Full wwPDB EM Validation Report

Mar 10, 2025 – 03:12 PM EDT

PDB ID	:	9B0F
EMDB ID	:	EMD-44039
Title	:	In situ human Hibernating class3 80S ribosome
Authors	:	Wei, Z.; Yong, X.
Deposited on	:	2024-03-12
Resolution	:	2.78 Å(reported)

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

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

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

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

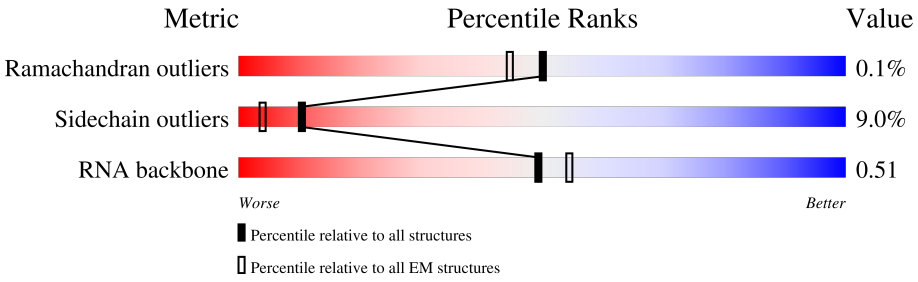
EMDB validation analysis	:	0.0.1.dev117
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.41.4

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.78 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)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	LR	187	12% 90% 10%
2	S2	1869	9% 68% 25% 7%
3	L5	5070	7% 56% 18% 26%
4	L7	120	88% 12%
5	L8	156	5% 81% 19%
6	LA	248	93% 6%
7	LB	402	94% 6%
8	LC	368	95% 5%

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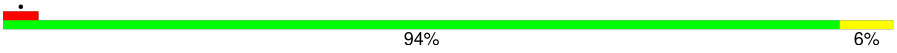
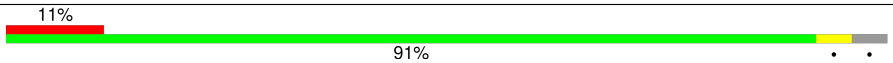
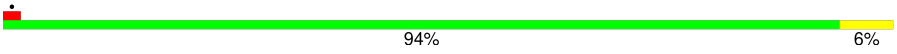
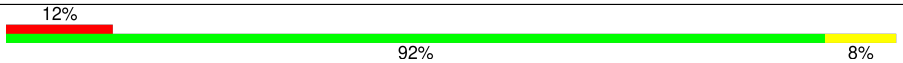
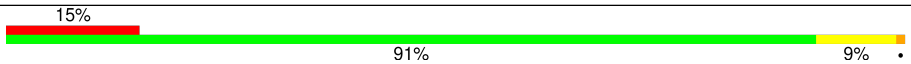
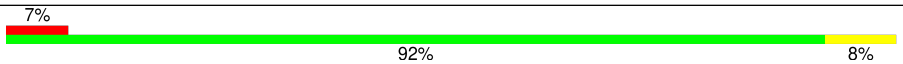
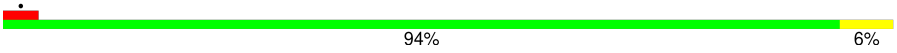
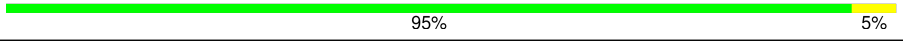
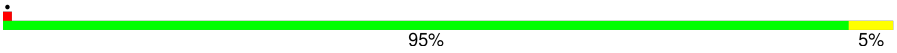
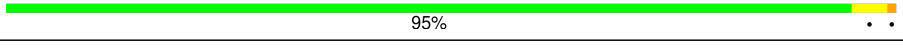
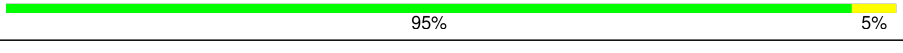
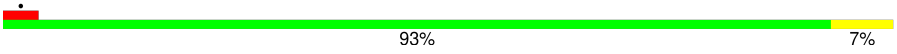
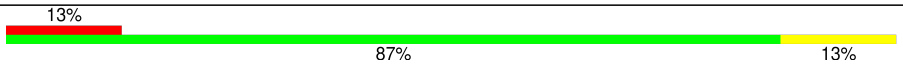
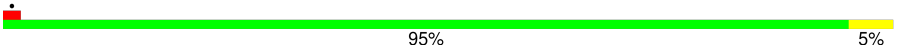
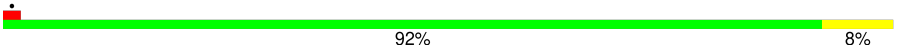
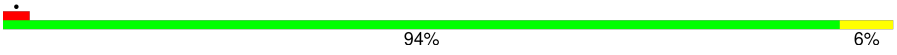
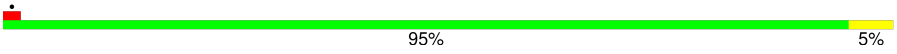
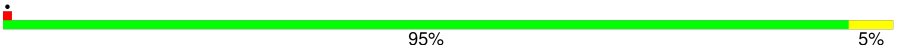
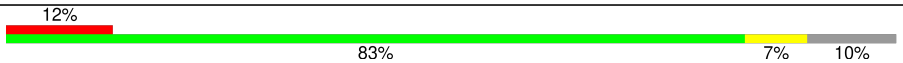
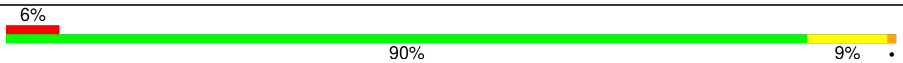
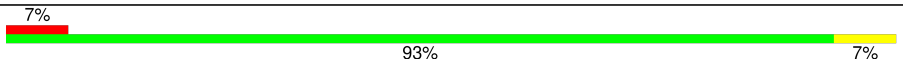
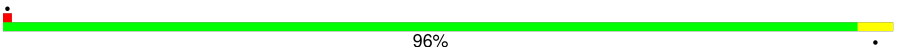
Mol	Chain	Length	Quality of chain
9	LD	293	
10	LE	247	
11	LF	225	
12	LG	241	
13	LH	190	
14	LI	213	
15	LJ	176	
16	LL	210	
17	LM	139	
18	LN	203	
19	LO	201	
20	LP	153	
21	LQ	187	
22	LS	175	
23	LT	159	
24	LU	101	
25	LV	131	
26	LX	120	
27	LY	134	
28	LZ	135	
29	La	147	
30	Lb	121	
31	Lc	98	
32	Ld	107	
33	Le	128	

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Mol	Chain	Length	Quality of chain
34	Lf	109	95% 5%
35	Lg	114	5% 95% 5%
36	Lh	122	98%
37	Li	102	96%
38	Lj	86	94% 5%
39	Lk	69	7% 91% 9%
40	Ll	50	94% 6%
41	Lm	52	96%
42	Ln	24	96%
43	Lo	105	92% 8%
44	Lp	91	99%
45	Lr	125	87% 13%
46	Lz	217	100% 93% 7%
47	CA	356	90% 93% 6%
48	Ls	196	48% 90% 10%
49	Lt	141	84% 91% 9%
50	SD	227	20% 87% 12%
51	SF	189	30% 93% 7%
52	SK	98	26% 89% 11%
53	SP	121	23% 92% 8%
54	SQ	144	28% 88% 12%
55	SS	145	28% 87% 13%
56	ST	143	23% 90% 10%
57	SU	104	32% 93% 7%
58	Sc	64	50% 84% 16%

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Mol	Chain	Length	Quality of chain
59	Sd	55	7% 93% 7%
60	Sg	313	58% 89% 11%
61	SM	122	79% 89% 11%
62	SZ	75	55% 93% 7%
63	Sf	67	81% 91% 9%
64	CD	55	31% 91% 9%
65	LW	124	40% 89% 6% 5%
66	SE	262	19% 92% 8%
67	SI	206	23% 92% 8%
68	SL	153	16% 88% 12%
69	SX	141	5% 93% 7%
70	SG	237	54% 89% 11%
71	SJ	185	14% 89% 11%
72	SY	131	37% 85% 15%
73	Se	58	29% 90% 10%
74	SA	221	22% 93% 7%
75	SB	214	37% 87% 13%
76	SH	189	50% 89% 9%
77	SV	83	23% 87% 13%
78	Sa	102	15% 93% 7%
79	SC	222	7% 89% 11%
80	SN	150	15% 89% 11%
81	SO	140	26% 93% 6%
82	SW	129	94% 6%
83	Sb	83	35% 87% 13%

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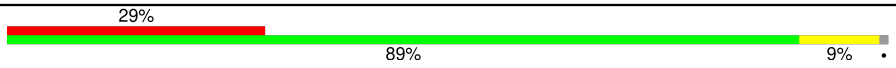
Mol	Chain	Length	Quality of chain
84	CB	856	
85	Et	75	

2 Entry composition

There are 87 unique types of molecules in this entry. The entry contains 229857 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 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	LR	187	Total	C	N	O	S	0	0
			1566	971	336	250	9		

- Molecule 2 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	S2	1740	Total	C	N	O	P	0	0
			36898	16459	6599	12101	1739		

- Molecule 3 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	L5	3740	Total	C	N	O	P	0	0
			79860	35549	14585	25987	3739		

- Molecule 4 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	L7	120	Total	C	N	O	P	0	0
			2561	1141	456	844	120		

- Molecule 5 is a RNA chain called 5.8S rRNA.

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

- Molecule 6 is a protein called 60S ribosomal protein L8.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	LB	402	Total	C	N	O	S	0	0
			3238	2060	608	556	14		

- Molecule 8 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	LC	368	Total	C	N	O	S	0	0
			2927	1840	583	489	15		

- Molecule 9 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	LD	293	Total	C	N	O	S	0	0
			2382	1507	434	427	14		

- Molecule 10 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	LE	236	Total	C	N	O	S	0	0
			1904	1222	361	317	4		

- Molecule 11 is a protein called 60S ribosomal protein L7.

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

- Molecule 12 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LG	241	Total	C	N	O	S	0	0
			1927	1228	371	324	4		

- Molecule 13 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	LH	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 14 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LI	202	Total	C	N	O	S	0	0
			1634	1037	314	269	14		

- Molecule 15 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	LJ	176	Total	C	N	O	S	0	0
			1410	888	263	253	6		

- Molecule 16 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LL	210	Total	C	N	O	S	0	0
			1701	1064	352	281	4		

- Molecule 17 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LM	139	Total	C	N	O	S	0	0
			1138	730	218	183	7		

- Molecule 18 is a protein called 60S ribosomal protein L15.

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

- Molecule 19 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	LO	201	Total	C	N	O	S	0	0
			1650	1063	321	261	5		

- Molecule 20 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	LP	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 21 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	LQ	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 22 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	LS	175	Total	C	N	O	S	0	0
			1453	925	283	235	10		

- Molecule 23 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	LT	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 24 is a protein called Heparin-binding protein HBp15.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	LU	101	Total	C	N	O	S	0	0
			825	529	144	150	2		

- Molecule 25 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	LV	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 26 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	LX	120	Total	C	N	O	S	0	0
			985	630	185	169	1		

- Molecule 27 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	LY	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 28 is a protein called 60S ribosomal protein L27.

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

- Molecule 29 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	La	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 30 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Lb	109	Total	C	N	O	S	0	0
			876	546	189	137	4		

- Molecule 31 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Lc	98	Total	C	N	O	S	0	0
			764	485	135	138	6		

- Molecule 32 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Ld	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 33 is a protein called 60S ribosomal protein L32.

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

- Molecule 34 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Lf	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 35 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Lg	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 36 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Lh	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 37 is a protein called 60S ribosomal protein L36.

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

- Molecule 38 is a protein called 60S ribosomal protein L37.

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

- Molecule 39 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Lk	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 40 is a protein called 60S ribosomal protein L39.

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

- Molecule 41 is a protein called Large ribosomal subunit protein eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Lm	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 42 is a protein called 60S ribosomal protein L41.

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

- Molecule 43 is a protein called 60S ribosomal protein L36a.

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

- Molecule 44 is a protein called 60S ribosomal protein L37a.

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

- Molecule 45 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Lr	125	Total	C	N	O	S	0	0
			1002	622	207	168	5		

- Molecule 46 is a protein called 60S ribosomal protein L10a.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Lz	217	Total	C	N	O	S	0	0
			1741	1113	312	307	9		

- Molecule 47 is a protein called Proliferation-associated protein 2G4.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	CA	354	Total	C	N	O	S	4	0
			2764	1744	475	528	17		

- Molecule 48 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Ls	196	Total	C	N	O	S	0	0
			1496	952	259	276	9		

- Molecule 49 is a protein called 60S ribosomal protein L12 [Homo sapiens].

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Lt	141	Total	C	N	O	S	0	0
			1046	652	191	199	4		

- Molecule 50 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	SD	227	Total	C	N	O	S	0	0
			1765	1125	317	315	8		

- Molecule 51 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	SF	189	Total	C	N	O	S	0	0
			1495	934	284	270	7		

- Molecule 52 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	SK	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

- Molecule 53 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	SP	121	Total	C	N	O	S	0	0
			985	623	185	170	7		

- Molecule 54 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SQ	144	Total	C	N	O	S	0	0
			1142	726	216	197	3		

- Molecule 55 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	SS	145	Total	C	N	O	S	0	0
			1198	751	242	203	2		

- Molecule 56 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	ST	143	Total	C	N	O	S	0	0
			1112	697	214	198	3		

- Molecule 57 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	SU	104	Total	C	N	O	S	0	0
			821	514	155	148	4		

- Molecule 58 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Sc	64	Total	C	N	O	S	0	0
			506	308	102	94	2		

- Molecule 59 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	Sd	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 60 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Sg	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 61 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	SM	122	Total	C	N	O	S	0	0
			940	590	164	177	9		

- Molecule 62 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	SZ	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 63 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Sf	67	Total	C	N	O	S	0	0
			548	346	102	93	7		

- Molecule 64 is a protein called Serbp1.

Mol	Chain	Residues	Atoms				AltConf	Trace
64	CD	55	Total	C	N	O	0	0
			440	263	87	90		

- Molecule 65 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	LW	118	Total	C	N	O	S	0	0
			965	604	199	158	4		

- Molecule 66 is a protein called Small ribosomal subunit protein eS4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	SE	262	Total	C	N	O	S	0	0
			2076	1324	386	358	8		

- Molecule 67 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	SI	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

- Molecule 68 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	SL	153	Total	C	N	O	S	0	0
			1247	793	234	214	6		

- Molecule 69 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	SX	141	Total	C	N	O	S	0	0
			1098	693	219	183	3		

- Molecule 70 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SG	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

- Molecule 71 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	SJ	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 72 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	SY	131	Total	C	N	O	S	0	0
			1065	673	209	178	5		

- Molecule 73 is a protein called Small ribosomal subunit protein eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Se	58	Total	C	N	O	S	0	0
			459	284	100	74	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
74	SA	221	Total	C	N	O	S	0	0
			1741	1106	305	322	8		

- Molecule 75 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	SB	214	Total	C	N	O	S	0	0
			1738	1103	310	311	14		

- Molecule 76 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	SH	186	Total	C	N	O	S	0	0
			1497	956	274	266	1		

- Molecule 77 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	SV	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

- Molecule 78 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	Sa	102	Total	C	N	O	S	0	0
			821	512	171	133	5		

- Molecule 79 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	SC	222	Total	C	N	O	S	0	0
			1725	1115	298	302	10		

- Molecule 80 is a protein called 40S ribosomal protein S13.

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

- Molecule 81 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	SO	140	Total	C	N	O	S	0	0
			1049	642	204	197	6		

- Molecule 82 is a protein called 40S ribosomal protein S15a.

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

- Molecule 83 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 84 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	CB	846	Total 6605	C 4193	N 1136	O 1232	S 44	0	0

- Molecule 85 is a RNA chain called E site tRNA [Homo sapiens].

Mol	Chain	Residues	Atoms					AltConf	Trace
85	Et	75	Total 1593	C 712	N 281	O 526	P 74	0	0

- Molecule 86 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
86	S2	29	Total 29	Mg 29	0
86	L5	213	Total 213	Mg 213	0
86	L7	3	Total 3	Mg 3	0
86	L8	4	Total 4	Mg 4	0
86	LA	1	Total 1	Mg 1	0
86	LI	1	Total 1	Mg 1	0
86	LP	1	Total 1	Mg 1	0
86	LV	1	Total 1	Mg 1	0
86	Le	1	Total 1	Mg 1	0
86	Lg	1	Total 1	Mg 1	0

- Molecule 87 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
87	Lg	1	Total 1	Zn 1	0
87	Lj	1	Total 1	Zn 1	0

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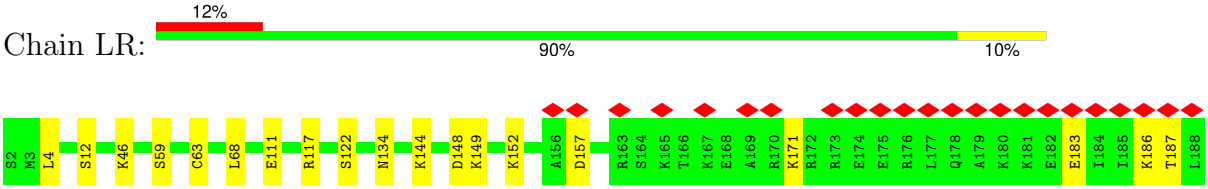
Mol	Chain	Residues	Atoms	AltConf
87	Lm	1	Total Zn 1 1	0
87	Lo	1	Total Zn 1 1	0
87	Lp	1	Total Zn 1 1	0
87	Sa	1	Total Zn 1 1	0

3 Residue-property plots (i)

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

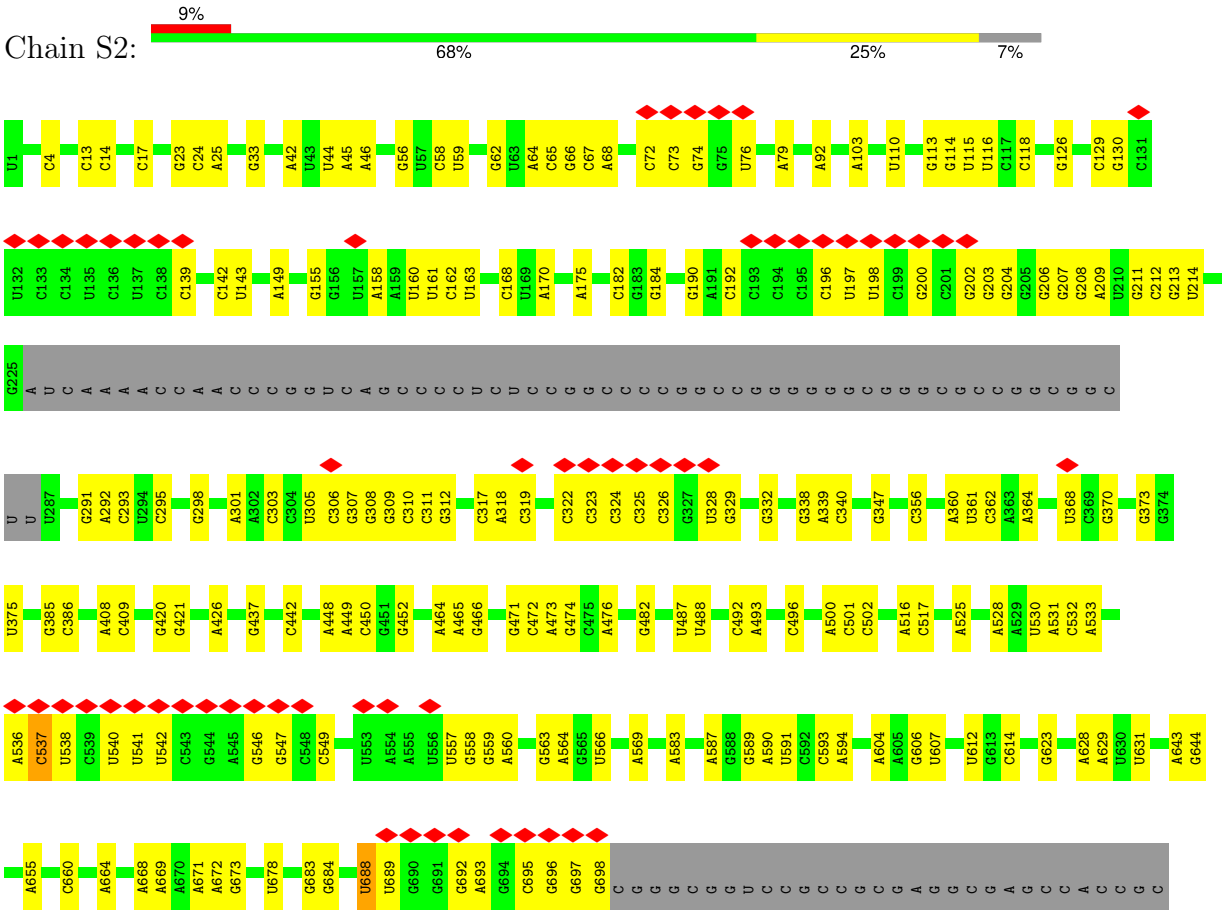
- Molecule 1: 60S ribosomal protein L19

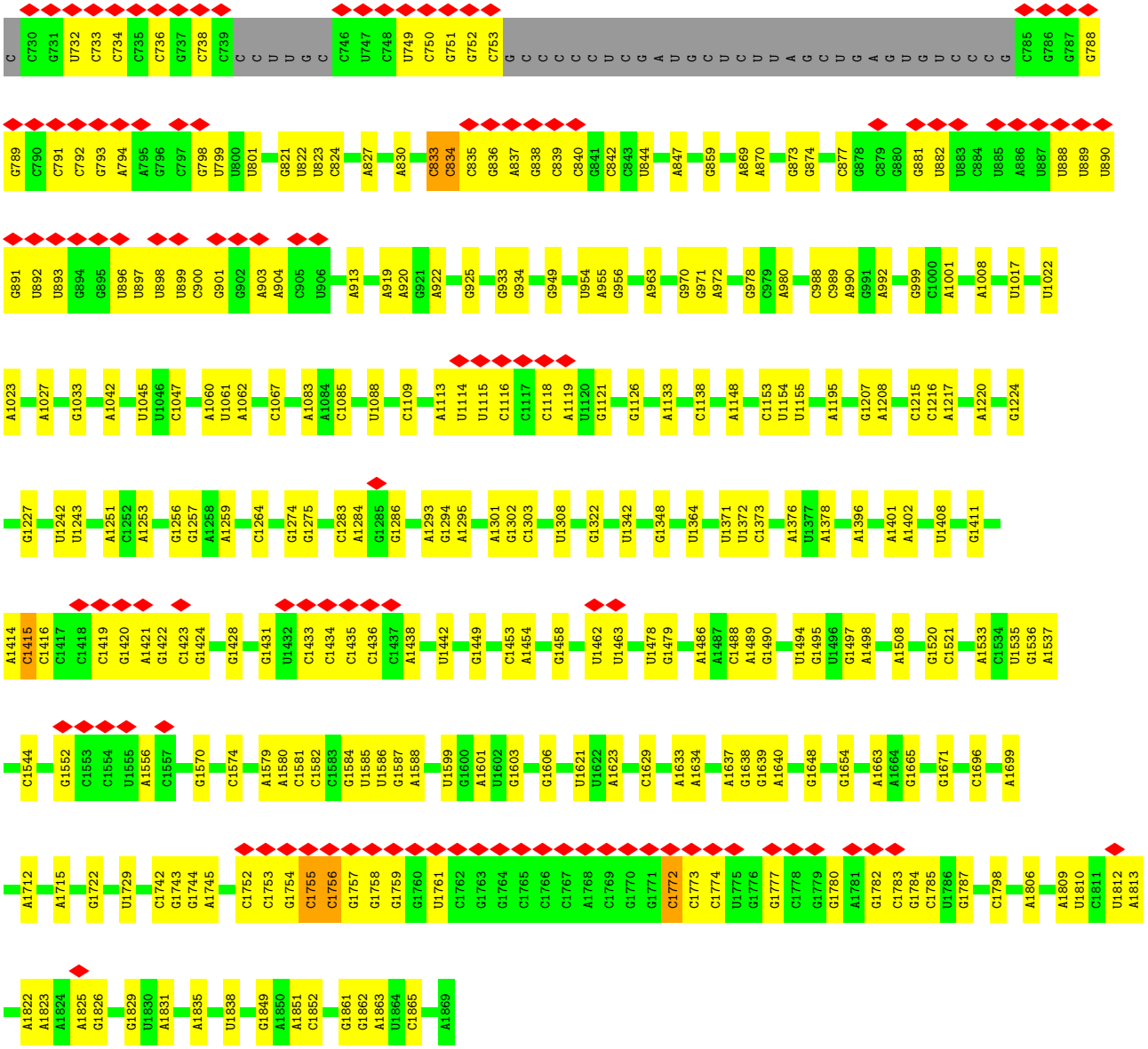
Chain LR:



- Molecule 2: 18S rRNA

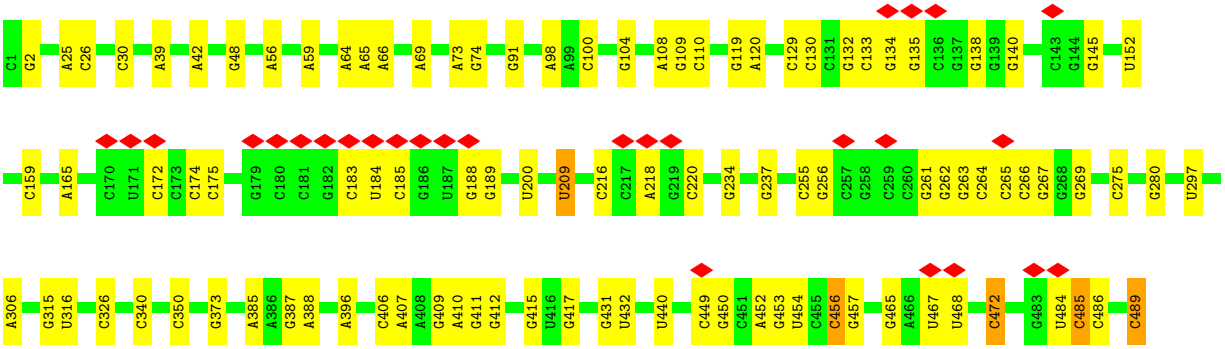
Chain S2:

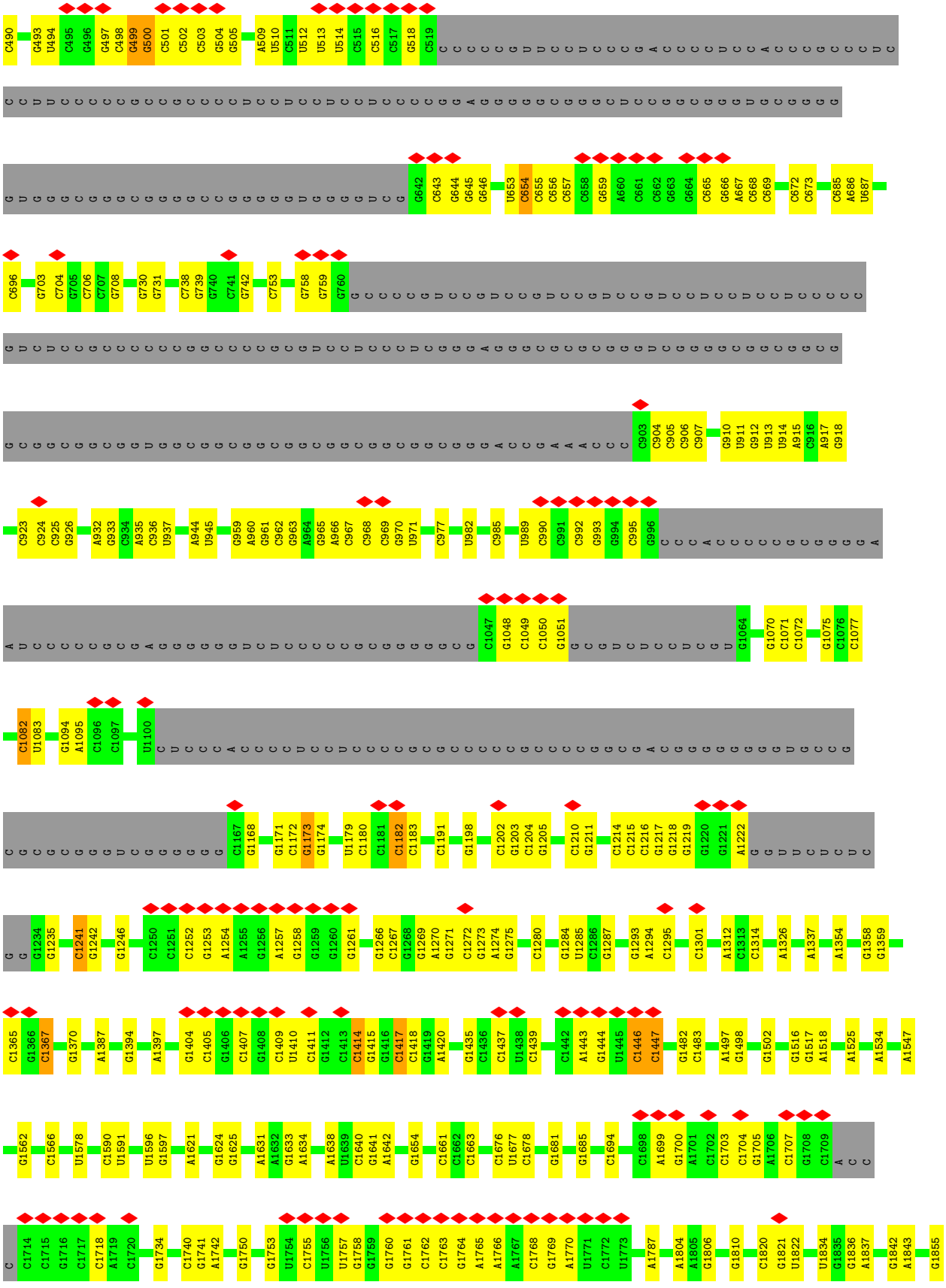


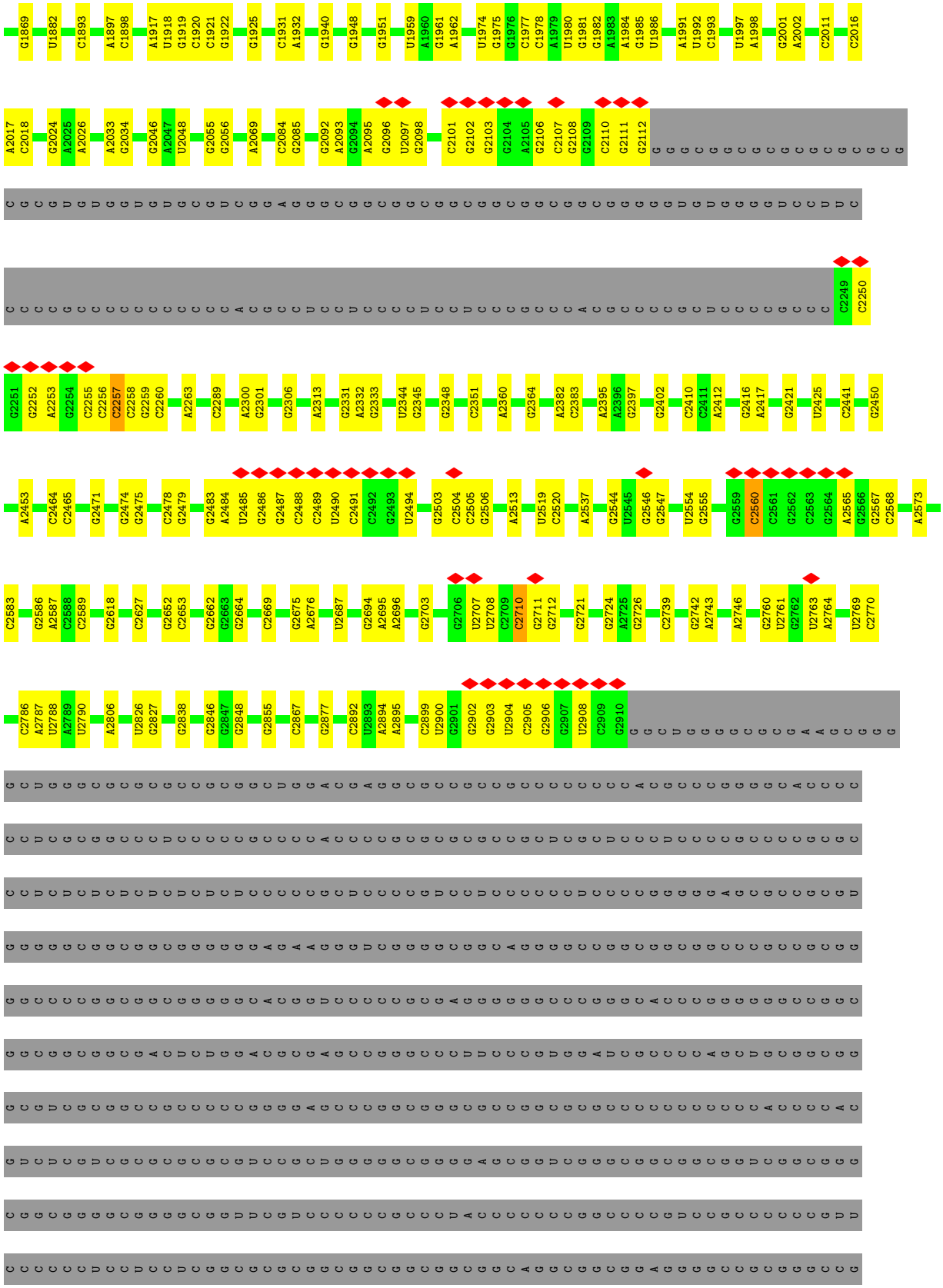


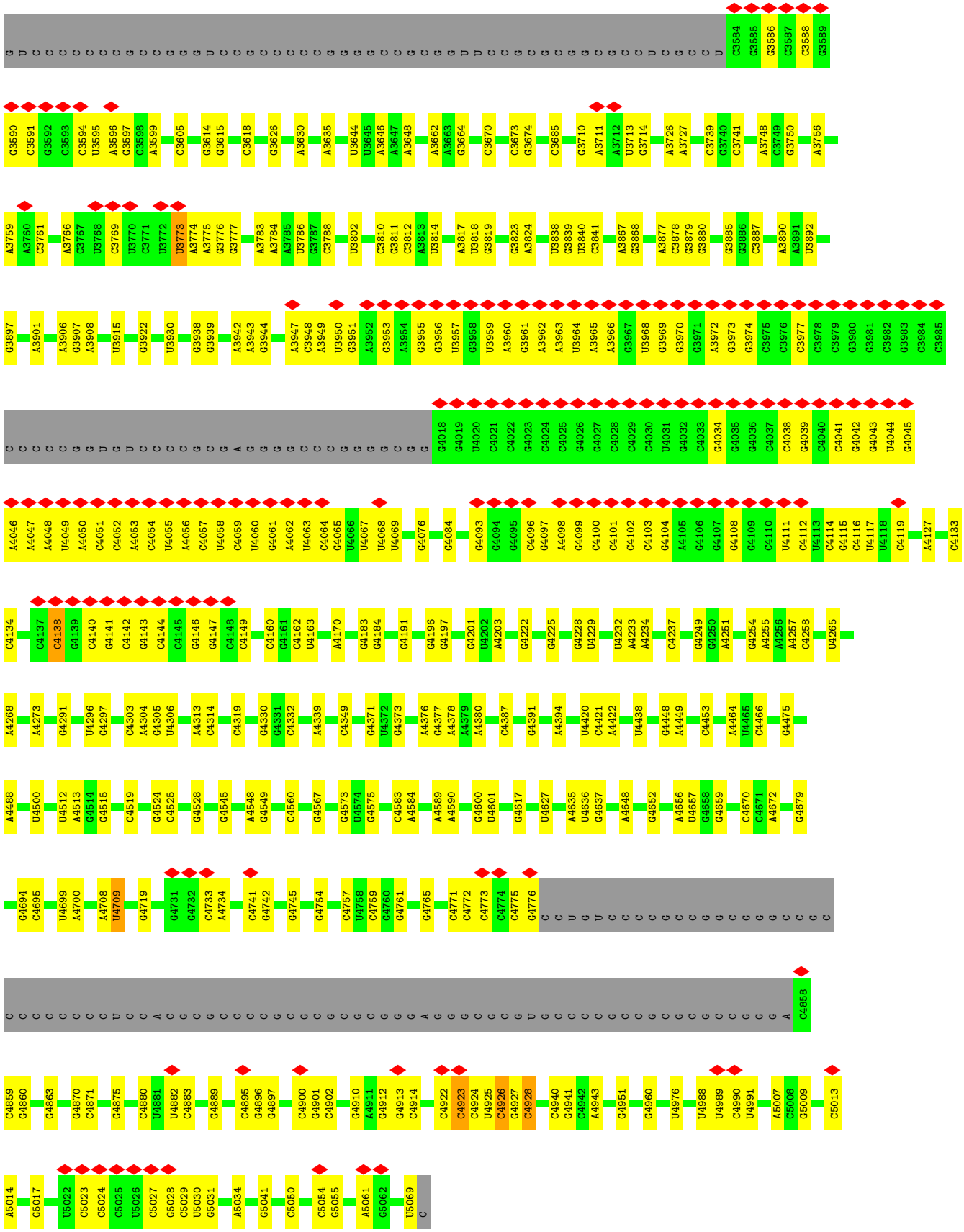
• Molecule 3: 28S rRNA

Chain L5:



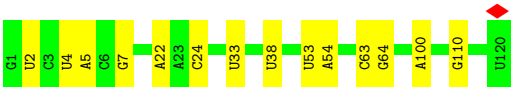






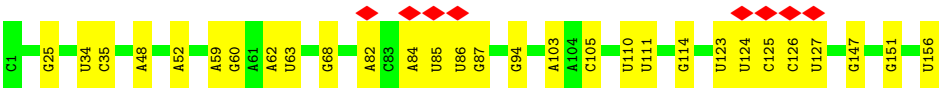
- Molecule 4: 5S rRNA

Chain L7:



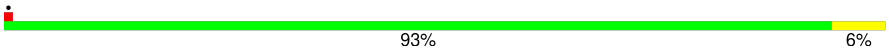
• Molecule 5: 5.8S rRNA

Chain L8:



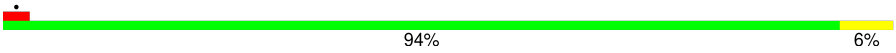
• Molecule 6: 60S ribosomal protein L8

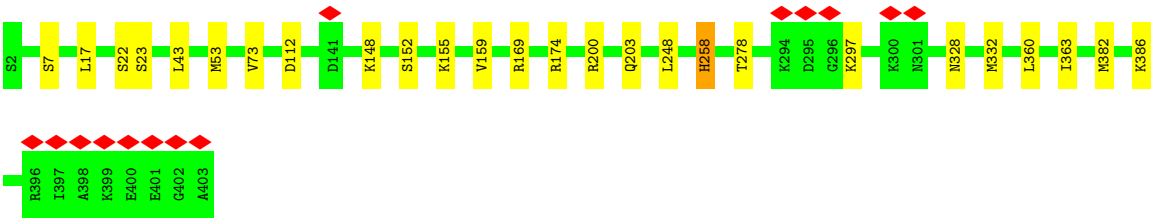
Chain LA:



• Molecule 7: Large ribosomal subunit protein uL3

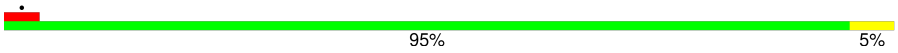
Chain LB:





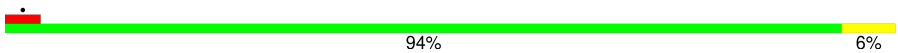
• Molecule 8: 60S ribosomal protein L4

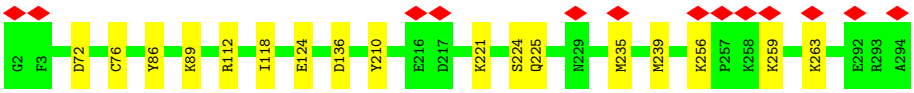
Chain LC:



• Molecule 9: Large ribosomal subunit protein uL18

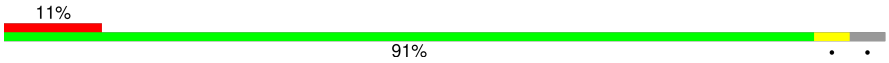
Chain LD:

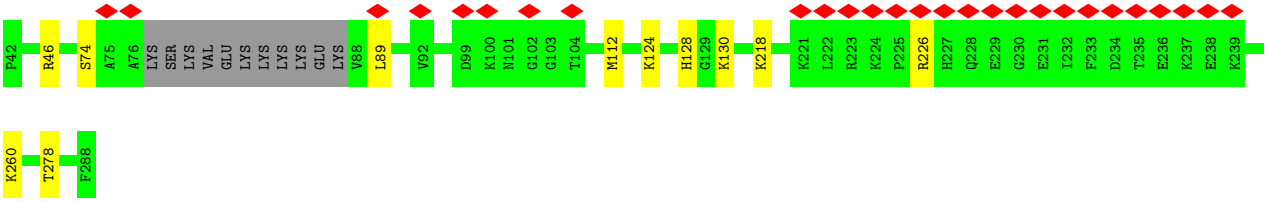




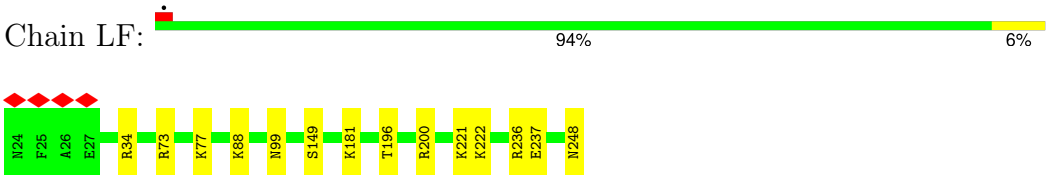
• Molecule 10: Large ribosomal subunit protein eL6

Chain LE:

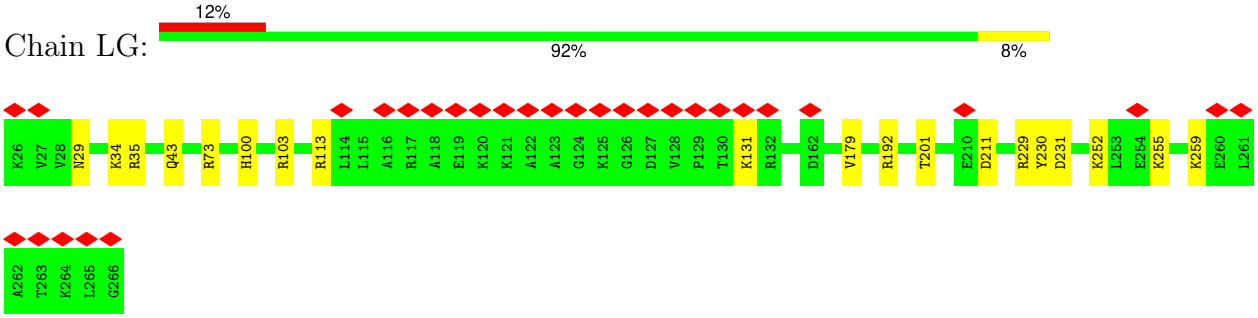




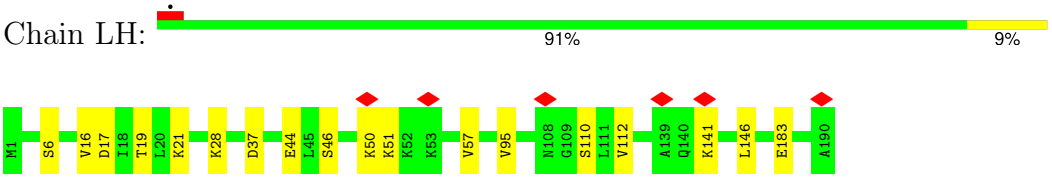
• Molecule 11: 60S ribosomal protein L7



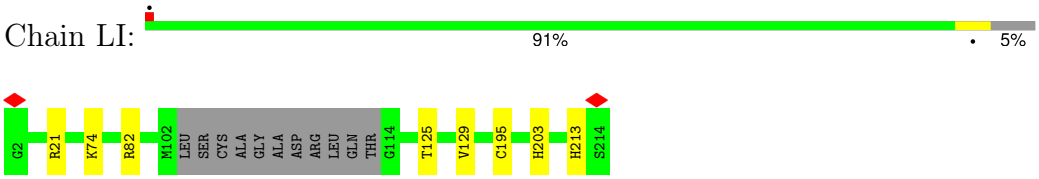
• Molecule 12: 60S ribosomal protein L7a



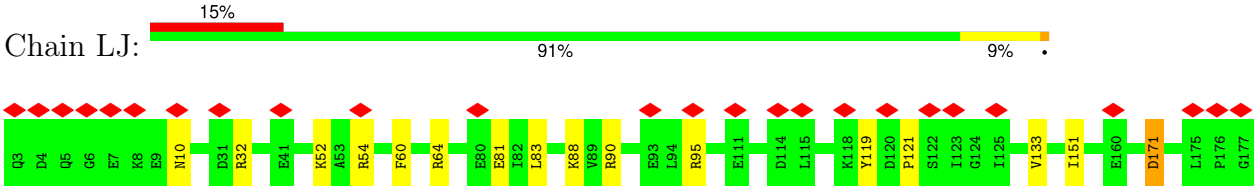
• Molecule 13: 60S ribosomal protein L9



• Molecule 14: Ribosomal protein uL16-like

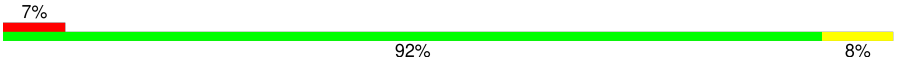


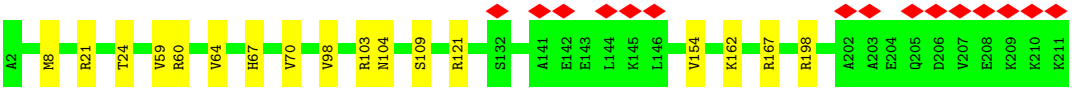
• Molecule 15: 60S ribosomal protein L11



• Molecule 16: Large ribosomal subunit protein eL13

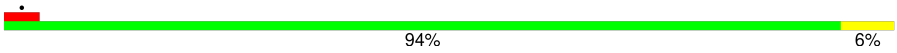
Chain LL:

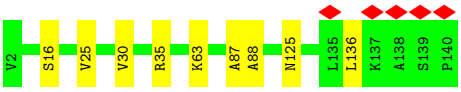




• Molecule 17: 60S ribosomal protein L14

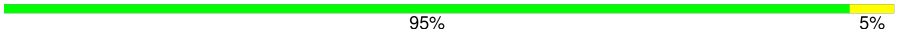
Chain LM:

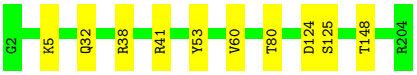




• Molecule 18: 60S ribosomal protein L15

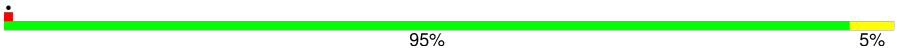
Chain LN:

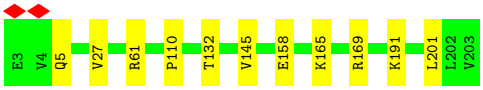




• Molecule 19: 60S ribosomal protein L13a

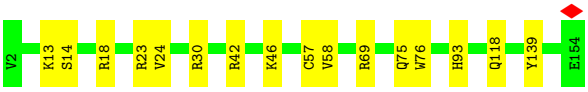
Chain LO:





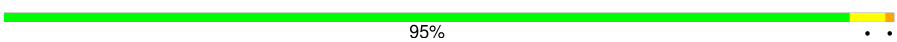
• Molecule 20: 60S ribosomal protein L17

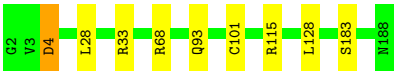
Chain LP:



• Molecule 21: 60S ribosomal protein L18

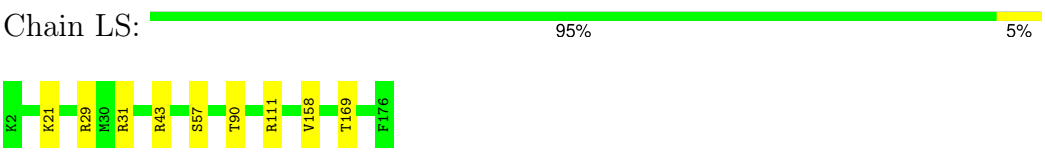
Chain LQ:





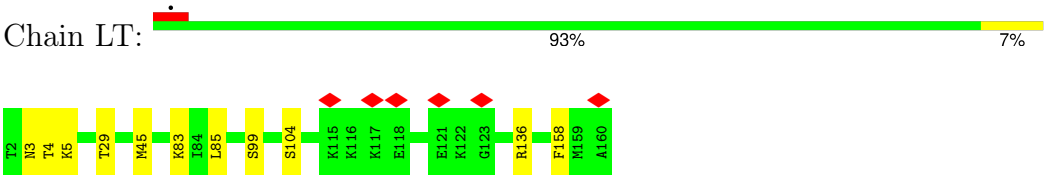
• Molecule 22: 60S ribosomal protein L18a

Chain LS:



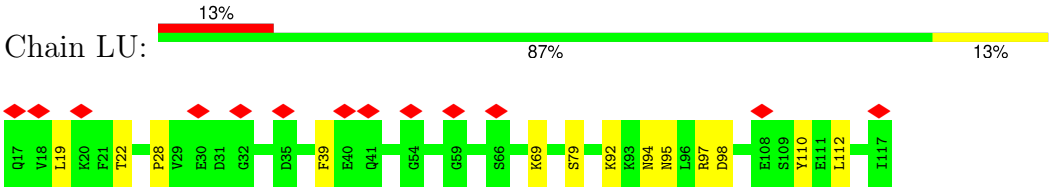
• Molecule 23: 60S ribosomal protein L21

Chain LT:



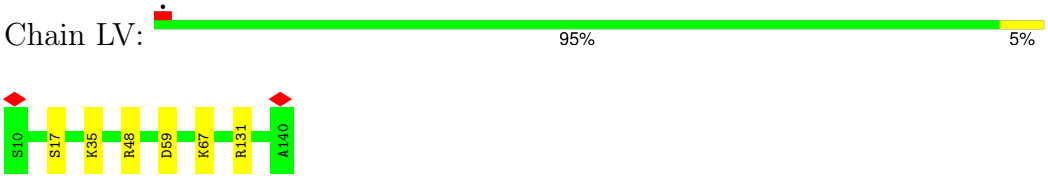
• Molecule 24: Heparin-binding protein HBp15

Chain LU:



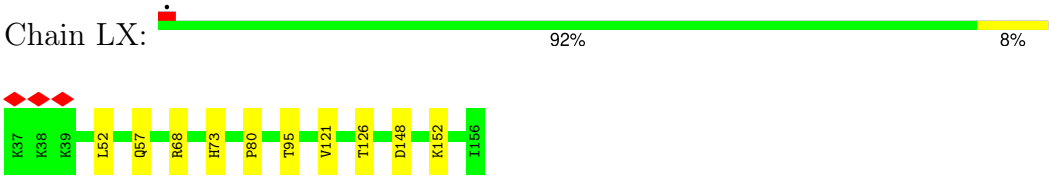
• Molecule 25: 60S ribosomal protein L23

Chain LV:



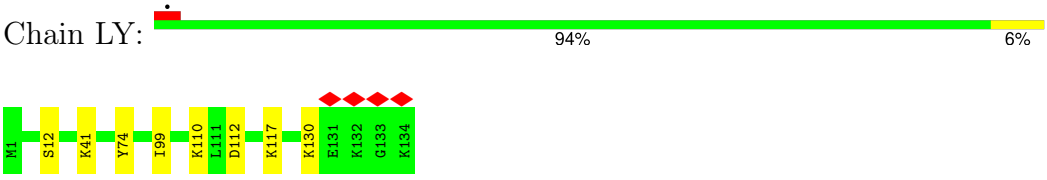
• Molecule 26: 60S ribosomal protein L23a

Chain LX:



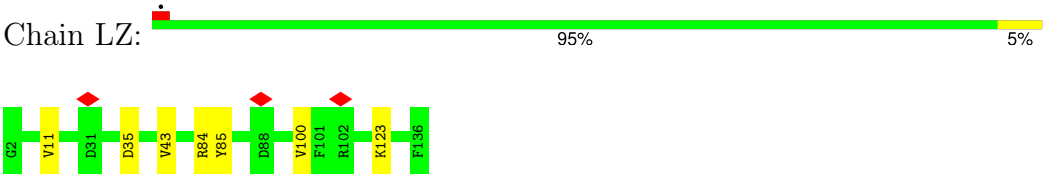
• Molecule 27: 60S ribosomal protein L26

Chain LY:



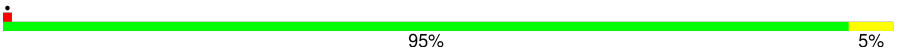
• Molecule 28: 60S ribosomal protein L27

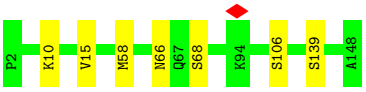
Chain LZ:



• Molecule 29: 60S ribosomal protein L27a

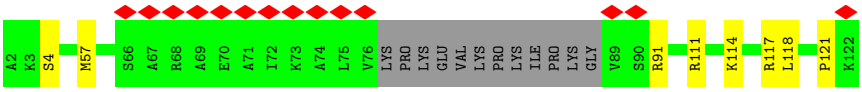
Chain La:





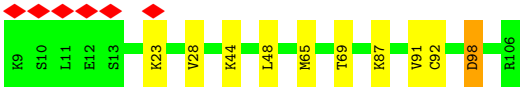
• Molecule 30: Large ribosomal subunit protein eL29

Chain Lb:



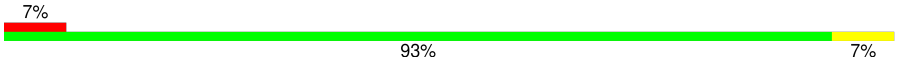
• Molecule 31: 60S ribosomal protein L30

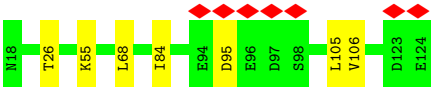
Chain Lc:



• Molecule 32: 60S ribosomal protein L31

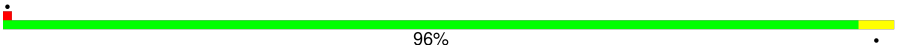
Chain Ld:





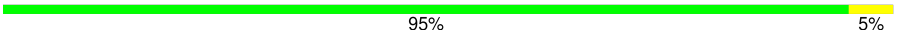
• Molecule 33: 60S ribosomal protein L32

Chain Le:



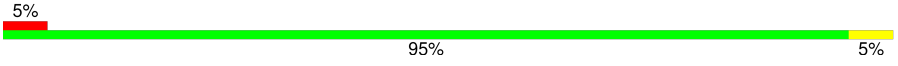
• Molecule 34: 60S ribosomal protein L35a

Chain Lf:



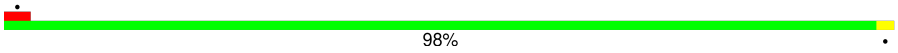
• Molecule 35: 60S ribosomal protein L34

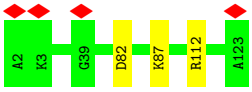
Chain Lg:



• Molecule 36: 60S ribosomal protein L35

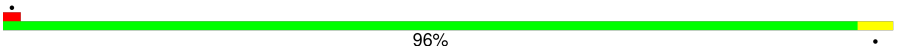
Chain Lh:





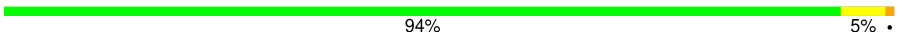
• Molecule 37: 60S ribosomal protein L36

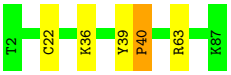
Chain Li:



• Molecule 38: 60S ribosomal protein L37

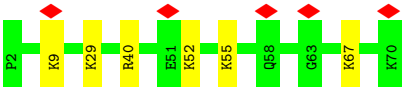
Chain Lj:





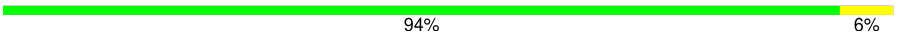
• Molecule 39: 60S ribosomal protein L38

Chain Lk:



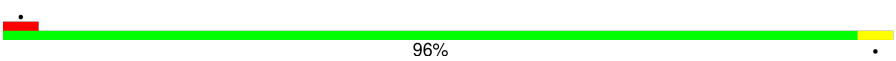
• Molecule 40: 60S ribosomal protein L39

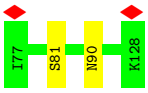
Chain Ll:



• Molecule 41: Large ribosomal subunit protein eL40

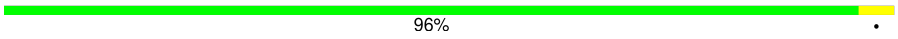
Chain Lm:





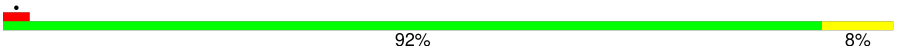
• Molecule 42: 60S ribosomal protein L41

Chain Ln:



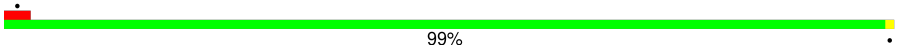
• Molecule 43: 60S ribosomal protein L36a

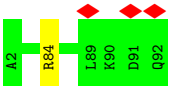
Chain Lo:



• Molecule 44: 60S ribosomal protein L37a

Chain Lp:



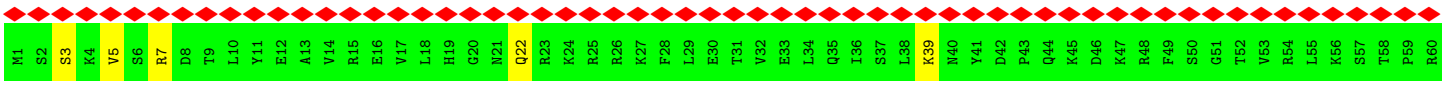


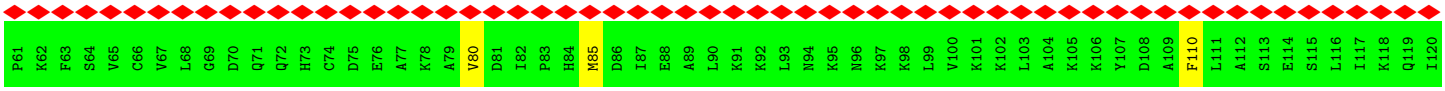
• Molecule 45: 60S ribosomal protein L28

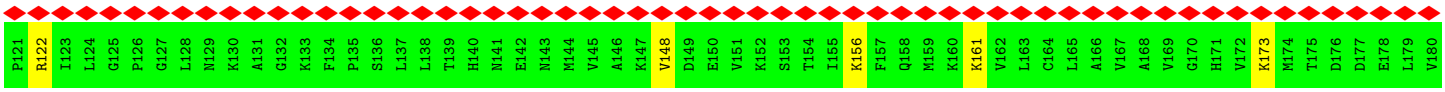
Chain Lr:

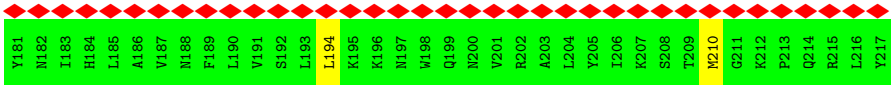
• Molecule 46: 60S ribosomal protein L10a

Chain Lz:



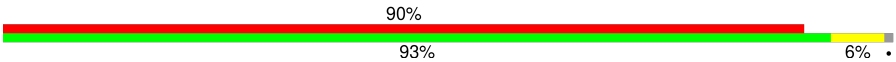


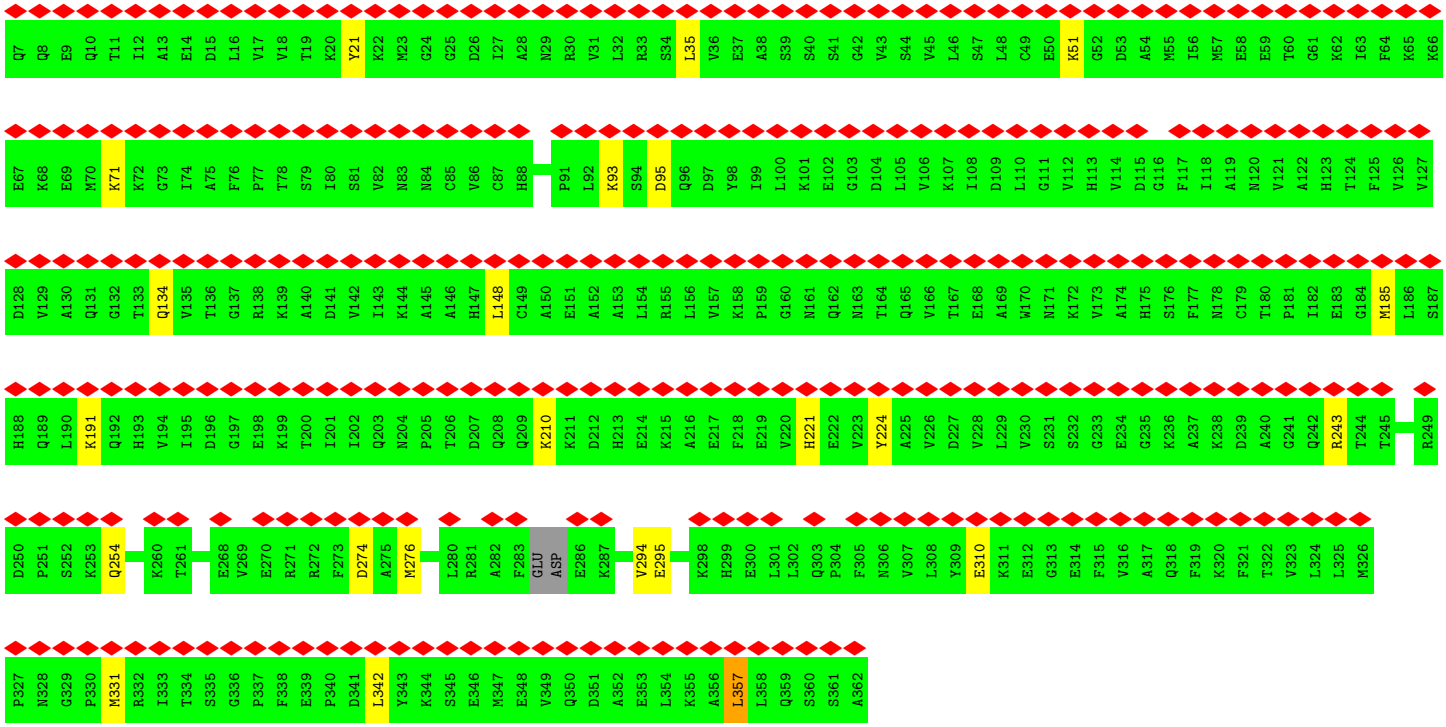




• Molecule 47: Proliferation-associated protein 2G4

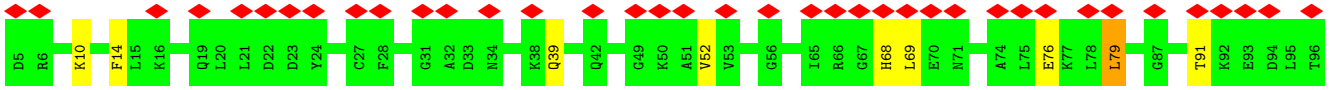
Chain CA:

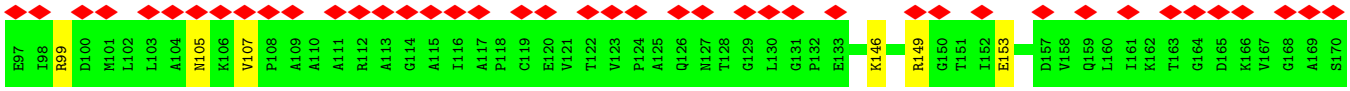




• Molecule 48: 60S acidic ribosomal protein P0

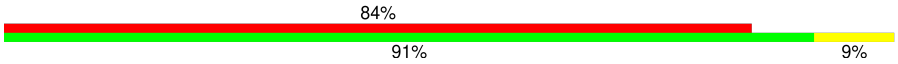
Chain Ls:

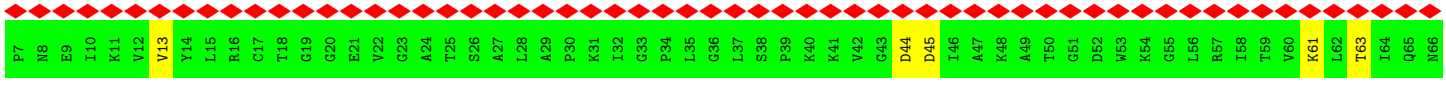




• Molecule 49: 60S ribosomal protein L12 [Homo sapiens]

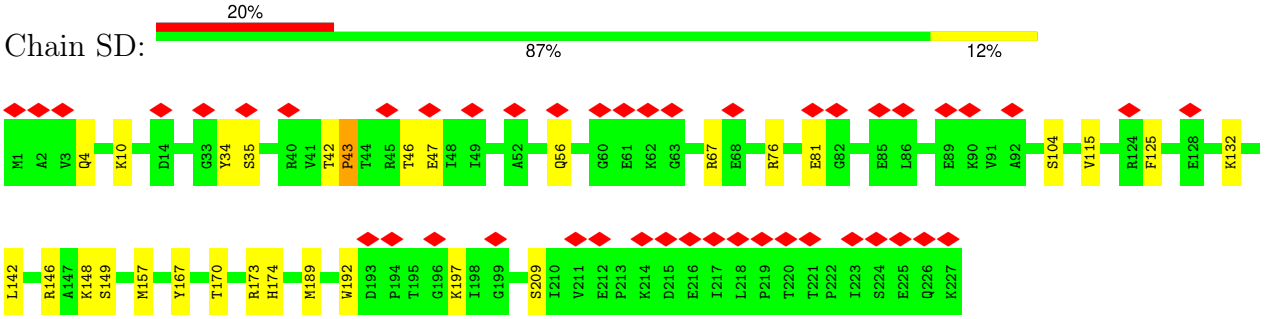
Chain Lt:





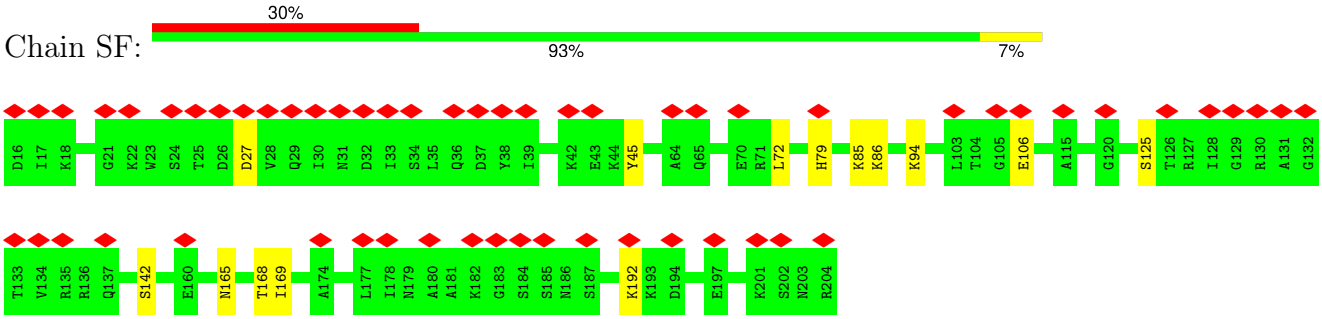
• Molecule 50: Small ribosomal subunit protein uS3

Chain SD:



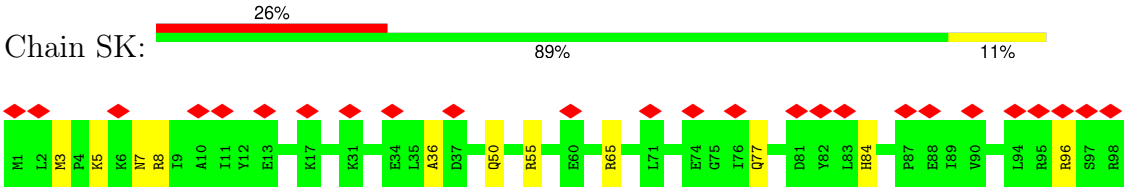
• Molecule 51: 40S ribosomal protein S5

Chain SF:



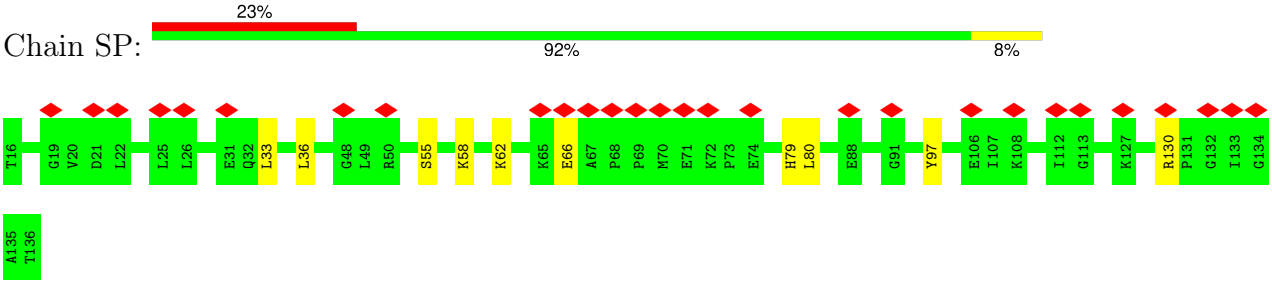
• Molecule 52: 40S ribosomal protein S10

Chain SK:



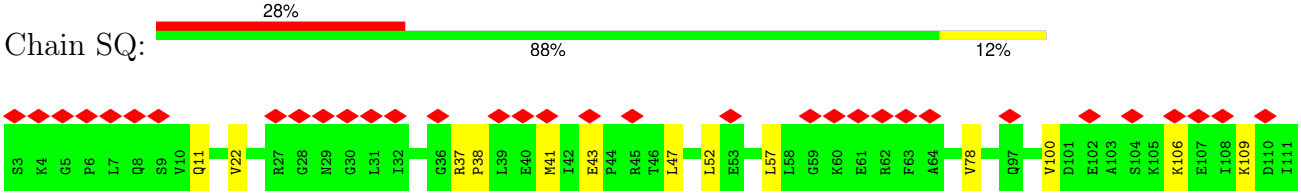
• Molecule 53: Small ribosomal subunit protein uS19

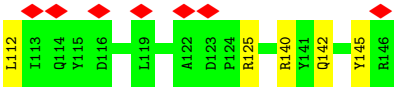
Chain SP:



• Molecule 54: Small ribosomal subunit protein uS9

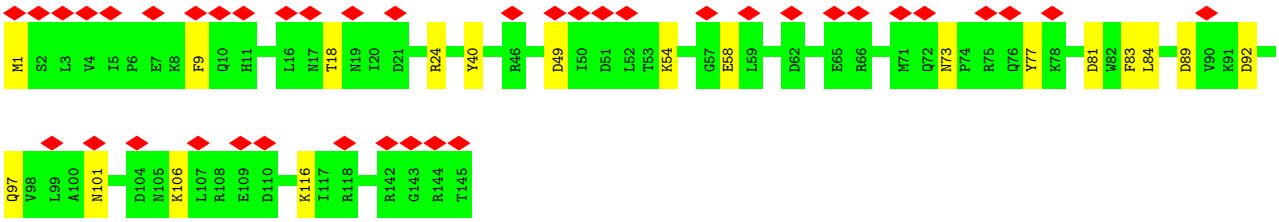
Chain SQ:





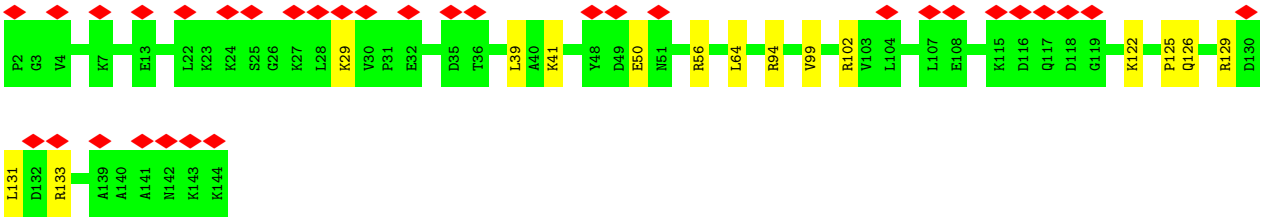
• Molecule 55: 40S ribosomal protein S18

Chain SS:



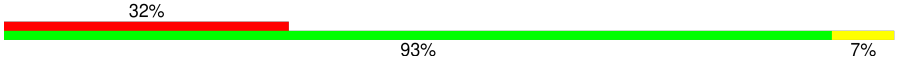
• Molecule 56: 40S ribosomal protein S19

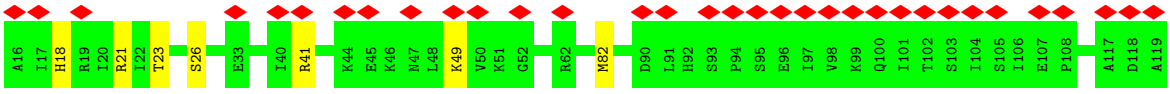
Chain ST:



• Molecule 57: 40S ribosomal protein S20

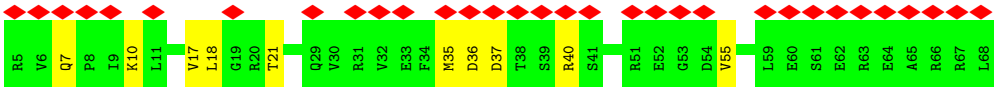
Chain SU:





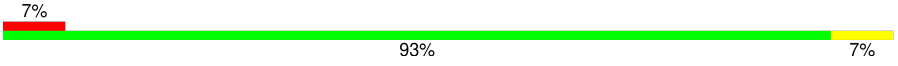
• Molecule 58: 40S ribosomal protein S28

Chain Sc:



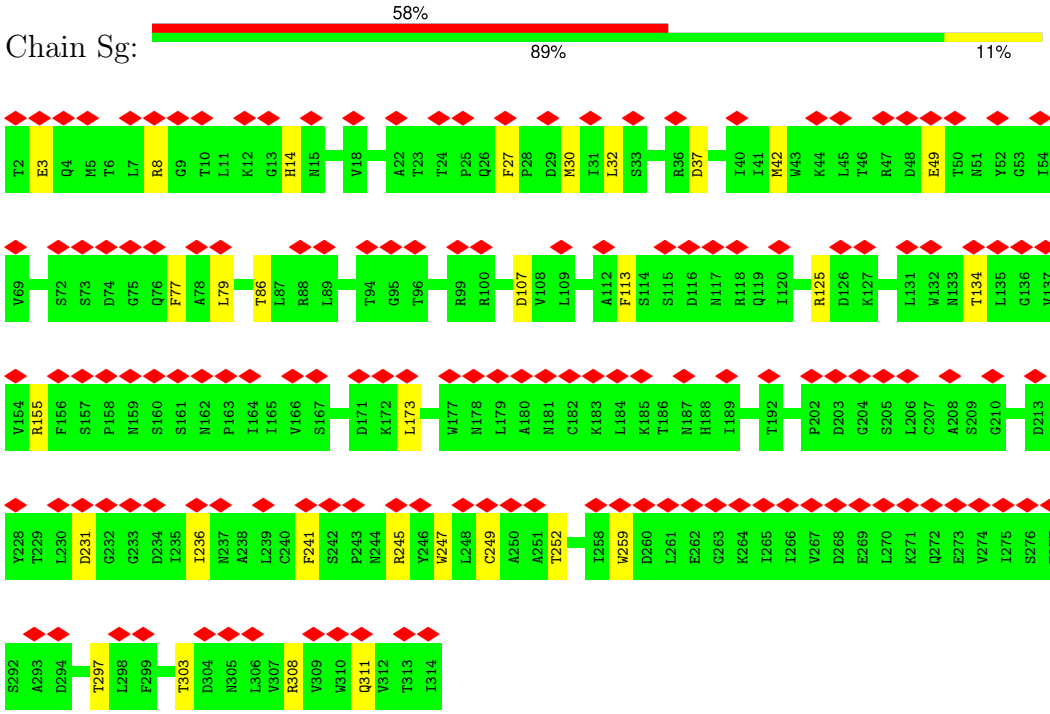
• Molecule 59: 40S ribosomal protein S29

Chain Sd:



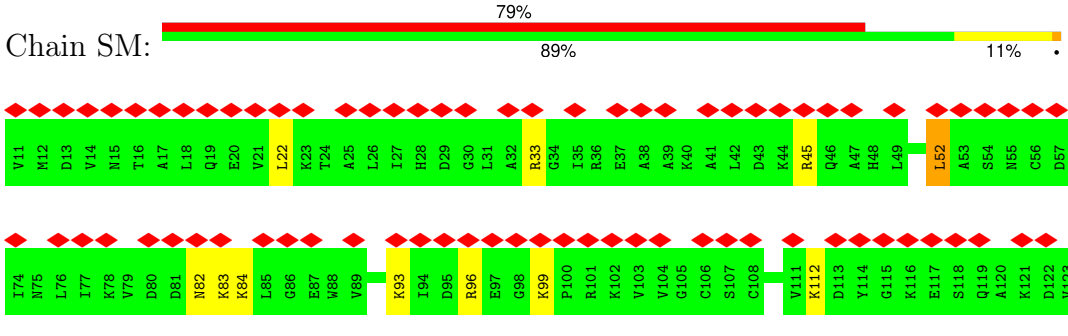
• Molecule 60: Receptor of activated protein C kinase 1

Chain Sg:



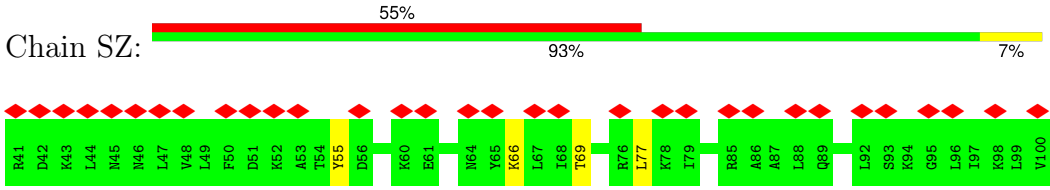
• Molecule 61: Small ribosomal subunit protein eS12

Chain SM:



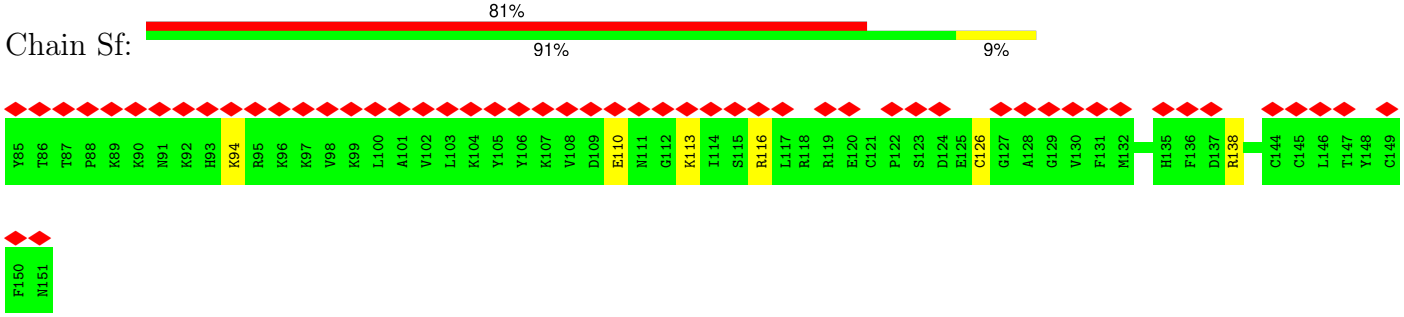
• Molecule 62: Small ribosomal subunit protein eS25

Chain SZ:



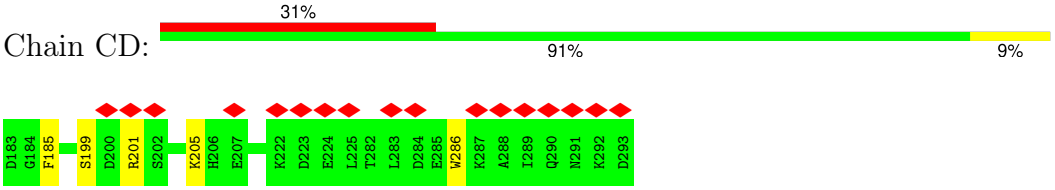
• Molecule 63: Ubiquitin-40S ribosomal protein S27a

Chain Sf:



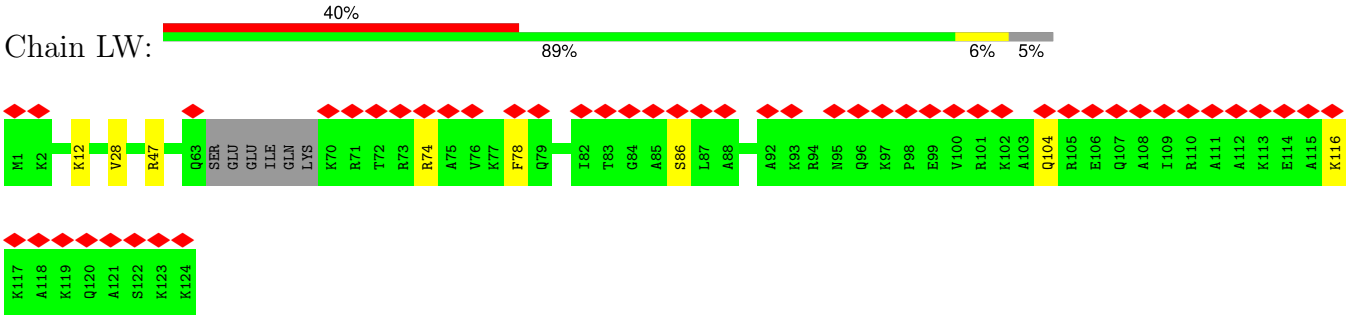
• Molecule 64: Serbp1

Chain CD:



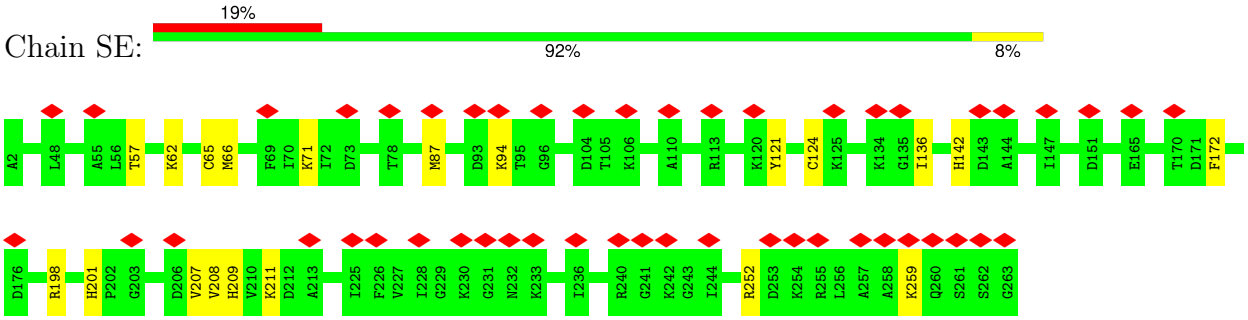
• Molecule 65: Ribosomal protein L24

Chain LW:



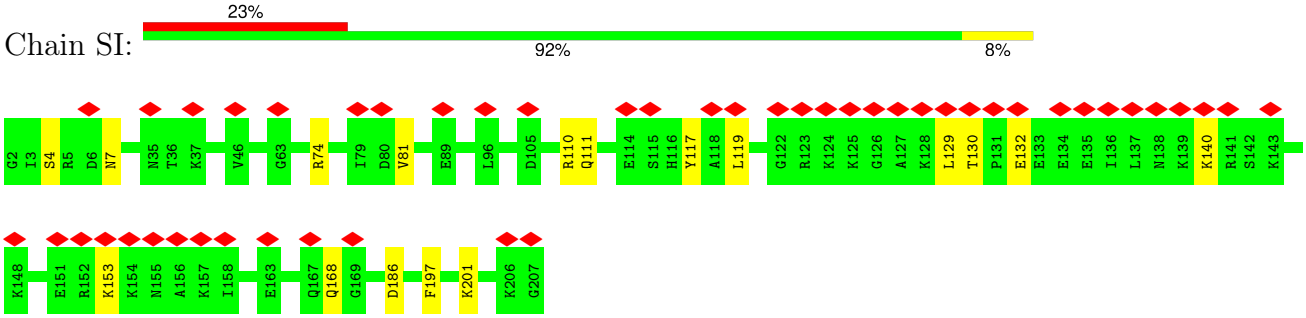
• Molecule 66: Small ribosomal subunit protein eS4, X isoform

Chain SE:



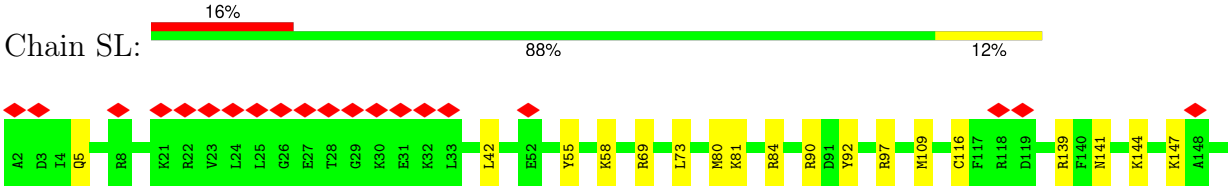
• Molecule 67: 40S ribosomal protein S8

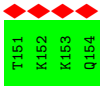
Chain SI:



• Molecule 68: 40S ribosomal protein S11

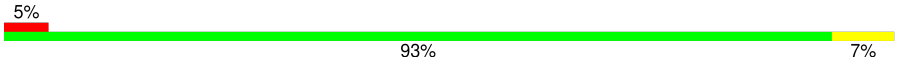
Chain SL:

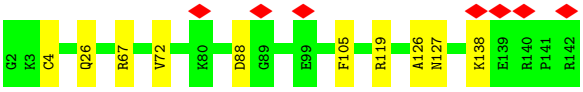




• Molecule 69: 40S ribosomal protein S23

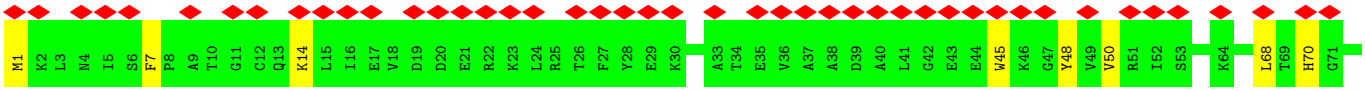
Chain SX:

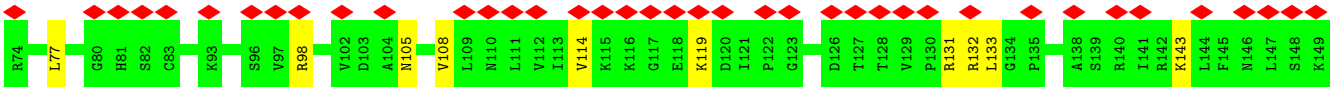


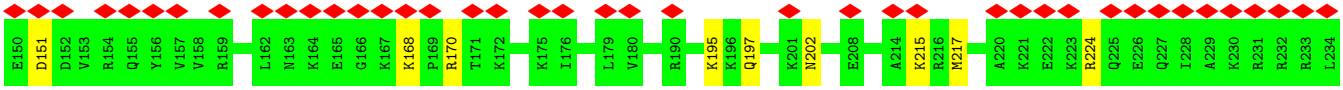


• Molecule 70: 40S ribosomal protein S6

Chain SG:

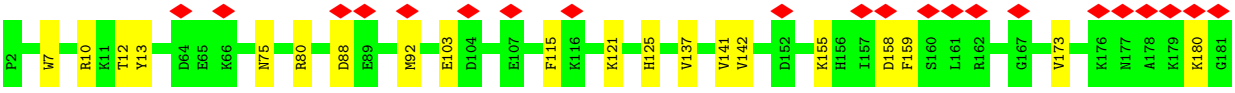


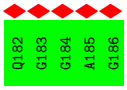




• Molecule 71: 40S ribosomal protein S9

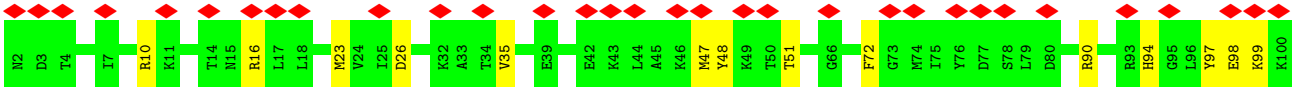
Chain SJ:

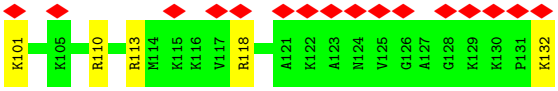




• Molecule 72: 40S ribosomal protein S24

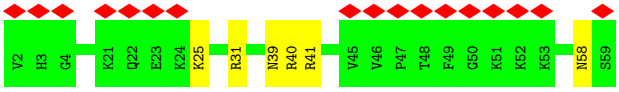
Chain SY:





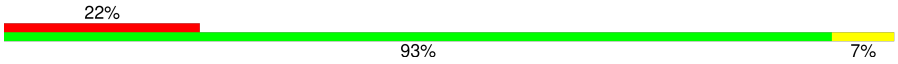
• Molecule 73: Small ribosomal subunit protein eS30

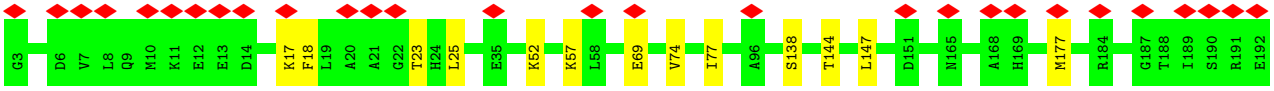
Chain Se:

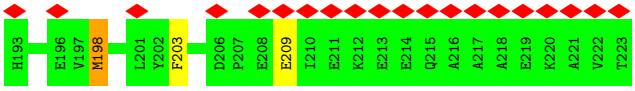


• Molecule 74: 40S ribosomal protein SA

Chain SA:

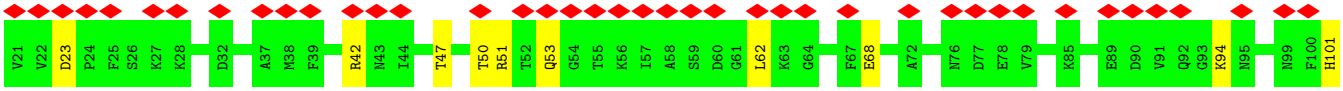


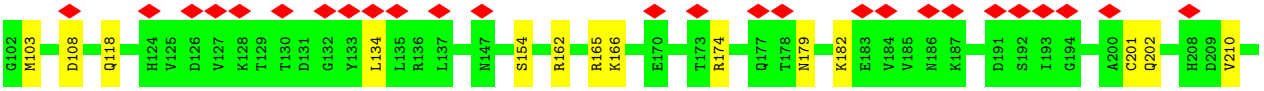


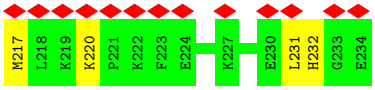


• Molecule 75: 40S ribosomal protein S3a

Chain SB:

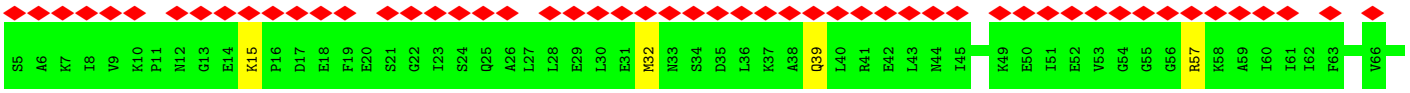


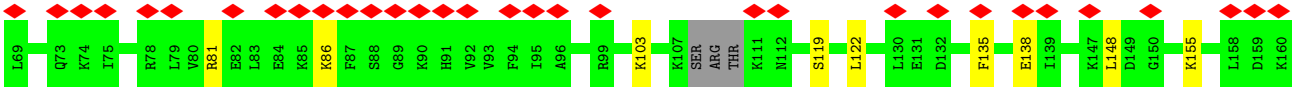


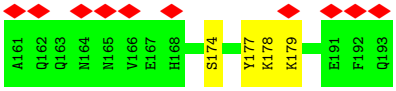


• Molecule 76: Small ribosomal subunit protein eS7

Chain SH:

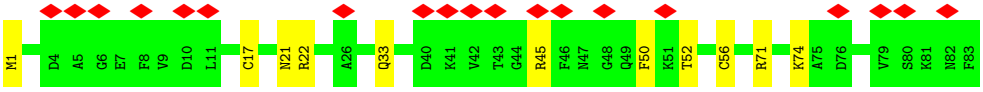






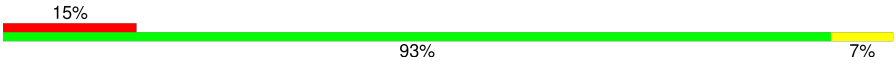
• Molecule 77: 40S ribosomal protein S21

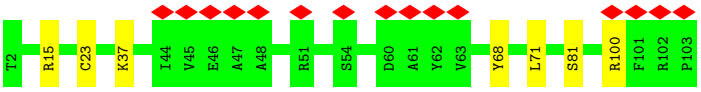
Chain SV:



• Molecule 78: 40S ribosomal protein S26

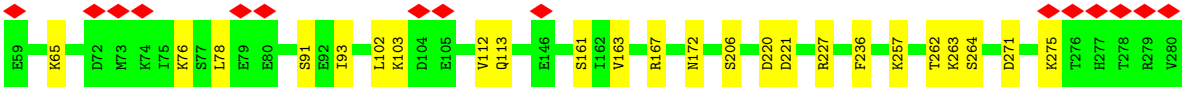
Chain Sa:





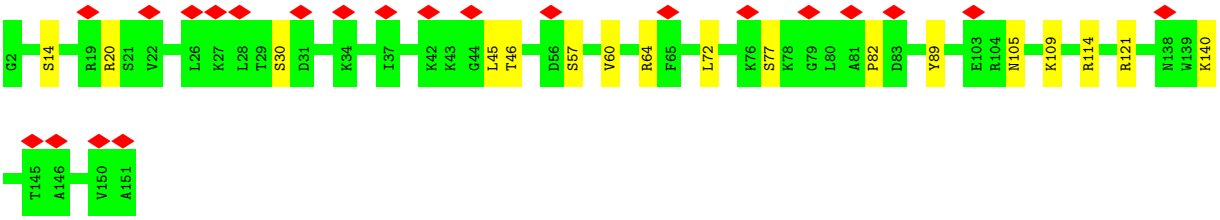
• Molecule 79: 40S ribosomal protein S2

Chain SC:



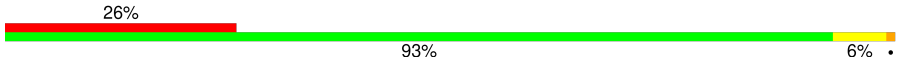
• Molecule 80: 40S ribosomal protein S13

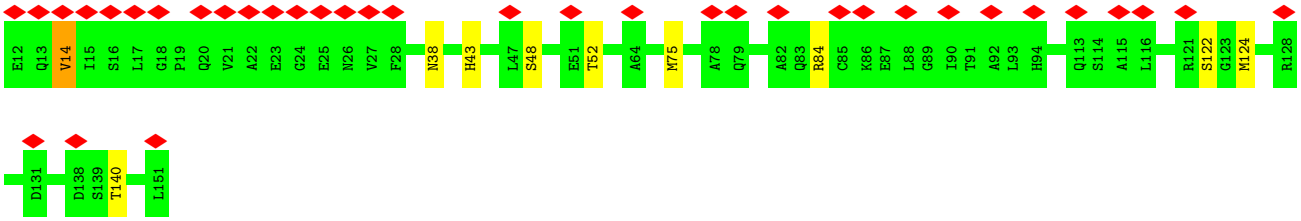
Chain SN:



• Molecule 81: Small ribosomal subunit protein uS11

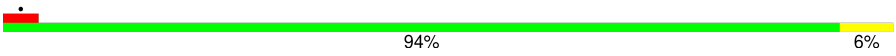
Chain SO:

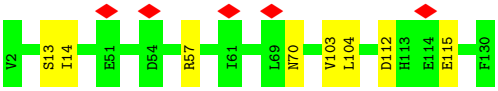




• Molecule 82: 40S ribosomal protein S15a

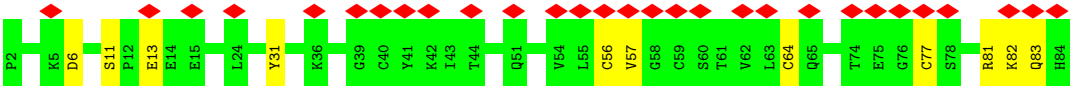
Chain SW:





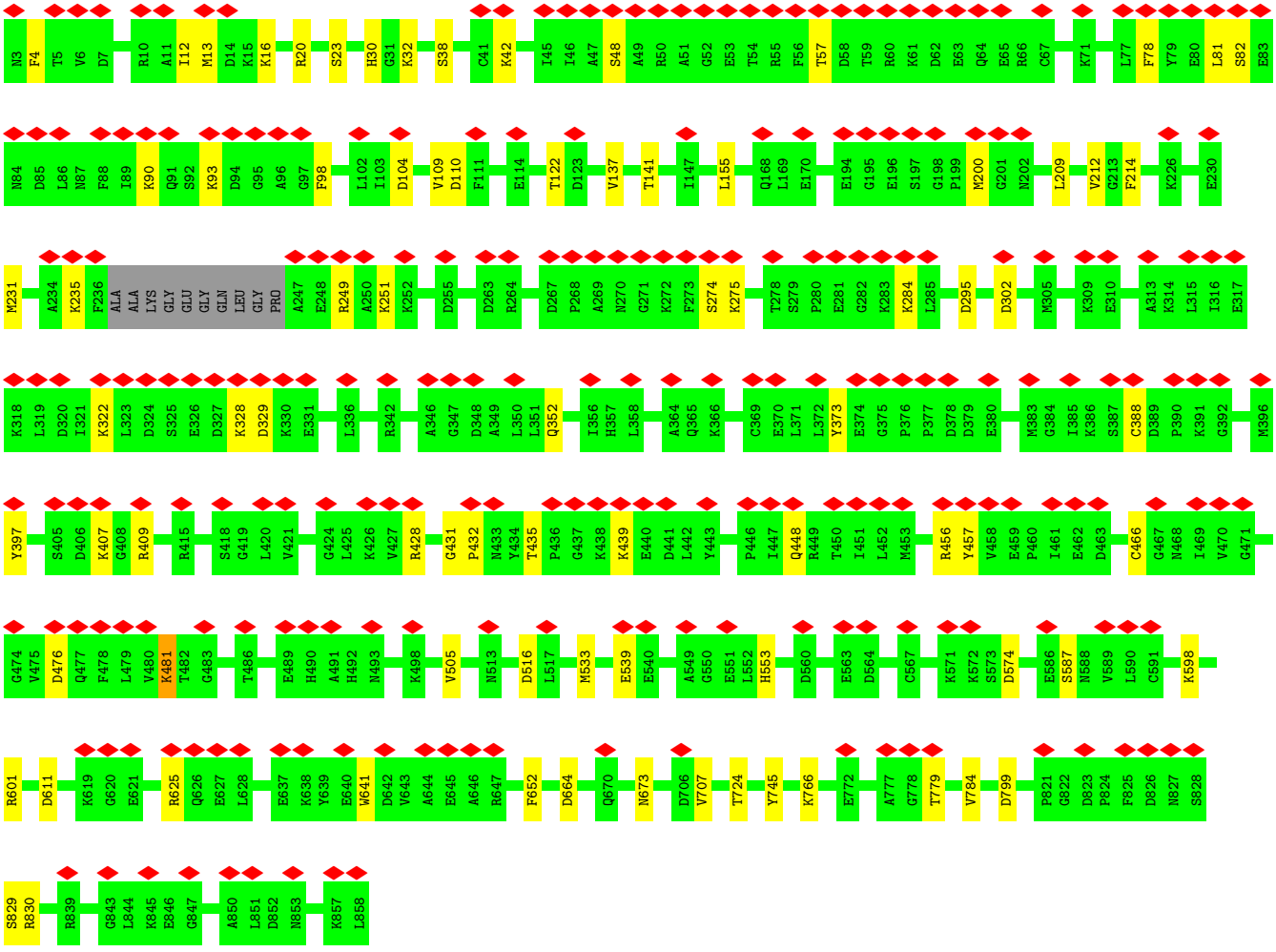
• Molecule 83: Small ribosomal subunit protein eS27

Chain Sb:



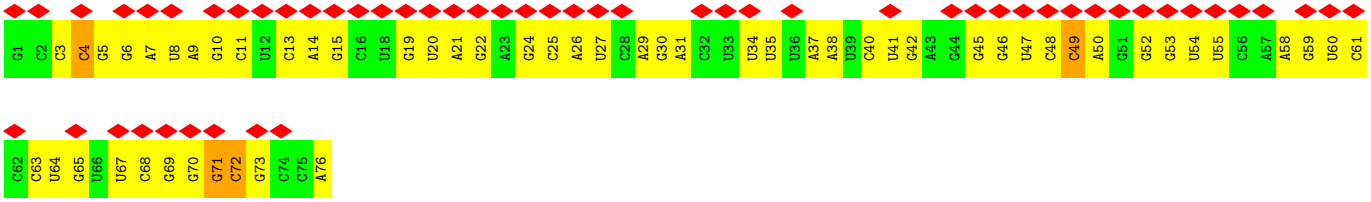
• Molecule 84: Elongation factor 2

Chain CB:



• Molecule 85: E site tRNA [Homo sapiens]

Chain Et:


G1 C2 C3 C4 C5 G6 A7 U8 A9 G10 C11 U12 C13 A14 G15 C16 U18 G19 U20 A21 G22 A23 G24 C25 A26 U27 C28 A29 G30 A31 C32 U33 U34 U35 U36 A37 A38 U39 C40 U41 G42 A43 G44 G45 G46 U47 C48 C49 A50 G51 G52 G53 U54 U55 C56 A57 A58 C59 U60 C61
C62 C63 U64 G65 U66 U67 C68 G69 G70 G71 C72 G73 C74 C75 A76

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	54480	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.495	Depositor
Minimum map value	-0.198	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.014	Depositor
Recommended contour level	0.05	Depositor
Map size (Å)	546.816, 546.816, 546.816	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.068, 1.068, 1.068	Depositor

5 Model quality

5.1 Standard geometry

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

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	LR	0.31	0/1582	0.58	0/2091
2	S2	0.41	0/41244	0.81	31/64263 (0.0%)
3	L5	0.64	0/89313	0.86	97/139291 (0.1%)
4	L7	0.62	0/2861	0.78	0/4459
5	L8	0.64	0/3701	0.78	0/5766
6	LA	0.40	0/1936	0.62	0/2596
7	LB	0.39	0/3306	0.59	0/4424
8	LC	0.36	0/2981	0.59	1/4002 (0.0%)
9	LD	0.36	0/2428	0.55	0/3252
10	LE	0.34	0/1942	0.58	0/2606
11	LF	0.38	0/1905	0.55	0/2539
12	LG	0.34	0/1960	0.57	0/2637
13	LH	0.36	0/1537	0.58	0/2066
14	LI	0.36	0/1673	0.56	0/2233
15	LJ	0.35	0/1433	0.68	2/1915 (0.1%)
16	LL	0.36	0/1732	0.59	0/2315
17	LM	0.36	0/1161	0.58	1/1554 (0.1%)
18	LN	0.39	0/1746	0.59	0/2338
19	LO	0.37	0/1682	0.56	0/2250
20	LP	0.37	0/1268	0.53	0/1701
21	LQ	0.37	0/1537	0.63	1/2052 (0.0%)
22	LS	0.39	0/1493	0.58	0/2003
23	LT	0.37	0/1326	0.56	0/1770
24	LU	0.38	0/839	0.66	2/1126 (0.2%)
25	LV	0.38	0/993	0.55	0/1332
26	LX	0.35	0/1002	0.58	0/1345
27	LY	0.37	0/1132	0.59	0/1504
28	LZ	0.36	0/1130	0.58	0/1507
29	La	0.38	0/1191	0.56	0/1591
30	Lb	0.34	0/889	0.65	2/1175 (0.2%)
31	Lc	0.35	0/774	0.58	1/1038 (0.1%)
32	Ld	0.35	0/903	0.61	0/1216

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	Le	0.39	0/1071	0.56	0/1429
34	Lf	0.41	0/895	0.63	0/1198
35	Lg	0.36	0/916	0.61	0/1220
36	Lh	0.32	0/1023	0.58	0/1351
37	Li	0.32	0/843	0.58	0/1115
38	Lj	1.03	3/720 (0.4%)	1.40	5/952 (0.5%)
39	Lk	0.31	0/575	0.60	0/761
40	Ll	0.33	0/454	0.59	0/599
41	Lm	0.34	0/435	0.56	0/575
42	Ln	0.28	0/231	0.74	0/294
43	Lo	0.38	0/876	0.61	0/1156
44	Lp	0.38	0/718	0.53	0/953
45	Lr	0.36	0/1017	0.59	0/1364
46	Lz	0.25	0/1769	0.57	1/2371 (0.0%)
47	CA	0.28	0/2810	0.53	1/3780 (0.0%)
48	Ls	0.29	0/1519	0.58	1/2052 (0.0%)
49	Lt	0.26	0/1058	0.64	1/1430 (0.1%)
50	SD	0.50	1/1793 (0.1%)	0.83	3/2414 (0.1%)
51	SF	0.29	0/1516	0.60	0/2037
52	SK	0.33	0/851	0.63	0/1147
53	SP	0.29	0/1003	0.67	2/1342 (0.1%)
54	SQ	0.30	0/1160	0.65	1/1553 (0.1%)
55	SS	0.28	0/1216	0.64	0/1628
56	ST	0.30	0/1131	0.62	1/1515 (0.1%)
57	SU	0.27	0/831	0.62	0/1115
58	Sc	0.28	0/508	0.66	0/680
59	Sd	0.31	0/470	0.58	0/623
60	Sg	0.28	0/2493	0.61	0/3394
61	SM	0.30	0/950	0.70	2/1275 (0.2%)
62	SZ	0.27	0/604	0.57	0/810
63	Sf	0.29	0/560	0.61	0/745
64	CD	0.28	0/447	0.57	0/592
65	LW	0.33	0/979	0.57	0/1295
66	SE	0.30	0/2118	0.59	0/2849
67	SI	0.29	0/1715	0.62	0/2287
68	SL	0.30	0/1268	0.60	0/1696
69	SX	0.32	0/1116	0.56	0/1490
70	SG	0.28	0/1946	0.66	0/2590
71	SJ	0.30	0/1550	0.59	0/2069
72	SY	0.28	0/1083	0.61	0/1438
73	Se	0.29	0/465	0.57	0/612
74	SA	0.28	0/1778	0.63	2/2416 (0.1%)
75	SB	0.29	0/1765	0.61	0/2362

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	SH	0.27	0/1519	0.59	1/2033 (0.0%)
77	SV	0.30	0/643	0.61	0/860
78	Sa	0.33	0/836	0.64	0/1121
79	SC	0.31	0/1762	0.54	0/2381
80	SN	0.50	2/1232 (0.2%)	0.92	4/1656 (0.2%)
81	SO	0.28	0/1062	0.64	1/1425 (0.1%)
82	SW	0.31	0/1051	0.60	0/1406
83	Sb	0.28	0/665	0.55	0/891
84	CB	0.46	3/6734 (0.0%)	0.65	7/9094 (0.1%)
85	Et	0.37	0/1778	1.07	4/2767 (0.1%)
All	All	0.49	9/246128 (0.0%)	0.76	175/360165 (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
6	LA	0	2
7	LB	0	2
16	LL	0	1
17	LM	0	1
19	LO	0	1
23	LT	0	1
34	Lf	0	1
38	Lj	0	2
54	SQ	0	1
69	SX	0	1
76	SH	0	1
All	All	0	14

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
84	CB	432	PRO	CB-CG	19.48	2.47	1.50
38	Lj	40	PRO	CB-CG	19.12	2.45	1.50
84	CB	432	PRO	CG-CD	-17.08	0.94	1.50
50	SD	43	PRO	CG-CD	-15.46	0.99	1.50
38	Lj	40	PRO	CG-CD	-15.07	1.00	1.50
80	SN	82	PRO	CB-CG	-9.98	1.00	1.50
80	SN	82	PRO	CG-CD	-9.74	1.18	1.50
84	CB	432	PRO	N-CD	9.60	1.61	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	Lj	40	PRO	N-CD	5.64	1.55	1.47

All (175) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
38	Lj	40	PRO	CB-CG-CD	-26.47	3.27	106.50
84	CB	432	PRO	CB-CG-CD	-23.04	16.63	106.50
50	SD	43	PRO	N-CD-CG	-19.95	73.28	103.20
38	Lj	40	PRO	CA-N-CD	-19.71	83.90	111.50
80	SN	82	PRO	CA-CB-CG	-18.40	69.04	104.00
80	SN	82	PRO	N-CD-CG	-18.35	75.67	103.20
50	SD	43	PRO	CA-CB-CG	-15.81	73.97	104.00
38	Lj	40	PRO	N-CA-CB	-14.65	85.72	103.30
84	CB	432	PRO	N-CA-CB	-13.92	86.60	103.30
3	L5	655	C	N3-C2-O2	-12.75	112.97	121.90
3	L5	4923	C	N3-C2-O2	-11.45	113.88	121.90
38	Lj	40	PRO	CA-CB-CG	-11.19	82.74	104.00
84	CB	432	PRO	N-CD-CG	-11.09	86.57	103.20
3	L5	129	C	N3-C2-O2	-10.56	114.50	121.90
3	L5	499	G	O4'-C1'-N9	10.42	116.54	108.20
80	SN	82	PRO	CB-CG-CD	10.38	146.97	106.50
50	SD	43	PRO	N-CA-CB	-9.97	91.34	103.30
3	L5	485	C	C2-N1-C1'	9.75	129.52	118.80
3	L5	655	C	N1-C2-O2	9.67	124.70	118.90
3	L5	174	C	N3-C2-O2	-9.38	115.33	121.90
2	S2	1772	C	N3-C2-O2	-9.17	115.48	121.90
3	L5	2710	C	N1-C2-O2	9.09	124.35	118.90
2	S2	1772	C	N1-C2-O2	9.06	124.33	118.90
3	L5	2710	C	C2-N1-C1'	8.79	128.47	118.80
2	S2	1453	C	C2-N1-C1'	8.76	128.43	118.80
3	L5	4923	C	N1-C2-O2	8.53	124.02	118.90
3	L5	1447	C	N3-C2-O2	-8.53	115.93	121.90
84	CB	432	PRO	CA-N-CD	-8.40	99.74	111.50
2	S2	356	C	N1-C2-O2	8.35	123.91	118.90
3	L5	654	C	N1-C2-O2	8.26	123.86	118.90
3	L5	4924	C	N3-C2-O2	-8.25	116.13	121.90
2	S2	1453	C	N1-C2-O2	8.13	123.78	118.90
3	L5	417	G	O4'-C1'-N9	8.04	114.63	108.20
3	L5	971	U	C2-N1-C1'	7.83	127.10	117.70
2	S2	356	C	C2-N1-C1'	7.73	127.31	118.80
3	L5	1414	C	N3-C2-O2	-7.71	116.51	121.90
3	L5	456	C	N3-C2-O2	-7.60	116.58	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	130	C	N3-C2-O2	-7.56	116.61	121.90
3	L5	485	C	C6-N1-C1'	-7.54	111.75	120.80
3	L5	3773	U	N3-C2-O2	-7.51	116.95	122.20
3	L5	490	C	N3-C2-O2	-7.44	116.69	121.90
3	L5	1252	C	N3-C2-O2	-7.38	116.74	121.90
80	SN	82	PRO	CA-N-CD	-7.33	101.24	111.50
3	L5	1082	C	O4'-C1'-N1	7.27	114.02	108.20
3	L5	655	C	C6-N1-C2	-7.26	117.40	120.30
3	L5	1191	C	N3-C2-O2	-7.24	116.83	121.90
3	L5	925	C	N3-C2-O2	-7.24	116.83	121.90
84	CB	431	GLY	C-N-CD	7.23	143.59	128.40
3	L5	925	C	N1-C2-O2	7.21	123.22	118.90
3	L5	4138	C	N3-C2-O2	-7.16	116.89	121.90
3	L5	2710	C	N3-C2-O2	-7.12	116.91	121.90
3	L5	175	C	N3-C2-O2	-7.10	116.93	121.90
3	L5	4897	G	N1-C6-O6	-7.02	115.69	119.90
30	Lb	118	LEU	CA-CB-CG	6.98	131.36	115.30
38	Lj	40	PRO	N-CD-CG	-6.98	92.74	103.20
3	L5	971	U	N1-C2-O2	6.92	127.64	122.80
2	S2	1416	C	N3-C2-O2	-6.86	117.10	121.90
74	SA	147	LEU	CA-CB-CG	6.83	131.02	115.30
56	ST	125	PRO	CA-N-CD	-6.83	101.94	111.50
3	L5	456	C	O4'-C1'-N1	6.83	113.66	108.20
3	L5	4897	G	C5-C6-O6	6.80	132.68	128.60
31	Lc	98	ASP	CB-CG-OD1	6.80	124.42	118.30
3	L5	4147	G	C5-C6-O6	6.78	132.67	128.60
53	SP	80	LEU	CA-CB-CG	6.78	130.89	115.30
3	L5	1077	C	N3-C2-O2	-6.77	117.16	121.90
3	L5	4709	U	C2-N1-C1'	6.76	125.81	117.70
3	L5	1414	C	N1-C2-O2	6.71	122.92	118.90
15	LJ	121	PRO	CA-N-CD	-6.69	102.14	111.50
2	S2	1022	U	C2-N1-C1'	6.68	125.72	117.70
61	SM	52	LEU	CB-CG-CD2	6.65	122.31	111.00
2	S2	356	C	N3-C2-O2	-6.65	117.25	121.90
84	CB	432	PRO	CA-CB-CG	-6.62	91.42	104.00
3	L5	1082	C	N3-C2-O2	-6.61	117.27	121.90
3	L5	4897	G	N1-C2-N2	-6.59	110.27	116.20
3	L5	129	C	C6-N1-C2	-6.59	117.67	120.30
3	L5	129	C	N1-C2-O2	6.55	122.83	118.90
3	L5	485	C	N1-C2-O2	6.51	122.81	118.90
81	SO	14	VAL	C-N-CA	6.47	137.87	121.70
48	Ls	79	LEU	CA-CB-CG	6.37	129.96	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	S2	1453	C	C6-N1-C1'	-6.31	113.22	120.80
3	L5	971	U	N3-C2-O2	-6.27	117.81	122.20
61	SM	52	LEU	CA-CB-CG	6.25	129.68	115.30
3	L5	3741	C	N3-C2-O2	-6.24	117.53	121.90
76	SH	148	LEU	CA-CB-CG	6.19	129.55	115.30
3	L5	4147	G	N1-C6-O6	-6.17	116.20	119.90
3	L5	2410	C	C2-N1-C1'	6.15	125.56	118.80
46	Lz	194	LEU	CA-CB-CG	6.14	129.42	115.30
3	L5	2710	C	C6-N1-C1'	-6.13	113.44	120.80
3	L5	4928	C	C2-N1-C1'	6.12	125.53	118.80
85	Et	4	C	C2-N1-C1'	6.07	125.48	118.80
15	LJ	171	ASP	CB-CG-OD2	6.05	123.74	118.30
3	L5	2560	C	C2-N1-C1'	6.02	125.43	118.80
2	S2	1415	C	N1-C2-O2	5.99	122.49	118.90
2	S2	1453	C	N3-C2-O2	-5.99	117.71	121.90
3	L5	100	C	C2-N1-C1'	5.91	125.30	118.80
3	L5	654	C	C2-N1-C1'	5.86	125.25	118.80
3	L5	174	C	N1-C2-O2	5.84	122.41	118.90
3	L5	499	G	N3-C2-N2	5.79	123.96	119.90
3	L5	262	G	N1-C6-O6	-5.78	116.43	119.90
8	LC	2	ALA	C-N-CA	5.77	136.13	121.70
3	L5	3761	C	C2-N1-C1'	5.76	125.14	118.80
85	Et	49	C	C2-N1-C1'	5.72	125.09	118.80
3	L5	489	C	N1-C2-O2	5.70	122.32	118.90
2	S2	834	C	N3-C2-O2	-5.68	117.93	121.90
30	Lb	121	PRO	CA-N-CD	-5.66	103.57	111.50
3	L5	4709	U	C5-C4-O4	-5.65	122.51	125.90
2	S2	322	C	N1-C2-O2	5.64	122.29	118.90
24	LU	28	PRO	N-CD-CG	-5.61	94.78	103.20
21	LQ	4	ASP	CB-CG-OD1	5.60	123.34	118.30
3	L5	1447	C	C6-N1-C2	-5.60	118.06	120.30
47	CA	357	LEU	CA-CB-CG	5.59	128.15	115.30
2	S2	1755	C	C2-N1-C1'	5.57	124.93	118.80
2	S2	1520	G	C4-N9-C1'	5.56	133.73	126.50
3	L5	1367	C	C2-N1-C1'	5.55	124.91	118.80
3	L5	2710	C	C6-N1-C2	-5.54	118.08	120.30
3	L5	209	U	C2-N1-C1'	5.52	124.33	117.70
3	L5	262	G	C5-C6-O6	5.52	131.91	128.60
2	S2	118	C	C2-N1-C1'	5.52	124.87	118.80
3	L5	1077	C	C6-N1-C2	-5.51	118.09	120.30
3	L5	1417	C	C2-N1-C1'	5.49	124.84	118.80
3	L5	1082	C	C2-N1-C1'	-5.48	112.77	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	S2	1755	C	N1-C2-O2	5.48	122.19	118.90
3	L5	1755	C	C2-N1-C1'	5.48	124.83	118.80
3	L5	1082	C	C6-N1-C1'	5.47	127.37	120.80
49	Lt	121	LEU	CA-CB-CG	5.45	127.84	115.30
3	L5	472	C	C2-N1-C1'	5.45	124.79	118.80
3	L5	1216	C	C2-N1-C1'	5.43	124.78	118.80
85	Et	71	G	N3-C4-N9	5.42	129.25	126.00
2	S2	356	C	C6-N1-C1'	-5.42	114.29	120.80
3	L5	3761	C	N1-C2-O2	5.42	122.15	118.90
2	S2	833	C	N1-C2-O2	5.41	122.15	118.90
2	S2	1756	C	C6-N1-C1'	5.41	127.29	120.80
3	L5	138	G	N3-C4-N9	5.40	129.24	126.00
3	L5	1241	C	C2-N1-C1'	5.40	124.74	118.80
2	S2	293	C	N1-C2-O2	5.38	122.13	118.90
3	L5	654	C	N3-C2-O2	-5.37	118.14	121.90
2	S2	501	C	N1-C2-O2	5.35	122.11	118.90
3	L5	1173	G	N3-C4-N9	-5.33	122.81	126.00
3	L5	4926	C	N1-C2-O2	5.33	122.09	118.90
3	L5	3773	U	C2-N1-C1'	5.32	124.09	117.70
24	LU	28	PRO	CA-N-CD	-5.32	104.05	111.50
3	L5	3773	U	N1-C2-O2	5.31	126.52	122.80
53	SP	33	LEU	CA-CB-CG	5.31	127.52	115.30
3	L5	500	G	N1-C2-N2	-5.30	111.43	116.20
2	S2	501	C	C2-N1-C1'	5.29	124.62	118.80
3	L5	456	C	C6-N1-C2	-5.29	118.18	120.30
2	S2	688	U	P-O3'-C3'	5.29	126.04	119.70
3	L5	4709	U	C6-N1-C1'	-5.28	113.81	121.20
2	S2	1520	G	N3-C4-N9	5.26	129.15	126.00
2	S2	834	C	C6-N1-C2	-5.23	118.21	120.30
54	SQ	38	PRO	CA-N-CD	-5.23	104.17	111.50
74	SA	198	MET	CA-CB-CG	5.22	122.17	113.30
3	L5	2257	C	N1-C2-O2	5.22	122.03	118.90
3	L5	971	U	C6-N1-C1'	-5.20	113.92	121.20
3	L5	1182	C	N1-C2-O2	5.19	122.02	118.90
2	S2	1520	G	C8-N9-C1'	-5.18	120.26	127.00
3	L5	1447	C	N1-C2-O2	5.18	122.01	118.90
3	L5	3741	C	N1-C2-O2	5.17	122.00	118.90
3	L5	1191	C	N1-C2-O2	5.16	122.00	118.90
3	L5	4924	C	C6-N1-C2	-5.16	118.24	120.30
3	L5	1241	C	N1-C2-O2	5.13	121.98	118.90
2	S2	537	C	C2-N1-C1'	5.11	124.42	118.80
2	S2	834	C	N1-C2-O2	5.09	121.96	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
17	LM	136	LEU	CA-CB-CG	5.09	127.02	115.30
3	L5	2257	C	C2-N1-C1'	5.09	124.40	118.80
3	L5	4303	C	C2-N1-C1'	5.07	124.38	118.80
3	L5	3775	A	O4'-C1'-N9	5.07	112.25	108.20
85	Et	72	C	N3-C2-O2	-5.05	118.37	121.90
3	L5	140	G	C5-C6-O6	5.04	131.63	128.60
3	L5	1597	G	O4'-C1'-N9	5.04	112.23	108.20
3	L5	4924	C	C5-C4-N4	5.02	123.72	120.20
2	S2	1453	C	C5-C6-N1	5.02	123.51	121.00
3	L5	1446	C	N1-C2-O2	5.02	121.91	118.90
84	CB	664	ASP	CB-CG-OD2	5.02	122.81	118.30
3	L5	963	G	C4-N9-C1'	5.01	133.02	126.50

There are no chirality outliers.

All (14) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	LA	13	GLY	Peptide
6	LA	54	ARG	Peptide
7	LB	17	LEU	Peptide
7	LB	258	HIS	Peptide
16	LL	154	VAL	Peptide
17	LM	87	ALA	Peptide
19	LO	110	PRO	Peptide
23	LT	136	ARG	Peptide
34	Lf	106	TYR	Peptide
38	Lj	39	TYR	Peptide
38	Lj	40	PRO	Peptide
76	SH	15	LYS	Peptide
54	SQ	43	GLU	Peptide
69	SX	126	ALA	Peptide

5.2 Too-close contacts (i)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	LR	185/187 (99%)	180 (97%)	5 (3%)	0	100	100
6	LA	246/248 (99%)	222 (90%)	23 (9%)	1 (0%)	30	58
7	LB	400/402 (100%)	373 (93%)	27 (7%)	0	100	100
8	LC	366/368 (100%)	342 (93%)	24 (7%)	0	100	100
9	LD	291/293 (99%)	277 (95%)	14 (5%)	0	100	100
10	LE	232/247 (94%)	207 (89%)	25 (11%)	0	100	100
11	LF	223/225 (99%)	213 (96%)	10 (4%)	0	100	100
12	LG	239/241 (99%)	225 (94%)	14 (6%)	0	100	100
13	LH	188/190 (99%)	173 (92%)	15 (8%)	0	100	100
14	LI	198/213 (93%)	184 (93%)	14 (7%)	0	100	100
15	LJ	174/176 (99%)	158 (91%)	16 (9%)	0	100	100
16	LL	208/210 (99%)	192 (92%)	16 (8%)	0	100	100
17	LM	137/139 (99%)	130 (95%)	6 (4%)	1 (1%)	19	45
18	LN	201/203 (99%)	192 (96%)	8 (4%)	1 (0%)	25	52
19	LO	199/201 (99%)	189 (95%)	10 (5%)	0	100	100
20	LP	151/153 (99%)	139 (92%)	12 (8%)	0	100	100
21	LQ	185/187 (99%)	180 (97%)	5 (3%)	0	100	100
22	LS	173/175 (99%)	163 (94%)	10 (6%)	0	100	100
23	LT	157/159 (99%)	146 (93%)	11 (7%)	0	100	100
24	LU	99/101 (98%)	81 (82%)	18 (18%)	0	100	100
25	LV	129/131 (98%)	125 (97%)	4 (3%)	0	100	100
26	LX	118/120 (98%)	116 (98%)	2 (2%)	0	100	100
27	LY	132/134 (98%)	128 (97%)	4 (3%)	0	100	100
28	LZ	133/135 (98%)	121 (91%)	12 (9%)	0	100	100
29	La	145/147 (99%)	138 (95%)	7 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	Lb	105/121 (87%)	97 (92%)	8 (8%)	0	100	100
31	Lc	96/98 (98%)	89 (93%)	7 (7%)	0	100	100
32	Ld	105/107 (98%)	98 (93%)	7 (7%)	0	100	100
33	Le	126/128 (98%)	118 (94%)	8 (6%)	0	100	100
34	Lf	107/109 (98%)	96 (90%)	10 (9%)	1 (1%)	14	38
35	Lg	112/114 (98%)	110 (98%)	2 (2%)	0	100	100
36	Lh	120/122 (98%)	118 (98%)	2 (2%)	0	100	100
37	Li	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
38	Lj	84/86 (98%)	80 (95%)	4 (5%)	0	100	100
39	Lk	67/69 (97%)	65 (97%)	2 (3%)	0	100	100
40	Ll	48/50 (96%)	44 (92%)	4 (8%)	0	100	100
41	Lm	50/52 (96%)	50 (100%)	0	0	100	100
42	Ln	22/24 (92%)	22 (100%)	0	0	100	100
43	Lo	103/105 (98%)	99 (96%)	4 (4%)	0	100	100
44	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
45	Lr	123/125 (98%)	115 (94%)	8 (6%)	0	100	100
46	Lz	215/217 (99%)	172 (80%)	43 (20%)	0	100	100
47	CA	350/356 (98%)	333 (95%)	17 (5%)	0	100	100
48	Ls	194/196 (99%)	185 (95%)	9 (5%)	0	100	100
49	Lt	137/141 (97%)	106 (77%)	29 (21%)	2 (2%)	8	25
50	SD	225/227 (99%)	200 (89%)	25 (11%)	0	100	100
51	SF	187/189 (99%)	169 (90%)	18 (10%)	0	100	100
52	SK	96/98 (98%)	80 (83%)	14 (15%)	2 (2%)	5	18
53	SP	119/121 (98%)	112 (94%)	7 (6%)	0	100	100
54	SQ	142/144 (99%)	124 (87%)	18 (13%)	0	100	100
55	SS	143/145 (99%)	134 (94%)	9 (6%)	0	100	100
56	ST	141/143 (99%)	128 (91%)	11 (8%)	2 (1%)	9	27
57	SU	102/104 (98%)	92 (90%)	10 (10%)	0	100	100
58	Sc	62/64 (97%)	51 (82%)	11 (18%)	0	100	100
59	Sd	53/55 (96%)	50 (94%)	3 (6%)	0	100	100
60	Sg	311/313 (99%)	274 (88%)	37 (12%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
61	SM	120/122 (98%)	108 (90%)	11 (9%)	1 (1%)	16 41
62	SZ	73/75 (97%)	62 (85%)	11 (15%)	0	100 100
63	Sf	65/67 (97%)	56 (86%)	9 (14%)	0	100 100
64	CD	51/55 (93%)	46 (90%)	5 (10%)	0	100 100
65	LW	114/124 (92%)	109 (96%)	5 (4%)	0	100 100
66	SE	260/262 (99%)	243 (94%)	17 (6%)	0	100 100
67	SI	204/206 (99%)	200 (98%)	4 (2%)	0	100 100
68	SL	151/153 (99%)	144 (95%)	7 (5%)	0	100 100
69	SX	139/141 (99%)	122 (88%)	16 (12%)	1 (1%)	19 45
70	SG	235/237 (99%)	219 (93%)	16 (7%)	0	100 100
71	SJ	183/185 (99%)	168 (92%)	15 (8%)	0	100 100
72	SY	129/131 (98%)	120 (93%)	9 (7%)	0	100 100
73	Se	56/58 (97%)	51 (91%)	5 (9%)	0	100 100
74	SA	219/221 (99%)	196 (90%)	23 (10%)	0	100 100
75	SB	212/214 (99%)	206 (97%)	6 (3%)	0	100 100
76	SH	182/189 (96%)	159 (87%)	23 (13%)	0	100 100
77	SV	81/83 (98%)	70 (86%)	11 (14%)	0	100 100
78	Sa	100/102 (98%)	90 (90%)	10 (10%)	0	100 100
79	SC	220/222 (99%)	206 (94%)	13 (6%)	1 (0%)	25 52
80	SN	148/150 (99%)	143 (97%)	5 (3%)	0	100 100
81	SO	138/140 (99%)	123 (89%)	15 (11%)	0	100 100
82	SW	127/129 (98%)	124 (98%)	3 (2%)	0	100 100
83	Sb	81/83 (98%)	70 (86%)	11 (14%)	0	100 100
84	CB	842/856 (98%)	795 (94%)	43 (5%)	4 (0%)	25 52
All	All	12973/13206 (98%)	12018 (93%)	938 (7%)	17 (0%)	50 76

All (17) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
49	Lt	144	ASP
52	SK	96	ARG
56	ST	39	LEU
84	CB	407	LYS
84	CB	779	THR

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Mol	Chain	Res	Type
18	LN	124	ASP
52	SK	36	ALA
69	SX	127	ASN
17	LM	88	ALA
49	Lt	13	VAL
61	SM	96	ARG
84	CB	481	LYS
84	CB	611	ASP
56	ST	41	LYS
79	SC	78	LEU
6	LA	55	GLY
34	Lf	107	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	LR	166/166 (100%)	147 (89%)	19 (11%)	4 14
6	LA	190/190 (100%)	175 (92%)	15 (8%)	10 28
7	LB	348/348 (100%)	323 (93%)	25 (7%)	12 31
8	LC	306/306 (100%)	288 (94%)	18 (6%)	16 41
9	LD	246/247 (100%)	229 (93%)	17 (7%)	13 34
10	LE	209/220 (95%)	198 (95%)	11 (5%)	19 46
11	LF	194/194 (100%)	180 (93%)	14 (7%)	12 31
12	LG	203/205 (99%)	184 (91%)	19 (9%)	7 20
13	LH	169/169 (100%)	151 (89%)	18 (11%)	5 15
14	LI	172/180 (96%)	164 (95%)	8 (5%)	22 51
15	LJ	148/148 (100%)	133 (90%)	15 (10%)	6 17
16	LL	176/176 (100%)	160 (91%)	16 (9%)	7 22
17	LM	118/118 (100%)	112 (95%)	6 (5%)	20 47
18	LN	171/171 (100%)	162 (95%)	9 (5%)	19 46

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
19	LO	173/173 (100%)	163 (94%)	10 (6%)	17 42
20	LP	134/134 (100%)	118 (88%)	16 (12%)	4 12
21	LQ	164/164 (100%)	155 (94%)	9 (6%)	18 44
22	LS	156/156 (100%)	147 (94%)	9 (6%)	17 42
23	LT	139/139 (100%)	129 (93%)	10 (7%)	12 31
24	LU	91/91 (100%)	79 (87%)	12 (13%)	3 9
25	LV	101/101 (100%)	95 (94%)	6 (6%)	16 41
26	LX	108/108 (100%)	98 (91%)	10 (9%)	7 21
27	LY	124/124 (100%)	116 (94%)	8 (6%)	14 37
28	LZ	117/117 (100%)	110 (94%)	7 (6%)	16 40
29	La	120/120 (100%)	113 (94%)	7 (6%)	17 42
30	Lb	88/101 (87%)	82 (93%)	6 (7%)	13 34
31	Lc	83/83 (100%)	73 (88%)	10 (12%)	4 12
32	Ld	98/98 (100%)	91 (93%)	7 (7%)	12 32
33	Le	114/114 (100%)	109 (96%)	5 (4%)	24 53
34	Lf	88/88 (100%)	85 (97%)	3 (3%)	32 63
35	Lg	98/98 (100%)	92 (94%)	6 (6%)	15 40
36	Lh	109/109 (100%)	106 (97%)	3 (3%)	38 69
37	Li	86/86 (100%)	82 (95%)	4 (5%)	22 51
38	Lj	73/73 (100%)	70 (96%)	3 (4%)	26 56
39	Lk	64/64 (100%)	58 (91%)	6 (9%)	7 20
40	Ll	47/47 (100%)	44 (94%)	3 (6%)	14 37
41	Lm	48/48 (100%)	46 (96%)	2 (4%)	25 55
42	Ln	23/23 (100%)	22 (96%)	1 (4%)	25 54
43	Lo	93/93 (100%)	85 (91%)	8 (9%)	8 24
44	Lp	74/74 (100%)	73 (99%)	1 (1%)	62 85
45	Lr	109/109 (100%)	93 (85%)	16 (15%)	2 7
46	Lz	195/196 (100%)	181 (93%)	14 (7%)	12 31
47	CA	303/305 (99%)	280 (92%)	23 (8%)	11 29
48	Ls	162/164 (99%)	142 (88%)	20 (12%)	4 11
49	Lt	112/115 (97%)	103 (92%)	9 (8%)	10 27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
50	SD	190/190 (100%)	161 (85%)	29 (15%)	2 6
51	SF	159/159 (100%)	145 (91%)	14 (9%)	8 23
52	SK	89/89 (100%)	80 (90%)	9 (10%)	6 17
53	SP	107/107 (100%)	99 (92%)	8 (8%)	11 30
54	SQ	119/119 (100%)	103 (87%)	16 (13%)	3 9
55	SS	126/126 (100%)	107 (85%)	19 (15%)	2 6
56	ST	113/113 (100%)	101 (89%)	12 (11%)	5 16
57	SU	94/94 (100%)	87 (93%)	7 (7%)	11 30
58	Sc	57/57 (100%)	47 (82%)	10 (18%)	1 4
59	Sd	48/48 (100%)	44 (92%)	4 (8%)	9 26
60	Sg	272/272 (100%)	238 (88%)	34 (12%)	3 11
61	SM	102/104 (98%)	89 (87%)	13 (13%)	3 11
62	SZ	66/66 (100%)	61 (92%)	5 (8%)	11 29
63	Sf	60/60 (100%)	54 (90%)	6 (10%)	6 18
64	CD	46/46 (100%)	41 (89%)	5 (11%)	5 15
65	LW	97/103 (94%)	89 (92%)	8 (8%)	9 26
66	SE	224/224 (100%)	204 (91%)	20 (9%)	8 23
67	SI	178/178 (100%)	161 (90%)	17 (10%)	7 19
68	SL	137/137 (100%)	119 (87%)	18 (13%)	3 9
69	SX	113/113 (100%)	105 (93%)	8 (7%)	12 32
70	SG	207/207 (100%)	180 (87%)	27 (13%)	3 10
71	SJ	161/161 (100%)	141 (88%)	20 (12%)	4 11
72	SY	113/113 (100%)	94 (83%)	19 (17%)	1 5
73	Se	47/47 (100%)	41 (87%)	6 (13%)	3 10
74	SA	183/183 (100%)	168 (92%)	15 (8%)	9 26
75	SB	195/195 (100%)	167 (86%)	28 (14%)	2 7
76	SH	166/169 (98%)	151 (91%)	15 (9%)	8 22
77	SV	67/67 (100%)	56 (84%)	11 (16%)	2 5
78	Sa	89/89 (100%)	82 (92%)	7 (8%)	10 28
79	SC	188/188 (100%)	165 (88%)	23 (12%)	4 11
80	SN	130/130 (100%)	114 (88%)	16 (12%)	4 11

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
81	SO	110/110 (100%)	100 (91%)	10 (9%)	7 22
82	SW	112/112 (100%)	104 (93%)	8 (7%)	12 32
83	Sb	75/75 (100%)	64 (85%)	11 (15%)	2 7
84	CB	722/728 (99%)	646 (90%)	76 (10%)	5 16
All	All	11272/11332 (100%)	10254 (91%)	1018 (9%)	10 22

All (1018) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	LR	4	LEU
1	LR	12	SER
1	LR	46	LYS
1	LR	59	SER
1	LR	63	CYS
1	LR	68	LEU
1	LR	111	GLU
1	LR	117	ARG
1	LR	122	SER
1	LR	134	ASN
1	LR	144	LYS
1	LR	148	ASP
1	LR	149	LYS
1	LR	152	LYS
1	LR	157	ASP
1	LR	171	LYS
1	LR	183	GLU
1	LR	186	LYS
1	LR	187	THR
6	LA	3	ARG
6	LA	28	ARG
6	LA	32	VAL
6	LA	45	VAL
6	LA	54	ARG
6	LA	80	GLU
6	LA	93	LYS
6	LA	102	LEU
6	LA	111	THR
6	LA	114	CYS
6	LA	123	ARG
6	LA	140	ASN
6	LA	160	SER

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Mol	Chain	Res	Type
6	LA	169	VAL
6	LA	207	VAL
7	LB	7	SER
7	LB	22	SER
7	LB	23	SER
7	LB	43	LEU
7	LB	53	MET
7	LB	73	VAL
7	LB	112	ASP
7	LB	148	LYS
7	LB	152	SER
7	LB	155	LYS
7	LB	159	VAL
7	LB	169	ARG
7	LB	174	ARG
7	LB	200	ARG
7	LB	203	GLN
7	LB	248	LEU
7	LB	258	HIS
7	LB	278	THR
7	LB	297	LYS
7	LB	328	ASN
7	LB	332	MET
7	LB	360	LEU
7	LB	363	ILE
7	LB	382	MET
7	LB	386	LYS
8	LC	1	MET
8	LC	16	GLU
8	LC	17	SER
8	LC	56	GLU
8	LC	114	ARG
8	LC	122	TYR
8	LC	154	VAL
8	LC	158	VAL
8	LC	175	LYS
8	LC	188	ARG
8	LC	234	LYS
8	LC	254	GLU
8	LC	261	ASP
8	LC	268	ARG
8	LC	273	LEU

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Mol	Chain	Res	Type
8	LC	276	ASN
8	LC	283	LYS
8	LC	313	VAL
9	LD	72	ASP
9	LD	76	CYS
9	LD	86	TYR
9	LD	89	LYS
9	LD	112	ARG
9	LD	118	ILE
9	LD	124	GLU
9	LD	136	ASP
9	LD	210	TYR
9	LD	221	LYS
9	LD	224	SER
9	LD	225	GLN
9	LD	235	MET
9	LD	239	MET
9	LD	256	LYS
9	LD	259	LYS
9	LD	263	LYS
10	LE	46	ARG
10	LE	74	SER
10	LE	89	LEU
10	LE	112	MET
10	LE	124	LYS
10	LE	128	HIS
10	LE	130	LYS
10	LE	218	LYS
10	LE	226	ARG
10	LE	260	LYS
10	LE	278	THR
11	LF	34	ARG
11	LF	73	ARG
11	LF	77	LYS
11	LF	88	LYS
11	LF	99	ASN
11	LF	149	SER
11	LF	181	LYS
11	LF	196	THR
11	LF	200	ARG
11	LF	221	LYS
11	LF	222	LYS

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Mol	Chain	Res	Type
11	LF	236	ARG
11	LF	237	GLU
11	LF	248	ASN
12	LG	29	ASN
12	LG	34	LYS
12	LG	35	ARG
12	LG	43	GLN
12	LG	73	ARG
12	LG	100	HIS
12	LG	103	ARG
12	LG	113	ARG
12	LG	131	LYS
12	LG	179	VAL
12	LG	192	ARG
12	LG	201	THR
12	LG	211	ASP
12	LG	229	ARG
12	LG	230	TYR
12	LG	231	ASP
12	LG	252	LYS
12	LG	255	LYS
12	LG	259	LYS
13	LH	6	SER
13	LH	16	VAL
13	LH	17	ASP
13	LH	19	THR
13	LH	21	LYS
13	LH	28	LYS
13	LH	37	ASP
13	LH	44	GLU
13	LH	46	SER
13	LH	50	LYS
13	LH	51	LYS
13	LH	57	VAL
13	LH	95	VAL
13	LH	110	SER
13	LH	112	VAL
13	LH	141	LYS
13	LH	146	LEU
13	LH	183	GLU
14	LI	21	ARG
14	LI	74	LYS

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Mol	Chain	Res	Type
14	LI	82	ARG
14	LI	125	THR
14	LI	129	VAL
14	LI	195	CYS
14	LI	203	HIS
14	LI	213	HIS
15	LJ	10	ASN
15	LJ	32	ARG
15	LJ	52	LYS
15	LJ	54	ARG
15	LJ	60	PHE
15	LJ	64	ARG
15	LJ	81	GLU
15	LJ	83	LEU
15	LJ	88	LYS
15	LJ	90	ARG
15	LJ	95	ARG
15	LJ	119	TYR
15	LJ	133	VAL
15	LJ	151	ILE
15	LJ	171	ASP
16	LL	8	MET
16	LL	21	ARG
16	LL	24	THR
16	LL	59	VAL
16	LL	60	ARG
16	LL	64	VAL
16	LL	67	HIS
16	LL	70	VAL
16	LL	98	VAL
16	LL	103	ARG
16	LL	104	ASN
16	LL	109	SER
16	LL	121	ARG
16	LL	162	LYS
16	LL	167	ARG
16	LL	198	ARG
17	LM	16	SER
17	LM	25	VAL
17	LM	30	VAL
17	LM	35	ARG
17	LM	63	LYS

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Mol	Chain	Res	Type
17	LM	125	ASN
18	LN	5	LYS
18	LN	32	GLN
18	LN	38	ARG
18	LN	41	ARG
18	LN	53	TYR
18	LN	60	VAL
18	LN	80	THR
18	LN	125	SER
18	LN	148	THR
19	LO	5	GLN
19	LO	27	VAL
19	LO	61	ARG
19	LO	132	THR
19	LO	145	VAL
19	LO	158	GLU
19	LO	165	LYS
19	LO	169	ARG
19	LO	191	LYS
19	LO	201	LEU
20	LP	13	LYS
20	LP	14	SER
20	LP	18	ARG
20	LP	23	ARG
20	LP	24	VAL
20	LP	30	ARG
20	LP	42	ARG
20	LP	46	LYS
20	LP	57	CYS
20	LP	58	VAL
20	LP	69	ARG
20	LP	75	GLN
20	LP	76	TRP
20	LP	93	HIS
20	LP	118	GLN
20	LP	139	TYR
21	LQ	4	ASP
21	LQ	28	LEU
21	LQ	33	ARG
21	LQ	68	ARG
21	LQ	93	GLN
21	LQ	101	CYS

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Mol	Chain	Res	Type
21	LQ	115	ARG
21	LQ	128	LEU
21	LQ	183	SER
22	LS	21	LYS
22	LS	29	ARG
22	LS	31	ARG
22	LS	43	ARG
22	LS	57	SER
22	LS	90	THR
22	LS	111	ARG
22	LS	158	VAL
22	LS	169	THR
23	LT	3	ASN
23	LT	4	THR
23	LT	5	LYS
23	LT	29	THR
23	LT	45	MET
23	LT	83	LYS
23	LT	85	LEU
23	LT	99	SER
23	LT	104	SER
23	LT	158	PHE
24	LU	19	LEU
24	LU	22	THR
24	LU	39	PHE
24	LU	69	LYS
24	LU	79	SER
24	LU	92	LYS
24	LU	94	ASN
24	LU	95	ASN
24	LU	97	ARG
24	LU	98	ASP
24	LU	110	TYR
24	LU	112	LEU
25	LV	17	SER
25	LV	35	LYS
25	LV	48	ARG
25	LV	59	ASP
25	LV	67	LYS
25	LV	131	ARG
26	LX	52	LEU
26	LX	57	GLN

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Mol	Chain	Res	Type
26	LX	68	ARG
26	LX	73	HIS
26	LX	80	PRO
26	LX	95	THR
26	LX	121	VAL
26	LX	126	THR
26	LX	148	ASP
26	LX	152	LYS
27	LY	12	SER
27	LY	41	LYS
27	LY	74	TYR
27	LY	99	ILE
27	LY	110	LYS
27	LY	112	ASP
27	LY	117	LYS
27	LY	130	LYS
28	LZ	11	VAL
28	LZ	35	ASP
28	LZ	43	VAL
28	LZ	84	ARG
28	LZ	85	TYR
28	LZ	100	VAL
28	LZ	123	LYS
29	La	10	LYS
29	La	15	VAL
29	La	58	MET
29	La	66	ASN
29	La	68	SER
29	La	106	SER
29	La	139	SER
30	Lb	4	SER
30	Lb	57	MET
30	Lb	91	ARG
30	Lb	111	ARG
30	Lb	114	LYS
30	Lb	117	ARG
31	Lc	23	LYS
31	Lc	28	VAL
31	Lc	44	LYS
31	Lc	48	LEU
31	Lc	65	MET
31	Lc	69	THR

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Mol	Chain	Res	Type
31	Lc	87	LYS
31	Lc	91	VAL
31	Lc	92	CYS
31	Lc	98	ASP
32	Ld	26	THR
32	Ld	55	LYS
32	Ld	68	LEU
32	Ld	84	ILE
32	Ld	95	ASP
32	Ld	105	LEU
32	Ld	106	VAL
33	Le	26	ASP
33	Le	65	LYS
33	Le	76	LYS
33	Le	87	VAL
33	Le	102	ASN
34	Lf	25	THR
34	Lf	37	ASP
34	Lf	46	ARG
35	Lg	28	ASN
35	Lg	44	SER
35	Lg	53	LEU
35	Lg	63	VAL
35	Lg	73	HIS
35	Lg	75	SER
36	Lh	82	ASP
36	Lh	87	LYS
36	Lh	112	ARG
37	Li	4	ARG
37	Li	23	LYS
37	Li	42	ASP
37	Li	55	ARG
38	Lj	22	CYS
38	Lj	36	LYS
38	Lj	63	ARG
39	Lk	9	LYS
39	Lk	29	LYS
39	Lk	40	ARG
39	Lk	52	LYS
39	Lk	55	LYS
39	Lk	67	LYS
40	Ll	21	ARG

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Mol	Chain	Res	Type
40	Ll	39	SER
40	Ll	51	LEU
41	Lm	81	SER
41	Lm	90	ASN
42	Ln	10	MET
43	Lo	15	CYS
43	Lo	31	ASP
43	Lo	36	GLN
43	Lo	69	ARG
43	Lo	71	GLU
43	Lo	74	GLU
43	Lo	77	CYS
43	Lo	97	LYS
44	Lp	84	ARG
45	Lr	14	SER
45	Lr	21	ASN
45	Lr	37	SER
45	Lr	49	VAL
45	Lr	51	VAL
45	Lr	58	LYS
45	Lr	60	VAL
45	Lr	62	VAL
45	Lr	63	VAL
45	Lr	80	THR
45	Lr	91	SER
45	Lr	96	MET
45	Lr	98	ARG
45	Lr	99	LYS
45	Lr	119	ARG
45	Lr	125	MET
46	Lz	3	SER
46	Lz	5	VAL
46	Lz	7	ARG
46	Lz	22	GLN
46	Lz	39	LYS
46	Lz	80	VAL
46	Lz	85	MET
46	Lz	110	PHE
46	Lz	122	ARG
46	Lz	148	VAL
46	Lz	156	LYS
46	Lz	161	LYS

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Mol	Chain	Res	Type
46	Lz	173	LYS
46	Lz	210	MET
47	CA	21	TYR
47	CA	35	LEU
47	CA	51	LYS
47	CA	71	LYS
47	CA	93	LYS
47	CA	95	ASP
47	CA	134	GLN
47	CA	148	LEU
47	CA	185	MET
47	CA	191	LYS
47	CA	210	LYS
47	CA	221	HIS
47	CA	224	TYR
47	CA	243	ARG
47	CA	254	GLN
47	CA	274	ASP
47	CA	276	MET
47	CA	294	VAL
47	CA	295	GLU
47	CA	310	GLU
47	CA	331	MET
47	CA	342	LEU
47	CA	357	LEU
48	Ls	10	LYS
48	Ls	14	PHE
48	Ls	39	GLN
48	Ls	52	VAL
48	Ls	68	HIS
48	Ls	69	LEU
48	Ls	76	GLU
48	Ls	79	LEU
48	Ls	91	THR
48	Ls	99	ARG
48	Ls	105	ASN
48	Ls	107	VAL
48	Ls	146	LYS
48	Ls	149	ARG
48	Ls	153	GLU
48	Ls	173	THR
48	Ls	176	ASN

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Mol	Chain	Res	Type
48	Ls	181	SER
48	Ls	183	PHE
48	Ls	185	PHE
49	Lt	44	ASP
49	Lt	45	ASP
49	Lt	61	LYS
49	Lt	63	THR
49	Lt	76	SER
49	Lt	104	ILE
49	Lt	114	ARG
49	Lt	116	MET
49	Lt	146	ARG
50	SD	4	GLN
50	SD	10	LYS
50	SD	34	TYR
50	SD	35	SER
50	SD	42	THR
50	SD	43	PRO
50	SD	46	THR
50	SD	47	GLU
50	SD	56	GLN
50	SD	67	ARG
50	SD	76	ARG
50	SD	81	GLU
50	SD	104	SER
50	SD	115	VAL
50	SD	125	PHE
50	SD	132	LYS
50	SD	142	LEU
50	SD	146	ARG
50	SD	148	LYS
50	SD	149	SER
50	SD	157	MET
50	SD	167	TYR
50	SD	170	THR
50	SD	173	ARG
50	SD	174	HIS
50	SD	189	MET
50	SD	192	TRP
50	SD	197	LYS
50	SD	209	SER
51	SF	27	ASP

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Mol	Chain	Res	Type
51	SF	45	TYR
51	SF	72	LEU
51	SF	79	HIS
51	SF	85	LYS
51	SF	86	LYS
51	SF	94	LYS
51	SF	106	GLU
51	SF	125	SER
51	SF	142	SER
51	SF	165	ASN
51	SF	168	THR
51	SF	169	ILE
51	SF	192	LYS
52	SK	3	MET
52	SK	5	LYS
52	SK	7	ASN
52	SK	8	ARG
52	SK	50	GLN
52	SK	55	ARG
52	SK	65	ARG
52	SK	77	GLN
52	SK	84	HIS
53	SP	36	LEU
53	SP	55	SER
53	SP	58	LYS
53	SP	62	LYS
53	SP	66	GLU
53	SP	79	HIS
53	SP	97	TYR
53	SP	130	ARG
54	SQ	11	GLN
54	SQ	22	VAL
54	SQ	37	ARG
54	SQ	41	MET
54	SQ	47	LEU
54	SQ	52	LEU
54	SQ	57	LEU
54	SQ	78	VAL
54	SQ	100	VAL
54	SQ	106	LYS
54	SQ	109	LYS
54	SQ	112	LEU

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Mol	Chain	Res	Type
54	SQ	125	ARG
54	SQ	140	ARG
54	SQ	142	GLN
54	SQ	145	TYR
55	SS	1	MET
55	SS	9	PHE
55	SS	18	THR
55	SS	24	ARG
55	SS	40	TYR
55	SS	49	ASP
55	SS	54	LYS
55	SS	58	GLU
55	SS	73	ASN
55	SS	77	TYR
55	SS	81	ASP
55	SS	83	PHE
55	SS	84	LEU
55	SS	89	ASP
55	SS	92	ASP
55	SS	97	GLN
55	SS	101	ASN
55	SS	106	LYS
55	SS	116	LYS
56	ST	29	LYS
56	ST	50	GLU
56	ST	56	ARG
56	ST	64	LEU
56	ST	94	ARG
56	ST	99	VAL
56	ST	102	ARG
56	ST	122	LYS
56	ST	126	GLN
56	ST	129	ARG
56	ST	131	LEU
56	ST	133	ARG
57	SU	18	HIS
57	SU	21	ARG
57	SU	23	THR
57	SU	26	SER
57	SU	41	ARG
57	SU	49	LYS
57	SU	82	MET

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Mol	Chain	Res	Type
58	Sc	7	GLN
58	Sc	10	LYS
58	Sc	17	VAL
58	Sc	18	LEU
58	Sc	21	THR
58	Sc	35	MET
58	Sc	36	ASP
58	Sc	37	ASP
58	Sc	40	ARG
58	Sc	55	VAL
59	Sd	4	GLN
59	Sd	6	LEU
59	Sd	8	TRP
59	Sd	18	SER
60	Sg	3	GLU
60	Sg	8	ARG
60	Sg	14	HIS
60	Sg	27	PHE
60	Sg	30	MET
60	Sg	32	LEU
60	Sg	37	ASP
60	Sg	42	MET
60	Sg	49	GLU
60	Sg	64	HIS
60	Sg	77	PHE
60	Sg	79	LEU
60	Sg	86	THR
60	Sg	107	ASP
60	Sg	113	PHE
60	Sg	125	ARG
60	Sg	134	THR
60	Sg	140	TYR
60	Sg	141	THR
60	Sg	155	ARG
60	Sg	173	LEU
60	Sg	231	ASP
60	Sg	236	ILE
60	Sg	241	PHE
60	Sg	245	ARG
60	Sg	247	TRP
60	Sg	249	CYS
60	Sg	252	THR

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Mol	Chain	Res	Type
60	Sg	259	TRP
60	Sg	289	LEU
60	Sg	297	THR
60	Sg	303	THR
60	Sg	308	ARG
60	Sg	311	GLN
61	SM	22	LEU
61	SM	33	ARG
61	SM	45	ARG
61	SM	52	LEU
61	SM	60	MET
61	SM	61	TYR
61	SM	82	ASN
61	SM	83	LYS
61	SM	84	LYS
61	SM	93	LYS
61	SM	99	LYS
61	SM	112	LYS
61	SM	127	TYR
62	SZ	55	TYR
62	SZ	66	LYS
62	SZ	69	THR
62	SZ	77	LEU
62	SZ	113	THR
63	Sf	94	LYS
63	Sf	110	GLU
63	Sf	113	LYS
63	Sf	116	ARG
63	Sf	126	CYS
63	Sf	138	ARG
64	CD	185	PHE
64	CD	199	SER
64	CD	201	ARG
64	CD	205	LYS
64	CD	286	TRP
65	LW	12	LYS
65	LW	28	VAL
65	LW	47	ARG
65	LW	74	ARG
65	LW	78	PHE
65	LW	86	SER
65	LW	104	GLN

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Mol	Chain	Res	Type
65	LW	116	LYS
66	SE	57	THR
66	SE	62	LYS
66	SE	65	CYS
66	SE	66	MET
66	SE	71	LYS
66	SE	87	MET
66	SE	94	LYS
66	SE	121	TYR
66	SE	124	CYS
66	SE	136	ILE
66	SE	142	HIS
66	SE	172	PHE
66	SE	198	ARG
66	SE	201	HIS
66	SE	207	VAL
66	SE	208	VAL
66	SE	209	HIS
66	SE	211	LYS
66	SE	252	ARG
66	SE	259	LYS
67	SI	4	SER
67	SI	7	ASN
67	SI	74	ARG
67	SI	81	VAL
67	SI	110	ARG
67	SI	111	GLN
67	SI	117	TYR
67	SI	119	LEU
67	SI	129	LEU
67	SI	130	THR
67	SI	132	GLU
67	SI	140	LYS
67	SI	153	LYS
67	SI	168	GLN
67	SI	186	ASP
67	SI	197	PHE
67	SI	201	LYS
68	SL	5	GLN
68	SL	42	LEU
68	SL	55	TYR
68	SL	58	LYS

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Mol	Chain	Res	Type
68	SL	69	ARG
68	SL	73	LEU
68	SL	80	MET
68	SL	81	LYS
68	SL	84	ARG
68	SL	90	ARG
68	SL	92	TYR
68	SL	97	ARG
68	SL	109	MET
68	SL	116	CYS
68	SL	139	ARG
68	SL	141	ASN
68	SL	144	LYS
68	SL	147	LYS
69	SX	4	CYS
69	SX	26	GLN
69	SX	67	ARG
69	SX	72	VAL
69	SX	88	ASP
69	SX	105	PHE
69	SX	119	ARG
69	SX	138	LYS
70	SG	1	MET
70	SG	7	PHE
70	SG	14	LYS
70	SG	45	TRP
70	SG	48	TYR
70	SG	50	VAL
70	SG	68	LEU
70	SG	70	HIS
70	SG	77	LEU
70	SG	98	ARG
70	SG	105	ASN
70	SG	108	VAL
70	SG	114	VAL
70	SG	119	LYS
70	SG	131	ARG
70	SG	132	ARG
70	SG	133	LEU
70	SG	143	LYS
70	SG	151	ASP
70	SG	168	LYS

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Mol	Chain	Res	Type
70	SG	170	ARG
70	SG	195	LYS
70	SG	197	GLN
70	SG	202	ASN
70	SG	215	LYS
70	SG	217	MET
70	SG	224	ARG
71	SJ	7	TRP
71	SJ	10	ARG
71	SJ	12	THR
71	SJ	13	TYR
71	SJ	75	ASN
71	SJ	80	ARG
71	SJ	88	ASP
71	SJ	92	MET
71	SJ	103	GLU
71	SJ	115	PHE
71	SJ	121	LYS
71	SJ	125	HIS
71	SJ	137	VAL
71	SJ	141	VAL
71	SJ	142	VAL
71	SJ	155	LYS
71	SJ	158	ASP
71	SJ	159	PHE
71	SJ	173	VAL
71	SJ	180	LYS
72	SY	10	ARG
72	SY	16	ARG
72	SY	23	MET
72	SY	26	ASP
72	SY	35	VAL
72	SY	47	MET
72	SY	48	TYR
72	SY	51	THR
72	SY	72	PHE
72	SY	90	ARG
72	SY	94	HIS
72	SY	97	TYR
72	SY	98	GLU
72	SY	99	LYS
72	SY	101	LYS

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Mol	Chain	Res	Type
72	SY	110	ARG
72	SY	113	ARG
72	SY	118	ARG
72	SY	132	LYS
73	Se	25	LYS
73	Se	31	ARG
73	Se	39	ASN
73	Se	40	ARG
73	Se	41	ARG
73	Se	58	ASN
74	SA	17	LYS
74	SA	18	PHE
74	SA	23	THR
74	SA	25	LEU
74	SA	52	LYS
74	SA	57	LYS
74	SA	69	GLU
74	SA	74	VAL
74	SA	77	ILE
74	SA	138	SER
74	SA	144	THR
74	SA	177	MET
74	SA	198	MET
74	SA	203	PHE
74	SA	209	GLU
75	SB	23	ASP
75	SB	42	ARG
75	SB	47	THR
75	SB	50	THR
75	SB	51	ARG
75	SB	53	GLN
75	SB	62	LEU
75	SB	68	GLU
75	SB	94	LYS
75	SB	101	HIS
75	SB	103	MET
75	SB	108	ASP
75	SB	118	GLN
75	SB	134	LEU
75	SB	154	SER
75	SB	162	ARG
75	SB	165	ARG

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Mol	Chain	Res	Type
75	SB	166	LYS
75	SB	174	ARG
75	SB	179	ASN
75	SB	182	LYS
75	SB	201	CYS
75	SB	202	GLN
75	SB	210	VAL
75	SB	217	MET
75	SB	220	LYS
75	SB	231	LEU
75	SB	232	HIS
76	SH	32	MET
76	SH	39	GLN
76	SH	57	ARG
76	SH	81	ARG
76	SH	86	LYS
76	SH	103	LYS
76	SH	119	SER
76	SH	122	LEU
76	SH	135	PHE
76	SH	138	GLU
76	SH	155	LYS
76	SH	174	SER
76	SH	177	TYR
76	SH	178	LYS
76	SH	179	LYS
77	SV	1	MET
77	SV	17	CYS
77	SV	21	ASN
77	SV	22	ARG
77	SV	33	GLN
77	SV	45	ARG
77	SV	50	PHE
77	SV	52	THR
77	SV	56	CYS
77	SV	71	ARG
77	SV	74	LYS
78	Sa	15	ARG
78	Sa	23	CYS
78	Sa	37	LYS
78	Sa	68	TYR
78	Sa	71	LEU

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Mol	Chain	Res	Type
78	Sa	81	SER
78	Sa	100	ARG
79	SC	65	LYS
79	SC	76	LYS
79	SC	91	SER
79	SC	93	ILE
79	SC	102	LEU
79	SC	103	LYS
79	SC	112	VAL
79	SC	113	GLN
79	SC	161	SER
79	SC	163	VAL
79	SC	167	ARG
79	SC	172	ASN
79	SC	206	SER
79	SC	220	ASP
79	SC	221	ASP
79	SC	227	ARG
79	SC	236	PHE
79	SC	257	LYS
79	SC	262	THR
79	SC	263	LYS
79	SC	264	SER
79	SC	271	ASP
79	SC	275	LYS
80	SN	14	SER
80	SN	20	ARG
80	SN	30	SER
80	SN	45	LEU
80	SN	46	THR
80	SN	57	SER
80	SN	60	VAL
80	SN	64	ARG
80	SN	72	LEU
80	SN	77	SER
80	SN	89	TYR
80	SN	105	ASN
80	SN	109	LYS
80	SN	114	ARG
80	SN	121	ARG
80	SN	140	LYS
81	SO	14	VAL

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Mol	Chain	Res	Type
81	SO	38	ASN
81	SO	43	HIS
81	SO	48	SER
81	SO	52	THR
81	SO	75	MET
81	SO	84	ARG
81	SO	122	SER
81	SO	124	MET
81	SO	140	THR
82	SW	13	SER
82	SW	14	ILE
82	SW	57	ARG
82	SW	70	ASN
82	SW	103	VAL
82	SW	104	LEU
82	SW	112	ASP
82	SW	115	GLU
83	Sb	6	ASP
83	Sb	11	SER
83	Sb	13	GLU
83	Sb	31	TYR
83	Sb	56	CYS
83	Sb	57	VAL
83	Sb	64	CYS
83	Sb	77	CYS
83	Sb	81	ARG
83	Sb	82	LYS
83	Sb	83	GLN
84	CB	4	PHE
84	CB	12	ILE
84	CB	13	MET
84	CB	16	LYS
84	CB	20	ARG
84	CB	23	SER
84	CB	30	HIS
84	CB	32	LYS
84	CB	38	SER
84	CB	42	LYS
84	CB	48	SER
84	CB	57	THR
84	CB	78	PHE
84	CB	81	LEU

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Mol	Chain	Res	Type
84	CB	82	SER
84	CB	90	LYS
84	CB	93	LYS
84	CB	98	PHE
84	CB	104	ASP
84	CB	109	VAL
84	CB	110	ASP
84	CB	122	THR
84	CB	137	VAL
84	CB	141	THR
84	CB	155	LEU
84	CB	200	MET
84	CB	209	LEU
84	CB	212	VAL
84	CB	214	PHE
84	CB	231	MET
84	CB	235	LYS
84	CB	249	ARG
84	CB	251	LYS
84	CB	274	SER
84	CB	275	LYS
84	CB	284	LYS
84	CB	295	ASP
84	CB	302	ASP
84	CB	322	LYS
84	CB	328	LYS
84	CB	329	ASP
84	CB	352	GLN
84	CB	373	TYR
84	CB	388	CYS
84	CB	397	TYR
84	CB	409	ARG
84	CB	428	ARG
84	CB	435	THR
84	CB	439	LYS
84	CB	448	GLN
84	CB	456	ARG
84	CB	457	TYR
84	CB	466	CYS
84	CB	476	ASP
84	CB	481	LYS
84	CB	505	VAL

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Mol	Chain	Res	Type
84	CB	516	ASP
84	CB	533	MET
84	CB	539	GLU
84	CB	553	HIS
84	CB	574	ASP
84	CB	587	SER
84	CB	598	LYS
84	CB	601	ARG
84	CB	625	ARG
84	CB	641	TRP
84	CB	652	PHE
84	CB	673	ASN
84	CB	707	VAL
84	CB	724	THR
84	CB	745	TYR
84	CB	766	LYS
84	CB	784	VAL
84	CB	799	ASP
84	CB	829	SER
84	CB	830	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (31) such sidechains are listed below:

Mol	Chain	Res	Type
6	LA	162	ASN
10	LE	128	HIS
14	LI	203	HIS
27	LY	72	GLN
29	La	93	ASN
31	Lc	40	GLN
46	Lz	119	GLN
46	Lz	143	ASN
47	CA	83	ASN
47	CA	88	HIS
48	Ls	127	ASN
49	Lt	70	GLN
51	SF	107	ASN
52	SK	7	ASN
54	SQ	11	GLN
54	SQ	48	GLN
56	ST	105	GLN
62	SZ	64	ASN

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Mol	Chain	Res	Type
62	SZ	103	HIS
66	SE	112	HIS
68	SL	5	GLN
71	SJ	111	GLN
71	SJ	177	ASN
74	SA	9	GLN
76	SH	91	HIS
77	SV	35	ASN
79	SC	272	HIS
81	SO	38	ASN
82	SW	90	GLN
83	Sb	51	GLN
84	CB	27	HIS

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	S2	1717/1869 (91%)	467 (27%)	5 (0%)
3	L5	3705/5070 (73%)	877 (23%)	22 (0%)
4	L7	119/120 (99%)	14 (11%)	0
5	L8	155/156 (99%)	29 (18%)	0
85	Et	73/75 (97%)	55 (75%)	0
All	All	5769/7290 (79%)	1442 (24%)	27 (0%)

All (1442) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	S2	4	C
2	S2	13	C
2	S2	14	C
2	S2	17	C
2	S2	23	G
2	S2	24	C
2	S2	25	A
2	S2	33	G
2	S2	42	A
2	S2	44	U
2	S2	45	A
2	S2	46	A
2	S2	56	G
2	S2	58	C

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Mol	Chain	Res	Type
2	S2	59	U
2	S2	62	G
2	S2	64	A
2	S2	65	C
2	S2	66	G
2	S2	67	C
2	S2	68	A
2	S2	72	C
2	S2	73	C
2	S2	74	G
2	S2	76	U
2	S2	79	A
2	S2	92	A
2	S2	103	A
2	S2	110	U
2	S2	113	G
2	S2	114	G
2	S2	115	U
2	S2	116	U
2	S2	126	G
2	S2	129	C
2	S2	130	G
2	S2	139	C
2	S2	142	C
2	S2	143	U
2	S2	149	A
2	S2	155	G
2	S2	158	A
2	S2	160	U
2	S2	161	U
2	S2	162	C
2	S2	163	U
2	S2	168	C
2	S2	170	A
2	S2	175	A
2	S2	182	C
2	S2	184	G
2	S2	190	G
2	S2	192	C
2	S2	196	C
2	S2	197	U
2	S2	198	U

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Mol	Chain	Res	Type
2	S2	200	G
2	S2	202	G
2	S2	203	G
2	S2	204	G
2	S2	206	G
2	S2	207	G
2	S2	208	G
2	S2	209	A
2	S2	211	G
2	S2	212	C
2	S2	213	G
2	S2	214	U
2	S2	291	G
2	S2	292	A
2	S2	295	C
2	S2	298	G
2	S2	301	A
2	S2	303	C
2	S2	305	U
2	S2	306	C
2	S2	307	G
2	S2	308	G
2	S2	309	G
2	S2	310	C
2	S2	311	C
2	S2	312	G
2	S2	317	C
2	S2	318	A
2	S2	319	C
2	S2	323	C
2	S2	324	C
2	S2	325	C
2	S2	326	C
2	S2	328	U
2	S2	329	G
2	S2	332	G
2	S2	338	G
2	S2	339	A
2	S2	340	C
2	S2	347	G
2	S2	360	A
2	S2	361	U

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Mol	Chain	Res	Type
2	S2	362	C
2	S2	364	A
2	S2	368	U
2	S2	370	G
2	S2	373	G
2	S2	375	U
2	S2	385	G
2	S2	386	C
2	S2	408	A
2	S2	409	C
2	S2	421	G
2	S2	426	A
2	S2	437	G
2	S2	442	C
2	S2	448	A
2	S2	449	A
2	S2	450	C
2	S2	452	G
2	S2	464	A
2	S2	465	A
2	S2	466	G
2	S2	471	G
2	S2	472	C
2	S2	473	A
2	S2	474	G
2	S2	476	A
2	S2	482	G
2	S2	487	U
2	S2	488	U
2	S2	492	C
2	S2	493	A
2	S2	496	C
2	S2	500	A
2	S2	502	C
2	S2	516	A
2	S2	517	C
2	S2	525	A
2	S2	528	A
2	S2	530	U
2	S2	531	A
2	S2	532	C
2	S2	533	A

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Mol	Chain	Res	Type
2	S2	536	A
2	S2	537	C
2	S2	538	U
2	S2	540	U
2	S2	541	U
2	S2	542	U
2	S2	546	G
2	S2	547	G
2	S2	549	C
2	S2	557	U
2	S2	558	G
2	S2	559	G
2	S2	560	A
2	S2	563	G
2	S2	564	A
2	S2	566	U
2	S2	569	A
2	S2	583	A
2	S2	587	A
2	S2	589	G
2	S2	590	A
2	S2	591	U
2	S2	593	C
2	S2	594	A
2	S2	604	A
2	S2	606	G
2	S2	607	U
2	S2	612	U
2	S2	614	C
2	S2	623	G
2	S2	628	A
2	S2	629	A
2	S2	631	U
2	S2	643	A
2	S2	644	G
2	S2	655	A
2	S2	660	C
2	S2	664	A
2	S2	668	A
2	S2	669	A
2	S2	671	A
2	S2	672	A

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Mol	Chain	Res	Type
2	S2	673	G
2	S2	678	U
2	S2	683	G
2	S2	684	G
2	S2	688	U
2	S2	689	U
2	S2	692	G
2	S2	693	A
2	S2	695	C
2	S2	696	G
2	S2	697	G
2	S2	698	G
2	S2	732	U
2	S2	733	C
2	S2	734	C
2	S2	736	C
2	S2	738	C
2	S2	749	U
2	S2	750	C
2	S2	751	G
2	S2	752	G
2	S2	753	C
2	S2	788	G
2	S2	789	G
2	S2	791	C
2	S2	792	C
2	S2	793	G
2	S2	794	A
2	S2	798	G
2	S2	799	U
2	S2	801	U
2	S2	821	G
2	S2	822	U
2	S2	823	U
2	S2	824	C
2	S2	827	A
2	S2	830	A
2	S2	833	C
2	S2	834	C
2	S2	835	C
2	S2	836	G
2	S2	837	A

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Mol	Chain	Res	Type
2	S2	838	G
2	S2	839	C
2	S2	840	C
2	S2	842	C
2	S2	844	U
2	S2	847	A
2	S2	859	G
2	S2	869	A
2	S2	870	A
2	S2	873	G
2	S2	874	G
2	S2	877	C
2	S2	881	G
2	S2	882	U
2	S2	888	U
2	S2	889	U
2	S2	890	U
2	S2	891	G
2	S2	892	U
2	S2	893	U
2	S2	896	U
2	S2	897	U
2	S2	898	U
2	S2	899	U
2	S2	900	C
2	S2	901	G
2	S2	903	A
2	S2	904	A
2	S2	913	A
2	S2	919	A
2	S2	920	A
2	S2	922	A
2	S2	925	G
2	S2	933	G
2	S2	934	G
2	S2	949	G
2	S2	954	U
2	S2	955	A
2	S2	956	G
2	S2	963	A
2	S2	970	G
2	S2	971	G

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Mol	Chain	Res	Type
2	S2	972	A
2	S2	978	G
2	S2	980	A
2	S2	988	C
2	S2	989	C
2	S2	990	A
2	S2	992	A
2	S2	999	G
2	S2	1001	A
2	S2	1008	A
2	S2	1017	U
2	S2	1023	A
2	S2	1027	A
2	S2	1033	G
2	S2	1042	A
2	S2	1045	U
2	S2	1047	C
2	S2	1060	A
2	S2	1061	U
2	S2	1062	A
2	S2	1067	C
2	S2	1083	A
2	S2	1085	C
2	S2	1088	U
2	S2	1109	C
2	S2	1113	A
2	S2	1114	U
2	S2	1115	U
2	S2	1116	C
2	S2	1118	C
2	S2	1119	A
2	S2	1121	G
2	S2	1126	G
2	S2	1133	A
2	S2	1138	C
2	S2	1148	A
2	S2	1153	C
2	S2	1154	U
2	S2	1155	U
2	S2	1195	A
2	S2	1207	G
2	S2	1208	A

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Mol	Chain	Res	Type
2	S2	1215	C
2	S2	1216	C
2	S2	1217	A
2	S2	1220	A
2	S2	1224	G
2	S2	1227	G
2	S2	1242	U
2	S2	1243	U
2	S2	1251	A
2	S2	1253	A
2	S2	1256	G
2	S2	1257	G
2	S2	1259	A
2	S2	1264	C
2	S2	1274	G
2	S2	1275	G
2	S2	1283	C
2	S2	1284	A
2	S2	1286	G
2	S2	1293	A
2	S2	1294	G
2	S2	1295	A
2	S2	1301	A
2	S2	1302	G
2	S2	1303	C
2	S2	1308	U
2	S2	1322	G
2	S2	1342	U
2	S2	1348	G
2	S2	1364	U
2	S2	1371	U
2	S2	1372	U
2	S2	1373	C
2	S2	1376	A
2	S2	1378	A
2	S2	1396	A
2	S2	1401	A
2	S2	1402	A
2	S2	1408	U
2	S2	1411	G
2	S2	1414	A
2	S2	1415	C

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Mol	Chain	Res	Type
2	S2	1419	C
2	S2	1420	G
2	S2	1421	A
2	S2	1422	G
2	S2	1423	C
2	S2	1424	G
2	S2	1428	G
2	S2	1431	G
2	S2	1433	C
2	S2	1434	C
2	S2	1435	C
2	S2	1436	C
2	S2	1438	A
2	S2	1442	U
2	S2	1449	G
2	S2	1454	A
2	S2	1458	G
2	S2	1462	U
2	S2	1463	U
2	S2	1478	U
2	S2	1479	G
2	S2	1486	A
2	S2	1488	C
2	S2	1489	A
2	S2	1490	G
2	S2	1494	U
2	S2	1495	G
2	S2	1497	G
2	S2	1498	A
2	S2	1508	A
2	S2	1521	C
2	S2	1533	A
2	S2	1535	U
2	S2	1536	G
2	S2	1537	A
2	S2	1544	C
2	S2	1552	G
2	S2	1556	A
2	S2	1570	G
2	S2	1574	C
2	S2	1579	A
2	S2	1580	A

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Mol	Chain	Res	Type
2	S2	1581	C
2	S2	1582	C
2	S2	1584	G
2	S2	1585	U
2	S2	1586	U
2	S2	1587	G
2	S2	1588	A
2	S2	1599	U
2	S2	1601	A
2	S2	1603	G
2	S2	1606	G
2	S2	1621	U
2	S2	1623	A
2	S2	1629	C
2	S2	1633	A
2	S2	1634	A
2	S2	1637	A
2	S2	1638	G
2	S2	1639	G
2	S2	1640	A
2	S2	1648	G
2	S2	1654	G
2	S2	1663	A
2	S2	1665	G
2	S2	1671	G
2	S2	1696	C
2	S2	1699	A
2	S2	1712	A
2	S2	1715	A
2	S2	1722	G
2	S2	1729	U
2	S2	1742	C
2	S2	1743	G
2	S2	1744	G
2	S2	1745	A
2	S2	1752	C
2	S2	1753	C
2	S2	1754	G
2	S2	1755	C
2	S2	1756	C
2	S2	1757	G
2	S2	1758	G

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Mol	Chain	Res	Type
2	S2	1759	G
2	S2	1761	U
2	S2	1772	C
2	S2	1773	C
2	S2	1774	C
2	S2	1777	G
2	S2	1780	G
2	S2	1782	G
2	S2	1783	C
2	S2	1784	G
2	S2	1785	C
2	S2	1787	G
2	S2	1798	C
2	S2	1806	A
2	S2	1809	A
2	S2	1810	U
2	S2	1812	U
2	S2	1813	A
2	S2	1822	A
2	S2	1823	A
2	S2	1825	A
2	S2	1826	G
2	S2	1829	G
2	S2	1831	A
2	S2	1835	A
2	S2	1838	U
2	S2	1849	G
2	S2	1851	A
2	S2	1852	C
2	S2	1861	G
2	S2	1862	G
2	S2	1863	A
2	S2	1865	C
3	L5	2	G
3	L5	25	A
3	L5	26	C
3	L5	30	C
3	L5	39	A
3	L5	42	A
3	L5	48	G
3	L5	56	A
3	L5	59	A

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Mol	Chain	Res	Type
3	L5	64	A
3	L5	65	A
3	L5	66	A
3	L5	69	A
3	L5	73	A
3	L5	74	G
3	L5	91	G
3	L5	98	A
3	L5	104	G
3	L5	108	A
3	L5	109	G
3	L5	110	C
3	L5	119	G
3	L5	120	A
3	L5	132	G
3	L5	133	C
3	L5	134	G
3	L5	135	G
3	L5	145	G
3	L5	152	U
3	L5	159	C
3	L5	165	A
3	L5	172	C
3	L5	183	C
3	L5	184	U
3	L5	185	C
3	L5	188	G
3	L5	189	G
3	L5	200	U
3	L5	209	U
3	L5	216	C
3	L5	218	A
3	L5	220	C
3	L5	234	G
3	L5	237	G
3	L5	255	C
3	L5	256	G
3	L5	261	G
3	L5	263	G
3	L5	264	C
3	L5	265	C
3	L5	266	C

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Mol	Chain	Res	Type
3	L5	267	G
3	L5	269	G
3	L5	275	C
3	L5	280	G
3	L5	297	U
3	L5	306	A
3	L5	315	G
3	L5	316	U
3	L5	326	C
3	L5	340	C
3	L5	350	C
3	L5	373	G
3	L5	385	A
3	L5	387	G
3	L5	388	A
3	L5	396	A
3	L5	407	A
3	L5	409	G
3	L5	410	A
3	L5	411	G
3	L5	412	G
3	L5	415	G
3	L5	431	G
3	L5	432	U
3	L5	440	U
3	L5	449	C
3	L5	450	G
3	L5	452	A
3	L5	453	G
3	L5	454	U
3	L5	456	C
3	L5	457	G
3	L5	465	G
3	L5	467	U
3	L5	468	U
3	L5	472	C
3	L5	484	U
3	L5	485	C
3	L5	486	C
3	L5	489	C
3	L5	493	G
3	L5	494	U

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Mol	Chain	Res	Type
3	L5	497	G
3	L5	498	C
3	L5	499	G
3	L5	500	G
3	L5	501	C
3	L5	502	C
3	L5	503	C
3	L5	504	G
3	L5	505	G
3	L5	509	A
3	L5	510	U
3	L5	512	U
3	L5	513	U
3	L5	514	U
3	L5	516	C
3	L5	518	G
3	L5	643	C
3	L5	644	G
3	L5	645	G
3	L5	646	G
3	L5	653	U
3	L5	654	C
3	L5	656	C
3	L5	657	C
3	L5	659	G
3	L5	665	C
3	L5	666	G
3	L5	667	A
3	L5	668	C
3	L5	669	C
3	L5	672	C
3	L5	673	C
3	L5	685	C
3	L5	686	A
3	L5	687	U
3	L5	696	C
3	L5	703	G
3	L5	704	C
3	L5	706	C
3	L5	708	G
3	L5	730	G
3	L5	731	G

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Mol	Chain	Res	Type
3	L5	738	C
3	L5	739	G
3	L5	742	G
3	L5	753	C
3	L5	758	G
3	L5	759	G
3	L5	904	C
3	L5	905	C
3	L5	906	C
3	L5	907	C
3	L5	910	G
3	L5	911	U
3	L5	912	G
3	L5	913	U
3	L5	914	U
3	L5	915	A
3	L5	917	A
3	L5	918	G
3	L5	923	C
3	L5	924	C
3	L5	926	G
3	L5	932	A
3	L5	933	G
3	L5	935	A
3	L5	936	C
3	L5	937	U
3	L5	944	A
3	L5	945	U
3	L5	959	G
3	L5	960	A
3	L5	961	G
3	L5	962	C
3	L5	965	G
3	L5	966	A
3	L5	967	C
3	L5	968	C
3	L5	969	C
3	L5	970	G
3	L5	977	C
3	L5	982	U
3	L5	985	C
3	L5	989	U

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Mol	Chain	Res	Type
3	L5	990	C
3	L5	992	C
3	L5	993	G
3	L5	995	C
3	L5	1048	G
3	L5	1049	C
3	L5	1050	C
3	L5	1051	G
3	L5	1070	G
3	L5	1071	C
3	L5	1072	C
3	L5	1075	G
3	L5	1082	C
3	L5	1083	U
3	L5	1094	G
3	L5	1095	A
3	L5	1168	G
3	L5	1171	G
3	L5	1172	C
3	L5	1173	G
3	L5	1174	G
3	L5	1179	U
3	L5	1180	C
3	L5	1182	C
3	L5	1183	C
3	L5	1198	G
3	L5	1202	C
3	L5	1203	G
3	L5	1204	C
3	L5	1205	G
3	L5	1210	C
3	L5	1211	G
3	L5	1214	C
3	L5	1215	C
3	L5	1217	G
3	L5	1218	G
3	L5	1219	G
3	L5	1222	A
3	L5	1235	G
3	L5	1241	C
3	L5	1242	G
3	L5	1246	G

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Mol	Chain	Res	Type
3	L5	1253	G
3	L5	1254	A
3	L5	1257	A
3	L5	1258	G
3	L5	1261	G
3	L5	1266	G
3	L5	1267	C
3	L5	1269	G
3	L5	1270	A
3	L5	1271	G
3	L5	1272	C
3	L5	1273	G
3	L5	1274	A
3	L5	1275	G
3	L5	1280	C
3	L5	1284	G
3	L5	1285	U
3	L5	1287	G
3	L5	1293	G
3	L5	1294	A
3	L5	1295	C
3	L5	1301	C
3	L5	1312	A
3	L5	1314	C
3	L5	1326	A
3	L5	1337	A
3	L5	1354	A
3	L5	1358	G
3	L5	1359	G
3	L5	1365	C
3	L5	1367	C
3	L5	1370	G
3	L5	1387	A
3	L5	1394	G
3	L5	1397	A
3	L5	1404	G
3	L5	1405	C
3	L5	1407	C
3	L5	1409	C
3	L5	1410	U
3	L5	1411	C
3	L5	1414	C

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Mol	Chain	Res	Type
3	L5	1415	G
3	L5	1417	C
3	L5	1418	C
3	L5	1420	A
3	L5	1435	G
3	L5	1437	C
3	L5	1439	C
3	L5	1443	A
3	L5	1444	G
3	L5	1446	C
3	L5	1447	C
3	L5	1482	G
3	L5	1483	C
3	L5	1497	A
3	L5	1498	G
3	L5	1502	G
3	L5	1516	G
3	L5	1517	G
3	L5	1518	A
3	L5	1525	A
3	L5	1534	A
3	L5	1547	A
3	L5	1562	G
3	L5	1566	C
3	L5	1578	U
3	L5	1591	U
3	L5	1596	U
3	L5	1621	A
3	L5	1624	G
3	L5	1625	G
3	L5	1631	A
3	L5	1633	G
3	L5	1634	A
3	L5	1638	A
3	L5	1640	C
3	L5	1641	G
3	L5	1642	A
3	L5	1654	G
3	L5	1661	C
3	L5	1663	C
3	L5	1676	C
3	L5	1677	U

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Mol	Chain	Res	Type
3	L5	1678	C
3	L5	1681	G
3	L5	1685	G
3	L5	1694	C
3	L5	1699	A
3	L5	1700	G
3	L5	1703	C
3	L5	1704	C
3	L5	1705	G
3	L5	1707	C
3	L5	1718	C
3	L5	1734	G
3	L5	1740	C
3	L5	1741	G
3	L5	1742	A
3	L5	1750	G
3	L5	1753	G
3	L5	1757	U
3	L5	1758	G
3	L5	1760	G
3	L5	1761	G
3	L5	1762	C
3	L5	1763	C
3	L5	1764	G
3	L5	1765	A
3	L5	1766	A
3	L5	1768	C
3	L5	1769	G
3	L5	1770	A
3	L5	1787	A
3	L5	1804	A
3	L5	1806	G
3	L5	1810	G
3	L5	1820	C
3	L5	1821	G
3	L5	1822	U
3	L5	1834	U
3	L5	1836	G
3	L5	1837	A
3	L5	1842	G
3	L5	1843	A
3	L5	1855	G

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Mol	Chain	Res	Type
3	L5	1869	G
3	L5	1882	U
3	L5	1893	C
3	L5	1897	A
3	L5	1898	C
3	L5	1917	A
3	L5	1918	U
3	L5	1919	G
3	L5	1920	C
3	L5	1921	C
3	L5	1922	G
3	L5	1925	G
3	L5	1931	C
3	L5	1932	A
3	L5	1940	G
3	L5	1948	G
3	L5	1951	G
3	L5	1959	U
3	L5	1961	G
3	L5	1962	A
3	L5	1974	U
3	L5	1975	G
3	L5	1978	C
3	L5	1980	U
3	L5	1981	G
3	L5	1982	G
3	L5	1984	A
3	L5	1985	G
3	L5	1986	U
3	L5	1991	A
3	L5	1992	U
3	L5	1993	C
3	L5	1997	U
3	L5	1998	A
3	L5	2001	G
3	L5	2002	A
3	L5	2011	C
3	L5	2016	C
3	L5	2017	A
3	L5	2018	C
3	L5	2024	G
3	L5	2026	A

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Mol	Chain	Res	Type
3	L5	2033	A
3	L5	2034	G
3	L5	2046	G
3	L5	2048	U
3	L5	2055	G
3	L5	2056	G
3	L5	2069	A
3	L5	2084	C
3	L5	2085	G
3	L5	2092	G
3	L5	2093	A
3	L5	2095	A
3	L5	2096	G
3	L5	2097	U
3	L5	2098	G
3	L5	2101	C
3	L5	2102	G
3	L5	2103	G
3	L5	2106	G
3	L5	2107	C
3	L5	2108	G
3	L5	2110	C
3	L5	2111	G
3	L5	2112	G
3	L5	2250	C
3	L5	2252	G
3	L5	2253	A
3	L5	2255	C
3	L5	2256	C
3	L5	2257	C
3	L5	2258	C
3	L5	2259	G
3	L5	2260	C
3	L5	2263	A
3	L5	2289	C
3	L5	2300	A
3	L5	2301	G
3	L5	2306	G
3	L5	2313	A
3	L5	2331	G
3	L5	2332	A
3	L5	2333	G

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Mol	Chain	Res	Type
3	L5	2344	U
3	L5	2345	G
3	L5	2348	G
3	L5	2351	C
3	L5	2360	A
3	L5	2364	G
3	L5	2382	A
3	L5	2383	C
3	L5	2395	A
3	L5	2397	G
3	L5	2402	G
3	L5	2412	A
3	L5	2417	A
3	L5	2421	G
3	L5	2425	U
3	L5	2441	C
3	L5	2450	G
3	L5	2453	A
3	L5	2464	C
3	L5	2465	C
3	L5	2471	G
3	L5	2474	G
3	L5	2475	G
3	L5	2478	C
3	L5	2479	G
3	L5	2483	G
3	L5	2484	A
3	L5	2485	U
3	L5	2486	G
3	L5	2487	G
3	L5	2488	C
3	L5	2489	C
3	L5	2490	U
3	L5	2491	C
3	L5	2494	U
3	L5	2503	G
3	L5	2504	C
3	L5	2505	C
3	L5	2506	G
3	L5	2513	A
3	L5	2519	U
3	L5	2520	C

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Mol	Chain	Res	Type
3	L5	2537	A
3	L5	2544	G
3	L5	2546	G
3	L5	2547	G
3	L5	2554	U
3	L5	2555	G
3	L5	2560	C
3	L5	2565	A
3	L5	2567	G
3	L5	2568	C
3	L5	2573	A
3	L5	2583	C
3	L5	2586	G
3	L5	2587	A
3	L5	2589	C
3	L5	2618	G
3	L5	2627	C
3	L5	2652	G
3	L5	2653	C
3	L5	2662	G
3	L5	2664	G
3	L5	2669	C
3	L5	2675	G
3	L5	2676	A
3	L5	2687	U
3	L5	2694	G
3	L5	2695	A
3	L5	2696	A
3	L5	2703	G
3	L5	2707	U
3	L5	2708	U
3	L5	2710	C
3	L5	2711	G
3	L5	2712	G
3	L5	2721	G
3	L5	2724	G
3	L5	2726	G
3	L5	2739	C
3	L5	2742	G
3	L5	2743	A
3	L5	2746	A
3	L5	2761	U

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Mol	Chain	Res	Type
3	L5	2763	U
3	L5	2764	A
3	L5	2769	U
3	L5	2770	C
3	L5	2787	A
3	L5	2788	U
3	L5	2790	U
3	L5	2806	A
3	L5	2826	U
3	L5	2827	G
3	L5	2838	G
3	L5	2846	G
3	L5	2848	G
3	L5	2855	G
3	L5	2867	C
3	L5	2877	G
3	L5	2892	C
3	L5	2894	A
3	L5	2895	A
3	L5	2899	C
3	L5	2900	U
3	L5	2902	G
3	L5	2903	G
3	L5	2904	U
3	L5	2905	C
3	L5	2906	G
3	L5	2908	U
3	L5	3586	G
3	L5	3588	C
3	L5	3590	G
3	L5	3591	C
3	L5	3594	C
3	L5	3595	U
3	L5	3596	A
3	L5	3597	G
3	L5	3599	A
3	L5	3605	C
3	L5	3615	G
3	L5	3618	C
3	L5	3626	G
3	L5	3630	A
3	L5	3635	A

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Mol	Chain	Res	Type
3	L5	3644	U
3	L5	3646	A
3	L5	3648	A
3	L5	3662	A
3	L5	3664	G
3	L5	3670	C
3	L5	3673	C
3	L5	3674	G
3	L5	3685	C
3	L5	3710	G
3	L5	3711	A
3	L5	3713	U
3	L5	3714	G
3	L5	3726	A
3	L5	3727	A
3	L5	3739	C
3	L5	3748	A
3	L5	3750	G
3	L5	3756	A
3	L5	3759	A
3	L5	3766	A
3	L5	3769	C
3	L5	3773	U
3	L5	3774	A
3	L5	3776	G
3	L5	3777	G
3	L5	3783	A
3	L5	3784	A
3	L5	3786	U
3	L5	3788	C
3	L5	3802	U
3	L5	3810	C
3	L5	3811	G
3	L5	3812	C
3	L5	3814	U
3	L5	3817	A
3	L5	3818	U
3	L5	3819	G
3	L5	3823	G
3	L5	3824	A
3	L5	3838	U
3	L5	3839	G

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Mol	Chain	Res	Type
3	L5	3840	U
3	L5	3841	C
3	L5	3867	A
3	L5	3868	G
3	L5	3877	A
3	L5	3878	C
3	L5	3879	G
3	L5	3880	G
3	L5	3885	G
3	L5	3887	C
3	L5	3890	A
3	L5	3892	U
3	L5	3897	G
3	L5	3901	A
3	L5	3906	A
3	L5	3907	G
3	L5	3908	A
3	L5	3915	U
3	L5	3922	G
3	L5	3930	U
3	L5	3938	G
3	L5	3939	G
3	L5	3942	A
3	L5	3943	A
3	L5	3944	G
3	L5	3947	A
3	L5	3948	C
3	L5	3949	A
3	L5	3950	U
3	L5	3951	G
3	L5	3953	G
3	L5	3955	G
3	L5	3956	G
3	L5	3957	U
3	L5	3959	U
3	L5	3960	A
3	L5	3961	G
3	L5	3962	A
3	L5	3963	A
3	L5	3964	U
3	L5	3965	A
3	L5	3966	A

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Mol	Chain	Res	Type
3	L5	3968	U
3	L5	3969	G
3	L5	3970	G
3	L5	3972	A
3	L5	3973	G
3	L5	3974	G
3	L5	3977	C
3	L5	4034	G
3	L5	4038	C
3	L5	4039	G
3	L5	4041	C
3	L5	4042	G
3	L5	4043	G
3	L5	4044	U
3	L5	4045	G
3	L5	4046	A
3	L5	4047	A
3	L5	4048	A
3	L5	4049	U
3	L5	4050	A
3	L5	4051	C
3	L5	4052	C
3	L5	4053	A
3	L5	4054	C
3	L5	4055	U
3	L5	4056	A
3	L5	4057	C
3	L5	4058	U
3	L5	4059	C
3	L5	4060	U
3	L5	4061	G
3	L5	4062	A
3	L5	4063	U
3	L5	4064	C
3	L5	4065	G
3	L5	4067	U
3	L5	4068	U
3	L5	4069	U
3	L5	4076	G
3	L5	4084	G
3	L5	4093	G
3	L5	4096	C

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Mol	Chain	Res	Type
3	L5	4097	G
3	L5	4098	A
3	L5	4099	G
3	L5	4100	C
3	L5	4101	C
3	L5	4102	C
3	L5	4103	C
3	L5	4104	G
3	L5	4108	G
3	L5	4111	U
3	L5	4112	C
3	L5	4114	C
3	L5	4115	G
3	L5	4116	C
3	L5	4117	U
3	L5	4119	C
3	L5	4127	A
3	L5	4133	C
3	L5	4134	C
3	L5	4138	C
3	L5	4140	C
3	L5	4141	G
3	L5	4142	C
3	L5	4143	G
3	L5	4144	C
3	L5	4146	G
3	L5	4149	C
3	L5	4160	C
3	L5	4162	C
3	L5	4163	U
3	L5	4170	A
3	L5	4183	G
3	L5	4184	G
3	L5	4191	G
3	L5	4196	G
3	L5	4197	G
3	L5	4201	G
3	L5	4203	A
3	L5	4222	G
3	L5	4225	G
3	L5	4228	G
3	L5	4229	U

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Mol	Chain	Res	Type
3	L5	4232	U
3	L5	4233	A
3	L5	4234	A
3	L5	4237	C
3	L5	4249	G
3	L5	4251	A
3	L5	4254	G
3	L5	4255	A
3	L5	4257	A
3	L5	4258	C
3	L5	4265	U
3	L5	4268	A
3	L5	4273	A
3	L5	4291	G
3	L5	4296	U
3	L5	4297	G
3	L5	4304	A
3	L5	4305	G
3	L5	4306	U
3	L5	4313	A
3	L5	4314	C
3	L5	4319	C
3	L5	4330	G
3	L5	4332	C
3	L5	4339	A
3	L5	4349	C
3	L5	4371	G
3	L5	4373	G
3	L5	4376	A
3	L5	4377	G
3	L5	4378	A
3	L5	4380	A
3	L5	4387	C
3	L5	4391	G
3	L5	4394	A
3	L5	4420	U
3	L5	4421	C
3	L5	4422	A
3	L5	4438	U
3	L5	4448	G
3	L5	4449	A
3	L5	4453	C

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Mol	Chain	Res	Type
3	L5	4464	A
3	L5	4466	C
3	L5	4475	G
3	L5	4488	A
3	L5	4500	U
3	L5	4512	U
3	L5	4513	A
3	L5	4515	G
3	L5	4519	C
3	L5	4524	G
3	L5	4525	C
3	L5	4528	G
3	L5	4545	G
3	L5	4548	A
3	L5	4549	G
3	L5	4560	C
3	L5	4567	G
3	L5	4573	G
3	L5	4575	G
3	L5	4583	C
3	L5	4584	A
3	L5	4589	A
3	L5	4590	A
3	L5	4600	G
3	L5	4601	U
3	L5	4617	G
3	L5	4627	U
3	L5	4635	A
3	L5	4636	U
3	L5	4637	G
3	L5	4648	A
3	L5	4652	G
3	L5	4656	A
3	L5	4657	U
3	L5	4659	G
3	L5	4670	C
3	L5	4672	A
3	L5	4679	G
3	L5	4694	G
3	L5	4695	C
3	L5	4700	A
3	L5	4708	A

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Mol	Chain	Res	Type
3	L5	4709	U
3	L5	4719	G
3	L5	4733	C
3	L5	4734	A
3	L5	4741	C
3	L5	4742	G
3	L5	4745	G
3	L5	4754	G
3	L5	4757	C
3	L5	4759	C
3	L5	4761	G
3	L5	4765	G
3	L5	4771	C
3	L5	4772	C
3	L5	4773	C
3	L5	4775	C
3	L5	4776	G
3	L5	4859	C
3	L5	4860	G
3	L5	4863	G
3	L5	4870	G
3	L5	4871	C
3	L5	4875	G
3	L5	4880	C
3	L5	4882	U
3	L5	4883	C
3	L5	4889	G
3	L5	4895	C
3	L5	4896	G
3	L5	4900	C
3	L5	4901	G
3	L5	4902	C
3	L5	4910	G
3	L5	4912	G
3	L5	4914	C
3	L5	4922	C
3	L5	4923	C
3	L5	4925	U
3	L5	4926	C
3	L5	4927	G
3	L5	4928	C
3	L5	4940	C

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Mol	Chain	Res	Type
3	L5	4941	G
3	L5	4943	A
3	L5	4951	G
3	L5	4960	G
3	L5	4976	U
3	L5	4988	U
3	L5	4989	U
3	L5	4990	C
3	L5	4991	U
3	L5	5007	A
3	L5	5009	G
3	L5	5013	C
3	L5	5014	A
3	L5	5017	G
3	L5	5023	C
3	L5	5024	C
3	L5	5027	C
3	L5	5028	G
3	L5	5029	C
3	L5	5030	U
3	L5	5031	G
3	L5	5034	A
3	L5	5041	G
3	L5	5050	C
3	L5	5054	C
3	L5	5055	G
3	L5	5061	A
3	L5	5069	U
4	L7	2	U
4	L7	4	U
4	L7	5	A
4	L7	7	G
4	L7	22	A
4	L7	24	C
4	L7	33	U
4	L7	38	U
4	L7	53	U
4	L7	54	A
4	L7	63	C
4	L7	64	G
4	L7	100	A
4	L7	110	G

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Mol	Chain	Res	Type
5	L8	25	G
5	L8	34	U
5	L8	35	C
5	L8	48	A
5	L8	52	A
5	L8	59	A
5	L8	60	G
5	L8	62	A
5	L8	63	U
5	L8	68	G
5	L8	82	A
5	L8	84	A
5	L8	85	U
5	L8	86	U
5	L8	87	G
5	L8	94	G
5	L8	103	A
5	L8	105	C
5	L8	110	U
5	L8	111	U
5	L8	114	G
5	L8	123	U
5	L8	124	U
5	L8	125	C
5	L8	126	C
5	L8	127	U
5	L8	147	G
5	L8	151	G
5	L8	156	U
85	Et	3	C
85	Et	4	C
85	Et	5	G
85	Et	6	G
85	Et	7	A
85	Et	8	U
85	Et	9	A
85	Et	10	G
85	Et	11	C
85	Et	13	C
85	Et	14	A
85	Et	15	G
85	Et	19	G

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Mol	Chain	Res	Type
85	Et	20	U
85	Et	21	A
85	Et	22	G
85	Et	24	G
85	Et	25	C
85	Et	26	A
85	Et	27	U
85	Et	29	A
85	Et	30	G
85	Et	31	A
85	Et	34	U
85	Et	35	U
85	Et	37	A
85	Et	38	A
85	Et	40	C
85	Et	41	U
85	Et	42	G
85	Et	45	G
85	Et	46	G
85	Et	47	U
85	Et	48	C
85	Et	49	C
85	Et	50	A
85	Et	52	G
85	Et	53	G
85	Et	54	U
85	Et	55	U
85	Et	58	A
85	Et	59	G
85	Et	60	U
85	Et	61	C
85	Et	63	C
85	Et	64	U
85	Et	65	G
85	Et	67	U
85	Et	68	C
85	Et	69	G
85	Et	70	G
85	Et	71	G
85	Et	72	C
85	Et	73	G
85	Et	76	A

All (27) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	S2	291	G
2	S2	420	G
2	S2	563	G
2	S2	688	U
2	S2	1434	C
3	L5	265	C
3	L5	406	C
3	L5	493	G
3	L5	914	U
3	L5	1082	C
3	L5	1590	C
3	L5	1633	G
3	L5	1977	C
3	L5	2033	A
3	L5	2416	G
3	L5	2485	U
3	L5	2675	G
3	L5	2760	G
3	L5	2786	C
3	L5	3614	G
3	L5	3673	C
3	L5	3948	C
3	L5	4055	U
3	L5	4061	G
3	L5	4600	G
3	L5	4699	U
3	L5	4913	G

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 261 ligands modelled in this entry, 261 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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
64	CD	1
49	Lt	1
85	Et	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	CD	225:LEU	C	282:THR	N	57.40
1	Lt	87:GLU	C	104:ILE	N	8.75
1	Et	16:C	O3’	18:U	P	5.31

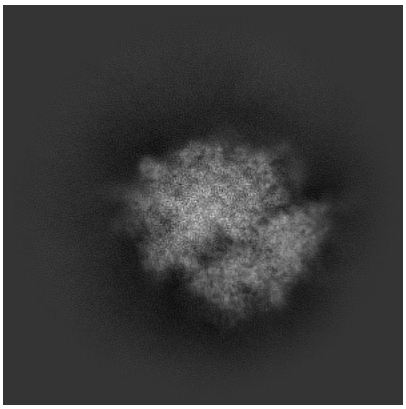
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-44039. These allow visual inspection of the internal detail of the map and identification of artifacts.

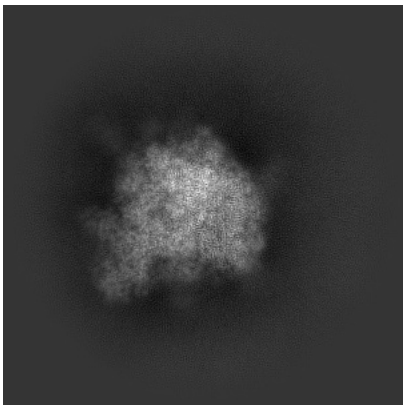
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

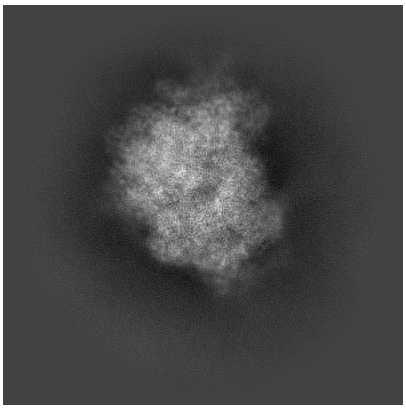
6.1.1 Primary map



X

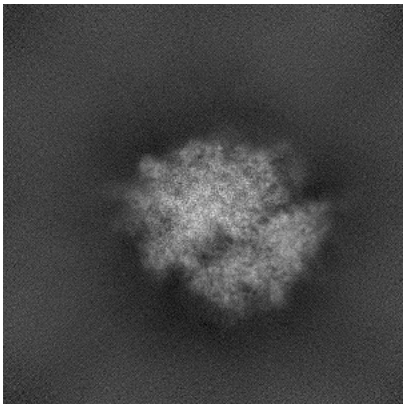


Y

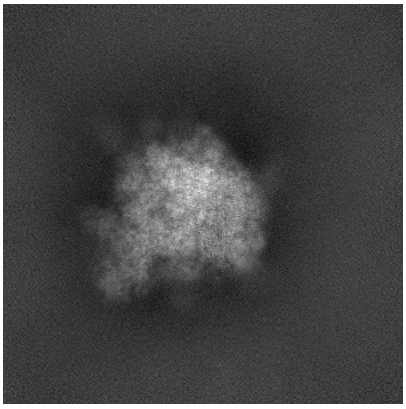


Z

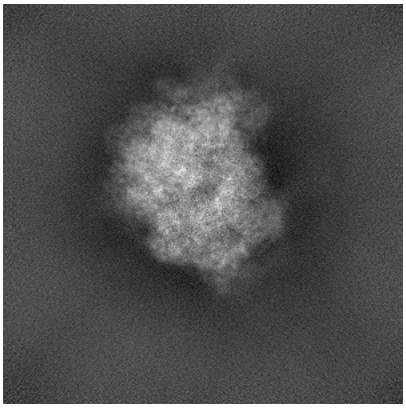
6.1.2 Raw map



X



Y

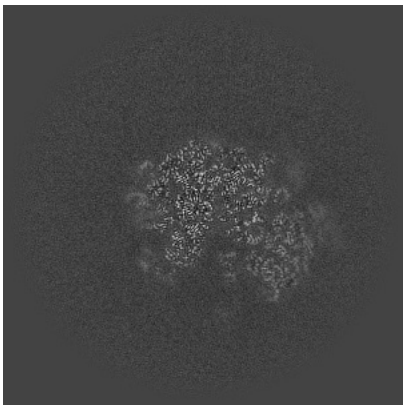


Z

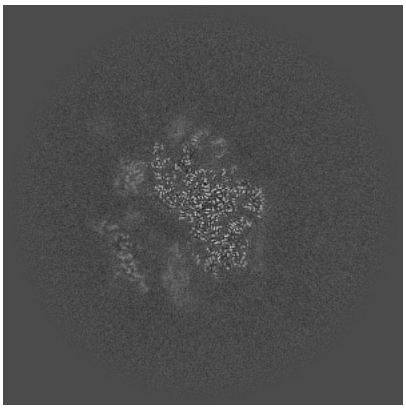
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

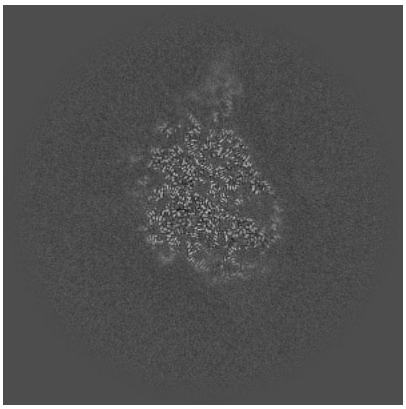
6.2.1 Primary map



X Index: 256

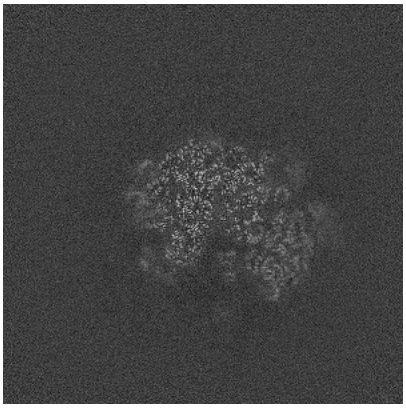


Y Index: 256

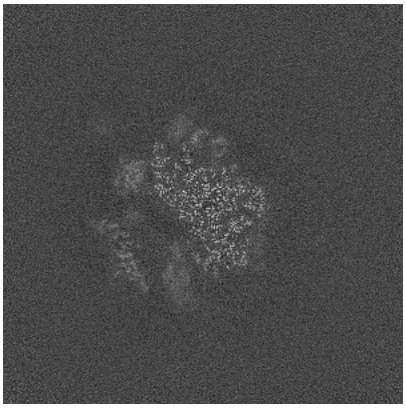


Z Index: 256

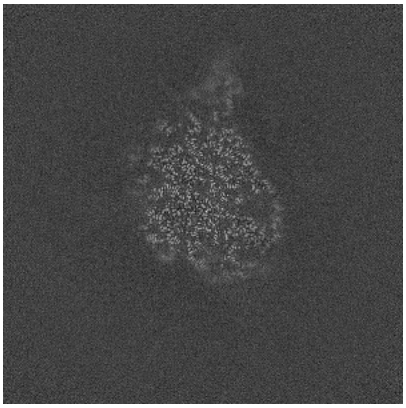
6.2.2 Raw map



X Index: 256



Y Index: 256

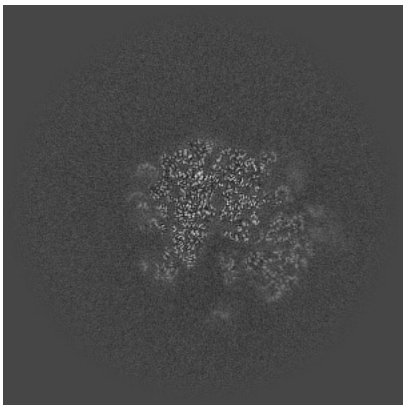


Z Index: 256

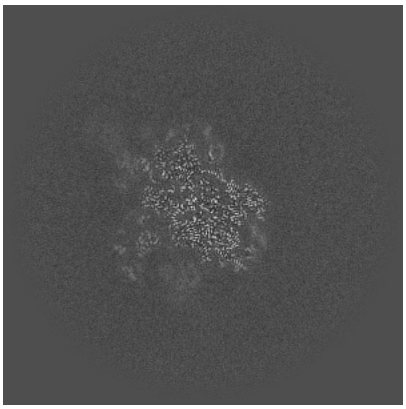
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

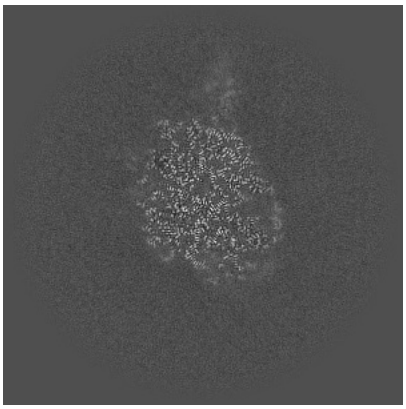
6.3.1 Primary map



X Index: 253

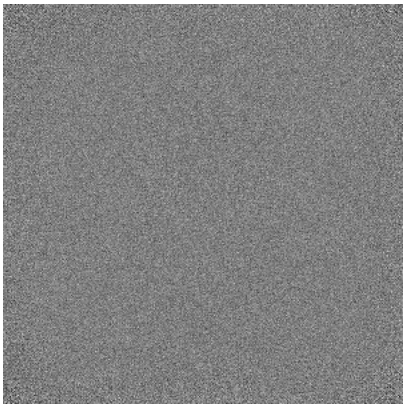


Y Index: 243

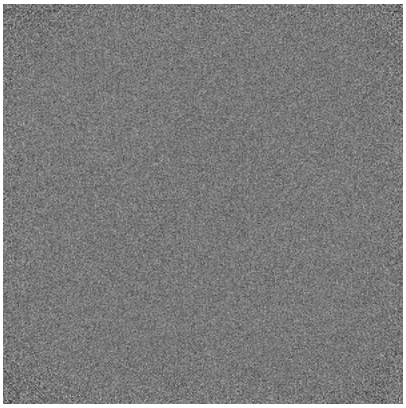


Z Index: 258

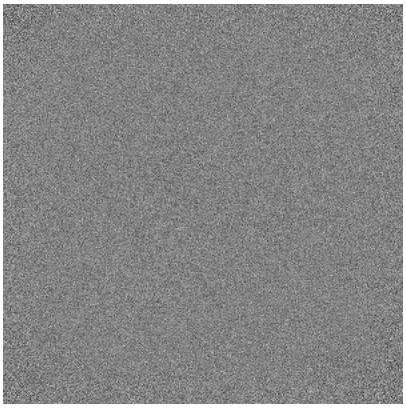
6.3.2 Raw map



X Index: 0



Y Index: 0

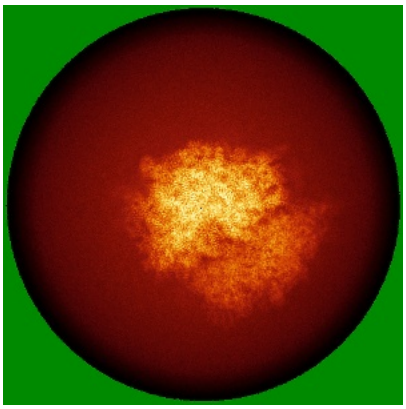


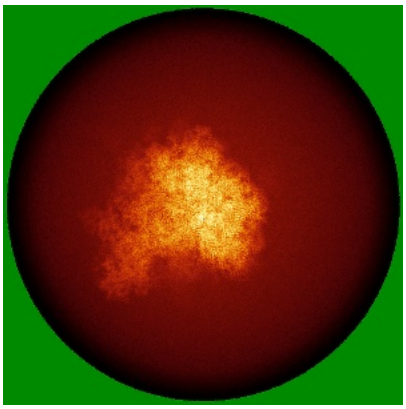
Z Index: 0

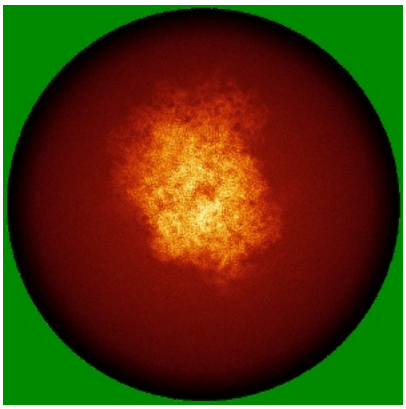
The images above show the largest variance slices of the map in three orthogonal directions.

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

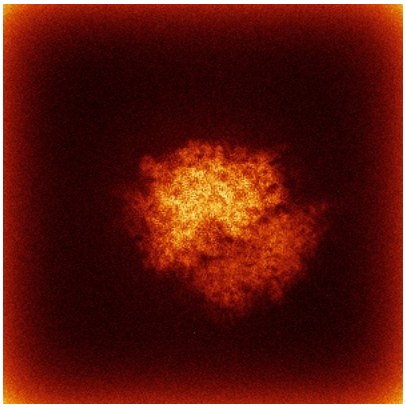
6.4.1 Primary map

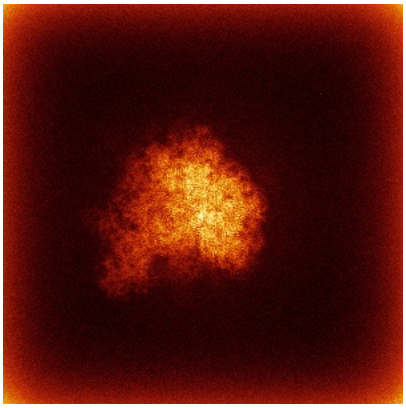

X

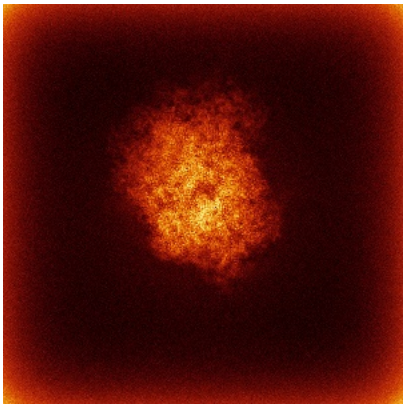

Y


Z

6.4.2 Raw map


X

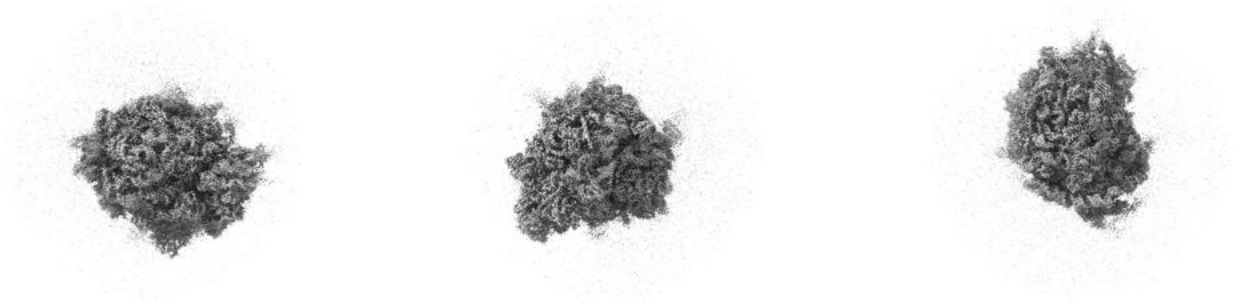

Y


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

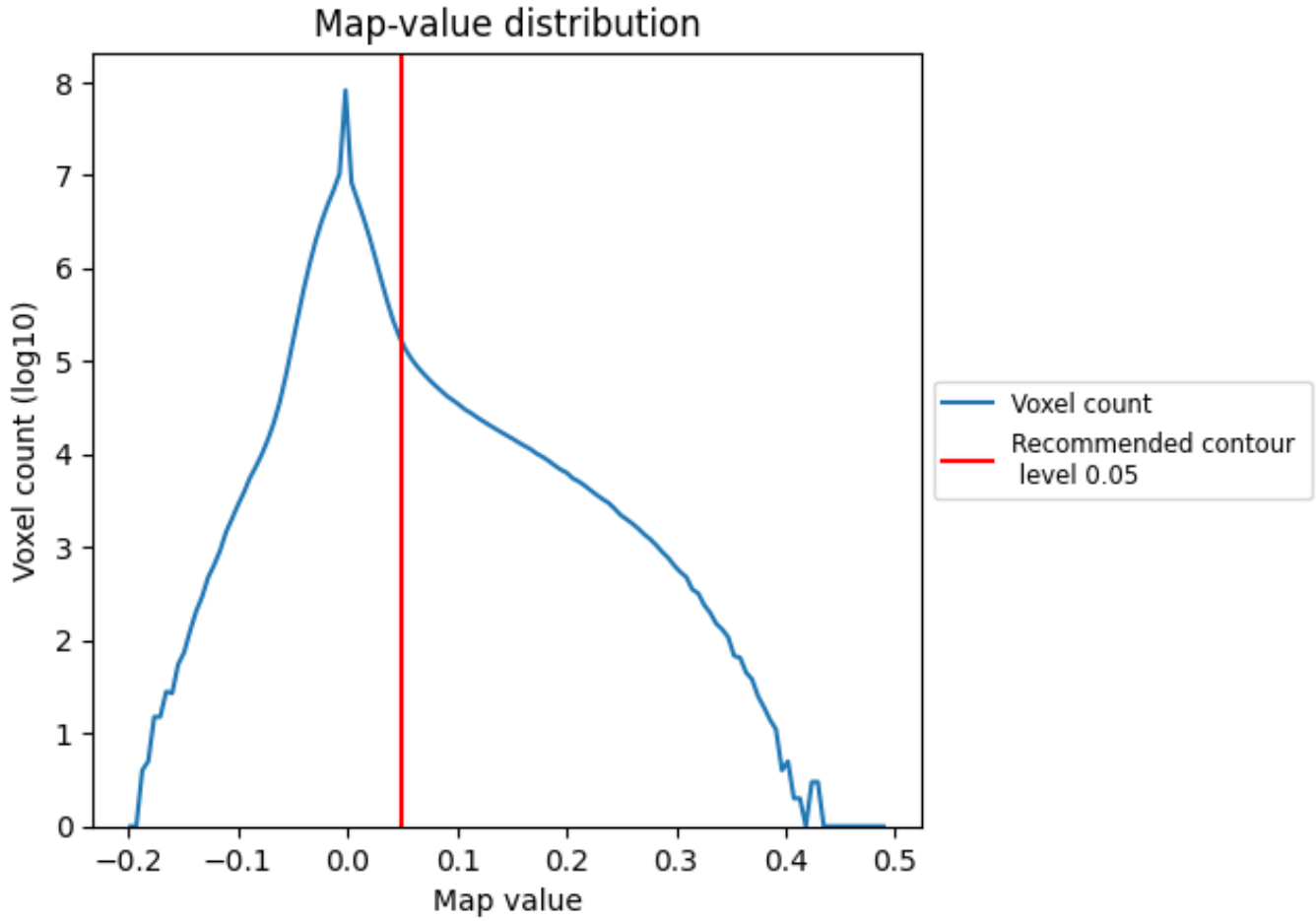
6.6 Mask visualisation (i)

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

7 Map analysis

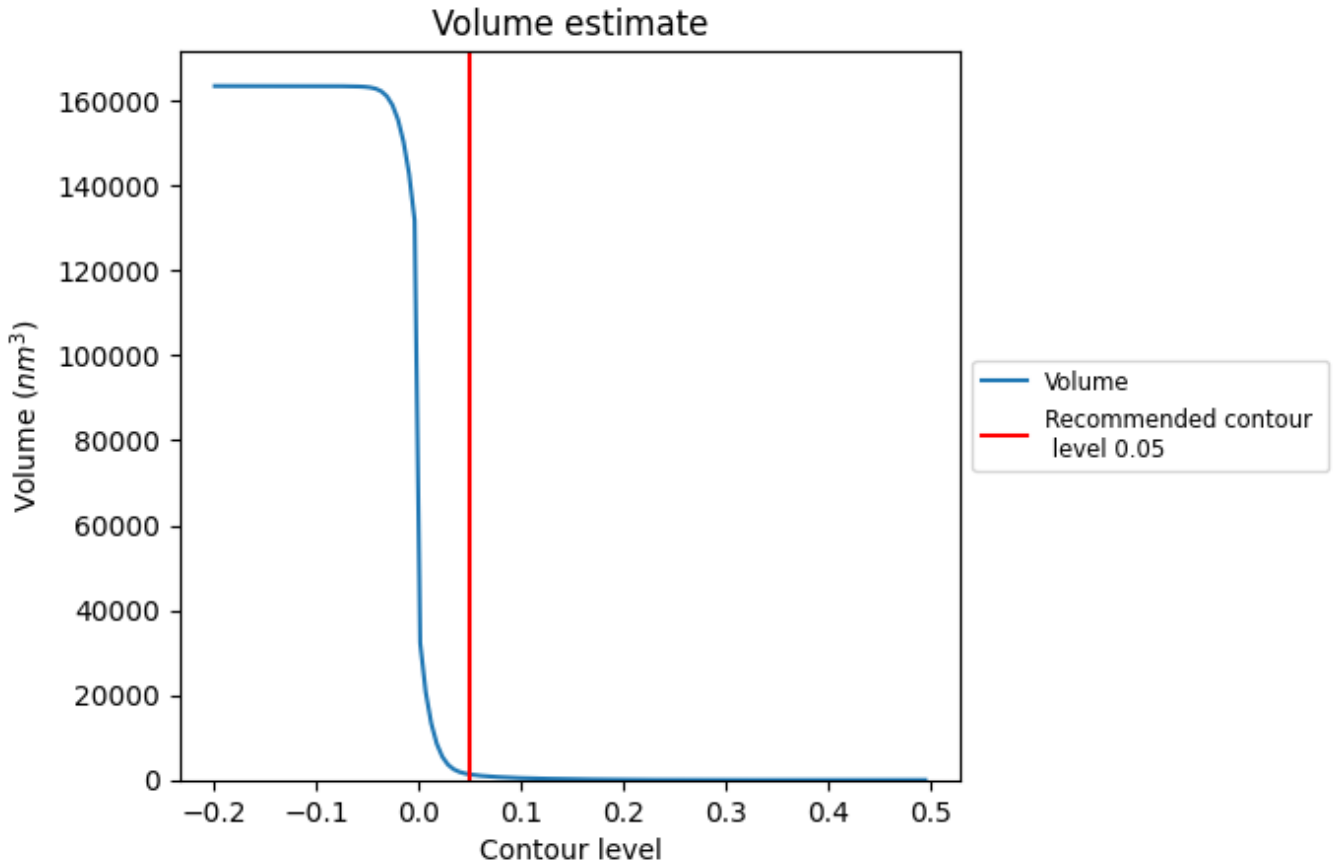
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

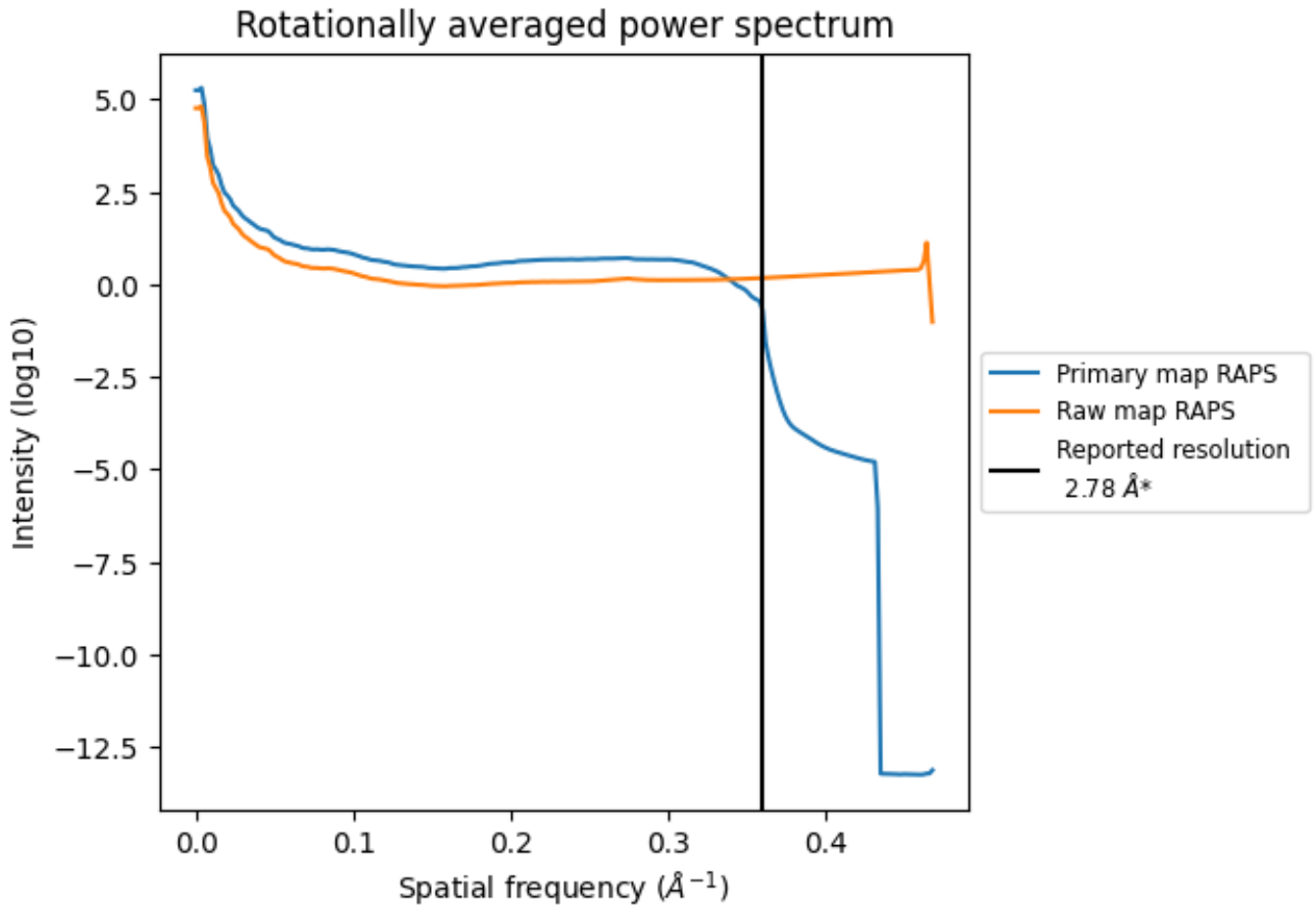
7.2 Volume estimate



The volume at the recommended contour level is 1337 nm^3; this corresponds to an approximate mass of 1207 kDa.

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

7.3 Rotationally averaged power spectrum (i)

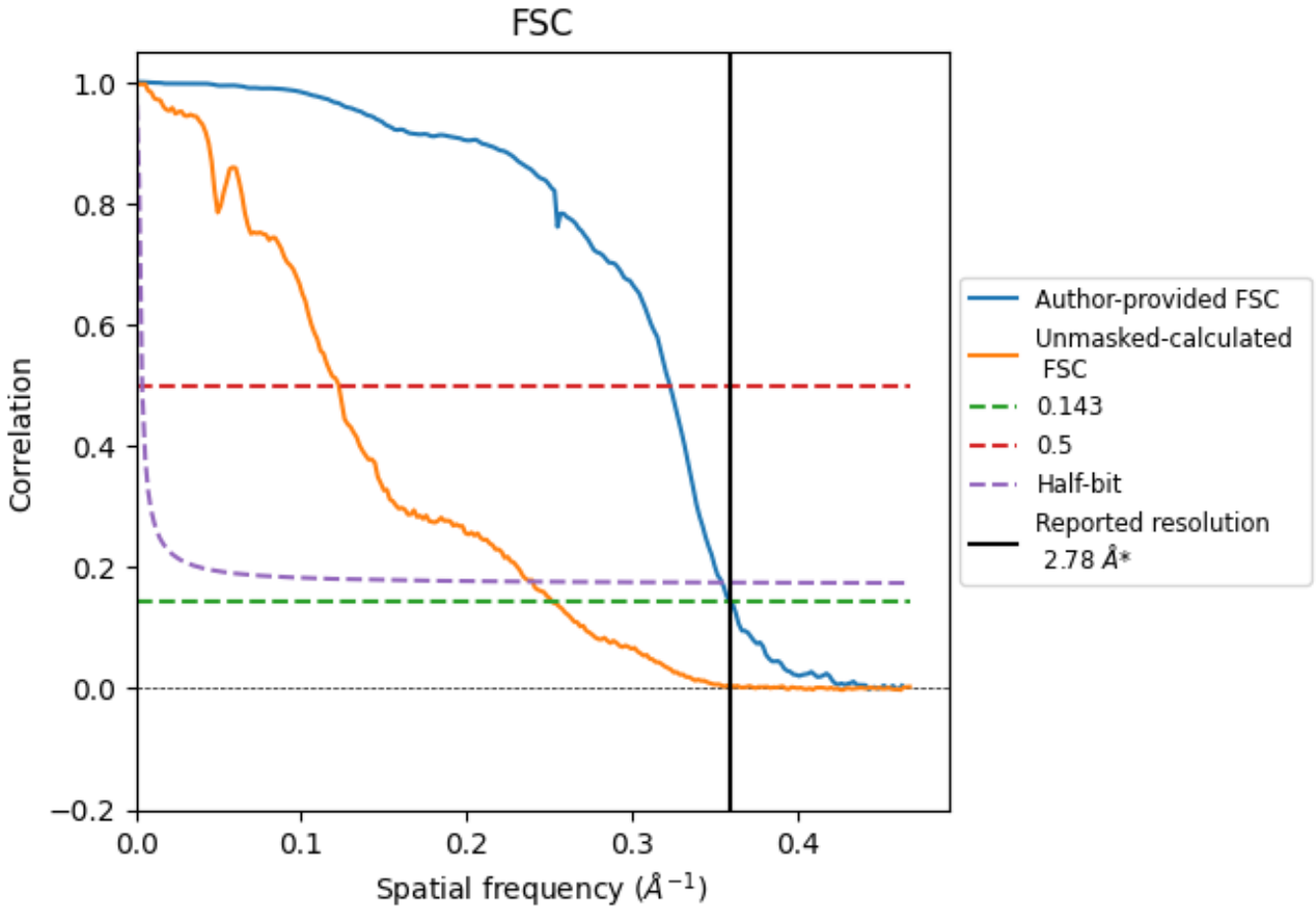


*Reported resolution corresponds to spatial frequency of 0.360 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.360 Å^{-1}

8.2 Resolution estimates (i)

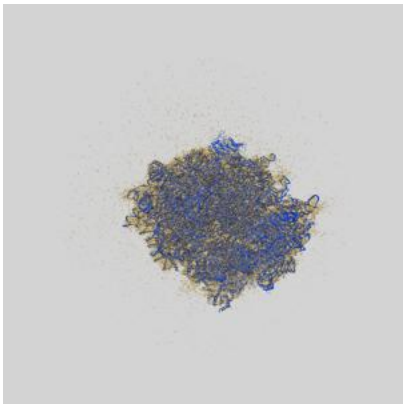
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.78	-	-
Author-provided FSC curve	2.78	3.10	2.82
Unmasked-calculated*	3.97	8.16	4.17

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.97 differs from the reported value 2.78 by more than 10 %

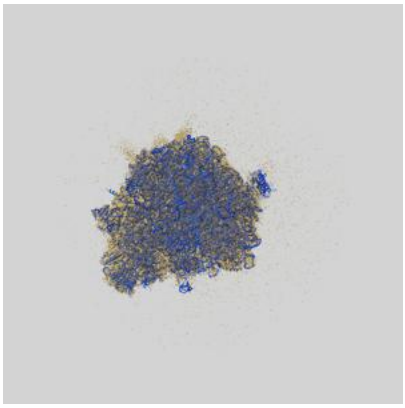
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-44039 and PDB model 9B0F. Per-residue inclusion information can be found in section 3 on page 21.

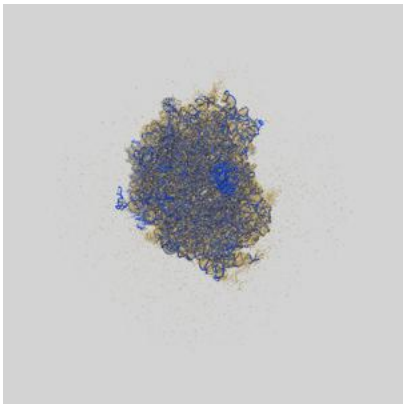
9.1 Map-model overlay



X



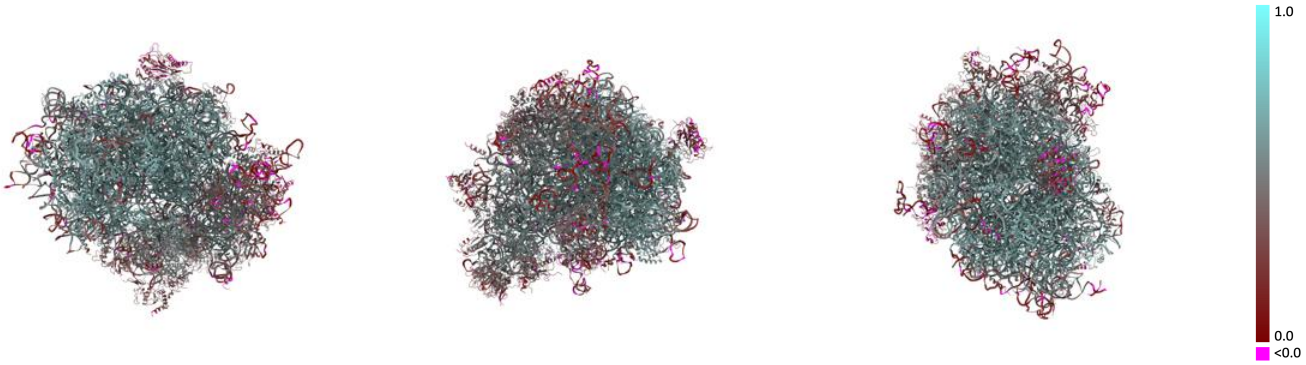
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

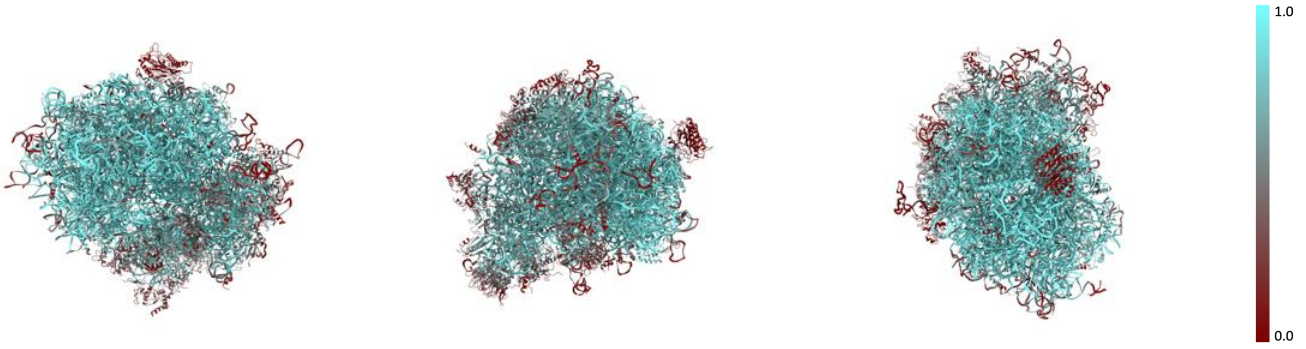
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

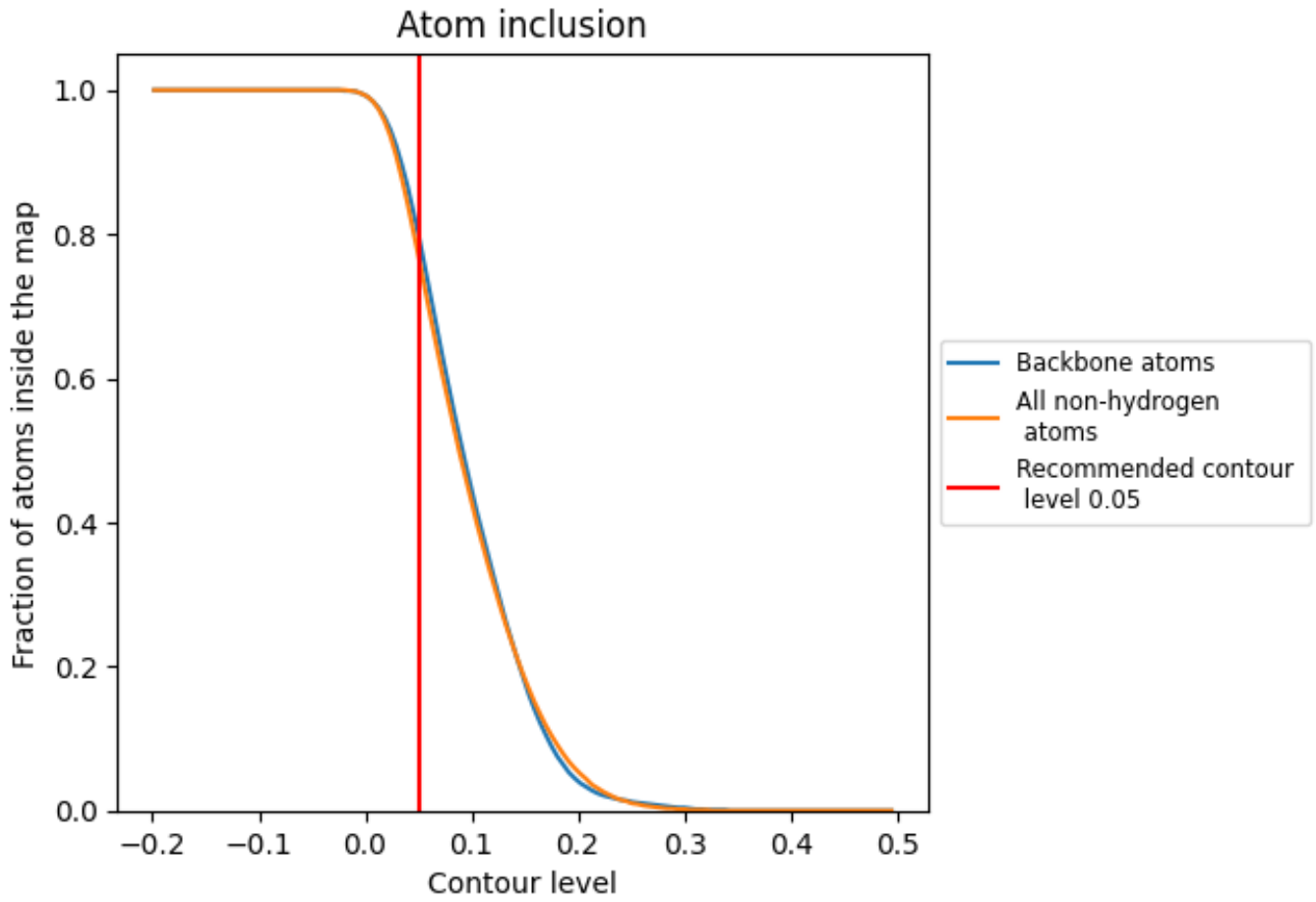
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.05).

9.4 Atom inclusion (i)



At the recommended contour level, 80% of all backbone atoms, 77% 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 (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7710	0.5060
CA	0.1210	0.2390
CB	0.5370	0.4600
CD	0.5560	0.4260
Et	0.2860	0.1280
L5	0.8640	0.5390
L7	0.9700	0.6060
L8	0.9130	0.5780
LA	0.9360	0.6180
LB	0.8900	0.6000
LC	0.8990	0.6000
LD	0.8280	0.5640
LE	0.7830	0.5340
LF	0.9190	0.6090
LG	0.7710	0.5440
LH	0.8620	0.5860
LI	0.8990	0.6080
LJ	0.7040	0.4980
LL	0.8420	0.5730
LM	0.8920	0.5910
LN	0.9730	0.6330
LO	0.9330	0.6170
LP	0.9100	0.6190
LQ	0.9410	0.6280
LR	0.7920	0.5500
LS	0.9340	0.6170
LT	0.8700	0.5870
LU	0.7010	0.4780
LV	0.9040	0.6130
LW	0.5590	0.4080
LX	0.8540	0.5920
LY	0.8900	0.6010
LZ	0.8540	0.5850
La	0.9260	0.6240
Lb	0.7540	0.5320

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Chain	Atom inclusion	Q-score
Lc	0.8300	0.5580
Ld	0.8590	0.5900
Le	0.9410	0.6240
Lf	0.9480	0.6230
Lg	0.8750	0.5930
Lh	0.8650	0.5930
Li	0.8420	0.5800
Lj	0.9450	0.6220
Lk	0.7380	0.5400
Ll	0.9170	0.6120
Lm	0.8940	0.6030
Ln	0.8470	0.6040
Lo	0.8650	0.5950
Lp	0.8850	0.6070
Lr	0.9150	0.6020
Ls	0.4300	0.3790
Lt	0.1790	0.2200
Lz	0.0200	0.1060
S2	0.8040	0.4660
SA	0.5910	0.4480
SB	0.4710	0.3730
SC	0.7260	0.5230
SD	0.5950	0.4620
SE	0.6110	0.4630
SF	0.5260	0.4080
SG	0.3840	0.2970
SH	0.3910	0.3360
SI	0.6080	0.4570
SJ	0.6760	0.4860
SK	0.6000	0.4470
SL	0.6760	0.4820
SM	0.2480	0.2830
SN	0.6630	0.4910
SO	0.5580	0.4210
SP	0.5990	0.4670
SQ	0.5780	0.4270
SS	0.5510	0.4310
ST	0.5890	0.4440
SU	0.5570	0.4070
SV	0.6160	0.4540
SW	0.7560	0.5260
SX	0.7600	0.5470

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Chain	Atom inclusion	Q-score
SY	0.4710	0.3540
SZ	0.3720	0.3280
Sa	0.6770	0.4890
Sb	0.5150	0.4020
Sc	0.3830	0.3300
Sd	0.7800	0.5220
Se	0.5610	0.4360
Sf	0.2550	0.2660
Sg	0.3670	0.3560