



wwPDB EM Validation Summary Report ⓘ

Sep 16, 2026 – 09:45 AM EDT

PDB ID : 7UNV / pdb_00007unv
EMDB ID : EMD-26634
Title : Pseudomonas aeruginosa 70S ribosome initiation complex bound to IF2-GDPCP (structure II-A)
Authors : Basu, R.S.; Sherman, M.B.; Gagnon, M.G.
Deposited on : 2022-04-11
Resolution : 2.70 Å (reported)
Based on initial models : 3JCJ, 6SPG

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

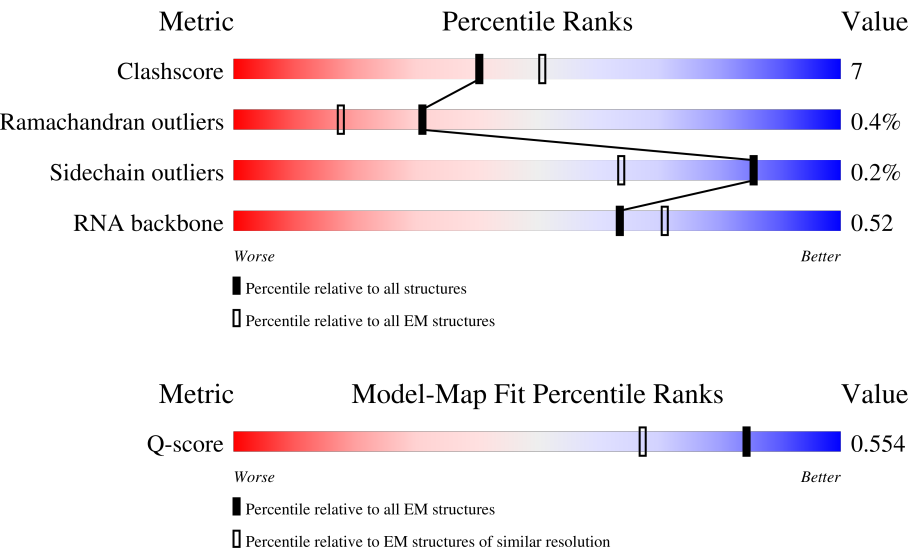
EMDB validation analysis : 0.0.1.dev133
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.50

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 2.70 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.



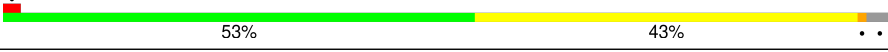
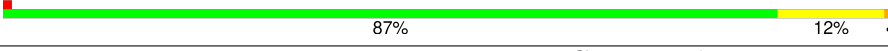
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	10327 (2.20 - 3.20)

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	a	1536	
2	b	246	
3	c	228	

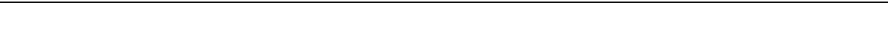
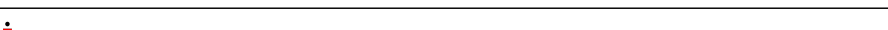
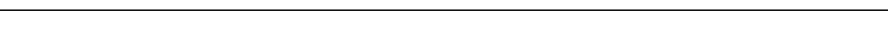
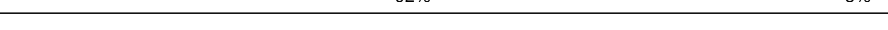
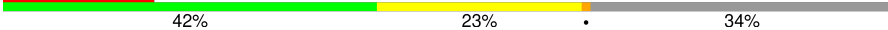
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
4	d	206	
5	e	166	
6	f	139	
7	g	156	
8	h	130	
9	i	130	
10	j	103	
11	k	129	
12	l	123	
13	m	118	
14	n	101	
15	o	89	
16	p	83	
17	q	88	
18	r	76	
19	s	91	
20	t	91	
21	u	71	
22	v	77	
23	w	24	
24	x	840	
25	A	2891	
26	B	120	
27	C	273	
28	D	211	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
29	E	200	
30	F	179	
31	G	177	
32	H	148	
33	I	166	
34	J	143	
35	L	142	
36	M	122	
37	N	144	
38	O	137	
39	P	129	
40	Q	116	
41	R	116	
42	S	118	
43	T	103	
44	U	110	
45	V	99	
46	W	104	
47	X	204	
48	Y	85	
49	Z	78	
50	1	63	
51	2	58	
52	3	71	
53	4	60	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
54	5	51	96%
55	6	44	91% 9%
56	7	64	89% 9%
57	8	38	89% 11%

2 Entry composition

There are 62 unique types of molecules in this entry. The entry contains 149599 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 16S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	a	1522	Total	C	N	O	P	0	0
			32675	14581	5999	10574	1521		

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	b	224	Total	C	N	O	S	0	0
			1751	1104	320	317	10		

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	c	208	Total	C	N	O	S	0	0
			1656	1047	313	291	5		

- Molecule 4 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	d	205	Total	C	N	O	S	0	0
			1617	998	313	301	5		

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	e	154	Total	C	N	O	S	0	0
			1134	711	210	207	6		

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	f	106	Total	C	N	O	S	0	0
			857	534	159	158	6		

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	g	152	Total	C	N	O	S	0	0
			1187	743	231	208	5		

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	h	129	Total	C	N	O	S	0	0
			982	618	173	185	6		

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	i	127	Total	C	N	O	S	0	0
			1010	625	203	181	1		

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	j	99	Total	C	N	O	S	0	0
			787	493	147	146	1		

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	k	119	Total	C	N	O	S	0	0
			879	545	171	161	2		

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	l	122	Total	C	N	O	S	0	0
			959	588	198	169	4		

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	m	114	Total	C	N	O	S	0	0
			892	544	182	162	4		

- Molecule 14 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	n	100	Total	C	N	O	S	0	0
			800	494	167	136	3		

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	o	88	Total	C	N	O	S	0	0
			703	434	139	129	1		

- Molecule 16 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	p	81	Total	C	N	O	S	0	0
			636	397	125	113	1		

- Molecule 17 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	q	80	Total	C	N	O	S	0	0
			645	404	124	115	2		

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	r	62	Total	C	N	O	0	0
			480	307	85	88		

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	s	83	Total	C	N	O	S	0	0
			663	422	129	109	3		

- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	t	87	Total	C	N	O	S	0	0
			671	414	138	117	2		

- Molecule 21 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	u	62	Total	C	N	O	S	0	0
			506	316	103	86	1		

- Molecule 22 is a RNA chain called P-site initiator tRNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
22	v	76	Total	C	N	O	P	S	0	0
			1625	725	294	529	76	1		

- Molecule 23 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	w	6	Total	C	N	O	P	0	0
			131	59	27	39	6		

- Molecule 24 is a protein called Translation initiation factor IF-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	x	593	Total	C	N	O	S	0	0
			4275	2676	773	810	16		

- Molecule 25 is a RNA chain called 23S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	A	2884	Total	C	N	O	P	0	0
			61891	27621	11346	20041	2883		

- Molecule 26 is a RNA chain called 5S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	B	117	Total	C	N	O	P	0	0
			2495	1114	448	816	117		

- Molecule 27 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	C	272	Total	C	N	O	S	0	0
			2072	1276	426	364	6		

- Molecule 28 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	D	211	Total	C	N	O	S	0	0
			1588	981	304	297	6		

- Molecule 29 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	E	200	Total	C	N	O	S	0	0
			1521	955	283	280	3		

- Molecule 30 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	F	176	Total	C	N	O	S	0	0
			1406	899	249	254	4		

- Molecule 31 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	G	175	Total	C	N	O	S	0	0
			1323	834	244	243	2		

- Molecule 32 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	H	72	Total	C	N	O	S	0	0
			513	321	92	99	1		

- Molecule 33 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	I	118	Total	C	N	O	0	0
			587	349	118	120		

- Molecule 34 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	J	134	Total	C	N	O	S	0	0
			689	415	134	138	2		

- Molecule 35 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	L	142	Total	C	N	O	S	0	0
			1130	718	206	202	4		

- Molecule 36 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	M	122	Total	C	N	O	S	0	0
			938	587	180	165	6		

- Molecule 37 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	N	144	Total	C	N	O	S	0	0
			1066	654	215	194	3		

- Molecule 38 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	O	137	Total	C	N	O	S	0	0
			1085	689	211	181	4		

- Molecule 39 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	P	120	Total	C	N	O	S	0	0
			959	600	192	162	5		

- Molecule 40 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Q	115	Total	C	N	O	S	0	0
			881	544	174	161	2		

- Molecule 41 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	R	114	Total	C	N	O	S	0	0
			902	568	171	162	1		

- Molecule 42 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	S	117	Total	C	N	O	0	0
			933	591	196	146		

- Molecule 43 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	T	103	Total	C	N	O	S	0	0
			822	521	156	143	2		

- Molecule 44 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	U	110	Total	C	N	O	S	0	0
			833	515	161	153	4		

- Molecule 45 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	V	94	Total	C	N	O	S	0	0
			739	472	134	132	1		

- Molecule 46 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	W	103	Total	C	N	O	S	0	0
			786	494	150	141	1		

- Molecule 47 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	X	190	Total	C	N	O	S	0	0
			1445	915	262	265	3		

- Molecule 48 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	Y	76	Total	C	N	O	0	0
			575	364	111	100		

- Molecule 49 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Z	77	Total	C	N	O	S	0	0
			630	391	134	103	2		

- Molecule 50 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	1	61	Total	C	N	O	S	0	0
			490	301	96	91	2		

- Molecule 51 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	2	57	Total	C	N	O	S	0	0
			445	277	87	79	2		

- Molecule 52 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	3	47	Total	C	N	O	S	0	0
			356	222	60	68	6		

- Molecule 53 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	4	55	Total	C	N	O	S	0	0
			440	264	93	82	1		

- Molecule 54 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	5	51	Total	C	N	O	S	0	0
			426	272	78	75	1		

- Molecule 55 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	6	44	Total	C	N	O	S	0	0
			365	222	87	54	2		

- Molecule 56 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	7	63	Total	C	N	O	S	0	0
			506	314	108	81	3		

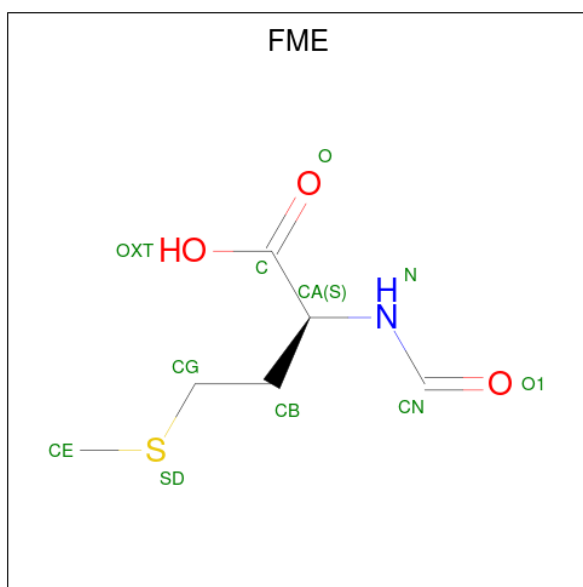
- Molecule 57 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	8	38	Total	C	N	O	S	0	0
			307	186	69	48	4		

- Molecule 58 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

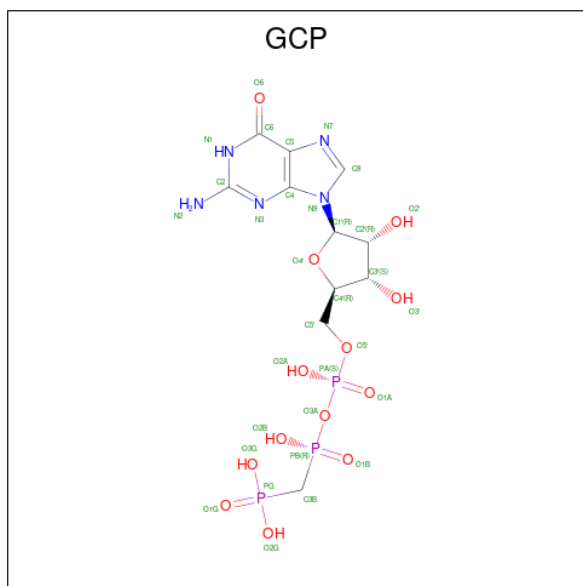
Mol	Chain	Residues	Atoms		AltConf
58	a	121	Total	Mg	0
			121	121	
58	q	1	Total	Mg	0
			1	1	
58	t	1	Total	Mg	0
			1	1	
58	v	1	Total	Mg	0
			1	1	
58	w	1	Total	Mg	0
			1	1	
58	x	1	Total	Mg	0
			1	1	
58	A	455	Total	Mg	0
			455	455	
58	B	4	Total	Mg	0
			4	4	
58	C	3	Total	Mg	0
			3	3	
58	D	2	Total	Mg	0
			2	2	
58	E	1	Total	Mg	0
			1	1	
58	P	1	Total	Mg	0
			1	1	
58	Y	1	Total	Mg	0
			1	1	
58	4	1	Total	Mg	0
			1	1	
58	7	1	Total	Mg	0
			1	1	

- Molecule 59 is N-FORMYLMETHIONINE (CCD ID: FME) (formula: C₆H₁₁NO₃S).



Mol	Chain	Residues	Atoms					AltConf
59	v	1	Total	C	N	O	S	0
			10	6	1	2	1	

- Molecule 60 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (CCD ID: GCP) (formula: $C_{11}H_{18}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
60	x	1	Total	C	N	O	P	0
			32	11	5	13	3	

- Molecule 61 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
61	3	1	Total 1	Zn 1	0
61	8	1	Total 1	Zn 1	0

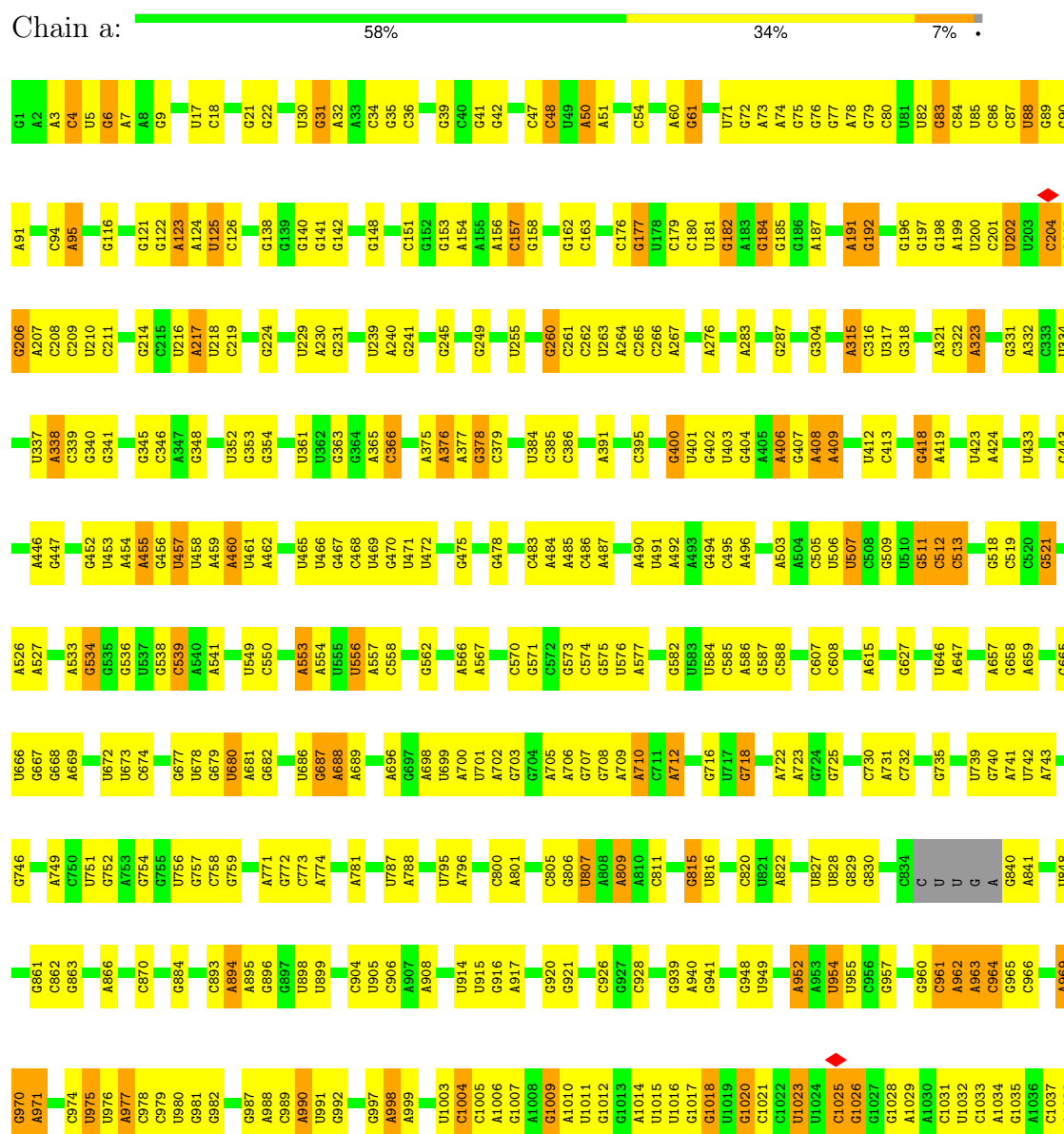
- Molecule 62 is water.

Mol	Chain	Residues	Atoms		AltConf
62	a	46	Total 46	O 46	0
62	k	1	Total 1	O 1	0
62	v	1	Total 1	O 1	0
62	w	1	Total 1	O 1	0
62	x	1	Total 1	O 1	0
62	A	238	Total 238	O 238	0
62	B	1	Total 1	O 1	0
62	C	2	Total 2	O 2	0
62	N	1	Total 1	O 1	0
62	4	2	Total 2	O 2	0
62	6	1	Total 1	O 1	0

3 Residue-property plots

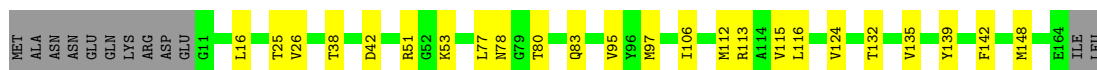
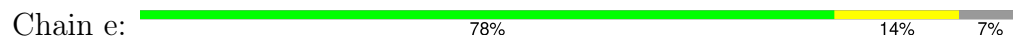
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 16S Ribosomal RNA

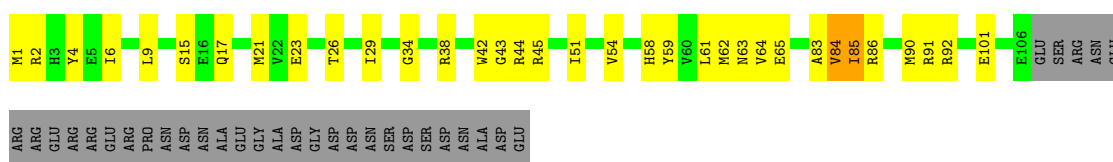




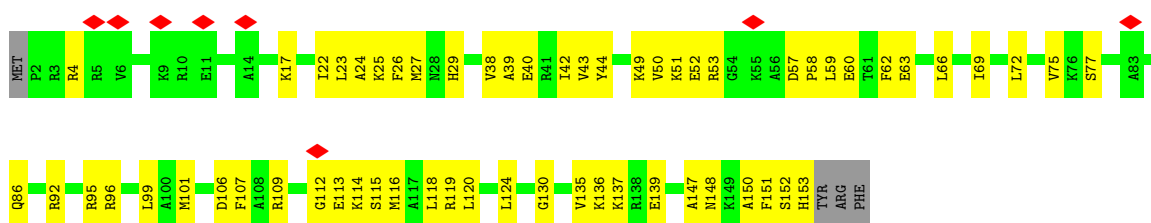
- Molecule 5: 30S ribosomal protein S5



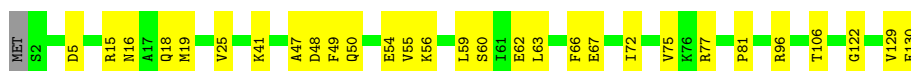
- Molecule 6: 30S ribosomal protein S6



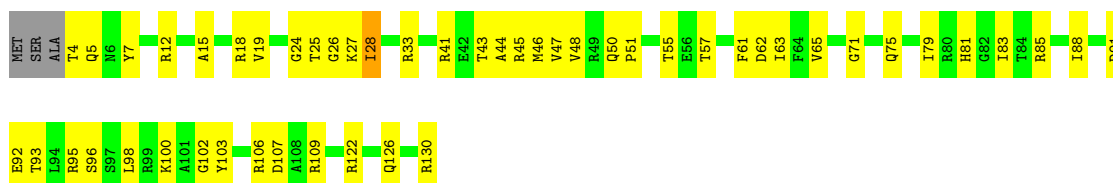
- Molecule 7: 30S ribosomal protein S7



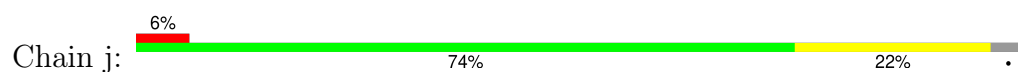
- Molecule 8: 30S ribosomal protein S8



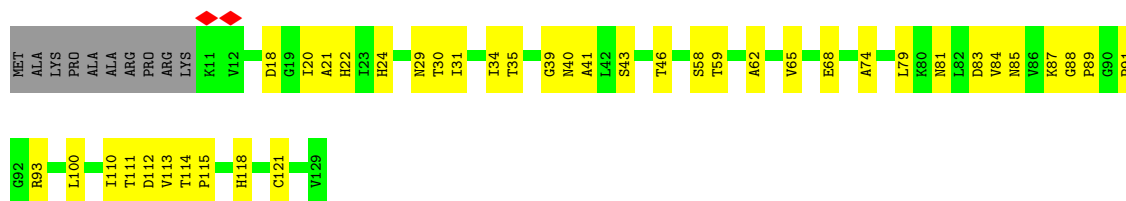
- Molecule 9: 30S ribosomal protein S9



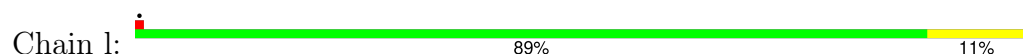
- Molecule 10: 30S ribosomal protein S10



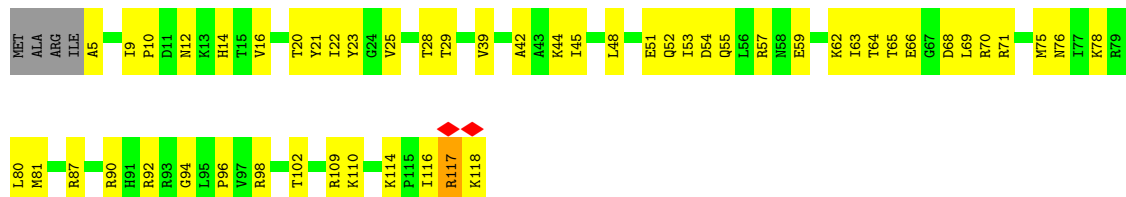
- Molecule 11: 30S ribosomal protein S11



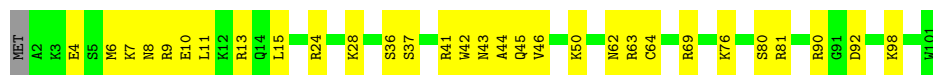
- Molecule 12: 30S ribosomal protein S12



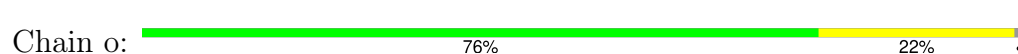
- Molecule 13: 30S ribosomal protein S13



- Molecule 14: 30S ribosomal protein S14



- Molecule 15: 30S ribosomal protein S15



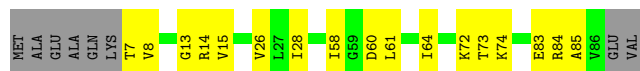
- Molecule 16: 30S ribosomal protein S16

Chain p:  83% 14%



- Molecule 17: 30S ribosomal protein S17

Chain q:  72% 19% 9%



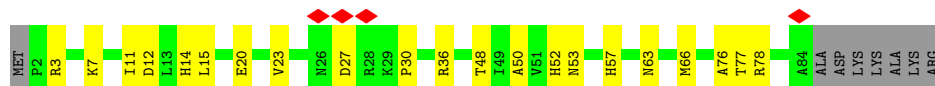
- Molecule 18: 30S ribosomal protein S18

Chain r:  7% 61% 21% 11%



- Molecule 19: 30S ribosomal protein S19

Chain s:  68% 23% 9%



- Molecule 20: 30S ribosomal protein S20

Chain t:  85% 11%



- Molecule 21: 30S ribosomal protein S21

Chain u:  70% 17% 13%



- Molecule 22: P-site initiator tRNA

Chain v:  47% 39% 12%



- Molecule 23: mRNA

G G C A A G G A G G U A A13 H G18 U U C U A A

Chain x:

NET	THR	GLN	VAL	VAL	LYS	GLU	GLU	ALA	GLN	VAL	VAL	VAL	ASP	THR	PRO	VAL	GLU	ARG	ARG	ASP	ALA	GLY	LEU	LEU	LEU	GLN	MET	MET	ARG	ASP	ALA	ALA	LEU	LEU	PRO	THR	THR	SER	ALA	GLU	GLU	LYS	GLN	ALA	LEU	LEU	THR	THR	HIS	HIS	LEU	LYS	GLY	ASP	ARG	ALA	SER	SER	GLU	GLU
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

PRO	ARG	LYS	ILE	THR	LEU	GLN	ARG	LYS	THR	THR	THR	THR	LYS	VAL	GLY	GLY	SER	LYS	THR	THR	SER	SER	VAL	VAL	GLU	GLU	VAL	VAL	ARG	LYS	LYS	LYS	LYS	THR	TYR	THR	VAL	VAL	LYS	LYS	ARG	ARG	PRO	ASP	GLU	GLU	ILE	GLU	GLU	ALA	ALA	ALA	ALA	GLU	GLU	GLU	GLU	GLN	ARG	ARG	GLU	GLU	LEU	LEU	GLU	GLU	ALA	ALA	GLU	GLU	LEU	ARG	LEU
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

LYS	GLU	GLU	ALA	ALA	ARG	GLN	ARG	ALA	GLU	GLU	ALA	ALA	GLU	GLU	LYS	ALA	ALA	ALA	GLN	GLU	ALA	ALA	ALA	THR	ALA	VAL	VAL	ASP	VAL	ALA	VAL	VAL	ALA	GLU	PRO	VAL	ALA	LYS	PRO	ALA	ALA	VAL	VAL	GLU	GLU	ARG	LYS
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

LYS	GLU	GLU	GLU	PRO	ARG	ARG	VAL	LYS	LYS	ASP	GLU	ASP	ASP	ASP	ARG	ARG	ASP	ARG	LYS	HIS	THR	HIS	GLN	ARG	ARG	PRO	PRO	VAL	VAL	LYS	GLY	GLU	LYS	LYS	VAL	VAL	PRO	PRO	ALA	ALA	ARG	ARG	SER	ARG	THR	ASP	GLU	GLU	GLU	SER	SER	ASP	GLY	TYR	ARG	ARG	GLY	GLY	GLY	GLY	ARG	GLY	GLY	LYS	SER
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

LYS	LEU	LYS	ARG	ASN	GLN	P248	R259	S277	P287	P293	V294	E337	V345	H350	V351	R362	H363	G354	K355	D360	R363	V367	E371	V384	E385	T386	E387	R388	G389	H399	R406	T413	D414	I415	L418	V419	M427	Q428	Q429	T430
-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

V434 V446 V447 V448 V462 V465 E473 E474 E475 V480 V481 V482 V483 V484 V485 V486 V487 V488 L496 L497 L498 V499 L500 L501 T511 R517 V520 V521 V522 E529 T534 V535 V539 T543 V542 V543 V544 V552 V553 V554 V558 V564 V565 V566 E570 L580

G581	G582	D583	G584	F607	R608	K611	G627	T628	F629	E630	N631	M632	G633	G634	E635	F636	G637	K638	T639	L644	G648	R649	G650	L655	L662	G663	N664	Q668	T680	D683	A684	F695	R717	T718	T719	L725	L726	E727	D728	S739	D740	L741	L745
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

R752	R753	R754	R776	R777	R778	R779	R780	R781	R782	R785	R792	R801	R807	R819	R822	R823	R824	R828	R829	R830	R831	R838	R839	R840	R841	R842	R843	R844	R845	R846	R847	R848	R849	R850	R851	R852	R853	R854	R855	R856	R857	R858	R859	R860	R861	R862	R863	R864	R865	R866	R867	R868	R869	R870	R871	R872	R873	R874	R875	R876	R877	R878	R879	R880	R881	R882	R883	R884	R885	R886	R887	R888	R889	R890	R891	R892	R893	R894	R895	R896	R897	R898	R899	R900	R901	R902	R903	R904	R905	R906	R907	R908	R909	R910	R911	R912	R913	R914	R915	R916	R917	R918	R919	R920	R921	R922	R923	R924	R925	R926	R927	R928	R929	R930	R931	R932	R933	R934	R935	R936	R937	R938	R939	R940	R941	R942	R943	R944	R945	R946	R947	R948	R949	R950	R951	R952	R953	R954	R955	R956	R957	R958	R959	R960	R961	R962	R963	R964	R965	R966	R967	R968	R969	R970	R971	R972	R973	R974	R975	R976	R977	R978	R979	R980	R981	R982	R983	R984	R985	R986	R987	R988	R989	R990	R991	R992	R993	R994	R995	R996	R997	R998	R999	R1000
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	-------

Chain A: 64% 30% 6%

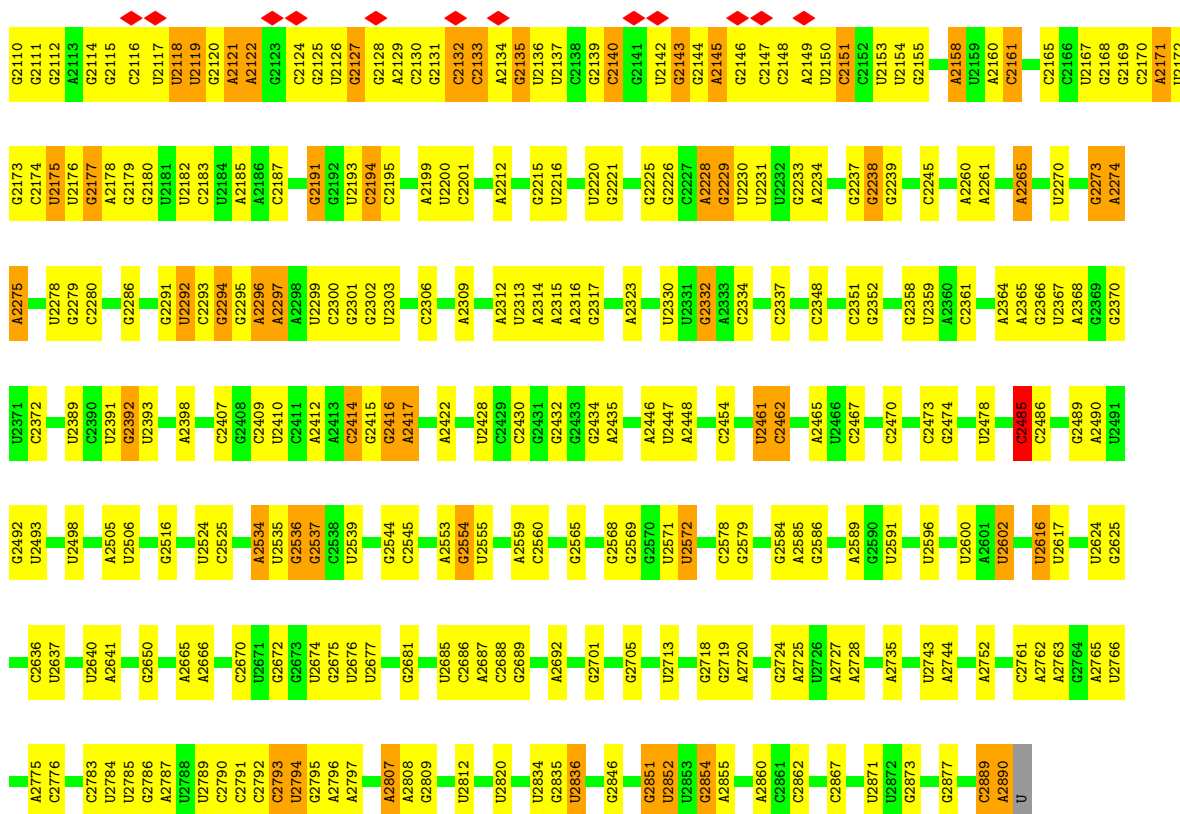
G1	G2	U3	C4	A5	A6	G9	G15	G16	G17	C18	C24	G27	A28	U34	G35	G36	C37	A38	G43	A44	A45	A46	U50	G58	G61	U62	G70	A71	A74	G75	G79	G80	G81	G82	G83	A84	G85	U86	C87	A92	A93	C94	A95	G96	A97	C98	A99
----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

U99	U100	U101	G102	G110	U114	C115	A118	A119	U120	G124	G125	A131	U134	A135	A141	C142	U150	U155	A156	C157	A160	C163	C164	A165	U166	A181	A191	C192	A196	A197	C198	A199	G205	U206	A207	C208	C209	G215	A216	G220	A221
-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

A222	A223	A224	G230	A233	A240	G242	U243	A244	G247	G248	G249	G250	G251	G252	A255	G261	A265	G266	U271	A272	A273	G274	G275	U276	U277	G288	A289	G290	G291	G292	A293	A294	G295	G296	G299	U300	G301	A304	A305	G306	A314	U315	A316	G317	U318	G319
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------

G320	G321	G322	G323	G324	C331	C337	A344	U345	U348	U349	G350	A351	A356	A357	A358	U359	G371	A372	G373	C374	A375	C376	G377	A380	A381	A382	G387	U396	G397	G400	G401	G402	A403	C404	C405	A406	U407	A426	A434	A435	U439	A444	A445	C446	C447
------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------





• Molecule 26: 5S Ribosomal RNA

Chain B: 73% 20%



• Molecule 27: 50S ribosomal protein L2

Chain C: 87% 13%



• Molecule 28: 50S ribosomal protein L3

Chain D: 87% 12%



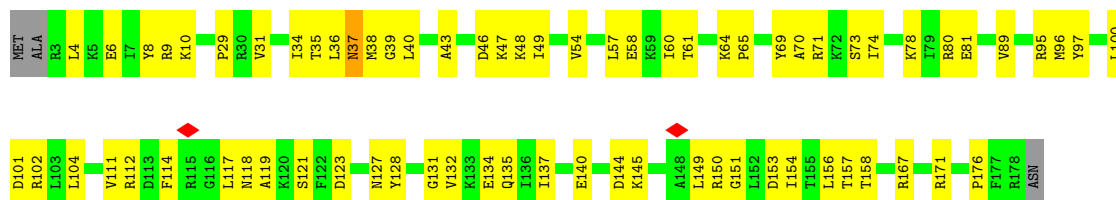
• Molecule 29: 50S ribosomal protein L4

Chain E:  87% 12%



- Molecule 30: 50S ribosomal protein L5

Chain F:  59% 39% ..

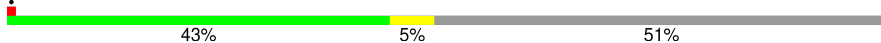


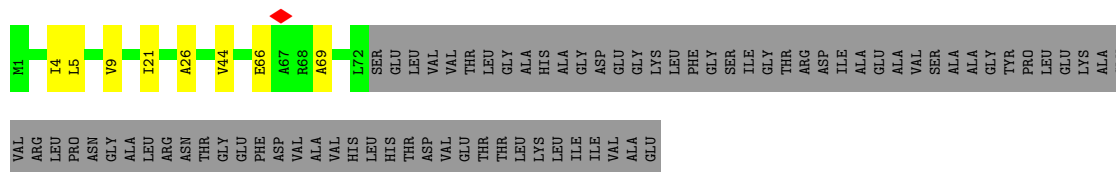
- Molecule 31: 50S ribosomal protein L6

Chain G:  89% 10% .



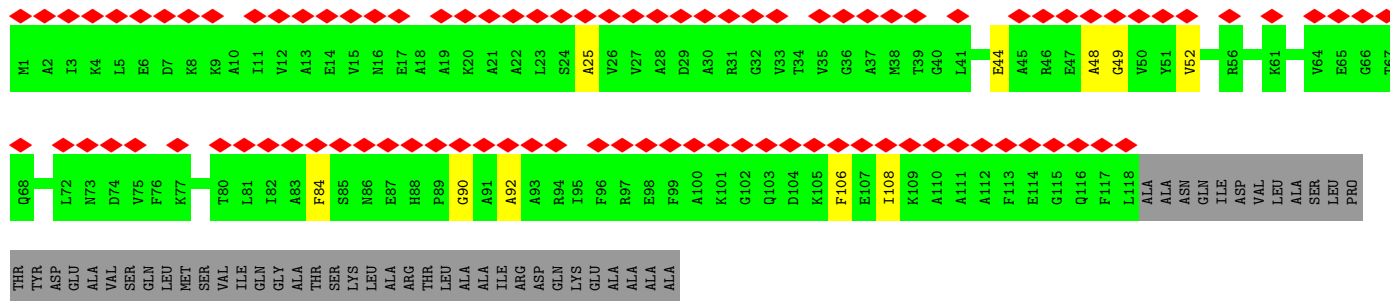
- Molecule 32: 50S ribosomal protein L9

Chain H:  43% 5% 51%



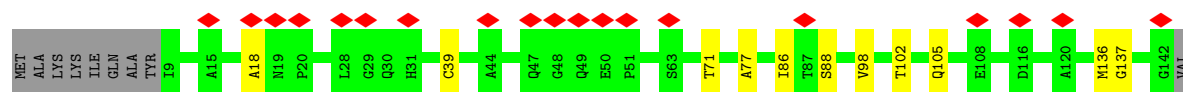
- Molecule 33: 50S ribosomal protein L10

Chain I:  57% 65% 6% 29%

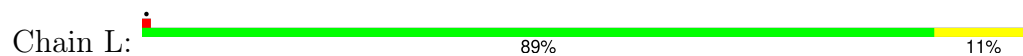


- Molecule 34: 50S ribosomal protein L11

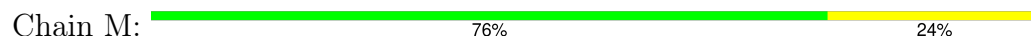
Chain J:  13% 86% 8% 6%



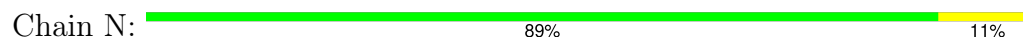
- Molecule 35: 50S ribosomal protein L13



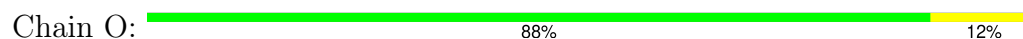
- Molecule 36: 50S ribosomal protein L14



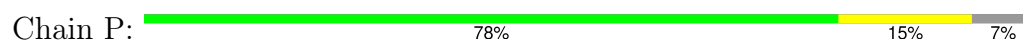
- Molecule 37: 50S ribosomal protein L15



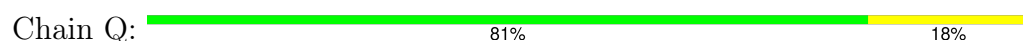
- Molecule 38: 50S ribosomal protein L16



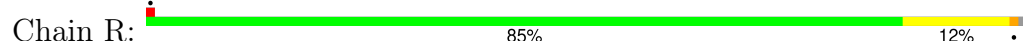
- Molecule 39: 50S ribosomal protein L17



- Molecule 40: 50S ribosomal protein L18



- Molecule 41: 50S ribosomal protein L19





- Molecule 42: 50S ribosomal protein L20

Chain S: 92% 8%



- Molecule 43: 50S ribosomal protein L21

Chain T: 88% 10%



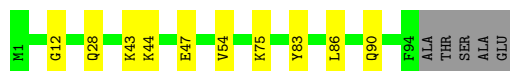
- Molecule 44: 50S ribosomal protein L22

Chain U: 90% 10%



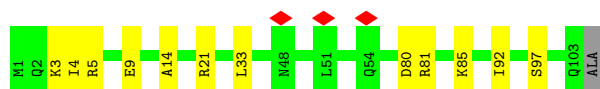
- Molecule 45: 50S ribosomal protein L23

Chain V: 85% 10% 5%



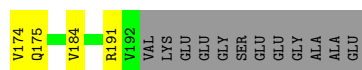
- Molecule 46: 50S ribosomal protein L24

Chain W: 88% 12%



- Molecule 47: 50S ribosomal protein L25

Chain X: 75% 18% 7%



- Molecule 48: 50S ribosomal protein L27

Chain Y:  80% 9% 11%



- Molecule 49: 50S ribosomal protein L28

Chain Z:  90% 9%



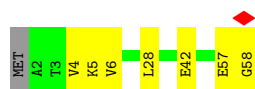
- Molecule 50: 50S ribosomal protein L29

Chain 1:  79% 17%



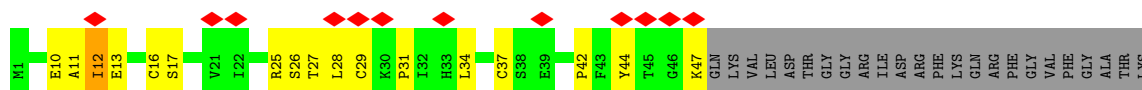
- Molecule 51: 50S ribosomal protein L30

Chain 2:  86% 12%



- Molecule 52: 50S ribosomal protein L31

Chain 3:  17% 42% 23% 34%

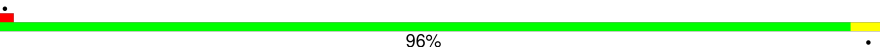


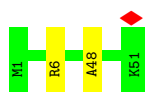
- Molecule 53: 50S ribosomal protein L32

Chain 4:  80% 12% 8%



- Molecule 54: 50S ribosomal protein L33

Chain 5:  96%



- Molecule 55: 50S ribosomal protein L34

Chain 6:  91% 9%



- Molecule 56: 50S ribosomal protein L35

Chain 7:  89% 9% .



- Molecule 57: 50S ribosomal protein L36

Chain 8:  89% 11%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	73337	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 ($e^-/\text{\AA}^2$)	31	Depositor
Minimum defocus (nm)	200	Depositor
Maximum defocus (nm)	2100	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.999	Depositor
Minimum map value	-0.674	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.065	Depositor
Recommended contour level	0.14	Depositor
Map size (Å)	435.2, 435.2, 435.2	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.85, 0.85, 0.85	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: MG, 4SU, PSU, 2MA, FME, ZN, 2MG, 5MC, OMC, MA6, OMG, 6MZ, 4OC, GCP, 7MG, 1MG, UR3, OMU, 5MU

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	a	0.15	0/36354	0.29	0/56707
2	b	0.15	0/1779	0.46	0/2392
3	c	0.15	0/1685	0.33	0/2270
4	d	0.17	0/1636	0.35	0/2189
5	e	0.16	0/1148	0.40	0/1544
6	f	0.18	0/871	0.47	0/1172
7	g	0.13	0/1204	0.38	0/1609
8	h	0.14	0/993	0.33	0/1332
9	i	0.12	0/1022	0.36	0/1365
10	j	0.24	0/797	0.40	0/1076
11	k	0.14	0/895	0.33	0/1209
12	l	0.14	0/973	0.36	0/1303
13	m	0.15	0/901	0.44	0/1209
14	n	0.14	0/812	0.41	0/1082
15	o	0.17	0/710	0.39	0/947
16	p	0.14	0/647	0.36	0/870
17	q	0.12	0/653	0.34	0/881
18	r	0.13	0/488	0.34	0/660
19	s	0.10	0/678	0.28	0/912
20	t	0.14	0/678	0.26	0/904
21	u	0.12	0/513	0.31	0/680
22	v	0.23	0/1725	0.35	2/2689 (0.1%)
23	w	0.12	0/147	0.18	0/227
24	x	0.14	0/4325	0.37	0/5861
25	A	0.19	0/68977	0.31	2/107590 (0.0%)
26	B	0.13	0/2789	0.25	0/4345
27	C	0.16	0/2108	0.33	0/2831
28	D	0.19	0/1611	0.39	0/2167
29	E	0.20	0/1541	0.38	0/2075
30	F	0.16	0/1427	0.48	0/1917
31	G	0.13	0/1341	0.31	0/1805

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	H	0.10	0/516	0.30	0/696
33	I	0.08	0/586	0.34	0/813
34	J	0.10	0/688	0.35	0/953
35	L	0.15	0/1156	0.31	0/1559
36	M	0.16	0/947	0.33	0/1268
37	N	0.16	0/1078	0.39	0/1436
38	O	0.16	0/1105	0.31	0/1476
39	P	0.16	0/975	0.34	0/1304
40	Q	0.11	0/888	0.28	0/1183
41	R	0.24	0/911	0.36	0/1218
42	S	0.16	0/943	0.29	0/1253
43	T	0.15	0/835	0.29	0/1117
44	U	0.14	0/837	0.27	0/1114
45	V	0.14	0/749	0.29	0/1002
46	W	0.14	0/794	0.34	0/1062
47	X	0.13	0/1468	0.29	0/1987
48	Y	0.24	0/583	0.39	0/774
49	Z	0.20	0/641	0.34	0/854
50	1	0.12	0/491	0.22	0/654
51	2	0.13	0/449	0.26	0/602
52	3	0.11	0/364	0.31	0/494
53	4	0.15	0/446	0.32	0/594
54	5	0.12	0/433	0.27	0/576
55	6	0.18	0/368	0.39	0/482
56	7	0.15	0/511	0.26	0/668
57	8	0.15	0/308	0.29	0/404
All	All	0.17	0/160498	0.32	4/239363 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
28	D	0	1
43	T	0	1
All	All	0	2

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	A	1094	C	OP1-P-O3'	-8.98	81.05	108.00
22	v	76	A	O4'-C1'-N9	8.16	120.44	108.20
25	A	1094	C	OP2-P-O3'	-8.08	83.77	108.00
22	v	75	C	OP2-P-O3'	-5.84	90.47	108.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
28	D	151	THR	Peptide
43	T	51	LEU	Peptide

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	a	32675	0	16461	416	0
2	b	1751	0	1785	48	0
3	c	1656	0	1706	26	0
4	d	1617	0	1650	35	0
5	e	1134	0	1181	18	0
6	f	857	0	836	33	0
7	g	1187	0	1244	42	0
8	h	982	0	1036	19	0
9	i	1010	0	1052	37	0
10	j	787	0	822	22	0
11	k	879	0	896	35	0
12	l	959	0	1009	10	0
13	m	892	0	933	38	0
14	n	800	0	837	26	0
15	o	703	0	727	12	0
16	p	636	0	646	8	0
17	q	645	0	689	11	0
18	r	480	0	488	11	0
19	s	663	0	697	18	0
20	t	671	0	722	9	0
21	u	506	0	537	8	0
22	v	1625	0	828	35	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
23	w	131	0	66	0	0
24	x	4275	0	4235	71	0
25	A	61891	0	31145	529	0
26	B	2495	0	1263	17	0
27	C	2072	0	2152	22	0
28	D	1588	0	1603	23	0
29	E	1521	0	1581	18	0
30	F	1406	0	1467	53	0
31	G	1323	0	1386	12	0
32	H	513	0	514	4	0
33	I	587	0	322	4	0
34	J	689	0	416	5	0
35	L	1130	0	1160	11	0
36	M	938	0	1012	18	0
37	N	1066	0	1112	13	0
38	O	1085	0	1157	13	0
39	P	959	0	1005	17	0
40	Q	881	0	920	14	0
41	R	902	0	960	11	0
42	S	933	0	1023	10	0
43	T	822	0	858	9	0
44	U	833	0	897	7	0
45	V	739	0	788	7	0
46	W	786	0	836	7	0
47	X	1445	0	1486	23	0
48	Y	575	0	598	5	0
49	Z	630	0	653	5	0
50	1	490	0	520	7	0
51	2	445	0	472	4	0
52	3	356	0	342	13	0
53	4	440	0	437	6	0
54	5	426	0	457	1	0
55	6	365	0	409	3	0
56	7	506	0	569	4	0
57	8	307	0	342	3	0
58	4	1	0	0	0	0
58	7	1	0	0	0	0
58	A	455	0	0	0	0
58	B	4	0	0	0	0
58	C	3	0	0	0	0
58	D	2	0	0	0	0
58	E	1	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
58	P	1	0	0	0	0
58	Y	1	0	0	0	0
58	a	121	0	0	0	0
58	q	1	0	0	0	0
58	t	1	0	0	0	0
58	v	1	0	0	0	0
58	w	1	0	0	0	0
58	x	1	0	0	0	0
59	v	10	0	10	0	0
60	x	32	0	14	2	0
61	3	1	0	0	0	0
61	8	1	0	0	0	0
62	4	2	0	0	0	0
62	6	1	0	0	0	0
62	A	238	0	0	2	0
62	B	1	0	0	0	0
62	C	2	0	0	0	0
62	N	1	0	0	0	0
62	a	46	0	0	0	0
62	k	1	0	0	0	0
62	v	1	0	0	0	0
62	w	1	0	0	0	0
62	x	1	0	0	0	0
All	All	149599	0	100969	1713	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 7.

The worst 5 of 1713 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:a:74:A:H62	1:a:89:G:N2	1.49	1.10
1:a:1020:G:H1	1:a:1029:A:N6	1.50	1.08
25:A:2175:U:H3'	25:A:2176:U:C5	1.88	1.08
1:a:74:A:N6	1:a:89:G:H21	1.52	1.06
25:A:2154:U:H3	25:A:2158:A:N6	1.56	1.03

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	b	222/246 (90%)	205 (92%)	16 (7%)	1 (0%)	24	48
3	c	206/228 (90%)	194 (94%)	12 (6%)	0	100	100
4	d	203/206 (98%)	175 (86%)	28 (14%)	0	100	100
5	e	152/166 (92%)	139 (91%)	13 (9%)	0	100	100
6	f	104/139 (75%)	92 (88%)	10 (10%)	2 (2%)	6	17
7	g	150/156 (96%)	140 (93%)	9 (6%)	1 (1%)	18	41
8	h	127/130 (98%)	116 (91%)	10 (8%)	1 (1%)	16	37
9	i	125/130 (96%)	113 (90%)	11 (9%)	1 (1%)	16	37
10	j	97/103 (94%)	90 (93%)	7 (7%)	0	100	100
11	k	117/129 (91%)	112 (96%)	5 (4%)	0	100	100
12	l	120/123 (98%)	112 (93%)	8 (7%)	0	100	100
13	m	112/118 (95%)	99 (88%)	12 (11%)	1 (1%)	14	35
14	n	98/101 (97%)	87 (89%)	11 (11%)	0	100	100
15	o	86/89 (97%)	83 (96%)	3 (4%)	0	100	100
16	p	79/83 (95%)	77 (98%)	2 (2%)	0	100	100
17	q	78/88 (89%)	78 (100%)	0	0	100	100
18	r	60/76 (79%)	54 (90%)	5 (8%)	1 (2%)	7	19
19	s	81/91 (89%)	72 (89%)	9 (11%)	0	100	100
20	t	85/91 (93%)	84 (99%)	1 (1%)	0	100	100
21	u	60/71 (84%)	58 (97%)	2 (3%)	0	100	100
24	x	591/840 (70%)	544 (92%)	43 (7%)	4 (1%)	18	41
27	C	270/273 (99%)	255 (94%)	15 (6%)	0	100	100
28	D	209/211 (99%)	183 (88%)	24 (12%)	2 (1%)	12	32
29	E	198/200 (99%)	190 (96%)	6 (3%)	2 (1%)	12	32
30	F	174/179 (97%)	151 (87%)	20 (12%)	3 (2%)	7	19

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	G	173/177 (98%)	160 (92%)	13 (8%)	0	100	100
32	H	70/148 (47%)	65 (93%)	5 (7%)	0	100	100
33	I	116/166 (70%)	97 (84%)	16 (14%)	3 (3%)	4	11
34	J	132/143 (92%)	110 (83%)	21 (16%)	1 (1%)	16	37
35	L	140/142 (99%)	136 (97%)	4 (3%)	0	100	100
36	M	120/122 (98%)	118 (98%)	2 (2%)	0	100	100
37	N	142/144 (99%)	126 (89%)	16 (11%)	0	100	100
38	O	135/137 (98%)	132 (98%)	3 (2%)	0	100	100
39	P	118/129 (92%)	110 (93%)	8 (7%)	0	100	100
40	Q	113/116 (97%)	102 (90%)	11 (10%)	0	100	100
41	R	112/116 (97%)	106 (95%)	6 (5%)	0	100	100
42	S	115/118 (98%)	111 (96%)	4 (4%)	0	100	100
43	T	101/103 (98%)	99 (98%)	1 (1%)	1 (1%)	12	32
44	U	108/110 (98%)	107 (99%)	1 (1%)	0	100	100
45	V	92/99 (93%)	90 (98%)	2 (2%)	0	100	100
46	W	101/104 (97%)	93 (92%)	7 (7%)	1 (1%)	12	32
47	X	188/204 (92%)	180 (96%)	8 (4%)	0	100	100
48	Y	74/85 (87%)	71 (96%)	2 (3%)	1 (1%)	9	23
49	Z	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
50	1	59/63 (94%)	59 (100%)	0	0	100	100
51	2	55/58 (95%)	55 (100%)	0	0	100	100
52	3	45/71 (63%)	41 (91%)	3 (7%)	1 (2%)	5	14
53	4	53/60 (88%)	51 (96%)	2 (4%)	0	100	100
54	5	49/51 (96%)	47 (96%)	2 (4%)	0	100	100
55	6	42/44 (96%)	39 (93%)	3 (7%)	0	100	100
56	7	61/64 (95%)	60 (98%)	1 (2%)	0	100	100
57	8	36/38 (95%)	34 (94%)	2 (6%)	0	100	100
All	All	6429/7157 (90%)	5976 (93%)	426 (7%)	27 (0%)	31	54

5 of 27 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	f	84	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	g	152	SER
8	h	55	VAL
13	m	117	ARG
24	x	635	GLU

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	b	184/202 (91%)	184 (100%)	0	100	100
3	c	170/187 (91%)	169 (99%)	1 (1%)	78	91
4	d	171/174 (98%)	171 (100%)	0	100	100
5	e	113/124 (91%)	113 (100%)	0	100	100
6	f	88/119 (74%)	88 (100%)	0	100	100
7	g	118/122 (97%)	118 (100%)	0	100	100
8	h	108/109 (99%)	108 (100%)	0	100	100
9	i	104/106 (98%)	104 (100%)	0	100	100
10	j	87/92 (95%)	87 (100%)	0	100	100
11	k	90/98 (92%)	90 (100%)	0	100	100
12	l	106/107 (99%)	106 (100%)	0	100	100
13	m	95/99 (96%)	95 (100%)	0	100	100
14	n	80/82 (98%)	80 (100%)	0	100	100
15	o	74/75 (99%)	73 (99%)	1 (1%)	59	82
16	p	64/65 (98%)	64 (100%)	0	100	100
17	q	73/79 (92%)	73 (100%)	0	100	100
18	r	48/64 (75%)	48 (100%)	0	100	100
19	s	72/78 (92%)	72 (100%)	0	100	100
20	t	69/70 (99%)	69 (100%)	0	100	100
21	u	51/60 (85%)	51 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
24	x	417/668 (62%)	417 (100%)	0	100	100
27	C	212/213 (100%)	212 (100%)	0	100	100
28	D	162/162 (100%)	162 (100%)	0	100	100
29	E	157/158 (99%)	155 (99%)	2 (1%)	61	83
30	F	149/153 (97%)	149 (100%)	0	100	100
31	G	138/141 (98%)	138 (100%)	0	100	100
32	H	44/107 (41%)	44 (100%)	0	100	100
33	I	2/122 (2%)	2 (100%)	0	100	100
34	J	13/110 (12%)	13 (100%)	0	100	100
35	L	119/119 (100%)	119 (100%)	0	100	100
36	M	102/102 (100%)	102 (100%)	0	100	100
37	N	106/106 (100%)	106 (100%)	0	100	100
38	O	110/110 (100%)	110 (100%)	0	100	100
39	P	99/104 (95%)	99 (100%)	0	100	100
40	Q	86/87 (99%)	86 (100%)	0	100	100
41	R	96/98 (98%)	94 (98%)	2 (2%)	47	75
42	S	86/88 (98%)	86 (100%)	0	100	100
43	T	86/86 (100%)	86 (100%)	0	100	100
44	U	87/87 (100%)	87 (100%)	0	100	100
45	V	79/82 (96%)	79 (100%)	0	100	100
46	W	84/88 (96%)	84 (100%)	0	100	100
47	X	154/164 (94%)	154 (100%)	0	100	100
48	Y	56/61 (92%)	55 (98%)	1 (2%)	51	78
49	Z	66/67 (98%)	65 (98%)	1 (2%)	57	81
50	1	54/55 (98%)	54 (100%)	0	100	100
51	2	48/49 (98%)	48 (100%)	0	100	100
52	3	41/61 (67%)	41 (100%)	0	100	100
53	4	48/52 (92%)	48 (100%)	0	100	100
54	5	47/47 (100%)	47 (100%)	0	100	100
55	6	37/37 (100%)	37 (100%)	0	100	100
56	7	54/55 (98%)	54 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
57	8	34/34 (100%)	34 (100%)	0	100	100
All	All	5038/5785 (87%)	5030 (100%)	8 (0%)	85	95

5 of 8 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
49	Z	2	SER
48	Y	70	GLU
41	R	34	LYS
29	E	74	SER
41	R	37	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 73 such sidechains are listed below:

Mol	Chain	Res	Type
45	V	28	GLN
52	3	33	HIS
46	W	99	GLN
49	Z	35	HIS
20	t	3	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	a	1520/1536 (98%)	268 (17%)	0
22	v	75/77 (97%)	16 (21%)	0
23	w	5/24 (20%)	0	0
25	A	2881/2891 (99%)	548 (19%)	47 (1%)
26	B	116/120 (96%)	14 (12%)	2 (1%)
All	All	4597/4648 (98%)	846 (18%)	49 (1%)

5 of 846 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	a	4	C
1	a	6	G
1	a	7	A
1	a	9	G
1	a	30	U

5 of 49 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
25	A	1627	A
25	A	2029	A
25	A	1642	A
25	A	1834	A
25	A	2228	A

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

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

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
25	2MA	A	2490	25,58	22,25,26	1.45	4 (18%)	32,37,40	2.28	9 (28%)
25	OMU	A	2539	25	19,22,23	1.26	3 (15%)	25,31,34	1.85	5 (20%)
1	2MG	a	960	1	23,26,27	1.25	4 (17%)	33,38,41	2.20	8 (24%)
25	6MZ	A	2017	25	22,25,26	1.85	6 (27%)	29,36,39	3.51	10 (34%)
25	UR3	A	1902	25	19,22,23	1.03	1 (5%)	26,32,35	1.75	4 (15%)
1	7MG	a	521	1	23,26,27	1.30	3 (13%)	27,39,42	2.67	7 (25%)
1	5MC	a	961	1	19,22,23	1.53	3 (15%)	26,32,35	1.11	2 (7%)
1	2MG	a	1201	1	23,26,27	1.28	4 (17%)	33,38,41	2.20	7 (21%)
25	7MG	A	2056	25,58	23,26,27	1.30	3 (13%)	27,39,42	2.65	7 (25%)
25	OMC	A	2485	25,58	19,22,23	0.81	0	25,31,34	0.91	1 (4%)
25	5MU	A	1926	25	19,22,23	1.39	5 (26%)	27,32,35	2.16	6 (22%)
25	OMG	A	2238	25	23,26,27	1.21	3 (13%)	32,38,41	1.96	6 (18%)
1	4OC	a	1396	1	20,23,24	0.73	0	25,32,35	1.00	2 (8%)
1	2MG	a	1510	1	23,26,27	1.22	3 (13%)	33,38,41	2.25	9 (27%)
22	PSU	v	55	22	18,21,22	1.37	2 (11%)	21,30,33	2.05	4 (19%)
22	5MU	v	54	22	19,22,23	1.42	6 (31%)	27,32,35	2.09	5 (18%)
25	5MC	A	1949	25	19,22,23	1.52	3 (15%)	26,32,35	1.08	2 (7%)
25	2MG	A	2432	25,58	23,26,27	1.26	3 (13%)	33,38,41	2.27	9 (27%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
25	2MG	A	1822	25	23,26,27	1.24	3 (13%)	33,38,41	2.19	6 (18%)
22	5MC	v	32	22	19,22,23	1.45	3 (15%)	26,32,35	1.30	3 (11%)
25	1MG	A	735	25	23,26,27	1.16	3 (13%)	33,39,42	1.70	5 (15%)
1	UR3	a	1492	1	19,22,23	0.98	1 (5%)	26,32,35	1.78	2 (7%)
1	MA6	a	1512	1	23,26,27	1.48	4 (17%)	33,38,41	2.42	13 (39%)
1	MA6	a	1513	1	23,26,27	1.47	5 (21%)	33,38,41	2.42	15 (45%)
22	4SU	v	8	22	18,21,22	1.95	5 (27%)	25,30,33	1.90	5 (20%)
25	6MZ	A	1608	25	22,25,26	1.86	5 (22%)	29,36,39	3.41	9 (31%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
25	2MA	A	2490	25,58	-	1/7/25/26	0/3/3/3
25	OMU	A	2539	25	-	0/9/27/28	0/2/2/2
1	2MG	a	960	1	-	0/9/27/28	0/3/3/3
25	6MZ	A	2017	25	-	2/9/27/28	0/3/3/3
25	UR3	A	1902	25	-	0/7/25/26	0/2/2/2
1	7MG	a	521	1	-	2/7/37/38	0/3/3/3
1	5MC	a	961	1	-	0/7/25/26	0/2/2/2
1	2MG	a	1201	1	-	3/9/27/28	0/3/3/3
25	7MG	A	2056	25,58	-	2/7/37/38	0/3/3/3
25	OMC	A	2485	25,58	-	1/9/27/28	0/2/2/2
25	5MU	A	1926	25	-	0/7/25/26	0/2/2/2
25	OMG	A	2238	25	-	2/9/27/28	0/3/3/3
1	4OC	a	1396	1	-	2/9/29/30	0/2/2/2
1	2MG	a	1510	1	-	0/9/27/28	0/3/3/3
22	PSU	v	55	22	-	0/7/25/26	0/2/2/2
22	5MU	v	54	22	-	0/7/25/26	0/2/2/2
25	5MC	A	1949	25	-	0/7/25/26	0/2/2/2
25	2MG	A	2432	25,58	-	0/9/27/28	0/3/3/3
25	2MG	A	1822	25	-	0/9/27/28	0/3/3/3
22	5MC	v	32	22	-	0/7/25/26	0/2/2/2
25	1MG	A	735	25	-	0/7/25/26	0/3/3/3
1	UR3	a	1492	1	-	0/7/25/26	0/2/2/2
1	MA6	a	1512	1	-	1/11/29/30	0/3/3/3
1	MA6	a	1513	1	-	4/11/29/30	0/3/3/3

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
22	4SU	v	8	22	-	1/7/25/26	0/2/2/2
25	6MZ	A	1608	25	-	0/9/27/28	0/3/3/3

The worst 5 of 85 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
25	A	1608	6MZ	C6-N6	5.51	1.40	1.34
25	A	1949	5MC	C5-C4	5.44	1.48	1.44
1	a	961	5MC	C5-C4	5.42	1.48	1.44
25	A	2017	6MZ	C6-N6	5.40	1.40	1.34
22	v	8	4SU	C4-S4	-4.97	1.59	1.68

The worst 5 of 161 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	A	2017	6MZ	C9-N6-C6	-14.98	108.95	122.85
25	A	1608	6MZ	C9-N6-C6	-14.33	109.56	122.85
1	a	521	7MG	N9-C4-N3	9.32	139.12	125.46
25	A	2056	7MG	N9-C4-N3	9.03	138.70	125.46
25	A	2490	2MA	C5-C4-N3	-8.01	118.75	127.18

There are no chirality outliers.

5 of 21 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	a	1201	2MG	O4'-C4'-C5'-O5'
25	A	2238	OMG	O4'-C4'-C5'-O5'
1	a	521	7MG	C3'-C4'-C5'-O5'
1	a	1201	2MG	C3'-C4'-C5'-O5'
1	a	1396	4OC	O4'-C4'-C5'-O5'

There are no ring outliers.

10 monomers are involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
25	A	2017	6MZ	1	0
1	a	961	5MC	2	0
25	A	2485	OMC	2	0
25	A	1926	5MU	1	0
1	a	1396	4OC	2	0
1	a	1510	2MG	1	0

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Clashes	Symm-Clashes
22	v	54	5MU	2	0
1	a	1512	MA6	2	0
1	a	1513	MA6	2	0
22	v	8	4SU	3	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 599 ligands modelled in this entry, 597 are monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
60	GCP	x	902	58	32,34,34	1.38	5 (15%)	49,54,54	1.75	7 (14%)
59	FME	v	102	22	8,9,10	0.40	0	8,9,11	1.23	1 (12%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
60	GCP	x	902	58	-	1/19/38/38	0/3/3/3
59	FME	v	102	22	-	1/7/9/11	-

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	x	902	GCP	C5-C4	3.06	1.47	1.38
60	x	902	GCP	PG-O3G	2.72	1.61	1.55
60	x	902	GCP	PG-O2G	2.62	1.60	1.55

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	x	902	GCP	C6-N1	-2.55	1.34	1.38
60	x	902	GCP	C5-N7	-2.09	1.34	1.39

The worst 5 of 8 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	x	902	GCP	C5-C4-N3	-5.93	118.95	128.39
60	x	902	GCP	C2-N3-C4	4.95	120.82	112.30
60	x	902	GCP	N9-C4-N3	4.38	134.71	125.95
60	x	902	GCP	C6-C5-N7	3.37	136.43	130.29
60	x	902	GCP	PB-O3A-PA	-2.94	122.76	132.37

There are no chirality outliers.

All (2) torsion outliers are listed below:

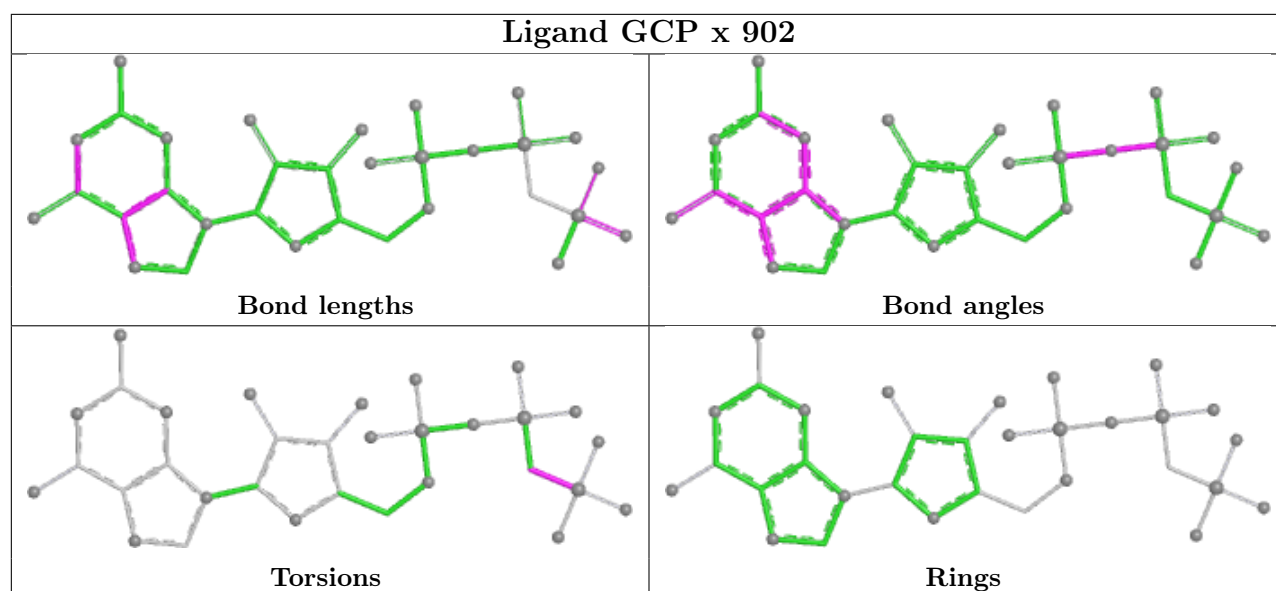
Mol	Chain	Res	Type	Atoms
59	v	102	FME	CB-CG-SD-CE
60	x	902	GCP	PB-C3B-PG-O1G

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
60	x	902	GCP	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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.

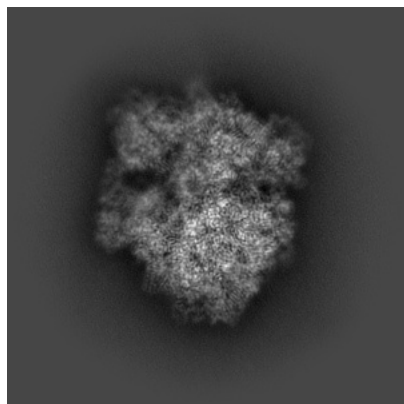
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-26634. These allow visual inspection of the internal detail of the map and identification of artifacts.

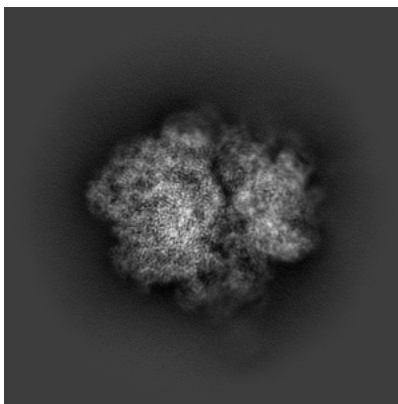
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

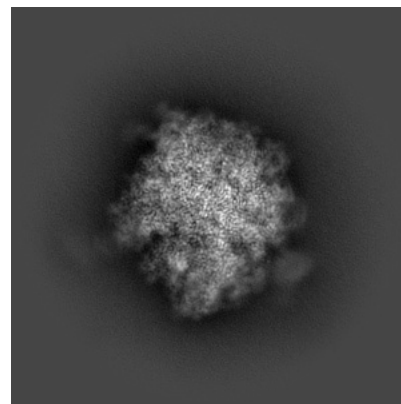
6.1.1 Primary map



X

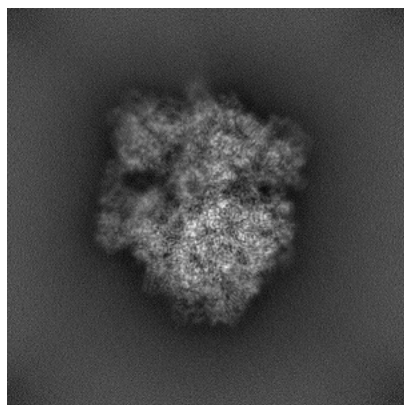


Y

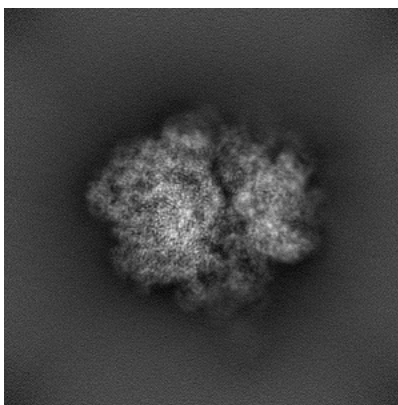


Z

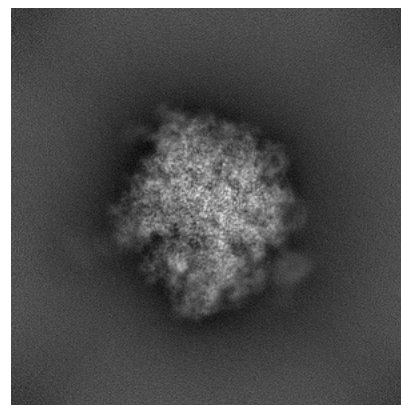
6.1.2 Raw map



X



Y

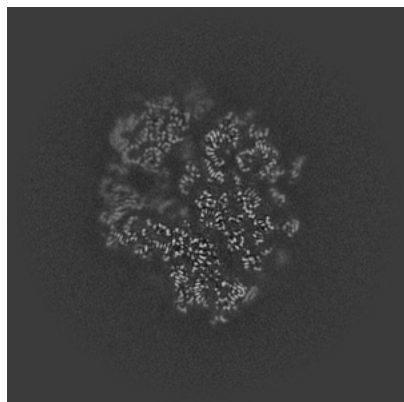


Z

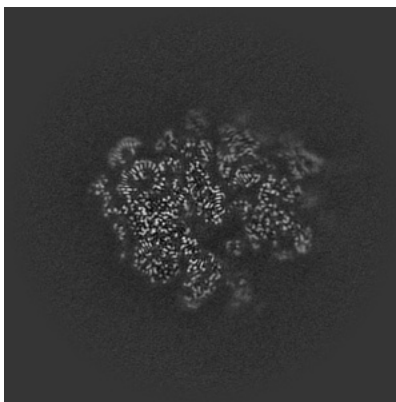
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

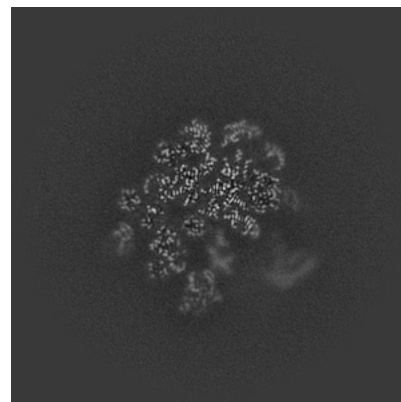
6.2.1 Primary map



X Index: 256

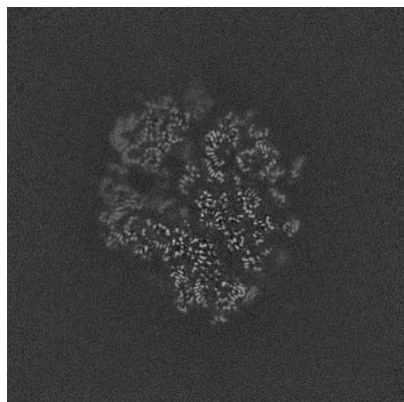


Y Index: 256

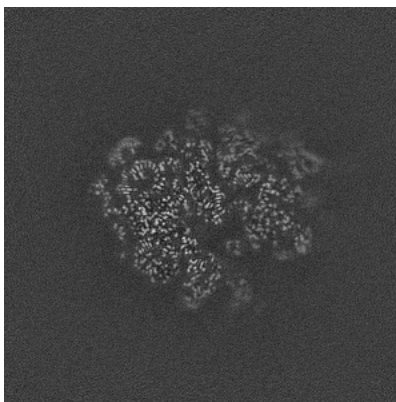


Z Index: 256

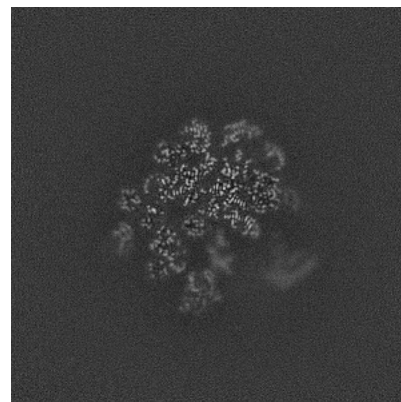
6.2.2 Raw map



X Index: 256



Y Index: 256

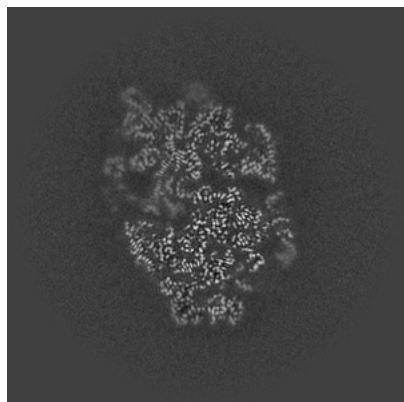


Z Index: 256

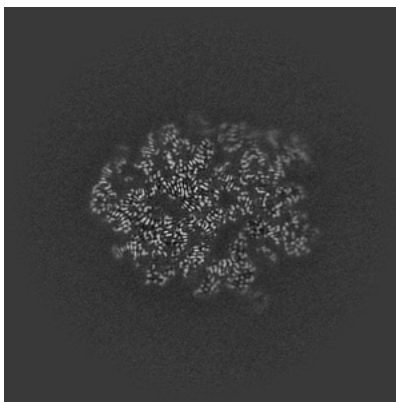
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

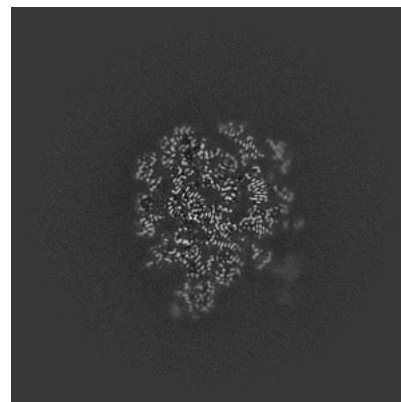
6.3.1 Primary map



X Index: 270

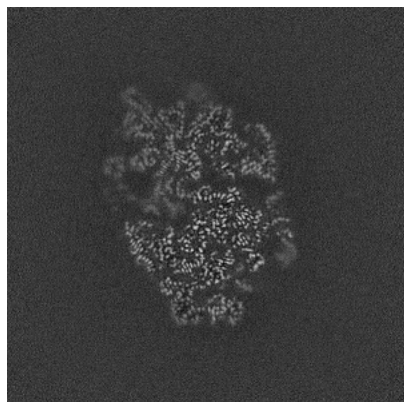


Y Index: 270

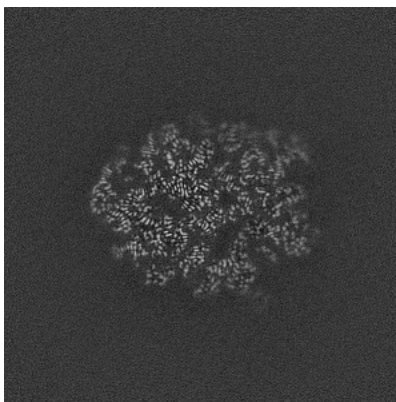


Z Index: 211

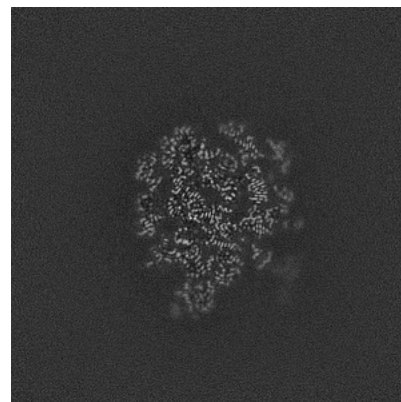
6.3.2 Raw map



X Index: 270



Y Index: 270

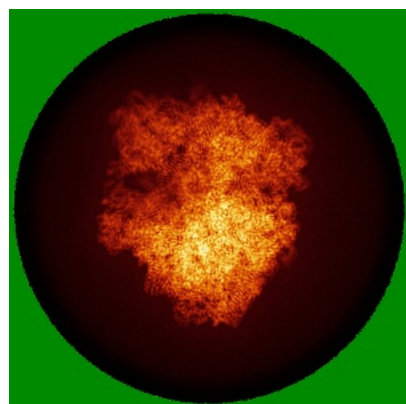


Z Index: 211

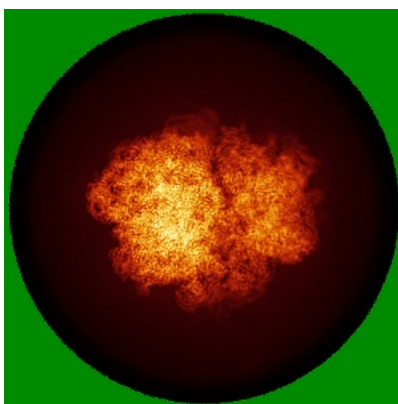
The images above show the largest variance slices of the map in three orthogonal directions.

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

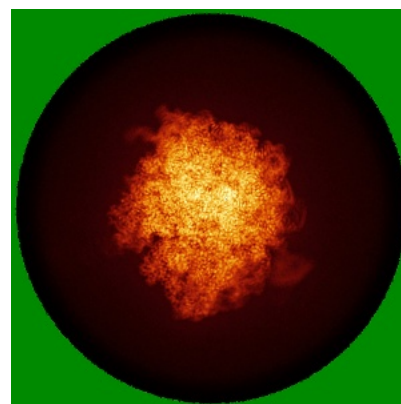
6.4.1 Primary map



X

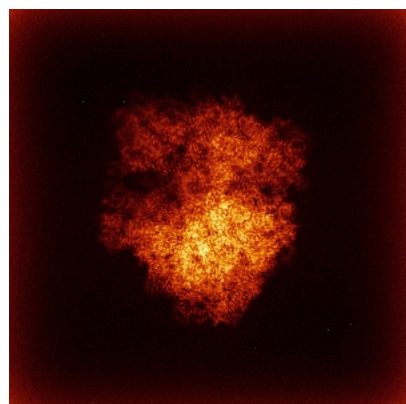


Y

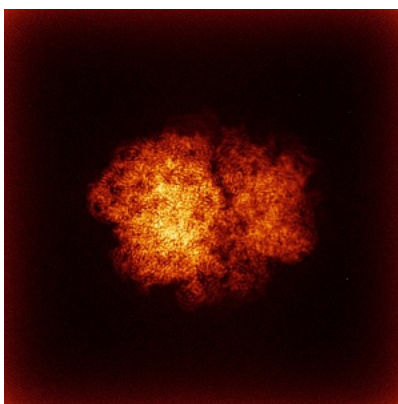


Z

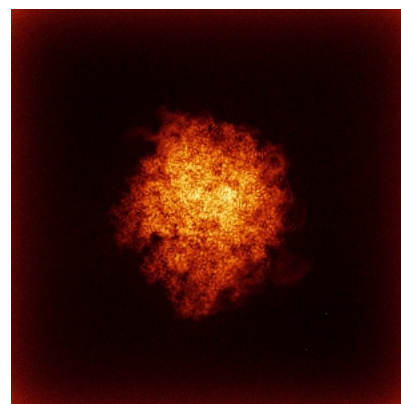
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



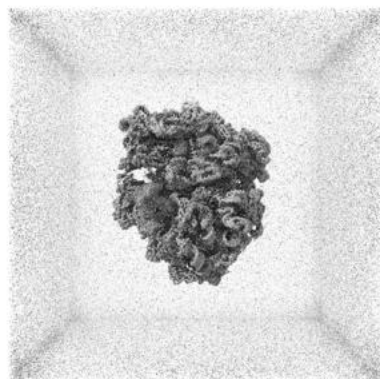
Y



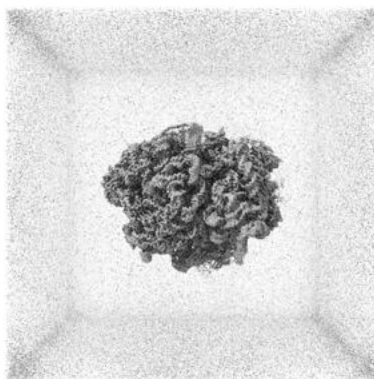
Z

The images above show the 3D surface view of the map at the recommended contour level 0.14. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

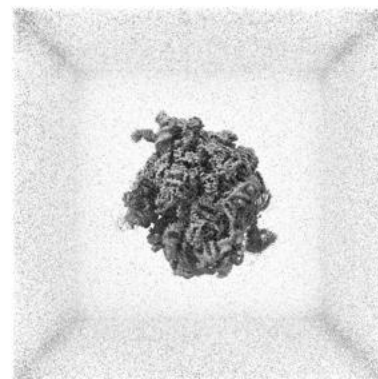
6.5.2 Raw map



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.

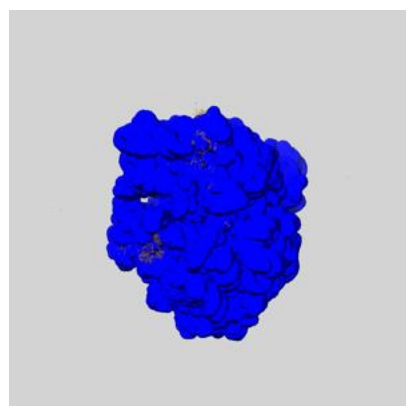
6.6 Mask visualisation [i](#)

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

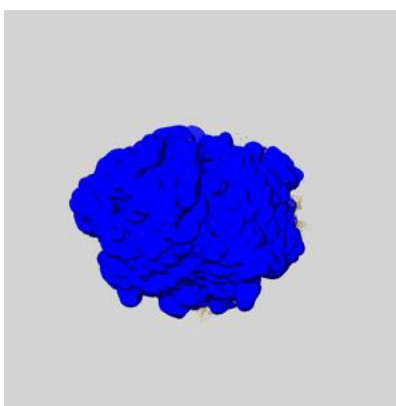
A mask typically either:

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

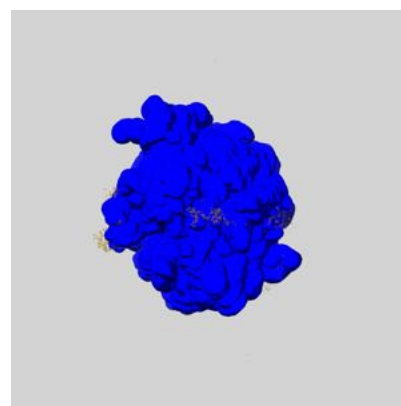
6.6.1 emd_26634_msk_1.map [i](#)



X



Y

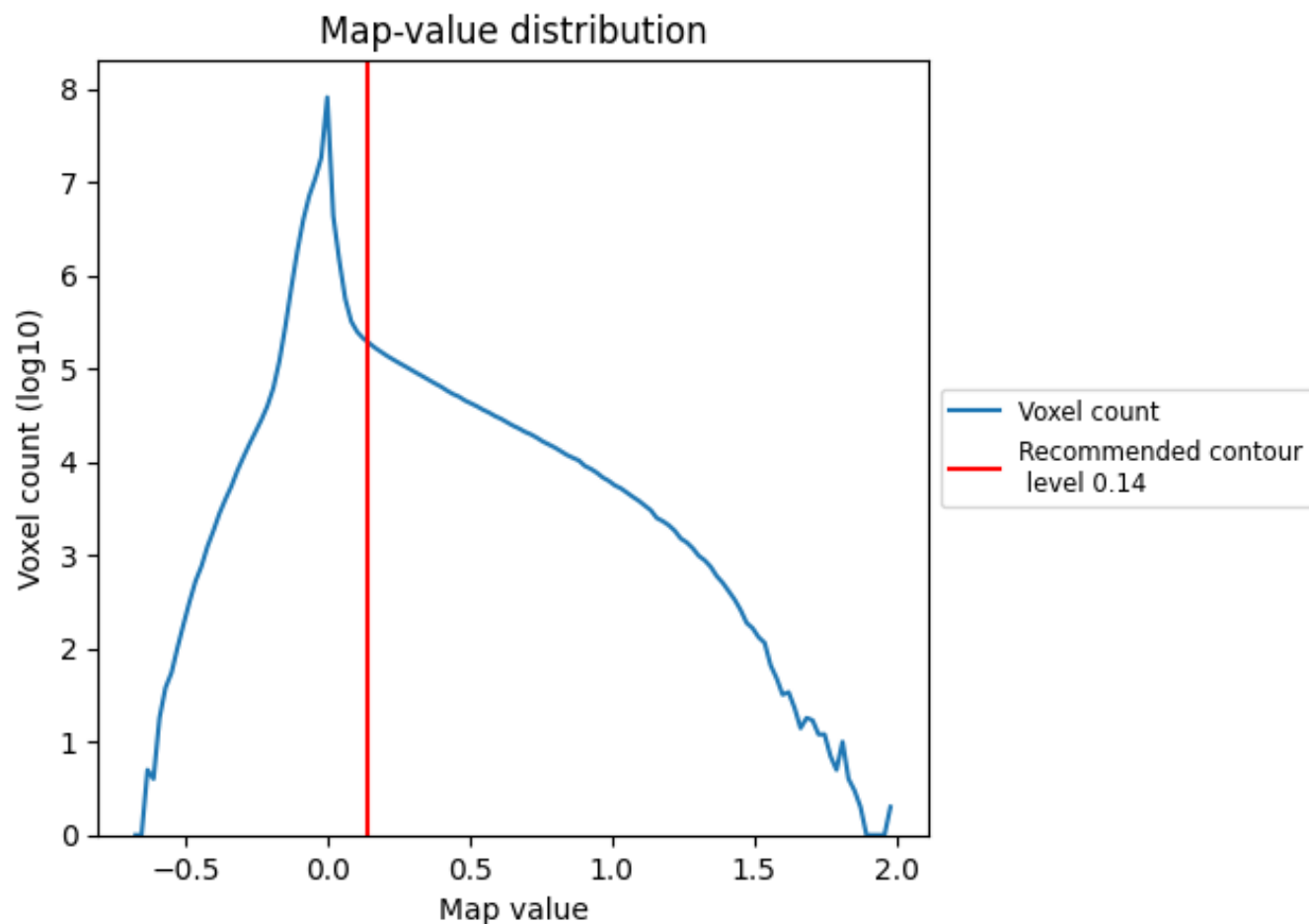


Z

7 Map analysis [i](#)

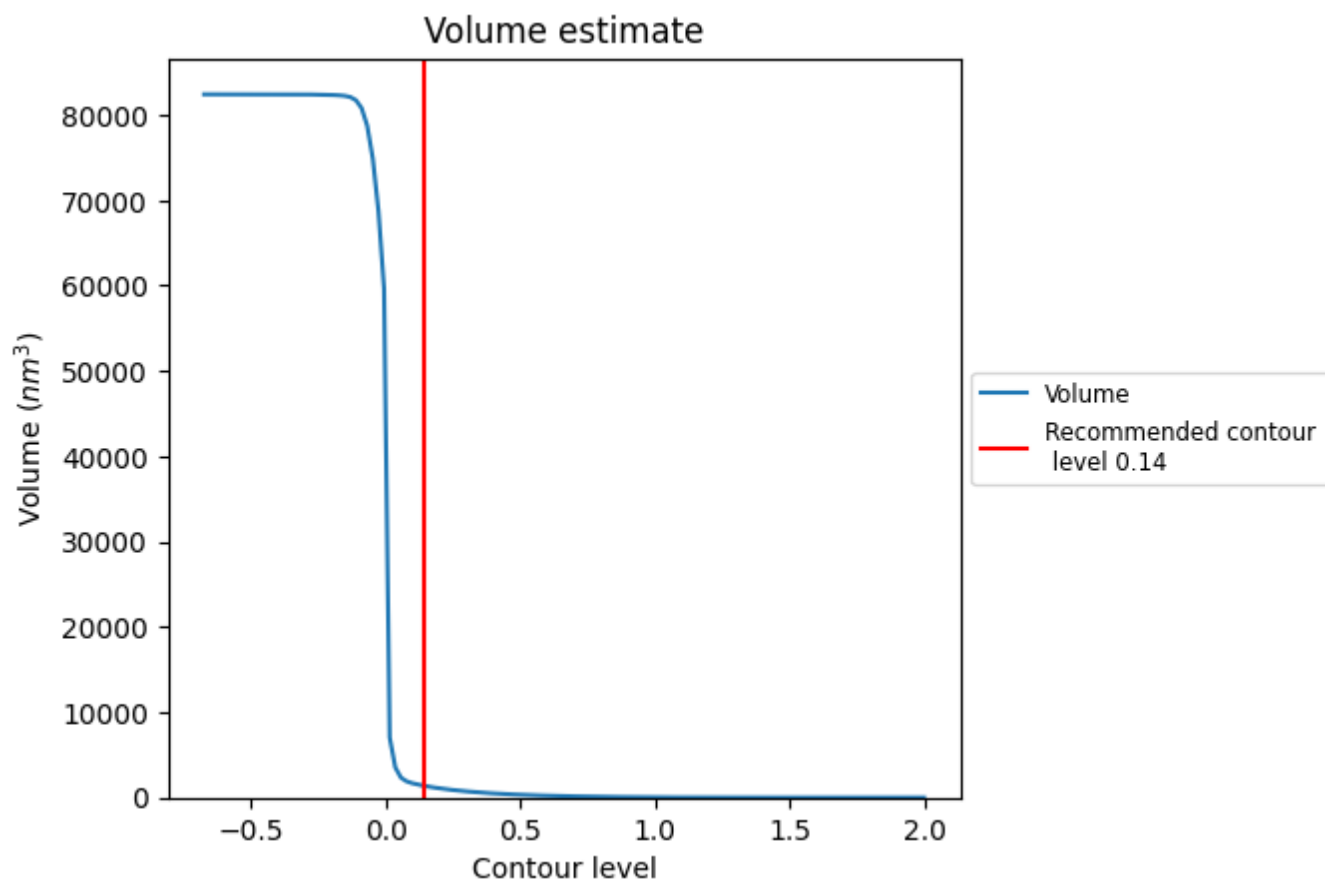
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

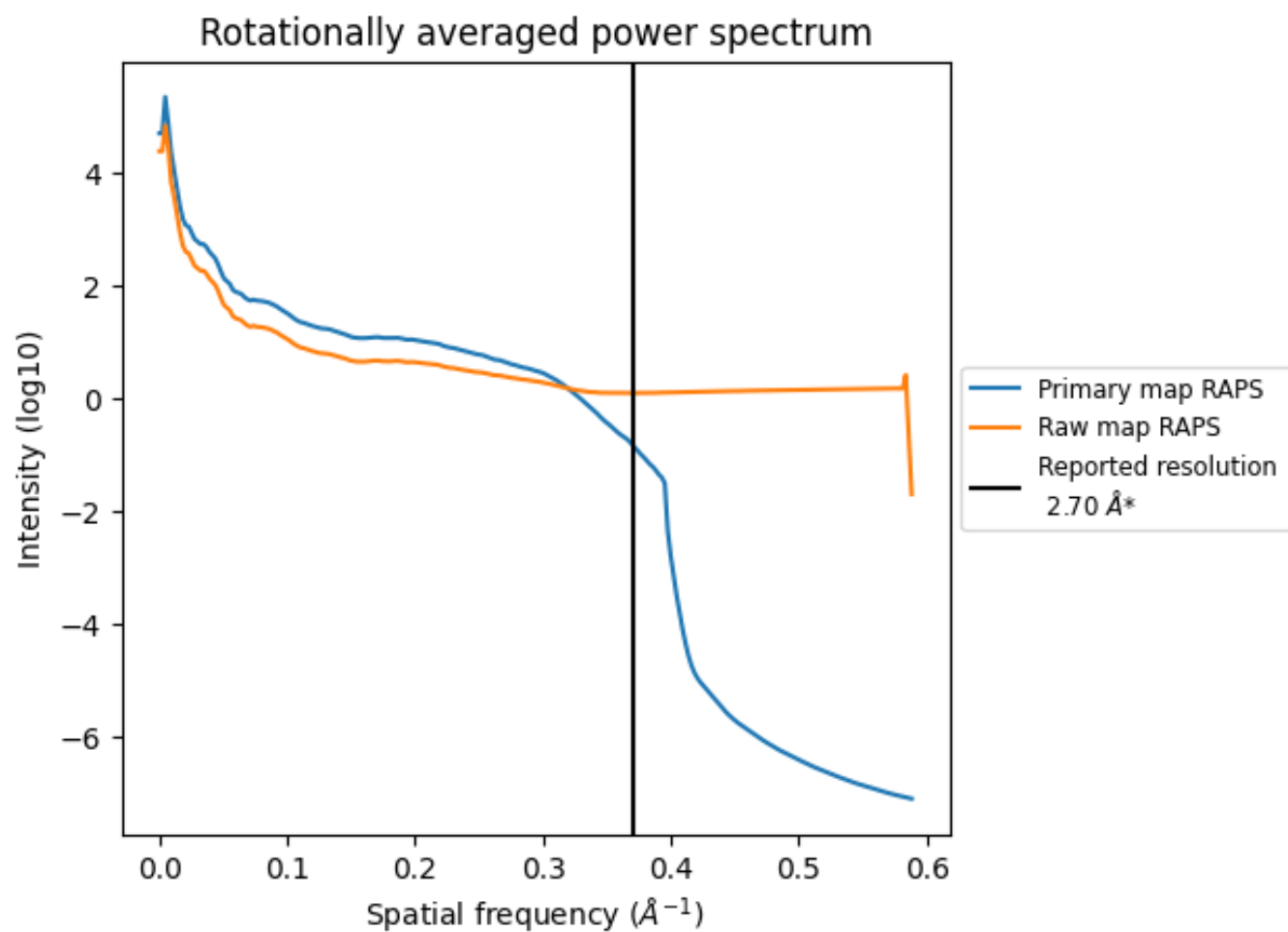
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1392 nm³; this corresponds to an approximate mass of 1258 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ

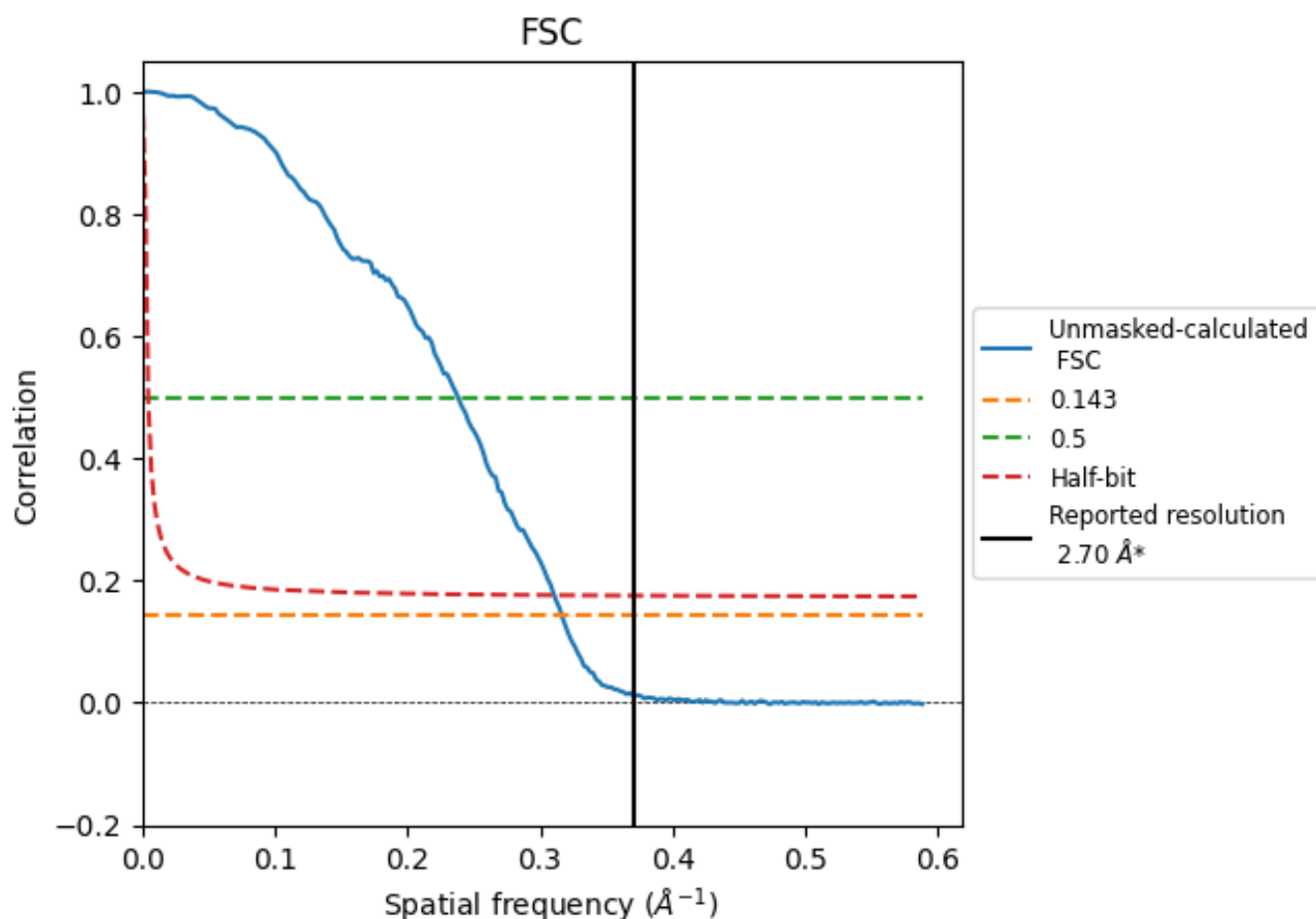


*Reported resolution corresponds to spatial frequency of 0.370 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.370 Å⁻¹

8.2 Resolution estimates [i](#)

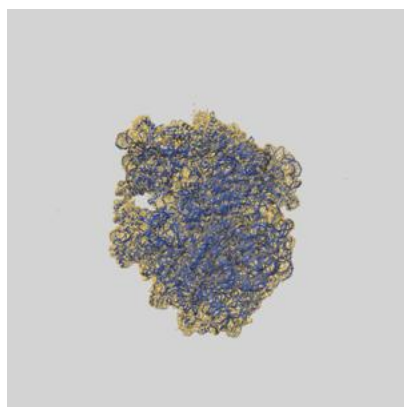
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.16	4.20	3.22

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.16 differs from the reported value 2.7 by more than 10 %

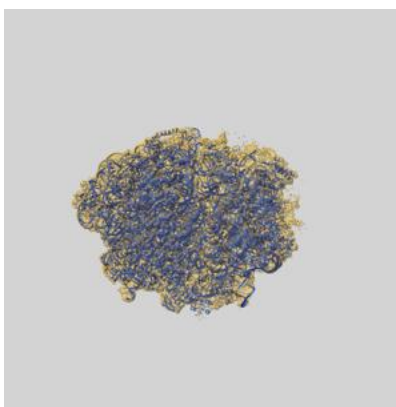
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-26634 and PDB model 7UNV. Per-residue inclusion information can be found in [section 3](#) on [page 17](#).

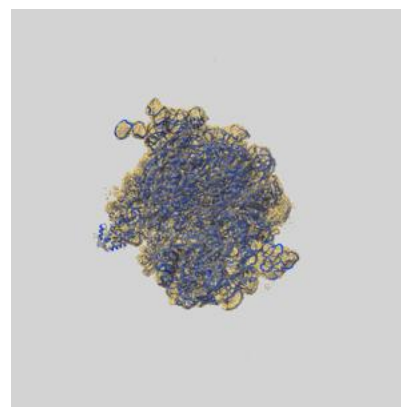
9.1 Map-model overlay [i](#)



X



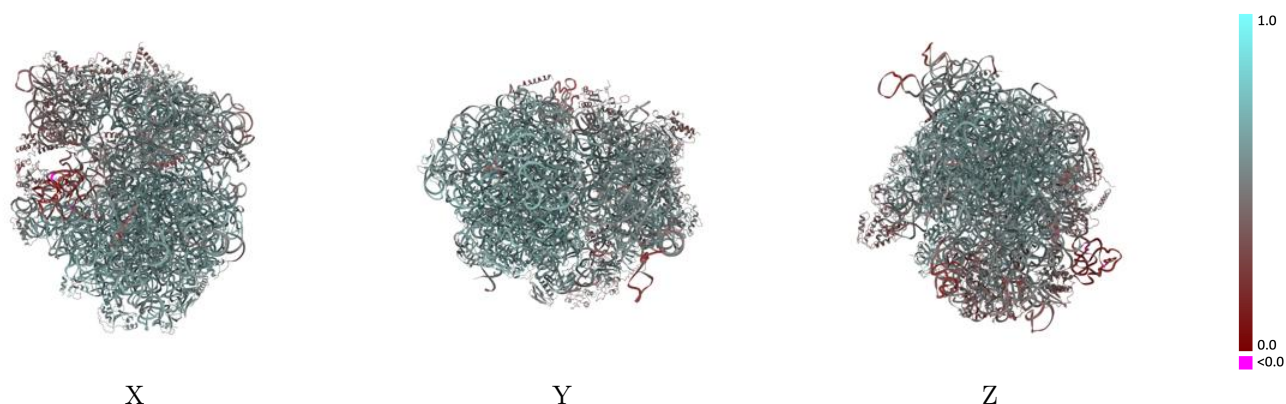
Y



Z

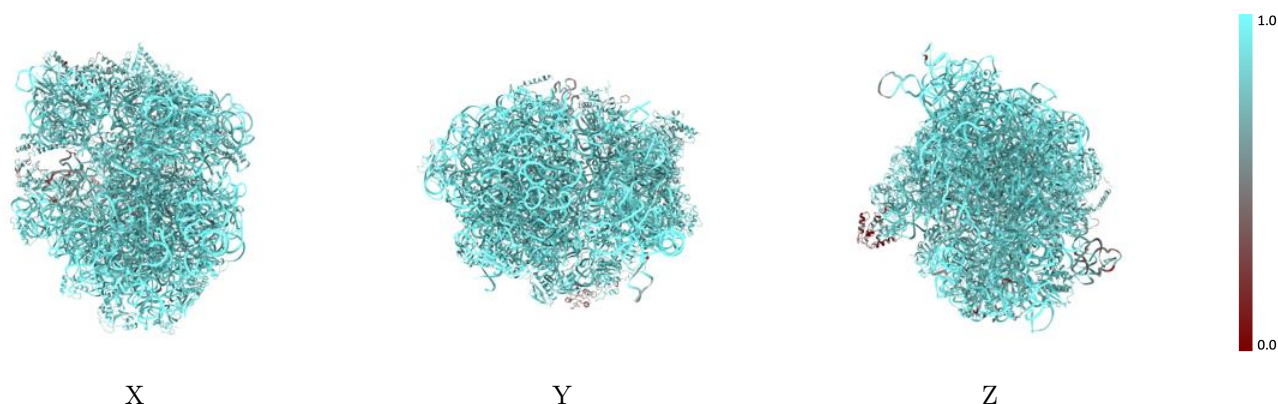
The images above show the 3D surface view of the map at the recommended contour level 0.14 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



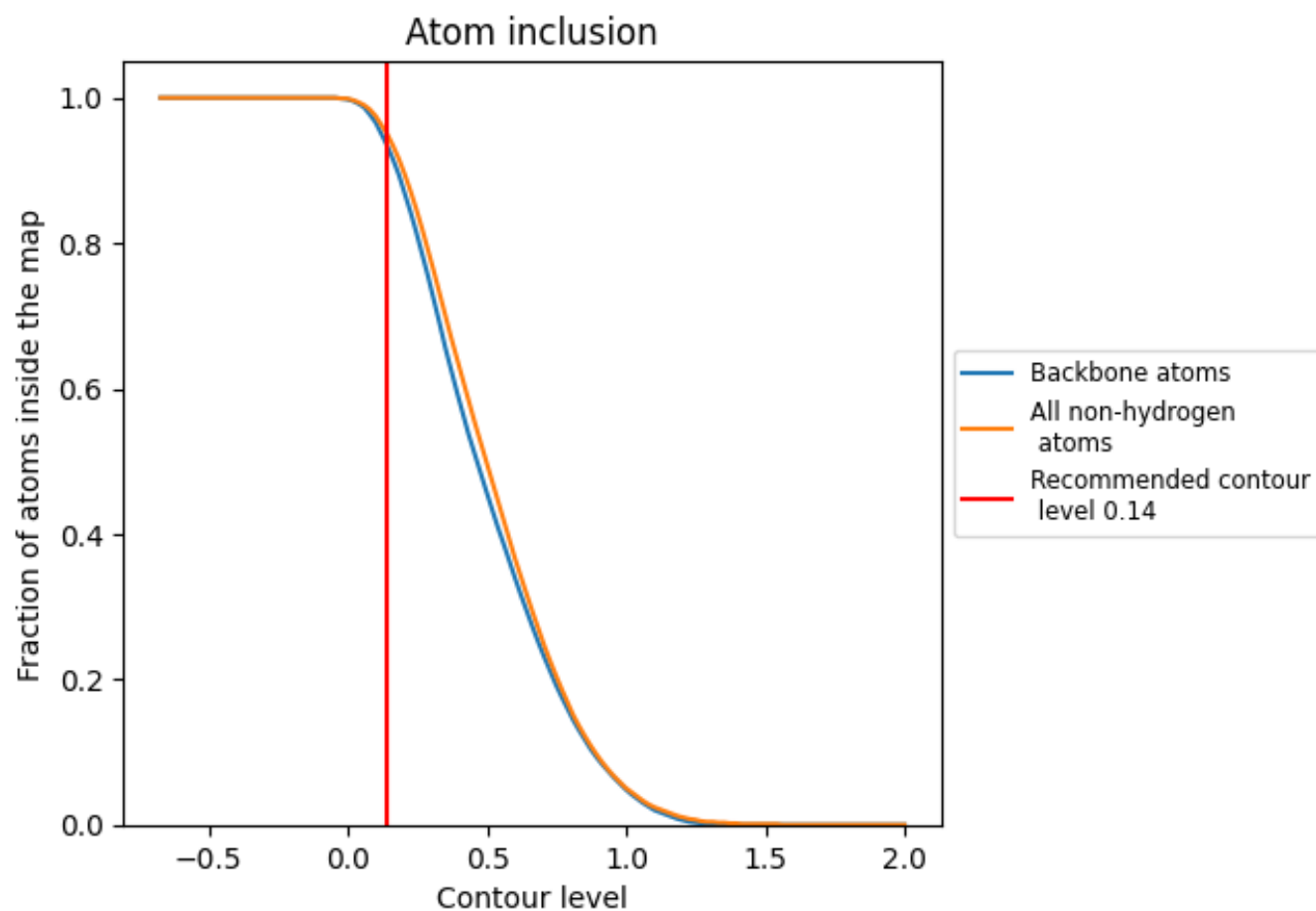
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.14).

9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 95% 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 (0.14) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9500	 0.5540
1	 0.9250	 0.5560
2	 0.9610	 0.5990
3	 0.5810	 0.3460
4	 0.9410	 0.5940
5	 0.9010	 0.5720
6	 0.9710	 0.6220
7	 0.9780	 0.6260
8	 0.9420	 0.6070
A	 0.9820	 0.5920
B	 0.9920	 0.5470
C	 0.9640	 0.6130
D	 0.9480	 0.5980
E	 0.9510	 0.5880
F	 0.8220	 0.4250
G	 0.8970	 0.5390
H	 0.8080	 0.4670
I	 0.2610	 0.3650
J	 0.7740	 0.3840
L	 0.9640	 0.6020
M	 0.9470	 0.6060
N	 0.9600	 0.5970
O	 0.9520	 0.6130
P	 0.9710	 0.6060
Q	 0.9210	 0.5310
R	 0.9420	 0.5960
S	 0.9730	 0.6120
T	 0.9470	 0.5850
U	 0.9470	 0.5970
V	 0.9440	 0.5810
W	 0.8820	 0.5380
X	 0.9250	 0.5570
Y	 0.9590	 0.6120
Z	 0.9550	 0.5980
a	 0.9850	 0.5300



Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
b	 0.8080	 0.4340
c	 0.8580	 0.4940
d	 0.8960	 0.5280
e	 0.9170	 0.5460
f	 0.8440	 0.4070
g	 0.7830	 0.3990
h	 0.9120	 0.5380
i	 0.8530	 0.4210
j	 0.7850	 0.4350
k	 0.8450	 0.4570
l	 0.9300	 0.5780
m	 0.8130	 0.3890
n	 0.8630	 0.4420
o	 0.9210	 0.5200
p	 0.9450	 0.5580
q	 0.9250	 0.5380
r	 0.8010	 0.4440
s	 0.7800	 0.3840
t	 0.9240	 0.5330
u	 0.7860	 0.4480
v	 0.9410	 0.4170
w	 0.9770	 0.5630
x	 0.8900	 0.5250