



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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ 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:

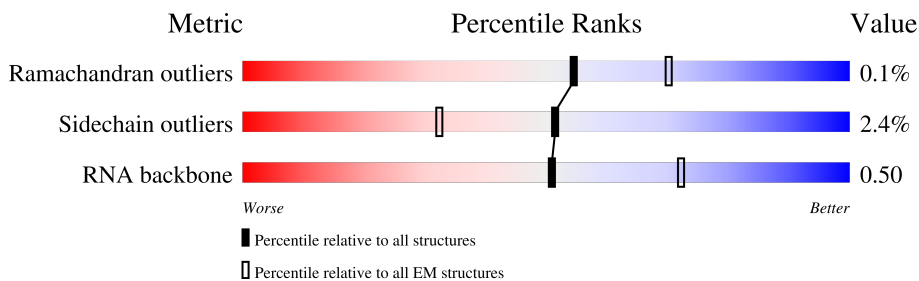
EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

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.





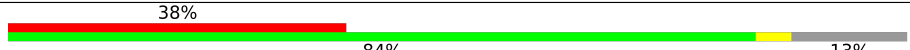
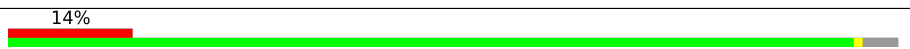
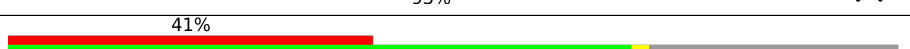
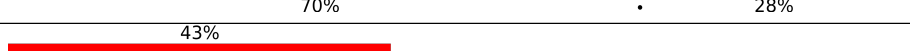
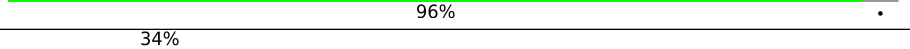





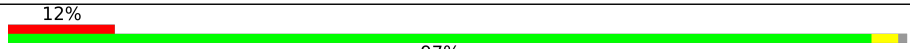


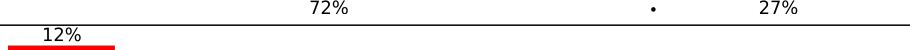

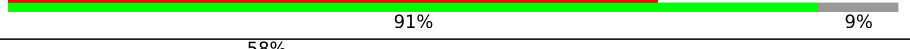


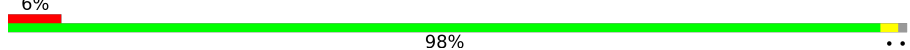



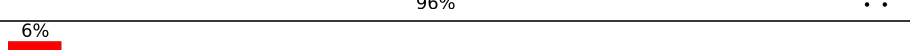
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	




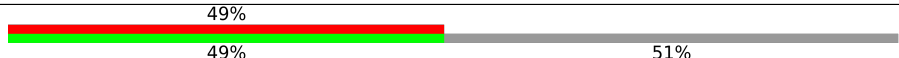

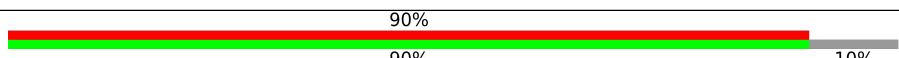
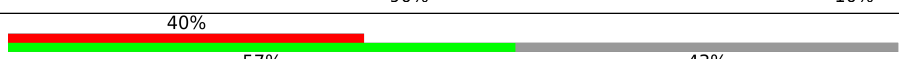

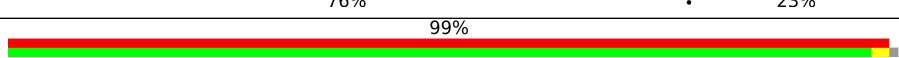
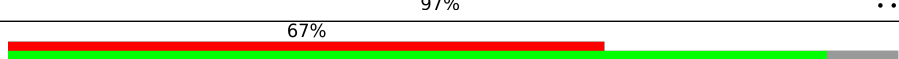
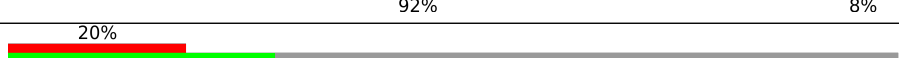

Continued on next page...

Continued from previous page...

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% 34%
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%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
34	j	91	
35	m	740	
36	n	607	
37	o	276	
38	r	260	
39	t	249	
40	u	192	
41	v	209	
42	x	306	
43	y	244	
44	z	117	
45	T	160	

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	S		
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	S		
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	S		
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		

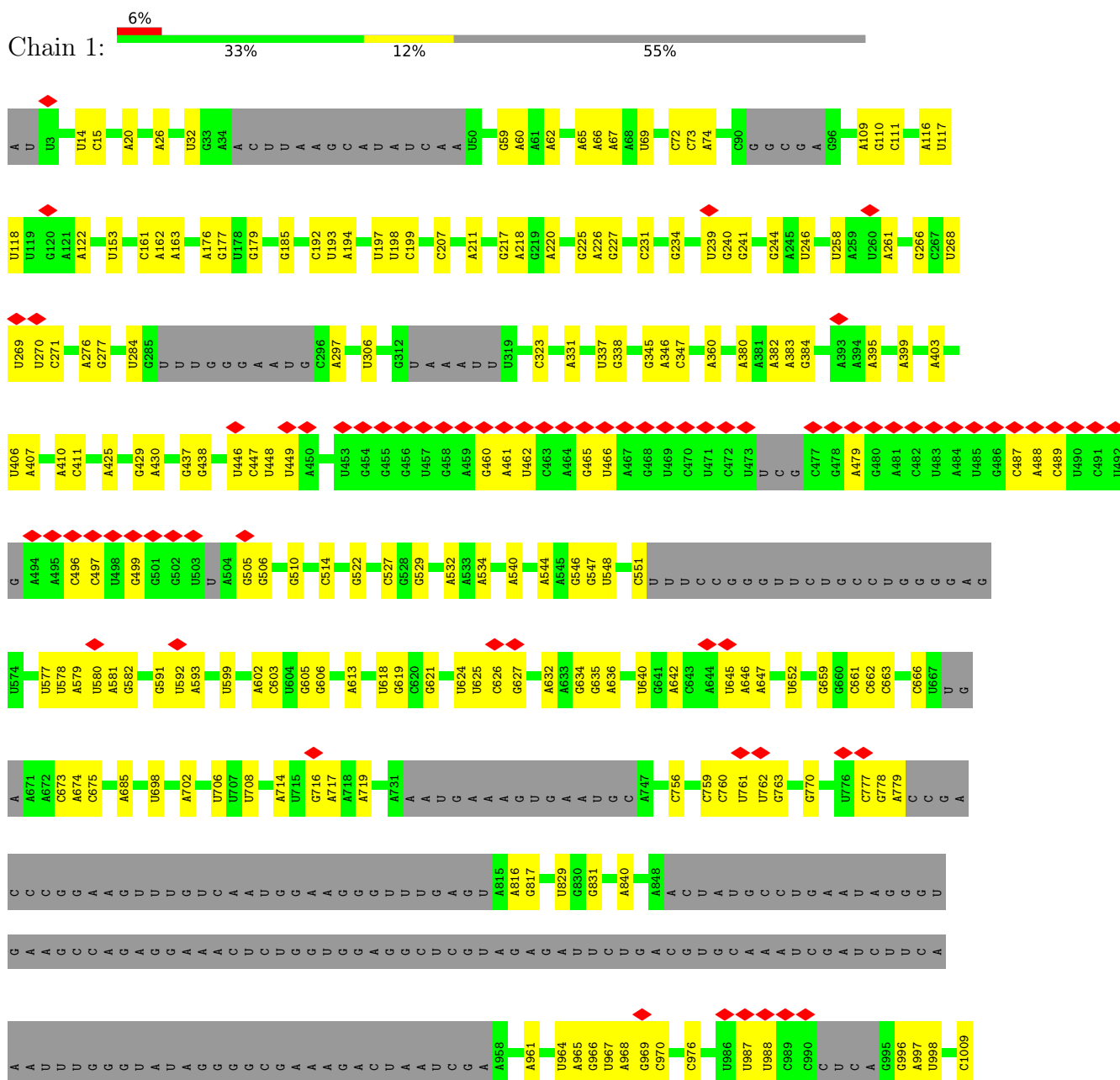
- Molecule 46 is ZINC ION (three-letter code: ZN) (formula: Zn).

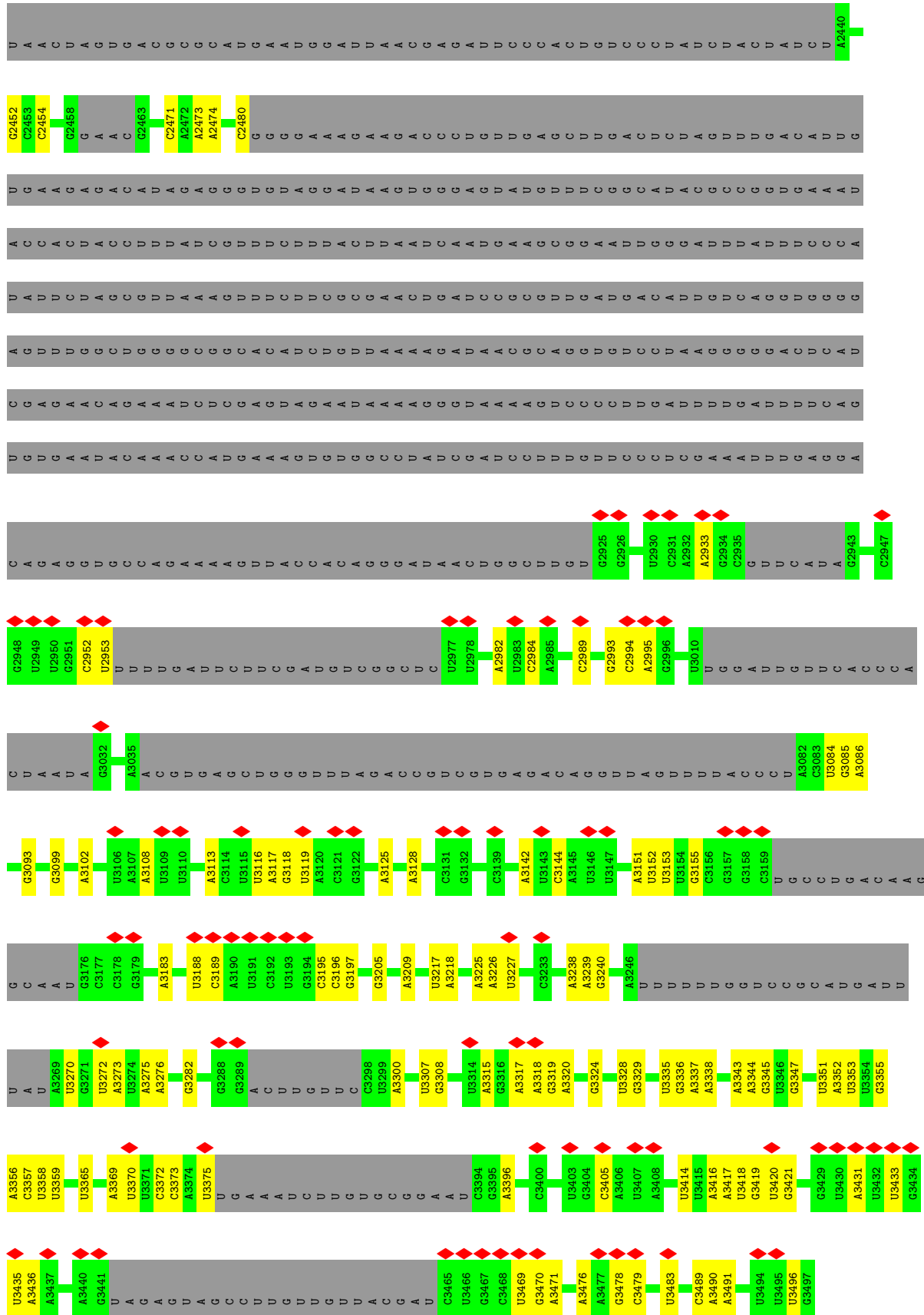
Mol	Chain	Residues	Atoms		AltConf
46	j	1	Total	Zn	0
			1	1	

3 Residue-property plots

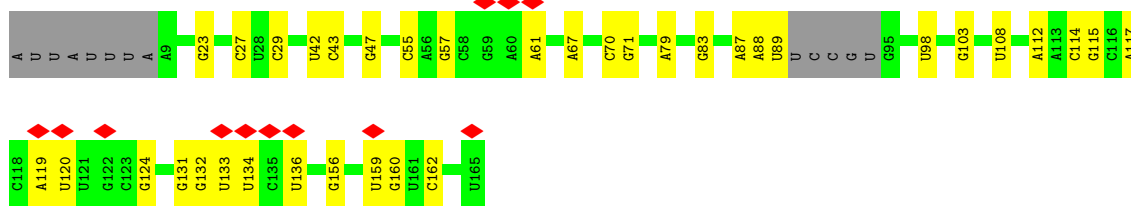
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: RNA (1564-MER)

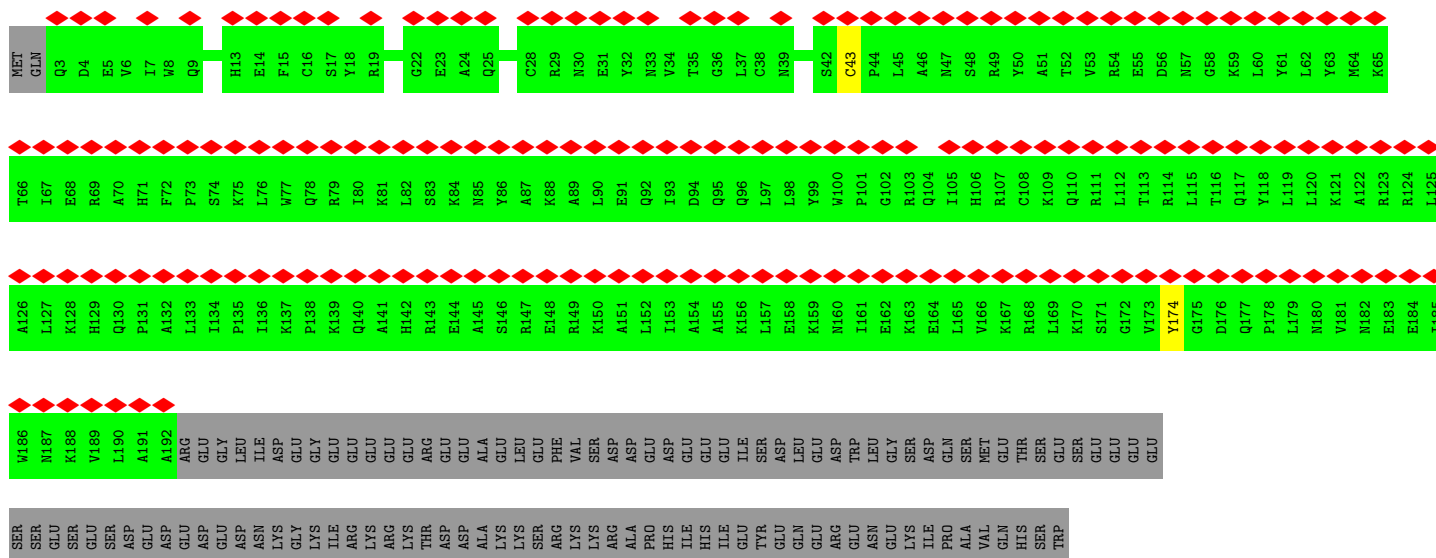




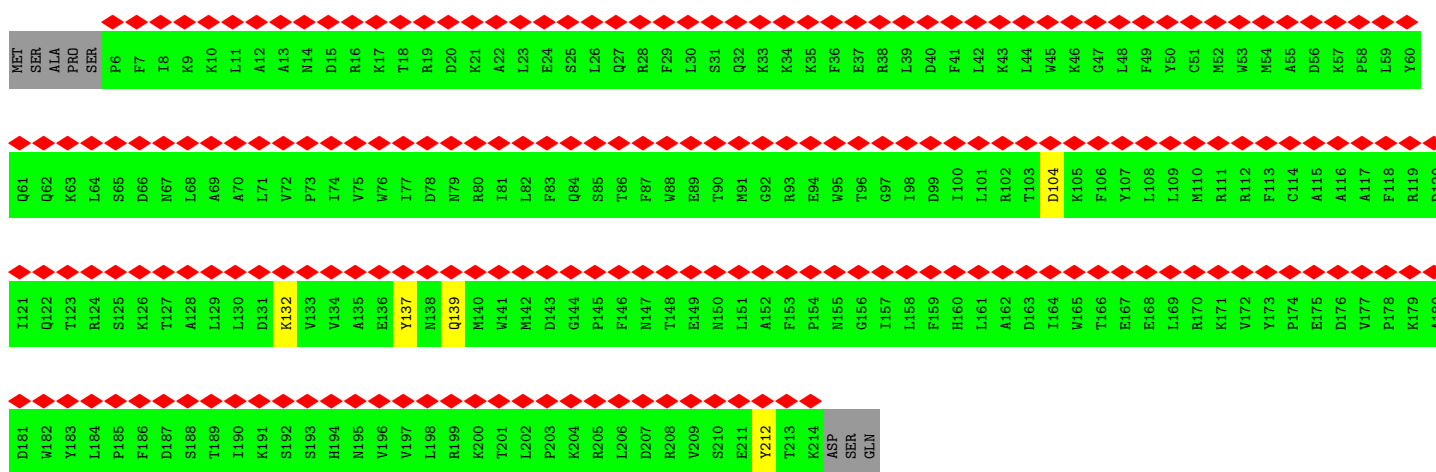
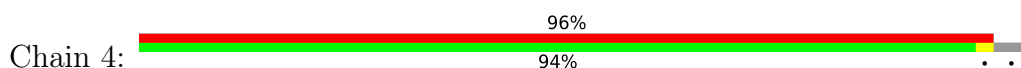
• Molecule 2: RNA (152-MER)



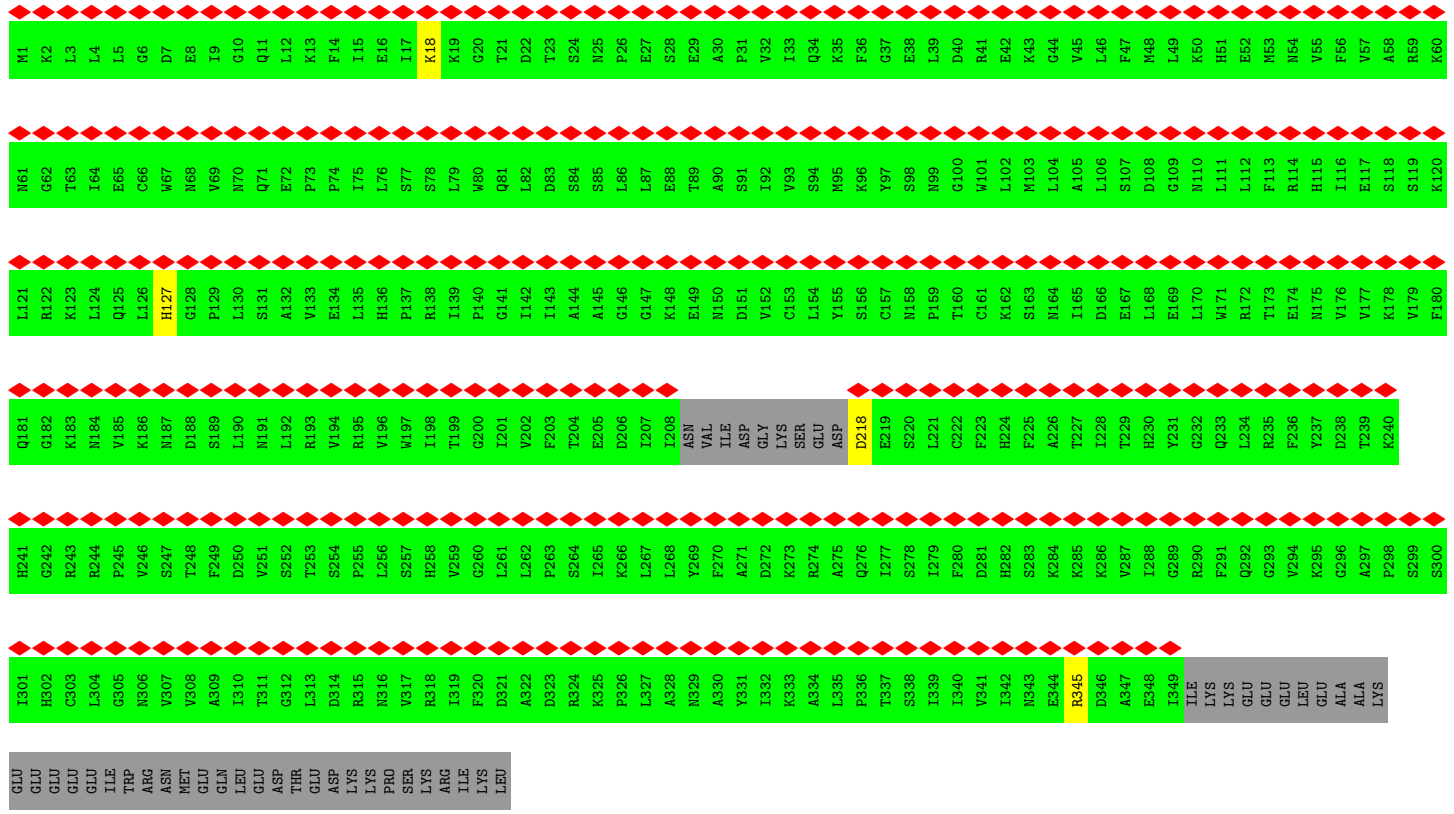
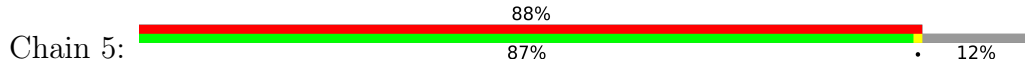
• Molecule 3: Protein mak16



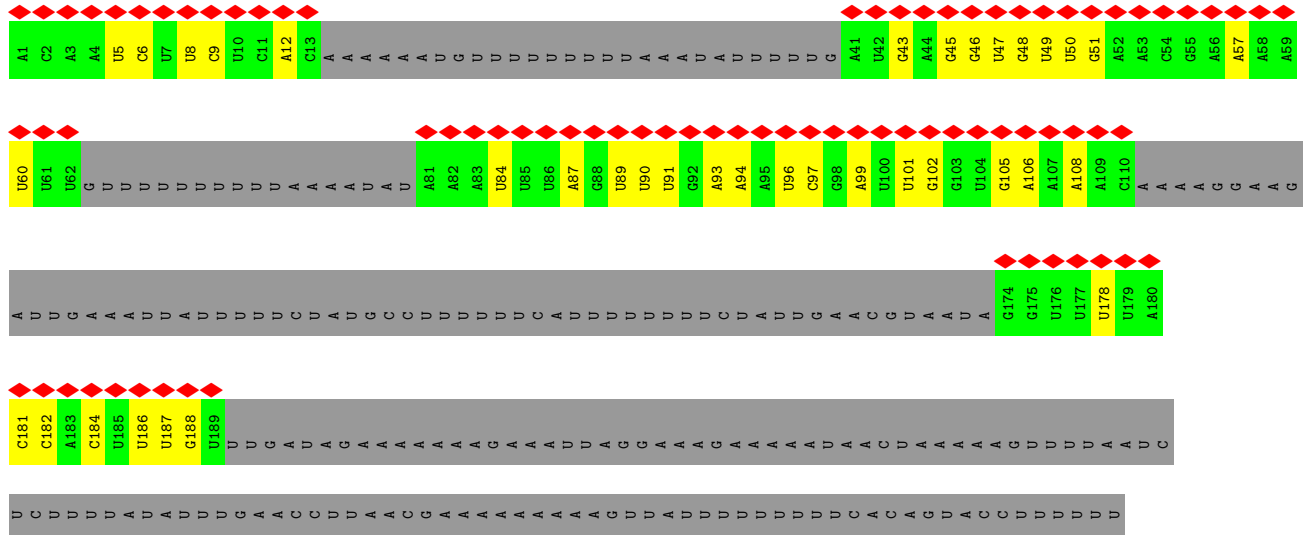
• Molecule 4: Ribosomal RNA-processing protein 1 homolog



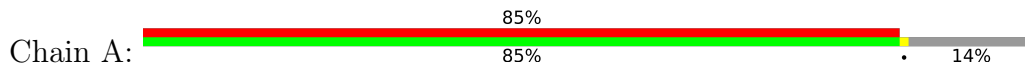
• Molecule 5: Ribosome biogenesis protein nsal

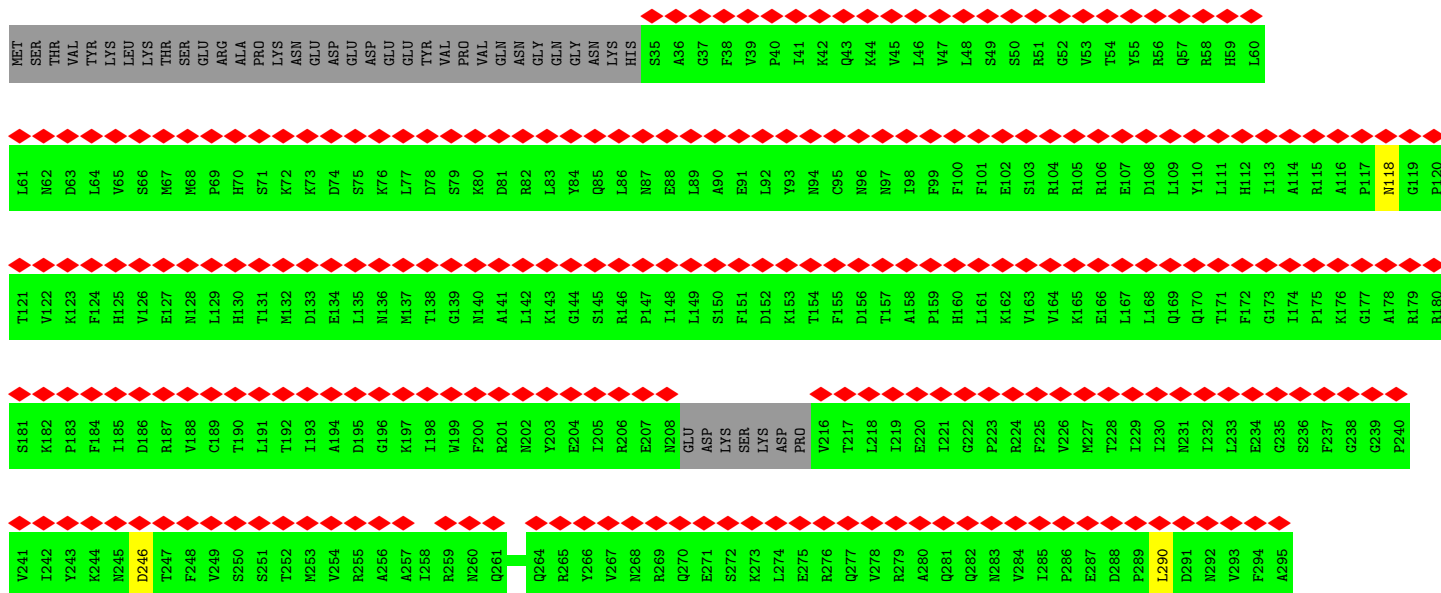


• Molecule 6: RNA (125-MER)

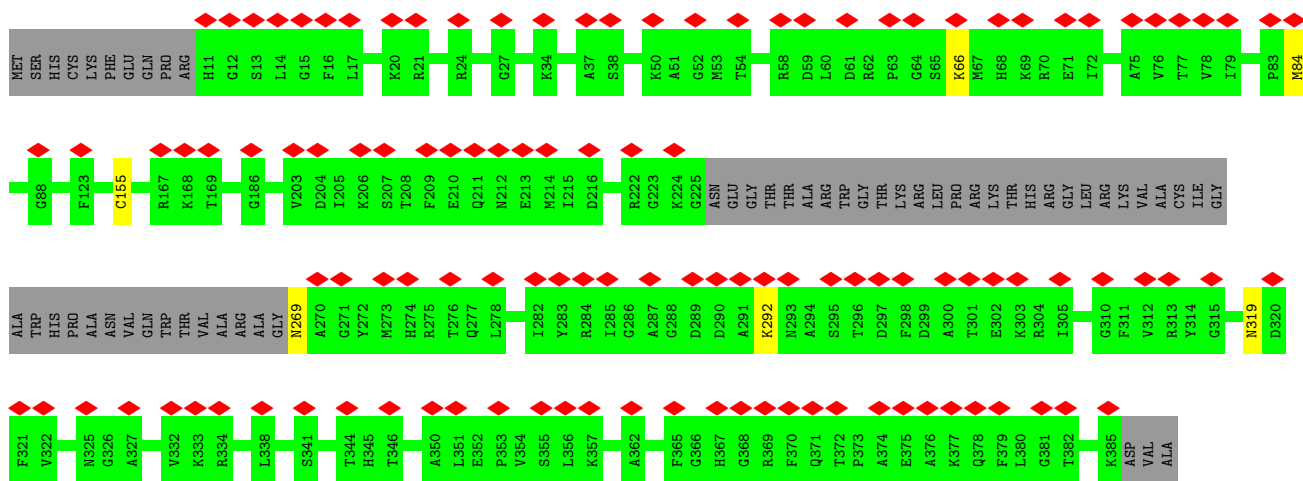
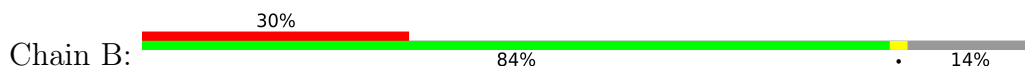


• Molecule 7: Ribosome biogenesis protein brx1

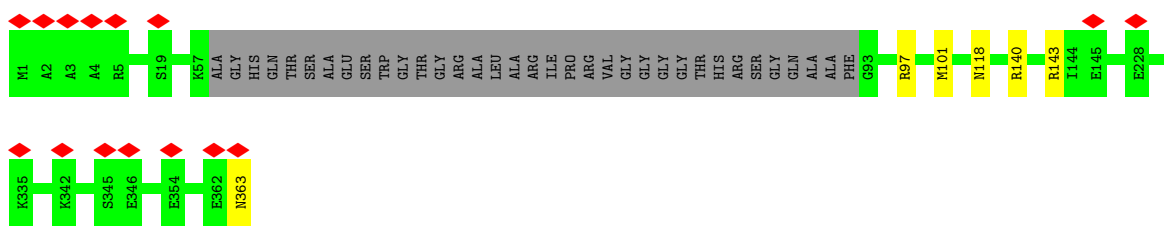
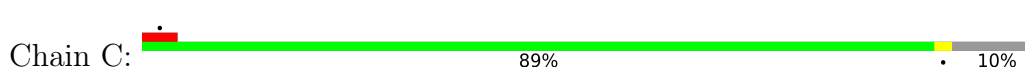




• Molecule 8: 60S ribosomal protein L3-A



• Molecule 9: 60S ribosomal protein L4-B

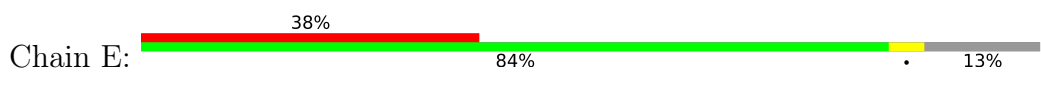


• Molecule 10: ATP-dependent RNA helicase has1



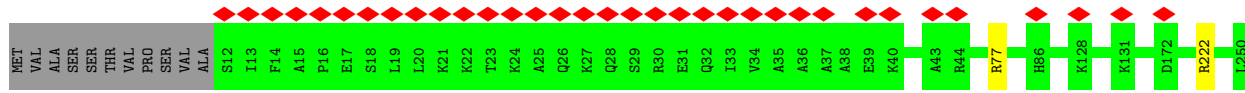
MET	ALA	LYS	SER	GLU	LEU	LYS	ARG	ASN	GLN	VAL	HIS	ASP	SER	GLY	ASN	GLU	LEU	VAL	ASN	LEU	GLN	GLU	VAL	ASP	GLN	ASP	THR	SER	VAL	GLU	SER																															
GLU	SER	GLU	GLU	LEU	ASP	ASN	GLU	ASN	ASN	GLU	ASP	GLU	ARG	VAL	VAL	ASN	LEU	ASN	ALA	SER	SER	THR	SER	ASP	GLU	LYS	PHE	SER	ASP	LEU	GLN																															
P121	P122	L123	L124	L125	G126	R127	D128	H129	G130	A132	A133	K134	T135	G136	S137	G138	K139	T140	A142	F143	L144	L145	P146	T147	I148	E149	M150	L151	N152	A153	L154	K155	F156	K157	P158	R159	N160	G161	T162	G163	V164	I165	T166	I167	S168	P169	T170	R171	E172	L173	L175	Q176	I177	F178	G179	L240						
A181	K182	E183	L184	L185	K186	Y187	H188	H189	Q190	T191	F192	G193	I194	V195	I196	G197	G198	A199	N200	R201	R202	A203	E204	A205	D206	K207	L208	V209	K210	G211	N212	V213	L214	L215	V216	A217	T218	P219	G220	R221	L222	L223	G163	D224	H225	Q227	N228	T229	K230	G231	F232	V233	F234	R235	N236	L237	R238	S239	L240			
V241	I242	D243	E244	A245	D246	R247	I248	L249	E250	I251	G252	F253	E254	D255	E256	M257	R258	Q259	I260	M261	K262	I263	L264	P265	S266	E267	N268	R269	Q270	T271	L272	PHE	SER	THR	ALA	GLN	THR	THR	LYS	VAL	GLU	ASP	LEU	ALA	ARG	ILE	SER	LEU	LYS	PRO	PRO	PRO	LEU	TVR	VAL	ASN	VAL	ASP				
SER	GLY	PRO	THR	SER	THR	VAL	GLY	LEU	E312	Q313	G314	V315	V316	V317	V318	D319	S320	D321	K322	F324	L325	L326	L327	F328	S329	F330	L331	K332	R333	N334	L335	K336	K337	K338	V339	T340	V341	F342	M343	S344	S345	C346	A347	S348	V349	K350	Y351	K352	A353	E354	L355	L356	N357	V358	I359	R417	D419	D420				
L361	P362	V363	L364	D365	L366	H367	G368	Q370	K371	Q372	Q373	R374	T376	N377	T378	F379	F380	E381	F382	C383	N384	A385	E386	K387	G388	I389	L390	L391	C392	T393	N394	V395	A396	A397	R398	G399	L400	D401	T402	P403	A404	V405	D406	W407	T408	V409	Q410	Y411	D412	P413	P414	D415	D416	P417	D419							
I421	H422	R423	W424	G425	ARG	THR	ALA	ALA	Q487	ARG	GLY	THR	THR	GLY	THR	G436	K436	S437	L438	M439	F440	L441	A442	P443	S444	E445	L446	G447	F448	L449	R450	Y451	L452	K453	T454	A455	K456	V457	S458	L459	N460	E461	F462	E463	F464	P465	A466	N467	K468	V469	A470	N471	W472	Q473	S474	Q475	L476	E477	K478	L479	V480	
S481	K482	M483	Y484	Y485	L486	Q487	Q488	S489	L490	K491	D492	G493	Y494	R495	S496	Y497	L498	Q499	A500	Y501	A502	S503	Y504	S505	L506	R507	S508	I509	F510	D511	I512	N513	K514	L515	D516	L517	A518	R519	V520	A521	S522	S523	F524	G525	A527	H528	F529	P530	N531	V532	N533	I534	THR	ILE	GLY	ALA	SER	GLY				
ARG	THR	ASP	LYS	GLY	GLU	ARG	ARG	THR	ALA	Q487	ARG	GLY	THR	THR	GLY	THR	G436	K436	S437	L438	M439	F440	L441	A442	P443	S444	E445	L446	G447	F448	L449	R450	Y451	L452	K453	T454	A455	K456	V457	S458	L459	N460	E461	F462	E463	F464	P465	A466	N467	K468	V469	A470	N471	W472	Q473	S474	Q475	L476	E477	K478	L479	V480

• Molecule 11: 60S ribosomal protein L6

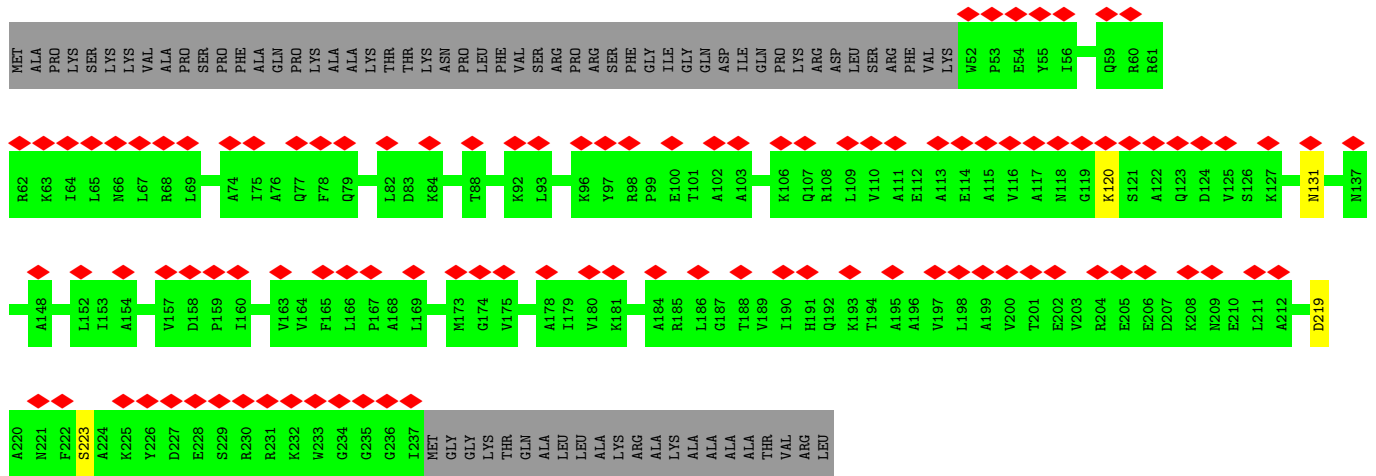
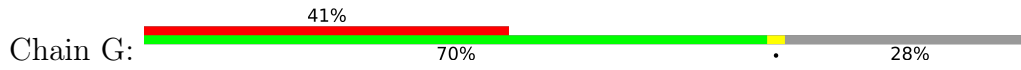


MET	SER	THR	VAL	LYS	VAL	ASN	GLY	ALA	D110	ASN	GLY	GLU	ARG	MET	VAL	LEU	PRO	ALA	ALA	ALA	ALA	R26	Y27	Y28	P29	A30	Y31	R32	N34	V35	K38	R44	K47	L52	G55	G63	L73	E77	D78	T79	L80	W81	T82	T83	G84	G90	
I93	R94	A106	I109	D110	V111	S112	V114	S115	K118	K121	A122	K126	K128	R129	S130	G131	P132	V133	K134	K135	D136	E137	A138	F139	F140	A141	E142	M143	A144	P145	K146	M147	A148	L149	P150	A151	E152	R153	I154	Q157	K158	D161	A162	K163	L164	I168	I171
M174	K175	E176	Y177	L178	A179	M186	R189	F195																																							

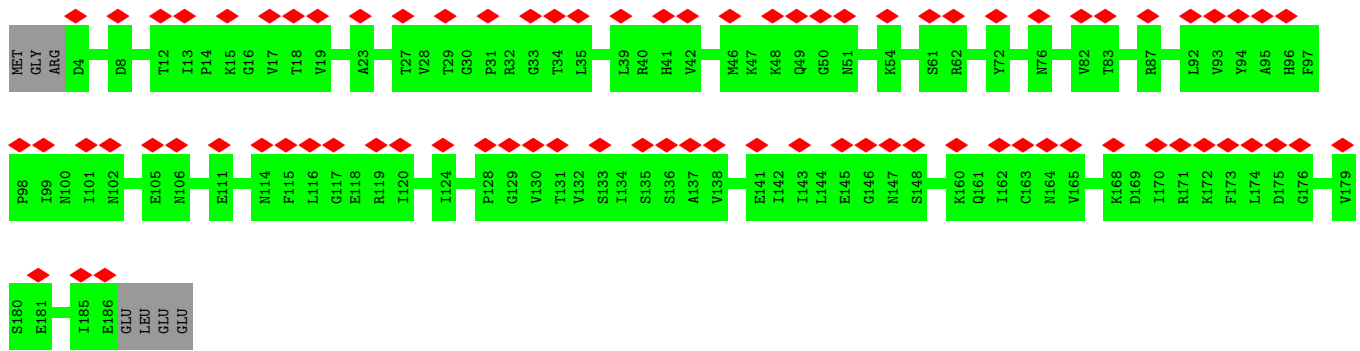
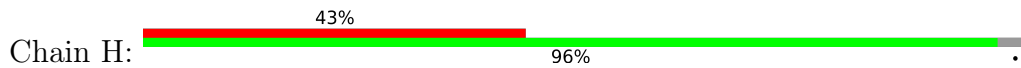
• Molecule 12: 60S ribosomal protein L7-B



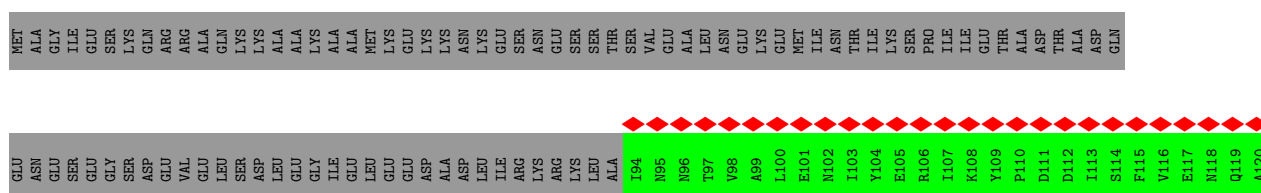
• Molecule 13: 60S ribosomal protein L8

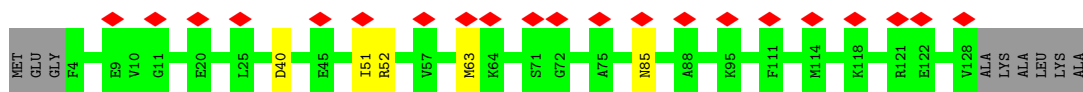
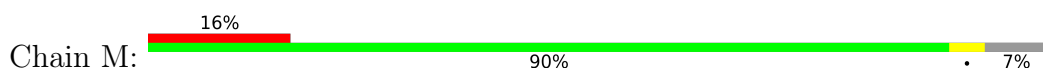


• Molecule 14: 60S ribosomal protein L9-A

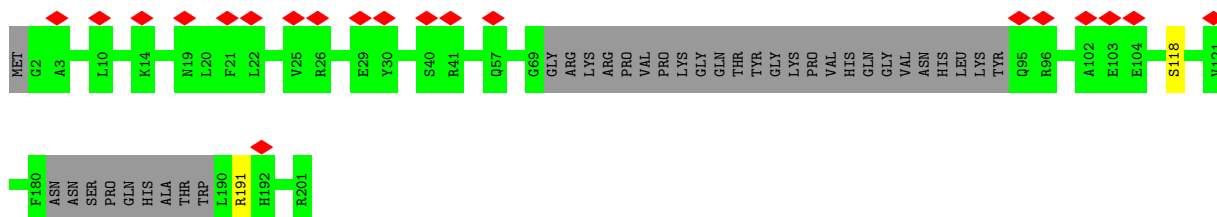
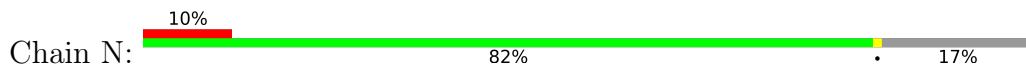


• Molecule 15: Probable rRNA-processing protein ebp2





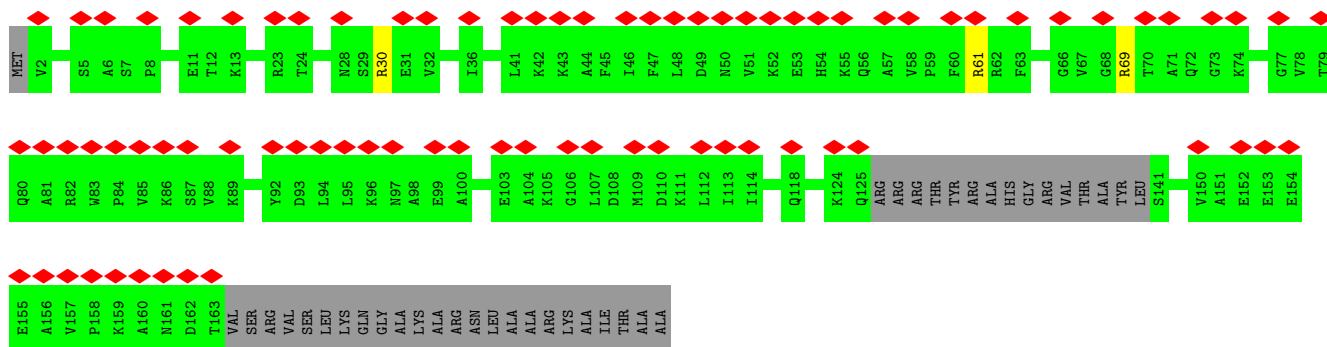
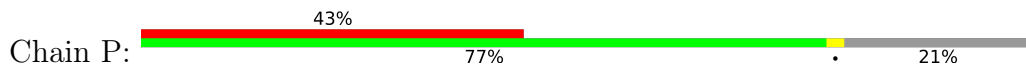
- Molecule 19: 60S ribosomal protein L15-A



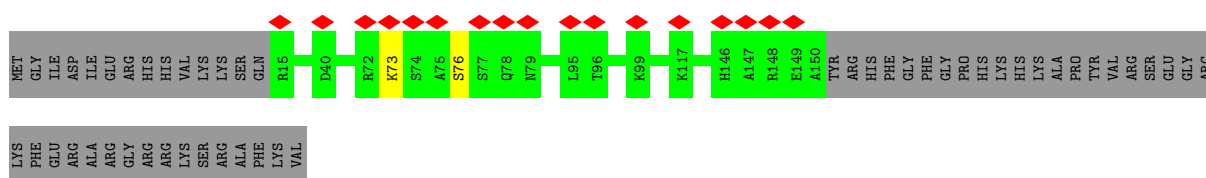
- Molecule 20: 60S ribosomal protein L16-B



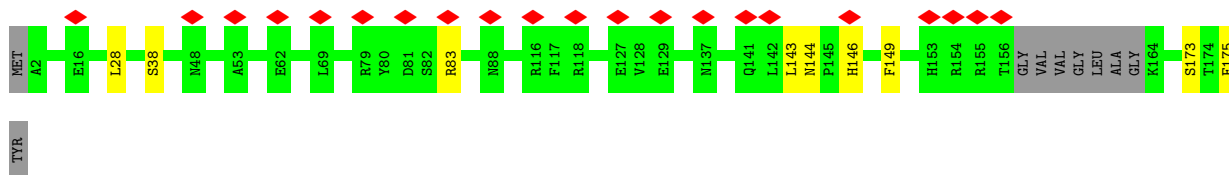
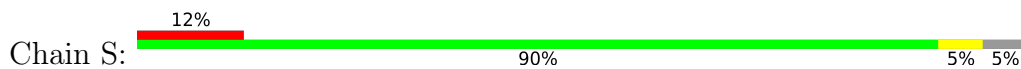
- Molecule 21: 60S ribosomal protein L17-A



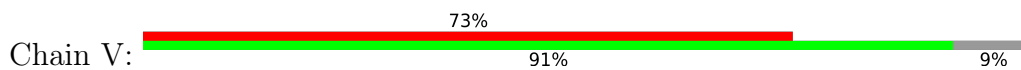
- Molecule 22: 60S ribosomal protein L18-A



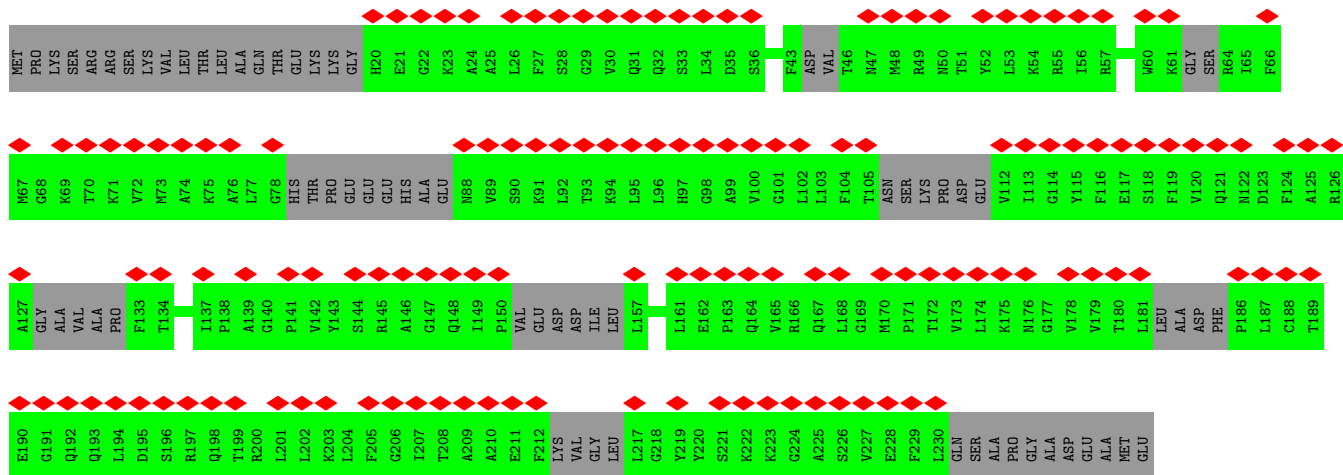
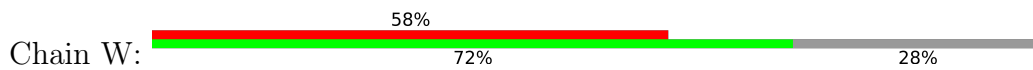
- Molecule 23: 60S ribosomal protein L20-A



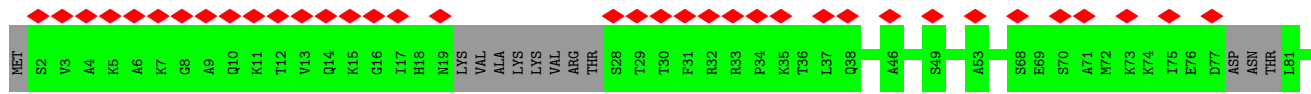
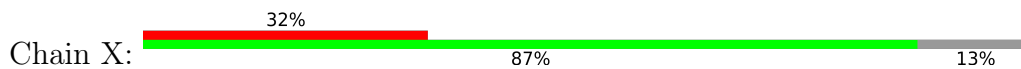
• Molecule 24: 60S ribosomal protein L23-A



• Molecule 25: Ribosome assembly factor mrt4

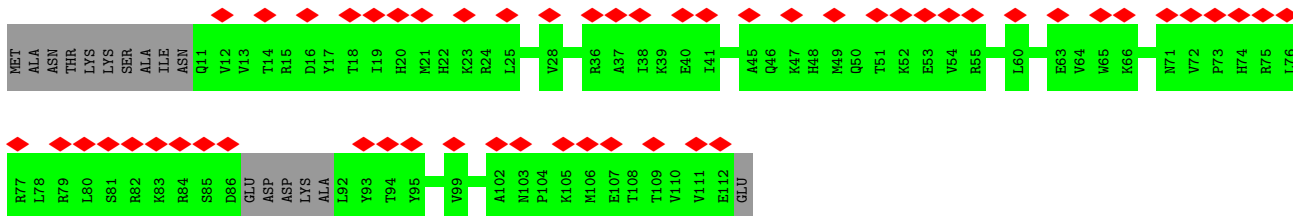
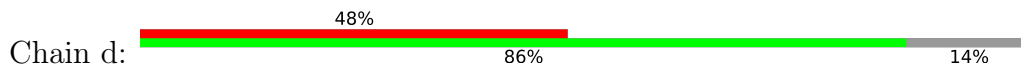


• Molecule 26: 60S ribosomal protein L25-A



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

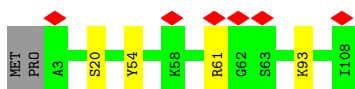
- Molecule 29: 60S ribosomal protein L31



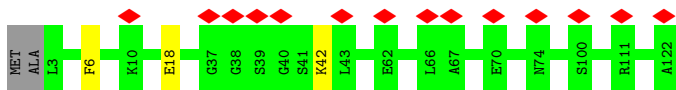
- Molecule 30: 60S ribosomal protein L32-A



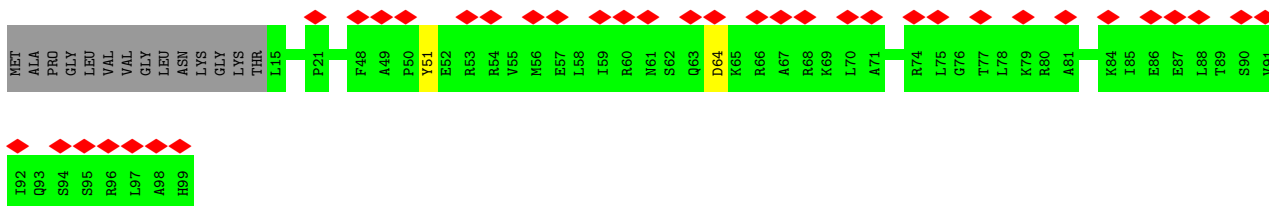
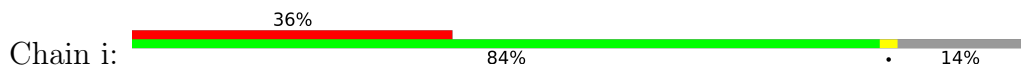
- Molecule 31: 60S ribosomal protein L33-B



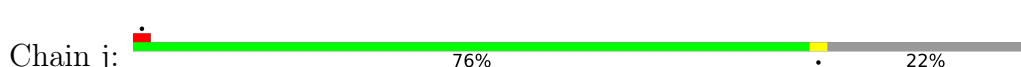
- Molecule 32: 60S ribosomal protein L35



- Molecule 33: 60S ribosomal protein L36-B



- Molecule 34: 60S ribosomal protein L37-B



LEU
GLY
ILE
THR
LEU
GLU
SER
ASP
VAL
SER
HIS
PRO
LYS
ALA
ALA
SER
PRO
VAL
ALA
SER
LYS
LYS
LYS
ASN
LYS
VAL
LEU
ALA
ALA
HIS
LYS

● Molecule 38: Ribosome biogenesis protein nsa2



MET
P2
Q3
M4
E5
Y6
E9
R12
K13
H14
G15
R16
R17
F18
D19
H20
E21
E22
K26
K27
A28
A29
R30
E31
A32
H33
D34
A35
S36
L37
Y38
K41
T42
K46
A47
Y50
Q51
E52
K53
R54
E57
K58
I59
Q60
M61
T64
I65
H68
E69
E70
R71

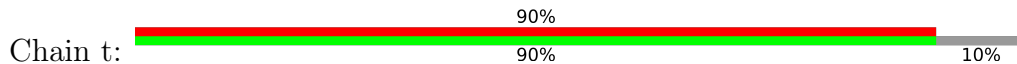
N72
A73
THR
GLN
ARG
GLY
SER
ASP
ALA
GLN
THR
GLN
GLY
ALA
VAL
PRO
TYR
LEU
LEU
ASP
ARG
GLN
SER
GLN
ALA
MET
LEU
SER
SER
ALA
VAL
PRO
LYS
ARG
GLN
LYS
ARG
LYS
GLU
LYS
VAL
SER
PRO
PRO
GLN
VAL
ARG
GLY
VAL
ALA
ALA
VAL

MET
PHE
LYS
VAL
ILE
ARG
THR
GLY
LYS
SER
LYS
THR
ASN
SER
TRP
K147
R148
M149
I150
T151
K152
A153
T154
F155
V156
GLY
ASP
GLY
PHE
THR
ARG
ARG
PRO
VAL
K166
Y167
E168
R169
F170
I171
R172
P173
M174
A175
L176
R177
Q178
K179
A180
M181
M182
V183
T184
H185
K186
E187
L188
G189
V190
T191

M192
Q193
L194
P195
I196
I197
G198
V199
K200
K201
N202
P203
P206
T207
Y208
T209
L211
V213
G212
L214
T215
K216
G217
T218
V219
I220
E221
V222
M223
V224
S225
E226
L227
GLY
LEU
VAL
THR
SER
GLY
GLY
LYS
VAL
VAL
TRP
G239
K240
Y241
A242
Q243
I244
T245
N246
M247
P248
E249
L250
D251
G252

C253
V254
M255
A256
L257
L258
L259
T260

● Molecule 39: 60S ribosomal protein L7-A



MET
ALA
GLU
ASP
ALA
VAL
VAL
GLN
GLN
MET
LEU
GLU
PRO
GLU
VAL
VAL
LEU
LEU
LYS
LYS
ARG
LYS
VAL
N25
E26
R27
T28
R29
K30
E31
R32
V33
E34
Q35
A36
I37
A38
K39
K40
E41
A42
Q43
K44
K45
M46
R47
K48
E49
T50
F51
K52
R53
A54
E55
T56
F57
I58
M59
M60

Y61
R62
Q63
R64
E65
R66
E67
R68
I69
R70
L71
N72
R73
S74
A75
K76
N77
K78
G79
D80
I81
F82
V83
P84
D85
E86
T87
K88
L89
L90
F91
V92
I93
R94
I95
A96
G97
V98
K99
N100
M101
P102
P103
K104
I105
F106
K107
V108
L109
R110
L111
L112
R113
L114
S115
R116
I117
N118
N119
A120

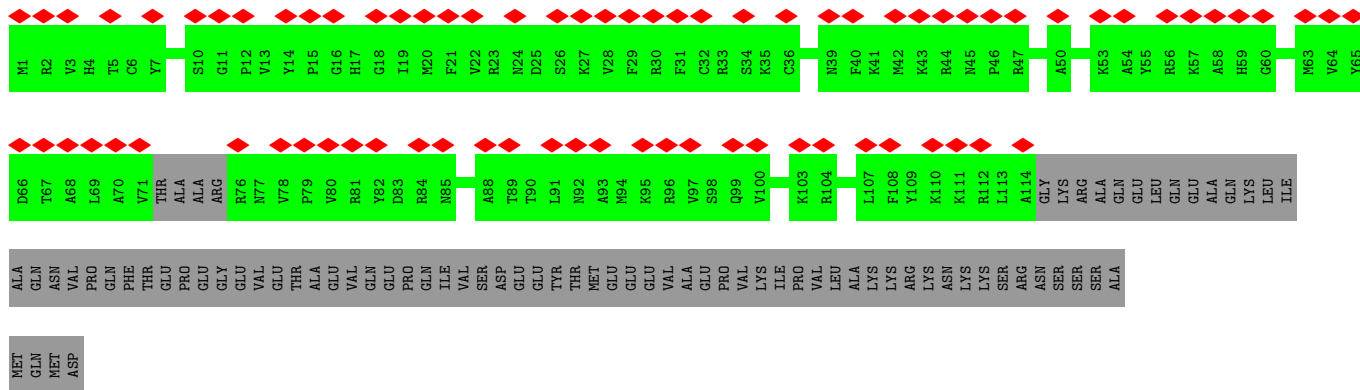
V121
F122
V123
R124
N125
N126
K127
A128
V129
A130
Q131
M132
R133
L134
I135
V136
E137
P138
Y139
V140
M141
Y142
G143
I144
P145
N146
L147
H148
S149
V150
R151
E152
L153
I154
Y155
K156
R157
G158
F159
G160
K161
I162
N163
G164
Q165
R166
I167
A168
L169
S170
D171
N172
A173
L174
I175
E176
E177
L178
G180

K181
Y182
D183
V184
I185
S186
I187
E188
D189
I190
I191
H192
E193
I194
Y195
N196
V197
G198
S199
H200
F201
K202
E203
V204
T205
K206
F207
L208
W209
P210
F211
T212
L213
T214
P215
V216
K217
H218
S219
L220
M221
E222
K223
K224
V225
K226
H227
F228
N229
E230
G231
R232
K233
A234
G235
Y236
C237
E238
E239
E240

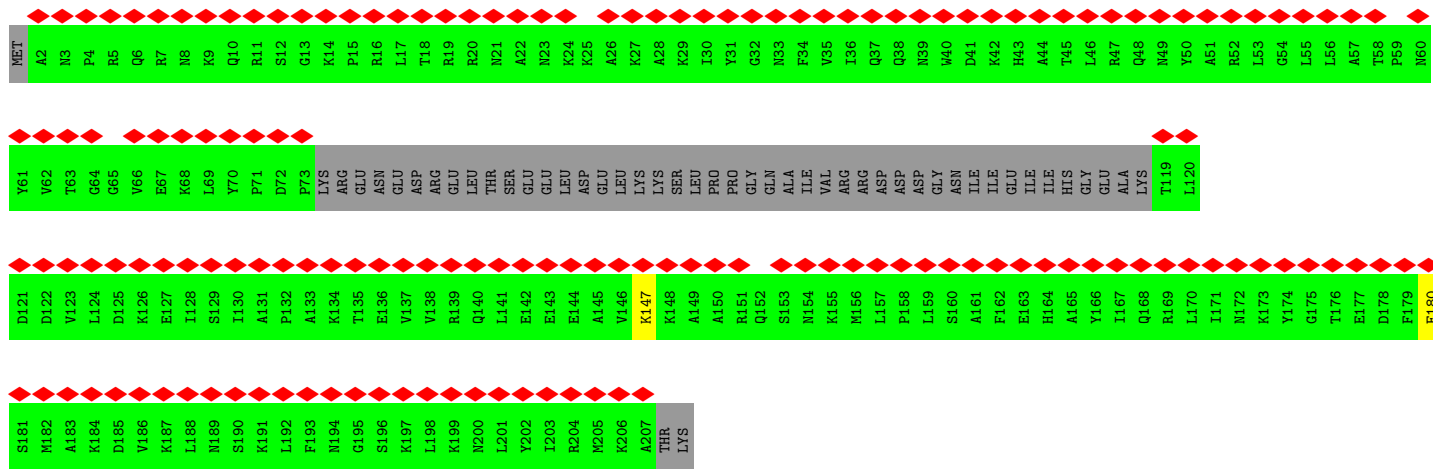
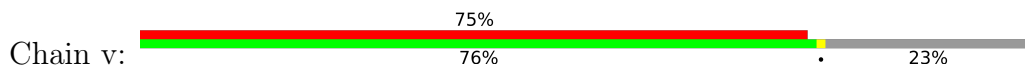
I241
N242
E243
L244
I245
K246
K247
Q248
V249

● Molecule 40: Ribosome biogenesis protein rlp24

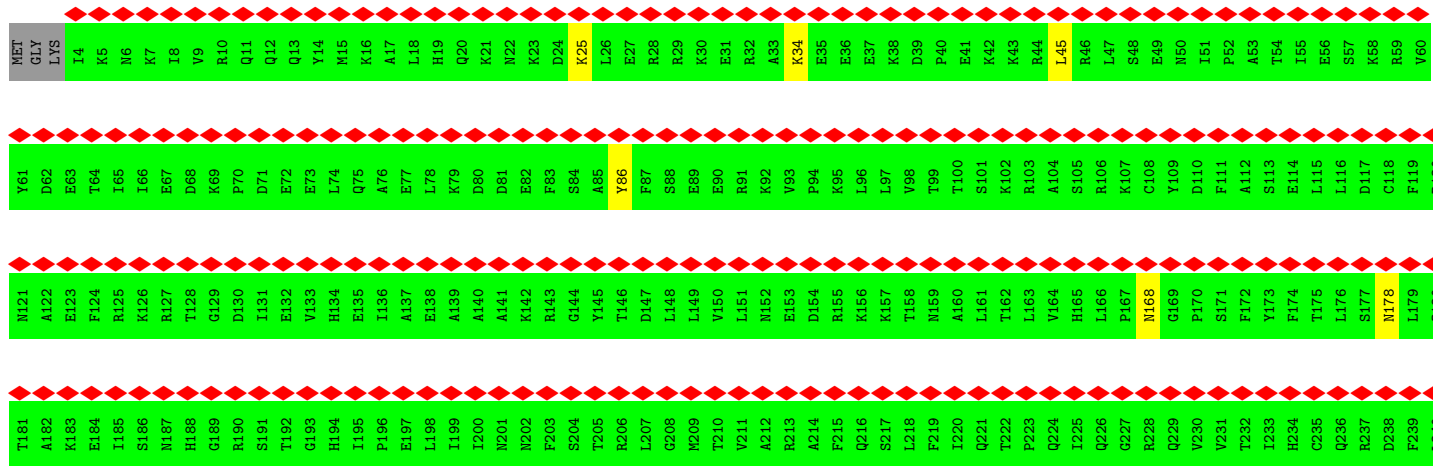




• Molecule 41: Nucleolar protein 16



• Molecule 42: Brix domain-containing protein C4F8.04



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 (Å)	542.72, 542.72, 542.72	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	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

Continued on next page...

Continued from previous page...

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

Continued on next page...

Continued from previous page...

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

Continued on next page...

Continued from previous page...

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

All (92) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	3	43	CYS
3	3	174	TYR
4	4	104	ASP
4	4	132	LYS
4	4	137	TYR
4	4	139	GLN
4	4	212	TYR
5	5	18	LYS
5	5	127	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
5	5	218	ASP
5	5	345	ARG
7	A	246	ASP
7	A	290	LEU
8	B	66	LYS
8	B	84	MET
8	B	155	CYS
8	B	269	ASN
8	B	292	LYS
8	B	319	ASN
9	C	97	ARG
9	C	101	MET
9	C	118	ASN
9	C	140	ARG
9	C	143	ARG
9	C	363	ASN
11	E	44	ARG
11	E	112	SER
11	E	137	GLU
11	E	139	PHE
11	E	176	GLU
11	E	189	ARG
12	F	77	ARG
13	G	120	LYS
13	G	131	ASN
13	G	219	ASP
13	G	223	SER
18	M	40	ASP
18	M	51	ILE
18	M	52	ARG
18	M	63	MET
18	M	85	ASN
19	N	118	SER
19	N	191	ARG
20	O	22	SER
20	O	48	PHE
20	O	53	LEU
20	O	73	HIS
20	O	136	TYR
21	P	30	ARG
21	P	61	ARG
21	P	69	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
22	Q	73	LYS
23	S	28	LEU
23	S	38	SER
23	S	83	ARG
23	S	143	LEU
23	S	144	ASN
23	S	146	HIS
23	S	149	PHE
23	S	173	SER
23	S	175	PHE
27	Y	2	LYS
27	Y	112	LYS
30	e	74	ARG
31	f	20	SER
31	f	54	TYR
31	f	61	ARG
31	f	93	LYS
32	h	6	PHE
32	h	18	GLU
32	h	42	LYS
33	i	51	TYR
33	i	64	ASP
34	j	26	SER
34	j	30	GLN
35	m	230	HIS
35	m	240	TYR
35	m	249	THR
36	n	32	ASP
36	n	33	PHE
36	n	50	LYS
36	n	122	ARG
41	v	147	LYS
41	v	180	GLU
42	x	25	LYS
42	x	34	LYS
42	x	45	LEU
42	x	86	TYR
42	x	168	ASN
42	x	178	ASN
42	x	305	TRP
45	T	152	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14)

such sidechains are listed below:

Mol	Chain	Res	Type
3	3	30	ASN
5	5	68	ASN
5	5	71	GLN
5	5	230	HIS
8	B	277	GLN
9	C	50	GLN
12	F	243	ASN
19	N	57	GLN
21	P	64	ASN
21	P	80	GLN
36	n	70	GLN
42	x	165	HIS
42	x	202	ASN
42	x	234	HIS

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%)

All (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
1	1	59	G
1	1	60	A
1	1	62	A
1	1	65	A
1	1	66	A
1	1	67	A
1	1	69	U
1	1	72	C
1	1	73	C
1	1	74	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	109	A
1	1	110	G
1	1	111	C
1	1	117	U
1	1	118	U
1	1	122	A
1	1	153	U
1	1	161	C
1	1	162	A
1	1	163	A
1	1	176	A
1	1	177	G
1	1	179	G
1	1	185	G
1	1	192	C
1	1	193	U
1	1	194	A
1	1	197	U
1	1	198	U
1	1	199	C
1	1	207	C
1	1	211	A
1	1	217	G
1	1	218	A
1	1	220	A
1	1	225	G
1	1	226	A
1	1	227	G
1	1	231	C
1	1	234	G
1	1	239	U
1	1	240	G
1	1	241	G
1	1	244	G
1	1	246	U
1	1	258	U
1	1	261	A
1	1	266	G
1	1	268	U
1	1	269	U
1	1	271	C
1	1	276	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	277	G
1	1	284	U
1	1	297	A
1	1	306	U
1	1	323	C
1	1	331	A
1	1	337	U
1	1	338	G
1	1	345	G
1	1	346	A
1	1	347	C
1	1	360	A
1	1	380	A
1	1	383	A
1	1	384	G
1	1	395	A
1	1	399	A
1	1	403	A
1	1	406	U
1	1	407	A
1	1	410	A
1	1	411	C
1	1	425	A
1	1	429	G
1	1	430	A
1	1	437	G
1	1	438	G
1	1	446	U
1	1	447	C
1	1	448	U
1	1	449	U
1	1	461	A
1	1	462	U
1	1	465	G
1	1	466	U
1	1	479	A
1	1	488	A
1	1	489	C
1	1	497	C
1	1	499	G
1	1	505	G
1	1	506	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	510	G
1	1	514	C
1	1	522	G
1	1	527	C
1	1	529	G
1	1	532	A
1	1	534	A
1	1	540	A
1	1	544	A
1	1	546	G
1	1	547	G
1	1	548	U
1	1	551	C
1	1	577	U
1	1	578	U
1	1	579	A
1	1	580	U
1	1	581	A
1	1	582	G
1	1	591	G
1	1	592	U
1	1	593	A
1	1	599	U
1	1	602	A
1	1	603	C
1	1	605	G
1	1	606	G
1	1	613	A
1	1	618	U
1	1	619	G
1	1	621	G
1	1	624	U
1	1	625	U
1	1	626	C
1	1	627	G
1	1	632	A
1	1	634	G
1	1	635	G
1	1	636	A
1	1	640	U
1	1	642	A
1	1	645	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	646	A
1	1	647	A
1	1	652	U
1	1	659	G
1	1	661	C
1	1	662	C
1	1	663	C
1	1	666	C
1	1	673	C
1	1	674	A
1	1	675	C
1	1	685	A
1	1	698	U
1	1	702	A
1	1	706	U
1	1	708	U
1	1	714	A
1	1	716	G
1	1	717	A
1	1	719	A
1	1	756	C
1	1	759	C
1	1	760	C
1	1	761	U
1	1	762	U
1	1	763	G
1	1	770	G
1	1	777	C
1	1	778	G
1	1	779	A
1	1	816	A
1	1	817	G
1	1	829	U
1	1	831	G
1	1	840	A
1	1	961	A
1	1	964	U
1	1	965	A
1	1	966	G
1	1	967	U
1	1	968	A
1	1	969	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	970	C
1	1	976	C
1	1	987	U
1	1	988	U
1	1	996	G
1	1	997	A
1	1	998	U
1	1	1009	C
1	1	1010	A
1	1	1012	A
1	1	1014	C
1	1	1016	G
1	1	1023	G
1	1	1133	G
1	1	1135	G
1	1	1139	U
1	1	1141	C
1	1	1142	U
1	1	1143	A
1	1	1146	G
1	1	1147	G
1	1	1150	C
1	1	1158	G
1	1	1160	A
1	1	1162	G
1	1	1163	C
1	1	1164	A
1	1	1170	G
1	1	1172	C
1	1	1173	G
1	1	1174	A
1	1	1176	G
1	1	1182	U
1	1	1185	A
1	1	1186	C
1	1	1190	A
1	1	1197	G
1	1	1199	U
1	1	1211	A
1	1	1212	U
1	1	1218	C
1	1	1219	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	1220	C
1	1	1222	U
1	1	1223	C
1	1	1224	A
1	1	1232	G
1	1	1235	A
1	1	1244	G
1	1	1248	A
1	1	1249	U
1	1	1252	A
1	1	1253	G
1	1	1254	A
1	1	1258	C
1	1	1259	A
1	1	1273	G
1	1	1275	A
1	1	1276	A
1	1	1277	G
1	1	1282	A
1	1	1283	A
1	1	1284	U
1	1	1285	C
1	1	1286	C
1	1	1289	U
1	1	1291	A
1	1	1292	G
1	1	1293	G
1	1	1294	A
1	1	1296	U
1	1	1297	G
1	1	1303	C
1	1	1308	C
1	1	1309	A
1	1	1310	C
1	1	1315	C
1	1	1316	G
1	1	1317	A
1	1	1318	A
1	1	1334	A
1	1	1336	U
1	1	1337	G
1	1	1338	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	1339	A
1	1	1340	U
1	1	1347	U
1	1	1348	A
1	1	1357	A
1	1	1362	U
1	1	1379	U
1	1	1380	A
1	1	1381	G
1	1	1383	U
1	1	1384	U
1	1	1386	G
1	1	1388	G
1	1	1389	A
1	1	1390	A
1	1	1416	G
1	1	1420	U
1	1	1425	C
1	1	1426	G
1	1	1433	U
1	1	1451	G
1	1	1452	A
1	1	1453	A
1	1	1463	G
1	1	1465	G
1	1	1471	C
1	1	1480	A
1	1	1481	G
1	1	1484	G
1	1	2452	G
1	1	2454	C
1	1	2471	C
1	1	2473	A
1	1	2474	A
1	1	2480	C
1	1	2933	A
1	1	2952	C
1	1	2953	U
1	1	2982	A
1	1	2984	C
1	1	2989	C
1	1	2993	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	2994	C
1	1	2995	A
1	1	3084	U
1	1	3085	G
1	1	3086	A
1	1	3093	G
1	1	3099	G
1	1	3102	A
1	1	3108	A
1	1	3113	A
1	1	3116	U
1	1	3117	A
1	1	3118	G
1	1	3119	U
1	1	3125	A
1	1	3128	A
1	1	3142	A
1	1	3144	C
1	1	3151	A
1	1	3152	U
1	1	3153	U
1	1	3155	G
1	1	3183	A
1	1	3188	U
1	1	3189	C
1	1	3195	C
1	1	3196	C
1	1	3197	G
1	1	3205	G
1	1	3209	A
1	1	3218	A
1	1	3225	A
1	1	3226	A
1	1	3227	U
1	1	3238	A
1	1	3239	A
1	1	3240	G
1	1	3270	U
1	1	3272	U
1	1	3273	A
1	1	3275	A
1	1	3276	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	3282	G
1	1	3300	A
1	1	3307	U
1	1	3308	G
1	1	3315	A
1	1	3317	A
1	1	3318	A
1	1	3319	G
1	1	3320	A
1	1	3324	G
1	1	3329	G
1	1	3335	U
1	1	3336	G
1	1	3337	A
1	1	3338	A
1	1	3343	A
1	1	3344	A
1	1	3345	G
1	1	3347	G
1	1	3351	U
1	1	3352	A
1	1	3353	U
1	1	3355	G
1	1	3356	A
1	1	3357	C
1	1	3358	U
1	1	3359	U
1	1	3365	U
1	1	3369	A
1	1	3370	U
1	1	3372	C
1	1	3373	C
1	1	3375	U
1	1	3396	A
1	1	3405	C
1	1	3414	U
1	1	3417	A
1	1	3418	U
1	1	3419	G
1	1	3420	U
1	1	3421	G
1	1	3431	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	1	3433	U
1	1	3435	U
1	1	3436	A
1	1	3469	U
1	1	3470	G
1	1	3471	A
1	1	3476	A
1	1	3478	G
1	1	3479	C
1	1	3483	U
1	1	3489	C
1	1	3490	A
1	1	3491	A
1	1	3496	U
2	2	23	G
2	2	27	C
2	2	29	C
2	2	42	U
2	2	43	C
2	2	47	G
2	2	55	C
2	2	57	G
2	2	61	A
2	2	67	A
2	2	70	C
2	2	71	G
2	2	79	A
2	2	83	G
2	2	87	A
2	2	88	A
2	2	89	U
2	2	98	U
2	2	103	G
2	2	108	U
2	2	112	A
2	2	114	C
2	2	115	G
2	2	117	A
2	2	119	A
2	2	120	U
2	2	124	G
2	2	132	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	2	133	U
2	2	134	U
2	2	136	U
2	2	156	G
2	2	159	U
2	2	160	G
2	2	162	C
6	6	5	U
6	6	6	C
6	6	8	U
6	6	9	C
6	6	12	A
6	6	43	G
6	6	45	G
6	6	46	G
6	6	47	U
6	6	48	G
6	6	49	U
6	6	50	U
6	6	51	G
6	6	57	A
6	6	60	U
6	6	84	U
6	6	87	A
6	6	89	U
6	6	90	U
6	6	91	U
6	6	93	A
6	6	94	A
6	6	96	U
6	6	97	C
6	6	99	A
6	6	101	U
6	6	102	G
6	6	105	G
6	6	106	A
6	6	108	A
6	6	178	U
6	6	181	C
6	6	182	C
6	6	184	C
6	6	186	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
6	6	187	U
6	6	188	G

All (26) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	116	A
1	1	270	U
1	1	382	A
1	1	460	G
1	1	487	C
1	1	496	C
1	1	626	C
1	1	661	C
1	1	674	A
1	1	759	C
1	1	760	C
1	1	761	U
1	1	997	A
1	1	1159	U
1	1	1234	A
1	1	1272	U
1	1	1333	A
1	1	1338	G
1	1	1385	U
1	1	2952	C
1	1	3217	U
1	1	3318	A
1	1	3328	U
1	1	3337	A
1	1	3416	A
2	2	131	G

5.4 Non-standard residues in protein, DNA, RNA chains [\(i\)](#)

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

5.5 Carbohydrates [\(i\)](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

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 [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

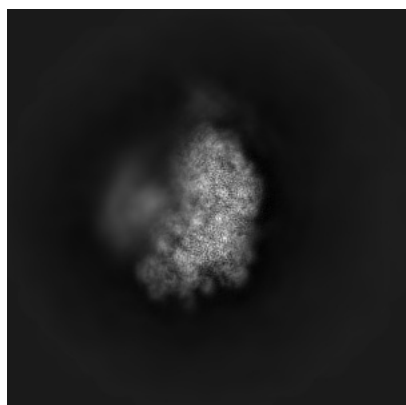
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-24395. These allow visual inspection of the internal detail of the map and identification of artifacts.

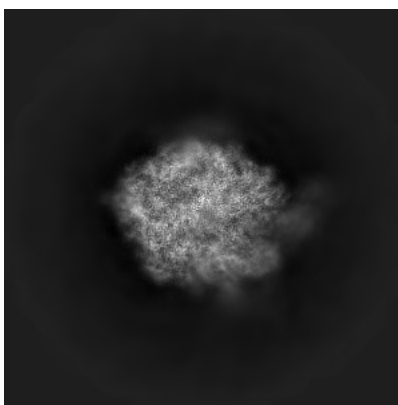
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

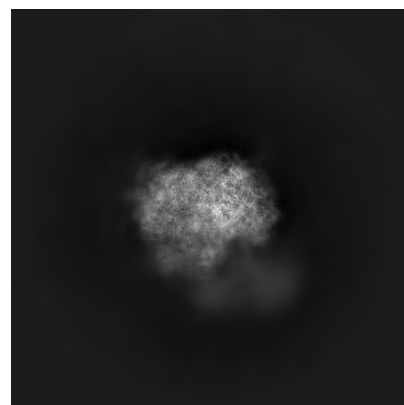
6.1.1 Primary map



X



Y

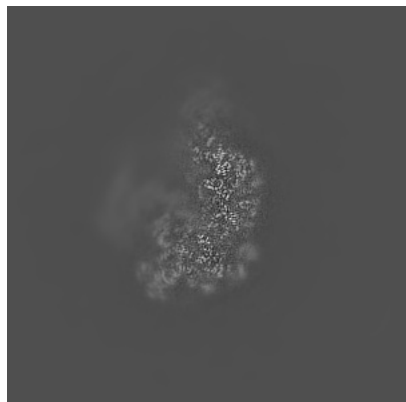


Z

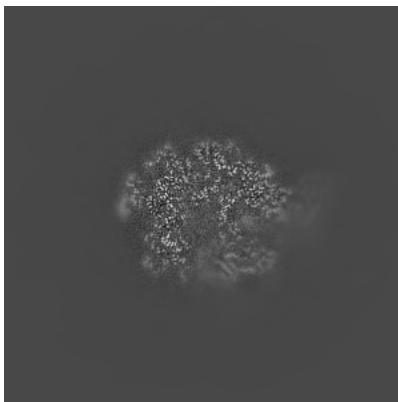
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

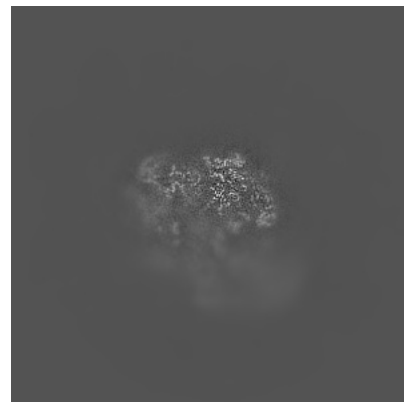
6.2.1 Primary map



X Index: 256



Y Index: 256

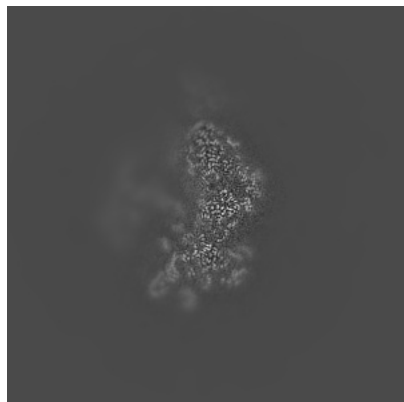


Z Index: 256

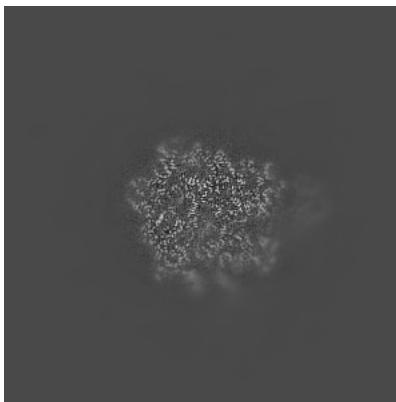
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

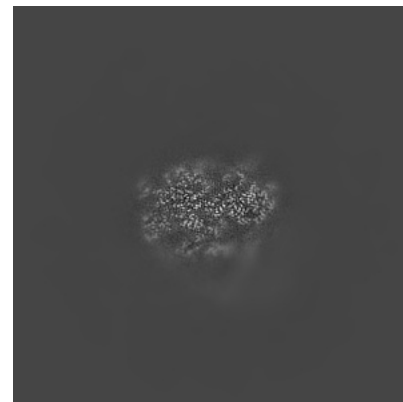
6.3.1 Primary map



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](#)

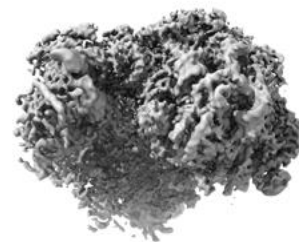
6.4.1 Primary map



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.

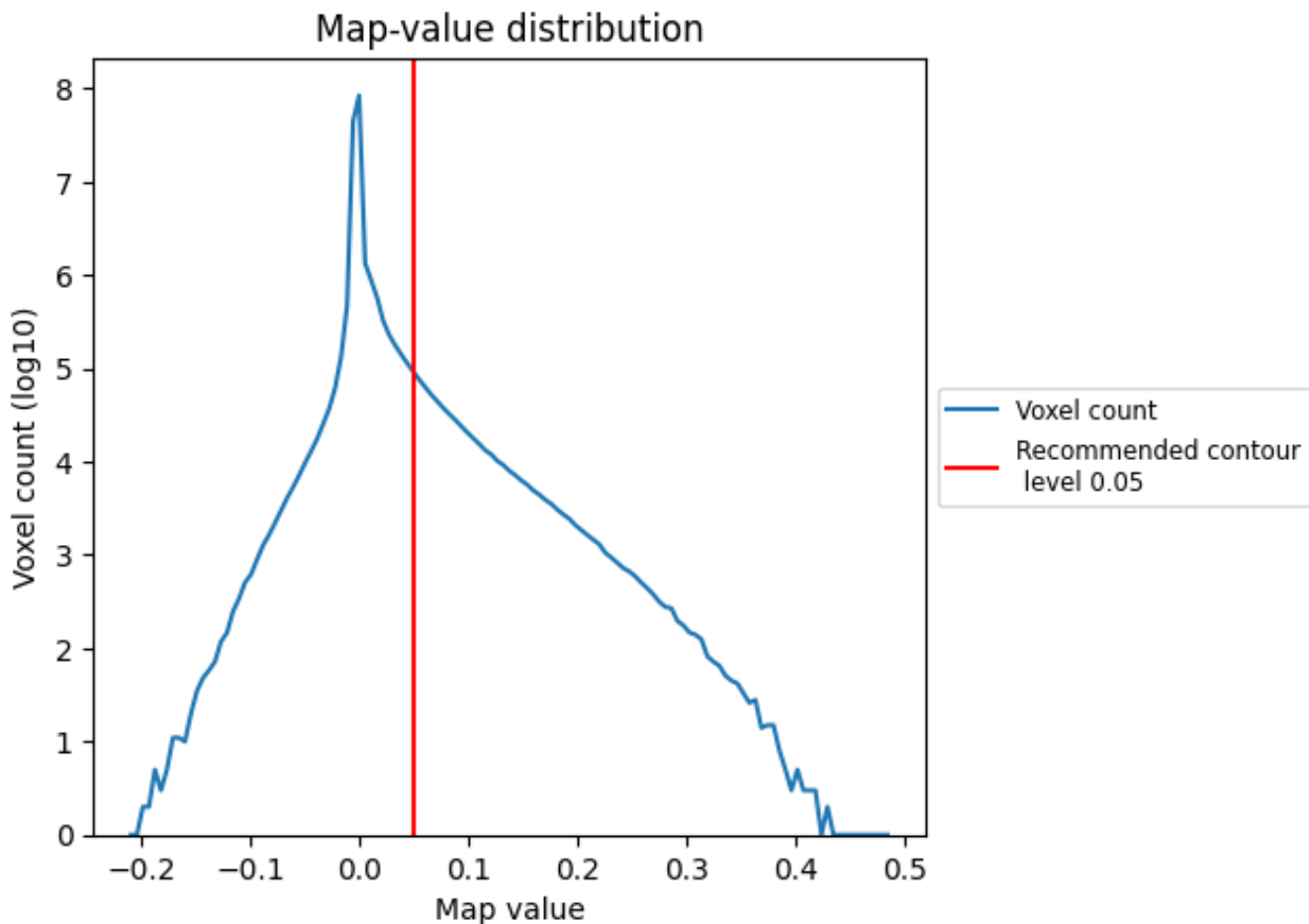
6.5 Mask visualisation

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

7 Map analysis [i](#)

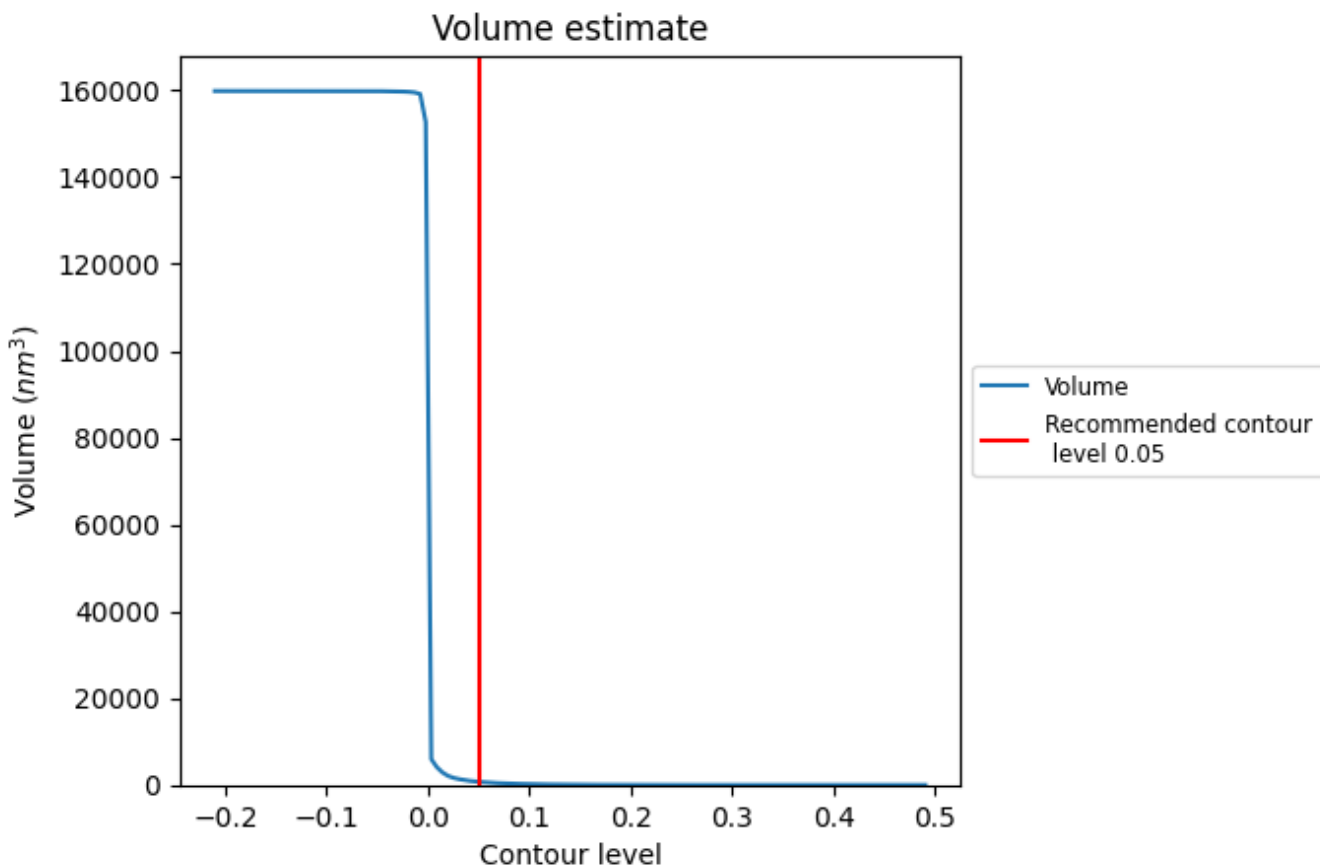
This section contains the results of statistical analysis of the map.

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.

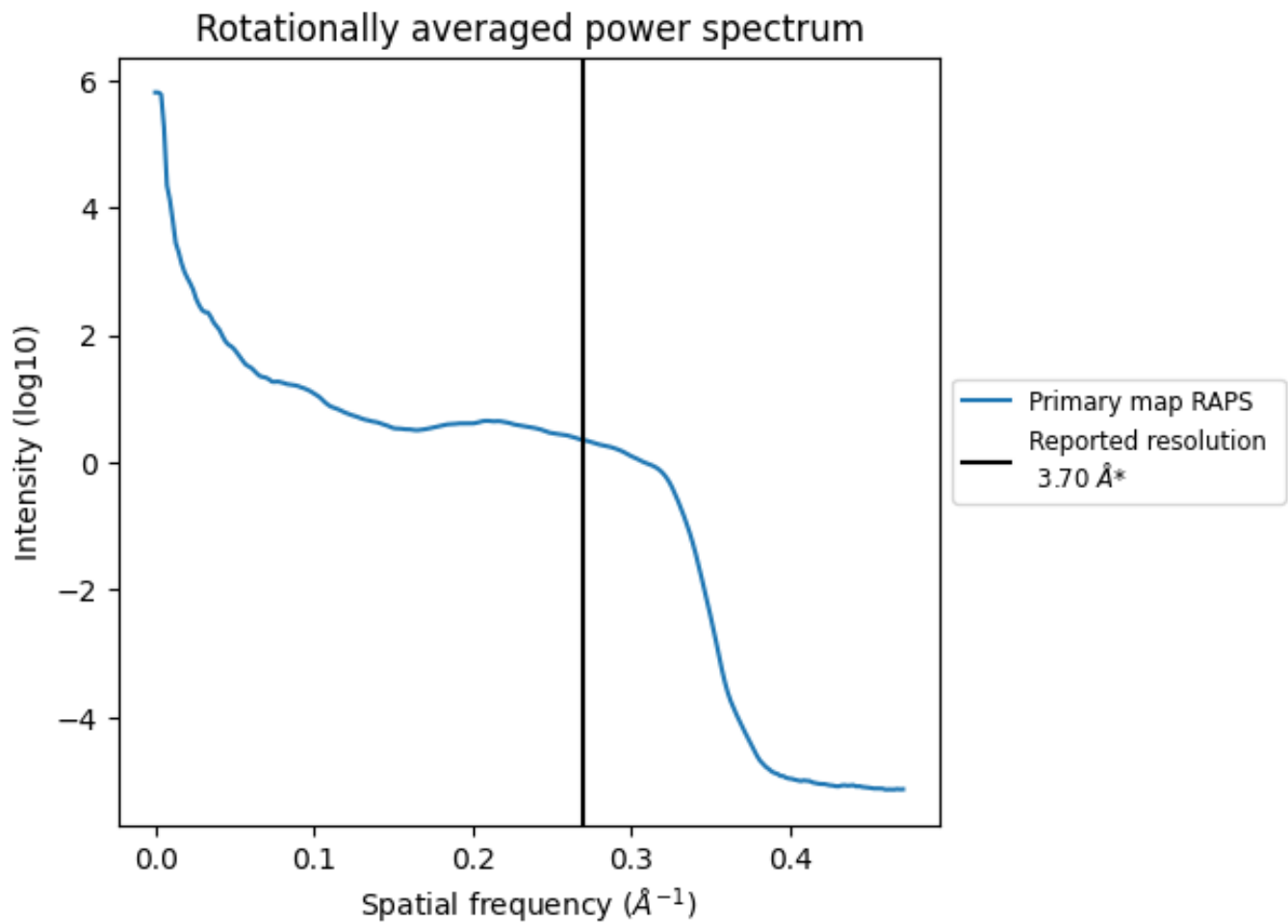
7.2 Volume estimate [\(i\)](#)



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\AA^{-1}

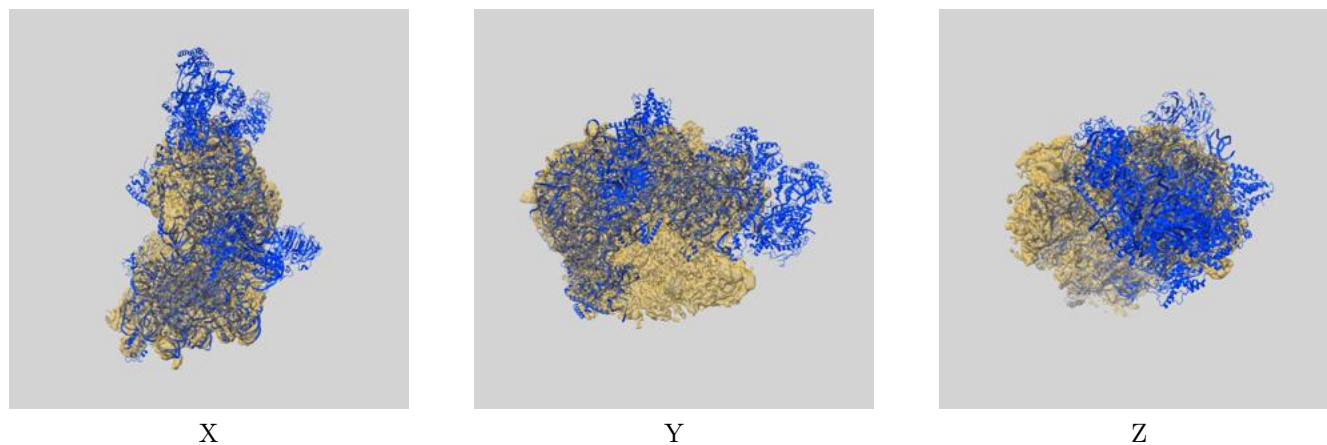
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

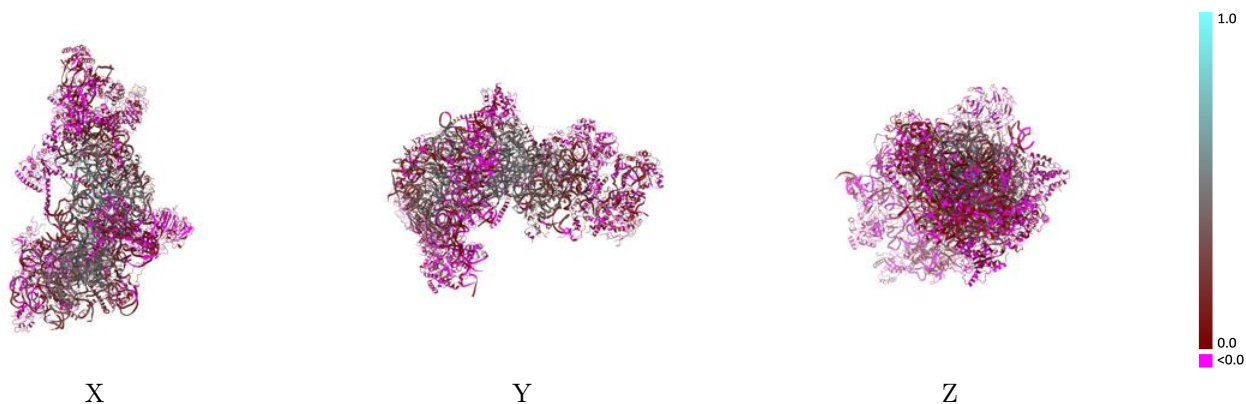
This section contains information regarding the fit between EMDB map EMD-24395 and PDB model 8ETI. Per-residue inclusion information can be found in section 3 on page 12.

9.1 Map-model overlay [i](#)



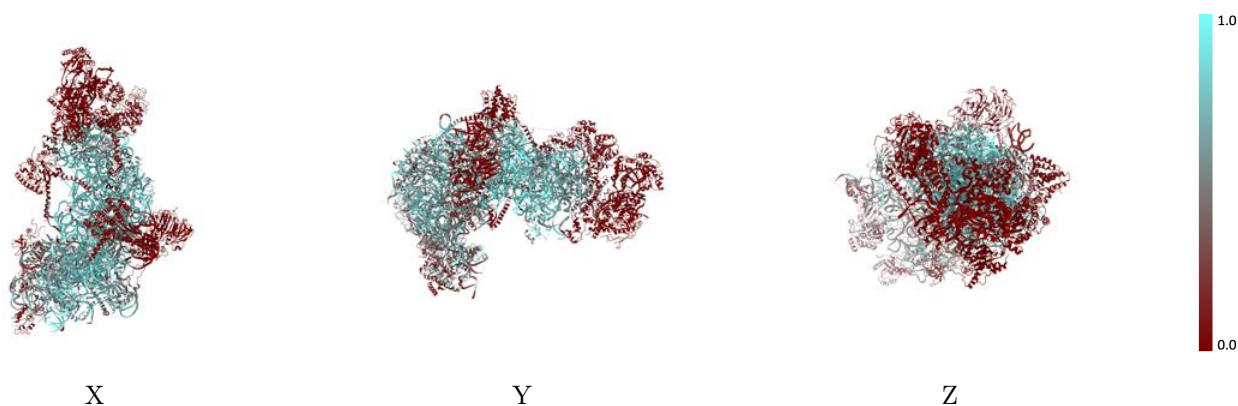
The images above show the 3D surface view of the map at the recommended contour level 0.05 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



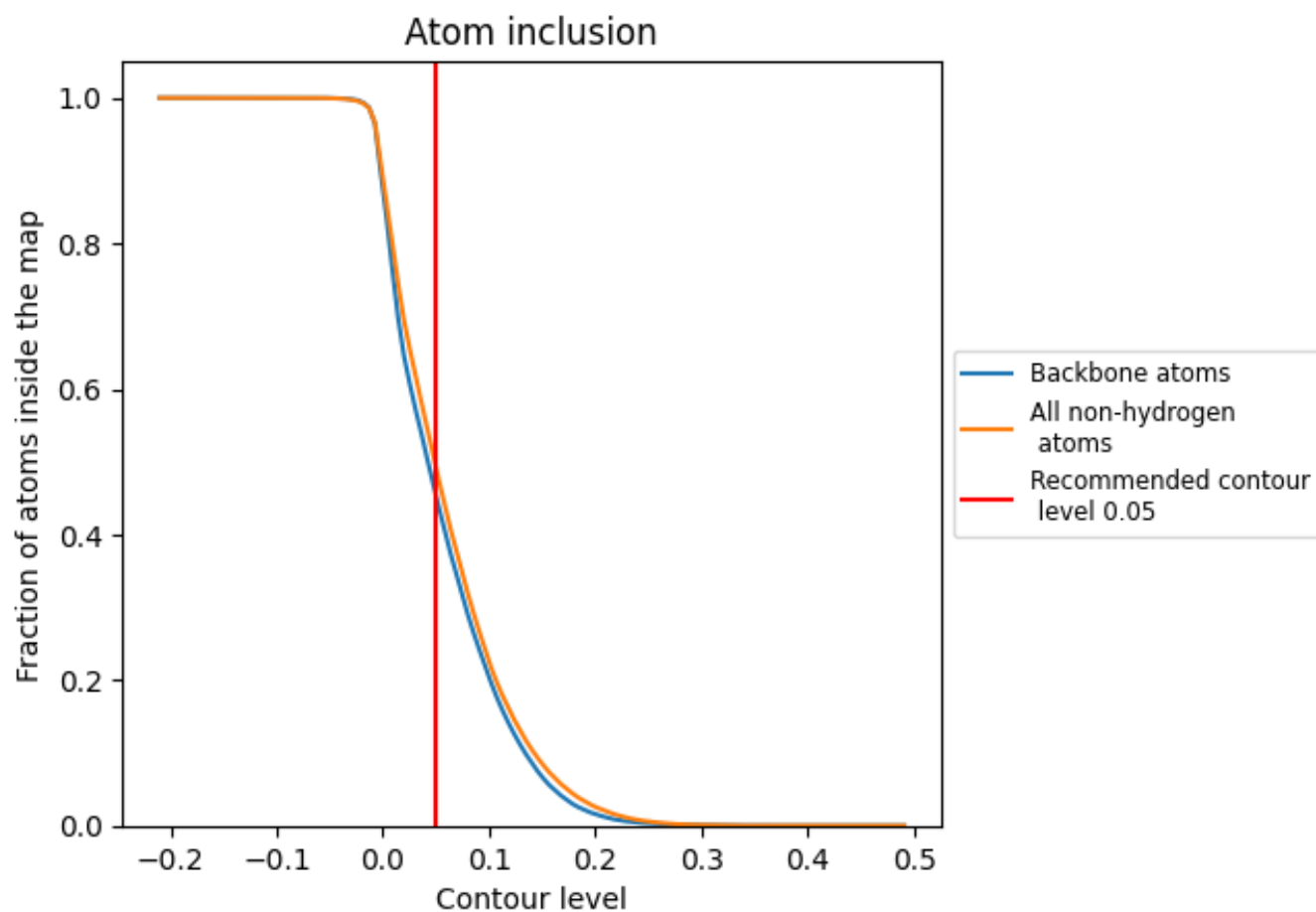
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



Continued on next page...

Continued from previous page...

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