



wwPDB EM Validation Summary Report ⓘ

Nov 21, 2022 – 02:25 PM EST

PDB ID : 8ETI
EMDB ID : EMD-24395
Title : Fkbp39 associated 60S nascent ribosome State 1
Authors : Zhou, X.; Bilokapic, S.; Deshmukh, A.A.; Halic, M.
Deposited on : 2022-10-17
Resolution : 3.70 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:

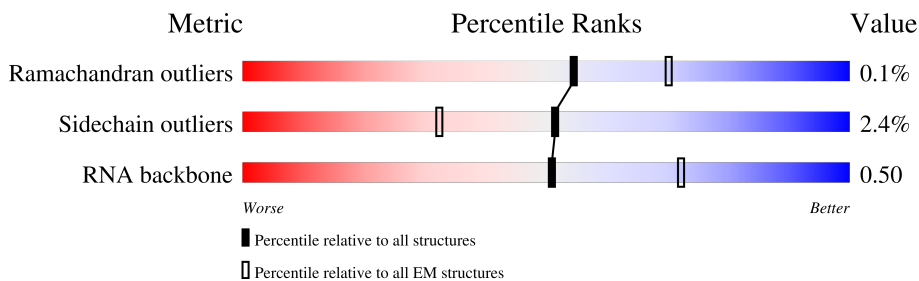
EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

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 3.70 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	1	3497	
2	2	165	
3	3	302	
4	4	217	
5	5	387	
6	6	300	
7	A	295	
8	B	388	



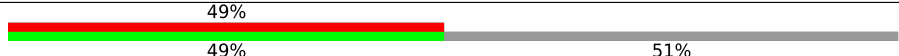

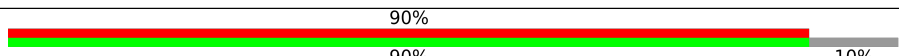
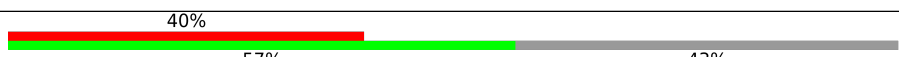

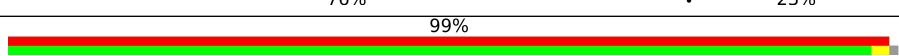
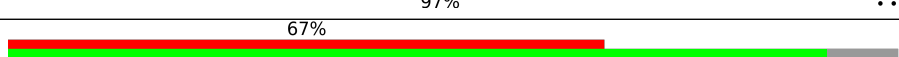
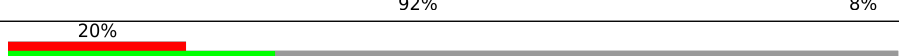
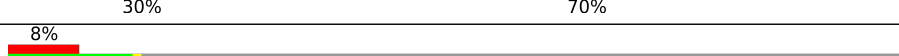
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Mol	Chain	Length	Quality of chain
9	C	363	89% 10%
10	D	578	67% 32%
11	E	195	38% 84% 13%
12	F	250	14% 95%
13	G	259	41% 70% 28%
14	H	190	43% 96%
15	J	333	34% 66%
16	K	373	64% 64% 36%
17	L	208	6% 55% 45%
18	M	134	16% 90% 7%
19	N	201	10% 82% 17%
20	O	197	12% 97%
21	P	187	43% 77% 21%
22	Q	187	9% 72% 27%
23	S	176	12% 90% 5% 5%
24	V	139	73% 91% 9%
25	W	241	58% 72% 28%
26	X	141	32% 87% 13%
27	Y	126	6% 98%
28	b	642	48% 61% 39%
29	d	113	48% 86% 14%
30	e	127	10% 96%
31	f	108	6% 94%
32	h	122	11% 96%
33	i	99	36% 84% 14%

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Mol	Chain	Length	Quality of chain
34	j	91	 76% 22%
35	m	740	 16% 84% 16%
36	n	607	 61% 60% 39%
37	o	276	 49% 49% 51%
38	r	260	 51% 64% 36%
39	t	249	 90% 90% 10%
40	u	192	 40% 57% 43%
41	v	209	 75% 76% 23%
42	x	306	 99% 97%
43	y	244	 67% 92% 8%
44	z	117	 20% 30% 70%
45	T	160	 8% 14% 86%

2 Entry composition [i](#)

There are 46 unique types of molecules in this entry. The entry contains 90456 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 RNA (1564-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	1579	33816	15104	6144	10989	1579	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	501	G	U	conflict	GB 157310483
1	503	U	G	conflict	GB 157310483
1	2930	U	C	conflict	GB 157310483

- Molecule 2 is a RNA chain called RNA (152-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	152	3229	1445	568	1064	152	0	0

- Molecule 3 is a protein called Protein mak16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	3	190	1576	999	299	272	6	0	0

- Molecule 4 is a protein called Ribosomal RNA-processing protein 1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	4	209	1762	1149	301	304	8	0	0

- Molecule 5 is a protein called Ribosome biogenesis protein nsal.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	5	340	2686	1716	468	491	11	0	0

- Molecule 6 is a RNA chain called RNA (125-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	6	81	1717	770	296	570	81	0	0

- Molecule 7 is a protein called Ribosome biogenesis protein brx1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	A	254	1427	856	285	285	1	0	0

- Molecule 8 is a protein called 60S ribosomal protein L3-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	B	332	2641	1676	488	468	9	0	0

- Molecule 9 is a protein called 60S ribosomal protein L4-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	C	328	2571	1631	486	450	4	0	0

- Molecule 10 is a protein called ATP-dependent RNA helicase has1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
10	D	391	1931	1149	391	391	0	0

- Molecule 11 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	E	170	1328	854	243	228	3	0	0

- Molecule 12 is a protein called 60S ribosomal protein L7-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	F	239	1939	1247	355	334	3	0	0

- Molecule 13 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	G	186	1464	938	264	260	2	0	0

- Molecule 14 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
14	H	183	902	536	183	183	0	0

- Molecule 15 is a protein called Probable rRNA-processing protein ebp2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
15	J	113	564	338	113	113	0	0

- Molecule 16 is a protein called Putative ribosome biogenesis protein C8F11.04.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
16	K	240	1190	710	240	240	0	0

- Molecule 17 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	L	115	938	590	197	150	1	0	0

- Molecule 18 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	M	125	1007	644	191	168	4	0	0

- Molecule 19 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	N	166	1401	877	291	230	3	0	0

- Molecule 20 is a protein called 60S ribosomal protein L16-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	O	196	Total	C	N	O	S	0	0
			1557	999	297	257	4		

- Molecule 21 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	P	147	Total	C	N	O	S	0	0
			1154	733	209	209	3		

- Molecule 22 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Q	136	Total	C	N	O	S	0	0
			1057	664	205	187	1		

- Molecule 23 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	S	167	Total	C	N	O	S	0	0
			1395	900	262	228	5		

- Molecule 24 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	V	127	Total	C	N	O	0	0
			624	369	127	128		

- Molecule 25 is a protein called Ribosome assembly factor mrt4.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	W	173	Total	C	N	O	0	0
			850	504	173	173		

- Molecule 26 is a protein called 60S ribosomal protein L25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	X	122	Total	C	N	O	0	0
			750	457	153	140		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	Y	125	998	622	201	173	2	0	0

- Molecule 28 is a protein called Probable nucleolar GTP-binding protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
28	b	391	1939	1157	391	391	0	0

- Molecule 29 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
29	d	97	483	289	97	97	0	0

- Molecule 30 is a protein called 60S ribosomal protein L32-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	e	123	986	616	201	164	5	0	0

- Molecule 31 is a protein called 60S ribosomal protein L33-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	f	106	839	534	162	140	3	0	0

- Molecule 32 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
32	h	120	994	626	193	175	0	0

- Molecule 33 is a protein called 60S ribosomal protein L36-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	i	85	696	431	148	116	1	0	0

- Molecule 34 is a protein called 60S ribosomal protein L37-B.

Mol	Chain	Residues	Atoms				AltConf	Trace	
34	j	71	Total	C	N	O	S	0	0
			563	346	121	90	6		

- Molecule 35 is a protein called Ribosome biogenesis protein erb1.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	m	121	Total	C	N	O	0	0
			859	529	163	167		

- Molecule 36 is a protein called Pescadillo homolog.

Mol	Chain	Residues	Atoms				AltConf	Trace	
36	n	369	Total	C	N	O	S	0	0
			2215	1369	430	415	1		

- Molecule 37 is a protein called Uncharacterized RNA-binding protein C1827.05c.

Mol	Chain	Residues	Atoms				AltConf	Trace
37	o	134	Total	C	N	O	0	0
			666	398	134	134		

- Molecule 38 is a protein called Ribosome biogenesis protein nsa2.

Mol	Chain	Residues	Atoms				AltConf	Trace
38	r	166	Total	C	N	O	0	0
			823	490	166	167		

- Molecule 39 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	t	225	Total	C	N	O	0	0
			1115	664	225	226		

- Molecule 40 is a protein called Ribosome biogenesis protein rlp24.

Mol	Chain	Residues	Atoms				AltConf	Trace
40	u	110	Total	C	N	O	0	0
			546	326	110	110		

- Molecule 41 is a protein called Nucleolar protein 16.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	v	161	Total	C	N	O	S	0	0
			1299	818	243	235	3		

- Molecule 42 is a protein called Brix domain-containing protein C4F8.04.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	x	303	Total	C	N	O	S	0	0
			2503	1570	460	465	8		

- Molecule 43 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms				AltConf	Trace
43	y	225	Total	C	N	O	0	0
			1107	657	225	225		

- Molecule 44 is a protein called UPF0642 protein C32H8.05.

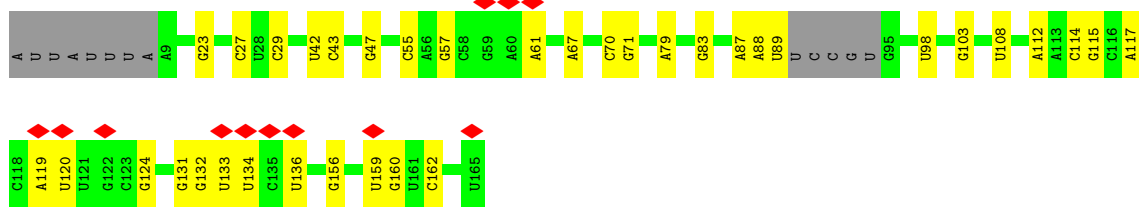
Mol	Chain	Residues	Atoms				AltConf	Trace
44	z	35	Total	C	N	O	0	0
			173	103	35	35		

- Molecule 45 is a protein called 60S ribosomal protein L21-A.

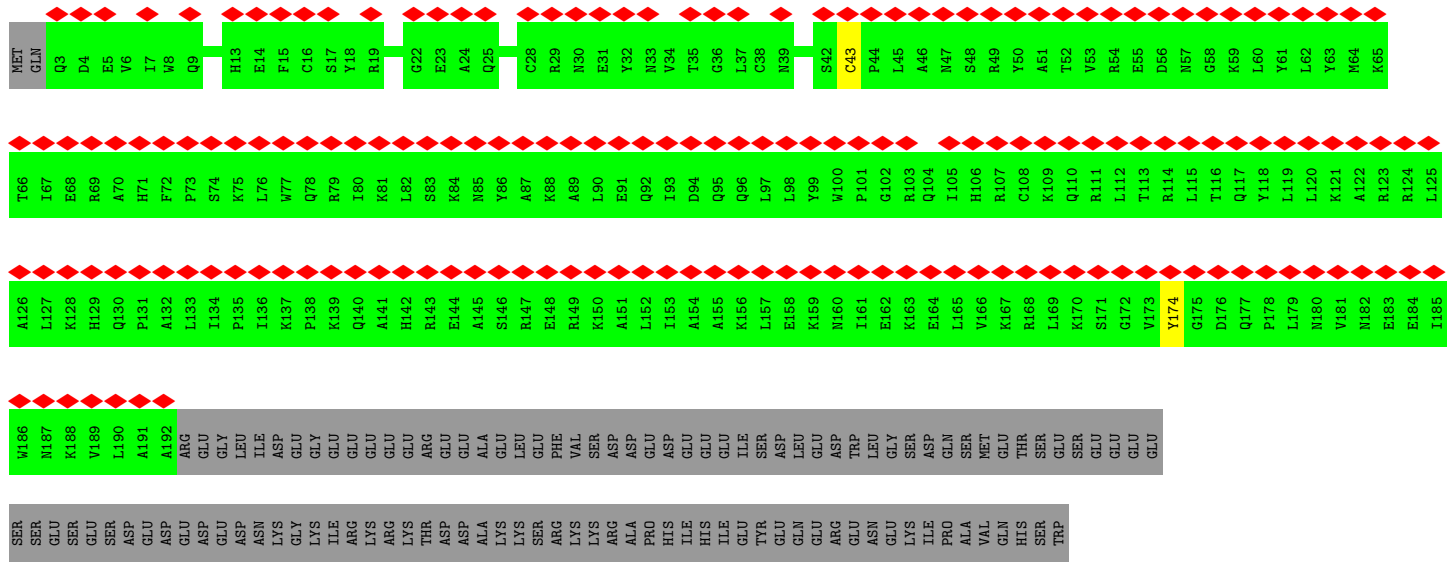
Mol	Chain	Residues	Atoms				AltConf	Trace
45	T	23	Total	C	N	O	0	0
			175	111	31	33		

- Molecule 46 is ZINC ION (three-letter code: ZN) (formula: Zn).

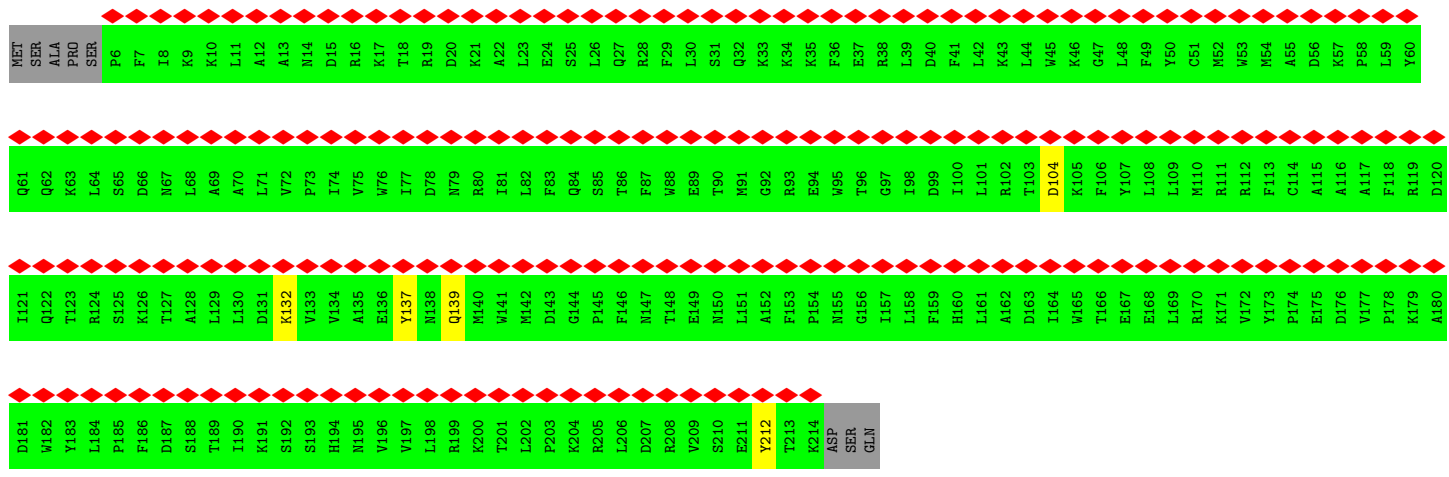
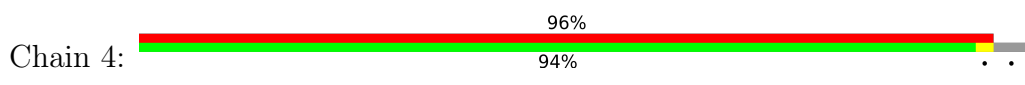
Mol	Chain	Residues	Atoms		AltConf
46	j	1	Total	Zn	0
			1	1	



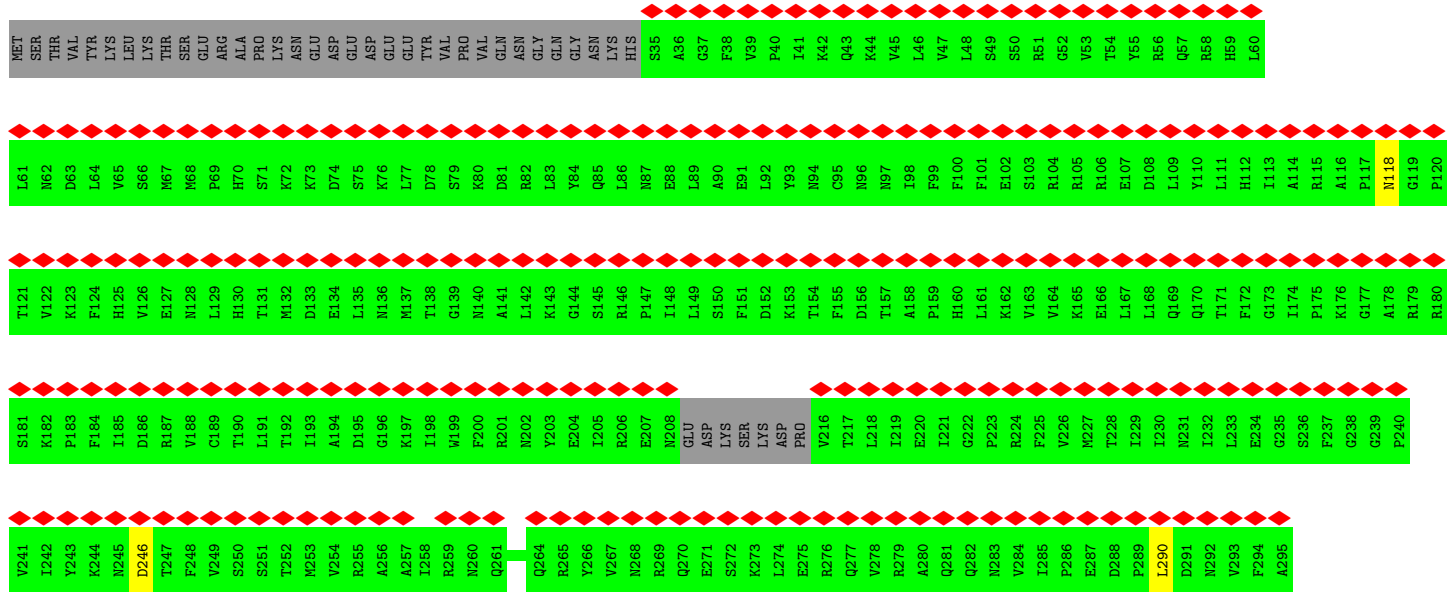
• Molecule 3: Protein mak16



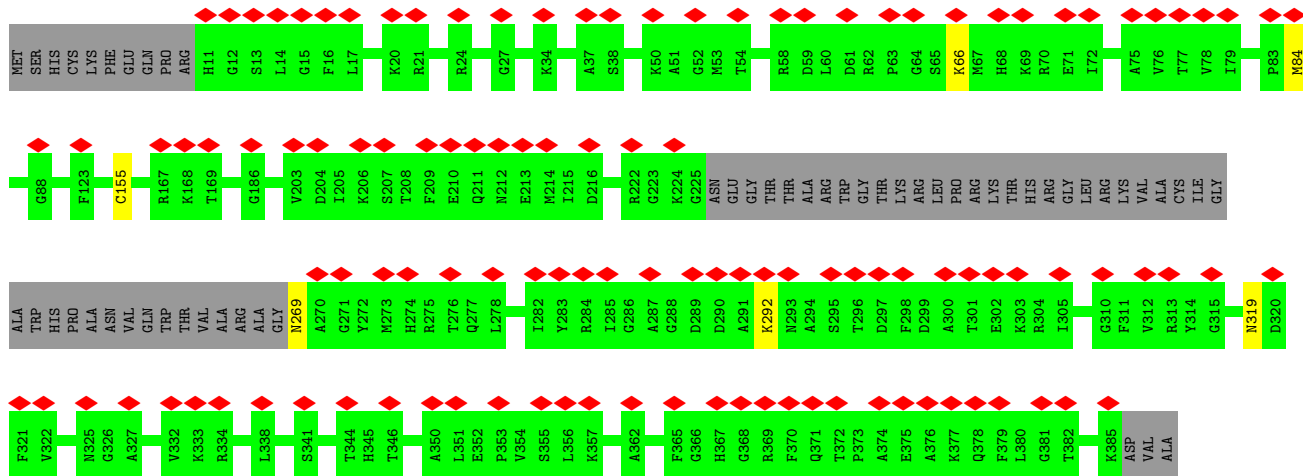
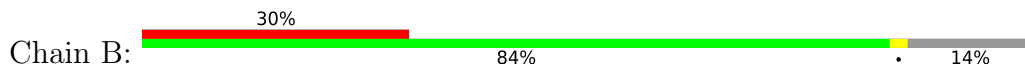
• Molecule 4: Ribosomal RNA-processing protein 1 homolog



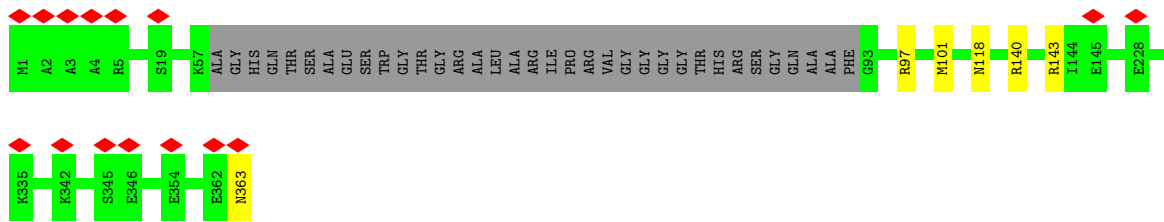
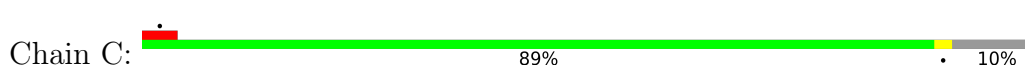
• Molecule 5: Ribosome biogenesis protein nsal



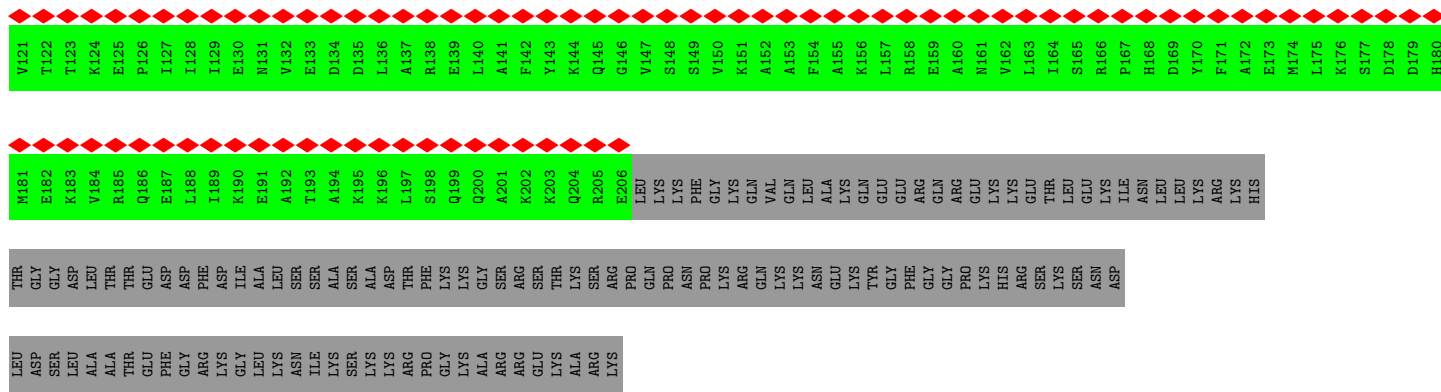
• Molecule 8: 60S ribosomal protein L3-A



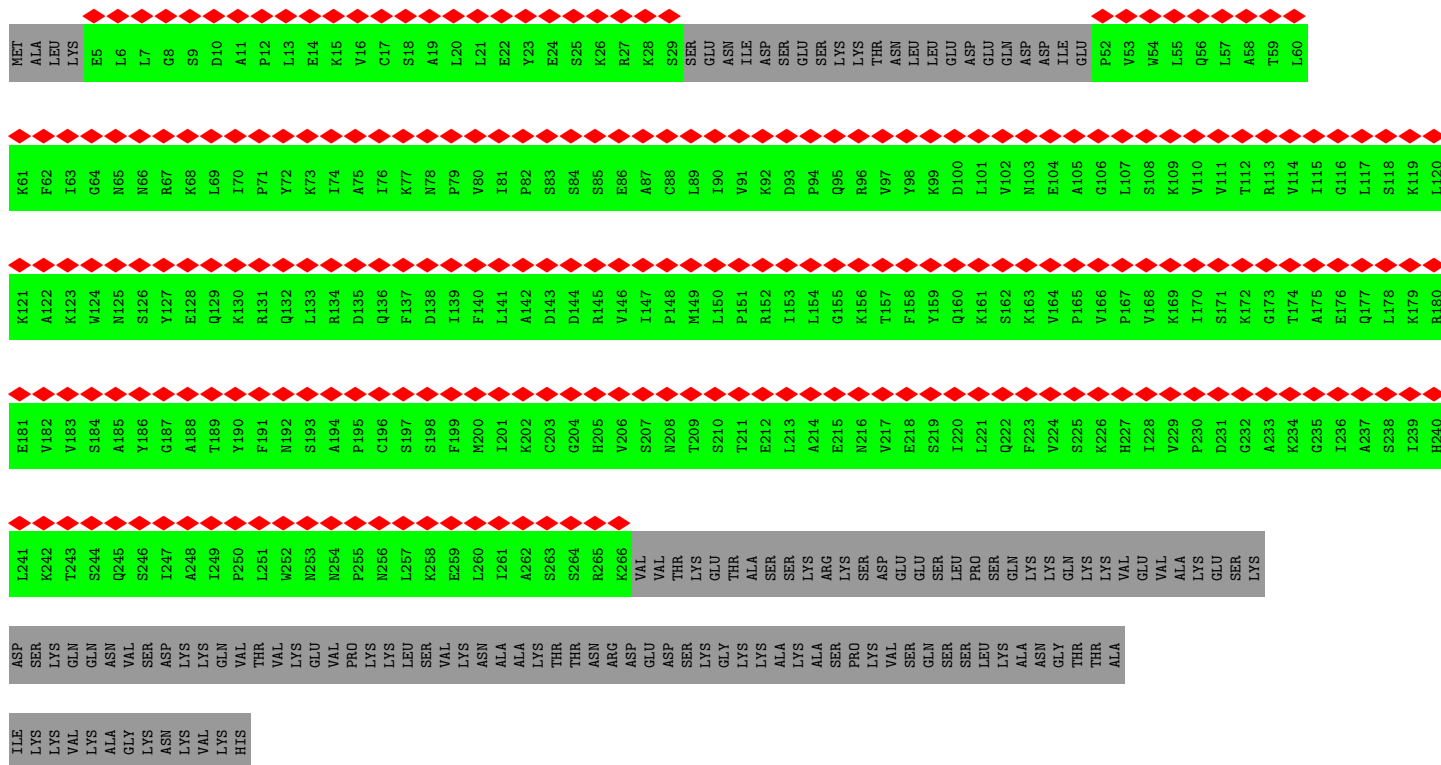
• Molecule 9: 60S ribosomal protein L4-B



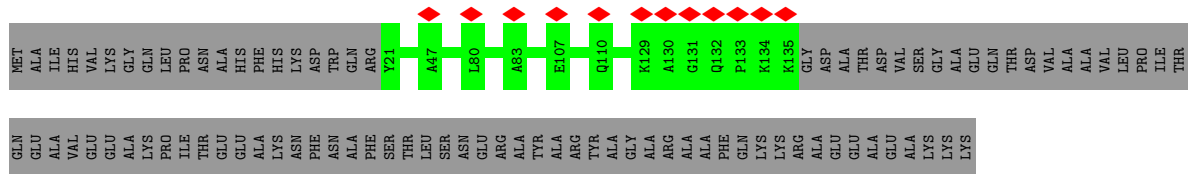
• Molecule 10: ATP-dependent RNA helicase has1



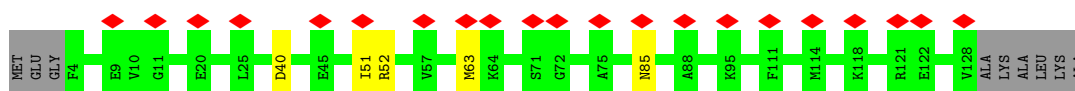
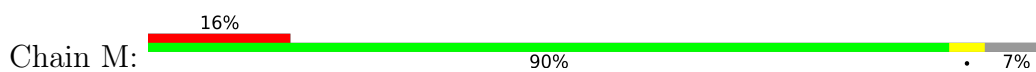
● Molecule 16: Putative ribosome biogenesis protein C8F11.04



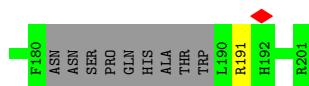
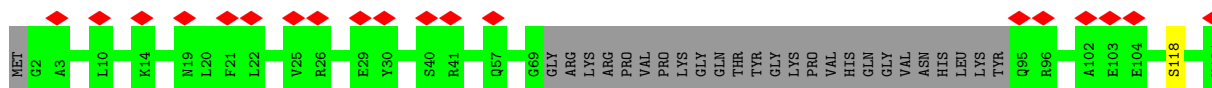
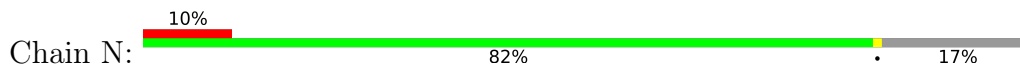
● Molecule 17: 60S ribosomal protein L13



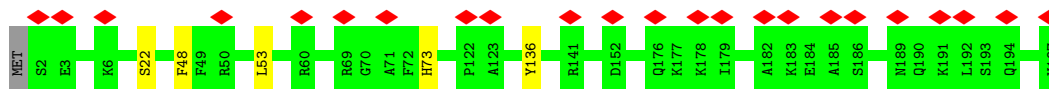
● Molecule 18: 60S ribosomal protein L14



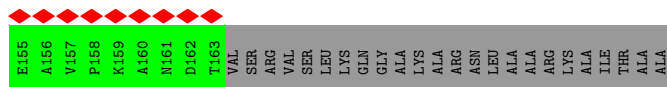
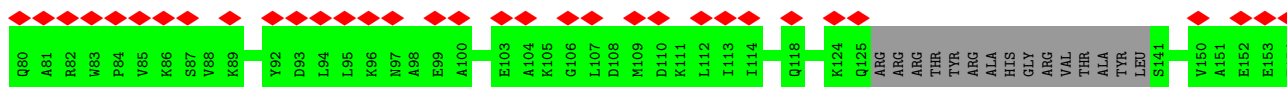
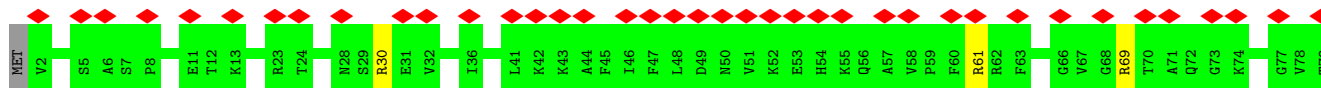
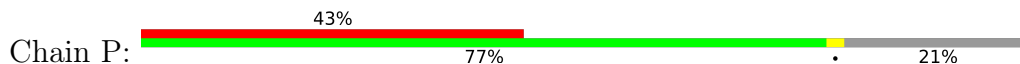
- Molecule 19: 60S ribosomal protein L15-A



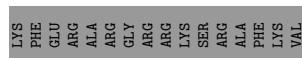
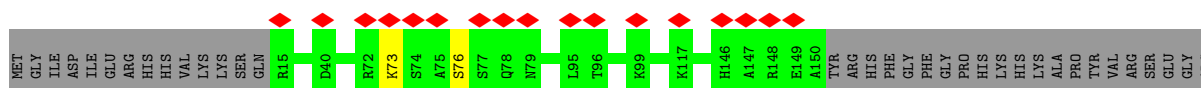
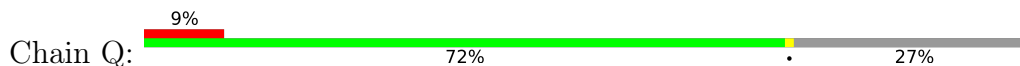
- Molecule 20: 60S ribosomal protein L16-B



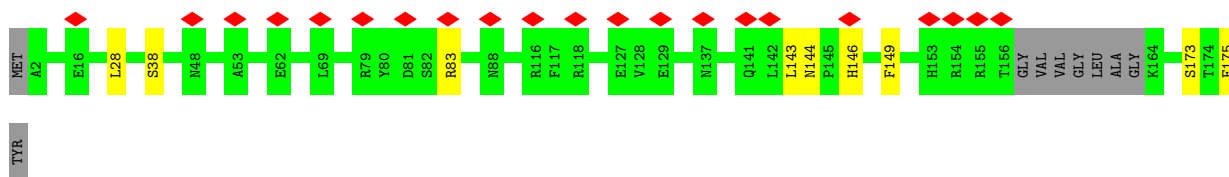
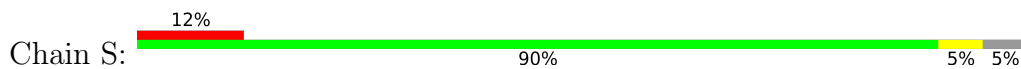
- Molecule 21: 60S ribosomal protein L17-A



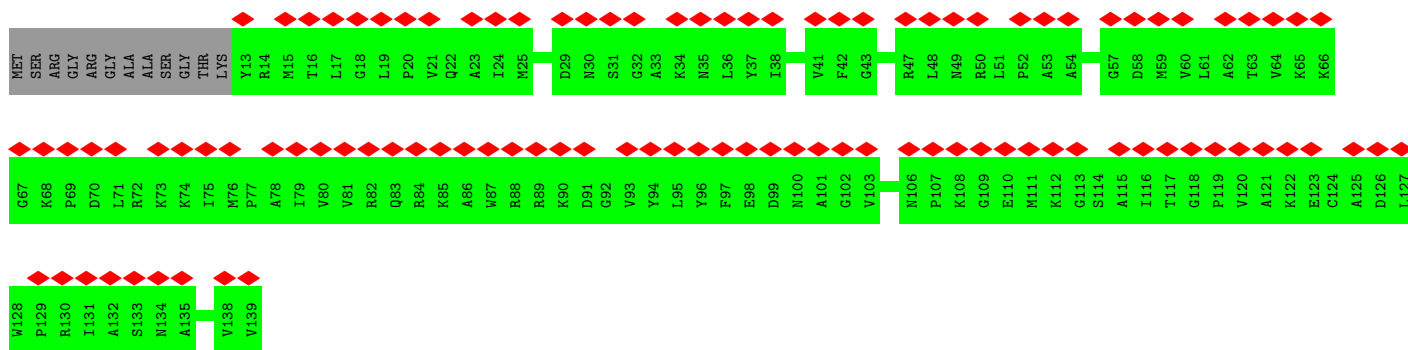
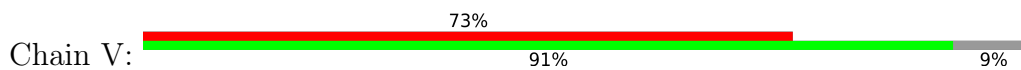
- Molecule 22: 60S ribosomal protein L18-A



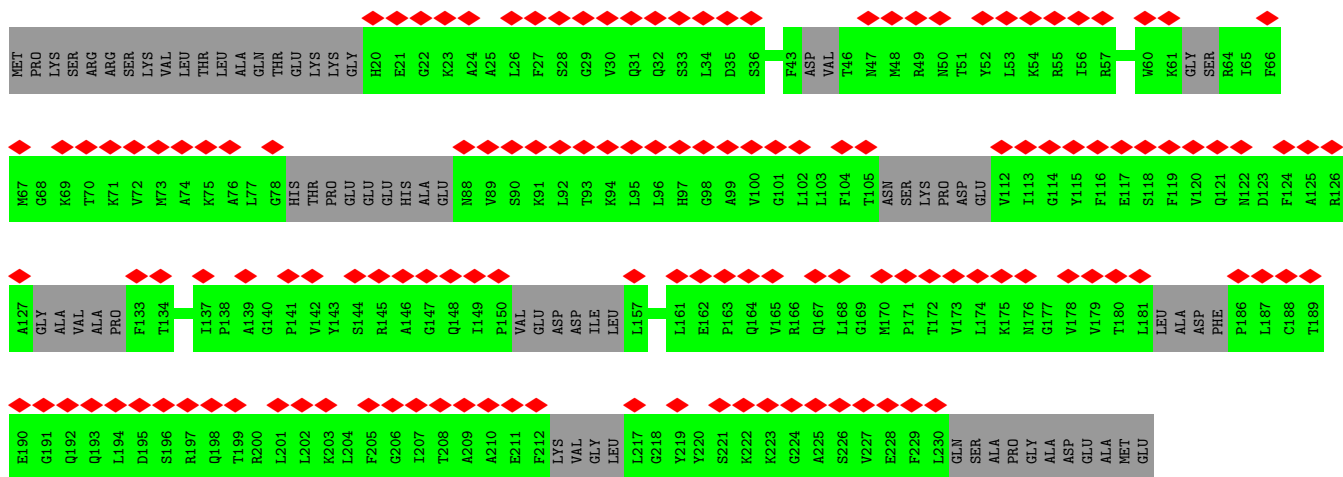
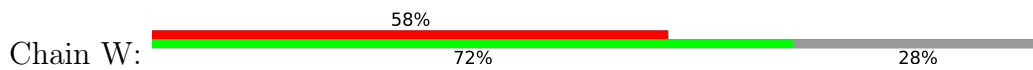
- Molecule 23: 60S ribosomal protein L20-A



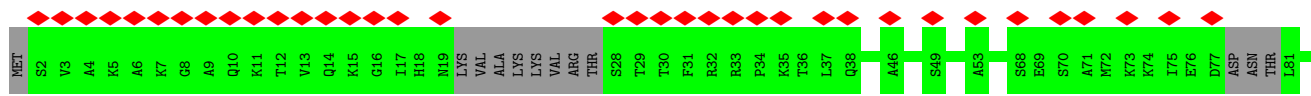
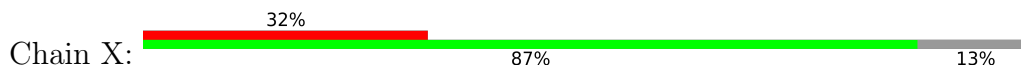
• Molecule 24: 60S ribosomal protein L23-A



• Molecule 25: Ribosome assembly factor mrt4

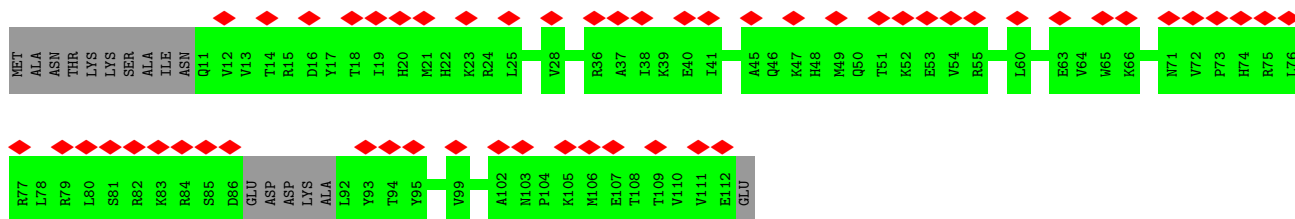
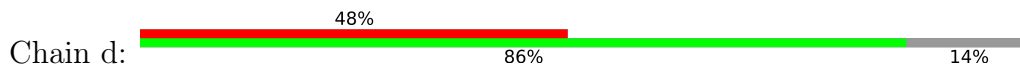


• Molecule 26: 60S ribosomal protein L25-A

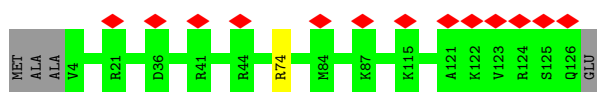


ALA
ALA
LYS
PRO
LYS
HIS
LEU
LEU
SER
GLY
LYS
LYS
ARG
GLY
ASN
GLY
LYS
THR
GLN
ARG
ARG

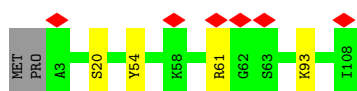
- Molecule 29: 60S ribosomal protein L31



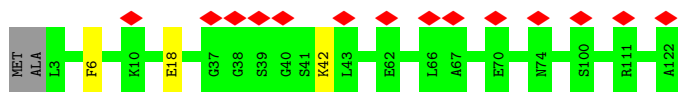
- Molecule 30: 60S ribosomal protein L32-A



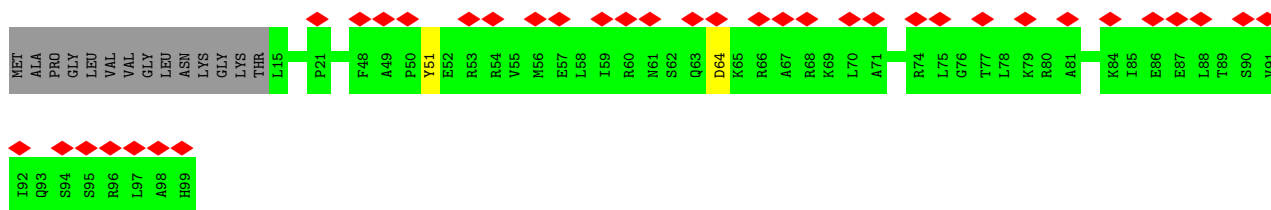
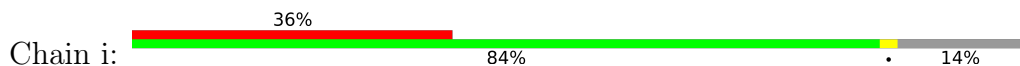
- Molecule 31: 60S ribosomal protein L33-B



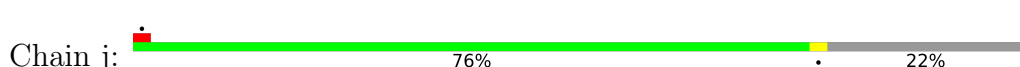
- Molecule 32: 60S ribosomal protein L35



- Molecule 33: 60S ribosomal protein L36-B



- Molecule 34: 60S ribosomal protein L37-B



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	9000	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 ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.491	Depositor
Minimum map value	-0.210	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.05	Depositor
Map size (\AA)	542.72, 542.72, 542.72	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.06, 1.06, 1.06	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

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	1	0.43	0/37838	0.75	0/58935
2	2	0.44	0/3608	0.73	0/5615
3	3	0.36	0/1607	0.54	0/2162
4	4	0.30	0/1809	0.54	0/2443
5	5	0.28	0/2739	0.56	0/3702
6	6	0.24	0/1916	0.86	0/2973
7	A	0.27	0/1431	0.54	0/1971
8	B	0.28	0/2694	0.58	0/3619
9	C	0.38	0/2617	0.59	0/3529
10	D	0.24	0/1928	0.41	0/2680
11	E	0.32	0/1356	0.60	0/1829
12	F	0.32	0/1977	0.53	0/2651
13	G	0.32	0/1487	0.56	0/2007
14	H	0.25	0/901	0.45	0/1252
15	J	0.23	0/563	0.35	0/786
16	K	0.24	0/1188	0.41	0/1654
17	L	0.39	0/956	0.67	0/1283
18	M	0.28	0/1024	0.59	0/1375
19	N	0.39	0/1429	0.61	0/1909
20	O	0.31	0/1588	0.57	0/2128
21	P	0.32	0/1176	0.54	0/1580
22	Q	0.32	0/1068	0.60	0/1434
23	S	0.30	0/1430	0.64	0/1921
24	V	0.25	0/623	0.44	0/862
25	W	0.24	0/841	0.44	0/1154
26	X	0.30	0/753	0.52	0/1021
27	Y	0.32	0/1008	0.64	0/1341
28	b	0.23	0/1935	0.38	0/2693
29	d	0.24	0/481	0.41	0/669
30	e	0.38	0/1000	0.63	0/1333
31	f	0.35	0/859	0.58	0/1152
32	h	0.33	0/1003	0.62	0/1333

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	i	0.32	0/703	0.66	0/931
34	j	0.35	0/575	0.62	0/761
35	m	0.30	0/873	0.60	0/1188
36	n	0.29	0/2233	0.52	0/3054
37	o	0.25	0/665	0.43	0/925
38	r	0.23	0/819	0.40	0/1134
39	t	0.23	0/1114	0.40	0/1550
40	u	0.24	0/544	0.40	0/756
41	v	0.29	0/1319	0.56	0/1769
42	x	0.30	0/2549	0.57	0/3416
43	y	0.24	0/1106	0.45	0/1536
44	z	0.23	0/172	0.36	0/238
45	T	0.27	0/182	0.48	0/252
All	All	0.36	0/95687	0.66	0/138506

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	
3	3	188/302 (62%)	177 (94%)	11 (6%)	0	100	100
4	4	207/217 (95%)	198 (96%)	9 (4%)	0	100	100
5	5	336/387 (87%)	301 (90%)	35 (10%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	A	250/295 (85%)	237 (95%)	12 (5%)	1 (0%)	34	69
8	B	328/388 (84%)	314 (96%)	14 (4%)	0	100	100
9	C	324/363 (89%)	302 (93%)	22 (7%)	0	100	100
10	D	385/578 (67%)	364 (94%)	21 (6%)	0	100	100
11	E	168/195 (86%)	144 (86%)	23 (14%)	1 (1%)	25	62
12	F	237/250 (95%)	217 (92%)	19 (8%)	1 (0%)	34	69
13	G	184/259 (71%)	175 (95%)	9 (5%)	0	100	100
14	H	181/190 (95%)	175 (97%)	6 (3%)	0	100	100
15	J	111/333 (33%)	106 (96%)	5 (4%)	0	100	100
16	K	236/373 (63%)	228 (97%)	8 (3%)	0	100	100
17	L	113/208 (54%)	106 (94%)	7 (6%)	0	100	100
18	M	123/134 (92%)	115 (94%)	8 (6%)	0	100	100
19	N	160/201 (80%)	154 (96%)	6 (4%)	0	100	100
20	O	194/197 (98%)	186 (96%)	8 (4%)	0	100	100
21	P	143/187 (76%)	134 (94%)	9 (6%)	0	100	100
22	Q	134/187 (72%)	121 (90%)	12 (9%)	1 (1%)	22	59
23	S	163/176 (93%)	149 (91%)	14 (9%)	0	100	100
24	V	125/139 (90%)	120 (96%)	5 (4%)	0	100	100
25	W	155/241 (64%)	147 (95%)	8 (5%)	0	100	100
26	X	114/141 (81%)	104 (91%)	10 (9%)	0	100	100
27	Y	123/126 (98%)	120 (98%)	3 (2%)	0	100	100
28	b	383/642 (60%)	374 (98%)	9 (2%)	0	100	100
29	d	93/113 (82%)	91 (98%)	2 (2%)	0	100	100
30	e	121/127 (95%)	111 (92%)	10 (8%)	0	100	100
31	f	104/108 (96%)	93 (89%)	11 (11%)	0	100	100
32	h	118/122 (97%)	110 (93%)	8 (7%)	0	100	100
33	i	83/99 (84%)	81 (98%)	2 (2%)	0	100	100
34	j	69/91 (76%)	64 (93%)	5 (7%)	0	100	100
35	m	115/740 (16%)	107 (93%)	8 (7%)	0	100	100
36	n	365/607 (60%)	353 (97%)	12 (3%)	0	100	100
37	o	132/276 (48%)	132 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	r	158/260 (61%)	153 (97%)	5 (3%)	0	100	100
39	t	223/249 (90%)	215 (96%)	8 (4%)	0	100	100
40	u	106/192 (55%)	104 (98%)	2 (2%)	0	100	100
41	v	157/209 (75%)	141 (90%)	16 (10%)	0	100	100
42	x	301/306 (98%)	289 (96%)	12 (4%)	0	100	100
43	y	223/244 (91%)	219 (98%)	4 (2%)	0	100	100
44	z	33/117 (28%)	32 (97%)	1 (3%)	0	100	100
45	T	21/160 (13%)	18 (86%)	3 (14%)	0	100	100
All	All	7487/10729 (70%)	7081 (95%)	402 (5%)	4 (0%)	54	83

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	A	118	ASN
11	E	136	ASP
22	Q	76	SER
12	F	222	ARG

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	
3	3	167/271 (62%)	165 (99%)	2 (1%)	71	84
4	4	190/197 (96%)	185 (97%)	5 (3%)	46	69
5	5	301/345 (87%)	297 (99%)	4 (1%)	69	83
7	A	47/266 (18%)	45 (96%)	2 (4%)	29	58
8	B	282/326 (86%)	276 (98%)	6 (2%)	53	74
9	C	276/297 (93%)	270 (98%)	6 (2%)	52	72
11	E	139/155 (90%)	133 (96%)	6 (4%)	29	58
12	F	201/210 (96%)	200 (100%)	1 (0%)	88	94

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
13	G	155/212 (73%)	151 (97%)	4 (3%)	46	69
17	L	97/167 (58%)	97 (100%)	0	100	100
18	M	108/113 (96%)	103 (95%)	5 (5%)	27	57
19	N	146/176 (83%)	144 (99%)	2 (1%)	67	82
20	O	161/162 (99%)	156 (97%)	5 (3%)	40	65
21	P	120/149 (80%)	117 (98%)	3 (2%)	47	70
22	Q	116/159 (73%)	115 (99%)	1 (1%)	78	88
23	S	149/154 (97%)	140 (94%)	9 (6%)	19	50
26	X	41/122 (34%)	41 (100%)	0	100	100
27	Y	110/111 (99%)	108 (98%)	2 (2%)	59	77
30	e	105/107 (98%)	104 (99%)	1 (1%)	76	86
31	f	89/91 (98%)	85 (96%)	4 (4%)	27	57
32	h	106/107 (99%)	103 (97%)	3 (3%)	43	67
33	i	74/84 (88%)	72 (97%)	2 (3%)	44	68
34	j	58/71 (82%)	56 (97%)	2 (3%)	37	64
35	m	67/659 (10%)	64 (96%)	3 (4%)	27	57
36	n	102/532 (19%)	98 (96%)	4 (4%)	32	60
37	o	1/246 (0%)	1 (100%)	0	100	100
41	v	138/181 (76%)	136 (99%)	2 (1%)	67	82
42	x	271/273 (99%)	264 (97%)	7 (3%)	46	69
45	T	20/139 (14%)	19 (95%)	1 (5%)	24	55
All	All	3837/6082 (63%)	3745 (98%)	92 (2%)	51	71

5 of 92 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
23	S	146	HIS
33	i	51	TYR
23	S	173	SER
31	f	54	TYR
35	m	230	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 14 such sidechains are listed below:

Mol	Chain	Res	Type
19	N	57	GLN
21	P	64	ASN
42	x	234	HIS
42	x	165	HIS
42	x	202	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	1550/3497 (44%)	407 (26%)	25 (1%)
2	2	150/165 (90%)	35 (23%)	1 (0%)
6	6	77/300 (25%)	37 (48%)	0
All	All	1777/3962 (44%)	479 (26%)	26 (1%)

5 of 479 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	14	U
1	1	15	C
1	1	20	A
1	1	26	A
1	1	32	U

5 of 26 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	1234	A
1	1	1338	G
1	1	3416	A
1	1	1333	A
1	1	1385	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

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

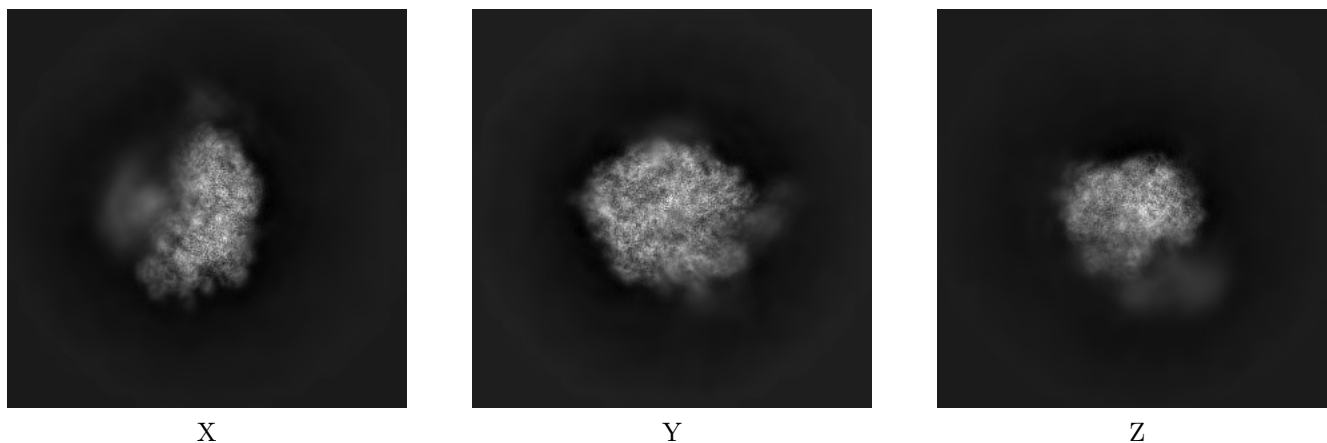
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24395. 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](#)

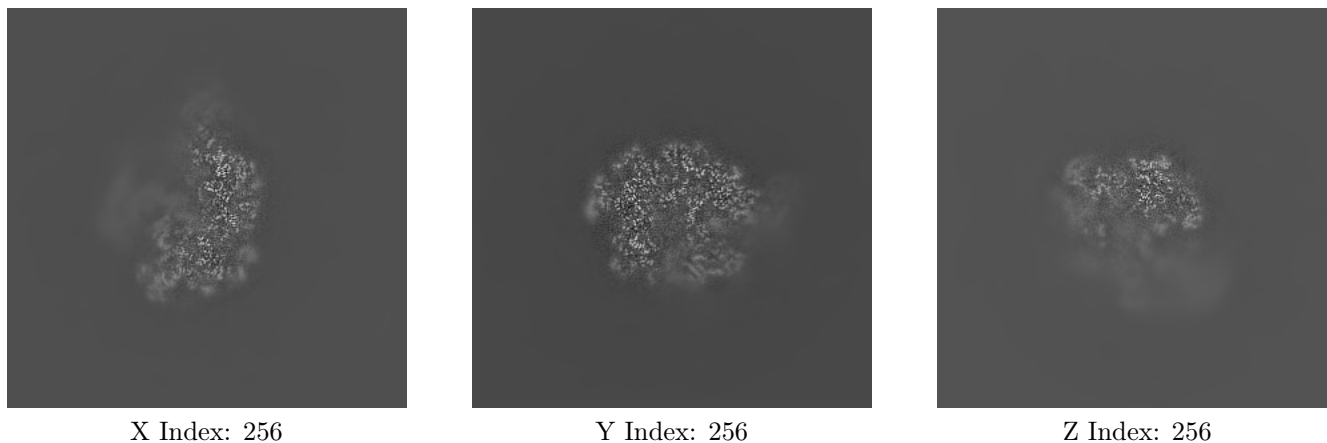
6.1.1 Primary map



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

6.2 Central slices [i](#)

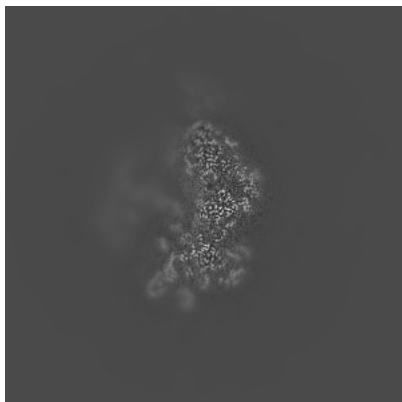
6.2.1 Primary map



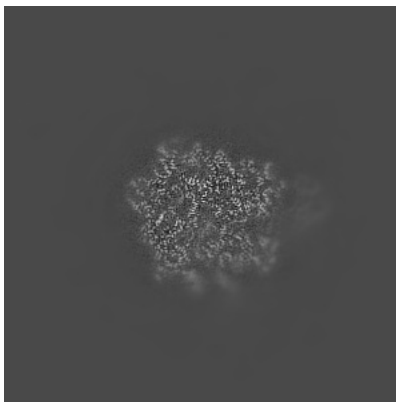
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

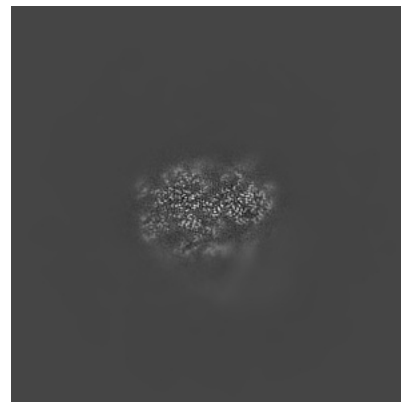
6.3.1 Primary map



X Index: 267



Y Index: 272



Z Index: 208

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

6.4 Orthogonal surface views [i](#)

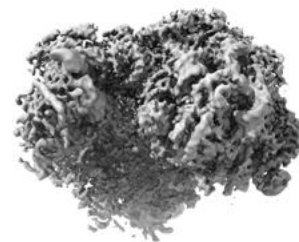
6.4.1 Primary map



X



Y



Z

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

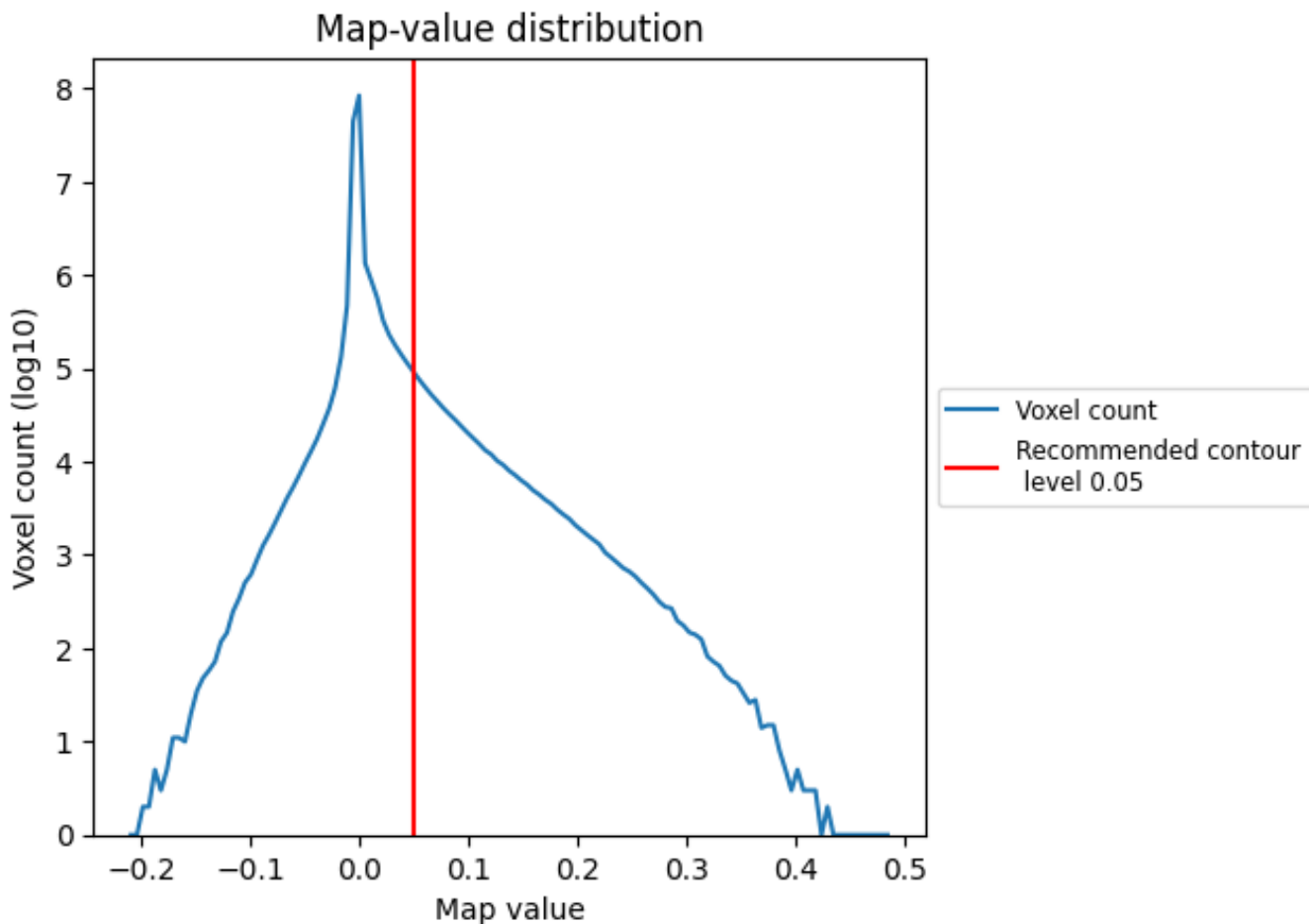
6.5 Mask visualisation

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

7 Map analysis [i](#)

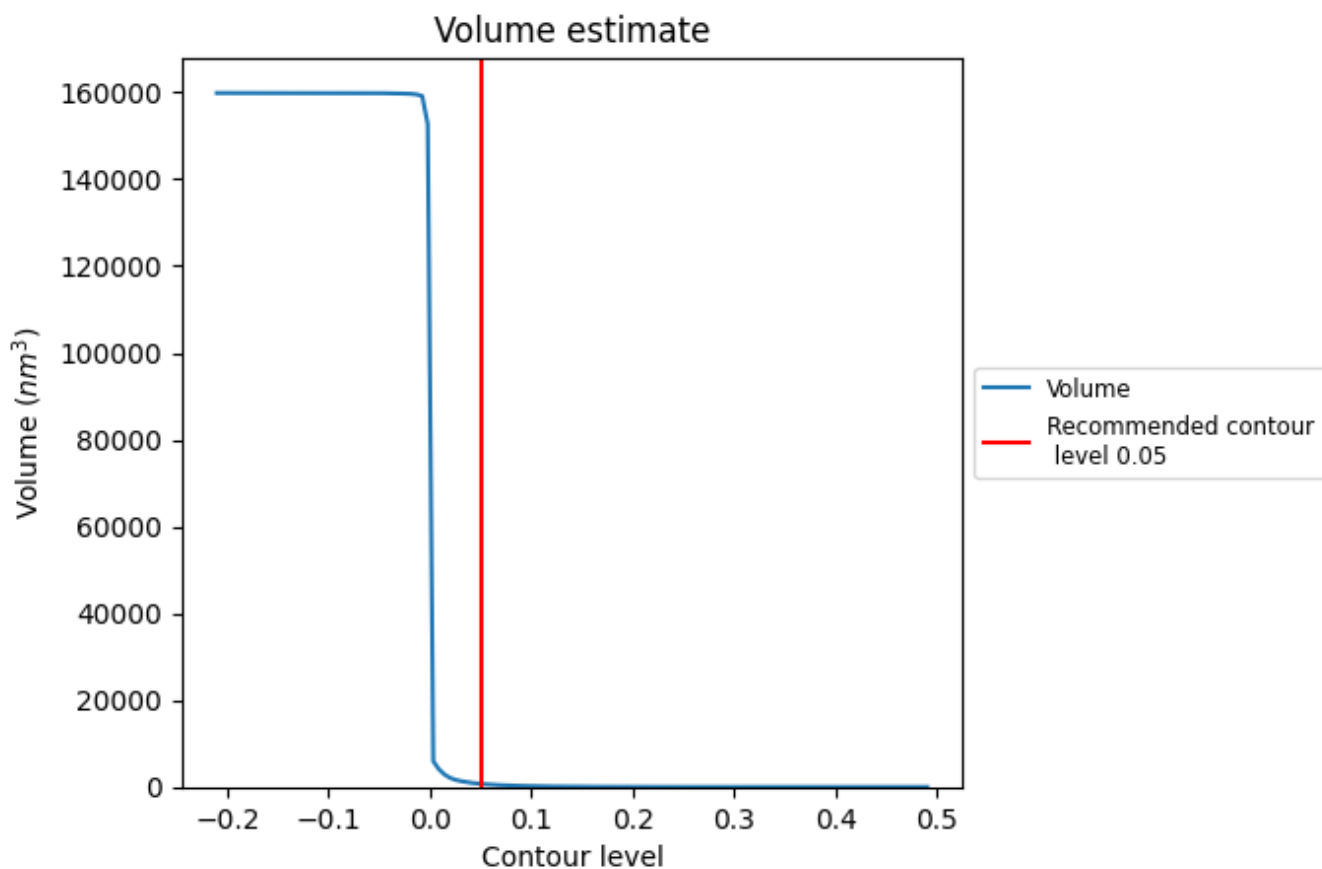
This section contains the results of statistical analysis of the map.

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.

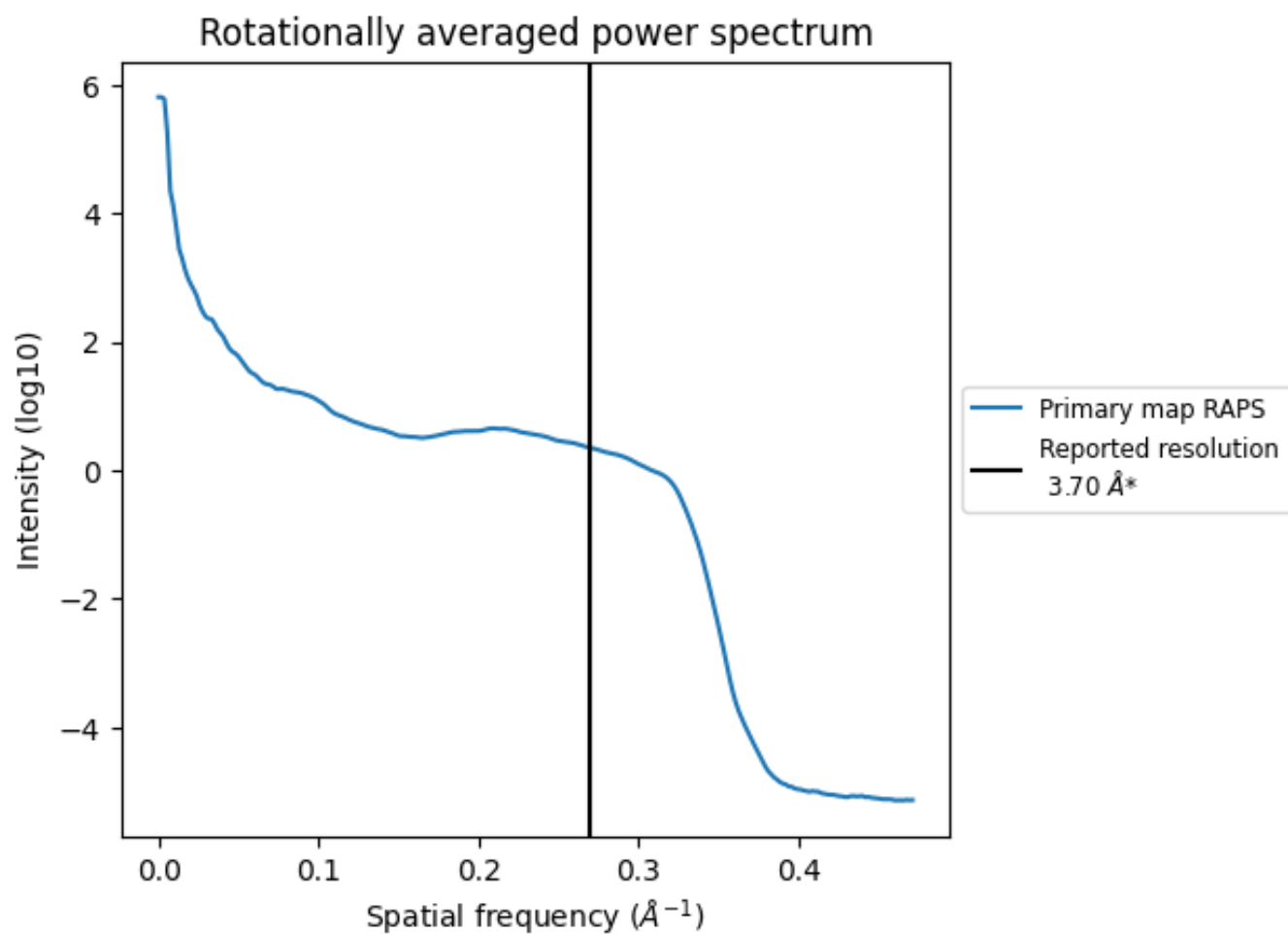
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 724 nm^3 ; this corresponds to an approximate mass of 654 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 0.270 Å⁻¹

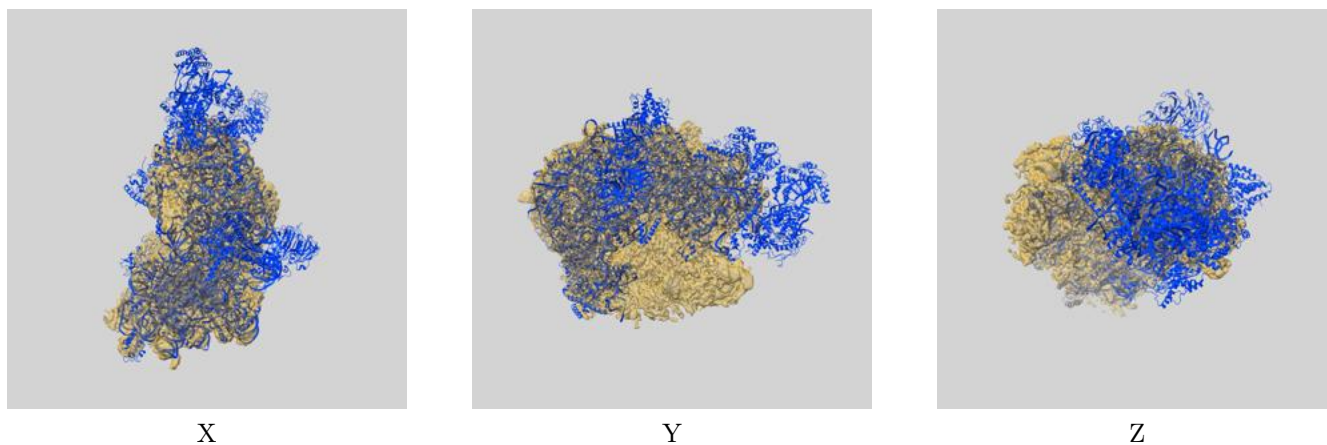
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

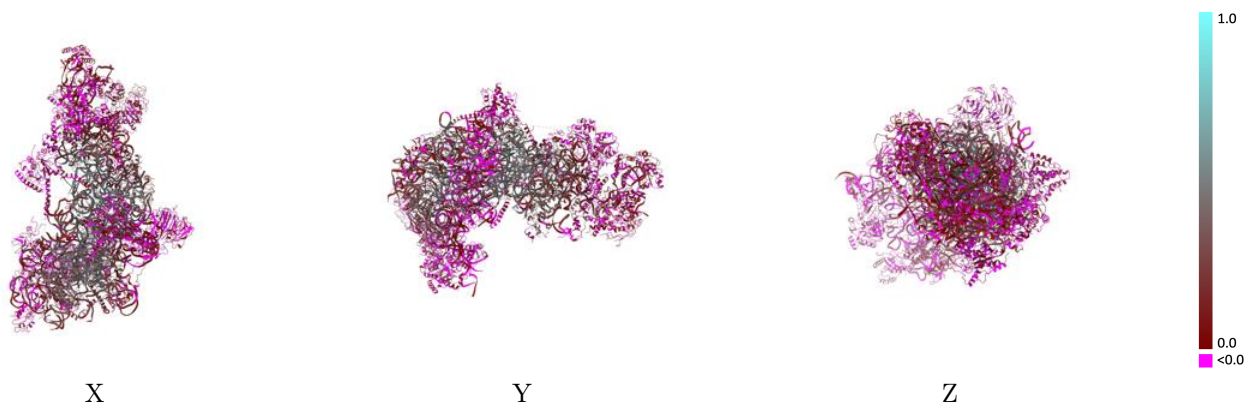
This section contains information regarding the fit between EMDB map EMD-24395 and PDB model 8ETI. Per-residue inclusion information can be found in section 3 on page 12.

9.1 Map-model overlay [i](#)



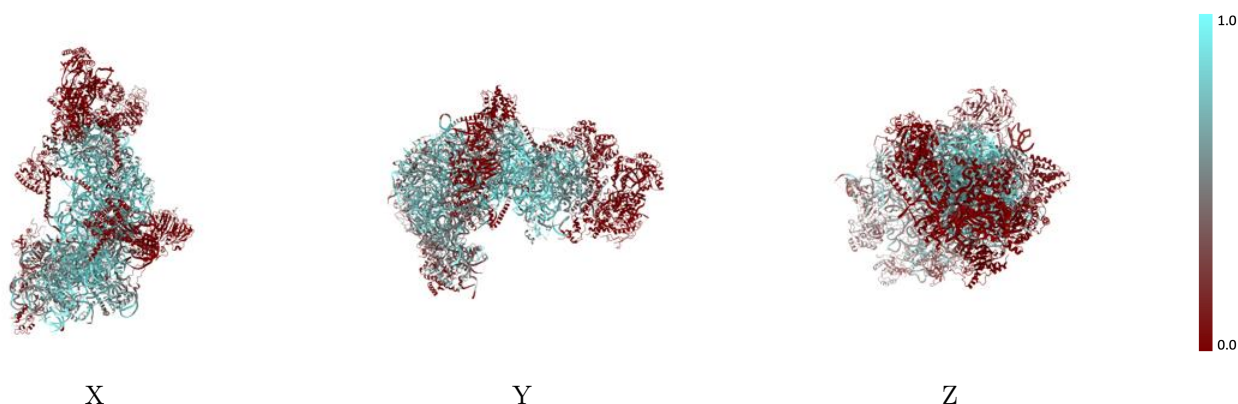
The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



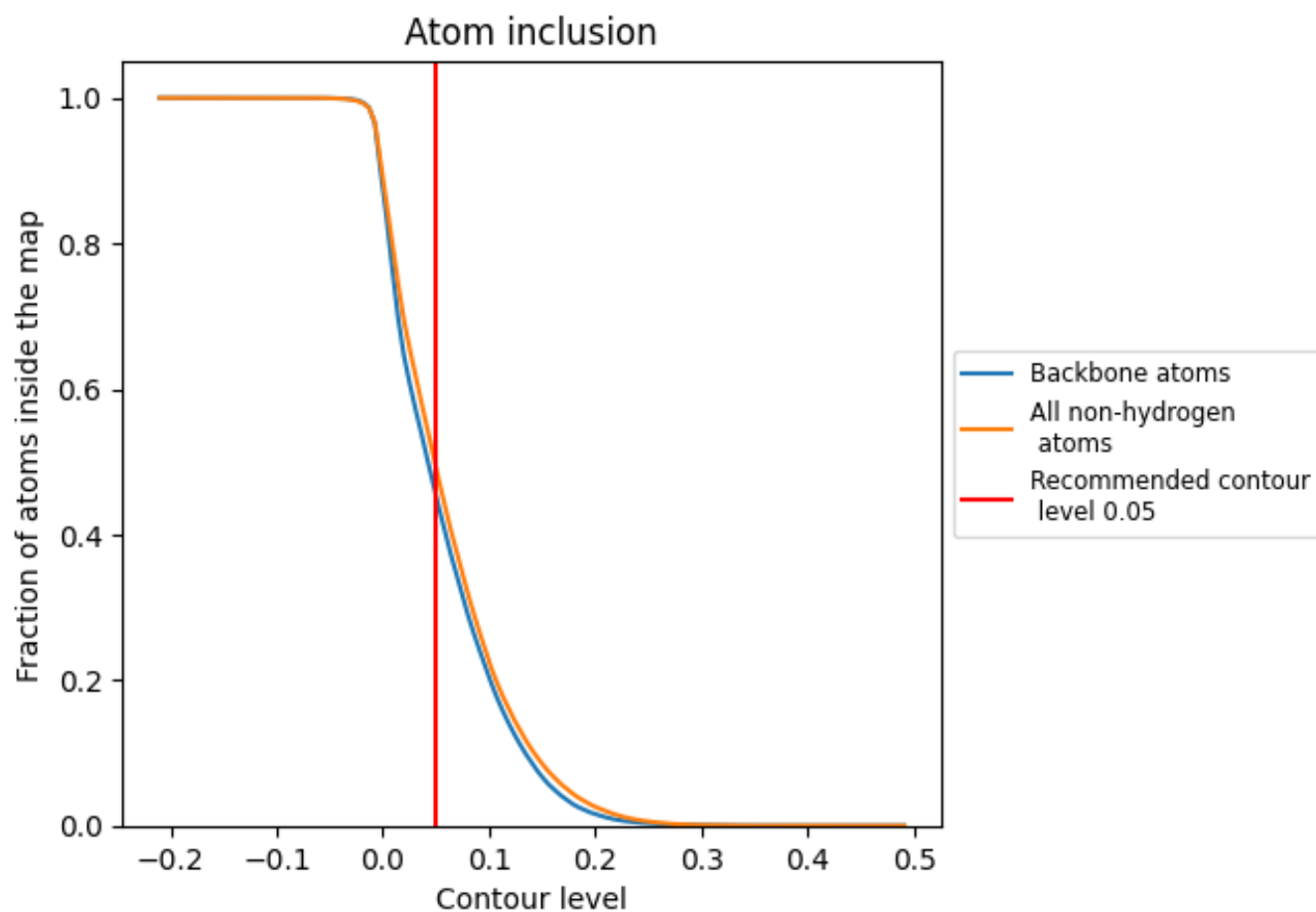
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.05).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 45% of all backbone atoms, 49% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary























The table lists the average atom inclusion at the recommended contour level (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.4908	 0.1930
1	 0.7234	 0.2640
2	 0.7739	 0.3030
3	 0.0948	 0.0660
4	 0.0006	 0.0230
5	 0.0000	 -0.0020
6	 0.0000	 0.0910
A	 0.0269	 -0.0030
B	 0.5031	 0.1290
C	 0.7533	 0.4280
D	 0.0062	 -0.0100
E	 0.4448	 0.1270
F	 0.6640	 0.3560
G	 0.3654	 0.0980
H	 0.5177	 0.1110
J	 0.0000	 -0.0180
K	 0.0000	 0.0750
L	 0.7121	 0.3730
M	 0.6151	 0.2320
N	 0.6614	 0.2970
O	 0.6950	 0.3370
P	 0.3915	 0.0530
Q	 0.6839	 0.3500
S	 0.6119	 0.2970
T	 0.3371	 0.2730
V	 0.2516	 -0.0370
W	 0.2141	 0.0360
X	 0.4926	 0.1990
Y	 0.7464	 0.3550
b	 0.2388	 0.0380
d	 0.4679	 0.0530
e	 0.6937	 0.3750
f	 0.7706	 0.4090
h	 0.6420	 0.2830
i	 0.4361	 0.1280



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Chain	Atom inclusion	Q-score
j	 0.7593	 0.4040
m	 0.0012	 0.0230
n	 0.0027	 0.0640
o	 0.0000	 0.0840
r	 0.2394	 0.0300
t	 0.0000	 0.0550
u	 0.3205	 0.0090
v	 0.0276	 0.0140
x	 0.0078	 -0.0010
y	 0.2909	 -0.0090
z	 0.3584	 0.0840