



wwPDB EM Validation Summary Report ⓘ

Dec 11, 2022 – 07:59 pm GMT

PDB ID : 4UG0
EMDB ID : EMD-2938
Title : STRUCTURE OF THE HUMAN 80S RIBOSOME
Authors : Khatter, H.; Myasnikov, A.G.; Natchiar, S.K.; Klaholz, B.P.
Deposited on : 2015-03-20
Resolution : 3.60 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.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

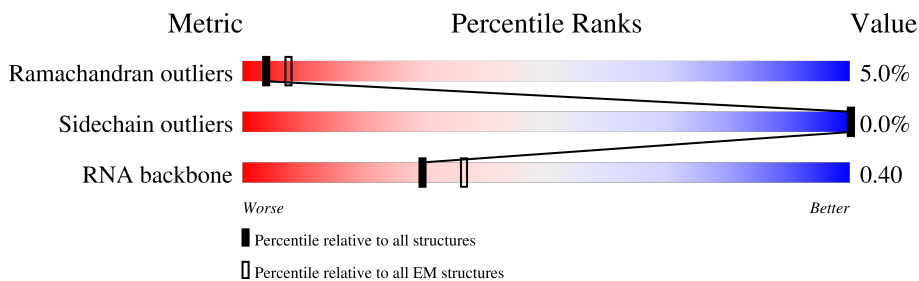
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.60 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.





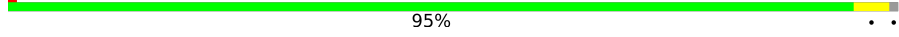
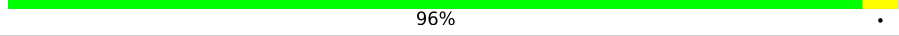
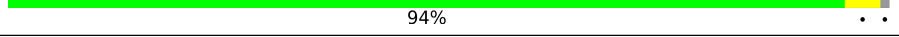
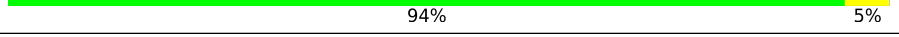

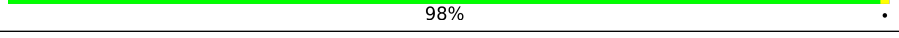
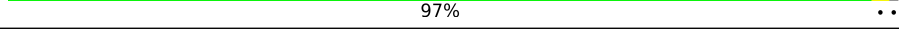

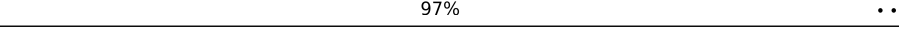
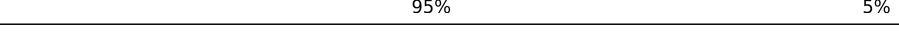
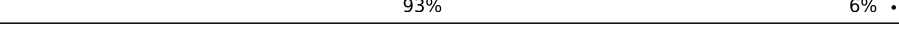
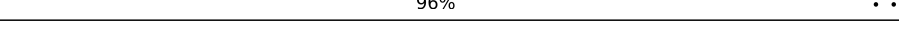


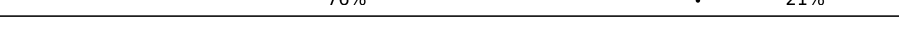

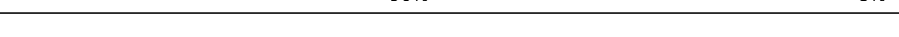






Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	L5	5070	
2	L7	121	
3	L8	157	
4	LA	257	
5	LB	403	
6	LC	427	
7	LD	297	
8	LE	288	

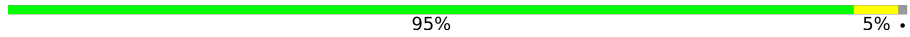
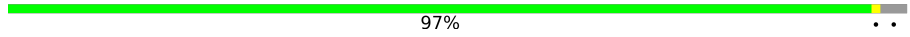
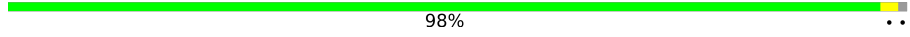



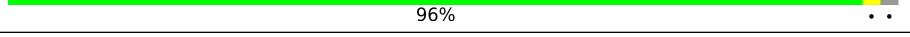

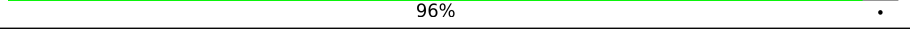
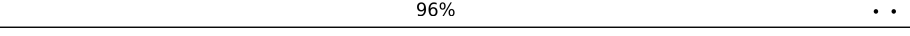
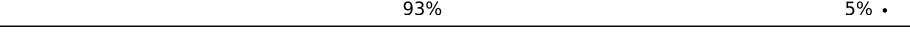
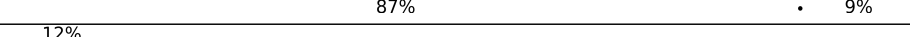
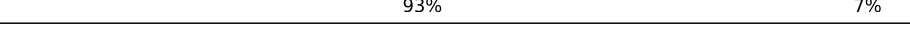
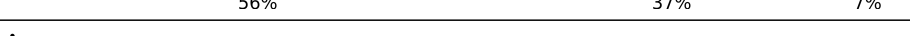


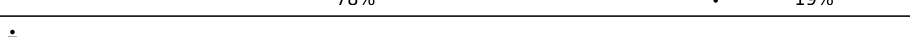

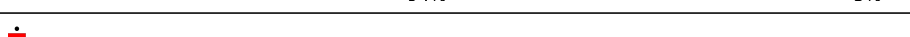






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Mol	Chain	Length	Quality of chain
9	LF	248	 89% 9%
10	LG	266	 85% 6% 9%
11	LH	192	 95%
12	LI	214	 96%
13	LJ	178	 94%
14	LL	211	 94% 5%
15	LM	215	 62% 35%
16	LN	204	 98%
17	LO	203	 97%
18	LP	184	 80% 17%
19	LQ	188	 97%
20	LR	196	 95% 5%
21	LS	176	 93% 6%
22	LT	160	 96%
23	LU	128	 78% 21%
24	LV	140	 89% 6%
25	LW	157	 76% 21%
26	LX	156	 76% 23%
27	LY	145	 90% 8%
28	LZ	136	 97%
29	La	148	 96%
30	Lb	159	 46% 53%
31	Lc	115	 80% 5% 15%
32	Ld	125	 82% 14%
33	Le	135	 91% 5%

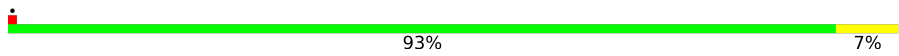
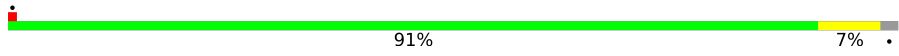
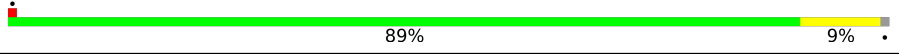
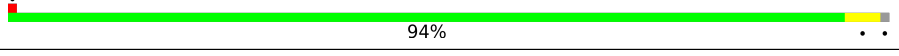

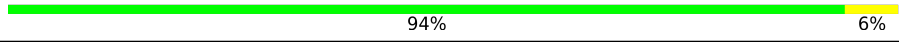
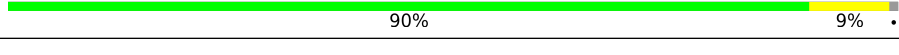

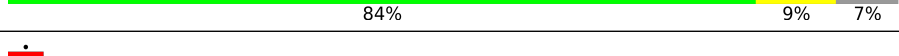
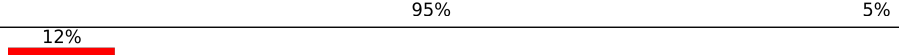
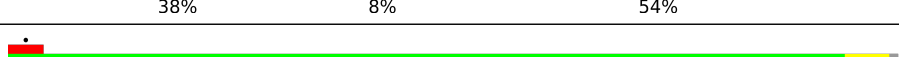
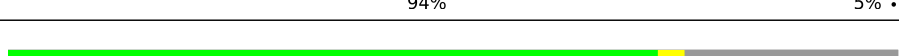

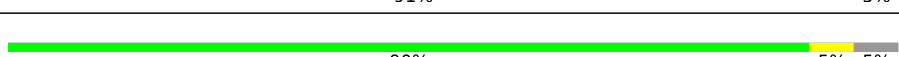
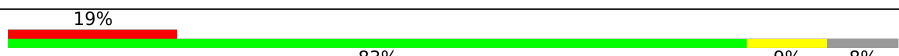
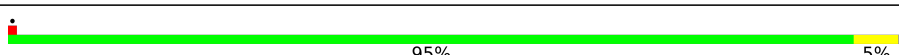
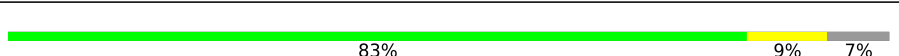
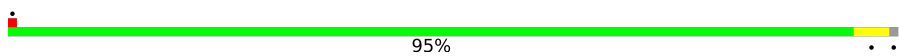
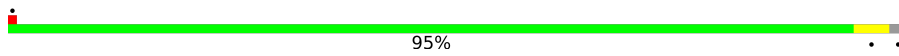

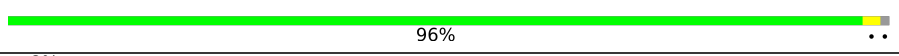
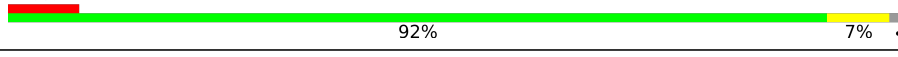

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Mol	Chain	Length	Quality of chain
34	Lf	110	 95% 5%
35	Lg	117	 97%
36	Lh	123	 98%
37	Li	105	 93%
38	Lj	97	 81% 7% 11%
39	Lk	70	 91% 7%
40	Ll	51	 96%
41	Lm	128	 39% 59%
42	Ln	25	 96%
43	Lo	106	 96%
44	Lp	92	 93% 5%
45	Lr	137	 87% 9%
46	Lz	217	 12% 93% 7%
47	S2	1869	 56% 37% 7%
48	S6	75	 63% 36%
49	SA	295	 73% 25%
50	SB	264	 78% 19%
51	SD	243	 86% 7% 7%
52	SE	263	 94% 5%
53	SF	204	 87% 7% 6%
54	SH	194	 90% 8%
55	SI	208	 93% 6%
56	SK	165	 57% 41%
57	SL	158	 91% 6%
58	SP	145	 57% 10% 33%

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Mol	Chain	Length	Quality of chain
59	SQ	146	 93% 7%
60	SR	135	 91% 7%
61	SS	152	 89% 9%
62	ST	145	 94%
63	SU	119	 83% 13%
64	SV	83	 94% 6%
65	SX	143	 90% 9%
66	Sa	115	 84% 9% 7%
67	Sc	69	 84% 9% 7%
68	Sd	56	 95% 5%
69	Sf	156	 12% 38% 8% 54%
70	Sg	317	 94% 5%
71	SC	293	 73% 24%
72	SG	249	 91% 5%
73	SJ	194	 90% 5% 5%
74	SM	132	 19% 83% 9% 8%
75	SN	151	 95% 5%
76	SO	151	 83% 9% 7%
77	SW	130	 95%
78	SY	133	 95%
79	SZ	125	 58% 40%
80	Sb	84	 96%
81	Se	59	 8% 92% 7%

2 Entry composition [i](#)

There are 83 unique types of molecules in this entry. The entry contains 218776 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	L5	3776	80184	35672	14597	26140	3775	0	0

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

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

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

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

- Molecule 4 is a protein called 60S RIBOSOMAL PROTEIN L8.

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

- Molecule 5 is a protein called 60S RIBOSOMAL PROTEIN L3.

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

- Molecule 6 is a protein called 60S RIBOSOMAL PROTEIN L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	LC	367	2919	1835	582	488	14	0	0

- Molecule 7 is a protein called 60S RIBOSOMAL PROTEIN L5.

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

- Molecule 8 is a protein called 60S RIBOSOMAL PROTEIN L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	LE	242	1958	1257	372	325	4	0	0

- Molecule 9 is a protein called 60S RIBOSOMAL PROTEIN L7.

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

- Molecule 10 is a protein called 60S RIBOSOMAL PROTEIN L7A.

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

- Molecule 11 is a protein called 60S RIBOSOMAL PROTEIN L9.

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

- Molecule 12 is a protein called 60S RIBOSOMAL PROTEIN L10-LIKE.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	LI	213	1711	1082	329	285	15	0	0

- Molecule 13 is a protein called 60S RIBOSOMAL PROTEIN L11.

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

- Molecule 14 is a protein called 60S RIBOSOMAL PROTEIN L13.

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

- Molecule 15 is a protein called 60S RIBOSOMAL PROTEIN L14.

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

- Molecule 16 is a protein called 60S RIBOSOMAL PROTEIN L15.

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

- Molecule 17 is a protein called 60S RIBOSOMAL PROTEIN L13A.

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

- Molecule 18 is a protein called 60S RIBOSOMAL PROTEIN L17.

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

- Molecule 19 is a protein called 60S RIBOSOMAL PROTEIN L18.

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

- Molecule 20 is a protein called 60S RIBOSOMAL PROTEIN L19.

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

- Molecule 21 is a protein called 60S RIBOSOMAL PROTEIN L18A.

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

- Molecule 22 is a protein called 60S RIBOSOMAL PROTEIN L21.

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

- Molecule 23 is a protein called 60S RIBOSOMAL PROTEIN L22.

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

- Molecule 24 is a protein called 60S RIBOSOMAL PROTEIN L23.

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

- Molecule 25 is a protein called 60S RIBOSOMAL PROTEIN L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	LW	124	1015	634	207	170	4	0	0

- Molecule 26 is a protein called 60S RIBOSOMAL PROTEIN L23A.

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

- Molecule 27 is a protein called 60S RIBOSOMAL PROTEIN L26.

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

- 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 60S RIBOSOMAL PROTEIN L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Lb	75	Total	C	N	O	S	0	0
			610	378	130	99	3		

- 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
			Total	C	N	O	S		
35	Lg	114	906	566	187	147	6	0	0

- Molecule 36 is a protein called 60S RIBOSOMAL PROTEIN L35.

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

- Molecule 37 is a protein called 60S RIBOSOMAL PROTEIN L36.

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

- Molecule 38 is a protein called 60S RIBOSOMAL PROTEIN L37.

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

- Molecule 39 is a protein called 60S RIBOSOMAL PROTEIN L38.

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

- Molecule 40 is a protein called 60S RIBOSOMAL PROTEIN L39.

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

- Molecule 41 is a protein called UBIQUITIN-60S RIBOSOMAL PROTEIN L40.

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

- 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 RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	S2	1742	Total	C	N	O	P	0	0
			36900	16458	6595	12106	1741		

- Molecule 48 is a RNA chain called HUMAN INITIATOR MET-TRNA-I.

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

- Molecule 49 is a protein called 40S RIBOSOMAL PROTEIN SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	SA	222	Total	C	N	O	S	0	0
			1747	1109	306	324	8		

- Molecule 50 is a protein called 40S RIBOSOMAL PROTEIN S3A.

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

- Molecule 51 is a protein called 40S RIBOSOMAL PROTEIN S3.

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

- Molecule 52 is a protein called 40S RIBOSOMAL PROTEIN S4, X ISOFORM.

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

- Molecule 53 is a protein called 40S RIBOSOMAL PROTEIN S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	SF	191	Total	C	N	O	S	0	0
			1509	943	286	273	7		

- Molecule 54 is a protein called 40S RIBOSOMAL PROTEIN S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SH	189	Total	C	N	O	S	0	0
			1521	969	280	271	1		

- Molecule 55 is a protein called 40S RIBOSOMAL PROTEIN S8.

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

- Molecule 56 is a protein called 40S RIBOSOMAL PROTEIN S10.

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

- Molecule 57 is a protein called 40S RIBOSOMAL PROTEIN S11.

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

- Molecule 58 is a protein called 40S RIBOSOMAL PROTEIN S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	SP	97	804	505	155	138	6	0	0

- Molecule 59 is a protein called 40S RIBOSOMAL PROTEIN S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	SQ	146	1158	736	218	200	4	0	0

- Molecule 60 is a protein called 40S RIBOSOMAL PROTEIN S17-LIKE.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	SR	132	1072	673	199	195	5	0	0

- Molecule 61 is a protein called 40S RIBOSOMAL PROTEIN S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	SS	150	1235	776	250	208	1	0	0

- Molecule 62 is a protein called 40S RIBOSOMAL PROTEIN S19.

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

- Molecule 63 is a protein called 40S RIBOSOMAL PROTEIN S20.

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

- Molecule 64 is a protein called 40S RIBOSOMAL PROTEIN S21.

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

- Molecule 65 is a protein called 40S RIBOSOMAL PROTEIN S23.

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

- Molecule 66 is a protein called 40S RIBOSOMAL PROTEIN S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	Sa	107	847	528	176	138	5	0	0

- Molecule 67 is a protein called 40S RIBOSOMAL PROTEIN S28.

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

- Molecule 68 is a protein called 40S RIBOSOMAL PROTEIN S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	Sd	53	445	278	90	72	5	0	0

- Molecule 69 is a protein called UBIQUITIN-40S RIBOSOMAL PROTEIN S27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
69	Sf	71	581	367	109	98	7	0	0

- Molecule 70 is a protein called GUANINE NUCLEOTIDE-BINDING PROTEIN SUBUNIT BETA-2-LIKE 1.

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

- Molecule 71 is a protein called 40S RIBOSOMAL PROTEIN S2.

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

- Molecule 72 is a protein called 40S RIBOSOMAL PROTEIN S6.

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

- Molecule 73 is a protein called 40S RIBOSOMAL PROTEIN S9.

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

- Molecule 74 is a protein called 40S RIBOSOMAL PROTEIN.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
74	SM	122	952	596	169	179	8	0	0

- Molecule 75 is a protein called 40S RIBOSOMAL PROTEIN S13.

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

- Molecule 76 is a protein called 40S RIBOSOMAL PROTEIN S14.

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

- Molecule 77 is a protein called 40S RIBOSOMAL PROTEIN S15A.

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

- Molecule 78 is a protein called 40S RIBOSOMAL PROTEIN S24.

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

- Molecule 79 is a protein called 40S RIBOSOMAL PROTEIN S25.

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

- Molecule 80 is a protein called 40S RIBOSOMAL PROTEIN S27.

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

- Molecule 81 is a protein called 40S RIBOSOMAL PROTEIN S30.

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

- Molecule 82 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
82	L5	149	Total	Mg	0
			149	149	
82	L7	5	Total	Mg	0
			5	5	
82	L8	2	Total	Mg	0
			2	2	
82	LA	1	Total	Mg	0
			1	1	
82	LB	1	Total	Mg	0
			1	1	
82	LH	1	Total	Mg	0
			1	1	

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Mol	Chain	Residues	Atoms		AltConf
82	LJ	1	Total 1	Mg 1	0
82	LN	1	Total 1	Mg 1	0
82	LP	1	Total 1	Mg 1	0
82	LQ	1	Total 1	Mg 1	0
82	La	1	Total 1	Mg 1	0
82	Le	1	Total 1	Mg 1	0
82	Ll	1	Total 1	Mg 1	0
82	S2	66	Total 66	Mg 66	0
82	S6	7	Total 7	Mg 7	0

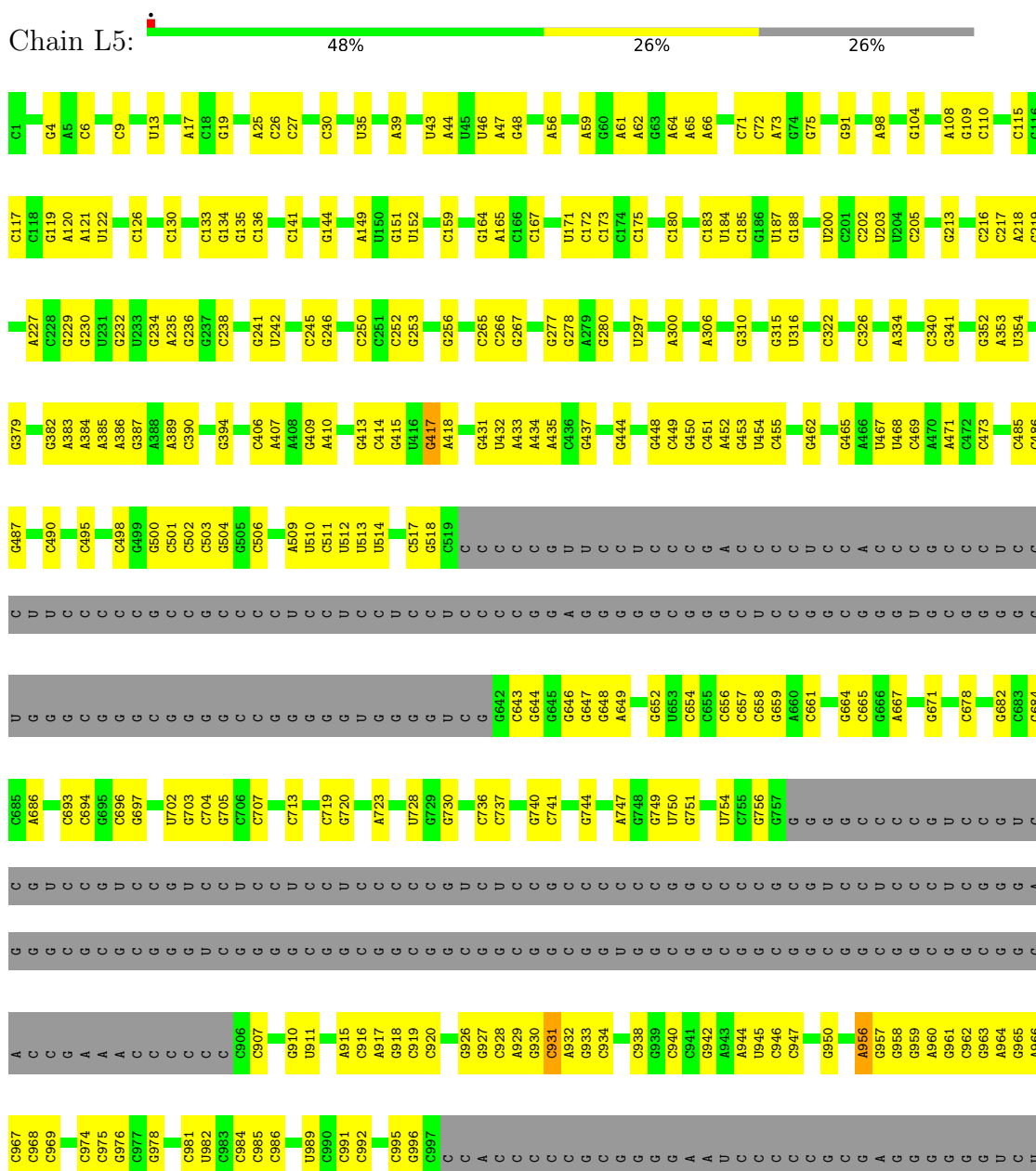
- Molecule 83 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

3 Residue-property plots i

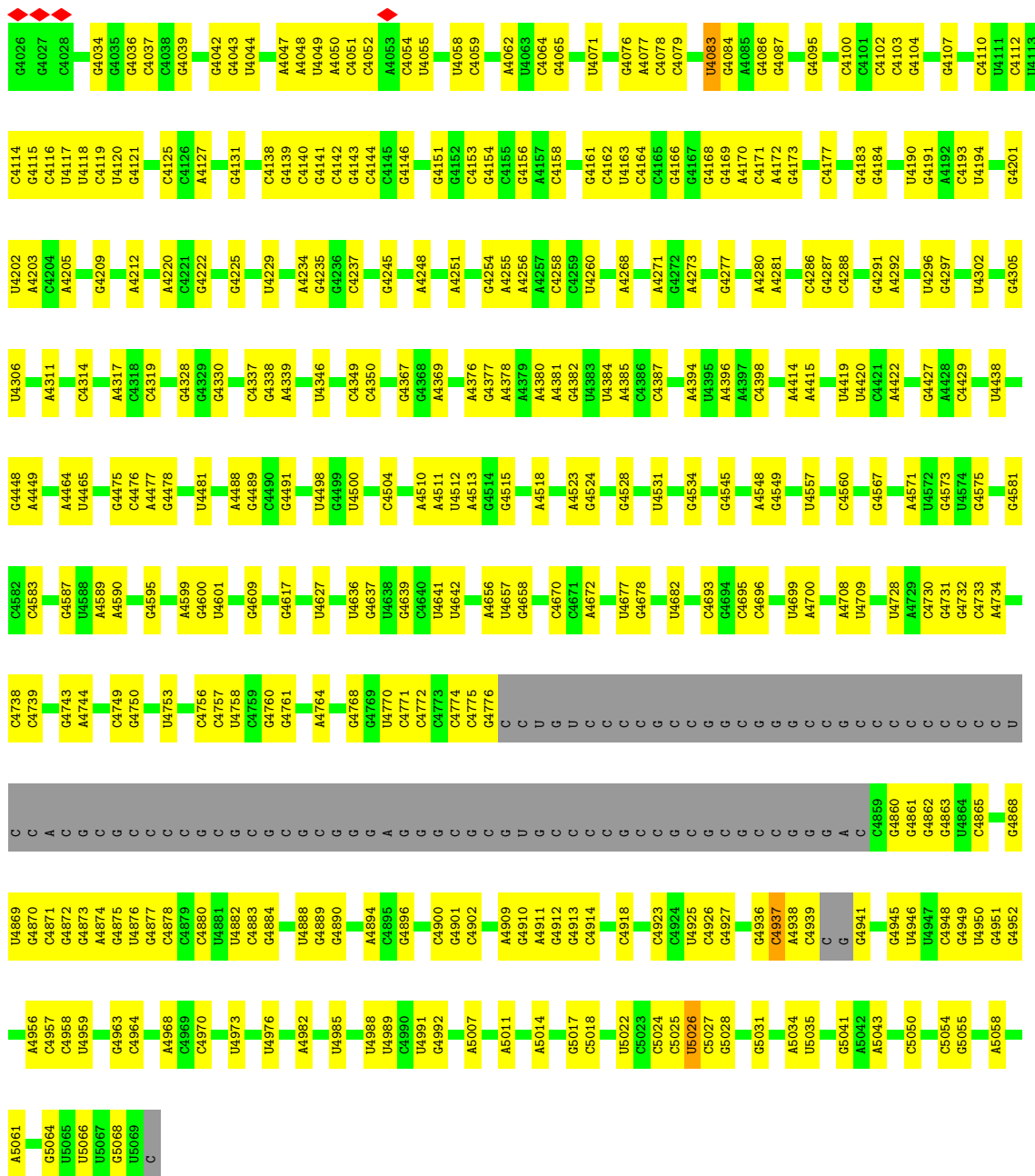
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 28S ribosomal RNA

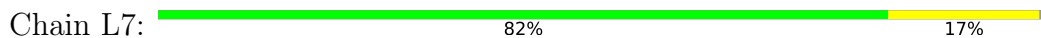


C2346	A2347	G2347	C2110	A2009	C1931	A1788	C1718	G1455	U1364	A1255	G1171	C1167
A2348	C2011	C2111	G2111	A2010	A1932	A1793	G1719	C1456	C1365	G1256	C1172	C1168
G2348	G2012	G2112	C2112	C2011	C1936	A1793	A1612	A1257	A1366	A1267	A1172	G1169
C2351	A2013	G2113	G2113	A2012	G1940	A1804	C1614	A1258	C1367	G1259	G1178	G1170
C2361	A2014	G2114	G2114	A2013	C1947	A1805	A1623	A1259	A1368	A1260	U1179	
U2362	A2017	G2115	G2115	A2014	G1948	G1806	G1624	A1261	C1369	G1261	C1180	
C2363	C2018	G2116	G2116	C2017	G1948	C1807	G1625	A1262	G1370	G1262	C1181	
G2364	C2019	G2117	G2117	C2018	G1948	G1807	G1626	A1263	A1371	C1263	C1182	
C2365	U2020	G2118	G2118	C2019	G1954	G1815	G1629	C1480	A1372	C1264	C1183	
U2365	U2021	G2119	G2119	C2020	U1955	G1815	G1630	C1481	U1376	C1265	C1184	
C2366	G2023	G2120	G2120	A2020	A1955	G1815	A1631	C1482	C1377	C1266	C1185	
C2367	A2026	G2121	G2121	C2023	A1956	G1815	A1632	C1483	G1378	C1267	C1186	
C2368	G2034	G2122	G2122	A2026	U1957	G1815	A1633	C1484	C1379	C1268	C1187	
A2369	G2034	G2123	G2123	G2034	A1958	G1815	G1634	A1488	C1379	C1269	C1188	
G2369	G2034	G2124	G2124	G2034	U1959	G1815	G1635	C1489	U1381	C1270	C1189	
A2389	G2045	G2125	G2125	G2045	A1960	G1815	U1494	C1489	A1387	C1271	C1191	
G2389	G2046	G2126	G2126	G2046	G1961	G1815	A1638	C1490	G1387	C1272	C1192	
C2390	A2047	G2127	G2127	A2047	A1962	G1815	G1641	C1491	C1388	C1273	C1193	
A2395	U2048	G2128	G2128	U2048	C1963	G1815	A1646	C1492	G1389	C1274	C1194	
G2395	G2062	G2129	G2129	U2048	G1966	G1815	U1649	C1493	U1394	C1275	C1195	
C2396	G2063	G2130	G2130	G2062	A1967	G1815	A1650	C1494	G1396	C1276	C1196	
A2402	G2064	G2131	G2131	G2063	G1968	G1815	A1651	C1495	U1399	C1277	C1197	
G2402	G2065	G2132	G2132	G2064	C1971	G1815	U1649	C1496	G1404	C1278	C1198	
A2403	G2066	G2133	G2133	G2065	C1974	G1815	A1651	C1497	U1399	C1279	C1199	
C2404	G2067	G2134	G2134	G2066	U1974	G1815	G1654	C1498	C1407	C1280	C1200	
C2410	G2068	G2135	G2135	G2067	G1976	G1815	U1654	C1499	C1408	C1281	C1201	
C2422	G2069	G2136	G2136	G2068	C1977	G1815	U1656	C1501	C1409	C1282	C1202	
U2425	A2069	G2137	G2137	G2069	C1978	G1815	G1657	C1502	U1411	C1283	C1203	
U2426	G2073	G2138	G2138	A2069	G1981	G1815	G1661	C1503	C1412	C1284	C1204	
A2431	G2074	G2139	G2139	G2073	G1982	G1815	C1676	C1504	C1413	C1285	C1205	
G2448	G2075	G2140	G2140	G2074	A1983	G1815	U1677	C1505	C1414	C1286	C1206	
A2449	G2076	G2141	G2141	G2075	A1984	G1815	U1677	C1506	C1415	C1287	C1207	
C2454	G2077	G2142	G2142	G2076	A1985	G1815	U1677	C1507	G1416	C1288	C1208	
C2465	C2084	G2143	G2143	G2077	U1986	G1815	G1681	C1508	C1417	C1289	C1209	
G2466	G2085	G2144	G2144	C2077	G1988	G1815	C1686	C1509	C1418	C1290	C1210	
U2467	G2089	G2145	G2145	A2069	G1989	G1815	U1686	C1510	U1301	C1291	C1211	
U2468	U2090	G2146	G2146	G2084	A1990	G1815	U1694	C1511	U1302	C1292	C1212	
G2471	C2091	G2147	G2147	G2085	A1991	G1815	U1694	C1512	A1222	C1293	C1213	
G2474	C2092	G2148	G2148	G2085	U1992	G1815	G1695	C1513	G	C1294	C1214	
G2475	A2094	G2149	G2149	G2085	C1993	G1815	C1696	C1514	C	C1295	C1215	
C2482	G2094	G2150	G2150	G2085	G1994	G1815	G1697	C1515	U	C1296	C1216	
G2483	A2095	G2151	G2151	G2085	C1994	G1815	A1699	C1516	U	C1297	C1217	
A2484	G2096	G2152	G2152	G2085	U1997	G1815	G	C1517	U	C1298	C1218	
U2485	G2097	G2153	G2153	G2085	A1998	G1815	A	C1518	U	C1299	C1219	
G2487	U2097	G2154	G2154	G2085	A1999	G1815	C	C1519	U	C1300	C1220	
C2488	G2098	G2155	G2155	G2085	G2000	G1815	C	C1520	U	C1301	C1221	
G2488	G2099	G2156	G2156	G2085	G2001	G1815	C	C1521	U	C1302	C1222	
	A2100	G2157	G2157	G2085	G2002	G1815	C	C1522	U	C1303	C1223	
	G2104	G2158	G2158	G2085	A2002	G1815	C	C1523	U	C1304	C1224	
	C2107	G2159	G2159	G2085	G2003	G1815	C	C1524	U	C1305	C1225	
	G2108	G2160	G2160	G2085	U2004	G1815	C	C1525	U	C1306	C1226	
	G2109	G2161	G2161	G2085	G2005	G1815	C	C1526	U	C1307	C1227	
		G2162	G2162	G2085	U2006	G1815	C	C1527	U	C1308	C1228	
		G2163	G2163	G2085	G2007	G1815	C	C1528	U	C1309	C1229	
		G2164	G2164	G2085	U2008	G1815	C	C1529	U	C1310	C1230	

U3959	C3843	G3742	G3615	C2860	U2740	G2624	C2489
A3960	C3866	U3745	U3616	C2861	A2743	G2634	U2490
A3961	A3867	U3748	G3625	G2862	G2753	U2636	C2491
A3962	G3868	C3749	G3626	A2864	G2754	G2637	U2495
A3963	C3869	G3750	A3635	U2869	A2755	U2638	G2502
A3965	C3870	G3751	U3635	A2870	G2756	U2639	G2503
A3966	A3871	C3752	U3640	U2874	G2760	G2648	G2504
U3968	A3877	G3753	G3641	U2875	U2761	G2649	C2505
G3969	C3878	C3754	A3642	G2877	G2762	A2507	A2507
A3972	G3879	G3755	A3643	U2884	U2763	C2653	A2511
G3973	G3880	A3756	U3644	A2885	A2766	G2662	A2512
G3974	G3881	G3757	U3645	U2886	U2767	G2662	A2513
G3975	A3882	U3758	A3646	U2887	C2768	C2670	G2518
C3976	G3885	A3759	G3659	G2888	U2769	G2675	U2519
C3977	G3886	C3761	C3660	U2888	C2770	A2527	A2527
C3978	G3887	U3762	G3661	A2894	G2776	G2528	A2528
C3979	A3889	A3763	A3662	G2895	A2783	G2681	A2529
C3987	U3891	U3764	G3669	G2902	C2784	G2686	A2537
C3988	U3892	G3765	C3670	G2903	C2785	U2687	G2544
C3989	G3895	A3766	G3671	U2904	C2786	G2688	U2545
C3990	G3896	C3767	G3672	G2905	A2787	G2689	G2546
C3991	G3897	U3769	C3673	G2906	U2788	A2695	G2547
G3992	G3898	C3771	G3674	U2907	A2789	A2696	A2551
U3993	A3901	U3772	G3681	G2908	C2794	U2701	G2552
G3994	A3905	G3776	A3682	G2909	C2797	G2702	U2553
U3995	G3907	G3777	U3690	G2910	C2799	G2703	G2555
C3996	A3908	A3784	C3696	G	U2803	G2704	G2556
C3997	U3914	A3785	U3697	G	G	G2705	G2569
C3998	U3915	A3786	G3698	G	A2806	U2708	U2570
C3999	G3922	U3789	C3699	G	A2807	G2710	C2571
G4000	G4000	U3790	G3705	G	C2814	G2711	C2572
C4001	A3923	C3791	U3709	G	A2815	G2712	A2573
G4002	G3933	A3795	G3710	G	G2816	G2713	G2576
A4003	G3934	G3802	A3711	G	G2822	G2714	C2583
G4004	C3935	A3803	A3712	G	A	G2717	G2586
G4005	G3938	A3807	U3713	G	U2825	U2718	A2587
G4006	A3943	C3810	G3714	G	U2826	G2719	C2588
G4007	G3944	G3811	G3588	G	G2827	C2720	G2596
C4008	A3947	C3812	G3589	G	U2828	G2721	A2601
C4009	C3948	U3813	C3593	G	U2829	U2722	G2602
G4010	A3949	U3814	G3597	G	G2830	U2723	G2605
G4012	G4012	C3731	C3600	G	U2831	G2724	G2618
G4013	A3954	A3817	G3732	G	A2832	A2725	
G4014	G3955	U3818	U3733	G	A2833	G2726	
C4015	U3957	G3819	G3734	G	G	G	
G4016	C3958	U3840	U3606	G	A2857	G2735	
G4017			A3608	G	G2859	C2739	
G4018				G			
G4019				G			
U4020				G			
C4021				G			
C4022				G			
G4023				G			
C4024				G			

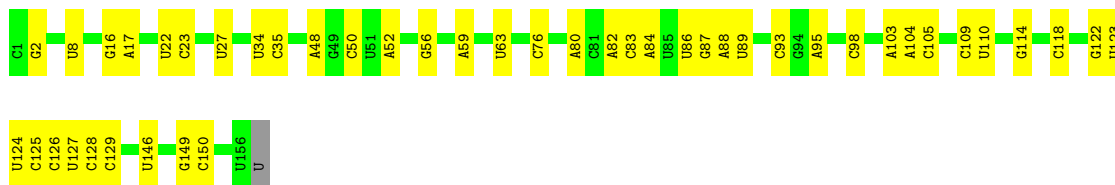


• Molecule 2: 5S ribosomal RNA



• Molecule 3: 5.8S ribosomal RNA

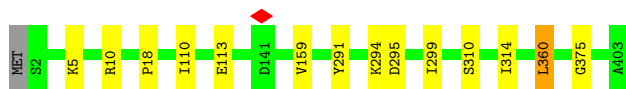




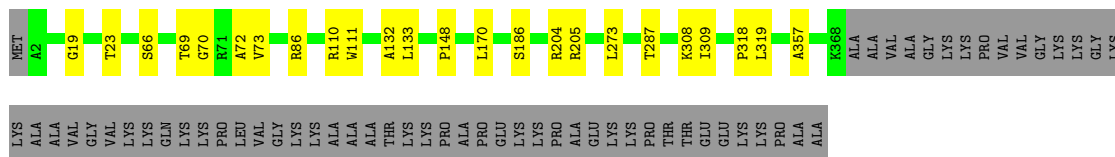
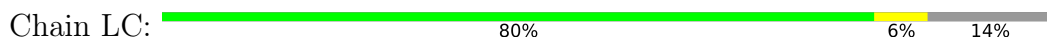
● Molecule 4: 60S RIBOSOMAL PROTEIN L8



● Molecule 5: 60S RIBOSOMAL PROTEIN L3



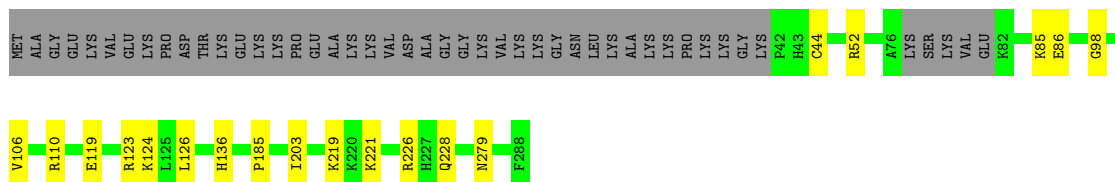
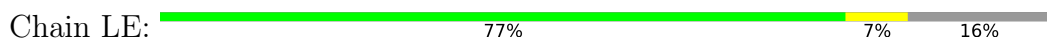
● Molecule 6: 60S RIBOSOMAL PROTEIN L4



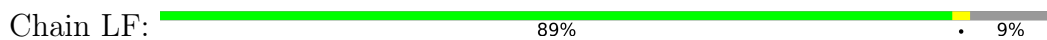
● Molecule 7: 60S RIBOSOMAL PROTEIN L5

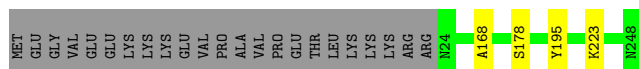


● Molecule 8: 60S RIBOSOMAL PROTEIN L6



● Molecule 9: 60S RIBOSOMAL PROTEIN L7





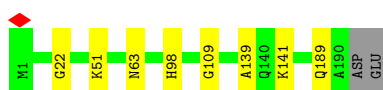
- Molecule 10: 60S RIBOSOMAL PROTEIN L7A

Chain LG: 85% 6% 9%



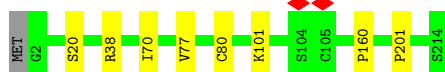
- Molecule 11: 60S RIBOSOMAL PROTEIN L9

Chain LH: 95%



- Molecule 12: 60S RIBOSOMAL PROTEIN L10-LIKE

Chain LI: 96%



- Molecule 13: 60S RIBOSOMAL PROTEIN L11

Chain LJ: 94%



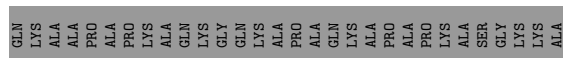
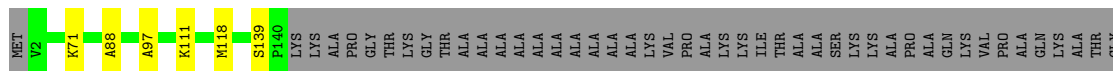
- Molecule 14: 60S RIBOSOMAL PROTEIN L13

Chain LL: 94% 5%



- Molecule 15: 60S RIBOSOMAL PROTEIN L14

Chain LM: 62% 35%



- Molecule 16: 60S RIBOSOMAL PROTEIN L15

Chain LN:  98%




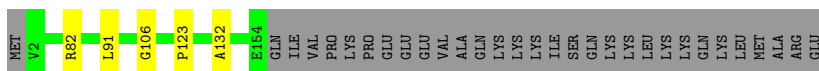
- Molecule 17: 60S RIBOSOMAL PROTEIN L13A

Chain LO:  97%



- Molecule 18: 60S RIBOSOMAL PROTEIN L17

Chain LP:  80% 17%



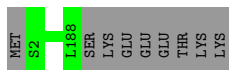
- Molecule 19: 60S RIBOSOMAL PROTEIN L18

Chain LQ:  97%



- Molecule 20: 60S RIBOSOMAL PROTEIN L19

Chain LR:  95% 5%



- Molecule 21: 60S RIBOSOMAL PROTEIN L18A

Chain LS:  93% 6%




- Molecule 22: 60S RIBOSOMAL PROTEIN L21

Chain LT:  96%



- Molecule 23: 60S RIBOSOMAL PROTEIN L22

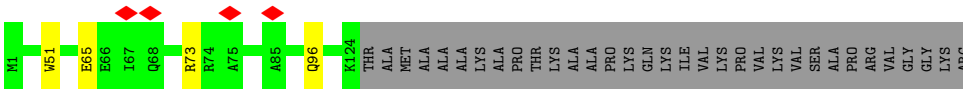
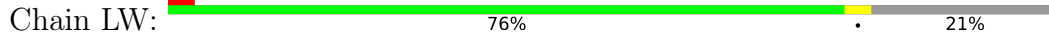
Chain LU:  78% 21%



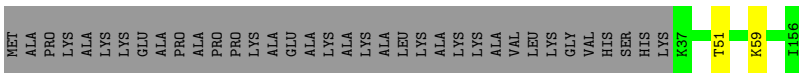
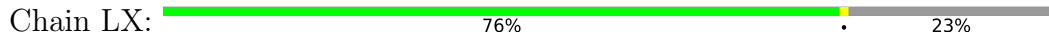
• Molecule 24: 60S RIBOSOMAL PROTEIN L23



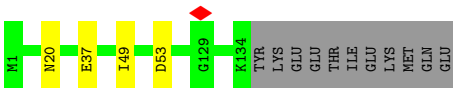
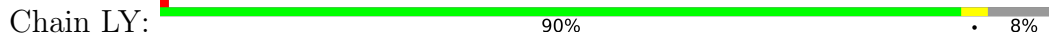
• Molecule 25: 60S RIBOSOMAL PROTEIN L24



• Molecule 26: 60S RIBOSOMAL PROTEIN L23A



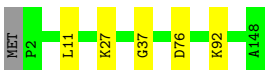
• Molecule 27: 60S RIBOSOMAL PROTEIN L26



• Molecule 28: 60S RIBOSOMAL PROTEIN L27

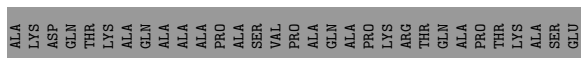
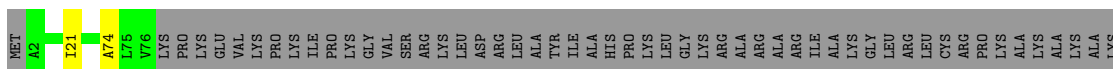


• Molecule 29: 60S RIBOSOMAL PROTEIN L27A

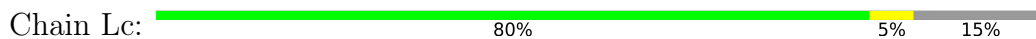


• Molecule 30: 60S RIBOSOMAL PROTEIN L29

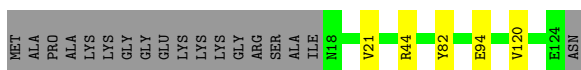
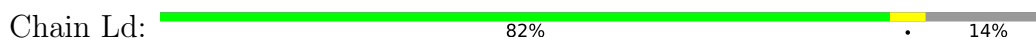




- Molecule 31: 60S RIBOSOMAL PROTEIN L30



- Molecule 32: 60S RIBOSOMAL PROTEIN L31



- Molecule 33: 60S RIBOSOMAL PROTEIN L32



- Molecule 34: 60S RIBOSOMAL PROTEIN L35A



- Molecule 35: 60S RIBOSOMAL PROTEIN L34

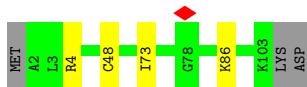


- Molecule 36: 60S RIBOSOMAL PROTEIN L35

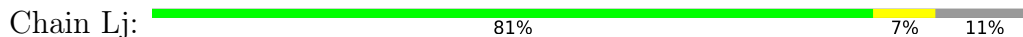


- Molecule 37: 60S RIBOSOMAL PROTEIN L36





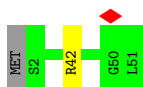
- Molecule 38: 60S RIBOSOMAL PROTEIN L37



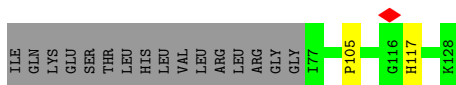
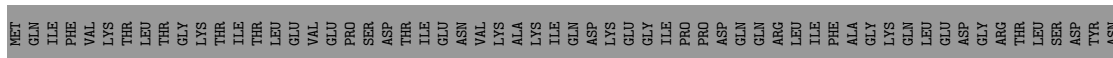
- Molecule 39: 60S RIBOSOMAL PROTEIN L38



- Molecule 40: 60S RIBOSOMAL PROTEIN L39



- Molecule 41: UBIQUITIN-60S RIBOSOMAL PROTEIN L40



- Molecule 42: 60S RIBOSOMAL PROTEIN L41

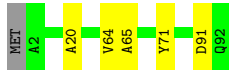


- Molecule 43: 60S RIBOSOMAL PROTEIN L36A



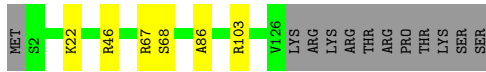
- Molecule 44: 60S RIBOSOMAL PROTEIN L37A

Chain Lp: 93% 5%



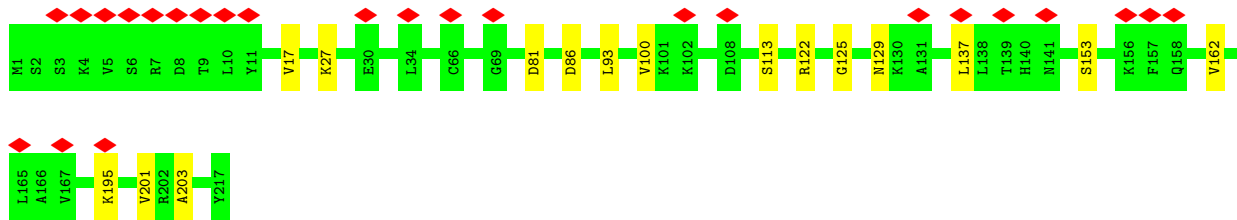
• Molecule 45: 60S RIBOSOMAL PROTEIN L28

Chain Lr: 87% 9%



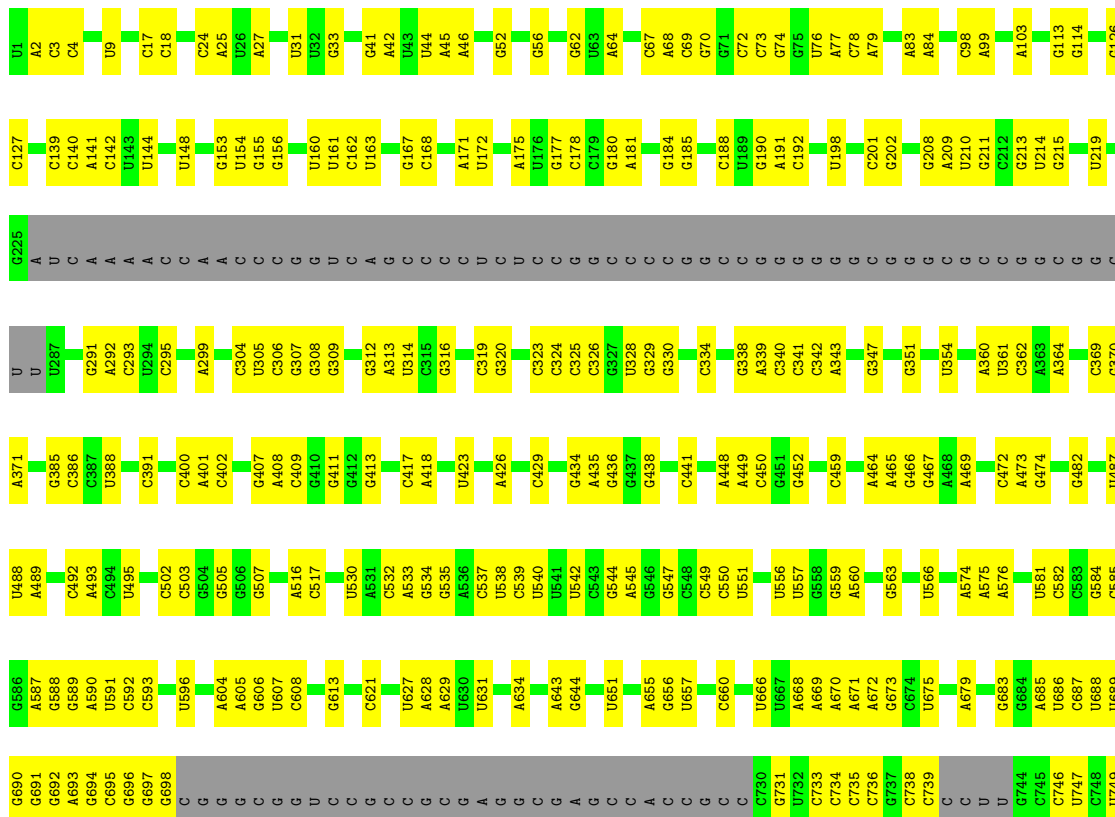
• Molecule 46: 60S RIBOSOMAL PROTEIN L10A

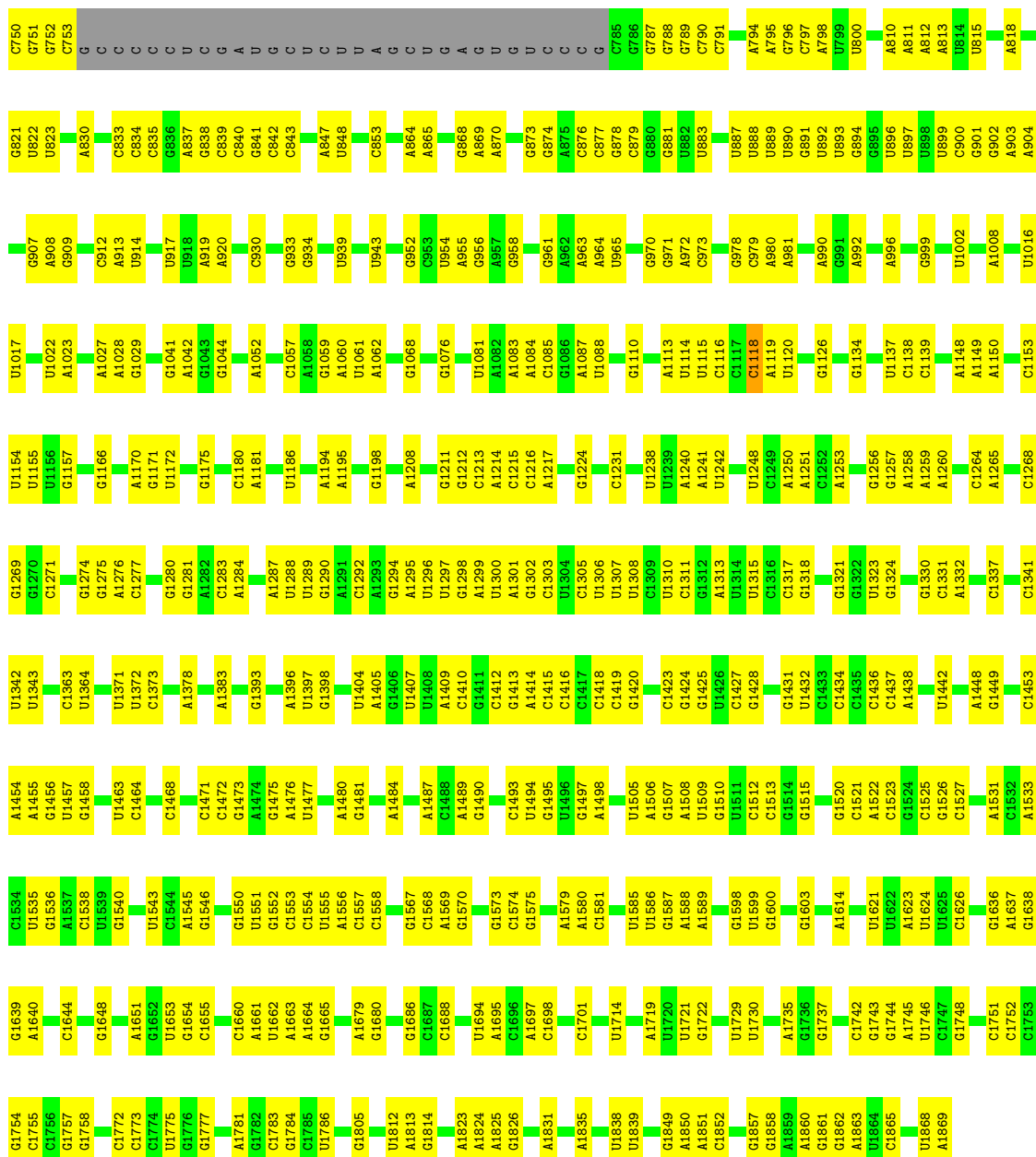
Chain Lz: 12% 93% 7%



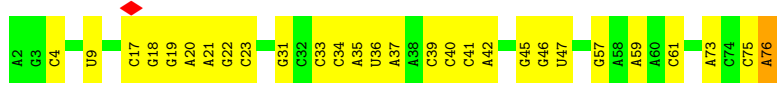
• Molecule 47: 18S ribosomal RNA

Chain S2: 56% 37% 7%

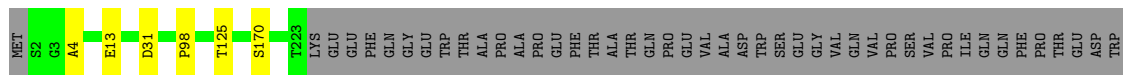
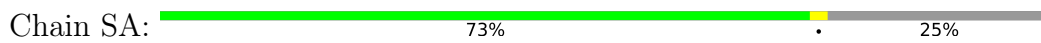




• Molecule 48: HUMAN INITIATOR MET-TRNA-I




• Molecule 49: 40S RIBOSOMAL PROTEIN SA



SER
ALA
GLN
PRO
GLY
VAL
ALA
THR
THR
GLU
ASP
TRP
TRP
SER
SER
ALA
ALA
ALA
PRO
THR
THR
ALA
ALA
ALA
THR
GLU
TRP
VAL
GLY
GLY
ALA
ALA
THR
THR
THR
ASP
TRP
SER


- Molecule 50: 40S RIBOSOMAL PROTEIN S3A

Chain SB:  78% 19%

MET
ALA
VAL
GLY
LYS
ASN
LYS
ARG
LEU
THR
SER
LYS
GLY
GLY
LYS
LYS
GLN
GLN
ALA
ALA
LYS
LYS
LYS
V21
V22
A37
N76
K83
L86
N147
P190
F223
E234
GLY
SER
SER
SER
GLY
LYS
LYS
ALA
THR
THR
GLY
GLY
ASP
GLU
THR
GLY
GLY
ALA
ALA
LYS
VAL
GLU
ARG
ALA
ASP
GLY
TYR

GLU
PRO
PRO
VAL
GLN
GLU
SER
VAL

- Molecule 51: 40S RIBOSOMAL PROTEIN S3

Chain SD:  86% 7% 7%


K1
A2
V3
E38
V41
T44
T55
E68
E81
E82
S83
T93
E135
S149
V163
D164
I198
G199
P200
D206
D215
E216
T220
T221
P222
I223
K227
GLY
GLY
LYS
PRO
GLU
PRO
PRO
ALA
MET
PRO
GLN
PRO
VAL
PRO
THR
ALA

- Molecule 52: 40S RIBOSOMAL PROTEIN S4, X ISOFORM

Chain SE:  94% 5%

MET
M2
P15
R30
R68
F69
V76
R77
D88
D93
V131
A144
L164
K168
T196
N214
M232
R245
G263

- Molecule 53: 40S RIBOSOMAL PROTEIN S5

Chain SF:  87% 7% 6%

MET
THR
GLU
TRP
GLU
THR
ALA
ALA
PRO
ALA
VAL
ALA
GLU
T14
P16
D16
I17
F20
D32
I33
V41
K42
K47
Y48
A57
R81
K85
K86
L87
T126
G129
R130
V139
S202
H203
R204

- Molecule 54: 40S RIBOSOMAL PROTEIN S7

Chain SH:  90% 8%

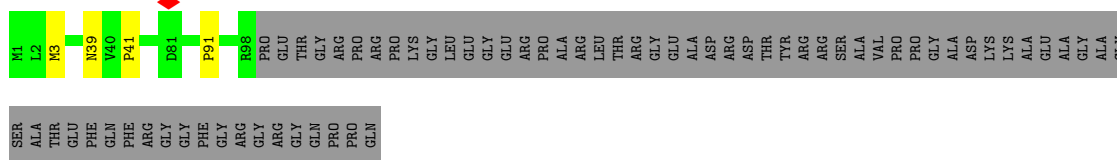
MET
PHE
SER
SER
S5
M12
S34
A38
V66
G69
R99
I100
K107
M112
K113
Q114
K115
E138
L148
Q162
P190
Q193
LEU

- Molecule 55: 40S RIBOSOMAL PROTEIN S8

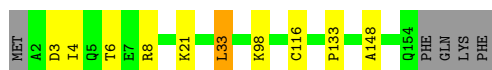
Chain SI:  93% 6%

MET
G2
K75
S86
V97
V102
G122
T130
F131
E132
K140
K143
M155
G180
D186
G207
LYS

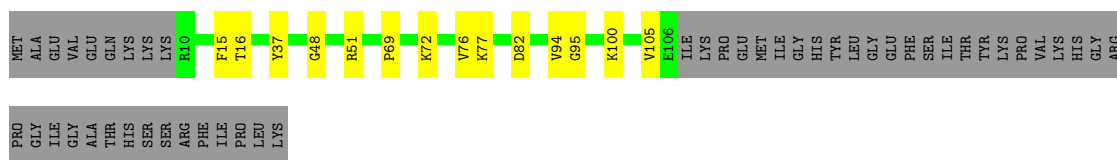
- Molecule 56: 40S RIBOSOMAL PROTEIN S10



- Molecule 57: 40S RIBOSOMAL PROTEIN S11



- Molecule 58: 40S RIBOSOMAL PROTEIN S15



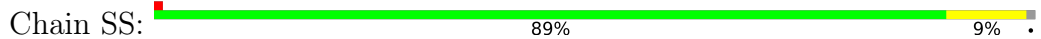
- Molecule 59: 40S RIBOSOMAL PROTEIN S16



- Molecule 60: 40S RIBOSOMAL PROTEIN S17-LIKE



- Molecule 61: 40S RIBOSOMAL PROTEIN S18

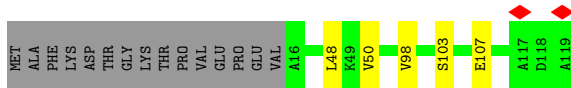
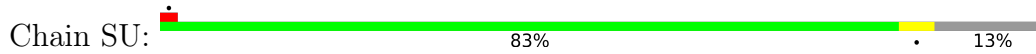


- Molecule 62: 40S RIBOSOMAL PROTEIN S19

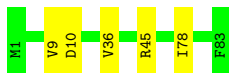




- Molecule 63: 40S RIBOSOMAL PROTEIN S20



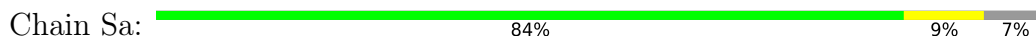
- Molecule 64: 40S RIBOSOMAL PROTEIN S21



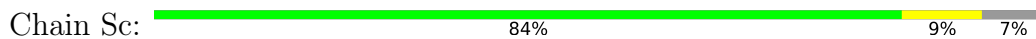
- Molecule 65: 40S RIBOSOMAL PROTEIN S23



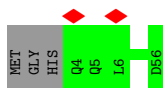
- Molecule 66: 40S RIBOSOMAL PROTEIN S26



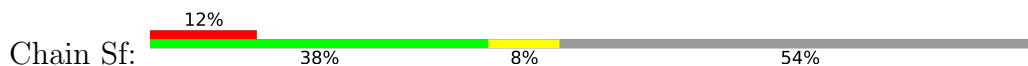
- Molecule 67: 40S RIBOSOMAL PROTEIN S28

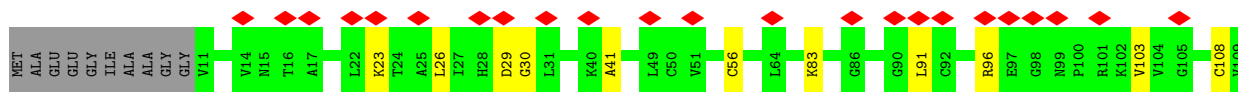


- Molecule 68: 40S RIBOSOMAL PROTEIN S29



- Molecule 69: UBIQUITIN-40S RIBOSOMAL PROTEIN S27A

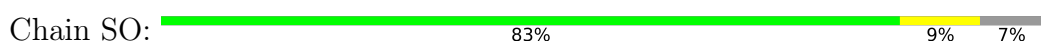




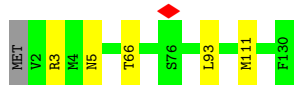
• Molecule 75: 40S RIBOSOMAL PROTEIN S13



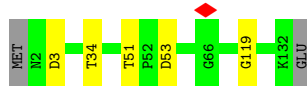
• Molecule 76: 40S RIBOSOMAL PROTEIN S14



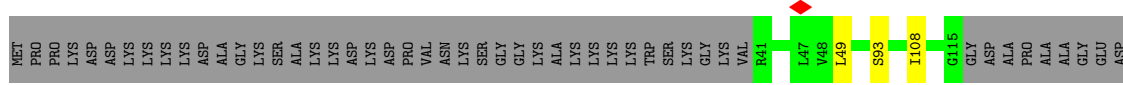
• Molecule 77: 40S RIBOSOMAL PROTEIN S15A



• Molecule 78: 40S RIBOSOMAL PROTEIN S24



• Molecule 79: 40S RIBOSOMAL PROTEIN S25

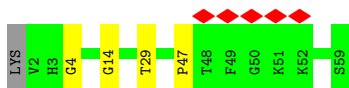
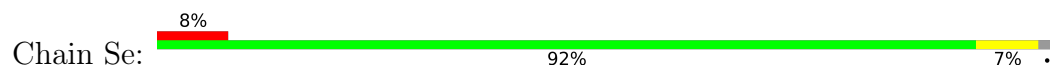


• Molecule 80: 40S RIBOSOMAL PROTEIN S27





- Molecule 81: 40S RIBOSOMAL PROTEIN S30



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	24000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Not provided	
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	4500	Depositor
Magnification	59000	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.362	Depositor
Minimum map value	-0.237	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.020	Depositor
Recommended contour level	0.01	Depositor
Map size (\AA)	330.0, 330.0, 330.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.1, 1.1, 1.1	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	L5	0.42	0/89645	0.79	26/139764 (0.0%)
2	L7	0.37	0/2858	0.73	0/4455
3	L8	0.40	0/3701	0.76	0/5766
4	LA	0.34	0/1936	0.56	1/2596 (0.0%)
5	LB	0.30	0/3306	0.52	1/4424 (0.0%)
6	LC	0.29	0/2973	0.50	0/3992
7	LD	0.29	0/2428	0.47	0/3252
8	LE	0.27	0/1996	0.59	0/2673
9	LF	0.31	0/1905	0.49	0/2539
10	LG	0.27	0/1960	0.50	0/2637
11	LH	0.26	0/1537	0.48	0/2066
12	LI	0.30	0/1751	0.50	0/2340
13	LJ	0.26	0/1433	0.49	0/1915
14	LL	0.30	0/1732	0.53	0/2315
15	LM	0.28	0/1161	0.46	0/1554
16	LN	0.33	0/1746	0.51	0/2338
17	LO	0.31	0/1682	0.47	0/2250
18	LP	0.31	0/1268	0.49	0/1701
19	LQ	0.30	0/1537	0.49	0/2052
20	LR	0.28	0/1582	0.49	0/2091
21	LS	0.31	0/1493	0.48	0/2003
22	LT	0.32	0/1326	0.52	0/1770
23	LU	0.27	0/839	0.47	0/1126
24	LV	0.31	0/993	0.49	0/1332
25	LW	0.29	0/1030	0.57	0/1364
26	LX	0.29	0/1002	0.49	0/1345
27	LY	0.28	0/1132	0.47	0/1504
28	LZ	0.29	0/1130	0.47	0/1507
29	La	0.31	0/1191	0.50	0/1591
30	Lb	0.26	0/620	0.44	0/819
31	Lc	0.29	0/774	0.48	0/1038
32	Ld	0.29	0/903	0.50	0/1216

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	Le	0.33	0/1071	0.53	0/1429
34	Lf	0.30	0/895	0.51	0/1198
35	Lg	0.28	0/916	0.49	0/1220
36	Lh	0.28	0/1023	0.46	0/1351
37	Li	0.28	0/843	0.47	0/1115
38	Lj	0.35	0/720	0.55	0/952
39	Lk	0.28	0/575	0.54	0/761
40	Ll	0.28	0/454	0.48	0/599
41	Lm	0.29	0/435	0.47	0/575
42	Ln	0.29	0/231	0.53	0/294
43	Lo	0.31	0/875	0.49	0/1153
44	Lp	0.36	0/718	0.51	0/953
45	Lr	0.27	0/1017	0.50	0/1364
46	Lz	0.24	0/1769	0.49	0/2371
47	S2	0.35	0/41243	0.77	11/64257 (0.0%)
48	S6	0.32	1/1795 (0.1%)	0.80	1/2798 (0.0%)
49	SA	0.26	0/1784	0.49	0/2424
50	SB	0.28	0/1765	0.52	0/2362
51	SD	0.26	0/1793	0.49	0/2414
52	SE	0.26	0/2118	0.53	1/2849 (0.0%)
53	SF	0.27	0/1531	0.52	0/2059
54	SH	0.26	0/1544	0.50	0/2068
55	SI	0.27	0/1715	0.48	0/2287
56	SK	0.27	0/851	0.50	0/1147
57	SL	0.29	0/1268	0.51	1/1696 (0.1%)
58	SP	0.26	0/815	0.56	0/1087
59	SQ	0.26	0/1177	0.48	0/1575
60	SR	0.27	0/1086	0.57	0/1457
61	SS	0.25	0/1253	0.52	0/1676
62	ST	0.25	0/1131	0.48	0/1515
63	SU	0.26	0/831	0.56	0/1115
64	SV	0.26	0/643	0.44	0/860
65	SX	0.29	0/1116	0.47	0/1490
66	Sa	0.31	0/862	0.52	0/1156
67	Sc	0.25	0/508	0.51	0/680
68	Sd	0.26	0/455	0.42	0/603
69	Sf	0.25	0/593	0.47	0/786
70	Sg	0.24	0/2493	0.50	0/3394
71	SC	0.29	0/1762	0.49	0/2381
72	SG	0.25	0/1946	0.52	0/2590
73	SJ	0.26	0/1550	0.47	0/2069
74	SM	0.23	0/962	0.53	0/1290
75	SN	0.28	0/1232	0.48	0/1656

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	SO	0.29	0/1062	0.57	1/1425 (0.1%)
77	SW	0.30	0/1051	0.52	0/1406
78	SY	0.26	0/1083	0.47	0/1438
79	SZ	0.26	0/604	0.57	0/810
80	Sb	0.27	0/665	0.51	0/891
81	Se	0.24	0/465	0.43	0/612
All	All	0.36	1/234864 (0.0%)	0.69	43/344993 (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
34	Lf	0	1
58	SP	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	S6	76	A	C4'-O4'	-5.87	1.38	1.45

The worst 5 of 43 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	S6	76	A	C5'-C4'-O4'	13.26	125.02	109.10
1	L5	4083	U	N1-C2-O2	8.35	128.64	122.80
1	L5	4083	U	C2-N1-C1'	8.04	127.35	117.70
1	L5	4937	C	C2-N1-C1'	7.68	127.25	118.80
1	L5	1367	C	N1-C2-O2	7.38	123.33	118.90

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
34	Lf	105	LEU	Peptide
58	SP	72	LYS	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	
4	LA	246/257 (96%)	207 (84%)	25 (10%)	14 (6%)	1	18
5	LB	400/403 (99%)	344 (86%)	42 (10%)	14 (4%)	3	30
6	LC	365/427 (86%)	311 (85%)	30 (8%)	24 (7%)	1	16
7	LD	291/297 (98%)	258 (89%)	22 (8%)	11 (4%)	3	27
8	LE	238/288 (83%)	182 (76%)	37 (16%)	19 (8%)	1	11
9	LF	223/248 (90%)	201 (90%)	18 (8%)	4 (2%)	8	43
10	LG	239/266 (90%)	205 (86%)	19 (8%)	15 (6%)	1	17
11	LH	188/192 (98%)	162 (86%)	18 (10%)	8 (4%)	2	24
12	LI	211/214 (99%)	177 (84%)	26 (12%)	8 (4%)	3	27
13	LJ	174/178 (98%)	147 (84%)	19 (11%)	8 (5%)	2	23
14	LL	208/211 (99%)	179 (86%)	18 (9%)	11 (5%)	2	19
15	LM	137/215 (64%)	115 (84%)	16 (12%)	6 (4%)	2	23
16	LN	201/204 (98%)	180 (90%)	18 (9%)	3 (2%)	10	47
17	LO	199/203 (98%)	180 (90%)	15 (8%)	4 (2%)	7	41
18	LP	151/184 (82%)	130 (86%)	16 (11%)	5 (3%)	4	31
19	LQ	185/188 (98%)	159 (86%)	22 (12%)	4 (2%)	6	39
20	LR	185/196 (94%)	168 (91%)	17 (9%)	0	100	100
21	LS	173/176 (98%)	141 (82%)	21 (12%)	11 (6%)	1	17
22	LT	157/160 (98%)	134 (85%)	18 (12%)	5 (3%)	4	31
23	LU	99/128 (77%)	81 (82%)	17 (17%)	1 (1%)	15	55
24	LV	129/140 (92%)	105 (81%)	18 (14%)	6 (5%)	2	22

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
25	LW	122/157 (78%)	96 (79%)	22 (18%)	4 (3%)	4	31
26	LX	118/156 (76%)	103 (87%)	13 (11%)	2 (2%)	9	45
27	LY	132/145 (91%)	118 (89%)	10 (8%)	4 (3%)	4	33
28	LZ	133/136 (98%)	118 (89%)	12 (9%)	3 (2%)	6	38
29	La	145/148 (98%)	122 (84%)	18 (12%)	5 (3%)	3	31
30	Lb	73/159 (46%)	62 (85%)	9 (12%)	2 (3%)	5	35
31	Lc	96/115 (84%)	81 (84%)	9 (9%)	6 (6%)	1	17
32	Ld	105/125 (84%)	85 (81%)	15 (14%)	5 (5%)	2	22
33	Le	126/135 (93%)	107 (85%)	14 (11%)	5 (4%)	3	26
34	Lf	107/110 (97%)	87 (81%)	16 (15%)	4 (4%)	3	28
35	Lg	112/117 (96%)	103 (92%)	8 (7%)	1 (1%)	17	57
36	Lh	120/123 (98%)	110 (92%)	8 (7%)	2 (2%)	9	45
37	Li	100/105 (95%)	92 (92%)	4 (4%)	4 (4%)	3	26
38	Lj	84/97 (87%)	67 (80%)	10 (12%)	7 (8%)	1	10
39	Lk	67/70 (96%)	50 (75%)	12 (18%)	5 (8%)	1	12
40	Ll	48/51 (94%)	44 (92%)	3 (6%)	1 (2%)	7	40
41	Lm	50/128 (39%)	43 (86%)	5 (10%)	2 (4%)	3	26
42	Ln	22/25 (88%)	20 (91%)	2 (9%)	0	100	100
43	Lo	102/106 (96%)	85 (83%)	15 (15%)	2 (2%)	7	41
44	Lp	89/92 (97%)	71 (80%)	13 (15%)	5 (6%)	2	19
45	Lr	123/137 (90%)	102 (83%)	15 (12%)	6 (5%)	2	21
46	Lz	215/217 (99%)	168 (78%)	31 (14%)	16 (7%)	1	13
49	SA	220/295 (75%)	187 (85%)	27 (12%)	6 (3%)	5	35
50	SB	212/264 (80%)	174 (82%)	30 (14%)	8 (4%)	3	27
51	SD	225/243 (93%)	183 (81%)	24 (11%)	18 (8%)	1	11
52	SE	260/263 (99%)	215 (83%)	30 (12%)	15 (6%)	1	18
53	SF	189/204 (93%)	144 (76%)	31 (16%)	14 (7%)	1	13
54	SH	187/194 (96%)	145 (78%)	27 (14%)	15 (8%)	1	11
55	SI	204/208 (98%)	168 (82%)	24 (12%)	12 (6%)	1	18
56	SK	96/165 (58%)	76 (79%)	16 (17%)	4 (4%)	3	25
57	SL	151/158 (96%)	130 (86%)	11 (7%)	10 (7%)	1	16

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
58	SP	95/145 (66%)	61 (64%)	21 (22%)	13 (14%)	0	4
59	SQ	144/146 (99%)	114 (79%)	20 (14%)	10 (7%)	1	14
60	SR	130/135 (96%)	104 (80%)	17 (13%)	9 (7%)	1	14
61	SS	148/152 (97%)	121 (82%)	13 (9%)	14 (10%)	0	8
62	ST	141/145 (97%)	119 (84%)	16 (11%)	6 (4%)	2	24
63	SU	102/119 (86%)	86 (84%)	11 (11%)	5 (5%)	2	21
64	SV	81/83 (98%)	65 (80%)	11 (14%)	5 (6%)	1	17
65	SX	139/143 (97%)	114 (82%)	12 (9%)	13 (9%)	0	8
66	Sa	103/115 (90%)	77 (75%)	16 (16%)	10 (10%)	0	8
67	Sc	62/69 (90%)	47 (76%)	9 (14%)	6 (10%)	0	8
68	Sd	51/56 (91%)	44 (86%)	7 (14%)	0	100	100
69	Sf	69/156 (44%)	47 (68%)	10 (14%)	12 (17%)	0	2
70	Sg	311/317 (98%)	237 (76%)	58 (19%)	16 (5%)	2	20
71	SC	220/293 (75%)	188 (86%)	23 (10%)	9 (4%)	3	26
72	SG	235/249 (94%)	198 (84%)	26 (11%)	11 (5%)	2	22
73	SJ	183/194 (94%)	157 (86%)	16 (9%)	10 (6%)	2	19
74	SM	120/132 (91%)	79 (66%)	29 (24%)	12 (10%)	0	8
75	SN	148/151 (98%)	133 (90%)	8 (5%)	7 (5%)	2	22
76	SO	138/151 (91%)	101 (73%)	24 (17%)	13 (9%)	0	8
77	SW	127/130 (98%)	109 (86%)	13 (10%)	5 (4%)	3	27
78	SY	129/133 (97%)	108 (84%)	16 (12%)	5 (4%)	3	27
79	SZ	73/125 (58%)	59 (81%)	11 (15%)	3 (4%)	3	26
80	Sb	81/84 (96%)	67 (83%)	12 (15%)	2 (2%)	5	36
81	Se	56/59 (95%)	41 (73%)	11 (20%)	4 (7%)	1	14
All	All	11518/12905 (89%)	9598 (83%)	1346 (12%)	574 (5%)	4	21

5 of 574 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	LA	118	GLU
5	LB	360	LEU
6	LC	23	THR
6	LC	148	PRO
6	LC	186	SER

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	LA	190/199 (96%)	189 (100%)	1 (0%)	88	95
5	LB	348/349 (100%)	348 (100%)	0	100	100
6	LC	305/348 (88%)	305 (100%)	0	100	100
7	LD	246/250 (98%)	246 (100%)	0	100	100
8	LE	215/252 (85%)	215 (100%)	0	100	100
9	LF	194/215 (90%)	194 (100%)	0	100	100
10	LG	203/223 (91%)	203 (100%)	0	100	100
11	LH	169/171 (99%)	169 (100%)	0	100	100
12	LI	180/181 (99%)	180 (100%)	0	100	100
13	LJ	148/149 (99%)	148 (100%)	0	100	100
14	LL	176/177 (99%)	176 (100%)	0	100	100
15	LM	118/161 (73%)	118 (100%)	0	100	100
16	LN	171/172 (99%)	171 (100%)	0	100	100
17	LO	173/174 (99%)	173 (100%)	0	100	100
18	LP	134/163 (82%)	134 (100%)	0	100	100
19	LQ	164/165 (99%)	164 (100%)	0	100	100
20	LR	166/175 (95%)	166 (100%)	0	100	100
21	LS	156/157 (99%)	156 (100%)	0	100	100
22	LT	139/140 (99%)	139 (100%)	0	100	100
23	LU	91/115 (79%)	91 (100%)	0	100	100
24	LV	101/107 (94%)	101 (100%)	0	100	100
25	LW	103/126 (82%)	103 (100%)	0	100	100
26	LX	108/133 (81%)	108 (100%)	0	100	100
27	LY	124/135 (92%)	124 (100%)	0	100	100
28	LZ	117/118 (99%)	117 (100%)	0	100	100
29	La	120/121 (99%)	120 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
30	Lb	63/126 (50%)	63 (100%)	0	100	100
31	Lc	83/97 (86%)	83 (100%)	0	100	100
32	Ld	98/110 (89%)	98 (100%)	0	100	100
33	Le	114/121 (94%)	114 (100%)	0	100	100
34	Lf	88/89 (99%)	88 (100%)	0	100	100
35	Lg	98/100 (98%)	98 (100%)	0	100	100
36	Lh	109/110 (99%)	109 (100%)	0	100	100
37	Li	86/89 (97%)	86 (100%)	0	100	100
38	Lj	73/80 (91%)	73 (100%)	0	100	100
39	Lk	64/65 (98%)	64 (100%)	0	100	100
40	Ll	47/48 (98%)	47 (100%)	0	100	100
41	Lm	48/116 (41%)	48 (100%)	0	100	100
42	Ln	23/24 (96%)	23 (100%)	0	100	100
43	Lo	93/94 (99%)	92 (99%)	1 (1%)	73	88
44	Lp	74/75 (99%)	74 (100%)	0	100	100
45	Lr	109/121 (90%)	109 (100%)	0	100	100
46	Lz	195/196 (100%)	195 (100%)	0	100	100
49	SA	184/243 (76%)	184 (100%)	0	100	100
50	SB	195/231 (84%)	195 (100%)	0	100	100
51	SD	190/202 (94%)	190 (100%)	0	100	100
52	SE	224/225 (100%)	224 (100%)	0	100	100
53	SF	161/170 (95%)	161 (100%)	0	100	100
54	SH	169/174 (97%)	169 (100%)	0	100	100
55	SI	178/180 (99%)	178 (100%)	0	100	100
56	SK	89/136 (65%)	89 (100%)	0	100	100
57	SL	137/142 (96%)	137 (100%)	0	100	100
58	SP	87/130 (67%)	87 (100%)	0	100	100
59	SQ	121/121 (100%)	121 (100%)	0	100	100
60	SR	120/122 (98%)	120 (100%)	0	100	100
61	SS	130/132 (98%)	130 (100%)	0	100	100
62	ST	113/115 (98%)	113 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
63	SU	94/107 (88%)	94 (100%)	0	100	100
64	SV	67/67 (100%)	67 (100%)	0	100	100
65	SX	113/115 (98%)	113 (100%)	0	100	100
66	Sa	90/98 (92%)	90 (100%)	0	100	100
67	Sc	57/62 (92%)	57 (100%)	0	100	100
68	Sd	47/49 (96%)	47 (100%)	0	100	100
69	Sf	64/140 (46%)	64 (100%)	0	100	100
70	Sg	272/275 (99%)	272 (100%)	0	100	100
71	SC	188/225 (84%)	188 (100%)	0	100	100
72	SG	207/218 (95%)	207 (100%)	0	100	100
73	SJ	161/168 (96%)	161 (100%)	0	100	100
74	SM	104/108 (96%)	104 (100%)	0	100	100
75	SN	130/131 (99%)	130 (100%)	0	100	100
76	SO	110/119 (92%)	110 (100%)	0	100	100
77	SW	112/113 (99%)	112 (100%)	0	100	100
78	SY	113/115 (98%)	113 (100%)	0	100	100
79	SZ	66/103 (64%)	66 (100%)	0	100	100
80	Sb	75/76 (99%)	75 (100%)	0	100	100
81	Se	47/48 (98%)	47 (100%)	0	100	100
All	All	10039/10997 (91%)	10037 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	LA	215	ASN
43	Lo	31	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 95 such sidechains are listed below:

Mol	Chain	Res	Type
46	Lz	143	ASN
57	SL	13	GLN
50	SB	202	GLN
54	SH	33	ASN

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Mol	Chain	Res	Type
63	SU	81	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	L5	3707/5070 (73%)	1303 (35%)	56 (1%)
2	L7	119/121 (98%)	21 (17%)	0
3	L8	155/157 (98%)	44 (28%)	2 (1%)
47	S2	1716/1869 (91%)	677 (39%)	22 (1%)
48	S6	74/75 (98%)	28 (37%)	2 (2%)
All	All	5771/7292 (79%)	2073 (35%)	82 (1%)

5 of 2073 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	L5	4	G
1	L5	6	C
1	L5	9	C
1	L5	13	U
1	L5	17	A

5 of 82 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	L8	87	G
47	S2	912	C
47	S2	213	G
47	S2	606	G
47	S2	1404	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 245 ligands modelled in this entry, 245 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
43	Lo	1
66	Sa	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	Lo	105:GLN	C	106:PHE	N	3.21
1	Sa	99:PRO	C	100:ARG	N	3.14

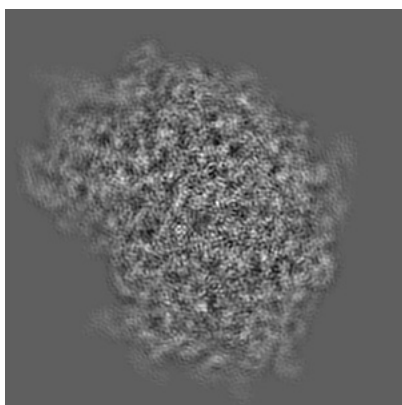
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-2938. These allow visual inspection of the internal detail of the map and identification of artifacts.

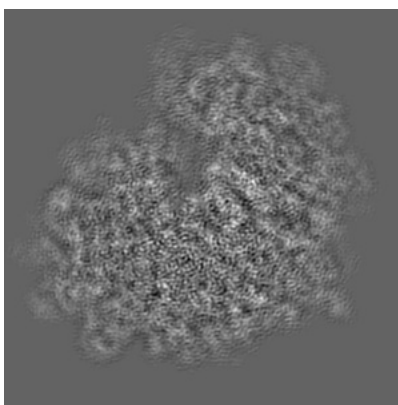
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

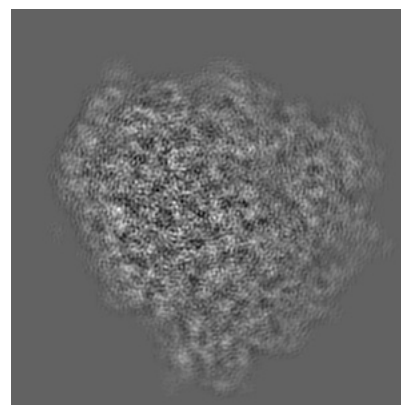
6.1.1 Primary map



X



Y

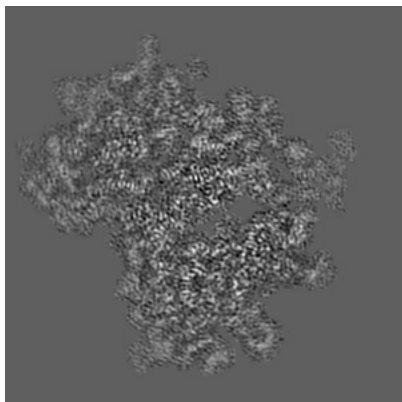


Z

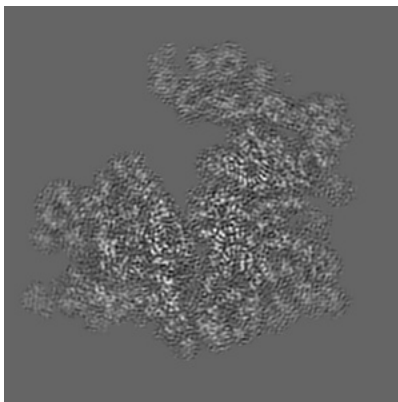
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

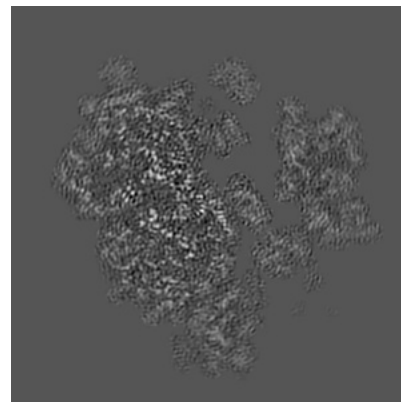
6.2.1 Primary map



X Index: 150



Y Index: 150

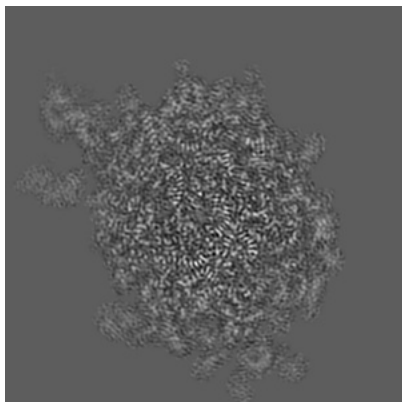


Z Index: 150

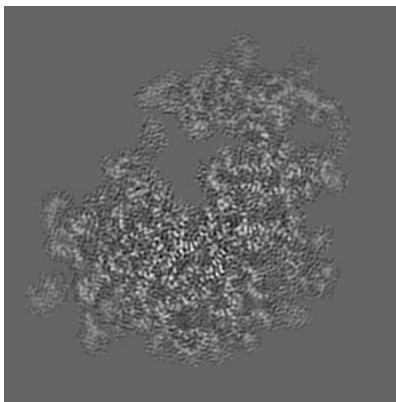
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

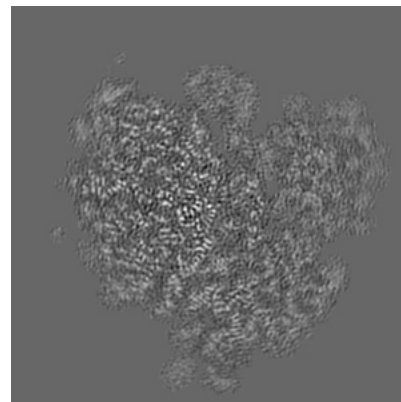
6.3.1 Primary map



X Index: 123



Y Index: 162

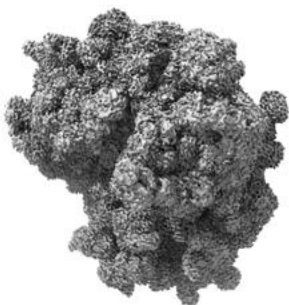


Z Index: 172

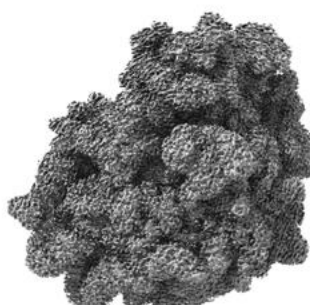
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

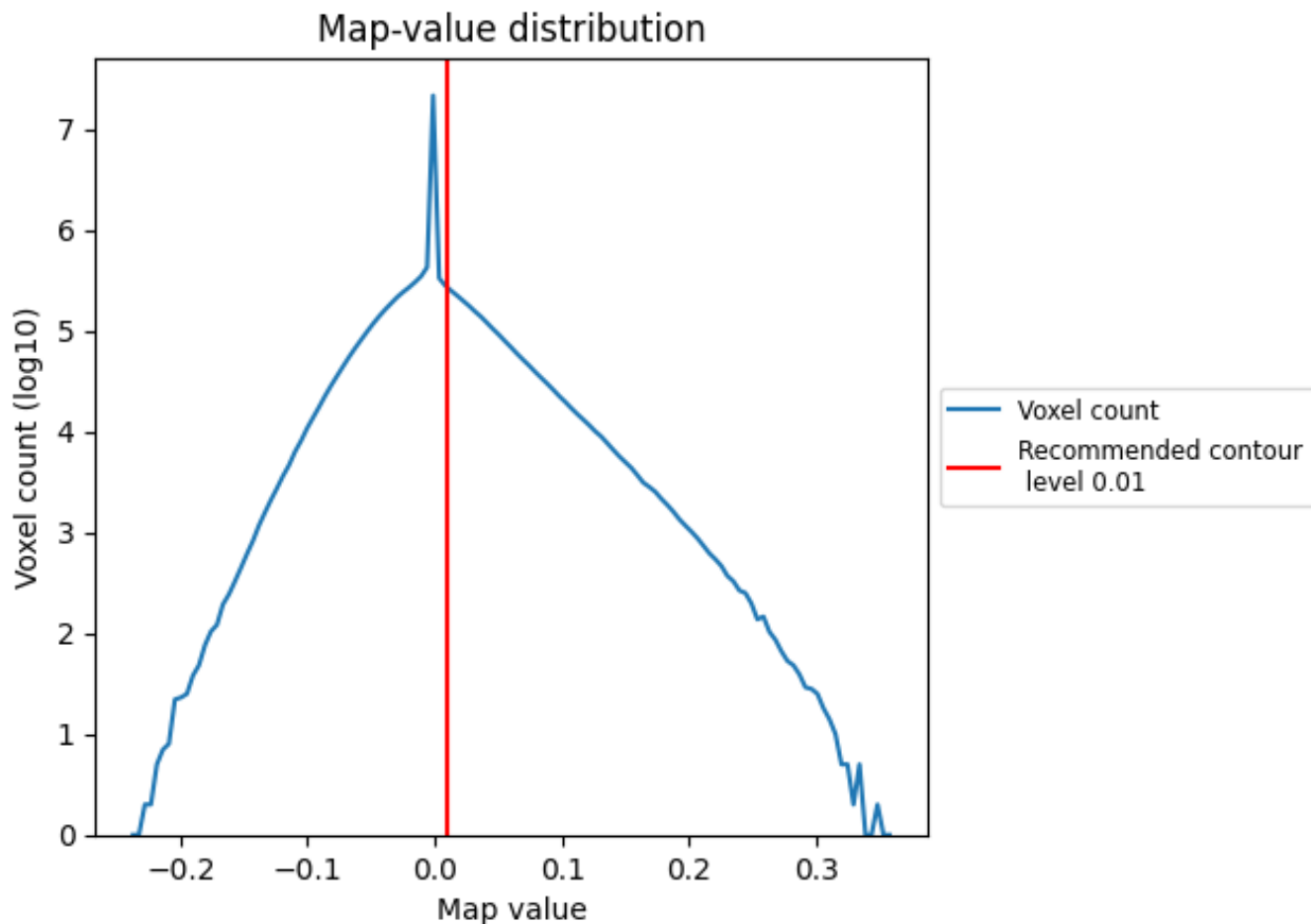
6.5 Mask visualisation

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

7 Map analysis [i](#)

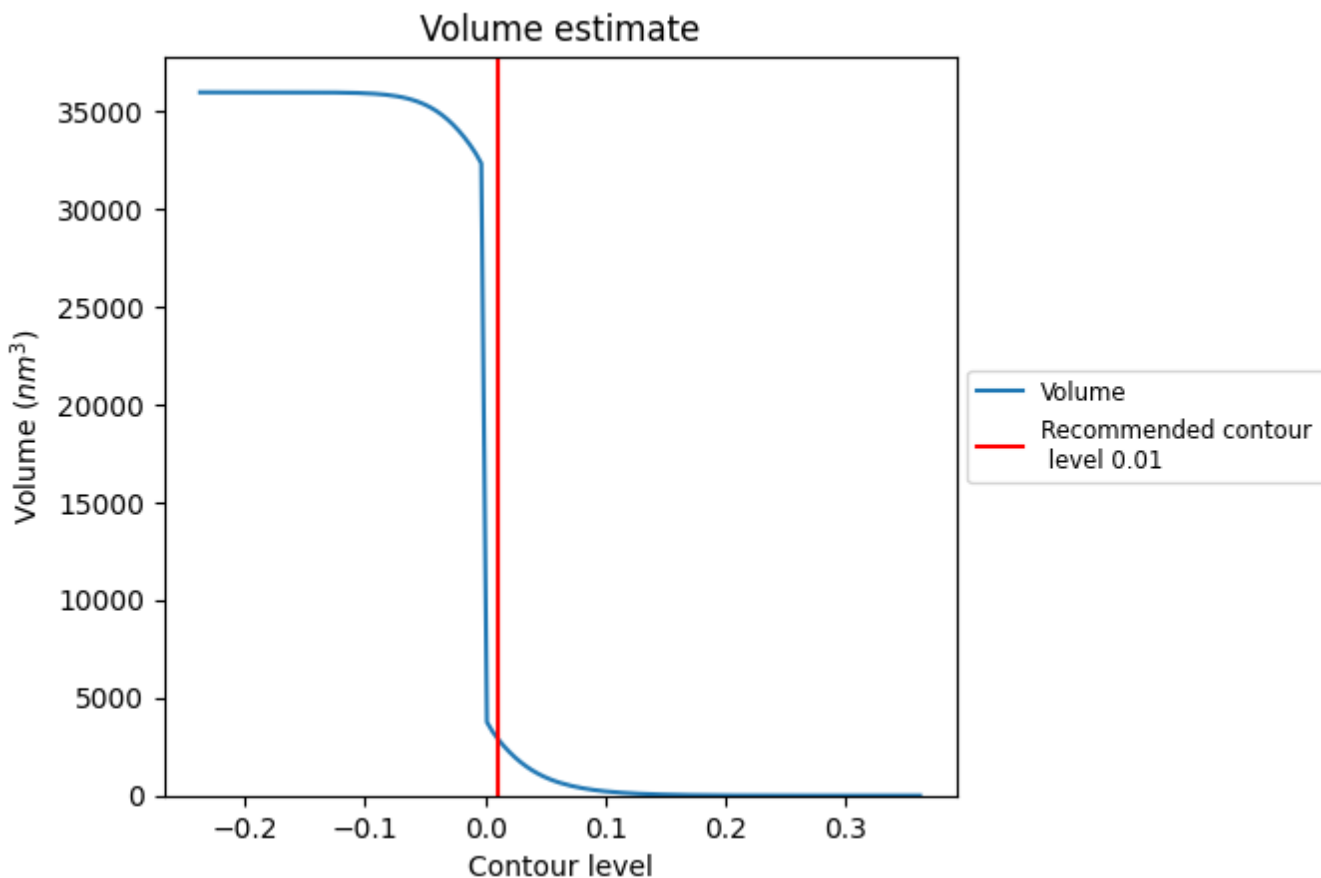
This section contains the results of statistical analysis of the map.

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.

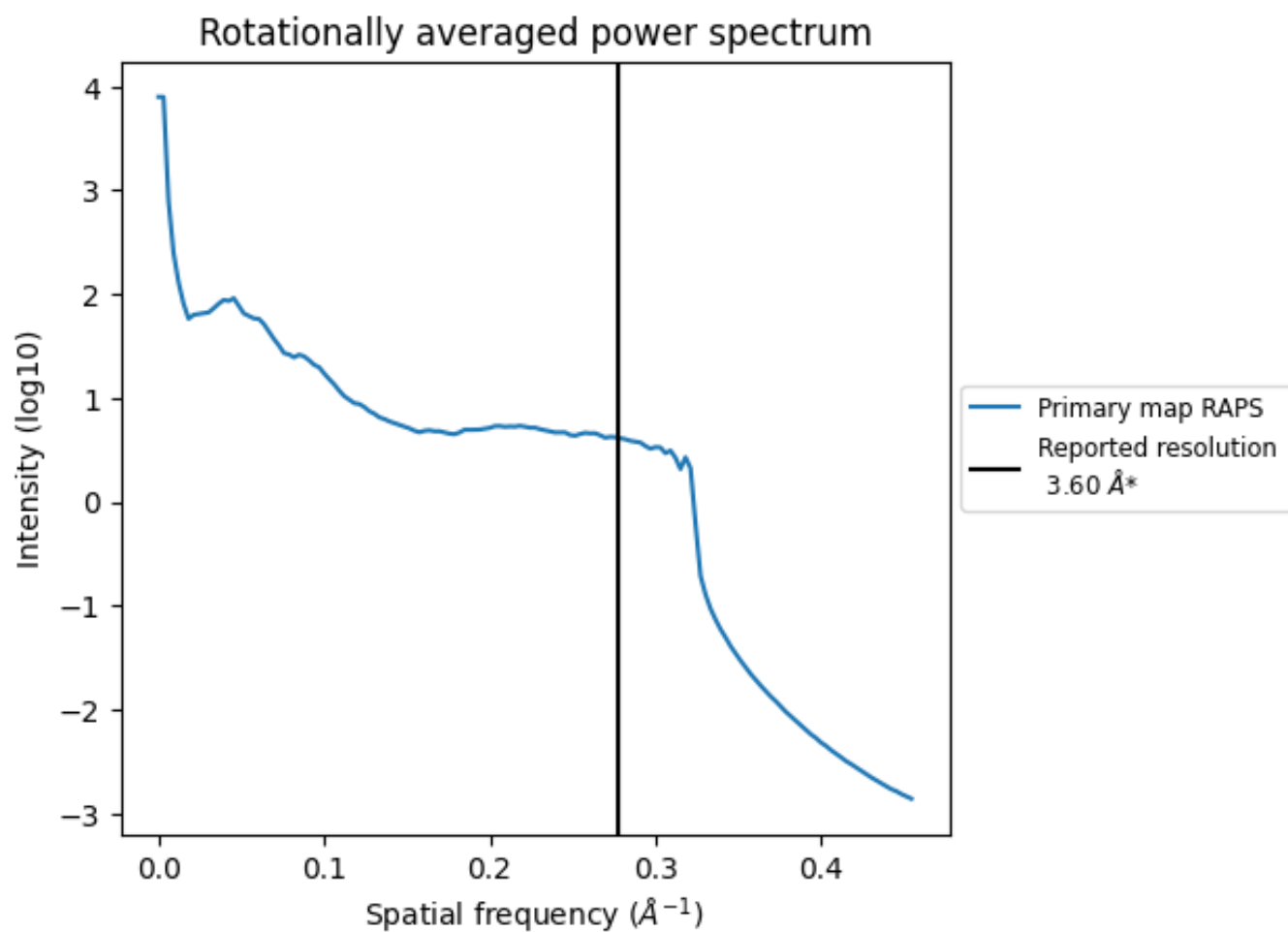
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 2951 nm³; this corresponds to an approximate mass of 2666 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 0.278\AA^{-1}

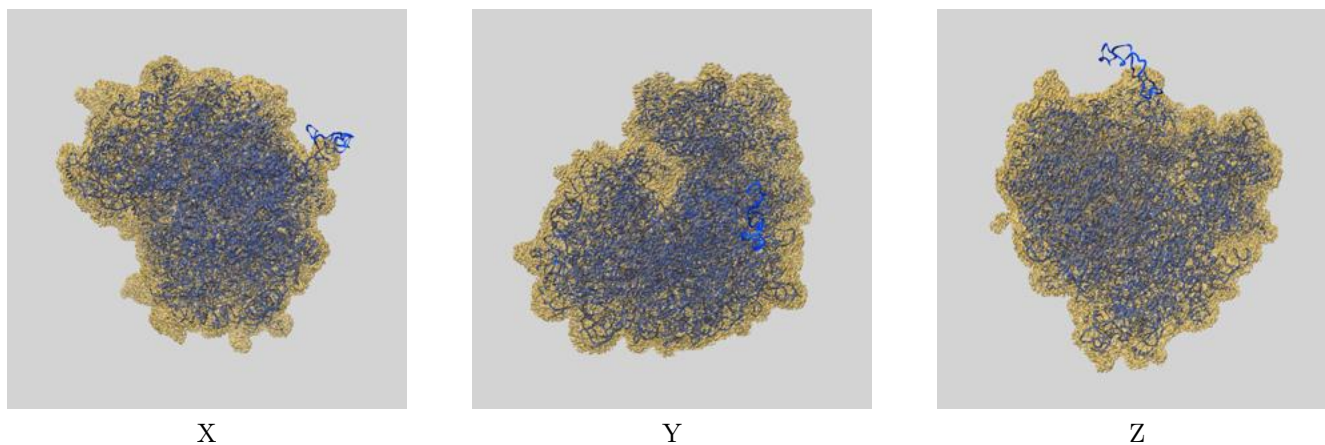
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

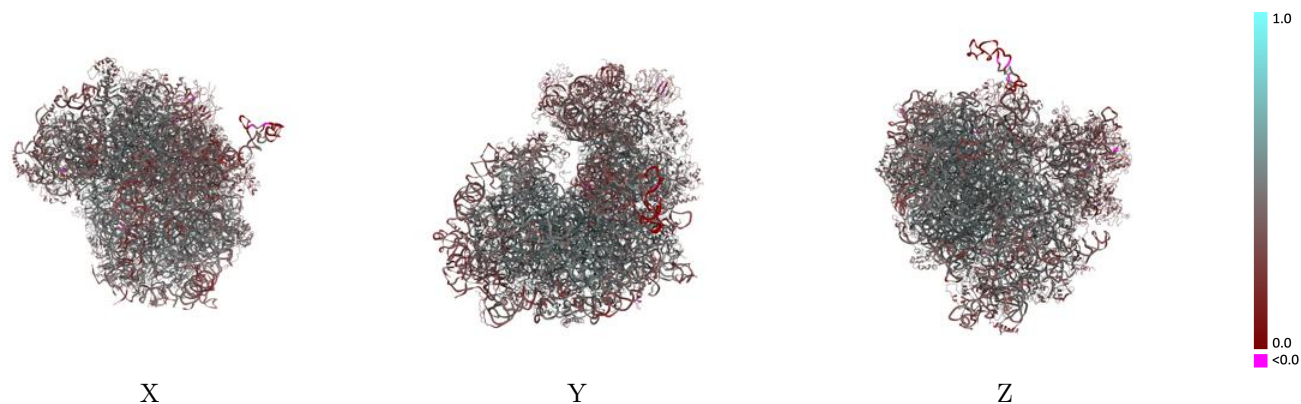
This section contains information regarding the fit between EMDB map EMD-2938 and PDB model 4UG0. Per-residue inclusion information can be found in section 3 on page 19.

9.1 Map-model overlay [i](#)



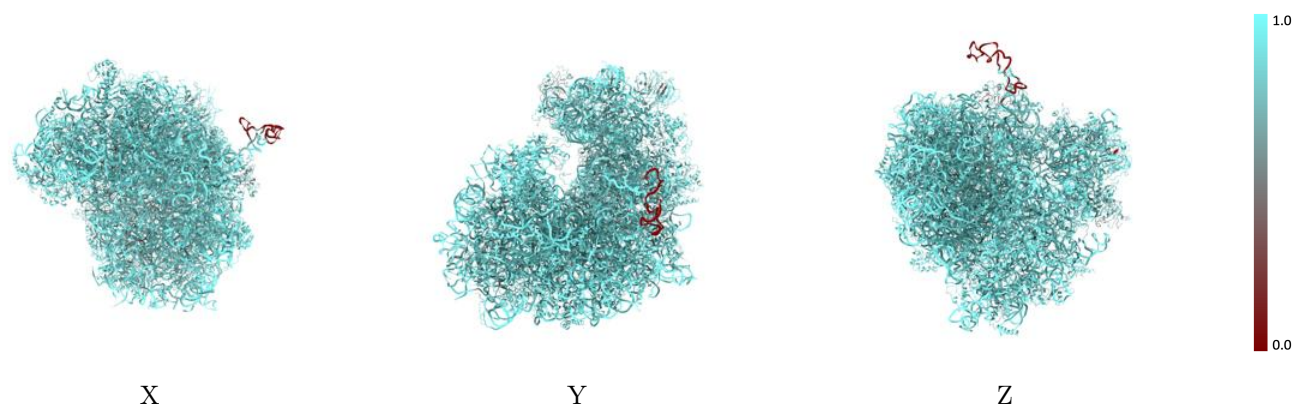
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



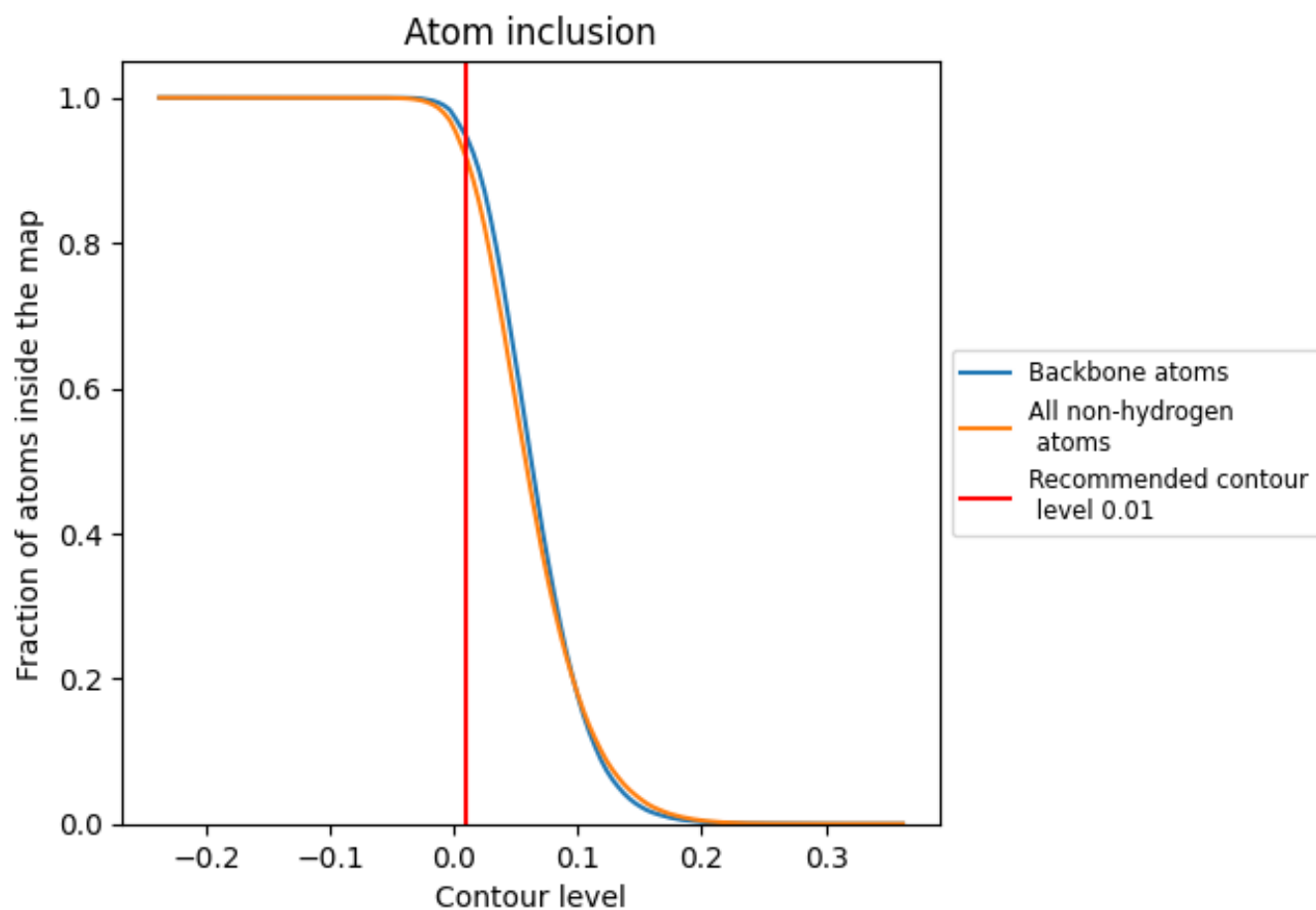
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.01).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 92% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9183	 0.4400
L5	 0.9449	 0.4620
L7	 0.9727	 0.4890
L8	 0.9587	 0.4900
LA	 0.9161	 0.5040
LB	 0.9118	 0.4670
LC	 0.9043	 0.4700
LD	 0.8975	 0.4170
LE	 0.8792	 0.4070
LF	 0.8921	 0.4770
LG	 0.8959	 0.4090
LH	 0.9034	 0.4300
LI	 0.8928	 0.4370
LJ	 0.8883	 0.3890
LL	 0.9247	 0.4550
LM	 0.9088	 0.4410
LN	 0.8951	 0.5010
LO	 0.9179	 0.4750
LP	 0.9072	 0.4790
LQ	 0.8999	 0.4750
LR	 0.9113	 0.4530
LS	 0.9129	 0.4730
LT	 0.9089	 0.4690
LU	 0.9108	 0.4010
LV	 0.9248	 0.4790
LW	 0.8724	 0.3930
LX	 0.8914	 0.4510
LY	 0.9128	 0.4350
LZ	 0.9021	 0.4380
La	 0.9195	 0.4960
Lb	 0.8805	 0.4310
Lc	 0.9143	 0.4480
Ld	 0.9218	 0.4620
Le	 0.9047	 0.4980
Lf	 0.9240	 0.5010













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Chain	Atom inclusion	Q-score
Lg	 0.9000	 0.4660
Lh	 0.9032	 0.4350
Li	 0.9060	 0.4380
Lj	 0.9153	 0.4900
Lk	 0.9138	 0.4010
Ll	 0.9009	 0.4850
Lm	 0.9087	 0.4620
Ln	 0.9330	 0.5140
Lo	 0.9200	 0.4800
Lp	 0.9245	 0.4920
Lr	 0.9211	 0.4720
Lz	 0.7025	 0.2650
S2	 0.9427	 0.4350
S6	 0.8864	 0.3390
SA	 0.8921	 0.4110
SB	 0.9040	 0.4260
SC	 0.8888	 0.4200
SD	 0.8438	 0.3480
SE	 0.8785	 0.4290
SF	 0.8399	 0.3670
SG	 0.8728	 0.3710
SH	 0.8901	 0.3800
SI	 0.8875	 0.4320
SJ	 0.8799	 0.4030
SK	 0.8211	 0.3020
SL	 0.8944	 0.4650
SM	 0.6631	 0.2750
SN	 0.8916	 0.4370
SO	 0.8873	 0.4430
SP	 0.8592	 0.3280
SQ	 0.8209	 0.3530
SR	 0.8618	 0.3650
SS	 0.8563	 0.3290
ST	 0.8364	 0.3470
SU	 0.8337	 0.3320
SV	 0.9019	 0.4270
SW	 0.8772	 0.4560
SX	 0.8889	 0.4620
SY	 0.8821	 0.3870
SZ	 0.8834	 0.3340
Sa	 0.9067	 0.4620
Sb	 0.9218	 0.4170

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Chain	Atom inclusion	Q-score
Sc	 0.8745	 0.3650
Sd	 0.7939	 0.3770
Se	 0.8063	 0.3550
Sf	 0.5795	 0.2200
Sg	 0.8156	 0.3010