



wwPDB EM Validation Summary Report ⓘ

Jan 5, 2026 – 05:32 pm GMT

PDB ID : 9SYR / pdb_00009syr
EMDB ID : EMD-55351
Title : Human quaternary complex of a translating 80S ribosome, NAC, MetAP1 and NatD
Authors : Yudin, D.; Jaskolowski, M.; Scaiola, A.; Ban, N.
Deposited on : 2025-10-13
Resolution : 3.55 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:

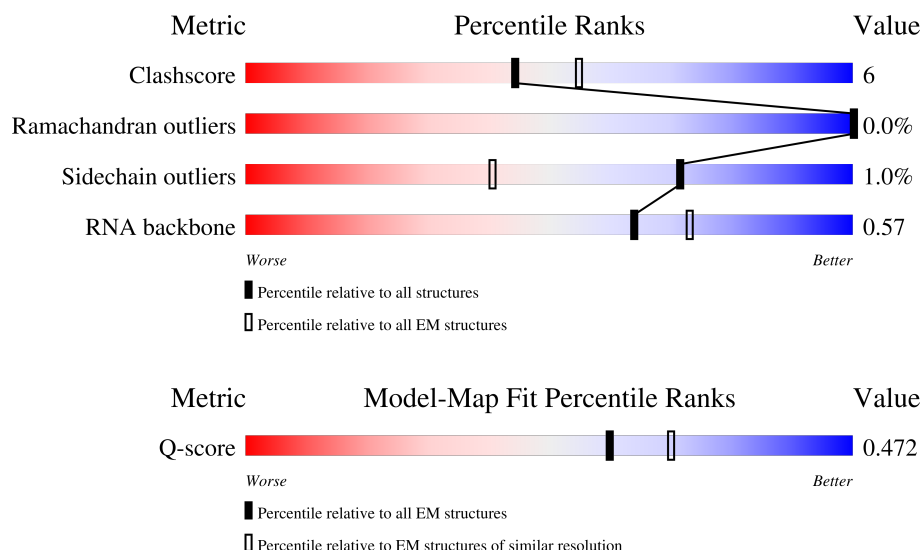
EMDB validation analysis : 0.0.1.dev129
Mogul : ?? (??), CSD ??CSD?? (????)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.47

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 3.55 Å.

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



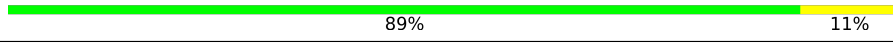
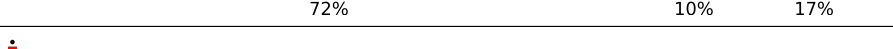
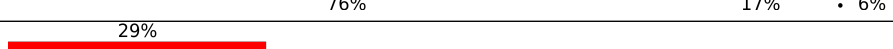
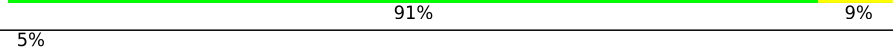
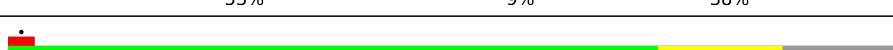
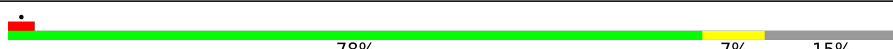
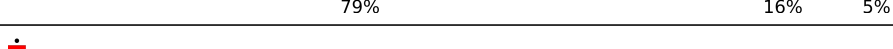
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	12819 (3.05 - 4.05)

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	L1	5070	
2	Lc	427	
3	Ld	297	

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Mol	Chain	Length	Quality of chain
4	Le	288	
5	Lf	199	
6	Lg	184	
7	Lh	188	
8	Li	196	
9	Lj	176	
10	Lk	160	
11	Ll	128	
12	Lm	140	
13	Ln	157	
14	Lo	156	
15	Lp	145	
16	Lq	136	
17	Lr	148	
18	Ls	159	
19	Lt	115	
20	Lu	125	
21	Lv	135	
22	Lw	110	
23	Lx	117	
24	Ly	123	
25	Lz	105	
26	Na	238	
27	Nb	162	
28	Nd	365	

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Mol	Chain	Length	Quality of chain
29	Nm	386	
30	S1	1869	
31	S2	1824	
32	S3	76	
33	SA	208	
34	SB	194	
35	SC	204	
36	SD	158	
37	SE	165	
38	SF	151	
39	SG	151	
40	SH	132	
41	Sa	152	
42	Sb	135	
43	Sc	146	
44	Sd	152	
45	Se	84	
46	Sf	130	
47	Sg	143	
48	L2	121	
49	Sh	131	
50	Si	145	
51	Sj	115	
52	Sk	84	
53	Sl	119	

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Mol	Chain	Length	Quality of chain
54	Sm	125	
55	Sn	133	
56	So	69	
57	Sp	56	
58	Sq	25	
59	Sr	156	
60	Ss	317	
61	St	295	
62	Su	264	
63	Sv	293	
64	Sw	263	
65	Sx	243	
66	Sy	249	
67	Sz	194	
68	L3	157	
69	LA	97	
70	LB	70	
71	LC	51	
72	LD	99	
73	LE	106	
74	LF	92	
75	LG	137	
76	LH	204	
77	LI	248	
78	LJ	266	

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Mol	Chain	Length	Quality of chain
79	LK	192	 86% 12%
80	LM	214	 5% 83% 16%
81	LN	414	 7% 91%
82	LO	178	 78% 17%
83	LP	211	 87% 10%
84	LQ	215	 55% 9% 35%
85	La	257	 82% 14%
86	Lb	403	 86% 12%

2 Entry composition

There are 89 unique types of molecules in this entry. The entry contains 217377 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 rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	L1	3403	Total	C	N	O	P	1	0
			73061	32575	13368	23714	3404		

- Molecule 2 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	Lc	363	Total	C	N	O	S	0	0
			2890	1818	577	482	13		

- Molecule 3 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	Ld	292	Total	C	N	O	S	0	0
			2372	1503	431	424	14		

- Molecule 4 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	Le	218	Total	C	N	O	S	0	0
			1752	1128	333	287	4		

- Molecule 5 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	Lf	199	Total	C	N	O	S	0	0
			1634	1053	319	257	5		

- Molecule 6 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	Lg	152	Total	C	N	O	S	0	0
			1233	771	240	213	9		

- Molecule 7 is a protein called 60S ribosomal protein L18.

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

- Molecule 8 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	Li	180	Total	C	N	O	S	0	0
			1501	929	327	236	9		

- Molecule 9 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	Lj	176	Total	C	N	O	S	0	0
			1461	930	284	236	11		

- Molecule 10 is a protein called 60S ribosomal protein L21.

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

- Molecule 11 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	Ll	102	Total	C	N	O	S	0	0
			833	533	146	152	2		

- Molecule 12 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Lm	132	Total	C	N	O	S	0	0
			985	621	185	174	5		

- Molecule 13 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	Ln	121	Total	C	N	O	S	0	0
			991	619	202	166	4		

- Molecule 14 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	Lo	119	Total	C	N	O	S	0	0
			976	624	183	168	1		

- Molecule 15 is a protein called 60S ribosomal protein L26.

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

- Molecule 16 is a protein called 60S ribosomal protein L27.

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

- Molecule 17 is a protein called 60S ribosomal protein L27a.

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

- Molecule 18 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Ls	99	Total	C	N	O	S	0	0
			806	500	177	125	4		

- Molecule 19 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	Lt	100	Total	C	N	O	S	0	0
			772	490	136	139	7		

- Molecule 20 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Lu	106	Total	C	N	O	S	0	0
			868	551	170	145	2		

- Molecule 21 is a protein called 60S ribosomal protein L32.

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

- Molecule 22 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Lw	109	Total	C	N	O	S	1	0
			879	557	174	144	4		

- Molecule 23 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Lx	111	Total	C	N	O	S	0	0
			882	552	182	142	6		

- Molecule 24 is a protein called 60S ribosomal protein L35.

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

- Molecule 25 is a protein called 60S ribosomal protein L36.

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

- Molecule 26 is a protein called Nascent polypeptide-associated complex subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Na	108	Total	C	N	O	S	0	0
			840	524	153	159	4		

There are 23 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Na	-22	MET	-	initiating methionine	UNP Q13765
Na	-21	GLY	-	expression tag	UNP Q13765
Na	-20	SER	-	expression tag	UNP Q13765
Na	-19	SER	-	expression tag	UNP Q13765
Na	-18	HIS	-	expression tag	UNP Q13765
Na	-17	HIS	-	expression tag	UNP Q13765

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Chain	Residue	Modelled	Actual	Comment	Reference
Na	-16	HIS	-	expression tag	UNP Q13765
Na	-15	HIS	-	expression tag	UNP Q13765
Na	-14	HIS	-	expression tag	UNP Q13765
Na	-13	HIS	-	expression tag	UNP Q13765
Na	-12	SER	-	expression tag	UNP Q13765
Na	-11	SER	-	expression tag	UNP Q13765
Na	-10	GLY	-	expression tag	UNP Q13765
Na	-9	LEU	-	expression tag	UNP Q13765
Na	-8	GLU	-	expression tag	UNP Q13765
Na	-7	VAL	-	expression tag	UNP Q13765
Na	-6	LEU	-	expression tag	UNP Q13765
Na	-5	PHE	-	expression tag	UNP Q13765
Na	-4	GLN	-	expression tag	UNP Q13765
Na	-3	GLY	-	expression tag	UNP Q13765
Na	-2	PRO	-	expression tag	UNP Q13765
Na	-1	SER	-	expression tag	UNP Q13765
Na	0	GLY	-	expression tag	UNP Q13765

- Molecule 27 is a protein called Isoform 2 of Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Nb	120	Total	C	N	O	S	0	0
			934	580	168	182	4		

- Molecule 28 is a protein called Ubiquitin-like protein SMT3,N-alpha-acetyltransferase 40.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Nd	236	Total	C	N	O	S	0	0
			1890	1182	337	353	18		

There are 34 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Nd	-127	MET	-	initiating methionine	UNP Q12306
Nd	-126	GLY	-	expression tag	UNP Q12306
Nd	-125	SER	-	expression tag	UNP Q12306
Nd	-124	SER	-	expression tag	UNP Q12306
Nd	-123	HIS	-	expression tag	UNP Q12306
Nd	-122	HIS	-	expression tag	UNP Q12306
Nd	-121	HIS	-	expression tag	UNP Q12306
Nd	-120	HIS	-	expression tag	UNP Q12306
Nd	-119	HIS	-	expression tag	UNP Q12306

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Chain	Residue	Modelled	Actual	Comment	Reference
Nd	-118	HIS	-	expression tag	UNP Q12306
Nd	-117	SER	-	expression tag	UNP Q12306
Nd	-116	SER	-	expression tag	UNP Q12306
Nd	-115	GLY	-	expression tag	UNP Q12306
Nd	-114	LEU	-	expression tag	UNP Q12306
Nd	-113	VAL	-	expression tag	UNP Q12306
Nd	-112	PRO	-	expression tag	UNP Q12306
Nd	-111	ARG	-	expression tag	UNP Q12306
Nd	-110	GLY	-	expression tag	UNP Q12306
Nd	-109	SER	-	expression tag	UNP Q12306
Nd	-108	HIS	-	expression tag	UNP Q12306
Nd	-107	MET	-	expression tag	UNP Q12306
Nd	-106	ALA	-	expression tag	UNP Q12306
Nd	-105	SER	-	expression tag	UNP Q12306
Nd	-104	MET	-	expression tag	UNP Q12306
Nd	-103	THR	-	expression tag	UNP Q12306
Nd	-102	GLY	-	expression tag	UNP Q12306
Nd	-101	GLY	-	expression tag	UNP Q12306
Nd	-100	GLN	-	expression tag	UNP Q12306
Nd	-99	GLN	-	expression tag	UNP Q12306
Nd	-98	MET	-	expression tag	UNP Q12306
Nd	-97	GLY	-	expression tag	UNP Q12306
Nd	-96	ARG	-	expression tag	UNP Q12306
Nd	-95	GLY	-	expression tag	UNP Q12306
Nd	-94	SER	-	expression tag	UNP Q12306

- Molecule 29 is a protein called Methionine aminopeptidase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Nm	380	Total	C	N	O	S	0	0
			2984	1870	532	558	24		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Nm	220	ASN	ASP	engineered mutation	UNP P53582

- Molecule 30 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	S1	1771	Total	C	N	O	P	0	0
			37855	16922	6786	12376	1771		

- Molecule 31 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	S2	7	Total	C	N	O	P	0	0
			148	66	24	51	7		

- Molecule 32 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	S3	74	Total	C	N	O	P	0	0
			1579	704	284	517	74		

- Molecule 33 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	SA	205	Total	C	N	O	S	0	0
			1682	1056	331	290	5		

- Molecule 34 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	SB	180	Total	C	N	O	S	0	0
			1499	955	300	242	2		

- Molecule 35 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	SC	192	Total	C	N	O	S	0	0
			1517	948	287	275	7		

- Molecule 36 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	SD	151	Total	C	N	O	S	0	0
			1229	782	230	211	6		

- Molecule 37 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	SE	97	Total	C	N	O	S	0	0
			816	533	144	133	6		

- Molecule 38 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	SF	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 39 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	SG	135	Total	C	N	O	S	0	0
			1010	618	198	188	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SG	138	IAS	ASP	conflict	UNP P62263

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

Mol	Chain	Residues	Atoms					AltConf	Trace
40	SH	123	Total	C	N	O	S	0	0
			953	598	169	177	9		

- Molecule 41 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Sa	124	Total	C	N	O	S	0	0
			1016	644	192	173	7		

- Molecule 42 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Sb	134	Total	C	N	O	S	0	0
			1082	680	201	197	4		

- Molecule 43 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Sc	142	Total	C	N	O	S	0	0
			1128	717	213	195	3		

- Molecule 44 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Sd	146	Total	C	N	O	S	0	0
			1200	753	242	204	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Sd	2	ACE	-	acetylation	UNP P62269

- Molecule 45 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Se	84	Total	C	N	O	S	0	0
			639	395	117	122	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Se	0	ACE	-	acetylation	UNP P63220

- Molecule 46 is a protein called 40S ribosomal protein S15a.

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

- Molecule 47 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Sg	141	Total	C	N	O	S	0	0
			1099	693	219	184	3		

- Molecule 48 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	L2	118	Total	C	N	O	P	0	0
			2518	1122	449	829	118		

- Molecule 49 is a protein called Isoform 3 of Small ribosomal subunit protein eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Sh	124	Total	C	N	O	S	0	0
			1014	641	198	170	5		

- Molecule 50 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Si	144	Total	C	N	O	S	0	0
			1123	704	217	199	3		

- Molecule 51 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	Sj	101	Total	C	N	O	S	0	0
			814	507	170	132	5		

- Molecule 52 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Sk	83	Total	C	N	O	S	0	0
			650	408	121	114	7		

- Molecule 53 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	Sl	101	Total	C	N	O	S	0	0
			803	504	153	142	4		

- Molecule 54 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	Sm	83	Total	C	N	O	S	0	0
			670	431	125	113	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Sn	59	Total	C	N	O	S	0	0
			467	290	102	74	1		

- Molecule 56 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	So	65	Total	C	N	O	S	0	0
			512	311	103	96	2		

- Molecule 57 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Sp	55	Total	C	N	O	S	0	0
			458	286	94	73	5		

- Molecule 58 is a protein called 60S ribosomal protein L41.

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

- Molecule 59 is a protein called Ubiquitin.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	Sr	74	Total	C	N	O	S	0	0
			610	385	117	101	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Ss	314	Total	C	N	O	S	0	0
			2440	1537	425	466	12		

- Molecule 61 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	St	223	Total	C	N	O	S	0	0
			1750	1111	306	325	8		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
St	2	ACE	-	acetylation	UNP P08865

- Molecule 62 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Su	224	Total	C	N	O	S	0	0
			1815	1152	328	321	14		

- Molecule 63 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Sv	223	Total	C	N	O	S	1	0
			1741	1124	300	307	10		

- Molecule 64 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 65 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	Sx	225	Total	C	N	O	S	0	0
			1752	1117	315	313	7		

- Molecule 66 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	Sy	240	Total	C	N	O	S	0	0
			1945	1212	393	333	7		

- Molecule 67 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	Sz	189	Total	C	N	O	S	0	0
			1523	972	280	270	1		

- Molecule 68 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	L3	148	Total	C	N	O	P	0	0
			3156	1408	563	1037	148		

- Molecule 69 is a protein called Large ribosomal subunit protein eL37.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	LA	86	Total	C	N	O	S	1	0
			713	442	155	111	5		

- Molecule 70 is a protein called 60S ribosomal protein L38.

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

- Molecule 71 is a protein called 60S ribosomal protein L39.

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

- Molecule 72 is a protein called Ubiquitin-60S ribosomal protein L40.

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

- Molecule 73 is a protein called 60S ribosomal protein L36a.

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

- Molecule 74 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	LF	92	Total	C	N	O	S	0	0
			716	450	137	121	8		

- Molecule 75 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	LG	124	Total	C	N	O	S	0	0
			992	615	206	167	4		

- Molecule 76 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	LH	203	Total	C	N	O	S	1	0
			1708	1077	360	267	4		

- Molecule 77 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	LI	223	Total	C	N	O	S	0	0
			1851	1189	355	298	9		

- Molecule 78 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	LJ	223	Total	C	N	O	S	0	0
			1809	1153	349	303	4		

- Molecule 79 is a protein called 60S ribosomal protein L9.

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

- Molecule 80 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	LM	213	Total	C	N	O	S	0	0
			1716	1086	331	285	14		

- Molecule 81 is a protein called Green fluorescent protein,Small ubiquitin-related modifier 1,Green fluorescent protein,Small ubiquitin-related modifier 1,Histone H4,X-box-binding protein 1,X-box-binding protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	LN	39	Total	C	N	O	S	0	0
			316	203	62	48	3		

There are 42 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LN	-4	MET	-	initiating methionine	UNP P42212
LN	-3	ALA	-	expression tag	UNP P42212
LN	-2	ALA	-	expression tag	UNP P42212
LN	-1	ALA	-	expression tag	UNP P42212
LN	0	THR	-	expression tag	UNP P42212
LN	1	MET	-	expression tag	UNP P42212
LN	2	VAL	-	expression tag	UNP P42212
LN	65	LEU	PHE	conflict	UNP P42212
LN	66	THR	SER	conflict	UNP P42212
LN	222	LYS	LEU	conflict	UNP P42212

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Chain	Residue	Modelled	Actual	Comment	Reference
LN	232	GLY	-	linker	UNP P42212
LN	233	SER	-	linker	UNP P42212
LN	234	GLY	-	linker	UNP P42212
LN	235	SER	-	linker	UNP P42212
LN	236	GLY	-	linker	UNP P42212
LN	237	SER	-	linker	UNP P42212
LN	238	GLY	-	linker	UNP P42212
LN	239	SER	-	linker	UNP P42212
LN	240	GLY	-	linker	UNP P42212
LN	241	SER	-	linker	UNP P42212
LN	242	GLY	-	linker	UNP P42212
LN	243	SER	-	linker	UNP P42212
LN	244	GLY	-	linker	UNP P42212
LN	245	SER	-	linker	UNP P42212
LN	246	GLY	-	linker	UNP P42212
LN	247	SER	-	linker	UNP P42212
LN	248	GLY	-	linker	UNP P42212
LN	249	SER	-	linker	UNP P42212
LN	250	GLY	-	linker	UNP P42212
LN	251	SER	-	linker	UNP P42212
LN	252	GLY	-	linker	UNP P42212
LN	253	SER	-	linker	UNP P42212
LN	254	SER	-	linker	UNP P42212
LN	255	ALA	-	linker	UNP P42212
LN	256	ALA	-	linker	UNP P42212
LN	257	GLY	-	linker	UNP P42212
LN	312	LYS	ASN	conflict	UNP P55857
LN	319	LYS	ASP	conflict	UNP P55857
LN	325	ALA	GLY	conflict	UNP P55857
LN	327	ARG	GLN	conflict	UNP P55857
LN	403	CYS	PRO	conflict	UNP B1AHH2
LN	404	ALA	SER	conflict	UNP B1AHH2

- Molecule 82 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	LO	170	Total	C	N	O	S	0	0
			1358	858	253	241	6		

- Molecule 83 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	LP	206	Total	C	N	O	S	0	0
			1664	1041	345	274	4		

- Molecule 84 is a protein called 60S ribosomal protein L14.

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

- Molecule 85 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	La	246	Total	C	N	O	S	0	0
			1887	1183	387	311	6		

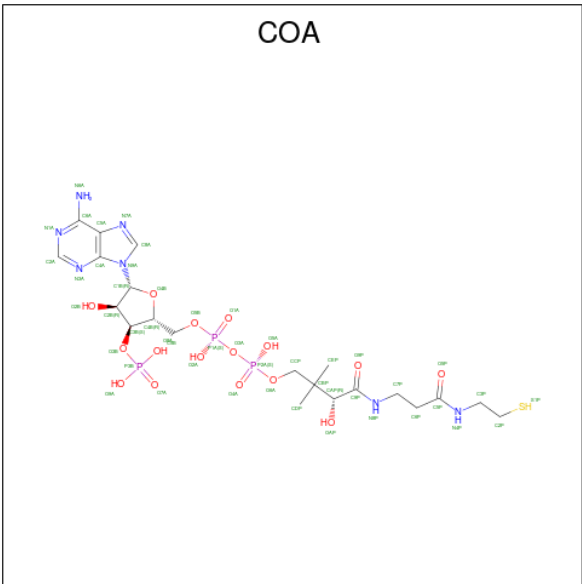
- Molecule 86 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	Lb	395	Total	C	N	O	S	1	0
			3194	2034	600	545	15		

- Molecule 87 is ZINC ION (CCD ID: ZN) (formula: Zn).

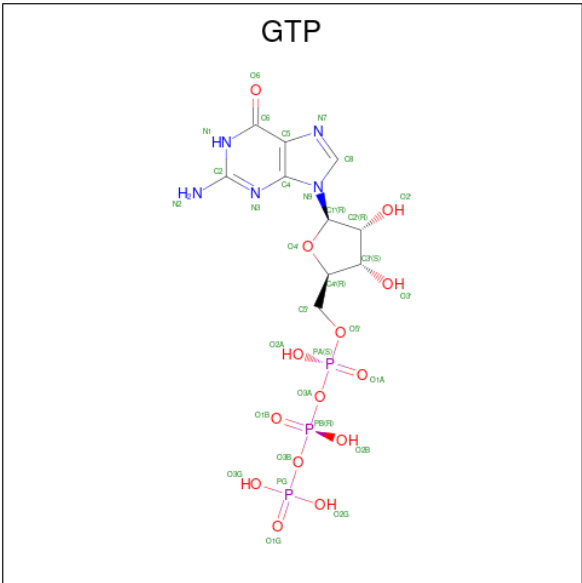
Mol	Chain	Residues	Atoms		AltConf
87	Lx	1	Total	Zn	0
			1	1	
87	Nm	2	Total	Zn	0
			2	2	
87	Sj	1	Total	Zn	0
			1	1	
87	Sp	1	Total	Zn	0
			1	1	
87	Sr	1	Total	Zn	0
			1	1	
87	LA	1	Total	Zn	0
			1	1	
87	LD	1	Total	Zn	0
			1	1	
87	LE	1	Total	Zn	0
			1	1	
87	LF	1	Total	Zn	0
			1	1	

- Molecule 88 is COENZYME A (CCD ID: COA) (formula: C₂₁H₃₆N₇O₁₆P₃S).



Mol	Chain	Residues	Atoms						AltConf
88	Nd	1	Total	C	N	O	P	S	0
			48	21	7	16	3	1	

- Molecule 89 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: C₁₀H₁₆N₅O₁₄P₃).

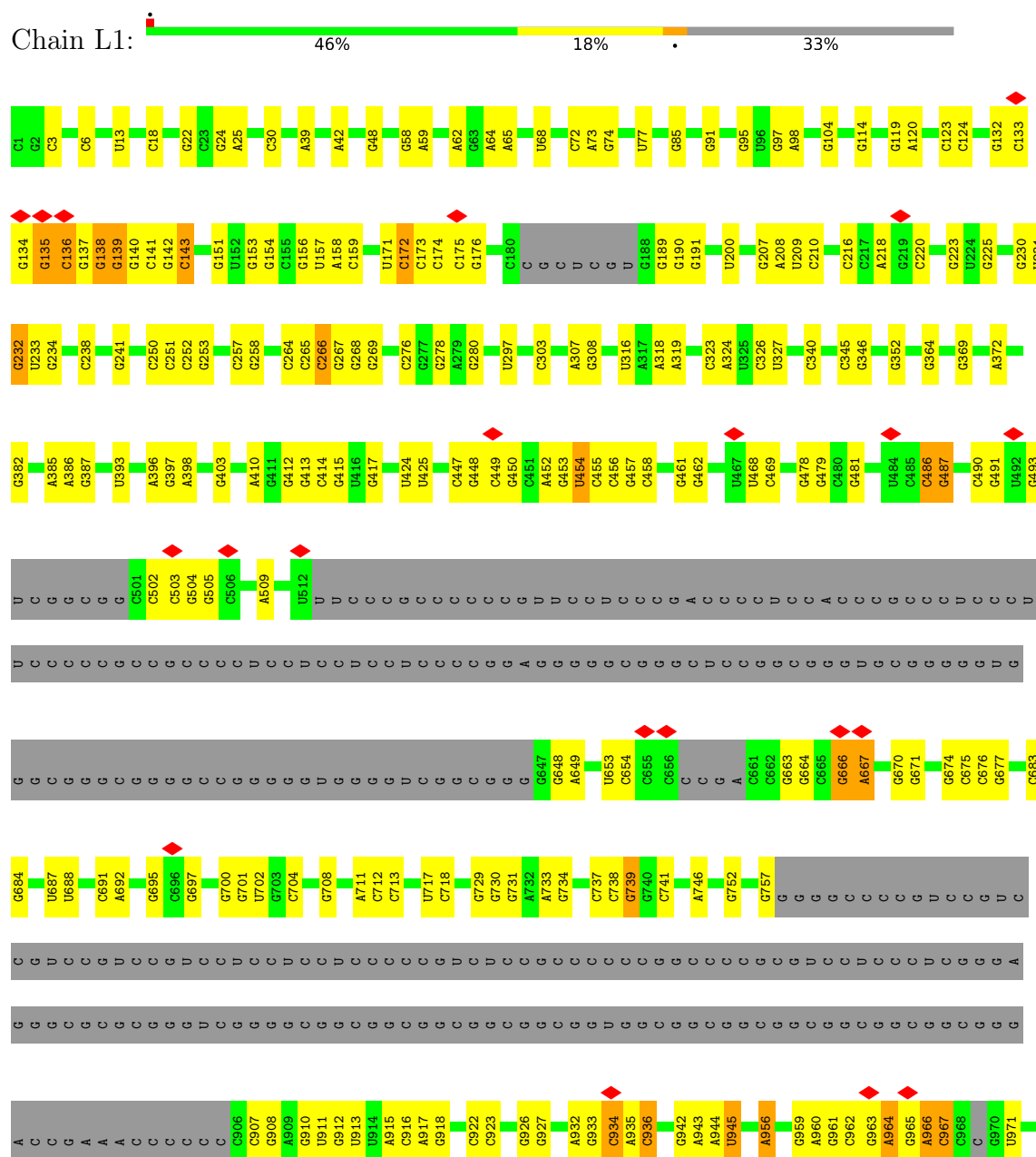


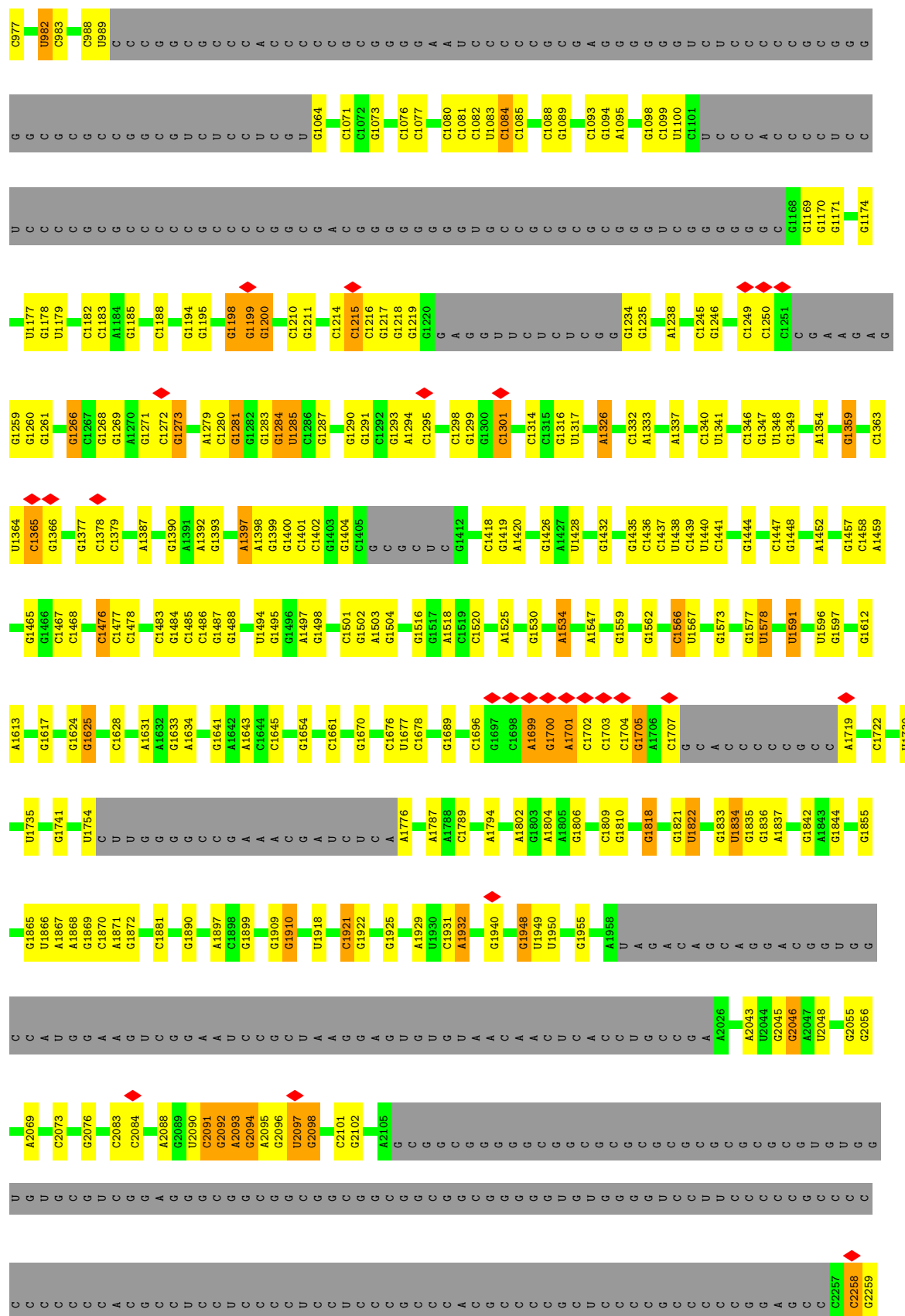
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
89	L2	1	32	10	5	14	3	0

3 Residue-property plots [i](#)

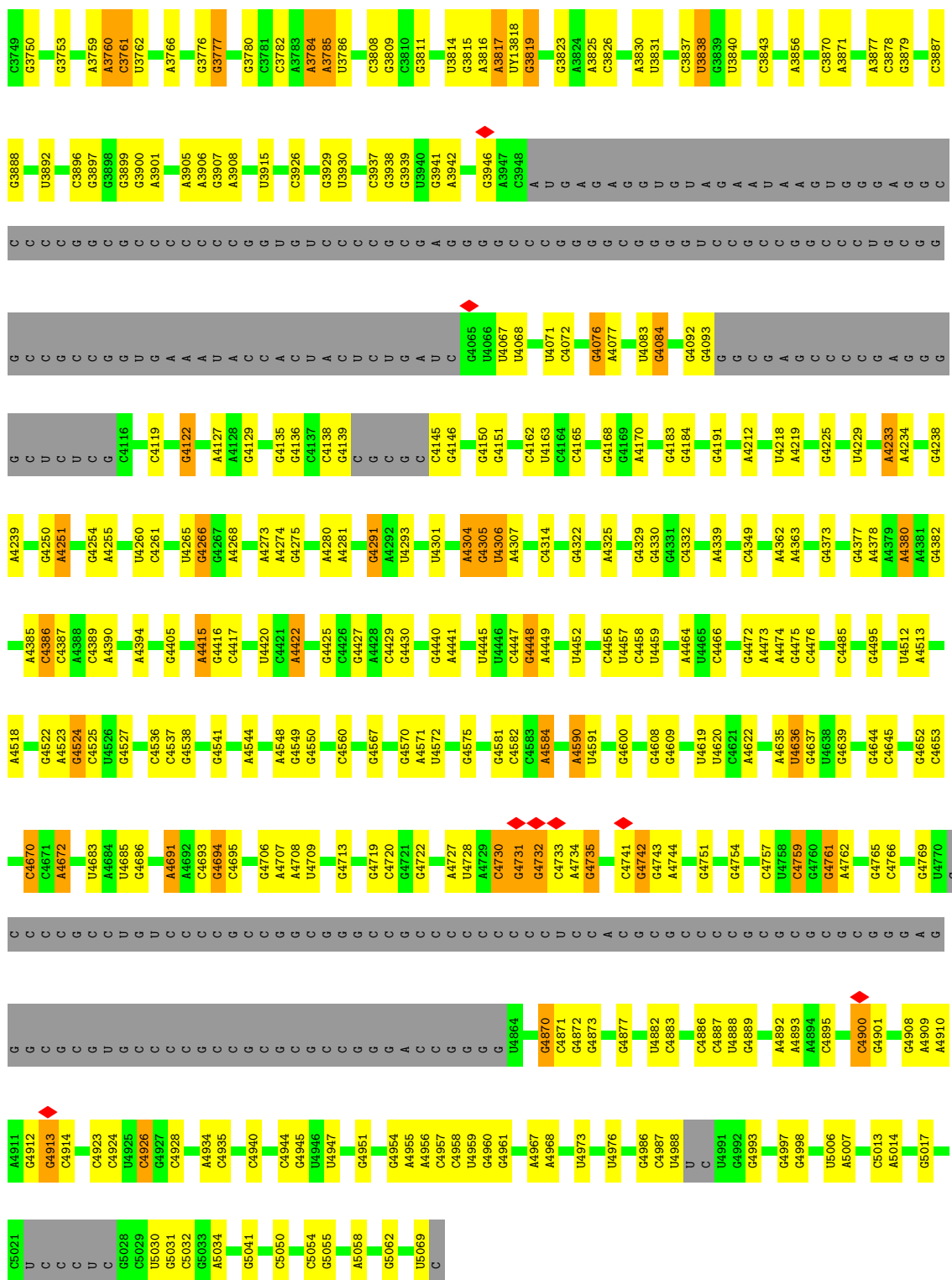
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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







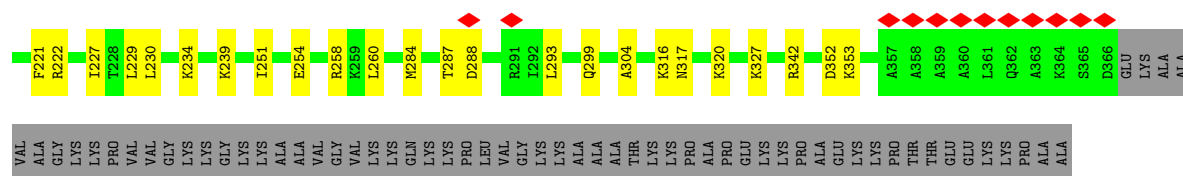


• Molecule 2: 60S ribosomal protein L4

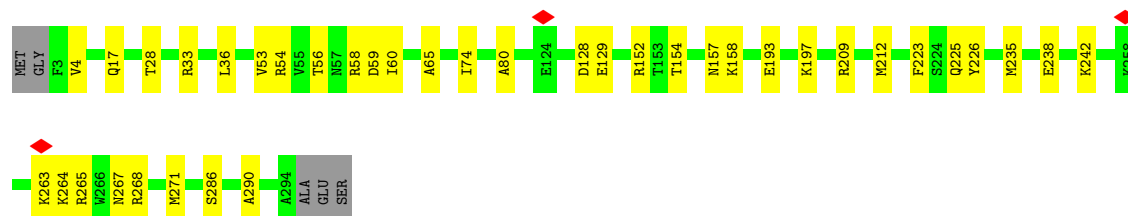
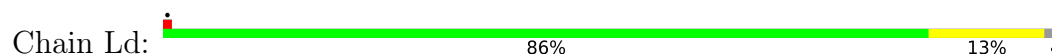
Chain Lc:



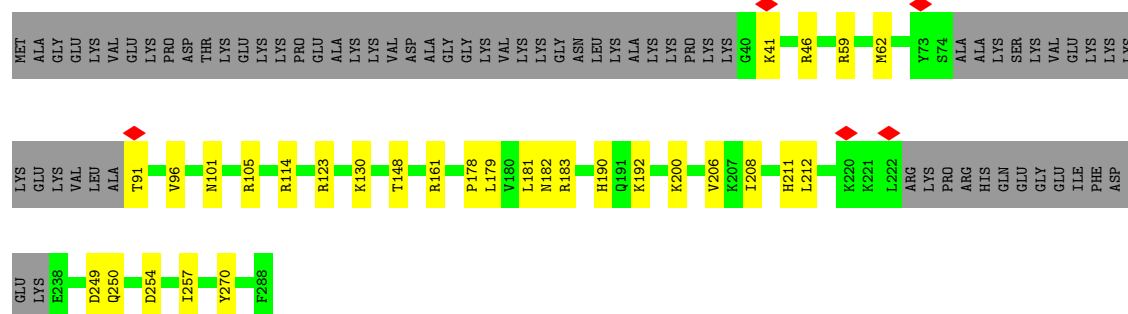
MET	A4	P25	A26	V27	D35	H60	E65	S66	W67	V73	T76	R80	N94	M95	C96	R100	W108	R114	M138	R143	I144	E145	L150	P151	L152	K165	S186	Q187	R188	G192	K195	M196	R197	R204	T209	I218
-----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------



• Molecule 3: 60S ribosomal protein L5



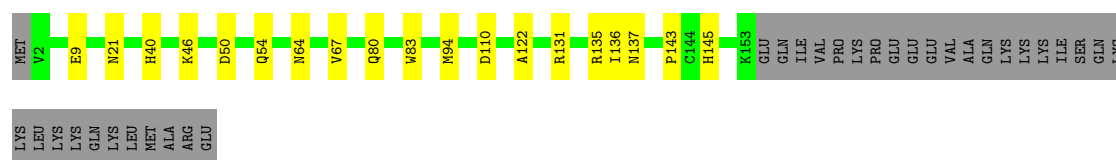
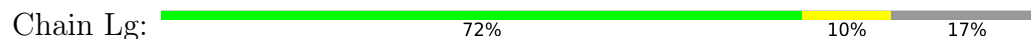
• Molecule 4: Large ribosomal subunit protein eL6



• Molecule 5: Large ribosomal subunit protein uL13



• Molecule 6: 60S ribosomal protein L17



• Molecule 7: 60S ribosomal protein L18

Chain Lh:  87% 12% ..



- Molecule 8: 60S ribosomal protein L19

Chain Li:  81% 11% . 8%



- Molecule 9: 60S ribosomal protein L18a

Chain Lj:  89% 11%



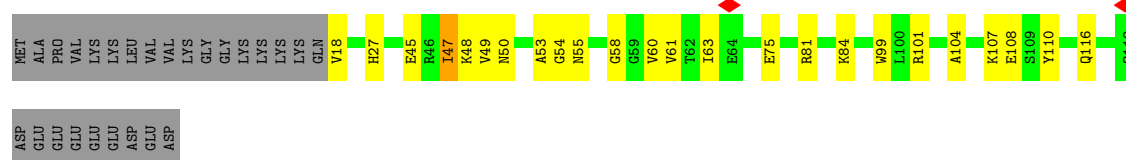
- Molecule 10: 60S ribosomal protein L21

Chain Lk:  82% 17% .



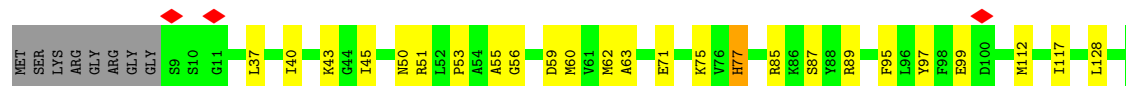
- Molecule 11: 60S ribosomal protein L22

Chain Ll:  61% 18% . 20%



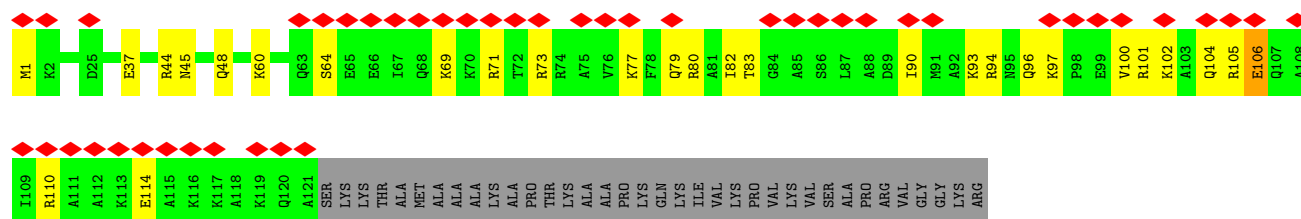
- Molecule 12: 60S ribosomal protein L23

Chain Lm:  76% 17% . 6%

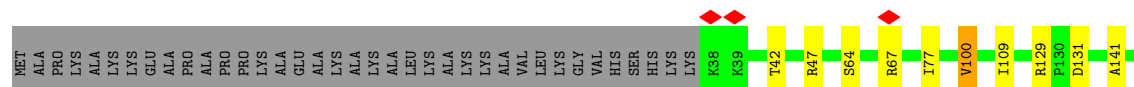


- Molecule 13: 60S ribosomal protein L24

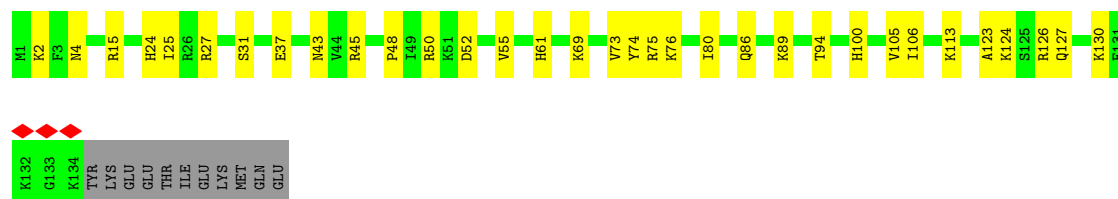
Chain Ln:  29% 59% 17% 23%



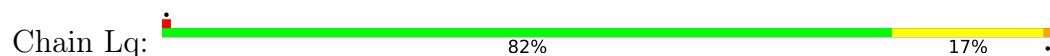
- Molecule 14: 60S ribosomal protein L23a



- Molecule 15: 60S ribosomal protein L26



- Molecule 16: 60S ribosomal protein L27

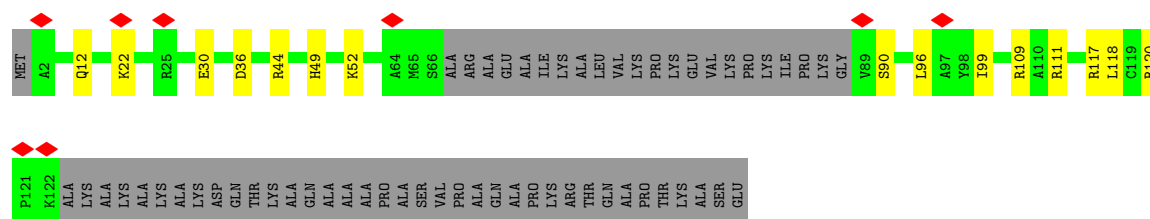


- Molecule 17: 60S ribosomal protein L27a

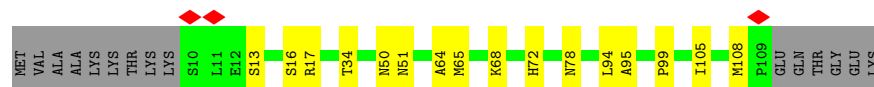
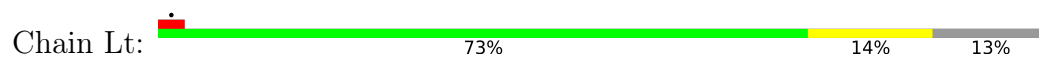


- Molecule 18: 60S ribosomal protein L29

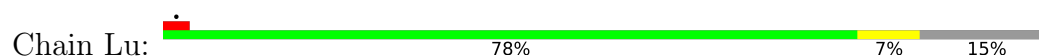




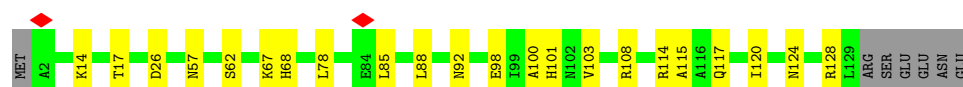
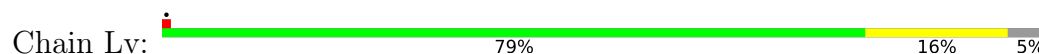
- Molecule 19: 60S ribosomal protein L30



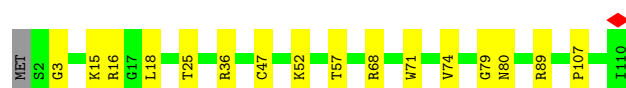
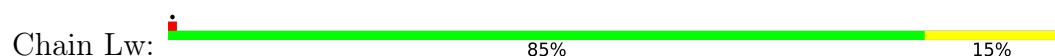
- Molecule 20: 60S ribosomal protein L31



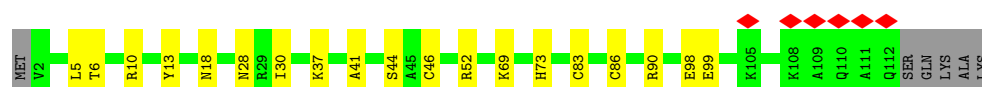
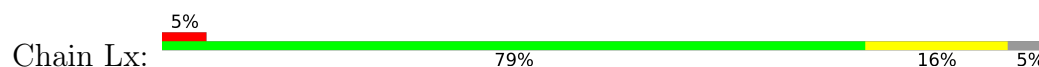
- Molecule 21: 60S ribosomal protein L32



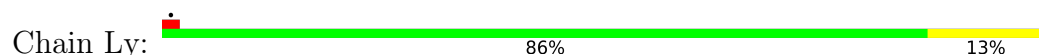
- Molecule 22: 60S ribosomal protein L35a



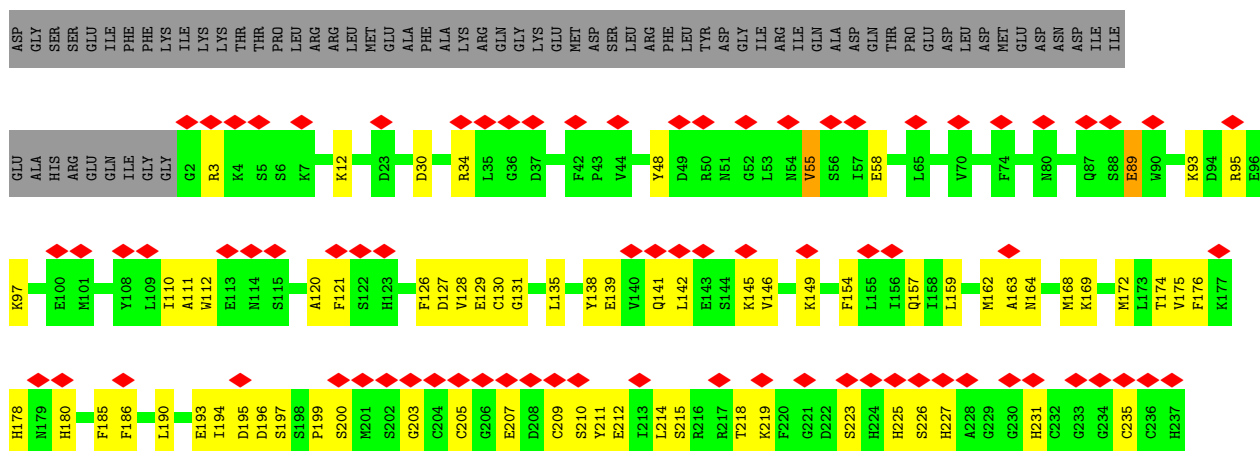
- Molecule 23: 60S ribosomal protein L34



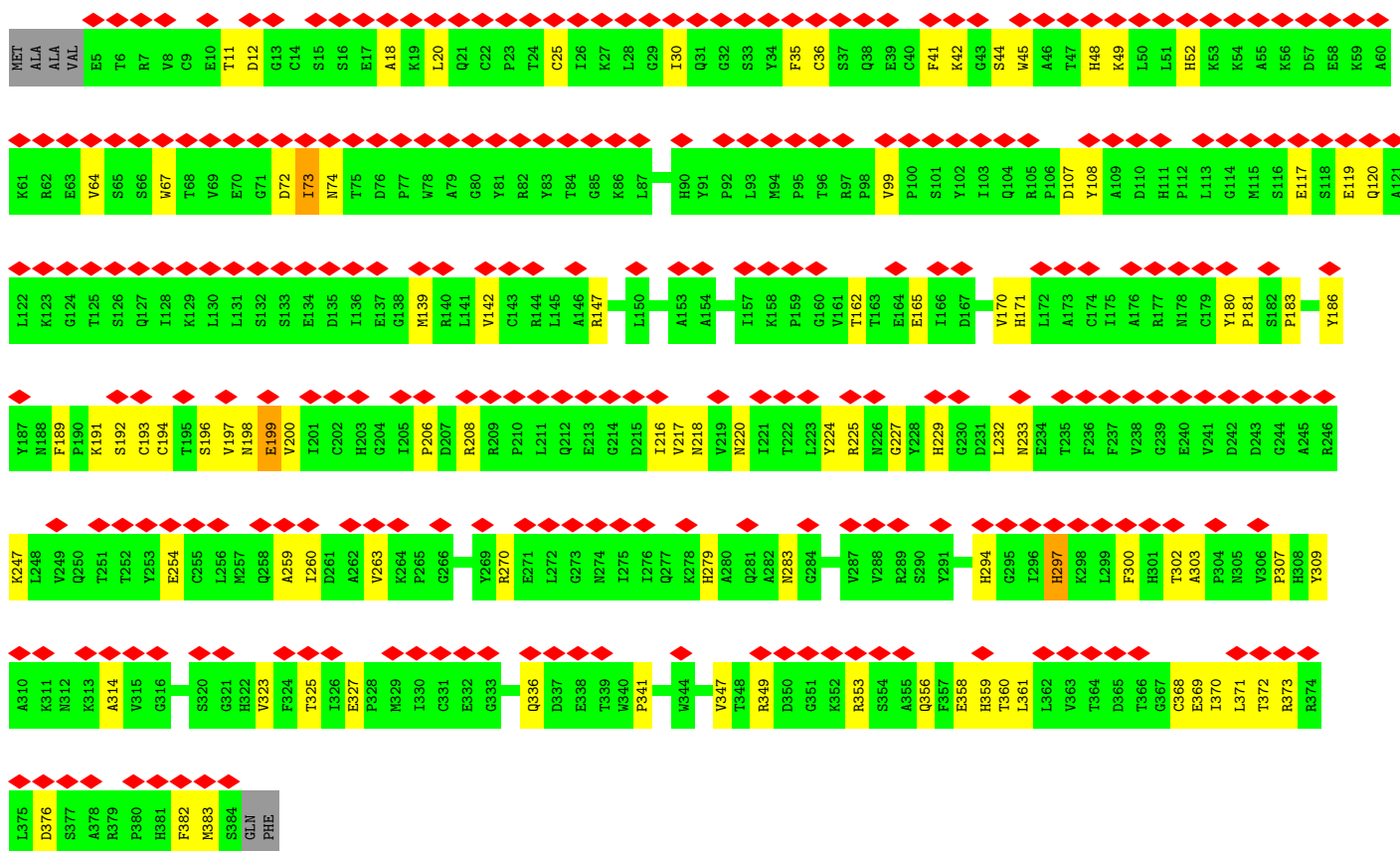
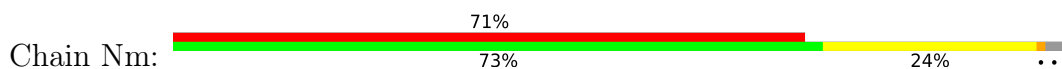
- Molecule 24: 60S ribosomal protein L35







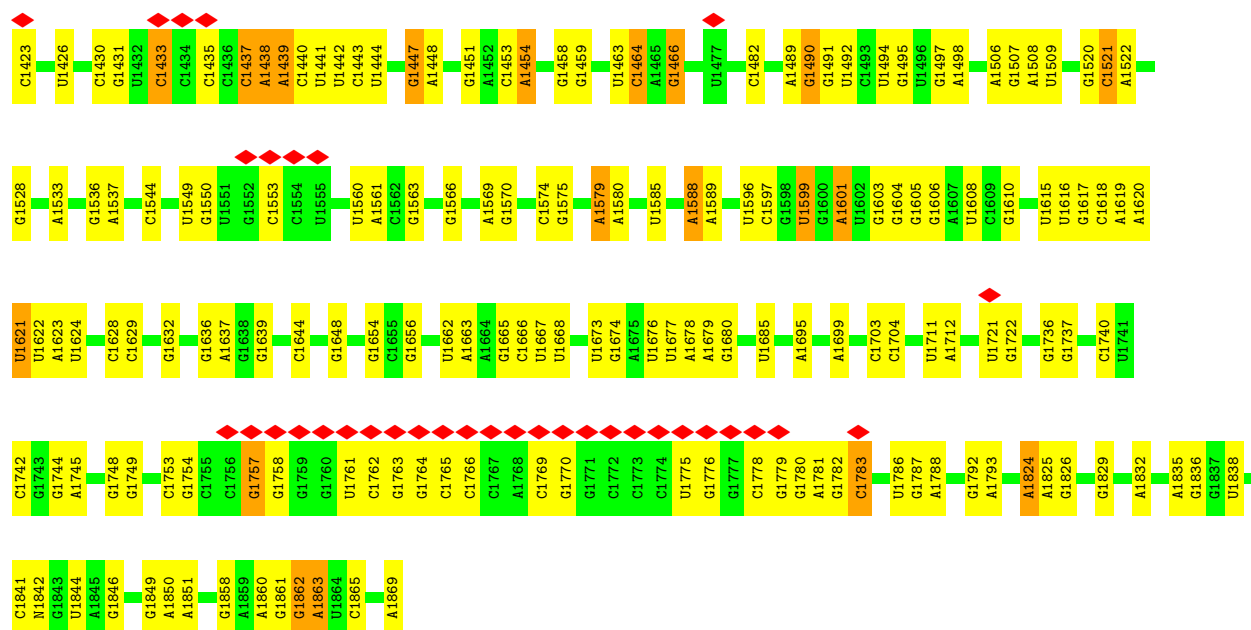
• Molecule 29: Methionine aminopeptidase 1



• Molecule 30: 18S rRNA



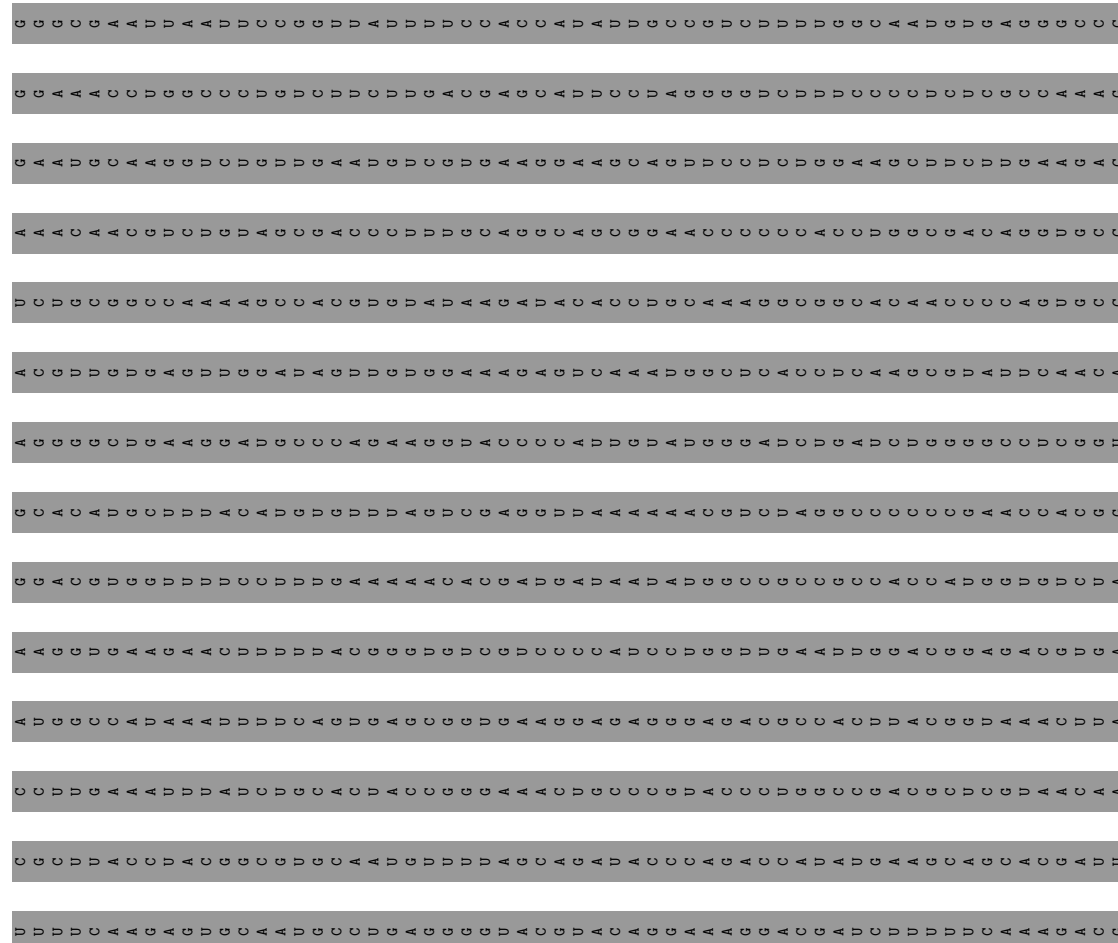


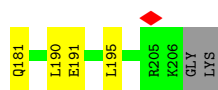


• Molecule 31: mRNA

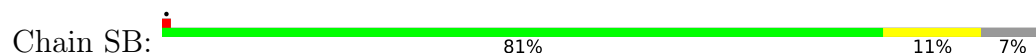
Chain S2:

100%

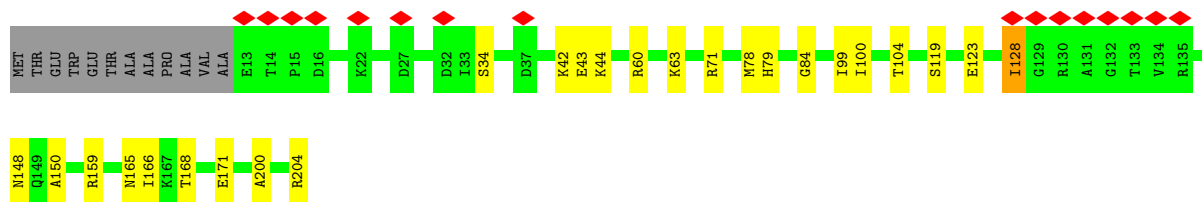
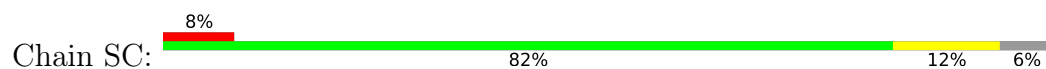




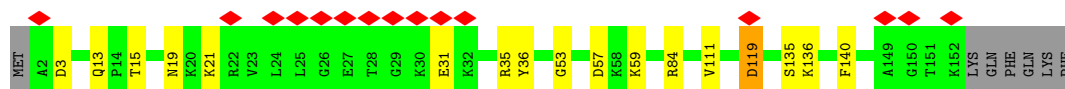
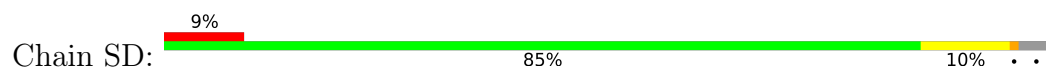
- Molecule 34: 40S ribosomal protein S9



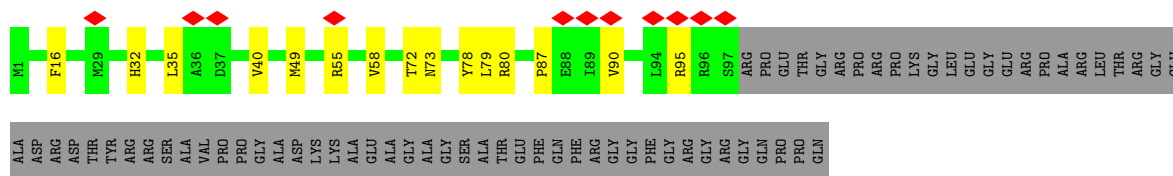
- Molecule 35: 40S ribosomal protein S5



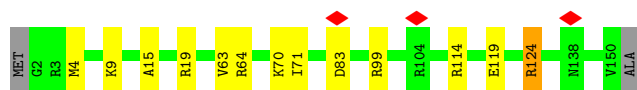
- Molecule 36: 40S ribosomal protein S11



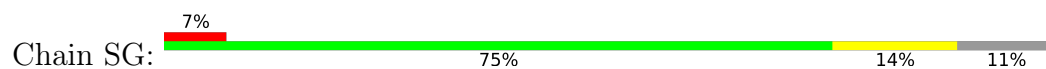
- Molecule 37: 40S ribosomal protein S10

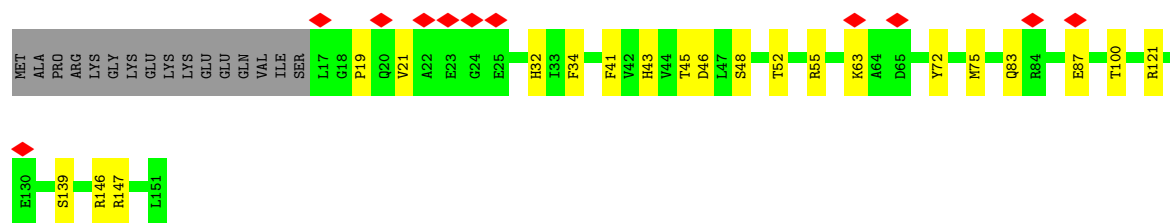


- Molecule 38: 40S ribosomal protein S13

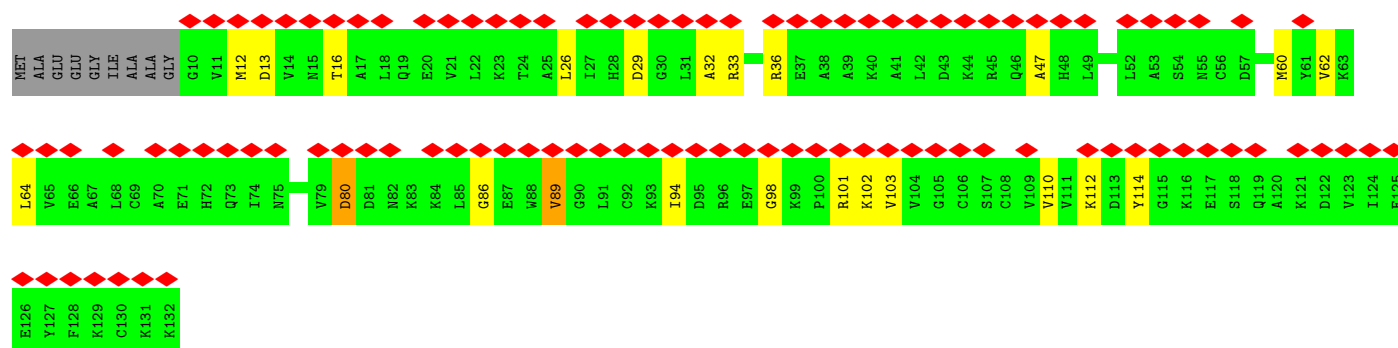
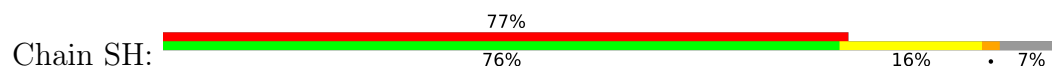


- Molecule 39: 40S ribosomal protein S14

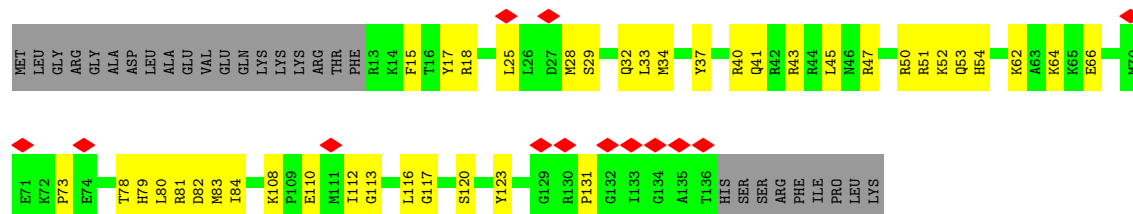




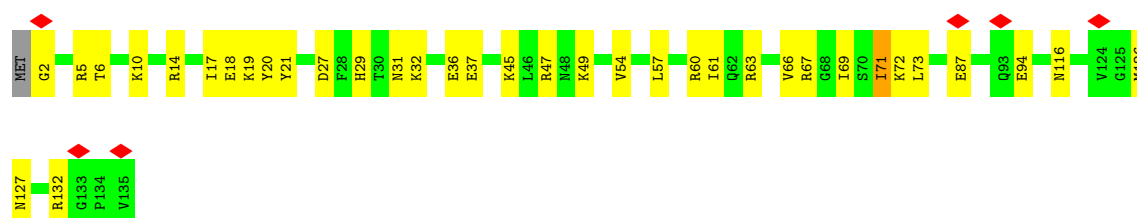
- Molecule 40: 40S ribosomal protein S12



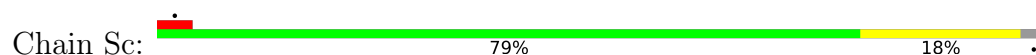
- Molecule 41: 40S ribosomal protein S15

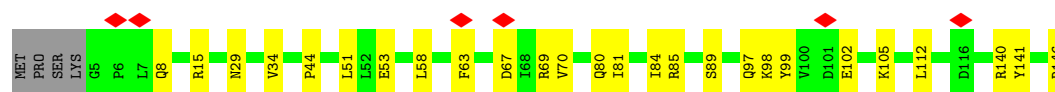


- Molecule 42: 40S ribosomal protein S17

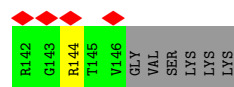
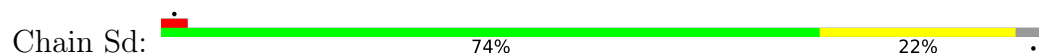


- Molecule 43: 40S ribosomal protein S16

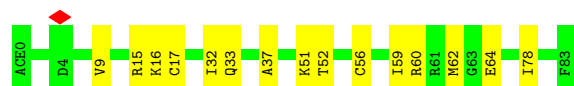
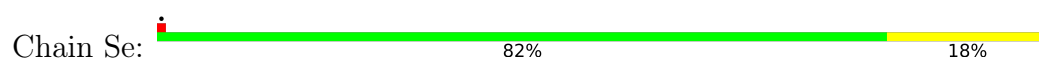




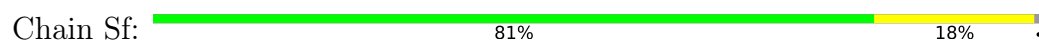
- Molecule 44: Small ribosomal subunit protein uS13



- Molecule 45: Small ribosomal subunit protein eS21



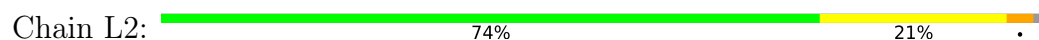
- Molecule 46: 40S ribosomal protein S15a



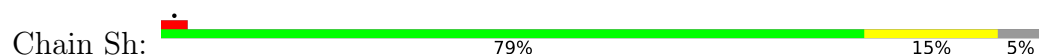
- Molecule 47: Small ribosomal subunit protein uS12

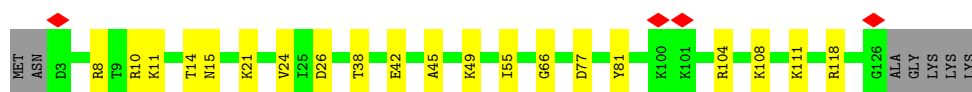


- Molecule 48: 5S rRNA

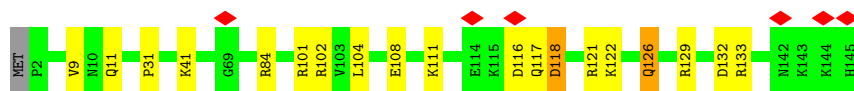
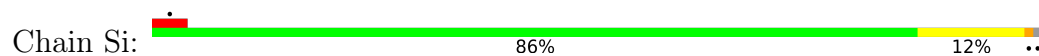


- Molecule 49: Isoform 3 of Small ribosomal subunit protein eS24

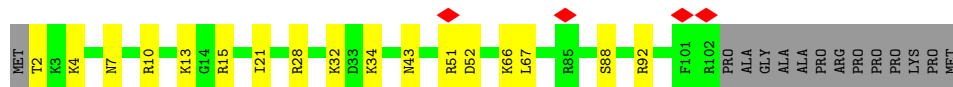
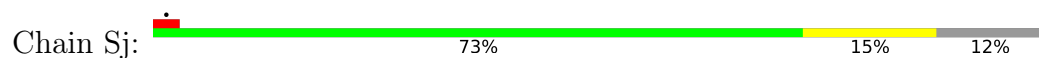




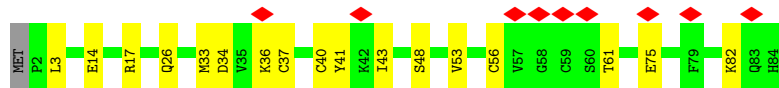
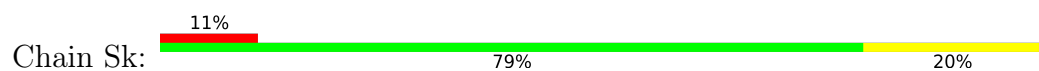
- Molecule 50: Small ribosomal subunit protein eS19



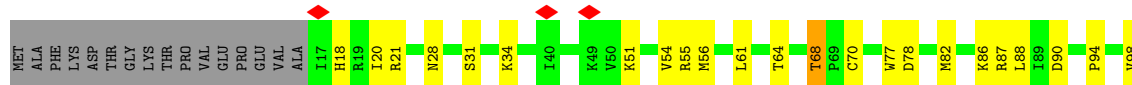
- Molecule 51: 40S ribosomal protein S26



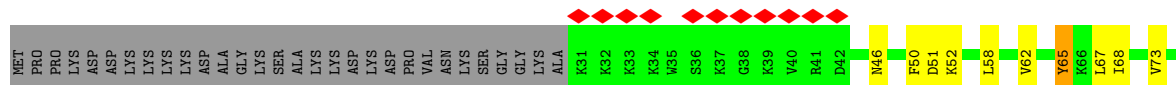
- Molecule 52: 40S ribosomal protein S27



- Molecule 53: 40S ribosomal protein S20

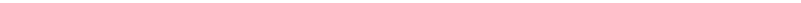


- Molecule 54: 40S ribosomal protein S25



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

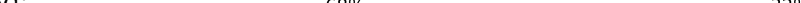


- Chain So: 

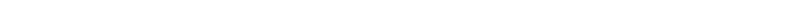


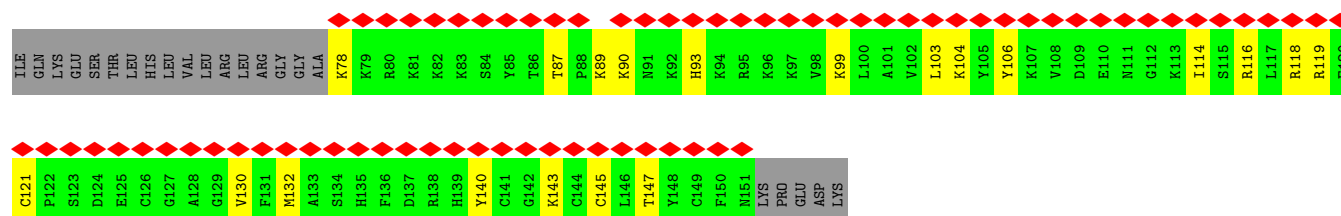
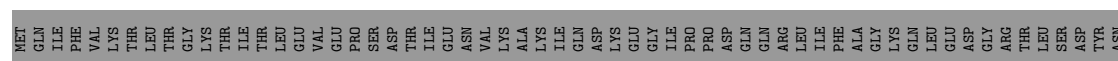
- Chain Sp: 14% 80% 18%

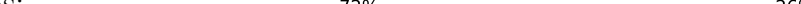


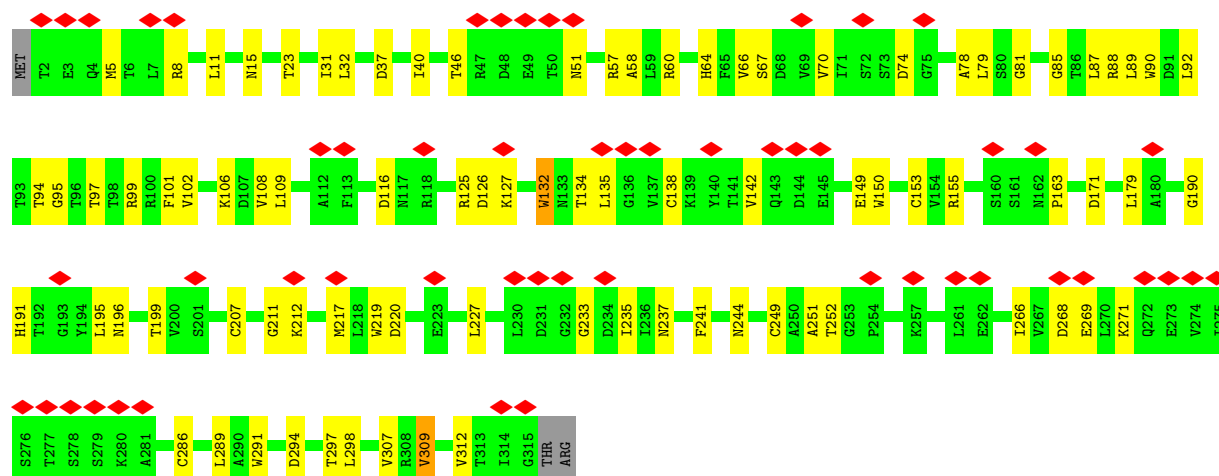
- Chain Sq: 



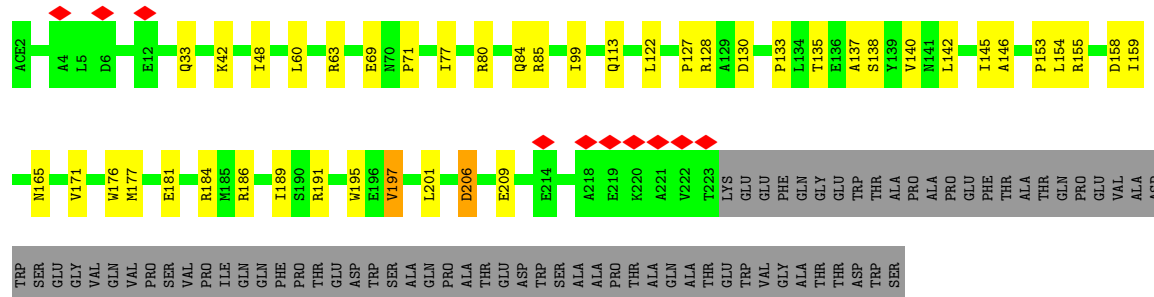
- Chain Sr: 



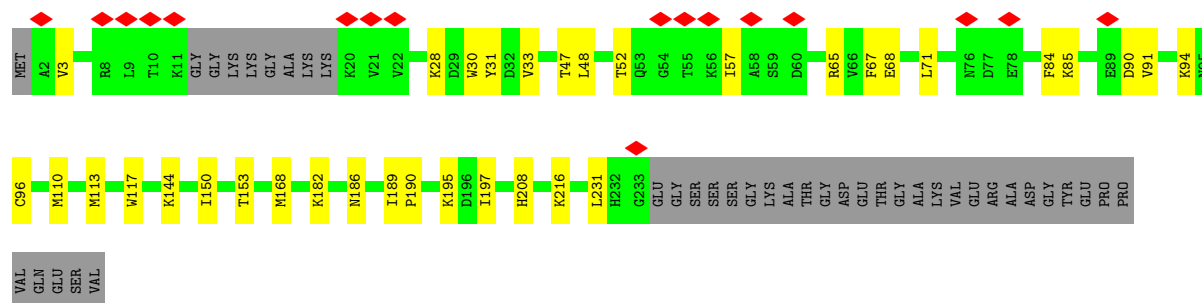
- Chain Ss: 



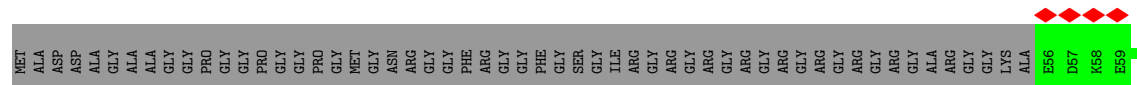
• Molecule 61: Small ribosomal subunit protein uS2

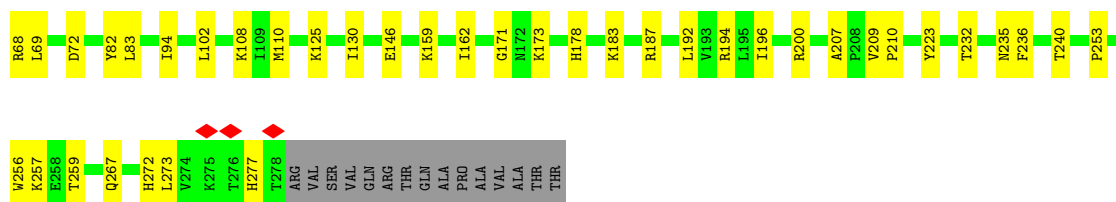


• Molecule 62: 40S ribosomal protein S3a



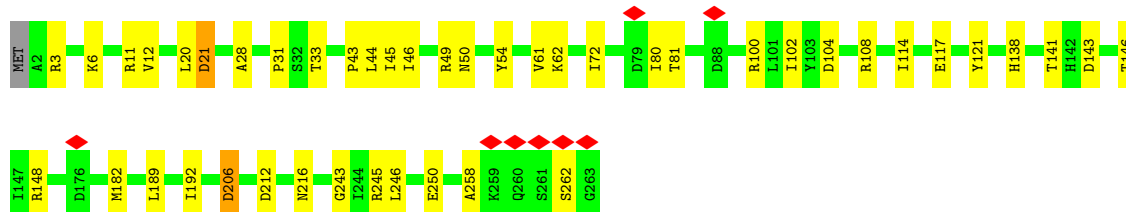
• Molecule 63: 40S ribosomal protein S2





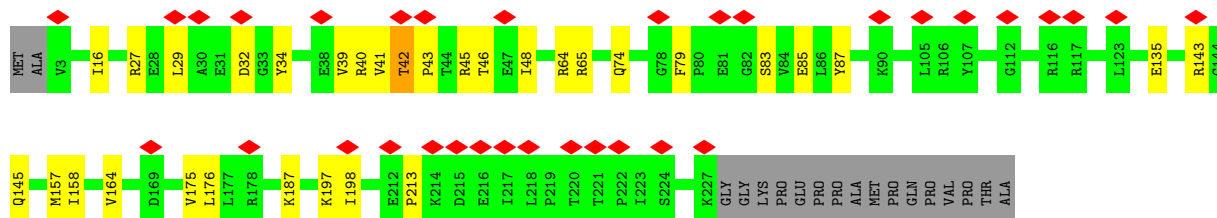
- Molecule 64: Small ribosomal subunit protein eS4, X isoform

Chain Sw: 83% 16%



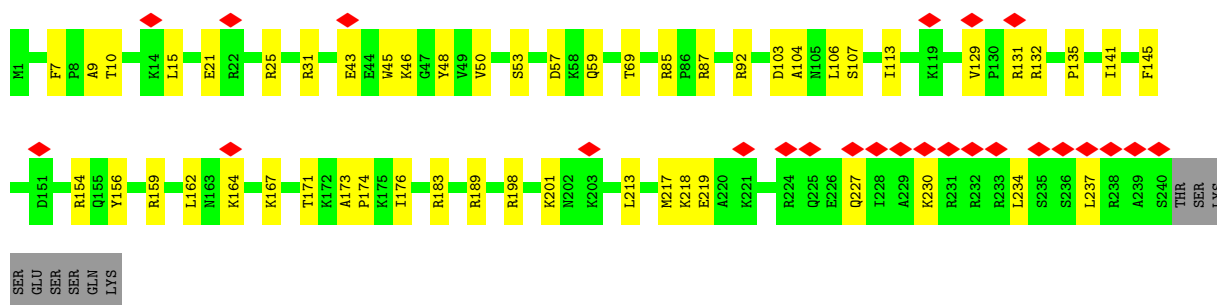
- Molecule 65: 40S ribosomal protein S3

Chain Sx: 14% 79% 13% 7%



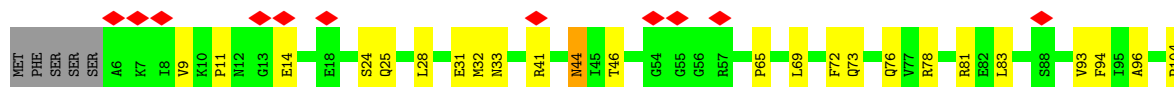
- Molecule 66: 40S ribosomal protein S6

Chain Sy: 10% 76% 21%



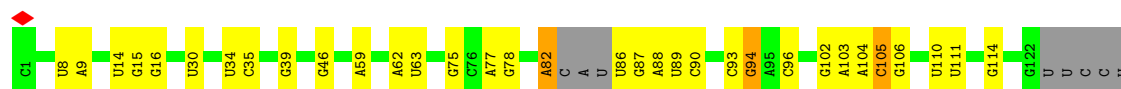
- Molecule 67: 40S ribosomal protein S7

Chain Sz: 10% 77% 20%

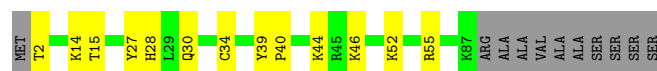
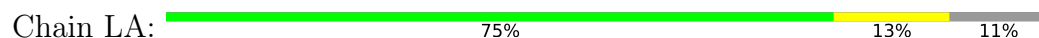




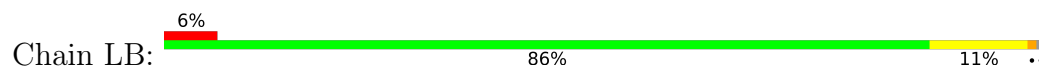
- Molecule 68: 5.8S rRNA



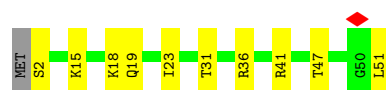
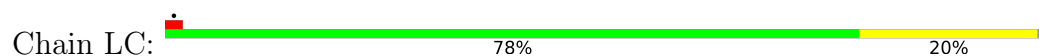
- Molecule 69: Large ribosomal subunit protein eL37



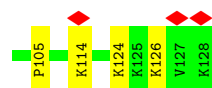
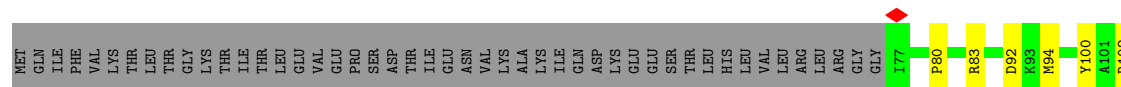
- Molecule 70: 60S ribosomal protein L38



- Molecule 71: 60S ribosomal protein L39

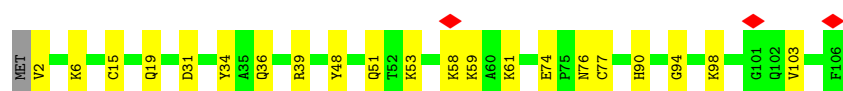


- Molecule 72: Ubiquitin-60S ribosomal protein L40



- Molecule 73: 60S ribosomal protein L36a

Chain LE:  79% 20%



- Molecule 74: 60S ribosomal protein L37a

Chain LF:  5% 87% 13%



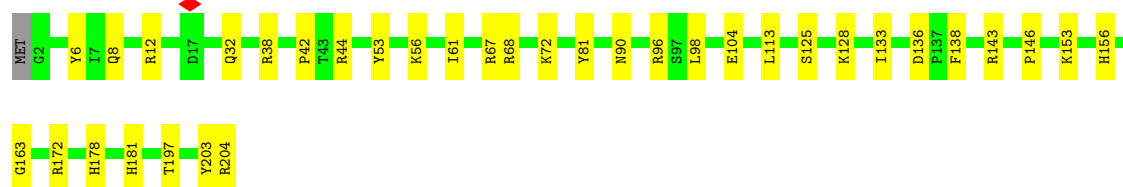
- Molecule 75: 60S ribosomal protein L28

Chain LG:  82% 9% 9%



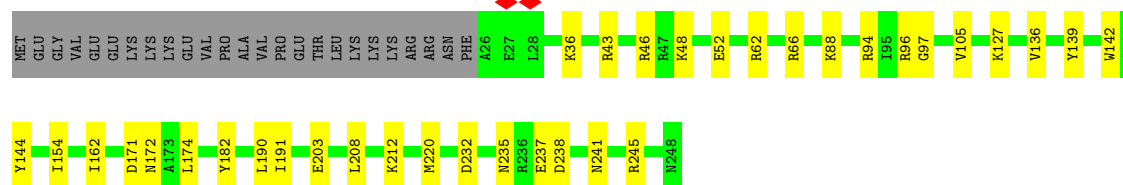
- Molecule 76: 60S ribosomal protein L15

Chain LH:  82% 17%



- Molecule 77: Large ribosomal subunit protein uL30

Chain LI:  76% 14% 10%



- Molecule 78: 60S ribosomal protein L7a

Chain LJ:  74% 10% 16%



Diagram illustrating the structure of the HLA-B*07:02 protein, showing the positions of various amino acids (residues) and the locations of polymerization interfaces (indicated by red diamonds).

The residues shown are: MET, ALA, GLN, ASP, GLN, GLY, GLU, R18, E28, L40, E41, S51, R54, Y55, T56, V57, R58, R63, R64, N65, A69, V70, H71, C72, T73, E84, Y92, R95, N98, F99, S100, D101, G108, E111, I123, D129, G135, K144, K145, R146, R147, A153, R156, K159, G172, L175, P176, G177, and LYS.

-

- [illegible]

- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| E208 | E223 | G244 | R247 | GLY | THR | LYS | THR | VAL | GLN | GLU | LYS | GLU | ASN | Met | G2 | Q8 | S14 | V15 | V20 | R23 | L29 | R30 | A31 | V32 | D33 | E36 | D47 | I49 | R54 | R72 | F76 | H83 | Q86 | V101 | L116 | E117 | E118 | R123 | G124 | R125 | L126 | A127 | R128 | N162 | R163 | A164 | V165 | R174 | I175 | P178 | I179 | L180 | R200 |
|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|

- [illegible]

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	11206	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOCONTINUUM (6k x 4k)	Depositor
Maximum map value	1.022	Depositor
Minimum map value	-0.502	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.051	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	596.4, 596.4, 596.4	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.065, 1.065, 1.065	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, PSU, MA6, 1MA, NMM, B8N, A2M, 6MZ, 4AC, OMC, G7M, HY3, 5MC, OMG, UR3, COA, ACE, GTP, UY1, IAS, OMU

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	L1	0.19	1/78858 (0.0%)	0.19	0/122991
2	Lc	0.16	0/2944	0.24	0/3954
3	Ld	0.14	0/2418	0.22	0/3239
4	Le	0.14	0/1786	0.25	0/2395
5	Lf	0.17	0/1666	0.23	0/2228
6	Lg	0.16	0/1259	0.24	0/1689
7	Lh	0.17	0/1537	0.25	0/2052
8	Li	0.14	0/1517	0.21	0/2005
9	Lj	0.16	0/1501	0.23	0/2013
10	Lk	0.16	0/1326	0.23	0/1770
11	Ll	0.16	0/847	0.29	0/1137
12	Lm	0.17	0/999	0.23	0/1340
13	Ln	0.13	0/1006	0.23	0/1334
14	Lo	0.15	0/993	0.21	0/1334
15	Lp	0.15	0/1132	0.24	0/1504
16	Lq	0.15	0/1130	0.22	0/1507
17	Lr	0.16	0/1191	0.24	0/1591
18	Ls	0.13	0/819	0.22	0/1081
19	Lt	0.15	0/783	0.21	0/1052
20	Lu	0.15	0/883	0.23	0/1190
21	Lv	0.17	0/1071	0.24	0/1429
22	Lw	0.17	0/901	0.24	0/1206
23	Lx	0.16	0/892	0.25	0/1189
24	Ly	0.14	0/1023	0.19	0/1351
25	Lz	0.12	0/843	0.20	0/1115
26	Na	0.10	0/844	0.23	0/1128
27	Nb	0.13	0/942	0.30	0/1264
28	Nd	0.10	0/1931	0.26	0/2589
29	Nm	0.10	0/3057	0.26	0/4144
30	S1	0.19	1/40280 (0.0%)	0.18	0/62782
31	S2	0.13	0/164	0.22	0/253

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	S3	0.12	0/1763	0.20	0/2742
33	SA	0.14	0/1711	0.25	0/2282
34	SB	0.13	0/1524	0.21	0/2035
35	SC	0.13	0/1539	0.27	0/2071
36	SD	0.15	0/1250	0.22	0/1673
37	SE	0.11	0/840	0.23	0/1133
38	SF	0.15	0/1226	0.24	0/1649
39	SG	0.15	0/1014	0.23	0/1358
40	SH	0.10	0/963	0.28	0/1291
41	Sa	0.12	0/1035	0.22	0/1383
42	Sb	0.31	0/1097	0.40	0/1474
43	Sc	0.13	0/1146	0.24	0/1534
44	Sd	0.14	0/1216	0.25	0/1630
45	Se	0.15	0/644	0.24	0/862
46	Sf	0.16	0/1051	0.25	0/1406
47	Sg	0.19	0/1107	0.26	0/1475
48	L2	0.16	0/2813	0.16	0/4384
49	Sh	0.12	0/1031	0.21	0/1370
50	Si	0.12	0/1130	0.22	0/1513
51	Sj	0.15	0/828	0.24	0/1109
52	Sk	0.13	0/664	0.26	0/891
53	Sl	0.13	0/813	0.26	0/1092
54	Sm	0.13	0/678	0.26	0/906
55	Sn	0.12	0/473	0.24	0/623
56	So	0.12	0/514	0.21	0/688
57	Sp	0.13	0/469	0.22	0/623
58	Sq	0.15	0/240	0.22	0/305
59	Sr	0.09	0/622	0.26	0/822
60	Ss	0.12	0/2497	0.27	0/3399
61	St	0.15	0/1785	0.25	0/2426
62	Su	0.14	0/1841	0.25	0/2459
63	Sv	0.15	0/1781	0.24	0/2405
64	Sw	0.13	0/2118	0.23	0/2849
65	Sx	0.13	0/1780	0.24	0/2397
66	Sy	0.11	0/1968	0.22	0/2619
67	Sz	0.13	0/1546	0.25	0/2071
68	L3	0.17	0/3453	0.16	0/5376
69	LA	0.17	0/732	0.25	0/968
70	LB	0.13	0/575	0.22	0/761
71	LC	0.17	0/454	0.22	0/599
72	LD	0.13	0/435	0.25	0/575
73	LE	0.14	0/876	0.23	0/1156
74	LF	0.16	0/726	0.25	0/963

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	LG	0.16	0/1007	0.23	0/1351
76	LH	0.18	0/1753	0.24	0/2348
77	LI	0.17	0/1885	0.23	0/2512
78	LJ	0.14	0/1840	0.23	0/2476
79	LK	0.15	0/1537	0.23	0/2066
80	LM	0.16	0/1755	0.26	0/2344
81	LN	0.17	0/327	0.34	0/441
82	LO	0.14	0/1381	0.28	0/1848
83	LP	0.15	0/1695	0.24	0/2270
84	LQ	0.14	0/1161	0.20	0/1554
85	La	0.17	0/1925	0.26	0/2581
86	Lb	0.16	0/3265	0.24	0/4369
All	All	0.17	2/228042 (0.0%)	0.21	0/333363

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
42	Sb	0	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
30	S1	1288	OMU	O3'-P	5.06	1.61	1.56
1	L1	3785	A2M	O3'-P	5.03	1.61	1.56

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
42	Sb	67	ARG	Sidechain

5.2 Too-close contacts

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

the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	L1	73061	0	37008	588	0
2	Lc	2890	0	3063	42	0
3	Ld	2372	0	2403	28	0
4	Le	1752	0	1904	21	0
5	Lf	1634	0	1779	13	0
6	Lg	1233	0	1263	13	0
7	Lh	1513	0	1628	16	0
8	Li	1501	0	1651	19	0
9	Lj	1461	0	1502	14	0
10	Lk	1298	0	1366	20	0
11	Ll	833	0	856	21	0
12	Lm	985	0	1044	16	0
13	Ln	991	0	1048	27	0
14	Lo	976	0	1053	10	0
15	Lp	1115	0	1205	24	0
16	Lq	1107	0	1182	17	0
17	Lr	1162	0	1213	11	0
18	Ls	806	0	865	13	0
19	Lt	772	0	808	10	0
20	Lu	868	0	913	6	0
21	Lv	1053	0	1147	18	0
22	Lw	879	0	917	10	0
23	Lx	882	0	972	13	0
24	Ly	1015	0	1148	14	0
25	Lz	832	0	917	7	0
26	Na	840	0	898	28	0
27	Nb	934	0	963	40	0
28	Nd	1890	0	1819	55	0
29	Nm	2984	0	2908	63	0
30	S1	37855	0	19186	432	0
31	S2	148	0	75	0	0
32	S3	1579	0	801	20	0
33	SA	1682	0	1769	25	0
34	SB	1499	0	1618	19	0
35	SC	1517	0	1569	18	0
36	SD	1229	0	1302	15	0
37	SE	816	0	841	10	0
38	SF	1202	0	1289	11	0
39	SG	1010	0	1033	14	0
40	SH	953	0	990	14	0
41	Sa	1016	0	1066	32	0
42	Sb	1082	0	1137	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	Sc	1128	0	1195	21	0
44	Sd	1200	0	1262	23	0
45	Se	639	0	638	13	0
46	Sf	1034	0	1080	17	0
47	Sg	1099	0	1162	11	0
48	L2	2518	0	1274	22	0
49	Sh	1014	0	1082	18	0
50	Si	1123	0	1152	15	0
51	Sj	814	0	863	11	0
52	Sk	650	0	672	9	0
53	Sl	803	0	873	17	0
54	Sm	670	0	745	11	0
55	Sn	467	0	516	8	0
56	So	512	0	541	13	0
57	Sp	458	0	448	8	0
58	Sq	239	0	289	8	0
59	Sr	610	0	634	17	0
60	Ss	2440	0	2396	51	0
61	St	1750	0	1755	28	0
62	Su	1815	0	1908	22	0
63	Sv	1741	0	1827	31	0
64	Sw	2076	0	2177	31	0
65	Sx	1752	0	1848	20	0
66	Sy	1945	0	2112	42	0
67	Sz	1523	0	1622	26	0
68	L3	3156	0	1602	20	0
69	LA	713	0	746	11	0
70	LB	569	0	637	6	0
71	LC	444	0	483	9	0
72	LD	429	0	465	8	0
73	LE	862	0	929	13	0
74	LF	716	0	768	9	0
75	LG	992	0	1052	8	0
76	LH	1708	0	1757	29	0
77	LI	1851	0	1981	26	0
78	LJ	1809	0	1941	21	0
79	LK	1518	0	1601	16	0
80	LM	1716	0	1765	23	0
81	LN	316	0	318	12	0
82	LO	1358	0	1388	18	0
83	LP	1664	0	1773	19	0
84	LQ	1138	0	1204	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
85	La	1887	0	1983	27	0
86	Lb	3194	0	3336	33	0
87	LA	1	0	0	0	0
87	LD	1	0	0	0	0
87	LE	1	0	0	0	0
87	LF	1	0	0	0	0
87	Lx	1	0	0	0	0
87	Nm	2	0	0	0	0
87	Sj	1	0	0	0	0
87	Sp	1	0	0	0	0
87	Sr	1	0	0	0	0
88	Nd	48	0	32	5	0
89	L2	32	0	11	1	0
All	All	217377	0	163962	2122	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 6.

The worst 5 of 2122 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L1:3642:A:HO2'	69:LA:2:THR:N	1.54	1.06
88:Nd:301:COA:HS1	81:LN:350:SER:N	1.59	0.97
42:Sb:71:ILE:HD11	42:Sb:73:LEU:HG	1.54	0.88
30:S1:1757:G:H1	30:S1:1775:U:H3	1.21	0.87
27:Nb:53:VAL:HG12	27:Nb:80:GLN:HB3	1.59	0.83

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	Lc	361/427 (84%)	351 (97%)	10 (3%)	0	100	100
3	Ld	290/297 (98%)	284 (98%)	6 (2%)	0	100	100
4	Le	212/288 (74%)	202 (95%)	10 (5%)	0	100	100
5	Lf	197/199 (99%)	195 (99%)	2 (1%)	0	100	100
6	Lg	150/184 (82%)	147 (98%)	3 (2%)	0	100	100
7	Lh	185/188 (98%)	182 (98%)	3 (2%)	0	100	100
8	Li	178/196 (91%)	177 (99%)	1 (1%)	0	100	100
9	Lj	174/176 (99%)	172 (99%)	2 (1%)	0	100	100
10	Lk	157/160 (98%)	154 (98%)	3 (2%)	0	100	100
11	Ll	100/128 (78%)	97 (97%)	3 (3%)	0	100	100
12	Lm	130/140 (93%)	127 (98%)	3 (2%)	0	100	100
13	Ln	119/157 (76%)	115 (97%)	4 (3%)	0	100	100
14	Lo	117/156 (75%)	116 (99%)	1 (1%)	0	100	100
15	Lp	132/145 (91%)	129 (98%)	3 (2%)	0	100	100
16	Lq	133/136 (98%)	130 (98%)	3 (2%)	0	100	100
17	Lr	145/148 (98%)	141 (97%)	4 (3%)	0	100	100
18	Ls	95/159 (60%)	94 (99%)	1 (1%)	0	100	100
19	Lt	98/115 (85%)	98 (100%)	0	0	100	100
20	Lu	104/125 (83%)	103 (99%)	1 (1%)	0	100	100
21	Lv	126/135 (93%)	124 (98%)	2 (2%)	0	100	100
22	Lw	108/110 (98%)	107 (99%)	1 (1%)	0	100	100
23	Lx	109/117 (93%)	107 (98%)	2 (2%)	0	100	100
24	Ly	120/123 (98%)	117 (98%)	3 (2%)	0	100	100
25	Lz	100/105 (95%)	94 (94%)	6 (6%)	0	100	100
26	Na	104/238 (44%)	100 (96%)	4 (4%)	0	100	100
27	Nb	116/162 (72%)	115 (99%)	1 (1%)	0	100	100
28	Nd	234/365 (64%)	226 (97%)	8 (3%)	0	100	100
29	Nm	378/386 (98%)	369 (98%)	8 (2%)	1 (0%)	37	67
33	SA	203/208 (98%)	198 (98%)	5 (2%)	0	100	100
34	SB	178/194 (92%)	174 (98%)	4 (2%)	0	100	100
35	SC	190/204 (93%)	183 (96%)	7 (4%)	0	100	100
36	SD	149/158 (94%)	145 (97%)	4 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
37	SE	95/165 (58%)	93 (98%)	2 (2%)	0	100	100
38	SF	147/151 (97%)	143 (97%)	4 (3%)	0	100	100
39	SG	131/151 (87%)	127 (97%)	4 (3%)	0	100	100
40	SH	121/132 (92%)	113 (93%)	8 (7%)	0	100	100
41	Sa	122/152 (80%)	117 (96%)	5 (4%)	0	100	100
42	Sb	132/135 (98%)	128 (97%)	4 (3%)	0	100	100
43	Sc	140/146 (96%)	136 (97%)	4 (3%)	0	100	100
44	Sd	144/152 (95%)	138 (96%)	6 (4%)	0	100	100
45	Se	82/84 (98%)	81 (99%)	1 (1%)	0	100	100
46	Sf	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
47	Sg	138/143 (96%)	136 (99%)	2 (1%)	0	100	100
49	Sh	122/131 (93%)	119 (98%)	3 (2%)	0	100	100
50	Si	141/145 (97%)	138 (98%)	3 (2%)	0	100	100
51	Sj	99/115 (86%)	97 (98%)	2 (2%)	0	100	100
52	Sk	81/84 (96%)	79 (98%)	2 (2%)	0	100	100
53	Sl	99/119 (83%)	95 (96%)	4 (4%)	0	100	100
54	Sm	81/125 (65%)	78 (96%)	3 (4%)	0	100	100
55	Sn	57/133 (43%)	54 (95%)	3 (5%)	0	100	100
56	So	63/69 (91%)	60 (95%)	3 (5%)	0	100	100
57	Sp	53/56 (95%)	52 (98%)	1 (2%)	0	100	100
58	Sq	23/25 (92%)	23 (100%)	0	0	100	100
59	Sr	72/156 (46%)	65 (90%)	7 (10%)	0	100	100
60	Ss	312/317 (98%)	295 (95%)	17 (5%)	0	100	100
61	St	221/295 (75%)	216 (98%)	5 (2%)	0	100	100
62	Su	220/264 (83%)	215 (98%)	5 (2%)	0	100	100
63	Sv	222/293 (76%)	218 (98%)	4 (2%)	0	100	100
64	Sw	260/263 (99%)	257 (99%)	3 (1%)	0	100	100
65	Sx	223/243 (92%)	214 (96%)	8 (4%)	1 (0%)	30	62
66	Sy	238/249 (96%)	234 (98%)	4 (2%)	0	100	100
67	Sz	187/194 (96%)	184 (98%)	3 (2%)	0	100	100
69	LA	85/97 (88%)	85 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
70	LB	67/70 (96%)	66 (98%)	1 (2%)	0	100	100
71	LC	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
72	LD	50/99 (50%)	50 (100%)	0	0	100	100
73	LE	103/106 (97%)	100 (97%)	3 (3%)	0	100	100
74	LF	90/92 (98%)	87 (97%)	3 (3%)	0	100	100
75	LG	122/137 (89%)	119 (98%)	3 (2%)	0	100	100
76	LH	202/204 (99%)	196 (97%)	6 (3%)	0	100	100
77	LI	221/248 (89%)	214 (97%)	7 (3%)	0	100	100
78	LJ	219/266 (82%)	213 (97%)	6 (3%)	0	100	100
79	LK	188/192 (98%)	187 (100%)	1 (0%)	0	100	100
80	LM	211/214 (99%)	203 (96%)	7 (3%)	1 (0%)	25	59
81	LN	35/414 (8%)	32 (91%)	3 (9%)	0	100	100
82	LO	168/178 (94%)	165 (98%)	3 (2%)	0	100	100
83	LP	204/211 (97%)	200 (98%)	4 (2%)	0	100	100
84	LQ	137/215 (64%)	135 (98%)	2 (2%)	0	100	100
85	La	244/257 (95%)	229 (94%)	15 (6%)	0	100	100
86	Lb	394/403 (98%)	385 (98%)	9 (2%)	0	100	100
All	All	12133/14300 (85%)	11816 (97%)	314 (3%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
29	Nm	297	HIS
65	Sx	42	THR
80	LM	103	LEU

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	
2	Lc	302/348 (87%)	301 (100%)	1 (0%)	91	96
3	Ld	245/250 (98%)	243 (99%)	2 (1%)	79	89
4	Le	193/252 (77%)	192 (100%)	1 (0%)	86	93
5	Lf	171/171 (100%)	170 (99%)	1 (1%)	84	92
6	Lg	133/163 (82%)	133 (100%)	0	100	100
7	Lh	164/165 (99%)	162 (99%)	2 (1%)	67	83
8	Li	157/175 (90%)	156 (99%)	1 (1%)	84	92
9	Lj	157/157 (100%)	157 (100%)	0	100	100
10	Lk	139/140 (99%)	137 (99%)	2 (1%)	62	80
11	Ll	92/115 (80%)	89 (97%)	3 (3%)	33	61
12	Lm	102/107 (95%)	101 (99%)	1 (1%)	73	85
13	Ln	100/126 (79%)	98 (98%)	2 (2%)	50	72
14	Lo	107/133 (80%)	105 (98%)	2 (2%)	52	73
15	Lp	124/135 (92%)	123 (99%)	1 (1%)	79	89
16	Lq	117/118 (99%)	116 (99%)	1 (1%)	75	87
17	Lr	120/121 (99%)	120 (100%)	0	100	100
18	Ls	82/126 (65%)	82 (100%)	0	100	100
19	Lt	84/97 (87%)	83 (99%)	1 (1%)	67	83
20	Lu	93/110 (84%)	93 (100%)	0	100	100
21	Lv	114/121 (94%)	114 (100%)	0	100	100
22	Lw	89/89 (100%)	89 (100%)	0	100	100
23	Lx	95/100 (95%)	95 (100%)	0	100	100
24	Ly	109/110 (99%)	109 (100%)	0	100	100
25	Lz	86/89 (97%)	85 (99%)	1 (1%)	67	83
26	Na	95/202 (47%)	94 (99%)	1 (1%)	70	84
27	Nb	104/136 (76%)	99 (95%)	5 (5%)	21	51
28	Nd	200/314 (64%)	198 (99%)	2 (1%)	73	85
29	Nm	326/330 (99%)	323 (99%)	3 (1%)	75	87
33	SA	178/180 (99%)	177 (99%)	1 (1%)	84	92
34	SB	160/168 (95%)	160 (100%)	0	100	100
35	SC	162/170 (95%)	160 (99%)	2 (1%)	67	83
36	SD	135/142 (95%)	134 (99%)	1 (1%)	81	90

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	SE	88/136 (65%)	87 (99%)	1 (1%)	70	84
38	SF	130/131 (99%)	129 (99%)	1 (1%)	79	89
39	SG	104/118 (88%)	101 (97%)	3 (3%)	37	64
40	SH	104/108 (96%)	98 (94%)	6 (6%)	17	45
41	Sa	110/134 (82%)	110 (100%)	0	100	100
42	Sb	121/122 (99%)	119 (98%)	2 (2%)	56	76
43	Sc	117/121 (97%)	117 (100%)	0	100	100
44	Sd	126/131 (96%)	123 (98%)	3 (2%)	44	68
45	Se	67/67 (100%)	66 (98%)	1 (2%)	60	78
46	Sf	112/113 (99%)	111 (99%)	1 (1%)	75	87
47	Sg	112/114 (98%)	112 (100%)	0	100	100
49	Sh	108/113 (96%)	108 (100%)	0	100	100
50	Si	113/114 (99%)	111 (98%)	2 (2%)	54	74
51	Sj	88/98 (90%)	86 (98%)	2 (2%)	45	69
52	Sk	75/76 (99%)	73 (97%)	2 (3%)	40	65
53	Sl	93/107 (87%)	92 (99%)	1 (1%)	70	84
54	Sm	74/103 (72%)	73 (99%)	1 (1%)	62	80
55	Sn	48/104 (46%)	48 (100%)	0	100	100
56	So	58/62 (94%)	57 (98%)	1 (2%)	56	76
57	Sp	48/49 (98%)	48 (100%)	0	100	100
58	Sq	24/24 (100%)	24 (100%)	0	100	100
59	Sr	67/140 (48%)	67 (100%)	0	100	100
60	Ss	272/275 (99%)	264 (97%)	8 (3%)	37	64
61	St	184/242 (76%)	182 (99%)	2 (1%)	70	84
62	Su	203/231 (88%)	202 (100%)	1 (0%)	86	93
63	Sv	190/225 (84%)	189 (100%)	1 (0%)	86	93
64	Sw	224/225 (100%)	220 (98%)	4 (2%)	54	74
65	Sx	189/202 (94%)	186 (98%)	3 (2%)	58	77
66	Sy	209/218 (96%)	207 (99%)	2 (1%)	73	85
67	Sz	169/174 (97%)	165 (98%)	4 (2%)	44	68
69	LA	74/80 (92%)	74 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
70	LB	64/65 (98%)	63 (98%)	1 (2%)	58	77
71	LC	47/48 (98%)	45 (96%)	2 (4%)	25	54
72	LD	48/91 (53%)	48 (100%)	0	100	100
73	LE	93/94 (99%)	92 (99%)	1 (1%)	70	84
74	LF	75/75 (100%)	73 (97%)	2 (3%)	40	65
75	LG	107/121 (88%)	107 (100%)	0	100	100
76	LH	172/172 (100%)	172 (100%)	0	100	100
77	LI	192/215 (89%)	192 (100%)	0	100	100
78	LJ	193/223 (86%)	192 (100%)	1 (0%)	86	93
79	LK	169/171 (99%)	169 (100%)	0	100	100
80	LM	180/181 (99%)	179 (99%)	1 (1%)	84	92
81	LN	33/336 (10%)	30 (91%)	3 (9%)	7	31
82	LO	142/149 (95%)	141 (99%)	1 (1%)	81	90
83	LP	172/177 (97%)	172 (100%)	0	100	100
84	LQ	118/161 (73%)	118 (100%)	0	100	100
85	La	189/199 (95%)	186 (98%)	3 (2%)	58	77
86	Lb	345/349 (99%)	343 (99%)	2 (1%)	84	92
All	All	10575/12144 (87%)	10469 (99%)	106 (1%)	71	85

5 of 106 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
51	Sj	21	ILE
60	Ss	309	VAL
81	LN	384	ARG
52	Sk	3	LEU
60	Ss	94	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 144 such sidechains are listed below:

Mol	Chain	Res	Type
71	LC	33	ASN
86	Lb	289	GLN
74	LF	33	GLN
79	LK	98	HIS

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Mol	Chain	Res	Type
29	Nm	356	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	L1	3376/5070 (66%)	462 (13%)	5 (0%)
30	S1	1765/1869 (94%)	255 (14%)	0
31	S2	6/1824 (0%)	0	0
32	S3	72/76 (94%)	9 (12%)	0
48	L2	117/121 (96%)	9 (7%)	0
68	L3	145/157 (92%)	16 (11%)	0
All	All	5481/9117 (60%)	751 (13%)	5 (0%)

5 of 751 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	L1	6	C
1	L1	13	U
1	L1	25	A
1	L1	30	C
1	L1	39	A

All (5) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	L1	486	C
1	L1	964	A
1	L1	1365	C
1	L1	1633	G
1	L1	2091	C

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

212 non-standard protein/DNA/RNA residues are modelled in this entry.

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.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 10 are monoatomic - leaving 2 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

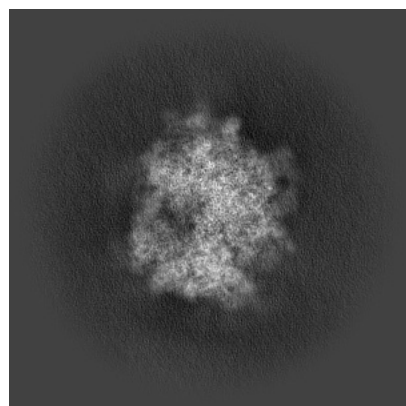
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-55351. These allow visual inspection of the internal detail of the map and identification of artifacts.

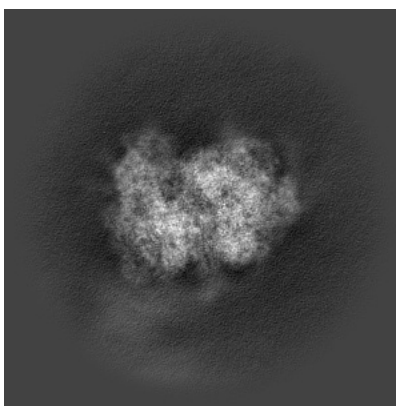
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

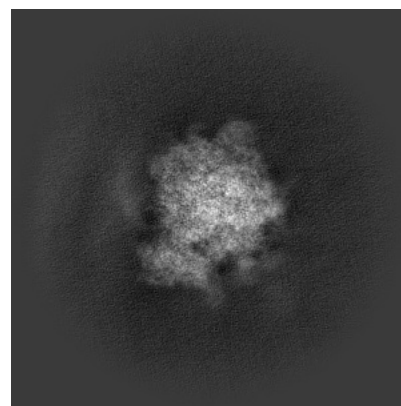
6.1.1 Primary map



X

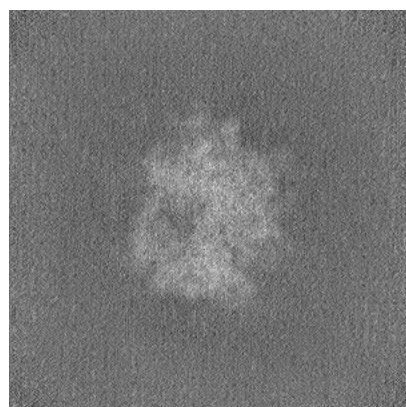


Y

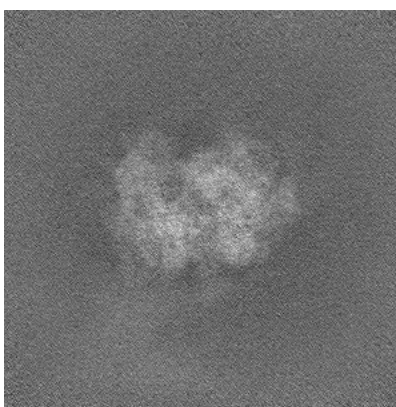


Z

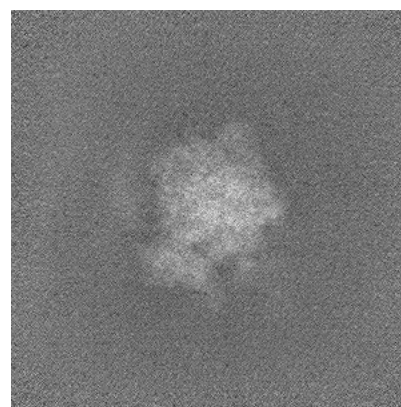
6.1.2 Raw map



X



Y

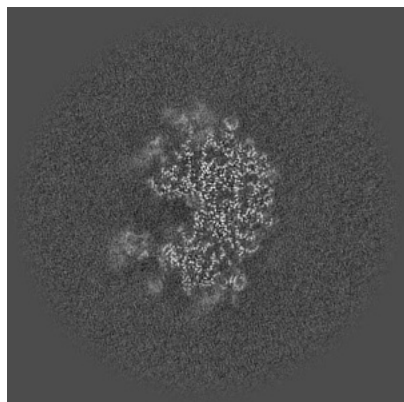


Z

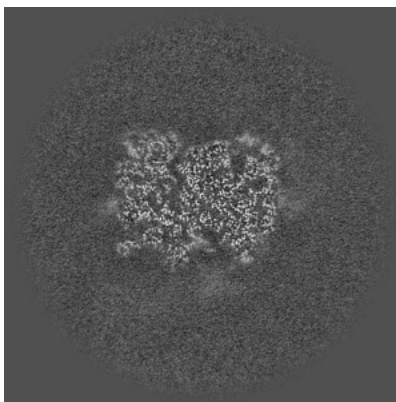
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

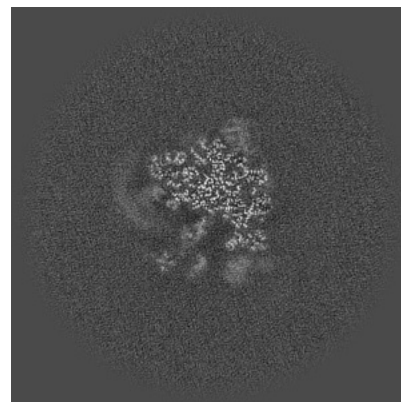
6.2.1 Primary map



X Index: 280

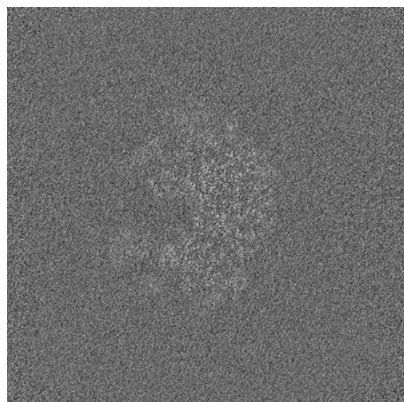


Y Index: 280

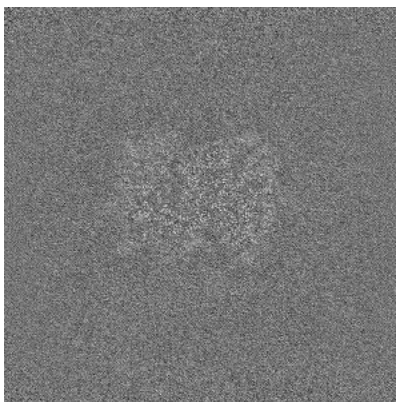


Z Index: 280

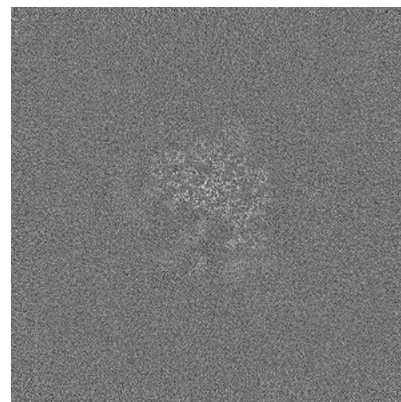
6.2.2 Raw map



X Index: 280



Y Index: 280

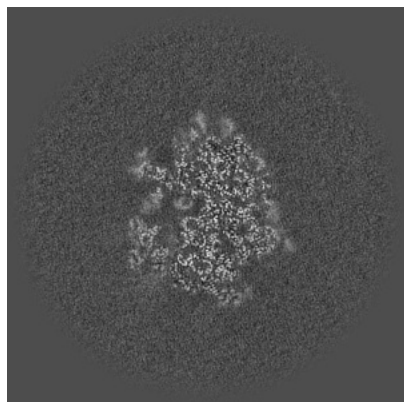


Z Index: 280

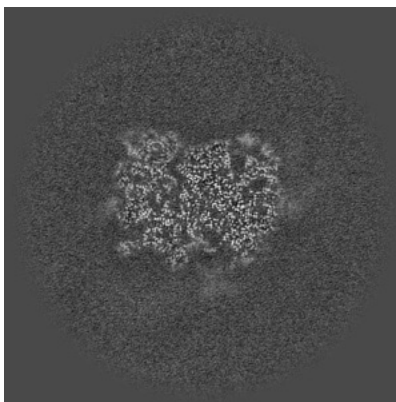
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

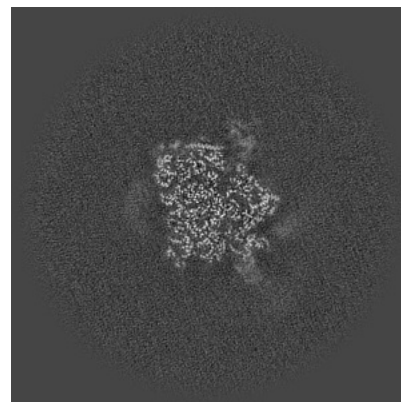
6.3.1 Primary map



X Index: 263

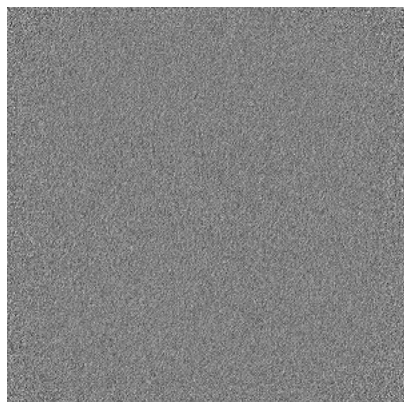


Y Index: 281

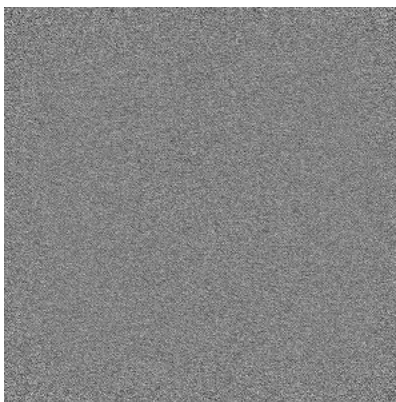


Z Index: 309

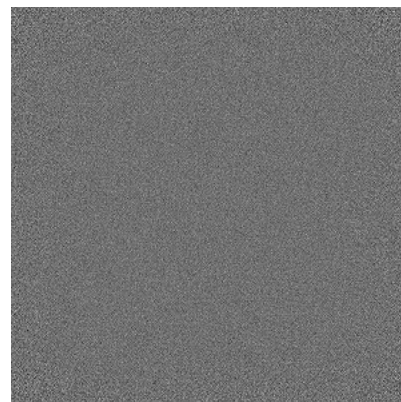
6.3.2 Raw map



X Index: 0



Y Index: 0

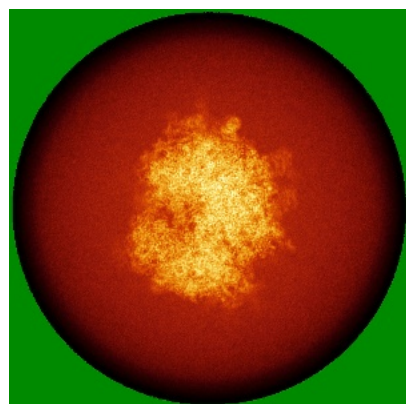


Z Index: 0

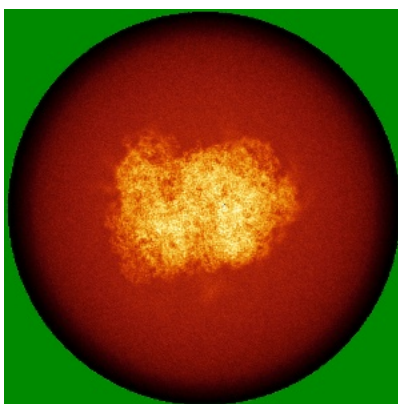
The images above show the largest variance slices of the map in three orthogonal directions.

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

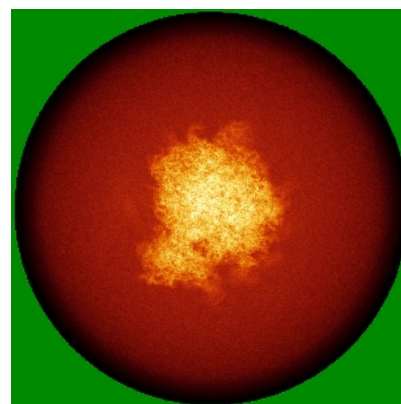
6.4.1 Primary map



X

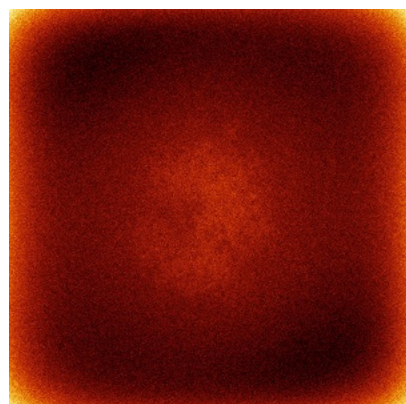


Y

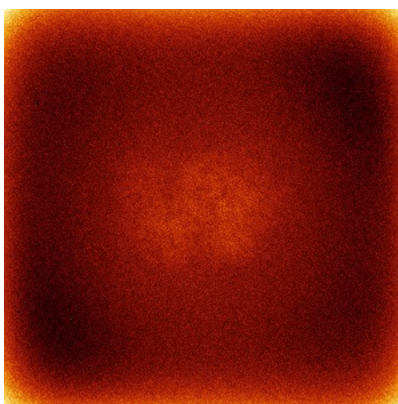


Z

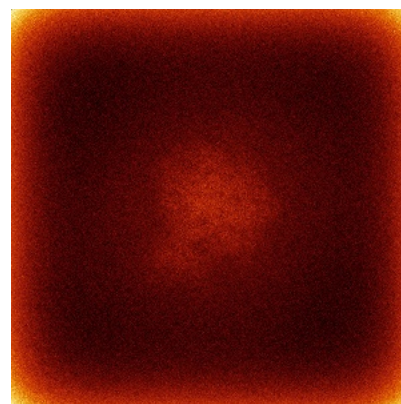
6.4.2 Raw map



X



Y

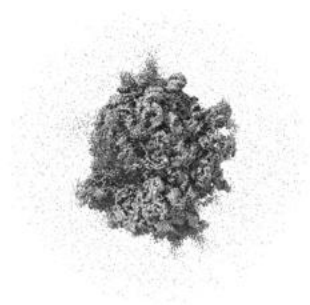


Z

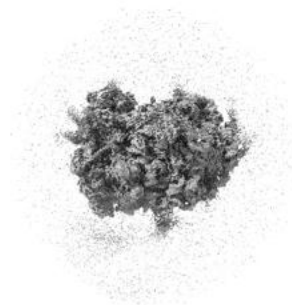
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

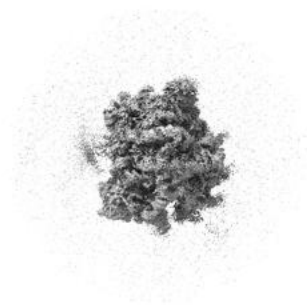
6.5.1 Primary map



X



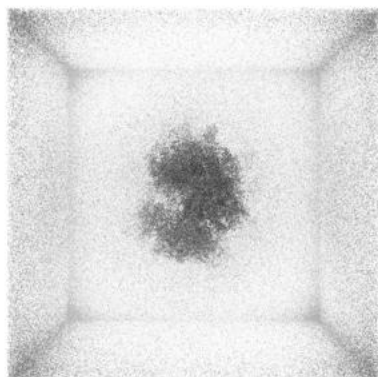
Y



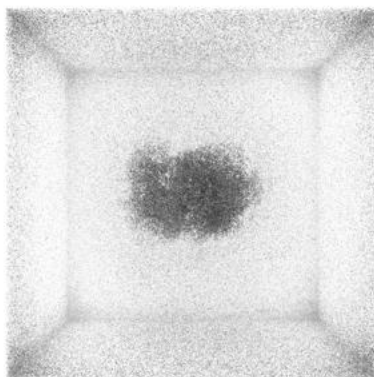
Z

The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

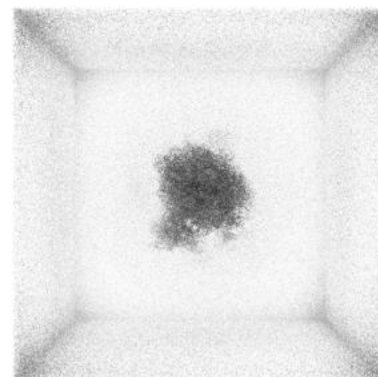
6.5.2 Raw map



X



Y



Z

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

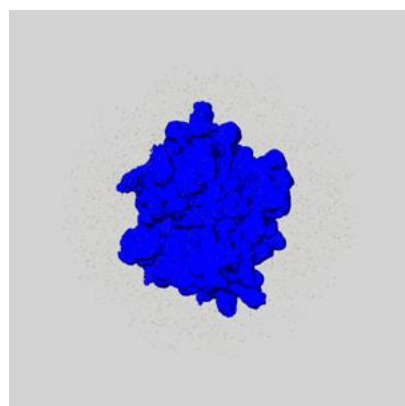
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

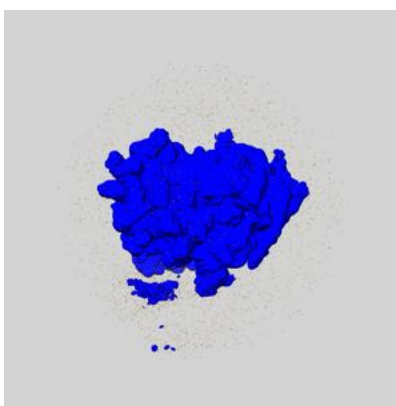
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

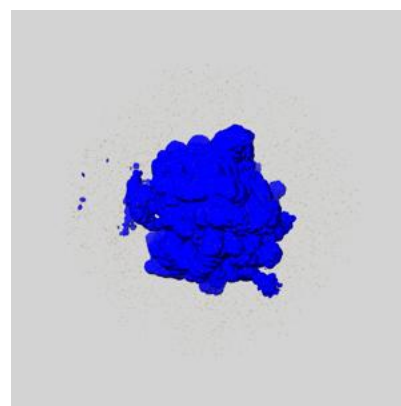
6.6.1 emd_55351_msk_1.map [i](#)



X



Y

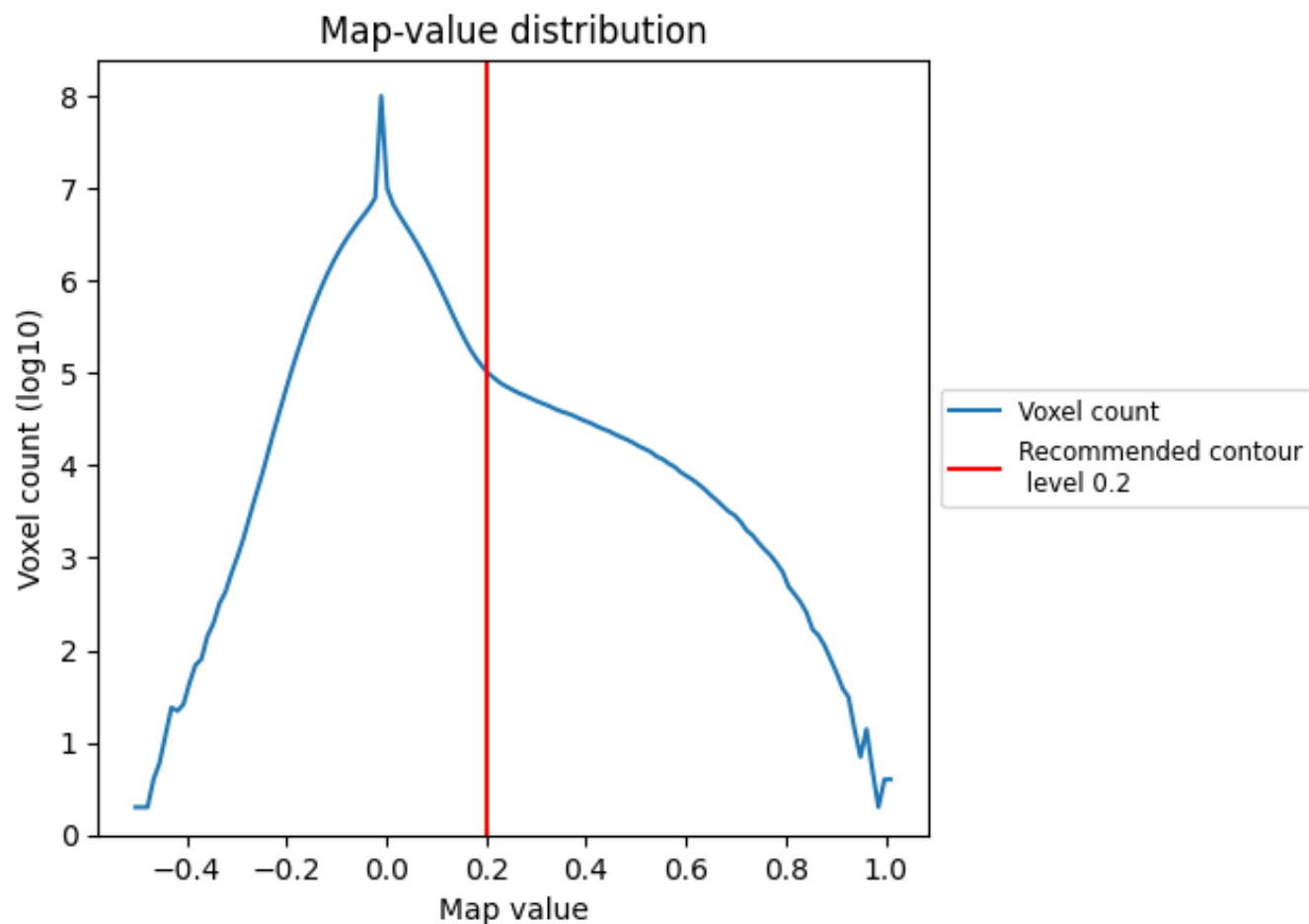


Z

7 Map analysis [i](#)

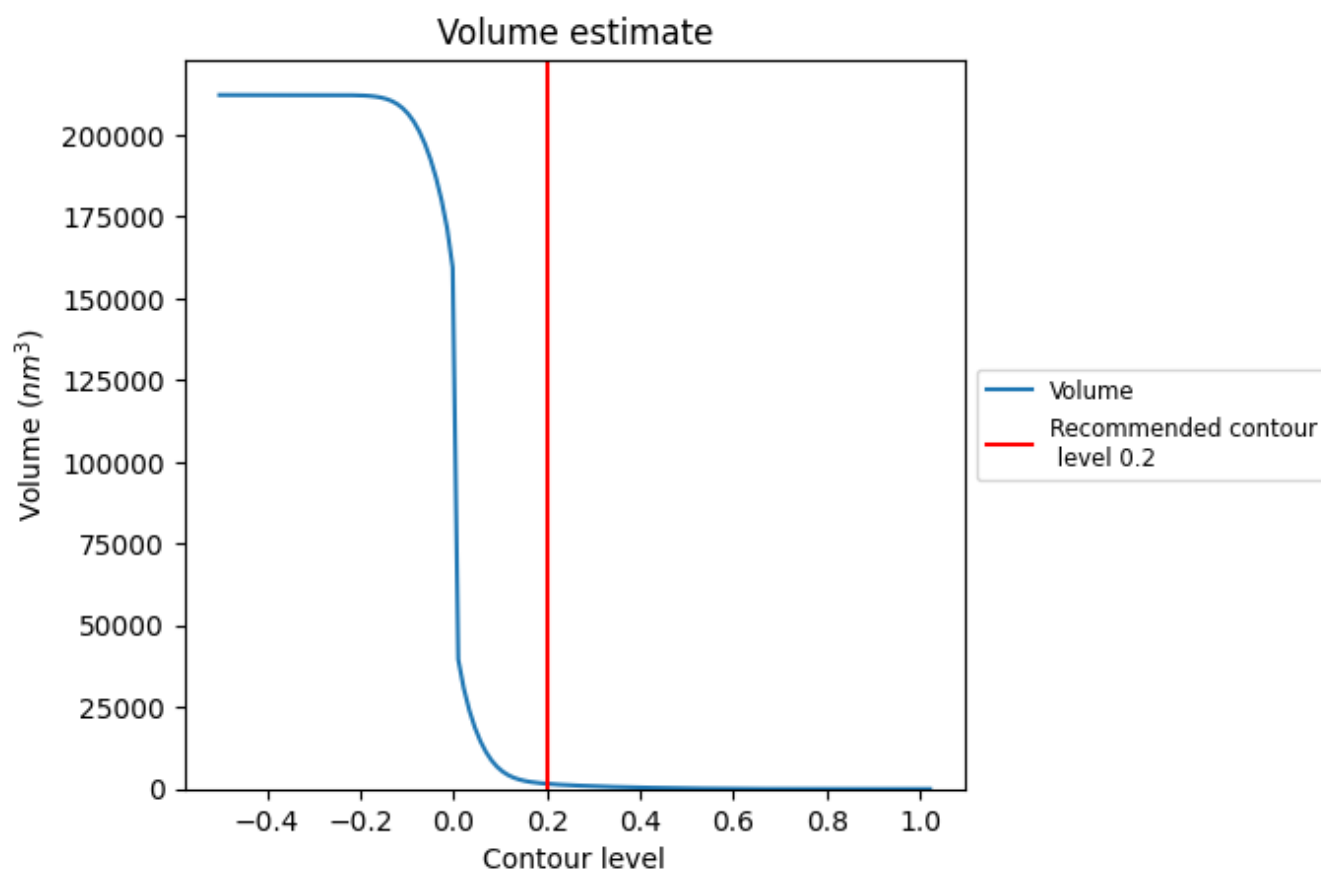
This section contains the results of statistical analysis of the map.

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.

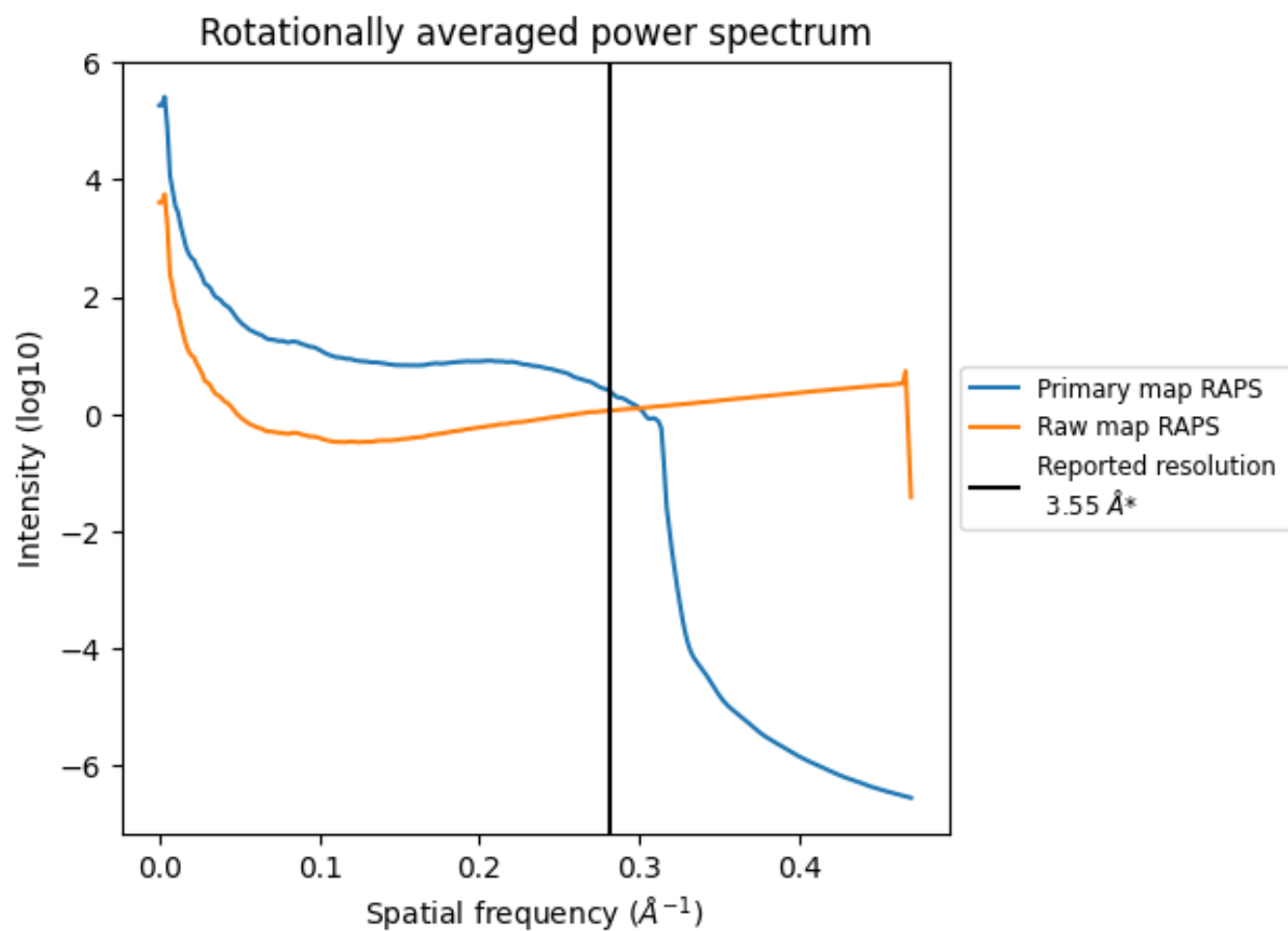
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1583 nm³; this corresponds to an approximate mass of 1430 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 ⓘ

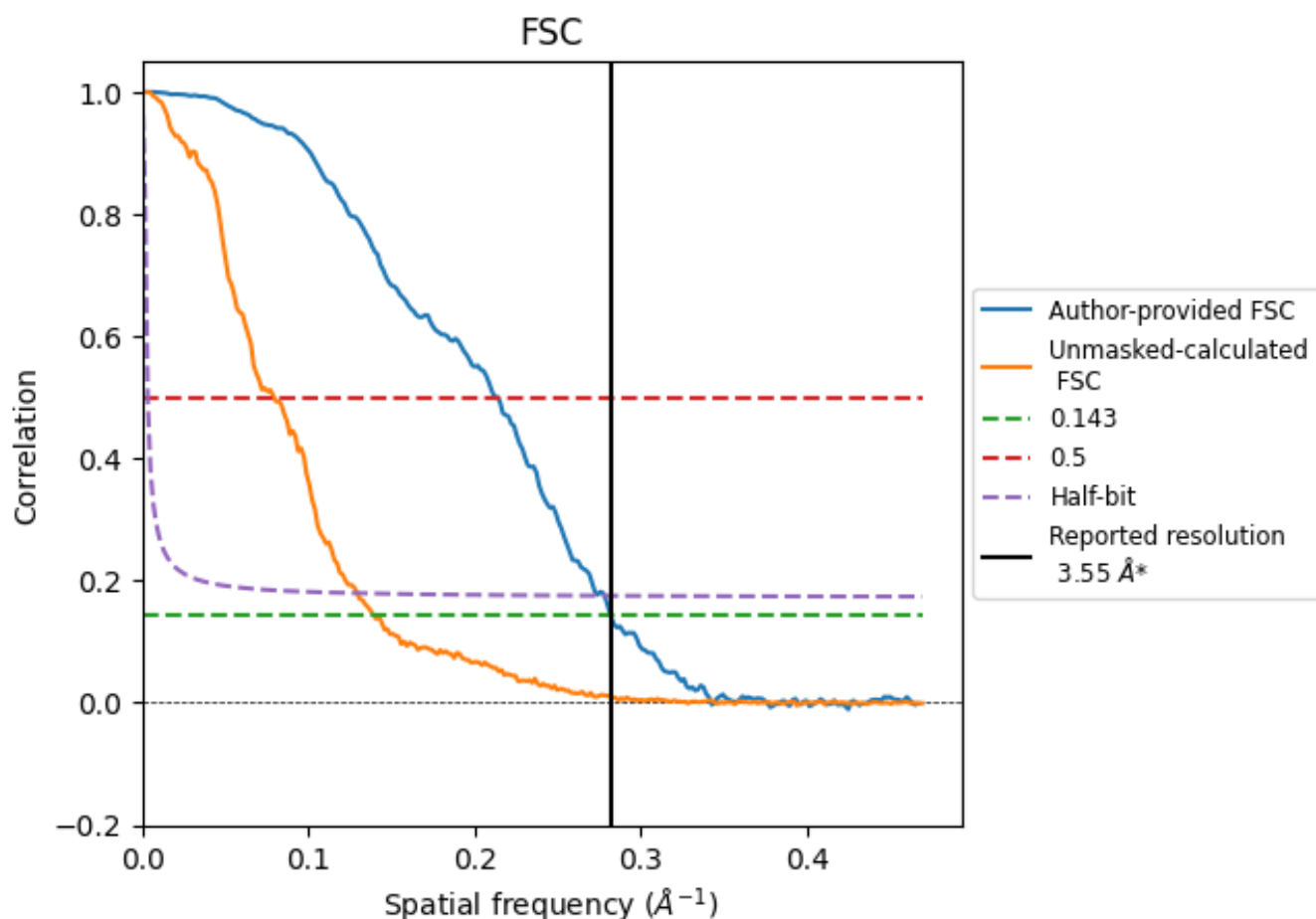


*Reported resolution corresponds to spatial frequency of 0.282 $\text{\AA}^{-1}$

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 0.282 Å⁻¹

8.2 Resolution estimates [i](#)

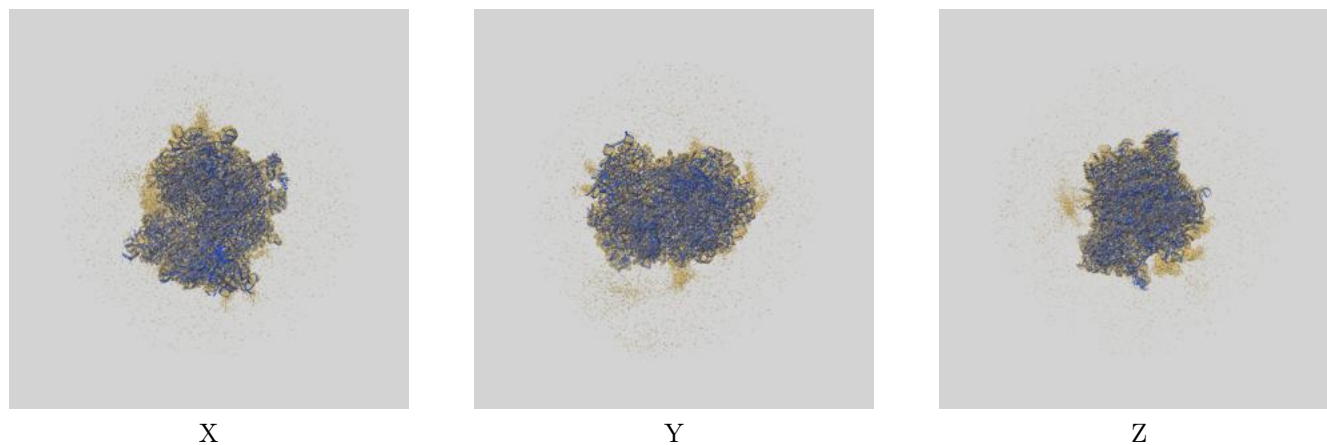
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.55	-	-
Author-provided FSC curve	3.55	4.68	3.60
Unmasked-calculated*	7.17	12.59	7.72

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 7.17 differs from the reported value 3.55 by more than 10 %

9 Map-model fit [i](#)

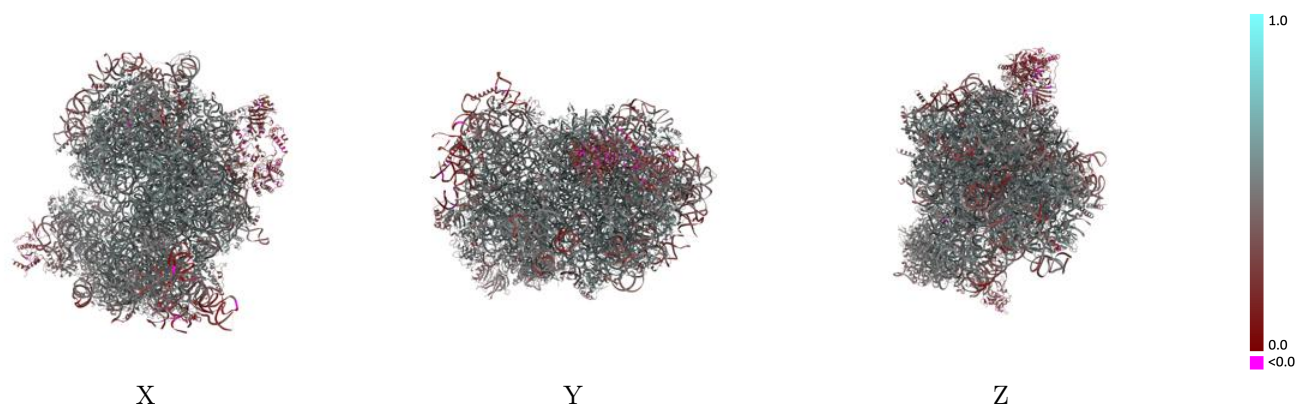
This section contains information regarding the fit between EMDB map EMD-55351 and PDB model 9SYR. Per-residue inclusion information can be found in section [3](#) on page [24](#).

9.1 Map-model overlay [i](#)



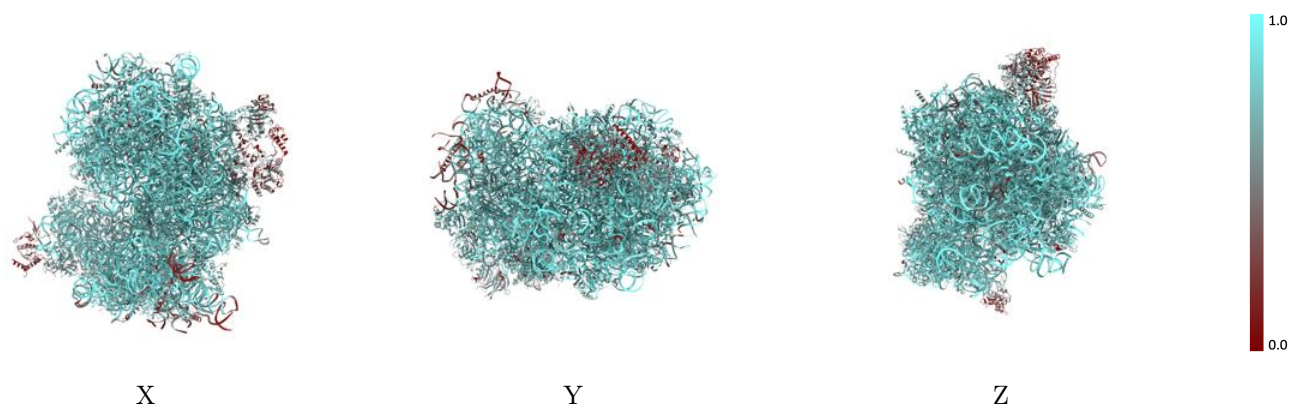
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



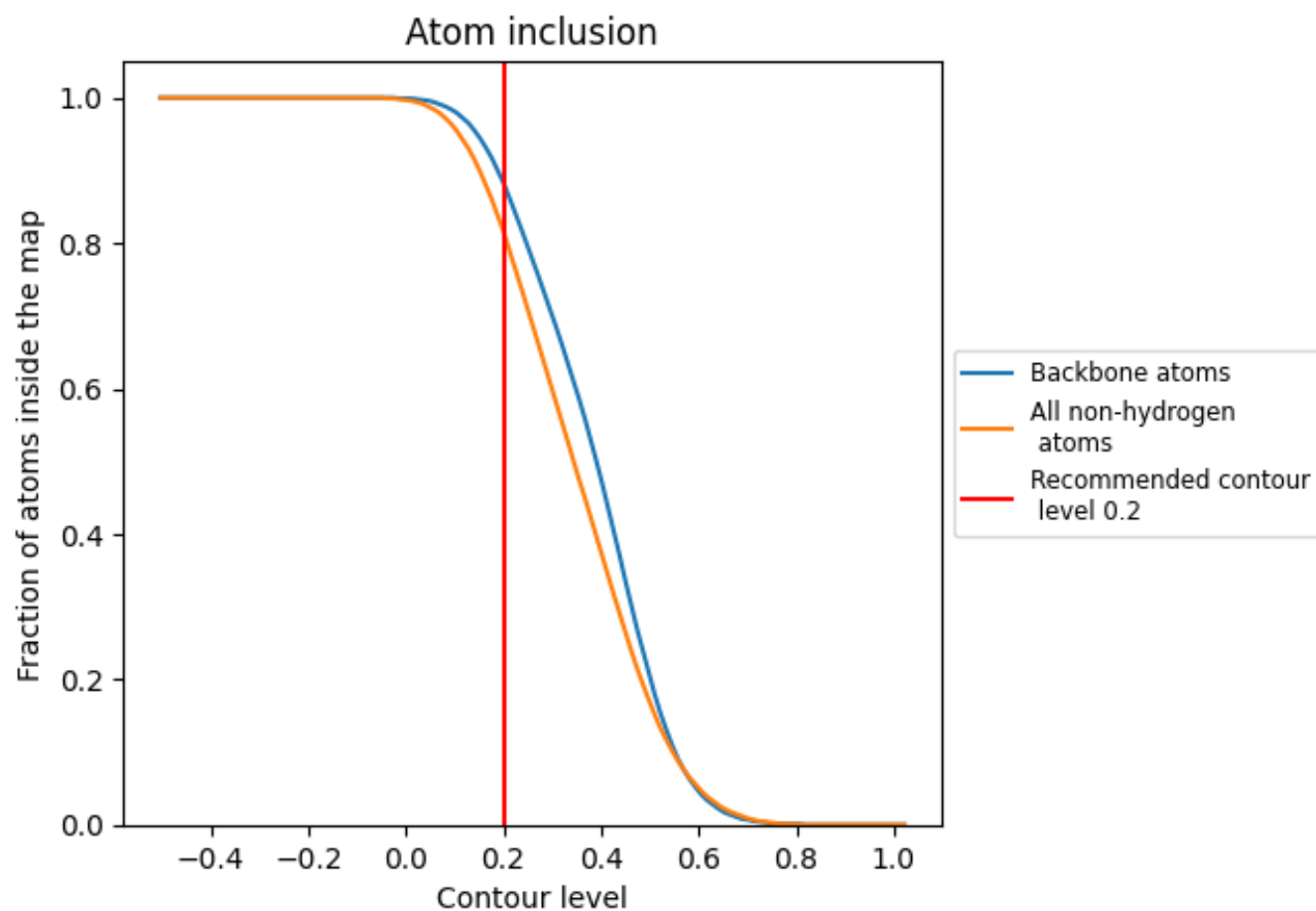
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.2).

9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 82% 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 (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8160	 0.4720
L1	 0.9060	 0.4830
L2	 0.9670	 0.5050
L3	 0.9360	 0.5010
LA	 0.8500	 0.5430
LB	 0.6910	 0.4550
LC	 0.7940	 0.5330
LD	 0.7430	 0.5020
LE	 0.7850	 0.5190
LF	 0.7660	 0.5290
LG	 0.8310	 0.5190
LH	 0.8310	 0.5440
LI	 0.7960	 0.5150
LJ	 0.7770	 0.4900
LK	 0.7810	 0.4970
LM	 0.7720	 0.5060
LN	 0.5020	 0.4660
LO	 0.7750	 0.4880
LP	 0.7820	 0.5020
LQ	 0.7940	 0.4970
La	 0.8120	 0.5470
Lb	 0.8190	 0.5300
Lc	 0.8090	 0.5200
Ld	 0.8180	 0.4890
Le	 0.7870	 0.4910
Lf	 0.7960	 0.5190
Lg	 0.8090	 0.5370
Lh	 0.8030	 0.5340
Li	 0.7860	 0.5010
Lj	 0.8200	 0.5230
Lk	 0.7930	 0.5210
Ll	 0.7770	 0.4660
Lm	 0.7870	 0.5330
Ln	 0.5520	 0.4130
Lo	 0.7430	 0.5010



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Chain	Atom inclusion	Q-score
Lp	 0.7810	 0.4970
Lq	 0.8190	 0.5060
Lr	 0.8320	 0.5330
Ls	 0.7280	 0.4590
Lt	 0.7750	 0.5050
Lu	 0.8040	 0.5150
Lv	 0.8230	 0.5360
Lw	 0.8430	 0.5450
Lx	 0.7780	 0.5070
Ly	 0.7610	 0.4870
Lz	 0.7420	 0.4850
Na	 0.3420	 0.2330
Nb	 0.4100	 0.3030
Nd	 0.5310	 0.2690
Nm	 0.2760	 0.2020
S1	 0.8600	 0.4510
S2	 0.7970	 0.4790
S3	 0.8440	 0.4410
SA	 0.7440	 0.4820
SB	 0.7920	 0.4890
SC	 0.6920	 0.4730
SD	 0.7330	 0.4960
SE	 0.6510	 0.4190
SF	 0.7620	 0.5000
SG	 0.7250	 0.4980
SH	 0.1900	 0.2180
Sa	 0.7070	 0.4560
Sb	 0.6960	 0.4570
Sc	 0.7120	 0.4790
Sd	 0.7570	 0.4630
Se	 0.7550	 0.5010
Sf	 0.7880	 0.5250
Sg	 0.7970	 0.5230
Sh	 0.7520	 0.4540
Si	 0.7230	 0.4580
Sj	 0.7670	 0.5020
Sk	 0.6940	 0.4560
Sl	 0.6730	 0.4370
Sm	 0.6380	 0.4370
Sn	 0.6330	 0.4490
So	 0.6670	 0.4770
Sp	 0.7260	 0.4670

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Chain	Atom inclusion	Q-score
Sq	 0.6420	 0.5000
Sr	 0.0660	 0.2120
Ss	 0.6010	 0.3930
St	 0.7550	 0.4800
Su	 0.7020	 0.4870
Sv	 0.7560	 0.5060
Sw	 0.7570	 0.4950
Sx	 0.6520	 0.4520
Sy	 0.6760	 0.4170
Sz	 0.6610	 0.4250