Full wwPDB EM Validation Report ⓘ

Mar 5, 2026 – 08:13 PM UTC

PDB ID	:	9S3D / pdb_00009s3d
EMDB ID	:	EMD-54530
Title	:	NAC bound human RNC with 58 amino acid ARF1-linker
Authors	:	Denk, T.; Berninghausen, O.; Beckmann, R.
Deposited on	:	2025-07-24
Resolution	:	2.32 Å(reported)

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

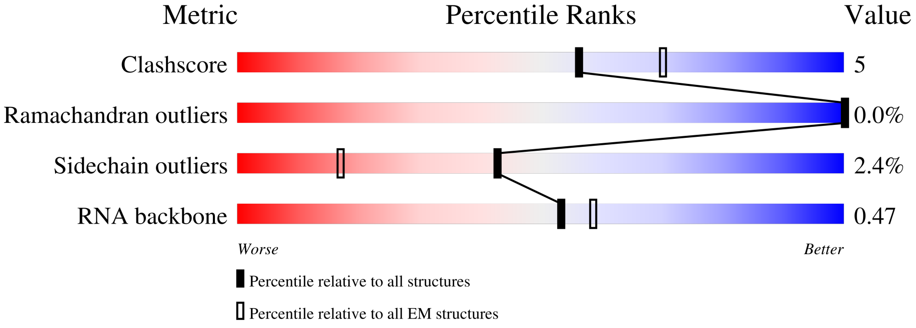
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

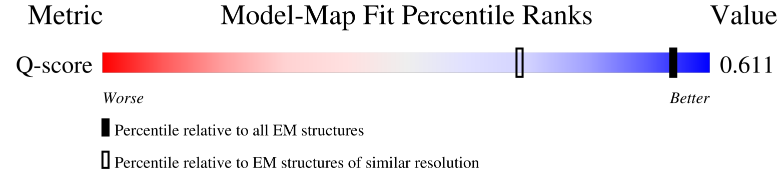
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.32 Å.

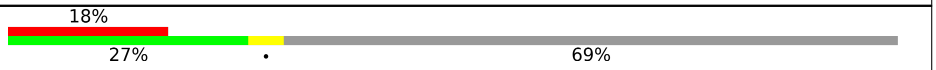
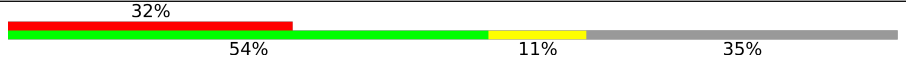
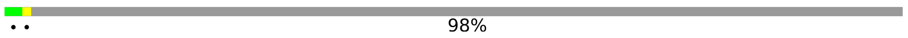
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.





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	4359 (1.82 - 2.82)

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	NA	215	
2	NB	162	
3	CM	586	

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Mol	Chain	Length	Quality of chain
4	CP	75	 60% 40%
5	CR	437	 81% 13% 5%
6	CZ	95	 39% 59%
7	L5	5070	 48% 22% 28%
8	L7	121	 75% 22%
9	L8	157	 69% 26%
10	LA	257	 79% 16%
11	LB	403	 84% 13%
12	LC	427	 77% 8% 15%
13	LD	297	 87% 12%
14	LE	288	 63% 12% 24%
15	LF	248	 74% 17% 9%
16	LG	266	 75% 11% 14%
17	LH	192	 82% 17%
18	LI	214	 79% 17%
19	LJ	178	 79% 16% 5%
20	LL	211	 83% 13%
21	LM	215	 57% 8% 35%
22	LN	204	 88% 11%
23	LO	203	 85% 13%
24	LP	184	 74% 8% 17%
25	LQ	188	 87% 13%
26	LR	196	 80% 10% 10%
27	LS	176	 83% 15%
28	LT	160	 82% 18%

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Mol	Chain	Length	Quality of chain
29	LU	128	
30	LV	140	
31	LW	157	
32	LX	156	
33	LY	145	
34	LZ	136	
35	La	148	
36	Lb	159	
37	Lc	115	
38	Ld	125	
39	Le	135	
40	Lf	110	
41	Lg	117	
42	Lh	123	
43	Li	105	
44	Lj	97	
45	Lk	70	
46	Ll	51	
47	Lm	128	
48	Ln	25	
49	Lo	106	
50	Lp	92	
51	Lr	137	
52	Ls	317	
53	Lt	165	

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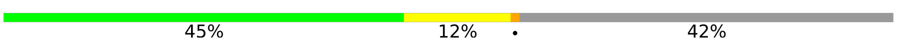
Mol	Chain	Length	Quality of chain
54	S2	1869	 53% 33% 6% 8%
55	SA	295	 59% 14% 27%
56	SB	264	 63% 17% 19%
57	SC	293	 65% 10% 25%
58	SD	243	 77% 15% 8%
59	SE	263	 81% 19%
60	SF	204	 69% 20% 11%
61	SG	249	 76% 16% • 7%
62	SH	194	 78% 15% • 6%
63	SI	208	 82% 17% •
64	SJ	194	 75% 17% • 8%
65	SK	165	 45% 12% • 42%
66	SL	158	 • 83% 8% 9%
67	SM	132	 • 63% 30% 8%
68	SN	151	 87% 12% •
69	SO	151	 74% 15% 11%
70	SP	145	 66% 21% • 11%
71	SQ	146	 • 79% 18% •
72	SR	135	 • 79% 19% •
73	SS	152	 • 63% 30% • 7%
74	ST	145	 • 76% 21% ••
75	SU	119	 • 68% 16% • 15%
76	SV	83	 88% 12%
77	SW	130	 87% 12% •
78	SX	143	 85% 13% •

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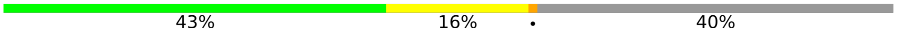
Mol	Chain	Length	Quality of chain
79	SY	133	
80	SZ	125	
81	Sa	115	
82	Sb	84	
83	Sc	69	
84	Sd	56	
85	Se	133	
86	Sf	156	
87	Sg	317	

2 Entry composition (i)

There are 90 unique types of molecules in this entry. The entry contains 218816 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Nascent polypeptide-associated complex subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	NA	66	522	329	95	97	1	0	0

- Molecule 2 is a protein called Isoform 2 of Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	NB	105	813	508	152	150	3	0	0

- Molecule 3 is a RNA chain called 58 amino acid ARF1-linker - V5 peptide - hCMV staller mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	CM	12	247	111	37	87	12	0	0

- Molecule 4 is a RNA chain called prolyl-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	CP	75	1602	713	284	530	75	0	0

- Molecule 5 is a protein called Eukaryotic peptide chain release factor subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	CR	414	3269	2080	557	621	11	0	0

- Molecule 6 is a protein called nascent chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	CZ	39	261	169	43	47	2	0	0

- Molecule 7 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
7	L5	3648	78199	34823	14307	25422	3647	0	0

- Molecule 8 is a RNA chain called 5S rRNA.

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

- Molecule 9 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
9	L8	156	3314	1480	585	1094	155	0	0

- Molecule 10 is a protein called 60S ribosomal protein L8.

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

- Molecule 11 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	LB	395	3183	2027	597	545	14	0	0

- Molecule 12 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	LC	364	2884	1814	576	479	15	0	0

- Molecule 13 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	LD	293	2361	1496	430	421	14	0	0

- Molecule 14 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	LE	219	1754	1129	334	287	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	LF	225	1870	1202	358	301	9	0	0

- Molecule 16 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	LG	229	1818	1157	351	306	4	0	0

- Molecule 17 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	LH	190	1510	950	282	272	6	0	0

- Molecule 18 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	LI	207	1666	1059	323	270	14	0	0

- Molecule 19 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	LJ	169	1329	841	250	232	6	0	0

- Molecule 20 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	LL	205	1630	1020	340	266	4	0	0

- Molecule 21 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	LM	139	1122	720	216	179	7	0	0

- Molecule 22 is a protein called 60S ribosomal protein L15.

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

- Molecule 23 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	LO	200	1633	1053	318	257	5	0	0

- Molecule 24 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	LP	153	1234	771	240	214	9	0	0

- Molecule 25 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	LQ	187	1502	939	313	245	5	0	0

- Molecule 26 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	LR	176	1452	898	318	227	9	0	0

- Molecule 27 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	LS	175	1452	925	283	234	10	0	0

- Molecule 28 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	LT	159	1282	813	250	213	6	0	0

- Molecule 29 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	LU	101	806	520	141	143	2	0	0

- Molecule 30 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	LV	131	971	613	183	170	5	0	0

- Molecule 31 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	LW	115	808	506	160	139	3	0	0

- Molecule 32 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	LX	120	981	627	184	169	1	0	0

- Molecule 33 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	LY	134	1111	697	225	186	3	0	0

- Molecule 34 is a protein called 60S ribosomal protein L27.

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

- Molecule 35 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	La	147	1154	731	236	184	3	0	0

- Molecule 36 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	Lb	75	590	367	123	97	3	0	0

- Molecule 37 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	Lc	97	742	473	130	133	6	0	0

- Molecule 38 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	Ld	107	874	554	171	147	2	0	0

- Molecule 39 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	Le	128	1049	664	215	165	5	0	0

- Molecule 40 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	Lf	109	872	552	173	144	3	0	0

- Molecule 41 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	Lg	114	889	557	184	142	6	0	0

- Molecule 42 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	Lh	121	1006	635	203	167	1	0	0

- Molecule 43 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	Li	102	813	510	176	123	4	0	0

- Molecule 44 is a protein called Large ribosomal subunit protein eL37.

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

- Molecule 45 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	Lk	69	542	350	100	91	1	0	0

- Molecule 46 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	Ll	50	444	281	98	64	1	0	0

- Molecule 47 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	Lm	52	425	264	90	65	6	0	0

- Molecule 48 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
48	Ln	24	230	139	62	26	3	0	0

- Molecule 49 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	Lo	105	862	542	175	139	6	0	0

- Molecule 50 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	Lp	91	696	440	135	114	7	0	0

- Molecule 51 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	Lr	125	997	618	207	168	4	0	0

- Molecule 52 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	Ls	212	1640	1042	284	305	9	0	0

- Molecule 53 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	Lt	160	1208	749	226	229	4	0	0

- Molecule 54 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
54	S2	1713	36562	16320	6564	11966	1712	0	0

- Molecule 55 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	SA	216	1671	1068	297	298	8	0	0

- Molecule 56 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	SB	213	Total	C	N	O	S	0	0
			1718	1092	308	304	14		

- Molecule 57 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	SC	219	Total	C	N	O	S	0	0
			1661	1076	284	291	10		

- Molecule 58 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	SD	223	Total	C	N	O	S	0	0
			1594	1023	291	273	7		

- Molecule 59 is a protein called Small ribosomal subunit protein eS4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	SE	262	Total	C	N	O	S	0	0
			1972	1270	370	324	8		

- Molecule 60 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	SF	181	Total	C	N	O	S	0	0
			1403	879	269	248	7		

- Molecule 61 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	SG	231	Total	C	N	O	S	0	0
			1634	1026	332	269	7		

- Molecule 62 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms				AltConf	Trace
62	SH	183	Total	C	N	O	0	0
			1274	819	242	213		

- Molecule 63 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	SI	206	1574	989	308	272	5	0	0

- Molecule 64 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	SJ	179	1431	915	290	224	2	0	0

- Molecule 65 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	SK	96	726	479	127	115	5	0	0

- Molecule 66 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	SL	144	1143	730	213	194	6	0	0

- Molecule 67 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	SM	122	950	596	168	177	9	0	0

- Molecule 68 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	SN	150	1182	758	226	197	1	0	0

- Molecule 69 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
69	SO	134	969	596	194	173	6	0	0

- Molecule 70 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	SP	129	990	626	190	168	6	0	0

- Molecule 71 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
71	SQ	142	1075	689	204	179	3	0	0

- Molecule 72 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
72	SR	131	942	600	179	159	4	0	0

- Molecule 73 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
73	SS	141	1130	712	232	185	1	0	0

- Molecule 74 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
74	ST	143	1081	679	210	189	3	0	0

- Molecule 75 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
75	SU	101	713	447	137	125	4	0	0

- Molecule 76 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
76	SV	83	618	385	115	113	5	0	0

- Molecule 77 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
77	SW	129	1026	655	193	172	6	0	0

- Molecule 78 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
78	SX	141	1078	682	212	181	3	0	0

- Molecule 79 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
79	SY	123	927	588	183	152	4	0	0

- Molecule 80 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
80	SZ	75	559	361	105	92	1	0	0

- Molecule 81 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
81	Sa	99	781	487	165	124	5	0	0

- Molecule 82 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
82	Sb	83	618	386	118	107	7	0	0

- Molecule 83 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
83	Sc	63	472	289	92	89	2	0	0

- Molecule 84 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Sd	53	Total 433	C 271	N 87	O 70	S 5	0	0

- Molecule 85 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	Se	55	Total 416	C 254	N 93	O 68	S 1	0	0

- Molecule 86 is a protein called Ubiquitin.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	Sf	63	Total 515	C 324	N 98	O 86	S 7	0	0

- Molecule 87 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
87	Sg	308	Total 2180	C 1393	N 381	O 395	S 11	0	0

- Molecule 88 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
88	L5	127	Total 127	Mg 127	0
88	L7	3	Total 3	Mg 3	0
88	L8	3	Total 3	Mg 3	0
88	LA	1	Total 1	Mg 1	0
88	LC	1	Total 1	Mg 1	0
88	LN	1	Total 1	Mg 1	0
88	LP	1	Total 1	Mg 1	0
88	LV	1	Total 1	Mg 1	0
88	S2	53	Total 53	Mg 53	0

- Molecule 89 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
89	Lg	1	Total Zn 1 1	0
89	Lj	1	Total Zn 1 1	0
89	Lm	1	Total Zn 1 1	0
89	Lo	1	Total Zn 1 1	0
89	Lp	1	Total Zn 1 1	0
89	Sa	1	Total Zn 1 1	0
89	Sd	1	Total Zn 1 1	0
89	Sf	1	Total Zn 1 1	0

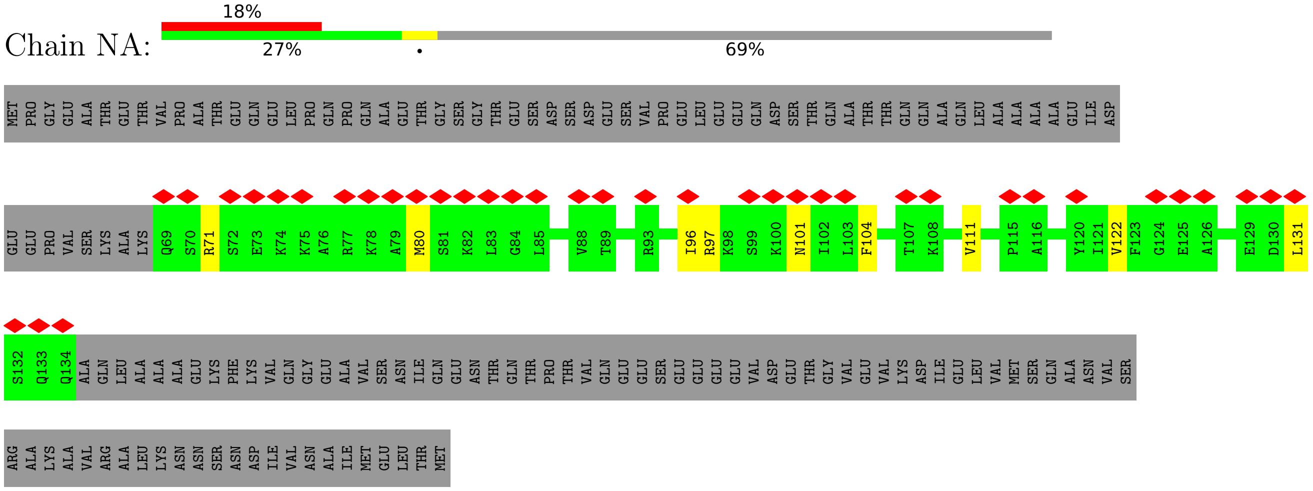
- Molecule 90 is water.

Mol	Chain	Residues	Atoms	AltConf
90	L5	4	Total O 4 4	0
90	L7	1	Total O 1 1	0
90	LI	1	Total O 1 1	0
90	LN	1	Total O 1 1	0
90	La	1	Total O 1 1	0
90	S2	3	Total O 3 3	0

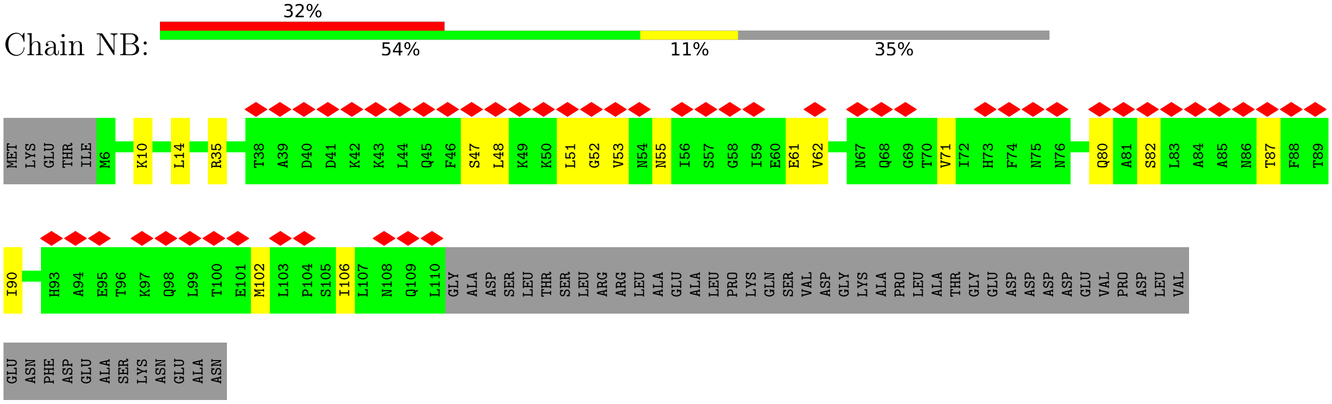
3 Residue-property plots ⓘ

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

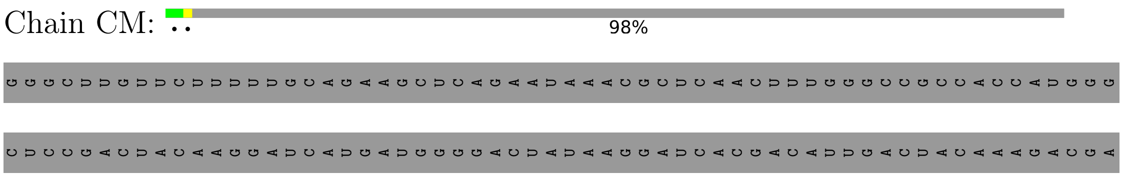
- Molecule 1: Nascent polypeptide-associated complex subunit alpha

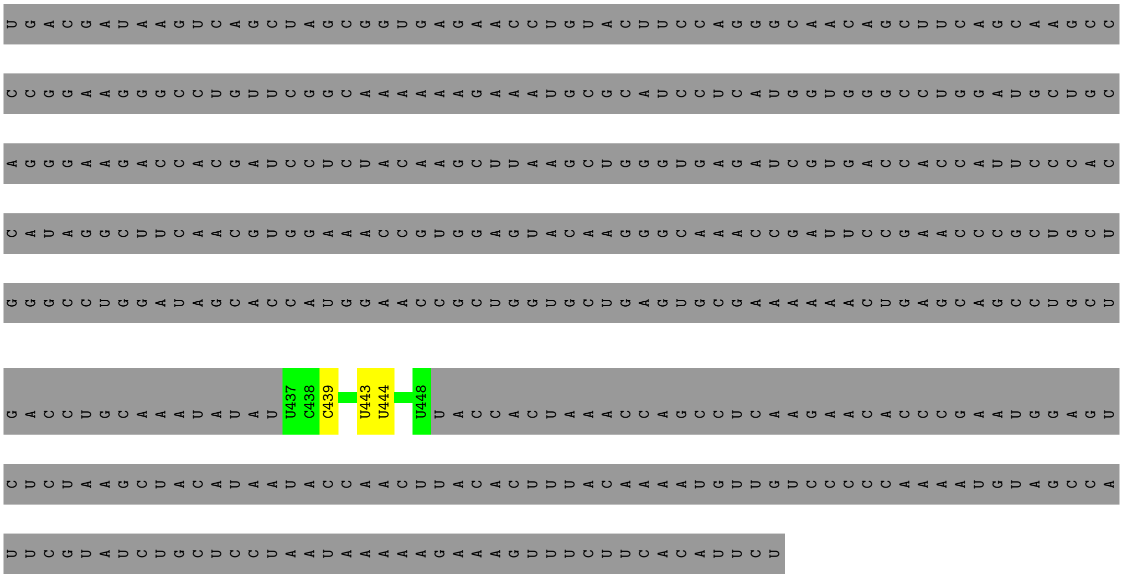


- Molecule 2: Isoform 2 of Transcription factor BTF3



- Molecule 3: 58 amino acid ARF1-linker - V5 peptide - hCMV staller mRNA





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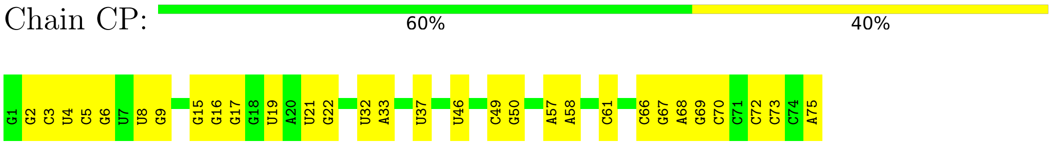
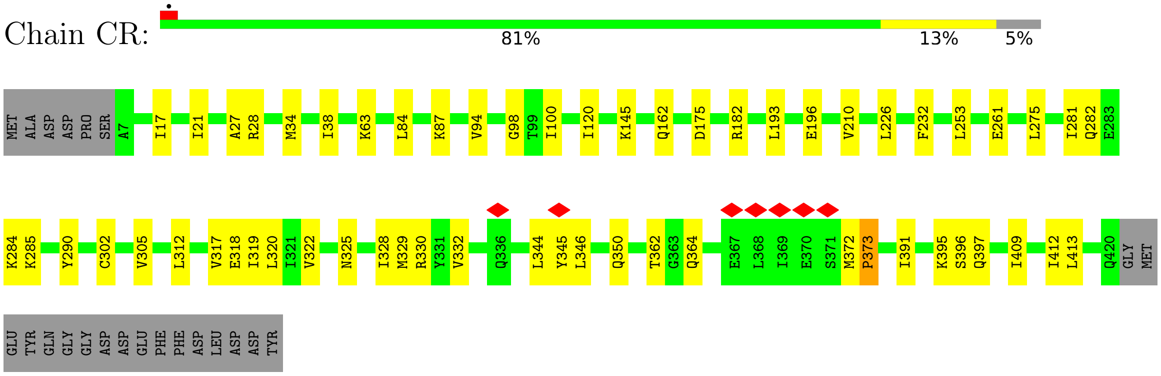
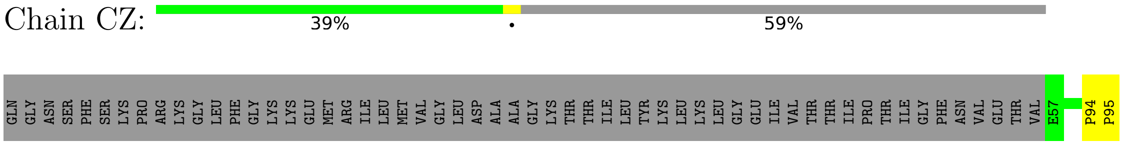


- Molecule 5: Eukaryotic peptide chain release factor subunit 1



- Molecule 6: nascent chain



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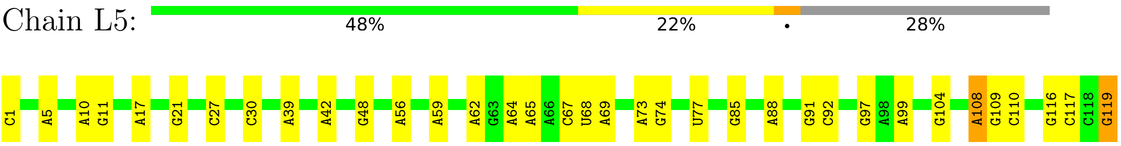

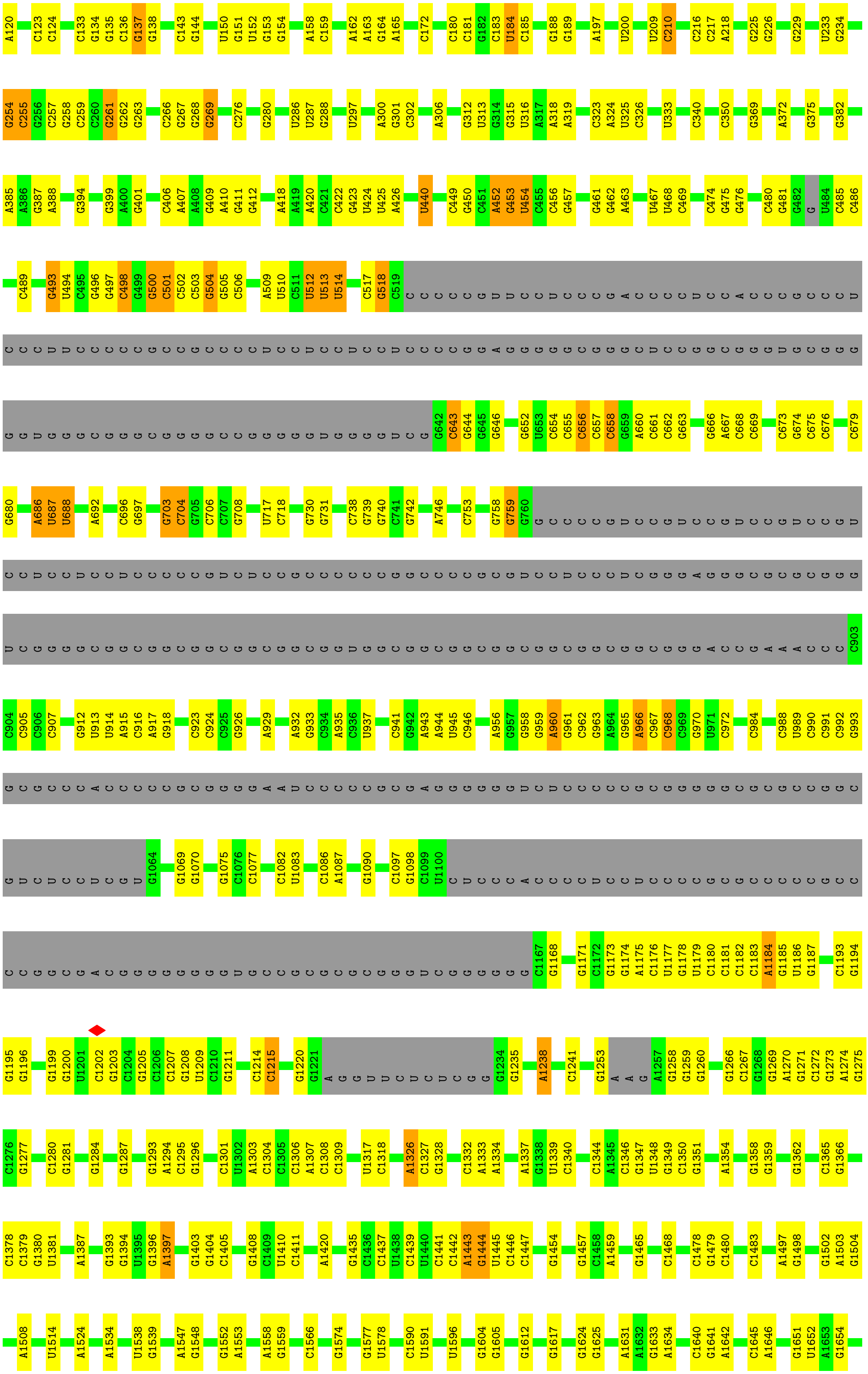
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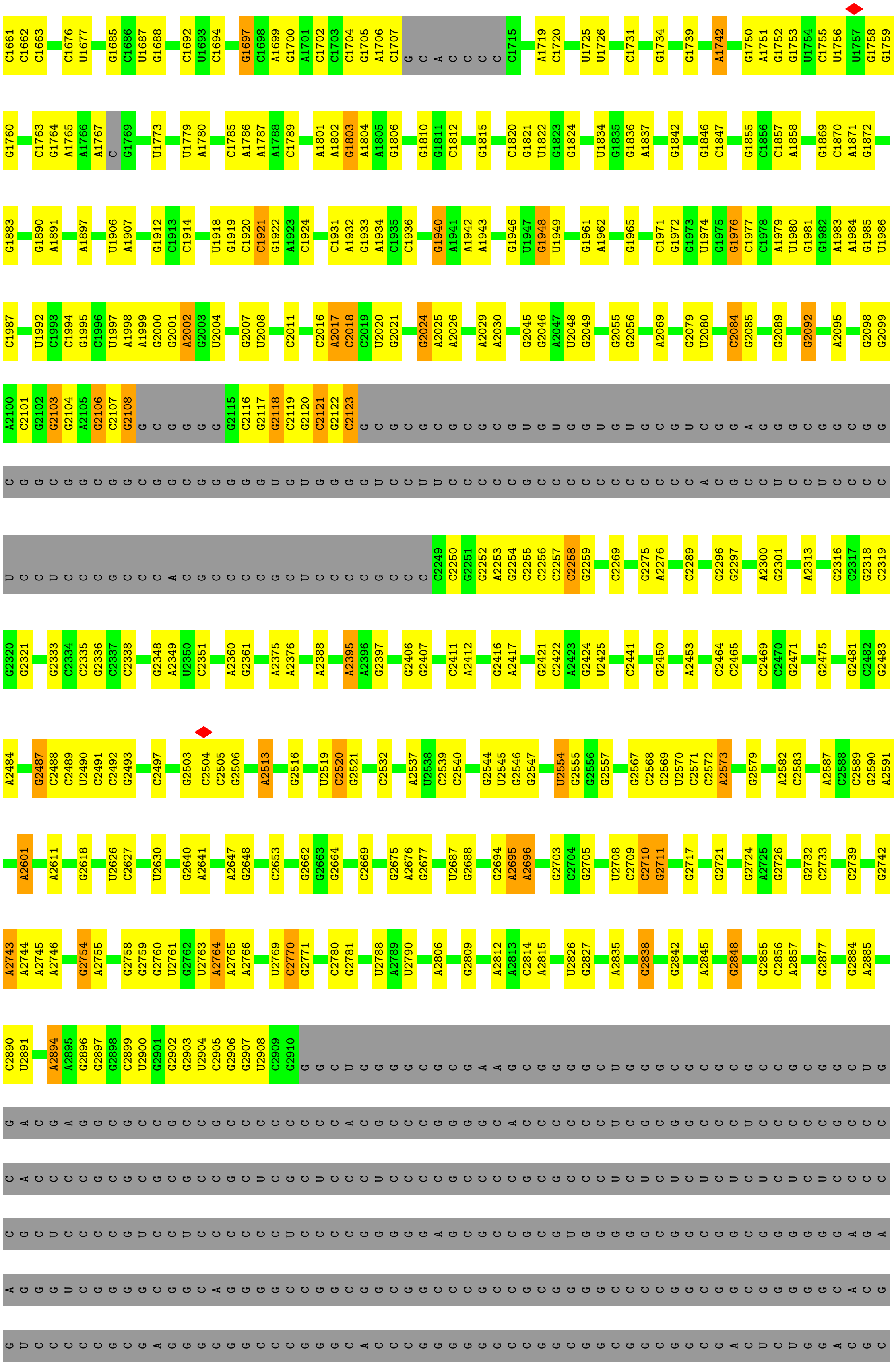
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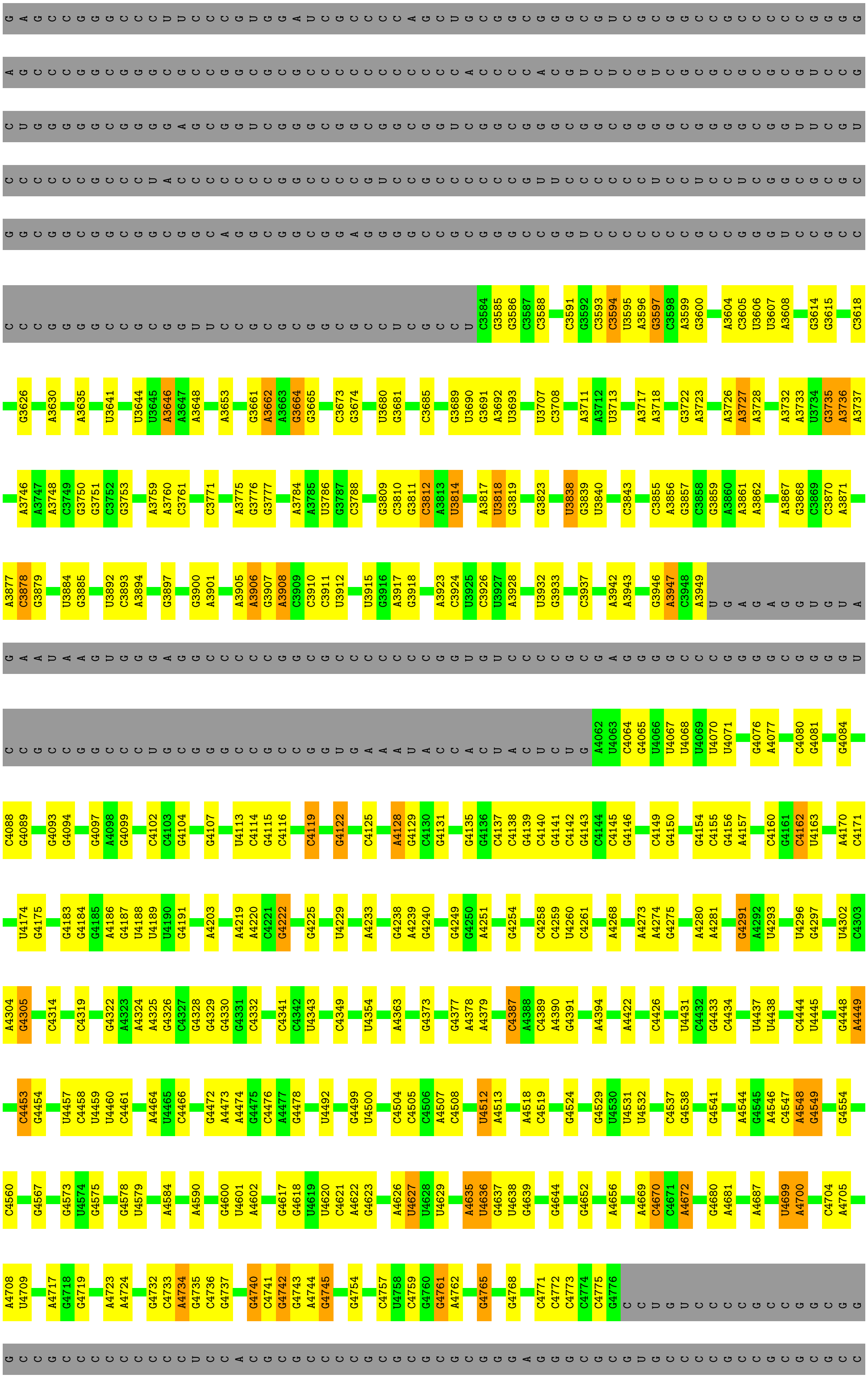
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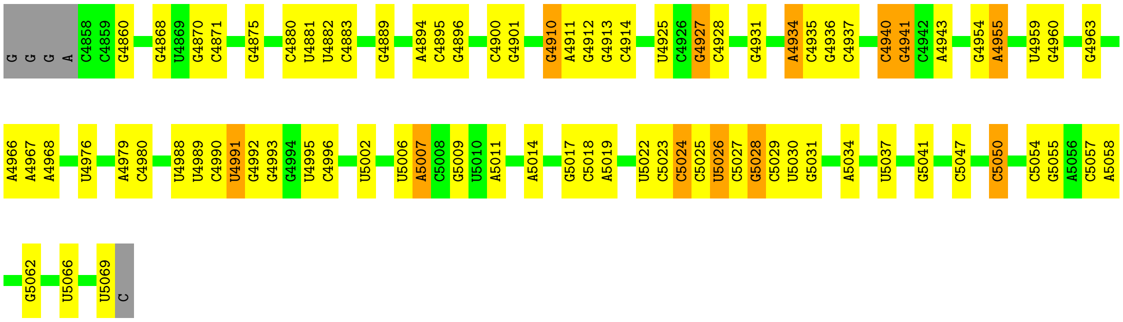
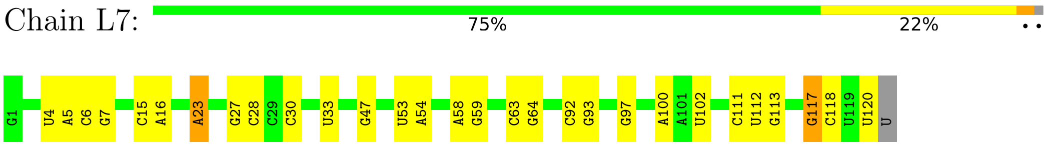


- Molecule 8: 5S rRNA



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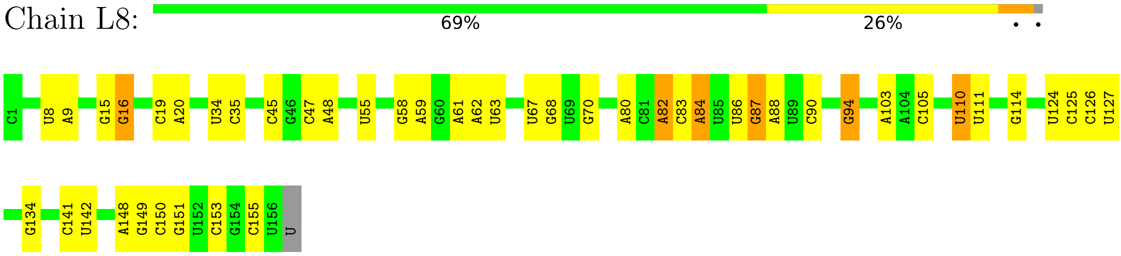

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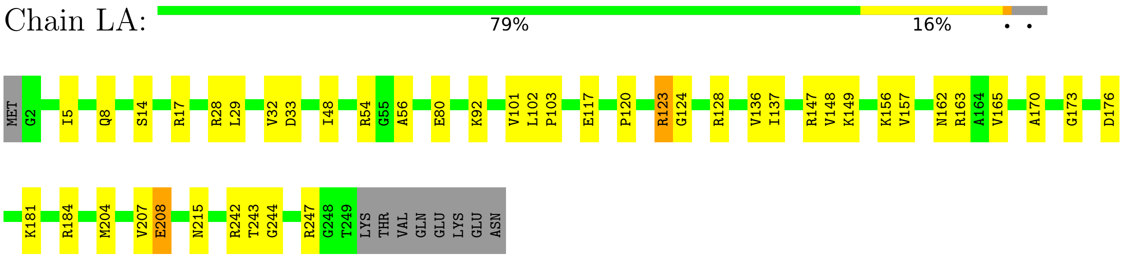

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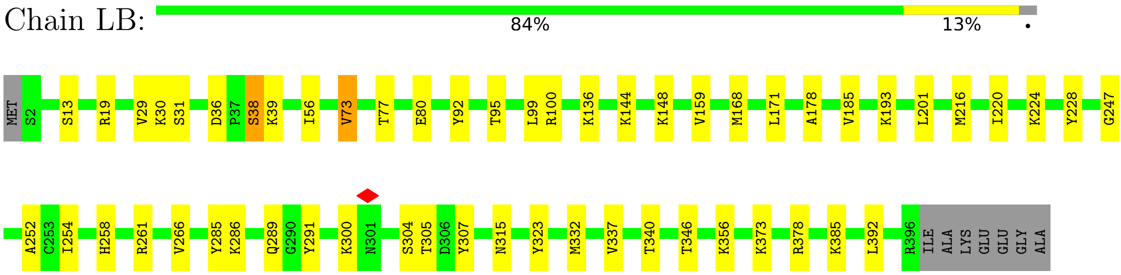

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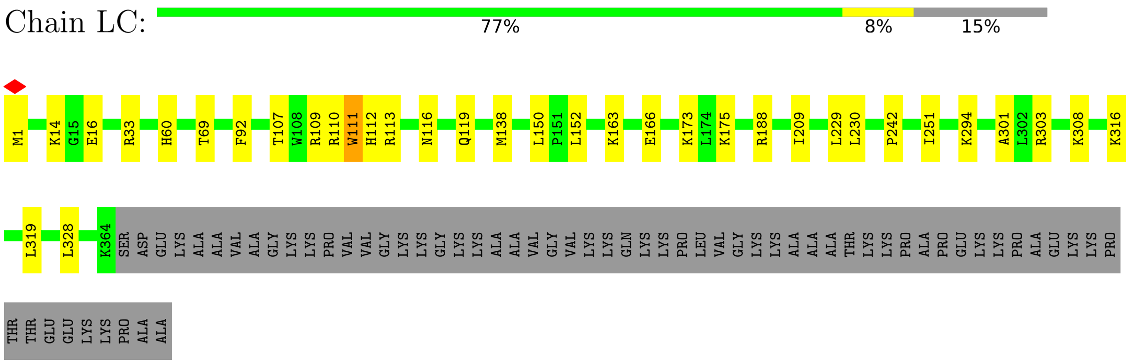

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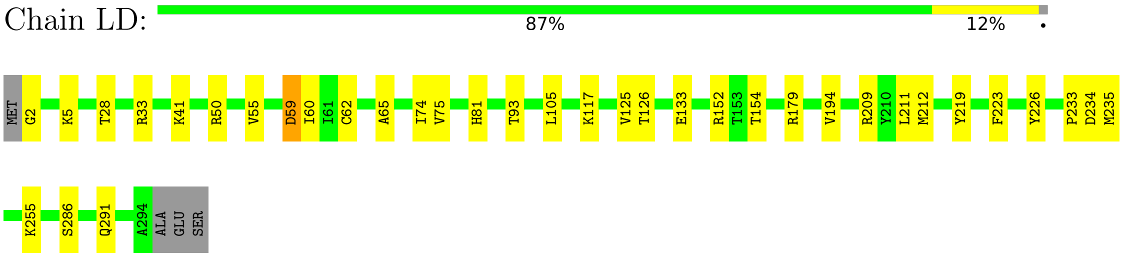
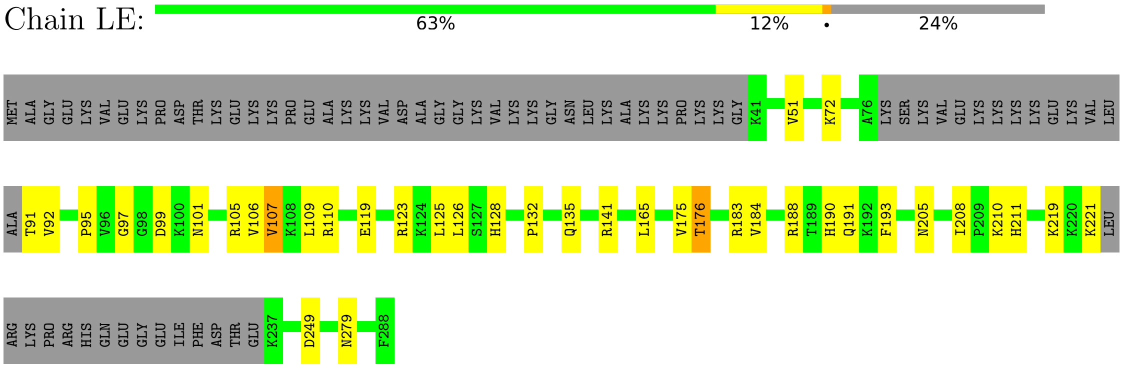
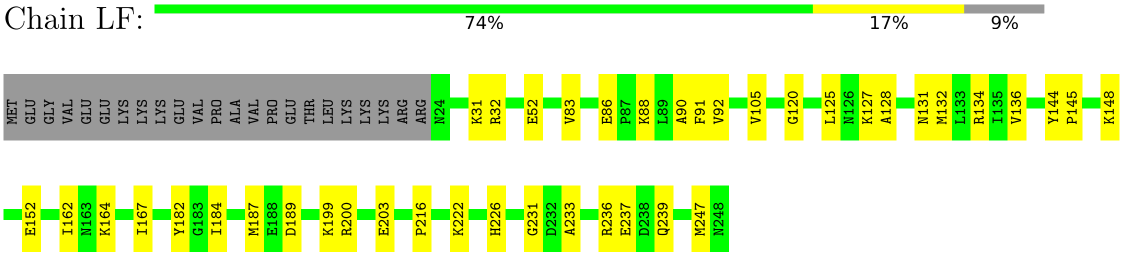


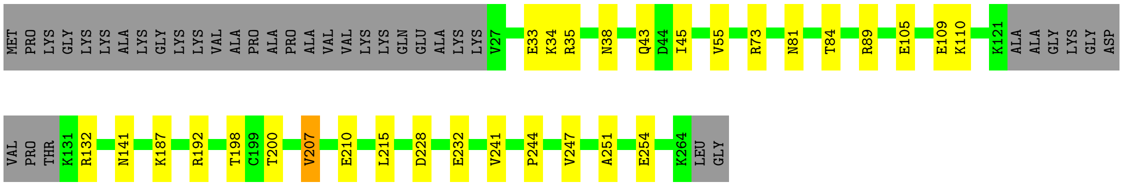
- Molecule 14: Large ribosomal subunit protein eL6



- Molecule 15: Large ribosomal subunit protein uL30

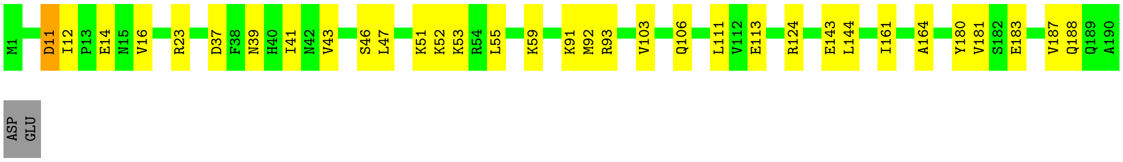


- Molecule 16: 60S ribosomal protein L7a



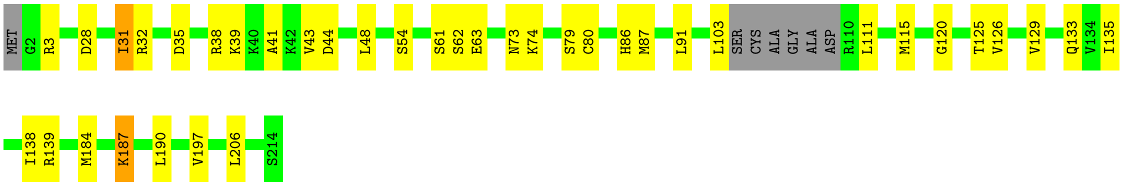
- Molecule 17: 60S ribosomal protein L9

Chain LH:



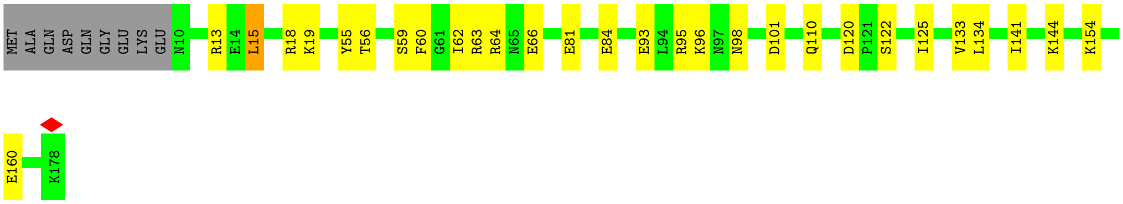
- Molecule 18: Ribosomal protein uL16-like

Chain LI:



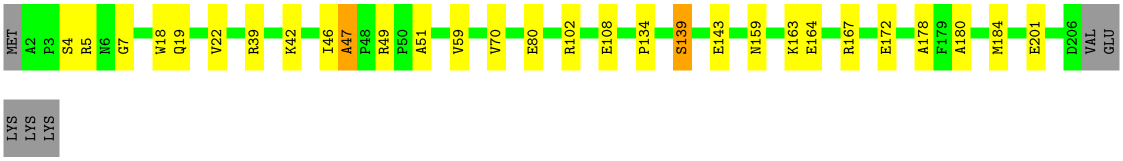
- Molecule 19: 60S ribosomal protein L11

Chain LJ:



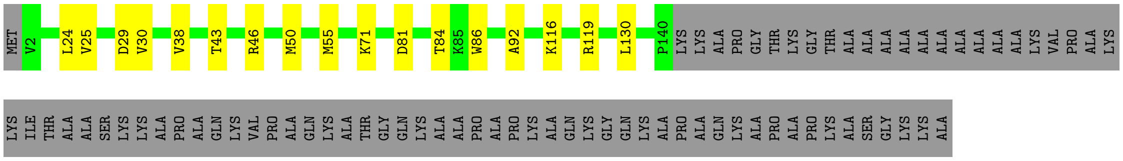
- Molecule 20: 60S ribosomal protein L13

Chain LL:



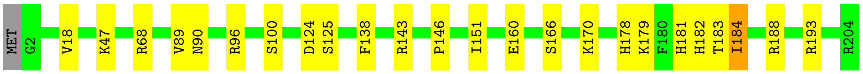
- Molecule 21: 60S ribosomal protein L14

Chain LM:



- Molecule 22: 60S ribosomal protein L15

Chain LN:

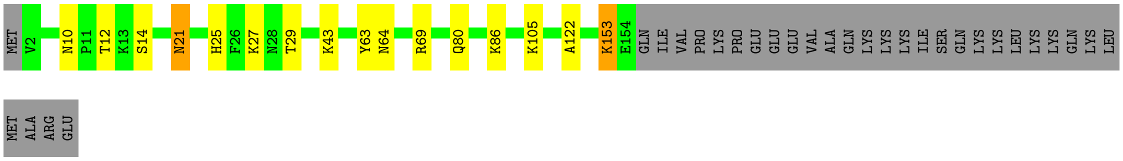


- Molecule 23: 60S ribosomal protein L13a

Chain LO:

- Molecule 24: 60S ribosomal protein L17

Chain LP:



- Molecule 25: 60S ribosomal protein L18

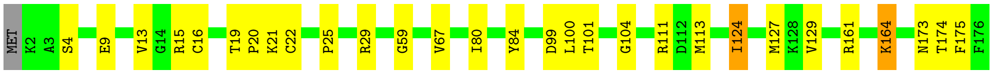
Chain LQ:

- Molecule 26: 60S ribosomal protein L19

Chain LR:

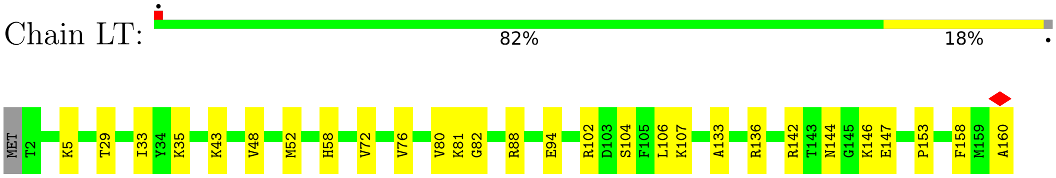
- Molecule 27: 60S ribosomal protein L18a

Chain LS:



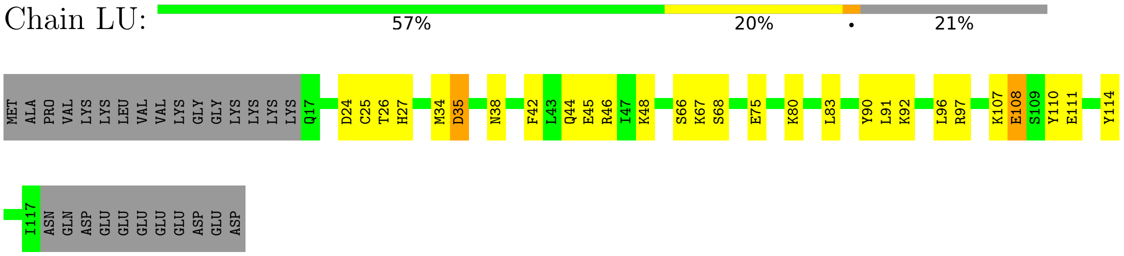
- Molecule 28: 60S ribosomal protein L21

Chain LT:



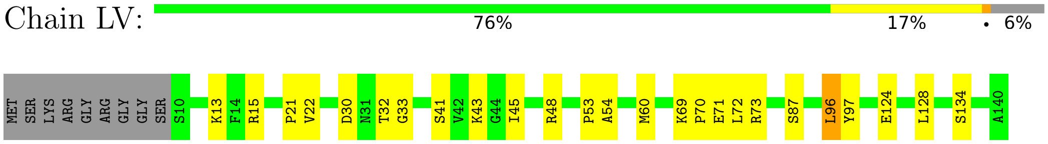
- Molecule 29: 60S ribosomal protein L22

Chain LU:



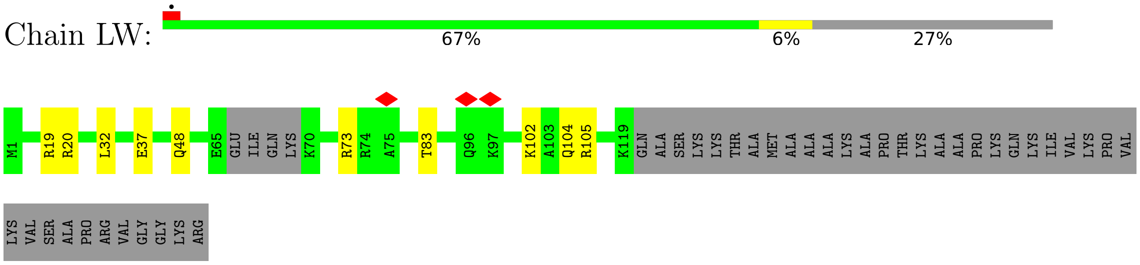
- Molecule 30: 60S ribosomal protein L23

Chain LV:



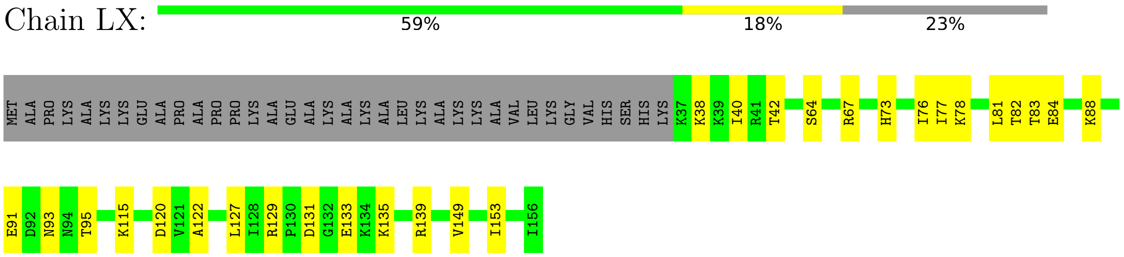
- Molecule 31: 60S ribosomal protein L24

Chain LW:



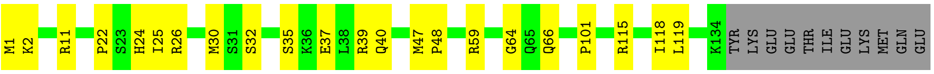
- Molecule 32: 60S ribosomal protein L23a

Chain LX:



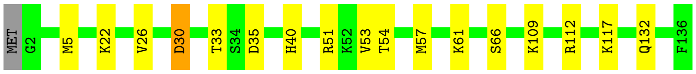
- Molecule 33: 60S ribosomal protein L26

Chain LY:



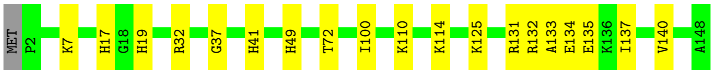
- Molecule 34: 60S ribosomal protein L27

Chain LZ:



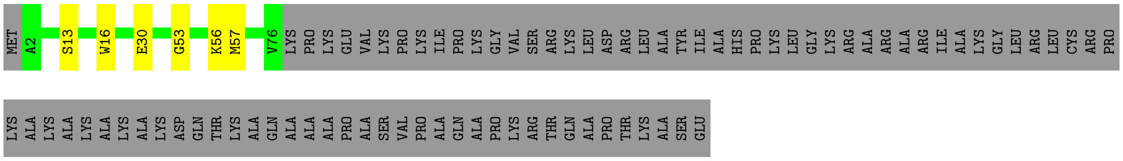
- Molecule 35: 60S ribosomal protein L27a

Chain La:



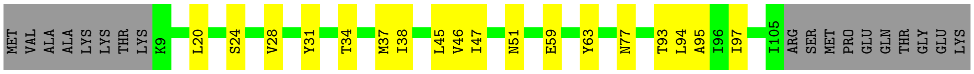
- Molecule 36: 60S ribosomal protein L29

Chain Lb:



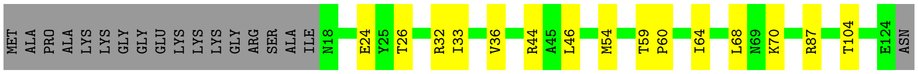
- Molecule 37: 60S ribosomal protein L30

Chain Lc:



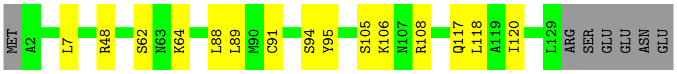
- Molecule 38: 60S ribosomal protein L31

Chain Ld:



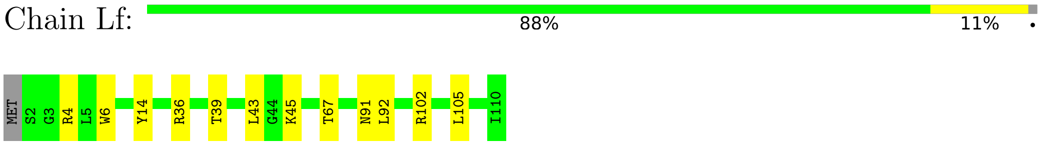
- Molecule 39: 60S ribosomal protein L32

Chain Le:



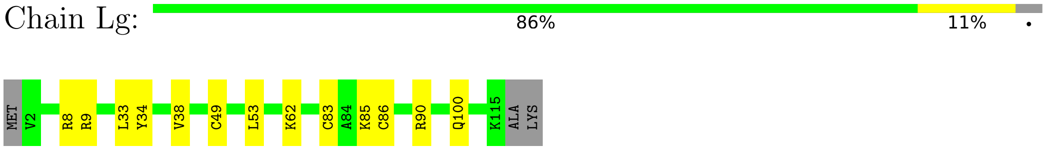
- Molecule 40: 60S ribosomal protein L35a

Chain Lf:



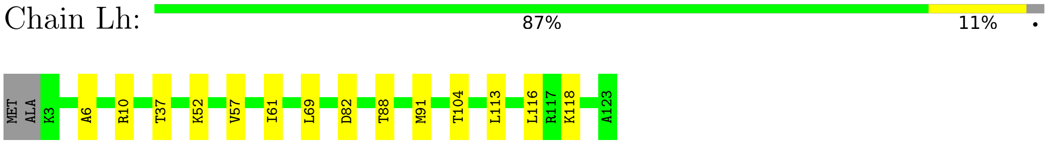
- Molecule 41: 60S ribosomal protein L34

Chain Lg:



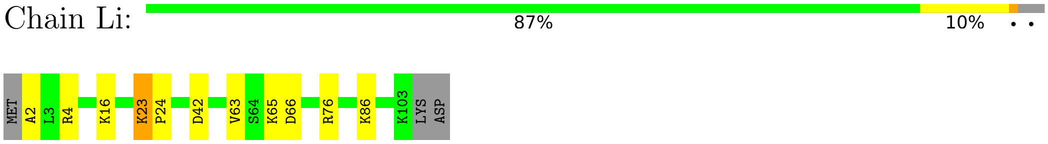
- Molecule 42: 60S ribosomal protein L35

Chain Lh:



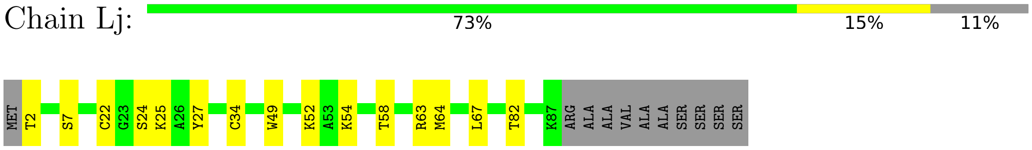
- Molecule 43: 60S ribosomal protein L36

Chain Li:



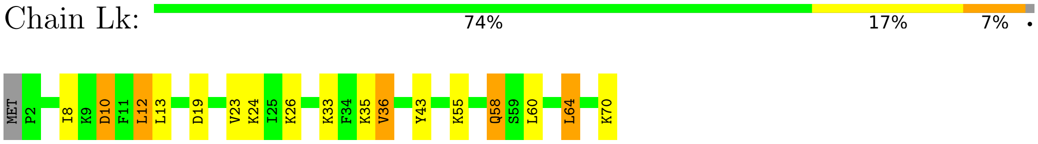
- Molecule 44: Large ribosomal subunit protein eL37

Chain Lj:



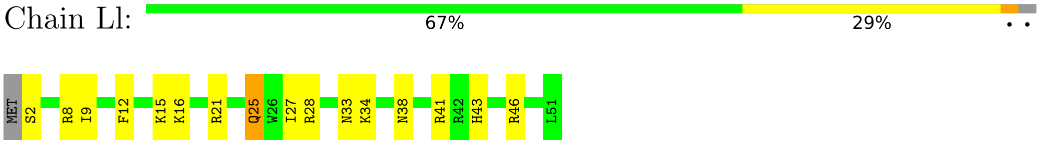
- Molecule 45: 60S ribosomal protein L38

Chain Lk:

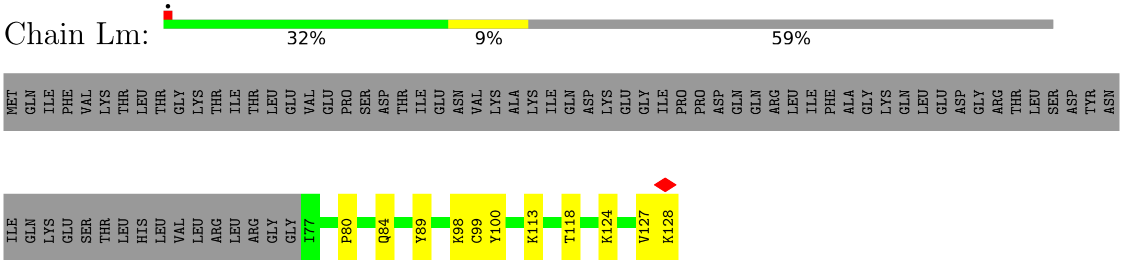


- Molecule 46: 60S ribosomal protein L39

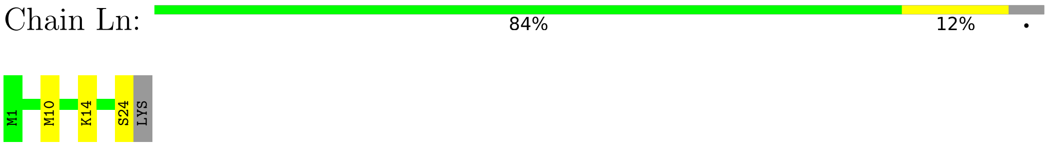
Chain Ll:



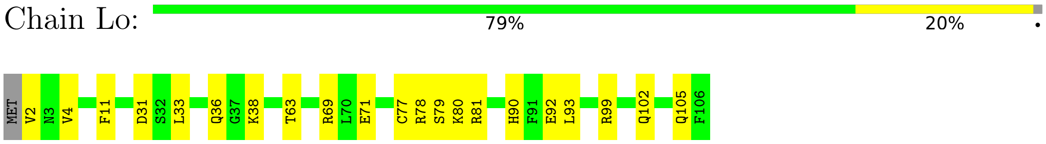
- Molecule 47: Ubiquitin-60S ribosomal protein L40



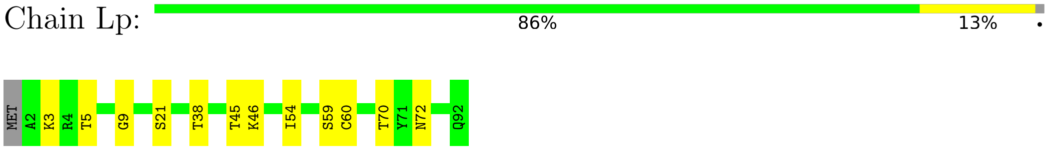
- Molecule 48: 60S ribosomal protein L41



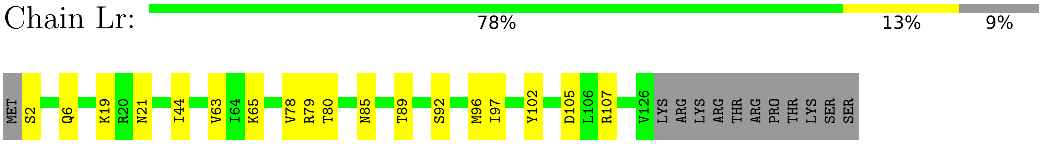
- Molecule 49: 60S ribosomal protein L36a



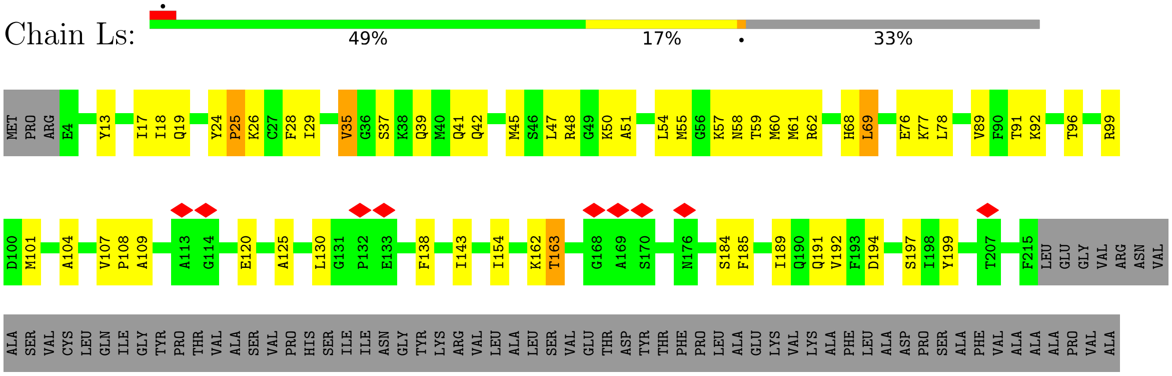
- Molecule 50: 60S ribosomal protein L37a

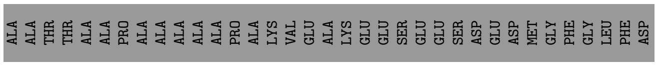


- Molecule 51: 60S ribosomal protein L28



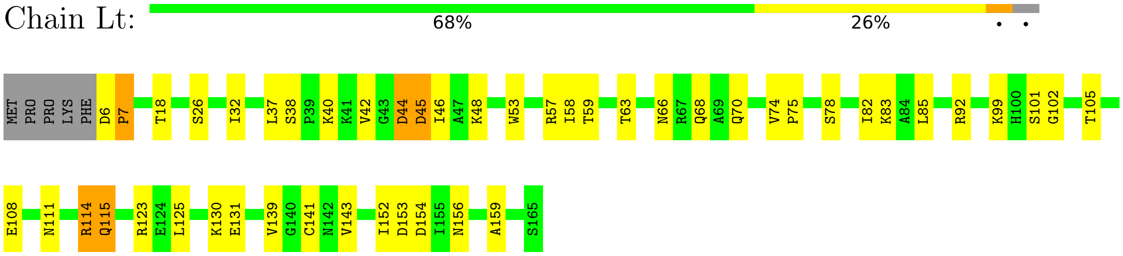
- Molecule 52: 60S acidic ribosomal protein P0





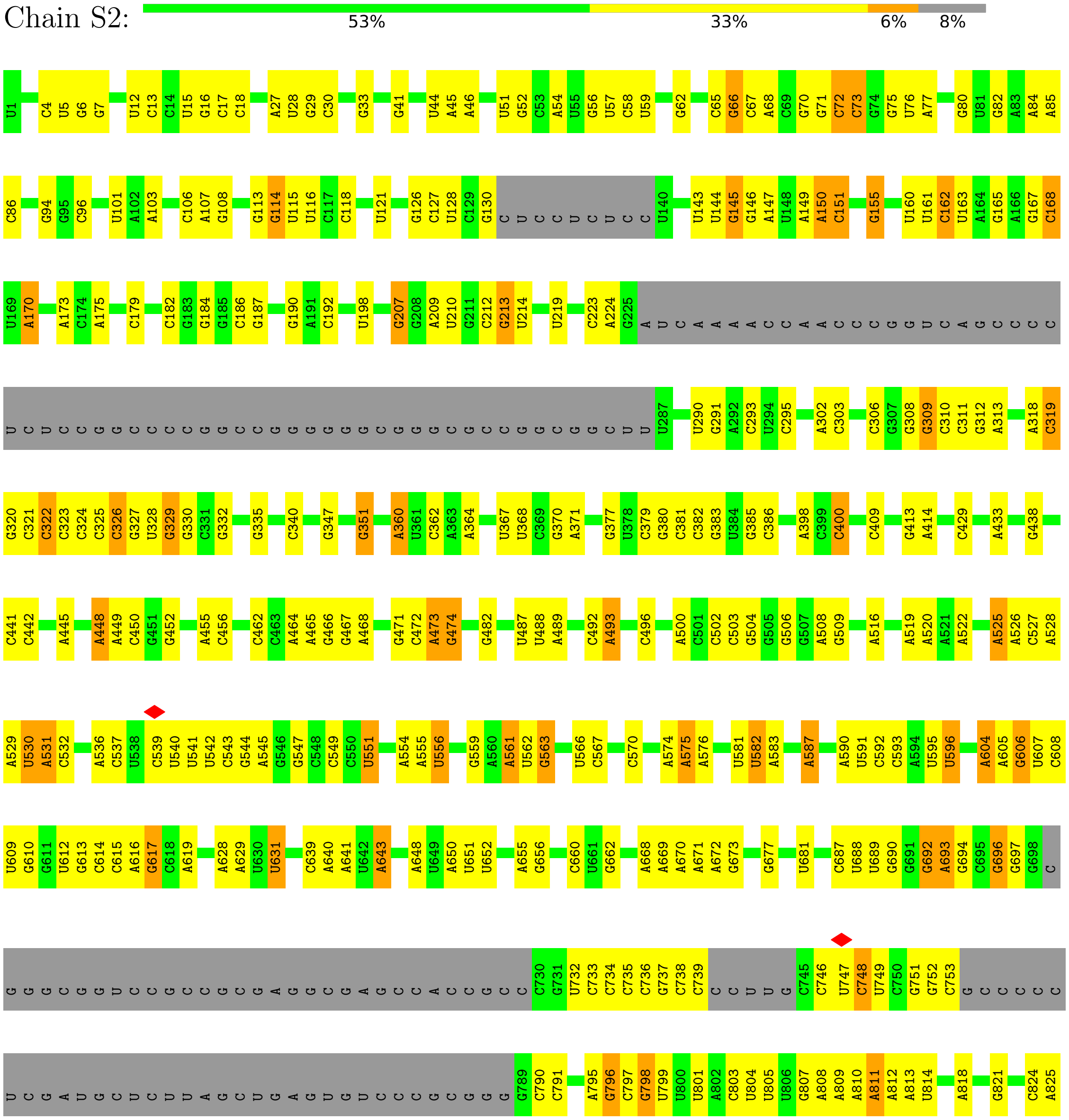
- Molecule 53: Large ribosomal subunit protein uL11

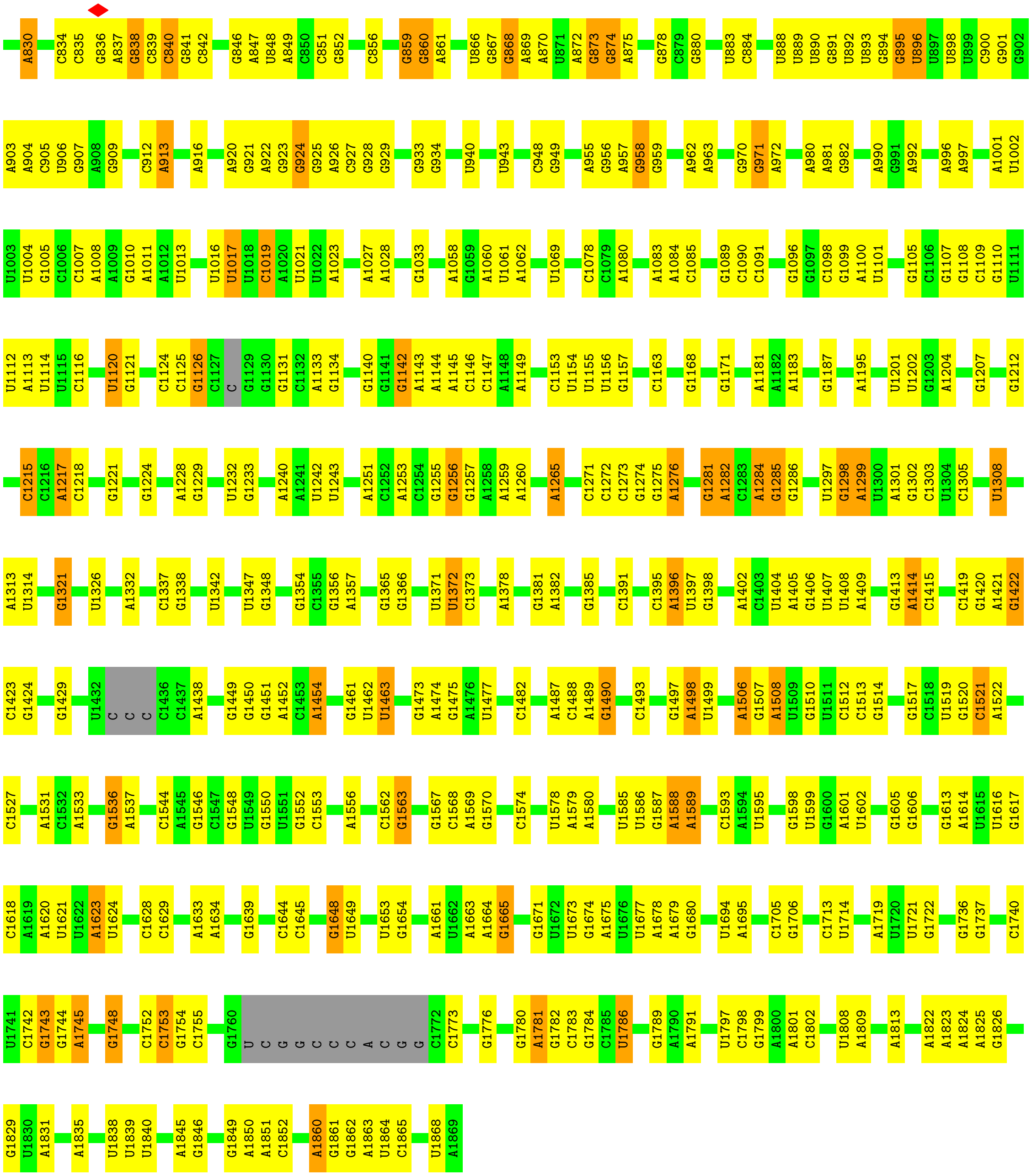
Chain Lt:



- Molecule 54: 18S rRNA

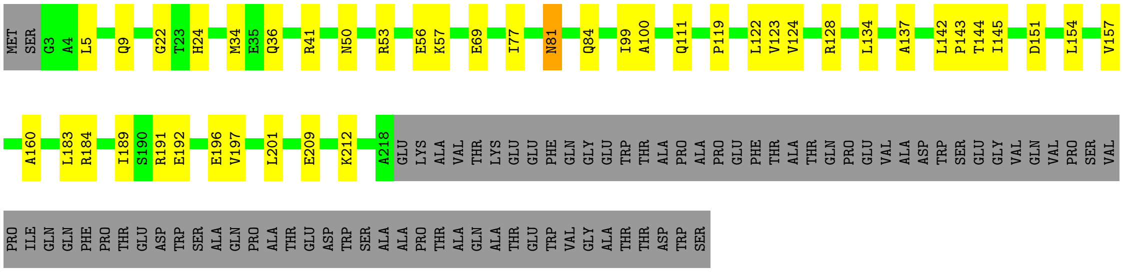
Chain S2:



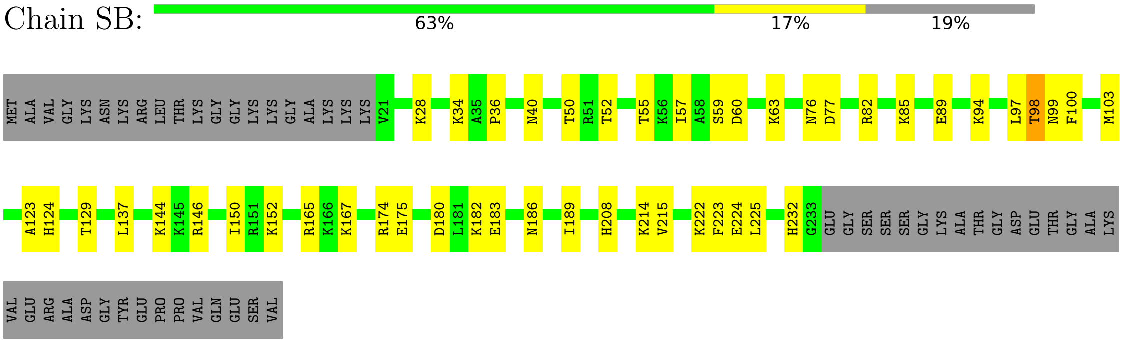


- Molecule 55: 40S ribosomal protein SA

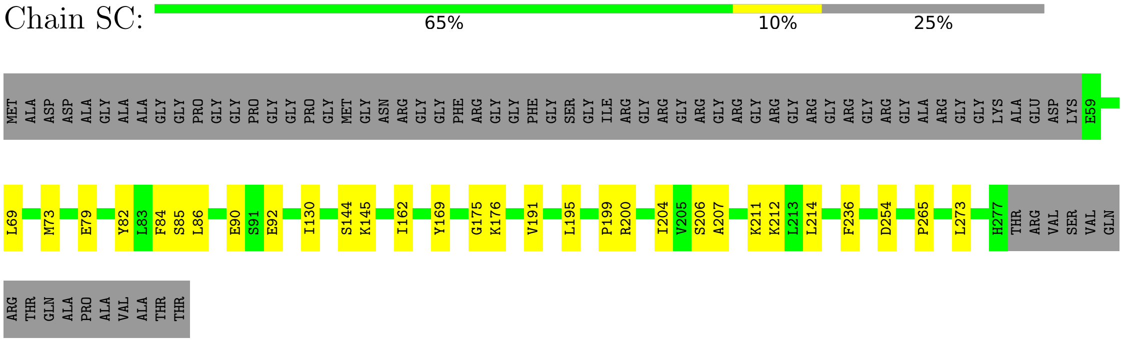
Chain SA:



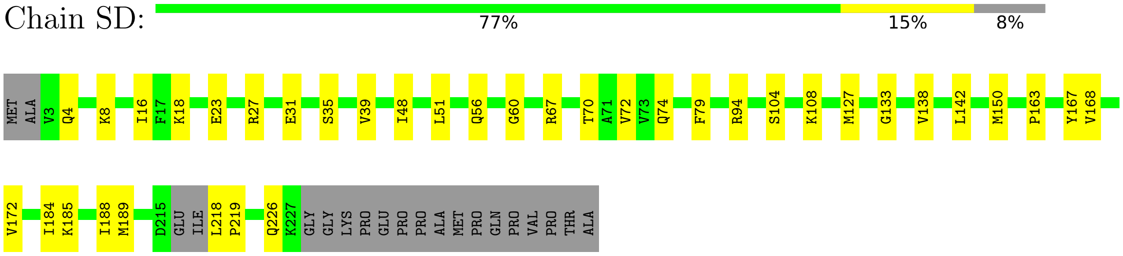
- Molecule 56: 40S ribosomal protein S3a



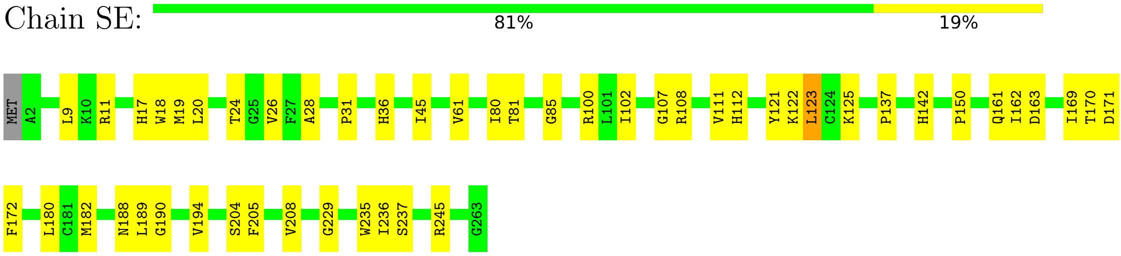
- Molecule 57: 40S ribosomal protein S2



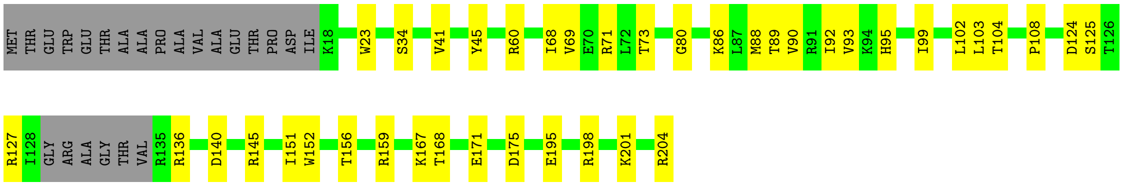
- Molecule 58: 40S ribosomal protein S3



- Molecule 59: Small ribosomal subunit protein eS4, X isoform

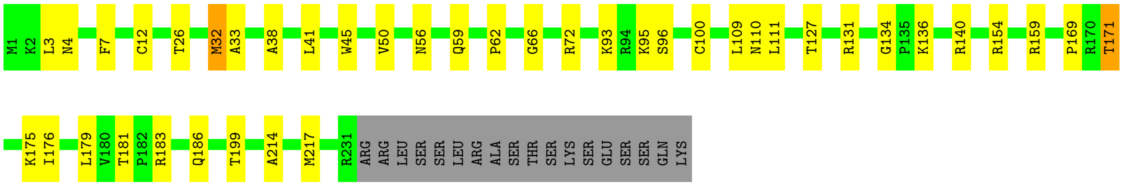


- Molecule 60: 40S ribosomal protein S5



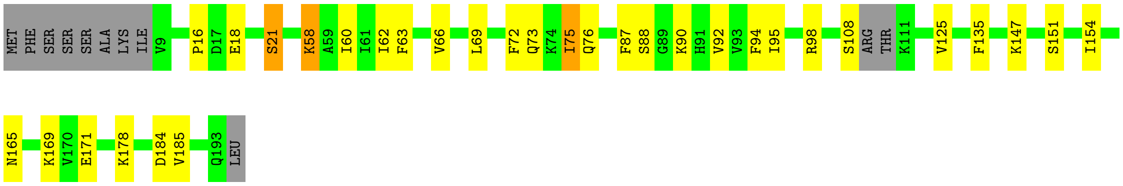
- Molecule 61: 40S ribosomal protein S6

Chain SG:



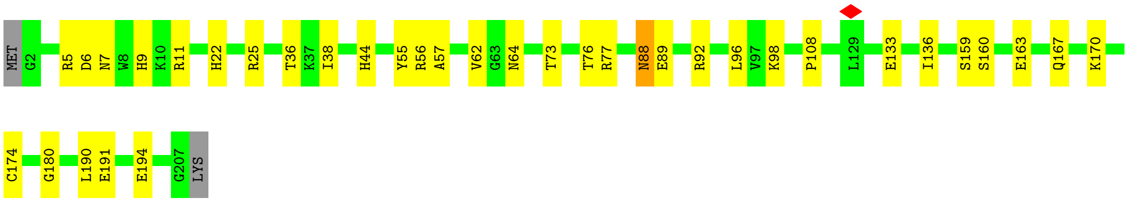
- Molecule 62: 40S ribosomal protein S7

Chain SH:



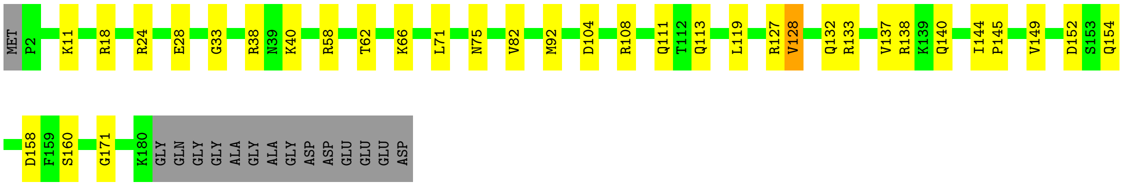
- Molecule 63: 40S ribosomal protein S8

Chain SI:

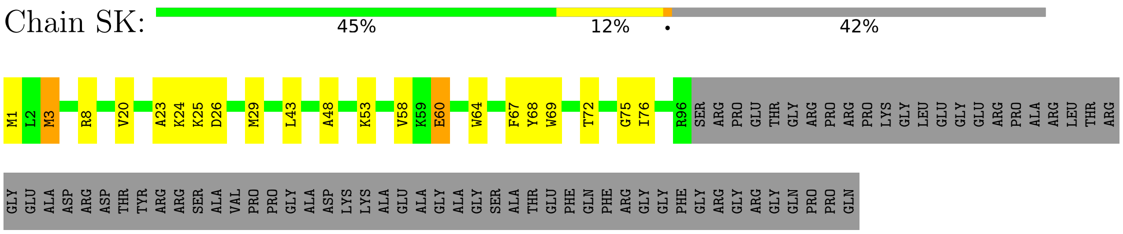


- Molecule 64: 40S ribosomal protein S9

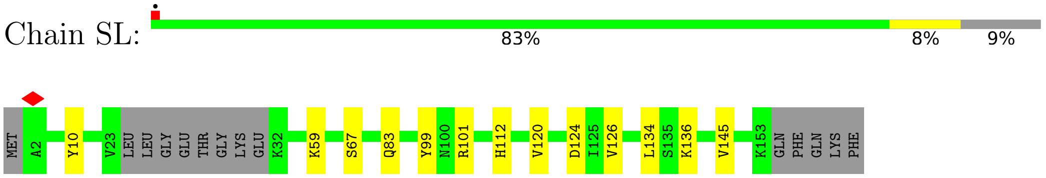
Chain SJ:



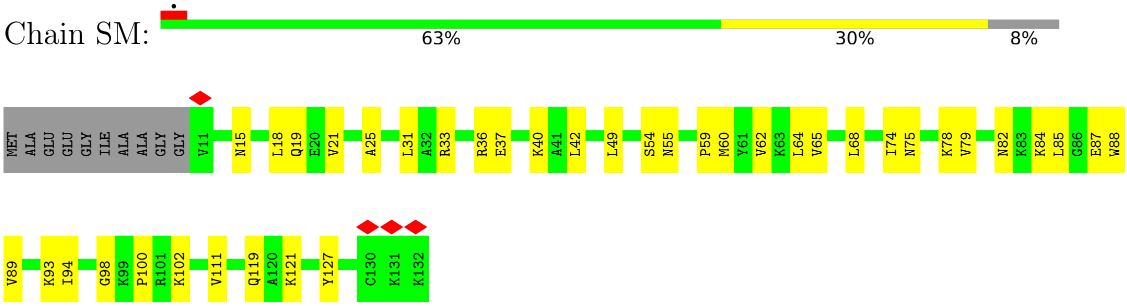
- Molecule 65: 40S ribosomal protein S10



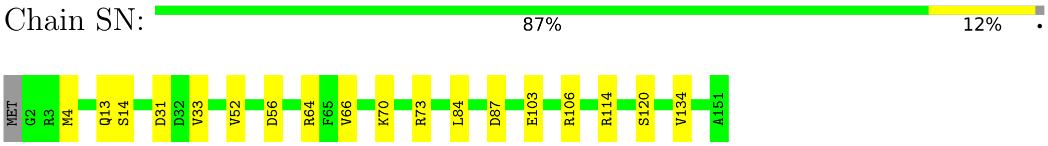
- Molecule 66: 40S ribosomal protein S11



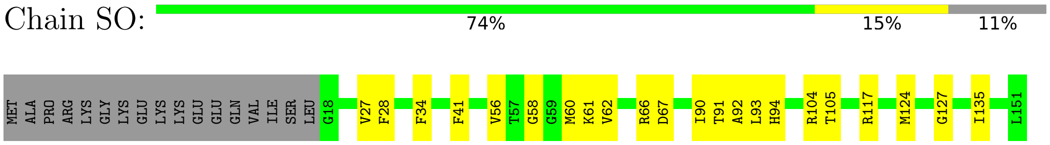
- Molecule 67: 40S ribosomal protein S12



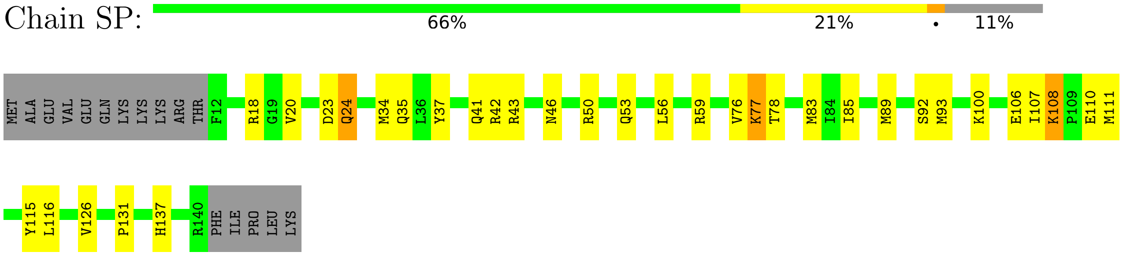
- Molecule 68: 40S ribosomal protein S13



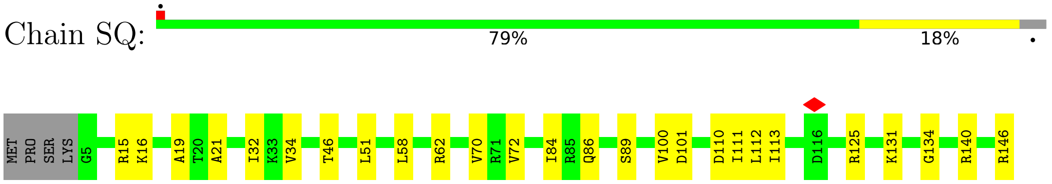
- Molecule 69: 40S ribosomal protein S14



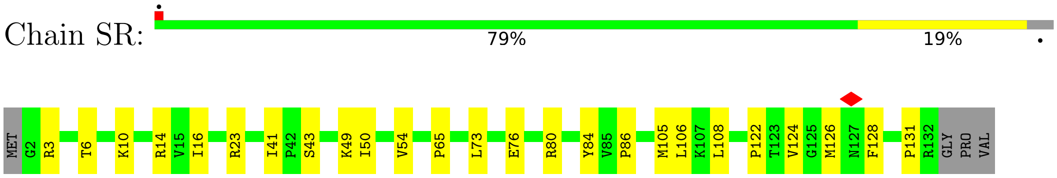
- Molecule 70: 40S ribosomal protein S15



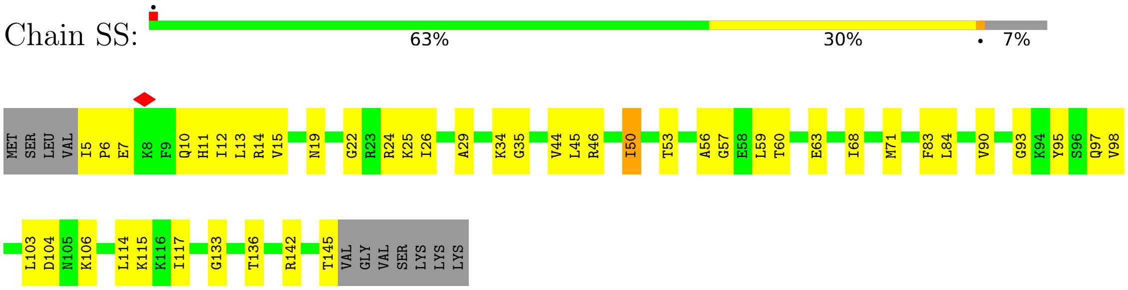
- Molecule 71: 40S ribosomal protein S16



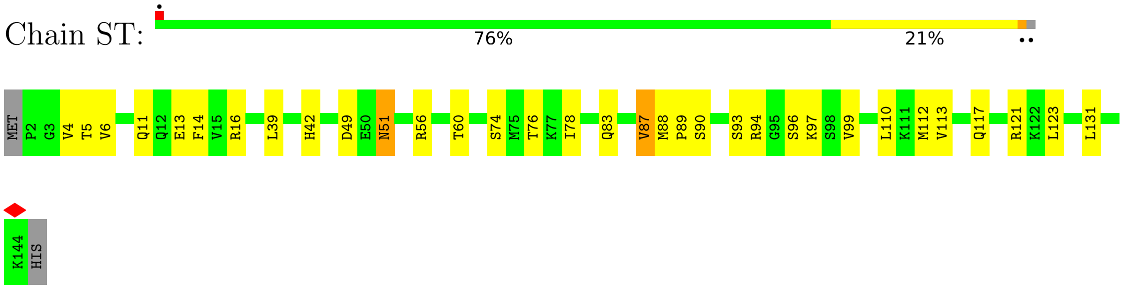
- Molecule 72: 40S ribosomal protein S17



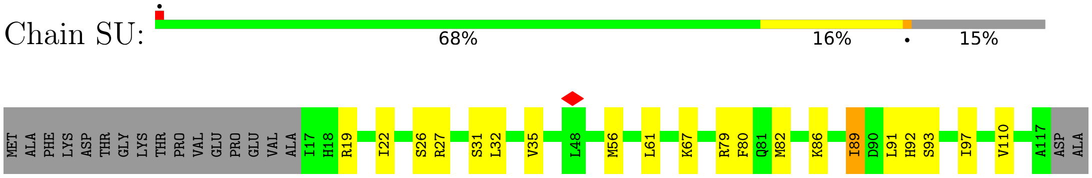
- Molecule 73: 40S ribosomal protein S18



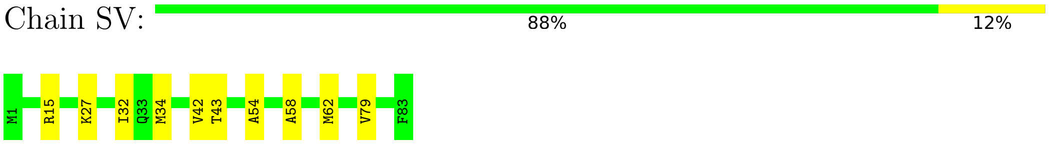
- Molecule 74: 40S ribosomal protein S19



- Molecule 75: 40S ribosomal protein S20

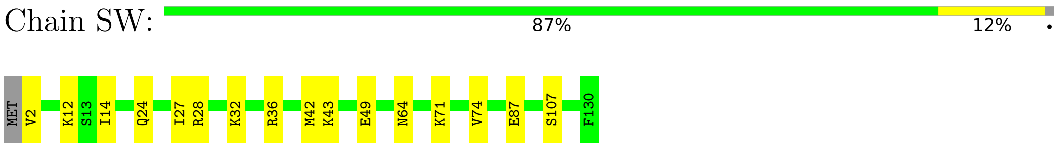


- Molecule 76: 40S ribosomal protein S21



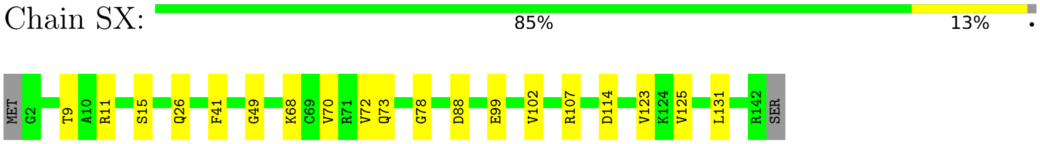
- Molecule 77: 40S ribosomal protein S15a

Chain SW:



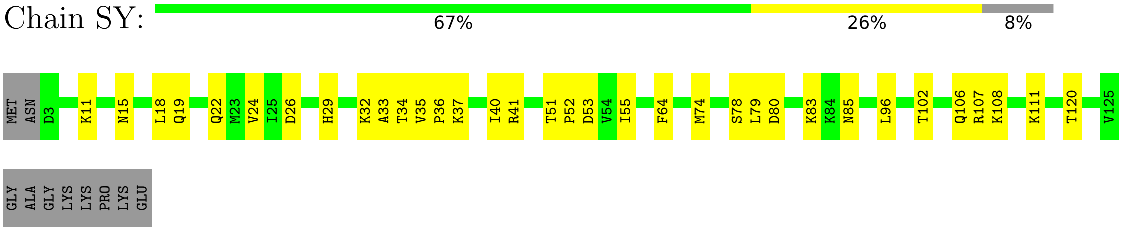
- Molecule 78: 40S ribosomal protein S23

Chain SX:



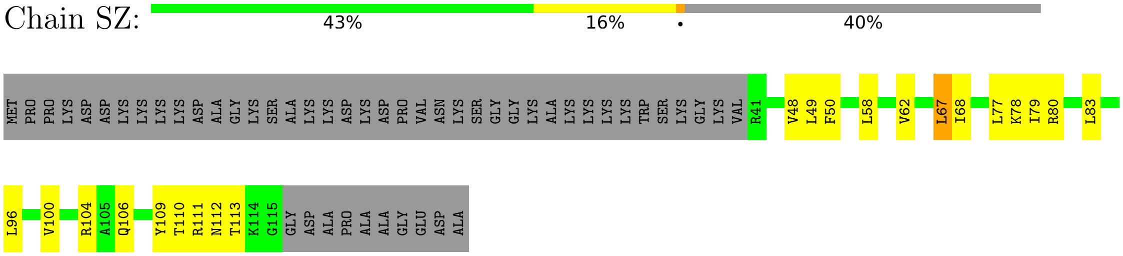
- Molecule 79: 40S ribosomal protein S24

Chain SY:



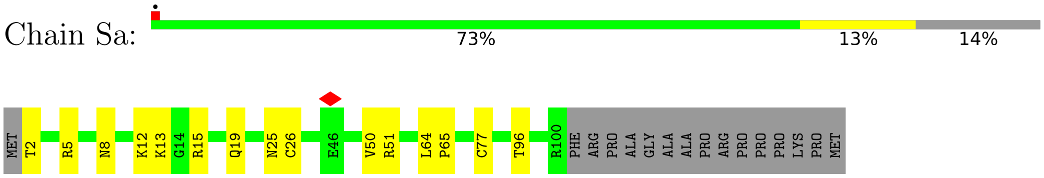
- Molecule 80: 40S ribosomal protein S25

Chain SZ:



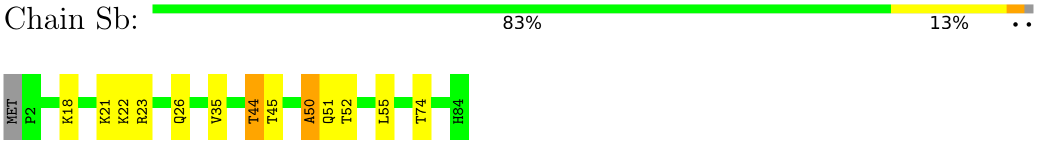
- Molecule 81: 40S ribosomal protein S26

Chain Sa:

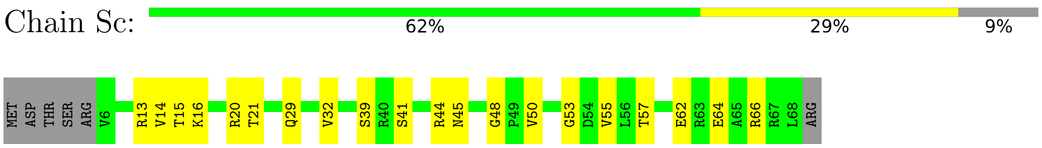


- Molecule 82: 40S ribosomal protein S27

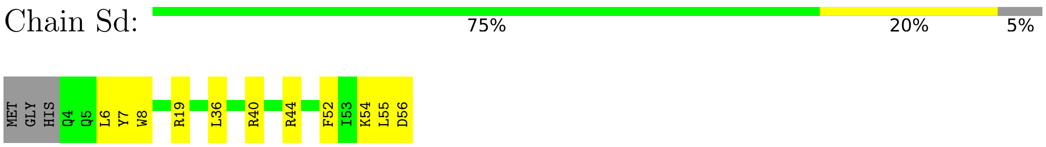
Chain Sb:



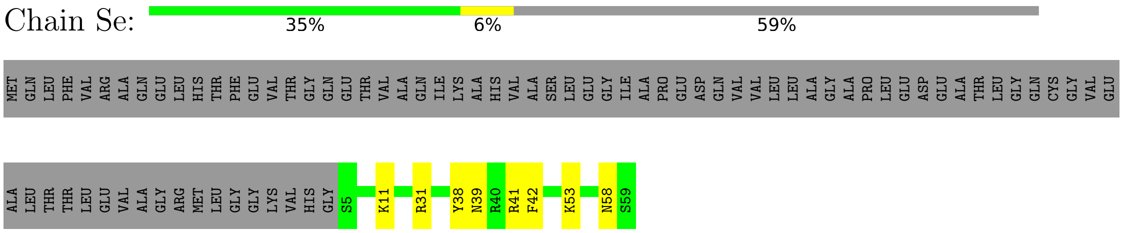
- Molecule 83: 40S ribosomal protein S28



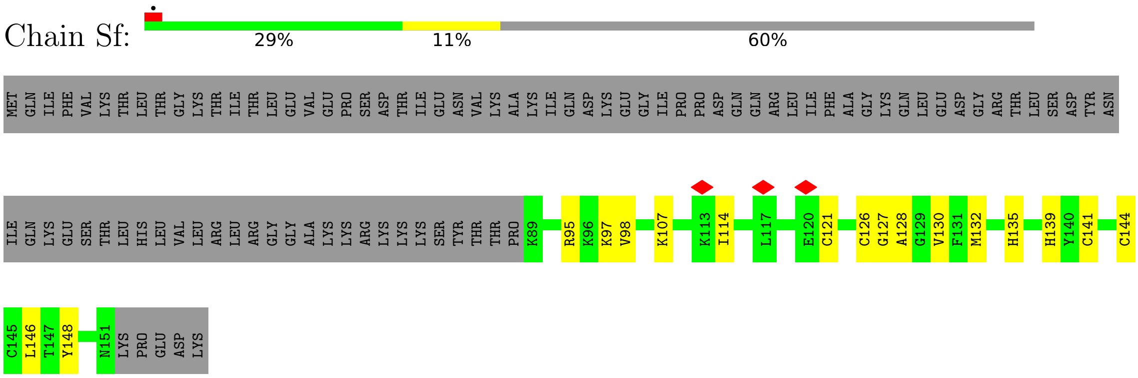
- Molecule 84: 40S ribosomal protein S29



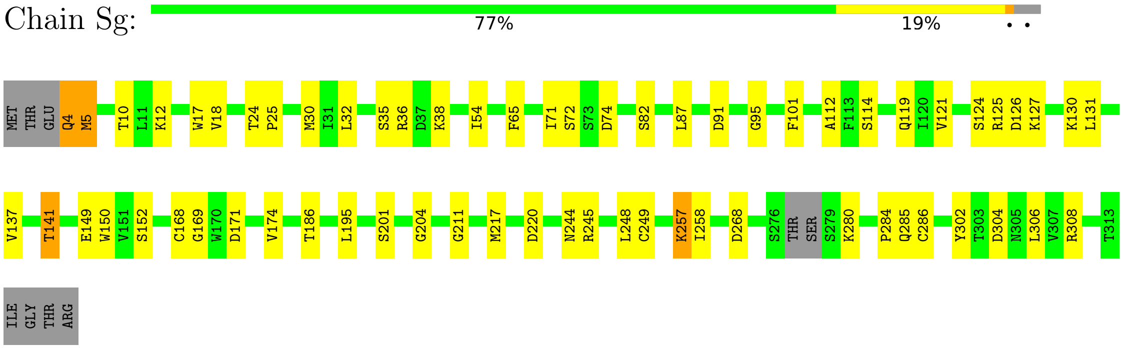
- Molecule 85: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein



- Molecule 86: Ubiquitin



- Molecule 87: Receptor of activated protein C kinase 1



4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	74754	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{Å}^2$)	40	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	6.553	Depositor
Minimum map value	-3.110	Depositor
Average map value	0.007	Depositor
Map value standard deviation	0.139	Depositor
Recommended contour level	0.0635	Depositor
Map size (Å)	465.28, 465.28, 465.28	wwPDB
Map dimensions	640, 640, 640	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.727, 0.727, 0.727	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: MG, LYO, 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	NA	0.11	0/527	0.32	0/704
2	NB	0.19	0/821	0.52	0/1101
3	CM	0.25	0/273	0.40	0/421
4	CP	0.25	0/1789	0.44	0/2788
5	CR	0.36	3/3311 (0.1%)	0.67	7/4452 (0.2%)
6	CZ	0.26	0/266	0.56	0/364
7	L5	0.28	0/87471	0.34	0/136443
8	L7	0.27	0/2858	0.31	0/4455
9	L8	0.28	0/3701	0.32	0/5766
10	LA	0.30	0/1936	0.55	0/2596
11	LB	0.28	0/3251	0.54	2/4352 (0.0%)
12	LC	0.26	0/2938	0.47	2/3947 (0.1%)
13	LD	0.24	0/2407	0.52	1/3227 (0.0%)
14	LE	0.27	0/1788	0.59	0/2399
15	LF	0.28	0/1905	0.52	0/2539
16	LG	0.27	0/1849	0.59	0/2496
17	LH	0.29	0/1529	0.61	0/2058
18	LI	0.28	0/1705	0.60	3/2277 (0.1%)
19	LJ	0.29	0/1352	0.69	0/1813
20	LL	0.30	0/1661	0.67	4/2229 (0.2%)
21	LM	0.26	0/1145	0.54	0/1536
22	LN	0.28	0/1746	0.48	1/2338 (0.0%)
23	LO	0.28	0/1665	0.55	1/2229 (0.0%)
24	LP	0.30	0/1260	0.56	1/1692 (0.1%)
25	LQ	0.27	0/1526	0.47	0/2038
26	LR	0.28	0/1468	0.59	0/1945
27	LS	0.27	0/1492	0.50	1/2003 (0.0%)
28	LT	0.28	0/1310	0.65	0/1752
29	LU	0.40	0/820	0.99	3/1102 (0.3%)
30	LV	0.28	0/985	0.54	0/1323
31	LW	0.30	0/820	0.72	1/1104 (0.1%)
32	LX	0.30	0/998	0.65	0/1341

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	LY	0.32	0/1128	0.68	1/1500 (0.1%)
34	LZ	0.27	0/1130	0.57	0/1507
35	La	0.26	0/1183	0.43	0/1582
36	Lb	0.28	0/600	0.64	0/796
37	Lc	0.26	0/752	0.54	0/1011
38	Ld	0.26	0/889	0.47	0/1198
39	Le	0.28	0/1067	0.45	0/1425
40	Lf	0.29	0/891	0.55	0/1194
41	Lg	0.27	0/899	0.56	0/1200
42	Lh	0.26	0/1014	0.60	0/1340
43	Li	0.22	0/824	0.49	1/1093 (0.1%)
44	Lj	0.28	0/720	0.50	0/952
45	Lk	0.32	0/548	0.83	1/730 (0.1%)
46	Ll	0.32	0/454	0.62	0/599
47	Lm	0.24	0/431	0.49	0/570
48	Ln	0.25	0/231	0.43	0/294
49	Lo	0.31	0/876	0.66	0/1156
50	Lp	0.27	0/706	0.55	0/939
51	Lr	0.28	0/1012	0.50	0/1358
52	Ls	0.28	0/1666	0.73	2/2250 (0.1%)
53	Lt	0.33	0/1224	0.88	5/1651 (0.3%)
54	S2	0.27	0/40882	0.38	0/63715
55	SA	0.31	0/1708	0.69	0/2324
56	SB	0.25	0/1745	0.55	1/2337 (0.0%)
57	SC	0.29	0/1697	0.56	0/2301
58	SD	0.28	0/1620	0.65	2/2198 (0.1%)
59	SE	0.26	0/2014	0.53	0/2726
60	SF	0.29	0/1423	0.68	2/1913 (0.1%)
61	SG	0.24	0/1657	0.62	1/2247 (0.0%)
62	SH	0.26	0/1295	0.61	3/1763 (0.2%)
63	SI	0.26	0/1603	0.54	0/2161
64	SJ	0.28	0/1456	0.61	0/1957
65	SK	0.30	0/750	0.70	0/1026
66	SL	0.28	0/1163	0.48	0/1562
67	SM	0.27	0/960	0.84	1/1286 (0.1%)
68	SN	0.27	0/1206	0.51	0/1626
69	SO	0.28	0/982	0.65	0/1320
70	SP	0.28	0/1010	0.69	1/1362 (0.1%)
71	SQ	0.26	0/1093	0.60	0/1470
72	SR	0.30	0/955	0.79	2/1294 (0.2%)
73	SS	0.32	0/1148	0.77	0/1542
74	ST	0.27	0/1100	0.56	0/1479
75	SU	0.30	0/722	0.71	1/983 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	SV	0.30	0/625	0.60	0/837
77	SW	0.28	0/1043	0.51	0/1396
78	SX	0.29	0/1096	0.61	0/1467
79	SY	0.28	0/944	0.67	0/1271
80	SZ	0.32	0/565	0.74	0/764
81	Sa	0.29	0/794	0.58	0/1065
82	Sb	0.29	0/632	0.70	0/851
83	Sc	0.29	0/474	0.79	0/638
84	Sd	0.26	0/443	0.49	0/589
85	Se	0.28	0/420	0.64	1/554 (0.2%)
86	Sf	0.24	0/525	0.68	0/695
87	Sg	0.30	0/2235	0.74	3/3068 (0.1%)
All	All	0.28	3/234803 (0.0%)	0.47	55/344962 (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
2	NB	0	1
14	LE	0	1
20	LL	0	1
25	LQ	0	1
56	SB	0	1
61	SG	0	1
73	SS	0	1
82	Sb	0	1
All	All	0	8

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	CR	373	PRO	CG-CD	-10.21	1.16	1.50
5	CR	175	ASP	CA-CB	6.92	1.65	1.53
5	CR	373	PRO	N-CD	5.69	1.55	1.47

All (55) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	CR	373	PRO	CA-N-CD	-12.64	94.30	112.00
5	CR	373	PRO	N-CD-CG	-10.84	86.94	103.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
53	Lt	7	PRO	CA-N-CD	-9.51	98.68	112.00
52	Ls	25	PRO	CA-N-CD	-8.12	100.63	112.00
29	LU	108	GLU	CA-CB-CG	7.92	129.94	114.10
20	LL	134	PRO	CA-N-CD	-7.83	101.04	112.00
72	SR	122	PRO	CA-N-CD	-7.54	101.44	112.00
58	SD	189	MET	CA-C-N	7.40	131.93	120.68
58	SD	189	MET	C-N-CA	7.40	131.93	120.68
87	Sg	25	PRO	CA-N-CD	-7.28	101.81	112.00
60	SF	88	MET	CA-CB-CG	6.93	127.96	114.10
20	LL	134	PRO	N-CD-CG	-6.85	92.92	103.20
22	LN	184	ILE	N-CA-C	-6.73	105.97	112.29
23	LO	202	LEU	CA-CB-CG	6.73	139.84	116.30
11	LB	216	MET	CB-CG-SD	6.60	132.50	112.70
5	CR	373	PRO	CA-CB-CG	-6.48	92.20	104.50
53	Lt	114	ARG	CA-C-N	-6.44	111.48	122.56
53	Lt	114	ARG	C-N-CA	-6.44	111.48	122.56
75	SU	89	ILE	CA-CB-CG1	6.29	121.10	110.40
87	Sg	257	LYS	CB-CG-CD	6.29	125.77	111.30
62	SH	75	ILE	CA-CB-CG1	6.22	120.98	110.40
67	SM	119	GLN	CA-CB-CG	6.13	126.36	114.10
29	LU	44	GLN	CA-CB-CG	6.05	126.20	114.10
62	SH	16	PRO	CA-N-CD	-5.96	103.66	112.00
61	SG	169	PRO	CA-N-CD	-5.90	103.74	112.00
56	SB	224	GLU	CA-CB-CG	5.86	125.81	114.10
53	Lt	115	GLN	CA-CB-CG	5.73	125.56	114.10
29	LU	108	GLU	CB-CG-CD	5.73	122.33	112.60
13	LD	235	MET	CB-CG-SD	5.68	129.73	112.70
60	SF	88	MET	CG-SD-CE	-5.66	88.45	100.90
27	LS	164	LYS	CA-CB-CG	5.61	125.32	114.10
43	Li	23	LYS	CA-CB-CG	5.51	125.12	114.10
11	LB	289	GLN	CA-CB-CG	5.50	125.09	114.10
18	LI	120	GLY	CA-C-N	5.48	129.01	120.68
18	LI	120	GLY	C-N-CA	5.48	129.01	120.68
24	LP	153	LYS	CB-CG-CD	5.46	123.86	111.30
31	LW	73	ARG	CA-CB-CG	5.46	125.02	114.10
70	SP	108	LYS	CB-CG-CD	5.41	123.74	111.30
87	Sg	5	MET	CB-CG-SD	5.40	128.90	112.70
5	CR	373	PRO	N-CA-CB	-5.39	97.59	103.25
53	Lt	123	ARG	CB-CG-CD	5.39	123.69	111.30
12	LC	109	ARG	CA-C-N	5.34	131.74	121.54
12	LC	109	ARG	C-N-CA	5.34	131.74	121.54
5	CR	372	MET	CB-CG-SD	5.25	128.46	112.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
72	SR	106	LEU	CA-CB-CG	5.20	134.49	116.30
52	Ls	19	GLN	CA-CB-CG	5.19	124.49	114.10
20	LL	201	GLU	CA-CB-CG	5.16	124.42	114.10
45	Lk	64	LEU	CA-CB-CG	5.08	134.09	116.30
5	CR	175	ASP	CB-CA-C	5.07	119.75	111.23
18	LI	187	LYS	CA-CB-CG	5.06	124.23	114.10
62	SH	58	LYS	CB-CG-CD	5.03	122.86	111.30
33	LY	40	GLN	CB-CG-CD	5.02	121.14	112.60
85	Se	53	LYS	CB-CG-CD	5.02	122.85	111.30
5	CR	373	PRO	N-CA-C	5.01	122.79	112.47
20	LL	163	LYS	CB-CG-CD	5.01	122.83	111.30

There are no chirality outliers.

All (8) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
14	LE	176	THR	Peptide
20	LL	47	ALA	Peptide
25	LQ	94	GLU	Peptide
2	NB	52	GLY	Peptide
56	SB	189	ILE	Peptide
61	SG	32	MET	Peptide
73	SS	11	HIS	Peptide
82	Sb	50	ALA	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	NA	522	0	560	6	0
2	NB	813	0	856	10	0
3	CM	247	0	128	1	0
4	CP	1602	0	809	5	0
5	CR	3269	0	3312	34	0
6	CZ	261	0	248	2	0
7	L5	78199	0	39523	455	0
8	L7	2558	0	1296	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	L8	3314	0	1683	19	0
10	LA	1898	0	1993	28	0
11	LB	3183	0	3316	36	0
12	LC	2884	0	3050	27	0
13	LD	2361	0	2378	22	0
14	LE	1754	0	1899	26	0
15	LF	1870	0	1996	26	0
16	LG	1818	0	1911	20	0
17	LH	1510	0	1579	20	0
18	LI	1666	0	1711	23	0
19	LJ	1329	0	1348	19	0
20	LL	1630	0	1715	18	0
21	LM	1122	0	1174	11	0
22	LN	1701	0	1749	16	0
23	LO	1633	0	1771	15	0
24	LP	1234	0	1254	10	0
25	LQ	1502	0	1616	16	0
26	LR	1452	0	1580	14	0
27	LS	1452	0	1490	20	0
28	LT	1282	0	1336	21	0
29	LU	806	0	826	17	0
30	LV	971	0	1024	16	0
31	LW	808	0	726	7	0
32	LX	981	0	1055	20	0
33	LY	1111	0	1194	17	0
34	LZ	1107	0	1182	12	0
35	La	1154	0	1198	12	0
36	Lb	590	0	613	6	0
37	Lc	742	0	774	9	0
38	Ld	874	0	918	8	0
39	Le	1049	0	1136	9	0
40	Lf	872	0	901	7	0
41	Lg	889	0	968	9	0
42	Lh	1006	0	1132	12	0
43	Li	813	0	887	7	0
44	Lj	705	0	737	11	0
45	Lk	542	0	590	13	0
46	Ll	444	0	483	13	0
47	Lm	425	0	462	7	0
48	Ln	230	0	276	3	0
49	Lo	862	0	929	13	0
50	Lp	696	0	744	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
51	Lr	997	0	1054	10	0
52	Ls	1640	0	1687	36	0
53	Lt	1208	0	1257	28	0
54	S2	36562	0	18472	281	0
55	SA	1671	0	1672	29	0
56	SB	1718	0	1786	32	0
57	SC	1661	0	1710	22	0
58	SD	1594	0	1568	22	0
59	SE	1972	0	2012	29	0
60	SF	1403	0	1421	30	0
61	SG	1634	0	1568	27	0
62	SH	1274	0	1196	20	0
63	SI	1574	0	1540	24	0
64	SJ	1431	0	1497	27	0
65	SK	726	0	674	16	0
66	SL	1143	0	1177	7	0
67	SM	950	0	987	23	0
68	SN	1182	0	1249	11	0
69	SO	969	0	982	14	0
70	SP	990	0	974	29	0
71	SQ	1075	0	1110	14	0
72	SR	942	0	913	16	0
73	SS	1130	0	1167	27	0
74	ST	1081	0	1093	20	0
75	SU	713	0	692	13	0
76	SV	618	0	617	7	0
77	SW	1026	0	1072	12	0
78	SX	1078	0	1130	11	0
79	SY	927	0	914	24	0
80	SZ	559	0	594	15	0
81	Sa	781	0	831	9	0
82	Sb	618	0	604	6	0
83	Sc	472	0	484	11	0
84	Sd	433	0	415	11	0
85	Se	416	0	439	6	0
86	Sf	515	0	521	12	0
87	Sg	2180	0	1968	38	0
88	L5	127	0	0	0	0
88	L7	3	0	0	0	0
88	L8	3	0	0	0	0
88	LA	1	0	0	0	0
88	LC	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
88	LN	1	0	0	0	0
88	LP	1	0	0	0	0
88	LV	1	0	0	0	0
88	S2	53	0	0	0	0
89	Lg	1	0	0	0	0
89	Lj	1	0	0	0	0
89	Lm	1	0	0	0	0
89	Lo	1	0	0	0	0
89	Lp	1	0	0	0	0
89	Sa	1	0	0	0	0
89	Sd	1	0	0	0	0
89	Sf	1	0	0	0	0
90	L5	4	0	0	0	0
90	L7	1	0	0	0	0
90	LI	1	0	0	0	0
90	LN	1	0	0	0	0
90	La	1	0	0	0	0
90	S2	3	0	0	0	0
All	All	218816	0	161083	1827	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 (1827) 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)
87:Sg:4:GLN:N	87:Sg:4:GLN:HE21	1.56	1.02
54:S2:1748:G:H1	54:S2:1786:U:H3	1.07	0.99
7:L5:1443:A:N6	7:L5:2104:G:C2	2.41	0.89
87:Sg:4:GLN:N	87:Sg:4:GLN:NE2	2.26	0.83
70:SP:93:MET:HE1	70:SP:106:GLU:HG2	1.61	0.82
7:L5:1443:A:N6	7:L5:2103:G:C6	2.47	0.81
7:L5:1443:A:H62	7:L5:2104:G:N2	1.80	0.79
54:S2:925:G:H1	54:S2:1017:U:H3	1.31	0.78
18:LI:48:LEU:O	18:LI:139:ARG:HA	1.83	0.78
3:CM:443:U:H3	4:CP:33:A:H61	1.31	0.77
75:SU:26:SER:HB3	75:SU:32:LEU:HD13	1.67	0.77
70:SP:108:LYS:H	70:SP:111:MET:HE2	1.49	0.77
29:LU:38:ASN:OD1	29:LU:90:TYR:OH	2.03	0.76
7:L5:3751:G:H21	7:L5:3775:A:H8	1.32	0.76
34:LZ:54:THR:H	34:LZ:57:MET:HE3	1.51	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
87:Sg:87:LEU:HB2	87:Sg:101:PHE:HB2	1.68	0.74
7:L5:2557:G:H1	7:L5:2570:U:H3	1.34	0.73
68:SN:52:VAL:O	68:SN:56:ASP:HB2	1.89	0.73
7:L5:468:U:H3	7:L5:688:U:H3	1.36	0.73
7:L5:2838:G:H5’	11:LB:247:GLY:HA2	1.72	0.72
54:S2:1396:A:O2’	54:S2:1398:G:N7	2.23	0.72
7:L5:4745:G:H1	7:L5:4955:A:H61	1.37	0.71
33:LY:30:MET:HB3	33:LY:101:PRO:HG2	1.70	0.71
30:LV:43:LYS:HG3	30:LV:60:MET:HG2	1.71	0.71
64:SJ:108:ARG:HH22	64:SJ:154:GLN:HE21	1.36	0.70
7:L5:5:A:H4’	16:LG:192:ARG:HH22	1.56	0.70
18:LI:87:MET:HG2	18:LI:138:ILE:HG12	1.73	0.70
30:LV:96:LEU:HD23	31:LW:20:ARG:HG2	1.74	0.69
5:CR:329:MET:O	5:CR:346:LEU:HB2	1.92	0.69
20:LL:164:GLU:HG3	35:La:100:ILE:HG13	1.75	0.69
78:SX:49:GLY:O	78:SX:99:GLU:HA	1.91	0.69
54:S2:860:G:H21	77:SW:107:SER:HB2	1.58	0.69
7:L5:3946:G:H21	7:L5:3947:A:H62	1.39	0.69
54:S2:529:A:H61	54:S2:556:U:H3	1.42	0.68
54:S2:1142:G:H21	54:S2:1145:A:H2	1.37	0.68
1:NA:71:ARG:NH2	7:L5:394:G:N7	2.41	0.68
7:L5:1443:A:N6	7:L5:2103:G:N1	2.41	0.68
7:L5:5027:C:H42	63:SI:170:LYS:HE3	1.59	0.68
87:Sg:38:LYS:HG3	87:Sg:65:PHE:H	1.58	0.67
7:L5:2611:A:H5’	7:L5:2688:G:H4’	1.76	0.67
19:LJ:55:TYR:HA	19:LJ:64:ARG:HG3	1.75	0.67
10:LA:120:PRO:HA	10:LA:162:ASN:HB3	1.76	0.67
79:SY:15:ASN:HD21	79:SY:18:LEU:HD12	1.61	0.66
54:S2:927:C:O2	82:Sb:51:GLN:NE2	2.29	0.66
54:S2:1098:C:H5	54:S2:1134:G:H1	1.43	0.66
54:S2:928:G:H1	54:S2:1013:U:H3	1.43	0.66
31:LW:102:LYS:H	31:LW:102:LYS:HE2	1.59	0.66
55:SA:184:ARG:HD3	55:SA:191:ARG:HD3	1.78	0.66
14:LE:119:GLU:HG3	39:Le:7:LEU:HD22	1.78	0.65
10:LA:117:GLU:HB2	10:LA:162:ASN:HB2	1.77	0.65
79:SY:83:LYS:HE3	79:SY:96:LEU:HD11	1.79	0.65
7:L5:1801:A:H4’	28:LT:102:ARG:HH21	1.61	0.65
11:LB:356:LYS:H	11:LB:356:LYS:HE2	1.62	0.65
52:Ls:96:THR:OG1	52:Ls:99:ARG:NH2	2.30	0.65
54:S2:1107:G:H1	54:S2:1125:C:H5	1.43	0.65
50:Lp:5:THR:HG21	50:Lp:9:GLY:H	1.60	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:1972:G:N2	53:Lt:131:GLU:OE1	2.29	0.65
26:LR:42:ARG:HA	26:LR:45:ILE:HD12	1.79	0.64
11:LB:305:THR:HG23	11:LB:307:TYR:H	1.62	0.64
7:L5:1267:C:OP2	7:L5:2121:C:N4	2.27	0.64
12:LC:116:ASN:HB2	12:LC:119:GLN:HG3	1.79	0.64
16:LG:38:ASN:ND2	16:LG:43:GLN:OE1	2.29	0.64
54:S2:1679:A:H2’	60:SF:60:ARG:HD3	1.80	0.64
56:SB:40:ASN:ND2	56:SB:76:ASN:OD1	2.29	0.64
79:SY:79:LEU:HD13	79:SY:83:LYS:HD3	1.79	0.64
58:SD:35:SER:OG	58:SD:51:LEU:O	2.16	0.64
75:SU:26:SER:OG	75:SU:27:ARG:N	2.28	0.64
7:L5:4139:G:H4’	7:L5:4146:G:H22	1.63	0.64
54:S2:114:G:O2’	54:S2:382:C:O2’	2.16	0.64
54:S2:1550:G:H3’	54:S2:1579:A:H61	1.63	0.63
27:LS:101:THR:HG22	27:LS:104:GLY:H	1.63	0.63
31:LW:102:LYS:HD3	31:LW:105:ARG:HH22	1.63	0.63
46:Ll:21:ARG:O	46:Ll:38:ASN:ND2	2.30	0.63
54:S2:190:G:O2’	54:S2:209:A:N6	2.32	0.63
87:Sg:195:LEU:HA	87:Sg:211:GLY:HA3	1.80	0.63
4:CP:32:U:OP2	71:SQ:146:ARG:NH2	2.32	0.63
52:Ls:18:ILE:HD12	52:Ls:68:HIS:HD2	1.62	0.63
54:S2:192:C:H41	54:S2:207:G:H21	1.45	0.63
57:SC:86:LEU:HD11	57:SC:265:PRO:HG2	1.81	0.63
82:Sb:21:LYS:NZ	82:Sb:26:GLN:OE1	2.31	0.63
49:Lo:33:LEU:HA	49:Lo:38:LYS:HG2	1.81	0.63
54:S2:1649:U:H3	54:S2:1675:A:H2	1.46	0.63
7:L5:966:A:H5”	7:L5:2092:G:H22	1.63	0.63
62:SH:63:PHE:HA	62:SH:95:ILE:O	1.98	0.62
9:L8:82:A:H62	9:L8:84:A:H3’	1.64	0.62
54:S2:1348:G:H1	54:S2:1381:G:H22	1.48	0.62
56:SB:183:GLU:HA	56:SB:186:ASN:HB2	1.80	0.62
26:LR:162:ARG:NH2	54:S2:873:G:N3	2.47	0.62
54:S2:433:A:H5”	63:SI:22:HIS:HB3	1.80	0.62
54:S2:1391:C:H4’	84:Sd:55:LEU:HD13	1.81	0.62
25:LQ:67:ILE:HD13	25:LQ:96:PRO:HD2	1.81	0.62
30:LV:69:LYS:NZ	30:LV:71:GLU:OE1	2.32	0.62
54:S2:617:G:H4’	78:SX:88:ASP:HB3	1.82	0.62
54:S2:1091:C:HO2’	77:SW:2:VAL:N	1.97	0.62
10:LA:101:VAL:HG22	10:LA:165:VAL:HG22	1.81	0.62
17:LH:106:GLN:NE2	17:LH:113:GLU:OE2	2.33	0.62
26:LR:160:GLU:OE1	26:LR:163:ARG:NH1	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:S2:1488:C:O2'	54:S2:1490:G:OP2	2.15	0.62
65:SK:3:MET:HE3	65:SK:8:ARG:HH21	1.65	0.62
5:CR:282:GLN:HA	5:CR:285:LYS:HE3	1.82	0.61
17:LH:37:ASP:OD1	17:LH:39:ASN:ND2	2.33	0.61
67:SM:84:LYS:O	67:SM:88:TRP:HB2	2.00	0.61
30:LV:45:ILE:HG21	30:LV:53:PRO:HB3	1.81	0.61
54:S2:1616:U:H3	54:S2:1620:A:H2	1.47	0.61
7:L5:518:G:H1	7:L5:643:C:H2'	1.63	0.61
27:LS:161:ARG:HE	27:LS:164:LYS:HD3	1.66	0.61
70:SP:18:ARG:HD3	73:SS:90:VAL:HA	1.81	0.61
54:S2:1544:C:N4	54:S2:1588:A:O2'	2.33	0.61
70:SP:18:ARG:O	73:SS:93:GLY:N	2.34	0.61
9:L8:55:U:H3	9:L8:62:A:H2	1.47	0.61
56:SB:152:LYS:HB2	72:SR:131:PRO:HB3	1.83	0.61
69:SO:34:PHE:HB3	69:SO:41:PHE:HB2	1.82	0.61
73:SS:14:ARG:NH1	73:SS:19:ASN:OD1	2.34	0.61
59:SE:171:ASP:OD1	59:SE:172:PHE:N	2.33	0.61
7:L5:2049:G:HO2'	7:L5:3884:U:HO2'	1.47	0.61
12:LC:328:LEU:HD13	15:LF:187:MET:HE3	1.82	0.61
73:SS:44:VAL:HG11	73:SS:71:MET:HG3	1.82	0.61
7:L5:2601:A:N6	7:L5:2744:A:OP2	2.34	0.60
7:L5:3641:U:OP2	7:L5:3646:A:N6	2.34	0.60
14:LE:99:ASP:OD1	14:LE:99:ASP:N	2.34	0.60
54:S2:1228:A:H2'	54:S2:1229:G:C8	2.36	0.60
7:L5:1362:G:OP1	20:LL:39:ARG:NH2	2.34	0.60
19:LJ:95:ARG:O	19:LJ:98:ASN:HB2	2.01	0.60
64:SJ:140:GLN:HE22	79:SY:64:PHE:HB3	1.66	0.60
5:CR:330:ARG:NH1	5:CR:344:LEU:O	2.33	0.60
5:CR:330:ARG:HH12	5:CR:344:LEU:HD23	1.65	0.60
15:LF:203:GLU:N	15:LF:203:GLU:OE2	2.34	0.60
29:LU:42:PHE:CE2	29:LU:46:ARG:HG3	2.36	0.60
75:SU:26:SER:HB2	75:SU:110:VAL:HA	1.83	0.60
7:L5:74:G:H5"	20:LL:59:VAL:HB	1.82	0.60
7:L5:1824:G:OP1	28:LT:35:LYS:NZ	2.34	0.60
54:S2:506:G:OP1	79:SY:108:LYS:NZ	2.32	0.60
56:SB:36:PRO:HD3	56:SB:98:THR:HG22	1.83	0.60
7:L5:1443:A:N6	7:L5:2104:G:N2	2.46	0.60
15:LF:105:VAL:HG13	15:LF:136:VAL:HG12	1.83	0.60
54:S2:377:G:H5'	63:SI:98:LYS:HB3	1.84	0.60
54:S2:1497:G:H1	65:SK:25:LYS:HG3	1.67	0.60
2:NB:35:ARG:H	2:NB:35:ARG:HD3	1.67	0.60

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
7:L5:5011:A:H62	7:L5:5037:U:H3	1.50	0.60
52:Ls:138:PHE:HB2	52:Ls:143:ILE:HB	1.83	0.60
7:L5:5066:U:OP1	24:LP:43:LYS:NZ	2.32	0.60
20:LL:47:ALA:O	20:LL:49:ARG:N	2.32	0.60
54:S2:170:A:OP2	61:SG:140:ARG:NH1	2.35	0.60
65:SK:3:MET:HE1	65:SK:48:ALA:HB2	1.84	0.60
27:LS:99:ASP:OD1	27:LS:100:LEU:N	2.34	0.59
61:SG:59:GLN:OE1	61:SG:72:ARG:NH2	2.34	0.59
29:LU:24:ASP:HB3	29:LU:111:GLU:HA	1.84	0.59
34:LZ:30:ASP:OD1	34:LZ:30:ASP:N	2.35	0.59
7:L5:4927:G:H5'	7:L5:4928:C:H5	1.65	0.59
22:LN:160:GLU:OE1	22:LN:160:GLU:N	2.33	0.59
7:L5:137:G:H2'	7:L5:138:G:H8	1.66	0.59
7:L5:1332:C:H2'	7:L5:1333:A:H8	1.67	0.59
7:L5:2894:A:H62	7:L5:3607:U:H3	1.49	0.59
8:L7:7:G:OP1	13:LD:33:ARG:NH1	2.33	0.59
18:LI:28:ASP:OD2	18:LI:28:ASP:N	2.36	0.59
45:Lk:19:ASP:OD2	45:Lk:19:ASP:N	2.34	0.59
53:Lt:99:LYS:NZ	53:Lt:101:SER:OG	2.31	0.59
54:S2:563:G:H1	54:S2:592:C:H5	1.50	0.59
56:SB:222:LYS:NZ	56:SB:223:PHE:O	2.35	0.59
22:LN:124:ASP:OD2	22:LN:125:SER:N	2.36	0.59
53:Lt:153:ASP:OD2	53:Lt:153:ASP:N	2.33	0.59
54:S2:696:G:N2	54:S2:737:G:O6	2.36	0.59
62:SH:18:GLU:O	62:SH:21:SER:OG	2.20	0.59
7:L5:679:C:H2'	7:L5:680:G:H8	1.67	0.59
7:L5:2089:G:OP2	12:LC:294:LYS:NZ	2.36	0.59
32:LX:93:ASN:HB3	32:LX:95:THR:HG23	1.85	0.59
7:L5:4472:G:O2'	47:Lm:100:TYR:O	2.20	0.59
65:SK:72:THR:O	65:SK:75:GLY:N	2.33	0.59
5:CR:38:ILE:HG12	5:CR:94:VAL:HG13	1.85	0.59
7:L5:703:G:H2'	7:L5:704:C:H4'	1.85	0.59
2:NB:55:ASN:HB2	2:NB:80:GLN:HG2	1.84	0.58
7:L5:2487:G:H22	7:L5:2492:C:H1'	1.66	0.58
18:LI:44:ASP:OD2	18:LI:44:ASP:N	2.34	0.58
7:L5:4626:A:H62	7:L5:4669:A:H2	1.51	0.58
10:LA:29:LEU:O	10:LA:123:ARG:NH1	2.36	0.58
64:SJ:127:ARG:HD2	85:Se:31:ARG:HD3	1.85	0.58
37:Lc:47:ILE:HD12	37:Lc:94:LEU:HD11	1.86	0.58
55:SA:128:ARG:NH2	55:SA:151:ASP:O	2.36	0.58
7:L5:4305:G:H1	28:LT:80:VAL:HG21	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:S2:1753:C:H4'	54:S2:1780:G:H1	1.68	0.58
73:SS:15:VAL:HB	73:SS:68:ILE:HD11	1.85	0.58
28:LT:43:LYS:O	28:LT:58:HIS:ND1	2.37	0.58
61:SG:4:ASN:HB3	61:SG:110:ASN:HB3	1.86	0.58
54:S2:66:G:H21	54:S2:82:G:H21	1.51	0.58
7:L5:1961:G:OP2	52:Ls:59:THR:OG1	2.20	0.58
15:LF:162:ILE:HD13	15:LF:167:ILE:HB	1.85	0.58
54:S2:1616:U:OP2	70:SP:43:ARG:NH2	2.36	0.58
55:SA:50:ASN:HA	72:SR:105:MET:HE2	1.86	0.58
62:SH:72:PHE:O	62:SH:75:ILE:O	2.21	0.58
7:L5:1351:G:OP1	12:LC:33:ARG:NH1	2.37	0.58
7:L5:4618:G:H5"	30:LV:15:ARG:HB3	1.85	0.58
8:L7:30:C:H5	8:L7:47:G:H1	1.52	0.58
27:LS:9:GLU:HG2	27:LS:67:VAL:HB	1.85	0.58
54:S2:959:G:OP1	69:SO:104:ARG:NH2	2.37	0.58
54:S2:1745:A:H1'	61:SG:66:GLY:HA2	1.85	0.58
59:SE:45:ILE:HA	59:SE:61:VAL:HG11	1.84	0.58
60:SF:124:ASP:OD1	60:SF:125:SER:N	2.36	0.58
40:Lf:36:ARG:O	40:Lf:39:THR:OG1	2.21	0.58
52:Ls:125:ALA:HA	52:Ls:154:ILE:HG23	1.85	0.58
9:L8:155:C:OP2	16:LG:89:ARG:NH1	2.37	0.58
53:Lt:45:ASP:HA	53:Lt:48:LYS:HG3	1.86	0.58
54:S2:1589:A:N3	54:S2:1653:U:O2'	2.36	0.58
59:SE:100:ARG:HH12	59:SE:122:LYS:HB2	1.69	0.58
67:SM:54:SER:HB3	67:SM:78:LYS:HD2	1.86	0.58
27:LS:84:TYR:HB2	27:LS:124:ILE:HG22	1.86	0.57
37:Lc:38:ILE:HD11	37:Lc:46:VAL:HG21	1.86	0.57
56:SB:57:ILE:HG22	56:SB:59:SER:H	1.69	0.57
57:SC:254:ASP:N	57:SC:254:ASP:OD1	2.35	0.57
62:SH:58:LYS:HB2	62:SH:90:LYS:HG2	1.86	0.57
87:Sg:124:SER:OG	87:Sg:126:ASP:OD1	2.17	0.57
7:L5:2469:C:H5	7:L5:2471:G:H1	1.52	0.57
54:S2:1276:A:H62	54:S2:1321:G:H8	1.53	0.57
59:SE:80:ILE:HG23	59:SE:81:THR:HG23	1.87	0.57
11:LB:224:LYS:HG2	11:LB:340:THR:HG22	1.85	0.57
74:ST:42:HIS:ND1	74:ST:93:SER:OG	2.37	0.57
83:Sc:29:GLN:NE2	83:Sc:66:ARG:O	2.37	0.57
7:L5:3693:U:O3'	50:Lp:21:SER:OG	2.23	0.57
19:LJ:101:ASP:OD1	19:LJ:101:ASP:N	2.31	0.57
57:SC:92:GLU:N	57:SC:92:GLU:OE2	2.34	0.57
60:SF:127:ARG:HH22	60:SF:136:ARG:HG2	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:4699:U:H1'	7:L5:4700:A:H5"	1.85	0.57
18:LI:31:ILE:HG22	18:LI:62:SER:HB2	1.86	0.57
54:S2:913:A:N6	62:SH:98:ARG:O	2.37	0.57
62:SH:147:LYS:NZ	62:SH:151:SER:OG	2.36	0.57
7:L5:2899:C:OP1	26:LR:108:ARG:NH2	2.34	0.57
7:L5:3594:C:O2	7:L5:3597:G:N2	2.37	0.57
53:Lt:44:ASP:OD2	53:Lt:44:ASP:N	2.27	0.57
54:S2:581:U:OP1	64:SJ:133:ARG:NH2	2.36	0.57
15:LF:226:HIS:HA	15:LF:233:ALA:HB3	1.87	0.57
75:SU:79:ARG:NH1	84:Sd:56:ASP:O	2.38	0.57
37:Lc:37:MET:HG3	37:Lc:97:ILE:HD11	1.85	0.57
44:Lj:54:LYS:O	44:Lj:58:THR:HB	2.05	0.57
71:SQ:70:VAL:HG11	71:SQ:84:ILE:HG23	1.85	0.57
7:L5:759:G:OP1	17:LH:51:LYS:NZ	2.38	0.56
7:L5:1890:G:OP2	7:L5:1890:G:N2	2.36	0.56
7:L5:3689:G:O2'	7:L5:3818:U:OP2	2.20	0.56
54:S2:360:A:N6	54:S2:400:C:O2'	2.37	0.56
71:SQ:58:LEU:HB3	71:SQ:62:ARG:HD2	1.87	0.56
53:Lt:18:THR:HA	53:Lt:57:ARG:HA	1.86	0.56
55:SA:77:ILE:HD13	55:SA:99:ILE:HB	1.86	0.56
74:ST:96:SER:HB3	74:ST:99:VAL:HB	1.87	0.56
83:Sc:32:VAL:O	83:Sc:41:SER:HA	2.05	0.56
2:NB:102:MET:HE3	2:NB:106:ILE:HG12	1.87	0.56
5:CR:322:VAL:O	5:CR:391:ILE:HA	2.04	0.56
7:L5:496:G:H2'	7:L5:498:C:H5"	1.87	0.56
7:L5:2764:A:H2'	7:L5:2765:A:H8	1.71	0.56
37:Lc:31:TYR:OH	37:Lc:59:GLU:OE2	2.22	0.56
60:SF:41:VAL:HA	60:SF:45:TYR:HB2	1.87	0.56
76:SV:32:ILE:O	76:SV:54:ALA:HA	2.06	0.56
7:L5:2395:A:HO2'	7:L5:2806:A:HO2'	1.53	0.56
87:Sg:152:SER:H	87:Sg:169:GLY:HA2	1.70	0.56
7:L5:4717:A:OP2	11:LB:30:LYS:NZ	2.38	0.56
28:LT:82:GLY:HA3	36:Lb:16:TRP:HB2	1.88	0.56
7:L5:1468:C:OP1	35:La:132:ARG:NH2	2.37	0.56
7:L5:5002:U:OP2	11:LB:385:LYS:NZ	2.37	0.56
20:LL:139:SER:O	20:LL:143:GLU:HB2	2.06	0.56
28:LT:88:ARG:NH2	36:Lb:30:GLU:OE1	2.37	0.56
54:S2:895:G:H8	54:S2:896:U:H4'	1.69	0.56
54:S2:1512:C:O2'	84:Sd:7:TYR:O	2.20	0.56
54:S2:1536:G:H2'	54:S2:1537:A:C8	2.40	0.56
55:SA:209:GLU:HB2	55:SA:212:LYS:HE3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:CR:145:LYS:HG2	5:CR:162:GLN:HG2	1.87	0.56
7:L5:3664:G:H2’	7:L5:3665:G:H8	1.70	0.56
10:LA:5:ILE:HG12	10:LA:8:GLN:HB2	1.88	0.56
11:LB:378:ARG:HG2	31:LW:32:LEU:HD21	1.88	0.56
17:LH:124:ARG:NH1	17:LH:164:ALA:O	2.33	0.56
54:S2:1308:U:H1’	86:Sf:135:HIS:HE1	1.70	0.56
9:L8:45:C:OP2	46:Ll:15:LYS:NZ	2.39	0.56
80:SZ:68:ILE:HB	80:SZ:109:TYR:HB2	1.88	0.56
7:L5:1697:G:N2	7:L5:2084:C:OP1	2.38	0.56
54:S2:587:A:H5’	54:S2:592:C:H42	1.70	0.56
60:SF:167:LYS:NZ	60:SF:175:ASP:OD1	2.37	0.56
71:SQ:16:LYS:H	71:SQ:19:ALA:HB3	1.70	0.56
80:SZ:79:ILE:HG13	80:SZ:83:LEU:HD23	1.87	0.56
54:S2:72:C:H1’	54:S2:73:C:H2’	1.88	0.55
59:SE:180:LEU:HA	59:SE:194:VAL:HA	1.88	0.55
70:SP:110:GLU:OE1	70:SP:110:GLU:N	2.36	0.55
86:Sf:121:CYS:HB2	86:Sf:146:LEU:HD11	1.88	0.55
49:Lo:11:PHE:O	49:Lo:81:ARG:NH2	2.39	0.55
53:Lt:105:THR:OG1	53:Lt:108:GLU:OE2	2.23	0.55
60:SF:73:THR:HG22	60:SF:93:VAL:HG11	1.88	0.55
54:S2:351:G:OP1	63:SI:7:ASN:ND2	2.40	0.55
54:S2:804:U:H5	54:S2:859:G:H1	1.53	0.55
64:SJ:128:VAL:O	64:SJ:132:GLN:HG2	2.07	0.55
67:SM:87:GLU:HG2	67:SM:100:PRO:HG3	1.87	0.55
68:SN:87:ASP:OD2	68:SN:87:ASP:N	2.37	0.55
23:LO:47:PHE:HZ	23:LO:144:GLU:HG3	1.72	0.55
27:LS:80:ILE:HG12	27:LS:129:VAL:HG13	1.87	0.55
56:SB:60:ASP:HA	56:SB:63:LYS:HD2	1.88	0.55
7:L5:2520:C:H2’	7:L5:2521:G:H8	1.72	0.55
54:S2:1598:G:O2’	80:SZ:80:ARG:O	2.22	0.55
25:LQ:157:GLY:O	25:LQ:188:ASN:ND2	2.40	0.55
52:Ls:39:GLN:O	52:Ls:42:GLN:NE2	2.40	0.55
59:SE:125:LYS:HG2	59:SE:142:HIS:HB3	1.89	0.55
63:SI:89:GLU:OE2	63:SI:92:ARG:NH2	2.40	0.55
69:SO:56:VAL:HG23	69:SO:60:MET:HE2	1.89	0.55
87:Sg:12:LYS:HA	87:Sg:306:LEU:HD13	1.89	0.55
2:NB:55:ASN:HA	2:NB:80:GLN:HA	1.87	0.55
7:L5:4992:G:H2’	7:L5:4993:G:C8	2.42	0.55
20:LL:108:GLU:OE2	20:LL:108:GLU:N	2.36	0.55
55:SA:36:GLN:O	55:SA:53:ARG:NH1	2.40	0.55
75:SU:80:PHE:HB3	84:Sd:52:PHE:HB3	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:CR:317:VAL:HA	5:CR:413:LEU:HA	1.89	0.55
13:LD:223:PHE:HB3	13:LD:226:TYR:HB2	1.88	0.55
38:Ld:36:VAL:HG21	38:Ld:44:ARG:HG2	1.89	0.55
54:S2:1776:G:N2	54:S2:1776:G:OP2	2.40	0.55
67:SM:36:ARG:HH12	67:SM:40:LYS:HE3	1.71	0.55
67:SM:93:LYS:NZ	67:SM:102:LYS:O	2.40	0.55
73:SS:34:LYS:HG2	73:SS:103:LEU:HD23	1.89	0.55
87:Sg:17:TRP:HB2	87:Sg:36:ARG:HD2	1.88	0.55
2:NB:82:SER:HB3	2:NB:87:THR:HB	1.89	0.54
7:L5:4546:A:N7	10:LA:215:ASN:ND2	2.55	0.54
52:Ls:26:LYS:HG3	52:Ls:91:THR:HG23	1.89	0.54
7:L5:3717:A:OP2	7:L5:3735:G:N2	2.37	0.54
7:L5:4537:C:H2’	7:L5:4538:G:C8	2.43	0.54
7:L5:4941:G:OP2	14:LE:188:ARG:NH2	2.40	0.54
49:Lo:99:ARG:HH12	49:Lo:102:GLN:HE21	1.54	0.54
52:Ls:48:ARG:O	52:Ls:50:LYS:NZ	2.39	0.54
52:Ls:194:ASP:O	52:Ls:197:SER:OG	2.25	0.54
56:SB:52:THR:HG23	56:SB:57:ILE:HA	1.87	0.54
58:SD:127:MET:HE1	58:SD:133:GLY:HA2	1.88	0.54
83:Sc:15:THR:HG22	83:Sc:16:LYS:H	1.71	0.54
87:Sg:244:ASN:OD1	87:Sg:245:ARG:N	2.40	0.54
7:L5:1994:C:H2’	7:L5:1995:G:H8	1.73	0.54
23:LO:61:ARG:HA	23:LO:70:PRO:HD2	1.89	0.54
37:Lc:38:ILE:HG21	37:Lc:63:TYR:HB3	1.89	0.54
54:S2:1156:U:OP1	77:SW:71:LYS:NZ	2.40	0.54
7:L5:958:G:H21	14:LE:125:LEU:H	1.55	0.54
7:L5:4122:G:H4’	41:Lg:90:ARG:HD2	1.89	0.54
21:LM:24:LEU:HB2	21:LM:43:THR:HG21	1.89	0.54
33:LY:35:SER:O	33:LY:39:ARG:HB2	2.07	0.54
53:Lt:45:ASP:OD2	53:Lt:45:ASP:N	2.35	0.54
54:S2:28:U:H2’	54:S2:29:G:H8	1.73	0.54
62:SH:171:GLU:OE2	62:SH:171:GLU:N	2.40	0.54
7:L5:1175:A:H2	7:L5:1185:G:H22	1.56	0.54
18:LI:103:LEU:HD12	18:LI:111:LEU:HD21	1.88	0.54
29:LU:75:GLU:N	29:LU:75:GLU:OE1	2.40	0.54
43:Li:23:LYS:HE2	43:Li:24:PRO:HD2	1.89	0.54
54:S2:1482:C:OP1	84:Sd:54:LYS:NZ	2.41	0.54
7:L5:158:A:N1	7:L5:276:C:O2’	2.40	0.54
38:Ld:64:ILE:HG23	38:Ld:68:LEU:HD23	1.88	0.54
54:S2:803:C:H41	54:S2:860:G:H1	1.55	0.54
55:SA:81:ASN:OD1	55:SA:81:ASN:N	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SB:77:ASP:N	56:SB:77:ASP:OD1	2.36	0.54
7:L5:1994:C:H2'	7:L5:1995:G:C8	2.43	0.54
7:L5:3717:A:H2'	7:L5:3718:A:C8	2.42	0.54
7:L5:4431:U:OP2	18:LI:3:ARG:NH2	2.40	0.54
10:LA:173:GLY:O	10:LA:176:ASP:HB2	2.08	0.54
37:Lc:20:LEU:O	37:Lc:24:SER:OG	2.20	0.54
49:Lo:2:VAL:N	49:Lo:90:HIS:O	2.41	0.54
52:Ls:191:GLN:HE22	52:Ls:199:TYR:H	1.55	0.54
1:NA:101:ASN:HB3	1:NA:131:LEU:HB3	1.89	0.54
7:L5:300:A:H2'	7:L5:301:G:H8	1.72	0.54
52:Ls:101:MET:HA	52:Ls:104:ALA:HB3	1.90	0.54
54:S2:155:G:N2	61:SG:56:ASN:OD1	2.41	0.54
54:S2:1298:G:OP2	70:SP:77:LYS:NZ	2.41	0.54
54:S2:1648:G:H5"	71:SQ:125:ARG:HB2	1.90	0.54
79:SY:53:ASP:OD1	79:SY:53:ASP:N	2.32	0.54
7:L5:1326:A:OP2	7:L5:4445:U:O2'	2.25	0.54
7:L5:4537:C:H2'	7:L5:4538:G:H8	1.73	0.54
20:LL:4:SER:OG	20:LL:5:ARG:N	2.41	0.54
54:S2:562:U:H4'	64:SJ:132:GLN:HB3	1.88	0.54
54:S2:874:G:H2'	54:S2:875:A:H8	1.73	0.54
70:SP:41:GLN:N	70:SP:41:GLN:OE1	2.40	0.54
72:SR:16:ILE:HD11	72:SR:54:VAL:HG21	1.90	0.54
44:Lj:22:CYS:SG	44:Lj:24:SER:OG	2.66	0.54
74:ST:13:GLU:HA	74:ST:16:ARG:HB2	1.89	0.54
2:NB:62:VAL:HG11	2:NB:90:ILE:HD13	1.90	0.53
7:L5:420:A:H61	9:L8:15:G:H1'	1.73	0.53
30:LV:33:GLY:HA3	30:LV:69:LYS:HD3	1.90	0.53
32:LX:40:ILE:HD13	32:LX:42:THR:HG23	1.90	0.53
33:LY:47:MET:HE1	33:LY:118:ILE:HD11	1.90	0.53
54:S2:1536:G:H2'	54:S2:1537:A:H8	1.71	0.53
58:SD:8:LYS:HG2	75:SU:61:LEU:HD21	1.90	0.53
7:L5:67:C:OP2	7:L5:312:G:N2	2.41	0.53
7:L5:4363:A:H5"	49:Lo:36:GLN:HG2	1.91	0.53
19:LJ:120:ASP:OD2	19:LJ:122:SER:OG	2.26	0.53
52:Ls:58:ASN:HB3	52:Ls:62:ARG:HH12	1.73	0.53
53:Lt:154:ASP:HB2	53:Lt:159:ALA:HB3	1.89	0.53
54:S2:1422:G:O2'	54:S2:1424:G:OP2	2.25	0.53
55:SA:5:LEU:O	55:SA:9:GLN:NE2	2.37	0.53
7:L5:496:G:N2	7:L5:658:C:O2	2.36	0.53
7:L5:4129:G:O2'	16:LG:34:LYS:NZ	2.39	0.53
38:Ld:59:THR:OG1	38:Ld:104:THR:OG1	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SK:26:ASP:OD1	65:SK:29:MET:N	2.41	0.53
37:Lc:34:THR:HG23	37:Lc:95:ALA:HB2	1.90	0.53
54:S2:616:A:OP1	78:SX:68:LYS:NZ	2.41	0.53
75:SU:22:ILE:HB	75:SU:89:ILE:HD12	1.90	0.53
19:LJ:18:ARG:H	19:LJ:134:LEU:HA	1.72	0.53
52:Ls:109:ALA:HB3	52:Ls:185:PHE:HE1	1.73	0.53
63:SI:36:THR:OG1	63:SI:57:ALA:O	2.25	0.53
7:L5:62:A:N3	7:L5:77:U:O2’	2.36	0.53
7:L5:1503:A:H4’	7:L5:1504:G:H5’	1.91	0.53
64:SJ:82:VAL:HG21	64:SJ:92:MET:HE1	1.89	0.53
81:Sa:25:ASN:OD1	81:Sa:25:ASN:N	2.40	0.53
7:L5:4499:G:C2	7:L5:4529:G:H1’	2.44	0.53
13:LD:60:ILE:HD11	13:LD:93:THR:HA	1.90	0.53
16:LG:210:GLU:OE1	16:LG:210:GLU:N	2.34	0.53
54:S2:640:A:H2’	54:S2:641:A:C8	2.44	0.53
54:S2:1748:G:O6	54:S2:1786:U:O4	2.27	0.53
55:SA:69:GLU:OE1	55:SA:69:GLU:N	2.36	0.53
57:SC:79:GLU:N	57:SC:79:GLU:OE1	2.41	0.53
7:L5:3937:C:H1’	22:LN:125:SER:HB3	1.90	0.53
33:LY:37:GLU:OE1	33:LY:37:GLU:N	2.33	0.53
77:SW:14:ILE:HG13	77:SW:27:ILE:HD11	1.90	0.53
7:L5:2123:C:H1’	14:LE:72:LYS:HD2	1.91	0.53
7:L5:4740:G:O6	7:L5:4959:U:O2	2.27	0.53
14:LE:132:PRO:HG2	14:LE:135:GLN:HG3	1.91	0.53
26:LR:105:LEU:HD22	26:LR:135:LYS:HG2	1.91	0.53
54:S2:687:C:OP2	77:SW:32:LYS:NZ	2.37	0.53
54:S2:923:G:H1	54:S2:1019:C:H5	1.56	0.53
75:SU:61:LEU:HB2	75:SU:82:MET:HB3	1.90	0.53
5:CR:330:ARG:HH21	5:CR:332:VAL:HA	1.74	0.53
7:L5:1857:C:H2’	7:L5:1858:A:H8	1.74	0.53
11:LB:92:TYR:HB3	11:LB:99:LEU:HD22	1.91	0.53
45:Lk:10:ASP:N	45:Lk:10:ASP:OD1	2.42	0.53
47:Lm:98:LYS:HG3	47:Lm:118:THR:HG21	1.90	0.53
56:SB:99:ASN:OD1	56:SB:100:PHE:N	2.41	0.53
7:L5:452:A:H4’	7:L5:453:G:H5’	1.91	0.52
27:LS:19:THR:HG23	27:LS:22:CYS:H	1.73	0.52
7:L5:1692:C:H5”	25:LQ:53:MET:HE2	1.89	0.52
7:L5:2695:A:OP1	45:Lk:35:LYS:NZ	2.39	0.52
7:L5:4910:G:N2	23:LO:106:ASP:O	2.42	0.52
19:LJ:141:ILE:HA	19:LJ:144:LYS:HD3	1.92	0.52
28:LT:94:GLU:N	28:LT:94:GLU:OE2	2.36	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:LX:82:THR:HG21	42:Lh:37:THR:HG22	1.92	0.52
54:S2:643:A:OP1	64:SJ:38:ARG:NH1	2.42	0.52
54:S2:921:G:H3’	77:SW:28:ARG:HH21	1.74	0.52
54:S2:1348:G:H5’	57:SC:145:LYS:HE3	1.90	0.52
63:SI:6:ASP:OD2	63:SI:9:HIS:ND1	2.30	0.52
67:SM:19:GLN:OE1	67:SM:88:TRP:NE1	2.29	0.52
1:NA:111:VAL:HG22	1:NA:122:VAL:HG22	1.90	0.52
52:Ls:28:PHE:HE2	52:Ls:189:ILE:HG23	1.75	0.52
54:S2:1255:G:OP1	54:S2:1256:G:O2’	2.23	0.52
58:SD:74:GLN:NE2	58:SD:79:PHE:O	2.42	0.52
58:SD:163:PRO:O	58:SD:167:TYR:HB2	2.10	0.52
73:SS:25:LYS:HE2	73:SS:53:THR:HA	1.91	0.52
79:SY:22:GLN:HG2	79:SY:74:MET:HE3	1.91	0.52
82:Sb:35:VAL:HG13	82:Sb:44:THR:HG23	1.90	0.52
87:Sg:286:CYS:HA	87:Sg:302:TYR:HD1	1.74	0.52
7:L5:4627:U:H4’	11:LB:373:LYS:HE2	1.92	0.52
7:L5:5026:U:H1’	7:L5:5027:C:H5	1.74	0.52
56:SB:124:HIS:HA	56:SB:137:LEU:O	2.09	0.52
74:ST:13:GLU:OE1	74:ST:13:GLU:N	2.42	0.52
7:L5:2711:G:OP2	26:LR:39:GLN:NE2	2.41	0.52
54:S2:924:G:OP1	68:SN:4:MET:N	2.43	0.52
63:SI:11:ARG:O	66:SL:136:LYS:NZ	2.39	0.52
5:CR:330:ARG:NH1	5:CR:344:LEU:H	2.07	0.52
7:L5:2521:G:OP2	41:Lg:8:ARG:NH2	2.41	0.52
16:LG:232:GLU:OE2	16:LG:232:GLU:N	2.37	0.52
26:LR:39:GLN:OE1	26:LR:42:ARG:NH1	2.41	0.52
41:Lg:83:CYS:SG	41:Lg:86:CYS:HB2	2.49	0.52
55:SA:137:ALA:HB1	55:SA:142:LEU:HB3	1.91	0.52
58:SD:56:GLN:O	58:SD:60:GLY:CA	2.58	0.52
59:SE:236:ILE:HD12	59:SE:237:SER:H	1.75	0.52
66:SL:124:ASP:OD2	66:SL:124:ASP:N	2.32	0.52
81:Sa:19:GLN:OE1	81:Sa:19:GLN:N	2.34	0.52
7:L5:2258:C:N4	7:L5:2259:G:O6	2.42	0.52
7:L5:2745:A:H2’	7:L5:2746:A:H8	1.75	0.52
20:LL:80:GLU:OE1	20:LL:102:ARG:NH2	2.41	0.52
7:L5:1332:C:H2’	7:L5:1333:A:C8	2.45	0.52
22:LN:96:ARG:NH1	22:LN:100:SER:OG	2.41	0.52
54:S2:528:A:H2’	54:S2:529:A:C8	2.45	0.52
66:SL:126:VAL:HG12	66:SL:145:VAL:HG22	1.91	0.52
29:LU:42:PHE:CD1	29:LU:90:TYR:HD1	2.27	0.52
54:S2:940:U:H3	54:S2:1002:U:H3	1.56	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:SJ:113:GLN:OE1	64:SJ:154:GLN:NE2	2.43	0.52
7:L5:2696:A:N1	45:Lk:24:LYS:NZ	2.55	0.52
7:L5:3759:A:HO2'	54:S2:1826:G:HO2'	1.58	0.52
23:LO:113:ASP:OD2	23:LO:113:ASP:N	2.37	0.52
54:S2:1215:C:O2'	54:S2:1645:C:OP2	2.28	0.52
7:L5:4547:C:O2'	7:L5:4549:G:OP1	2.27	0.51
54:S2:570:C:O2'	79:SY:34:THR:O	2.22	0.51
54:S2:943:U:OP1	56:SB:214:LYS:NZ	2.38	0.51
54:S2:957:A:H2'	54:S2:958:G:H21	1.75	0.51
67:SM:79:VAL:HG11	67:SM:85:LEU:HB2	1.92	0.51
7:L5:151:G:N7	16:LG:141:ASN:ND2	2.57	0.51
32:LX:78:LYS:NZ	32:LX:133:GLU:OE2	2.43	0.51
47:Lm:127:VAL:HG23	47:Lm:128:LYS:HG2	1.93	0.51
52:Ls:47:LEU:HD12	52:Ls:51:ALA:HB3	1.90	0.51
54:S2:562:U:H2'	54:S2:563:G:C8	2.44	0.51
54:S2:1217:A:H2'	54:S2:1218:C:H6	1.75	0.51
54:S2:1354:G:N2	54:S2:1357:A:OP2	2.37	0.51
55:SA:123:VAL:HA	55:SA:145:ILE:O	2.09	0.51
56:SB:40:ASN:OD1	56:SB:40:ASN:N	2.43	0.51
60:SF:41:VAL:HG11	60:SF:68:ILE:HG22	1.91	0.51
7:L5:1176:C:H42	7:L5:1184:A:H61	1.58	0.51
7:L5:1785:C:OP1	18:LI:133:GLN:NE2	2.39	0.51
7:L5:4745:G:H1	7:L5:4955:A:N6	2.05	0.51
7:L5:5006:U:H4'	7:L5:5007:A:H5'	1.93	0.51
10:LA:181:LYS:HB2	10:LA:184:ARG:HG3	1.92	0.51
54:S2:1281:G:H3'	54:S2:1282:A:H8	1.75	0.51
54:S2:1740:C:OP1	63:SI:44:HIS:ND1	2.44	0.51
67:SM:33:ARG:H	67:SM:37:GLU:HB2	1.75	0.51
83:Sc:62:GLU:OE1	83:Sc:62:GLU:N	2.43	0.51
7:L5:268:G:H2'	7:L5:269:G:H8	1.74	0.51
7:L5:1548:G:O2'	7:L5:2812:A:N3	2.41	0.51
7:L5:2554:U:O2	7:L5:2764:A:N7	2.44	0.51
10:LA:247:ARG:HD3	54:S2:1069:U:H4'	1.91	0.51
24:LP:10:ASN:OD1	24:LP:12:THR:OG1	2.24	0.51
54:S2:1680:G:H4'	83:Sc:20:ARG:HG2	1.92	0.51
62:SH:154:ILE:HB	62:SH:185:VAL:HG22	1.92	0.51
7:L5:4274:A:H2'	7:L5:4275:G:C8	2.44	0.51
7:L5:4541:G:N2	7:L5:4544:A:OP2	2.40	0.51
54:S2:1860:A:H3'	81:Sa:8:ASN:HB3	1.92	0.51
57:SC:176:LYS:O	57:SC:200:ARG:NH2	2.43	0.51
58:SD:31:GLU:OE2	58:SD:31:GLU:N	2.34	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:SG:176:ILE:HB	61:SG:179:LEU:HD23	1.91	0.51
7:L5:4478:G:O2'	7:L5:4602:A:N1	2.43	0.51
45:Lk:55:LYS:O	45:Lk:58:GLN:NE2	2.44	0.51
54:S2:1454:A:H5"	72:SR:3:ARG:HD2	1.92	0.51
54:S2:1593:C:OP2	80:SZ:104:ARG:NH2	2.43	0.51
58:SD:138:VAL:HG22	58:SD:184:ILE:HD13	1.92	0.51
73:SS:22:GLY:HA2	73:SS:56:ALA:HB3	1.92	0.51
7:L5:1552:G:O2'	7:L5:1574:G:N2	2.31	0.51
7:L5:2020:U:H2'	7:L5:2021:G:H8	1.75	0.51
7:L5:4238:G:H2'	7:L5:4239:A:C8	2.46	0.51
10:LA:14:SER:H	10:LA:17:ARG:HD3	1.75	0.51
20:LL:164:GLU:OE1	20:LL:167:ARG:NH1	2.44	0.51
32:LX:64:SER:HB2	42:Lh:69:LEU:HD13	1.92	0.51
54:S2:641:A:OP1	64:SJ:40:LYS:NZ	2.30	0.51
54:S2:1752:C:H42	54:S2:1781:A:H2	1.57	0.51
55:SA:196:GLU:OE2	55:SA:196:GLU:N	2.42	0.51
65:SK:60:GLU:HB2	65:SK:69:TRP:CD1	2.46	0.51
7:L5:679:C:H2'	7:L5:680:G:C8	2.44	0.51
13:LD:212:MET:HE1	13:LD:233:PRO:HG3	1.92	0.51
27:LS:15:ARG:HD2	27:LS:25:PRO:HG2	1.93	0.51
54:S2:30:C:O2'	54:S2:596:U:OP1	2.22	0.51
54:S2:1240:A:C8	70:SP:100:LYS:HD2	2.45	0.51
66:SL:59:LYS:HB3	66:SL:134:LEU:HD13	1.93	0.51
7:L5:4093:G:H2'	7:L5:4094:G:C8	2.45	0.51
46:Ll:27:ILE:O	46:Ll:33:ASN:ND2	2.43	0.51
54:S2:1298:G:H4'	70:SP:78:THR:HA	1.93	0.51
54:S2:1372:U:OP1	54:S2:1385:G:N2	2.31	0.51
63:SI:133:GLU:HA	63:SI:136:ILE:HD12	1.93	0.51
83:Sc:13:ARG:NH1	83:Sc:53:GLY:O	2.44	0.51
28:LT:144:ASN:O	28:LT:146:LYS:NZ	2.44	0.51
53:Lt:101:SER:HA	53:Lt:141:CYS:HA	1.92	0.51
54:S2:1563:G:H5"	74:ST:121:ARG:HH21	1.76	0.51
61:SG:7:PHE:HB3	61:SG:12:CYS:HB2	1.93	0.51
7:L5:257:C:H2'	7:L5:258:G:C8	2.46	0.50
7:L5:1306:C:H2'	7:L5:1307:A:H8	1.77	0.50
53:Lt:152:ILE:O	53:Lt:156:ASN:ND2	2.44	0.50
54:S2:1016:U:H5"	68:SN:14:SER:HB3	1.92	0.50
54:S2:1298:G:O2'	54:S2:1299:A:O4'	2.29	0.50
62:SH:178:LYS:NZ	62:SH:184:ASP:OD1	2.34	0.50
72:SR:65:PRO:HB3	72:SR:73:LEU:HD11	1.93	0.50
7:L5:27:C:OP1	22:LN:193:ARG:NH1	2.44	0.50

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Atom-1	**Atom-2**	**Interatomic distance (Å)**	**Clash overlap (Å)**
7:L5:3908:A:H2	7:L5:4449:A:H61	1.60	0.50
7:L5:4302:U:H4'	28:LT:5:LYS:HD3	1.93	0.50
16:LG:207:VAL:HG21	16:LG:215:LEU:HD13	1.92	0.50
20:LL:46:ILE:HD11	20:LL:51:ALA:HA	1.93	0.50
44:Lj:2:THR:O	44:Lj:7:SER:OG	2.21	0.50
54:S2:5:U:H2'	54:S2:6:G:H8	1.76	0.50
54:S2:508:A:H3'	54:S2:509:G:H8	1.76	0.50
56:SB:28:LYS:NZ	56:SB:50:THR:OG1	2.41	0.50
61:SG:41:LEU:HB2	61:SG:45:TRP:HD1	1.77	0.50
73:SS:45:LEU:HD22	73:SS:50:ILE:HD11	1.92	0.50
77:SW:32:LYS:O	77:SW:36:ARG:HG2	2.12	0.50
7:L5:958:G:O2'	14:LE:123:ARG:O	2.25	0.50
7:L5:1177:U:HO2'	13:LD:286:SER:HG	1.59	0.50
7:L5:1942:A:H2'	7:L5:1943:A:C8	2.47	0.50
11:LB:36:ASP:OD2	11:LB:38:SER:OG	2.28	0.50
21:LM:38:VAL:HG11	21:LM:55:MET:HE1	1.93	0.50
54:S2:527:C:H2'	54:S2:528:A:C8	2.45	0.50
54:S2:956:G:H4'	69:SO:60:MET:HG2	1.94	0.50
67:SM:62:VAL:HA	67:SM:65:VAL:HG12	1.94	0.50
81:Sa:12:LYS:HG3	81:Sa:15:ARG:HB2	1.93	0.50
15:LF:182:TYR:HB3	15:LF:200:ARG:HG3	1.92	0.50
53:Lt:130:LYS:HG2	53:Lt:152:ILE:HD13	1.92	0.50
54:S2:848:U:H2'	54:S2:849:A:H8	1.77	0.50
54:S2:1109:C:C5	72:SR:124:VAL:HG23	2.47	0.50
73:SS:6:PRO:HD3	80:SZ:49:LEU:HB3	1.94	0.50
7:L5:1508:A:H5"	12:LC:113:ARG:HD2	1.94	0.50
14:LE:141:ARG:N	14:LE:191:GLN:OE1	2.42	0.50
27:LS:127:MET:HG2	28:LT:153:PRO:HG2	1.93	0.50
52:Ls:120:GLU:OE2	52:Ls:163:THR:OG1	2.29	0.50
54:S2:681:U:H4'	78:SX:9:THR:HG22	1.93	0.50
7:L5:2335:C:H2'	7:L5:2336:G:H8	1.75	0.50
54:S2:530:U:H2'	54:S2:531:A:H8	1.76	0.50
54:S2:1204:A:H62	54:S2:1694:U:H3	1.58	0.50
77:SW:24:GLN:NE2	77:SW:64:ASN:OD1	2.43	0.50
7:L5:150:U:OP2	16:LG:200:THR:OG1	2.25	0.50
7:L5:1090:G:OP1	28:LT:142:ARG:NH1	2.40	0.50
7:L5:4162:C:O2	16:LG:73:ARG:NH2	2.37	0.50
7:L5:4260:U:H2'	7:L5:4261:C:C6	2.47	0.50
30:LV:13:LYS:HB3	30:LV:128:LEU:HD21	1.94	0.50
53:Lt:58:ILE:HD11	53:Lt:75:PRO:HA	1.94	0.50
54:S2:94:G:HO2'	54:S2:508:A:HO2'	1.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:S2:928:G:H2’	54:S2:929:G:C8	2.46	0.50
56:SB:222:LYS:HG3	56:SB:223:PHE:H	1.76	0.50
70:SP:85:ILE:HD13	70:SP:111:MET:HG3	1.93	0.50
7:L5:184:U:H1’	7:L5:254:G:H22	1.76	0.50
16:LG:33:GLU:OE1	16:LG:35:ARG:NH2	2.44	0.50
42:Lh:57:VAL:O	42:Lh:61:ILE:HG13	2.12	0.50
45:Lk:26:LYS:HB3	45:Lk:33:LYS:HB2	1.94	0.50
71:SQ:89:SER:HB3	71:SQ:112:LEU:HD13	1.92	0.50
7:L5:68:U:OP1	22:LN:178:HIS:ND1	2.38	0.50
7:L5:85:G:O2’	7:L5:97:G:O6	2.28	0.50
7:L5:1977:C:H4’	53:Lt:139:VAL:HG13	1.94	0.50
7:L5:2758:G:O2’	7:L5:2765:A:N3	2.36	0.50
7:L5:4128:A:H2	7:L5:4156:G:H21	1.59	0.50
29:LU:45:GLU:OE1	29:LU:45:GLU:N	2.37	0.50
34:LZ:57:MET:HB3	34:LZ:61:LYS:HD3	1.94	0.50
49:Lo:77:CYS:SG	49:Lo:79:SER:OG	2.64	0.50
54:S2:1454:A:OP1	72:SR:49:LYS:NZ	2.42	0.50
59:SE:11:ARG:HE	59:SE:20:LEU:HB3	1.76	0.50
74:ST:5:THR:OG1	74:ST:6:VAL:N	2.35	0.50
4:CP:66:C:H2’	4:CP:67:G:H8	1.75	0.49
7:L5:1328:G:O2’	7:L5:2349:A:OP1	2.30	0.49
7:L5:4239:A:H2’	7:L5:4240:G:C8	2.47	0.49
25:LQ:88:ASP:OD2	25:LQ:89:ASP:N	2.45	0.49
27:LS:80:ILE:HG23	27:LS:129:VAL:HG22	1.93	0.49
53:Lt:85:LEU:HD11	53:Lt:102:GLY:H	1.76	0.49
58:SD:172:VAL:HG22	58:SD:185:LYS:HG3	1.93	0.49
64:SJ:66:LYS:HA	64:SJ:71:LEU:HD11	1.93	0.49
67:SM:42:LEU:HD23	67:SM:68:LEU:HD11	1.94	0.49
85:Se:41:ARG:HB3	85:Se:42:PHE:CD1	2.46	0.49
7:L5:3811:G:O2’	7:L5:3814:U:OP2	2.30	0.49
15:LF:91:PHE:HB2	15:LF:145:PRO:HG3	1.94	0.49
54:S2:851:C:H5”	54:S2:852:G:H5’	1.93	0.49
54:S2:957:A:O2’	54:S2:958:G:N3	2.41	0.49
7:L5:2008:U:H1’	7:L5:2011:C:H5	1.77	0.49
11:LB:285:TYR:HB2	11:LB:332:MET:HG2	1.93	0.49
13:LD:209:ARG:HH12	13:LD:234:ASP:HB3	1.77	0.49
33:LY:64:GLY:HA3	33:LY:66:GLN:HE22	1.76	0.49
21:LM:116:LYS:HB2	23:LO:196:LEU:HD21	1.94	0.49
26:LR:23:TRP:HB3	26:LR:51:ILE:HD12	1.95	0.49
51:Lr:6:GLN:HB2	51:Lr:44:ILE:HD12	1.94	0.49
54:S2:107:A:H2’	54:S2:108:G:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:S2:803:C:H5	54:S2:860:G:H22	1.58	0.49
60:SF:23:TRP:CH2	60:SF:108:PRO:HG2	2.47	0.49
87:Sg:171:ASP:OD1	87:Sg:171:ASP:N	2.44	0.49
7:L5:369:G:N2	7:L5:372:A:OP2	2.40	0.49
7:L5:1779:U:OP2	13:LD:5:LYS:NZ	2.45	0.49
13:LD:59:ASP:OD2	13:LD:81:HIS:NE2	2.46	0.49
16:LG:187:LYS:HG3	16:LG:198:THR:HA	1.93	0.49
19:LJ:13:ARG:NH1	19:LJ:154:LYS:O	2.41	0.49
46:Ll:25:GLN:NE2	46:Ll:25:GLN:HA	2.26	0.49
53:Lt:63:THR:OG1	53:Lt:70:GLN:OE1	2.30	0.49
54:S2:846:G:OP2	59:SE:108:ARG:NH1	2.44	0.49
54:S2:996:A:H2’	54:S2:997:A:C8	2.48	0.49
55:SA:84:GLN:HB3	55:SA:100:ALA:HB1	1.94	0.49
75:SU:19:ARG:HA	75:SU:92:HIS:HA	1.95	0.49
82:Sb:50:ALA:O	82:Sb:52:THR:N	2.42	0.49
7:L5:2411:C:H2’	7:L5:2412:A:H8	1.78	0.49
7:L5:2520:C:H2’	7:L5:2521:G:C8	2.48	0.49
54:S2:981:A:H2’	54:S2:982:G:C8	2.48	0.49
59:SE:31:PRO:HA	59:SE:81:THR:HB	1.94	0.49
7:L5:2745:A:H2’	7:L5:2746:A:C8	2.47	0.49
7:L5:4238:G:H2’	7:L5:4239:A:H8	1.77	0.49
7:L5:4280:A:N6	13:LD:28:THR:O	2.42	0.49
59:SE:204:SER:OG	59:SE:205:PHE:N	2.43	0.49
70:SP:59:ARG:HH21	70:SP:76:VAL:HG13	1.77	0.49
7:L5:1914:C:H4’	23:LO:89:PRO:HD3	1.95	0.49
7:L5:4093:G:OP2	7:L5:4093:G:N2	2.35	0.49
7:L5:4765:G:OP1	17:LH:23:ARG:NE	2.45	0.49
54:S2:1171:G:O2’	54:S2:1187:G:O6	2.29	0.49
54:S2:1347:U:H2’	54:S2:1348:G:C8	2.48	0.49
56:SB:89:GLU:N	56:SB:89:GLU:OE2	2.45	0.49
60:SF:89:THR:HA	60:SF:92:ILE:HD12	1.93	0.49
60:SF:102:LEU:HD11	80:SZ:100:VAL:HG21	1.95	0.49
7:L5:1692:C:O2’	25:LQ:143:ARG:NH2	2.45	0.49
14:LE:279:ASN:H	40:Lf:4:ARG:HH12	1.61	0.49
15:LF:222:LYS:HB3	15:LF:231:GLY:HA2	1.95	0.49
25:LQ:154:LYS:HE3	25:LQ:161:SER:HB3	1.95	0.49
33:LY:22:PRO:O	33:LY:26:ARG:HB2	2.12	0.49
45:Lk:60:LEU:HD21	45:Lk:64:LEU:HD23	1.95	0.49
60:SF:195:GLU:OE1	60:SF:198:ARG:NH2	2.41	0.49
7:L5:1755:C:H1’	13:LD:2:GLY:HA3	1.95	0.49
7:L5:3868:G:H22	7:L5:3900:G:H1’	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:4507:A:HO2’	30:LV:41:SER:HG	1.61	0.49
20:LL:18:TRP:CD1	20:LL:18:TRP:H	2.29	0.49
35:La:37:GLY:H	35:La:41:HIS:HB2	1.78	0.49
51:Lr:97:ILE:HD13	51:Lr:107:ARG:HA	1.95	0.49
52:Ls:39:GLN:HA	52:Ls:42:GLN:HE21	1.77	0.49
54:S2:94:G:O2’	54:S2:508:A:O2’	2.28	0.49
54:S2:1845:A:H2’	54:S2:1846:G:C8	2.48	0.49
55:SA:56:GLU:HG2	76:SV:79:VAL:HG23	1.95	0.49
7:L5:1396:G:HO2’	7:L5:1468:C:HO2’	1.56	0.48
7:L5:1971:C:H5	7:L5:2000:G:H2’	1.77	0.48
13:LD:133:GLU:OE1	13:LD:133:GLU:N	2.46	0.48
54:S2:639:C:H2’	54:S2:640:A:C8	2.48	0.48
54:S2:1661:A:OP1	84:Sd:19:ARG:NH2	2.44	0.48
62:SH:69:LEU:O	62:SH:73:GLN:HG2	2.13	0.48
79:SY:32:LYS:H	79:SY:32:LYS:HD2	1.76	0.48
11:LB:56:ILE:O	11:LB:73:VAL:HA	2.13	0.48
11:LB:185:VAL:HG12	11:LB:193:LYS:HG2	1.95	0.48
44:Lj:27:TYR:HA	44:Lj:34:CYS:HA	1.94	0.48
54:S2:1568:C:OP1	74:ST:96:SER:OG	2.30	0.48
54:S2:1743:G:H21	54:S2:1791:A:H62	1.60	0.48
58:SD:67:ARG:O	58:SD:70:THR:OG1	2.28	0.48
7:L5:1906:U:H2’	7:L5:1907:A:H8	1.78	0.48
13:LD:62:CYS:HB3	13:LD:105:LEU:HD22	1.94	0.48
79:SY:19:GLN:HE21	79:SY:85:ASN:HD21	1.60	0.48
81:Sa:26:CYS:HB3	81:Sa:77:CYS:SG	2.52	0.48
87:Sg:65:PHE:O	87:Sg:82:SER:OG	2.23	0.48
7:L5:137:G:H2’	7:L5:138:G:C8	2.49	0.48
7:L5:4940:C:OP2	14:LE:219:LYS:NZ	2.34	0.48
10:LA:162:ASN:OD1	10:LA:162:ASN:N	2.41	0.48
19:LJ:56:THR:HG23	19:LJ:63:ARG:HA	1.95	0.48
49:Lo:99:ARG:CZ	49:Lo:102:GLN:HG3	2.44	0.48
50:Lp:38:THR:HA	50:Lp:45:THR:HA	1.95	0.48
54:S2:962:A:H5”	69:SO:66:ARG:HB3	1.95	0.48
54:S2:1506:A:O2’	54:S2:1508:A:OP2	2.32	0.48
58:SD:23:GLU:HG2	65:SK:64:TRP:HE1	1.78	0.48
69:SO:117:ARG:HH12	83:Sc:64:GLU:HG2	1.77	0.48
76:SV:58:ALA:O	76:SV:62:MET:HG3	2.14	0.48
5:CR:84:LEU:HD13	70:SP:131:PRO:HA	1.95	0.48
5:CR:312:LEU:HD11	5:CR:320:LEU:HD11	1.96	0.48
7:L5:1174:G:H1	7:L5:1186:U:H3	1.60	0.48
12:LC:138:MET:HE3	12:LC:138:MET:HB3	1.72	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:SP:35:GLN:OE1	70:SP:35:GLN:N	2.39	0.48
7:L5:2755:A:OP2	34:LZ:51:ARG:NH1	2.47	0.48
7:L5:4274:A:H2'	7:L5:4275:G:H8	1.79	0.48
29:LU:35:ASP:OD1	29:LU:38:ASN:ND2	2.46	0.48
55:SA:123:VAL:HG12	55:SA:145:ILE:HB	1.95	0.48
66:SL:99:TYR:O	66:SL:101:ARG:N	2.46	0.48
69:SO:27:VAL:N	69:SO:91:THR:OG1	2.46	0.48
87:Sg:30:MET:HE2	87:Sg:30:MET:HB2	1.70	0.48
7:L5:968:C:P	14:LE:110:ARG:HH22	2.37	0.48
9:L8:47:C:H1'	9:L8:61:A:H2'	1.95	0.48
19:LJ:160:GLU:N	19:LJ:160:GLU:OE1	2.46	0.48
33:LY:26:ARG:O	33:LY:30:MET:HG3	2.14	0.48
54:S2:379:C:O2	63:SI:5:ARG:NE	2.47	0.48
54:S2:1033:G:N1	54:S2:1080:A:O2'	2.39	0.48
67:SM:55:ASN:OD1	67:SM:55:ASN:N	2.47	0.48
72:SR:126:MET:HE2	72:SR:128:PHE:HE2	1.77	0.48
7:L5:153:G:H2'	7:L5:154:G:H8	1.78	0.48
7:L5:501:C:H42	7:L5:506:C:H41	1.61	0.48
50:Lp:70:THR:OG1	50:Lp:72:ASN:O	2.26	0.48
52:Ls:18:ILE:HD12	52:Ls:68:HIS:CD2	2.46	0.48
54:S2:1010:G:H2'	54:S2:1011:A:C8	2.49	0.48
56:SB:34:LYS:O	56:SB:98:THR:HB	2.12	0.48
59:SE:11:ARG:NH1	59:SE:24:THR:O	2.47	0.48
62:SH:60:ILE:HD12	62:SH:92:VAL:HG12	1.96	0.48
7:L5:652:G:O3'	25:LQ:115:ARG:NH2	2.46	0.48
7:L5:3917:A:H2'	7:L5:3918:G:H8	1.78	0.48
29:LU:91:LEU:HB2	29:LU:97:ARG:HD2	1.95	0.48
52:Ls:13:TYR:O	52:Ls:17:ILE:HG13	2.14	0.48
54:S2:1606:G:H4'	74:ST:87:VAL:HG23	1.96	0.48
57:SC:79:GLU:HA	57:SC:82:TYR:HB2	1.95	0.48
74:ST:117:GLN:CD	74:ST:117:GLN:H	2.21	0.48
79:SY:80:ASP:HA	79:SY:83:LYS:HG2	1.96	0.48
5:CR:182:ARG:NH1	7:L5:4548:A:OP2	2.46	0.48
7:L5:500:G:H1'	7:L5:504:G:H3'	1.96	0.48
7:L5:3717:A:H2'	7:L5:3718:A:H8	1.78	0.48
7:L5:4935:C:H2'	7:L5:4936:G:C8	2.49	0.48
33:LY:2:LYS:HE3	33:LY:2:LYS:HB3	1.67	0.48
55:SA:183:LEU:HB3	55:SA:189:ILE:HG12	1.96	0.48
57:SC:204:ILE:HB	57:SC:211:LYS:HD3	1.96	0.48
73:SS:5:ILE:HG22	80:SZ:50:PHE:H	1.78	0.48
80:SZ:110:THR:OG1	80:SZ:111:ARG:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:968:C:H5”	14:LE:110:ARG:HH12	1.79	0.47
7:L5:1538:U:H2’	7:L5:1539:G:H8	1.78	0.47
7:L5:1558:A:H2’	7:L5:1559:G:C8	2.49	0.47
7:L5:4996:C:OP1	38:Ld:32:ARG:NH1	2.39	0.47
31:LW:83:THR:HA	61:SG:131:ARG:HB3	1.96	0.47
41:Lg:49:CYS:SG	41:Lg:85:LYS:NZ	2.87	0.47
82:Sb:18:LYS:HB2	82:Sb:23:ARG:HG3	1.96	0.47
7:L5:4077:A:N1	7:L5:4171:C:N4	2.61	0.47
54:S2:77:A:N7	61:SG:154:ARG:NE	2.61	0.47
54:S2:527:C:H2’	54:S2:528:A:H8	1.77	0.47
54:S2:1679:A:C8	60:SF:60:ARG:HB2	2.48	0.47
56:SB:123:ALA:HB2	56:SB:165:ARG:HG3	1.96	0.47
7:L5:662:C:H2’	7:L5:663:G:C8	2.50	0.47
7:L5:2318:G:N2	7:L5:2321:G:OP2	2.38	0.47
13:LD:65:ALA:HB2	13:LD:74:ILE:HD13	1.95	0.47
19:LJ:110:GLN:OE1	19:LJ:110:GLN:N	2.47	0.47
54:S2:147:A:H61	54:S2:173:A:H61	1.62	0.47
54:S2:212:C:H2’	54:S2:213:G:C8	2.49	0.47
54:S2:319:C:H2’	54:S2:320:G:H8	1.79	0.47
54:S2:561:A:H5’	64:SJ:171:GLY:HA3	1.96	0.47
54:S2:574:A:O2’	54:S2:575:A:O4’	2.32	0.47
54:S2:1513:C:H2’	54:S2:1514:G:H8	1.80	0.47
74:ST:42:HIS:HB2	74:ST:83:GLN:HA	1.96	0.47
75:SU:67:LYS:HA	84:Sd:44:ARG:HD2	1.94	0.47
7:L5:1558:A:H2’	7:L5:1559:G:H8	1.78	0.47
7:L5:1812:C:H5”	36:Lb:56:LYS:HD2	1.95	0.47
7:L5:2572:C:O2’	34:LZ:112:ARG:NH2	2.47	0.47
37:Lc:47:ILE:HB	37:Lc:94:LEU:HG	1.96	0.47
43:Li:63:VAL:HG23	43:Li:65:LYS:HG3	1.96	0.47
53:Lt:111:ASN:HA	53:Lt:114:ARG:HB2	1.96	0.47
54:S2:96:C:O2	54:S2:473:A:O2’	2.33	0.47
7:L5:10:A:H2’	7:L5:11:G:C8	2.50	0.47
7:L5:4460:U:H2’	7:L5:4461:C:H6	1.78	0.47
12:LC:107:THR:O	12:LC:111:TRP:NE1	2.37	0.47
16:LG:251:ALA:HA	16:LG:254:GLU:HG3	1.96	0.47
28:LT:48:VAL:HG21	28:LT:94:GLU:HG2	1.96	0.47
54:S2:106:C:H2’	54:S2:107:A:H8	1.79	0.47
54:S2:1512:C:H5”	84:Sd:8:TRP:HZ3	1.80	0.47
87:Sg:91:ASP:O	87:Sg:95:GLY:N	2.41	0.47
7:L5:1194:G:H2’	7:L5:1195:G:H8	1.80	0.47
7:L5:1281:G:OP1	12:LC:316:LYS:NZ	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:2835:A:O2'	11:LB:228:TYR:O	2.28	0.47
7:L5:4343:U:O2'	49:Lo:31:ASP:OD2	2.31	0.47
11:LB:286:LYS:HG2	11:LB:332:MET:HE3	1.97	0.47
15:LF:88:LYS:H	15:LF:88:LYS:HG2	1.56	0.47
17:LH:53:LYS:HD3	17:LH:53:LYS:HA	1.72	0.47
26:LR:136:ARG:O	26:LR:140:GLU:HG3	2.14	0.47
38:Ld:54:MET:HG2	38:Ld:60:PRO:HA	1.97	0.47
54:S2:28:U:H2'	54:S2:29:G:C8	2.50	0.47
54:S2:318:A:H61	61:SG:186:GLN:HE22	1.63	0.47
59:SE:182:MET:HE3	59:SE:190:GLY:HA2	1.97	0.47
59:SE:229:GLY:HA2	59:SE:235:TRP:CD1	2.49	0.47
60:SF:140:ASP:OD1	83:Sc:44:ARG:NH2	2.47	0.47
64:SJ:137:VAL:HG12	64:SJ:138:ARG:H	1.80	0.47
67:SM:121:LYS:HE2	67:SM:121:LYS:HB2	1.73	0.47
78:SX:114:ASP:OD2	78:SX:114:ASP:N	2.40	0.47
7:L5:302:C:OP1	22:LN:68:ARG:NE	2.45	0.47
7:L5:2319:C:OP2	39:Le:62:SER:OG	2.25	0.47
7:L5:3788:C:N4	7:L5:3812:C:OP2	2.47	0.47
7:L5:4629:U:H3	7:L5:4669:A:H62	1.63	0.47
7:L5:4670:C:O2'	7:L5:4672:A:OP2	2.27	0.47
9:L8:58:G:O6	44:Lj:63:ARG:NH1	2.48	0.47
11:LB:254:ILE:HG23	11:LB:266:VAL:HG11	1.96	0.47
12:LC:152:LEU:HD23	12:LC:251:ILE:HG12	1.97	0.47
18:LI:91:LEU:HD21	18:LI:129:VAL:HB	1.97	0.47
18:LI:184:MET:HA	18:LI:187:LYS:HG3	1.97	0.47
26:LR:105:LEU:HD23	26:LR:138:LEU:HD23	1.97	0.47
27:LS:13:VAL:HG22	27:LS:29:ARG:HB2	1.97	0.47
32:LX:64:SER:OG	42:Lh:82:ASP:OD1	2.27	0.47
52:Ls:69:LEU:HD21	52:Ls:76:GLU:HB3	1.97	0.47
54:S2:468:A:OP1	61:SG:96:SER:OG	2.28	0.47
54:S2:519:A:H5"	64:SJ:11:LYS:HD3	1.96	0.47
54:S2:1498:A:OP2	58:SD:27:ARG:NH1	2.48	0.47
54:S2:1618:C:H4'	70:SP:50:ARG:HH12	1.80	0.47
54:S2:1705:C:H2'	54:S2:1706:G:C8	2.49	0.47
59:SE:137:PRO:HB2	59:SE:150:PRO:HD2	1.96	0.47
60:SF:86:LYS:O	60:SF:90:VAL:HG13	2.15	0.47
63:SI:133:GLU:OE1	63:SI:133:GLU:N	2.41	0.47
67:SM:25:ALA:HB1	67:SM:31:LEU:HD21	1.96	0.47
70:SP:34:MET:HB3	70:SP:42:ARG:HG3	1.97	0.47
7:L5:469:C:N3	14:LE:105:ARG:NH2	2.63	0.47
7:L5:1725:U:H2'	7:L5:1726:U:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:2764:A:H2'	7:L5:2765:A:C8	2.50	0.47
15:LF:236:ARG:HB3	15:LF:239:GLN:HB2	1.96	0.47
49:Lo:4:VAL:HG13	49:Lo:93:LEU:HD23	1.97	0.47
54:S2:150:A:H2'	54:S2:151:C:C6	2.50	0.47
54:S2:1677:U:OP1	60:SF:71:ARG:NH2	2.48	0.47
55:SA:122:LEU:O	55:SA:144:THR:HA	2.14	0.47
60:SF:156:THR:HA	60:SF:159:ARG:HG2	1.96	0.47
75:SU:93:SER:HB3	75:SU:97:ILE:HD11	1.97	0.47
5:CR:319:ILE:HB	5:CR:412:ILE:HB	1.97	0.47
7:L5:258:G:H2'	7:L5:259:C:C6	2.50	0.47
7:L5:1940:G:H22	7:L5:4434:C:H5"	1.80	0.47
7:L5:2705:G:H22	7:L5:2710:C:H5	1.62	0.47
7:L5:4927:G:H5'	7:L5:4928:C:C5	2.49	0.47
12:LC:303:ARG:O	25:LQ:38:ARG:NH2	2.36	0.47
14:LE:165:LEU:HD11	14:LE:176:THR:HG22	1.95	0.47
24:LP:25:HIS:O	24:LP:29:THR:OG1	2.25	0.47
57:SC:69:LEU:HD11	57:SC:273:LEU:HD11	1.96	0.47
57:SC:85:SER:OG	76:SV:15:ARG:NH2	2.48	0.47
59:SE:107:GLY:HA3	59:SE:189:LEU:HD23	1.96	0.47
7:L5:462:G:H2'	7:L5:463:A:C8	2.50	0.47
7:L5:2744:A:H2'	7:L5:2745:A:C8	2.50	0.47
7:L5:5047:C:O2'	7:L5:5050:C:OP2	2.30	0.47
11:LB:168:MET:HA	11:LB:171:LEU:HD12	1.97	0.47
21:LM:119:ARG:HG3	23:LO:189:ILE:HD12	1.97	0.47
32:LX:122:ALA:HB3	32:LX:139:ARG:HG2	1.97	0.47
53:Lt:68:GLN:N	53:Lt:68:GLN:OE1	2.48	0.47
54:S2:838:G:N2	54:S2:840:C:O2'	2.48	0.47
54:S2:846:G:H2'	59:SE:19:MET:HG2	1.96	0.47
60:SF:152:TRP:O	60:SF:156:THR:HG23	2.15	0.47
71:SQ:134:GLY:HA3	71:SQ:140:ARG:HA	1.97	0.47
72:SR:84:TYR:HD2	72:SR:86:PRO:HD2	1.80	0.47
14:LE:190:HIS:HB3	14:LE:193:PHE:HD2	1.81	0.46
24:LP:14:SER:O	24:LP:105:LYS:NZ	2.37	0.46
29:LU:67:LYS:HB2	29:LU:67:LYS:HE2	1.70	0.46
35:La:131:ARG:O	35:La:135:GLU:HG3	2.14	0.46
54:S2:1124:C:H5"	56:SB:150:ILE:HG12	1.97	0.46
59:SE:121:TYR:HA	59:SE:163:ASP:HA	1.97	0.46
62:SH:88:SER:O	62:SH:90:LYS:NZ	2.48	0.46
7:L5:1238:A:O2'	15:LF:52:GLU:OE2	2.34	0.46
20:LL:47:ALA:HB1	42:Lh:118:LYS:HE3	1.97	0.46
27:LS:21:LYS:HE2	27:LS:21:LYS:H	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:Lj:67:LEU:HD23	44:Lj:67:LEU:HA	1.78	0.46
52:Ls:28:PHE:HB3	52:Ls:89:VAL:HB	1.98	0.46
54:S2:830:A:OP2	54:S2:846:G:N2	2.48	0.46
72:SR:23:ARG:HE	72:SR:23:ARG:HB2	1.53	0.46
79:SY:37:LYS:HA	79:SY:40:ILE:HG12	1.96	0.46
1:NA:96:ILE:HB	1:NA:104:PHE:HB2	1.97	0.46
7:L5:2411:C:H2'	7:L5:2412:A:C8	2.50	0.46
7:L5:3599:A:H2'	7:L5:3600:G:C8	2.51	0.46
7:L5:3722:G:H2'	7:L5:3723:A:H8	1.80	0.46
8:L7:117:G:OP2	13:LD:255:LYS:NZ	2.41	0.46
22:LN:138:PHE:HA	22:LN:143:ARG:HD2	1.98	0.46
25:LQ:10:ASP:N	25:LQ:10:ASP:OD1	2.49	0.46
54:S2:65:C:N4	61:SG:134:GLY:O	2.48	0.46
54:S2:414:A:OP1	54:S2:814:U:O2'	2.30	0.46
59:SE:36:HIS:CG	59:SE:85:GLY:HA3	2.50	0.46
62:SH:72:PHE:O	62:SH:76:GLN:HB2	2.15	0.46
87:Sg:114:SER:HB2	87:Sg:119:GLN:HB2	1.97	0.46
6:CZ:94:PRO:HD2	7:L5:4531:U:H4'	1.97	0.46
7:L5:1339:U:H2'	7:L5:1340:C:C6	2.51	0.46
7:L5:1652:U:H5"	35:La:32:ARG:HH22	1.80	0.46
7:L5:2845:A:H61	7:L5:3843:C:H42	1.63	0.46
7:L5:3809:G:OP2	7:L5:3809:G:N2	2.37	0.46
9:L8:67:U:H2'	9:L8:68:G:H8	1.79	0.46
25:LQ:49:LYS:HB3	25:LQ:49:LYS:HE2	1.74	0.46
53:Lt:53:TRP:CZ3	53:Lt:83:LYS:HD2	2.50	0.46
56:SB:129:THR:HB	56:SB:180:ASP:HA	1.96	0.46
60:SF:68:ILE:HD11	60:SF:151:ILE:HD11	1.98	0.46
1:NA:97:ARG:HD3	2:NB:61:GLU:HG2	1.98	0.46
7:L5:2568:C:H2'	7:L5:2569:G:H8	1.79	0.46
23:LO:194:GLU:O	23:LO:198:THR:HG23	2.15	0.46
54:S2:165:G:OP2	54:S2:165:G:N2	2.35	0.46
54:S2:1113:A:H62	54:S2:1120:U:H3	1.63	0.46
54:S2:1228:A:H2'	54:S2:1229:G:H8	1.78	0.46
64:SJ:104:ASP:OD2	64:SJ:104:ASP:N	2.47	0.46
73:SS:24:ARG:HB2	73:SS:29:ALA:HB2	1.96	0.46
73:SS:115:LYS:C	73:SS:117:ILE:H	2.24	0.46
76:SV:42:VAL:HG13	76:SV:43:THR:HG23	1.98	0.46
5:CR:34:MET:HB3	5:CR:98:GLY:HA3	1.98	0.46
5:CR:395:LYS:HD2	5:CR:396:SER:N	2.31	0.46
7:L5:1194:G:H2'	7:L5:1195:G:C8	2.50	0.46
7:L5:1346:C:H2'	7:L5:1347:G:H8	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:2361:G:O2'	7:L5:3859:G:O6	2.34	0.46
7:L5:4459:U:H2'	7:L5:4460:U:C6	2.51	0.46
9:L8:19:C:H2'	9:L8:20:A:C8	2.50	0.46
10:LA:137:ILE:HD11	10:LA:149:LYS:HB2	1.98	0.46
15:LF:187:MET:HE2	15:LF:187:MET:HB2	1.72	0.46
29:LU:80:LYS:HE2	29:LU:110:TYR:CZ	2.51	0.46
31:LW:102:LYS:HE2	31:LW:102:LYS:N	2.29	0.46
54:S2:639:C:H2'	54:S2:640:A:H8	1.81	0.46
60:SF:34:SER:HA	83:Sc:55:VAL:HB	1.98	0.46
64:SJ:111:GLN:HE22	64:SJ:127:ARG:HB2	1.81	0.46
5:CR:329:MET:HE1	5:CR:373:PRO:HB3	1.97	0.46
7:L5:2000:G:N2	7:L5:2000:G:OP2	2.48	0.46
7:L5:4620:U:OP2	7:L5:4670:C:N4	2.44	0.46
7:L5:4742:G:H2'	7:L5:4743:G:H8	1.81	0.46
7:L5:4954:G:H2'	7:L5:4955:A:C8	2.51	0.46
27:LS:173:ASN:OD1	27:LS:175:PHE:N	2.39	0.46
54:S2:629:A:O2'	54:S2:631:U:OP1	2.33	0.46
55:SA:192:GLU:OE1	55:SA:192:GLU:N	2.48	0.46
74:ST:56:ARG:O	74:ST:60:THR:HG23	2.16	0.46
7:L5:162:A:H2'	7:L5:163:A:C8	2.51	0.46
7:L5:382:G:N1	7:L5:385:A:OP2	2.41	0.46
7:L5:960:A:C8	14:LE:126:LEU:HD12	2.51	0.46
7:L5:1872:G:O2'	7:L5:4219:A:N3	2.45	0.46
51:Lr:105:ASP:OD2	51:Lr:105:ASP:N	2.41	0.46
52:Ls:35:VAL:HG23	52:Ls:39:GLN:HB3	1.97	0.46
54:S2:455:A:H2'	54:S2:456:C:C6	2.51	0.46
54:S2:1648:G:O2'	54:S2:1674:G:O6	2.33	0.46
55:SA:57:LYS:NZ	55:SA:160:ALA:O	2.44	0.46
63:SI:194:GLU:HG3	66:SL:10:TYR:CD2	2.51	0.46
65:SK:23:ALA:HB3	65:SK:69:TRP:HZ3	1.80	0.46
5:CR:362:THR:HG23	5:CR:364:GLN:H	1.81	0.46
7:L5:4258:C:H2'	7:L5:4259:C:H6	1.80	0.46
20:LL:178:ALA:N	35:La:134:GLU:OE2	2.45	0.46
21:LM:29:ASP:OD2	21:LM:30:VAL:N	2.49	0.46
22:LN:178:HIS:HA	22:LN:181:HIS:CE1	2.50	0.46
26:LR:170:ARG:HA	26:LR:170:ARG:CZ	2.46	0.46
54:S2:4:C:O2'	64:SJ:18:ARG:NH2	2.43	0.46
58:SD:72:VAL:HB	65:SK:68:TYR:HD2	1.81	0.46
59:SE:102:ILE:HG23	59:SE:182:MET:HE1	1.98	0.46
75:SU:56:MET:HG3	75:SU:86:LYS:HD3	1.98	0.46
5:CR:284:LYS:NZ	5:CR:397:GLN:OE1	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:CR:346:LEU:HD23	5:CR:350:GLN:HE22	1.81	0.46
11:LB:136:LYS:HB3	11:LB:136:LYS:HE2	1.81	0.46
14:LE:208:ILE:HG22	14:LE:210:LYS:H	1.81	0.46
15:LF:148:LYS:O	15:LF:152:GLU:HG2	2.16	0.46
16:LG:81:ASN:O	16:LG:84:THR:OG1	2.33	0.46
19:LJ:60:PHE:HB2	19:LJ:62:ILE:HG12	1.98	0.46
24:LP:27:LYS:HG2	24:LP:63:TYR:CG	2.51	0.46
35:La:17:HIS:O	35:La:19:HIS:N	2.47	0.46
52:Ls:45:MET:HE1	52:Ls:48:ARG:HH21	1.81	0.46
53:Lt:58:ILE:HD12	53:Lt:59:THR:H	1.81	0.46
54:S2:319:C:N4	61:SG:186:GLN:OE1	2.50	0.46
56:SB:94:LYS:HD2	56:SB:94:LYS:HA	1.70	0.46
60:SF:103:LEU:HD21	80:SZ:67:LEU:HD22	1.97	0.46
61:SG:3:LEU:HA	61:SG:109:LEU:O	2.16	0.46
77:SW:49:GLU:O	77:SW:64:ASN:ND2	2.49	0.46
79:SY:102:THR:HG23	79:SY:107:ARG:HH11	1.80	0.46
7:L5:318:A:H2'	7:L5:319:A:C8	2.51	0.45
7:L5:2481:G:H1	7:L5:2497:C:H42	1.64	0.45
7:L5:2717:G:P	29:LU:107:LYS:HZ1	2.38	0.45
7:L5:2848:G:O2'	7:L5:3838:U:O4	2.28	0.45
12:LC:14:LYS:HB2	12:LC:14:LYS:HE2	1.72	0.45
24:LP:153:LYS:HE2	24:LP:153:LYS:HA	1.97	0.45
43:Li:16:LYS:HD3	43:Li:16:LYS:HA	1.61	0.45
54:S2:51:U:H2'	54:S2:52:G:C8	2.51	0.45
56:SB:144:LYS:HD3	56:SB:208:HIS:HB3	1.97	0.45
61:SG:38:ALA:HB2	61:SG:50:VAL:HG22	1.97	0.45
73:SS:98:VAL:HG11	73:SS:106:LYS:HG3	1.98	0.45
80:SZ:96:LEU:N	80:SZ:112:ASN:OD1	2.50	0.45
87:Sg:18:VAL:HA	87:Sg:35:SER:HA	1.98	0.45
87:Sg:201:SER:HB3	87:Sg:204:GLY:HA3	1.98	0.45
13:LD:152:ARG:HG3	13:LD:154:THR:HG23	1.99	0.45
17:LH:12:ILE:HB	17:LH:53:LYS:HB3	1.98	0.45
46:Ll:9:ILE:HD13	46:Ll:9:ILE:HA	1.83	0.45
53:Lt:32:ILE:HG23	53:Lt:37:LEU:HB2	1.98	0.45
65:SK:53:LYS:HD3	65:SK:60:GLU:HB3	1.99	0.45
70:SP:34:MET:HE1	70:SP:46:ASN:HB2	1.97	0.45
71:SQ:110:ASP:OD1	71:SQ:111:ILE:N	2.49	0.45
73:SS:26:ILE:HG12	73:SS:59:LEU:HD21	1.96	0.45
5:CR:87:LYS:HE3	5:CR:87:LYS:HB3	1.59	0.45
7:L5:1308:C:H2'	7:L5:1309:C:C6	2.51	0.45
7:L5:2296:G:O2'	12:LC:242:PRO:O	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:3726:A:H2'	7:L5:3727:A:C8	2.51	0.45
7:L5:4260:U:H2'	7:L5:4261:C:H6	1.81	0.45
11:LB:77:THR:HG21	11:LB:337:VAL:HG22	1.97	0.45
27:LS:20:PRO:HG2	27:LS:21:LYS:NZ	2.32	0.45
36:Lb:53:GLY:O	36:Lb:57:MET:HB2	2.16	0.45
54:S2:1531:A:H4'	54:S2:1605:G:H4'	1.98	0.45
54:S2:1617:G:N1	54:S2:1620:A:OP2	2.49	0.45
54:S2:1808:U:H2'	54:S2:1809:A:C8	2.52	0.45
60:SF:90:VAL:HA	60:SF:93:VAL:HG12	1.97	0.45
64:SJ:75:ASN:OD1	64:SJ:75:ASN:N	2.49	0.45
7:L5:3855:C:H2'	7:L5:3856:A:H8	1.81	0.45
11:LB:220:ILE:HB	11:LB:346:THR:HB	1.97	0.45
15:LF:128:ALA:O	15:LF:132:MET:HG2	2.15	0.45
54:S2:1217:A:H2'	54:S2:1218:C:C6	2.52	0.45
67:SM:60:MET:H	67:SM:60:MET:HE3	1.80	0.45
5:CR:193:LEU:HA	5:CR:196:GLU:HG3	1.99	0.45
7:L5:1317:U:H2'	7:L5:1318:C:C6	2.52	0.45
7:L5:3861:A:H2'	7:L5:3862:A:H8	1.81	0.45
7:L5:4088:C:H2'	7:L5:4089:G:H8	1.81	0.45
7:L5:4623:G:OP1	11:LB:19:ARG:NH2	2.50	0.45
10:LA:103:PRO:HA	10:LA:163:ARG:HA	1.99	0.45
11:LB:261:ARG:HB2	23:LO:64:THR:HG21	1.97	0.45
20:LL:172:GLU:OE1	43:Li:2:ALA:N	2.49	0.45
22:LN:146:PRO:HB2	42:Lh:104:THR:HG22	1.98	0.45
42:Lh:6:ALA:O	42:Lh:10:ARG:HG2	2.17	0.45
43:Li:66:ASP:OD2	43:Li:66:ASP:N	2.48	0.45
54:S2:1010:G:H2'	54:S2:1011:A:H8	1.81	0.45
67:SM:55:ASN:HB2	67:SM:82:ASN:HB2	1.99	0.45
71:SQ:15:ARG:H	71:SQ:86:GLN:NE2	2.14	0.45
7:L5:1097:C:H2'	7:L5:1098:G:H8	1.81	0.45
7:L5:1933:G:H2'	7:L5:1934:A:C8	2.52	0.45
7:L5:2591:A:N6	7:L5:2754:G:O2'	2.50	0.45
7:L5:3870:C:H2'	7:L5:3871:A:H8	1.82	0.45
9:L8:94:G:N3	44:Lj:82:THR:OG1	2.48	0.45
18:LI:73:ASN:HB2	18:LI:87:MET:HE1	1.98	0.45
39:Le:89:LEU:HD13	39:Le:118:LEU:HD22	1.99	0.45
54:S2:1413:G:H2'	54:S2:1414:A:H8	1.80	0.45
81:Sa:51:ARG:HH12	83:Sc:39:SER:HB2	1.80	0.45
86:Sf:95:ARG:HH22	86:Sf:97:LYS:HG2	1.80	0.45
87:Sg:72:SER:OG	87:Sg:74:ASP:O	2.31	0.45
7:L5:1199:G:H2'	7:L5:1200:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:1646:A:O2'	44:Lj:49:TRP:O	2.28	0.45
45:Lk:36:VAL:HG13	45:Lk:43:TYR:HB2	1.97	0.45
54:S2:921:G:C2	82:Sb:22:LYS:HG3	2.52	0.45
70:SP:108:LYS:HA	70:SP:108:LYS:HE3	1.98	0.45
84:Sd:54:LYS:HB3	84:Sd:54:LYS:HE2	1.72	0.45
87:Sg:24:THR:HB	87:Sg:71:ILE:HG21	1.99	0.45
87:Sg:168:CYS:HB2	87:Sg:195:LEU:HG	1.98	0.45
7:L5:226:G:OP2	33:LY:1:MET:N	2.41	0.45
7:L5:262:G:H2'	7:L5:263:G:H8	1.82	0.45
7:L5:1604:G:H2'	7:L5:1605:G:C8	2.52	0.45
9:L8:141:C:H2'	9:L8:142:U:C6	2.52	0.45
10:LA:147:ARG:HG3	10:LA:157:VAL:HG22	1.98	0.45
17:LH:91:LYS:HB2	17:LH:183:GLU:OE2	2.17	0.45
22:LN:47:LYS:HA	22:LN:47:LYS:HD2	1.86	0.45
38:Ld:33:ILE:HG22	38:Ld:44:ARG:HG3	1.99	0.45
39:Le:88:LEU:HB2	39:Le:120:ILE:HD13	1.99	0.45
52:Ls:37:SER:O	52:Ls:41:GLN:NE2	2.50	0.45
60:SF:168:THR:OG1	60:SF:171:GLU:OE1	2.24	0.45
63:SI:56:ARG:HA	63:SI:180:GLY:HA2	1.98	0.45
70:SP:18:ARG:H	70:SP:18:ARG:HG2	1.49	0.45
78:SX:11:ARG:O	78:SX:15:SER:OG	2.25	0.45
87:Sg:258:ILE:HG23	87:Sg:268:ASP:H	1.81	0.45
2:NB:48:LEU:HA	2:NB:51:LEU:HB2	1.99	0.45
7:L5:1739:G:N3	7:L5:1742:A:N6	2.65	0.45
9:L8:90:C:H1'	33:LY:24:HIS:HB3	1.97	0.45
18:LI:38:ARG:HG2	18:LI:41:ALA:HB2	1.99	0.45
35:La:133:ALA:O	35:La:137:ILE:HG13	2.17	0.45
53:Lt:40:LYS:O	53:Lt:40:LYS:NZ	2.32	0.45
54:S2:448:A:H5"	63:SI:25:ARG:HA	1.98	0.45
54:S2:867:G:H2'	54:S2:868:G:C8	2.52	0.45
54:S2:1356:G:H2'	54:S2:1357:A:C8	2.52	0.45
55:SA:77:ILE:HB	55:SA:124:VAL:HG12	1.98	0.45
65:SK:20:VAL:HA	65:SK:69:TRP:O	2.17	0.45
87:Sg:257:LYS:HA	87:Sg:257:LYS:HE3	1.97	0.45
7:L5:1346:C:H2'	7:L5:1347:G:C8	2.52	0.45
7:L5:1478:C:H2'	7:L5:1479:G:H8	1.82	0.45
7:L5:1706:A:N6	7:L5:2118:G:O4'	2.50	0.45
7:L5:4188:U:H2'	7:L5:4189:U:C6	2.52	0.45
22:LN:166:SER:OG	22:LN:170:LYS:NZ	2.50	0.45
39:Le:106:LYS:HB3	39:Le:106:LYS:HE2	1.58	0.45
52:Ls:24:TYR:HA	52:Ls:92:LYS:HE2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:S2:17:C:H2’	54:S2:18:C:C6	2.52	0.45
54:S2:382:C:H2’	54:S2:383:G:H8	1.82	0.45
54:S2:1521:C:OP2	73:SS:136:THR:OG1	2.20	0.45
70:SP:116:LEU:HD23	70:SP:116:LEU:HA	1.86	0.45
87:Sg:125:ARG:HD3	87:Sg:150:TRP:CE2	2.51	0.45
5:CR:318:GLU:OE2	5:CR:318:GLU:N	2.48	0.44
7:L5:2079:G:H2’	7:L5:2080:U:C6	2.53	0.44
7:L5:2765:A:H2’	7:L5:2766:A:C8	2.52	0.44
7:L5:4174:U:H2’	7:L5:4175:G:H8	1.82	0.44
10:LA:136:VAL:HA	10:LA:148:VAL:HG12	1.98	0.44
32:LX:81:LEU:HG	32:LX:83:THR:HG23	1.99	0.44
32:LX:149:VAL:O	32:LX:153:ILE:HD12	2.18	0.44
46:Ll:12:PHE:O	46:Ll:16:LYS:HG2	2.18	0.44
54:S2:106:C:H2’	54:S2:107:A:C8	2.52	0.44
54:S2:955:A:N6	54:S2:971:G:H1’	2.32	0.44
56:SB:167:LYS:HD3	56:SB:167:LYS:HA	1.78	0.44
61:SG:136:LYS:NZ	61:SG:175:LYS:O	2.35	0.44
62:SH:62:ILE:HD11	62:SH:94:PHE:CZ	2.52	0.44
73:SS:46:ARG:HA	73:SS:46:ARG:HD3	1.69	0.44
7:L5:323:C:H2’	7:L5:324:A:H8	1.81	0.44
8:L7:23:A:N3	8:L7:118:C:O2’	2.47	0.44
18:LI:61:SER:HA	18:LI:126:VAL:HG12	1.97	0.44
21:LM:71:LYS:HE3	21:LM:71:LYS:HB2	1.85	0.44
27:LS:29:ARG:NE	28:LT:147:GLU:OE1	2.50	0.44
32:LX:73:HIS:ND1	32:LX:115:LYS:HD3	2.32	0.44
41:Lg:33:LEU:HD23	41:Lg:33:LEU:HA	1.88	0.44
54:S2:57:U:OP1	54:S2:504:G:O2’	2.33	0.44
54:S2:948:C:H2’	54:S2:949:G:H8	1.83	0.44
67:SM:75:ASN:OD1	67:SM:75:ASN:N	2.49	0.44
74:ST:76:THR:HG21	74:ST:97:LYS:HG3	1.99	0.44
5:CR:17:ILE:O	5:CR:21:ILE:HG12	2.18	0.44
7:L5:422:C:H2’	7:L5:423:G:H8	1.82	0.44
7:L5:935:A:O2’	21:LM:46:ARG:NH1	2.50	0.44
7:L5:1590:C:H4’	7:L5:2857:A:H5’	1.98	0.44
7:L5:2388:A:O2’	38:Ld:70:LYS:NZ	2.46	0.44
7:L5:2532:C:O2’	32:LX:93:ASN:OD1	2.33	0.44
7:L5:3878:C:O2	11:LB:258:HIS:NE2	2.38	0.44
15:LF:127:LYS:HB2	28:LT:133:ALA:HB3	1.99	0.44
19:LJ:19:LYS:HG2	19:LJ:133:VAL:HB	1.99	0.44
54:S2:429:C:O2’	54:S2:811:A:N1	2.45	0.44
54:S2:1004:U:H2’	54:S2:1005:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:SC:130:ILE:HG23	57:SC:162:ILE:HD11	1.99	0.44
57:SC:212:LYS:HE3	57:SC:212:LYS:HB2	1.84	0.44
69:SO:94:HIS:HA	69:SO:127:GLY:O	2.17	0.44
73:SS:12:ILE:HD13	73:SS:19:ASN:HB3	1.97	0.44
86:Sf:146:LEU:HD23	86:Sf:146:LEU:H	1.82	0.44
7:L5:1077:C:H4'	7:L5:1215:C:C4	2.53	0.44
7:L5:1857:C:H2'	7:L5:1858:A:C8	2.52	0.44
16:LG:228:ASP:OD1	16:LG:228:ASP:N	2.50	0.44
18:LI:74:LYS:HB2	18:LI:74:LYS:HE3	1.72	0.44
20:LL:7:GLY:O	35:La:49:HIS:NE2	2.42	0.44
29:LU:80:LYS:HD2	29:LU:108:GLU:HA	1.98	0.44
52:Ls:29:ILE:HD11	52:Ls:78:LEU:HD23	1.99	0.44
53:Lt:42:VAL:HG12	53:Lt:46:ILE:HD13	1.99	0.44
55:SA:22:GLY:O	55:SA:24:HIS:ND1	2.51	0.44
56:SB:97:LEU:HD12	56:SB:232:HIS:CG	2.52	0.44
56:SB:225:LEU:HD12	56:SB:225:LEU:HA	1.83	0.44
59:SE:162:ILE:HG22	59:SE:169:ILE:HA	1.99	0.44
7:L5:88:A:N7	25:LQ:173:LYS:NZ	2.65	0.44
7:L5:1333:A:H2'	7:L5:1334:A:C8	2.52	0.44
7:L5:1802:A:H5"	7:L5:1803:G:H5'	1.99	0.44
7:L5:2705:G:H1	7:L5:2710:C:H5	1.64	0.44
7:L5:3736:A:H2'	7:L5:3737:A:C8	2.53	0.44
46:Ll:33:ASN:OD1	46:Ll:34:LYS:N	2.51	0.44
50:Lp:59:SER:OG	50:Lp:60:CYS:N	2.49	0.44
54:S2:1736:G:H2'	54:S2:1737:G:C8	2.52	0.44
65:SK:60:GLU:HB2	65:SK:69:TRP:NE1	2.32	0.44
67:SM:59:PRO:HA	67:SM:62:VAL:HG22	1.99	0.44
67:SM:74:ILE:HD12	67:SM:75:ASN:H	1.83	0.44
75:SU:31:SER:O	75:SU:35:VAL:HG23	2.17	0.44
78:SX:70:VAL:HG13	78:SX:72:VAL:HG23	2.00	0.44
79:SY:15:ASN:HD22	79:SY:22:GLN:NE2	2.16	0.44
5:CR:281:ILE:HA	5:CR:284:LYS:HB2	1.99	0.44
7:L5:1702:C:H4'	12:LC:308:LYS:HE3	1.99	0.44
7:L5:2297:G:H4'	12:LC:242:PRO:HB2	1.98	0.44
32:LX:127:LEU:HD11	32:LX:135:LYS:HE3	2.00	0.44
38:Ld:24:GLU:OE1	38:Ld:87:ARG:NH2	2.44	0.44
46:Ll:43:HIS:HB3	46:Ll:46:ARG:HG2	1.99	0.44
53:Lt:7:PRO:HB2	53:Lt:66:ASN:HA	1.98	0.44
54:S2:4:C:H4'	57:SC:207:ALA:HB2	1.97	0.44
54:S2:520:A:O2'	54:S2:825:A:N3	2.48	0.44
56:SB:76:ASN:OD1	56:SB:76:ASN:N	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:SG:181:THR:HG22	61:SG:183:ARG:H	1.82	0.44
79:SY:29:HIS:HB2	79:SY:32:LYS:HD3	1.99	0.44
86:Sf:107:LYS:HB2	86:Sf:107:LYS:HE2	1.72	0.44
7:L5:512:U:H2'	7:L5:513:U:H4'	1.99	0.44
19:LJ:81:GLU:HA	19:LJ:84:GLU:HB3	2.00	0.44
52:Ls:162:LYS:HA	52:Ls:162:LYS:HD2	1.83	0.44
54:S2:303:C:O4'	63:SI:64:ASN:ND2	2.50	0.44
54:S2:916:A:C5	68:SN:73:ARG:HD3	2.52	0.44
54:S2:1797:U:H2'	54:S2:1798:C:C6	2.53	0.44
54:S2:1801:A:H2'	54:S2:1802:C:C6	2.53	0.44
79:SY:11:LYS:HB2	79:SY:24:VAL:HG12	1.98	0.44
86:Sf:139:HIS:CE1	86:Sf:148:TYR:H	2.35	0.44
87:Sg:304:ASP:O	87:Sg:306:LEU:HD23	2.17	0.44
7:L5:99:A:H5"	22:LN:184:ILE:HD13	1.99	0.44
7:L5:2407:G:OP2	7:L5:2407:G:N2	2.48	0.44
21:LM:86:TRP:CE2	21:LM:92:ALA:HB2	2.53	0.44
32:LX:76:ILE:HG22	32:LX:77:ILE:HD13	1.99	0.44
33:LY:32:SER:OG	33:LY:101:PRO:O	2.34	0.44
54:S2:54:A:OP1	79:SY:111:LYS:NZ	2.36	0.44
54:S2:570:C:H4'	79:SY:36:PRO:HG3	2.00	0.44
54:S2:748:C:H4'	54:S2:796:G:C6	2.53	0.44
54:S2:1493:C:O2'	54:S2:1499:U:O4	2.26	0.44
54:S2:1628:C:H2'	54:S2:1629:C:C6	2.53	0.44
58:SD:104:SER:O	58:SD:108:LYS:HG2	2.18	0.44
65:SK:1:MET:HG2	65:SK:3:MET:HE2	2.00	0.44
70:SP:92:SER:H	70:SP:107:ILE:HB	1.82	0.44
5:CR:290:TYR:HD1	5:CR:412:ILE:HG12	1.83	0.44
5:CR:325:ASN:OD1	5:CR:325:ASN:N	2.45	0.44
7:L5:717:U:H2'	7:L5:718:C:C6	2.53	0.44
7:L5:1097:C:H2'	7:L5:1098:G:C8	2.53	0.44
7:L5:1459:A:OP1	25:LQ:65:ARG:NH1	2.51	0.44
7:L5:1553:A:N6	7:L5:1574:G:H1'	2.33	0.44
7:L5:2630:U:OP1	29:LU:48:LYS:NZ	2.51	0.44
7:L5:4492:U:O2'	7:L5:4512:U:O2	2.27	0.44
7:L5:4680:G:H2'	7:L5:4681:A:C8	2.53	0.44
18:LI:190:LEU:HB3	18:LI:197:VAL:HG22	1.99	0.44
62:SH:76:GLN:HG2	62:SH:135:PHE:CD2	2.52	0.44
64:SJ:33:GLY:HA3	85:Se:38:TYR:CG	2.53	0.44
68:SN:33:VAL:HG21	68:SN:66:VAL:HG11	1.98	0.44
70:SP:107:ILE:HD13	70:SP:107:ILE:HA	1.90	0.44
76:SV:27:LYS:HA	76:SV:27:LYS:HD3	1.67	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:SY:35:VAL:HA	79:SY:36:PRO:HD3	1.88	0.44
7:L5:325:U:H2'	7:L5:326:C:C6	2.53	0.43
7:L5:3861:A:H2'	7:L5:3862:A:C8	2.52	0.43
8:L7:92:C:H2'	8:L7:93:G:H8	1.82	0.43
14:LE:211:HIS:NE2	14:LE:249:ASP:OD2	2.49	0.43
15:LF:131:ASN:OD1	15:LF:134:ARG:NH1	2.51	0.43
18:LI:35:ASP:HB3	18:LI:86:HIS:HE2	1.83	0.43
19:LJ:93:GLU:N	19:LJ:93:GLU:OE2	2.51	0.43
25:LQ:109:ALA:O	25:LQ:113:ILE:HG13	2.17	0.43
35:La:7:LYS:HB3	35:La:7:LYS:HE2	1.83	0.43
46:Ll:28:ARG:HA	46:Ll:33:ASN:ND2	2.32	0.43
54:S2:51:U:H2'	54:S2:52:G:H8	1.83	0.43
54:S2:186:C:H2'	54:S2:187:G:C8	2.53	0.43
61:SG:32:MET:HB2	61:SG:100:CYS:HB2	2.00	0.43
64:SJ:24:ARG:O	64:SJ:28:GLU:HG2	2.18	0.43
70:SP:20:VAL:HG23	70:SP:24:GLN:HG3	2.00	0.43
70:SP:137:HIS:O	70:SP:137:HIS:ND1	2.51	0.43
1:NA:80:MET:HE1	2:NB:47:SER:HB3	2.00	0.43
7:L5:3707:U:H2'	7:L5:3708:C:C6	2.53	0.43
7:L5:3746:A:H5"	10:LA:244:GLY:HA3	2.00	0.43
8:L7:6:C:O3'	13:LD:50:ARG:NH2	2.50	0.43
32:LX:38:LYS:HD2	32:LX:38:LYS:HA	1.77	0.43
45:Lk:35:LYS:HA	45:Lk:43:TYR:O	2.18	0.43
54:S2:677:G:OP1	68:SN:120:SER:OG	2.36	0.43
54:S2:1606:G:H1'	54:S2:1633:A:N6	2.34	0.43
55:SA:143:PRO:HB3	76:SV:34:MET:HE3	1.99	0.43
7:L5:10:A:H2'	7:L5:11:G:H8	1.83	0.43
7:L5:1086:C:H2'	7:L5:1087:A:H8	1.83	0.43
7:L5:1577:G:O2'	7:L5:1612:G:H4'	2.18	0.43
7:L5:3932:U:H2'	7:L5:3933:G:C8	2.53	0.43
7:L5:4088:C:H2'	7:L5:4089:G:C8	2.53	0.43
7:L5:4967:A:H2'	7:L5:4968:A:C8	2.53	0.43
10:LA:247:ARG:HE	10:LA:247:ARG:HA	1.82	0.43
26:LR:173:ARG:O	26:LR:173:ARG:NE	2.40	0.43
32:LX:120:ASP:OD2	32:LX:120:ASP:N	2.48	0.43
40:Lf:14:TYR:OH	40:Lf:92:LEU:O	2.28	0.43
41:Lg:9:ARG:HD2	41:Lg:34:TYR:CZ	2.53	0.43
54:S2:12:U:H2'	54:S2:13:C:C6	2.53	0.43
54:S2:1845:A:H2'	54:S2:1846:G:H8	1.83	0.43
58:SD:39:VAL:HG22	58:SD:48:ILE:HG12	1.99	0.43
59:SE:161:GLN:OE1	59:SE:170:THR:OG1	2.35	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:SF:69:VAL:O	60:SF:73:THR:HG23	2.17	0.43
70:SP:83:MET:HE2	70:SP:83:MET:HA	2.00	0.43
72:SR:41:ILE:HD13	72:SR:50:ILE:HD12	2.00	0.43
73:SS:26:ILE:HG13	73:SS:45:LEU:HD11	2.01	0.43
73:SS:84:LEU:HD12	73:SS:95:TYR:HB3	2.01	0.43
87:Sg:217:MET:HE2	87:Sg:217:MET:HB3	1.78	0.43
7:L5:937:U:OP1	21:LM:46:ARG:NH1	2.52	0.43
7:L5:4736:C:H2’	7:L5:4737:G:H8	1.83	0.43
40:Lf:6:TRP:CE2	40:Lf:102:ARG:HD3	2.54	0.43
48:Ln:10:MET:HE2	48:Ln:10:MET:HB2	1.75	0.43
50:Lp:3:LYS:HB2	50:Lp:3:LYS:HE3	1.75	0.43
52:Ls:42:GLN:HA	52:Ls:45:MET:HB2	2.01	0.43
54:S2:329:G:H2’	54:S2:330:G:C8	2.53	0.43
7:L5:2640:G:H2’	7:L5:2641:A:C8	2.54	0.43
7:L5:2708:U:H4’	7:L5:2709:C:H5”	2.00	0.43
11:LB:201:LEU:HD23	11:LB:201:LEU:HA	1.88	0.43
25:LQ:81:VAL:HG22	25:LQ:101:CYS:HB3	2.00	0.43
30:LV:30:ASP:OD1	30:LV:32:THR:OG1	2.33	0.43
45:Lk:10:ASP:HA	45:Lk:13:LEU:HD23	2.00	0.43
51:Lr:2:SER:O	51:Lr:6:GLN:HG3	2.18	0.43
54:S2:5:U:H2’	54:S2:6:G:C8	2.54	0.43
54:S2:692:G:H2’	54:S2:693:A:C4	2.54	0.43
55:SA:119:PRO:HG2	55:SA:142:LEU:HD21	1.99	0.43
58:SD:4:GLN:OE1	58:SD:4:GLN:N	2.51	0.43
7:L5:424:U:H2’	7:L5:425:U:C6	2.54	0.43
7:L5:2029:A:H2’	7:L5:2030:A:C8	2.54	0.43
7:L5:3690:U:H2’	7:L5:3691:G:O4’	2.19	0.43
7:L5:4220:A:H2’	7:L5:4222:G:H5”	2.01	0.43
9:L8:8:U:H2’	9:L8:9:A:C8	2.53	0.43
11:LB:168:MET:HG3	11:LB:178:ALA:HA	1.99	0.43
18:LI:63:GLU:OE1	18:LI:63:GLU:N	2.36	0.43
18:LI:79:SER:HG	18:LI:80:CYS:HG	1.66	0.43
31:LW:19:ARG:HH21	31:LW:37:GLU:CD	2.26	0.43
54:S2:223:C:H2’	54:S2:224:A:C8	2.54	0.43
54:S2:522:A:H5”	64:SJ:145:PRO:HD2	2.01	0.43
54:S2:525:A:H2’	54:S2:526:A:H8	1.84	0.43
61:SG:93:LYS:HE2	61:SG:93:LYS:HB3	1.81	0.43
72:SR:76:GLU:O	72:SR:80:ARG:HD2	2.19	0.43
87:Sg:32:LEU:HD23	87:Sg:32:LEU:HA	1.91	0.43
5:CR:27:ALA:HB1	5:CR:100:ILE:HG21	2.01	0.43
7:L5:108:A:N1	7:L5:333:U:O2’	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:197:A:N1	7:L5:225:G:O2’	2.43	0.43
7:L5:2539:C:H2’	7:L5:2540:C:C6	2.54	0.43
7:L5:3906:A:H2’	12:LC:69:THR:HG23	1.99	0.43
7:L5:4324:A:H2’	7:L5:4325:A:C8	2.54	0.43
7:L5:4507:A:H2’	7:L5:4508:C:C6	2.54	0.43
7:L5:4761:G:H2’	7:L5:4762:A:H8	1.83	0.43
9:L8:148:A:H2’	9:L8:149:G:C8	2.54	0.43
15:LF:92:VAL:O	15:LF:120:GLY:HA2	2.18	0.43
39:Le:105:SER:HA	39:Le:108:ARG:HG2	2.00	0.43
52:Ls:45:MET:HA	52:Ls:45:MET:HE2	2.01	0.43
54:S2:1405:A:H2’	54:S2:1406:G:O4’	2.18	0.43
55:SA:201:LEU:HD13	72:SR:84:TYR:HB3	2.00	0.43
55:SA:209:GLU:HA	55:SA:212:LYS:HB3	2.00	0.43
62:SH:169:LYS:HZ3	62:SH:169:LYS:HG2	1.67	0.43
69:SO:61:LYS:HA	69:SO:61:LYS:HD2	1.68	0.43
79:SY:19:GLN:NE2	79:SY:85:ASN:HD21	2.17	0.43
7:L5:1992:U:H1’	7:L5:2002:A:H5”	2.00	0.43
7:L5:4473:A:OP1	47:Lm:124:LYS:NZ	2.49	0.43
10:LA:208:GLU:H	10:LA:208:GLU:HG2	1.64	0.43
15:LF:164:LYS:HD3	15:LF:164:LYS:HA	1.86	0.43
46:Ll:28:ARG:HA	46:Ll:33:ASN:HD22	1.83	0.43
48:Ln:24:SER:O	48:Ln:24:SER:OG	2.35	0.43
50:Lp:46:LYS:HE3	50:Lp:46:LYS:HB3	1.69	0.43
54:S2:455:A:H2’	54:S2:456:C:H6	1.83	0.43
58:SD:142:LEU:HD13	58:SD:150:MET:HE3	2.01	0.43
59:SE:188:ASN:HA	59:SE:245:ARG:HH12	1.84	0.43
7:L5:181:C:N4	7:L5:255:C:N3	2.66	0.43
7:L5:1846:G:H2’	7:L5:1847:C:C6	2.53	0.43
7:L5:1998:A:N7	52:Ls:55:MET:HB2	2.33	0.43
7:L5:2579:G:N2	7:L5:2582:A:OP2	2.40	0.43
7:L5:4474:A:OP2	7:L5:4476:C:N4	2.52	0.43
14:LE:183:ARG:HA	14:LE:183:ARG:HD2	1.76	0.43
27:LS:113:MET:HE3	27:LS:113:MET:HB3	1.85	0.43
30:LV:71:GLU:N	30:LV:71:GLU:OE2	2.51	0.43
49:Lo:71:GLU:HG2	49:Lo:80:LYS:HG2	2.01	0.43
51:Lr:63:VAL:HG22	51:Lr:79:ARG:HG2	2.00	0.43
54:S2:115:U:H2’	54:S2:116:U:C6	2.54	0.43
54:S2:943:U:O2’	69:SO:135:ILE:O	2.37	0.43
54:S2:1521:C:H5’	70:SP:126:VAL:HB	2.01	0.43
54:S2:1798:C:H2’	54:S2:1799:G:O4’	2.19	0.43
56:SB:182:LYS:HE3	56:SB:182:LYS:HB3	1.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:SC:191:VAL:HG11	57:SC:236:PHE:HA	2.00	0.43
58:SD:18:LYS:HB2	58:SD:18:LYS:HE2	1.78	0.43
61:SG:159:ARG:NH1	61:SG:171:THR:OG1	2.52	0.43
63:SI:62:VAL:HA	63:SI:77:ARG:HA	2.01	0.43
71:SQ:51:LEU:HD12	71:SQ:51:LEU:HA	1.82	0.43
71:SQ:113:ILE:HD13	71:SQ:113:ILE:HA	1.86	0.43
74:ST:74:SER:O	74:ST:78:ILE:HG13	2.18	0.43
87:Sg:280:LYS:HE2	87:Sg:280:LYS:N	2.34	0.43
7:L5:1380:G:N2	7:L5:1381:U:O4	2.46	0.43
7:L5:1974:U:O4’	7:L5:1976:G:H5’	2.19	0.43
7:L5:4743:G:H2’	7:L5:4744:A:C8	2.54	0.43
29:LU:27:HIS:HB3	29:LU:114:TYR:HE2	1.84	0.43
41:Lg:8:ARG:HB2	41:Lg:34:TYR:HE1	1.84	0.43
54:S2:1736:G:H2’	54:S2:1737:G:H8	1.83	0.43
54:S2:1864:U:H3’	81:Sa:5:ARG:HH21	1.83	0.43
58:SD:56:GLN:O	58:SD:60:GLY:HA3	2.19	0.43
60:SF:125:SER:OG	60:SF:136:ARG:NE	2.52	0.43
68:SN:103:GLU:O	68:SN:106:ARG:NH2	2.51	0.43
80:SZ:48:VAL:HG23	80:SZ:80:ARG:HD2	2.00	0.43
81:Sa:13:LYS:HD3	81:Sa:13:LYS:HA	1.87	0.43
7:L5:229:G:H5”	33:LY:11:ARG:HG3	2.01	0.42
7:L5:1348:U:H2’	7:L5:1349:G:H8	1.84	0.42
7:L5:2017:A:O2’	7:L5:2018:C:O5’	2.33	0.42
7:L5:4621:C:OP1	30:LV:48:ARG:HD2	2.19	0.42
7:L5:4635:A:H3’	7:L5:4636:U:H4’	2.01	0.42
8:L7:58:A:H2’	8:L7:59:G:C8	2.54	0.42
12:LC:294:LYS:HZ2	12:LC:294:LYS:HG2	1.75	0.42
14:LE:92:VAL:HG23	14:LE:107:VAL:HG13	2.01	0.42
21:LM:50:MET:HE3	21:LM:50:MET:HB2	1.81	0.42
21:LM:81:ASP:OD2	21:LM:84:THR:OG1	2.32	0.42
34:LZ:22:LYS:NZ	34:LZ:132:GLN:O	2.36	0.42
52:Ls:57:LYS:O	52:Ls:60:MET:HB2	2.19	0.42
59:SE:9:LEU:HG	59:SE:28:ALA:HB3	2.01	0.42
62:SH:75:ILE:O	62:SH:75:ILE:HD12	2.19	0.42
73:SS:35:GLY:O	73:SS:97:GLN:NE2	2.52	0.42
77:SW:12:LYS:HA	77:SW:12:LYS:HD3	1.81	0.42
77:SW:87:GLU:CD	77:SW:87:GLU:H	2.27	0.42
7:L5:2045:G:O6	7:L5:3870:C:O2’	2.35	0.42
7:L5:3932:U:H2’	7:L5:3933:G:H8	1.84	0.42
7:L5:3947:A:H61	7:L5:4068:U:H1’	1.85	0.42
7:L5:4967:A:H2’	7:L5:4968:A:H8	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:LA:80:GLU:HB2	10:LA:170:ALA:HA	2.01	0.42
17:LH:103:VAL:HG11	17:LH:144:LEU:HD11	2.01	0.42
51:Lr:97:ILE:HG21	51:Lr:107:ARG:HB2	2.01	0.42
54:S2:1007:C:H2’	54:S2:1008:A:C8	2.54	0.42
54:S2:1126:G:OP1	55:SA:41:ARG:NH1	2.48	0.42
54:S2:1822:A:H2’	54:S2:1823:A:C8	2.54	0.42
57:SC:73:MET:HE2	57:SC:73:MET:HB3	1.78	0.42
74:ST:39:LEU:O	74:ST:96:SER:HB2	2.19	0.42
81:Sa:64:LEU:HD13	81:Sa:65:PRO:HD2	2.02	0.42
7:L5:453:G:H4’	7:L5:454:U:H5’	2.01	0.42
7:L5:1662:C:H2’	7:L5:1663:C:C6	2.54	0.42
7:L5:2568:C:H2’	7:L5:2569:G:C8	2.54	0.42
7:L5:4080:C:H2’	7:L5:4081:G:H8	1.84	0.42
30:LV:21:PRO:HA	30:LV:54:ALA:HA	2.00	0.42
32:LX:129:ARG:NH2	32:LX:131:ASP:OD2	2.40	0.42
33:LY:24:HIS:CD2	33:LY:25:ILE:HG23	2.53	0.42
34:LZ:35:ASP:OD2	34:LZ:35:ASP:N	2.53	0.42
34:LZ:117:LYS:HD3	34:LZ:117:LYS:HA	1.83	0.42
52:Ls:25:PRO:HD2	52:Ls:26:LYS:N	2.33	0.42
54:S2:615:C:O2	85:Se:11:LYS:NZ	2.51	0.42
54:S2:1665:G:H5”	74:ST:89:PRO:HD2	1.99	0.42
54:S2:1839:U:H2’	54:S2:1840:U:C6	2.54	0.42
68:SN:84:LEU:HD12	68:SN:84:LEU:HA	1.89	0.42
87:Sg:10:THR:HG22	87:Sg:308:ARG:HG2	2.00	0.42
7:L5:318:A:H2’	7:L5:319:A:H8	1.85	0.42
7:L5:1307:A:H2’	7:L5:1308:C:C6	2.54	0.42
7:L5:1445:U:H2’	7:L5:1446:C:C6	2.54	0.42
7:L5:2884:G:H2’	7:L5:2885:A:H8	1.84	0.42
7:L5:3732:A:H2’	7:L5:3733:A:C8	2.54	0.42
7:L5:5024:C:N4	7:L5:5028:G:H21	2.18	0.42
9:L8:67:U:H2’	9:L8:68:G:C8	2.54	0.42
13:LD:211:LEU:HB3	13:LD:219:TYR:HB2	2.01	0.42
15:LF:86:GLU:OE1	28:LT:136:ARG:HB2	2.20	0.42
15:LF:90:ALA:HB2	15:LF:125:LEU:HD11	2.01	0.42
19:LJ:63:ARG:NH1	49:Lo:105:GLN:OE1	2.53	0.42
33:LY:119:LEU:HD23	33:LY:119:LEU:HA	1.88	0.42
42:Lh:52:LYS:HD3	42:Lh:52:LYS:HA	1.78	0.42
54:S2:619:A:N6	78:SX:114:ASP:OD2	2.48	0.42
56:SB:146:ARG:HA	56:SB:146:ARG:HD2	1.82	0.42
60:SF:95:HIS:HD2	80:SZ:106:GLN:HB3	1.83	0.42
64:SJ:138:ARG:NH2	64:SJ:152:ASP:OD2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:SX:41:PHE:HZ	78:SX:102:VAL:HG12	1.85	0.42
79:SY:18:LEU:O	79:SY:85:ASN:ND2	2.52	0.42
7:L5:504:G:H1	7:L5:656:C:H1'	1.84	0.42
7:L5:1443:A:H3'	7:L5:1444:G:H8	1.84	0.42
7:L5:1725:U:H2'	7:L5:1726:U:C6	2.55	0.42
7:L5:2770:C:H2'	7:L5:2771:G:H8	1.83	0.42
7:L5:4504:C:H2'	7:L5:4505:C:C6	2.53	0.42
12:LC:301:ALA:HB1	25:LQ:132:LYS:HD3	2.00	0.42
16:LG:244:PRO:HA	16:LG:247:VAL:HG22	2.00	0.42
19:LJ:59:SER:OG	19:LJ:60:PHE:N	2.52	0.42
49:Lo:71:GLU:OE1	49:Lo:78:ARG:NH2	2.52	0.42
54:S2:1365:G:H2'	54:S2:1366:G:C8	2.54	0.42
55:SA:34:MET:HE3	55:SA:34:MET:HB3	1.77	0.42
57:SC:84:PHE:CD2	57:SC:265:PRO:HD3	2.54	0.42
7:L5:119:G:OP1	16:LG:132:ARG:NH2	2.51	0.42
7:L5:1327:C:H2'	7:L5:1328:G:C8	2.55	0.42
7:L5:4768:G:OP1	23:LO:168:TYR:OH	2.33	0.42
8:L7:15:C:H2'	8:L7:16:A:H8	1.84	0.42
12:LC:150:LEU:HD12	12:LC:150:LEU:HA	1.80	0.42
14:LE:101:ASN:HD21	14:LE:105:ARG:HH22	1.67	0.42
15:LF:144:TYR:CE2	15:LF:237:GLU:HB3	2.54	0.42
17:LH:12:ILE:HD11	17:LH:55:LEU:HB2	2.01	0.42
53:Lt:78:SER:O	53:Lt:82:ILE:HG13	2.20	0.42
54:S2:66:G:N2	54:S2:82:G:H21	2.16	0.42
54:S2:309:G:OP2	63:SI:55:TYR:OH	2.28	0.42
54:S2:467:G:O5'	61:SG:72:ARG:NH1	2.52	0.42
54:S2:1232:U:H2'	54:S2:1233:G:C8	2.55	0.42
54:S2:1461:G:H3'	54:S2:1463:U:H3	1.84	0.42
54:S2:1620:A:OP1	70:SP:115:TYR:OH	2.30	0.42
57:SC:169:TYR:OH	57:SC:175:GLY:O	2.32	0.42
59:SE:125:LYS:O	59:SE:142:HIS:N	2.52	0.42
67:SM:15:ASN:HA	67:SM:18:LEU:HG	2.02	0.42
69:SO:93:LEU:HG	69:SO:124:MET:HE2	2.01	0.42
80:SZ:77:LEU:C	80:SZ:78:LYS:HE2	2.44	0.42
87:Sg:5:MET:HA	87:Sg:5:MET:HE3	2.01	0.42
5:CR:305:VAL:HG11	5:CR:345:TYR:HB3	2.01	0.42
7:L5:261:G:H2'	7:L5:262:G:H8	1.85	0.42
7:L5:1946:G:O2'	7:L5:1948:G:OP2	2.36	0.42
7:L5:2406:G:N7	46:Ll:2:SER:N	2.67	0.42
7:L5:4322:G:N2	7:L5:4325:A:OP2	2.46	0.42
7:L5:4723:A:H2'	7:L5:4724:A:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:Lf:45:LYS:HD2	40:Lf:105:LEU:HA	2.02	0.42
45:Lk:70:LYS:HD3	45:Lk:70:LYS:HA	1.78	0.42
54:S2:582:U:H1'	79:SY:33:ALA:HB2	2.01	0.42
87:Sg:130:LYS:HZ2	87:Sg:130:LYS:HG3	1.67	0.42
7:L5:1:C:O2'	32:LX:38:LYS:NZ	2.52	0.42
7:L5:2780:C:H2'	7:L5:2781:G:H8	1.85	0.42
7:L5:3923:A:H2'	7:L5:3924:C:C6	2.55	0.42
7:L5:4387:C:OP2	7:L5:4532:U:O2'	2.38	0.42
13:LD:41:LYS:HD3	13:LD:41:LYS:HA	1.77	0.42
13:LD:125:VAL:HG23	13:LD:126:THR:H	1.84	0.42
14:LE:221:LYS:HD2	14:LE:221:LYS:HA	1.92	0.42
54:S2:162:C:O3'	61:SG:95:LYS:NZ	2.51	0.42
54:S2:493:A:H1'	54:S2:574:A:H5'	2.02	0.42
54:S2:1623:A:O5'	73:SS:133:GLY:HA3	2.20	0.42
63:SI:38:ILE:HG12	63:SI:96:LEU:HD11	2.01	0.42
70:SP:53:GLN:CD	70:SP:53:GLN:H	2.28	0.42
74:ST:49:ASP:OD2	74:ST:51:ASN:N	2.53	0.42
5:CR:226:LEU:O	5:CR:253:LEU:HA	2.19	0.42
7:L5:480:C:H2'	7:L5:481:G:H8	1.85	0.42
7:L5:1445:U:H2'	7:L5:1446:C:H6	1.84	0.42
7:L5:3857:G:H5"	24:LP:86:LYS:HB2	2.02	0.42
7:L5:3928:A:OP1	22:LN:90:ASN:ND2	2.50	0.42
7:L5:4507:A:O2'	30:LV:41:SER:OG	2.28	0.42
7:L5:4980:C:N3	24:LP:69:ARG:NH2	2.64	0.42
12:LC:230:LEU:HD23	12:LC:230:LEU:HA	1.87	0.42
30:LV:124:GLU:OE2	30:LV:124:GLU:N	2.42	0.42
34:LZ:33:THR:OG1	34:LZ:35:ASP:OD2	2.33	0.42
37:Lc:51:ASN:CG	37:Lc:77:ASN:HB2	2.45	0.42
54:S2:656:G:H5'	54:S2:662:G:N2	2.35	0.42
54:S2:824:C:H1'	64:SJ:144:ILE:HG21	2.02	0.42
54:S2:1265:A:H2	54:S2:1517:G:H22	1.68	0.42
54:S2:1745:A:N6	54:S2:1789:G:O2'	2.53	0.42
54:S2:1808:U:H2'	54:S2:1809:A:H8	1.85	0.42
74:ST:94:ARG:H	74:ST:94:ARG:HG2	1.65	0.42
79:SY:51:THR:HA	79:SY:52:PRO:HD3	1.92	0.42
2:NB:71:VAL:HG11	2:NB:102:MET:HE1	2.01	0.42
5:CR:290:TYR:OH	5:CR:302:CYS:O	2.37	0.42
7:L5:475:G:H2'	7:L5:476:G:H8	1.85	0.42
7:L5:1883:G:O2'	39:Le:48:ARG:O	2.34	0.42
7:L5:2275:G:H2'	7:L5:2276:A:C8	2.55	0.42
7:L5:2573:A:O2'	34:LZ:112:ARG:NH1	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:2626:U:C6	29:LU:92:LYS:HG2	2.55	0.42
7:L5:4578:G:H2’	7:L5:4579:U:C6	2.55	0.42
7:L5:5057:C:H2’	7:L5:5058:A:C8	2.54	0.42
10:LA:92:LYS:HA	10:LA:103:PRO:HD2	2.01	0.42
10:LA:242:ARG:NH2	10:LA:243:THR:O	2.52	0.42
20:LL:19:GLN:HA	20:LL:22:VAL:HG23	2.02	0.42
34:LZ:33:THR:HG21	34:LZ:40:HIS:NE2	2.35	0.42
36:Lb:13:SER:HA	36:Lb:16:TRP:NE1	2.35	0.42
39:Le:91:CYS:HB2	39:Le:95:TYR:HD1	1.85	0.42
54:S2:1142:G:N2	54:S2:1145:A:OP2	2.38	0.42
63:SI:88:ASN:OD1	63:SI:88:ASN:N	2.53	0.42
69:SO:28:PHE:HA	69:SO:92:ALA:O	2.20	0.42
73:SS:114:LEU:HD23	73:SS:114:LEU:HA	1.85	0.42
7:L5:3727:A:H2’	7:L5:3728:A:C8	2.55	0.41
7:L5:4704:C:H2’	7:L5:4705:A:C8	2.55	0.41
7:L5:4734:A:H1’	7:L5:4735:G:C8	2.55	0.41
8:L7:27:G:H2’	8:L7:28:C:C6	2.55	0.41
11:LB:29:VAL:HG12	11:LB:31:SER:H	1.84	0.41
11:LB:39:LYS:HE3	11:LB:39:LYS:HB3	1.93	0.41
11:LB:291:TYR:OH	11:LB:315:ASN:ND2	2.53	0.41
33:LY:66:GLN:H	33:LY:66:GLN:CD	2.28	0.41
39:Le:64:LYS:HB2	39:Le:64:LYS:HE2	1.79	0.41
42:Lh:88:THR:OG1	42:Lh:91:MET:HG3	2.19	0.41
53:Lt:154:ASP:OD2	53:Lt:154:ASP:N	2.52	0.41
54:S2:1004:U:H2’	54:S2:1005:G:C8	2.55	0.41
70:SP:108:LYS:N	70:SP:111:MET:HE2	2.27	0.41
87:Sg:127:LYS:HE2	87:Sg:149:GLU:HA	2.02	0.41
7:L5:425:U:H2’	7:L5:426:A:H8	1.84	0.41
7:L5:1763:C:H3’	7:L5:1764:G:H8	1.85	0.41
7:L5:4291:G:H5’	7:L5:4293:U:C6	2.54	0.41
8:L7:4:U:H2’	8:L7:5:A:H8	1.85	0.41
17:LH:41:ILE:HG22	17:LH:43:VAL:HG13	2.02	0.41
17:LH:113:GLU:HA	17:LH:124:ARG:O	2.20	0.41
17:LH:180:TYR:HB3	47:Lm:89:TYR:CE2	2.56	0.41
20:LL:180:ALA:O	20:LL:184:MET:HG3	2.20	0.41
23:LO:149:TYR:O	23:LO:153:THR:OG1	2.28	0.41
30:LV:87:SER:HA	30:LV:97:TYR:HB3	2.02	0.41
54:S2:118:C:H1’	54:S2:445:A:C5	2.55	0.41
54:S2:604:A:N3	54:S2:639:C:O2’	2.44	0.41
54:S2:1201:U:H2’	54:S2:1202:U:C6	2.55	0.41
54:S2:1373:C:OP1	72:SR:6:THR:OG1	2.30	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:S2:1407:U:H2’	54:S2:1408:U:C6	2.56	0.41
54:S2:1713:C:H2’	54:S2:1714:U:C6	2.55	0.41
63:SI:76:THR:HG22	63:SI:108:PRO:HG2	2.01	0.41
67:SM:36:ARG:HH22	67:SM:40:LYS:HE3	1.84	0.41
73:SS:60:THR:HG1	73:SS:63:GLU:CD	2.26	0.41
7:L5:1645:C:H2’	7:L5:1646:A:C8	2.55	0.41
7:L5:1719:A:H2’	7:L5:1720:C:C6	2.55	0.41
7:L5:2338:C:OP1	51:Lr:19:LYS:NZ	2.49	0.41
7:L5:3653:A:N6	7:L5:3691:G:O2’	2.45	0.41
7:L5:4174:U:H2’	7:L5:4175:G:C8	2.55	0.41
13:LD:179:ARG:HD3	13:LD:179:ARG:HA	1.80	0.41
14:LE:205:ASN:OD1	14:LE:205:ASN:N	2.40	0.41
19:LJ:125:ILE:HD13	19:LJ:125:ILE:HA	1.85	0.41
20:LL:42:LYS:O	20:LL:46:ILE:HG12	2.20	0.41
47:Lm:113:LYS:HE2	47:Lm:113:LYS:HB3	1.87	0.41
51:Lr:92:SER:O	51:Lr:96:MET:HG3	2.19	0.41
56:SB:82:ARG:HD3	56:SB:103:MET:HE2	2.01	0.41
58:SD:218:LEU:HA	58:SD:219:PRO:HD3	1.92	0.41
59:SE:17:HIS:HB2	59:SE:108:ARG:HA	2.01	0.41
60:SF:23:TRP:HH2	60:SF:108:PRO:HG2	1.85	0.41
60:SF:99:ILE:HG23	80:SZ:67:LEU:HD13	2.01	0.41
64:SJ:58:ARG:O	64:SJ:62:THR:HG23	2.20	0.41
65:SK:72:THR:O	65:SK:76:ILE:HD12	2.21	0.41
73:SS:142:ARG:HD2	73:SS:142:ARG:HA	1.88	0.41
4:CP:66:C:H2’	4:CP:67:G:C8	2.53	0.41
7:L5:287:U:H2’	7:L5:288:G:C8	2.55	0.41
7:L5:1751:A:H2’	7:L5:1752:G:C8	2.55	0.41
7:L5:2809:G:O2’	7:L5:4644:G:OP1	2.37	0.41
7:L5:3870:C:H2’	7:L5:3871:A:C8	2.55	0.41
7:L5:4911:A:OP2	11:LB:100:ARG:NE	2.53	0.41
10:LA:54:ARG:HG2	10:LA:56:ALA:H	1.86	0.41
11:LB:356:LYS:HE2	11:LB:356:LYS:N	2.32	0.41
32:LX:84:GLU:O	32:LX:88:LYS:HG2	2.20	0.41
54:S2:96:C:H1’	54:S2:474:G:H5’	2.01	0.41
54:S2:670:A:HO2’	54:S2:1163:C:HO2’	1.68	0.41
54:S2:798:G:H1’	62:SH:108:SER:H	1.85	0.41
54:S2:906:U:H2’	54:S2:907:G:H8	1.85	0.41
54:S2:1562:C:H2’	54:S2:1563:G:H8	1.86	0.41
57:SC:195:LEU:HD21	57:SC:214:LEU:HD21	2.02	0.41
62:SH:98:ARG:HB3	62:SH:125:VAL:HG22	2.02	0.41
63:SI:36:THR:HG22	63:SI:96:LEU:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:SO:91:THR:HB	69:SO:92:ALA:H	1.68	0.41
74:ST:88:MET:HE3	74:ST:88:MET:HB3	1.76	0.41
87:Sg:149:GLU:HG2	87:Sg:171:ASP:HB3	2.01	0.41
7:L5:300:A:H2'	7:L5:301:G:C8	2.54	0.41
7:L5:1397:A:C8	35:La:114:LYS:HD2	2.55	0.41
7:L5:4458:C:H2'	7:L5:4459:U:C6	2.56	0.41
15:LF:216:PRO:HB3	15:LF:247:MET:HG2	2.01	0.41
18:LI:39:LYS:HE2	18:LI:39:LYS:HB2	1.98	0.41
18:LI:115:MET:HE3	18:LI:115:MET:HB3	1.82	0.41
30:LV:70:PRO:HA	30:LV:73:ARG:HG3	2.01	0.41
43:Li:76:ARG:HD3	43:Li:76:ARG:HA	1.78	0.41
45:Lk:23:VAL:HG23	45:Lk:64:LEU:HG	2.02	0.41
52:Ls:108:PRO:HA	52:Ls:184:SER:HA	2.02	0.41
54:S2:15:U:H2'	54:S2:16:G:O4'	2.20	0.41
54:S2:441:C:H2'	54:S2:442:C:C6	2.55	0.41
54:S2:866:U:H2'	54:S2:867:G:C8	2.56	0.41
56:SB:103:MET:HB3	56:SB:215:VAL:HB	2.03	0.41
57:SC:199:PRO:HG2	64:SJ:58:ARG:HD3	2.03	0.41
65:SK:76:ILE:HD12	65:SK:76:ILE:H	1.84	0.41
69:SO:58:GLY:O	69:SO:62:VAL:HG12	2.20	0.41
87:Sg:112:ALA:HB3	87:Sg:121:VAL:HG12	2.01	0.41
7:L5:1870:C:H2'	7:L5:1871:A:H8	1.86	0.41
7:L5:2106:G:O2'	7:L5:2108:G:O4'	2.33	0.41
7:L5:2121:C:H2'	7:L5:2122:G:C8	2.55	0.41
7:L5:3607:U:H2'	7:L5:3608:A:C8	2.55	0.41
7:L5:3661:G:N2	7:L5:3681:G:O2'	2.54	0.41
7:L5:3946:G:H22	7:L5:4067:U:H3	1.68	0.41
9:L8:110:U:P	46:Ll:8:ARG:HH22	2.43	0.41
11:LB:80:GLU:OE1	11:LB:323:TYR:OH	2.31	0.41
13:LD:55:VAL:HG13	13:LD:60:ILE:HG12	2.02	0.41
17:LH:43:VAL:HG12	17:LH:59:LYS:HD3	2.01	0.41
17:LH:187:VAL:HG12	17:LH:188:GLN:H	1.84	0.41
54:S2:551:U:O3'	85:Se:39:ASN:ND2	2.53	0.41
54:S2:1451:G:H21	54:S2:1474:A:H62	1.68	0.41
61:SG:50:VAL:HG21	61:SG:111:LEU:HD13	2.02	0.41
72:SR:10:LYS:O	72:SR:14:ARG:HG3	2.21	0.41
86:Sf:126:CYS:HB3	86:Sf:144:CYS:SG	2.60	0.41
87:Sg:249:CYS:HA	87:Sg:257:LYS:O	2.21	0.41
5:CR:275:LEU:HD23	5:CR:275:LEU:HA	1.90	0.41
7:L5:163:A:H2'	7:L5:164:G:H8	1.86	0.41
7:L5:2570:U:H2'	7:L5:2571:C:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:4070:U:H2'	7:L5:4071:U:C6	2.56	0.41
7:L5:4934:A:H2'	7:L5:4935:C:C6	2.55	0.41
9:L8:70:G:H22	9:L8:87:G:H1'	1.85	0.41
12:LC:33:ARG:HE	12:LC:33:ARG:HB3	1.57	0.41
12:LC:175:LYS:HE3	12:LC:175:LYS:HB3	1.77	0.41
28:LT:52:MET:HE2	28:LT:52:MET:HB2	1.85	0.41
28:LT:158:PHE:HE2	28:LT:160:ALA:HB3	1.85	0.41
33:LY:48:PRO:O	33:LY:115:ARG:NH1	2.52	0.41
54:S2:146:G:N2	54:S2:175:A:H1'	2.35	0.41
54:S2:326:C:O2	54:S2:327:G:N2	2.53	0.41
54:S2:367:U:H4'	54:S2:371:A:C8	2.56	0.41
54:S2:804:U:H2'	54:S2:805:U:C6	2.55	0.41
54:S2:1337:C:H2'	54:S2:1338:G:H8	1.85	0.41
60:SF:168:THR:HG1	60:SF:171:GLU:CD	2.22	0.41
78:SX:73:GLN:NE2	78:SX:78:GLY:O	2.53	0.41
79:SY:41:ARG:HA	79:SY:55:ILE:HG21	2.02	0.41
4:CP:37:U:O2'	54:S2:1058:A:OP1	2.36	0.41
7:L5:513:U:H3'	7:L5:514:U:H4'	2.02	0.41
7:L5:1759:G:H1	7:L5:1773:U:H3	1.67	0.41
7:L5:2732:G:H2'	7:L5:2733:C:C6	2.56	0.41
7:L5:2884:G:H2'	7:L5:2885:A:C8	2.56	0.41
7:L5:3664:G:H2'	7:L5:3665:G:C8	2.51	0.41
7:L5:4991:U:H2'	7:L5:4992:G:C8	2.56	0.41
7:L5:5018:C:H2'	7:L5:5019:A:H8	1.86	0.41
15:LF:184:ILE:HG23	15:LF:189:ASP:HB2	2.03	0.41
18:LI:54:SER:HB2	18:LI:135:ILE:HD11	2.02	0.41
22:LN:183:THR:HG22	22:LN:188:ARG:N	2.36	0.41
23:LO:180:GLN:NE2	23:LO:184:ASN:OD1	2.54	0.41
43:Li:42:ASP:OD1	43:Li:42:ASP:N	2.54	0.41
45:Lk:8:ILE:O	45:Lk:12:LEU:HD22	2.21	0.41
54:S2:1305:C:OP2	86:Sf:95:ARG:HD2	2.20	0.41
57:SC:82:TYR:OH	57:SC:162:ILE:HG22	2.19	0.41
59:SE:18:TRP:HH2	59:SE:31:PRO:HD3	1.86	0.41
67:SM:31:LEU:HD22	67:SM:111:VAL:HA	2.02	0.41
5:CR:261:GLU:H	5:CR:261:GLU:CD	2.29	0.41
6:CZ:94:PRO:HA	6:CZ:95:PRO:HD3	1.78	0.41
7:L5:123:C:H2'	7:L5:124:C:H6	1.86	0.41
7:L5:418:A:N6	9:L8:16:G:H1'	2.36	0.41
7:L5:475:G:H2'	7:L5:476:G:C8	2.56	0.41
7:L5:963:G:P	15:LF:32:ARG:HH21	2.44	0.41
7:L5:2099:G:P	15:LF:31:LYS:HZ1	2.44	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:2516:G:O2'	41:Lg:62:LYS:NZ	2.54	0.41
7:L5:2647:A:H3'	7:L5:2648:G:H8	1.85	0.41
7:L5:3680:U:OP1	10:LA:54:ARG:NH2	2.37	0.41
7:L5:3893:C:H2'	7:L5:3894:A:C8	2.56	0.41
7:L5:3910:C:H2'	7:L5:3911:C:C6	2.55	0.41
7:L5:4119:C:H5	41:Lg:100:GLN:HG2	1.86	0.41
7:L5:4125:C:H5'	16:LG:45:ILE:HD12	2.02	0.41
10:LA:33:ASP:OD1	10:LA:33:ASP:N	2.54	0.41
11:LB:300:LYS:O	11:LB:304:SER:OG	2.31	0.41
12:LC:60:HIS:HA	12:LC:92:PHE:HE1	1.85	0.41
12:LC:209:ILE:HB	12:LC:229:LEU:HD13	2.03	0.41
17:LH:52:LYS:HA	17:LH:52:LYS:HD3	1.85	0.41
17:LH:92:MET:HE3	17:LH:181:VAL:HG22	2.03	0.41
17:LH:93:ARG:HD2	17:LH:143:GLU:HB3	2.03	0.41
23:LO:181:ALA:O	23:LO:185:VAL:HG22	2.21	0.41
26:LR:157:ASP:OD1	26:LR:157:ASP:N	2.54	0.41
27:LS:16:CYS:HA	27:LS:59:GLY:HA2	2.03	0.41
28:LT:33:ILE:HD13	28:LT:33:ILE:HA	1.87	0.41
28:LT:81:LYS:HG3	36:Lb:16:TRP:CZ3	2.56	0.41
28:LT:102:ARG:O	28:LT:106:LEU:HG	2.21	0.41
44:Lj:64:MET:HE2	44:Lj:64:MET:HB3	1.78	0.41
47:Lm:80:PRO:O	47:Lm:84:GLN:HG3	2.21	0.41
48:Ln:14:LYS:HE2	48:Ln:14:LYS:HB3	1.78	0.41
49:Lo:69:ARG:NH2	49:Lo:80:LYS:HD3	2.36	0.41
51:Lr:65:LYS:O	51:Lr:102:TYR:OH	2.29	0.41
54:S2:145:G:H1	54:S2:175:A:H2	1.69	0.41
54:S2:1284:A:OP1	54:S2:1285:G:O2'	2.27	0.41
56:SB:85:LYS:HD3	56:SB:85:LYS:HA	1.86	0.41
56:SB:174:ARG:NE	56:SB:175:GLU:OE2	2.53	0.41
57:SC:144:SER:OG	57:SC:145:LYS:N	2.54	0.41
58:SD:16:ILE:HD11	84:Sd:36:LEU:HD23	2.03	0.41
59:SE:123:LEU:HB3	59:SE:161:GLN:HA	2.03	0.41
61:SG:176:ILE:H	61:SG:176:ILE:HD12	1.86	0.41
61:SG:214:ALA:HA	61:SG:217:MET:SD	2.61	0.41
62:SH:87:PHE:HB3	62:SH:90:LYS:HE2	2.03	0.41
66:SL:59:LYS:HB2	66:SL:112:HIS:CE1	2.56	0.41
72:SR:126:MET:HE2	72:SR:128:PHE:CE2	2.56	0.41
74:ST:123:LEU:HD11	74:ST:131:LEU:HD22	2.02	0.41
77:SW:42:MET:HE2	77:SW:42:MET:HB3	1.71	0.41
7:L5:440:U:O2'	40:Lf:91:ASN:O	2.31	0.41
7:L5:493:G:N2	7:L5:661:C:O2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L5:687:U:C4	14:LE:95:PRO:HG2	2.56	0.41
7:L5:1306:C:H2’	7:L5:1307:A:C8	2.53	0.41
7:L5:1333:A:H2’	7:L5:1334:A:H8	1.86	0.41
7:L5:1524:A:H61	7:L5:1651:G:H22	1.67	0.41
7:L5:1786:A:H2’	7:L5:1789:C:C5	2.56	0.41
7:L5:2590:G:H22	7:L5:2754:G:H2’	1.84	0.41
7:L5:2743:A:H2’	7:L5:2744:A:C8	2.56	0.41
7:L5:4742:G:H2’	7:L5:4743:G:C8	2.55	0.41
8:L7:4:U:H2’	8:L7:5:A:C8	2.56	0.41
8:L7:112:U:H2’	8:L7:113:G:H8	1.85	0.41
9:L8:134:G:OP1	32:LX:67:ARG:HG2	2.21	0.41
10:LA:48:ILE:HG22	50:Lp:54:ILE:HG12	2.03	0.41
11:LB:144:LYS:O	11:LB:148:LYS:HG3	2.21	0.41
13:LD:117:LYS:HD3	13:LD:117:LYS:HA	1.78	0.41
17:LH:11:ASP:OD1	17:LH:11:ASP:N	2.54	0.41
17:LH:14:GLU:OE1	17:LH:14:GLU:N	2.39	0.41
23:LO:189:ILE:HD13	23:LO:189:ILE:HA	1.81	0.41
54:S2:1113:A:N6	54:S2:1120:U:H3	2.18	0.41
54:S2:1256:G:C8	84:Sd:40:ARG:HD3	2.56	0.41
57:SC:206:SER:OG	57:SC:207:ALA:O	2.39	0.41
61:SG:56:ASN:HD22	61:SG:62:PRO:HA	1.85	0.41
64:SJ:119:LEU:HD21	64:SJ:158:ASP:HA	2.01	0.41
67:SM:36:ARG:HH11	67:SM:36:ARG:HA	1.87	0.41
68:SN:64:ARG:HD3	68:SN:70:LYS:HD3	2.03	0.41
71:SQ:21:ALA:HB2	71:SQ:72:VAL:HG23	2.03	0.41
80:SZ:58:LEU:HA	80:SZ:62:VAL:HG13	2.03	0.41
7:L5:1662:C:H2’	7:L5:1663:C:H6	1.86	0.40
7:L5:3911:C:H2’	7:L5:3912:U:H6	1.87	0.40
16:LG:105:GLU:OE1	16:LG:109:GLU:N	2.54	0.40
18:LI:32:ARG:HA	18:LI:32:ARG:NH1	2.36	0.40
26:LR:80:LYS:HD2	26:LR:80:LYS:HA	1.87	0.40
34:LZ:109:LYS:HE3	34:LZ:109:LYS:HB2	1.90	0.40
42:Lh:82:ASP:OD2	42:Lh:82:ASP:N	2.54	0.40
42:Lh:116:LEU:HD12	42:Lh:116:LEU:H	1.86	0.40
52:Ls:39:GLN:HE22	52:Ls:107:VAL:H	1.67	0.40
52:Ls:57:LYS:O	52:Ls:61:MET:HG2	2.22	0.40
54:S2:321:C:H2’	54:S2:322:C:C6	2.57	0.40
54:S2:606:G:H8	85:Se:58:ASN:HD21	1.69	0.40
54:S2:609:U:H2’	54:S2:610:G:H8	1.86	0.40
54:S2:1232:U:H2’	54:S2:1233:G:H8	1.85	0.40
54:S2:1673:U:H2’	54:S2:1674:G:O4’	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SD:168:VAL:HA	58:SD:188:ILE:O	2.21	0.40
59:SE:189:LEU:HD12	59:SE:189:LEU:HA	1.86	0.40
63:SI:174:CYS:HB2	63:SI:190:LEU:HD21	2.02	0.40
71:SQ:131:LYS:HB2	71:SQ:140:ARG:HH22	1.85	0.40
78:SX:107:ARG:HE	78:SX:107:ARG:HB3	1.73	0.40
86:Sf:126:CYS:SG	86:Sf:127:GLY:N	2.91	0.40
5:CR:28:ARG:HD3	5:CR:28:ARG:HA	1.74	0.40
7:L5:210:C:OP1	33:LY:59:ARG:NE	2.54	0.40
7:L5:1351:G:O6	25:LQ:55:ARG:NH1	2.48	0.40
7:L5:1921:C:C6	27:LS:161:ARG:HD3	2.56	0.40
7:L5:3662:A:P	10:LA:156:LYS:HZ1	2.44	0.40
7:L5:4389:C:H2’	7:L5:4390:A:C8	2.56	0.40
7:L5:4622:A:H4’	11:LB:13:SER:HB2	2.04	0.40
7:L5:4991:U:H2’	7:L5:4992:G:H8	1.86	0.40
12:LC:110:ARG:O	12:LC:112:HIS:N	2.55	0.40
16:LG:105:GLU:OE1	16:LG:110:LYS:N	2.34	0.40
19:LJ:96:LYS:HE2	19:LJ:96:LYS:HB3	1.80	0.40
28:LT:107:LYS:HE3	28:LT:107:LYS:HB3	1.96	0.40
29:LU:26:THR:HG22	29:LU:68:SER:OG	2.20	0.40
29:LU:34:MET:HE3	29:LU:34:MET:HB3	1.87	0.40
35:La:72:THR:HG22	35:La:110:LYS:HB3	2.02	0.40
42:Lh:113:LEU:HD23	42:Lh:113:LEU:HA	1.92	0.40
51:Lr:85:ASN:O	51:Lr:89:THR:HG23	2.21	0.40
53:Lt:92:ARG:HD2	53:Lt:92:ARG:HA	1.80	0.40
54:S2:150:A:N6	54:S2:168:C:C2	2.89	0.40
54:S2:319:C:H2’	54:S2:320:G:C8	2.56	0.40
55:SA:77:ILE:HG13	55:SA:122:LEU:HD21	2.02	0.40
55:SA:134:LEU:HD23	55:SA:134:LEU:HA	1.81	0.40
60:SF:201:LYS:HA	60:SF:204:ARG:HG3	2.03	0.40
64:SJ:113:GLN:HG3	64:SJ:149:VAL:HG21	2.04	0.40
65:SK:25:LYS:HG2	65:SK:67:PHE:CE1	2.56	0.40
71:SQ:100:VAL:HG12	71:SQ:101:ASP:H	1.86	0.40
73:SS:13:LEU:HD11	73:SS:57:GLY:HA2	2.03	0.40
87:Sg:54:ILE:HD12	87:Sg:54:ILE:HA	1.96	0.40
87:Sg:130:LYS:HG2	87:Sg:141:THR:HA	2.02	0.40
7:L5:313:U:H5”	22:LN:179:LYS:HE2	2.04	0.40
7:L5:375:G:OP2	44:Lj:52:LYS:NZ	2.44	0.40
7:L5:1617:G:H1’	7:L5:2513:A:N6	2.37	0.40
7:L5:1687:U:H2’	7:L5:1688:G:C8	2.56	0.40
7:L5:1961:G:N2	7:L5:2024:G:O2’	2.53	0.40
7:L5:4291:G:H8	7:L5:4328:G:H2’	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:LC:173:LYS:HA	12:LC:173:LYS:HD2	1.86	0.40
14:LE:92:VAL:HG13	14:LE:109:LEU:HD11	2.02	0.40
19:LJ:15:LEU:H	19:LJ:15:LEU:HD23	1.87	0.40
24:LP:21:ASN:HB3	24:LP:122:ALA:HB1	2.03	0.40
32:LX:81:LEU:HD12	32:LX:81:LEU:HA	1.97	0.40
54:S2:1649:U:N3	54:S2:1675:A:H2	2.18	0.40
60:SF:145:ARG:HB2	83:Sc:48:GLY:HA3	2.03	0.40
73:SS:7:GLU:OE1	73:SS:10:GLN:NE2	2.54	0.40
86:Sf:132:MET:HE3	86:Sf:132:MET:HB3	1.91	0.40
7:L5:92:C:OP2	7:L5:4341:C:O2'	2.34	0.40
7:L5:686:A:H5'	14:LE:97:GLY:HA3	2.03	0.40
7:L5:1350:C:H2'	7:L5:1351:G:C8	2.57	0.40
7:L5:1779:U:H2'	7:L5:1780:A:C8	2.56	0.40
7:L5:2375:A:H2'	7:L5:2376:A:H8	1.87	0.40
7:L5:2664:G:H4'	7:L5:2677:G:H4'	2.04	0.40
7:L5:3893:C:O2'	7:L5:4979:A:N1	2.52	0.40
7:L5:4186:A:H2'	7:L5:4187:G:C8	2.56	0.40
8:L7:92:C:H2'	8:L7:93:G:C8	2.57	0.40
10:LA:124:GLY:O	10:LA:128:ARG:NH1	2.54	0.40
10:LA:204:MET:HB3	10:LA:208:GLU:HG3	2.02	0.40
11:LB:286:LYS:HE3	11:LB:286:LYS:HB2	1.82	0.40
15:LF:199:LYS:H	15:LF:199:LYS:HG2	1.67	0.40
18:LI:206:LEU:HD12	18:LI:206:LEU:HA	1.91	0.40
27:LS:173:ASN:OD1	27:LS:174:THR:N	2.55	0.40
46:Ll:41:ARG:HA	46:Ll:41:ARG:HD2	1.91	0.40
53:Lt:38:SER:O	53:Lt:42:VAL:HG23	2.22	0.40
63:SI:160:SER:HA	63:SI:163:GLU:HG3	2.03	0.40
68:SN:114:ARG:HA	68:SN:114:ARG:HD3	1.97	0.40
86:Sf:114:ILE:HD12	86:Sf:114:ILE:HA	1.91	0.40
7:L5:286:U:H2'	7:L5:287:U:C6	2.57	0.40
7:L5:1086:C:H2'	7:L5:1087:A:C8	2.56	0.40
7:L5:1207:C:H2'	7:L5:1208:G:H8	1.86	0.40
7:L5:3722:G:H2'	7:L5:3723:A:C8	2.55	0.40
7:L5:3893:C:H2'	7:L5:3894:A:H8	1.87	0.40
7:L5:4453:C:H2'	7:L5:4454:G:O4'	2.22	0.40
7:L5:4457:U:H1'	11:LB:252:ALA:HB3	2.03	0.40
12:LC:16:GLU:OE1	12:LC:16:GLU:N	2.54	0.40
12:LC:163:LYS:O	12:LC:166:GLU:HG2	2.22	0.40
23:LO:34:VAL:HG22	23:LO:103:LYS:HB2	2.04	0.40
24:LP:64:ASN:ND2	24:LP:80:GLN:OE1	2.38	0.40
27:LS:4:SER:HB2	27:LS:111:ARG:HH12	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:Lf:43:LEU:HD12	40:Lf:43:LEU:HA	1.92	0.40
44:Lj:25:LYS:HE3	44:Lj:25:LYS:HB3	1.86	0.40
52:Ls:77:LYS:HZ2	52:Ls:77:LYS:HG3	1.75	0.40
54:S2:980:A:H2'	54:S2:981:A:C8	2.56	0.40
67:SM:94:ILE:HD11	67:SM:98:GLY:HA2	2.03	0.40
74:ST:11:GLN:HA	74:ST:14:PHE:HB3	2.03	0.40
86:Sf:126:CYS:SG	86:Sf:130:VAL:HG21	2.61	0.40
87:Sg:284:PRO:HB3	87:Sg:304:ASP:HB3	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	NA	64/215 (30%)	62 (97%)	2 (3%)	0	100	100
2	NB	103/162 (64%)	95 (92%)	8 (8%)	0	100	100
5	CR	411/437 (94%)	402 (98%)	9 (2%)	0	100	100
6	CZ	37/95 (39%)	33 (89%)	4 (11%)	0	100	100
10	LA	246/257 (96%)	229 (93%)	17 (7%)	0	100	100
11	LB	393/403 (98%)	370 (94%)	23 (6%)	0	100	100
12	LC	362/427 (85%)	342 (94%)	19 (5%)	1 (0%)	36	45
13	LD	291/297 (98%)	276 (95%)	14 (5%)	1 (0%)	36	45
14	LE	213/288 (74%)	193 (91%)	20 (9%)	0	100	100
15	LF	223/248 (90%)	212 (95%)	11 (5%)	0	100	100
16	LG	225/266 (85%)	213 (95%)	12 (5%)	0	100	100
17	LH	188/192 (98%)	178 (95%)	10 (5%)	0	100	100
18	LI	203/214 (95%)	190 (94%)	13 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	LJ	167/178 (94%)	163 (98%)	4 (2%)	0	100	100
20	LL	203/211 (96%)	191 (94%)	12 (6%)	0	100	100
21	LM	137/215 (64%)	129 (94%)	8 (6%)	0	100	100
22	LN	201/204 (98%)	194 (96%)	7 (4%)	0	100	100
23	LO	198/203 (98%)	195 (98%)	3 (2%)	0	100	100
24	LP	151/184 (82%)	144 (95%)	7 (5%)	0	100	100
25	LQ	185/188 (98%)	182 (98%)	3 (2%)	0	100	100
26	LR	174/196 (89%)	172 (99%)	2 (1%)	0	100	100
27	LS	173/176 (98%)	164 (95%)	9 (5%)	0	100	100
28	LT	157/160 (98%)	147 (94%)	10 (6%)	0	100	100
29	LU	99/128 (77%)	93 (94%)	6 (6%)	0	100	100
30	LV	129/140 (92%)	120 (93%)	9 (7%)	0	100	100
31	LW	111/157 (71%)	100 (90%)	11 (10%)	0	100	100
32	LX	118/156 (76%)	115 (98%)	3 (2%)	0	100	100
33	LY	132/145 (91%)	126 (96%)	6 (4%)	0	100	100
34	LZ	133/136 (98%)	122 (92%)	11 (8%)	0	100	100
35	La	145/148 (98%)	138 (95%)	7 (5%)	0	100	100
36	Lb	73/159 (46%)	68 (93%)	5 (7%)	0	100	100
37	Lc	95/115 (83%)	93 (98%)	2 (2%)	0	100	100
38	Ld	105/125 (84%)	104 (99%)	1 (1%)	0	100	100
39	Le	126/135 (93%)	124 (98%)	2 (2%)	0	100	100
40	Lf	107/110 (97%)	102 (95%)	5 (5%)	0	100	100
41	Lg	112/117 (96%)	104 (93%)	8 (7%)	0	100	100
42	Lh	119/123 (97%)	116 (98%)	3 (2%)	0	100	100
43	Li	100/105 (95%)	98 (98%)	2 (2%)	0	100	100
44	Lj	84/97 (87%)	80 (95%)	4 (5%)	0	100	100
45	Lk	67/70 (96%)	62 (92%)	5 (8%)	0	100	100
46	Ll	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
47	Lm	50/128 (39%)	50 (100%)	0	0	100	100
48	Ln	22/25 (88%)	22 (100%)	0	0	100	100
49	Lo	103/106 (97%)	99 (96%)	4 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
50	Lp	89/92 (97%)	82 (92%)	7 (8%)	0	100	100
51	Lr	123/137 (90%)	116 (94%)	7 (6%)	0	100	100
52	Ls	210/317 (66%)	208 (99%)	2 (1%)	0	100	100
53	Lt	158/165 (96%)	157 (99%)	1 (1%)	0	100	100
55	SA	214/295 (72%)	203 (95%)	11 (5%)	0	100	100
56	SB	211/264 (80%)	206 (98%)	5 (2%)	0	100	100
57	SC	217/293 (74%)	207 (95%)	10 (5%)	0	100	100
58	SD	219/243 (90%)	209 (95%)	10 (5%)	0	100	100
59	SE	260/263 (99%)	252 (97%)	8 (3%)	0	100	100
60	SF	177/204 (87%)	169 (96%)	7 (4%)	1 (1%)	21	25
61	SG	229/249 (92%)	215 (94%)	13 (6%)	1 (0%)	30	37
62	SH	179/194 (92%)	169 (94%)	10 (6%)	0	100	100
63	SI	204/208 (98%)	198 (97%)	6 (3%)	0	100	100
64	SJ	177/194 (91%)	172 (97%)	5 (3%)	0	100	100
65	SK	94/165 (57%)	88 (94%)	6 (6%)	0	100	100
66	SL	140/158 (89%)	131 (94%)	9 (6%)	0	100	100
67	SM	120/132 (91%)	111 (92%)	9 (8%)	0	100	100
68	SN	148/151 (98%)	144 (97%)	4 (3%)	0	100	100
69	SO	132/151 (87%)	120 (91%)	12 (9%)	0	100	100
70	SP	127/145 (88%)	121 (95%)	6 (5%)	0	100	100
71	SQ	140/146 (96%)	131 (94%)	9 (6%)	0	100	100
72	SR	129/135 (96%)	111 (86%)	18 (14%)	0	100	100
73	SS	139/152 (91%)	120 (86%)	19 (14%)	0	100	100
74	ST	141/145 (97%)	135 (96%)	6 (4%)	0	100	100
75	SU	99/119 (83%)	91 (92%)	8 (8%)	0	100	100
76	SV	81/83 (98%)	79 (98%)	2 (2%)	0	100	100
77	SW	127/130 (98%)	120 (94%)	7 (6%)	0	100	100
78	SX	139/143 (97%)	129 (93%)	10 (7%)	0	100	100
79	SY	121/133 (91%)	115 (95%)	6 (5%)	0	100	100
80	SZ	73/125 (58%)	66 (90%)	7 (10%)	0	100	100
81	Sa	97/115 (84%)	89 (92%)	8 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
82	Sb	81/84 (96%)	72 (89%)	9 (11%)	0	100	100
83	Sc	61/69 (88%)	54 (88%)	7 (12%)	0	100	100
84	Sd	51/56 (91%)	51 (100%)	0	0	100	100
85	Se	53/133 (40%)	51 (96%)	2 (4%)	0	100	100
86	Sf	61/156 (39%)	53 (87%)	7 (12%)	1 (2%)	7	7
87	Sg	304/317 (96%)	268 (88%)	36 (12%)	0	100	100
All	All	12108/14153 (86%)	11472 (95%)	631 (5%)	5 (0%)	100	100

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
60	SF	80	GLY
12	LC	111	TRP
86	Sf	128	ALA
13	LD	59	ASP
61	SG	33	ALA

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	NA	59/183 (32%)	59 (100%)	0	100	100
2	NB	89/136 (65%)	86 (97%)	3 (3%)	32	47
5	CR	356/375 (95%)	351 (99%)	5 (1%)	59	75
6	CZ	25/83 (30%)	25 (100%)	0	100	100
10	LA	190/199 (96%)	184 (97%)	6 (3%)	34	50
11	LB	343/349 (98%)	338 (98%)	5 (2%)	57	73
12	LC	299/348 (86%)	296 (99%)	3 (1%)	68	81
13	LD	241/250 (96%)	238 (99%)	3 (1%)	63	78
14	LE	191/252 (76%)	184 (96%)	7 (4%)	30	44

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	LF	194/215 (90%)	193 (100%)	1 (0%)	81	89
16	LG	188/223 (84%)	185 (98%)	3 (2%)	55	72
17	LH	167/171 (98%)	161 (96%)	6 (4%)	31	45
18	LI	174/181 (96%)	171 (98%)	3 (2%)	53	70
19	LJ	136/149 (91%)	134 (98%)	2 (2%)	57	73
20	LL	164/177 (93%)	161 (98%)	3 (2%)	51	69
21	LM	114/161 (71%)	112 (98%)	2 (2%)	51	69
22	LN	171/172 (99%)	167 (98%)	4 (2%)	44	62
23	LO	170/174 (98%)	163 (96%)	7 (4%)	27	40
24	LP	132/163 (81%)	131 (99%)	1 (1%)	73	85
25	LQ	161/165 (98%)	160 (99%)	1 (1%)	78	88
26	LR	150/175 (86%)	149 (99%)	1 (1%)	76	86
27	LS	156/157 (99%)	155 (99%)	1 (1%)	78	88
28	LT	135/140 (96%)	131 (97%)	4 (3%)	36	52
29	LU	86/115 (75%)	81 (94%)	5 (6%)	18	25
30	LV	99/107 (92%)	95 (96%)	4 (4%)	28	41
31	LW	61/126 (48%)	59 (97%)	2 (3%)	33	48
32	LX	107/133 (80%)	106 (99%)	1 (1%)	70	83
33	LY	123/135 (91%)	123 (100%)	0	100	100
34	LZ	117/118 (99%)	112 (96%)	5 (4%)	26	38
35	La	118/121 (98%)	116 (98%)	2 (2%)	53	70
36	Lb	59/126 (47%)	59 (100%)	0	100	100
37	Lc	79/97 (81%)	76 (96%)	3 (4%)	29	43
38	Ld	94/110 (86%)	92 (98%)	2 (2%)	47	65
39	Le	113/121 (93%)	111 (98%)	2 (2%)	51	69
40	Lf	87/89 (98%)	86 (99%)	1 (1%)	65	80
41	Lg	93/100 (93%)	91 (98%)	2 (2%)	45	63
42	Lh	108/110 (98%)	108 (100%)	0	100	100
43	Li	81/89 (91%)	79 (98%)	2 (2%)	42	59
44	Lj	73/80 (91%)	73 (100%)	0	100	100
45	Lk	57/65 (88%)	53 (93%)	4 (7%)	14	18

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
46	Ll	47/48 (98%)	46 (98%)	1 (2%)	47	65
47	Lm	47/116 (40%)	46 (98%)	1 (2%)	47	65
48	Ln	23/24 (96%)	23 (100%)	0	100	100
49	Lo	93/94 (99%)	91 (98%)	2 (2%)	45	63
50	Lp	71/75 (95%)	71 (100%)	0	100	100
51	Lr	107/121 (88%)	104 (97%)	3 (3%)	38	55
52	Ls	180/258 (70%)	174 (97%)	6 (3%)	33	48
53	Lt	132/137 (96%)	124 (94%)	8 (6%)	17	23
55	SA	170/243 (70%)	165 (97%)	5 (3%)	37	53
56	SB	191/231 (83%)	189 (99%)	2 (1%)	68	81
57	SC	175/225 (78%)	174 (99%)	1 (1%)	78	88
58	SD	148/202 (73%)	146 (99%)	2 (1%)	59	75
59	SE	196/225 (87%)	191 (97%)	5 (3%)	40	57
60	SF	142/170 (84%)	141 (99%)	1 (1%)	76	86
61	SG	138/218 (63%)	134 (97%)	4 (3%)	37	53
62	SH	109/174 (63%)	106 (97%)	3 (3%)	38	55
63	SI	149/180 (83%)	144 (97%)	5 (3%)	32	47
64	SJ	143/168 (85%)	141 (99%)	2 (1%)	59	75
65	SK	65/136 (48%)	60 (92%)	5 (8%)	12	15
66	SL	121/142 (85%)	118 (98%)	3 (2%)	42	59
67	SM	104/108 (96%)	99 (95%)	5 (5%)	23	33
68	SN	123/131 (94%)	120 (98%)	3 (2%)	43	60
69	SO	95/119 (80%)	92 (97%)	3 (3%)	34	50
70	SP	98/130 (75%)	92 (94%)	6 (6%)	17	23
71	SQ	103/121 (85%)	100 (97%)	3 (3%)	37	53
72	SR	84/122 (69%)	82 (98%)	2 (2%)	43	60
73	SS	112/132 (85%)	108 (96%)	4 (4%)	31	45
74	ST	105/115 (91%)	98 (93%)	7 (7%)	15	20
75	SU	68/107 (64%)	67 (98%)	1 (2%)	57	73
76	SV	62/67 (92%)	62 (100%)	0	100	100
77	SW	110/113 (97%)	108 (98%)	2 (2%)	51	69

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
78	SX	109/115 (95%)	105 (96%)	4 (4%)	30	44
79	SY	86/115 (75%)	82 (95%)	4 (5%)	23	34
80	SZ	56/103 (54%)	54 (96%)	2 (4%)	31	45
81	Sa	83/98 (85%)	80 (96%)	3 (4%)	31	45
82	Sb	65/76 (86%)	61 (94%)	4 (6%)	16	23
83	Sc	51/62 (82%)	46 (90%)	5 (10%)	7	9
84	Sd	44/49 (90%)	43 (98%)	1 (2%)	44	62
85	Se	39/104 (38%)	39 (100%)	0	100	100
86	Sf	56/140 (40%)	54 (96%)	2 (4%)	31	45
87	Sg	201/275 (73%)	192 (96%)	9 (4%)	24	36
All	All	9861/12029 (82%)	9626 (98%)	235 (2%)	43	60

All (235) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	NB	10	LYS
2	NB	14	LEU
2	NB	53	VAL
5	CR	120	ILE
5	CR	210	VAL
5	CR	232	PHE
5	CR	328	ILE
5	CR	409	ILE
10	LA	28	ARG
10	LA	32	VAL
10	LA	102	LEU
10	LA	123	ARG
10	LA	207	VAL
10	LA	208	GLU
11	LB	38	SER
11	LB	73	VAL
11	LB	95	THR
11	LB	159	VAL
11	LB	392	LEU
12	LC	1	MET
12	LC	188	ARG
12	LC	319	LEU
13	LD	75	VAL

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Mol	Chain	Res	Type
13	LD	194	VAL
13	LD	291	GLN
14	LE	51	VAL
14	LE	91	THR
14	LE	106	VAL
14	LE	107	VAL
14	LE	128	HIS
14	LE	175	VAL
14	LE	184	VAL
15	LF	83	VAL
16	LG	55	VAL
16	LG	207	VAL
16	LG	241	VAL
17	LH	11	ASP
17	LH	16	VAL
17	LH	46	SER
17	LH	47	LEU
17	LH	111	LEU
17	LH	161	ILE
18	LI	31	ILE
18	LI	43	VAL
18	LI	125	THR
19	LJ	15	LEU
19	LJ	66	GLU
20	LL	70	VAL
20	LL	139	SER
20	LL	159	ASN
21	LM	25	VAL
21	LM	130	LEU
22	LN	18	VAL
22	LN	89	VAL
22	LN	151	ILE
22	LN	182	HIS
23	LO	36	VAL
23	LO	49	ARG
23	LO	119	VAL
23	LO	127	VAL
23	LO	129	LEU
23	LO	166	ILE
23	LO	189	ILE
24	LP	21	ASN
25	LQ	160	HIS

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Mol	Chain	Res	Type
26	LR	14	VAL
27	LS	124	ILE
28	LT	29	THR
28	LT	72	VAL
28	LT	76	VAL
28	LT	104	SER
29	LU	25	CYS
29	LU	35	ASP
29	LU	66	SER
29	LU	83	LEU
29	LU	96	LEU
30	LV	22	VAL
30	LV	72	LEU
30	LV	96	LEU
30	LV	134	SER
31	LW	48	GLN
31	LW	104	GLN
32	LX	91	GLU
34	LZ	5	MET
34	LZ	26	VAL
34	LZ	30	ASP
34	LZ	53	VAL
34	LZ	66	SER
35	La	125	LYS
35	La	140	VAL
37	Lc	28	VAL
37	Lc	45	LEU
37	Lc	93	THR
38	Ld	26	THR
38	Ld	46	LEU
39	Le	94	SER
39	Le	117	GLN
40	Lf	67	THR
41	Lg	38	VAL
41	Lg	53	LEU
43	Li	4	ARG
43	Li	86	LYS
45	Lk	10	ASP
45	Lk	12	LEU
45	Lk	36	VAL
45	Lk	58	GLN
46	Ll	25	GLN

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Mol	Chain	Res	Type
47	Lm	99	CYS
49	Lo	63	THR
49	Lo	92	GLU
51	Lr	21	ASN
51	Lr	78	VAL
51	Lr	80	THR
52	Ls	35	VAL
52	Ls	54	LEU
52	Ls	69	LEU
52	Ls	130	LEU
52	Ls	163	THR
52	Ls	192	VAL
53	Lt	6	ASP
53	Lt	26	SER
53	Lt	44	ASP
53	Lt	45	ASP
53	Lt	74	VAL
53	Lt	115	GLN
53	Lt	125	LEU
53	Lt	143	VAL
55	SA	81	ASN
55	SA	111	GLN
55	SA	154	LEU
55	SA	157	VAL
55	SA	197	VAL
56	SB	55	THR
56	SB	98	THR
57	SC	90	GLU
58	SD	94	ARG
58	SD	226	GLN
59	SE	26	VAL
59	SE	111	VAL
59	SE	112	HIS
59	SE	123	LEU
59	SE	208	VAL
60	SF	104	THR
61	SG	26	THR
61	SG	127	THR
61	SG	171	THR
61	SG	199	THR
62	SH	21	SER
62	SH	66	VAL

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Mol	Chain	Res	Type
62	SH	165	ASN
63	SI	73	THR
63	SI	88	ASN
63	SI	159	SER
63	SI	167	GLN
63	SI	191	GLU
64	SJ	128	VAL
64	SJ	160	SER
65	SK	3	MET
65	SK	24	LYS
65	SK	43	LEU
65	SK	58	VAL
65	SK	60	GLU
66	SL	67	SER
66	SL	83	GLN
66	SL	120	VAL
67	SM	21	VAL
67	SM	49	LEU
67	SM	64	LEU
67	SM	89	VAL
67	SM	127	TYR
68	SN	13	GLN
68	SN	31	ASP
68	SN	134	VAL
69	SO	67	ASP
69	SO	90	ILE
69	SO	105	THR
70	SP	23	ASP
70	SP	24	GLN
70	SP	37	TYR
70	SP	56	LEU
70	SP	77	LYS
70	SP	89	MET
71	SQ	32	ILE
71	SQ	34	VAL
71	SQ	46	THR
72	SR	43	SER
72	SR	108	LEU
73	SS	50	ILE
73	SS	83	PHE
73	SS	104	ASP
73	SS	145	THR

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Mol	Chain	Res	Type
74	ST	4	VAL
74	ST	51	ASN
74	ST	87	VAL
74	ST	90	SER
74	ST	110	LEU
74	ST	112	MET
74	ST	113	VAL
75	SU	91	LEU
77	SW	43	LYS
77	SW	74	VAL
78	SX	26	GLN
78	SX	123	VAL
78	SX	125	VAL
78	SX	131	LEU
79	SY	26	ASP
79	SY	78	SER
79	SY	106	GLN
79	SY	120	THR
80	SZ	67	LEU
80	SZ	113	THR
81	Sa	2	THR
81	Sa	50	VAL
81	Sa	96	THR
82	Sb	44	THR
82	Sb	45	THR
82	Sb	55	LEU
82	Sb	74	THR
83	Sc	14	VAL
83	Sc	21	THR
83	Sc	45	ASN
83	Sc	50	VAL
83	Sc	57	THR
84	Sd	6	LEU
86	Sf	98	VAL
86	Sf	141	CYS
87	Sg	4	GLN
87	Sg	131	LEU
87	Sg	137	VAL
87	Sg	141	THR
87	Sg	174	VAL
87	Sg	186	THR
87	Sg	220	ASP

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Mol	Chain	Res	Type
87	Sg	248	LEU
87	Sg	285	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (97) such sidechains are listed below:

Mol	Chain	Res	Type
2	NB	7	ASN
2	NB	8	GLN
2	NB	34	HIS
2	NB	45	GLN
2	NB	76	ASN
2	NB	80	GLN
5	CR	79	GLN
6	CZ	65	ASN
10	LA	38	HIS
10	LA	205	ASN
11	LB	184	GLN
12	LC	38	ASN
12	LC	43	ASN
12	LC	61	GLN
12	LC	89	GLN
12	LC	215	ASN
12	LC	329	ASN
12	LC	347	HIS
13	LD	111	ASN
13	LD	131	ASN
13	LD	202	GLN
13	LD	229	ASN
14	LE	128	HIS
15	LF	151	ASN
15	LF	192	HIS
16	LG	38	ASN
16	LG	43	GLN
17	LH	39	ASN
17	LH	98	HIS
17	LH	169	ASN
18	LI	100	ASN
19	LJ	71	HIS
21	LM	20	HIS
21	LM	66	HIS
21	LM	131	GLN
23	LO	50	ASN

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Mol	Chain	Res	Type
23	LO	167	HIS
23	LO	180	GLN
24	LP	21	ASN
24	LP	133	HIS
26	LR	40	GLN
26	LR	121	HIS
30	LV	27	ASN
33	LY	14	ASN
33	LY	18	HIS
33	LY	66	GLN
33	LY	96	HIS
34	LZ	127	ASN
36	Lb	6	ASN
36	Lb	19	ASN
37	Lc	15	ASN
37	Lc	19	GLN
37	Lc	50	ASN
40	Lf	80	ASN
42	Lh	20	GLN
42	Lh	65	GLN
42	Lh	108	GLN
44	Lj	13	ASN
44	Lj	30	GLN
46	Ll	4	HIS
49	Lo	76	ASN
50	Lp	56	HIS
51	Lr	36	ASN
52	Ls	41	GLN
52	Ls	68	HIS
52	Ls	159	GLN
53	Lt	8	ASN
53	Lt	142	ASN
56	SB	95	ASN
56	SB	158	HIS
57	SC	115	GLN
60	SF	110	GLN
60	SF	149	GLN
62	SH	114	GLN
62	SH	168	HIS
63	SI	52	ASN
64	SJ	154	GLN
66	SL	11	GLN

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Mol	Chain	Res	Type
66	SL	18	GLN
66	SL	83	GLN
66	SL	94	HIS
66	SL	141	ASN
68	SN	69	ASN
69	SO	38	ASN
71	SQ	80	GLN
71	SQ	142	GLN
73	SS	42	HIS
74	ST	128	GLN
78	SX	127	ASN
79	SY	22	GLN
79	SY	85	ASN
82	Sb	51	GLN
83	Sc	7	GLN
83	Sc	29	GLN
86	Sf	139	HIS
87	Sg	62	HIS
87	Sg	237	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
3	CM	11/586 (1%)	2 (18%)	0
4	CP	74/75 (98%)	23 (31%)	2 (2%)
54	S2	1704/1869 (91%)	465 (27%)	17 (0%)
7	L5	3633/5070 (71%)	737 (20%)	14 (0%)
8	L7	119/121 (98%)	12 (10%)	0
9	L8	155/157 (98%)	26 (16%)	1 (0%)
All	All	5696/7878 (72%)	1265 (22%)	34 (0%)

All (1265) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
3	CM	439	C
3	CM	444	U
4	CP	2	G
4	CP	4	U
4	CP	5	C
4	CP	6	G
4	CP	8	U

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Mol	Chain	Res	Type
4	CP	9	G
4	CP	15	G
4	CP	16	G
4	CP	17	G
4	CP	19	U
4	CP	22	G
4	CP	46	U
4	CP	49	C
4	CP	50	G
4	CP	57	A
4	CP	58	A
4	CP	61	C
4	CP	68	A
4	CP	69	G
4	CP	70	C
4	CP	72	C
4	CP	73	C
4	CP	75	A
7	L5	17	A
7	L5	21	G
7	L5	30	C
7	L5	39	A
7	L5	42	A
7	L5	48	G
7	L5	56	A
7	L5	59	A
7	L5	64	A
7	L5	65	A
7	L5	69	A
7	L5	73	A
7	L5	91	G
7	L5	104	G
7	L5	108	A
7	L5	109	G
7	L5	110	C
7	L5	116	G
7	L5	117	C
7	L5	119	G
7	L5	120	A
7	L5	133	C
7	L5	134	G
7	L5	135	G

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Mol	Chain	Res	Type
7	L5	136	C
7	L5	137	G
7	L5	143	C
7	L5	144	G
7	L5	152	U
7	L5	159	C
7	L5	165	A
7	L5	172	C
7	L5	180	C
7	L5	183	C
7	L5	184	U
7	L5	185	C
7	L5	188	G
7	L5	189	G
7	L5	200	U
7	L5	209	U
7	L5	210	C
7	L5	216	C
7	L5	217	C
7	L5	218	A
7	L5	233	U
7	L5	234	G
7	L5	254	G
7	L5	255	C
7	L5	261	G
7	L5	266	C
7	L5	267	G
7	L5	269	G
7	L5	280	G
7	L5	297	U
7	L5	306	A
7	L5	315	G
7	L5	316	U
7	L5	340	C
7	L5	350	C
7	L5	387	G
7	L5	388	A
7	L5	399	G
7	L5	401	G
7	L5	407	A
7	L5	409	G
7	L5	410	A

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Mol	Chain	Res	Type
7	L5	411	G
7	L5	412	G
7	L5	440	U
7	L5	449	C
7	L5	450	G
7	L5	452	A
7	L5	453	G
7	L5	454	U
7	L5	456	C
7	L5	457	G
7	L5	461	G
7	L5	467	U
7	L5	474	C
7	L5	485	C
7	L5	486	C
7	L5	489	C
7	L5	493	G
7	L5	494	U
7	L5	497	G
7	L5	498	C
7	L5	500	G
7	L5	501	C
7	L5	502	C
7	L5	503	C
7	L5	504	G
7	L5	505	G
7	L5	509	A
7	L5	510	U
7	L5	512	U
7	L5	513	U
7	L5	514	U
7	L5	517	C
7	L5	518	G
7	L5	643	C
7	L5	644	G
7	L5	646	G
7	L5	654	C
7	L5	655	C
7	L5	656	C
7	L5	657	C
7	L5	658	C
7	L5	660	A

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Mol	Chain	Res	Type
7	L5	666	G
7	L5	667	A
7	L5	668	C
7	L5	669	C
7	L5	673	C
7	L5	674	G
7	L5	675	C
7	L5	676	C
7	L5	686	A
7	L5	687	U
7	L5	688	U
7	L5	692	A
7	L5	696	C
7	L5	697	G
7	L5	703	G
7	L5	704	C
7	L5	706	C
7	L5	708	G
7	L5	730	G
7	L5	731	G
7	L5	738	C
7	L5	739	G
7	L5	740	G
7	L5	742	G
7	L5	746	A
7	L5	753	C
7	L5	758	G
7	L5	759	G
7	L5	905	C
7	L5	907	C
7	L5	912	G
7	L5	913	U
7	L5	914	U
7	L5	915	A
7	L5	916	C
7	L5	917	A
7	L5	918	G
7	L5	923	C
7	L5	924	C
7	L5	926	G
7	L5	929	A
7	L5	932	A

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Mol	Chain	Res	Type
7	L5	933	G
7	L5	941	C
7	L5	943	A
7	L5	944	A
7	L5	945	U
7	L5	946	C
7	L5	956	A
7	L5	959	G
7	L5	960	A
7	L5	961	G
7	L5	962	C
7	L5	965	G
7	L5	966	A
7	L5	967	C
7	L5	968	C
7	L5	970	G
7	L5	972	C
7	L5	984	C
7	L5	988	C
7	L5	989	U
7	L5	990	C
7	L5	991	C
7	L5	992	C
7	L5	993	G
7	L5	1069	G
7	L5	1070	G
7	L5	1075	G
7	L5	1083	U
7	L5	1168	G
7	L5	1171	G
7	L5	1173	G
7	L5	1178	G
7	L5	1179	U
7	L5	1180	C
7	L5	1181	C
7	L5	1182	C
7	L5	1183	C
7	L5	1184	A
7	L5	1187	G
7	L5	1193	C
7	L5	1196	G
7	L5	1202	C

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Mol	Chain	Res	Type
7	L5	1203	G
7	L5	1205	G
7	L5	1209	U
7	L5	1211	G
7	L5	1214	C
7	L5	1215	C
7	L5	1220	G
7	L5	1235	G
7	L5	1238	A
7	L5	1241	C
7	L5	1253	G
7	L5	1258	G
7	L5	1259	G
7	L5	1260	G
7	L5	1266	G
7	L5	1269	G
7	L5	1270	A
7	L5	1271	G
7	L5	1272	C
7	L5	1273	G
7	L5	1274	A
7	L5	1275	G
7	L5	1277	G
7	L5	1280	C
7	L5	1284	G
7	L5	1287	G
7	L5	1293	G
7	L5	1294	A
7	L5	1295	C
7	L5	1296	G
7	L5	1301	C
7	L5	1303	A
7	L5	1304	C
7	L5	1326	A
7	L5	1337	A
7	L5	1344	C
7	L5	1354	A
7	L5	1358	G
7	L5	1359	G
7	L5	1365	C
7	L5	1366	G
7	L5	1378	C

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Mol	Chain	Res	Type
7	L5	1379	C
7	L5	1387	A
7	L5	1393	G
7	L5	1394	G
7	L5	1397	A
7	L5	1403	G
7	L5	1404	G
7	L5	1405	C
7	L5	1408	G
7	L5	1410	U
7	L5	1411	C
7	L5	1420	A
7	L5	1435	G
7	L5	1437	C
7	L5	1439	C
7	L5	1441	C
7	L5	1442	C
7	L5	1443	A
7	L5	1444	G
7	L5	1447	C
7	L5	1454	G
7	L5	1457	G
7	L5	1465	G
7	L5	1480	C
7	L5	1483	C
7	L5	1497	A
7	L5	1498	G
7	L5	1502	G
7	L5	1514	U
7	L5	1534	A
7	L5	1547	A
7	L5	1566	C
7	L5	1578	U
7	L5	1591	U
7	L5	1596	U
7	L5	1624	G
7	L5	1625	G
7	L5	1631	A
7	L5	1633	G
7	L5	1634	A
7	L5	1640	C
7	L5	1641	G

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Mol	Chain	Res	Type
7	L5	1642	A
7	L5	1654	G
7	L5	1661	C
7	L5	1676	C
7	L5	1677	U
7	L5	1685	G
7	L5	1694	C
7	L5	1697	G
7	L5	1699	A
7	L5	1700	G
7	L5	1704	C
7	L5	1705	G
7	L5	1707	C
7	L5	1731	C
7	L5	1734	G
7	L5	1742	A
7	L5	1750	G
7	L5	1753	G
7	L5	1756	U
7	L5	1758	G
7	L5	1760	G
7	L5	1765	A
7	L5	1767	A
7	L5	1787	A
7	L5	1803	G
7	L5	1804	A
7	L5	1806	G
7	L5	1810	G
7	L5	1815	G
7	L5	1820	C
7	L5	1821	G
7	L5	1822	U
7	L5	1834	U
7	L5	1836	G
7	L5	1837	A
7	L5	1842	G
7	L5	1855	G
7	L5	1869	G
7	L5	1891	A
7	L5	1897	A
7	L5	1912	G
7	L5	1918	U

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Mol	Chain	Res	Type
7	L5	1919	G
7	L5	1920	C
7	L5	1921	C
7	L5	1922	G
7	L5	1924	C
7	L5	1931	C
7	L5	1932	A
7	L5	1936	C
7	L5	1940	G
7	L5	1948	G
7	L5	1949	U
7	L5	1962	A
7	L5	1965	G
7	L5	1976	G
7	L5	1979	A
7	L5	1980	U
7	L5	1981	G
7	L5	1983	A
7	L5	1984	A
7	L5	1985	G
7	L5	1986	U
7	L5	1987	C
7	L5	1997	U
7	L5	1999	A
7	L5	2001	G
7	L5	2002	A
7	L5	2004	U
7	L5	2007	G
7	L5	2016	C
7	L5	2017	A
7	L5	2018	C
7	L5	2024	G
7	L5	2025	A
7	L5	2026	A
7	L5	2046	G
7	L5	2048	U
7	L5	2055	G
7	L5	2056	G
7	L5	2069	A
7	L5	2084	C
7	L5	2085	G
7	L5	2092	G

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Mol	Chain	Res	Type
7	L5	2095	A
7	L5	2098	G
7	L5	2101	C
7	L5	2103	G
7	L5	2106	G
7	L5	2107	C
7	L5	2108	G
7	L5	2116	C
7	L5	2117	G
7	L5	2118	G
7	L5	2119	C
7	L5	2120	G
7	L5	2121	C
7	L5	2123	C
7	L5	2250	C
7	L5	2252	G
7	L5	2253	A
7	L5	2254	G
7	L5	2255	C
7	L5	2256	C
7	L5	2257	C
7	L5	2258	C
7	L5	2269	C
7	L5	2289	C
7	L5	2300	A
7	L5	2301	G
7	L5	2313	A
7	L5	2316	G
7	L5	2333	G
7	L5	2348	G
7	L5	2351	C
7	L5	2360	A
7	L5	2395	A
7	L5	2397	G
7	L5	2417	A
7	L5	2421	G
7	L5	2422	C
7	L5	2424	G
7	L5	2425	U
7	L5	2441	C
7	L5	2450	G
7	L5	2453	A

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Mol	Chain	Res	Type
7	L5	2464	C
7	L5	2465	C
7	L5	2475	G
7	L5	2483	G
7	L5	2484	A
7	L5	2487	G
7	L5	2488	C
7	L5	2489	C
7	L5	2490	U
7	L5	2491	C
7	L5	2493	G
7	L5	2503	G
7	L5	2504	C
7	L5	2505	C
7	L5	2506	G
7	L5	2513	A
7	L5	2519	U
7	L5	2520	C
7	L5	2537	A
7	L5	2544	G
7	L5	2545	U
7	L5	2546	G
7	L5	2547	G
7	L5	2554	U
7	L5	2555	G
7	L5	2567	G
7	L5	2573	A
7	L5	2583	C
7	L5	2587	A
7	L5	2589	C
7	L5	2601	A
7	L5	2618	G
7	L5	2627	C
7	L5	2653	C
7	L5	2662	G
7	L5	2669	C
7	L5	2676	A
7	L5	2687	U
7	L5	2694	G
7	L5	2695	A
7	L5	2696	A
7	L5	2703	G

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Mol	Chain	Res	Type
7	L5	2710	C
7	L5	2711	G
7	L5	2721	G
7	L5	2724	G
7	L5	2726	G
7	L5	2739	C
7	L5	2742	G
7	L5	2743	A
7	L5	2754	G
7	L5	2759	G
7	L5	2761	U
7	L5	2763	U
7	L5	2764	A
7	L5	2769	U
7	L5	2770	C
7	L5	2788	U
7	L5	2790	U
7	L5	2814	C
7	L5	2815	A
7	L5	2826	U
7	L5	2827	G
7	L5	2838	G
7	L5	2842	G
7	L5	2848	G
7	L5	2855	G
7	L5	2856	C
7	L5	2877	G
7	L5	2890	C
7	L5	2891	U
7	L5	2894	A
7	L5	2896	G
7	L5	2897	G
7	L5	2900	U
7	L5	2902	G
7	L5	2903	G
7	L5	2904	U
7	L5	2905	C
7	L5	2906	G
7	L5	2907	G
7	L5	2908	U
7	L5	3585	G
7	L5	3586	G

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Mol	Chain	Res	Type
7	L5	3588	C
7	L5	3591	C
7	L5	3593	C
7	L5	3594	C
7	L5	3595	U
7	L5	3596	A
7	L5	3597	G
7	L5	3604	A
7	L5	3605	C
7	L5	3606	U
7	L5	3615	G
7	L5	3618	C
7	L5	3626	G
7	L5	3630	A
7	L5	3635	A
7	L5	3644	U
7	L5	3646	A
7	L5	3648	A
7	L5	3662	A
7	L5	3664	G
7	L5	3673	C
7	L5	3674	G
7	L5	3685	C
7	L5	3692	A
7	L5	3711	A
7	L5	3713	U
7	L5	3727	A
7	L5	3735	G
7	L5	3736	A
7	L5	3748	A
7	L5	3750	G
7	L5	3753	G
7	L5	3760	A
7	L5	3761	C
7	L5	3771	C
7	L5	3776	G
7	L5	3777	G
7	L5	3784	A
7	L5	3786	U
7	L5	3810	C
7	L5	3812	C
7	L5	3814	U

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Mol	Chain	Res	Type
7	L5	3817	A
7	L5	3818	U
7	L5	3819	G
7	L5	3823	G
7	L5	3838	U
7	L5	3839	G
7	L5	3840	U
7	L5	3867	A
7	L5	3877	A
7	L5	3878	C
7	L5	3879	G
7	L5	3885	G
7	L5	3892	U
7	L5	3897	G
7	L5	3901	A
7	L5	3905	A
7	L5	3906	A
7	L5	3907	G
7	L5	3908	A
7	L5	3915	U
7	L5	3926	C
7	L5	3942	A
7	L5	3943	A
7	L5	3947	A
7	L5	3949	A
7	L5	4064	C
7	L5	4065	G
7	L5	4076	G
7	L5	4084	G
7	L5	4097	G
7	L5	4099	G
7	L5	4102	C
7	L5	4104	G
7	L5	4107	G
7	L5	4113	U
7	L5	4114	C
7	L5	4115	G
7	L5	4116	C
7	L5	4119	C
7	L5	4122	G
7	L5	4128	A
7	L5	4131	G

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Mol	Chain	Res	Type
7	L5	4135	G
7	L5	4137	C
7	L5	4138	C
7	L5	4140	C
7	L5	4141	G
7	L5	4142	C
7	L5	4143	G
7	L5	4145	C
7	L5	4149	C
7	L5	4150	G
7	L5	4154	G
7	L5	4155	C
7	L5	4157	A
7	L5	4160	C
7	L5	4162	C
7	L5	4163	U
7	L5	4170	A
7	L5	4183	G
7	L5	4184	G
7	L5	4191	G
7	L5	4203	A
7	L5	4222	G
7	L5	4225	G
7	L5	4229	U
7	L5	4233	A
7	L5	4249	G
7	L5	4251	A
7	L5	4254	G
7	L5	4268	A
7	L5	4273	A
7	L5	4281	A
7	L5	4291	G
7	L5	4296	U
7	L5	4297	G
7	L5	4304	A
7	L5	4305	G
7	L5	4314	C
7	L5	4319	C
7	L5	4326	G
7	L5	4329	G
7	L5	4330	G
7	L5	4332	C

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Mol	Chain	Res	Type
7	L5	4349	C
7	L5	4354	U
7	L5	4373	G
7	L5	4377	G
7	L5	4378	A
7	L5	4379	A
7	L5	4387	C
7	L5	4391	G
7	L5	4394	A
7	L5	4422	A
7	L5	4426	C
7	L5	4433	G
7	L5	4437	U
7	L5	4438	U
7	L5	4444	C
7	L5	4448	G
7	L5	4449	A
7	L5	4453	C
7	L5	4464	A
7	L5	4466	C
7	L5	4500	U
7	L5	4512	U
7	L5	4513	A
7	L5	4518	A
7	L5	4519	C
7	L5	4524	G
7	L5	4548	A
7	L5	4549	G
7	L5	4554	G
7	L5	4560	C
7	L5	4567	G
7	L5	4573	G
7	L5	4575	G
7	L5	4584	A
7	L5	4590	A
7	L5	4600	G
7	L5	4601	U
7	L5	4617	G
7	L5	4627	U
7	L5	4635	A
7	L5	4636	U
7	L5	4637	G

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Mol	Chain	Res	Type
7	L5	4638	U
7	L5	4639	G
7	L5	4652	G
7	L5	4656	A
7	L5	4670	C
7	L5	4672	A
7	L5	4687	A
7	L5	4700	A
7	L5	4708	A
7	L5	4709	U
7	L5	4719	G
7	L5	4732	G
7	L5	4733	C
7	L5	4734	A
7	L5	4740	G
7	L5	4741	C
7	L5	4742	G
7	L5	4745	G
7	L5	4754	G
7	L5	4757	C
7	L5	4759	C
7	L5	4761	G
7	L5	4765	G
7	L5	4771	C
7	L5	4772	C
7	L5	4773	C
7	L5	4775	C
7	L5	4860	G
7	L5	4868	G
7	L5	4870	G
7	L5	4871	C
7	L5	4875	G
7	L5	4880	C
7	L5	4881	U
7	L5	4882	U
7	L5	4883	C
7	L5	4889	G
7	L5	4894	A
7	L5	4895	C
7	L5	4896	G
7	L5	4900	C
7	L5	4901	G

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Mol	Chain	Res	Type
7	L5	4910	G
7	L5	4912	G
7	L5	4914	C
7	L5	4925	U
7	L5	4927	G
7	L5	4931	G
7	L5	4934	A
7	L5	4937	C
7	L5	4940	C
7	L5	4941	G
7	L5	4943	A
7	L5	4955	A
7	L5	4960	G
7	L5	4963	G
7	L5	4966	A
7	L5	4976	U
7	L5	4988	U
7	L5	4989	U
7	L5	4990	C
7	L5	4991	U
7	L5	4995	U
7	L5	5007	A
7	L5	5009	G
7	L5	5014	A
7	L5	5017	G
7	L5	5022	U
7	L5	5023	C
7	L5	5024	C
7	L5	5025	C
7	L5	5026	U
7	L5	5028	G
7	L5	5029	C
7	L5	5030	U
7	L5	5031	G
7	L5	5034	A
7	L5	5041	G
7	L5	5050	C
7	L5	5054	C
7	L5	5055	G
7	L5	5062	G
7	L5	5069	U
8	L7	23	A

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Mol	Chain	Res	Type
8	L7	33	U
8	L7	53	U
8	L7	54	A
8	L7	63	C
8	L7	64	G
8	L7	97	G
8	L7	100	A
8	L7	102	U
8	L7	111	C
8	L7	117	G
8	L7	120	U
9	L8	16	G
9	L8	34	U
9	L8	35	C
9	L8	48	A
9	L8	59	A
9	L8	63	U
9	L8	80	A
9	L8	82	A
9	L8	83	C
9	L8	84	A
9	L8	86	U
9	L8	87	G
9	L8	88	A
9	L8	94	G
9	L8	103	A
9	L8	105	C
9	L8	110	U
9	L8	111	U
9	L8	114	G
9	L8	124	U
9	L8	125	C
9	L8	126	C
9	L8	127	U
9	L8	150	C
9	L8	151	G
9	L8	153	C
54	S2	7	G
54	S2	27	A
54	S2	33	G
54	S2	41	G
54	S2	44	U

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Mol	Chain	Res	Type
54	S2	45	A
54	S2	46	A
54	S2	56	G
54	S2	58	C
54	S2	59	U
54	S2	62	G
54	S2	66	G
54	S2	67	C
54	S2	68	A
54	S2	70	G
54	S2	71	G
54	S2	72	C
54	S2	73	C
54	S2	75	G
54	S2	76	U
54	S2	80	G
54	S2	84	A
54	S2	85	A
54	S2	86	C
54	S2	101	U
54	S2	103	A
54	S2	113	G
54	S2	114	G
54	S2	121	U
54	S2	126	G
54	S2	127	C
54	S2	128	U
54	S2	130	G
54	S2	143	U
54	S2	144	U
54	S2	145	G
54	S2	149	A
54	S2	150	A
54	S2	151	C
54	S2	155	G
54	S2	160	U
54	S2	161	U
54	S2	162	C
54	S2	163	U
54	S2	167	G
54	S2	168	C
54	S2	170	A

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Mol	Chain	Res	Type
54	S2	179	C
54	S2	182	C
54	S2	184	G
54	S2	198	U
54	S2	207	G
54	S2	210	U
54	S2	214	U
54	S2	219	U
54	S2	290	U
54	S2	291	G
54	S2	293	C
54	S2	295	C
54	S2	302	A
54	S2	306	C
54	S2	308	G
54	S2	309	G
54	S2	310	C
54	S2	311	C
54	S2	312	G
54	S2	313	A
54	S2	319	C
54	S2	322	C
54	S2	323	C
54	S2	324	C
54	S2	325	C
54	S2	326	C
54	S2	328	U
54	S2	329	G
54	S2	332	G
54	S2	335	G
54	S2	340	C
54	S2	347	G
54	S2	351	G
54	S2	360	A
54	S2	362	C
54	S2	364	A
54	S2	368	U
54	S2	370	G
54	S2	380	G
54	S2	381	C
54	S2	385	G
54	S2	386	C

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Mol	Chain	Res	Type
54	S2	398	A
54	S2	400	C
54	S2	409	C
54	S2	413	G
54	S2	438	G
54	S2	448	A
54	S2	449	A
54	S2	450	C
54	S2	452	G
54	S2	462	C
54	S2	464	A
54	S2	465	A
54	S2	466	G
54	S2	471	G
54	S2	472	C
54	S2	473	A
54	S2	474	G
54	S2	482	G
54	S2	487	U
54	S2	488	U
54	S2	489	A
54	S2	492	C
54	S2	493	A
54	S2	496	C
54	S2	500	A
54	S2	502	C
54	S2	503	C
54	S2	516	A
54	S2	525	A
54	S2	530	U
54	S2	531	A
54	S2	532	C
54	S2	536	A
54	S2	537	C
54	S2	539	C
54	S2	540	U
54	S2	541	U
54	S2	542	U
54	S2	543	C
54	S2	544	G
54	S2	545	A
54	S2	547	G

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Mol	Chain	Res	Type
54	S2	549	C
54	S2	551	U
54	S2	554	A
54	S2	555	A
54	S2	556	U
54	S2	559	G
54	S2	561	A
54	S2	563	G
54	S2	566	U
54	S2	567	C
54	S2	575	A
54	S2	576	A
54	S2	582	U
54	S2	583	A
54	S2	587	A
54	S2	590	A
54	S2	591	U
54	S2	593	C
54	S2	595	U
54	S2	596	U
54	S2	604	A
54	S2	605	A
54	S2	606	G
54	S2	607	U
54	S2	608	C
54	S2	612	U
54	S2	613	G
54	S2	614	C
54	S2	617	G
54	S2	628	A
54	S2	631	U
54	S2	643	A
54	S2	648	A
54	S2	650	A
54	S2	651	U
54	S2	652	U
54	S2	655	A
54	S2	660	C
54	S2	668	A
54	S2	669	A
54	S2	671	A
54	S2	672	A

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Mol	Chain	Res	Type
54	S2	673	G
54	S2	688	U
54	S2	689	U
54	S2	690	G
54	S2	692	G
54	S2	693	A
54	S2	694	G
54	S2	696	G
54	S2	697	G
54	S2	732	U
54	S2	733	C
54	S2	734	C
54	S2	735	C
54	S2	736	C
54	S2	738	C
54	S2	739	C
54	S2	746	C
54	S2	747	U
54	S2	748	C
54	S2	749	U
54	S2	751	G
54	S2	752	G
54	S2	753	C
54	S2	790	C
54	S2	791	C
54	S2	795	A
54	S2	796	G
54	S2	797	C
54	S2	798	G
54	S2	799	U
54	S2	801	U
54	S2	807	G
54	S2	808	A
54	S2	809	A
54	S2	810	A
54	S2	811	A
54	S2	812	A
54	S2	813	A
54	S2	818	A
54	S2	821	G
54	S2	830	A
54	S2	834	C

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Mol	Chain	Res	Type
54	S2	835	C
54	S2	836	G
54	S2	837	A
54	S2	838	G
54	S2	839	C
54	S2	840	C
54	S2	841	G
54	S2	842	C
54	S2	847	A
54	S2	856	C
54	S2	859	G
54	S2	860	G
54	S2	861	A
54	S2	868	G
54	S2	869	A
54	S2	870	A
54	S2	872	A
54	S2	873	G
54	S2	874	G
54	S2	878	G
54	S2	880	G
54	S2	883	U
54	S2	884	C
54	S2	888	U
54	S2	889	U
54	S2	890	U
54	S2	891	G
54	S2	892	U
54	S2	893	U
54	S2	894	G
54	S2	895	G
54	S2	896	U
54	S2	898	U
54	S2	900	C
54	S2	901	G
54	S2	903	A
54	S2	904	A
54	S2	905	C
54	S2	909	G
54	S2	913	A
54	S2	920	A
54	S2	922	A

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Mol	Chain	Res	Type
54	S2	924	G
54	S2	926	A
54	S2	933	G
54	S2	934	G
54	S2	958	G
54	S2	963	A
54	S2	970	G
54	S2	971	G
54	S2	972	A
54	S2	990	A
54	S2	992	A
54	S2	1001	A
54	S2	1017	U
54	S2	1019	C
54	S2	1021	U
54	S2	1023	A
54	S2	1027	A
54	S2	1028	A
54	S2	1060	A
54	S2	1061	U
54	S2	1062	A
54	S2	1078	C
54	S2	1083	A
54	S2	1084	A
54	S2	1085	C
54	S2	1089	G
54	S2	1090	C
54	S2	1096	G
54	S2	1099	G
54	S2	1100	A
54	S2	1101	U
54	S2	1105	G
54	S2	1108	G
54	S2	1110	G
54	S2	1112	U
54	S2	1114	U
54	S2	1116	C
54	S2	1120	U
54	S2	1121	G
54	S2	1126	G
54	S2	1131	G
54	S2	1133	A

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Mol	Chain	Res	Type
54	S2	1140	G
54	S2	1142	G
54	S2	1143	A
54	S2	1144	A
54	S2	1146	C
54	S2	1147	C
54	S2	1149	A
54	S2	1153	C
54	S2	1154	U
54	S2	1155	U
54	S2	1157	G
54	S2	1168	G
54	S2	1181	A
54	S2	1183	A
54	S2	1195	A
54	S2	1207	G
54	S2	1212	G
54	S2	1215	C
54	S2	1217	A
54	S2	1221	G
54	S2	1224	G
54	S2	1242	U
54	S2	1243	U
54	S2	1251	A
54	S2	1253	A
54	S2	1256	G
54	S2	1257	G
54	S2	1259	A
54	S2	1260	A
54	S2	1265	A
54	S2	1271	C
54	S2	1272	C
54	S2	1273	C
54	S2	1274	G
54	S2	1275	G
54	S2	1276	A
54	S2	1281	G
54	S2	1282	A
54	S2	1284	A
54	S2	1285	G
54	S2	1286	G
54	S2	1297	U

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Mol	Chain	Res	Type
54	S2	1298	G
54	S2	1299	A
54	S2	1301	A
54	S2	1302	G
54	S2	1303	C
54	S2	1308	U
54	S2	1313	A
54	S2	1314	U
54	S2	1321	G
54	S2	1326	U
54	S2	1332	A
54	S2	1342	U
54	S2	1371	U
54	S2	1372	U
54	S2	1378	A
54	S2	1382	A
54	S2	1396	A
54	S2	1397	U
54	S2	1402	A
54	S2	1404	U
54	S2	1409	A
54	S2	1414	A
54	S2	1415	C
54	S2	1419	C
54	S2	1420	G
54	S2	1421	A
54	S2	1422	G
54	S2	1423	C
54	S2	1429	G
54	S2	1438	A
54	S2	1449	G
54	S2	1450	G
54	S2	1452	A
54	S2	1454	A
54	S2	1462	U
54	S2	1463	U
54	S2	1473	G
54	S2	1475	G
54	S2	1477	U
54	S2	1487	A
54	S2	1489	A
54	S2	1490	G

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Mol	Chain	Res	Type
54	S2	1498	A
54	S2	1506	A
54	S2	1507	G
54	S2	1508	A
54	S2	1510	G
54	S2	1519	U
54	S2	1520	G
54	S2	1521	C
54	S2	1522	A
54	S2	1527	C
54	S2	1533	A
54	S2	1536	G
54	S2	1546	G
54	S2	1548	G
54	S2	1552	G
54	S2	1553	C
54	S2	1556	A
54	S2	1563	G
54	S2	1567	G
54	S2	1569	A
54	S2	1570	G
54	S2	1574	C
54	S2	1578	U
54	S2	1580	A
54	S2	1585	U
54	S2	1586	U
54	S2	1587	G
54	S2	1588	A
54	S2	1589	A
54	S2	1595	U
54	S2	1599	U
54	S2	1601	A
54	S2	1602	U
54	S2	1613	G
54	S2	1614	A
54	S2	1621	U
54	S2	1623	A
54	S2	1624	U
54	S2	1634	A
54	S2	1639	G
54	S2	1644	C
54	S2	1648	G

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Mol	Chain	Res	Type
54	S2	1654	G
54	S2	1663	A
54	S2	1664	A
54	S2	1665	G
54	S2	1671	G
54	S2	1678	A
54	S2	1695	A
54	S2	1719	A
54	S2	1721	U
54	S2	1722	G
54	S2	1742	C
54	S2	1743	G
54	S2	1744	G
54	S2	1745	A
54	S2	1748	G
54	S2	1753	C
54	S2	1754	G
54	S2	1755	C
54	S2	1773	C
54	S2	1781	A
54	S2	1782	G
54	S2	1783	C
54	S2	1784	G
54	S2	1786	U
54	S2	1813	A
54	S2	1824	A
54	S2	1825	A
54	S2	1829	G
54	S2	1831	A
54	S2	1835	A
54	S2	1838	U
54	S2	1849	G
54	S2	1850	A
54	S2	1851	A
54	S2	1852	C
54	S2	1861	G
54	S2	1862	G
54	S2	1863	A
54	S2	1865	C
54	S2	1868	U

All (34) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
4	CP	3	C
4	CP	21	U
7	L5	406	C
7	L5	504	G
7	L5	914	U
7	L5	1082	C
7	L5	1633	G
7	L5	2117	G
7	L5	2416	G
7	L5	2675	G
7	L5	2760	G
7	L5	3614	G
7	L5	3673	C
7	L5	4600	G
7	L5	4699	U
7	L5	4913	G
9	L8	87	G
54	S2	85	A
54	S2	144	U
54	S2	150	A
54	S2	213	G
54	S2	465	A
54	S2	604	A
54	S2	688	U
54	S2	912	C
54	S2	971	G
54	S2	1120	U
54	S2	1273	C
54	S2	1395	C
54	S2	1519	U
54	S2	1585	U
54	S2	1601	A
54	S2	1664	A
54	S2	1860	A

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	LYO	CR	63	5	7,9,10	0.81	0	7,10,12	1.10	1 (14%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	LYO	CR	63	5	-	3/8/9/11	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	CR	63	LYO	CE-CD-CG	-2.09	109.07	113.47

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	CR	63	LYO	N-CA-CB-CG
5	CR	63	LYO	C-CA-CB-CG
5	CR	63	LYO	CA-CB-CG-CD

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 199 ligands modelled in this entry, 199 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 ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

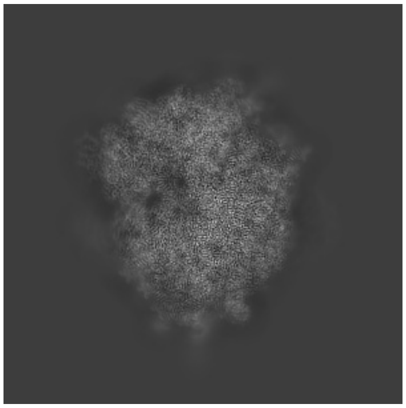
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-54530. These allow visual inspection of the internal detail of the map and identification of artifacts.

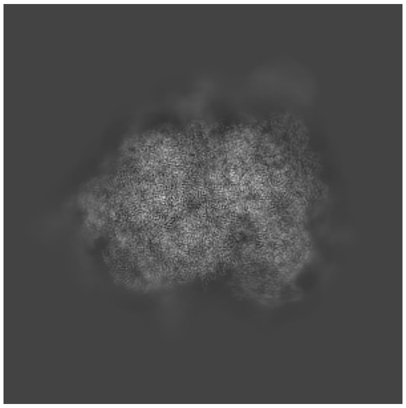
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections ⓘ

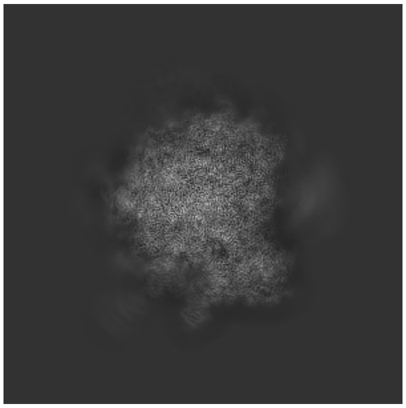
6.1.1 Primary map



X

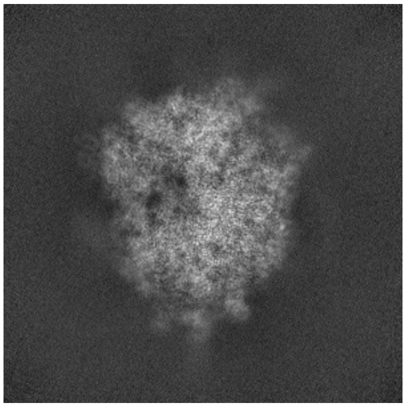


Y

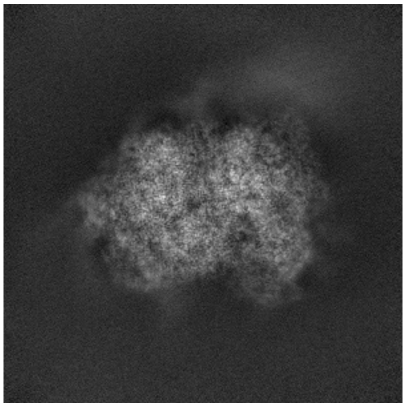


Z

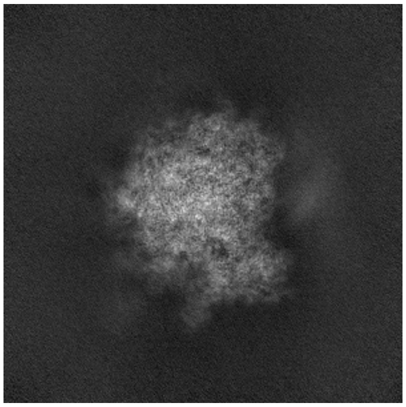
6.1.2 Raw map



X



Y

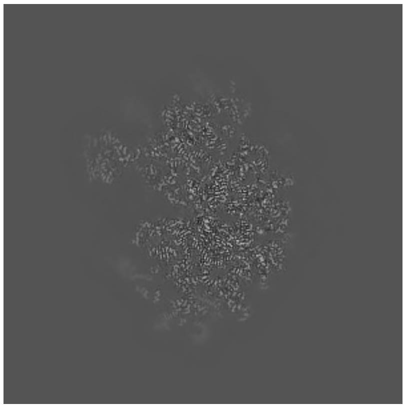


Z

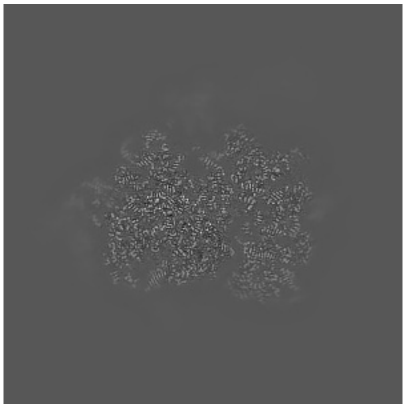
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

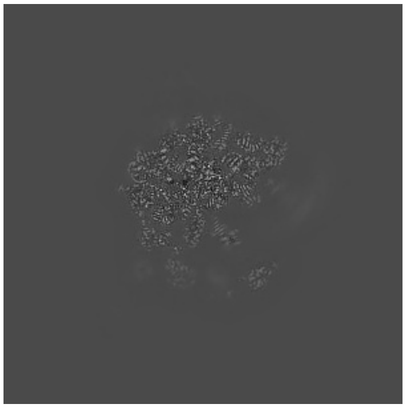
6.2.1 Primary map



X Index: 320

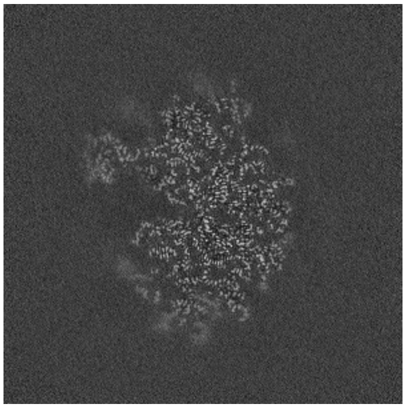


Y Index: 320

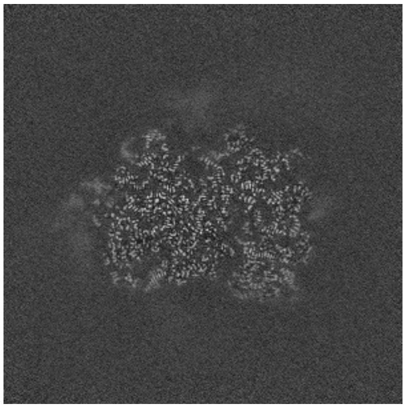


Z Index: 320

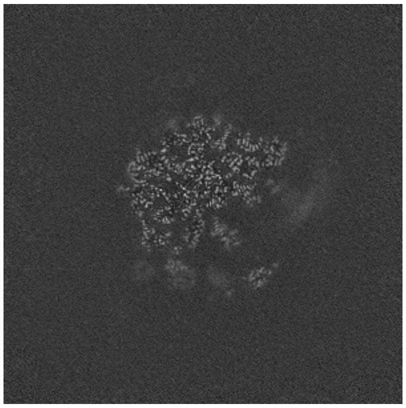
6.2.2 Raw map



X Index: 320



Y Index: 320

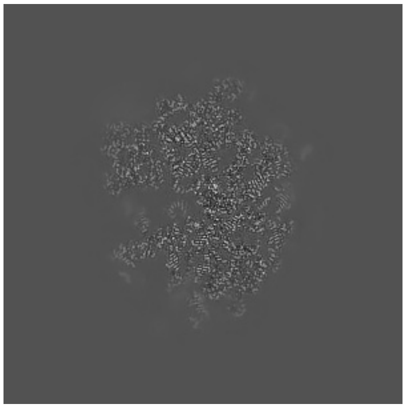


Z Index: 320

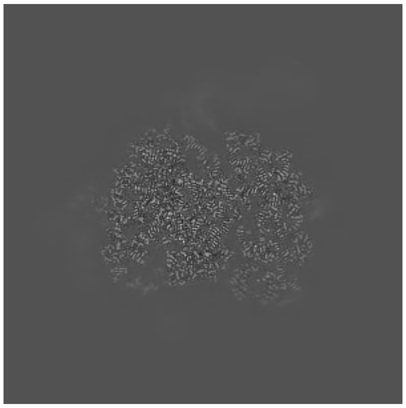
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

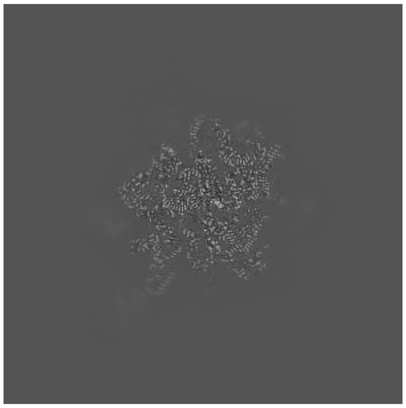
6.3.1 Primary map



X Index: 344

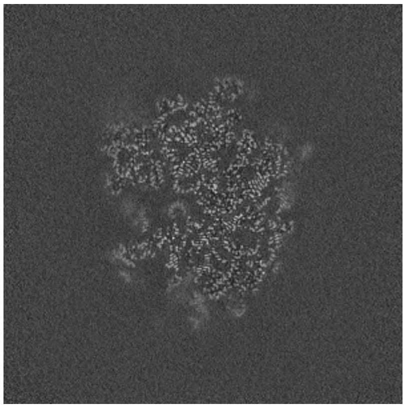


Y Index: 329

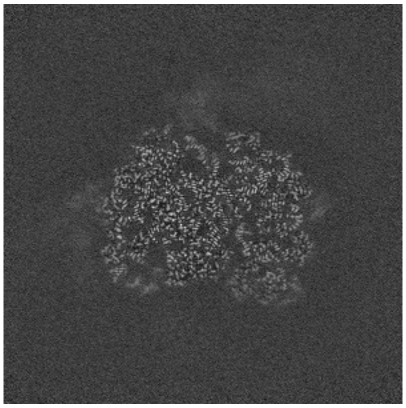


Z Index: 267

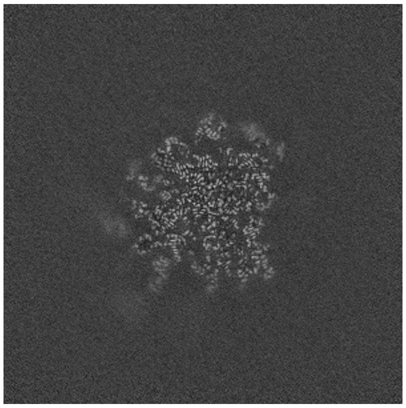
6.3.2 Raw map



X Index: 344



Y Index: 328

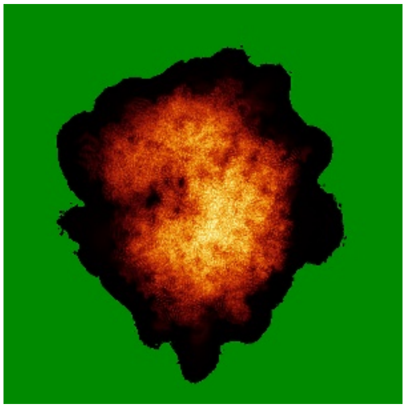


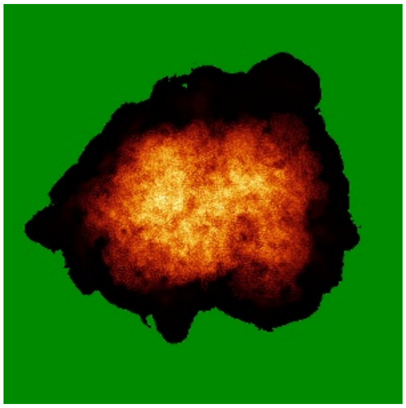
Z Index: 257

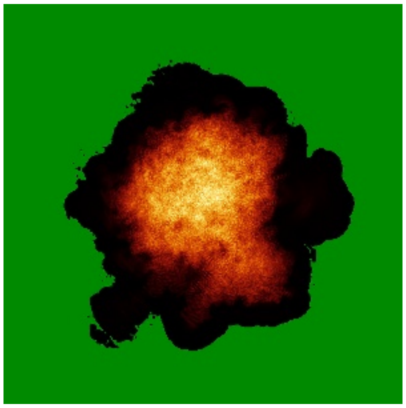
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color)

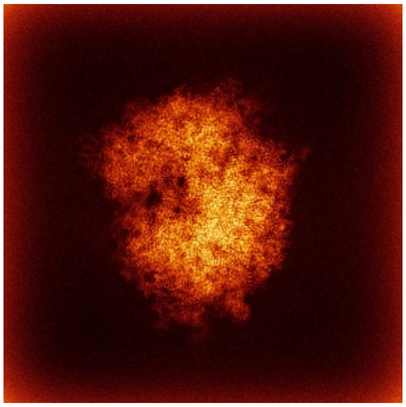
6.4.1 Primary map

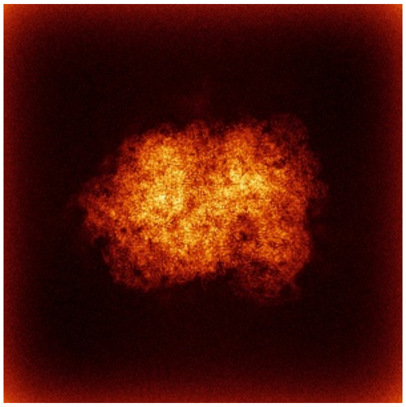

X

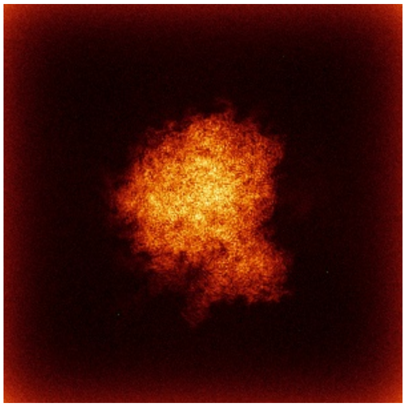

Y


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

This section was not generated.

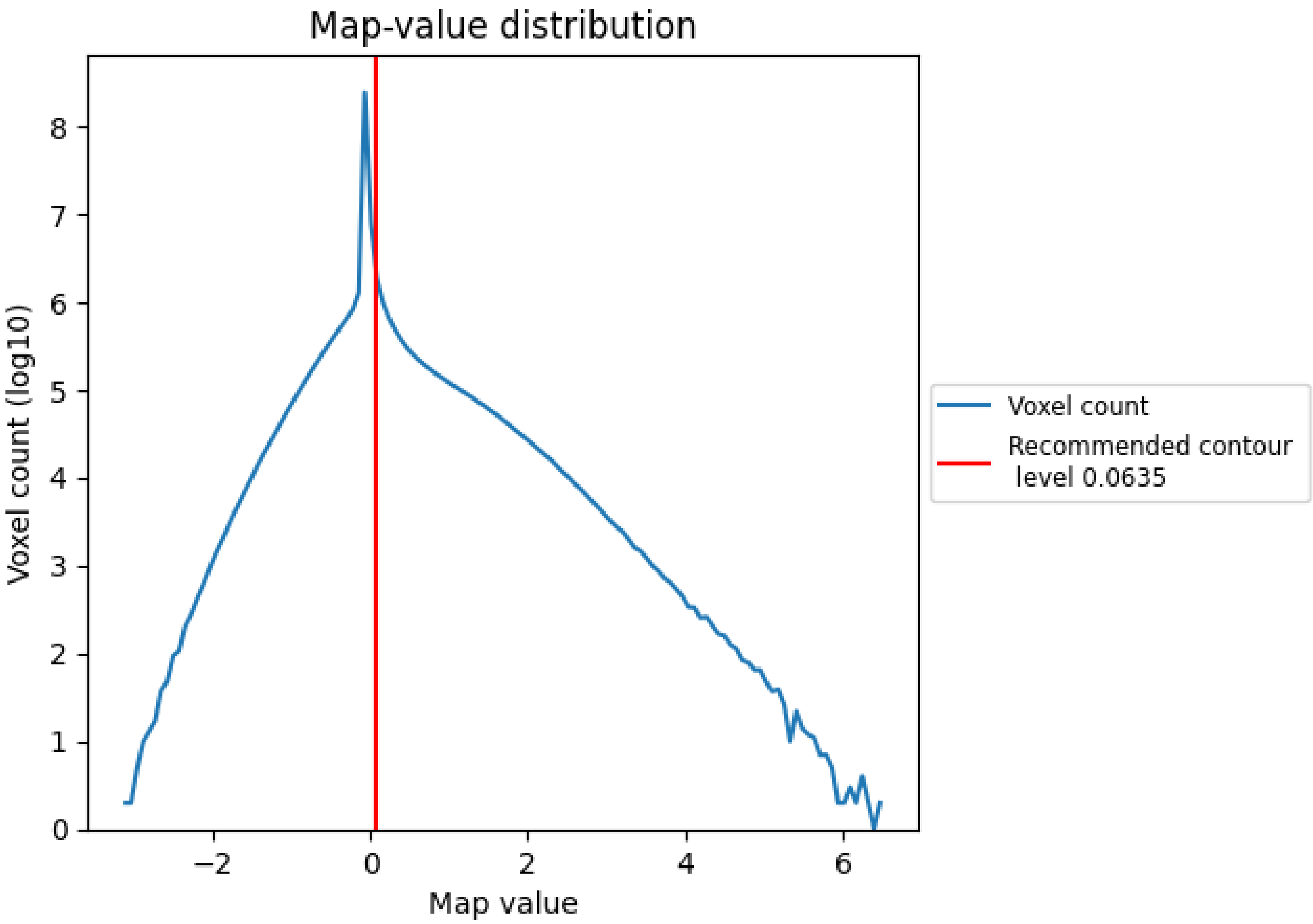
6.6 Mask visualisation

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

7 Map analysis ⓘ

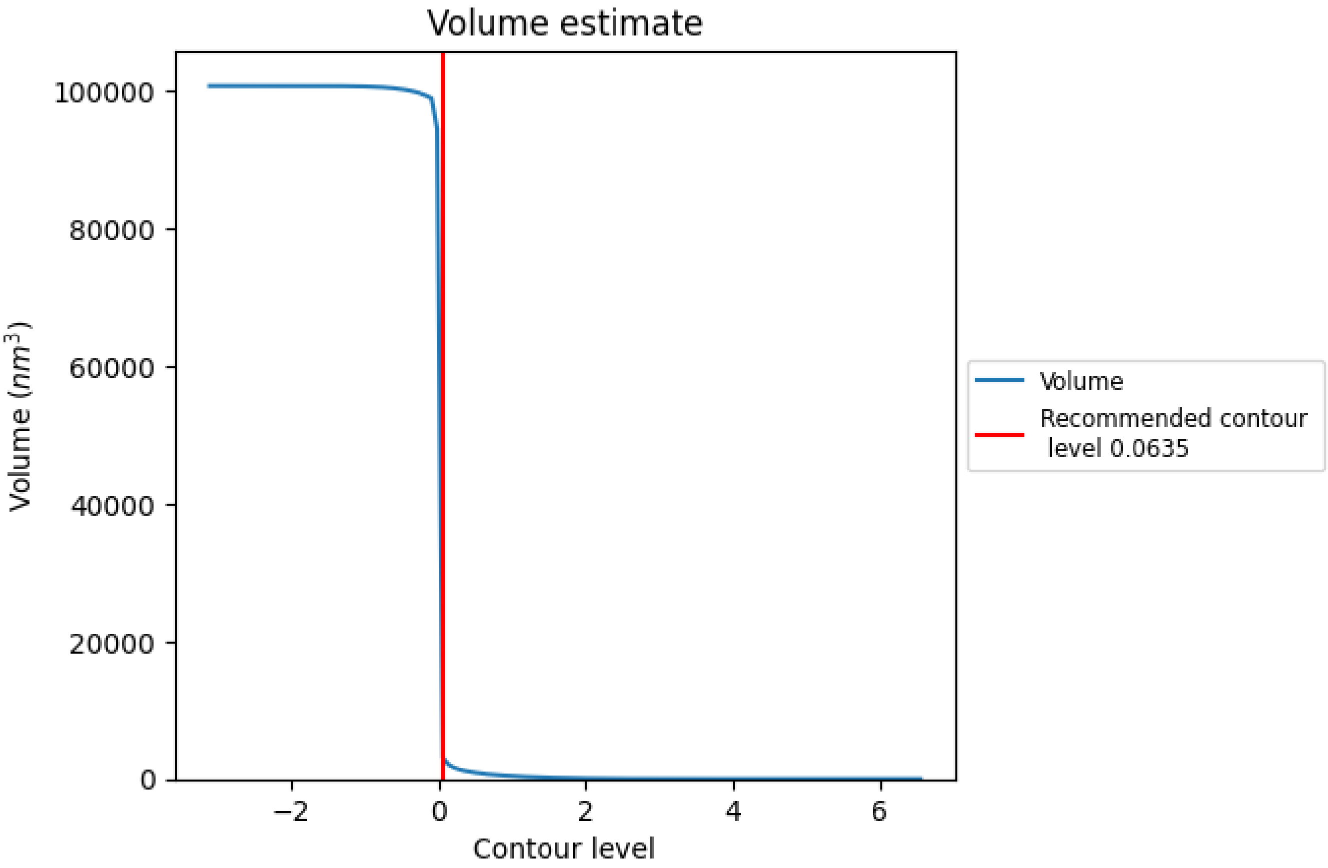
This section contains the results of statistical analysis of the map.

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.

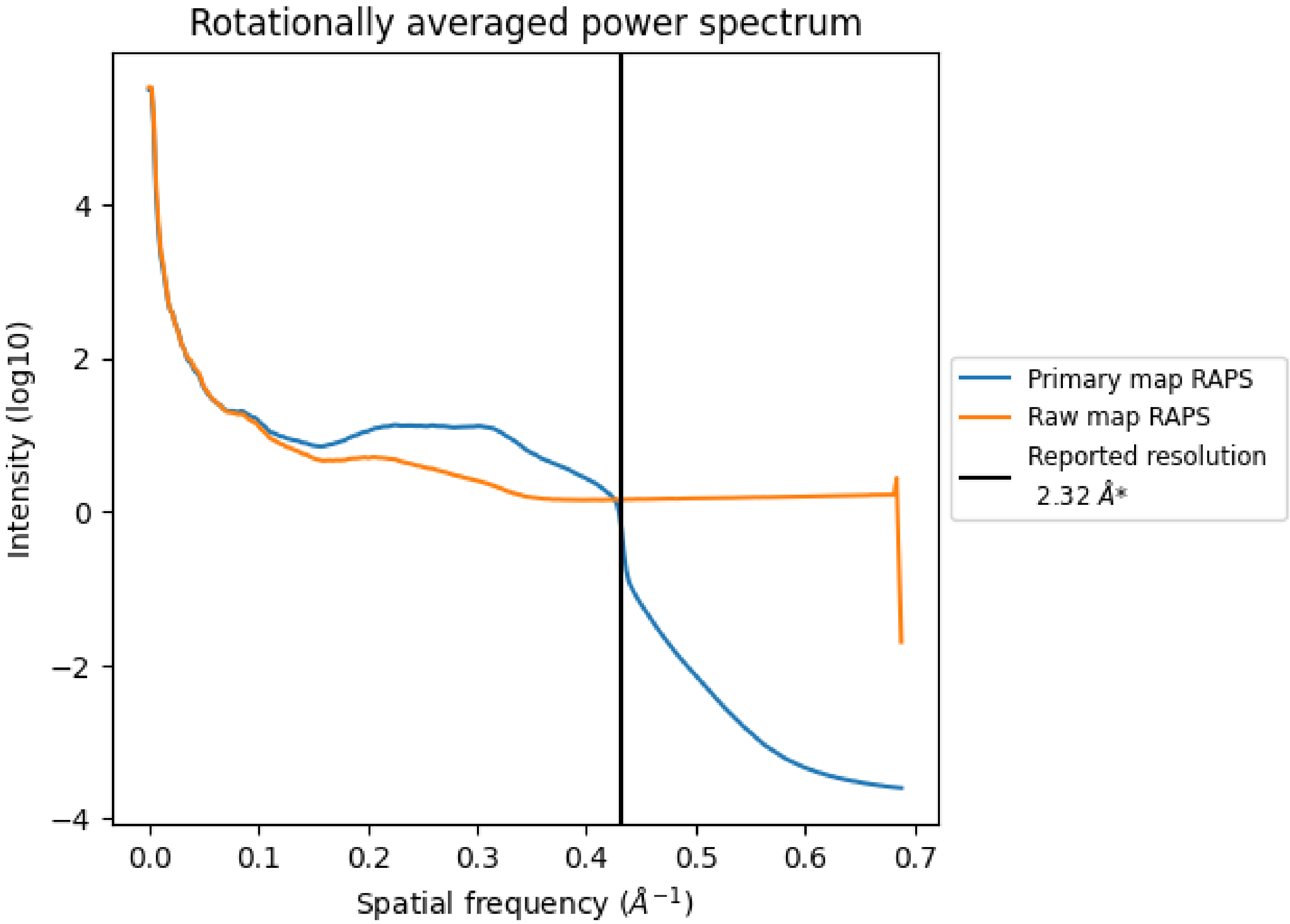
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 3063 nm^3; this corresponds to an approximate mass of 2767 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

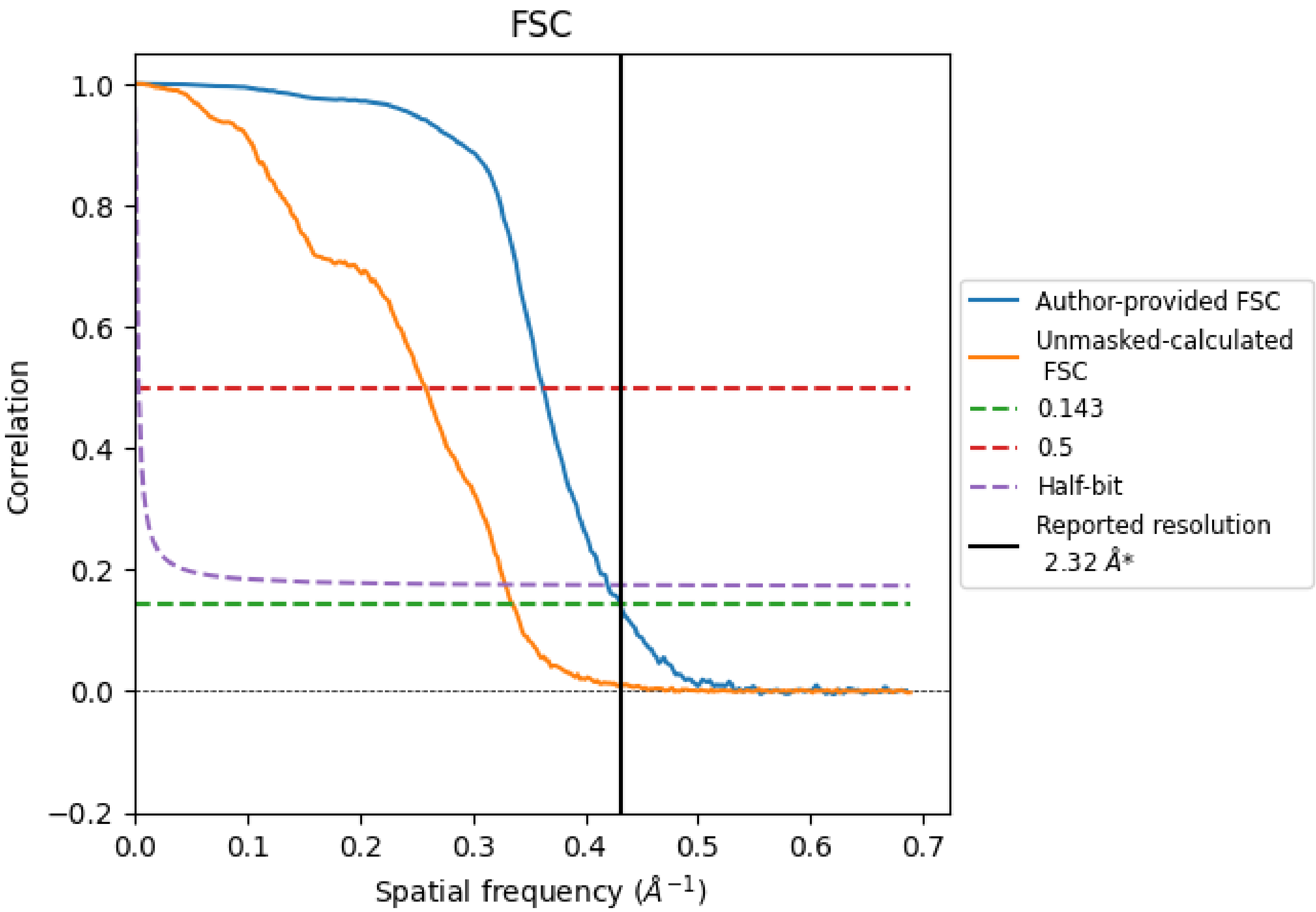


*Reported resolution corresponds to spatial frequency of 0.431 Å^{-1}

8 Fourier-Shell correlation (i)

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

8.1 FSC (i)



*Reported resolution corresponds to spatial frequency of 0.431 Å^{-1}

8.2 Resolution estimates ⓘ

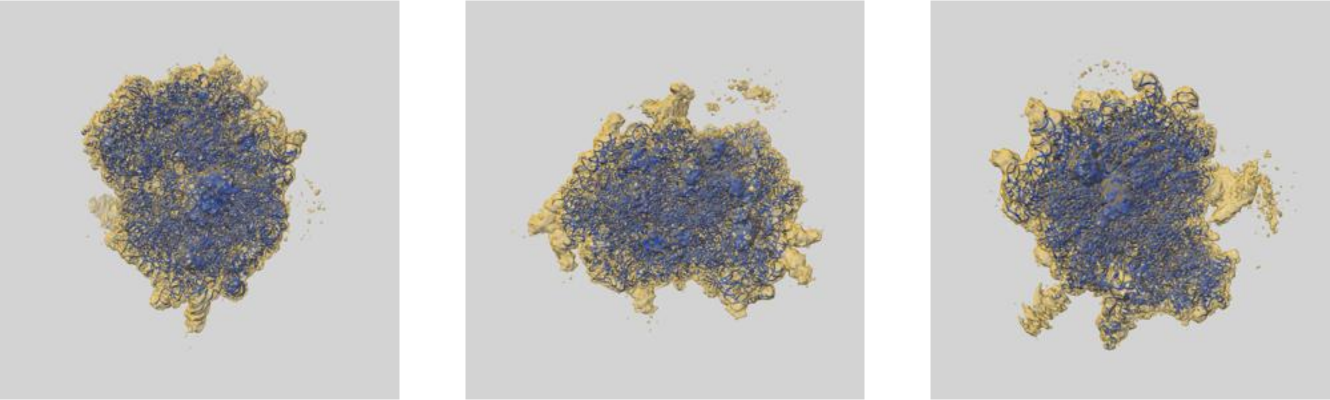
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.32	-	-
Author-provided FSC curve	2.32	2.76	2.38
Unmasked-calculated*	2.98	3.87	3.04

*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 2.98 differs from the reported value 2.32 by more than 10 %

9 Map-model fit (i)

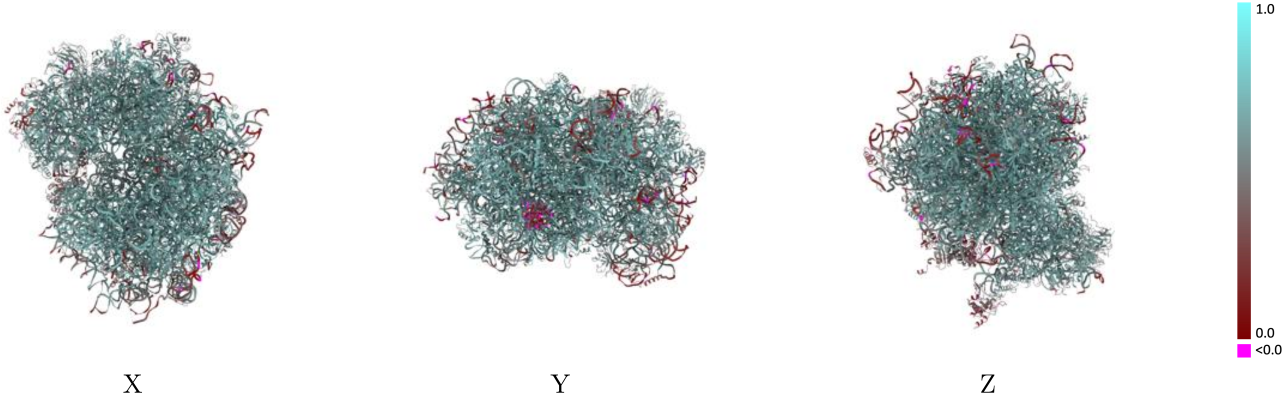
This section contains information regarding the fit between EMDB map EMD-54530 and PDB model 9S3D. Per-residue inclusion information can be found in section 3 on page 21.

9.1 Map-model overlay (i)



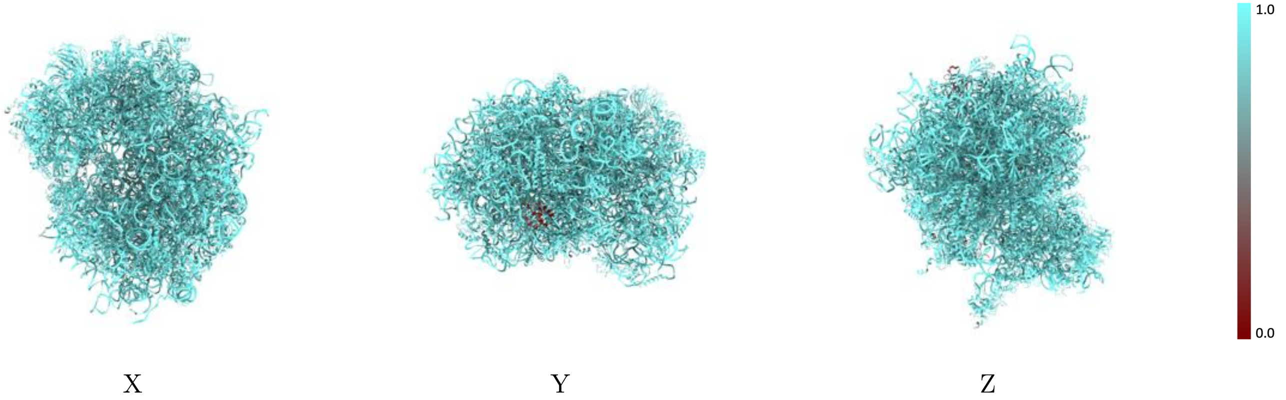
The images above show the 3D surface view of the map at the recommended contour level 0.0635 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ



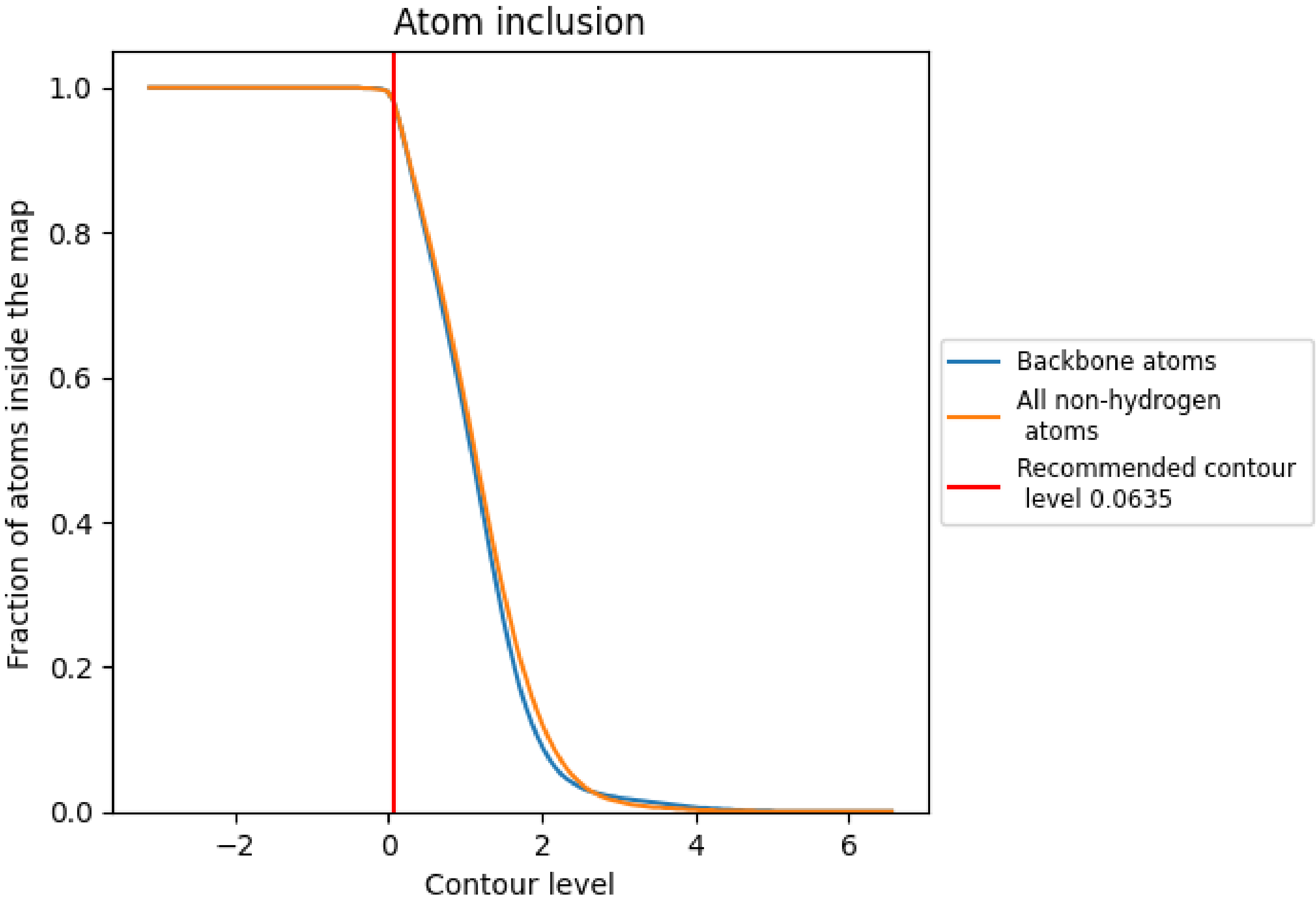
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (0.0635).

9.4 Atom inclusion ⓘ



At the recommended contour level, 98% of all backbone atoms, 98% 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 (0.0635) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9820	0.6110
CM	0.9800	0.5850
CP	0.9880	0.5880
CR	0.9390	0.5240
CZ	0.9420	0.5380
L5	0.9910	0.6190
L7	0.9970	0.6690
L8	0.9910	0.6340
LA	0.9920	0.6920
LB	0.9870	0.6750
LC	0.9870	0.6730
LD	0.9830	0.6210
LE	0.9820	0.6160
LF	0.9860	0.6720
LG	0.9810	0.6090
LH	0.9850	0.6340
LI	0.9770	0.6430
LJ	0.9760	0.5960
LL	0.9780	0.6340
LM	0.9930	0.6490
LN	0.9960	0.7020
LO	0.9910	0.6840
LP	0.9910	0.6830
LQ	0.9940	0.6890
LR	0.9830	0.6590
LS	0.9890	0.6770
LT	0.9730	0.6260
LU	0.9750	0.5400
LV	0.9920	0.6810
LW	0.9620	0.5230
LX	0.9830	0.6450
LY	0.9890	0.6410
LZ	0.9890	0.6470
La	0.9900	0.6810
Lb	0.9670	0.5860

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Chain	Atom inclusion	Q-score
Lc	0.9850	0.6600
Ld	0.9950	0.6610
Le	0.9940	0.6900
Lf	0.9860	0.6840
Lg	0.9850	0.6570
Lh	0.9810	0.6420
Li	0.9880	0.6380
Lj	0.9910	0.6860
Lk	0.9600	0.5690
Ll	0.9840	0.6530
Lm	0.9810	0.6660
Ln	0.9860	0.6680
Lo	0.9850	0.6500
Lp	0.9940	0.6880
Lr	0.9920	0.6660
Ls	0.9080	0.2970
Lt	0.9560	0.3630
NA	0.3410	0.0840
NB	0.4740	0.1920
S2	0.9870	0.5960
SA	0.9920	0.6450
SB	0.9830	0.6260
SC	0.9880	0.6510
SD	0.9860	0.5940
SE	0.9880	0.6190
SF	0.9680	0.5930
SG	0.9850	0.5400
SH	0.9850	0.5670
SI	0.9900	0.6230
SJ	0.9910	0.6240
SK	0.9830	0.5790
SL	0.9880	0.6570
SM	0.9040	0.2960
SN	0.9850	0.6610
SO	0.9890	0.6460
SP	0.9880	0.5870
SQ	0.9720	0.6170
SR	0.9550	0.5520
SS	0.9730	0.5850
ST	0.9790	0.6070
SU	0.9810	0.5470
SV	0.9870	0.6390

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Chain	Atom inclusion	Q-score
SW	0.9920	0.6820
SX	0.9850	0.6390
SY	0.9890	0.5770
SZ	0.9780	0.5660
Sa	0.9830	0.6340
Sb	0.9800	0.5890
Sc	0.9390	0.5310
Sd	0.9900	0.6390
Se	0.9800	0.5820
Sf	0.8750	0.3110
Sg	0.9770	0.5390