



wwPDB EM Validation Summary Report ⓘ

Mar 31, 2025 – 01:10 PM EDT

PDB ID : 8UIY / pdb_00008uiy
EMDB ID : EMD-42305
Title : In situ human P-Z state 80S ribosome
Authors : Wei, Z.; Yong, X.
Deposited on : 2023-10-10
Resolution : 3.44 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.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) : 2.42

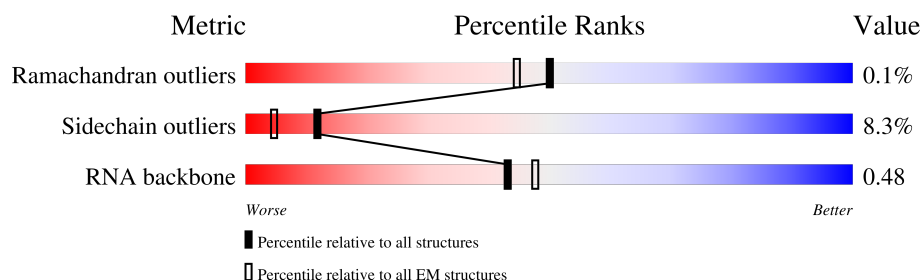
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.44 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 $\leq 5\%$. 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	LW	124	<div> <div>22%</div> <div>87%</div> <div>8%</div> <div>5%</div> </div>
2	LR	187	<div> <div>91%</div> <div>9%</div> </div>
3	SE	262	<div> <div>90%</div> <div>10%</div> </div>
4	SI	206	<div> <div>93%</div> <div>7%</div> </div>
5	SL	153	<div> <div>10%</div> <div>91%</div> <div>9%</div> </div>
6	SX	141	<div> <div>92%</div> <div>8%</div> </div>
7	SG	237	<div> <div>12%</div> <div>92%</div> <div>8%</div> </div>
8	SJ	185	<div> <div>5%</div> <div>92%</div> <div>8%</div> </div>

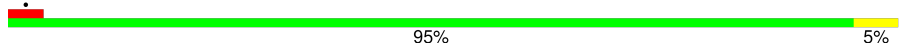
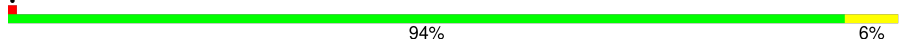
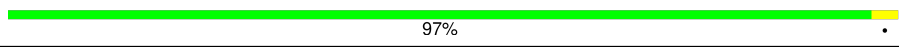
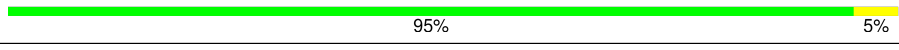
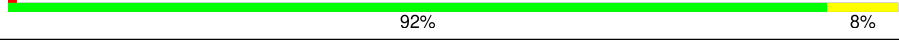
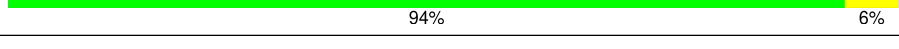
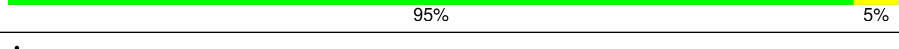
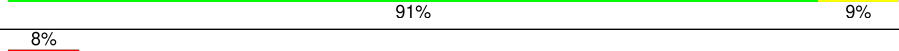
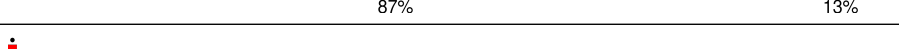
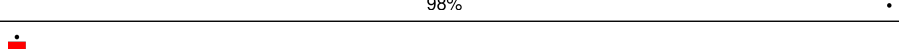
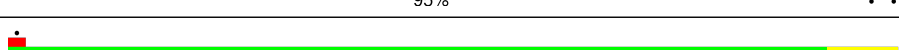
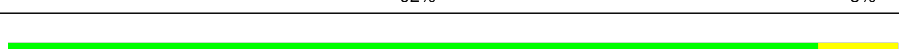
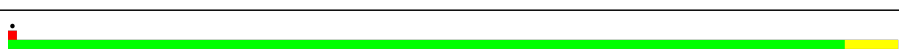

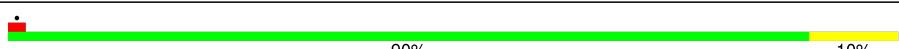

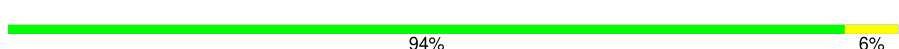
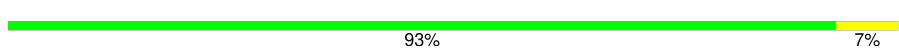
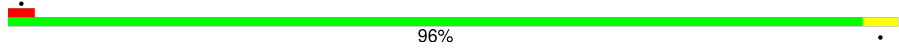
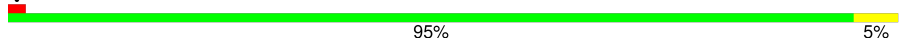
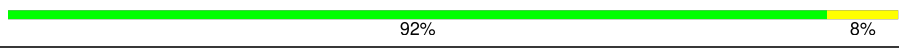
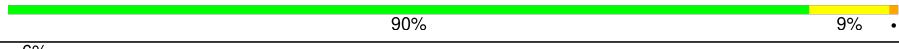
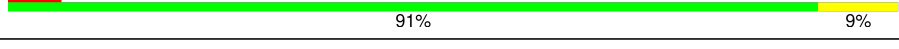
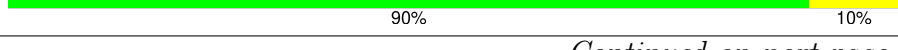

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Mol	Chain	Length	Quality of chain
9	SY	131	
10	Se	58	
11	SA	221	
12	SB	214	
13	SH	189	
14	SV	83	
15	Sa	102	
16	SC	222	
17	SN	150	
18	SO	140	
19	SW	129	
20	Sb	83	
21	L5	5070	
22	L7	120	
23	L8	156	
24	LA	248	
25	LB	402	
26	LC	368	
27	LD	293	
28	LE	247	
29	LF	225	
30	LG	241	
31	LH	190	
32	LI	213	
33	LJ	176	


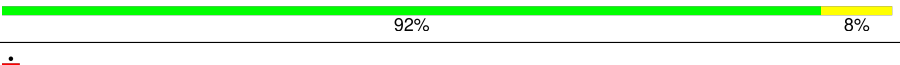
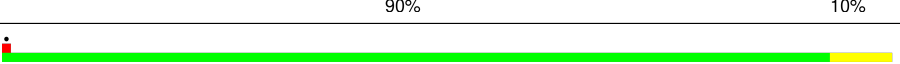
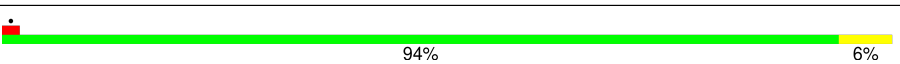


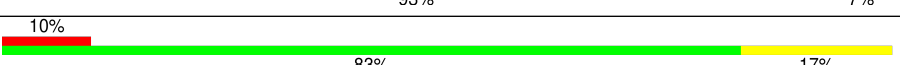
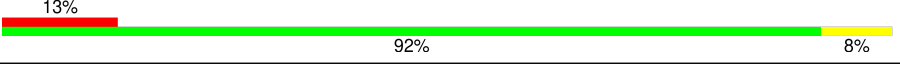
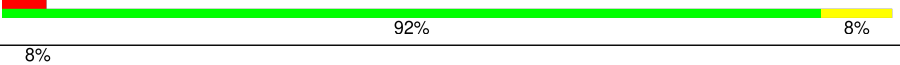

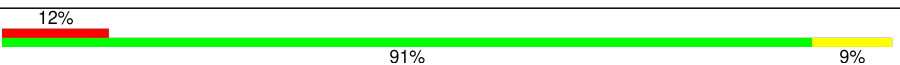
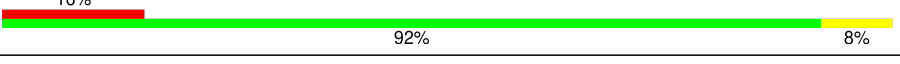

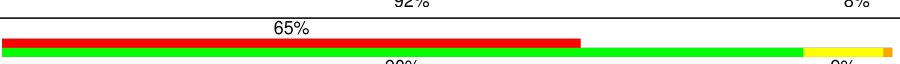

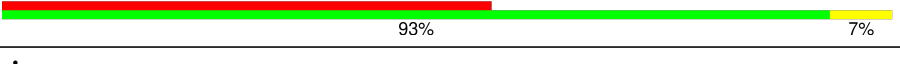


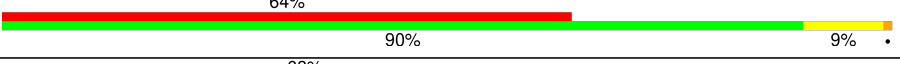




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Mol	Chain	Length	Quality of chain
34	LL	210	
35	LM	139	
36	LN	203	
37	LO	201	
38	LP	153	
39	LQ	187	
40	LS	175	
41	LT	159	
42	LU	101	
43	LV	131	
44	LX	120	
45	LY	134	
46	LZ	135	
47	La	147	
48	Lb	121	
49	Lc	98	
50	Ld	107	
51	Le	128	
52	Lf	109	
53	Lg	114	
54	Lh	122	
55	Li	102	
56	Lj	86	
57	Lk	69	
58	Ll	50	

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Mol	Chain	Length	Quality of chain
59	Lm	52	
60	Ln	24	
61	Lo	105	
62	Lp	91	
63	Lr	125	
64	SR	135	
65	SD	227	
66	SF	189	
67	SK	98	
68	SP	121	
69	SQ	144	
70	SS	145	
71	ST	143	
72	SU	104	
73	Sc	64	
74	Sd	55	
75	Sg	313	
76	SM	122	
77	SZ	75	
78	Sf	67	
79	S2	1740	
80	Pt	76	
81	Zt	75	
82	Ls	196	
83	Lt	157	

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Mol	Chain	Length	Quality of chain	
			90%	6%
84	Lz	217		

2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 222758 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 Ribosomal protein L24.

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

- Molecule 2 is a protein called 60S ribosomal protein L19.

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

- Molecule 3 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 4 is a protein called 40S ribosomal protein S8.

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

- Molecule 5 is a protein called 40S ribosomal protein S11.

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

- Molecule 6 is a protein called 40S ribosomal protein S23.

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

- Molecule 7 is a protein called 40S ribosomal protein S6.

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

- Molecule 8 is a protein called 40S ribosomal protein S9.

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

- Molecule 9 is a protein called 40S ribosomal protein S24.

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

- Molecule 10 is a protein called Small ribosomal subunit protein eS30.

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

- Molecule 11 is a protein called 40S ribosomal protein SA.

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

- Molecule 12 is a protein called 40S ribosomal protein S3a.

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

- Molecule 13 is a protein called Small ribosomal subunit protein eS7.

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

- Molecule 14 is a protein called 40S ribosomal protein S21.

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

- Molecule 15 is a protein called 40S ribosomal protein S26.

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

- Molecule 16 is a protein called 40S ribosomal protein S2.

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

- Molecule 17 is a protein called 40S ribosomal protein S13.

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

- Molecule 18 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 19 is a protein called 40S ribosomal protein S15a.

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

- Molecule 20 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 21 is a RNA chain called 28S rRNA.

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

- Molecule 22 is a RNA chain called 5S rRNA [Homo sapiens].

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

- Molecule 23 is a RNA chain called 5.8S rRNA [Homo sapiens].

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

- Molecule 24 is a protein called 60S ribosomal protein L8.

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

- Molecule 25 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 26 is a protein called 60S ribosomal protein L4.

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

- Molecule 27 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 28 is a protein called Large ribosomal subunit protein eL6.

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

- Molecule 29 is a protein called 60S ribosomal protein L7.

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

- Molecule 30 is a protein called 60S ribosomal protein L7a.

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

- Molecule 31 is a protein called 60S ribosomal protein L9.

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

- Molecule 32 is a protein called Ribosomal protein uL16-like.

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

- Molecule 33 is a protein called 60S ribosomal protein L11.

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

- Molecule 34 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 35 is a protein called 60S ribosomal protein L14.

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

- Molecule 36 is a protein called 60S ribosomal protein L15.

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

- Molecule 37 is a protein called 60S ribosomal protein L13a.

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

- Molecule 38 is a protein called 60S ribosomal protein L17.

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

- Molecule 39 is a protein called 60S ribosomal protein L18.

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

- Molecule 40 is a protein called 60S ribosomal protein L18a.

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

- Molecule 41 is a protein called 60S ribosomal protein L21.

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

- Molecule 42 is a protein called Heparin-binding protein HBp15.

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

- Molecule 43 is a protein called 60S ribosomal protein L23.

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

- Molecule 44 is a protein called 60S ribosomal protein L23a.

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

- Molecule 45 is a protein called 60S ribosomal protein L26.

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

- Molecule 46 is a protein called 60S ribosomal protein L27.

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

- Molecule 47 is a protein called 60S ribosomal protein L27a.

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

- Molecule 48 is a protein called Large ribosomal subunit protein eL29.

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

- Molecule 49 is a protein called 60S ribosomal protein L30.

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

- Molecule 50 is a protein called 60S ribosomal protein L31.

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

- Molecule 51 is a protein called 60S ribosomal protein L32.

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

- Molecule 52 is a protein called 60S ribosomal protein L35a.

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

- Molecule 53 is a protein called 60S ribosomal protein L34.

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

- Molecule 54 is a protein called 60S ribosomal protein L35.

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

- Molecule 55 is a protein called 60S ribosomal protein L36.

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

- Molecule 56 is a protein called 60S ribosomal protein L37.

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

- Molecule 57 is a protein called 60S ribosomal protein L38.

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

- Molecule 58 is a protein called 60S ribosomal protein L39.

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

- Molecule 59 is a protein called Large ribosomal subunit protein eL40.

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

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

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

- Molecule 61 is a protein called 60S ribosomal protein L36a.

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

- Molecule 62 is a protein called 60S ribosomal protein L37a.

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

- Molecule 63 is a protein called 60S ribosomal protein L28.

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

- Molecule 64 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	SR	135	Total	C	N	O	S	0	0
			1090	685	202	198	5		

- Molecule 65 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 66 is a protein called 40S ribosomal protein S5.

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

- Molecule 67 is a protein called 40S ribosomal protein S10.

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

- Molecule 68 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 69 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 70 is a protein called 40S ribosomal protein S18.

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

- Molecule 71 is a protein called 40S ribosomal protein S19.

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

- Molecule 72 is a protein called 40S ribosomal protein S20.

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

- Molecule 73 is a protein called 40S ribosomal protein S28.

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

- Molecule 74 is a protein called 40S ribosomal protein S29.

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

- Molecule 75 is a protein called Receptor of activated protein C kinase 1.

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

- Molecule 76 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 77 is a protein called Small ribosomal subunit protein eS25.

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

- Molecule 78 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 79 is a RNA chain called 18S rRNA.

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

- Molecule 80 is a RNA chain called P site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Pt	76	Total	C	N	O	P	0	0
			1620	725	296	524	75		

- Molecule 81 is a RNA chain called Z site tRNA.

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

- Molecule 82 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 83 is a protein called Large ribosomal subunit protein uL11.

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

- Molecule 84 is a protein called 60S ribosomal protein L10a.

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

- Molecule 85 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
85	Sa	1	Total	Zn	0
			1	1	
85	Lg	1	Total	Zn	0
			1	1	
85	Lj	1	Total	Zn	0
			1	1	
85	Lm	1	Total	Zn	0
			1	1	
85	Lo	1	Total	Zn	0
			1	1	
85	Lp	1	Total	Zn	0
			1	1	

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

Mol	Chain	Residues	Atoms		AltConf
86	L5	212	Total	Mg	0
			212	212	
86	L7	3	Total	Mg	0
			3	3	
86	L8	4	Total	Mg	0
			4	4	
86	LA	1	Total	Mg	0
			1	1	
86	LP	1	Total	Mg	0
			1	1	
86	LV	1	Total	Mg	0
			1	1	
86	La	1	Total	Mg	0
			1	1	
86	Le	1	Total	Mg	0
			1	1	
86	Lg	1	Total	Mg	0
			1	1	
86	Lj	1	Total	Mg	0
			1	1	

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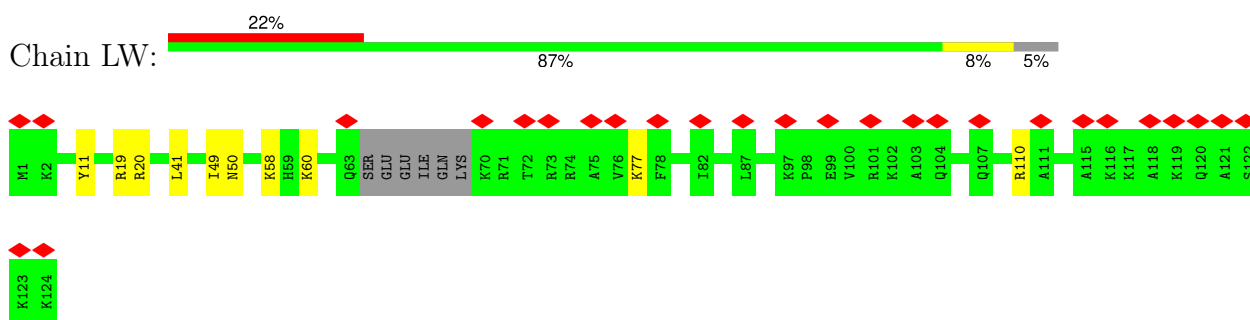
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Mol	Chain	Residues	Atoms		AltConf
86	S2	29	Total	Mg	0
			29	29	

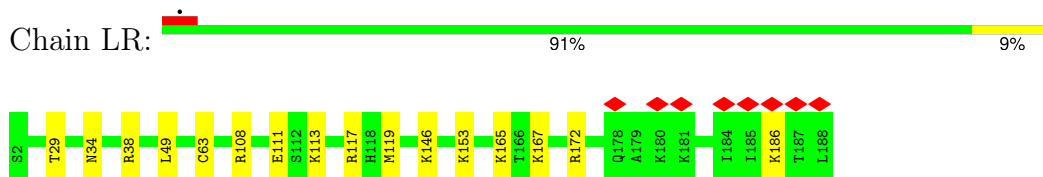
3 Residue-property plots [i](#)

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.

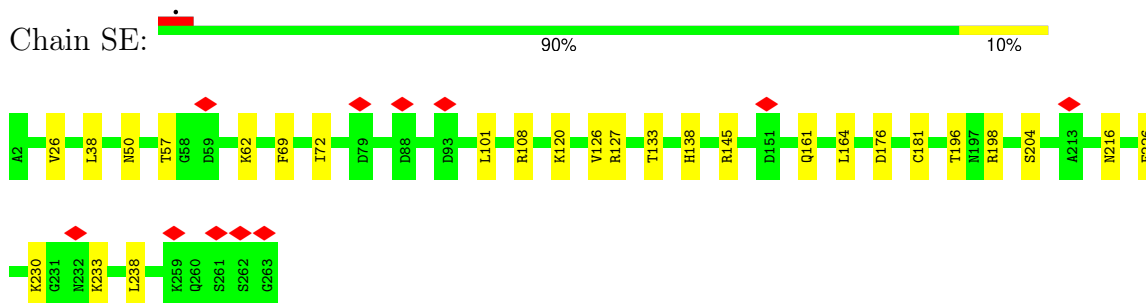
- Molecule 1: Ribosomal protein L24



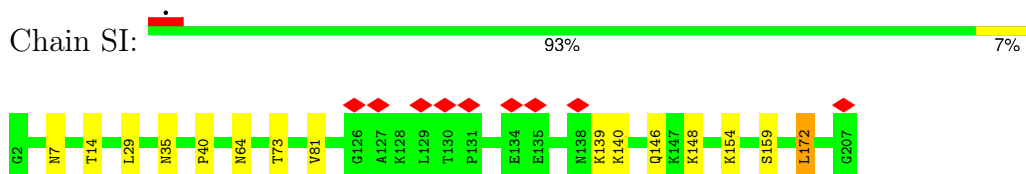
- Molecule 2: 60S ribosomal protein L19



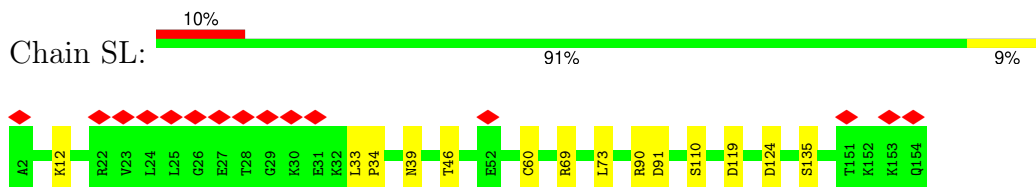
- Molecule 3: Small ribosomal subunit protein eS4, X isoform



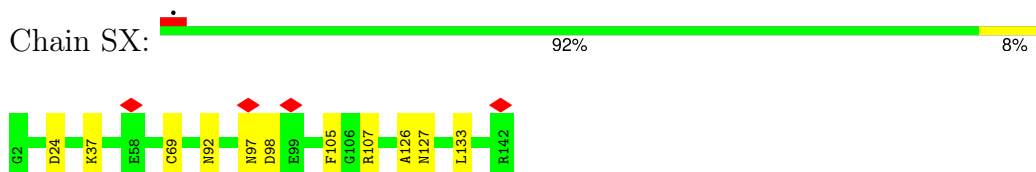
- Molecule 4: 40S ribosomal protein S8



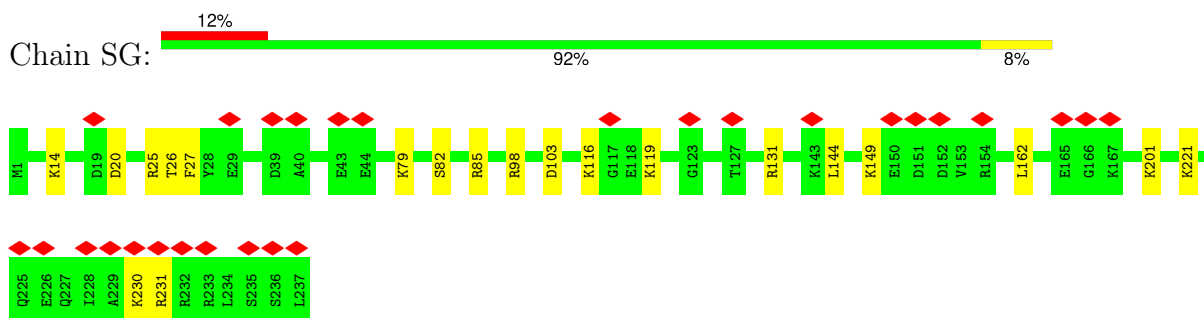
- Molecule 5: 40S ribosomal protein S11



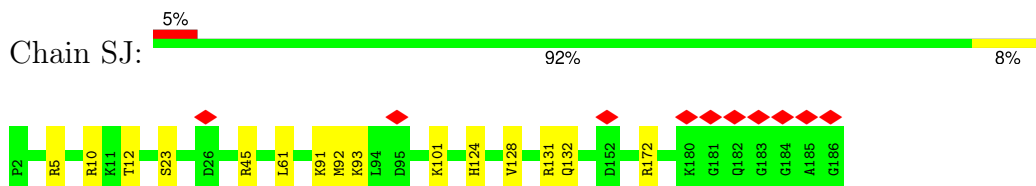
- Molecule 6: 40S ribosomal protein S23



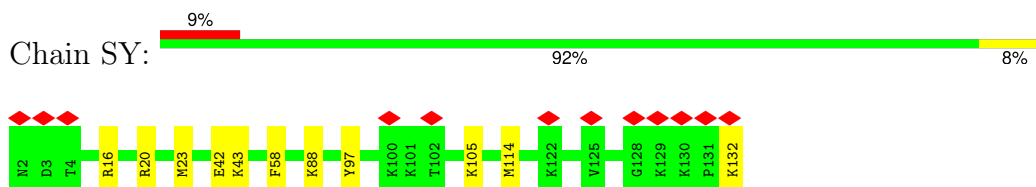
- Molecule 7: 40S ribosomal protein S6



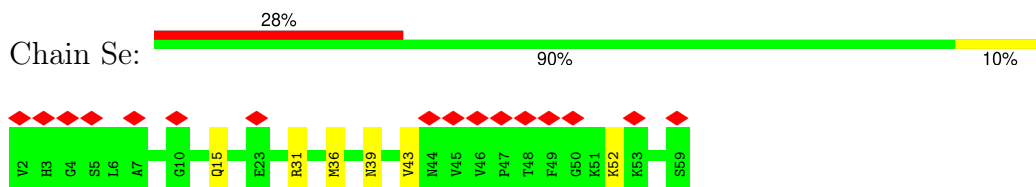
- Molecule 8: 40S ribosomal protein S9



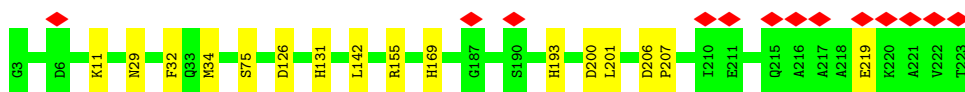
- Molecule 9: 40S ribosomal protein S24



- Molecule 10: Small ribosomal subunit protein eS30



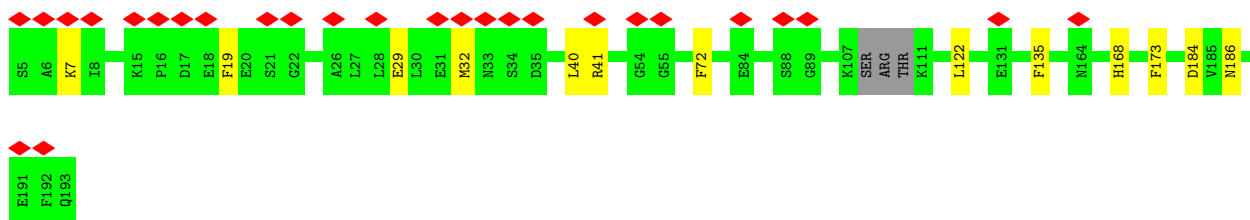
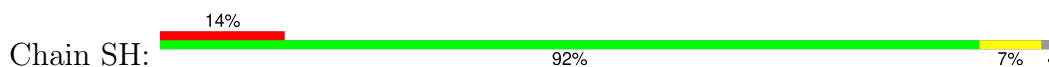
- Molecule 11: 40S ribosomal protein SA



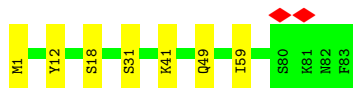
- Molecule 12: 40S ribosomal protein S3a



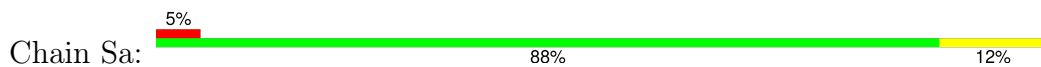
- Molecule 13: Small ribosomal subunit protein eS7



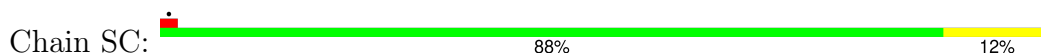
- Molecule 14: 40S ribosomal protein S21



- Molecule 15: 40S ribosomal protein S26



- Molecule 16: 40S ribosomal protein S2

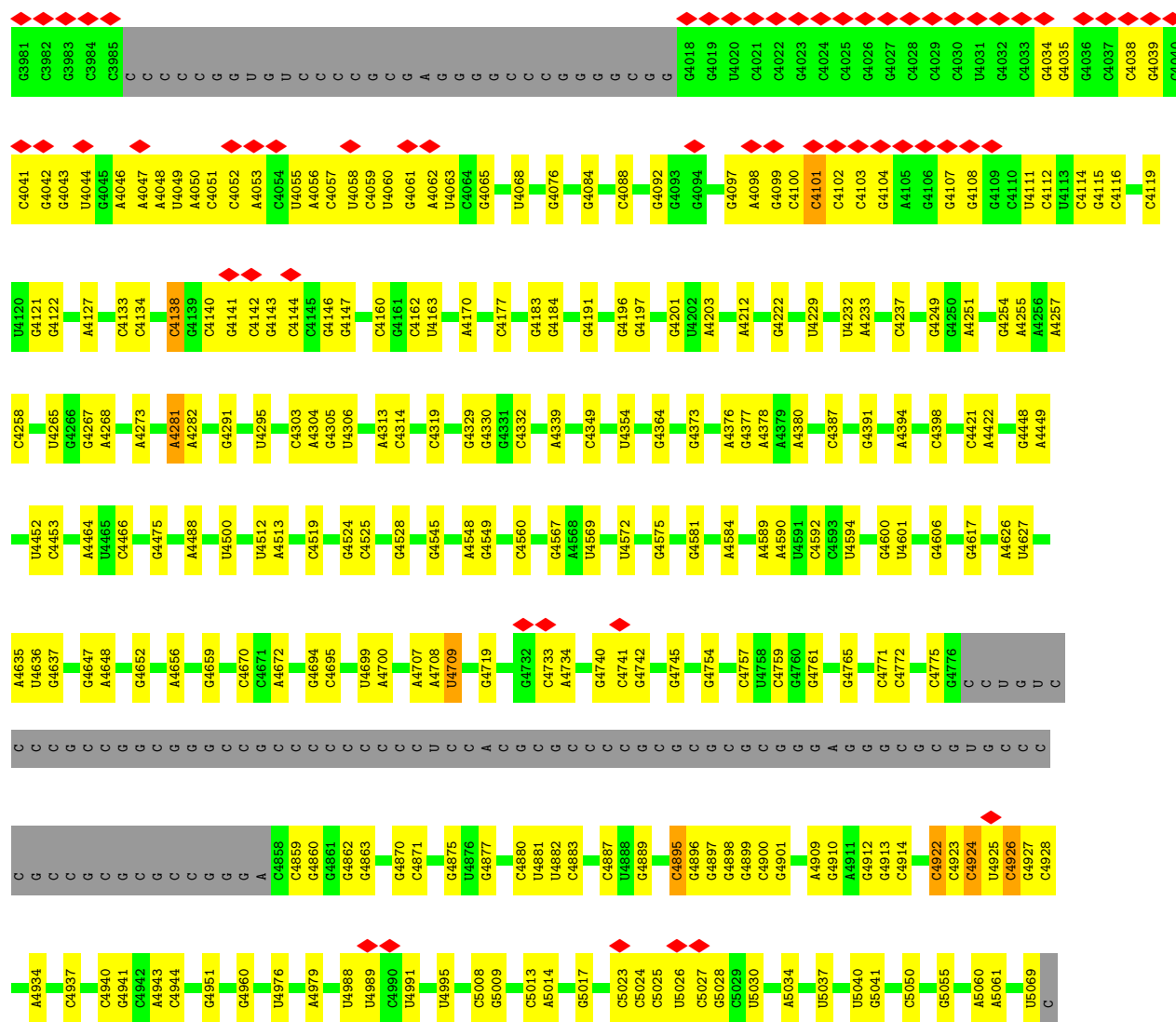


- Molecule 17: 40S ribosomal protein S13









• Molecule 22: 5S rRNA [Homo sapiens]

Chain L7: 88% 12%




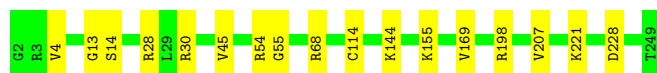
• Molecule 23: 5.8S rRNA [Homo sapiens]

Chain L8: 76% 24%



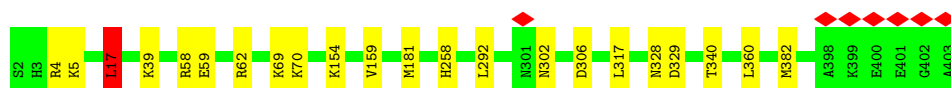
• Molecule 24: 60S ribosomal protein L8

Chain LA:  93% 7%



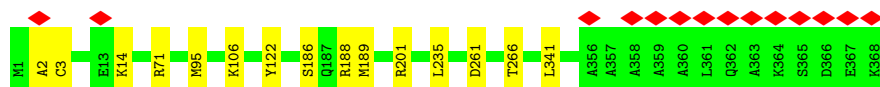
- Molecule 25: Large ribosomal subunit protein uL3

Chain LB:  95% 5%



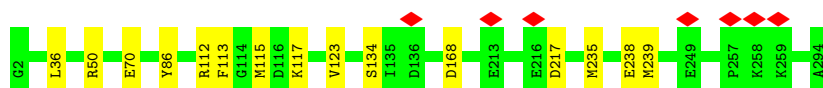
- Molecule 26: 60S ribosomal protein L4

Chain LC:  96% 4%



- Molecule 27: Large ribosomal subunit protein uL18

Chain LD:  95% 5%



- Molecule 28: Large ribosomal subunit protein eL6

Chain LE:  89% 7% 6%



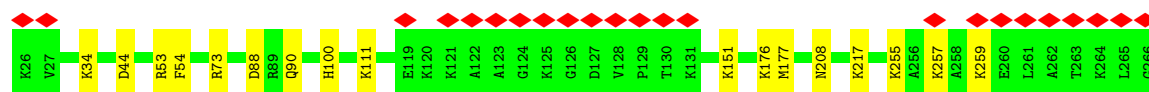
- Molecule 29: 60S ribosomal protein L7

Chain LF:  96% 4%



- Molecule 30: 60S ribosomal protein L7a

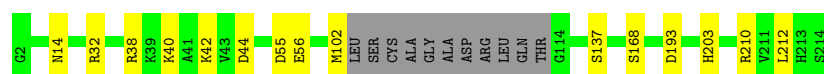
Chain LG:  93% 7% 10%



- Molecule 31: 60S ribosomal protein L9



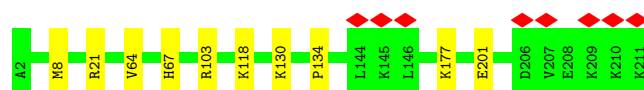
- Molecule 32: Ribosomal protein uL16-like



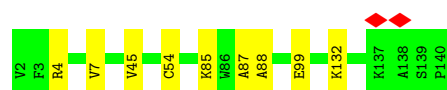
- Molecule 33: 60S ribosomal protein L11



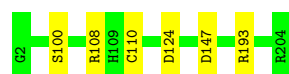
- Molecule 34: Large ribosomal subunit protein eL13



- Molecule 35: 60S ribosomal protein L14



- Molecule 36: 60S ribosomal protein L15



- Molecule 37: 60S ribosomal protein L13a

Chain LO:  95% 5%



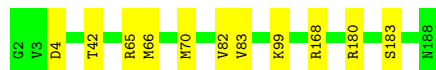
- Molecule 38: 60S ribosomal protein L17

Chain LP:  92% 8%



- Molecule 39: 60S ribosomal protein L18

Chain LQ:  94% 6%




- Molecule 40: 60S ribosomal protein L18a

Chain LS:  95% 5%




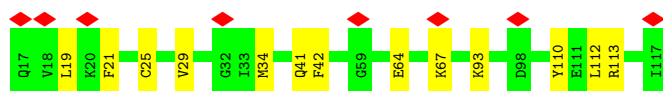
- Molecule 41: 60S ribosomal protein L21

Chain LT:  91% 9%



- Molecule 42: Heparin-binding protein HBp15

Chain LU:  87% 13% 8%

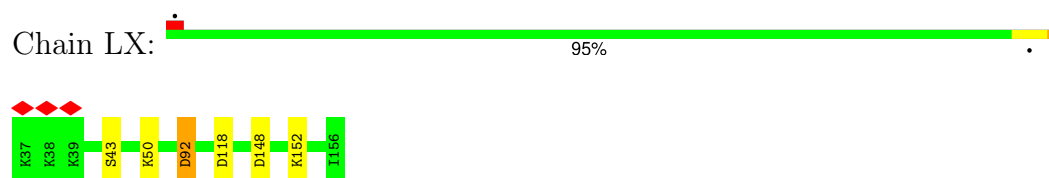


- Molecule 43: 60S ribosomal protein L23

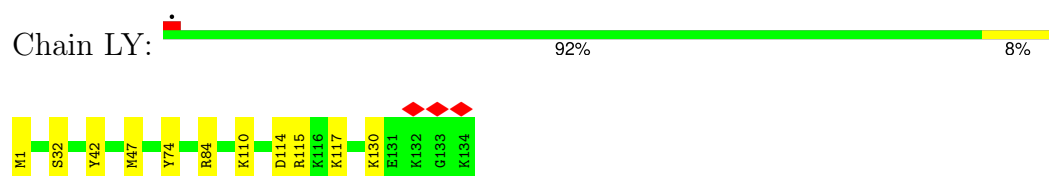
Chain LV:  98%



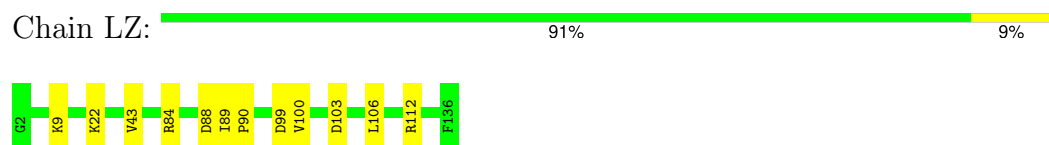
- Molecule 44: 60S ribosomal protein L23a



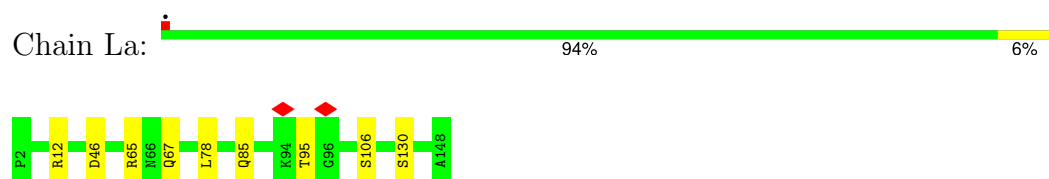
- Molecule 45: 60S ribosomal protein L26



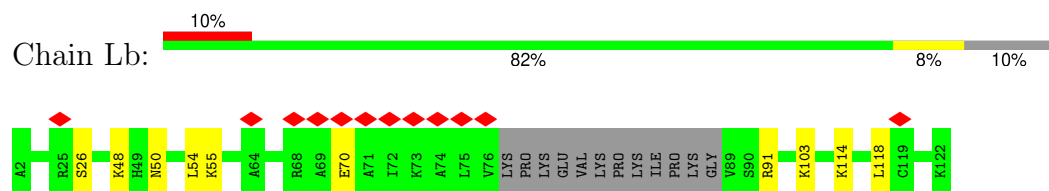
- Molecule 46: 60S ribosomal protein L27



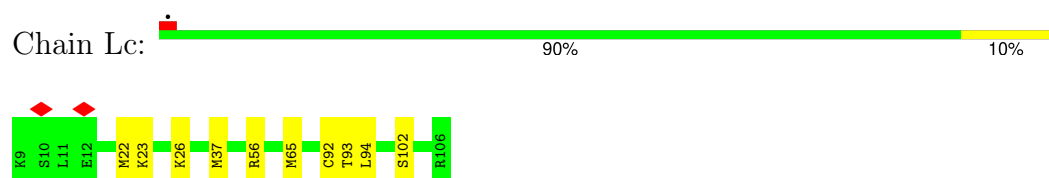
- Molecule 47: 60S ribosomal protein L27a



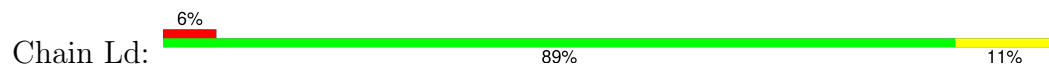
- Molecule 48: Large ribosomal subunit protein eL29



- Molecule 49: 60S ribosomal protein L30



- Molecule 50: 60S ribosomal protein L31





- Molecule 51: 60S ribosomal protein L32



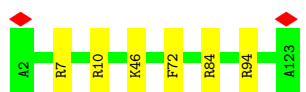
- Molecule 52: 60S ribosomal protein L35a



- Molecule 53: 60S ribosomal protein L34



- Molecule 54: 60S ribosomal protein L35



- Molecule 55: 60S ribosomal protein L36

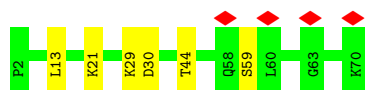


- Molecule 56: 60S ribosomal protein L37



- Molecule 57: 60S ribosomal protein L38





- Molecule 58: 60S ribosomal protein L39

Chain Ll: 90% 10%



- Molecule 59: Large ribosomal subunit protein eL40

Chain Lm: 90% 10%



- Molecule 60: 60S ribosomal protein L41

Chain Ln: 92% 8%



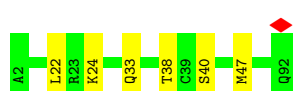
- Molecule 61: 60S ribosomal protein L36a

Chain Lo: 90% 10%



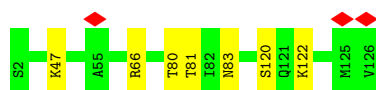
- Molecule 62: 60S ribosomal protein L37a

Chain Lp: 93% 7%

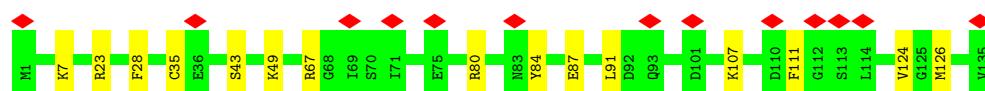
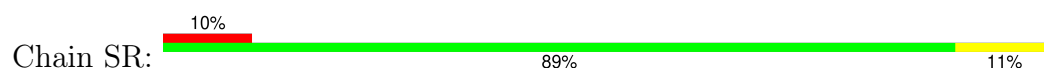


- Molecule 63: 60S ribosomal protein L28

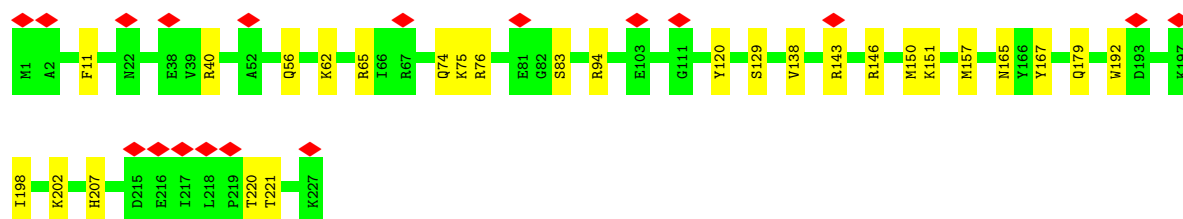
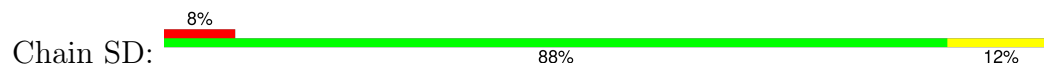
Chain Lr: 94% 6%



- Molecule 64: 40S ribosomal protein S17



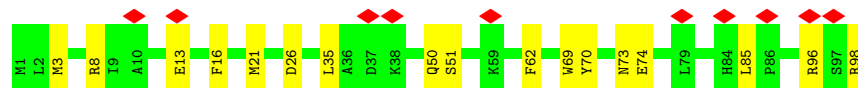
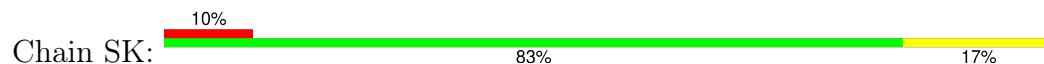
- Molecule 65: Small ribosomal subunit protein uS3



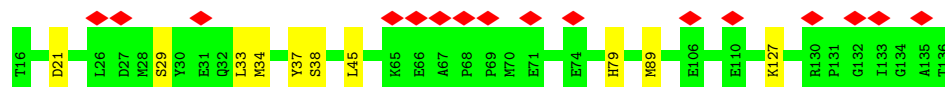
- Molecule 66: 40S ribosomal protein S5



- Molecule 67: 40S ribosomal protein S10



- Molecule 68: Small ribosomal subunit protein uS19

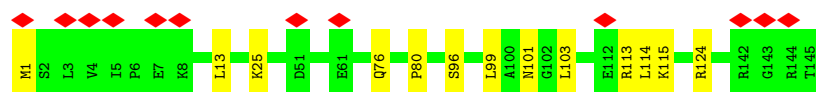


- Molecule 69: Small ribosomal subunit protein uS9

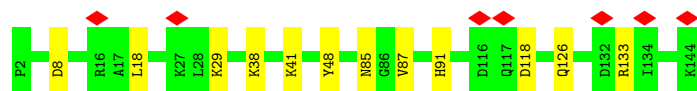


- Molecule 70: 40S ribosomal protein S18

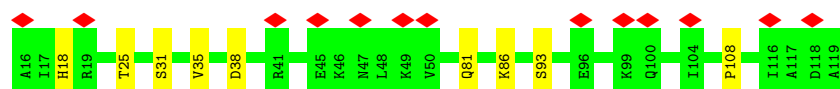




- Molecule 71: 40S ribosomal protein S19



- Molecule 72: 40S ribosomal protein S20



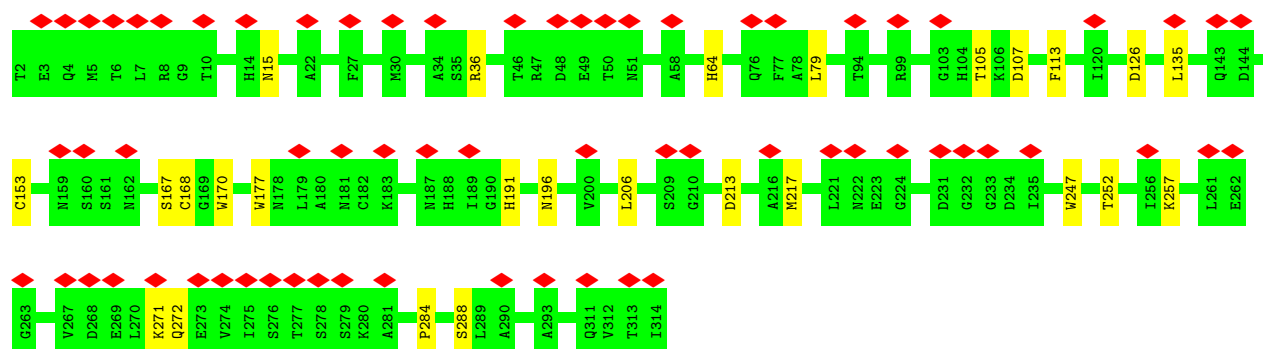
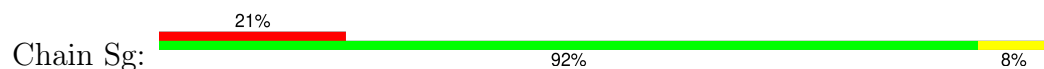
- Molecule 73: 40S ribosomal protein S28



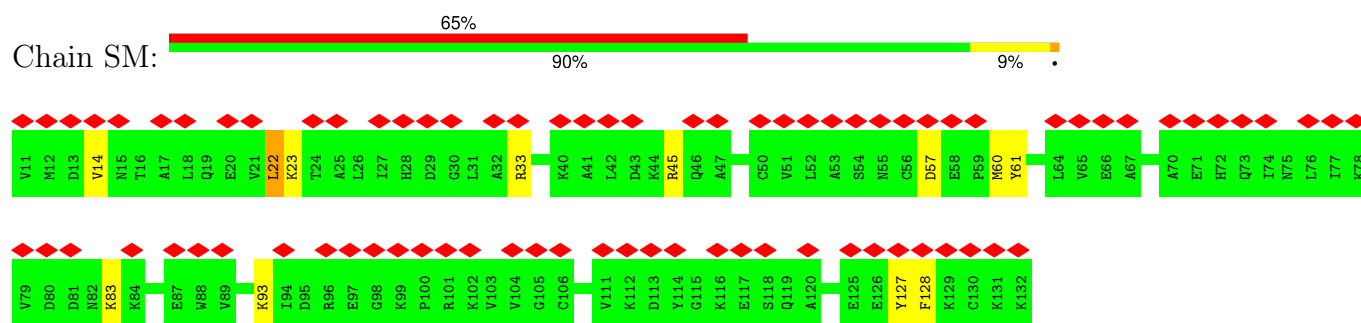
- Molecule 74: 40S ribosomal protein S29



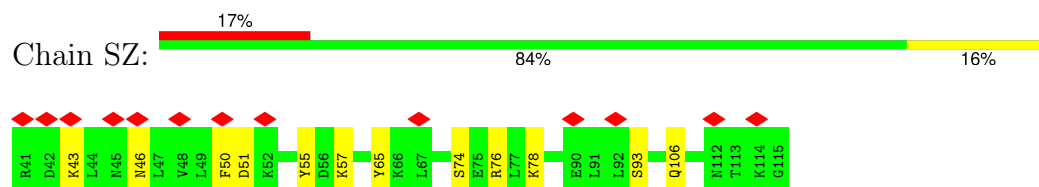
- Molecule 75: Receptor of activated protein C kinase 1



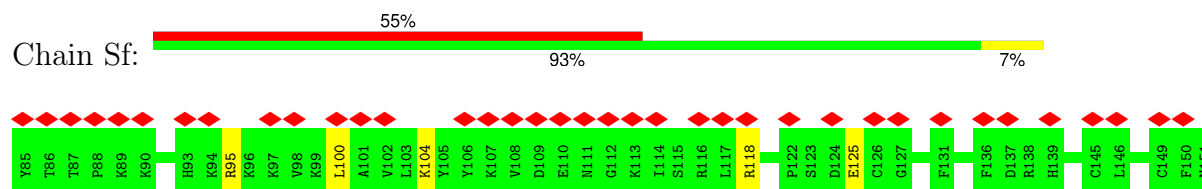
- Molecule 76: Small ribosomal subunit protein eS12



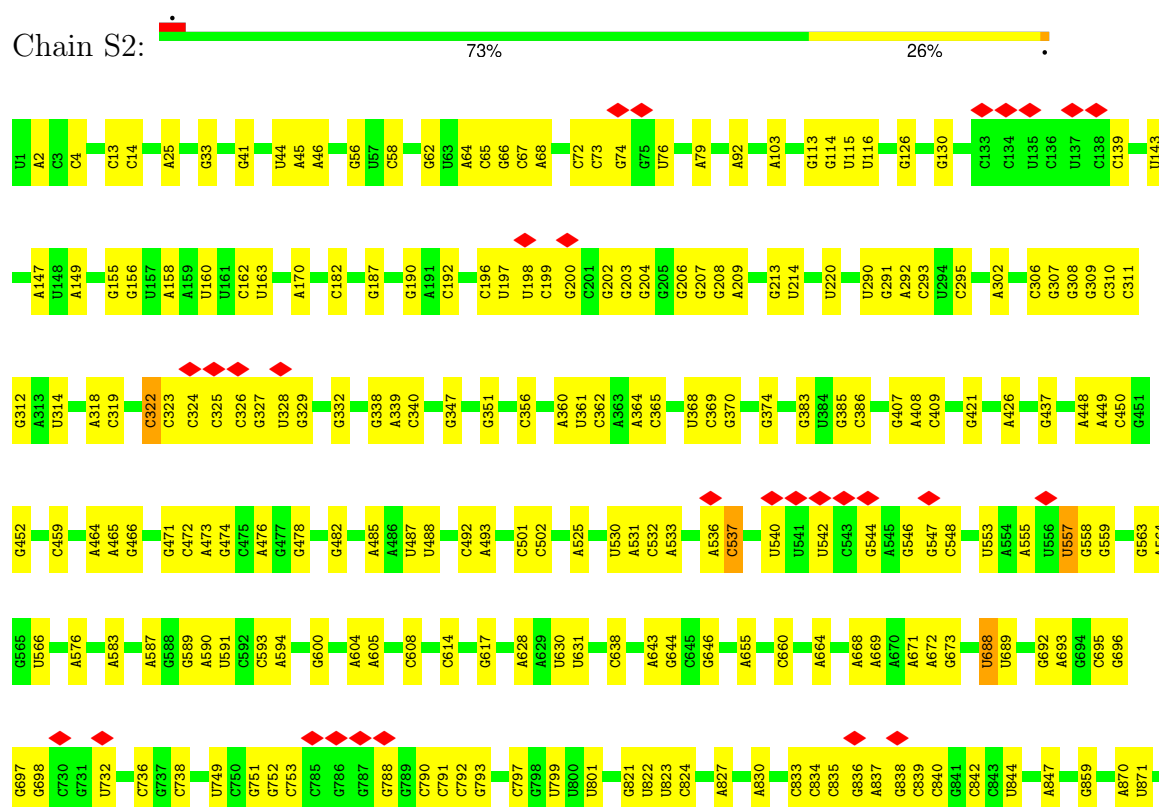
- Molecule 77: Small ribosomal subunit protein eS25

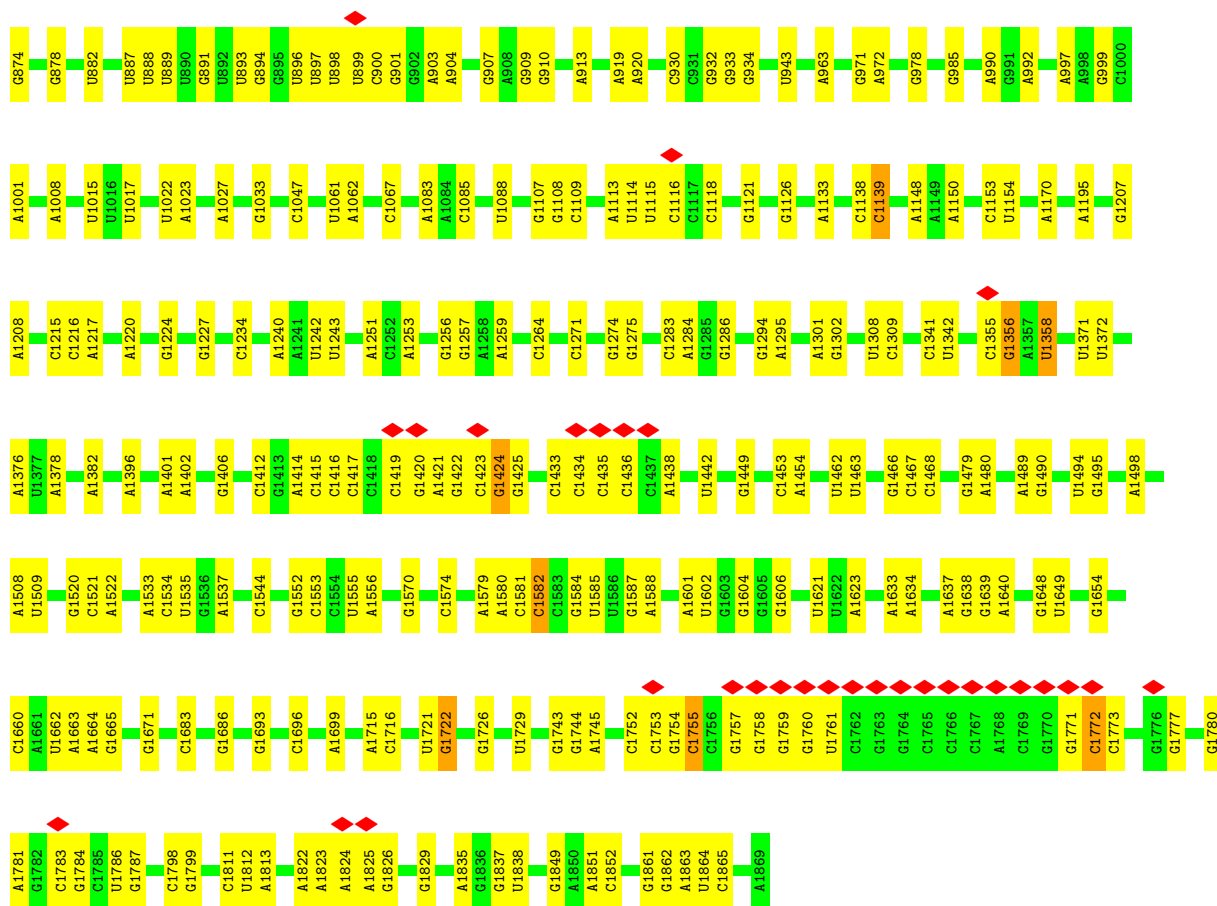


- Molecule 78: Ubiquitin-40S ribosomal protein S27a

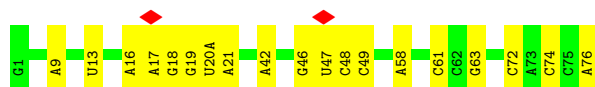
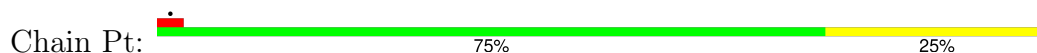


- Molecule 79: 18S rRNA

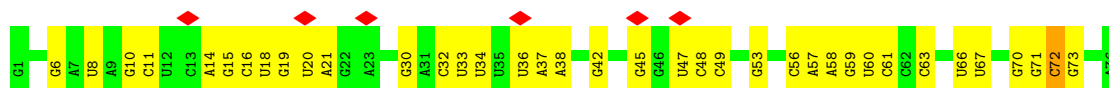




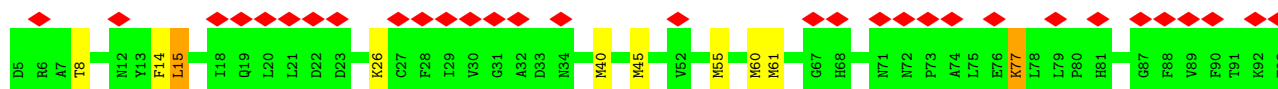
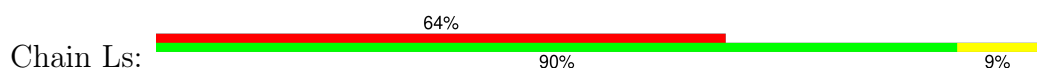
• Molecule 80: P site tRNA

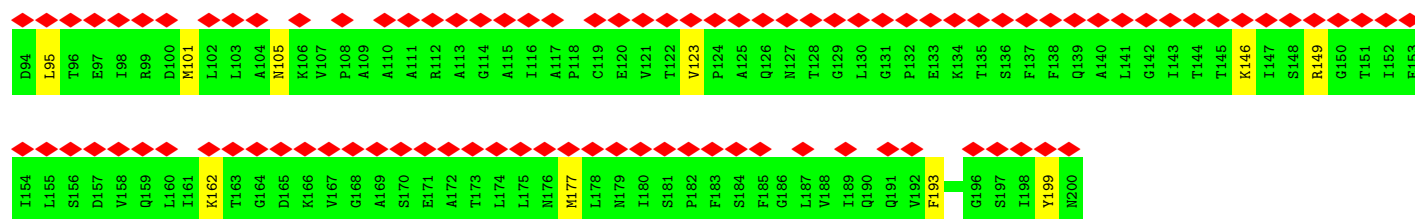


• Molecule 81: Z site tRNA

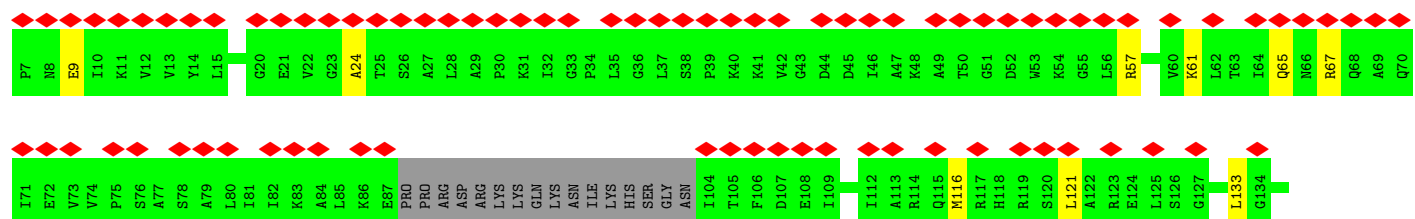
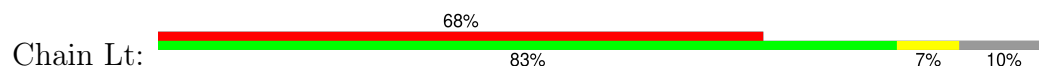


• Molecule 82: 60S acidic ribosomal protein P0

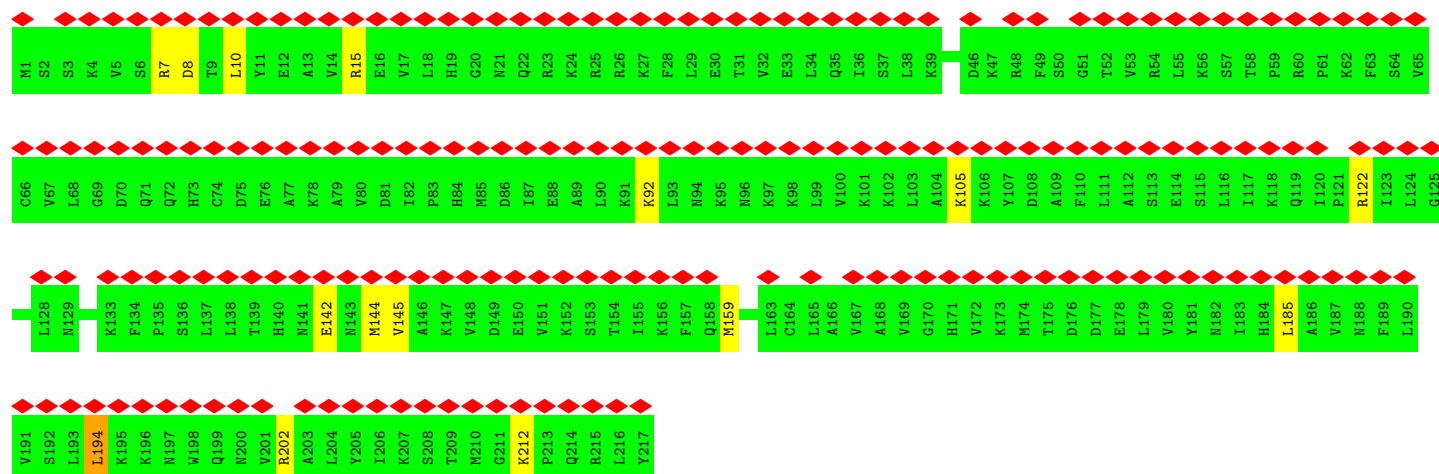
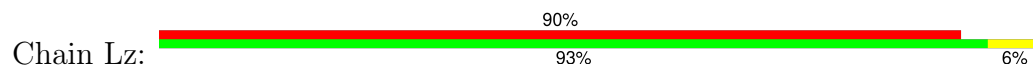




• Molecule 83: Large ribosomal subunit protein uL11



• Molecule 84: 60S ribosomal protein L10a



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	10889	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 ($e^-/\text{\AA}^2$)	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	0.188	Depositor
Minimum map value	-0.078	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.0237	Depositor
Map size (\AA)	546.816, 546.816, 546.816	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	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: MG, ZN

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	LW	0.44	0/979	0.67	0/1295
2	LR	0.42	0/1582	0.67	0/2091
3	SE	0.36	0/2118	0.60	0/2849
4	SI	0.42	0/1715	0.66	2/2287 (0.1%)
5	SL	0.63	2/1268 (0.2%)	0.79	3/1696 (0.2%)
6	SX	0.43	0/1116	0.64	1/1490 (0.1%)
7	SG	0.34	0/1946	0.65	0/2590
8	SJ	0.37	0/1550	0.64	0/2069
9	SY	0.35	0/1083	0.68	0/1438
10	Se	0.33	0/465	0.65	0/612
11	SA	0.43	0/1778	0.70	2/2416 (0.1%)
12	SB	0.43	0/1765	0.65	1/2362 (0.0%)
13	SH	0.34	0/1519	0.65	0/2033
14	SV	0.36	0/643	0.65	0/860
15	Sa	0.45	0/836	0.68	0/1121
16	SC	0.40	0/1762	0.65	1/2381 (0.0%)
17	SN	0.41	0/1232	0.59	0/1656
18	SO	0.40	0/1062	0.66	1/1425 (0.1%)
19	SW	0.44	1/1051 (0.1%)	0.68	1/1406 (0.1%)
20	Sb	0.41	0/665	0.67	0/891
21	L5	0.98	0/89311	0.98	127/139283 (0.1%)
22	L7	0.98	0/2861	0.90	0/4459
23	L8	0.99	0/3701	0.90	2/5766 (0.0%)
24	LA	0.55	0/1936	0.68	0/2596
25	LB	0.51	0/3306	0.63	3/4424 (0.1%)
26	LC	0.50	0/2981	0.66	2/4002 (0.0%)
27	LD	0.49	0/2428	0.61	0/3252
28	LE	0.45	0/1942	0.67	1/2606 (0.0%)
29	LF	0.51	0/1905	0.63	0/2539
30	LG	0.46	0/1960	0.60	0/2637
31	LH	0.48	0/1537	0.67	0/2066
32	LI	0.49	0/1673	0.69	2/2233 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	LJ	0.46	0/1433	0.68	1/1915 (0.1%)
34	LL	0.53	2/1732 (0.1%)	0.73	3/2315 (0.1%)
35	LM	0.49	0/1161	0.61	0/1554
36	LN	0.56	0/1746	0.66	0/2338
37	LO	0.53	0/1682	0.63	0/2250
38	LP	0.52	0/1268	0.61	0/1701
39	LQ	0.53	0/1537	0.70	1/2052 (0.0%)
40	LS	0.55	0/1493	0.62	0/2003
41	LT	0.54	0/1326	0.65	0/1770
42	LU	0.49	0/839	0.74	0/1126
43	LV	0.51	0/993	0.64	0/1332
44	LX	0.47	0/1002	0.67	1/1345 (0.1%)
45	LY	0.50	0/1132	0.64	0/1504
46	LZ	0.64	1/1130 (0.1%)	0.85	4/1507 (0.3%)
47	La	0.52	0/1191	0.60	0/1591
48	Lb	0.39	0/889	0.69	1/1175 (0.1%)
49	Lc	0.49	0/774	0.60	0/1038
50	Ld	0.51	0/903	0.63	0/1216
51	Le	0.54	0/1071	0.64	0/1429
52	Lf	0.56	0/895	0.65	0/1198
53	Lg	0.50	0/916	0.65	0/1220
54	Lh	0.42	0/1023	0.61	0/1351
55	Li	0.61	2/843 (0.2%)	0.82	3/1115 (0.3%)
56	Lj	0.57	0/720	0.68	0/952
57	Lk	0.40	0/575	0.63	0/761
58	Ll	0.48	0/454	0.67	0/599
59	Lm	0.47	0/435	0.65	0/575
60	Ln	0.43	0/231	0.76	0/294
61	Lo	0.48	0/876	0.62	0/1156
62	Lp	0.50	0/718	0.66	1/953 (0.1%)
63	Lr	0.49	0/1017	0.64	0/1364
64	SR	0.34	0/1105	0.67	0/1484
65	SD	0.37	0/1793	0.62	0/2414
66	SF	0.38	0/1516	0.66	1/2037 (0.0%)
67	SK	0.37	0/851	0.72	1/1147 (0.1%)
68	SP	0.39	0/1003	0.68	0/1342
69	SQ	0.37	0/1160	0.73	0/1553
70	SS	0.36	0/1216	0.68	0/1628
71	ST	0.34	0/1131	0.61	0/1515
72	SU	0.33	0/831	0.67	0/1115
73	Sc	0.36	0/508	0.70	0/680
74	Sd	0.42	0/470	0.69	1/623 (0.2%)
75	Sg	0.37	1/2493 (0.0%)	0.70	2/3394 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	SM	0.30	0/950	0.62	1/1275 (0.1%)
77	SZ	0.35	0/604	0.71	0/810
78	Sf	0.35	0/560	0.62	0/745
79	S2	0.72	0/41242	0.92	47/64255 (0.1%)
80	Pt	0.58	0/1812	0.87	0/2823
81	Zt	0.44	0/1779	0.95	2/2771 (0.1%)
82	Ls	0.33	0/1519	0.65	2/2052 (0.1%)
83	Lt	0.28	0/1058	0.64	2/1430 (0.1%)
84	Lz	0.30	0/1769	0.60	1/2371 (0.0%)
All	All	0.75	9/239051 (0.0%)	0.86	224/350994 (0.1%)

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
1	LW	0	1
6	SX	0	1
24	LA	0	2
25	LB	0	3
32	LI	0	1
33	LJ	0	1
35	LM	0	1
37	LO	0	1
41	LT	0	1
42	LU	0	1
52	Lf	0	2
56	Lj	0	1
64	SR	0	1
68	SP	0	1
69	SQ	0	1
77	SZ	0	1
All	All	0	20

The worst 5 of 9 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	SL	34	PRO	CG-CD	-13.49	1.06	1.50
46	LZ	90	PRO	CG-CD	-11.44	1.12	1.50
55	Li	6	PRO	CG-CD	-9.21	1.20	1.50
34	LL	134	PRO	CG-CD	-7.35	1.26	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	SL	34	PRO	N-CD	6.45	1.56	1.47

The worst 5 of 224 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	LZ	90	PRO	CA-N-CD	-13.39	92.75	111.50
34	LL	134	PRO	CA-N-CD	-13.05	93.23	111.50
55	Li	6	PRO	CA-N-CD	-12.60	93.86	111.50
11	SA	207	PRO	CA-N-CD	-12.56	93.91	111.50
5	SL	34	PRO	CA-N-CD	-12.09	94.57	111.50

There are no chirality outliers.

5 of 20 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
24	LA	13	GLY	Peptide
24	LA	54	ARG	Peptide
25	LB	17	LEU	Peptide
1	LW	49	ILE	Peptide
6	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	LW	114/124 (92%)	109 (96%)	5 (4%)	0	100	100
2	LR	185/187 (99%)	177 (96%)	8 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	SE	260/262 (99%)	245 (94%)	15 (6%)	0	100	100
4	SI	204/206 (99%)	189 (93%)	15 (7%)	0	100	100
5	SL	151/153 (99%)	139 (92%)	12 (8%)	0	100	100
6	SX	139/141 (99%)	121 (87%)	17 (12%)	1 (1%)	19	52
7	SG	235/237 (99%)	216 (92%)	19 (8%)	0	100	100
8	SJ	183/185 (99%)	173 (94%)	10 (6%)	0	100	100
9	SY	129/131 (98%)	112 (87%)	17 (13%)	0	100	100
10	Se	56/58 (97%)	50 (89%)	6 (11%)	0	100	100
11	SA	219/221 (99%)	194 (89%)	25 (11%)	0	100	100
12	SB	212/214 (99%)	197 (93%)	15 (7%)	0	100	100
13	SH	182/189 (96%)	154 (85%)	28 (15%)	0	100	100
14	SV	81/83 (98%)	70 (86%)	11 (14%)	0	100	100
15	Sa	100/102 (98%)	88 (88%)	11 (11%)	1 (1%)	13	44
16	SC	220/222 (99%)	203 (92%)	17 (8%)	0	100	100
17	SN	148/150 (99%)	143 (97%)	5 (3%)	0	100	100
18	SO	138/140 (99%)	126 (91%)	12 (9%)	0	100	100
19	SW	127/129 (98%)	117 (92%)	10 (8%)	0	100	100
20	Sb	81/83 (98%)	69 (85%)	12 (15%)	0	100	100
24	LA	246/248 (99%)	222 (90%)	22 (9%)	2 (1%)	16	49
25	LB	400/402 (100%)	363 (91%)	37 (9%)	0	100	100
26	LC	366/368 (100%)	336 (92%)	30 (8%)	0	100	100
27	LD	291/293 (99%)	268 (92%)	23 (8%)	0	100	100
28	LE	232/247 (94%)	204 (88%)	28 (12%)	0	100	100
29	LF	223/225 (99%)	207 (93%)	16 (7%)	0	100	100
30	LG	239/241 (99%)	221 (92%)	18 (8%)	0	100	100
31	LH	188/190 (99%)	176 (94%)	12 (6%)	0	100	100
32	LI	198/213 (93%)	183 (92%)	15 (8%)	0	100	100
33	LJ	174/176 (99%)	157 (90%)	17 (10%)	0	100	100
34	LL	208/210 (99%)	189 (91%)	19 (9%)	0	100	100
35	LM	137/139 (99%)	127 (93%)	9 (7%)	1 (1%)	19	52
36	LN	201/203 (99%)	187 (93%)	13 (6%)	1 (0%)	25	58

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	LO	199/201 (99%)	191 (96%)	8 (4%)	0	100	100
38	LP	151/153 (99%)	141 (93%)	10 (7%)	0	100	100
39	LQ	185/187 (99%)	176 (95%)	9 (5%)	0	100	100
40	LS	173/175 (99%)	158 (91%)	15 (9%)	0	100	100
41	LT	157/159 (99%)	145 (92%)	12 (8%)	0	100	100
42	LU	99/101 (98%)	80 (81%)	19 (19%)	0	100	100
43	LV	129/131 (98%)	121 (94%)	8 (6%)	0	100	100
44	LX	118/120 (98%)	113 (96%)	5 (4%)	0	100	100
45	LY	132/134 (98%)	128 (97%)	4 (3%)	0	100	100
46	LZ	133/135 (98%)	120 (90%)	13 (10%)	0	100	100
47	La	145/147 (99%)	136 (94%)	9 (6%)	0	100	100
48	Lb	105/121 (87%)	99 (94%)	6 (6%)	0	100	100
49	Lc	96/98 (98%)	87 (91%)	9 (9%)	0	100	100
50	Ld	105/107 (98%)	100 (95%)	5 (5%)	0	100	100
51	Le	126/128 (98%)	117 (93%)	9 (7%)	0	100	100
52	Lf	107/109 (98%)	98 (92%)	8 (8%)	1 (1%)	14	46
53	Lg	112/114 (98%)	109 (97%)	3 (3%)	0	100	100
54	Lh	120/122 (98%)	118 (98%)	2 (2%)	0	100	100
55	Li	100/102 (98%)	93 (93%)	7 (7%)	0	100	100
56	Lj	84/86 (98%)	75 (89%)	9 (11%)	0	100	100
57	Lk	67/69 (97%)	65 (97%)	2 (3%)	0	100	100
58	Ll	48/50 (96%)	45 (94%)	3 (6%)	0	100	100
59	Lm	50/52 (96%)	50 (100%)	0	0	100	100
60	Ln	22/24 (92%)	22 (100%)	0	0	100	100
61	Lo	103/105 (98%)	99 (96%)	4 (4%)	0	100	100
62	Lp	89/91 (98%)	84 (94%)	5 (6%)	0	100	100
63	Lr	123/125 (98%)	117 (95%)	6 (5%)	0	100	100
64	SR	133/135 (98%)	117 (88%)	15 (11%)	1 (1%)	16	49
65	SD	225/227 (99%)	200 (89%)	25 (11%)	0	100	100
66	SF	187/189 (99%)	167 (89%)	20 (11%)	0	100	100
67	SK	96/98 (98%)	84 (88%)	11 (12%)	1 (1%)	13	44

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
68	SP	119/121 (98%)	112 (94%)	7 (6%)	0	100	100
69	SQ	142/144 (99%)	121 (85%)	20 (14%)	1 (1%)	19	52
70	SS	143/145 (99%)	132 (92%)	11 (8%)	0	100	100
71	ST	141/143 (99%)	129 (92%)	12 (8%)	0	100	100
72	SU	102/104 (98%)	90 (88%)	11 (11%)	1 (1%)	13	44
73	Sc	62/64 (97%)	50 (81%)	12 (19%)	0	100	100
74	Sd	53/55 (96%)	49 (92%)	3 (6%)	1 (2%)	6	31
75	Sg	311/313 (99%)	269 (86%)	42 (14%)	0	100	100
76	SM	120/122 (98%)	107 (89%)	13 (11%)	0	100	100
77	SZ	73/75 (97%)	55 (75%)	18 (25%)	0	100	100
78	Sf	65/67 (97%)	56 (86%)	9 (14%)	0	100	100
82	Ls	194/196 (99%)	178 (92%)	16 (8%)	0	100	100
83	Lt	137/157 (87%)	107 (78%)	27 (20%)	3 (2%)	5	29
84	Lz	215/217 (99%)	166 (77%)	49 (23%)	0	100	100
All	All	11863/12090 (98%)	10808 (91%)	1040 (9%)	15 (0%)	50	79

5 of 15 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	SX	127	ASN
67	SK	96	ARG
15	Sa	47	ALA
35	LM	88	ALA
36	LN	124	ASP

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	LW	97/103 (94%)	88 (91%)	9 (9%)	7	28
2	LR	166/166 (100%)	150 (90%)	16 (10%)	7	27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	SE	224/224 (100%)	197 (88%)	27 (12%)	4	18
4	SI	178/178 (100%)	164 (92%)	14 (8%)	10	34
5	SL	137/137 (100%)	124 (90%)	13 (10%)	7	27
6	SX	113/113 (100%)	105 (93%)	8 (7%)	12	38
7	SG	207/207 (100%)	187 (90%)	20 (10%)	6	26
8	SJ	161/161 (100%)	146 (91%)	15 (9%)	7	28
9	SY	113/113 (100%)	102 (90%)	11 (10%)	6	26
10	Se	47/47 (100%)	41 (87%)	6 (13%)	3	17
11	SA	183/183 (100%)	168 (92%)	15 (8%)	9	33
12	SB	195/195 (100%)	180 (92%)	15 (8%)	10	35
13	SH	166/169 (98%)	153 (92%)	13 (8%)	10	34
14	SV	67/67 (100%)	60 (90%)	7 (10%)	5	24
15	Sa	89/89 (100%)	78 (88%)	11 (12%)	4	18
16	SC	188/188 (100%)	163 (87%)	25 (13%)	3	16
17	SN	130/130 (100%)	119 (92%)	11 (8%)	8	31
18	SO	110/110 (100%)	103 (94%)	7 (6%)	14	41
19	SW	112/112 (100%)	101 (90%)	11 (10%)	6	26
20	Sb	75/75 (100%)	66 (88%)	9 (12%)	4	19
24	LA	190/190 (100%)	177 (93%)	13 (7%)	13	40
25	LB	348/348 (100%)	329 (94%)	19 (6%)	18	46
26	LC	306/306 (100%)	293 (96%)	13 (4%)	25	53
27	LD	246/247 (100%)	231 (94%)	15 (6%)	15	43
28	LE	209/220 (95%)	194 (93%)	15 (7%)	12	38
29	LF	194/194 (100%)	186 (96%)	8 (4%)	26	54
30	LG	203/205 (99%)	186 (92%)	17 (8%)	9	31
31	LH	169/169 (100%)	157 (93%)	12 (7%)	12	38
32	LI	172/180 (96%)	160 (93%)	12 (7%)	12	39
33	LJ	148/148 (100%)	141 (95%)	7 (5%)	22	51
34	LL	176/176 (100%)	167 (95%)	9 (5%)	20	48
35	LM	118/118 (100%)	111 (94%)	7 (6%)	16	44
36	LN	171/171 (100%)	166 (97%)	5 (3%)	37	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	LO	173/173 (100%)	164 (95%)	9 (5%)	19	47
38	LP	134/134 (100%)	122 (91%)	12 (9%)	8	29
39	LQ	164/164 (100%)	154 (94%)	10 (6%)	15	43
40	LS	156/156 (100%)	147 (94%)	9 (6%)	17	44
41	LT	139/139 (100%)	126 (91%)	13 (9%)	7	27
42	LU	91/91 (100%)	79 (87%)	12 (13%)	3	16
43	LV	101/101 (100%)	98 (97%)	3 (3%)	36	63
44	LX	108/108 (100%)	102 (94%)	6 (6%)	17	45
45	LY	124/124 (100%)	113 (91%)	11 (9%)	8	30
46	LZ	117/117 (100%)	107 (92%)	10 (8%)	8	31
47	La	120/120 (100%)	111 (92%)	9 (8%)	11	36
48	Lb	88/101 (87%)	79 (90%)	9 (10%)	6	25
49	Lc	83/83 (100%)	73 (88%)	10 (12%)	4	19
50	Ld	98/98 (100%)	86 (88%)	12 (12%)	4	18
51	Le	114/114 (100%)	106 (93%)	8 (7%)	12	39
52	Lf	88/88 (100%)	83 (94%)	5 (6%)	17	45
53	Lg	98/98 (100%)	93 (95%)	5 (5%)	20	48
54	Lh	109/109 (100%)	103 (94%)	6 (6%)	18	46
55	Li	86/86 (100%)	79 (92%)	7 (8%)	9	33
56	Lj	73/73 (100%)	64 (88%)	9 (12%)	4	18
57	Lk	64/64 (100%)	58 (91%)	6 (9%)	7	27
58	Ll	47/47 (100%)	42 (89%)	5 (11%)	5	23
59	Lm	48/48 (100%)	43 (90%)	5 (10%)	5	24
60	Ln	23/23 (100%)	21 (91%)	2 (9%)	8	30
61	Lo	93/93 (100%)	83 (89%)	10 (11%)	5	23
62	Lp	74/74 (100%)	69 (93%)	5 (7%)	13	40
63	Lr	109/109 (100%)	102 (94%)	7 (6%)	14	41
64	SR	122/122 (100%)	109 (89%)	13 (11%)	5	23
65	SD	190/190 (100%)	163 (86%)	27 (14%)	2	14
66	SF	159/159 (100%)	147 (92%)	12 (8%)	11	36
67	SK	89/89 (100%)	74 (83%)	15 (17%)	1	9

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
68	SP	107/107 (100%)	98 (92%)	9 (8%)	9	31
69	SQ	119/119 (100%)	109 (92%)	10 (8%)	9	31
70	SS	126/126 (100%)	113 (90%)	13 (10%)	6	25
71	ST	113/113 (100%)	101 (89%)	12 (11%)	5	23
72	SU	94/94 (100%)	86 (92%)	8 (8%)	8	31
73	Sc	57/57 (100%)	52 (91%)	5 (9%)	8	30
74	Sd	48/48 (100%)	44 (92%)	4 (8%)	9	32
75	Sg	272/272 (100%)	247 (91%)	25 (9%)	7	28
76	SM	102/104 (98%)	90 (88%)	12 (12%)	4	19
77	SZ	66/66 (100%)	55 (83%)	11 (17%)	2	9
78	Sf	60/60 (100%)	55 (92%)	5 (8%)	9	32
82	Ls	162/164 (99%)	142 (88%)	20 (12%)	4	18
83	Lt	112/130 (86%)	106 (95%)	6 (5%)	18	46
84	Lz	195/196 (100%)	180 (92%)	15 (8%)	10	35
All	All	10323/10390 (99%)	9471 (92%)	852 (8%)	12	32

5 of 852 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
41	LT	85	LEU
54	Lh	94	ARG
77	SZ	57	LYS
42	LU	93	LYS
41	LT	83	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 49 such sidechains are listed below:

Mol	Chain	Res	Type
46	LZ	127	ASN
66	SF	110	GLN
51	Le	107	ASN
62	Lp	33	GLN
68	SP	35	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
21	L5	3703/5070 (73%)	920 (24%)	26 (0%)
22	L7	119/120 (99%)	14 (11%)	0
23	L8	155/156 (99%)	35 (22%)	0
79	S2	1715/1740 (98%)	458 (26%)	5 (0%)
80	Pt	75/76 (98%)	19 (25%)	0
81	Zt	74/75 (98%)	36 (48%)	0
All	All	5841/7237 (80%)	1482 (25%)	31 (0%)

5 of 1482 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
21	L5	25	A
21	L5	26	C
21	L5	30	C
21	L5	39	A
21	L5	42	A

5 of 31 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
21	L5	2416	G
79	S2	563	G
21	L5	2760	G
79	S2	1434	C
21	L5	4699	U

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 [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
79	S2	6
21	L5	2

The worst 5 of 8 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	S2	753:C	O3'	785:C	P	27.67
1	S2	698:G	O3'	730:C	P	17.12
1	S2	739:C	O3'	746:C	P	13.36
1	S2	225:G	O3'	287:U	P	7.94
1	S2	1693:G	O3'	1694:U	P	5.36

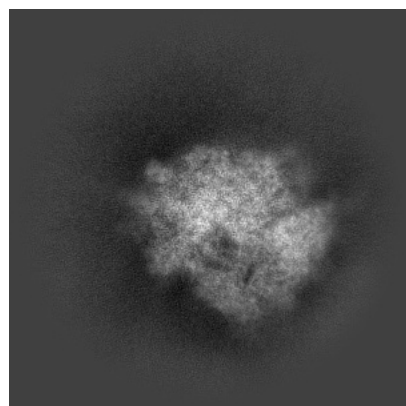
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-42305. These allow visual inspection of the internal detail of the map and identification of artifacts.

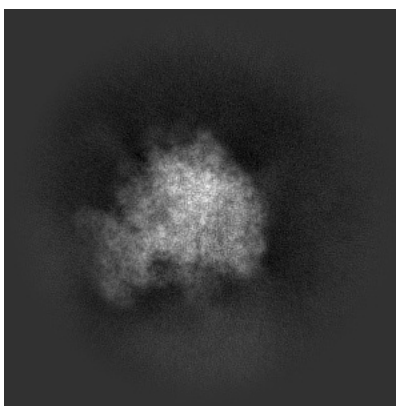
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

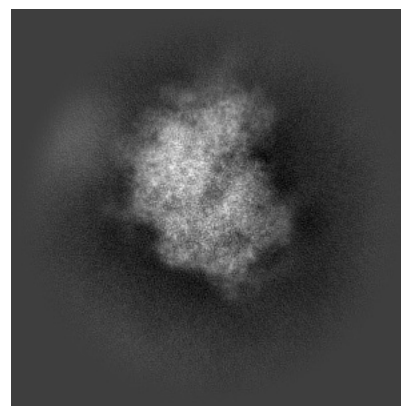
6.1.1 Primary map



X

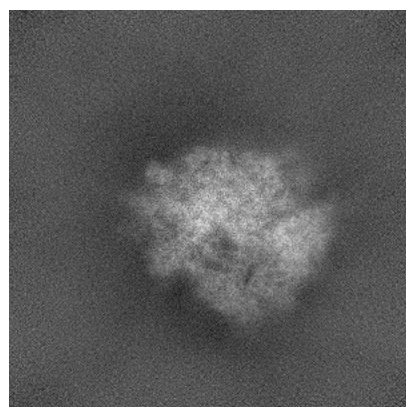


Y

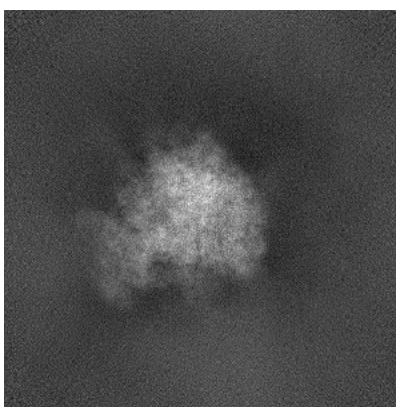


Z

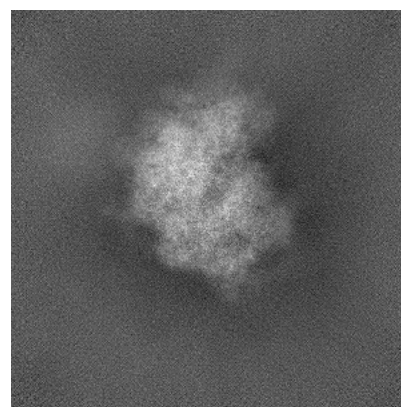
6.1.2 Raw map



X



Y

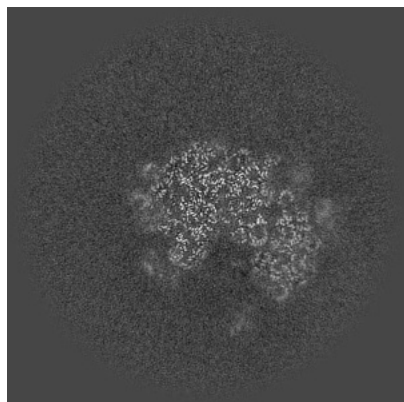


Z

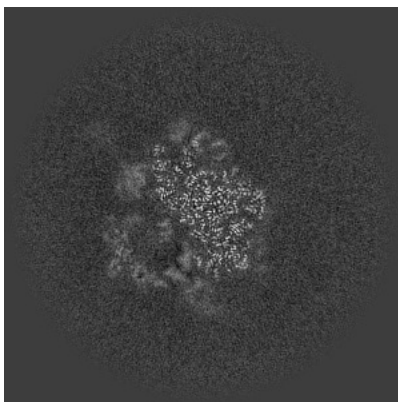
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

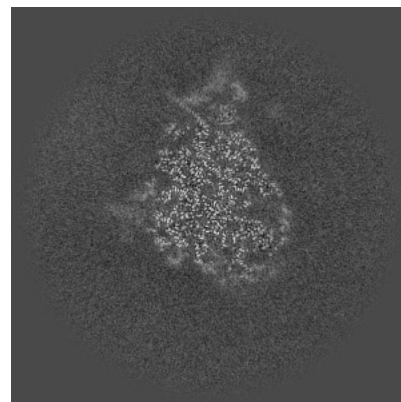
6.2.1 Primary map



X Index: 256

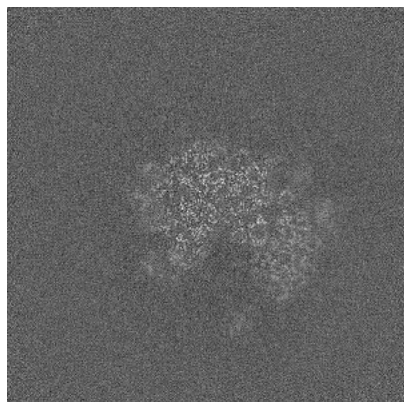


Y Index: 256

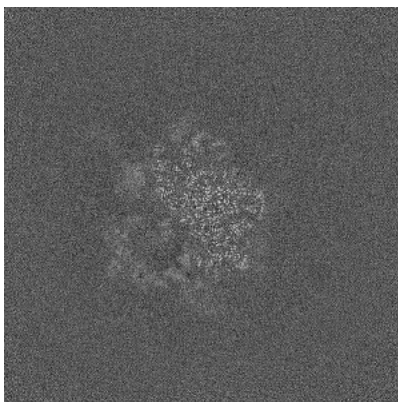


Z Index: 256

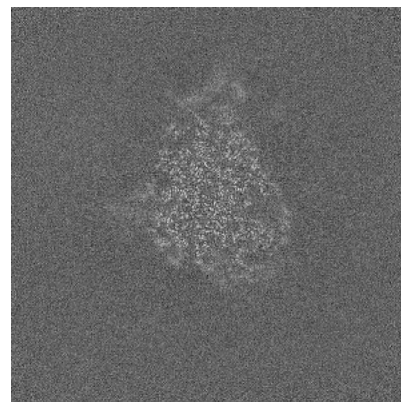
6.2.2 Raw map



X Index: 256



Y Index: 256

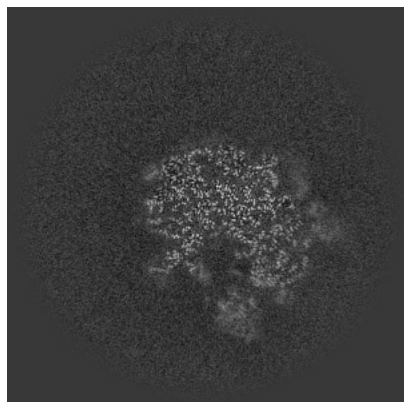


Z Index: 256

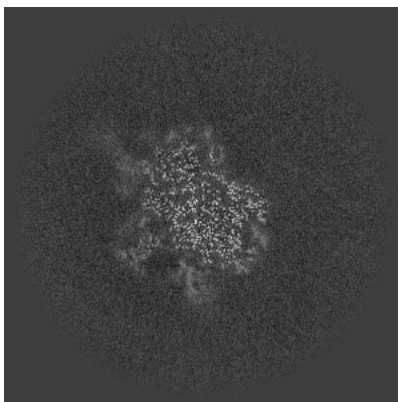
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

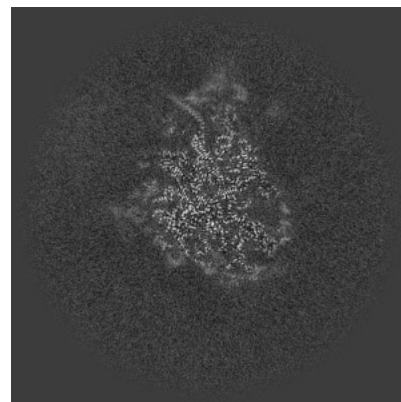
6.3.1 Primary map



X Index: 243

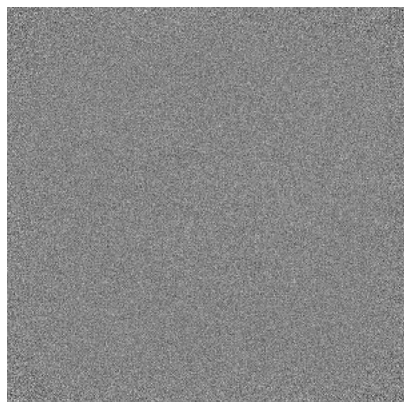


Y Index: 243

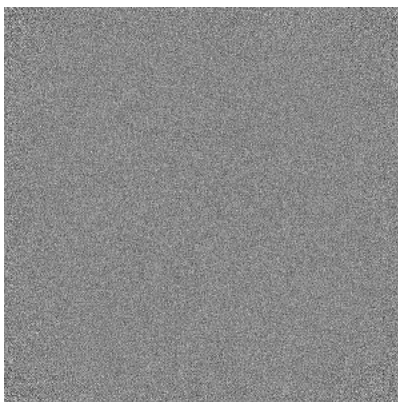


Z Index: 254

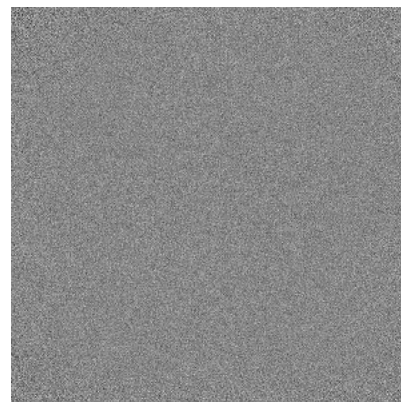
6.3.2 Raw map



X Index: 0



Y Index: 0

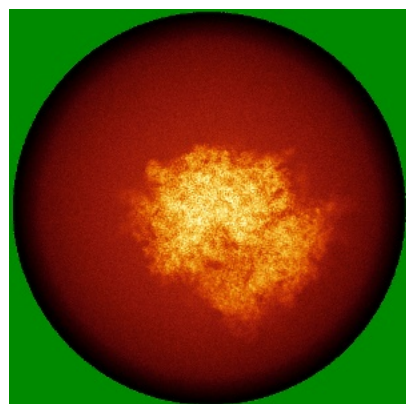


Z Index: 0

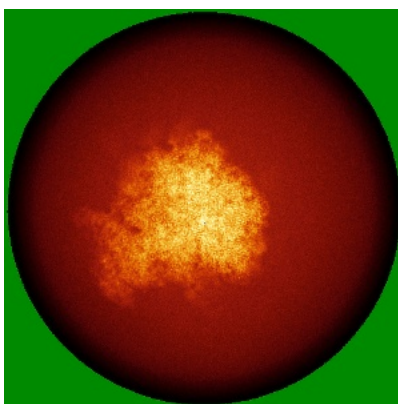
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

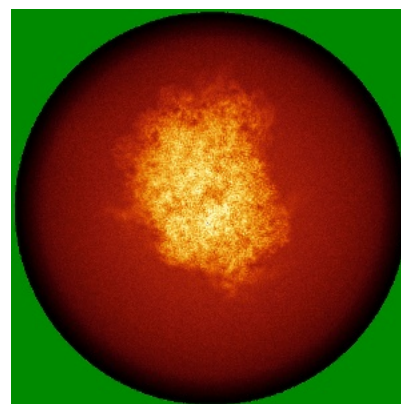
6.4.1 Primary map



X

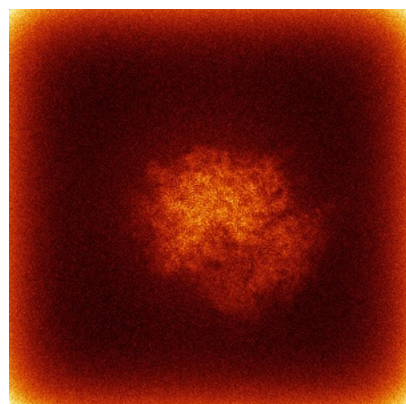


Y

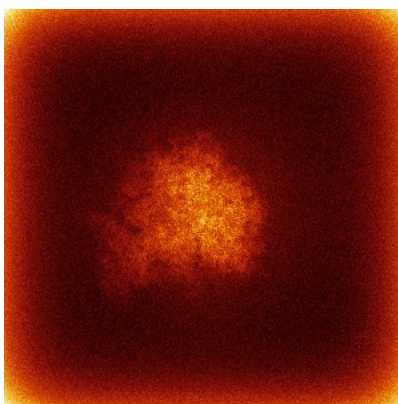


Z

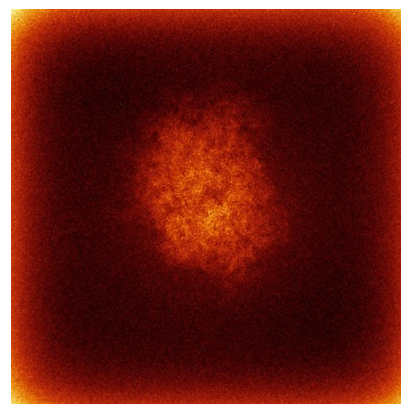
6.4.2 Raw map



X



Y

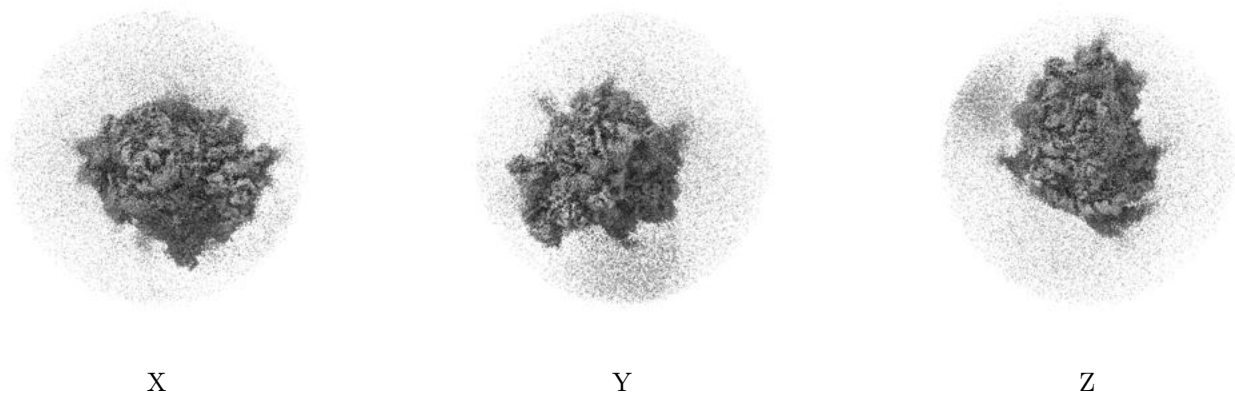


Z

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.

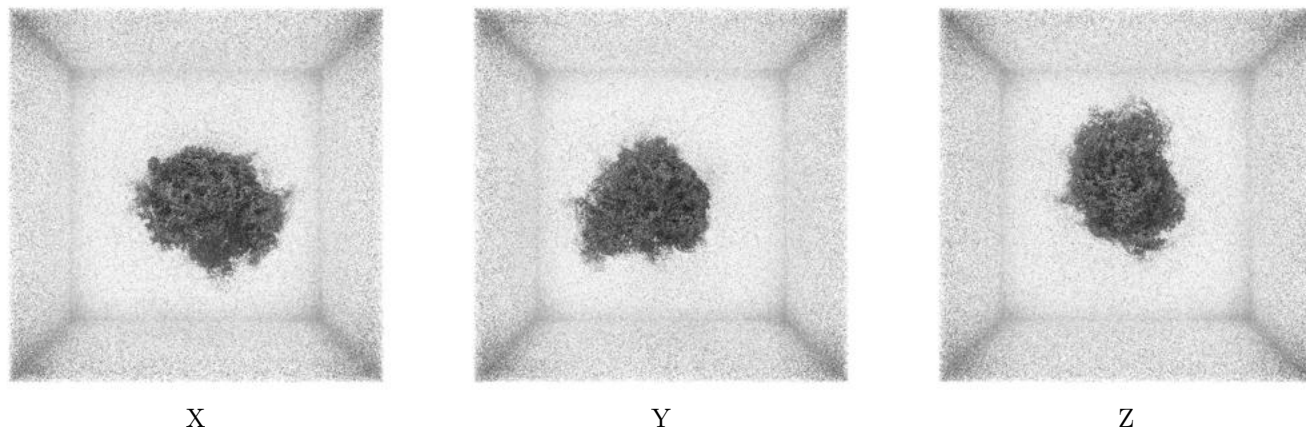
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0237. 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



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

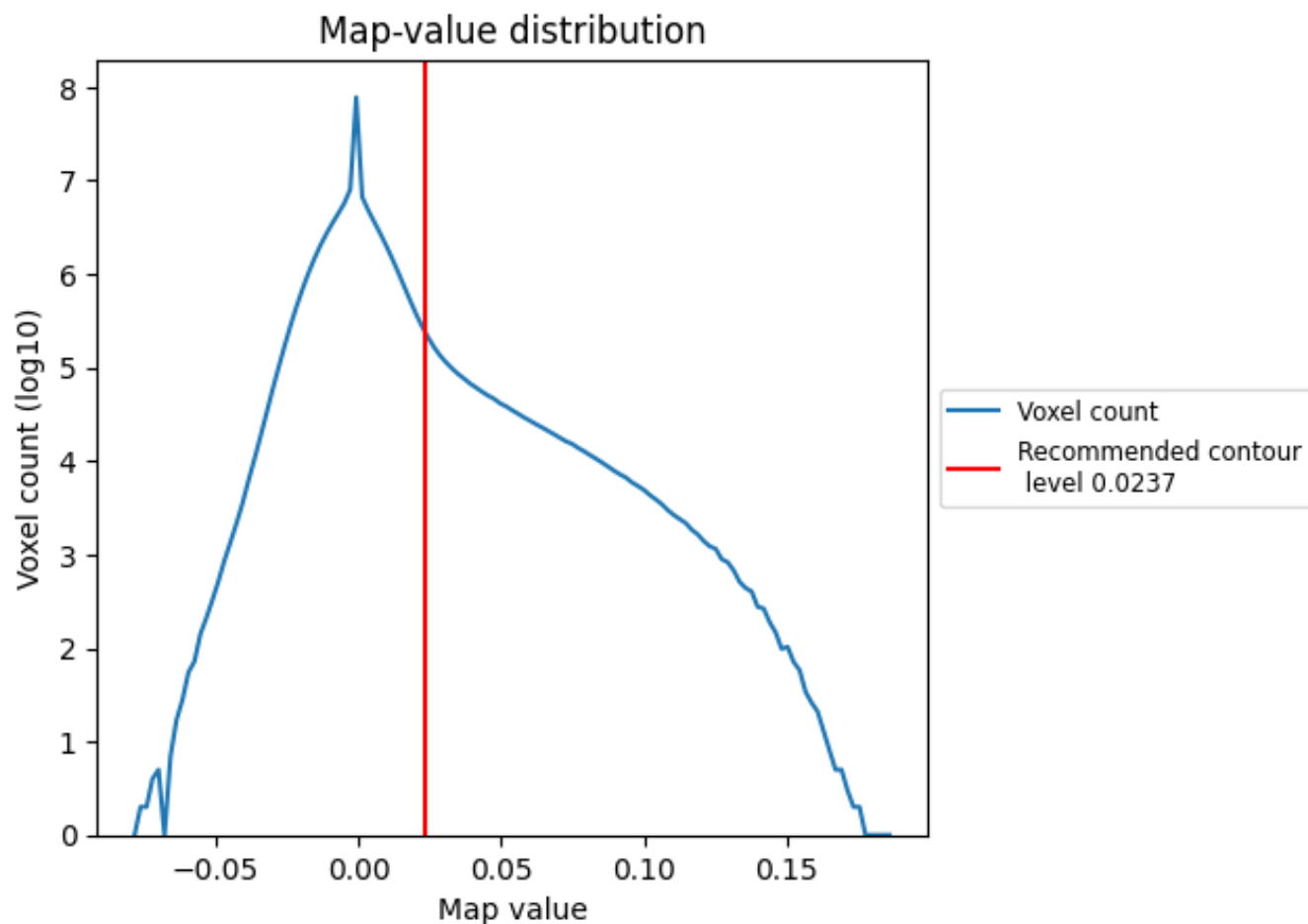
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

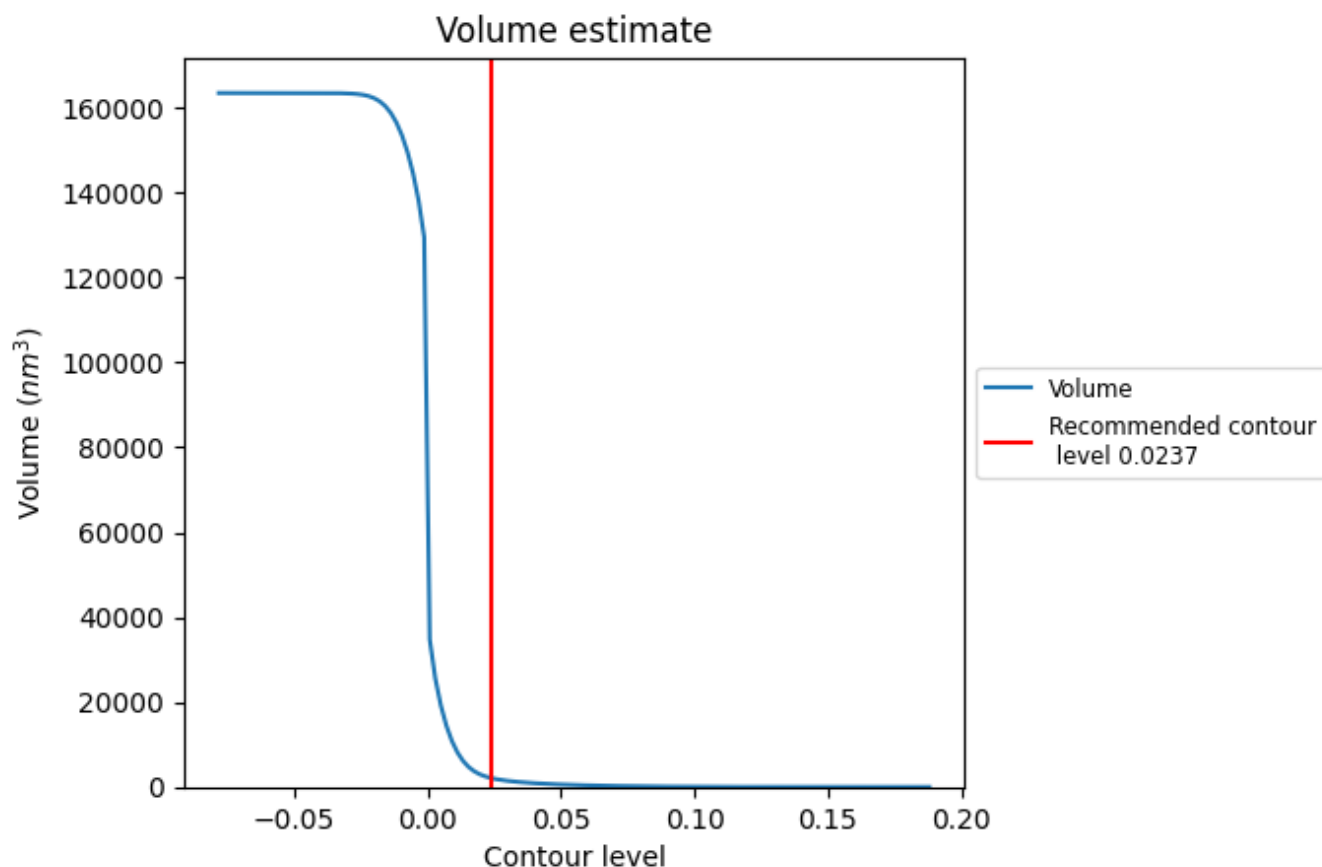
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

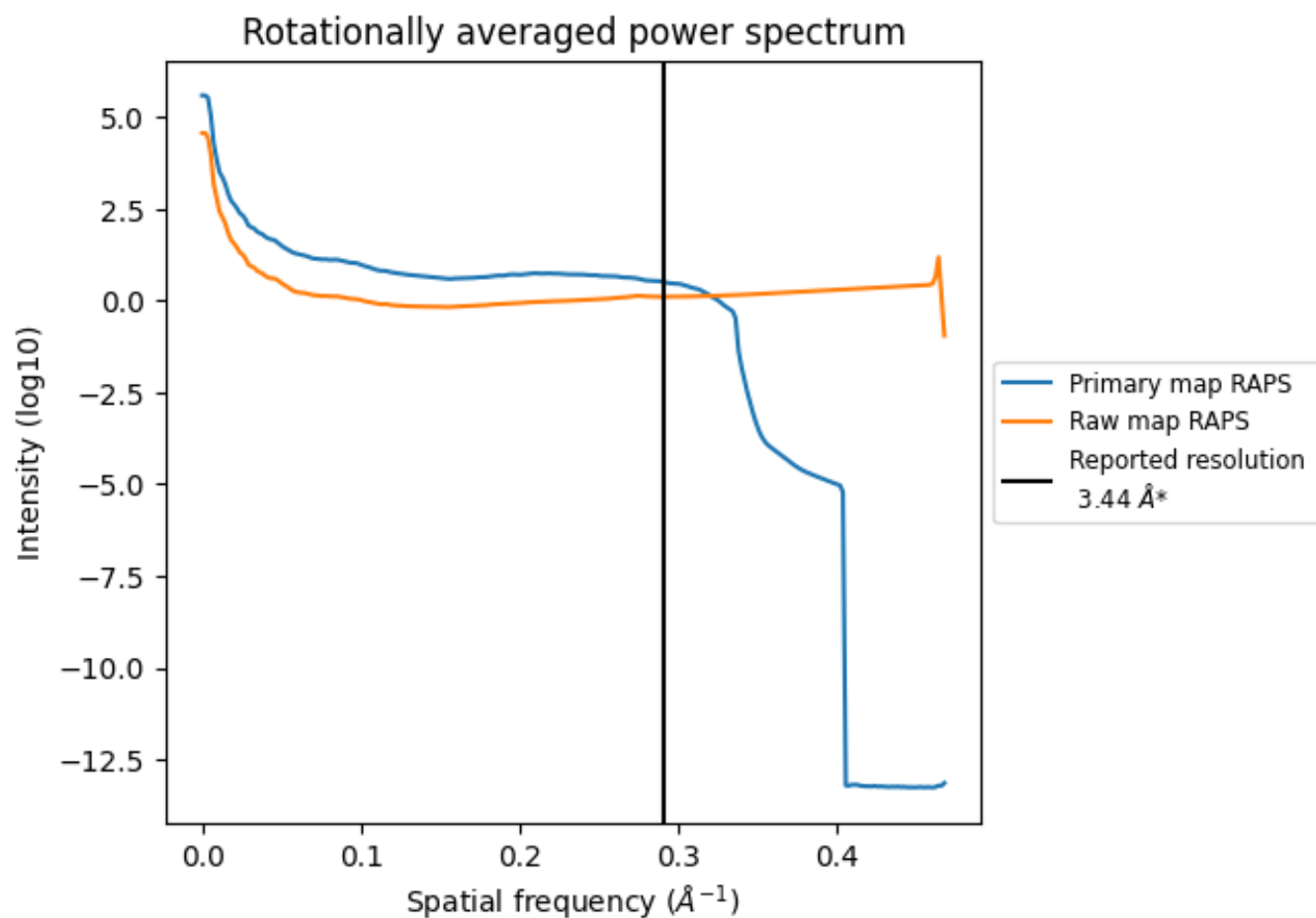
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2116 nm^3 ; this corresponds to an approximate mass of 1911 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

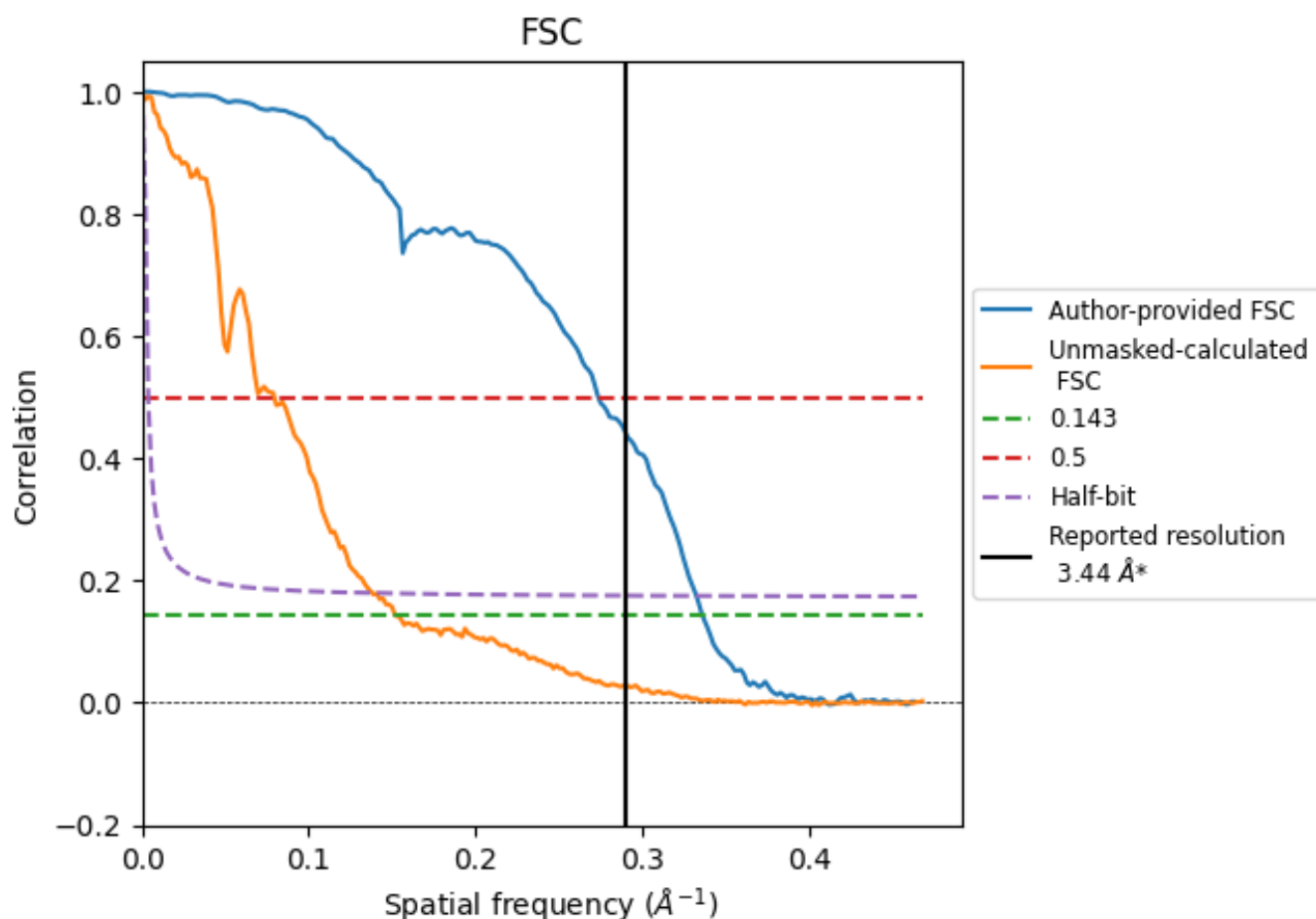


*Reported resolution corresponds to spatial frequency of 0.291 \AA^{-1}

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.291 \AA^{-1}

8.2 Resolution estimates

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.44	-	-
Author-provided FSC curve	2.97	3.65	3.01
Unmasked-calculated*	6.59	12.61	7.24

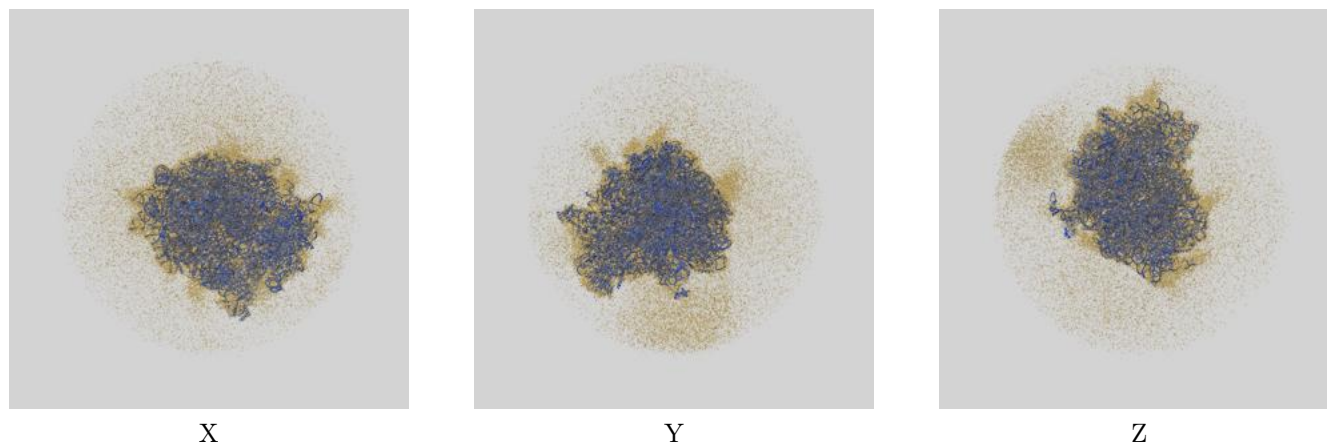
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 2.97 differs from the reported value 3.44 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.59 differs from the reported value 3.44 by more than 10 %

9 Map-model fit [i](#)

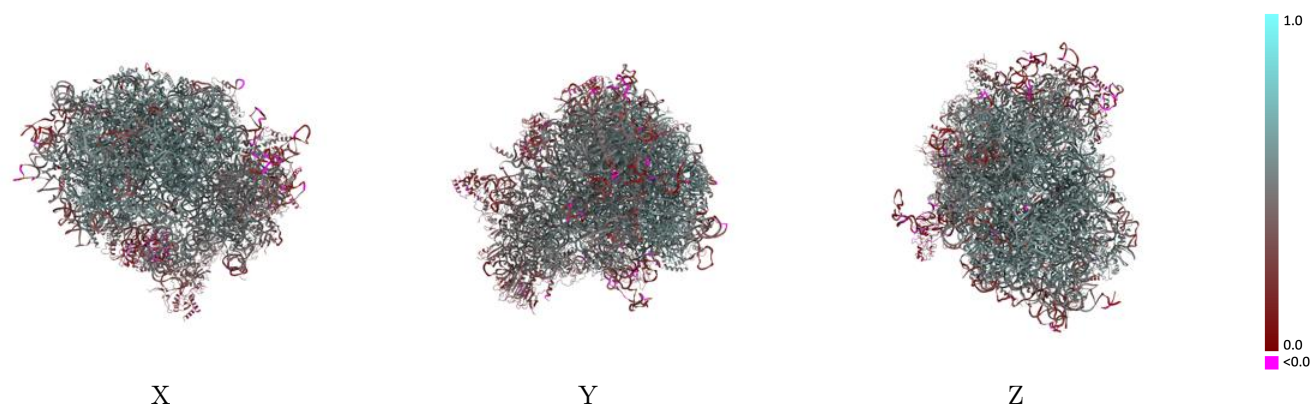
This section contains information regarding the fit between EMDB map EMD-42305 and PDB model 8UIY. Per-residue inclusion information can be found in section [3](#) on page [21](#).

9.1 Map-model overlay [i](#)



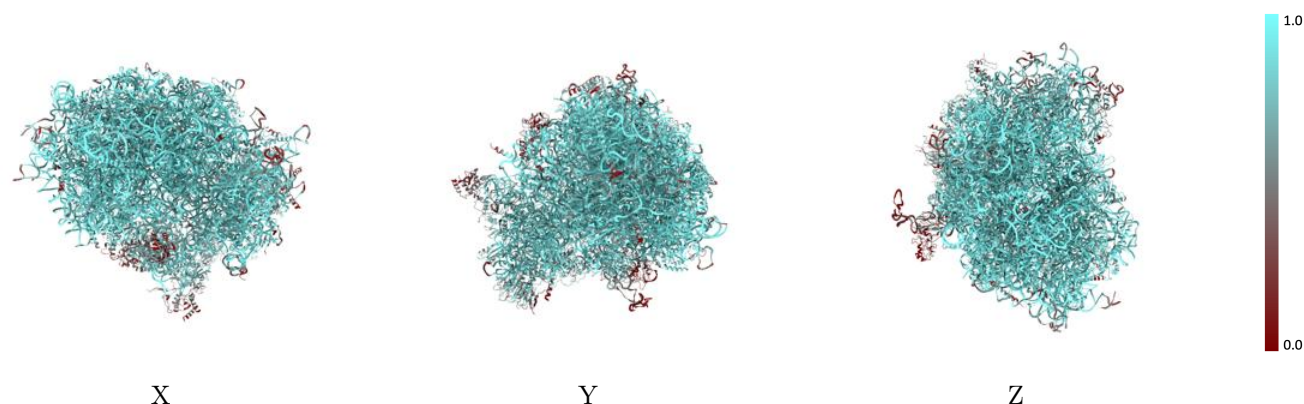
The images above show the 3D surface view of the map at the recommended contour level 0.0237 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



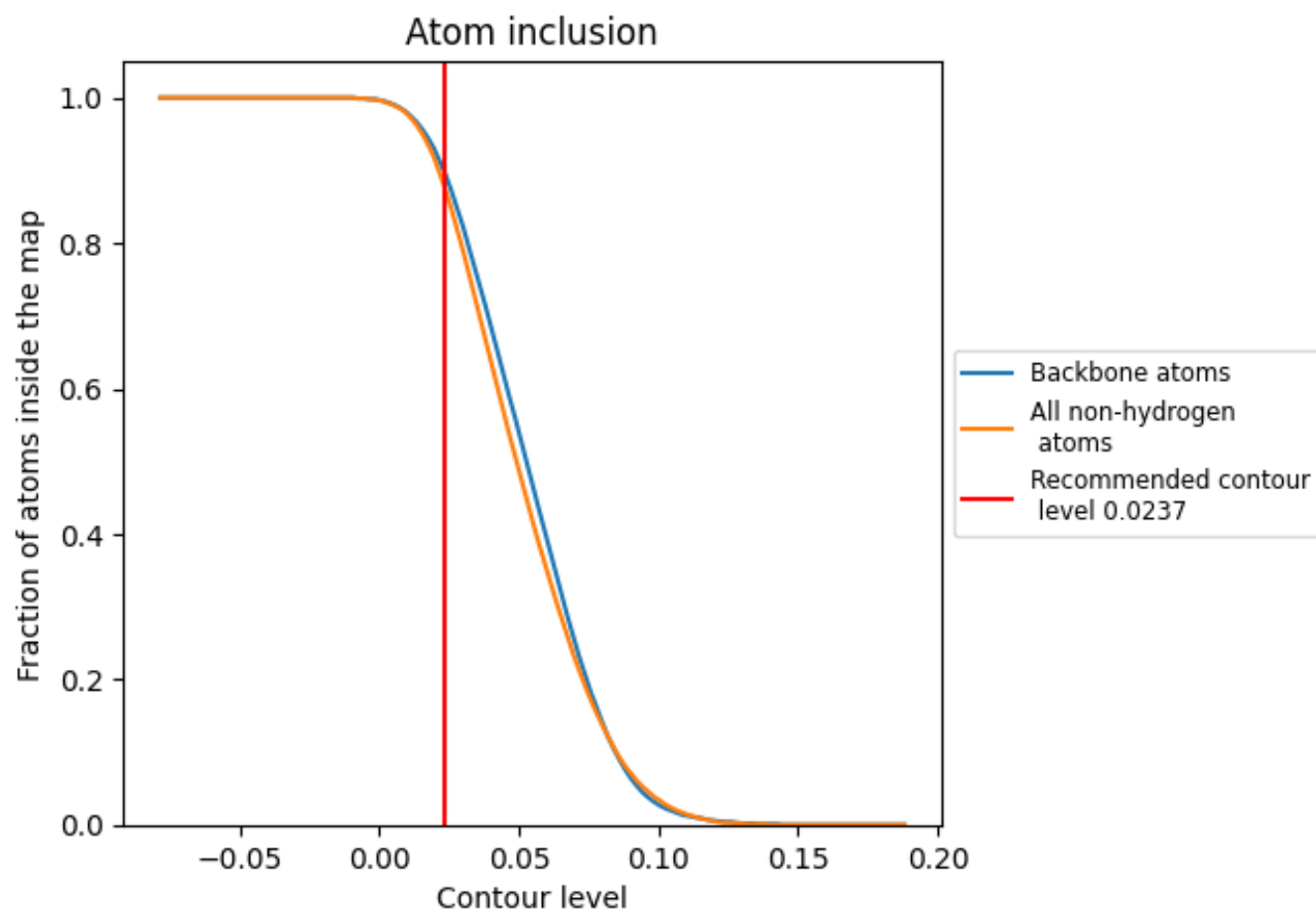
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (0.0237).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 87% 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 (0.0237) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8740	 0.4870
L5	 0.9230	 0.5060
L7	 0.9840	 0.5640
L8	 0.9520	 0.5330
LA	 0.9530	 0.5880
LB	 0.9140	 0.5660
LC	 0.9170	 0.5660
LD	 0.8800	 0.5230
LE	 0.8370	 0.5040
LF	 0.9290	 0.5680
LG	 0.8220	 0.5050
LH	 0.8900	 0.5470
LI	 0.9130	 0.5600
LJ	 0.7710	 0.4810
LL	 0.8740	 0.5330
LM	 0.9280	 0.5490
LN	 0.9720	 0.5910
LO	 0.9360	 0.5700
LP	 0.9450	 0.5750
LQ	 0.9400	 0.5830
LR	 0.8620	 0.5250
LS	 0.9340	 0.5840
LT	 0.9070	 0.5510
LU	 0.8040	 0.4650
LV	 0.9170	 0.5710
LW	 0.6810	 0.3930
LX	 0.8960	 0.5540
LY	 0.9010	 0.5560
LZ	 0.9070	 0.5430
La	 0.9460	 0.5800
Lb	 0.7980	 0.4950
Lc	 0.9250	 0.5440
Ld	 0.8720	 0.5410
Le	 0.9400	 0.5830
Lf	 0.9540	 0.5890



















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Chain	Atom inclusion	Q-score
Lg	 0.9130	 0.5530
Lh	 0.8810	 0.5410
Li	 0.9170	 0.5420
Lj	 0.9660	 0.5830
Lk	 0.8060	 0.5010
Ll	 0.9460	 0.5660
Lm	 0.9090	 0.5660
Ln	 0.9470	 0.5780
Lo	 0.9380	 0.5590
Lp	 0.9140	 0.5620
Lr	 0.9270	 0.5690
Ls	 0.3350	 0.2160
Lt	 0.2570	 0.1720
Lz	 0.1280	 0.1500
Pt	 0.8550	 0.4300
S2	 0.9190	 0.4580
SA	 0.7970	 0.4630
SB	 0.8200	 0.4970
SC	 0.8650	 0.5000
SD	 0.7280	 0.4030
SE	 0.8260	 0.4610
SF	 0.7950	 0.4410
SG	 0.7150	 0.3750
SH	 0.6960	 0.3930
SI	 0.8370	 0.4850
SJ	 0.8330	 0.4680
SK	 0.7010	 0.3790
SL	 0.8280	 0.4980
SM	 0.3240	 0.2000
SN	 0.8730	 0.5150
SO	 0.8010	 0.4950
SP	 0.7120	 0.4040
SQ	 0.7690	 0.4290
SR	 0.7290	 0.3940
SS	 0.7420	 0.4260
ST	 0.7540	 0.4000
SU	 0.7290	 0.3790
SV	 0.8120	 0.4750
SW	 0.9200	 0.5280
SX	 0.8640	 0.5120
SY	 0.7560	 0.3840
SZ	 0.6740	 0.3850

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Chain	Atom inclusion	Q-score
Sa	 0.8660	 0.5110
Sb	 0.7980	 0.4850
Sc	 0.7100	 0.3950
Sd	 0.8780	 0.4490
Se	 0.6890	 0.3960
Sf	 0.4390	 0.2240
Sg	 0.6090	 0.3240
Zt	 0.6550	 0.1770