Full wwPDB EM Validation Report ⓘ

Jan 22, 2025 – 06:30 am GMT

PDB ID	:	8RG0
EMDB ID	:	EMD-19128
Title	:	Structure of human eIF3 core from closed 48S translation initiation complex
Authors	:	Petrychenko, V.; Yi, S.-H.; Liedtke, D.; Peng, B.Z.; Rodnina, M.V.; Fischer, N.
Deposited on	:	2023-12-13
Resolution	:	3.40 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:

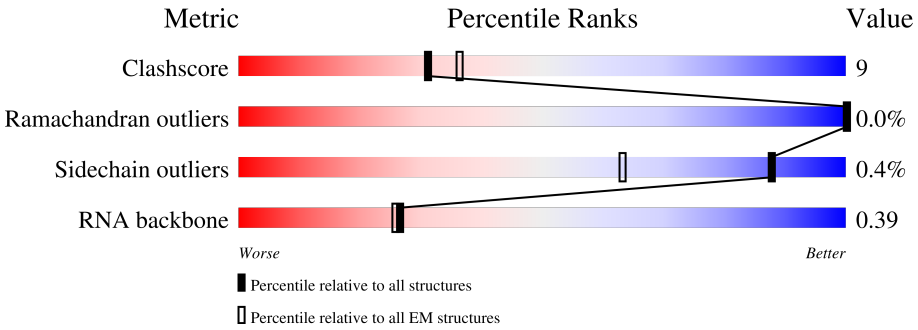
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.40 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)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	3	218	71% 95%
2	4	357	17% 71% 28%
3	5	564	71% 79% 13% 8%
4	6	374	23% 87% 9%
5	7	255	11% 7% 88%
6	8	352	31% 89% 10%
7	A	1869	94%

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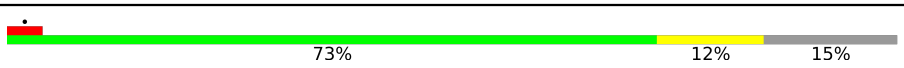
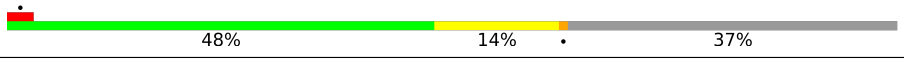
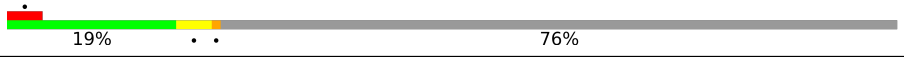
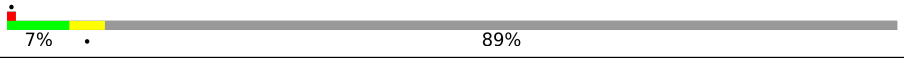
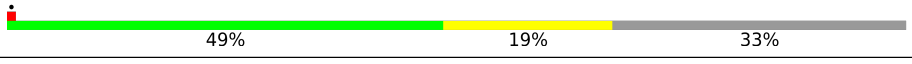
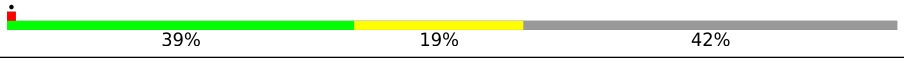
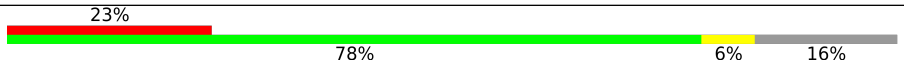
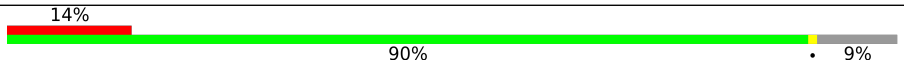
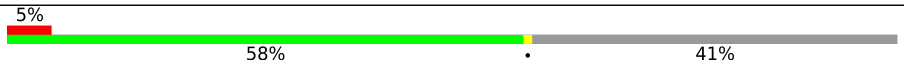
Mol	Chain	Length	Quality of chain
8	H	84	
9	I	151	
10	M	135	
11	N	295	
12	O	264	
13	P	151	
14	Q	115	
15	n	69	
16	u	1382	
17	v	445	
18	x	548	
19	y	913	

2 Entry composition

There are 21 unique types of molecules in this entry. The entry contains 31348 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Eukaryotic translation initiation factor 3 subunit K.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
1	3	213	1057	631	213	213	0	0

- Molecule 2 is a protein called Eukaryotic translation initiation factor 3 subunit F.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	4	257	1272	757	257	258	0	0

- Molecule 3 is a protein called Eukaryotic translation initiation factor 3 subunit L.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	5	520	4347	2814	721	793	19	0	0

- Molecule 4 is a protein called Eukaryotic translation initiation factor 3 subunit M.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	6	362	2196	1348	414	427	7	0	0

- Molecule 5 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	7	31	663	299	132	201	31	0	0

- Molecule 6 is a protein called Eukaryotic translation initiation factor 3 subunit H.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	8	317	1574	937	318	319	0	0

- Molecule 7 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	121	Total	C	N	O	P	0	0
			2594	1154	467	852	121		

- Molecule 8 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	71	Total	C	N	O	S	0	0
			555	347	103	98	7		

- Molecule 9 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	I	95	Total	C	N	O	0	0
			753	484	139	130		

- Molecule 10 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	M	32	Total	C	N	O	S	0	0
			257	161	43	51	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	N	32	Total	C	N	O	S	0	0
			255	163	43	48	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	O	178	Total	C	N	O	S	0	0
			1455	925	260	256	14		

- Molecule 13 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	P	88	Total	C	N	O	S	0	0
			651	404	120	124	3		

- Molecule 14 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	Q	96	Total	C	N	O	S	0	0
			767	476	160	126	5		

- Molecule 15 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	n	58	Total	C	N	O	S	0	0
			455	275	91	87	2		

- Molecule 16 is a protein called Eukaryotic translation initiation factor 3 subunit A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	u	603	Total	C	N	O	S	1	0
			4869	3071	879	896	23		

- Molecule 17 is a protein called Eukaryotic translation initiation factor 3 subunit E.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	v	405	Total	C	N	O	S	0	0
			2740	1720	498	510	12		

- Molecule 18 is a protein called Eukaryotic translation initiation factor 3 subunit D.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	x	63	Total	C	N	O	S	0	0
			525	331	88	104	2		

- Molecule 19 is a protein called Eukaryotic translation initiation factor 3 subunit C.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	y	543	Total	C	N	O	S	0	0
			4361	2743	776	809	33		

- Molecule 20 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
20	A	1	Total	Mg	0
			1	1	

- Molecule 21 is ZINC ION (three-letter code: ZN) (formula: Zn).

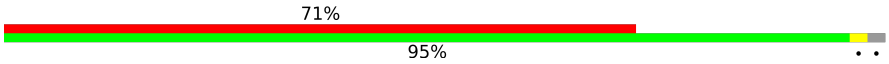
Mol	Chain	Residues	Atoms		AltConf
21	Q	1	Total	Zn	0
			1	1	

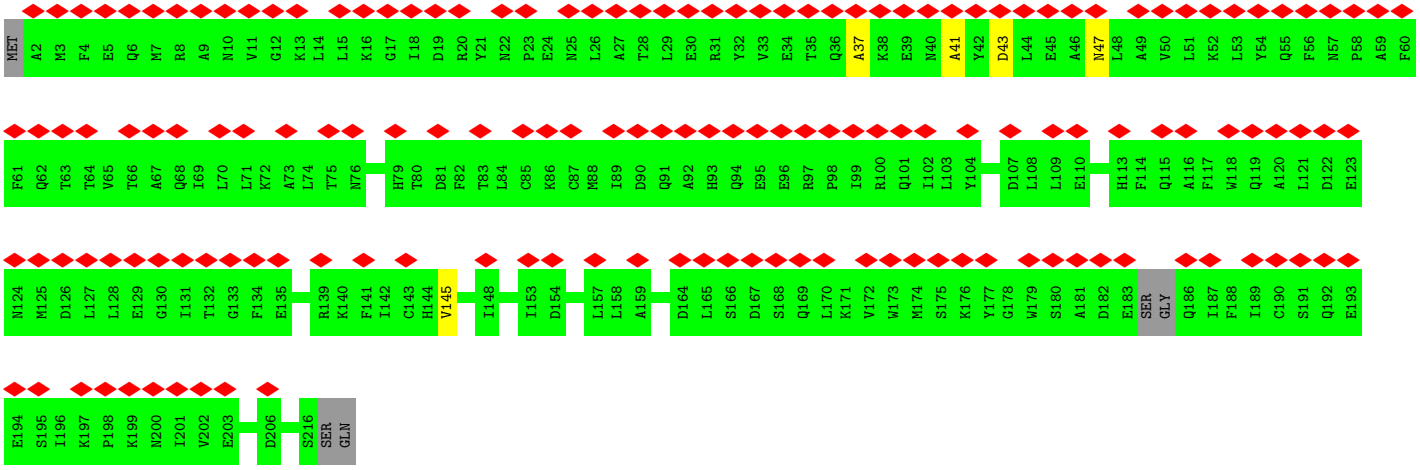
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: Eukaryotic translation initiation factor 3 subunit K

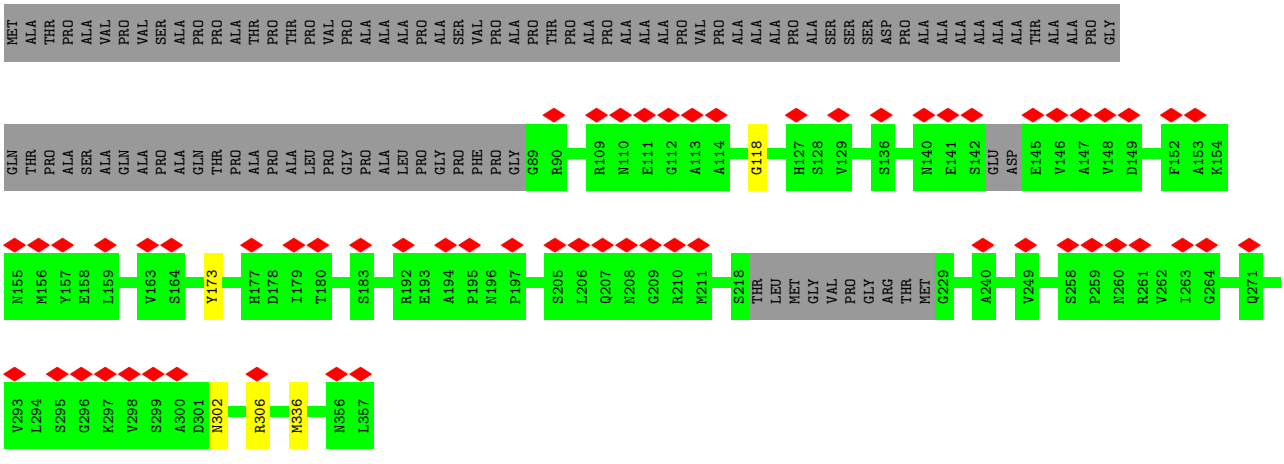
Chain 3:





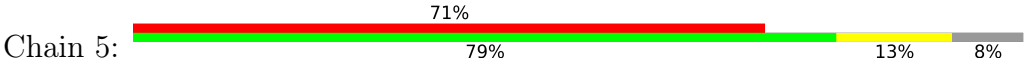
• Molecule 2: Eukaryotic translation initiation factor 3 subunit F

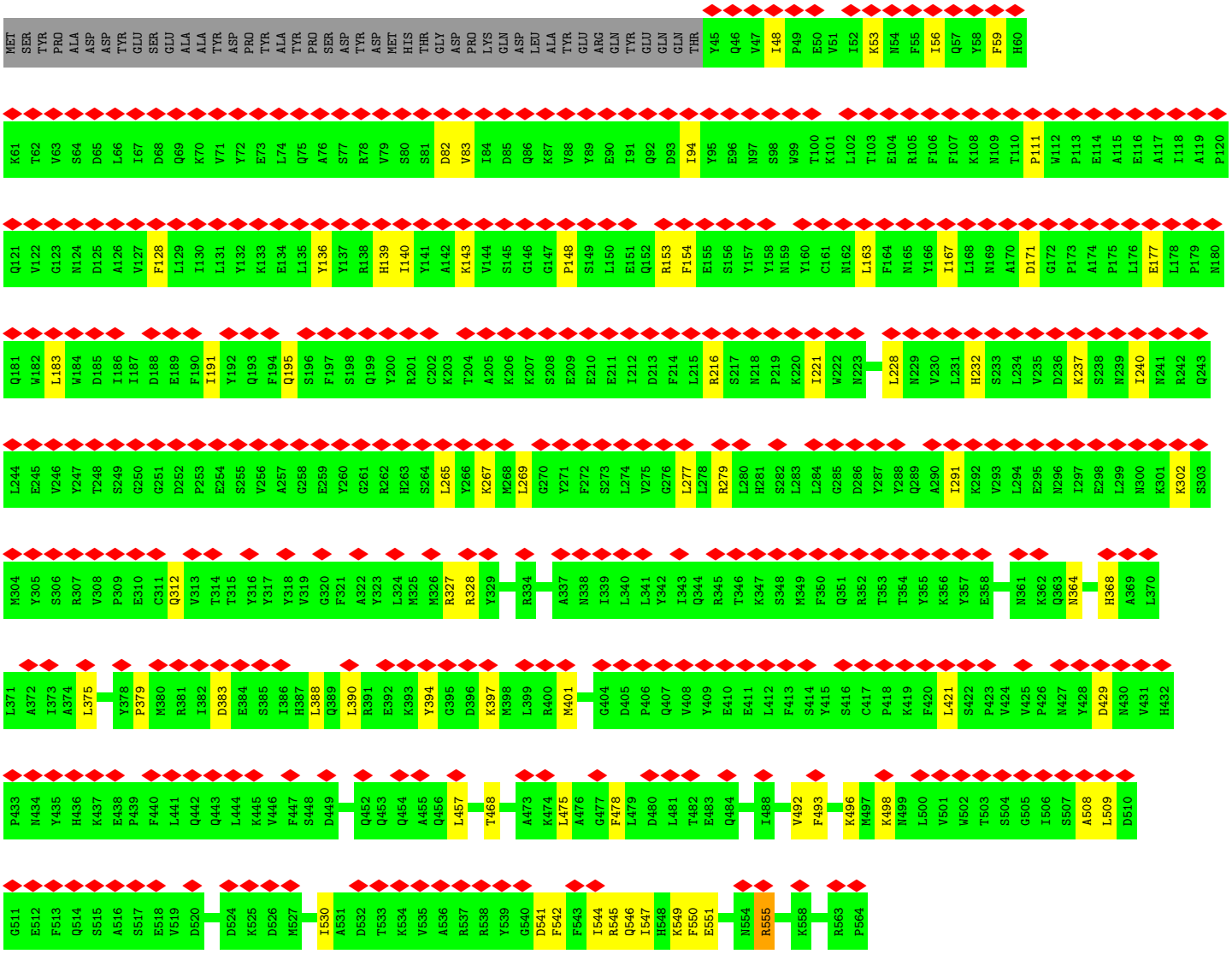
Chain 4:



• Molecule 3: Eukaryotic translation initiation factor 3 subunit L

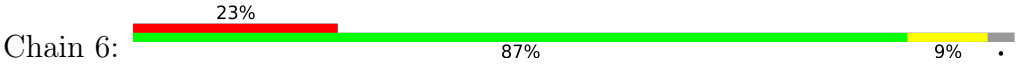
Chain 5:

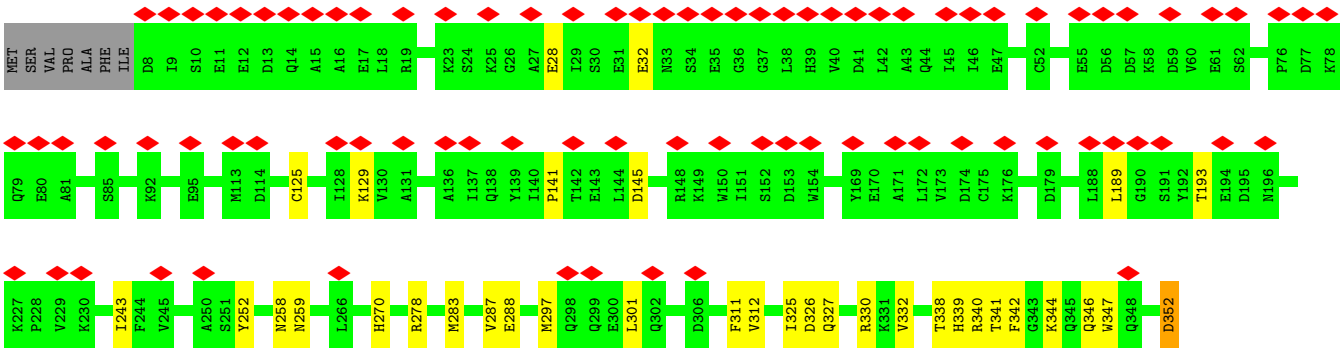


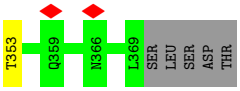


• Molecule 4: Eukaryotic translation initiation factor 3 subunit M

Chain 6:





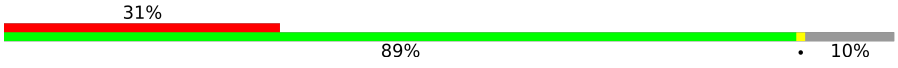


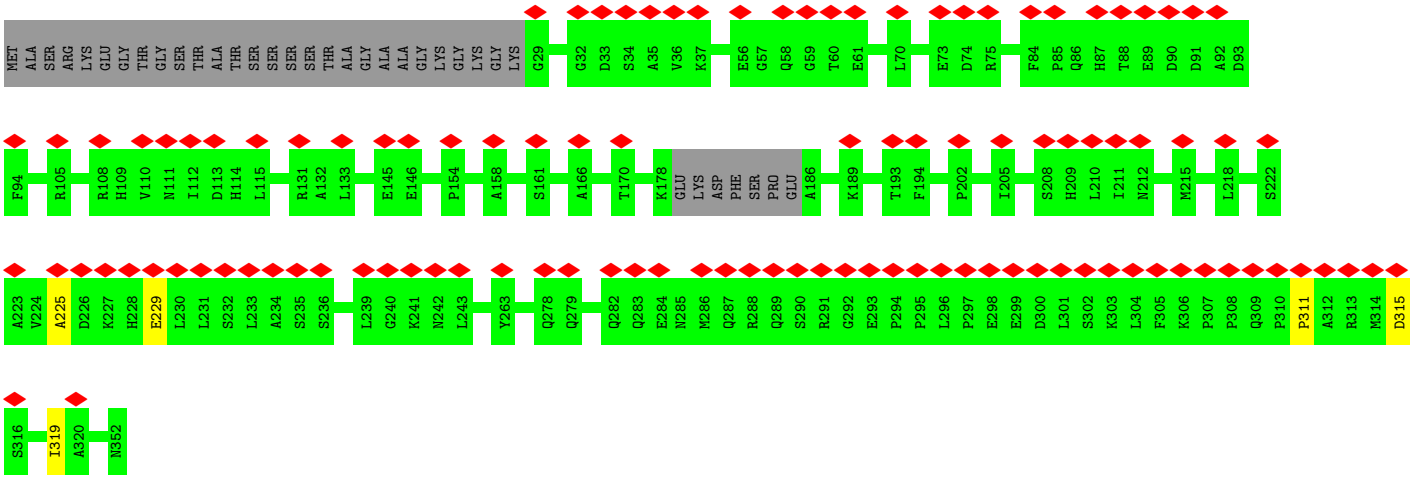
• Molecule 5: mRNA

Chain 7:

• Molecule 6: Eukaryotic translation initiation factor 3 subunit H

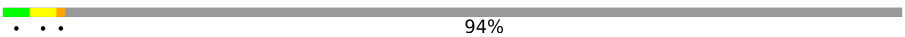
Chain 8:

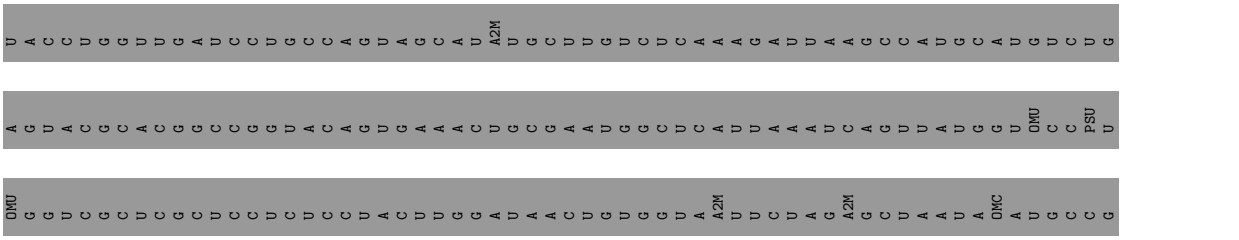


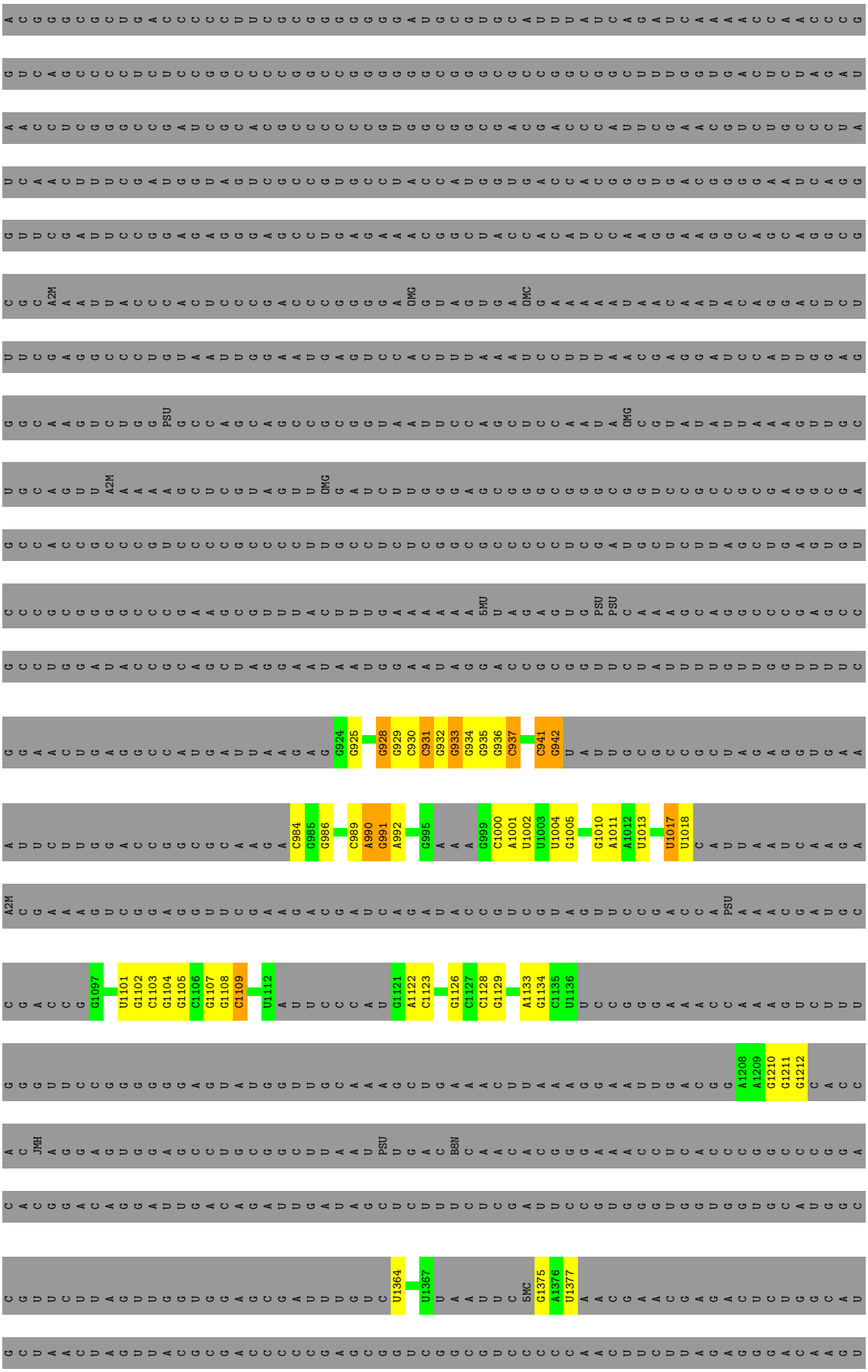


• Molecule 7: 18S rRNA

Chain A:






A2M
JMH
B8N
PSU
5MC
DMG
5MU
G924
G925
G928
G929
G930
C931
G932
G933
G934
G935
G936
C937
C941
G942
C984
G985
G986
C989
A990
G991
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G999
C1000
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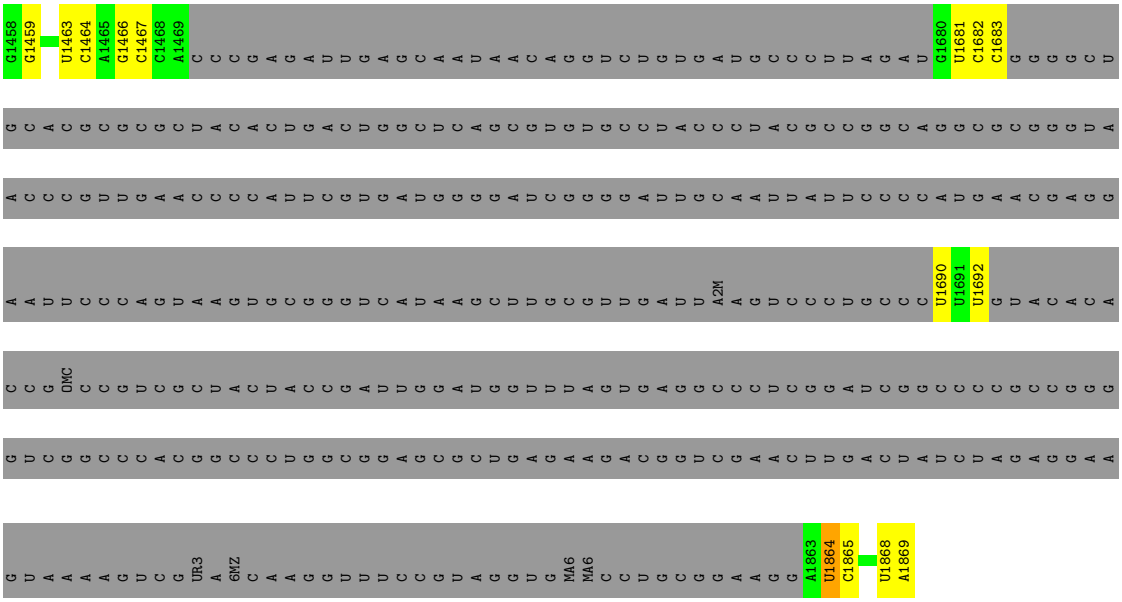
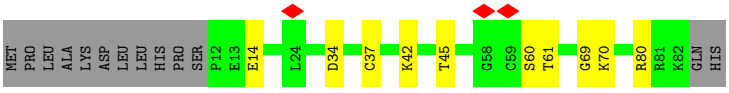
U1377



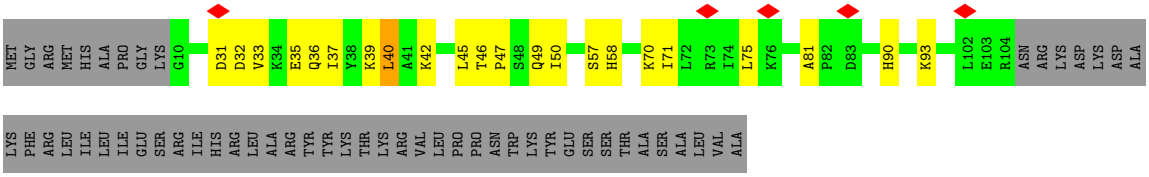
• Molecule 8: 40S ribosomal protein S27

Chain H:



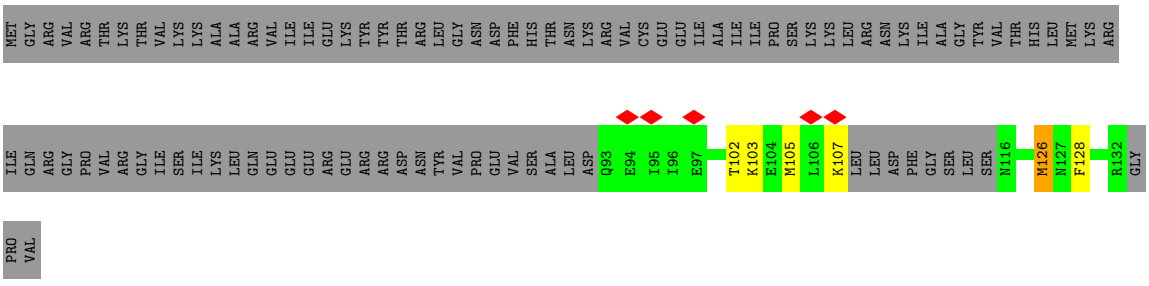
• Molecule 9: 40S ribosomal protein S13

Chain I:



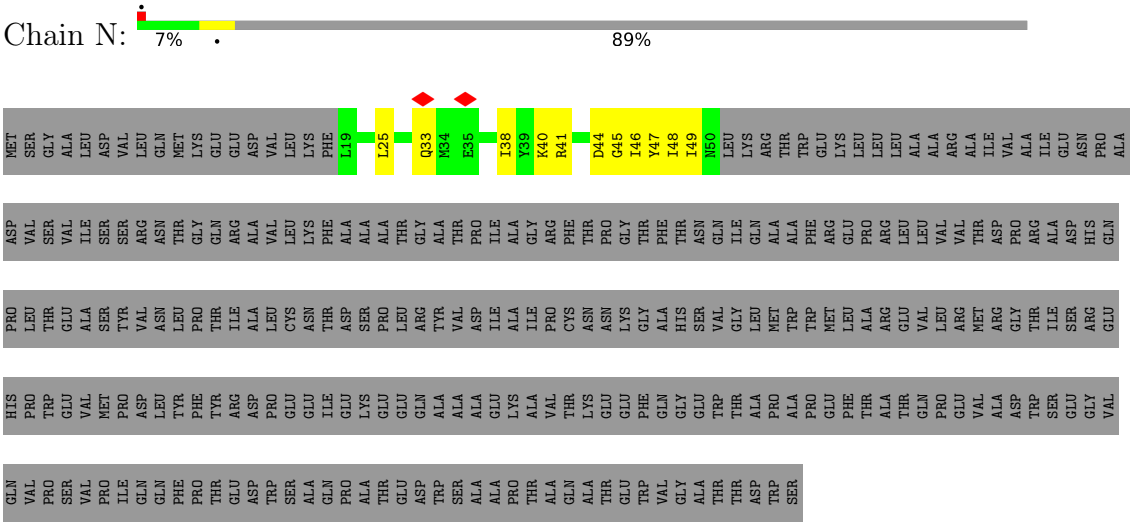
• Molecule 10: 40S ribosomal protein S17

Chain M:



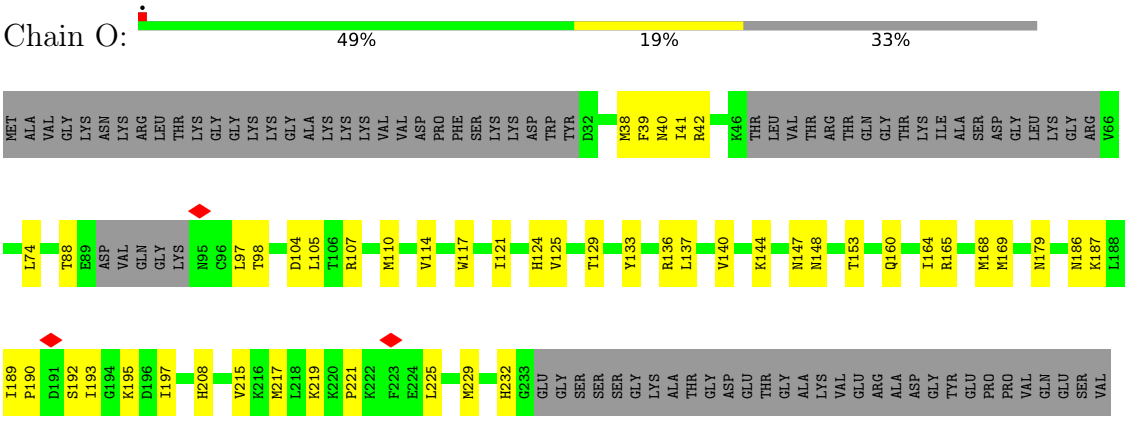
• Molecule 11: 40S ribosomal protein SA

Chain N:



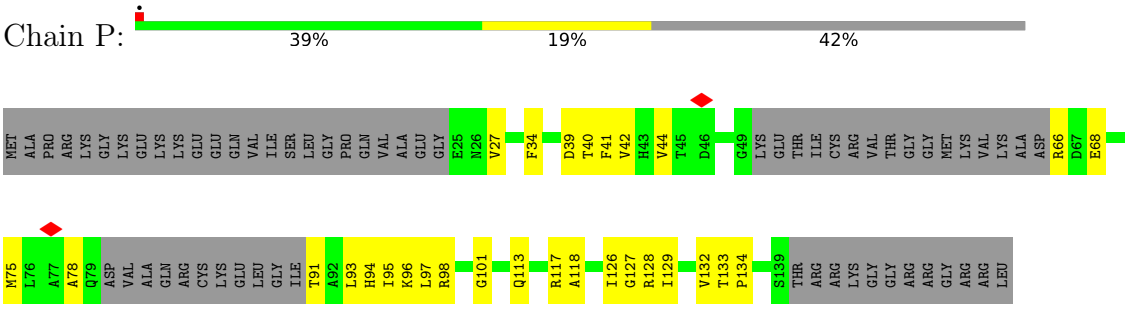
• Molecule 12: 40S ribosomal protein S3a

Chain O:



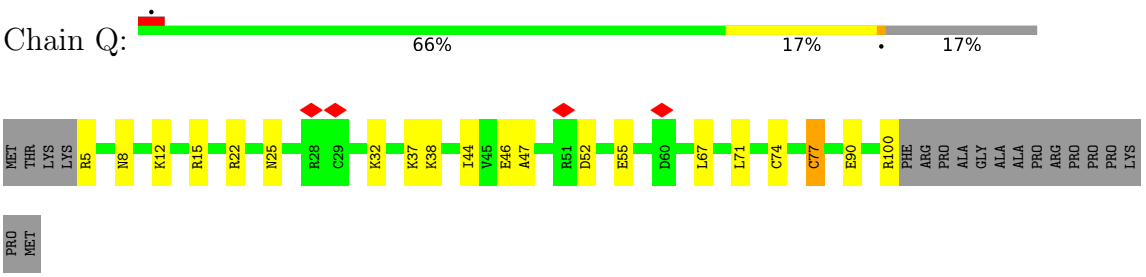
• Molecule 13: 40S ribosomal protein S14

Chain P:



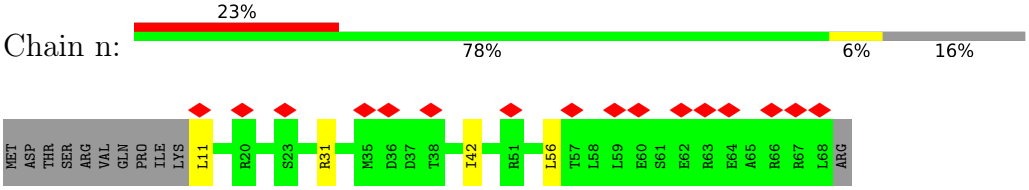
• Molecule 14: 40S ribosomal protein S26

Chain Q:



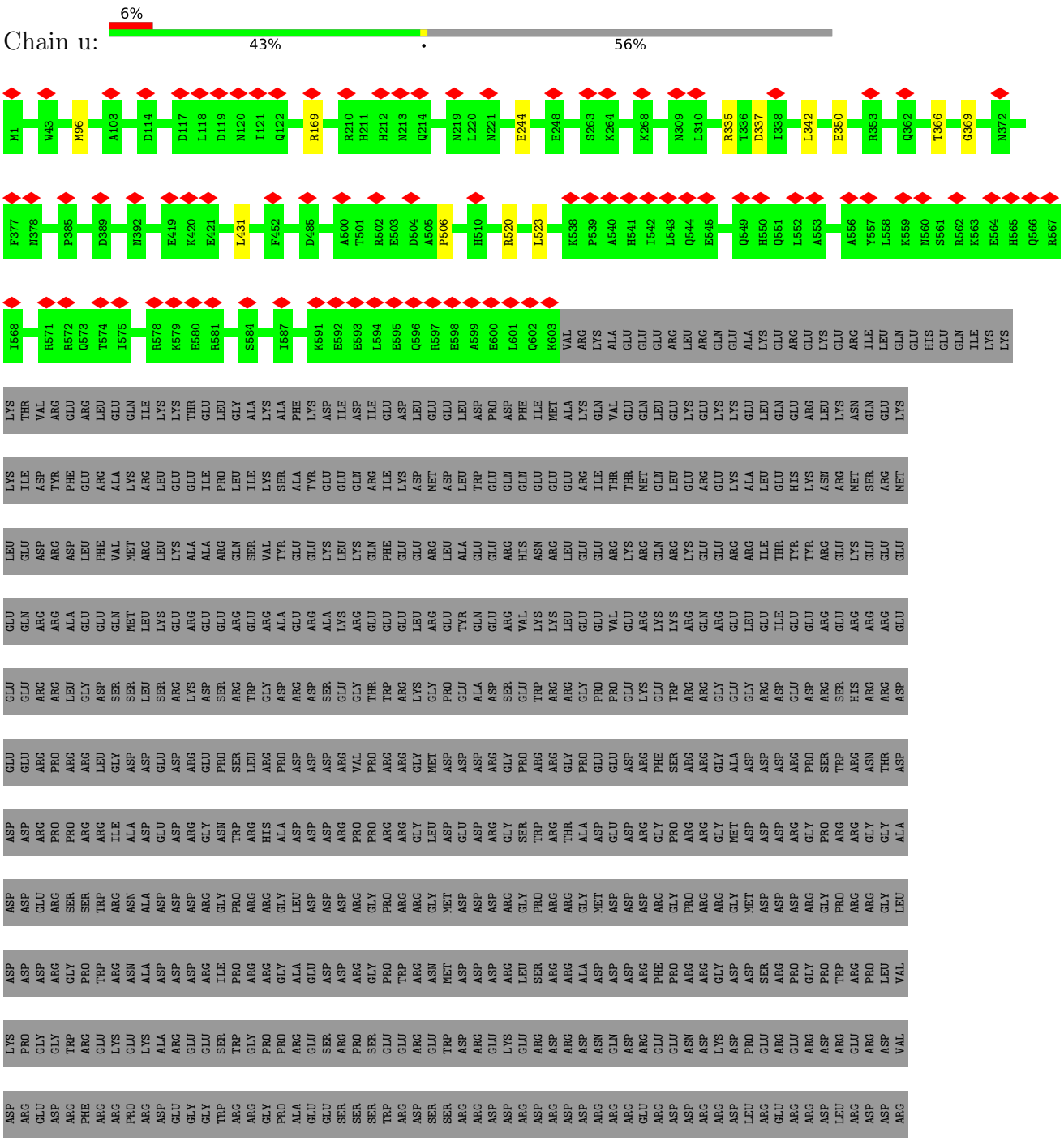
• Molecule 15: 40S ribosomal protein S28

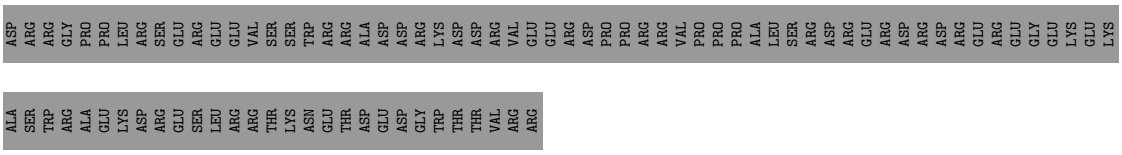
Chain n:



• Molecule 16: Eukaryotic translation initiation factor 3 subunit A

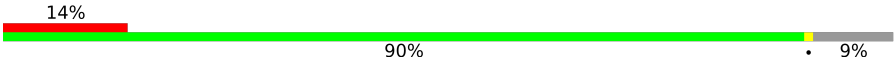
Chain u:

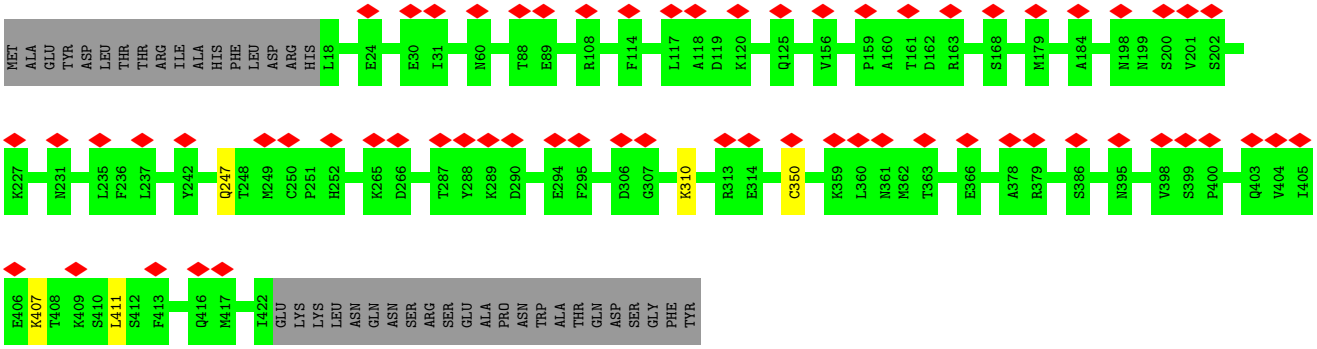




• Molecule 17: Eukaryotic translation initiation factor 3 subunit E

Chain v:



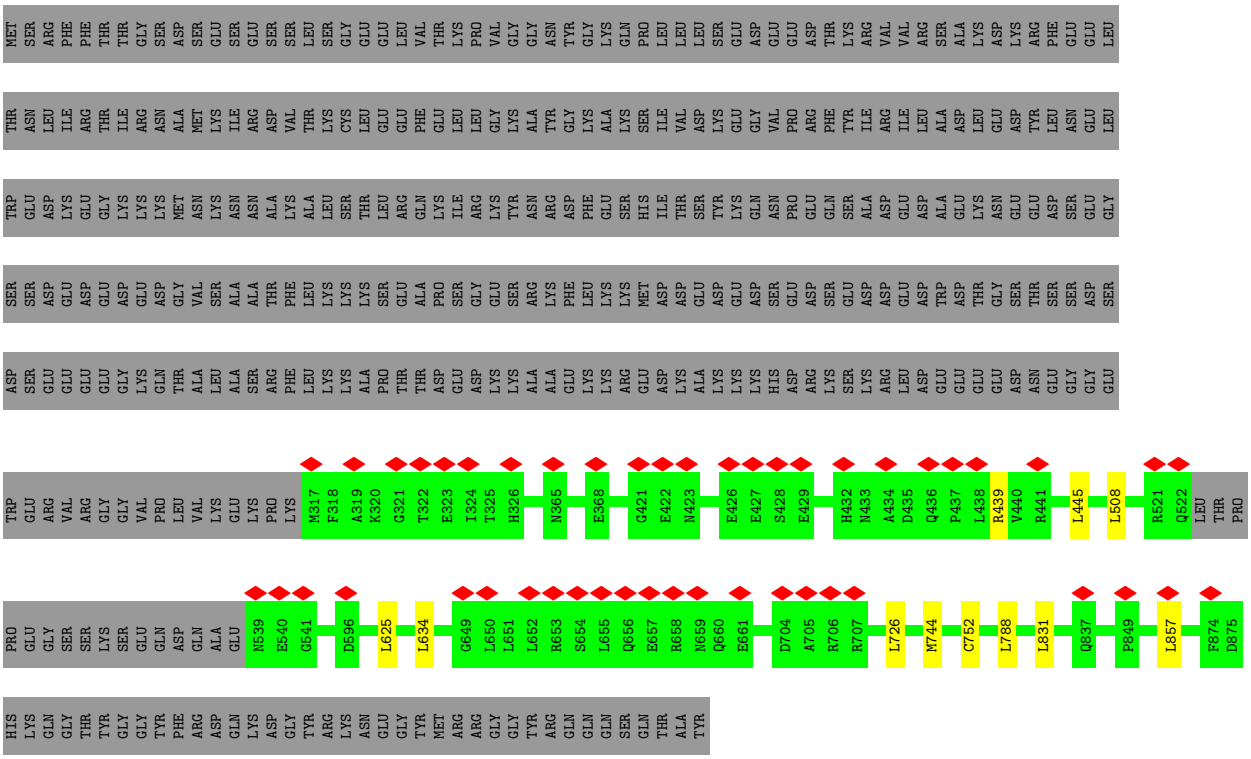


• Molecule 18: Eukaryotic translation initiation factor 3 subunit D

Chain x:

• Molecule 19: Eukaryotic translation initiation factor 3 subunit C

Chain y:


MET SER ARG PHE PHE THR THR GLY SER ASP SER GLU SER GLU SER SER LEU SER GLY GLU GLU LEU VAL THR LYS PRO VAL GLY GLY GLY ASN TYR GLY LYS GLN PRO LEU LEU LEU SER GLU ASP GLU GLU ASP THR LYS ARG VAL VAL ARG SER ALA LYS ASP LYS ARG PHE GLU GLU LEU
THR ASN LEU ILE ARG THR ILE ARG ASN ALA MET LYS ILE ARG ASP VAL THR LYS CYS LEU GLU GLU PHE GLU LEU LEU GLY LYS ALA TYR GLY LYS ALA LYS SER ILE VAL ASP LYS GLU GLY VAL PRO ARG PHE TYR ILE ARG ILE LEU GLU ALA ASP LEU GLU ASP TYR LEU ASN GLU GLU LEU
TRP GLU ASP LYS GLU GLY LYS LYS LYS MET ASN LYS ASN ASN ALA LYS ALA LEU SER THR LEU ARG GLN LYS ILE ARG LYS TYR ASN ARG ASP PHE GLU SER HIS ILE THR SER TYR LYS GLN ASN PRO GLU GLN SER ALA ASP GLU ASP ALA GLU LYS ASN GLU GLU ASP TYR LEU ASN GLU GLY
SER SER ASP GLU ASP GLU ASP GLU ASP GLY VAL SER ALA ALA THR PHE LEU LYS LYS LYS SER GLU ALA PRO SER GLY GLU SER ARG LYS PHE LEU LYS LYS ALA LYS LYS MET ASP ASP GLU ASP GLU ASP SER GLU ASP SER GLU ASP ASP GLU ASP ALA GLU LYS THR SER SER ASP SER
ASP SER GLU GLU GLU GLY LYS GLN THR ALA ALA LEU ALA SER ARG PHE LEU LYS LYS LYS ALA PRO THR THR ASP GLU ASP LYS LYS ALA ALA GLU LYS LYS LYS ARG GLU ASP LYS ALA LYS LYS LYS HIS ASP ARG LYS SER LYS ARG LEU ASP GLU ASP GLU ASP ASN GLU GLY GLY GLU
TRP GLU ARG VAL ARG GLY GLY VAL PRO LEU VAL LYS GLU LYS PRO LYS M317 F318 A319 K320 G321 T322 E323 I324 T325 H326 N365 E368 G421 E422 N423 E426 E427 S428 E429 H432 N433 A434 D435 Q436 P437 L438 R439 V440 R441 L445 L508 R521 Q522 LEU THR PRO
PRO GLU GLY SER SER LYS SER GLU GLN ASP GLN ALA GLU N539 E540 G541 D596 L625 L634 G649 L650 L651 L652 R653 S654 L655 Q656 E657 R658 N659 Q660 E661 D704 A705 R706 R707 L726 M744 C752 L788 L831 Q837 P849 L857 F874 D875
HIS LYS GLN GLY THR TYR GLY GLY TYR PHE ARG ASP GLN LYS ASP GLY TYR ARG LYS ASN GLU GLY TYR MET ARG ARG GLY GLY TYR ARG GLN GLN GLN SER GLN THR ALA TYR

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	356632	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	45	Depositor
Minimum defocus (nm)	200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	59000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	34.833	Depositor
Minimum map value	-15.718	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	4	Depositor
Map size (Å)	278.4, 278.4, 278.4	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.16, 1.16, 1.16	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	3	0.24	0/1055	0.36	0/1469
2	4	0.24	0/1269	0.39	0/1762
3	5	0.29	0/4458	0.60	3/6027 (0.0%)
4	6	0.30	0/2212	0.59	2/3034 (0.1%)
5	7	0.54	4/744 (0.5%)	0.82	1/1156 (0.1%)
6	8	0.26	0/1572	0.43	0/2187
7	A	0.46	0/2889	1.09	10/4479 (0.2%)
8	H	0.39	0/565	0.82	1/755 (0.1%)
9	I	0.35	0/766	0.81	1/1032 (0.1%)
10	M	0.37	0/259	0.88	1/348 (0.3%)
11	N	0.36	0/259	0.96	1/347 (0.3%)
12	O	0.40	0/1475	0.85	3/1968 (0.2%)
13	P	0.34	0/661	0.79	1/891 (0.1%)
14	Q	0.44	1/780 (0.1%)	0.82	0/1047
15	n	0.35	0/456	1.04	4/610 (0.7%)
16	u	0.38	2/4961 (0.0%)	0.75	7/6713 (0.1%)
17	v	0.33	0/2778	0.69	3/3797 (0.1%)
18	x	0.36	0/539	0.79	1/727 (0.1%)
19	y	0.35	0/4436	0.75	11/5989 (0.2%)
All	All	0.35	7/32134 (0.0%)	0.75	50/44338 (0.1%)

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	7	-34	C	C1'-N1	5.99	1.57	1.48
16	u	350	GLU	C-N	5.95	1.47	1.34
5	7	-25	C	C1'-N1	5.91	1.57	1.48
5	7	-31	C	C1'-N1	5.67	1.57	1.48
14	Q	77	CYS	CB-SG	-5.66	1.72	1.81
5	7	-22	C	C1'-N1	5.60	1.57	1.48
16	u	366	THR	C-N	-5.09	1.22	1.34

All (50) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
16	u	342	LEU	N-CA-C	-9.46	85.46	111.00
19	y	726	LEU	CA-CB-CG	8.83	135.60	115.30
3	5	388	LEU	CA-CB-CG	7.85	133.34	115.30
10	M	126	MET	CA-CB-CG	7.58	126.19	113.30
9	I	40	LEU	CA-CB-CG	7.49	132.53	115.30
16	u	523	LEU	CA-CB-CG	7.40	132.32	115.30
16	u	506	PRO	CA-N-CD	-7.19	101.44	111.50
5	7	-21	A	P-O3'-C3'	6.96	128.05	119.70
4	6	352	ASP	CB-CG-OD1	6.84	124.45	118.30
15	n	42	ILE	CG1-CB-CG2	-6.71	96.65	111.40
19	y	744	MET	CA-CB-CG	6.70	124.68	113.30
12	O	168	MET	CA-CB-CG	6.69	124.67	113.30
7	A	1123	C	N3-C2-O2	-6.67	117.23	121.90
4	6	326	ASP	CB-CG-OD1	6.53	124.18	118.30
7	A	1123	C	N1-C2-O2	6.47	122.78	118.90
19	y	634	LEU	CA-CB-CG	6.27	129.73	115.30
16	u	366	THR	O-C-N	-6.22	112.75	122.70
3	5	277	LEU	CA-CB-CG	6.21	129.57	115.30
17	v	411	LEU	CA-CB-CG	6.14	129.43	115.30
19	y	857	LEU	CB-CG-CD2	5.97	121.15	111.00
7	A	1690	U	N3-C2-O2	-5.89	118.08	122.20
16	u	369	GLY	N-CA-C	-5.83	98.53	113.10
7	A	1002	U	N3-C2-O2	-5.70	118.21	122.20
15	n	56	LEU	CA-CB-CG	5.70	128.40	115.30
12	O	168	MET	CB-CG-SD	-5.64	95.47	112.40
7	A	984	C	C6-N1-C2	-5.61	118.06	120.30
19	y	752	CYS	CA-CB-SG	-5.60	103.92	114.00
15	n	31	ARG	CG-CD-NE	5.58	123.52	111.80
3	5	555	ARG	CB-CG-CD	5.54	126.01	111.60
17	v	247	GLN	CA-CB-CG	5.50	125.51	113.40
18	x	82	LEU	CA-CB-CG	5.49	127.93	115.30
19	y	508	LEU	CA-CB-CG	5.43	127.80	115.30
7	A	1109	C	C2-N1-C1'	5.42	124.77	118.80
7	A	1123	C	C6-N1-C2	-5.41	118.14	120.30
19	y	625	LEU	CA-CB-CG	5.35	127.60	115.30
15	n	11	LEU	CA-CB-CG	5.34	127.59	115.30
13	P	97	LEU	CA-CB-CG	5.30	127.50	115.30
16	u	96	MET	CA-CB-CG	5.29	122.30	113.30
19	y	744	MET	CB-CG-SD	-5.24	96.68	112.40
7	A	1690	U	N1-C2-O2	5.22	126.46	122.80
12	O	110	MET	CA-CB-CG	5.15	122.06	113.30
17	v	350	CYS	CA-CB-SG	5.13	123.23	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	y	831	LEU	CA-CB-CG	5.13	127.09	115.30
19	y	788	LEU	CA-CB-CG	5.09	127.01	115.30
7	A	1109	C	N1-C2-O2	5.09	121.95	118.90
8	H	37	CYS	CA-CB-SG	5.07	123.12	114.00
16	u	244	GLU	CA-CB-CG	5.06	124.54	113.40
11	N	33	GLN	CA-CB-CG	5.06	124.53	113.40
19	y	445	LEU	CB-CG-CD1	-5.03	102.46	111.00
7	A	1002	U	C5-C6-N1	5.02	125.21	122.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	3	1057	0	475	3	0
2	4	1272	0	564	3	0
3	5	4347	0	4294	44	0
4	6	2196	0	1547	22	0
5	7	663	0	341	1	0
6	8	1574	0	687	3	0
7	A	2594	0	1317	24	0
8	H	555	0	576	6	0
9	I	753	0	814	15	0
10	M	257	0	262	3	0
11	N	255	0	250	5	0
12	O	1455	0	1519	29	0
13	P	651	0	644	18	0
14	Q	767	0	808	16	0
15	n	455	0	475	0	0
16	u	4869	0	4861	0	0
17	v	2740	0	2251	0	0
18	x	525	0	476	0	0
19	y	4361	0	4335	0	0
20	A	1	0	0	0	0
21	Q	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	31348	0	26496	179	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 9.

All (179) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:925:G:H1	7:A:1017:U:H3	1.39	0.70
13:P:75:MET:HG2	13:P:118:ALA:HB2	1.73	0.70
10:M:102:THR:HA	10:M:105:MET:HG2	1.73	0.70
12:O:217:MET:SD	12:O:217:MET:N	2.68	0.66
3:5:48:ILE:HB	3:5:53:LYS:HE3	1.80	0.64
3:5:327:ARG:HH22	3:5:496:LYS:HG2	1.64	0.63
13:P:44:VAL:HG13	13:P:93:LEU:HD11	1.79	0.63
11:N:41:ARG:HE	11:N:45:GLY:HA2	1.63	0.63
13:P:101:GLY:HA3	13:P:134:PRO:HG2	1.80	0.63
4:6:344:LYS:HA	4:6:347:TRP:HD1	1.64	0.62
3:5:167:ILE:O	3:5:237:LYS:NZ	2.30	0.61
12:O:129:THR:OG1	12:O:179:ASN:O	2.18	0.61
3:5:394:TYR:HB3	3:5:397:LYS:HB2	1.81	0.61
14:Q:38:LYS:HB3	14:Q:71:LEU:HB2	1.82	0.61
9:I:35:GLU:OE2	9:I:36:GLN:NE2	2.34	0.60
14:Q:74:CYS:HB2	14:Q:77:CYS:HB2	1.82	0.60
11:N:41:ARG:NH1	11:N:47:TYR:OH	2.35	0.60
4:6:243:ILE:O	4:6:340:ARG:NH1	2.35	0.60
14:Q:5:ARG:HB2	14:Q:8:ASN:HA	1.83	0.59
3:5:183:LEU:HD22	3:5:269:LEU:HD13	1.84	0.59
7:A:1869:A:N6	12:O:114:VAL:O	2.36	0.58
12:O:192:SER:HA	12:O:195:LYS:HG2	1.85	0.58
4:6:327:GLN:O	4:6:330:ARG:NH2	2.37	0.58
11:N:25:LEU:HD13	11:N:48:ILE:HG22	1.86	0.58
9:I:46:THR:OG1	9:I:49:GLN:OE1	2.22	0.58
3:5:216:ARG:NH2	3:5:429:ASP:OD1	2.37	0.57
11:N:38:ILE:HG22	11:N:49:ILE:HA	1.87	0.57
4:6:312:VAL:HG11	4:6:325:ILE:HG21	1.86	0.57
9:I:75:LEU:HB3	9:I:81:ALA:HB2	1.86	0.56
13:P:95:ILE:HB	13:P:129:ILE:HG13	1.87	0.56
3:5:544:ILE:HA	3:5:547:ILE:HD12	1.87	0.56
6:8:315:ASP:O	6:8:319:ILE:N	2.37	0.56
2:4:118:GLY:N	2:4:173:TYR:O	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:40:LEU:HD21	9:I:50:ILE:HG23	1.88	0.55
4:6:312:VAL:HG11	4:6:325:ILE:HD13	1.89	0.54
14:Q:12:LYS:HG3	14:Q:15:ARG:HB2	1.90	0.54
12:O:193:ILE:O	12:O:197:ILE:HG12	2.08	0.54
13:P:96:LYS:HG2	13:P:132:VAL:HG21	1.89	0.54
7:A:1364:U:H5	7:A:1375:G:H21	1.56	0.54
6:8:311:PRO:O	6:8:315:ASP:N	2.38	0.54
2:4:302:ASN:O	2:4:306:ARG:N	2.39	0.54
3:5:59:PHE:HD1	3:5:94:ILE:HD13	1.73	0.53
13:P:94:HIS:ND1	13:P:128:ARG:HB2	2.22	0.53
3:5:457:LEU:HD11	3:5:492:VAL:HG12	1.90	0.53
12:O:125:VAL:O	12:O:136:ARG:HA	2.08	0.53
3:5:195:GLN:HG2	3:5:421:LEU:HD21	1.89	0.53
4:6:28:GLU:O	4:6:32:GLU:N	2.40	0.53
4:6:258:ASN:OD1	4:6:259:ASN:N	2.42	0.53
7:A:1864:U:OP2	14:Q:5:ARG:NH2	2.42	0.52
12:O:38:MET:SD	12:O:38:MET:N	2.82	0.52
3:5:177:GLU:HA	3:5:265:LEU:HD22	1.90	0.52
7:A:1004:U:H2'	7:A:1005:G:H8	1.74	0.52
4:6:278:ARG:HD3	4:6:311:PHE:HE2	1.75	0.52
5:7:-8:A:H62	14:Q:47:ALA:HB2	1.75	0.52
7:A:1010:G:H2'	7:A:1011:A:H8	1.75	0.52
7:A:928:G:H2'	7:A:929:G:C8	2.45	0.51
12:O:187:LYS:HD3	12:O:193:ILE:HD11	1.92	0.51
3:5:547:ILE:HA	3:5:550:PHE:CE1	2.44	0.51
12:O:38:MET:HB2	12:O:186:ASN:HD21	1.75	0.51
9:I:36:GLN:HA	9:I:39:LYS:HZ3	1.76	0.51
13:P:117:ARG:NH2	14:Q:46:GLU:OE2	2.44	0.51
9:I:33:VAL:O	9:I:37:ILE:HD12	2.11	0.50
1:3:43:ASP:O	1:3:47:ASN:N	2.43	0.50
7:A:990:A:OP2	14:Q:37:LYS:NZ	2.44	0.50
13:P:42:VAL:HG11	13:P:78:ALA:HA	1.93	0.50
8:H:60:SER:OG	8:H:61:THR:N	2.45	0.50
14:Q:90:GLU:N	14:Q:90:GLU:OE2	2.44	0.50
3:5:191:ILE:HD13	3:5:279:ARG:HE	1.77	0.49
2:4:336:MET:HA	3:5:546:GLN:HE21	1.77	0.49
3:5:468:THR:O	3:5:530:ILE:N	2.37	0.49
12:O:190:PRO:HG2	12:O:192:SER:H	1.77	0.49
3:5:82:ASP:OD1	3:5:83:VAL:N	2.45	0.49
7:A:941:C:H2'	7:A:942:G:C8	2.48	0.49
12:O:124:HIS:HA	12:O:137:LEU:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:5:154:PHE:HD1	3:5:221:ILE:HG21	1.78	0.49
3:5:541:ASP:O	3:5:545:ARG:HG2	2.13	0.49
10:M:103:LYS:HZ3	10:M:107:LYS:HD3	1.78	0.49
3:5:302:LYS:NZ	3:5:312:GLN:OE1	2.45	0.49
4:6:297:MET:HG3	4:6:301:LEU:HD12	1.95	0.49
3:5:291:ILE:HG23	3:5:508:ALA:HB3	1.95	0.48
13:P:113:GLN:NE2	14:Q:44:ILE:O	2.46	0.48
3:5:148:PRO:HG2	3:5:153:ARG:HE	1.78	0.47
7:A:1010:G:H2'	7:A:1011:A:C8	2.49	0.47
9:I:32:ASP:O	9:I:35:GLU:HG3	2.14	0.47
3:5:383:ASP:HA	3:5:545:ARG:NH2	2.29	0.47
12:O:225:LEU:O	12:O:229:MET:N	2.44	0.47
13:P:98:ARG:HH21	13:P:134:PRO:HG3	1.78	0.47
3:5:59:PHE:HD2	3:5:128:PHE:HE1	1.62	0.47
12:O:133:TYR:HD1	12:O:221:PRO:HD2	1.80	0.47
9:I:45:LEU:HD23	9:I:49:GLN:HB3	1.96	0.47
3:5:457:LEU:HD13	3:5:493:PHE:HA	1.97	0.47
4:6:325:ILE:HG22	4:6:332:VAL:HG12	1.97	0.47
7:A:1101:U:H2'	7:A:1102:G:C8	2.50	0.46
12:O:137:LEU:HG	12:O:215:VAL:HG22	1.96	0.46
10:M:126:MET:HB2	10:M:128:PHE:HE2	1.80	0.46
9:I:36:GLN:HE21	9:I:39:LYS:HZ1	1.61	0.46
12:O:147:ASN:OD1	12:O:148:ASN:N	2.49	0.46
3:5:397:LYS:O	3:5:401:MET:HG3	2.16	0.46
12:O:219:LYS:HG3	12:O:221:PRO:HD3	1.98	0.46
13:P:94:HIS:ND1	13:P:127:GLY:O	2.40	0.46
14:Q:25:ASN:HB3	14:Q:77:CYS:SG	2.56	0.46
12:O:88:THR:HA	12:O:98:THR:HA	1.97	0.46
13:P:39:ASP:OD1	13:P:40:THR:N	2.48	0.46
4:6:341:THR:O	4:6:341:THR:OG1	2.33	0.45
12:O:40:ASN:O	12:O:42:ARG:N	2.49	0.45
12:O:97:LEU:HB3	12:O:232:HIS:CE1	2.51	0.45
3:5:136:TYR:CZ	3:5:140:ILE:HD11	2.51	0.45
3:5:240:ILE:HD11	3:5:267:LYS:HA	1.99	0.45
7:A:1013:U:OP1	7:A:1129:G:O2'	2.35	0.45
12:O:104:ASP:OD1	12:O:105:LEU:N	2.50	0.45
4:6:352:ASP:OD1	4:6:353:THR:N	2.50	0.45
12:O:40:ASN:HB2	12:O:41:ILE:HD12	1.99	0.45
3:5:545:ARG:O	3:5:549:LYS:HD2	2.16	0.45
7:A:1018:U:H5"	9:I:70:LYS:HZ3	1.82	0.45
3:5:328:ARG:NH2	3:5:509:LEU:O	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:5:111:PRO:HA	3:5:139:HIS:CD2	2.52	0.44
1:3:145:VAL:O	3:5:498:LYS:NZ	2.50	0.44
13:P:34:PHE:HD1	13:P:98:ARG:HG3	1.82	0.44
3:5:364:ASN:O	3:5:368:HIS:ND1	2.50	0.44
3:5:56:ILE:HG23	3:5:128:PHE:HZ	1.82	0.44
12:O:39:PHE:CD1	12:O:74:LEU:HD23	2.52	0.44
12:O:144:LYS:HE2	12:O:208:HIS:HB3	1.99	0.44
7:A:1004:U:H2'	7:A:1005:G:C8	2.50	0.44
12:O:160:GLN:O	12:O:164:ILE:HG12	2.18	0.44
13:P:27:VAL:N	13:P:91:THR:OG1	2.51	0.44
6:8:225:ALA:O	6:8:229:GLU:N	2.49	0.43
7:A:989:C:O3'	14:Q:32:LYS:NZ	2.50	0.43
7:A:1103:C:H2'	7:A:1104:G:C8	2.53	0.43
4:6:125:CYS:O	4:6:129:LYS:N	2.48	0.43
4:6:287:VAL:HG23	4:6:288:GLU:OE1	2.18	0.43
11:N:44:ASP:OD1	11:N:46:ILE:HG12	2.17	0.43
13:P:95:ILE:HD12	13:P:126:ILE:HD11	2.00	0.43
7:A:936:G:C2'	7:A:937:C:H5'	2.48	0.43
7:A:930:C:H2'	7:A:931:C:C6	2.53	0.43
14:Q:52:ASP:OD1	14:Q:52:ASP:N	2.40	0.43
14:Q:100:ARG:HG3	14:Q:100:ARG:HH11	1.84	0.43
4:6:252:TYR:HH	4:6:270:HIS:HD1	1.54	0.43
8:H:14:GLU:OE1	8:H:14:GLU:N	2.46	0.43
3:5:542:PHE:O	3:5:546:GLN:HG2	2.19	0.43
4:6:342:PHE:HB2	4:6:346:GLN:HG3	2.01	0.43
7:A:1105:G:O3'	8:H:69:GLY:HA3	2.18	0.43
13:P:34:PHE:HB3	13:P:41:PHE:HB2	2.00	0.43
3:5:327:ARG:NH2	3:5:496:LYS:HG2	2.33	0.43
12:O:121:ILE:O	12:O:140:VAL:HA	2.18	0.43
12:O:165:ARG:O	12:O:169:MET:HG2	2.18	0.42
7:A:991:G:C6	7:A:1134:G:H4'	2.53	0.42
12:O:117:TRP:HB3	12:O:153:THR:HA	2.00	0.42
14:Q:52:ASP:HA	14:Q:55:GLU:HG3	2.00	0.42
3:5:228:LEU:O	3:5:232:HIS:ND1	2.53	0.42
7:A:933:G:H21	7:A:1000:C:H3'	1.84	0.42
9:I:57:SER:OG	9:I:58:HIS:N	2.52	0.42
3:5:143:LYS:HA	3:5:143:LYS:HD2	1.90	0.42
3:5:475:LEU:HD23	3:5:478:PHE:HD2	1.85	0.42
3:5:163:LEU:HD12	3:5:163:LEU:HA	1.93	0.42
3:5:375:LEU:HD12	3:5:379:PRO:HA	2.02	0.42
7:A:1211:G:H2'	7:A:1212:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:5:368:HIS:HD2	3:5:390:LEU:HD21	1.84	0.41
3:5:551:GLU:HB3	3:5:555:ARG:NH1	2.36	0.41
14:Q:44:ILE:HD13	14:Q:67:LEU:HB2	2.01	0.41
4:6:189:LEU:O	4:6:193:THR:N	2.53	0.41
4:6:141:PRO:O	4:6:145:ASP:N	2.47	0.41
4:6:342:PHE:HD2	4:6:346:GLN:HB2	1.85	0.41
9:I:90:HIS:HA	9:I:93:LYS:HZ3	1.84	0.41
12:O:107:ARG:NH1	13:P:133:THR:O	2.39	0.41
12:O:189:ILE:HG13	12:O:190:PRO:HD3	2.02	0.41
4:6:278:ARG:HB3	4:6:311:PHE:CE2	2.56	0.41
8:H:34:ASP:OD1	8:H:80:ARG:HB2	2.21	0.41
9:I:47:PRO:HB3	9:I:71:ILE:HD11	2.03	0.41
1:3:37:ALA:HA	1:3:41:ALA:HB3	2.02	0.41
9:I:39:LYS:HA	9:I:42:LYS:HD2	2.03	0.41
4:6:287:VAL:HG11	4:6:339:HIS:HA	2.02	0.41
7:A:1107:G:OP1	8:H:70:LYS:NZ	2.43	0.41
13:P:66:ARG:N	13:P:68:GLU:OE1	2.54	0.41
4:6:283:MET:HE1	4:6:338:THR:H	1.87	0.40
8:H:34:ASP:HA	8:H:45:THR:HA	2.03	0.40
9:I:31:ASP:OD1	9:I:32:ASP:N	2.54	0.40
7:A:931:C:H2'	7:A:932:G:C8	2.57	0.40
3:5:191:ILE:HG21	3:5:279:ARG:HE	1.86	0.40
3:5:171:ASP:OD1	3:5:171:ASP:N	2.55	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	3	209/218 (96%)	202 (97%)	7 (3%)	0	100	100
2	4	251/357 (70%)	235 (94%)	16 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	5	518/564 (92%)	501 (97%)	17 (3%)	0	100	100
4	6	360/374 (96%)	339 (94%)	21 (6%)	0	100	100
6	8	313/352 (89%)	289 (92%)	24 (8%)	0	100	100
8	H	69/84 (82%)	67 (97%)	2 (3%)	0	100	100
9	I	93/151 (62%)	87 (94%)	6 (6%)	0	100	100
10	M	28/135 (21%)	27 (96%)	1 (4%)	0	100	100
11	N	30/295 (10%)	28 (93%)	2 (7%)	0	100	100
12	O	172/264 (65%)	163 (95%)	9 (5%)	0	100	100
13	P	82/151 (54%)	77 (94%)	5 (6%)	0	100	100
14	Q	94/115 (82%)	89 (95%)	5 (5%)	0	100	100
15	n	56/69 (81%)	51 (91%)	5 (9%)	0	100	100
16	u	602/1382 (44%)	552 (92%)	49 (8%)	1 (0%)	44	72
17	v	403/445 (91%)	367 (91%)	36 (9%)	0	100	100
18	x	59/548 (11%)	52 (88%)	7 (12%)	0	100	100
19	y	539/913 (59%)	513 (95%)	26 (5%)	0	100	100
All	All	3878/6417 (60%)	3639 (94%)	238 (6%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
16	u	337	ASP

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	5	477/515 (93%)	477 (100%)	0	100	100
4	6	112/335 (33%)	112 (100%)	0	100	100
6	8	1/310 (0%)	1 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
8	H	64/76 (84%)	63 (98%)	1 (2%)	58 75
9	I	83/131 (63%)	83 (100%)	0	100 100
10	M	31/122 (25%)	31 (100%)	0	100 100
11	N	26/243 (11%)	25 (96%)	1 (4%)	28 54
12	O	164/231 (71%)	164 (100%)	0	100 100
13	P	69/119 (58%)	69 (100%)	0	100 100
14	Q	83/98 (85%)	82 (99%)	1 (1%)	67 80
15	n	51/62 (82%)	51 (100%)	0	100 100
16	u	528/1259 (42%)	524 (99%)	4 (1%)	79 87
17	v	206/406 (51%)	204 (99%)	2 (1%)	73 83
18	x	55/494 (11%)	55 (100%)	0	100 100
19	y	472/811 (58%)	471 (100%)	1 (0%)	92 96
All	All	2422/5212 (46%)	2412 (100%)	10 (0%)	88 93

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
8	H	42	LYS
11	N	40	LYS
14	Q	22	ARG
16	u	169	ARG
16	u	335	ARG
16	u	431	LEU
16	u	520	ARG
17	v	310	LYS
17	v	407	LYS
19	y	439	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
9	I	36	GLN
12	O	95	ASN
16	u	522	GLN
17	v	247	GLN
17	v	377	ASN
17	v	416	GLN

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Mol	Chain	Res	Type
19	y	662	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
5	7	30/255 (11%)	17 (56%)	2 (6%)
7	A	109/1869 (5%)	34 (31%)	1 (0%)
All	All	139/2124 (6%)	51 (36%)	3 (2%)

All (51) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
5	7	-33	A
5	7	-30	A
5	7	-28	C
5	7	-27	A
5	7	-26	A
5	7	-23	A
5	7	-22	C
5	7	-21	A
5	7	-20	A
5	7	-17	A
5	7	-16	U
5	7	-13	A
5	7	-12	A
5	7	-11	A
5	7	-9	C
5	7	-8	A
5	7	-5	C
7	A	928	G
7	A	931	C
7	A	933	G
7	A	934	G
7	A	935	G
7	A	937	C
7	A	941	C
7	A	942	G
7	A	986	G
7	A	990	A
7	A	991	G
7	A	992	A

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Mol	Chain	Res	Type
7	A	1001	A
7	A	1017	U
7	A	1108	G
7	A	1109	C
7	A	1122	A
7	A	1126	G
7	A	1128	C
7	A	1133	A
7	A	1210	G
7	A	1377	U
7	A	1459	G
7	A	1463	U
7	A	1464	C
7	A	1466	G
7	A	1467	C
7	A	1681	U
7	A	1682	C
7	A	1683	C
7	A	1692	U
7	A	1864	U
7	A	1865	C
7	A	1868	U

All (3) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
5	7	-21	A
5	7	-10	A
7	A	1682	C

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

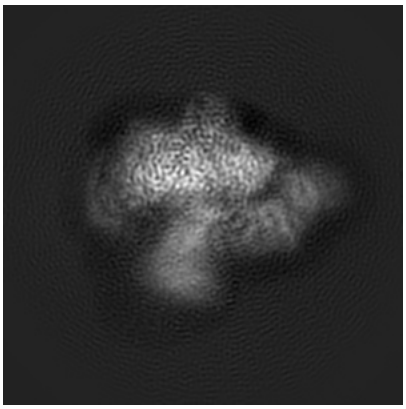
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-19128. These allow visual inspection of the internal detail of the map and identification of artifacts.

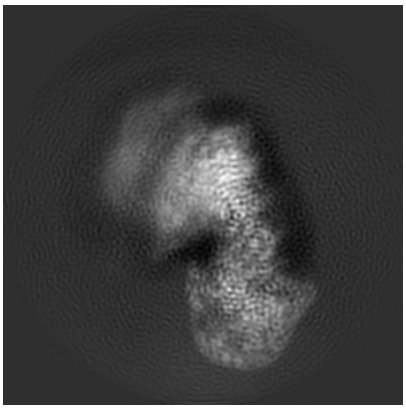
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

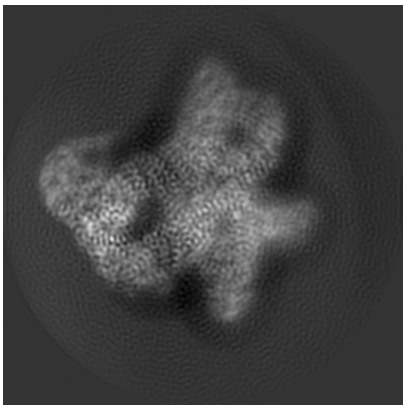
6.1.1 Primary map



X

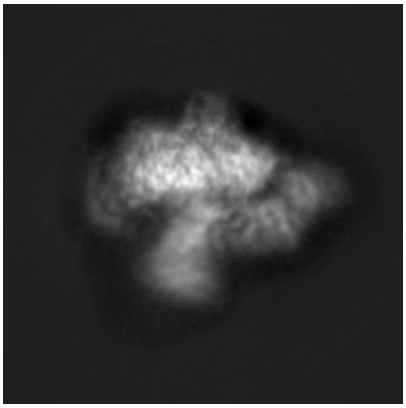


Y

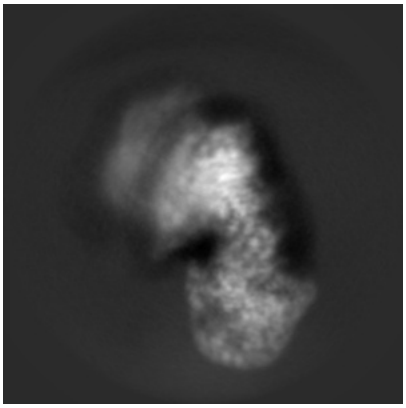


Z

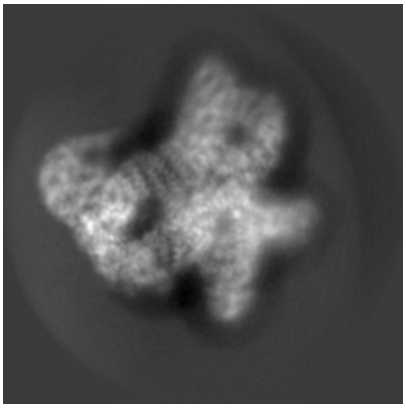
6.1.2 Raw map



X



Y

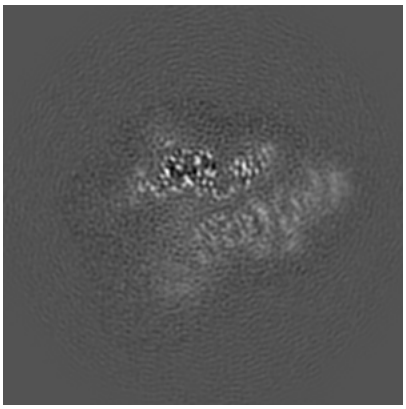


Z

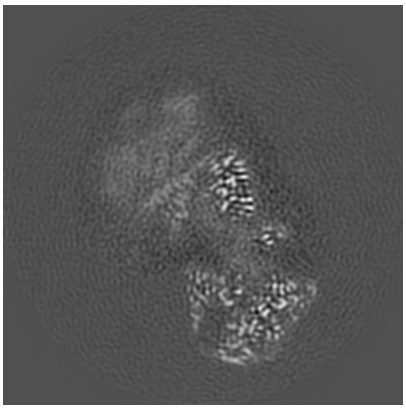
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

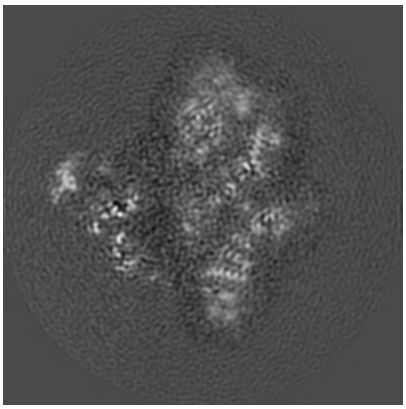
6.2.1 Primary map



X Index: 120

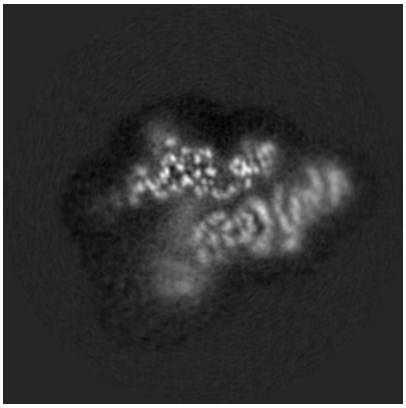


Y Index: 120

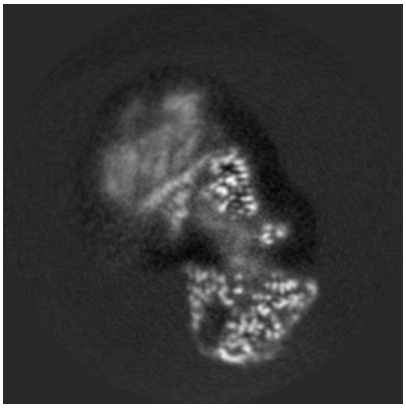


Z Index: 120

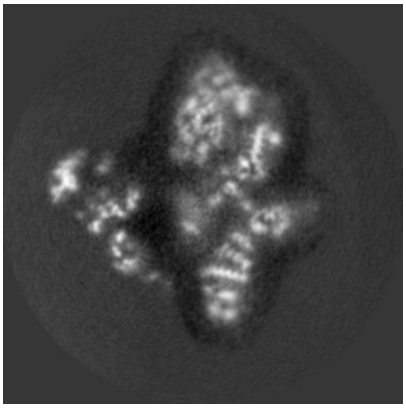
6.2.2 Raw map



X Index: 120



Y Index: 120

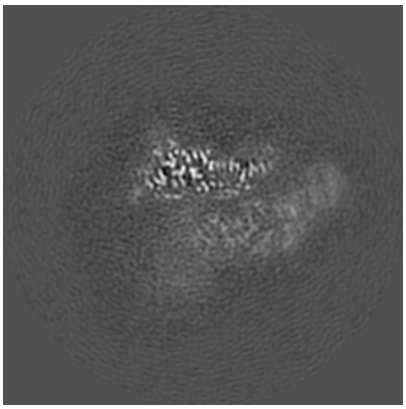


Z Index: 120

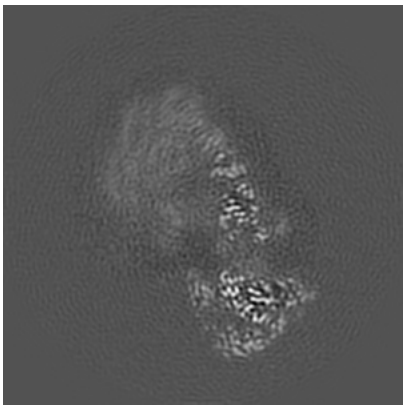
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

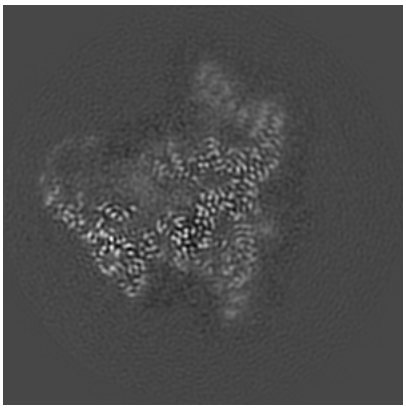
6.3.1 Primary map



X Index: 118

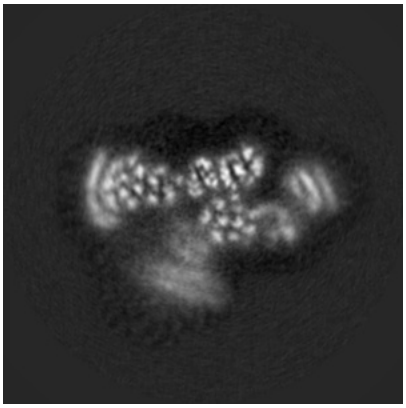


Y Index: 114

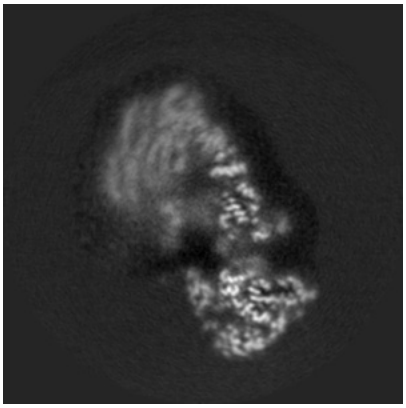


Z Index: 137

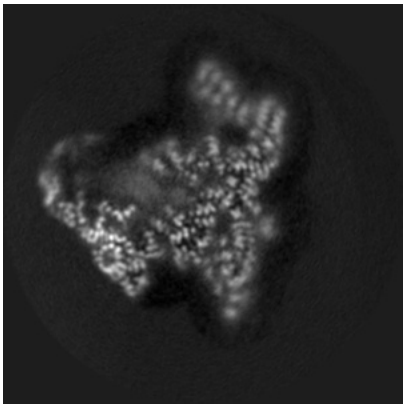
6.3.2 Raw map



X Index: 137



Y Index: 114

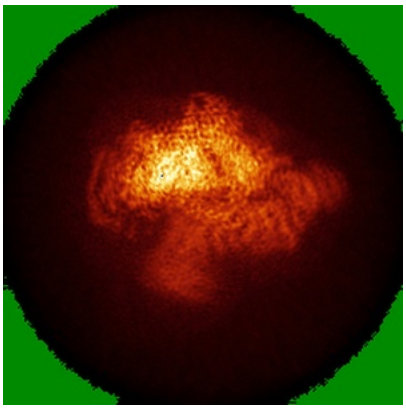


Z Index: 136

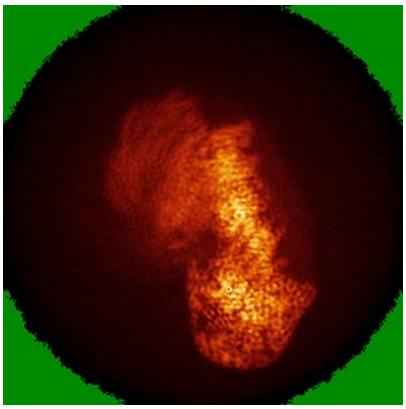
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

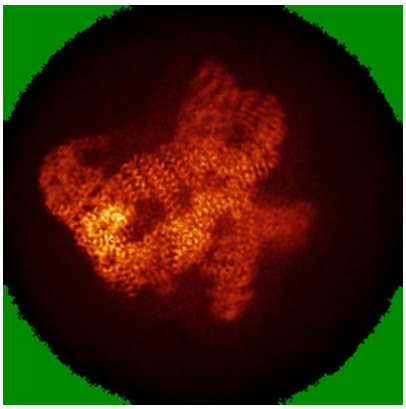
6.4.1 Primary map



X

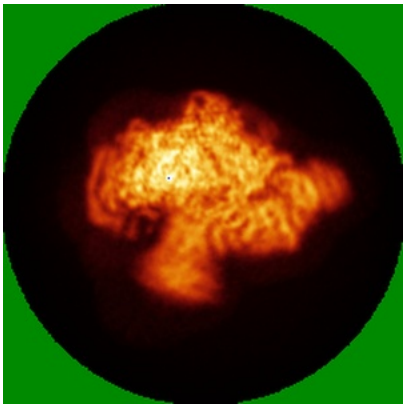


Y

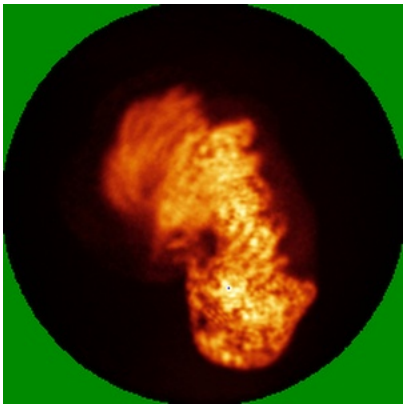


Z

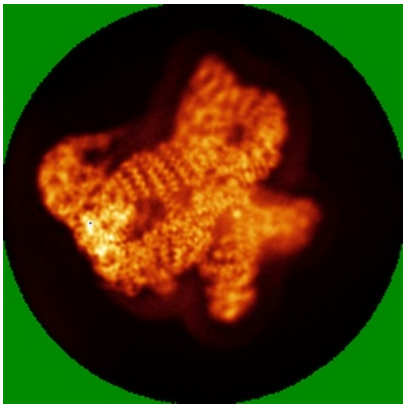
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 4.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

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

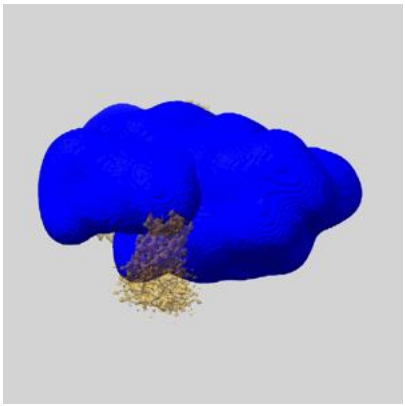
6.6 Mask visualisation (i)

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

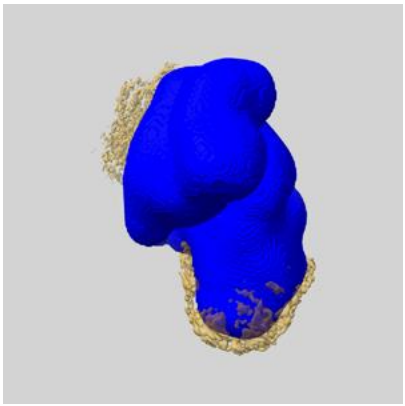
A mask typically either:

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

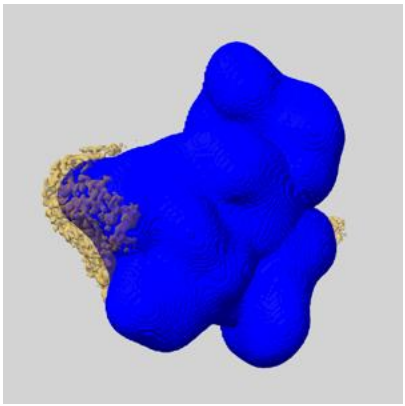
6.6.1 emd_19128_msk_1.map (i)



X



Y

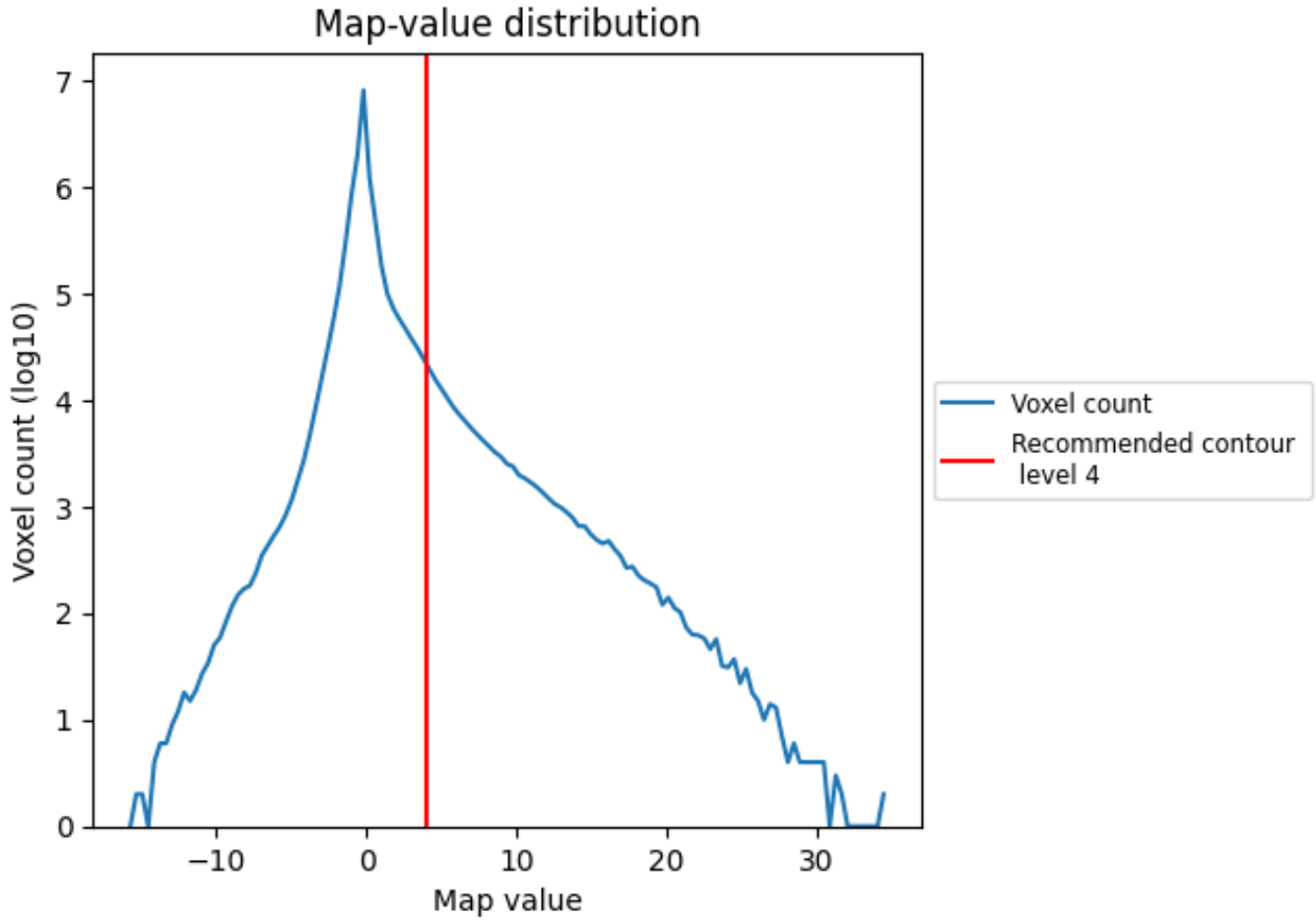


Z

7 Map analysis

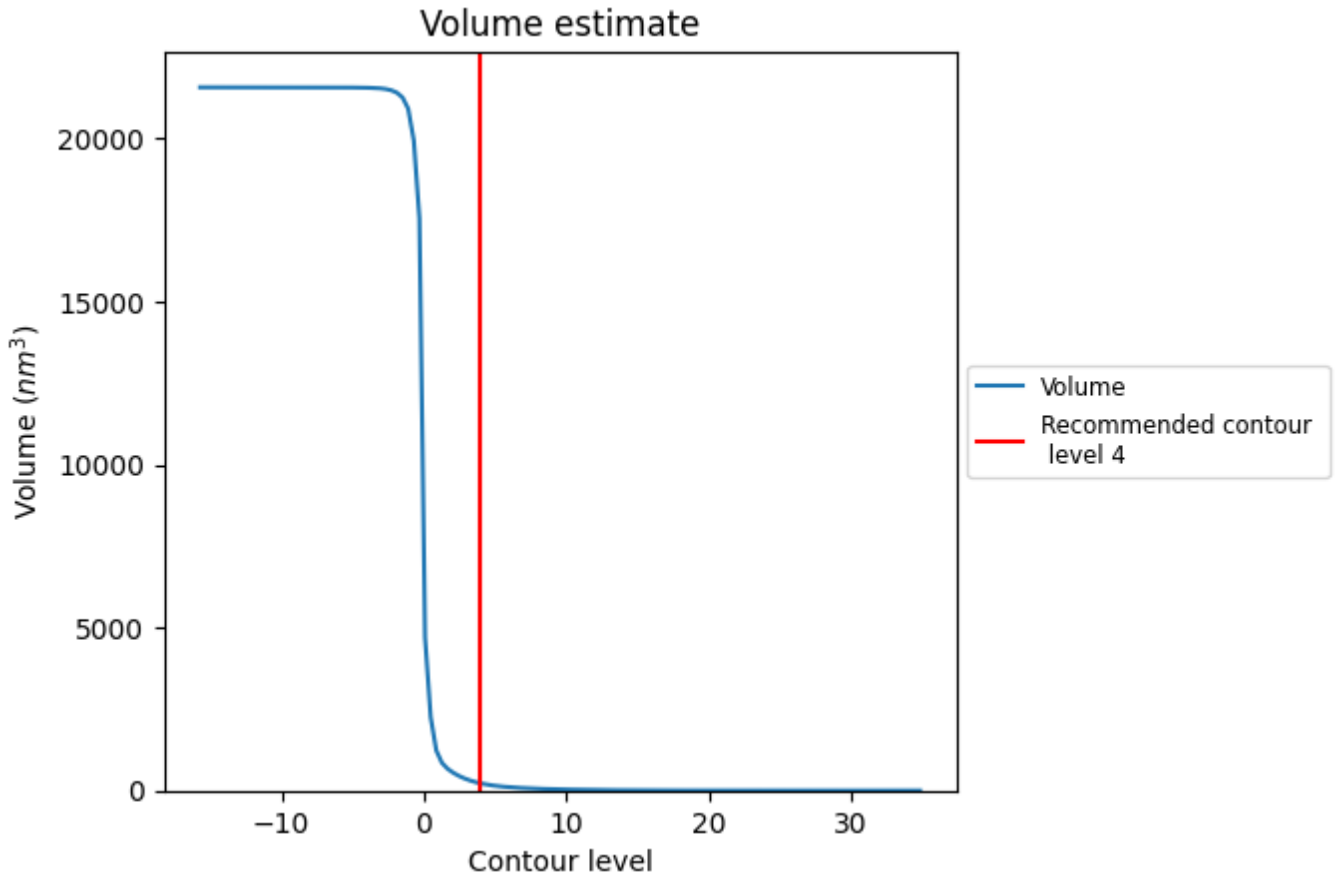
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

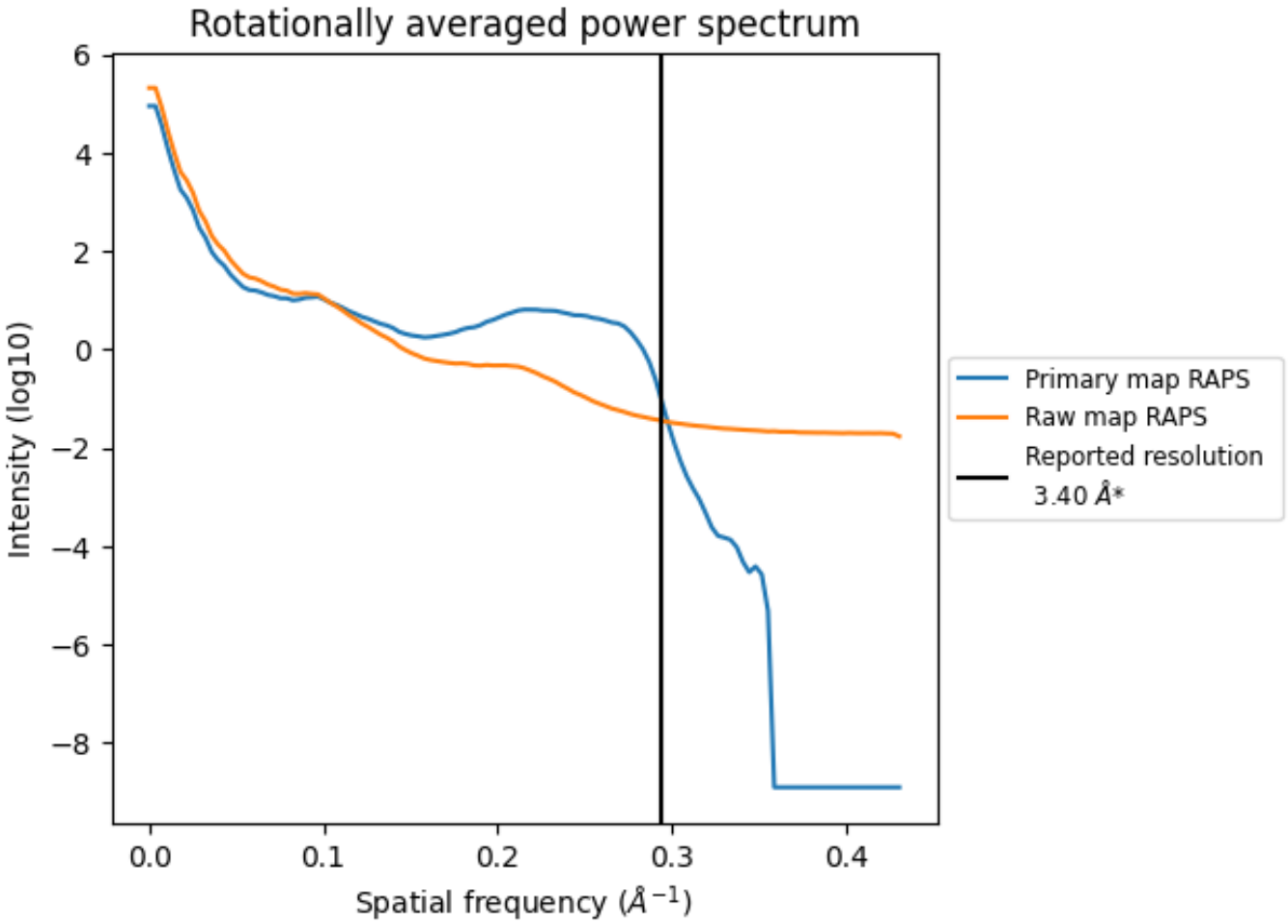
7.2 Volume estimate



The volume at the recommended contour level is 219 nm^3; this corresponds to an approximate mass of 198 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)

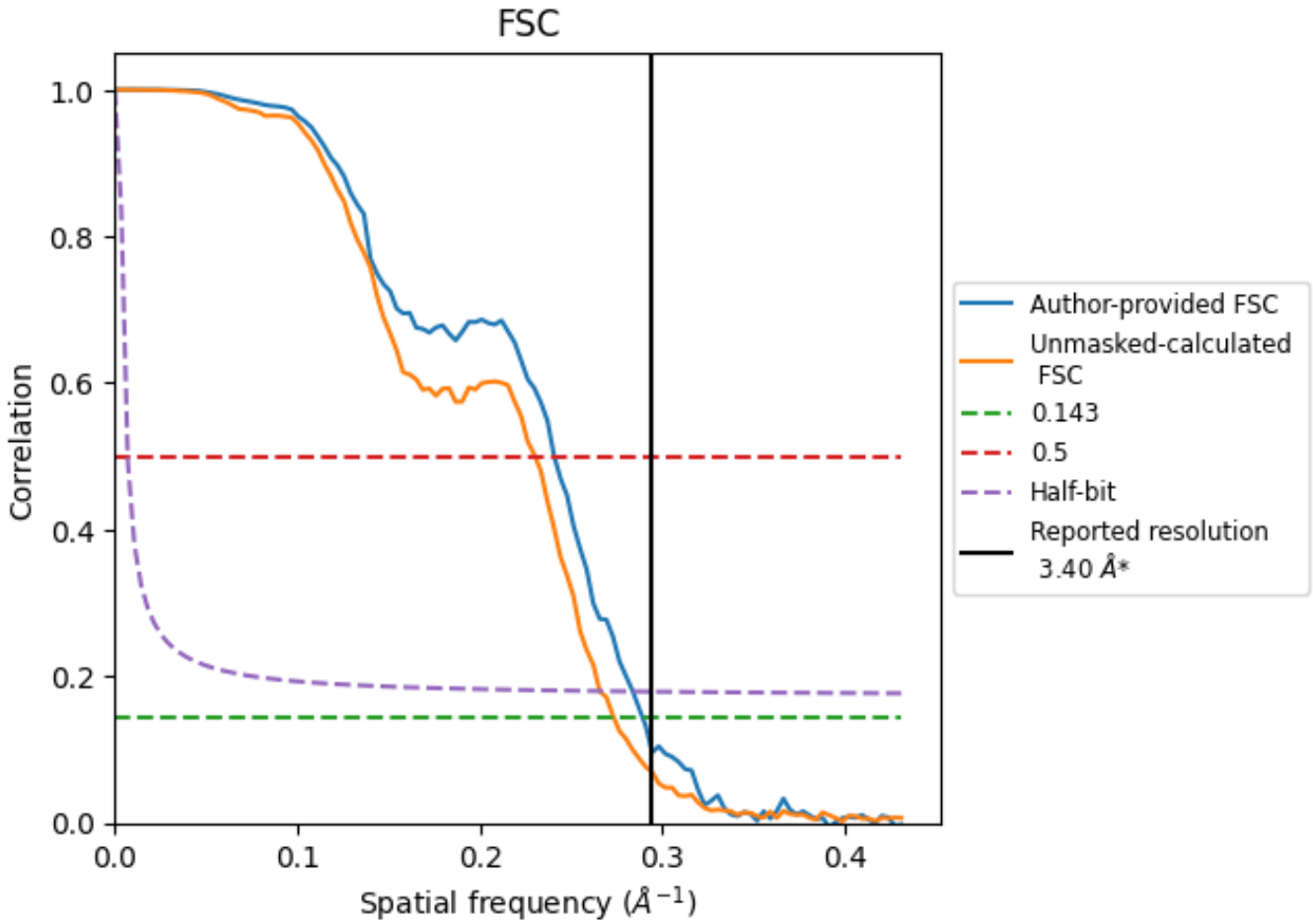


*Reported resolution corresponds to spatial frequency of 0.294 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.294 $Å^{-1}$

8.2 Resolution estimates (i)

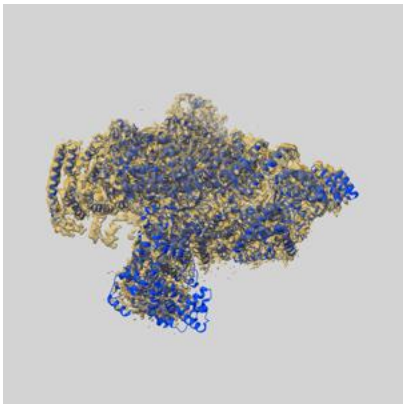
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.40	-	-
Author-provided FSC curve	3.46	4.15	3.52
Unmasked-calculated*	3.66	4.34	3.76

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

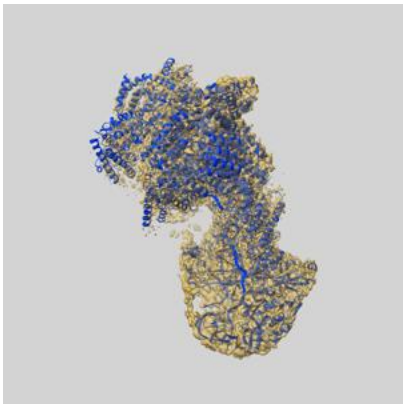
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-19128 and PDB model 8RG0. Per-residue inclusion information can be found in section 3 on page 8.

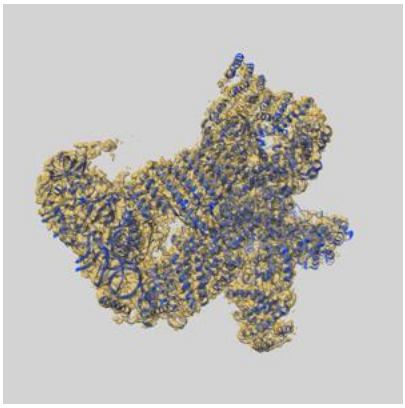
9.1 Map-model overlay



X



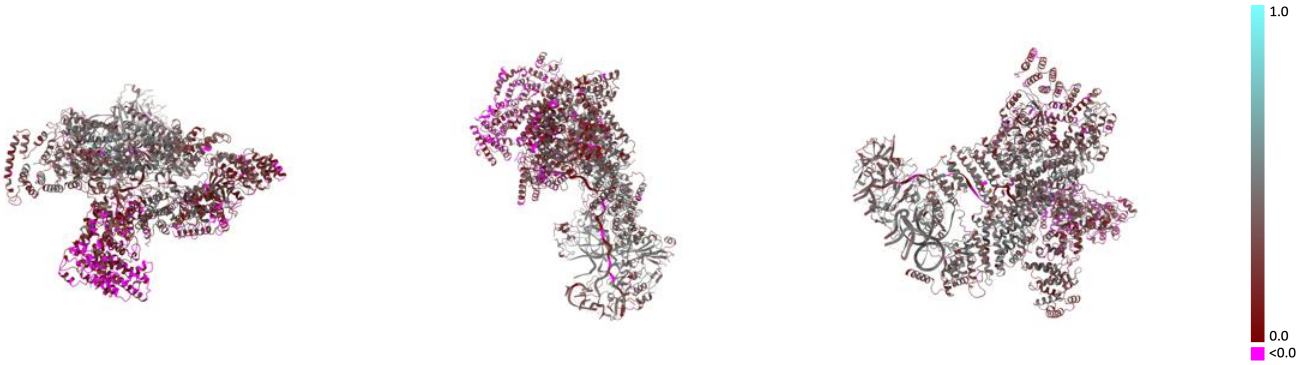
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 4.0 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.

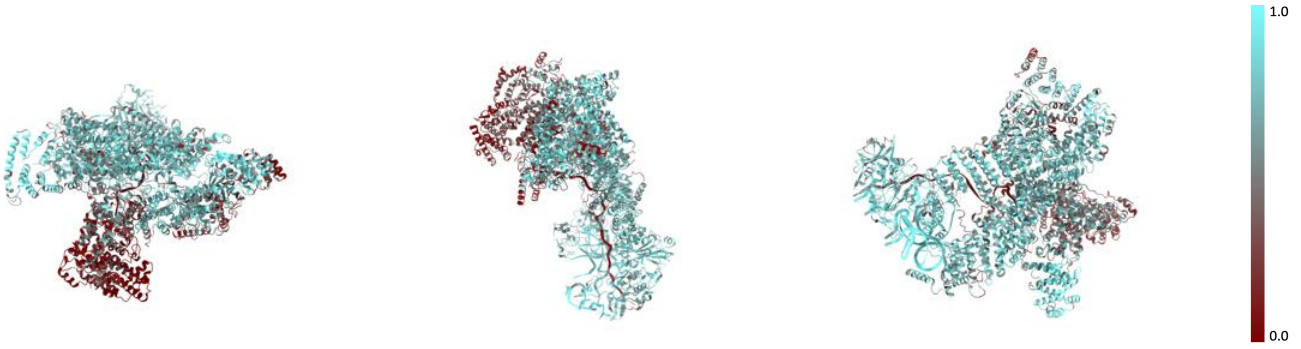
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

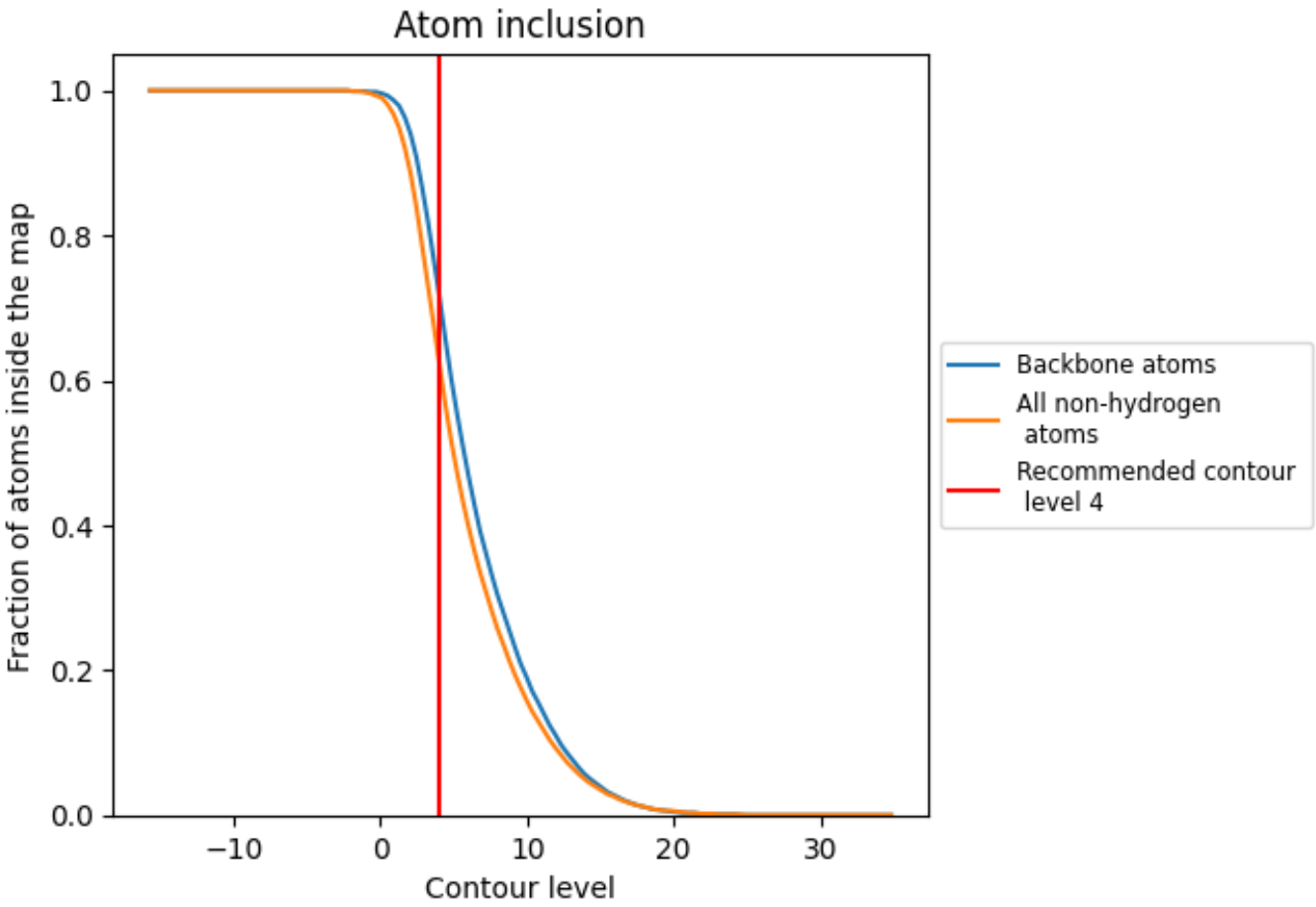
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (4).

9.4 Atom inclusion (i)



At the recommended contour level, 72% of all backbone atoms, 62% 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 (4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6240	0.3030
3	0.3170	0.1290
4	0.6930	0.2850
5	0.2280	0.0850
6	0.6530	0.2700
7	0.1820	0.1020
8	0.5900	0.2470
A	0.9080	0.4280
H	0.7840	0.4270
I	0.7550	0.3900
M	0.6590	0.3480
N	0.6880	0.3580
O	0.8010	0.4400
P	0.7480	0.3970
Q	0.7690	0.4170
n	0.5450	0.3240
u	0.6820	0.3490
v	0.6730	0.2950
x	0.6530	0.3260
y	0.7270	0.3920