.63
60:SH:149:ASP:OD1	60:SH:151:SER:OG	2.17	0.63
21:LI:87:ILE:HD13	21:LI:138:ILE:HG12	1.80	0.63
44:LY:2:LYS:NZ	44:LY:7:VAL:O	2.31	0.63
55:Se:116:PHE:HE2	62:SJ:30:LYS:HD2	1.64	0.63
46:S2:1753:C:H5"	46:S2:1754:C:H1'	1.80	0.63
61:SI:62:VAL:HG11	61:SI:75:LYS:HE3	1.81	0.63
58:Sg:212:LYS:HB3	58:Sg:235:ILE:HD12	1.81	0.63
1:L5:171:U:OP2	1:L5:172:C:N4	2.32	0.62
1:L5:939:U:H3	1:L5:1050:C:H41	1.47	0.62
40:LU:75:GLU:N	40:LU:75:GLU:OE2	2.32	0.62
77:SY:102:THR:OG1	77:SY:106:GLN:NE2	2.32	0.62
1:L5:1380:C:H2'	1:L5:1381:U:C6	2.33	0.62
78:SZ:65:TYR:HA	78:SZ:111:ARG:HH21	1.63	0.62
1:L5:138:C:H2'	1:L5:139:G:H8	1.63	0.62
46:S2:47:G:H1	46:S2:479:G:H22	1.47	0.62
48:SA:14:ASP:HB2	48:SA:177:MET:HE1	1.82	0.62
46:S2:144:U:OP1	59:SG:178:ARG:NH1	2.32	0.62
79:S6:31:G:H2'	79:S6:32:C:H6	1.63	0.62
1:L5:2565:G:N1	1:L5:2568:C:OP2	2.28	0.62
46:S2:1276:G:H5'	46:S2:1277:A:H5'	1.81	0.62
57:SF:73:THR:HG22	57:SF:93:VAL:HG21	1.82	0.62
46:S2:523:A:OP1	62:SJ:146:SER:OG	2.14	0.62
54:SD:42:THR:HG22	54:SD:44:THR:H	1.65	0.62
46:S2:47:G:H22	46:S2:479:G:N2	1.97	0.61
46:S2:819:A:OP1	62:SJ:80:ARG:NH2	2.33	0.61
1:L5:119:G:N2	17:LG:105:GLU:OE1	2.32	0.61
1:L5:1296:G:O6	20:Li:4:ARG:NH1	2.30	0.61
48:SA:36:GLN:O	48:SA:53:ARG:NH1	2.33	0.61
2:L7:3:C:H2'	2:L7:4:U:C6	2.35	0.61
26:LL:58:ILE:HG12	26:LL:157:ILE:HG12	1.81	0.61
46:S2:1555:C:O2	63:SK:24:LYS:NZ	2.33	0.61
1:L5:3873:A:OP2	39:LT:2:THR:OG1	2.18	0.61
20:Li:20:ASN:HB2	26:LL:107:THR:HG22	1.81	0.61
20:Li:30:ARG:O	20:Li:32:ARG:NH1	2.34	0.61
46:S2:1274:C:O2'	46:S2:1276:G:OP1	2.18	0.61
80:Z:-13:UNK:O	80:Z:-12:UNK:CB	2.48	0.61
7:LB:220:ILE:HG12	7:LB:278:THR:HG23	1.82	0.61
28:LM:101:LYS:HB2	32:LO:200:GLY:HA3	1.83	0.61
79:S7:76:A:C3'	80:Z:5:UNK:C	2.78	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:4544:G:H2'	1:L5:4545:G:C8	2.36	0.61
46:S2:58:C:O2'	46:S2:59:U:O5'	2.19	0.61
1:L5:3269:C:H1'	1:L5:4664:A:C8	2.36	0.60
46:S2:311:C:O2'	46:S2:341:C:O4'	2.18	0.60
67:SP:48:GLY:O	67:SP:50:ARG:NH1	2.33	0.60
53:Sd:12:ARG:HB3	53:Sd:18:SER:HB3	1.83	0.60
64:SL:12:LYS:HG3	64:SL:18:GLN:HE21	1.66	0.60
1:L5:3913:U:H2'	1:L5:3914:C:C6	2.36	0.60
1:L5:1012:U:HO2'	1:L5:1015:C:H42	1.47	0.60
1:L5:1013:C:O2'	1:L5:1016:C:N4	2.32	0.60
20:Li:2:ALA:N	20:Li:5:TYR:HH	1.99	0.60
46:S2:800:U:OP2	46:S2:868:G:N2	2.32	0.60
1:L5:415:U:O2'	1:L5:416:G:OP1	2.18	0.60
15:LF:120:ILE:O	15:LF:120:ILE:HD12	2.01	0.60
63:SK:1:MET:HE2	63:SK:1:MET:HA	1.82	0.60
1:L5:4548:C:O2'	1:L5:4549:G:H2'	2.02	0.60
74:SW:28:ARG:HB3	74:SW:29:PRO:HD3	1.83	0.60
39:LT:143:THR:HG23	39:LT:145:GLY:H	1.67	0.60
40:LU:62:THR:OG1	40:LU:73:THR:OG1	2.19	0.60
47:Sa:90:GLU:OE2	47:Sa:90:GLU:N	2.29	0.60
51:Sc:9:ILE:HD12	51:Sc:59:LEU:HD22	1.84	0.60
1:L5:2499:A:H2'	1:L5:2500:A:C8	2.36	0.60
1:L5:3374:A:OP2	1:L5:3392:G:N2	2.35	0.60
46:S2:171:A:H2'	46:S2:173:A:C8	2.37	0.60
60:SH:184:ASP:OD1	60:SH:184:ASP:N	2.32	0.60
1:L5:189:G:N2	1:L5:252:G:H22	2.00	0.59
1:L5:828:C:H3'	1:L5:829:G:H21	1.66	0.59
28:LM:58:THR:HG22	28:LM:59:ASP:H	1.67	0.59
1:L5:1168:G:N7	35:LQ:104:ARG:NH2	2.49	0.59
13:LE:149:ARG:NH2	13:LE:199:GLN:O	2.35	0.59
46:S2:1537:G:H2'	46:S2:1538:A:C8	2.37	0.59
1:L5:3606:A:H62	1:L5:3715:C:H42	1.50	0.59
1:L5:3904:A:H5"	23:LJ:108:GLY:HA3	1.83	0.59
46:S2:1093:G:H4'	74:SW:2:VAL:HG13	1.85	0.59
39:LT:111:GLU:O	39:LT:115:LYS:HG2	2.02	0.59
58:Sg:20:GLN:NE2	58:Sg:68:ASP:HB2	2.17	0.59
1:L5:753:G:O2'	1:L5:754:A:OP1	2.19	0.59
17:LG:187:LYS:HG2	17:LG:198:THR:HB	1.85	0.59
46:S2:800:U:H2'	46:S2:801:U:C6	2.37	0.59
59:SG:188:LYS:O	59:SG:192:ILE:HD12	2.03	0.59
76:SX:24:ASP:OD1	76:SX:24:ASP:N	2.31	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:2513:G:H21	1:L5:2518:A:H62	1.49	0.59
1:L5:4161:C:H5"	41:LV:43:LYS:HE3	1.84	0.59
38:LS:15:ARG:HB3	38:LS:27:LEU:HD23	1.84	0.59
46:S2:473:C:O2'	46:S2:475:G:OP2	2.20	0.59
76:SX:77:ASN:O	76:SX:77:ASN:ND2	2.33	0.59
1:L5:2221:C:HO2'	1:L5:2222:C:H6	1.49	0.59
68:SQ:21:ALA:HB2	68:SQ:72:VAL:HG23	1.85	0.59
32:LO:3:GLU:HG3	32:LO:31:ARG:HH22	1.68	0.59
46:S2:66:G:N2	46:S2:68:A:O4'	2.35	0.59
46:S2:1728:G:O2'	46:S2:1729:U:H5'	2.02	0.59
79:S7:29:G:H22	79:S7:41:C:H5	1.51	0.59
1:L5:189:G:H1	1:L5:252:G:H1	1.50	0.59
1:L5:4615:A:H2'	1:L5:4616:A:H8	1.68	0.59
46:S2:965:A:H2'	46:S2:966:U:H6	1.67	0.59
68:SQ:45:ARG:HG3	68:SQ:48:GLN:HG3	1.84	0.59
46:S2:118:C:O2'	46:S2:119:U:OP1	2.20	0.58
69:SR:69:ILE:HD11	69:SR:74:GLN:HB3	1.85	0.58
79:S7:76:A:O3'	80:Z:5:UNK:CA	2.50	0.58
1:L5:499:G:H1	1:L5:663:C:H5	1.51	0.58
11:LD:41:LYS:HE3	39:LT:93:ILE:HD13	1.85	0.58
19:LH:140:GLN:HG3	19:LH:141:LYS:H	1.69	0.58
46:S2:799:G:N2	60:SH:107:LYS:O	2.36	0.58
46:S2:943:G:H2'	46:S2:944:U:C6	2.38	0.58
1:L5:932:C:H5"	1:L5:1049:C:H2'	1.84	0.58
55:Se:110:MET:SD	55:Se:114:ARG:NH2	2.77	0.58
46:S2:1269:C:H1'	46:S2:1270:G:H5"	1.84	0.58
1:L5:3374:A:H2'	1:L5:3375:A:H8	1.66	0.58
46:S2:71:G:H2'	46:S2:72:C:H4'	1.85	0.58
46:S2:483:G:OP2	46:S2:484:C:H5"	2.02	0.58
46:S2:558:U:O2'	46:S2:559:G:H5'	2.04	0.58
1:L5:2328:G:OP2	45:LZ:67:LYS:NZ	2.36	0.58
46:S2:1777:G:H5'	46:S2:1778:G:N7	2.19	0.58
48:SA:197:VAL:HG23	48:SA:201:LEU:HD13	1.86	0.58
1:L5:1012:U:HO2'	1:L5:1015:C:N4	2.01	0.58
1:L5:1745:A:H2'	1:L5:1746:A:C8	2.39	0.58
46:S2:67:C:OP2	46:S2:68:A:N6	2.35	0.58
46:S2:1276:G:O4'	46:S2:1507:A:N6	2.36	0.58
46:S2:525:U:H3	46:S2:595:A:H2	1.51	0.58
46:S2:538:C:H42	46:S2:547:G:H1	1.52	0.58
9:LC:303:ARG:O	35:LQ:38:ARG:NH2	2.32	0.57
26:LL:80:GLU:HG3	26:LL:110:LEU:HD12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:SY:121:ALA:HB1	77:SY:125:VAL:HG23	1.86	0.57
46:S2:1260:A:N6	46:S2:1520:U:OP1	2.33	0.57
50:SB:189:ILE:HB	50:SB:190:PRO:HD3	1.85	0.57
1:L5:2314:G:H1	1:L5:2324:G:H22	1.52	0.57
1:L5:4190:C:H2'	1:L5:4191:G:C8	2.39	0.57
15:LF:184:ILE:HB	15:LF:189:ILE:HD12	1.86	0.57
46:S2:172:U:P	46:S2:316:C:H5'	2.44	0.57
46:S2:1270:G:N2	46:S2:1515:G:H22	2.02	0.57
46:S2:1571:G:N7	71:ST:97:LYS:NZ	2.52	0.57
1:L5:4615:A:H2'	1:L5:4616:A:C8	2.39	0.57
5:LA:28:ARG:HG3	5:LA:123:ARG:HH11	1.69	0.57
8:Lc:34:THR:HG23	8:Lc:95:ALA:HB2	1.84	0.57
46:S2:875:G:H2'	46:S2:876:A:H8	1.70	0.57
46:S2:1229:A:H2'	46:S2:1230:G:H8	1.70	0.57
58:Sg:257:LYS:HA	58:Sg:257:LYS:HE3	1.85	0.57
26:LL:47:ALA:HB3	26:LL:48:PRO:HD3	1.86	0.57
31:Lo:59:LYS:HE2	31:Lo:59:LYS:HA	1.87	0.57
1:L5:1123:C:H2'	1:L5:1124:C:C6	2.39	0.57
1:L5:4233:U:O2'	7:LB:182:GLU:OE2	2.19	0.57
37:LR:105:LEU:HD13	37:LR:135:LYS:HE3	1.85	0.57
46:S2:1297:U:N3	67:SP:59:ARG:HB2	2.19	0.57
70:SS:102:GLY:O	70:SS:106:LYS:HG2	2.04	0.57
1:L5:3420:A:HO2'	1:L5:3421:U:H6	1.51	0.57
46:S2:480:C:H3'	46:S2:481:G:H8	1.70	0.57
46:S2:483:G:H4'	76:SX:76:LYS:HD3	1.87	0.57
46:S2:1309:U:H2'	46:S2:1310:C:C6	2.39	0.57
58:Sg:156:PHE:HE1	58:Sg:179:LEU:HD21	1.68	0.57
66:SO:34:PHE:HB3	66:SO:41:PHE:HB2	1.86	0.57
1:L5:3480:G:OP2	1:L5:3480:G:N2	2.22	0.57
46:S2:47:G:H22	46:S2:479:G:H22	1.53	0.57
46:S2:92:A:H62	46:S2:445:G:H8	1.52	0.57
1:L5:477:G:H2'	1:L5:478:G:H8	1.70	0.57
2:L7:34:C:O2	11:LD:203:ASN:ND2	2.37	0.57
46:S2:1476:G:O2'	46:S2:1477:A:OP1	2.22	0.57
61:SI:11:ARG:NH1	61:SI:15:GLY:O	2.35	0.57
1:L5:1374:A:H2'	1:L5:1375:G:C8	2.40	0.57
1:L5:2239:C:H42	1:L5:2254:C:H42	1.53	0.57
46:S2:146:G:H2'	46:S2:147:A:C8	2.40	0.57
46:S2:152:U:O4'	59:SG:132:ARG:NH2	2.38	0.57
46:S2:95:G:O6	46:S2:435:G:N1	2.30	0.56
46:S2:554:U:H2'	46:S2:555:A:H2'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:2205:G:H2'	1:L5:2206:A:C8	2.40	0.56
1:L5:3716:G:O2'	1:L5:3717:U:H5'	2.05	0.56
1:L5:3892:A:H2'	1:L5:3893:G:C8	2.39	0.56
46:S2:1316:U:H2'	46:S2:1317:C:C6	2.40	0.56
56:SE:35:PRO:HD2	56:SE:83:PRO:HG2	1.86	0.56
58:Sg:220:ASP:HB2	58:Sg:224:GLY:H	1.69	0.56
1:L5:4171:A:H5"	1:L5:4173:G:H4'	1.87	0.56
3:L8:75:G:OP2	44:LY:74:TYR:OH	2.23	0.56
46:S2:1589:A:H2'	46:S2:1590:A:C8	2.41	0.56
59:SG:135:PRO:HG2	59:SG:141:ILE:HG22	1.87	0.56
65:SN:87:ASP:OD1	65:SN:87:ASP:N	2.38	0.56
79:S6:41:C:H2'	79:S6:42:A:H8	1.70	0.56
46:S2:161:U:H5"	77:SY:116:LYS:HD3	1.87	0.56
1:L5:4552:C:H2'	1:L5:4553:G:H4'	1.86	0.56
46:S2:62:G:H2'	46:S2:62:G:N3	2.21	0.56
46:S2:1620:A:OP1	67:SP:47:ARG:NE	2.38	0.56
46:S2:1781:G:H3'	46:S2:1782:A:H4'	1.87	0.56
59:SG:55:GLY:N	59:SG:63:MET:HG3	2.21	0.56
77:SY:41:ARG:NH1	77:SY:57:VAL:HG22	2.20	0.56
1:L5:1859:G:H5"	32:LO:128:ARG:HH21	1.71	0.56
23:LJ:158:SER:OG	23:LJ:161:GLU:OE1	2.24	0.56
46:S2:1537:G:H2'	46:S2:1538:A:H8	1.69	0.56
46:S2:1719:G:C2	46:S2:1816:A:N6	2.73	0.56
63:SK:3:MET:HE1	63:SK:48:ALA:HB2	1.87	0.56
1:L5:461:G:H2'	1:L5:462:A:C8	2.40	0.56
46:S2:558:U:H2'	46:S2:559:G:C8	2.40	0.56
46:S2:1268:C:HO2'	46:S2:1270:G:H8	1.54	0.56
61:SI:106:SER:HB3	61:SI:171:LEU:HG	1.87	0.56
69:SR:58:MET:HA	69:SR:61:ILE:HG22	1.87	0.56
1:L5:830:C:H4'	1:L5:831:G:O5'	2.05	0.56
1:L5:1005:C:O2'	1:L5:1006:G:O5'	2.24	0.56
1:L5:4395:A:O2'	1:L5:4397:G:OP1	2.22	0.56
1:L5:4594:U:HO2'	14:Lf:2:SER:N	2.02	0.56
32:LO:166:MET:HE2	32:LO:166:MET:HA	1.88	0.56
46:S2:1719:G:N2	46:S2:1816:A:H62	2.04	0.56
7:LB:80:GLU:OE1	7:LB:323:TYR:OH	2.18	0.56
17:LG:77:PRO:HG2	17:LG:80:ILE:HD12	1.87	0.56
1:L5:667:G:O2'	1:L5:668:G:H8	1.89	0.56
1:L5:2460:G:O2'	1:L5:2462:U:O4'	2.23	0.56
1:L5:3530:G:H2'	1:L5:3531:G:C8	2.40	0.56
3:L8:1:C:H3'	3:L8:2:G:H21	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Lf:33:VAL:HG13	14:Lf:38:GLU:HB2	1.88	0.56
27:Lm:77:ILE:HG22	27:Lm:78:ILE:H	1.70	0.56
30:LN:45:PRO:O	30:LN:49:ARG:HG3	2.06	0.56
46:S2:1270:G:H2'	46:S2:1270:G:N3	2.20	0.56
2:L7:3:C:H2'	2:L7:4:U:H6	1.69	0.55
46:S2:594:C:O3'	46:S2:595:A:H4'	2.06	0.55
78:SZ:102:LYS:HA	78:SZ:107:VAL:HG12	1.88	0.55
80:Z:-11:UNK:O	80:Z:-10:UNK:CB	2.53	0.55
46:S2:311:C:H2'	46:S2:312:C:C6	2.42	0.55
46:S2:820:G:H1	46:S2:830:C:H5	1.54	0.55
72:SU:21:ARG:HG3	72:SU:90:ASP:HB3	1.87	0.55
1:L5:494:G:H1	1:L5:668:G:H1	1.55	0.55
1:L5:1265:G:H5'	1:L5:1266:A:OP1	2.07	0.55
1:L5:2406:G:N2	33:Lp:59:SER:O	2.40	0.55
32:LO:113:ASP:OD1	32:LO:113:ASP:N	2.33	0.55
46:S2:66:G:H3'	46:S2:68:A:H62	1.71	0.55
59:SG:102:VAL:HG21	59:SG:109:LEU:HD21	1.88	0.55
1:L5:831:G:N2	1:L5:836:C:H2'	2.22	0.55
1:L5:1332:A:OP1	4:La:27:LYS:NZ	2.40	0.55
45:LZ:35:ASP:N	45:LZ:35:ASP:OD1	2.40	0.55
46:S2:176:U:H3	46:S2:314:A:H62	1.54	0.55
77:SY:120:THR:O	77:SY:124:ASN:HB2	2.07	0.55
1:L5:1132:U:H2'	1:L5:1133:C:C6	2.42	0.55
1:L5:2024:U:OP1	36:Lr:37:SER:OG	2.21	0.55
44:LY:37:GLU:H	44:LY:37:GLU:CD	2.14	0.55
46:S2:902:G:H2'	46:S2:903:G:C5	2.41	0.55
46:S2:1744:G:H21	46:S2:1792:A:N6	1.96	0.55
1:L5:511:G:O2'	1:L5:513:U:OP2	2.20	0.55
38:LS:99:ASP:OD1	38:LS:100:LEU:N	2.39	0.55
46:S2:1378:U:H3'	48:SA:102:ARG:HH12	1.71	0.55
59:SG:196:LYS:O	59:SG:199:THR:HG22	2.05	0.55
1:L5:3913:U:H2'	1:L5:3914:C:H6	1.71	0.55
9:LC:144:ILE:HG13	9:LC:144:ILE:O	2.05	0.55
46:S2:50:A:OP2	46:S2:473:C:N4	2.40	0.55
46:S2:532:A:N1	46:S2:554:U:N3	2.45	0.55
57:SF:17:ILE:HG22	57:SF:17:ILE:O	2.06	0.55
72:SU:32:LEU:HD22	72:SU:87:ARG:HG3	1.89	0.55
1:L5:299:A:H2'	1:L5:300:G:H8	1.72	0.55
19:LH:117:PHE:O	19:LH:120:GLU:HG3	2.07	0.55
46:S2:493:C:H5	46:S2:507:G:H4'	1.72	0.55
46:S2:1014:U:OP1	46:S2:1130:G:O2'	2.23	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S2:1280:C:H2'	46:S2:1281:G:C8	2.42	0.55
60:SH:61:ILE:HG22	60:SH:93:VAL:HB	1.89	0.55
1:L5:3927:A:H2'	1:L5:3928:G:C8	2.42	0.55
12:Le:91:CYS:O	12:Le:93:LYS:N	2.40	0.55
46:S2:66:G:P	46:S2:82:G:H22	2.30	0.55
46:S2:368:U:H4'	46:S2:372:A:C8	2.42	0.55
67:SP:81:ARG:NH1	67:SP:97:TYR:O	2.38	0.55
1:L5:3826:G:H2'	1:L5:3827:U:C6	2.42	0.55
1:L5:4199:A:N7	5:LA:215:ASN:ND2	2.55	0.55
46:S2:158:A:H5'	46:S2:465:A:C6	2.42	0.55
77:SY:103:SER:OG	77:SY:106:GLN:OE1	2.20	0.55
1:L5:140:G:H2'	1:L5:141:C:C6	2.42	0.54
1:L5:477:G:H2'	1:L5:478:G:C8	2.43	0.54
46:S2:482:C:C4'	46:S2:483:G:H5'	2.37	0.54
46:S2:564:G:H2'	46:S2:565:A:C8	2.41	0.54
67:SP:108:LYS:HD2	67:SP:109:PRO:HD2	1.89	0.54
69:SR:34:VAL:O	69:SR:38:ILE:HG12	2.07	0.54
14:Lf:106:TYR:HB2	14:Lf:107:PRO:HD3	1.89	0.54
46:S2:480:C:H3'	46:S2:481:G:C8	2.42	0.54
46:S2:1389:A:H61	54:SD:161:GLY:HA3	1.70	0.54
1:L5:416:G:OP1	1:L5:2066:G:N2	2.40	0.54
3:L8:8:U:H2'	3:L8:9:A:C8	2.41	0.54
46:S2:92:A:OP1	56:SE:3:ARG:NH2	2.39	0.54
60:SH:133:LEU:HD11	60:SH:176:VAL:HG13	1.89	0.54
1:L5:424:U:H2'	1:L5:425:A:H8	1.72	0.54
1:L5:4190:C:H2'	1:L5:4191:G:H8	1.71	0.54
46:S2:929:G:H2'	46:S2:930:G:C8	2.43	0.54
60:SH:62:ILE:HD12	60:SH:94:PHE:HE1	1.72	0.54
69:SR:127:ASN:OD1	69:SR:127:ASN:N	2.41	0.54
71:ST:104:LEU:HD22	71:ST:121:ARG:HG3	1.88	0.54
46:S2:456:A:H2'	46:S2:457:C:H6	1.72	0.54
67:SP:86:LEU:H	67:SP:89:MET:HE2	1.73	0.54
1:L5:1009:C:H42	1:L5:1017:A:N6	2.05	0.54
23:LJ:173:ILE:HD11	23:LJ:175:LEU:HD12	1.89	0.54
46:S2:294:C:O2'	46:S2:295:U:H3'	2.07	0.54
46:S2:833:G:H1	46:S2:842:G:H1	1.55	0.54
46:S2:1422:A:H2'	46:S2:1423:G:H8	1.72	0.54
54:SD:65:ARG:NH1	54:SD:68:GLU:OE1	2.40	0.54
77:SY:41:ARG:HH21	77:SY:94:HIS:CE1	2.26	0.54
78:SZ:79:ILE:HG23	78:SZ:83:LEU:HD23	1.89	0.54
1:L5:3393:A:H2'	1:L5:3394:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:LX:87:MET:HE1	43:LX:155:ILE:HD12	1.88	0.54
46:S2:863:A:C8	74:SW:107:SER:HA	2.42	0.54
1:L5:93:G:H2'	1:L5:94:A:C8	2.42	0.54
1:L5:189:G:H22	1:L5:252:G:H1	1.55	0.54
1:L5:1148:A:H2'	1:L5:1149:A:C8	2.43	0.54
1:L5:1377:A:H61	46:S2:1029:A:H2	1.54	0.54
2:L7:53:U:OP1	23:LJ:10:ASN:ND2	2.37	0.54
13:LE:100:VAL:HG12	13:LE:115:VAL:HB	1.90	0.54
45:LZ:76:ASN:OD1	45:LZ:77:TYR:N	2.41	0.54
46:S2:107:A:H2'	46:S2:108:G:C8	2.43	0.54
3:L8:8:U:H2'	3:L8:9:A:H8	1.73	0.54
1:L5:2655:G:N2	1:L5:3256:A:N3	2.57	0.53
48:SA:198:MET:SD	69:SR:89:SER:OG	2.61	0.53
53:Sd:26:ASN:ND2	53:Sd:39:CYS:SG	2.81	0.53
54:SD:39:VAL:HG12	54:SD:39:VAL:O	2.08	0.53
58:Sg:54:ILE:HG13	58:Sg:55:PRO:HD2	1.89	0.53
68:SQ:66:VAL:HG12	68:SQ:67:ASP:H	1.72	0.53
17:LG:160:ASP:OD1	17:LG:160:ASP:N	2.40	0.53
46:S2:589:G:OP2	46:S2:589:G:N2	2.34	0.53
46:S2:1420:C:H2'	46:S2:1421:G:C5	2.44	0.53
11:LD:226:TYR:O	11:LD:228:LYS:N	2.42	0.53
15:LF:247:THR:HG22	15:LF:253:GLY:HA3	1.90	0.53
46:S2:1601:G:H5'	78:SZ:43:LYS:HG2	1.90	0.53
57:SF:95:HIS:CG	78:SZ:106:GLN:HE21	2.26	0.53
60:SH:73:GLN:NE2	60:SH:132:ASP:OD1	2.41	0.53
63:SK:3:MET:HE2	63:SK:8:ARG:HA	1.91	0.53
71:ST:40:ALA:HB3	71:ST:43:LYS:HG2	1.91	0.53
77:SY:61:ARG:HG2	77:SY:61:ARG:HH11	1.72	0.53
1:L5:1122:A:H2'	1:L5:1123:C:C6	2.43	0.53
1:L5:3528:A:H2'	1:L5:3529:A:C8	2.44	0.53
49:Sb:67:THR:OG1	49:Sb:70:LYS:O	2.26	0.53
77:SY:78:SER:OG	77:SY:80:ASP:OD1	2.23	0.53
1:L5:162:A:H2'	1:L5:163:A:C8	2.43	0.53
39:LT:124:THR:OG1	39:LT:125:TRP:N	2.42	0.53
46:S2:221:U:H1'	61:SI:184:ARG:HD2	1.90	0.53
46:S2:1244:U:OP2	46:S2:1519:C:O2'	2.21	0.53
60:SH:50:GLU:HG3	60:SH:60:ILE:HG22	1.90	0.53
75:Sx:33:U:H2'	75:Sx:34:C:C6	2.43	0.53
1:L5:468:C:N3	13:LE:113:ARG:NH2	2.54	0.53
1:L5:1523:C:H2'	1:L5:1524:G:C8	2.44	0.53
5:LA:180:LEU:HD21	33:Lp:22:LEU:HB3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:LH:91:LYS:HG2	19:LH:145:ILE:HD13	1.90	0.53
23:LJ:174:ILE:HG22	23:LJ:176:PRO:HD2	1.90	0.53
46:S2:527:A:O2'	62:SJ:125:HIS:ND1	2.25	0.53
60:SH:78:ARG:H	60:SH:78:ARG:NE	2.06	0.53
1:L5:1031:G:H2'	1:L5:1033:G:C8	2.44	0.53
1:L5:2499:A:H2'	1:L5:2500:A:H8	1.74	0.53
46:S2:1159:G:O3'	74:SW:76:SER:OG	2.21	0.53
67:SP:108:LYS:HD2	67:SP:109:PRO:CD	2.38	0.53
79:S7:65:C:O2'	79:S7:66:C:H5'	2.09	0.53
1:L5:1154:U:H2'	1:L5:1155:C:C6	2.43	0.53
1:L5:4556:A:H4'	7:LB:95:THR:HG22	1.91	0.53
18:Lh:80:PRO:HD2	18:Lh:83:LEU:HD12	1.91	0.53
55:Se:116:PHE:CE2	62:SJ:30:LYS:HD2	2.44	0.53
63:SK:14:LEU:HD11	63:SK:35:LEU:HD11	1.91	0.53
1:L5:1476:C:H2'	1:L5:1477:C:C6	2.44	0.53
1:L5:2277:C:O2	1:L5:2394:G:N2	2.41	0.53
40:LU:18:VAL:HG22	40:LU:20:LYS:HE3	1.90	0.53
46:S2:994:G:N7	47:Sa:15:ARG:NH1	2.57	0.53
46:S2:1145:A:H5'	46:S2:1356:C:H41	1.74	0.53
46:S2:1736:A:H2	46:S2:1800:G:H21	1.57	0.53
59:SG:176:ILE:HD11	59:SG:179:LEU:HD22	1.91	0.53
62:SJ:83:ARG:HE	62:SJ:150:ARG:HD3	1.74	0.53
46:S2:526:A:C2	46:S2:591:A:C6	2.96	0.53
46:S2:1145:A:H2'	46:S2:1146:A:C8	2.44	0.53
46:S2:1320:U:H3'	46:S2:1321:G:O4'	2.08	0.53
67:SP:18:ARG:HH11	70:SS:88:LYS:HG2	1.73	0.53
75:Sx:33:U:H2'	75:Sx:34:C:H6	1.74	0.53
60:SH:172:THR:O	60:SH:176:VAL:HG12	2.09	0.52
69:SR:6:THR:HG22	69:SR:8:THR:H	1.73	0.52
1:L5:1218:C:H2'	1:L5:1219:C:C6	2.44	0.52
1:L5:2656:G:H1	1:L5:3254:G:H1	1.56	0.52
17:LG:58:PRO:HD2	17:LG:61:ILE:HD12	1.91	0.52
1:L5:1736:G:H2'	1:L5:1737:A:C8	2.45	0.52
7:LB:299:ILE:HG23	7:LB:313:SER:HB3	1.90	0.52
11:LD:116:ASP:OD1	11:LD:116:ASP:N	2.38	0.52
34:LP:122:ALA:HB3	34:LP:143:PRO:HB2	1.90	0.52
46:S2:39:A:OP1	62:SJ:5:ARG:NH1	2.42	0.52
77:SY:76:TYR:OH	77:SY:85:ASN:O	2.27	0.52
1:L5:385:A:OP2	44:LY:89:LYS:NZ	2.40	0.52
1:L5:1710:A:H2'	1:L5:1711:A:C8	2.44	0.52
1:L5:3313:A:H2'	1:L5:3314:U:H6	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:4247:U:H2'	1:L5:4248:G:H8	1.73	0.52
1:L5:4425:U:H3	1:L5:4509:G:H1	1.55	0.52
67:SP:72:LYS:HG2	67:SP:93:MET:HE2	1.91	0.52
77:SY:102:THR:HG23	77:SY:107:ARG:HH11	1.73	0.52
1:L5:4154:U:OP1	7:LB:2:SER:N	2.42	0.52
46:S2:1355:G:N2	46:S2:1358:A:OP2	2.34	0.52
53:Sd:33:LYS:O	53:Sd:36:LEU:HD12	2.09	0.52
54:SD:41:VAL:HG12	54:SD:47:GLU:H	1.73	0.52
1:L5:1605:A:H5"	1:L5:1606:G:H5'	1.92	0.52
14:Lf:106:TYR:O	14:Lf:108:SER:N	2.43	0.52
43:LX:84:GLU:CD	43:LX:84:GLU:H	2.17	0.52
43:LX:111:GLN:O	43:LX:115:LYS:HE2	2.10	0.52
46:S2:126:G:H8	59:SG:195:LYS:HD3	1.73	0.52
46:S2:1275:G:H21	63:SK:27:VAL:HG12	1.75	0.52
46:S2:1720:A:N6	46:S2:1815:G:N2	2.21	0.52
48:SA:76:VAL:HG12	48:SA:123:VAL:HB	1.92	0.52
58:Sg:88:ARG:NH2	58:Sg:97:THR:OG1	2.43	0.52
1:L5:4550:G:H2'	1:L5:4551:C:C6	2.45	0.52
37:LR:105:LEU:HD23	37:LR:138:LEU:HD23	1.92	0.52
46:S2:72:C:O2'	46:S2:74:G:N2	2.34	0.52
46:S2:126:G:OP1	59:SG:198:ARG:NH1	2.42	0.52
79:S7:66:C:HO2'	79:S7:67:U:H6	1.57	0.52
1:L5:189:G:H22	1:L5:252:G:N2	2.06	0.52
1:L5:432:A:C2	1:L5:3524:A:H4'	2.44	0.52
1:L5:761:C:H2'	1:L5:762:U:H6	1.75	0.52
1:L5:4559:G:O2'	1:L5:4560:C:O4'	2.23	0.52
46:S2:16:G:H2'	46:S2:17:C:C6	2.45	0.52
46:S2:96:C:O2'	46:S2:97:U:O5'	2.25	0.52
46:S2:925:G:H5'	65:SN:4:MET:HE3	1.91	0.52
69:SR:83:ASN:OD1	69:SR:84:TYR:N	2.42	0.52
77:SY:28:LEU:O	77:SY:29:HIS:ND1	2.43	0.52
1:L5:76:A:OP2	26:LL:74:ARG:NH1	2.43	0.52
1:L5:270:C:H2'	1:L5:271:U:O2	2.10	0.52
1:L5:747:G:O2'	1:L5:748:G:H8	1.93	0.52
1:L5:936:C:N4	1:L5:1054:G:O6	2.43	0.52
1:L5:1254:U:O4	1:L5:1909:C:N3	2.43	0.52
58:Sg:82:SER:OG	58:Sg:84:ASP:OD1	2.27	0.52
69:SR:60:ARG:HG3	69:SR:66:VAL:HG21	1.92	0.52
1:L5:2394:G:H2'	1:L5:2395:A:C8	2.45	0.52
11:LD:128:GLY:O	11:LD:164:LYS:NZ	2.43	0.52
40:LU:105:ASN:OD1	40:LU:109:SER:OG	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:1562:G:H3'	1:L5:1563:G:H8	1.74	0.51
1:L5:2253:G:H2'	1:L5:2254:C:C6	2.45	0.51
1:L5:3413:A:N1	1:L5:3425:U:H5	2.08	0.51
4:La:110:LYS:HG3	4:La:128:PHE:HB2	1.92	0.51
46:S2:456:A:O2'	46:S2:1736:A:H8	1.91	0.51
79:S6:18:G:O2'	79:S6:57:G:N2	2.43	0.51
1:L5:4352:U:H1'	1:L5:4353:A:H5"	1.91	0.51
7:LB:358:ARG:HG3	7:LB:358:ARG:HH11	1.76	0.51
13:LE:103:THR:OG1	13:LE:104:VAL:N	2.43	0.51
34:LP:93:HIS:N	34:LP:93:HIS:ND1	2.58	0.51
46:S2:526:A:N1	46:S2:591:A:C5	2.79	0.51
46:S2:820:G:H4'	56:SE:255:ARG:NH2	2.23	0.51
46:S2:1280:C:H2'	46:S2:1281:G:H8	1.75	0.51
76:SX:68:LYS:HB3	76:SX:91:LEU:HD22	1.92	0.51
79:S7:62:C:H2'	79:S7:63:A:C8	2.46	0.51
1:L5:927:C:O2'	1:L5:928:C:OP1	2.28	0.51
52:SC:266:TYR:O	52:SC:270:THR:OG1	2.22	0.51
54:SD:27:ARG:HG3	63:SK:61:GLN:HE21	1.75	0.51
58:Sg:171:ASP:O	58:Sg:172:LYS:HG2	2.10	0.51
58:Sg:191:HIS:HE2	58:Sg:209:SER:HG	1.56	0.51
62:SJ:88:ASP:OD1	62:SJ:89:GLU:N	2.44	0.51
71:ST:42:HIS:CE1	71:ST:43:LYS:HE3	2.46	0.51
79:S6:53:G:O2'	79:S6:54:A:OP1	2.27	0.51
1:L5:1380:C:H2'	1:L5:1381:U:H6	1.74	0.51
1:L5:4585:G:O2'	1:L5:4587:A:N7	2.40	0.51
46:S2:872:U:H5'	65:SN:76:LYS:HE3	1.93	0.51
46:S2:1297:U:C4	67:SP:59:ARG:HB2	2.45	0.51
61:SI:76:THR:HG22	61:SI:108:PRO:HG2	1.92	0.51
17:LG:165:GLU:OE2	30:LN:26:ARG:NH2	2.28	0.51
46:S2:641:A:H2'	46:S2:642:A:C8	2.46	0.51
60:SH:10:LYS:HD2	60:SH:45:ILE:HG12	1.92	0.51
72:SU:90:ASP:OD1	72:SU:90:ASP:N	2.41	0.51
1:L5:753:G:H2'	1:L5:754:A:C8	2.45	0.51
11:LD:119:TYR:OH	11:LD:139:PRO:O	2.26	0.51
46:S2:1268:C:O2'	46:S2:1270:G:H8	1.93	0.51
46:S2:1784:C:H4'	46:S2:1785:G:O5'	2.10	0.51
52:SC:85:SER:OG	73:SV:25:ALA:O	2.29	0.51
1:L5:955:C:O2'	1:L5:1028:G:N1	2.41	0.51
1:L5:3984:G:H3'	1:L5:3985:C:H5'	1.92	0.51
63:SK:3:MET:SD	63:SK:8:ARG:HD3	2.51	0.51
78:SZ:99:LEU:HD22	78:SZ:100:VAL:H	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:1418:G:H2'	1:L5:1419:G:C8	2.46	0.51
1:L5:3389:A:H2'	1:L5:3390:A:C8	2.46	0.51
1:L5:3892:A:H2'	1:L5:3893:G:H8	1.76	0.51
34:LP:94:MET:HG2	34:LP:148:MET:SD	2.51	0.51
46:S2:456:A:H2'	46:S2:457:C:C6	2.46	0.51
46:S2:515:U:H2'	46:S2:516:G:C8	2.46	0.51
46:S2:1514:C:H2'	46:S2:1515:G:C8	2.46	0.51
49:Sb:59:CYS:SG	49:Sb:60:SER:N	2.84	0.51
71:ST:64:LEU:HD21	71:ST:121:ARG:HB2	1.93	0.51
1:L5:1010:U:H4'	11:LD:279:ARG:HH11	1.76	0.51
1:L5:3326:G:H21	1:L5:3329:G:H21	1.57	0.51
1:L5:3927:A:H2'	1:L5:3928:G:H8	1.76	0.51
11:LD:152:ARG:O	11:LD:157:ASN:ND2	2.44	0.51
43:LX:153:ILE:HG22	43:LX:155:ILE:HG23	1.93	0.51
61:SI:165:GLN:HB2	61:SI:171:LEU:HD23	1.92	0.51
79:S7:10:G:H21	79:S7:45:G:H3'	1.75	0.51
79:S7:16:G:H2'	79:S7:20:A:H61	1.75	0.51
1:L5:490:C:H2'	1:L5:491:C:C6	2.46	0.51
1:L5:1192:G:H5"	1:L5:1193:C:OP2	2.11	0.51
1:L5:2327:A:H62	1:L5:2515:U:H5	1.58	0.51
1:L5:4651:U:H2'	1:L5:4652:C:C6	2.45	0.51
7:LB:302:ASN:HB2	7:LB:313:SER:HA	1.93	0.51
11:LD:41:LYS:HB2	39:LT:68:THR:O	2.10	0.51
14:Lf:21:GLN:NE2	14:Lf:23:GLU:OE2	2.43	0.51
48:SA:19:LEU:HD11	69:SR:106:LEU:HD11	1.93	0.51
48:SA:85:ARG:NH2	69:SR:81:ARG:O	2.41	0.51
50:SB:169:MET:O	50:SB:173:THR:HG22	2.11	0.51
50:SB:192:SER:HA	50:SB:195:LYS:HG3	1.91	0.51
58:Sg:124:SER:OG	58:Sg:126:ASP:OD1	2.16	0.51
1:L5:1011:G:N2	11:LD:283:LYS:O	2.44	0.50
2:L7:117:G:OP1	11:LD:253:TYR:OH	2.22	0.50
46:S2:28:U:H2'	46:S2:29:G:H8	1.76	0.50
1:L5:316:A:N1	1:L5:4013:U:H5	2.09	0.50
1:L5:424:U:H2'	1:L5:425:A:C8	2.46	0.50
1:L5:4111:C:H2'	1:L5:4112:U:C6	2.46	0.50
2:L7:23:A:N3	2:L7:118:C:O2'	2.43	0.50
46:S2:1115:U:O2'	46:S2:1116:U:O5'	2.24	0.50
72:SU:24:LEU:HB2	72:SU:87:ARG:HB2	1.93	0.50
1:L5:1012:U:O2'	1:L5:1013:C:OP1	2.27	0.50
1:L5:1222:C:O2'	1:L5:1226:G:N3	2.43	0.50
3:L8:141:C:H2'	3:L8:142:U:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:LY:10:ASP:HB3	44:LY:13:LYS:HB2	1.93	0.50
46:S2:796:A:O2'	46:S2:797:G:O4'	2.22	0.50
56:SE:36:HIS:CE1	56:SE:85:GLY:HA3	2.46	0.50
63:SK:16:PHE:HD2	63:SK:79:LEU:HD23	1.76	0.50
1:L5:1011:G:O2'	1:L5:1012:U:H5'	2.12	0.50
1:L5:3904:A:H4'	1:L5:3905:C:OP1	2.10	0.50
27:Lm:83:ARG:O	27:Lm:87:GLN:HG3	2.11	0.50
32:LO:121:PRO:HA	32:LO:124:LEU:HD12	1.93	0.50
46:S2:492:C:H1'	46:S2:511:G:N2	2.26	0.50
72:SU:54:VAL:HG12	72:SU:56:MET:HE3	1.94	0.50
1:L5:678:G:H2'	1:L5:679:G:C8	2.47	0.50
46:S2:47:G:N2	46:S2:479:G:H22	2.10	0.50
46:S2:1410:A:H2'	46:S2:1411:C:O4'	2.11	0.50
1:L5:937:C:H2'	1:L5:938:C:H5'	1.93	0.50
2:L7:110:G:H2'	2:L7:111:C:C6	2.47	0.50
46:S2:80:G:H2'	46:S2:81:U:C6	2.47	0.50
46:S2:516:G:H5"	46:S2:517:A:H3'	1.93	0.50
46:S2:629:A:O2'	46:S2:630:A:OP1	2.28	0.50
62:SJ:103:GLU:O	62:SJ:107:GLU:HG2	2.11	0.50
73:SV:43:THR:HB	73:SV:45:ARG:HG3	1.92	0.50
1:L5:3802:C:H2'	1:L5:3803:G:C8	2.47	0.50
46:S2:315:U:H2'	46:S2:316:C:C6	2.47	0.50
56:SE:15:PRO:HD2	56:SE:18:TRP:CZ2	2.47	0.50
1:L5:823:C:O2'	1:L5:824:C:OP1	2.28	0.50
1:L5:831:G:H8	1:L5:831:G:OP1	1.94	0.50
1:L5:4422:G:OP1	32:LO:168:TYR:OH	2.29	0.50
13:LE:107:ASP:O	13:LE:108:LYS:HG2	2.11	0.50
15:LF:170:LYS:O	15:LF:174:GLU:HG2	2.11	0.50
16:Lg:41:ALA:O	16:Lg:52:ARG:NH1	2.37	0.50
41:LV:99:GLU:HG3	42:LW:21:TYR:OH	2.12	0.50
46:S2:1296:A:H2	46:S2:1306:C:H42	1.60	0.50
46:S2:1729:U:O2'	46:S2:1730:U:O4'	2.29	0.50
72:SU:46:LYS:HE3	72:SU:97:ILE:HD11	1.93	0.50
5:LA:118:GLU:OE2	5:LA:156:LYS:NZ	2.45	0.50
1:L5:884:C:H2'	1:L5:885:C:C6	2.47	0.49
1:L5:1858:G:H4'	1:L5:1859:G:OP2	2.12	0.49
6:Lb:89:PRO:HD2	6:Lb:92:LYS:HB2	1.94	0.49
46:S2:50:A:H5"	46:S2:51:U:OP2	2.12	0.49
46:S2:538:C:O2	46:S2:538:C:H2'	2.12	0.49
52:SC:166:ARG:HG2	52:SC:181:PRO:HG3	1.94	0.49
71:ST:108:GLU:OE2	71:ST:121:ARG:NH1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:S6:28:U:H2'	79:S6:29:G:C8	2.46	0.49
1:L5:1561:G:H2'	1:L5:1562:G:O4'	2.12	0.49
6:Lb:54:LEU:O	6:Lb:58:GLN:HG3	2.12	0.49
26:LL:87:HIS:HB3	26:LL:90:VAL:HG23	1.93	0.49
46:S2:1315:U:H5"	46:S2:1316:U:H5	1.77	0.49
1:L5:1147:C:H2'	1:L5:1148:A:H8	1.75	0.49
55:Se:86:VAL:O	55:Se:90:THR:HG23	2.13	0.49
58:Sg:292:SER:O	58:Sg:292:SER:OG	2.27	0.49
76:SX:107:ARG:HG3	76:SX:112:VAL:HG22	1.93	0.49
1:L5:4054:G:H2'	1:L5:4055:C:H6	1.78	0.49
2:L7:52:C:O2'	2:L7:53:U:OP1	2.29	0.49
30:LN:174:LEU:HD23	30:LN:183:THR:HG21	1.94	0.49
46:S2:81:U:H2'	46:S2:82:G:O4'	2.12	0.49
48:SA:174:MET:HA	48:SA:177:MET:HB2	1.95	0.49
68:SQ:19:ALA:HB2	68:SQ:75:GLY:HA3	1.94	0.49
77:SY:39:GLU:O	77:SY:42:GLU:HG2	2.12	0.49
1:L5:886:U:O4	1:L5:887:C:N4	2.46	0.49
1:L5:3595:G:N2	1:L5:3824:C:OP2	2.46	0.49
2:L7:4:U:H2'	2:L7:5:A:H8	1.77	0.49
46:S2:862:A:O2'	46:S2:863:A:OP2	2.26	0.49
46:S2:1458:U:H2'	46:S2:1459:G:H8	1.78	0.49
48:SA:40:LYS:O	48:SA:48:ILE:HG12	2.12	0.49
48:SA:84:GLN:HG2	48:SA:100:ALA:HB1	1.94	0.49
56:SE:57:THR:HB	56:SE:60:GLU:HG3	1.94	0.49
56:SE:125:LYS:O	56:SE:142:HIS:N	2.45	0.49
63:SK:19:GLY:HA2	63:SK:71:LEU:HD12	1.94	0.49
78:SZ:56:ASP:OD1	78:SZ:57:LYS:N	2.46	0.49
1:L5:940:C:H2'	1:L5:941:C:H6	1.77	0.49
1:L5:951:A:H2	1:L5:1034:G:H22	1.60	0.49
1:L5:2313:G:H2'	1:L5:2314:G:C8	2.48	0.49
18:Lh:95:LEU:HG	18:Lh:99:GLU:HB3	1.95	0.49
46:S2:539:U:O2	46:S2:547:G:N2	2.46	0.49
56:SE:175:PHE:HE2	56:SE:222:LEU:HD11	1.78	0.49
24:Lk:40:ARG:NH1	24:Lk:41:TYR:OH	2.46	0.49
46:S2:1210:A:O2'	47:Sa:85:ARG:NH1	2.45	0.49
79:S7:63:A:H2'	79:S7:64:U:C6	2.48	0.49
1:L5:304:A:OP1	20:Li:76:ARG:NH1	2.45	0.49
1:L5:1497:U:OP1	4:La:44:ASN:ND2	2.45	0.49
1:L5:3379:G:H2'	1:L5:3380:A:H8	1.77	0.49
1:L5:3580:A:H2'	1:L5:3581:C:C6	2.48	0.49
1:L5:4393:G:H1'	1:L5:4396:G:H5"	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:LE:53:ARG:O	13:LE:72:ARG:NH1	2.45	0.49
46:S2:1668:U:H2'	46:S2:1669:U:C6	2.48	0.49
55:Se:105:ARG:HD3	62:SJ:127:ARG:HG2	1.94	0.49
1:L5:267:G:H2'	1:L5:268:G:H8	1.77	0.49
1:L5:940:C:H2'	1:L5:941:C:C6	2.48	0.49
1:L5:4152:G:C2	1:L5:4182:G:H1'	2.48	0.49
1:L5:4652:C:H2'	1:L5:4653:G:O4'	2.13	0.49
8:Lc:47:ILE:HD12	8:Lc:94:LEU:HD22	1.95	0.49
46:S2:220:U:C4	46:S2:221:U:C5	3.01	0.49
46:S2:988:A:OP1	47:Sa:32:LYS:NZ	2.46	0.49
77:SY:47:MET:SD	77:SY:48:TYR:HB2	2.53	0.49
1:L5:139:G:H2'	1:L5:140:G:O4'	2.13	0.49
46:S2:946:U:H2'	46:S2:947:U:C6	2.48	0.49
54:SD:32:ASP:N	54:SD:32:ASP:OD1	2.45	0.49
67:SP:108:LYS:NZ	67:SP:109:PRO:HG2	2.28	0.49
1:L5:468:C:H2'	1:L5:469:A:H8	1.77	0.48
5:LA:226:ARG:HG3	5:LA:228:ASP:H	1.78	0.48
10:Ld:32:ARG:HB3	10:Ld:48:GLU:HG3	1.95	0.48
46:S2:1299:G:H4'	67:SP:78:THR:HA	1.95	0.48
73:SV:2:GLN:HE21	73:SV:8:PHE:HE1	1.60	0.48
1:L5:925:G:H2'	1:L5:926:G:H5'	1.94	0.48
1:L5:1026:C:H2'	1:L5:1027:G:H8	1.77	0.48
1:L5:2168:C:H2'	1:L5:2169:A:H8	1.78	0.48
1:L5:4073:U:H5"	1:L5:4074:C:H5	1.78	0.48
11:LD:206:ASP:N	11:LD:206:ASP:OD1	2.43	0.48
46:S2:501:A:H3'	46:S2:502:C:H6	1.78	0.48
50:SB:125:VAL:HG22	50:SB:172:MET:HE3	1.95	0.48
72:SU:38:ASP:OD1	72:SU:41:ARG:NH2	2.26	0.48
72:SU:46:LYS:HB2	72:SU:46:LYS:HE2	1.64	0.48
7:LB:300:LYS:C	7:LB:302:ASN:H	2.20	0.48
38:LS:69:GLU:OE1	38:LS:101:THR:HA	2.12	0.48
46:S2:145:G:H2'	46:S2:146:G:H8	1.74	0.48
46:S2:225:C:O2'	46:S2:226:A:H8	1.91	0.48
64:SL:104:LYS:O	76:SX:11:ARG:NH2	2.36	0.48
65:SN:115:LEU:O	65:SN:119:GLU:HG3	2.14	0.48
66:SO:103:ASN:HB3	66:SO:142:ARG:HD3	1.96	0.48
9:LC:150:LEU:HB3	9:LC:151:PRO:HD3	1.95	0.48
35:LQ:122:THR:OG1	35:LQ:125:GLN:OE1	2.28	0.48
46:S2:97:U:H4'	46:S2:98:C:OP2	2.13	0.48
46:S2:833:G:N2	46:S2:842:G:H22	2.11	0.48
46:S2:893:U:O2'	46:S2:894:U:O5'	2.30	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:1258:G:H1	1:L5:1904:C:H42	1.60	0.48
1:L5:2356:G:H2'	1:L5:2357:C:C6	2.49	0.48
1:L5:4024:G:O2'	1:L5:4025:U:OP2	2.27	0.48
7:LB:206:PRO:HG2	7:LB:209:GLN:HG3	1.96	0.48
28:LM:104:MET:HG2	28:LM:108:ASP:HB2	1.94	0.48
46:S2:86:C:O2	46:S2:86:C:H2'	2.11	0.48
46:S2:111:A:O2'	46:S2:112:U:H5'	2.14	0.48
46:S2:599:G:O2'	46:S2:600:A:OP1	2.30	0.48
46:S2:1476:G:HO2'	46:S2:1477:A:P	2.35	0.48
64:SL:59:LYS:HG2	64:SL:134:LEU:HD22	1.94	0.48
1:L5:3568:C:H2'	1:L5:3569:U:H6	1.79	0.48
7:LB:297:LYS:HE3	7:LB:297:LYS:HB3	1.73	0.48
43:LX:148:ASP:OD1	43:LX:148:ASP:N	2.46	0.48
46:S2:1302:A:H2'	46:S2:1303:G:H4'	1.95	0.48
46:S2:1448:G:H2'	46:S2:1449:A:C8	2.49	0.48
46:S2:1736:A:H3'	46:S2:1737:G:H8	1.79	0.48
54:SD:38:GLU:OE2	54:SD:39:VAL:N	2.47	0.48
77:SY:78:SER:OG	77:SY:79:LEU:N	2.46	0.48
1:L5:2:G:H2'	1:L5:3:C:C6	2.49	0.48
1:L5:138:C:H2'	1:L5:139:G:C8	2.45	0.48
1:L5:1005:C:O2'	1:L5:1006:G:N3	2.41	0.48
1:L5:2091:C:OP2	9:LC:195:LYS:NZ	2.47	0.48
19:LH:15:ASN:OD1	19:LH:15:ASN:N	2.44	0.48
46:S2:514:G:H5"	46:S2:515:U:H5	1.79	0.48
46:S2:1407:G:H22	46:S2:1440:A:H2	1.61	0.48
59:SG:147:LEU:HD21	59:SG:156:TYR:CZ	2.48	0.48
9:LC:134:PRO:O	9:LC:138:MET:HG2	2.13	0.48
11:LD:83:LEU:N	11:LD:84:PRO:HD2	2.28	0.48
46:S2:91:A:N1	59:SG:88:ARG:HD3	2.29	0.48
46:S2:514:G:H2'	46:S2:514:G:N3	2.29	0.48
46:S2:1680:A:H2'	57:SF:60:ARG:HD2	1.96	0.48
58:Sg:183:LYS:HG3	58:Sg:184:LEU:H	1.77	0.48
68:SQ:38:PRO:HB2	68:SQ:40:GLU:HG3	1.96	0.48
1:L5:1008:A:H3'	1:L5:1009:C:H5"	1.95	0.48
1:L5:1589:A:H2'	1:L5:1592:C:C5	2.48	0.48
23:LJ:36:ALA:O	23:LJ:39:VAL:HG22	2.14	0.48
46:S2:493:C:C5	46:S2:507:G:H4'	2.48	0.48
46:S2:1228:G:C2	46:S2:1229:A:C8	3.02	0.48
46:S2:1323:G:OP2	46:S2:1323:G:N2	2.38	0.48
58:Sg:11:LEU:HB2	58:Sg:307:VAL:HB	1.96	0.48
58:Sg:288:SER:O	58:Sg:289:LEU:HD23	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:761:C:H2'	1:L5:762:U:C6	2.49	0.48
32:LO:194:GLU:HA	32:LO:194:GLU:OE2	2.14	0.48
38:LS:147:ASP:HB3	38:LS:150:ILE:HB	1.95	0.48
46:S2:12:U:H2'	46:S2:13:C:C6	2.49	0.48
46:S2:849:U:H2'	46:S2:850:A:H8	1.79	0.48
51:Sc:49:PRO:HG2	57:SF:144:LEU:HD23	1.96	0.48
1:L5:2345:A:H2'	1:L5:2346:U:H6	1.77	0.47
1:L5:2598:A:O2'	1:L5:4284:G:H4'	2.12	0.47
1:L5:3745:G:H2'	1:L5:3746:G:C8	2.49	0.47
30:LN:189:ARG:HH21	30:LN:193:ARG:HD3	1.79	0.47
46:S2:41:G:H1	46:S2:481:G:H1	1.62	0.47
46:S2:994:G:OP1	46:S2:1132:G:N2	2.41	0.47
46:S2:1276:G:H4'	46:S2:1277:A:C8	2.49	0.47
70:SS:15:VAL:HB	70:SS:20:ILE:HD13	1.96	0.47
1:L5:1562:G:H22	1:L5:1576:U:H3	1.62	0.47
1:L5:2656:G:H3'	1:L5:2657:G:N2	2.29	0.47
46:S2:953:G:H2'	46:S2:954:C:C6	2.49	0.47
46:S2:1276:G:OP2	46:S2:1509:A:N6	2.48	0.47
46:S2:1567:G:N7	71:ST:101:ARG:NH2	2.55	0.47
46:S2:1737:G:H2'	46:S2:1738:G:H8	1.78	0.47
47:Sa:90:GLU:H	47:Sa:90:GLU:CD	2.17	0.47
58:Sg:227:LEU:HD23	58:Sg:227:LEU:HA	1.76	0.47
59:SG:21:GLU:HA	59:SG:24:LEU:HD12	1.97	0.47
66:SO:97:LEU:HD11	66:SO:112:ALA:HB1	1.96	0.47
1:L5:662:C:H2'	1:L5:663:C:O2	2.14	0.47
1:L5:943:A:H2'	1:L5:944:C:C6	2.49	0.47
1:L5:1050:C:H2'	1:L5:1051:G:C8	2.49	0.47
1:L5:1173:A:O2'	1:L5:1175:G:O6	2.19	0.47
1:L5:1219:C:H2'	1:L5:1220:C:C6	2.50	0.47
1:L5:1225:G:N3	1:L5:1304:G:O2'	2.47	0.47
1:L5:1255:C:N3	1:L5:1256:C:N4	2.62	0.47
1:L5:3518:A:H2'	1:L5:3519:A:C8	2.49	0.47
27:Lm:77:ILE:HG22	27:Lm:78:ILE:HG13	1.95	0.47
46:S2:34:U:O2'	46:S2:35:C:OP1	2.32	0.47
58:Sg:32:LEU:HD21	58:Sg:71:ILE:HD12	1.95	0.47
68:SQ:12:VAL:HG21	68:SQ:91:ALA:HA	1.96	0.47
1:L5:747:G:O2'	1:L5:748:G:O5'	2.28	0.47
1:L5:1542:G:H2'	1:L5:1543:C:C6	2.49	0.47
1:L5:1585:U:H2'	1:L5:1586:C:O2	2.15	0.47
39:LT:103:ASP:OD1	39:LT:104:SER:N	2.47	0.47
54:SD:23:GLU:HG2	63:SK:64:TRP:CD1	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:Sg:106:LYS:HB3	58:Sg:125:ARG:HB3	1.96	0.47
63:SK:31:LYS:HD2	63:SK:39:ASN:HA	1.95	0.47
1:L5:2235:C:C4	1:L5:2236:G:H1'	2.49	0.47
1:L5:2296:C:H2'	1:L5:2297:C:C6	2.50	0.47
1:L5:3309:A:H2'	1:L5:3310:A:C8	2.48	0.47
3:L8:92:U:H2'	3:L8:93:C:O4'	2.14	0.47
46:S2:341:C:H2'	46:S2:342:C:O4'	2.14	0.47
46:S2:1477:A:H4'	46:S2:1478:U:H5"	1.97	0.47
54:SD:85:GLU:OE1	54:SD:85:GLU:N	2.47	0.47
62:SJ:46:VAL:HG13	62:SJ:102:ILE:HD11	1.96	0.47
75:Sx:38:A:H2'	75:Sx:39:A:C8	2.35	0.47
1:L5:416:G:O2'	3:L8:16:G:N2	2.32	0.47
1:L5:811:U:H2'	1:L5:812:G:O4'	2.14	0.47
1:L5:4618:C:H2'	1:L5:4619:A:H8	1.79	0.47
46:S2:381:G:P	61:SI:56:ARG:HH22	2.37	0.47
46:S2:455:U:H2'	46:S2:456:A:C8	2.50	0.47
46:S2:455:U:H2'	46:S2:456:A:H8	1.79	0.47
46:S2:1737:G:H2'	46:S2:1738:G:C8	2.49	0.47
46:S2:1799:C:H2'	46:S2:1800:G:O4'	2.14	0.47
58:Sg:191:HIS:CD2	58:Sg:195:LEU:HD21	2.49	0.47
65:SN:39:LYS:NZ	65:SN:39:LYS:HB3	2.30	0.47
1:L5:2168:C:H2'	1:L5:2169:A:C8	2.50	0.47
1:L5:3518:A:H2'	1:L5:3519:A:H8	1.80	0.47
1:L5:3567:C:H2'	1:L5:3568:C:C6	2.49	0.47
1:L5:3587:U:H3	1:L5:3833:G:H1	1.60	0.47
1:L5:4254:U:H2'	1:L5:4255:A:H8	1.80	0.47
2:L7:4:U:H2'	2:L7:5:A:C8	2.50	0.47
11:LD:208:MET:HB3	11:LD:233:PRO:HG3	1.97	0.47
32:LO:105:LEU:HD22	32:LO:109:PRO:HG2	1.96	0.47
46:S2:120:U:H3	56:SE:34:GLY:HA2	1.79	0.47
46:S2:448:A:H4'	56:SE:3:ARG:HG2	1.96	0.47
46:S2:1266:A:N3	46:S2:1266:A:H2'	2.29	0.47
46:S2:1277:A:C4	46:S2:1324:U:H1'	2.50	0.47
46:S2:1753:C:H4'	46:S2:1783:G:N2	2.28	0.47
52:SC:106:VAL:HG22	52:SC:128:VAL:HG22	1.97	0.47
59:SG:21:GLU:OE1	59:SG:21:GLU:N	2.47	0.47
78:SZ:55:TYR:O	78:SZ:55:TYR:HD1	1.97	0.47
79:S7:15:A:H2'	79:S7:16:G:O4'	2.14	0.47
1:L5:829:G:C2'	1:L5:830:C:H5'	2.45	0.47
1:L5:1745:A:H2'	1:L5:1746:A:H8	1.79	0.47
1:L5:2498:A:H2'	1:L5:2499:A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:LC:317:ASN:HD22	9:LC:320:LYS:HD3	1.79	0.47
13:LE:138:LYS:HD3	13:LE:138:LYS:N	2.30	0.47
46:S2:315:U:H2'	46:S2:316:C:C5	2.50	0.47
46:S2:944:U:O2'	66:SO:135:ILE:O	2.33	0.47
46:S2:1279:A:N6	46:S2:1321:G:H22	2.13	0.47
54:SD:127:MET:HE3	54:SD:127:MET:HB3	1.81	0.47
67:SP:21:ASP:OD1	67:SP:22:LEU:N	2.45	0.47
74:SW:76:SER:HB3	74:SW:77:PRO:HD3	1.96	0.47
1:L5:468:C:H2'	1:L5:469:A:C8	2.50	0.47
1:L5:3313:A:H2'	1:L5:3314:U:C6	2.50	0.47
1:L5:3904:A:O2'	1:L5:3905:C:O2	2.24	0.47
1:L5:4526:G:OP2	28:LM:120:ASN:ND2	2.43	0.47
18:Lh:8:ASP:O	18:Lh:12:LYS:NZ	2.44	0.47
21:LI:182:GLU:O	21:LI:185:VAL:HG12	2.15	0.47
23:LJ:38:LYS:HE3	23:LJ:38:LYS:HB3	1.71	0.47
46:S2:172:U:O4'	46:S2:315:U:O2'	2.33	0.47
46:S2:844:C:OP1	56:SE:240:ARG:NH1	2.48	0.47
48:SA:5:LEU:O	48:SA:9:GLN:NE2	2.33	0.47
58:Sg:92:LEU:HD23	58:Sg:93:THR:H	1.80	0.47
1:L5:174:C:H2'	1:L5:175:C:C6	2.50	0.47
1:L5:1476:C:H2'	1:L5:1477:C:H6	1.79	0.47
21:LI:190:LEU:HD23	21:LI:199:TYR:HA	1.97	0.47
40:LU:101:ARG:O	40:LU:112:LEU:HA	2.15	0.47
48:SA:163:CYS:C	48:SA:164:ASN:HD22	2.16	0.47
1:L5:324:U:H2'	1:L5:325:C:C6	2.50	0.46
1:L5:4612:C:H2'	1:L5:4613:U:C6	2.50	0.46
9:LC:163:LYS:HB2	9:LC:166:GLU:HG3	1.97	0.46
46:S2:1099:C:H2'	46:S2:1100:G:C8	2.49	0.46
46:S2:1319:G:H2'	46:S2:1320:U:C6	2.50	0.46
66:SO:27:VAL:H	66:SO:91:THR:HG22	1.77	0.46
1:L5:132:G:H3'	1:L5:133:C:H4'	1.97	0.46
1:L5:3567:C:H2'	1:L5:3568:C:H6	1.79	0.46
1:L5:3996:U:O2'	31:Lo:31:ASP:OD2	2.31	0.46
1:L5:4427:C:H5	1:L5:4428:C:H5	1.63	0.46
23:LJ:12:MET:HE2	23:LJ:12:MET:HA	1.98	0.46
41:LV:30:ASP:N	41:LV:30:ASP:OD1	2.47	0.46
46:S2:58:C:N4	46:S2:62:G:O6	2.47	0.46
46:S2:126:G:C8	59:SG:195:LYS:HB3	2.50	0.46
70:SS:111:LEU:HA	70:SS:111:LEU:HD13	1.72	0.46
1:L5:1010:U:H3	1:L5:1013:C:HO2'	1.61	0.46
1:L5:4247:U:H2'	1:L5:4248:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:LT:107:LYS:HE3	39:LT:107:LYS:HB3	1.78	0.46
46:S2:219:A:C5	46:S2:220:U:C4	3.03	0.46
46:S2:619:C:H41	76:SX:67:ARG:HH22	1.63	0.46
46:S2:1398:U:C2	46:S2:1443:U:H5"	2.50	0.46
48:SA:158:ASP:N	48:SA:158:ASP:OD1	2.47	0.46
57:SF:47:LYS:NZ	68:SQ:116:ASP:OD1	2.41	0.46
1:L5:297:G:OP1	30:LN:179:LYS:HD3	2.14	0.46
1:L5:299:A:H2'	1:L5:300:G:C8	2.50	0.46
1:L5:738:G:OP2	15:LF:98:ARG:NE	2.46	0.46
1:L5:4676:G:H1'	1:L5:4677:C:C6	2.51	0.46
46:S2:126:G:C8	59:SG:195:LYS:HD3	2.49	0.46
46:S2:833:G:H1	46:S2:842:G:H22	1.63	0.46
46:S2:858:U:H2'	46:S2:859:A:C8	2.50	0.46
46:S2:1417:C:N3	46:S2:1425:G:N2	2.55	0.46
52:SC:77:SER:OG	52:SC:79:GLU:HG2	2.16	0.46
52:SC:257:LYS:O	73:SV:16:LYS:NZ	2.35	0.46
60:SH:127:ASP:OD1	60:SH:142:LYS:NZ	2.49	0.46
72:SU:40:ILE:HD12	72:SU:53:PRO:HD3	1.98	0.46
76:SX:128:VAL:HG23	76:SX:129:SER:H	1.80	0.46
77:SY:110:ARG:HD3	77:SY:127:ALA:HB3	1.97	0.46
1:L5:460:G:H2'	1:L5:461:G:C8	2.50	0.46
1:L5:2316:G:H21	1:L5:2323:G:H1	1.64	0.46
11:LD:103:LEU:O	11:LD:107:ARG:HG2	2.15	0.46
46:S2:1278:C:C4	46:S2:1279:A:C8	3.04	0.46
58:Sg:77:PHE:HB3	58:Sg:89:LEU:HD11	1.97	0.46
74:SW:80:ASP:OD1	74:SW:80:ASP:N	2.39	0.46
1:L5:1562:G:H3'	1:L5:1563:G:C8	2.51	0.46
18:Lh:122:LYS:O	26:LL:123:LYS:HD2	2.16	0.46
42:LW:25:ASP:OD1	42:LW:27:LYS:HG3	2.15	0.46
46:S2:488:U:H4'	46:S2:490:A:H8	1.81	0.46
46:S2:829:G:N2	46:S2:831:A:O2'	2.48	0.46
46:S2:1140:C:H2'	46:S2:1141:G:O4'	2.16	0.46
46:S2:1204:G:H2'	46:S2:1205:A:C8	2.51	0.46
46:S2:1297:U:O4'	67:SP:59:ARG:HD2	2.15	0.46
46:S2:1458:U:H2'	46:S2:1459:G:C8	2.51	0.46
54:SD:38:GLU:OE2	54:SD:40:ARG:N	2.49	0.46
57:SF:42:LYS:HG3	57:SF:43:GLU:OE1	2.15	0.46
1:L5:1902:A:H2'	1:L5:1903:A:C8	2.51	0.46
1:L5:4418:A:N1	19:LH:60:TRP:HB2	2.31	0.46
8:Lc:20:LEU:HD23	8:Lc:101:ASP:CB	2.41	0.46
11:LD:231:VAL:O	11:LD:231:VAL:HG12	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:LE:53:ARG:HH11	13:LE:73:LYS:HG2	1.80	0.46
18:Lh:103:LYS:NZ	18:Lh:111:GLU:OE1	2.49	0.46
30:LN:200:LEU:HD22	30:LN:204:ARG:HD3	1.96	0.46
41:LV:97:TYR:OH	42:LW:37:GLU:OE2	2.16	0.46
46:S2:28:U:H2'	46:S2:29:G:C8	2.50	0.46
46:S2:53:C:H2'	46:S2:54:A:H8	1.79	0.46
46:S2:795:A:H2'	46:S2:796:A:C8	2.51	0.46
51:Sc:47:LYS:NZ	57:SF:126:THR:OG1	2.31	0.46
53:Sd:3:HIS:O	53:Sd:6:LEU:N	2.49	0.46
59:SG:120:ASP:HB3	59:SG:125:THR:HG21	1.98	0.46
60:SH:43:LEU:HB3	60:SH:72:PHE:CE2	2.51	0.46
77:SY:107:ARG:HH11	77:SY:107:ARG:HB2	1.80	0.46
1:L5:1003:G:H3'	1:L5:1004:G:H8	1.80	0.46
7:LB:86:VAL:HG12	7:LB:201:LEU:HD12	1.97	0.46
7:LB:288:GLY:HA3	7:LB:330:PHE:CE1	2.50	0.46
12:Le:12:ILE:HD12	12:Le:66:THR:HG23	1.98	0.46
19:LH:140:GLN:HB3	19:LH:143:GLU:HG2	1.98	0.46
43:LX:114:LYS:HE3	43:LX:114:LYS:HB3	1.70	0.46
46:S2:1713:A:H2'	46:S2:1714:C:C6	2.50	0.46
56:SE:44:LEU:HD23	56:SE:44:LEU:HA	1.84	0.46
1:L5:1355:U:H3	1:L5:1432:G:H1	1.62	0.46
40:LU:66:SER:O	40:LU:66:SER:OG	2.30	0.46
46:S2:61:A:N6	46:S2:503:C:OP2	2.49	0.46
46:S2:96:C:H42	46:S2:434:A:H61	1.64	0.46
46:S2:526:A:C2	46:S2:591:A:N6	2.84	0.46
46:S2:832:G:H2'	46:S2:833:G:H8	1.81	0.46
57:SF:100:ILE:HG23	57:SF:178:ILE:HD11	1.97	0.46
1:L5:2091:C:C5	9:LC:191:ALA:HB2	2.50	0.46
1:L5:4549:G:H1'	1:L5:4550:G:H1'	1.98	0.46
7:LB:329:ASP:OD1	7:LB:329:ASP:N	2.47	0.46
19:LH:59:LYS:HA	19:LH:59:LYS:HD2	1.65	0.46
23:LJ:56:THR:HG22	23:LJ:64:ARG:H	1.80	0.46
76:SX:61:GLN:HB3	76:SX:62:PRO:HD3	1.97	0.46
1:L5:1509:U:H2'	1:L5:1510:C:C6	2.51	0.45
1:L5:3841:U:H2'	1:L5:3842:U:C6	2.51	0.45
1:L5:4112:U:H2'	1:L5:4113:U:C6	2.50	0.45
1:L5:4171:A:OP2	7:LB:258:HIS:HB2	2.16	0.45
40:LU:49:VAL:HG12	40:LU:50:ASN:H	1.81	0.45
46:S2:102:A:OP1	61:SI:19:LYS:HD3	2.16	0.45
46:S2:369:U:H2'	46:S2:370:C:C5	2.51	0.45
46:S2:508:G:N7	56:SE:27:PHE:HE2	2.13	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SE:72:ILE:HB	56:SE:77:ARG:HG3	1.98	0.45
58:Sg:44:LYS:HB3	58:Sg:54:ILE:HG22	1.99	0.45
59:SG:20:ASP:HB3	59:SG:22:ARG:HG2	1.98	0.45
61:SI:87:ASN:HB3	61:SI:90:LEU:HG	1.97	0.45
79:S6:43:G:H2'	79:S6:44:A:C8	2.51	0.45
1:L5:828:C:H3'	1:L5:829:G:N2	2.30	0.45
1:L5:1182:U:O2'	1:L5:1184:C:OP2	2.33	0.45
1:L5:3308:A:H5'	5:LA:199:VAL:HG12	1.98	0.45
1:L5:4290:G:H2'	1:L5:4291:U:C6	2.52	0.45
7:LB:300:LYS:C	7:LB:302:ASN:N	2.74	0.45
10:Ld:64:ILE:HG23	10:Ld:68:LEU:HD23	1.97	0.45
15:LF:81:LYS:HE2	15:LF:81:LYS:HB3	1.86	0.45
46:S2:1554:C:H41	54:SD:76:ARG:HH22	1.63	0.45
46:S2:1582:C:H5"	46:S2:1583:C:H5	1.81	0.45
58:Sg:172:LYS:HE2	58:Sg:172:LYS:HB3	1.84	0.45
62:SJ:95:ASP:OD1	62:SJ:95:ASP:N	2.49	0.45
80:Z:-18:UNK:O	80:Z:-17:UNK:CB	2.64	0.45
1:L5:1431:G:H1'	1:L5:2270:A:N6	2.31	0.45
1:L5:2311:U:H3	1:L5:2518:A:H2	1.63	0.45
1:L5:3368:A:H1'	46:S2:971:G:C4	2.52	0.45
3:L8:6:C:H2'	3:L8:7:U:H6	1.82	0.45
7:LB:107:ALA:HB2	7:LB:201:LEU:HG	1.98	0.45
9:LC:294:LYS:HE2	9:LC:294:LYS:HB3	1.60	0.45
13:LE:138:LYS:HD3	13:LE:138:LYS:H	1.82	0.45
15:LF:204:PHE:CD1	15:LF:222:ARG:HD2	2.51	0.45
19:LH:151:ILE:O	19:LH:155:SER:OG	2.29	0.45
46:S2:619:C:H41	76:SX:67:ARG:NH2	2.13	0.45
46:S2:869:G:C5	60:SH:115:LYS:HG3	2.51	0.45
46:S2:923:A:OP1	74:SW:28:ARG:NH2	2.47	0.45
48:SA:34:MET:HE2	48:SA:149:ASN:O	2.17	0.45
54:SD:135:GLU:HG3	54:SD:153:VAL:HG22	1.98	0.45
60:SH:60:ILE:HD11	60:SH:92:VAL:HG22	1.97	0.45
1:L5:676:C:H5'	9:LC:6:PRO:HB3	1.97	0.45
1:L5:1009:C:N4	1:L5:1017:A:H61	2.11	0.45
1:L5:2342:C:OP1	1:L5:2522:C:O2'	2.33	0.45
44:LY:54:GLU:HB2	44:LY:108:ARG:HB3	1.98	0.45
45:LZ:29:ILE:HG13	45:LZ:40:HIS:NE2	2.31	0.45
46:S2:539:U:H2'	46:S2:540:C:O4'	2.15	0.45
46:S2:675:C:H2'	46:S2:676:U:C6	2.51	0.45
46:S2:1546:A:H2'	46:S2:1547:G:C8	2.51	0.45
58:Sg:74:ASP:OD1	58:Sg:74:ASP:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:1010:U:N3	1:L5:1013:C:O2'	2.49	0.45
1:L5:1157:A:OP1	30:LN:204:ARG:HD2	2.17	0.45
1:L5:1377:A:P	1:L5:1377:A:H8	2.39	0.45
24:Lk:19:ASP:OD1	24:Lk:19:ASP:N	2.48	0.45
33:Lp:38:THR:HA	33:Lp:45:THR:HA	1.98	0.45
37:LR:154:LEU:HD12	37:LR:154:LEU:HA	1.83	0.45
41:LV:48:ARG:HG2	41:LV:48:ARG:HH11	1.80	0.45
46:S2:1270:G:H22	46:S2:1515:G:N2	2.15	0.45
46:S2:1407:G:H2'	46:S2:1408:U:C6	2.52	0.45
46:S2:1532:A:H2'	46:S2:1533:C:C6	2.51	0.45
51:Sc:16:LYS:H	51:Sc:16:LYS:HD3	1.82	0.45
66:SO:75:MET:HE3	66:SO:75:MET:HB2	1.77	0.45
1:L5:754:A:H2'	1:L5:755:A:C8	2.52	0.45
1:L5:2224:U:H4'	1:L5:2225:U:H5'	1.98	0.45
1:L5:2406:G:C6	16:Lg:50:PRO:HG3	2.51	0.45
1:L5:3712:C:H2'	1:L5:3713:A:C5	2.51	0.45
3:L8:128:C:H2'	3:L8:129:C:C6	2.51	0.45
7:LB:135:LYS:O	7:LB:138:GLN:NE2	2.49	0.45
7:LB:300:LYS:O	7:LB:302:ASN:N	2.49	0.45
21:LI:188:LYS:HB3	21:LI:212:LEU:HD11	1.98	0.45
46:S2:126:G:C2	46:S2:181:A:H4'	2.51	0.45
46:S2:149:A:C8	46:S2:170:A:C8	3.05	0.45
46:S2:1209:A:OP2	46:S2:1836:A:O2'	2.31	0.45
46:S2:1719:G:O4'	46:S2:1817:G:N2	2.49	0.45
52:SC:211:LYS:HE3	52:SC:211:LYS:HB2	1.64	0.45
57:SF:204:ARG:HD2	57:SF:204:ARG:HA	1.73	0.45
78:SZ:58:LEU:O	78:SZ:62:VAL:HG12	2.16	0.45
1:L5:679:G:H2'	1:L5:680:C:C6	2.51	0.45
1:L5:1147:C:H2'	1:L5:1148:A:C8	2.51	0.45
1:L5:1447:G:H5'	1:L5:1448:A:OP1	2.17	0.45
1:L5:2301:G:N2	3:L8:126:C:OP1	2.37	0.45
21:LI:38:ARG:HD3	21:LI:83:ASP:HB3	1.98	0.45
40:LU:65:ARG:HD2	40:LU:67:LYS:H	1.80	0.45
46:S2:320:C:N4	59:SG:186:GLN:OE1	2.50	0.45
46:S2:964:A:H2'	46:S2:965:A:C8	2.51	0.45
46:S2:997:A:H2'	46:S2:998:A:C8	2.52	0.45
46:S2:1165:G:O2'	46:S2:1166:G:H5'	2.16	0.45
46:S2:1379:A:H4'	46:S2:1380:A:O5'	2.17	0.45
48:SA:41:ARG:HD3	48:SA:47:TYR:CZ	2.52	0.45
58:Sg:212:LYS:HE3	58:Sg:212:LYS:HB2	1.75	0.45
60:SH:158:LEU:HD23	60:SH:158:LEU:HA	1.85	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:ST:113:VAL:HG12	71:ST:123:LEU:HD12	1.99	0.45
79:S6:4:C:H2'	79:S6:5:A:H8	1.82	0.45
1:L5:2497:A:H2'	1:L5:2498:A:C8	2.51	0.45
1:L5:2569:A:H2'	1:L5:2570:G:C8	2.52	0.45
1:L5:3577:U:H2'	1:L5:3578:U:C6	2.52	0.45
1:L5:3603:G:H1	1:L5:3718:U:H3	1.65	0.45
9:LC:25:PRO:HG2	9:LC:28:PHE:HE2	1.82	0.45
18:Lh:74:LYS:HE2	18:Lh:74:LYS:HB2	1.69	0.45
37:LR:171:LYS:HD3	37:LR:171:LYS:HA	1.73	0.45
46:S2:39:A:N6	46:S2:516:G:H1'	2.32	0.45
46:S2:1279:A:H61	46:S2:1321:G:H1	1.65	0.45
46:S2:1294:A:H2'	46:S2:1295:G:C8	2.52	0.45
46:S2:1399:G:H1'	58:Sg:63:SER:HB2	1.98	0.45
48:SA:127:PRO:HG2	48:SA:152:SER:HB2	1.98	0.45
60:SH:58:LYS:HB2	60:SH:90:LYS:HD3	1.98	0.45
63:SK:17:LYS:HD3	63:SK:18:GLU:HG3	1.98	0.45
70:SS:6:PRO:HD3	78:SZ:49:LEU:HD23	1.99	0.45
72:SU:32:LEU:CD2	72:SU:87:ARG:HG3	2.46	0.45
77:SY:110:ARG:HD2	77:SY:114:MET:HG2	1.98	0.45
1:L5:2221:C:O2'	1:L5:2222:C:H6	1.99	0.45
1:L5:3430:U:H2'	1:L5:3432:A:H2	1.81	0.45
11:LD:66:TYR:CE2	11:LD:68:ARG:HD3	2.52	0.45
11:LD:181:PRO:HD2	11:LD:195:HIS:ND1	2.31	0.45
17:LG:205:THR:HG22	17:LG:206:GLN:H	1.81	0.45
46:S2:54:A:H2'	46:S2:54:A:N3	2.32	0.45
46:S2:158:A:H2'	46:S2:159:A:O4'	2.17	0.45
46:S2:171:A:OP1	59:SG:137:ARG:NH1	2.36	0.45
46:S2:530:A:N6	46:S2:557:U:O4	2.49	0.45
46:S2:795:A:O2'	46:S2:796:A:O4'	2.27	0.45
61:SI:172:LEU:HD13	61:SI:190:LEU:HD12	1.99	0.45
62:SJ:31:LEU:HD21	62:SJ:103:GLU:OE2	2.17	0.45
72:SU:34:LYS:HE3	72:SU:34:LYS:HB3	1.54	0.45
78:SZ:62:VAL:HA	78:SZ:65:TYR:CZ	2.51	0.45
79:S6:32:C:H42	79:S6:38:A:N6	2.15	0.45
79:S6:41:C:H2'	79:S6:42:A:C8	2.50	0.45
1:L5:425:A:N1	3:L8:8:U:H5	2.13	0.45
1:L5:1376:G:O2'	1:L5:1377:A:N7	2.45	0.45
1:L5:3341:G:H2'	1:L5:3342:C:C6	2.51	0.45
1:L5:3522:A:H2'	1:L5:3523:C:H6	1.82	0.45
13:LE:78:ARG:HA	13:LE:78:ARG:HD2	1.73	0.45
23:LJ:144:LYS:O	23:LJ:148:THR:OG1	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Lo:74:GLU:OE1	31:Lo:76:ASN:N	2.49	0.45
46:S2:926:G:H1	46:S2:1018:U:H3	1.65	0.45
46:S2:1682:U:H2'	46:S2:1683:C:C6	2.52	0.45
46:S2:1720:A:N6	46:S2:1815:G:C2	2.82	0.45
68:SQ:43:GLU:HB3	68:SQ:44:PRO:HD2	1.98	0.45
72:SU:40:ILE:HG23	72:SU:50:VAL:HG21	1.98	0.45
1:L5:1148:A:H2'	1:L5:1149:A:H8	1.80	0.44
1:L5:1523:C:H5"	1:L5:1524:G:N7	2.32	0.44
9:LC:138:MET:HE3	9:LC:138:MET:HB3	1.86	0.44
13:LE:191:ARG:HA	13:LE:191:ARG:HD2	1.72	0.44
17:LG:114:LEU:HD23	17:LG:114:LEU:HA	1.81	0.44
23:LJ:26:VAL:O	23:LJ:28:GLU:N	2.45	0.44
31:Lo:11:PHE:O	31:Lo:81:ARG:NH1	2.40	0.44
32:LO:187:LYS:HB2	32:LO:187:LYS:HE2	1.42	0.44
44:LY:34:LEU:HD21	44:LY:47:MET:HB2	1.98	0.44
46:S2:375:G:H2'	46:S2:376:U:C6	2.52	0.44
46:S2:1731:U:H2'	46:S2:1732:A:O4'	2.16	0.44
54:SD:158:ILE:HG13	54:SD:164:VAL:HG22	1.98	0.44
56:SE:125:LYS:HZ3	56:SE:157:ASN:HA	1.82	0.44
57:SF:179:ASN:HB3	57:SF:187:SER:HB3	1.99	0.44
58:Sg:166:VAL:HG12	58:Sg:176:VAL:HG22	1.99	0.44
67:SP:48:GLY:C	67:SP:50:ARG:HH12	2.24	0.44
67:SP:110:GLU:OE1	70:SS:116:LYS:NZ	2.39	0.44
72:SU:40:ILE:HD11	72:SU:89:ILE:HG12	1.98	0.44
78:SZ:49:LEU:H	78:SZ:83:LEU:HD22	1.82	0.44
1:L5:162:A:H2'	1:L5:163:A:H8	1.82	0.44
1:L5:4175:G:O2'	1:L5:4178:C:OP2	2.30	0.44
1:L5:4510:U:H2'	1:L5:4511:C:C6	2.52	0.44
7:LB:238:LYS:HE2	7:LB:238:LYS:HB2	1.75	0.44
11:LD:136:ASP:OD1	11:LD:136:ASP:N	2.50	0.44
11:LD:232:THR:O	11:LD:234:ASP:N	2.38	0.44
12:Le:81:ASN:OD1	12:Le:84:GLU:HG3	2.17	0.44
18:Lh:52:LYS:HA	18:Lh:52:LYS:HD3	1.74	0.44
21:LI:66:GLU:HA	21:LI:66:GLU:OE2	2.17	0.44
46:S2:455:U:OP1	59:SG:93:LYS:HA	2.16	0.44
46:S2:1464:U:H5"	46:S2:1465:C:C5	2.52	0.44
58:Sg:245:ARG:HG2	58:Sg:246:TYR:H	1.82	0.44
79:S7:15:A:C2	79:S7:22:G:C4	3.05	0.44
1:L5:4637:U:O2'	1:L5:4638:C:H5"	2.17	0.44
3:L8:144:U:H2'	3:L8:145:C:C6	2.52	0.44
23:LJ:48:PRO:HB2	23:LJ:70:VAL:HG22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:LR:98:ARG:NH2	37:LR:130:ASN:OD1	2.41	0.44
46:S2:38:A:N1	46:S2:516:G:H2'	2.32	0.44
46:S2:473:C:OP1	46:S2:475:G:N2	2.51	0.44
46:S2:1300:A:O2'	46:S2:1302:A:OP1	2.25	0.44
46:S2:1448:G:H2'	46:S2:1449:A:H8	1.82	0.44
46:S2:1659:G:OP2	46:S2:1661:C:N4	2.50	0.44
50:SB:40:ASN:OD1	50:SB:40:ASN:N	2.49	0.44
1:L5:460:G:H2'	1:L5:461:G:H8	1.81	0.44
1:L5:1675:G:O2'	1:L5:3872:A:N3	2.39	0.44
1:L5:2450:A:H5"	24:Lk:26:LYS:HE3	1.99	0.44
1:L5:3287:A:N1	1:L5:3488:U:H5	2.16	0.44
1:L5:3408:G:N2	1:L5:3432:A:H8	2.07	0.44
26:LL:121:ARG:HH11	26:LL:121:ARG:HG3	1.83	0.44
46:S2:551:C:H2'	46:S2:552:U:C6	2.52	0.44
46:S2:1729:U:C2	46:S2:1730:U:C2	3.06	0.44
56:SE:188:ASN:HB3	56:SE:191:ARG:HD3	2.00	0.44
60:SH:20:GLU:HB3	60:SH:24:SER:HB3	2.00	0.44
79:S7:23:C:H2'	79:S7:24:G:C8	2.52	0.44
1:L5:423:U:H2'	1:L5:424:U:C6	2.53	0.44
1:L5:2439:C:H2'	1:L5:2440:G:O4'	2.18	0.44
1:L5:4544:G:H2'	1:L5:4545:G:H8	1.81	0.44
19:LH:59:LYS:HE3	19:LH:66:GLU:HB3	2.00	0.44
46:S2:515:U:H2'	46:S2:516:G:H8	1.82	0.44
46:S2:615:C:OP2	46:S2:627:G:O2'	2.27	0.44
54:SD:175:VAL:HG13	54:SD:182:LEU:HB2	1.99	0.44
58:Sg:35:SER:OG	58:Sg:36:ARG:N	2.49	0.44
58:Sg:254:PRO:HA	58:Sg:285:GLN:HA	2.00	0.44
59:SG:22:ARG:HA	59:SG:25:ARG:NH1	2.32	0.44
69:SR:74:GLN:HA	69:SR:77:GLU:HG2	1.98	0.44
74:SW:9:ASP:OD1	74:SW:9:ASP:N	2.47	0.44
1:L5:3267:A:H2'	1:L5:3268:A:C8	2.52	0.44
1:L5:3926:A:H2'	1:L5:3927:A:C8	2.53	0.44
9:LC:71:ARG:NH2	80:Z:-6:UNK:CB	2.73	0.44
24:Lk:55:LYS:O	24:Lk:59:SER:OG	2.31	0.44
46:S2:375:G:H1'	64:SL:83:GLN:HE21	1.83	0.44
46:S2:805:U:H2'	46:S2:806:U:C6	2.52	0.44
58:Sg:164:ILE:HD12	58:Sg:164:ILE:HA	1.85	0.44
58:Sg:257:LYS:HA	58:Sg:257:LYS:CE	2.47	0.44
79:S6:31:G:H2'	79:S6:32:C:C6	2.49	0.44
1:L5:143:U:H2'	1:L5:144:G:H5"	1.98	0.44
1:L5:701:C:H2'	1:L5:702:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L8:5:U:H2'	3:L8:6:C:H6	1.82	0.44
19:LH:93:ARG:HD2	19:LH:143:GLU:HB3	1.98	0.44
21:LI:136:MET:HE2	21:LI:136:MET:HB2	1.85	0.44
46:S2:887:A:H61	46:S2:902:G:H1'	1.82	0.44
46:S2:1290:U:H2'	46:S2:1291:G:C8	2.53	0.44
50:SB:131:ASP:OD1	50:SB:131:ASP:N	2.48	0.44
58:Sg:212:LYS:HA	58:Sg:235:ILE:HA	1.98	0.44
60:SH:75:ILE:C	60:SH:78:ARG:HH21	2.25	0.44
64:SL:49:GLU:OE1	64:SL:49:GLU:N	2.44	0.44
68:SQ:107:GLU:O	68:SQ:111:ILE:HD12	2.18	0.44
77:SY:111:LYS:O	77:SY:114:MET:HB2	2.17	0.44
1:L5:1207:A:H2'	1:L5:1208:G:C8	2.53	0.44
1:L5:3379:G:H2'	1:L5:3380:A:C8	2.53	0.44
1:L5:3393:A:H2'	1:L5:3394:A:H8	1.82	0.44
1:L5:4560:C:H2'	1:L5:4561:G:H8	1.81	0.44
2:L7:111:C:H2'	2:L7:112:U:O4'	2.18	0.44
6:Lb:107:ARG:HD2	15:LF:63:THR:HG22	2.00	0.44
17:LG:44:ASP:N	17:LG:44:ASP:OD1	2.51	0.44
34:LP:36:ILE:HA	34:LP:39:MET:HE3	2.00	0.44
44:LY:69:LYS:H	44:LY:83:GLU:HG2	1.82	0.44
46:S2:484:C:H5	76:SX:45:SER:HG	1.65	0.44
46:S2:1241:A:O2'	46:S2:1242:A:P	2.75	0.44
66:SO:98:ARG:HG2	66:SO:99:ALA:N	2.33	0.44
68:SQ:146:ARG:NH1	79:S7:33:C:OP2	2.42	0.44
76:SX:77:ASN:HD22	76:SX:79:LYS:HD2	1.83	0.44
78:SZ:65:TYR:CE1	78:SZ:68:ILE:HG22	2.53	0.44
79:S6:4:C:H2'	79:S6:5:A:C8	2.52	0.44
1:L5:1156:U:H2'	1:L5:1157:A:C8	2.53	0.44
1:L5:4237:A:H2'	1:L5:4238:U:O4'	2.18	0.44
31:Lo:27:LYS:HB3	31:Lo:27:LYS:HE2	1.62	0.44
34:LP:94:MET:HE3	34:LP:94:MET:HB2	1.76	0.44
35:LQ:10:ASP:N	35:LQ:10:ASP:OD1	2.51	0.44
40:LU:39:PHE:CE1	40:LU:43:LEU:HD21	2.53	0.44
46:S2:488:U:H4'	46:S2:490:A:C8	2.53	0.44
46:S2:514:G:H3'	46:S2:515:U:C6	2.46	0.44
46:S2:834:C:H3'	46:S2:835:C:H4'	1.99	0.44
46:S2:845:U:H2'	46:S2:846:G:C8	2.53	0.44
46:S2:1798:U:H2'	46:S2:1799:C:C6	2.52	0.44
56:SE:171:ASP:OD1	56:SE:171:ASP:N	2.51	0.44
57:SF:69:VAL:O	57:SF:73:THR:HG23	2.18	0.44
58:Sg:11:LEU:HB3	58:Sg:43:TRP:CH2	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:SI:110:ARG:O	61:SI:114:GLU:HG2	2.17	0.44
61:SI:144:LYS:HE3	61:SI:144:LYS:HB3	1.79	0.44
68:SQ:95:TYR:C	68:SQ:95:TYR:CD1	2.96	0.44
71:ST:102:ARG:HA	71:ST:102:ARG:HD3	1.70	0.44
79:S7:25:U:C2	79:S7:26:G:C8	3.06	0.44
1:L5:23:C:H2'	1:L5:24:G:O4'	2.17	0.43
1:L5:106:A:H2'	1:L5:107:G:O4'	2.18	0.43
1:L5:2314:G:H22	1:L5:2324:G:N2	2.16	0.43
1:L5:3430:U:C2'	1:L5:3432:A:H2	2.31	0.43
1:L5:3907:G:H2'	1:L5:3907:G:N3	2.33	0.43
1:L5:4125:G:O2'	27:Lm:100:TYR:O	2.36	0.43
14:Lf:36:ARG:NH1	14:Lf:79:GLY:O	2.43	0.43
14:Lf:63:LYS:HA	14:Lf:63:LYS:HD3	1.66	0.43
46:S2:172:U:H5'	46:S2:315:U:O3'	2.18	0.43
46:S2:678:G:H21	46:S2:1029:A:H62	1.66	0.43
46:S2:1556:U:N3	53:Sd:19:ARG:HA	2.33	0.43
46:S2:1652:A:O2'	57:SF:83:ASN:OD1	2.26	0.43
50:SB:126:ASP:OD2	50:SB:136:ARG:NH1	2.51	0.43
50:SB:219:LYS:HD2	50:SB:219:LYS:HA	1.87	0.43
54:SD:39:VAL:O	54:SD:41:VAL:HG13	2.17	0.43
59:SG:61:PHE:HD2	59:SG:72:ARG:HD3	1.83	0.43
63:SK:73:ASN:O	63:SK:76:ILE:HG22	2.18	0.43
73:SV:9:VAL:HG13	73:SV:9:VAL:O	2.18	0.43
78:SZ:42:ASP:N	78:SZ:42:ASP:OD1	2.50	0.43
1:L5:1034:G:H2'	1:L5:1035:U:C6	2.53	0.43
1:L5:1882:G:H2'	1:L5:1883:U:C6	2.53	0.43
1:L5:3537:G:H2'	1:L5:3538:G:C8	2.53	0.43
1:L5:3739:C:H2'	1:L5:3740:G:C8	2.53	0.43
9:LC:3:CYS:SG	9:LC:4:ALA:N	2.91	0.43
17:LG:175:ARG:HE	17:LG:175:ARG:HB3	1.57	0.43
46:S2:532:A:N6	46:S2:553:G:O6	2.50	0.43
60:SH:130:LEU:HD21	60:SH:156:VAL:HG21	1.99	0.43
62:SJ:83:ARG:HH21	62:SJ:150:ARG:NH1	2.16	0.43
1:L5:2449:A:OP1	24:Lk:35:LYS:NZ	2.51	0.43
1:L5:4070:C:H2'	1:L5:4071:G:O4'	2.19	0.43
3:L8:40:A:H2'	3:L8:41:A:C8	2.52	0.43
9:LC:109:ARG:O	9:LC:109:ARG:HG2	2.18	0.43
19:LH:12:ILE:HD12	19:LH:53:LYS:C	2.43	0.43
46:S2:151:C:O2'	59:SG:132:ARG:NH1	2.52	0.43
1:L5:955:C:HO2'	1:L5:1028:G:H1	1.61	0.43
1:L5:2618:A:H2'	1:L5:2619:U:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L5:4278:C:O2'	1:L5:4279:A:H5'	2.18	0.43
3:L8:67:U:H2'	3:L8:68:G:H8	1.83	0.43
6:Lb:93:ARG:HG2	6:Lb:93:ARG:NH1	2.29	0.43
6:Lb:110:MET:O	6:Lb:114:GLN:HG2	2.18	0.43
12:Le:32:LYS:HE2	12:Le:32:LYS:HB2	1.56	0.43
46:S2:1103:G:H2'	46:S2:1104:C:C6	2.54	0.43
46:S2:1227:G:N1	46:S2:1640:G:OP2	2.50	0.43
50:SB:179:ASN:OD1	50:SB:179:ASN:N	2.51	0.43
51:Sc:49:PRO:HB2	57:SF:61:PHE:CE1	2.53	0.43
59:SG:52:ILE:HD12	59:SG:52:ILE:O	2.17	0.43
64:SL:120:VAL:HG22	64:SL:145:VAL:HG11	1.99	0.43
70:SS:65:GLU:O	70:SS:69:THR:HG22	2.19	0.43
1:L5:950:G:H22	1:L5:1035:U:H3	1.65	0.43
1:L5:954:G:H2'	1:L5:955:C:O4'	2.18	0.43
1:L5:2512:G:H2'	1:L5:2513:G:C8	2.53	0.43
1:L5:3574:A:H2'	1:L5:3575:G:H8	1.82	0.43
1:L5:3992:A:H2'	1:L5:3993:U:H6	1.83	0.43
9:LC:218:ILE:HG12	9:LC:229:LEU:HG	2.01	0.43
19:LH:28:LYS:HB2	19:LH:28:LYS:NZ	2.33	0.43
20:Li:81:ILE:HD12	20:Li:81:ILE:HA	1.86	0.43
30:LN:140:LYS:HG3	30:LN:144:ARG:HD3	2.01	0.43
56:SE:126:VAL:HG13	56:SE:158:ASP:H	1.82	0.43
56:SE:212:ASP:OD1	56:SE:216:ASN:HB2	2.18	0.43
56:SE:246:LEU:O	56:SE:247:THR:HB	2.18	0.43
57:SF:201:LYS:HD3	57:SF:201:LYS:HA	1.61	0.43
59:SG:196:LYS:HA	59:SG:199:THR:HG22	2.01	0.43
75:Sx:32:A:O2'	75:Sx:33:U:OP2	2.33	0.43
76:SX:60:LYS:HG3	76:SX:61:GLN:HG2	2.01	0.43
1:L5:150:U:OP2	17:LG:200:THR:OG1	2.37	0.43
1:L5:267:G:H2'	1:L5:268:G:C8	2.54	0.43
1:L5:2337:C:OP2	16:Lg:76:ARG:NH1	2.42	0.43
5:LA:14:SER:OG	5:LA:15:VAL:N	2.52	0.43
30:LN:145:ASN:HB3	30:LN:148:THR:HG22	2.00	0.43
40:LU:44:GLN:HG2	40:LU:63:ILE:HD12	2.01	0.43
46:S2:219:A:H2'	46:S2:220:U:C6	2.53	0.43
46:S2:542:U:H2'	46:S2:543:U:H5"	2.00	0.43
48:SA:147:LEU:HD22	48:SA:163:CYS:SG	2.58	0.43
56:SE:35:PRO:HB2	56:SE:143:ASP:OD1	2.19	0.43
69:SR:33:ARG:HD2	69:SR:33:ARG:HA	1.71	0.43
1:L5:1562:G:H1	1:L5:1576:U:H3	1.67	0.43
1:L5:2540:C:O2'	1:L5:2541:A:OP2	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:LC:283:LYS:HD3	35:LQ:103:LEU:HD22	2.00	0.43
11:LD:152:ARG:HD2	11:LD:154:THR:HG23	2.01	0.43
17:LG:89:ARG:HH11	17:LG:89:ARG:HG3	1.82	0.43
17:LG:132:ARG:HA	17:LG:132:ARG:HD2	1.41	0.43
17:LG:162:ASP:OD1	17:LG:187:LYS:NZ	2.51	0.43
19:LH:12:ILE:HG12	19:LH:17:GLU:OE2	2.19	0.43
39:LT:94:GLU:OE1	39:LT:94:GLU:N	2.50	0.43
46:S2:120:U:H5'	46:S2:121:U:H5	1.83	0.43
1:L5:1536:G:N3	1:L5:3867:A:H2'	2.33	0.43
1:L5:4148:G:C2	1:L5:4149:A:N7	2.87	0.43
2:L7:12:U:OP2	2:L7:67:C:O2'	2.36	0.43
2:L7:52:C:HO2'	2:L7:53:U:P	2.41	0.43
3:L8:66:A:H2'	3:L8:67:U:C6	2.53	0.43
8:Lc:13:SER:O	8:Lc:17:ARG:HG3	2.19	0.43
14:Lf:110:ILE:HD13	14:Lf:110:ILE:HA	1.90	0.43
46:S2:47:G:H1	46:S2:479:G:N2	2.16	0.43
46:S2:154:U:OP1	59:SG:15:LEU:HD21	2.18	0.43
52:SC:188:CYS:O	52:SC:191:VAL:HG12	2.19	0.43
76:SX:41:PHE:HZ	76:SX:102:VAL:HG12	1.84	0.43
1:L5:2345:A:H2'	1:L5:2346:U:C6	2.53	0.43
1:L5:4357:C:H2'	1:L5:4358:A:C8	2.54	0.43
15:LF:221:LYS:H	15:LF:221:LYS:HG2	1.67	0.43
17:LG:182:CYS:HB3	17:LG:222:ILE:HD13	2.00	0.43
21:LI:190:LEU:HD22	21:LI:197:VAL:HG13	2.00	0.43
22:Lj:36:LYS:HE2	22:Lj:36:LYS:HB2	1.84	0.43
23:LJ:167:GLN:HA	23:LJ:171:ASP:O	2.18	0.43
30:LN:83:LYS:O	30:LN:85:VAL:N	2.52	0.43
38:LS:21:LYS:HE3	38:LS:21:LYS:HB3	1.87	0.43
39:LT:43:LYS:O	39:LT:95:HIS:HB3	2.19	0.43
46:S2:798:C:H3'	46:S2:800:U:H5'	2.00	0.43
46:S2:1423:G:C8	46:S2:1425:G:H1'	2.54	0.43
46:S2:1650:U:OP1	68:SQ:128:GLU:HB3	2.19	0.43
58:Sg:14:HIS:HE1	58:Sg:18:VAL:HG22	1.84	0.43
72:SU:56:MET:HE2	72:SU:56:MET:HA	2.01	0.43
1:L5:949:C:H2'	1:L5:950:G:C8	2.54	0.43
1:L5:1766:C:H2'	1:L5:1767:A:H8	1.84	0.43
1:L5:3377:G:H22	1:L5:3390:A:H2	1.66	0.43
3:L8:65:A:C4	3:L8:66:A:C8	3.07	0.43
35:LQ:39:THR:HG22	35:LQ:41:SER:H	1.84	0.43
46:S2:17:C:H2'	46:S2:18:C:C6	2.54	0.43
46:S2:158:A:H5'	46:S2:465:A:N6	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S2:311:C:H1'	46:S2:341:C:H4'	2.01	0.43
60:SH:101:LEU:HD12	60:SH:101:LEU:HA	1.88	0.43
69:SR:32:LYS:HD2	69:SR:47:ARG:HH21	1.83	0.43
77:SY:20:ARG:HD3	77:SY:74:MET:HE3	2.01	0.43
1:L5:1766:C:H2'	1:L5:1767:A:C8	2.54	0.42
1:L5:2386:U:H2'	1:L5:2387:U:C6	2.54	0.42
1:L5:3891:G:H2'	1:L5:3892:A:C8	2.54	0.42
1:L5:4664:A:H2'	1:L5:4664:A:N3	2.33	0.42
1:L5:4686:A:O2'	1:L5:4687:U:OP1	2.34	0.42
41:LV:69:LYS:HB2	41:LV:69:LYS:HE2	1.92	0.42
42:LW:12:LYS:HE3	42:LW:12:LYS:HB3	1.82	0.42
46:S2:563:U:C2	46:S2:564:G:H8	2.37	0.42
46:S2:1840:U:H2'	46:S2:1841:U:C6	2.54	0.42
48:SA:50:ASN:OD1	48:SA:52:LYS:HG3	2.19	0.42
79:S6:27:C:H2'	79:S6:28:U:C6	2.54	0.42
1:L5:952:C:H2'	1:L5:953:C:C6	2.54	0.42
1:L5:2214:G:O2'	1:L5:3329:G:H8	2.03	0.42
1:L5:4527:U:C4	28:LM:113:MET:HG3	2.54	0.42
7:LB:29:VAL:HG12	7:LB:31:SER:H	1.84	0.42
7:LB:168:MET:HE3	7:LB:168:MET:HB3	1.80	0.42
7:LB:305:THR:C	7:LB:307:TYR:H	2.27	0.42
13:LE:51:CYS:SG	13:LE:52:SER:N	2.91	0.42
16:Lg:107:LEU:HD23	16:Lg:107:LEU:HA	1.82	0.42
39:LT:97:LYS:HB3	39:LT:97:LYS:HE2	1.56	0.42
40:LU:65:ARG:HH11	40:LU:67:LYS:HA	1.84	0.42
46:S2:69:C:H2'	46:S2:70:G:O4'	2.19	0.42
46:S2:220:U:C4	46:S2:221:U:H5	2.37	0.42
46:S2:509:A:H3'	62:SJ:3:VAL:HG12	2.01	0.42
46:S2:798:C:H5"	46:S2:801:U:OP1	2.20	0.42
46:S2:1388:G:H2'	46:S2:1389:A:O4'	2.18	0.42
46:S2:1790:G:H5'	46:S2:1791:A:OP1	2.19	0.42
50:SB:120:MET:HG3	50:SB:142:PHE:CE2	2.53	0.42
55:Se:116:PHE:HE1	62:SJ:29:LEU:HD23	1.84	0.42
57:SF:192:LYS:HB2	57:SF:192:LYS:HE2	1.91	0.42
70:SS:117:ILE:HD13	70:SS:117:ILE:HA	1.85	0.42
1:L5:3441:A:O2'	1:L5:3443:U:OP2	2.28	0.42
1:L5:4387:A:H1'	1:L5:4388:G:C8	2.54	0.42
3:L8:94:G:C5	22:Lj:84:PRO:HG3	2.53	0.42
13:LE:284:SER:HB2	14:Lf:3:GLY:HA3	2.02	0.42
20:Li:51:ALA:HB3	20:Li:54:GLU:OE1	2.19	0.42
34:LP:140:MET:HE3	34:LP:140:MET:HB3	1.89	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S2:1202:U:H2'	46:S2:1203:U:C6	2.54	0.42
48:SA:116:PHE:C	48:SA:117:ARG:HD3	2.44	0.42
48:SA:191:ARG:NH2	73:SV:44:GLY:O	2.52	0.42
52:SC:173:LYS:HB3	52:SC:173:LYS:HE3	1.65	0.42
78:SZ:68:ILE:O	78:SZ:68:ILE:HG13	2.20	0.42
1:L5:268:G:H2'	1:L5:269:U:C6	2.54	0.42
1:L5:1122:A:H2'	1:L5:1123:C:H6	1.85	0.42
8:Lc:82:GLY:HA2	8:Lc:91:VAL:HG12	2.01	0.42
9:LC:62:THR:OG1	9:LC:63:SER:N	2.52	0.42
18:Lh:107:GLN:O	18:Lh:111:GLU:HG3	2.20	0.42
21:LI:86:HIS:HB3	21:LI:139:ARG:HG2	1.99	0.42
23:LJ:96:LYS:HB3	23:LJ:176:PRO:HG2	2.00	0.42
46:S2:87:U:O4	46:S2:501:A:H2	2.01	0.42
46:S2:290:G:OP1	56:SE:155:LYS:HE2	2.19	0.42
46:S2:535:G:H2'	46:S2:536:G:H8	1.83	0.42
49:Sb:36:LYS:HB2	49:Sb:43:ILE:HG22	2.01	0.42
59:SG:116:LYS:NZ	59:SG:120:ASP:OD1	2.45	0.42
60:SH:107:LYS:HA	60:SH:107:LYS:HD3	1.66	0.42
79:S6:35:A:H2'	79:S6:36:U:C6	2.54	0.42
1:L5:266:G:H2'	1:L5:267:G:H8	1.84	0.42
1:L5:829:G:O2'	1:L5:830:C:H5'	2.20	0.42
1:L5:950:G:C2	1:L5:1037:G:C2	3.07	0.42
7:LB:181:MET:HG2	7:LB:182:GLU:N	2.35	0.42
7:LB:261:ARG:HB2	32:LO:64:THR:HG21	2.01	0.42
9:LC:101:MET:HE2	9:LC:104:PRO:HA	2.01	0.42
13:LE:188:VAL:HG21	13:LE:266:LEU:HD11	2.00	0.42
46:S2:224:U:O2'	46:S2:225:C:H5'	2.20	0.42
46:S2:375:G:C1'	64:SL:83:GLN:HE21	2.33	0.42
46:S2:482:C:H2'	46:S2:483:G:H21	1.84	0.42
46:S2:1126:C:OP1	69:SR:129:LYS:HD2	2.20	0.42
46:S2:1311:U:H2'	46:S2:1312:C:C5	2.54	0.42
46:S2:1745:G:HO2'	46:S2:1746:A:H8	1.60	0.42
60:SH:160:LYS:HD3	60:SH:190:PRO:O	2.20	0.42
60:SH:186:ASN:C	60:SH:186:ASN:OD1	2.62	0.42
77:SY:41:ARG:NH1	77:SY:57:VAL:H	2.16	0.42
78:SZ:65:TYR:CD1	78:SZ:68:ILE:HG22	2.55	0.42
79:S7:20:A:O2'	79:S7:21:A:O5'	2.38	0.42
3:L8:86:U:H1'	3:L8:87:G:H5'	2.02	0.42
11:LD:117:LYS:HA	11:LD:117:LYS:HD3	1.75	0.42
26:LL:108:GLU:H	26:LL:108:GLU:CD	2.26	0.42
39:LT:120:LYS:HE2	39:LT:120:LYS:HB2	1.57	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S2:77:A:OP2	59:SG:154:ARG:NE	2.43	0.42
46:S2:981:A:H2'	46:S2:982:A:C8	2.55	0.42
48:SA:10:MET:O	48:SA:11:LYS:HB2	2.20	0.42
56:SE:174:LYS:HD3	56:SE:174:LYS:HA	1.85	0.42
58:Sg:92:LEU:HD23	58:Sg:93:THR:N	2.35	0.42
72:SU:66:ARG:HG3	72:SU:68:THR:HG22	2.02	0.42
1:L5:2652:G:H2'	1:L5:2653:C:C6	2.54	0.42
1:L5:2657:G:N2	1:L5:2657:G:OP1	2.32	0.42
1:L5:3587:U:H2'	1:L5:3588:C:C6	2.55	0.42
7:LB:194:LEU:HD12	7:LB:194:LEU:HA	1.83	0.42
9:LC:293:LEU:HD23	9:LC:293:LEU:HA	1.91	0.42
12:Le:89:LEU:HD13	12:Le:118:LEU:HD22	2.02	0.42
17:LG:89:ARG:HG3	17:LG:89:ARG:NH1	2.34	0.42
37:LR:148:ASP:OD1	37:LR:148:ASP:N	2.50	0.42
46:S2:837:G:H2'	46:S2:838:A:H4'	2.01	0.42
53:Sd:52:PHE:HB3	72:SU:80:PHE:HB3	2.02	0.42
54:SD:97:CYS:O	54:SD:101:GLN:HG2	2.20	0.42
59:SG:23:LYS:HB2	59:SG:41:LEU:HD23	2.01	0.42
68:SQ:98:LYS:HD3	68:SQ:99:TYR:CZ	2.55	0.42
1:L5:2:G:H2'	1:L5:3:C:H6	1.84	0.42
1:L5:99:A:H2'	1:L5:100:C:O2	2.20	0.42
1:L5:4549:G:O6	1:L5:4565:G:H1'	2.20	0.42
12:Le:124:ASN:OD1	12:Le:124:ASN:N	2.52	0.42
20:Li:63:VAL:HG12	20:Li:65:LYS:HG3	2.01	0.42
32:LO:175:LEU:HD12	32:LO:175:LEU:HA	1.85	0.42
46:S2:345:U:H2'	46:S2:346:U:C6	2.55	0.42
46:S2:516:G:H4'	46:S2:518:C:OP1	2.20	0.42
46:S2:1017:U:O2	46:S2:1017:U:H2'	2.20	0.42
46:S2:1113:U:O2'	46:S2:1114:A:H5'	2.19	0.42
61:SI:142:SER:O	61:SI:145:ILE:HG12	2.20	0.42
1:L5:1003:G:C2	1:L5:1004:G:H1'	2.55	0.42
1:L5:1649:G:H2'	1:L5:1650:C:C6	2.54	0.42
5:LA:10:LYS:HE3	5:LA:10:LYS:HB2	1.85	0.42
9:LC:66:SER:HA	9:LC:77:PRO:HA	2.01	0.42
26:LL:134:PRO:C	26:LL:135:LYS:HG2	2.44	0.42
46:S2:185:G:H2'	46:S2:186:C:O4'	2.19	0.42
46:S2:812:A:H2'	46:S2:813:A:C8	2.54	0.42
46:S2:830:C:H4'	46:S2:831:A:OP1	2.20	0.42
46:S2:1420:C:H2'	46:S2:1421:G:C6	2.54	0.42
50:SB:83:LYS:HB2	50:SB:83:LYS:HE3	1.64	0.42
62:SJ:94:LEU:HD23	62:SJ:94:LEU:HA	1.90	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:SK:79:LEU:HD12	63:SK:79:LEU:HA	1.86	0.42
1:L5:25:A:H2'	1:L5:26:C:H6	1.85	0.42
1:L5:1499:G:H2'	1:L5:1500:C:H6	1.85	0.42
1:L5:2618:A:H2'	1:L5:2619:U:C6	2.54	0.42
1:L5:3321:G:H2'	1:L5:3322:G:H8	1.84	0.42
1:L5:3722:U:H2'	1:L5:3723:C:C6	2.54	0.42
1:L5:4677:C:HO2'	1:L5:4678:U:H6	1.68	0.42
7:LB:34:LYS:HE3	7:LB:34:LYS:HB3	1.85	0.42
18:Lh:6:ALA:O	18:Lh:10:ARG:HG3	2.20	0.42
20:Li:64:SER:O	20:Li:64:SER:OG	2.32	0.42
46:S2:225:C:O2'	46:S2:226:A:H5'	2.19	0.42
46:S2:1540:U:H1'	71:ST:48:TYR:CZ	2.54	0.42
46:S2:1728:G:H2'	46:S2:1729:U:C6	2.55	0.42
48:SA:69:GLU:OE2	52:SC:270:THR:HB	2.19	0.42
50:SB:94:LYS:HD3	50:SB:94:LYS:HA	1.79	0.42
54:SD:151:LYS:HB3	54:SD:151:LYS:HE2	1.86	0.42
58:Sg:131:LEU:O	58:Sg:139:LYS:N	2.46	0.42
61:SI:107:THR:O	61:SI:111:GLN:HG3	2.19	0.42
69:SR:91:LEU:HD12	69:SR:91:LEU:HA	1.88	0.42
71:ST:65:TYR:HB2	71:ST:123:LEU:HD22	2.02	0.42
77:SY:46:LYS:HE2	77:SY:46:LYS:HB2	1.76	0.42
79:S6:15:A:H2'	79:S6:16:G:O4'	2.19	0.42
1:L5:384:A:N3	1:L5:386:G:H5"	2.34	0.41
1:L5:667:G:HO2'	1:L5:668:G:H8	1.68	0.41
1:L5:857:A:H8	1:L5:857:A:OP2	2.03	0.41
1:L5:4333:G:H2'	1:L5:4334:A:C8	2.55	0.41
5:LA:31:ALA:HB2	5:LA:123:ARG:NH2	2.35	0.41
15:LF:62:LYS:HB3	15:LF:62:LYS:HE2	1.76	0.41
15:LF:69:ARG:HA	15:LF:69:ARG:HD2	1.85	0.41
31:Lo:93:LEU:HD23	31:Lo:93:LEU:HA	1.92	0.41
35:LQ:49:LYS:HE2	35:LQ:49:LYS:HB3	1.58	0.41
46:S2:381:G:OP1	61:SI:31:ARG:HD2	2.20	0.41
46:S2:1422:A:H2'	46:S2:1423:G:C8	2.54	0.41
46:S2:1809:U:N3	46:S2:1810:A:N7	2.67	0.41
54:SD:25:LEU:HB3	54:SD:34:TYR:CE1	2.55	0.41
54:SD:92:ALA:O	54:SD:93:THR:OG1	2.34	0.41
67:SP:59:ARG:HG3	67:SP:76:VAL:HG11	2.00	0.41
1:L5:1001:G:C6	1:L5:1026:C:C4	3.08	0.41
1:L5:1018:G:O2'	1:L5:1019:U:H6	2.03	0.41
1:L5:1761:A:H2'	1:L5:1762:U:O4'	2.20	0.41
1:L5:3443:U:OP1	1:L5:4203:G:O2'	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L8:19:C:H2'	3:L8:20:A:C8	2.54	0.41
15:LF:206:ILE:HG23	15:LF:211:ASP:HB2	2.02	0.41
35:LQ:97:LYS:HE2	35:LQ:97:LYS:HB3	1.87	0.41
46:S2:508:G:C8	56:SE:27:PHE:CE2	3.08	0.41
58:Sg:34:ALA:HB1	58:Sg:66:VAL:HG23	2.02	0.41
59:SG:79:LYS:HG2	59:SG:86:PRO:HG3	2.01	0.41
63:SK:7:ASN:O	63:SK:11:ILE:HG12	2.21	0.41
71:ST:65:TYR:CD1	71:ST:65:TYR:C	2.98	0.41
72:SU:23:THR:HG22	72:SU:113:GLU:HB2	2.01	0.41
76:SX:61:GLN:HB3	76:SX:62:PRO:CD	2.50	0.41
1:L5:477:G:OP1	36:Lr:66:ARG:NH2	2.53	0.41
1:L5:2046:C:N4	36:Lr:19:LYS:HB3	2.34	0.41
5:LA:115:CYS:O	5:LA:164:ALA:HA	2.20	0.41
11:LD:278:ASP:OD2	11:LD:282:GLN:NE2	2.52	0.41
15:LF:96:MET:HE2	15:LF:96:MET:HB3	1.89	0.41
26:LL:94:ILE:HD13	26:LL:94:ILE:HA	1.80	0.41
28:LM:11:ARG:NH1	28:LM:58:THR:O	2.51	0.41
46:S2:508:G:N7	56:SE:27:PHE:CE2	2.88	0.41
46:S2:615:C:H2'	46:S2:627:G:C8	2.55	0.41
46:S2:687:U:OP1	74:SW:32:LYS:HG3	2.21	0.41
56:SE:52:LEU:HD23	56:SE:52:LEU:HA	1.84	0.41
58:Sg:101:PHE:CD1	58:Sg:136:GLY:HA2	2.56	0.41
79:S7:34:C:H2'	79:S7:35:A:C8	2.55	0.41
1:L5:1226:G:O2'	1:L5:1227:G:O4'	2.30	0.41
1:L5:3733:G:H2'	1:L5:3734:U:C6	2.56	0.41
1:L5:3891:G:H2'	1:L5:3892:A:H8	1.85	0.41
1:L5:4194:G:N2	1:L5:4197:A:OP2	2.37	0.41
3:L8:86:U:O2'	3:L8:87:G:O5'	2.38	0.41
13:LE:207:THR:HG21	28:LM:107:PHE:HB2	2.01	0.41
46:S2:564:G:H5"	46:S2:587:G:N2	2.35	0.41
46:S2:864:U:C2	46:S2:865:A:C8	3.09	0.41
46:S2:1504:C:H2'	46:S2:1505:U:H6	1.85	0.41
46:S2:1518:G:OP1	67:SP:122:THR:OG1	2.32	0.41
77:SY:55:ILE:HD12	77:SY:55:ILE:O	2.20	0.41
77:SY:61:ARG:HG2	77:SY:61:ARG:NH1	2.34	0.41
79:S7:43:G:H2'	79:S7:44:A:C8	2.55	0.41
1:L5:108:A:H4'	1:L5:109:G:OP1	2.20	0.41
1:L5:2301:G:N2	3:L8:126:C:O4'	2.54	0.41
1:L5:3298:U:H5	1:L5:3303:A:N7	2.18	0.41
1:L5:3568:C:H2'	1:L5:3569:U:C6	2.54	0.41
36:Lr:7:TRP:O	36:Lr:11:ARG:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:Lr:52:GLU:OE1	36:Lr:79:ARG:NH2	2.53	0.41
46:S2:922:G:C5	74:SW:28:ARG:HD2	2.55	0.41
52:SC:88:ILE:HG22	52:SC:160:LEU:HD13	2.01	0.41
54:SD:178:ARG:H	54:SD:178:ARG:HG3	1.67	0.41
62:SJ:110:LEU:HD22	62:SJ:147:PHE:HB3	2.02	0.41
1:L5:3942:U:H2'	1:L5:3943:U:C6	2.55	0.41
9:LC:235:LEU:HD23	9:LC:235:LEU:HA	1.91	0.41
9:LC:290:SER:O	9:LC:294:LYS:HG2	2.19	0.41
21:LI:45:GLU:OE1	21:LI:45:GLU:N	2.53	0.41
34:LP:37:LYS:HG3	34:LP:117:ILE:HG22	2.03	0.41
37:LR:19:LYS:HB2	37:LR:19:LYS:HE2	1.88	0.41
39:LT:107:LYS:O	39:LT:111:GLU:HG2	2.20	0.41
46:S2:904:A:N7	46:S2:905:A:N6	2.69	0.41
46:S2:1392:C:H4'	53:Sd:55:LEU:HD13	2.03	0.41
46:S2:1610:C:OP2	70:SS:132:ARG:HD2	2.21	0.41
53:Sd:54:LYS:HD3	72:SU:78:ASP:OD1	2.20	0.41
59:SG:115:LYS:HG3	59:SG:116:LYS:O	2.21	0.41
70:SS:5:ILE:HA	78:SZ:49:LEU:HD23	2.02	0.41
1:L5:258:C:O2'	1:L5:259:C:O4'	2.31	0.41
1:L5:1234:A:N3	1:L5:1234:A:H2'	2.36	0.41
1:L5:3512:C:H2'	1:L5:3513:A:H8	1.85	0.41
1:L5:3528:A:H2'	1:L5:3529:A:H8	1.84	0.41
1:L5:3536:G:O2'	1:L5:3538:G:OP2	2.31	0.41
1:L5:4191:G:H2'	1:L5:4192:U:C6	2.55	0.41
1:L5:4216:U:H2'	1:L5:4217:A:H8	1.85	0.41
3:L8:62:A:OP1	18:Lh:51:ARG:NH2	2.52	0.41
8:Lc:37:MET:HG3	8:Lc:97:ILE:HD11	2.02	0.41
9:LC:25:PRO:HG2	9:LC:28:PHE:CE2	2.56	0.41
37:LR:173:ARG:HH21	46:S2:910:G:H5'	1.86	0.41
41:LV:131:ARG:NH1	41:LV:131:ARG:HG2	2.35	0.41
46:S2:55:U:H4'	46:S2:56:G:OP1	2.18	0.41
59:SG:30:LYS:O	59:SG:102:VAL:HG12	2.21	0.41
60:SH:174:SER:OG	60:SH:185:VAL:O	2.39	0.41
69:SR:103:LYS:C	69:SR:103:LYS:HD3	2.46	0.41
77:SY:37:LYS:HB3	77:SY:37:LYS:HE3	1.85	0.41
1:L5:955:C:H1'	1:L5:1029:G:O6	2.20	0.41
1:L5:3309:A:H2'	1:L5:3310:A:N7	2.36	0.41
1:L5:3827:U:H2'	1:L5:3828:G:H8	1.85	0.41
8:Lc:40:GLN:H	8:Lc:40:GLN:HG3	1.70	0.41
15:LF:108:GLU:HB2	39:LT:135:PRO:HB3	2.03	0.41
17:LG:257:LYS:HB3	17:LG:257:LYS:HE2	1.90	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:LM:51:PRO:HG2	28:LM:54:CYS:SG	2.61	0.41
38:LS:25:PRO:HA	38:LS:26:PRO:HD3	1.93	0.41
46:S2:847:G:C4	56:SE:19:MET:SD	3.14	0.41
46:S2:1292:A:OP1	53:Sd:3:HIS:HB2	2.20	0.41
46:S2:1667:C:H2'	46:S2:1668:U:C6	2.56	0.41
54:SD:198:ILE:HD12	54:SD:198:ILE:HA	1.86	0.41
62:SJ:84:ILE:HD13	62:SJ:84:ILE:HA	1.84	0.41
70:SS:89:ASP:HB3	70:SS:93:GLY:H	1.85	0.41
71:ST:27:LYS:HE2	71:ST:27:LYS:HB2	1.90	0.41
1:L5:490:C:H2'	1:L5:491:C:H6	1.86	0.41
1:L5:761:C:H5	1:L5:810:G:N1	2.11	0.41
1:L5:950:G:H2'	1:L5:951:A:C8	2.56	0.41
1:L5:1110:U:H4'	1:L5:1111:G:O4'	2.20	0.41
1:L5:1225:G:N7	1:L5:1303:G:N2	2.69	0.41
1:L5:1271:G:H4'	1:L5:1272:C:OP1	2.21	0.41
1:L5:1338:A:H2	1:L5:3572:U:HO2'	1.67	0.41
1:L5:1523:C:H5"	1:L5:1524:G:C8	2.56	0.41
1:L5:2512:G:O2'	1:L5:2513:G:O5'	2.30	0.41
1:L5:3420:A:O2'	1:L5:3421:U:H6	2.04	0.41
1:L5:4068:A:OP1	21:LI:154:ARG:NH1	2.54	0.41
3:L8:5:U:H2'	3:L8:6:C:C6	2.56	0.41
3:L8:141:C:H2'	3:L8:142:U:H6	1.86	0.41
32:LO:61:ARG:HA	32:LO:70:PRO:HD2	2.03	0.41
35:LQ:43:PHE:CD2	35:LQ:133:GLY:HA3	2.56	0.41
46:S2:219:A:H2'	46:S2:220:U:O4'	2.21	0.41
46:S2:476:C:O2'	46:S2:477:A:H8	2.04	0.41
46:S2:798:C:H2'	46:S2:801:U:P	2.61	0.41
46:S2:825:C:H1'	62:SJ:144:ILE:HG21	2.01	0.41
46:S2:965:A:H2'	46:S2:966:U:C6	2.51	0.41
46:S2:986:G:H4'	66:SO:138:ASP:OD2	2.20	0.41
46:S2:1556:U:C4	53:Sd:19:ARG:HA	2.56	0.41
46:S2:1586:U:C4	71:ST:67:ARG:HD2	2.55	0.41
46:S2:1750:G:H2'	46:S2:1751:C:C6	2.56	0.41
48:SA:81:ASN:OD1	48:SA:82:THR:N	2.54	0.41
49:Sb:8:LEU:HD12	49:Sb:8:LEU:HA	1.92	0.41
50:SB:68:GLU:OE1	50:SB:83:LYS:HB3	2.21	0.41
52:SC:84:PHE:HA	73:SV:15:ARG:NH1	2.36	0.41
52:SC:246:LYS:HE2	52:SC:246:LYS:HB3	1.86	0.41
56:SE:57:THR:HG22	56:SE:59:ASP:H	1.85	0.41
56:SE:103:TYR:CD1	56:SE:189:LEU:HD21	2.56	0.41
57:SF:16:ASP:C	57:SF:17:ILE:HD12	2.46	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:Sg:174:VAL:CG2	58:Sg:188:HIS:HB2	2.50	0.41
58:Sg:245:ARG:HH22	58:Sg:247:TRP:HB2	1.86	0.41
59:SG:32:MET:HA	59:SG:52:ILE:HD13	2.03	0.41
60:SH:36:LEU:HA	60:SH:36:LEU:HD23	1.83	0.41
61:SI:201:LYS:HD3	61:SI:201:LYS:HA	1.88	0.41
63:SK:57:TYR:O	63:SK:72:THR:OG1	2.27	0.41
68:SQ:49:TYR:O	68:SQ:53:GLU:HG2	2.21	0.41
72:SU:22:ILE:HG23	72:SU:114:VAL:HG22	2.02	0.41
79:S7:2:A:H2'	79:S7:3:G:H8	1.86	0.41
1:L5:750:G:H2'	1:L5:751:G:O4'	2.22	0.41
1:L5:1581:C:H5"	11:LD:5:LYS:HG2	2.03	0.41
11:LD:289:ARG:O	11:LD:292:GLU:HG3	2.20	0.41
17:LG:259:LYS:HE3	17:LG:259:LYS:HB3	1.86	0.41
26:LL:194:ILE:HD12	26:LL:194:ILE:HA	1.78	0.41
40:LU:41:GLN:O	40:LU:45:GLU:HG2	2.21	0.41
46:S2:95:G:H1	46:S2:435:G:N2	2.10	0.41
46:S2:493:C:H5"	46:S2:510:G:N1	2.35	0.41
46:S2:544:C:H3'	46:S2:545:G:H8	1.85	0.41
46:S2:836:C:H4'	46:S2:837:G:N7	2.36	0.41
46:S2:864:U:N3	46:S2:865:A:N7	2.69	0.41
46:S2:1426:G:H2'	46:S2:1427:U:C6	2.56	0.41
46:S2:1644:U:H2'	46:S2:1645:C:C6	2.56	0.41
46:S2:1679:A:O2'	46:S2:1680:A:H5'	2.20	0.41
46:S2:1789:A:H2'	46:S2:1790:G:O4'	2.21	0.41
56:SE:29:PRO:HG2	56:SE:46:ILE:HD11	2.01	0.41
60:SH:160:LYS:O	60:SH:160:LYS:HG3	2.20	0.41
66:SO:133:THR:HA	66:SO:134:PRO:HD3	1.96	0.41
69:SR:89:SER:HB2	69:SR:92:ASP:HB2	2.03	0.41
79:S7:19:G:H5'	79:S7:60:A:H61	1.86	0.41
1:L5:415:U:HO2'	1:L5:416:G:P	2.43	0.40
1:L5:677:C:O2'	1:L5:678:G:O5'	2.36	0.40
1:L5:1765:A:C5	1:L5:1766:C:C6	3.09	0.40
1:L5:3976:A:C2	11:LD:146:LEU:HD23	2.56	0.40
1:L5:4404:G:H2'	1:L5:4405:G:C8	2.56	0.40
4:La:94:LYS:H	4:La:94:LYS:HG2	1.56	0.40
7:LB:84:MET:O	7:LB:204:GLN:HA	2.21	0.40
13:LE:206:SER:OG	13:LE:296:PHE:OXT	2.38	0.40
17:LG:193:LEU:HD23	17:LG:193:LEU:HA	1.90	0.40
19:LH:18:ILE:HD12	19:LH:18:ILE:N	2.36	0.40
39:LT:146:LYS:HB3	39:LT:146:LYS:HE3	1.82	0.40
46:S2:547:G:H1'	46:S2:548:G:N7	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S2:854:C:C2	46:S2:855:A:C8	3.09	0.40
46:S2:1020:C:H2'	46:S2:1021:A:O4'	2.21	0.40
46:S2:1281:G:H2'	46:S2:1282:G:H8	1.85	0.40
56:SE:98:ASN:O	56:SE:114:ILE:HG12	2.21	0.40
58:Sg:27:PHE:HE2	58:Sg:75:GLY:HA3	1.86	0.40
69:SR:31:ASN:OD1	69:SR:31:ASN:N	2.54	0.40
70:SS:87:GLN:HB3	70:SS:95:TYR:CE2	2.56	0.40
77:SY:105:LYS:HA	77:SY:105:LYS:HD2	1.69	0.40
1:L5:423:U:H2'	1:L5:424:U:H6	1.86	0.40
1:L5:686:C:H2'	1:L5:687:C:H6	1.87	0.40
1:L5:1374:A:H2'	1:L5:1375:G:H8	1.81	0.40
1:L5:1377:A:H2'	1:L5:1378:A:N3	2.37	0.40
1:L5:2655:G:C2	1:L5:3256:A:C2	3.10	0.40
1:L5:3264:U:H2'	1:L5:3265:A:C8	2.56	0.40
1:L5:3364:U:H2'	1:L5:3365:C:H6	1.85	0.40
6:Lb:51:LYS:O	6:Lb:54:LEU:HD23	2.21	0.40
46:S2:918:U:H2'	46:S2:919:U:C6	2.56	0.40
46:S2:922:G:C6	74:SW:28:ARG:HD2	2.57	0.40
46:S2:929:G:H1	46:S2:1014:U:H3	1.68	0.40
47:Sa:13:LYS:HA	47:Sa:13:LYS:HD3	1.90	0.40
61:SI:3:ILE:O	61:SI:30:GLY:N	2.51	0.40
61:SI:42:ARG:HH12	61:SI:59:ARG:HH21	1.69	0.40
65:SN:78:LYS:HA	65:SN:78:LYS:HD3	1.83	0.40
71:ST:85:ASN:OD1	71:ST:88:ARG:HB2	2.20	0.40
79:S6:13:G:N1	79:S6:24:G:C2	2.89	0.40
79:S6:43:G:H2'	79:S6:44:A:H8	1.85	0.40
1:L5:1004:G:H22	1:L5:1022:G:H1	1.68	0.40
1:L5:2060:C:H5"	12:Le:104:SER:HB3	2.03	0.40
1:L5:3420:A:H61	46:S2:1710:G:HO2'	1.67	0.40
1:L5:4397:G:H2'	1:L5:4398:A:C8	2.56	0.40
1:L5:4618:C:C2	1:L5:4619:A:C8	3.08	0.40
9:LC:132:ALA:C	9:LC:150:LEU:HD23	2.47	0.40
11:LD:187:SER:HB2	11:LD:189:GLU:OE2	2.22	0.40
18:Lh:123:ALA:HB3	26:LL:150:LEU:HD11	2.02	0.40
19:LH:96:TYR:CE2	19:LH:100:PRO:HA	2.56	0.40
26:LL:169:ILE:HG22	26:LL:174:LYS:HG2	2.02	0.40
46:S2:82:G:H8	46:S2:82:G:OP2	2.04	0.40
46:S2:219:A:C6	46:S2:220:U:N3	2.89	0.40
46:S2:221:U:O2'	61:SI:186:ASP:OD2	2.36	0.40
46:S2:339:G:H2'	46:S2:340:A:O4'	2.21	0.40
46:S2:430:C:OP1	56:SE:10:LYS:HE2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:S2:1519:C:H5”	46:S2:1520:U:H2’	2.04	0.40
46:S2:1680:A:P	57:SF:60:ARG:HE	2.45	0.40
46:S2:1734:U:H2’	46:S2:1735:G:O4’	2.21	0.40
47:Sa:94:ASP:OD1	47:Sa:94:ASP:N	2.39	0.40
49:Sb:34:ASP:HA	49:Sb:44:THR:O	2.21	0.40
52:SC:125:LYS:HG3	52:SC:143:CYS:HB2	2.03	0.40
71:ST:39:LEU:O	71:ST:96:SER:HB2	2.21	0.40
1:L5:822:U:H2’	1:L5:823:C:C6	2.57	0.40
1:L5:2513:G:O2’	1:L5:2514:G:O4’	2.24	0.40
1:L5:2602:G:O2’	1:L5:3495:U:O4	2.37	0.40
1:L5:3269:C:H1’	1:L5:4664:A:H8	1.84	0.40
5:LA:54:ARG:HG2	5:LA:56:ALA:H	1.86	0.40
9:LC:50:GLN:HA	9:LC:51:PRO:HD3	1.96	0.40
15:LF:138:GLN:O	15:LF:141:ASN:HB2	2.22	0.40
38:LS:113:MET:HE3	38:LS:113:MET:HB3	1.98	0.40
46:S2:128:U:H4’	46:S2:217:G:H5’	2.04	0.40
46:S2:155:G:C2’	46:S2:156:G:H5’	2.52	0.40
46:S2:849:U:H2’	46:S2:850:A:C8	2.56	0.40
46:S2:946:U:H2’	46:S2:947:U:H6	1.87	0.40
46:S2:1502:C:H2’	46:S2:1503:C:C6	2.56	0.40
46:S2:1736:A:H5’	46:S2:1737:G:OP2	2.22	0.40
46:S2:1857:C:H2’	46:S2:1858:G:C8	2.57	0.40
56:SE:175:PHE:CE1	56:SE:195:ILE:HD13	2.56	0.40
67:SP:33:LEU:HD23	67:SP:33:LEU:HA	1.85	0.40
76:SX:68:LYS:H	76:SX:68:LYS:HG2	1.74	0.40
78:SZ:49:LEU:N	78:SZ:83:LEU:HD22	2.37	0.40
1:L5:3318:G:H4’	1:L5:3319:A:H5’	2.04	0.40
1:L5:4059:U:C2	1:L5:4060:G:C8	3.09	0.40
7:LB:4:ARG:HD3	7:LB:5:LYS:N	2.37	0.40
7:LB:258:HIS:C	7:LB:260:ALA:N	2.78	0.40
9:LC:150:LEU:HD12	9:LC:150:LEU:HA	1.83	0.40
11:LD:259:ARG:HD2	11:LD:259:ARG:HA	1.87	0.40
17:LG:48:LYS:HD3	17:LG:48:LYS:HA	1.82	0.40
25:Ll:34:LYS:HB3	25:Ll:34:LYS:HE2	1.78	0.40
46:S2:66:G:OP1	46:S2:82:G:N2	2.52	0.40
46:S2:454:C:H2’	46:S2:455:U:C6	2.55	0.40
46:S2:593:C:C2	46:S2:594:C:H5”	2.57	0.40
46:S2:1553:G:H2’	46:S2:1557:A:OP1	2.21	0.40
46:S2:1706:C:H2’	46:S2:1707:G:C8	2.56	0.40
48:SA:174:MET:HB2	48:SA:174:MET:HE3	1.66	0.40
52:SC:132:ASP:OD1	52:SC:133:TYR:N	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SE:18:TRP:C	56:SE:18:TRP:CD1	3.00	0.40
56:SE:51:ARG:HG3	56:SE:51:ARG:HH11	1.87	0.40
57:SF:42:LYS:HG3	57:SF:43:GLU:H	1.87	0.40
58:Sg:105:THR:HG23	58:Sg:106:LYS:HG2	2.02	0.40
59:SG:103:ASP:O	59:SG:106:LEU:HD23	2.22	0.40
59:SG:121:ILE:HD13	59:SG:121:ILE:HA	1.88	0.40
62:SJ:111:GLN:OE1	62:SJ:127:ARG:HD2	2.21	0.40
63:SK:2:LEU:HD12	63:SK:2:LEU:HA	1.89	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	
4	La	145/148 (98%)	136 (94%)	9 (6%)	0	100	100
5	LA	246/257 (96%)	228 (93%)	18 (7%)	0	100	100
6	Lb	95/160 (59%)	93 (98%)	2 (2%)	0	100	100
7	LB	395/403 (98%)	372 (94%)	23 (6%)	0	100	100
8	Lc	92/115 (80%)	90 (98%)	1 (1%)	1 (1%)	11	16
9	LC	355/419 (85%)	335 (94%)	20 (6%)	0	100	100
10	Ld	106/125 (85%)	103 (97%)	3 (3%)	0	100	100
11	LD	291/297 (98%)	263 (90%)	28 (10%)	0	100	100
12	Le	126/135 (93%)	119 (94%)	7 (6%)	0	100	100
13	LE	210/296 (71%)	200 (95%)	10 (5%)	0	100	100
14	Lf	107/110 (97%)	104 (97%)	3 (3%)	0	100	100
15	LF	212/270 (78%)	201 (95%)	11 (5%)	0	100	100
16	Lg	108/117 (92%)	107 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	LG	225/266 (85%)	215 (96%)	10 (4%)	0	100	100
18	Lh	120/123 (98%)	118 (98%)	2 (2%)	0	100	100
19	LH	188/190 (99%)	175 (93%)	10 (5%)	3 (2%)	7	10
20	Li	100/105 (95%)	93 (93%)	7 (7%)	0	100	100
21	LI	197/214 (92%)	194 (98%)	3 (2%)	0	100	100
22	Lj	84/97 (87%)	81 (96%)	3 (4%)	0	100	100
23	LJ	165/178 (93%)	158 (96%)	7 (4%)	0	100	100
24	Lk	67/70 (96%)	64 (96%)	3 (4%)	0	100	100
25	Ll	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
26	LL	204/211 (97%)	191 (94%)	13 (6%)	0	100	100
27	Lm	49/128 (38%)	49 (100%)	0	0	100	100
28	LM	134/217 (62%)	129 (96%)	5 (4%)	0	100	100
29	Ln	23/25 (92%)	23 (100%)	0	0	100	100
30	LN	201/204 (98%)	193 (96%)	8 (4%)	0	100	100
31	Lo	101/106 (95%)	95 (94%)	5 (5%)	1 (1%)	12	18
32	LO	199/203 (98%)	188 (94%)	10 (5%)	1 (0%)	24	36
33	Lp	89/92 (97%)	84 (94%)	5 (6%)	0	100	100
34	LP	152/184 (83%)	148 (97%)	4 (3%)	0	100	100
35	LQ	185/188 (98%)	178 (96%)	7 (4%)	0	100	100
36	Lr	122/137 (89%)	113 (93%)	8 (7%)	1 (1%)	16	24
37	LR	172/196 (88%)	169 (98%)	3 (2%)	0	100	100
38	LS	173/176 (98%)	165 (95%)	8 (5%)	0	100	100
39	LT	158/160 (99%)	154 (98%)	4 (2%)	0	100	100
40	LU	98/128 (77%)	87 (89%)	11 (11%)	0	100	100
41	LV	128/140 (91%)	125 (98%)	3 (2%)	0	100	100
42	LW	60/157 (38%)	59 (98%)	1 (2%)	0	100	100
43	LX	116/156 (74%)	113 (97%)	3 (3%)	0	100	100
44	LY	130/145 (90%)	129 (99%)	1 (1%)	0	100	100
45	LZ	133/136 (98%)	128 (96%)	5 (4%)	0	100	100
47	Sa	97/115 (84%)	91 (94%)	6 (6%)	0	100	100
48	SA	205/295 (70%)	189 (92%)	16 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
49	Sb	81/84 (96%)	73 (90%)	8 (10%)	0	100	100
50	SB	211/264 (80%)	197 (93%)	14 (7%)	0	100	100
51	Sc	52/69 (75%)	46 (88%)	5 (10%)	1 (2%)	6	8
52	SC	213/293 (73%)	206 (97%)	7 (3%)	0	100	100
53	Sd	52/56 (93%)	50 (96%)	2 (4%)	0	100	100
54	SD	207/243 (85%)	193 (93%)	13 (6%)	1 (0%)	24	36
55	Se	44/133 (33%)	39 (89%)	5 (11%)	0	100	100
56	SE	256/263 (97%)	242 (94%)	13 (5%)	1 (0%)	30	42
57	SF	175/204 (86%)	165 (94%)	10 (6%)	0	100	100
58	Sg	270/317 (85%)	244 (90%)	26 (10%)	0	100	100
59	SG	200/249 (80%)	191 (96%)	9 (4%)	0	100	100
60	SH	176/194 (91%)	162 (92%)	14 (8%)	0	100	100
61	SI	179/208 (86%)	173 (97%)	6 (3%)	0	100	100
62	SJ	130/194 (67%)	123 (95%)	7 (5%)	0	100	100
63	SK	86/165 (52%)	75 (87%)	11 (13%)	0	100	100
64	SL	131/158 (83%)	126 (96%)	5 (4%)	0	100	100
65	SN	148/151 (98%)	147 (99%)	1 (1%)	0	100	100
66	SO	132/151 (87%)	123 (93%)	9 (7%)	0	100	100
67	SP	116/145 (80%)	111 (96%)	5 (4%)	0	100	100
68	SQ	137/146 (94%)	125 (91%)	12 (9%)	0	100	100
69	SR	129/135 (96%)	116 (90%)	13 (10%)	0	100	100
70	SS	138/152 (91%)	128 (93%)	10 (7%)	0	100	100
71	ST	138/145 (95%)	130 (94%)	8 (6%)	0	100	100
72	SU	93/119 (78%)	86 (92%)	7 (8%)	0	100	100
73	SV	79/83 (95%)	74 (94%)	5 (6%)	0	100	100
74	SW	127/130 (98%)	120 (94%)	7 (6%)	0	100	100
76	SX	137/143 (96%)	126 (92%)	10 (7%)	1 (1%)	18	27
77	SY	108/133 (81%)	102 (94%)	6 (6%)	0	100	100
78	SZ	70/125 (56%)	62 (89%)	8 (11%)	0	100	100
All	All	10626/12497 (85%)	10050 (95%)	565 (5%)	11 (0%)	49	64

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
8	Lc	99	PRO
19	LH	13	PRO
32	LO	187	LYS
36	Lr	123	PRO
51	Sc	51	ARG
76	SX	61	GLN
31	Lo	59	LYS
54	SD	93	THR
19	LH	189	GLN
19	LH	53	LYS
56	SE	247	THR

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	
4	La	120/121 (99%)	117 (98%)	3 (2%)	42	63
5	LA	190/199 (96%)	187 (98%)	3 (2%)	55	73
6	Lb	83/124 (67%)	82 (99%)	1 (1%)	63	78
7	LB	344/348 (99%)	334 (97%)	10 (3%)	37	57
8	Lc	79/97 (81%)	78 (99%)	1 (1%)	61	76
9	LC	301/348 (86%)	297 (99%)	4 (1%)	61	76
10	Ld	99/110 (90%)	96 (97%)	3 (3%)	36	56
11	LD	246/249 (99%)	236 (96%)	10 (4%)	27	44
12	Le	114/121 (94%)	110 (96%)	4 (4%)	32	51
13	LE	194/256 (76%)	187 (96%)	7 (4%)	31	50
14	Lf	88/89 (99%)	87 (99%)	1 (1%)	65	79
15	LF	185/234 (79%)	182 (98%)	3 (2%)	55	73
16	Lg	94/100 (94%)	93 (99%)	1 (1%)	65	79
17	LG	197/223 (88%)	189 (96%)	8 (4%)	27	44
18	Lh	109/110 (99%)	108 (99%)	1 (1%)	70	82
19	LH	169/169 (100%)	162 (96%)	7 (4%)	27	44

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
20	Li	86/89 (97%)	85 (99%)	1 (1%)	63 78
21	LI	170/180 (94%)	165 (97%)	5 (3%)	37 57
22	Lj	73/80 (91%)	73 (100%)	0	100 100
23	LJ	141/149 (95%)	133 (94%)	8 (6%)	18 31
24	Lk	64/65 (98%)	62 (97%)	2 (3%)	35 55
25	Ll	46/47 (98%)	45 (98%)	1 (2%)	45 66
26	LL	173/178 (97%)	164 (95%)	9 (5%)	21 34
27	Lm	47/116 (40%)	45 (96%)	2 (4%)	26 42
28	LM	116/157 (74%)	114 (98%)	2 (2%)	53 72
29	Ln	24/24 (100%)	24 (100%)	0	100 100
30	LN	171/172 (99%)	170 (99%)	1 (1%)	78 87
31	Lo	91/94 (97%)	91 (100%)	0	100 100
32	LO	172/173 (99%)	168 (98%)	4 (2%)	44 65
33	Lp	74/75 (99%)	71 (96%)	3 (4%)	27 44
34	LP	135/163 (83%)	132 (98%)	3 (2%)	45 66
35	LQ	164/165 (99%)	163 (99%)	1 (1%)	78 87
36	Lr	108/121 (89%)	105 (97%)	3 (3%)	38 58
37	LR	154/175 (88%)	149 (97%)	5 (3%)	34 54
38	LS	155/156 (99%)	149 (96%)	6 (4%)	28 47
39	LT	140/140 (100%)	137 (98%)	3 (2%)	47 67
40	LU	90/114 (79%)	88 (98%)	2 (2%)	45 66
41	LV	100/107 (94%)	97 (97%)	3 (3%)	36 56
42	LW	54/126 (43%)	54 (100%)	0	100 100
43	LX	106/133 (80%)	103 (97%)	3 (3%)	38 58
44	LY	123/135 (91%)	122 (99%)	1 (1%)	73 84
45	LZ	117/118 (99%)	117 (100%)	0	100 100
47	Sa	86/98 (88%)	81 (94%)	5 (6%)	18 30
48	SA	173/242 (72%)	170 (98%)	3 (2%)	53 72
49	Sb	75/76 (99%)	67 (89%)	8 (11%)	6 9
50	SB	194/229 (85%)	191 (98%)	3 (2%)	57 74
51	Sc	48/62 (77%)	46 (96%)	2 (4%)	26 44

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
52	SC	181/224 (81%)	176 (97%)	5 (3%)	38	58
53	Sd	48/49 (98%)	45 (94%)	3 (6%)	16	27
54	SD	173/202 (86%)	166 (96%)	7 (4%)	28	45
55	Se	39/106 (37%)	38 (97%)	1 (3%)	40	61
56	SE	221/225 (98%)	207 (94%)	14 (6%)	16	27
57	SF	152/170 (89%)	149 (98%)	3 (2%)	48	68
58	Sg	237/275 (86%)	231 (98%)	6 (2%)	42	63
59	SG	178/218 (82%)	172 (97%)	6 (3%)	32	52
60	SH	161/174 (92%)	150 (93%)	11 (7%)	14	23
61	SI	159/180 (88%)	154 (97%)	5 (3%)	35	55
62	SJ	126/168 (75%)	123 (98%)	3 (2%)	43	64
63	SK	81/136 (60%)	80 (99%)	1 (1%)	63	78
64	SL	123/142 (87%)	120 (98%)	3 (2%)	43	64
65	SN	130/131 (99%)	127 (98%)	3 (2%)	44	65
66	SO	104/119 (87%)	101 (97%)	3 (3%)	37	57
67	SP	107/130 (82%)	101 (94%)	6 (6%)	19	31
68	SQ	115/121 (95%)	108 (94%)	7 (6%)	17	29
69	SR	119/121 (98%)	116 (98%)	3 (2%)	42	63
70	SS	122/132 (92%)	113 (93%)	9 (7%)	13	20
71	ST	110/115 (96%)	104 (94%)	6 (6%)	19	32
72	SU	88/107 (82%)	86 (98%)	2 (2%)	44	65
73	SV	65/67 (97%)	62 (95%)	3 (5%)	24	39
74	SW	112/113 (99%)	106 (95%)	6 (5%)	20	33
76	SX	111/115 (96%)	104 (94%)	7 (6%)	16	27
77	SY	93/115 (81%)	93 (100%)	0	100	100
78	SZ	64/103 (62%)	63 (98%)	1 (2%)	55	73
All	All	9301/10615 (88%)	9021 (97%)	280 (3%)	37	56

All (280) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	La	92	LYS
4	La	103	VAL

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Mol	Chain	Res	Type
4	La	140	VAL
5	LA	15	VAL
5	LA	136	VAL
5	LA	237	LEU
6	Lb	115	ARG
7	LB	17	LEU
7	LB	31	SER
7	LB	43	LEU
7	LB	60	VAL
7	LB	162	ILE
7	LB	258	HIS
7	LB	328	ASN
7	LB	329	ASP
7	LB	331	ILE
7	LB	362	LYS
8	Lc	58	SER
9	LC	62	THR
9	LC	105	THR
9	LC	107	THR
9	LC	228	THR
10	Ld	36	VAL
10	Ld	57	MET
10	Ld	89	SER
11	LD	7	VAL
11	LD	44	TYR
11	LD	118	ILE
11	LD	171	LEU
11	LD	194	VAL
11	LD	217	ASP
11	LD	224	SER
11	LD	226	TYR
11	LD	267	ASN
11	LD	286	SER
12	Le	4	LEU
12	Le	31	ILE
12	Le	86	GLU
12	Le	117	GLN
13	LE	101	THR
13	LE	183	VAL
13	LE	202	VAL
13	LE	206	SER
13	LE	207	THR

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Mol	Chain	Res	Type
13	LE	209	VAL
13	LE	295	VAL
14	Lf	59	THR
15	LF	218	THR
15	LF	247	THR
15	LF	250	VAL
16	Lg	17	SER
17	LG	33	GLU
17	LG	97	LYS
17	LG	106	THR
17	LG	108	GLN
17	LG	112	GLN
17	LG	132	ARG
17	LG	166	LEU
17	LG	168	VAL
18	Lh	14	LYS
19	LH	58	ASP
19	LH	65	LYS
19	LH	95	VAL
19	LH	137	SER
19	LH	155	SER
19	LH	183	GLU
19	LH	188	GLN
20	Li	64	SER
21	LI	43	VAL
21	LI	59	GLN
21	LI	179	ASP
21	LI	195	CYS
21	LI	197	VAL
23	LJ	56	THR
23	LJ	72	CYS
23	LJ	78	LYS
23	LJ	81	GLU
23	LJ	90	ARG
23	LJ	132	VAL
23	LJ	146	ARG
23	LJ	173	ILE
24	Lk	5	ILE
24	Lk	59	SER
25	Ll	47	THR
26	LL	17	ASP
26	LL	59	VAL

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Mol	Chain	Res	Type
26	LL	63	THR
26	LL	64	VAL
26	LL	67	HIS
26	LL	107	THR
26	LL	115	GLN
26	LL	204	GLU
26	LL	206	ASP
27	Lm	103	LEU
27	Lm	126	LYS
28	LM	31	ILE
28	LM	136	LEU
30	LN	34	SER
32	LO	32	LYS
32	LO	120	VAL
32	LO	175	LEU
32	LO	187	LYS
33	Lp	21	SER
33	Lp	26	VAL
33	Lp	52	VAL
34	LP	24	VAL
34	LP	57	CYS
34	LP	93	HIS
35	LQ	119	LYS
36	Lr	91	SER
36	Lr	122	LYS
36	Lr	123	PRO
37	LR	91	GLU
37	LR	93	VAL
37	LR	112	SER
37	LR	149	LYS
37	LR	152	LYS
38	LS	23	HIS
38	LS	48	VAL
38	LS	82	LEU
38	LS	90	THR
38	LS	148	SER
38	LS	161	ARG
39	LT	2	THR
39	LT	29	THR
39	LT	76	VAL
40	LU	109	SER
40	LU	115	PHE

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Mol	Chain	Res	Type
41	LV	18	LEU
41	LV	92	ASP
41	LV	115	SER
43	LX	85	SER
43	LX	119	ILE
43	LX	148	ASP
44	LY	43	ASN
47	Sa	24	THR
47	Sa	30	VAL
47	Sa	54	SER
47	Sa	66	LYS
47	Sa	81	SER
48	SA	6	ASP
48	SA	7	VAL
48	SA	54	THR
49	Sb	8	LEU
49	Sb	13	GLU
49	Sb	43	ILE
49	Sb	44	THR
49	Sb	46	VAL
49	Sb	57	VAL
49	Sb	65	GLN
49	Sb	78	SER
50	SB	38	MET
50	SB	55	THR
50	SB	91	VAL
51	Sc	15	THR
51	Sc	17	VAL
52	SC	137	VAL
52	SC	147	VAL
52	SC	149	THR
52	SC	184	VAL
52	SC	211	LYS
53	Sd	31	ILE
53	Sd	36	LEU
53	Sd	53	ILE
54	SD	17	PHE
54	SD	20	GLU
54	SD	32	ASP
54	SD	48	ILE
54	SD	110	LEU
54	SD	206	ASP

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Mol	Chain	Res	Type
54	SD	208	VAL
55	Se	132	ASN
56	SE	12	VAL
56	SE	18	TRP
56	SE	19	MET
56	SE	56	LEU
56	SE	126	VAL
56	SE	131	VAL
56	SE	140	VAL
56	SE	166	THR
56	SE	196	THR
56	SE	210	VAL
56	SE	217	SER
56	SE	220	THR
56	SE	222	LEU
56	SE	248	ILE
57	SF	34	SER
57	SF	82	ASN
57	SF	147	VAL
58	Sg	69	VAL
58	Sg	135	LEU
58	Sg	146	SER
58	Sg	178	ASN
58	Sg	297	THR
58	Sg	309	VAL
59	SG	26	THR
59	SG	114	VAL
59	SG	129	VAL
59	SG	141	ILE
59	SG	172	LYS
59	SG	178	ARG
60	SH	30	LEU
60	SH	40	LEU
60	SH	52	GLU
60	SH	61	ILE
60	SH	64	VAL
60	SH	114	GLN
60	SH	151	SER
60	SH	166	VAL
60	SH	172	THR
60	SH	174	SER
60	SH	184	ASP

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Mol	Chain	Res	Type
61	SI	38	ILE
61	SI	91	VAL
61	SI	97	VAL
61	SI	121	LEU
61	SI	157	LYS
62	SJ	114	VAL
62	SJ	123	ILE
62	SJ	149	VAL
63	SK	7	ASN
64	SL	87	VAL
64	SL	130	GLU
64	SL	146	THR
65	SN	63	VAL
65	SN	67	THR
65	SN	87	ASP
66	SO	65	ASP
66	SO	98	ARG
66	SO	129	ILE
67	SP	26	LEU
67	SP	57	LEU
67	SP	58	LYS
67	SP	59	ARG
67	SP	61	ARG
67	SP	79	HIS
68	SQ	18	THR
68	SQ	34	VAL
68	SQ	48	GLN
68	SQ	70	VAL
68	SQ	89	SER
68	SQ	105	LYS
68	SQ	113	ILE
69	SR	6	THR
69	SR	27	ASP
69	SR	62	GLN
70	SS	12	ILE
70	SS	15	VAL
70	SS	33	ILE
70	SS	52	LEU
70	SS	67	VAL
70	SS	99	LEU
70	SS	109	GLU
70	SS	111	LEU

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Mol	Chain	Res	Type
70	SS	116	LYS
71	ST	6	VAL
71	ST	28	LEU
71	ST	39	LEU
71	ST	90	SER
71	ST	93	SER
71	ST	113	VAL
72	SU	40	ILE
72	SU	65	THR
73	SV	10	ASP
73	SV	70	LEU
73	SV	74	LYS
74	SW	6	VAL
74	SW	66	THR
74	SW	80	ASP
74	SW	81	VAL
74	SW	103	VAL
74	SW	118	ARG
76	SX	4	CYS
76	SX	24	ASP
76	SX	26	GLN
76	SX	51	VAL
76	SX	71	ARG
76	SX	112	VAL
76	SX	128	VAL
78	SZ	73	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (90) such sidechains are listed below:

Mol	Chain	Res	Type
4	La	28	HIS
4	La	39	HIS
4	La	66	ASN
4	La	67	GLN
5	LA	50	HIS
6	Lb	19	ASN
7	LB	184	GLN
7	LB	376	HIS
9	LC	60	HIS
9	LC	61	GLN
9	LC	89	GLN
9	LC	212	ASN

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Mol	Chain	Res	Type
9	LC	329	ASN
10	Ld	93	ASN
11	LD	157	ASN
11	LD	267	ASN
15	LF	102	ASN
15	LF	121	ASN
15	LF	148	ASN
17	LG	81	ASN
17	LG	100	HIS
17	LG	141	ASN
18	Lh	108	GLN
19	LH	163	GLN
21	LI	144	ASN
22	Lj	13	ASN
23	LJ	65	ASN
23	LJ	98	ASN
23	LJ	104	ASN
27	Lm	109	ASN
30	LN	91	GLN
30	LN	156	HIS
32	LO	26	GLN
32	LO	42	ASN
32	LO	63	ASN
34	LP	97	ASN
34	LP	116	HIS
34	LP	133	HIS
35	LQ	162	HIS
36	Lr	4	HIS
36	Lr	21	ASN
37	LR	141	HIS
38	LS	77	ASN
38	LS	91	HIS
38	LS	108	GLN
39	LT	66	ASN
40	LU	27	HIS
41	LV	108	ASN
43	LX	57	GLN
43	LX	69	ASN
43	LX	111	GLN
44	LY	43	ASN
44	LY	100	HIS
47	Sa	8	ASN

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Mol	Chain	Res	Type
52	SC	113	GLN
52	SC	267	GLN
53	Sd	26	ASN
53	Sd	37	ASN
54	SD	22	ASN
55	Se	132	ASN
56	SE	214	ASN
57	SF	149	GLN
57	SF	203	ASN
60	SH	33	ASN
60	SH	39	GLN
60	SH	165	ASN
61	SI	35	ASN
63	SK	61	GLN
64	SL	18	GLN
64	SL	19	ASN
64	SL	83	GLN
64	SL	100	ASN
64	SL	112	HIS
65	SN	62	GLN
66	SO	32	HIS
67	SP	32	GLN
68	SQ	80	GLN
68	SQ	142	GLN
69	SR	74	GLN
69	SR	121	GLN
70	SS	17	ASN
70	SS	72	GLN
71	ST	42	HIS
71	ST	91	HIS
74	SW	24	GLN
74	SW	64	ASN
74	SW	82	GLN
76	SX	61	GLN
76	SX	77	ASN
78	SZ	106	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	L5	3377/4731 (71%)	685 (20%)	33 (0%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	L7	119/120 (99%)	10 (8%)	3 (2%)
3	L8	149/158 (94%)	28 (18%)	1 (0%)
46	S2	1618/1870 (86%)	508 (31%)	35 (2%)
75	Sx	9/10 (90%)	1 (11%)	0
79	S6	74/75 (98%)	23 (31%)	3 (4%)
79	S7	74/75 (98%)	27 (36%)	1 (1%)
All	All	5420/7039 (76%)	1282 (23%)	76 (1%)

All (1282) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	L5	2	G
1	L5	3	C
1	L5	21	G
1	L5	25	A
1	L5	39	A
1	L5	42	A
1	L5	48	G
1	L5	56	A
1	L5	59	A
1	L5	64	A
1	L5	65	A
1	L5	66	A
1	L5	71	C
1	L5	72	C
1	L5	76	A
1	L5	85	G
1	L5	91	G
1	L5	99	A
1	L5	104	G
1	L5	108	A
1	L5	109	G
1	L5	119	G
1	L5	120	A
1	L5	132	G
1	L5	133	C
1	L5	134	G
1	L5	135	U
1	L5	136	C
1	L5	137	G
1	L5	138	C
1	L5	139	G

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Mol	Chain	Res	Type
1	L5	140	G
1	L5	141	C
1	L5	143	U
1	L5	144	G
1	L5	159	C
1	L5	160	G
1	L5	170	C
1	L5	172	C
1	L5	173	C
1	L5	195	C
1	L5	197	A
1	L5	200	U
1	L5	209	U
1	L5	210	C
1	L5	217	C
1	L5	218	A
1	L5	219	G
1	L5	228	C
1	L5	233	U
1	L5	234	G
1	L5	235	A
1	L5	241	G
1	L5	252	G
1	L5	256	C
1	L5	258	C
1	L5	259	C
1	L5	260	G
1	L5	264	U
1	L5	265	C
1	L5	267	G
1	L5	269	U
1	L5	279	G
1	L5	296	U
1	L5	305	A
1	L5	315	U
1	L5	333	A
1	L5	339	C
1	L5	349	C
1	L5	360	C
1	L5	361	A
1	L5	372	G
1	L5	386	G

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Mol	Chain	Res	Type
1	L5	387	A
1	L5	388	A
1	L5	398	G
1	L5	408	G
1	L5	409	A
1	L5	411	G
1	L5	416	G
1	L5	430	G
1	L5	431	U
1	L5	443	G
1	L5	448	C
1	L5	449	G
1	L5	452	G
1	L5	453	U
1	L5	454	C
1	L5	455	C
1	L5	456	G
1	L5	457	C
1	L5	458	C
1	L5	459	C
1	L5	466	U
1	L5	467	U
1	L5	487	C
1	L5	491	C
1	L5	494	G
1	L5	497	C
1	L5	512	A
1	L5	513	U
1	L5	654	G
1	L5	660	G
1	L5	661	U
1	L5	667	G
1	L5	668	G
1	L5	669	C
1	L5	671	G
1	L5	673	C
1	L5	674	G
1	L5	675	A
1	L5	676	C
1	L5	677	C
1	L5	678	G
1	L5	680	C

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Mol	Chain	Res	Type
1	L5	682	G
1	L5	691	C
1	L5	693	C
1	L5	695	C
1	L5	696	U
1	L5	697	U
1	L5	701	C
1	L5	704	U
1	L5	705	G
1	L5	712	C
1	L5	714	C
1	L5	739	G
1	L5	746	C
1	L5	747	G
1	L5	748	G
1	L5	749	U
1	L5	750	G
1	L5	754	A
1	L5	757	G
1	L5	761	C
1	L5	766	G
1	L5	806	C
1	L5	807	C
1	L5	810	G
1	L5	813	U
1	L5	815	A
1	L5	817	A
1	L5	824	C
1	L5	825	G
1	L5	830	C
1	L5	831	G
1	L5	833	U
1	L5	834	U
1	L5	835	U
1	L5	842	A
1	L5	843	U
1	L5	857	A
1	L5	858	A
1	L5	860	C
1	L5	882	U
1	L5	886	U
1	L5	924	G

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Mol	Chain	Res	Type
1	L5	926	G
1	L5	927	C
1	L5	928	C
1	L5	938	C
1	L5	940	C
1	L5	953	C
1	L5	954	G
1	L5	1003	G
1	L5	1005	C
1	L5	1006	G
1	L5	1007	G
1	L5	1009	C
1	L5	1010	U
1	L5	1011	G
1	L5	1012	U
1	L5	1013	C
1	L5	1014	C
1	L5	1015	C
1	L5	1016	C
1	L5	1017	A
1	L5	1018	G
1	L5	1019	U
1	L5	1020	G
1	L5	1021	C
1	L5	1022	G
1	L5	1026	C
1	L5	1027	G
1	L5	1028	G
1	L5	1029	G
1	L5	1031	G
1	L5	1032	U
1	L5	1033	G
1	L5	1034	G
1	L5	1036	C
1	L5	1037	G
1	L5	1038	C
1	L5	1039	G
1	L5	1044	C
1	L5	1045	G
1	L5	1048	U
1	L5	1049	C
1	L5	1050	C

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Mol	Chain	Res	Type
1	L5	1051	G
1	L5	1053	G
1	L5	1055	G
1	L5	1095	C
1	L5	1099	G
1	L5	1100	U
1	L5	1102	G
1	L5	1108	G
1	L5	1116	C
1	L5	1141	A
1	L5	1152	A
1	L5	1154	U
1	L5	1160	G
1	L5	1169	A
1	L5	1173	A
1	L5	1174	G
1	L5	1180	C
1	L5	1193	C
1	L5	1194	C
1	L5	1202	A
1	L5	1209	G
1	L5	1212	A
1	L5	1221	G
1	L5	1222	C
1	L5	1223	C
1	L5	1224	C
1	L5	1225	G
1	L5	1226	G
1	L5	1227	G
1	L5	1228	G
1	L5	1229	G
1	L5	1230	C
1	L5	1232	C
1	L5	1234	A
1	L5	1254	U
1	L5	1256	C
1	L5	1257	A
1	L5	1261	C
1	L5	1266	A
1	L5	1272	C
1	L5	1289	G
1	L5	1290	C

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Mol	Chain	Res	Type
1	L5	1295	C
1	L5	1296	G
1	L5	1297	C
1	L5	1298	G
1	L5	1299	C
1	L5	1311	A
1	L5	1312	G
1	L5	1316	G
1	L5	1317	A
1	L5	1328	U
1	L5	1329	A
1	L5	1344	G
1	L5	1348	A
1	L5	1361	A
1	L5	1379	A
1	L5	1380	C
1	L5	1389	A
1	L5	1392	U
1	L5	1405	U
1	L5	1410	U
1	L5	1415	A
1	L5	1428	C
1	L5	1438	G
1	L5	1439	G
1	L5	1445	A
1	L5	1447	G
1	L5	1448	A
1	L5	1454	C
1	L5	1456	A
1	L5	1465	G
1	L5	1468	G
1	L5	1475	C
1	L5	1490	C
1	L5	1491	U
1	L5	1508	C
1	L5	1511	G
1	L5	1524	G
1	L5	1537	G
1	L5	1553	G
1	L5	1556	G
1	L5	1557	U
1	L5	1560	U

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Mol	Chain	Res	Type
1	L5	1561	G
1	L5	1563	G
1	L5	1564	G
1	L5	1575	C
1	L5	1578	A
1	L5	1586	C
1	L5	1590	A
1	L5	1607	A
1	L5	1615	C
1	L5	1625	U
1	L5	1627	G
1	L5	1639	G
1	L5	1640	A
1	L5	1645	G
1	L5	1658	G
1	L5	1672	G
1	L5	1673	C
1	L5	1685	U
1	L5	1700	A
1	L5	1713	G
1	L5	1721	U
1	L5	1722	G
1	L5	1723	C
1	L5	1724	C
1	L5	1725	G
1	L5	1728	G
1	L5	1734	C
1	L5	1735	A
1	L5	1743	G
1	L5	1751	G
1	L5	1762	U
1	L5	1763	A
1	L5	1764	G
1	L5	1765	A
1	L5	1766	C
1	L5	1767	A
1	L5	1831	C
1	L5	1832	A
1	L5	1847	U
1	L5	1851	U
1	L5	1858	G
1	L5	1859	G

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Mol	Chain	Res	Type
1	L5	1872	A
1	L5	1887	C
1	L5	1892	G
1	L5	1903	A
1	L5	1904	C
1	L5	1905	G
1	L5	1907	G
1	L5	1908	A
1	L5	1909	C
1	L5	1910	G
1	L5	2016	G
1	L5	2046	C
1	L5	2057	A
1	L5	2058	G
1	L5	2070	A
1	L5	2073	G
1	L5	2089	A
1	L5	2090	G
1	L5	2105	G
1	L5	2108	C
1	L5	2121	G
1	L5	2141	U
1	L5	2152	A
1	L5	2153	A
1	L5	2154	G
1	L5	2178	G
1	L5	2179	C
1	L5	2180	A
1	L5	2182	U
1	L5	2207	G
1	L5	2210	A
1	L5	2222	C
1	L5	2227	C
1	L5	2228	G
1	L5	2230	A
1	L5	2231	G
1	L5	2232	G
1	L5	2235	C
1	L5	2236	G
1	L5	2237	G
1	L5	2241	A
1	L5	2242	U

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Mol	Chain	Res	Type
1	L5	2243	G
1	L5	2254	C
1	L5	2255	C
1	L5	2260	G
1	L5	2261	C
1	L5	2263	G
1	L5	2269	A
1	L5	2270	A
1	L5	2274	A
1	L5	2285	G
1	L5	2300	A
1	L5	2301	G
1	L5	2302	U
1	L5	2303	G
1	L5	2304	G
1	L5	2311	U
1	L5	2312	G
1	L5	2315	C
1	L5	2324	G
1	L5	2337	C
1	L5	2340	G
1	L5	2341	A
1	L5	2343	C
1	L5	2346	U
1	L5	2355	A
1	L5	2356	G
1	L5	2381	C
1	L5	2392	G
1	L5	2401	A
1	L5	2406	G
1	L5	2407	C
1	L5	2414	A
1	L5	2416	G
1	L5	2423	C
1	L5	2435	G
1	L5	2441	U
1	L5	2448	G
1	L5	2449	A
1	L5	2450	A
1	L5	2457	G
1	L5	2460	G
1	L5	2461	U

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Mol	Chain	Res	Type
1	L5	2462	U
1	L5	2463	C
1	L5	2464	C
1	L5	2465	G
1	L5	2466	G
1	L5	2480	G
1	L5	2493	C
1	L5	2497	A
1	L5	2498	A
1	L5	2508	G
1	L5	2513	G
1	L5	2515	U
1	L5	2516	G
1	L5	2517	U
1	L5	2518	A
1	L5	2519	A
1	L5	2520	A
1	L5	2524	C
1	L5	2532	G
1	L5	2541	A
1	L5	2542	U
1	L5	2544	U
1	L5	2552	A
1	L5	2561	A
1	L5	2569	A
1	L5	2576	G
1	L5	2580	U
1	L5	2581	G
1	L5	2583	U
1	L5	2592	G
1	L5	2609	G
1	L5	2646	C
1	L5	2650	G
1	L5	2651	G
1	L5	2653	C
1	L5	2657	G
1	L5	3263	U
1	L5	3273	U
1	L5	3275	C
1	L5	3283	G
1	L5	3292	A
1	L5	3301	U

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Mol	Chain	Res	Type
1	L5	3319	A
1	L5	3330	C
1	L5	3331	G
1	L5	3349	A
1	L5	3353	C
1	L5	3368	A
1	L5	3375	A
1	L5	3398	C
1	L5	3399	G
1	L5	3400	G
1	L5	3405	A
1	L5	3407	G
1	L5	3410	G
1	L5	3411	G
1	L5	3416	A
1	L5	3417	A
1	L5	3418	C
1	L5	3420	A
1	L5	3421	U
1	L5	3423	A
1	L5	3428	C
1	L5	3430	U
1	L5	3431	A
1	L5	3433	G
1	L5	3434	G
1	L5	3441	A
1	L5	3443	U
1	L5	3449	G
1	L5	3468	G
1	L5	3471	U
1	L5	3474	A
1	L5	3475	U
1	L5	3476	G
1	L5	3495	U
1	L5	3497	U
1	L5	3508	U
1	L5	3524	A
1	L5	3534	A
1	L5	3535	C
1	L5	3536	G
1	L5	3544	C
1	L5	3549	U

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Mol	Chain	Res	Type
1	L5	3553	C
1	L5	3554	G
1	L5	3558	A
1	L5	3562	A
1	L5	3563	A
1	L5	3564	G
1	L5	3565	A
1	L5	3572	U
1	L5	3596	G
1	L5	3597	U
1	L5	3599	A
1	L5	3601	G
1	L5	3603	G
1	L5	3605	C
1	L5	3606	A
1	L5	3608	G
1	L5	3712	C
1	L5	3713	A
1	L5	3714	U
1	L5	3715	C
1	L5	3716	G
1	L5	3717	U
1	L5	3718	U
1	L5	3727	G
1	L5	3744	G
1	L5	3745	G
1	L5	3747	C
1	L5	3768	U
1	L5	3770	C
1	L5	3773	G
1	L5	3778	A
1	L5	3786	G
1	L5	3787	U
1	L5	3788	C
1	L5	3789	C
1	L5	3816	U
1	L5	3821	G
1	L5	3823	A
1	L5	3836	G
1	L5	3837	G
1	L5	3842	U
1	L5	3844	G

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Mol	Chain	Res	Type
1	L5	3849	G
1	L5	3856	A
1	L5	3878	G
1	L5	3882	U
1	L5	3886	A
1	L5	3904	A
1	L5	3905	C
1	L5	3907	G
1	L5	3909	A
1	L5	3910	A
1	L5	3911	C
1	L5	3921	A
1	L5	3924	A
1	L5	3926	A
1	L5	3933	A
1	L5	3934	A
1	L5	3944	G
1	L5	3950	G
1	L5	3958	G
1	L5	3959	U
1	L5	3967	C
1	L5	3977	A
1	L5	3982	G
1	L5	3983	G
1	L5	3985	C
1	L5	3992	A
1	L5	4001	A
1	L5	4021	G
1	L5	4026	G
1	L5	4029	A
1	L5	4030	G
1	L5	4031	A
1	L5	4033	A
1	L5	4040	C
1	L5	4044	G
1	L5	4047	A
1	L5	4068	A
1	L5	4073	U
1	L5	4074	C
1	L5	4075	A
1	L5	4090	U
1	L5	4101	G

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Mol	Chain	Res	Type
1	L5	4103	U
1	L5	4106	C
1	L5	4117	A
1	L5	4128	G
1	L5	4146	U
1	L5	4165	U
1	L5	4166	A
1	L5	4171	A
1	L5	4172	C
1	L5	4177	G
1	L5	4181	G
1	L5	4201	A
1	L5	4208	U
1	L5	4210	U
1	L5	4213	C
1	L5	4220	G
1	L5	4228	G
1	L5	4237	A
1	L5	4243	A
1	L5	4253	G
1	L5	4259	G
1	L5	4263	A
1	L5	4287	U
1	L5	4288	A
1	L5	4289	U
1	L5	4290	G
1	L5	4309	A
1	L5	4310	U
1	L5	4323	C
1	L5	4325	A
1	L5	4330	U
1	L5	4353	A
1	L5	4360	A
1	L5	4361	A
1	L5	4362	U
1	L5	4373	C
1	L5	4381	U
1	L5	4383	C
1	L5	4384	G
1	L5	4385	G
1	L5	4386	C
1	L5	4387	A

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Mol	Chain	Res	Type
1	L5	4393	G
1	L5	4394	A
1	L5	4395	A
1	L5	4396	G
1	L5	4399	G
1	L5	4408	G
1	L5	4411	C
1	L5	4413	C
1	L5	4415	G
1	L5	4419	G
1	L5	4428	C
1	L5	4507	G
1	L5	4516	G
1	L5	4517	C
1	L5	4528	U
1	L5	4529	C
1	L5	4531	U
1	L5	4532	C
1	L5	4549	G
1	L5	4550	G
1	L5	4552	C
1	L5	4553	G
1	L5	4554	G
1	L5	4558	G
1	L5	4559	G
1	L5	4565	G
1	L5	4567	C
1	L5	4568	C
1	L5	4569	U
1	L5	4579	C
1	L5	4580	A
1	L5	4583	U
1	L5	4584	U
1	L5	4588	C
1	L5	4589	G
1	L5	4591	A
1	L5	4592	C
1	L5	4593	G
1	L5	4599	G
1	L5	4604	A
1	L5	4605	C
1	L5	4613	U

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Mol	Chain	Res	Type
1	L5	4621	U
1	L5	4624	U
1	L5	4636	U
1	L5	4638	C
1	L5	4639	U
1	L5	4654	U
1	L5	4662	A
1	L5	4664	A
1	L5	4665	G
1	L5	4668	G
1	L5	4669	C
1	L5	4676	G
1	L5	4677	C
1	L5	4678	U
1	L5	4682	A
1	L5	4687	U
1	L5	4689	G
1	L5	4698	C
1	L5	4702	C
1	L5	4703	G
1	L5	4706	A
1	L5	4709	A
1	L5	4710	G
1	L5	4717	U
2	L7	4	U
2	L7	22	A
2	L7	24	C
2	L7	53	U
2	L7	61	G
2	L7	64	G
2	L7	100	A
2	L7	103	A
2	L7	110	G
2	L7	120	U
3	L8	6	C
3	L8	23	C
3	L8	34	U
3	L8	35	C
3	L8	52	A
3	L8	59	A
3	L8	60	G
3	L8	62	A

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Mol	Chain	Res	Type
3	L8	63	U
3	L8	71	A
3	L8	72	A
3	L8	75	G
3	L8	80	A
3	L8	87	G
3	L8	94	G
3	L8	96	C
3	L8	103	A
3	L8	105	C
3	L8	109	C
3	L8	110	U
3	L8	111	U
3	L8	114	G
3	L8	121	G
3	L8	123	U
3	L8	125	C
3	L8	126	C
3	L8	150	C
3	L8	151	G
46	S2	2	A
46	S2	17	C
46	S2	23	G
46	S2	26	U
46	S2	33	G
46	S2	35	C
46	S2	40	A
46	S2	41	G
46	S2	43	U
46	S2	46	A
46	S2	49	C
46	S2	50	A
46	S2	52	G
46	S2	53	C
46	S2	56	G
46	S2	57	U
46	S2	59	U
46	S2	60	A
46	S2	61	A
46	S2	62	G
46	S2	65	C
46	S2	67	C

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Mol	Chain	Res	Type
46	S2	68	A
46	S2	72	C
46	S2	73	C
46	S2	74	G
46	S2	75	G
46	S2	76	U
46	S2	78	C
46	S2	79	A
46	S2	80	G
46	S2	83	A
46	S2	86	C
46	S2	87	U
46	S2	88	G
46	S2	90	G
46	S2	91	A
46	S2	92	A
46	S2	93	U
46	S2	94	G
46	S2	95	G
46	S2	96	C
46	S2	97	U
46	S2	98	C
46	S2	99	A
46	S2	100	U
46	S2	102	A
46	S2	103	A
46	S2	113	G
46	S2	114	G
46	S2	115	U
46	S2	116	U
46	S2	117	C
46	S2	118	C
46	S2	119	U
46	S2	120	U
46	S2	121	U
46	S2	126	G
46	S2	127	C
46	S2	129	C
46	S2	142	C
46	S2	143	U
46	S2	149	A
46	S2	151	C

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Mol	Chain	Res	Type
46	S2	152	U
46	S2	153	G
46	S2	156	G
46	S2	158	A
46	S2	161	U
46	S2	162	C
46	S2	163	U
46	S2	165	G
46	S2	168	C
46	S2	169	U
46	S2	171	A
46	S2	173	A
46	S2	177	G
46	S2	179	C
46	S2	181	A
46	S2	182	C
46	S2	222	U
46	S2	226	A
46	S2	289	G
46	S2	292	G
46	S2	294	C
46	S2	299	G
46	S2	303	A
46	S2	311	C
46	S2	313	G
46	S2	314	A
46	S2	315	U
46	S2	316	C
46	S2	317	G
46	S2	319	A
46	S2	320	C
46	S2	323	C
46	S2	338	C
46	S2	341	C
46	S2	342	C
46	S2	343	C
46	S2	344	A
46	S2	348	G
46	S2	357	C
46	S2	363	C
46	S2	365	A
46	S2	370	C

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Mol	Chain	Res	Type
46	S2	371	G
46	S2	384	G
46	S2	386	G
46	S2	387	C
46	S2	408	G
46	S2	409	A
46	S2	410	C
46	S2	419	A
46	S2	445	G
46	S2	447	G
46	S2	449	A
46	S2	450	A
46	S2	451	C
46	S2	455	U
46	S2	464	C
46	S2	465	A
46	S2	466	A
46	S2	467	G
46	S2	469	A
46	S2	470	A
46	S2	472	G
46	S2	473	C
46	S2	474	A
46	S2	475	G
46	S2	476	C
46	S2	477	A
46	S2	478	G
46	S2	479	G
46	S2	483	G
46	S2	484	C
46	S2	485	A
46	S2	486	A
46	S2	487	A
46	S2	488	U
46	S2	489	U
46	S2	490	A
46	S2	491	C
46	S2	492	C
46	S2	493	C
46	S2	494	A
46	S2	495	C
46	S2	496	U

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Mol	Chain	Res	Type
46	S2	502	C
46	S2	503	C
46	S2	504	C
46	S2	505	G
46	S2	507	G
46	S2	508	G
46	S2	509	A
46	S2	510	G
46	S2	513	A
46	S2	515	U
46	S2	517	A
46	S2	518	C
46	S2	525	U
46	S2	526	A
46	S2	530	A
46	S2	531	U
46	S2	533	C
46	S2	534	A
46	S2	535	G
46	S2	537	A
46	S2	538	C
46	S2	539	U
46	S2	541	U
46	S2	543	U
46	S2	545	G
46	S2	546	A
46	S2	547	G
46	S2	548	G
46	S2	552	U
46	S2	557	U
46	S2	559	G
46	S2	560	G
46	S2	561	A
46	S2	562	A
46	S2	564	G
46	S2	565	A
46	S2	566	G
46	S2	567	U
46	S2	568	C
46	S2	569	C
46	S2	570	A
46	S2	572	U

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Mol	Chain	Res	Type
46	S2	577	A
46	S2	584	A
46	S2	585	A
46	S2	587	G
46	S2	588	A
46	S2	590	G
46	S2	591	A
46	S2	592	U
46	S2	593	C
46	S2	594	C
46	S2	595	A
46	S2	596	U
46	S2	600	A
46	S2	605	A
46	S2	607	G
46	S2	608	U
46	S2	609	C
46	S2	627	G
46	S2	629	A
46	S2	630	A
46	S2	632	U
46	S2	644	A
46	S2	645	G
46	S2	656	A
46	S2	661	C
46	S2	665	A
46	S2	669	A
46	S2	670	A
46	S2	672	A
46	S2	673	A
46	S2	674	G
46	S2	684	G
46	S2	689	U
46	S2	749	C
46	S2	750	U
46	S2	751	C
46	S2	795	A
46	S2	796	A
46	S2	798	C
46	S2	799	G
46	S2	800	U
46	S2	822	G

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Mol	Chain	Res	Type
46	S2	823	U
46	S2	831	A
46	S2	832	G
46	S2	835	C
46	S2	837	G
46	S2	838	A
46	S2	839	G
46	S2	840	C
46	S2	841	C
46	S2	843	C
46	S2	844	C
46	S2	845	U
46	S2	846	G
46	S2	847	G
46	S2	848	A
46	S2	854	C
46	S2	863	A
46	S2	870	A
46	S2	871	A
46	S2	874	G
46	S2	875	G
46	S2	876	A
46	S2	882	G
46	S2	884	U
46	S2	885	C
46	S2	886	U
46	S2	890	U
46	S2	891	U
46	S2	892	G
46	S2	893	U
46	S2	894	U
46	S2	895	G
46	S2	896	G
46	S2	897	U
46	S2	898	U
46	S2	899	U
46	S2	900	U
46	S2	901	C
46	S2	902	G
46	S2	903	G
46	S2	904	A
46	S2	905	A

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Mol	Chain	Res	Type
46	S2	914	A
46	S2	917	A
46	S2	918	U
46	S2	921	A
46	S2	923	A
46	S2	931	C
46	S2	934	G
46	S2	957	G
46	S2	972	G
46	S2	991	A
46	S2	993	A
46	S2	1000	G
46	S2	1002	A
46	S2	1018	U
46	S2	1024	A
46	S2	1048	C
46	S2	1061	A
46	S2	1062	U
46	S2	1063	A
46	S2	1084	A
46	S2	1086	C
46	S2	1109	G
46	S2	1110	C
46	S2	1114	A
46	S2	1115	U
46	S2	1116	U
46	S2	1117	C
46	S2	1118	C
46	S2	1119	C
46	S2	1139	C
46	S2	1154	C
46	S2	1155	U
46	S2	1196	A
46	S2	1204	G
46	S2	1208	G
46	S2	1209	A
46	S2	1216	C
46	S2	1217	C
46	S2	1225	G
46	S2	1228	G
46	S2	1238	C
46	S2	1240	U

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Mol	Chain	Res	Type
46	S2	1241	A
46	S2	1242	A
46	S2	1243	U
46	S2	1244	U
46	S2	1248	C
46	S2	1249	U
46	S2	1252	A
46	S2	1254	A
46	S2	1257	G
46	S2	1258	G
46	S2	1260	A
46	S2	1266	A
46	S2	1269	C
46	S2	1270	G
46	S2	1271	G
46	S2	1273	C
46	S2	1275	G
46	S2	1276	G
46	S2	1277	A
46	S2	1279	A
46	S2	1284	C
46	S2	1286	G
46	S2	1287	G
46	S2	1288	A
46	S2	1289	U
46	S2	1292	A
46	S2	1293	C
46	S2	1294	A
46	S2	1295	G
46	S2	1296	A
46	S2	1297	U
46	S2	1298	U
46	S2	1299	G
46	S2	1301	U
46	S2	1303	G
46	S2	1304	C
46	S2	1305	U
46	S2	1307	U
46	S2	1308	U
46	S2	1309	U
46	S2	1310	C
46	S2	1311	U

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Mol	Chain	Res	Type
46	S2	1315	U
46	S2	1318	C
46	S2	1319	G
46	S2	1321	G
46	S2	1324	U
46	S2	1325	G
46	S2	1331	G
46	S2	1343	U
46	S2	1344	U
46	S2	1372	U
46	S2	1373	U
46	S2	1374	C
46	S2	1379	A
46	S2	1391	U
46	S2	1398	U
46	S2	1399	G
46	S2	1401	U
46	S2	1403	A
46	S2	1404	C
46	S2	1405	U
46	S2	1407	G
46	S2	1409	U
46	S2	1412	G
46	S2	1417	C
46	S2	1419	C
46	S2	1420	C
46	S2	1421	G
46	S2	1422	A
46	S2	1423	G
46	S2	1424	C
46	S2	1425	G
46	S2	1426	G
46	S2	1427	U
46	S2	1428	C
46	S2	1430	G
46	S2	1431	C
46	S2	1432	G
46	S2	1433	U
46	S2	1442	U
46	S2	1443	U
46	S2	1448	G
46	S2	1453	A

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Mol	Chain	Res	Type
46	S2	1455	A
46	S2	1463	U
46	S2	1465	C
46	S2	1477	A
46	S2	1479	U
46	S2	1488	A
46	S2	1490	A
46	S2	1491	G
46	S2	1498	G
46	S2	1507	A
46	S2	1508	G
46	S2	1509	A
46	S2	1510	U
46	S2	1513	C
46	S2	1515	G
46	S2	1518	G
46	S2	1521	G
46	S2	1522	C
46	S2	1523	A
46	S2	1534	A
46	S2	1538	A
46	S2	1540	U
46	S2	1542	G
46	S2	1553	G
46	S2	1554	C
46	S2	1556	U
46	S2	1557	A
46	S2	1558	C
46	S2	1559	C
46	S2	1565	C
46	S2	1569	C
46	S2	1580	A
46	S2	1581	A
46	S2	1582	C
46	S2	1583	C
46	S2	1586	U
46	S2	1588	G
46	S2	1589	A
46	S2	1595	A
46	S2	1596	U
46	S2	1599	G
46	S2	1600	U

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Mol	Chain	Res	Type
46	S2	1601	G
46	S2	1602	A
46	S2	1604	G
46	S2	1620	A
46	S2	1622	U
46	S2	1624	A
46	S2	1638	A
46	S2	1647	C
46	S2	1649	G
46	S2	1655	G
46	S2	1662	A
46	S2	1664	A
46	S2	1666	G
46	S2	1672	G
46	S2	1681	G
46	S2	1687	G
46	S2	1700	A
46	S2	1719	G
46	S2	1720	A
46	S2	1721	U
46	S2	1722	U
46	S2	1723	G
46	S2	1729	U
46	S2	1730	U
46	S2	1731	U
46	S2	1733	G
46	S2	1736	A
46	S2	1743	C
46	S2	1744	G
46	S2	1748	C
46	S2	1749	G
46	S2	1752	C
46	S2	1753	C
46	S2	1754	C
46	S2	1778	G
46	S2	1779	C
46	S2	1782	A
46	S2	1784	C
46	S2	1785	G
46	S2	1786	C
46	S2	1787	U
46	S2	1790	G

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Mol	Chain	Res	Type
46	S2	1791	A
46	S2	1807	A
46	S2	1809	U
46	S2	1810	A
46	S2	1811	U
46	S2	1818	G
46	S2	1819	A
46	S2	1825	A
46	S2	1826	A
46	S2	1827	G
46	S2	1828	U
46	S2	1830	G
46	S2	1832	A
46	S2	1836	A
46	S2	1839	U
46	S2	1850	G
46	S2	1852	A
46	S2	1853	C
46	S2	1862	G
46	S2	1863	G
46	S2	1864	A
46	S2	1865	U
46	S2	1866	C
46	S2	1870	A
75	Sx	33	U
79	S6	6	G
79	S6	10	G
79	S6	17	C
79	S6	18	G
79	S6	20	A
79	S6	21	A
79	S6	27	C
79	S6	32	C
79	S6	33	C
79	S6	34	C
79	S6	46	G
79	S6	48	C
79	S6	54	A
79	S6	55	U
79	S6	57	G
79	S6	58	A
79	S6	59	A

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Mol	Chain	Res	Type
79	S6	61	C
79	S6	62	C
79	S6	67	U
79	S6	69	U
79	S6	75	C
79	S6	76	A
79	S7	3	G
79	S7	11	G
79	S7	12	C
79	S7	14	C
79	S7	18	G
79	S7	19	G
79	S7	20	A
79	S7	21	A
79	S7	23	C
79	S7	24	G
79	S7	35	A
79	S7	40	C
79	S7	46	G
79	S7	47	U
79	S7	48	C
79	S7	50	A
79	S7	53	G
79	S7	54	A
79	S7	55	U
79	S7	58	A
79	S7	59	A
79	S7	62	C
79	S7	66	C
79	S7	67	U
79	S7	72	U
79	S7	75	C
79	S7	76	A

All (76) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	L5	1	C
1	L5	234	G
1	L5	266	G
1	L5	415	U
1	L5	453	U

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Mol	Chain	Res	Type
1	L5	456	G
1	L5	458	C
1	L5	486	C
1	L5	676	C
1	L5	753	G
1	L5	760	G
1	L5	823	C
1	L5	830	C
1	L5	1054	G
1	L5	1192	G
1	L5	1227	G
1	L5	1271	G
1	L5	1447	G
1	L5	1563	G
1	L5	1585	U
1	L5	2345	A
1	L5	2519	A
1	L5	2540	C
1	L5	2649	A
1	L5	3416	A
1	L5	3422	G
1	L5	3427	U
1	L5	3605	C
1	L5	3714	U
1	L5	3904	A
1	L5	4352	U
1	L5	4612	C
1	L5	4686	A
2	L7	3	C
2	L7	52	C
2	L7	60	G
3	L8	5	U
46	S2	34	U
46	S2	55	U
46	S2	94	G
46	S2	96	C
46	S2	97	U
46	S2	118	C
46	S2	126	G
46	S2	293	A
46	S2	446	A
46	S2	454	C

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Mol	Chain	Res	Type
46	S2	483	G
46	S2	484	C
46	S2	485	A
46	S2	512	U
46	S2	536	G
46	S2	537	A
46	S2	565	A
46	S2	592	U
46	S2	593	C
46	S2	599	G
46	S2	629	A
46	S2	842	G
46	S2	862	A
46	S2	893	U
46	S2	1241	A
46	S2	1294	A
46	S2	1297	U
46	S2	1343	U
46	S2	1408	U
46	S2	1414	G
46	S2	1416	C
46	S2	1442	U
46	S2	1476	G
46	S2	1555	C
46	S2	1784	C
79	S6	53	G
79	S6	54	A
79	S6	74	C
79	S7	53	G

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 100 ligands modelled in this entry, 100 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

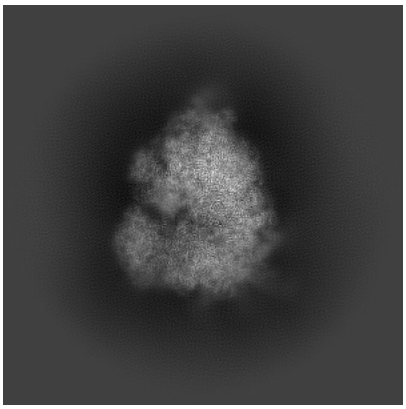
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-62285. These allow visual inspection of the internal detail of the map and identification of artifacts.

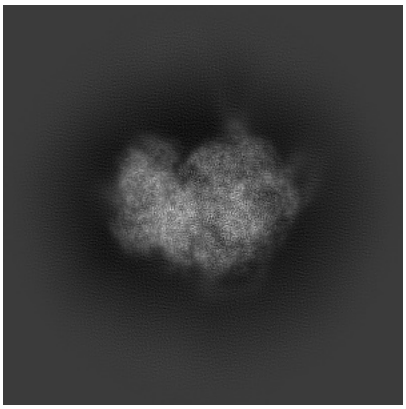
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

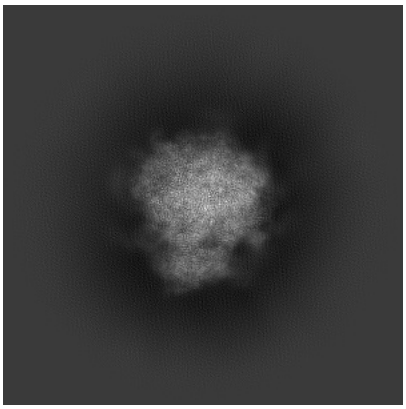
6.1.1 Primary map



X

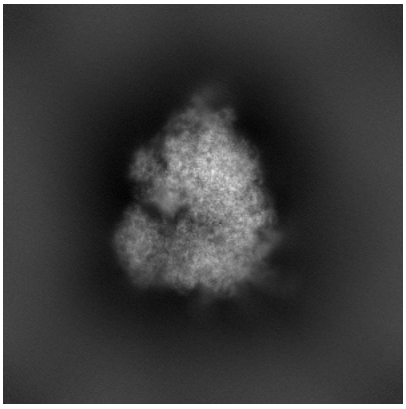


Y

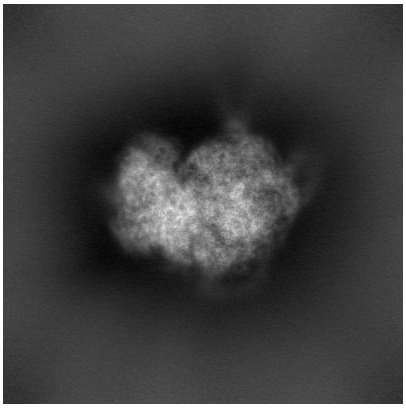


Z

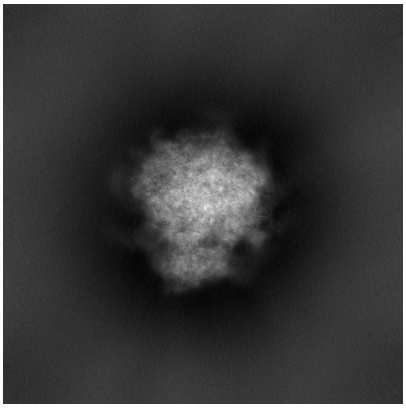
6.1.2 Raw map



X



Y

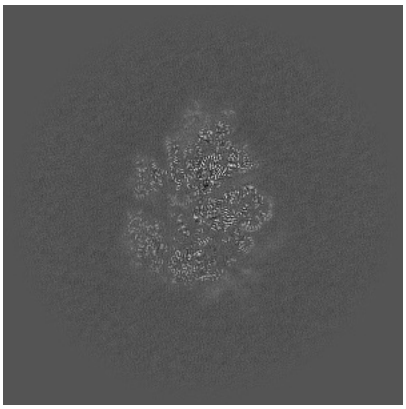


Z

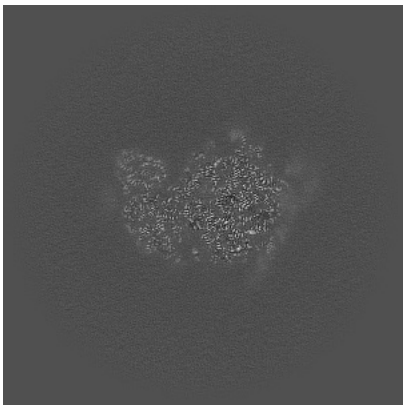
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

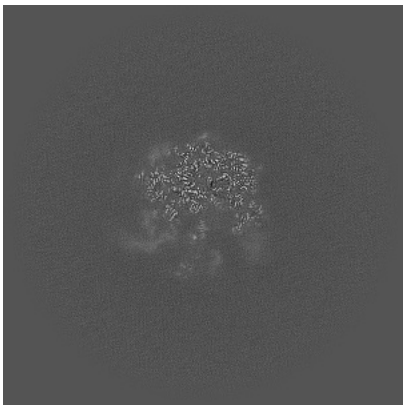
6.2.1 Primary map



X Index: 280

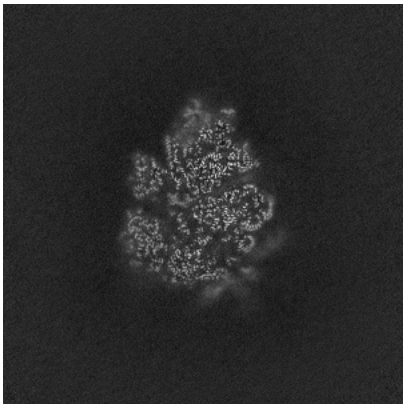


Y Index: 280

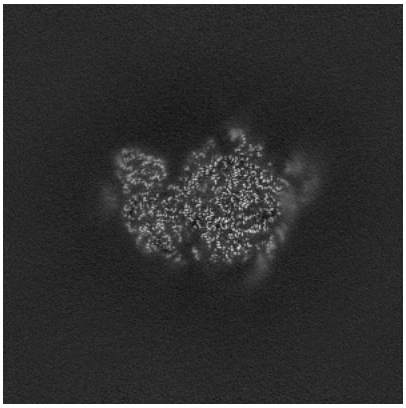


Z Index: 280

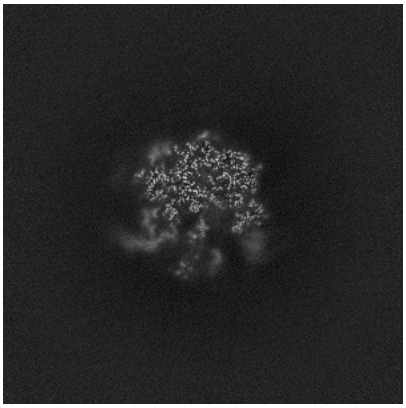
6.2.2 Raw map



X Index: 280



Y Index: 280

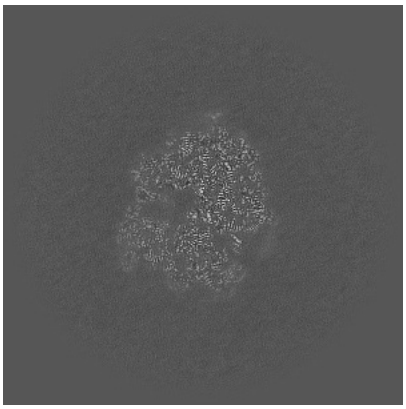


Z Index: 280

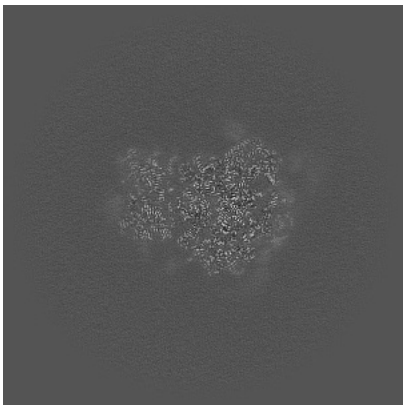
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

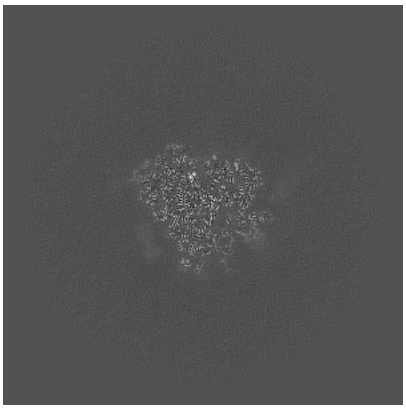
6.3.1 Primary map



X Index: 260

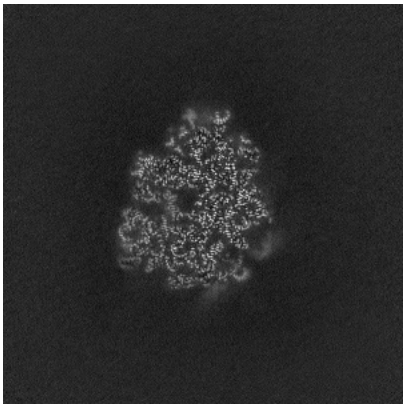


Y Index: 292

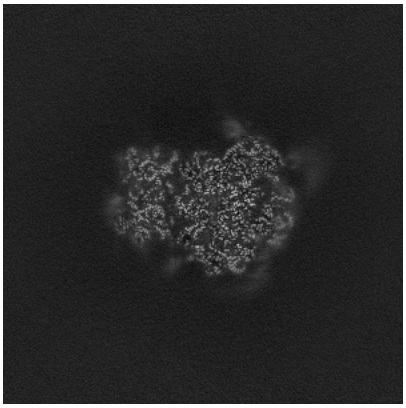


Z Index: 312

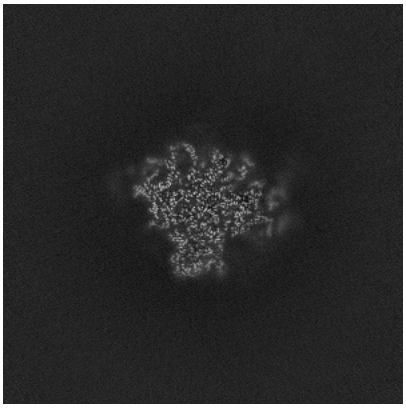
6.3.2 Raw map



X Index: 268



Y Index: 294

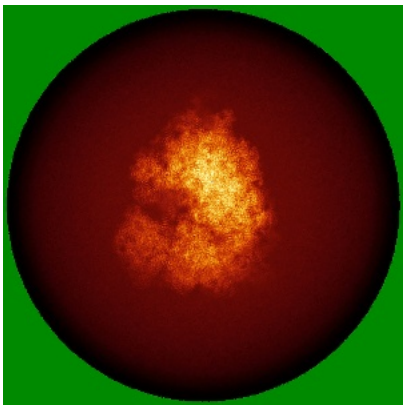


Z Index: 325

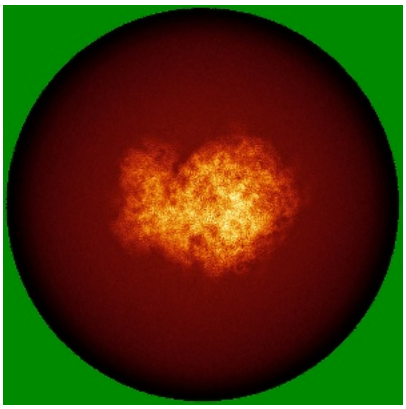
The images above show the largest variance slices of the map in three orthogonal directions.

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

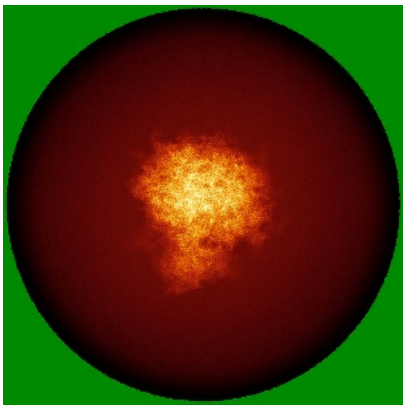
6.4.1 Primary map



X

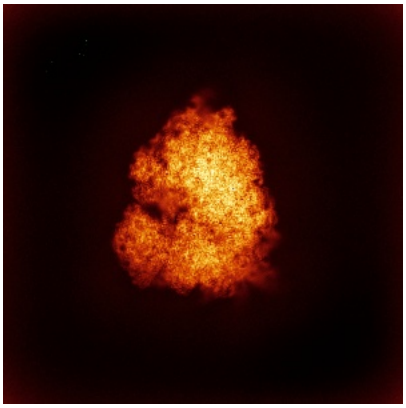


Y

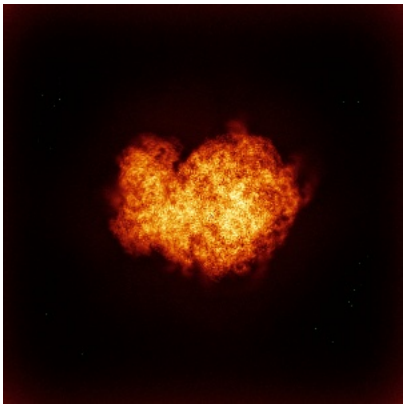


Z

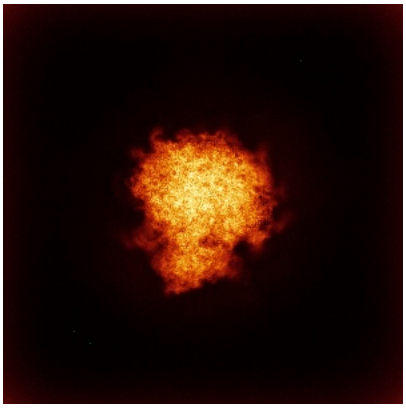
6.4.2 Raw map



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 0.8. 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.

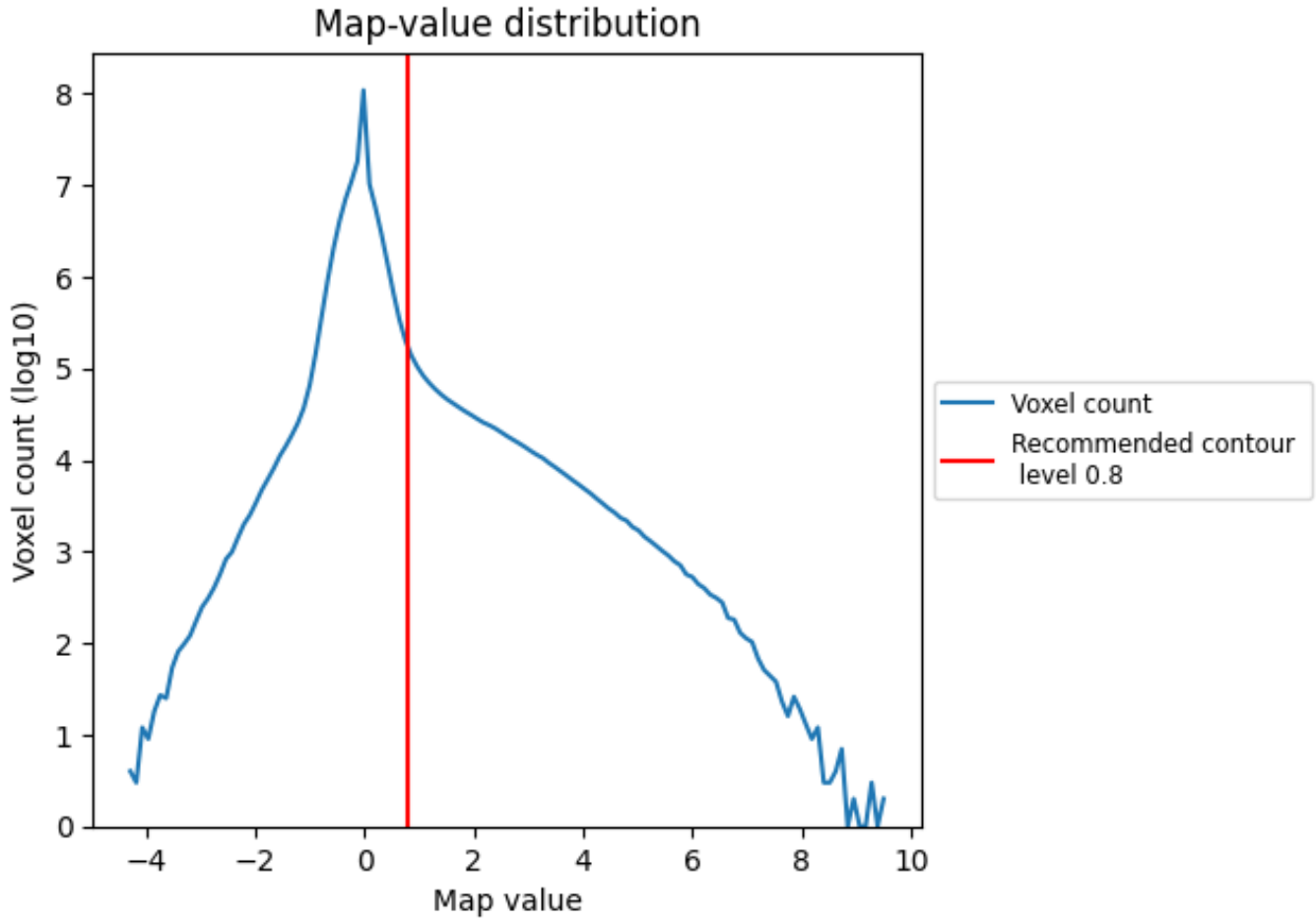
6.6 Mask visualisation (i)

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

7 Map analysis

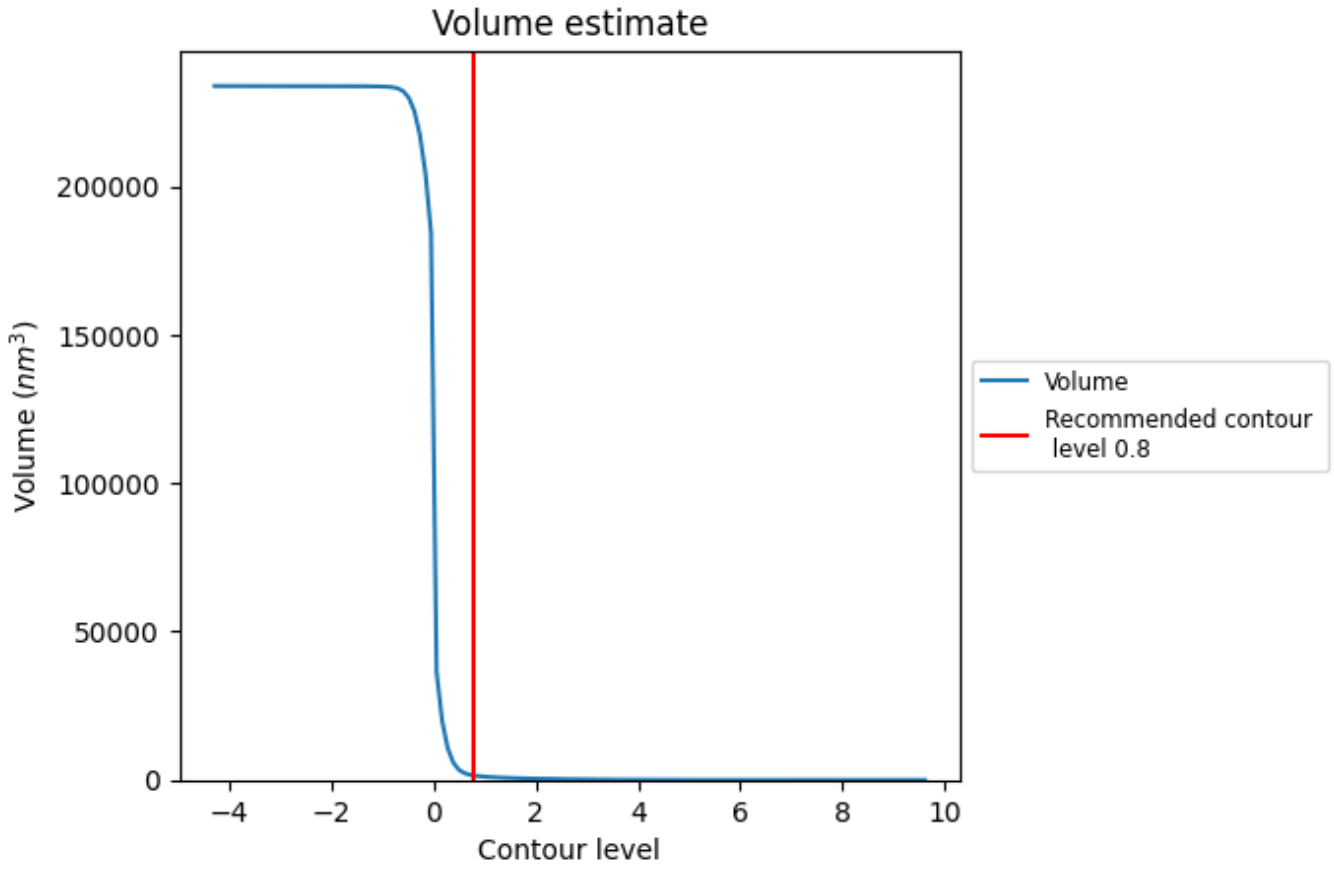
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

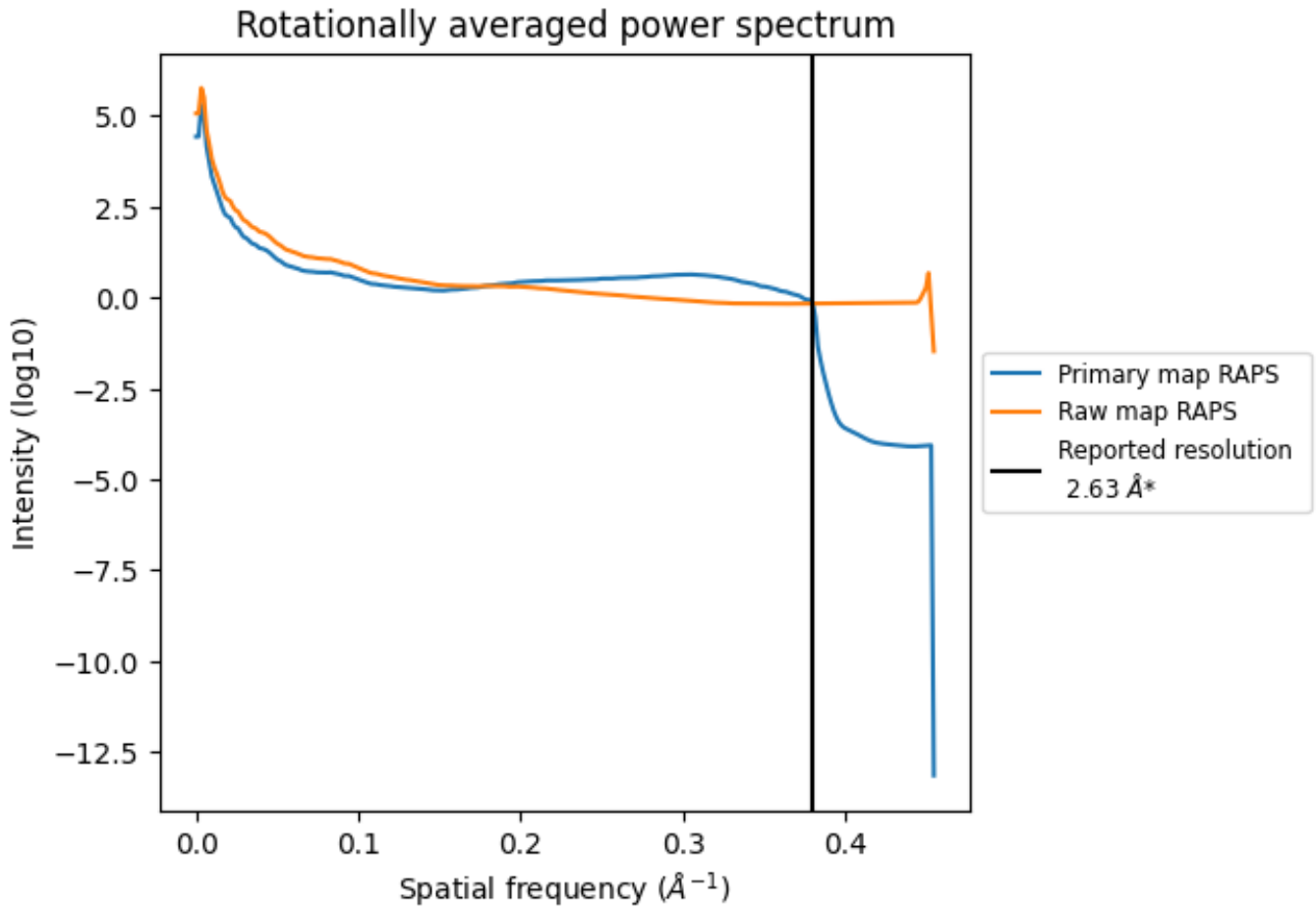
7.2 Volume estimate



The volume at the recommended contour level is 1473 nm^3; this corresponds to an approximate mass of 1331 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)

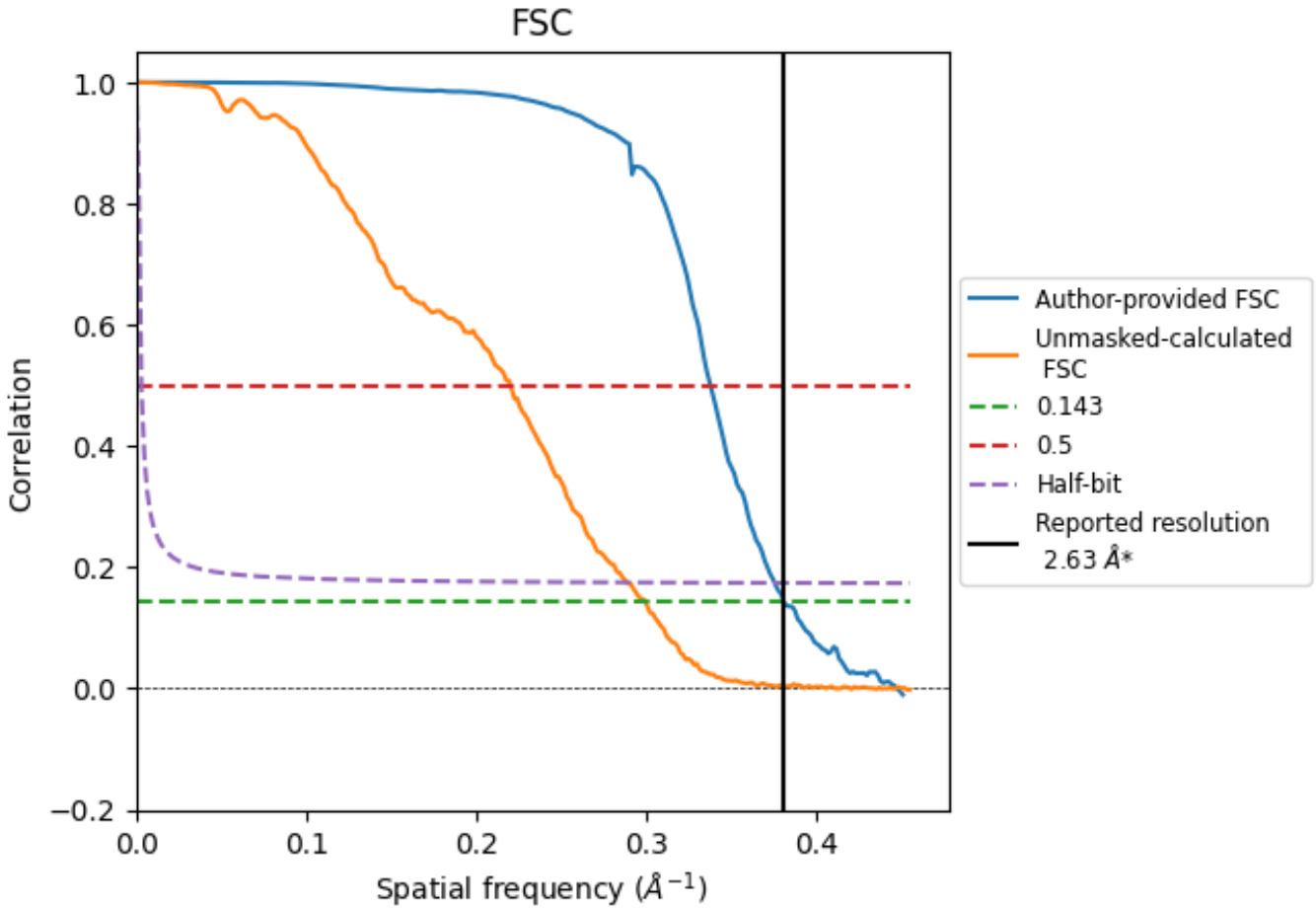


*Reported resolution corresponds to spatial frequency of 0.380 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.380 Å^{-1}

8.2 Resolution estimates (i)

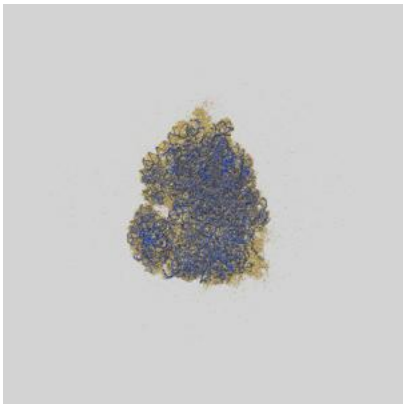
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.63	-	-
Author-provided FSC curve	2.63	2.96	2.67
Unmasked-calculated*	3.34	4.55	3.47

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.34 differs from the reported value 2.63 by more than 10 %

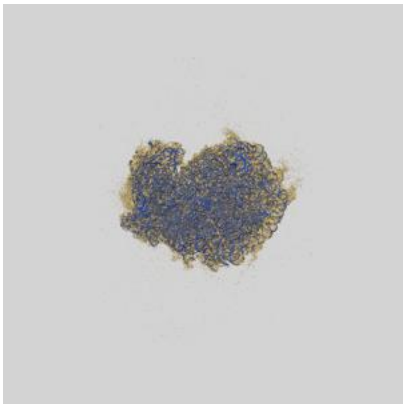
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-62285 and PDB model 9KDT. Per-residue inclusion information can be found in section 3 on page 20.

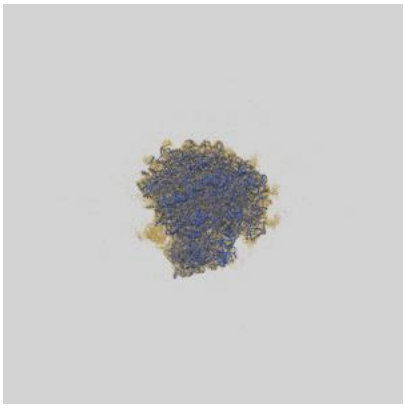
9.1 Map-model overlay



X



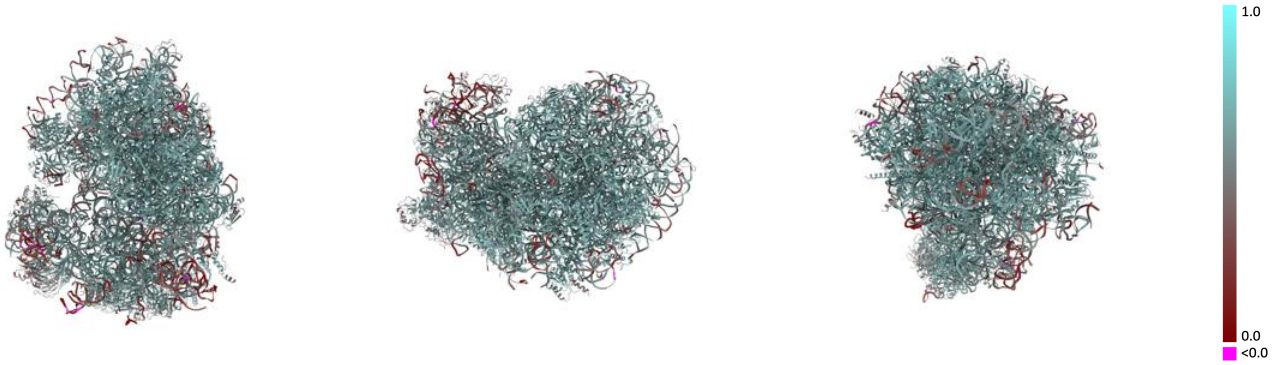
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.8 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.

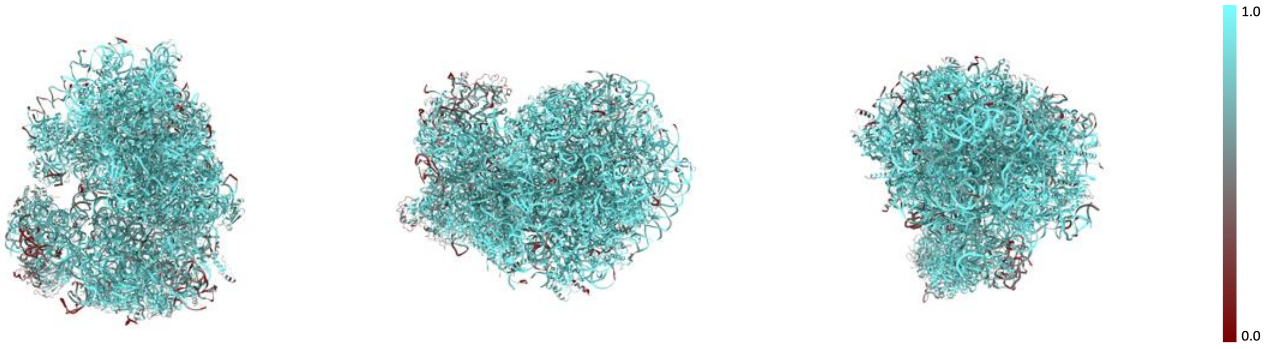
9.2 Q-score mapped to coordinate model



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.

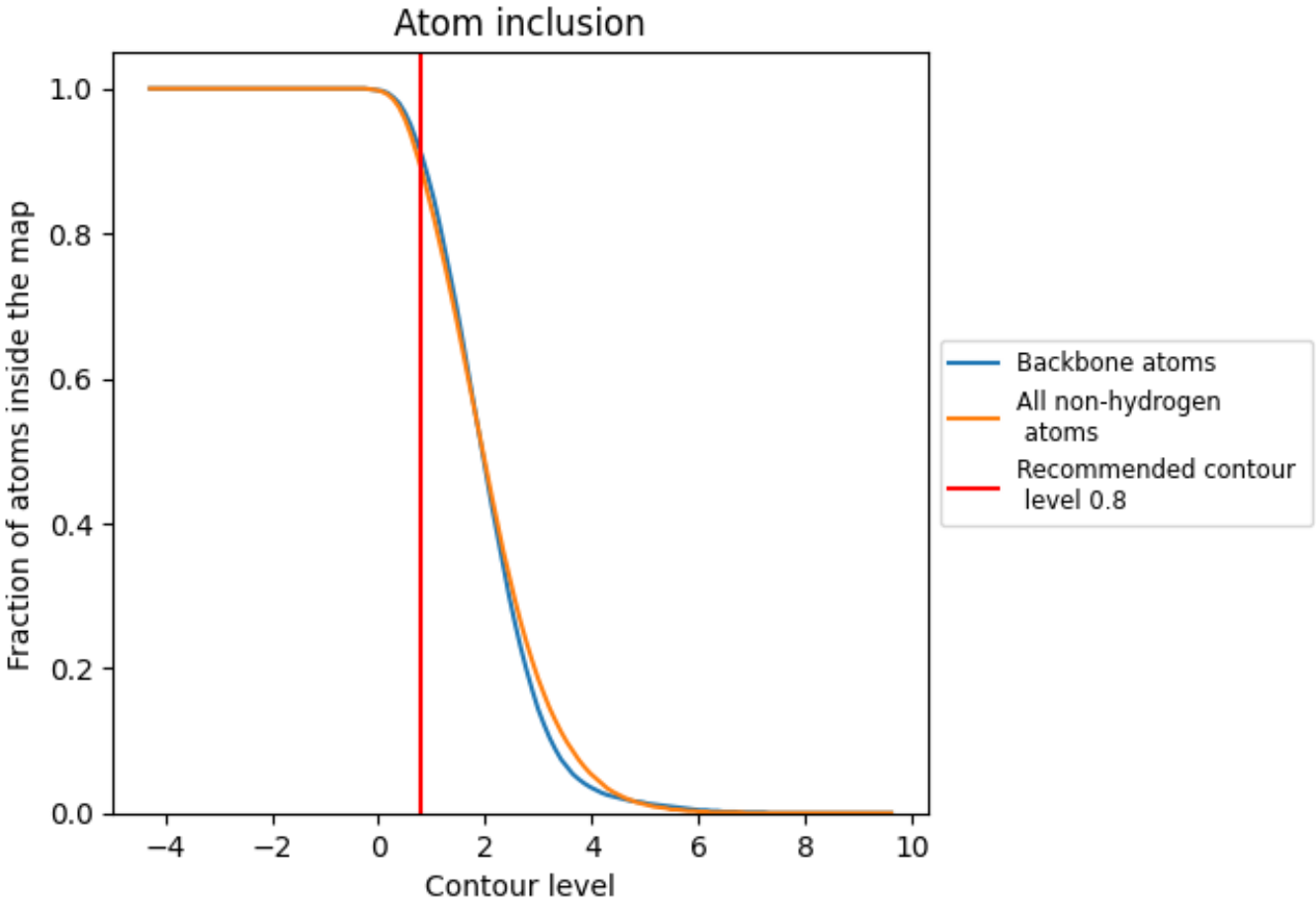
9.3 Atom inclusion mapped to coordinate model



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 (0.8).

9.4 Atom inclusion (i)



At the recommended contour level, 91% of all backbone atoms, 89% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.8) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8900	0.5870
L5	0.9350	0.6010
L7	0.9850	0.6320
L8	0.9570	0.6200
LA	0.9630	0.6540
LB	0.9260	0.6360
LC	0.9570	0.6470
LD	0.8890	0.5990
LE	0.9070	0.6080
LF	0.9670	0.6540
LG	0.8370	0.5950
LH	0.8910	0.6110
LI	0.8170	0.5950
LJ	0.8650	0.5960
LL	0.9110	0.6300
LM	0.9360	0.6320
LN	0.9870	0.6690
LO	0.9570	0.6490
LP	0.9490	0.6480
LQ	0.9730	0.6660
LR	0.9090	0.6310
LS	0.9570	0.6490
LT	0.9030	0.6310
LU	0.8140	0.5640
LV	0.9430	0.6480
LW	0.9400	0.6400
LX	0.9270	0.6430
LY	0.9240	0.6310
LZ	0.9280	0.6350
La	0.9650	0.6620
Lb	0.8730	0.5950
Lc	0.9400	0.6350
Ld	0.8870	0.6150
Le	0.9710	0.6600
Lf	0.9730	0.6600

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Chain	Atom inclusion	Q-score
Lg	0.9380	0.6440
Lh	0.9160	0.6360
Li	0.8920	0.6210
Lj	0.9760	0.6600
Lk	0.7970	0.5870
Ll	0.9720	0.6510
Lm	0.9380	0.6310
Ln	0.9310	0.6480
Lo	0.9290	0.6390
Lp	0.9200	0.6420
Lr	0.9720	0.6540
S2	0.8490	0.5280
S6	0.4630	0.2770
S7	0.8640	0.5610
SA	0.8780	0.6040
SB	0.8540	0.6010
SC	0.9060	0.6160
SD	0.7170	0.5250
SE	0.8800	0.5820
SF	0.8500	0.5770
SG	0.6310	0.4860
SH	0.6690	0.5110
SI	0.8960	0.6000
SJ	0.9000	0.5850
SK	0.5200	0.4220
SL	0.9310	0.6370
SN	0.9150	0.6250
SO	0.8900	0.6140
SP	0.6670	0.4970
SQ	0.8420	0.5630
SR	0.6850	0.5170
SS	0.7910	0.5540
ST	0.8240	0.5550
SU	0.6130	0.4760
SV	0.8340	0.5770
SW	0.9440	0.6310
SX	0.9050	0.6150
SY	0.7000	0.4570
SZ	0.7520	0.5140
Sa	0.9030	0.6100
Sb	0.7570	0.5450
Sc	0.7870	0.5560

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Chain	Atom inclusion	Q-score
Sd	0.7350	0.5090
Se	0.7700	0.5480
Sg	0.6290	0.4660
Sx	0.5890	0.3720
Z	0.3530	0.3540