WORLDWIDE PDB
PROTEIN DATA BANK

wwPDB EM Validation Summary Report (i)

Mar 10, 2026 – 03:47 pm GMT

PDB ID	:	9EVT / pdb_00009evt
EMDB ID	:	EMD-50014
Title	:	Structure of the small subunit of the flowering plant mitoribosome with the maturation factor RsgA
Authors	:	Waltz, F.; Skaltsogiannis, V.; Giege, P.
Deposited on	:	2024-04-02
Resolution	:	2.27 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) 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 (i)) were used in the production of this report:

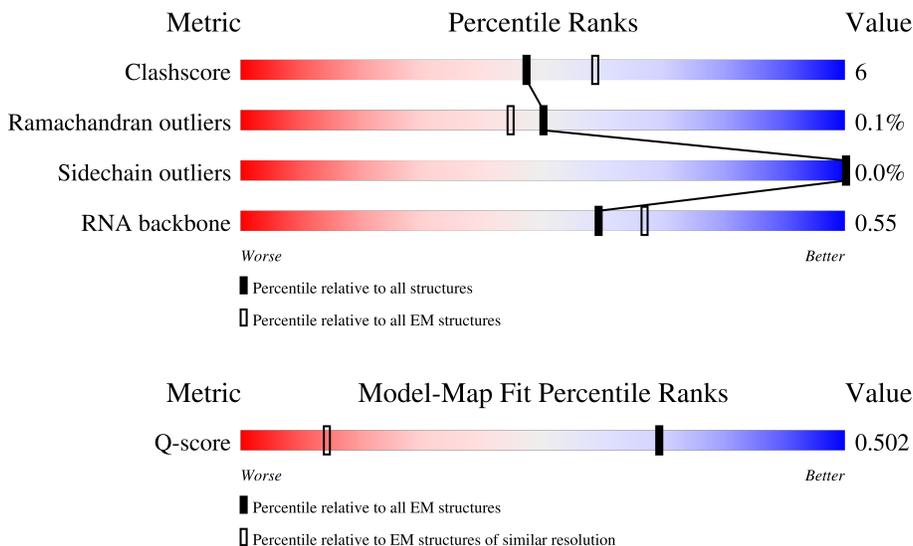|		
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

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 2.27 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.
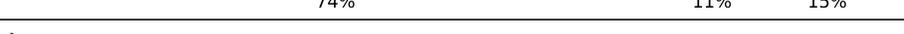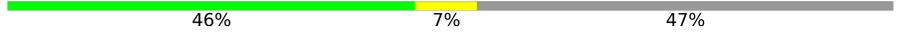
Metric	Percentile Ranks	Value
Clashscore		6
Ramachandran outliers		0.1%
Sidechain outliers		0.0%
RNA backbone		0.55

Worse ← → *Better*

▮ Percentile relative to all structures
❏ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.502

Worse ← → *Better*

▮ Percentile relative to all EM structures
❏ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	3593 (1.77 - 2.77)

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	A	212	88% · · · 8% ·
2	B	554	68% · · · 15% · 16%
3	C	362	81% · · · 11% 8%

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Mol	Chain	Length	Quality of chain
4	D	501	78% 6% 17%
5	E	138	70% 27%
6	F	157	85% 15%
7	G	129	88% 11%
8	H	383	7% 50% 5% 45%
9	I	228	43% 7% 50%
10	J	304	34% 8% 58%
11	K	125	85% 14%
12	L	154	65% 6% 29%
13	M	155	56% 9% 35%
14	N	414	27% 72%
15	O	136	75% 6% 19%
16	P	110	76% 5% 17%
17	Q	237	32% 5% 62%
18	R	212	22% 72% 6% 22%
19	S	100	67% 8% 25%
20	T	94	51% 47%
21	U	192	21% 52% 14% 34%
22	V	193	74% 11% 15%
23	W	483	66% 13% 21%
24	X	496	33% 8% 59%
25	Y	102	78% 18%
26	Z	153	46% 7% 47%
27	7	496	61% 12% 27%
28	a	424	57% 17% 26%

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Mol	Chain	Length	Quality of chain
29	b	80	22% 80% 11% 9%
30	c	128	19% 80%
31	d	110	65% 5% 29%
32	e	383	60% 36%
33	f	410	75% 16% 9%
34	h	384	18% 61% 20% 19%
35	i	725	12% 39% 58%
36	k	153	13% 86%
37	2	1560	69% 27%

2 Entry composition ⓘ

There are 42 unique types of molecules in this entry. The entry contains 85715 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 Ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	204	Total 1611	C 1032	N 284	O 285	S 10	0	0

- Molecule 2 is a protein called Small ribosomal subunit protein uS3m.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	467	Total 3877	C 2520	N 701	O 643	S 13	0	0

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	22	TRP	ARG	conflict	UNP A0A068BCX1
B	172	LEU	SER	conflict	UNP A0A068BCX1
B	202	LYS	ARG	conflict	UNP A0A068BCX1
B	296	LEU	SER	conflict	UNP A0A068BCX1
B	512	CYS	ARG	conflict	UNP A0A068BCX1
B	524	VAL	ALA	conflict	UNP A0A068BCX1
B	533	LEU	SER	conflict	UNP A0A068BCX1

- Molecule 3 is a protein called Ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	333	Total 2806	C 1793	N 540	O 462	S 11	0	0

- Molecule 4 is a protein called S5 DRBM domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	417	Total 3425	C 2146	N 603	O 664	S 12	0	0

- Molecule 5 is a protein called bS6m.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	101	Total	C	N	O	S	0	0
			823	535	145	138	5		

- Molecule 6 is a protein called uS7m,Small ribosomal subunit protein uS7m,Small ribosomal subunit protein uS7m.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	157	Total	C	N	O	S	0	0
			1254	793	244	213	4		

- Molecule 7 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	128	Total	C	N	O	S	0	0
			1037	652	193	189	3		

- Molecule 8 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	211	Total	C	N	O	S	0	0
			1662	1042	306	309	5		

- Molecule 9 is a protein called Small ribosomal subunit protein uS10 domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	113	Total	C	N	O	S	0	0
			941	602	174	159	6		

- Molecule 10 is a protein called Ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	127	Total	C	N	O	S	0	0
			993	612	196	181	4		

- Molecule 11 is a protein called Small ribosomal subunit protein uS12m.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	124	Total	C	N	O	S	0	0
			992	614	209	165	4		

- Molecule 12 is a protein called uS13m.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	109	Total 864	C 523	N 183	O 153	S 5	0	0

- Molecule 13 is a protein called Small ribosomal subunit protein uS14m.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	101	Total 843	C 524	N 174	O 140	S 5	0	0

- Molecule 14 is a protein called Small ribosomal subunit protein uS15c.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	116	Total 941	C 593	N 170	O 171	S 7	0	0

- Molecule 15 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	110	Total 869	C 550	N 169	O 144	S 6	0	0

- Molecule 16 is a protein called Small ribosomal subunit protein uS17c.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	91	Total 717	C 455	N 135	O 124	S 3	0	0

- Molecule 17 is a protein called Small ribosomal subunit protein bS18c.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	90	Total 724	C 460	N 127	O 134	S 3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	250	ILE	VAL	conflict	UNP A0A078FCZ9

- Molecule 18 is a protein called Small ribosomal subunit protein uS19m.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	R	166	Total	C	N	O	S	0	0
			1299	819	236	237	7		

- Molecule 19 is a protein called Ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	S	75	Total	C	N	O	S	0	0
			611	386	120	103	2		

- Molecule 20 is a protein called 30S ribosomal protein S31, mitochondrial.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	50	Total	C	N	O	S	0	0
			408	260	79	68	1		

- Molecule 21 is a protein called Small ribosomal subunit protein mS23.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	U	127	Total	C	N	O	S	0	0
			1016	647	185	179	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
U	81	GLN	PRO	conflict	UNP A0A3P6DYP2

- Molecule 22 is a protein called mS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	164	Total	C	N	O	S	0	0
			1399	874	266	255	4		

- Molecule 23 is a protein called Small ribosomal subunit protein mS29.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	W	380	Total	C	N	O	S	0	0
			3062	1955	535	559	13		

- Molecule 24 is a protein called BnaC06g06470D protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	X	204	Total	C	N	O	S	0	0
			1613	1011	262	329	11		

- Molecule 25 is a protein called MOSC domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Y	98	Total	C	N	O	S	0	0
			793	495	159	137	2		

- Molecule 26 is a protein called Mitochondrial 28S ribosomal protein S34.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Z	81	Total	C	N	O	S	0	0
			660	428	125	105	2		

- Molecule 27 is a protein called EngC GTPase domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	7	363	Total	C	N	O	S	0	0
			2878	1824	514	526	14		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
7	385	MET	GLN	conflict	UNP A0A0D3CYN0

- Molecule 28 is a protein called Small ribosomal subunit protein mS35 mitochondrial conserved domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	a	315	Total	C	N	O	S	0	0
			2486	1546	448	482	10		

- Molecule 29 is a protein called IMS import disulfide relay-system CHCH-CHCH-like Cx9C domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	b	73	Total	C	N	O	S	0	0
			581	361	108	104	8		

- Molecule 30 is a protein called Small ribosomal subunit protein mS38.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	c	26	Total 232	C 145	N 54	O 32	S 1	0	0

- Molecule 31 is a protein called IGR domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	d	78	Total 616	C 403	N 110	O 102	S 1	0	0

- Molecule 32 is a protein called mS45.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	e	246	Total 2074	C 1310	N 374	O 380	S 10	0	0

- Molecule 33 is a protein called mS47.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	f	375	Total 2898	C 1825	N 484	O 569	S 20	0	0

- Molecule 34 is a protein called (rape) hypothetical protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	h	310	Total 2463	C 1557	N 438	O 455	S 13	0	0

- Molecule 35 is a protein called PROP1-like PPR domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	i	306	Total 2487	C 1567	N 419	O 487	S 14	0	0

- Molecule 36 is a protein called RRM domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	k	22	Total 177	C 113	N 34	O 27	S 3	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
k	9	ARG	LYS	conflict	UNP A0A3P6FEP3
k	15	LYS	ARG	conflict	UNP A0A3P6FEP3

- Molecule 37 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	2	1560	Total	C	N	O	P	0	0
			33424	14925	6097	10842	1560		

- Molecule 38 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
38	K	1	Total	K	0
			1	1	
38	2	9	Total	K	0
			9	9	

- Molecule 39 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
39	T	1	Total	Mg	0
			1	1	
39	W	1	Total	Mg	0
			1	1	
39	7	1	Total	Mg	0
			1	1	
39	2	82	Total	Mg	0
			82	82	

- Molecule 40 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).
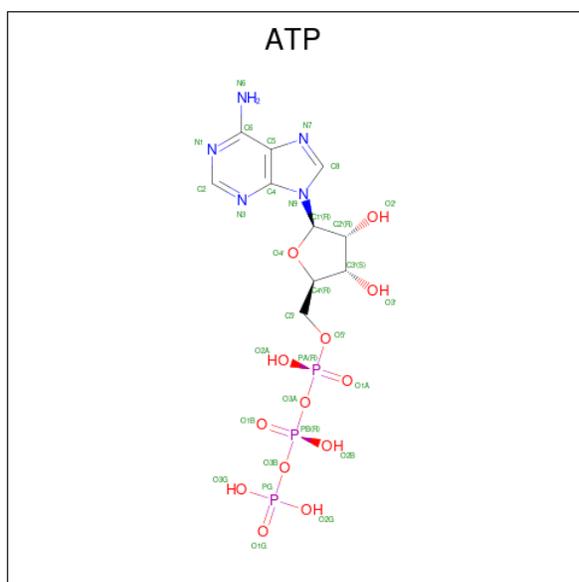
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
40	W	1	31	10	5	13	3	0

- Molecule 41 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
41	7	1	1	1	0

- Molecule 42 is GUANOSINE-5'-TRIPHOSPHATE (CCD ID: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$).
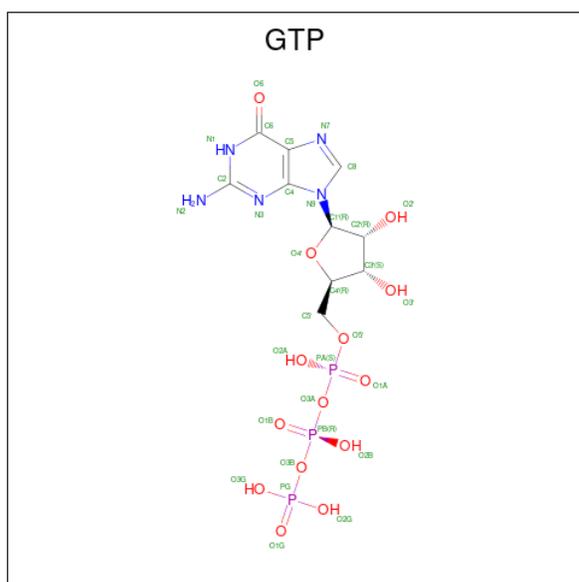
Mol	Chain	Residues	Atoms					AltConf
42	7	1	Total 32	C 10	N 5	O 14	P 3	0

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.
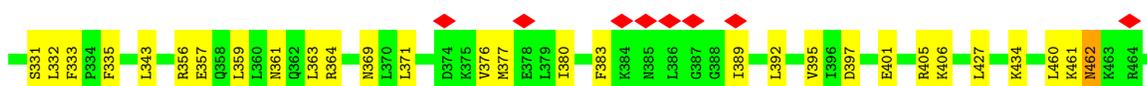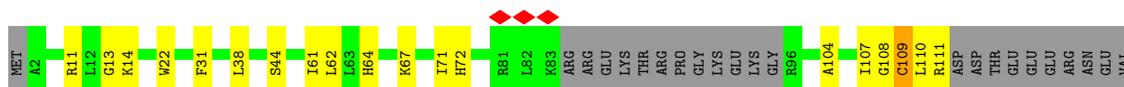
- Molecule 1: Ribosomal protein S2

Chain A:

- Molecule 2: Small ribosomal subunit protein uS3m

Chain B:

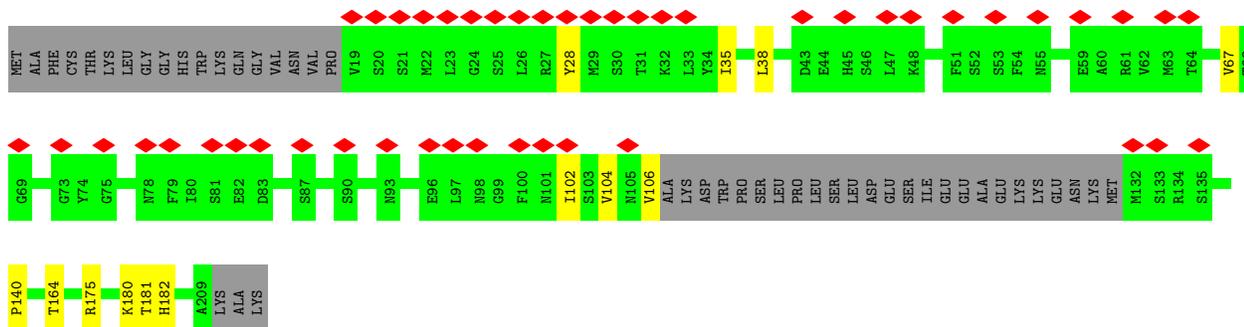- Molecule 3: Ribosomal protein S4

Chain C:

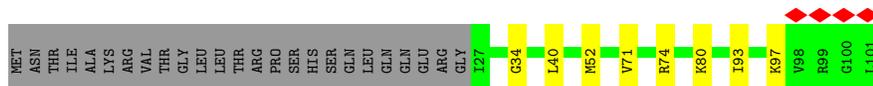R162 E165 I166 R167 K182 T204 K205 R206 L217 L220 L242 L262 R266 LYS GLU LYS ASN LEU ASN PRO THR ARG THR ILE SER P280 I281 V282 L287 F297 I309 E320 V321 N322 L352 I362

● Molecule 4: S5 DRBM domain-containing protein

Chain D: 78%   6%   17%

MET SER PHE ARG THR ARG ALA SER SER TRP THR ARG LEU LEU LEU ARG ARG ASN PRO ARG SER SER PHE SER ARG GLN ILE ILE SER SER LEU ASP ALA SER GLY SER SER ALA PHE PRO GLY ARG ILE THR PRO TRP ILE SER SER GLN THR HIS ARG SER SER ALA THR T70 D77

V80 E90 D109 D110 E113 D114 E115 E116 D117 Y118 S145 S146 D147 S148 D149 L178 L187 D188 E189 A190 L207 A208 P209 L217 I236 R262 D263 ASN VAL GLN GLY GLY GLU GLU LYS GLU GLU ARG LEU VAL ALA ASP GLY SER LYS ASP ASP ASP ASP

ASN GLU GLU GLU PHE D295 D312 R338 R344 K351 R357 V370 R381 K401 S475 K488 L517

● Molecule 5: bS6m

Chain E: 70%   •   27%

MET P2 F10 K16 L37 Q63 L93 G102 SER SER GLU MET GLU ASP ARG GLN ASP ASP SER ASN ARG VAL THR ASN ARG SER LEU TYR ASP GLU SER THR ASP GLU ASP ASP ILE LEU GLY LEU LEU SER ARG

● Molecule 6: uS7m,Small ribosomal subunit protein uS7m,Small ribosomal subunit protein uS7m

Chain F: 85%   15%

X-8 D5 G6 E7 Q8 L11 V16 E22 R25 I31 V32 Y33 Q34 E62 G67 I72 V79 Q85 I89 R100 I105 S106 L107 E108 K109 S137 R146 W147 W148

● Molecule 7: 40S ribosomal protein S15a

Chain G: 88%   11%   •

MET G2 A9 A22 L26 K27 P28 I29 S30 H52 R56 R59 Y88 T92 T104 T105 G108 D111 Y129

● Molecule 8: 30S ribosomal protein S9

Chain H: 7%   50%   5%   45%

MET LEU SER ARG LEU PHE LEU ARG SER SER ASN LEU ARG LEU ALA THR LEU VAL SER LYS SER ASN GLN ILE PHE SER SER PHE ILE ARG PRO LEU SER THR ASN SER GLY GLY GLY GLY ASN ASP SER GLY ASN GLY ASN ARG ASN ASP ALA PRO TRP SER PHE

SER GLY VAL ASN ASP GLY LYS SER ASP PRO PHE SER PHE GLU SER GLY VAL SER PRO GLY ASP LYS TRP PRO LYS GLU GLU PRO LYS ARG TRP ASN MET LYS GLU GLU GLY ASP GLY LYS ALA VAL PHE GLY ASP VAL SER ASN GLY PHE GLY ASP VAL LYS SER GLY TRP

ASP VAL SER SER LYS PRO ASP TRP ASP LEU LYS GLU ASP GLU GLU ASP GLY LYS ASP VAL VAL PHE ASP THR SER GLY MET PRO VAL SER PHE ASN ASP ASN LEU VAL N203 E204 E205 E206 E207 R208 A209 K210 K211 E212 L213 F214 E215 K216 E217 E218 K219 E220 L221 T222 E223 V224 I225 K226

- Molecule 9: Small ribosomal subunit protein uS10 domain-containing protein

Chain I:

- Molecule 10: Ribosomal protein S11

Chain J:

- Molecule 11: Small ribosomal subunit protein uS12m

Chain K:

- Molecule 12: uS13m

Chain L:

- Molecule 13: Small ribosomal subunit protein uS14m

Chain M:

56%   9%   35%

MET ALA ASN LEU ARG GLY VAL LEU THR ASN VAL SER SER TYR CYS GLN ARG SER PHE SER GLN SER ALA LEU LEU LEU TRP ARG SER ALA VAL LYS PRO PRO ASN ASN LEU ALA GLN ILE GLN SER ARG GLN ILE SER THR SER LEU ALA LYS HIS SER GLY THR **E64 Q65 G66 V67** **N70**

R76 R87 S118 T121 R122 R126 G131 M142 L150 E155 K160 W164

• Molecule 14: Small ribosomal subunit protein uS15c

Chain N:

27%   72%

MET ALA PHE HIS LEU ALA ARG LYS GLN ARG LEU HIS SER ASN PRO TYR LEU ILE HIS LEU PHE SER THR SER SER SER ALA SER PRO GLN ASP GLY ASN GLU SER GLY GLU GLN GLN PRO SER GLN SER PRO SER ASP PHE LYS ILE SER SER TYR PHE SER GLY ILE LYS SER

SER LEU LYS GLN PRO GLN HIS GLN ALA GLN ASP GLY ARG ARG GLN GLN LEU ALA GLY LEU ALA PRO LYS GLU SER PHE SER GLY SER GLY GLY ASP PHE GLN ILE ASP VAL ARG ARG ASN LEU ASN GLU PHE ARG ARG ARG ALA ALA PRO PRO ALA ARG ASP LEU GLN ILE ASP LEU TYR

LYS GLN ASN VAL LEU SER LYS SER GLY ASP LEU GLY ALA GLY LYS VAL GLU GLY SER PRO PHE GLU ASN LEU LYS LYS ASN LEU ARG GLN MET ARG PRO GLN GLU THR ARG TRP SER ASN LEU SER SER LEU GLN SER ILE MET LYS ALA LYS ASP SER GLY ASN VAL ARG SER ASN VAL

PHE GLY GLY GLY GLY LEU GLY PRO ILE SER VAL PHE GLY GLU ILE GLU GLU ARG LYS LYS MET GLY ASP ASP SER GLU GLU MET LYS SER GLU GLU PHE ILE LYS SER TYR ASN THR LYS GLU LEU GLY ILE LEU LEU ARG GLN GLN TYR ARG PRO GLY LYS ARG GLU GLU GLY TRP PHE

SER LEU GLN GLU LEU ASN GLN ARG LEU VAL LYS LEU ARG GLU VAL GLU GLU ALA ALA ALA GLN GLY ALA ARG LYS GLY ILE ALA PHE ASP SER LEU ARG GLU SER GLU ILE GLN GLN ALA ARG LYS SER GLN ALA PHE GLN ASN LEU GLU ASP PHE PHE SER VAL LEU ASN **G296 T297 P298** **L301**

L302 P316 M319 L360 V363 D411 TYR LYS PHE

• Molecule 15: 30S ribosomal protein S16

Chain O:

75%   6%   19%

MET **V2** **R6** **M21** **R26** **R29** **V36** **R79** **P85 P86** **V111** ASP ALA GLU LYS LYS THR PRO VAL ILE ILE ASP GLN PRO LYS GLU GLU ASP ASN ALA GLN ASP LYS SER PRO

• Molecule 16: Small ribosomal subunit protein uS17c

Chain P:

76%   5%   17%

MET **K2** **P3** **S10** **V18** **M27 K28 L29** **R36** **A87 A88 A89 A90 L91 S92** PHE SER ALA ALA LYS SER PRO SER GLU SER VAL PRO PRO VAL SER SER SER

• Molecule 17: Small ribosomal subunit protein bS18c

Chain Q:

32%   5%   62%

MET LYS LEU ALA HIS SER ALA ILE ARG SER LEU SER ASP VAL ALA SER PHE GLN THR CYS ARG PRO PHE VAL SER ARG SER LEU SER THR ASN ALA ASN GLN ASP ASP TRP MET PHE GLY LYS LEU ASP LYS GLU ALA ASN SER PHE PHE GLN HIS LEU GLY LYS ALA GLU LYS ASP LYS

• Molecule 18: Small ribosomal subunit protein uS19m

Chain R:

• Molecule 19: Ribosomal protein S21

Chain S:

• Molecule 20: 30S ribosomal protein S31, mitochondrial

Chain T:

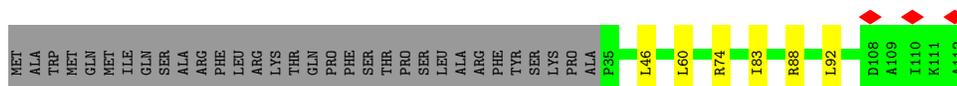• Molecule 21: Small ribosomal subunit protein mS23

Chain U:

• Molecule 22: mS26

Chain V:

74%   11%   15%

MET SER LEU CYS ASN GLN LEU SER ARG LEU VAL LYS GLN SER PRO LEU THR LYS GLN SER LEU ARG SER PHE SER ALA GLU ALA ALA T32 H36 E39 T40 E47 S48 Y49 E89 R92 R113 R114 K117 A118 E119 A120 A121 K122 V123 R124 E142 L155

E159 I176 K184 E187 A188 L189 S192 L195

• Molecule 23: Small ribosomal subunit protein mS29

Chain W:

66%   13%   21%

MET PHE ARG SER VAL VAL ARG ILE THR SER ARG ASN PHE ASN LEU ASN ARG ARG SER LEU ILE PRO ASN ASP VAL SER PHE HIS PRO SER PRO PRO SER ALA ALA THR LEU ILE PRO SER LEU ASP HIS ALA HIS ARG ARG PHE SER SER SER LYS SER THR LYS SER

SER ILE THR LYS THR LYS LYS SER GLU LYS LYS SER LYS SER GLY GLU GLY SER GLY ALA ALA ALA GLY ALA GLU ASP GLY GLU PHE GLY GLY SER ALA GLY D95 D96 R101 L114 G117 R121 P122 L123 L174 F187 I190 M195 TRP PRO SER GLU

GLY LYS GLY G202 V203 K204 P205 K206 K207 Q208 I209 I210 L211 D212 G213 P214 V215 K216 I221 A222 L223 A224 M225 L226 V227 L236 V237 D262 L271 R281 V289 Y290 D291 P292 I293 V294 L295 K305 M310 P311 I312 P313 S316 V322 Q323 M324 V333 R338

V349 P350 V351 A354 Y358 T363 T372 P373 R374 S375 R382 E383 R391 D396 D397 R424 R429 Y441 Y442 L443 R444 Q445 R450 E451 V452 E455 E456 N457 W458 M479 R480

• Molecule 24: BnaC06g06470D protein

Chain X:

33%   8%   59%

MET ARG GLY ALA ILE GLY ARG ARG LEU SER ASN PRO SER ASN GLY PHE SER LEU ALA SER ILE VAL LYS HIS THR PRO PHE LEU VAL GLN PRO THR SER HIS PHE SER SER SER ASP GLY GLY ALA VAL ARG GLY ARG GLY ARG GLY ARG GLY SER GLY PRO ALA ALA

GLY ALA GLY GLN PHE GLY PHE ASN ARG GLU GLU PRO GLU GLY LYS ALA ASN GLU VAL GLY GLN ALA ARG GLY SER GLU SER GLU SER GLN GLU SER PRO GLY GLY TYR GLY HIS GLY ARG GLY ARG GLY ARG PRO ILE GLN GLY SER ASP PRO ILE SER PRO PRO PHE GLU SER PHE VAL LYS PRO ASP SER HIS SER

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

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

PRO GLU GLU GLU ALA GLY ARG ALA ARG ALA ARG SER GLN LEU SER ARG ARG GLU GLU ALA GLU GLY GLY GLY SER GLY SER GLY GLY ARG GLY GLY VAL ARG ARG GLY GLY ARG ARG GLY ALA ARG ARG GLY GLY GLU GLY TRP ARG ASP D320 K321 K322 V335 G336 D337 N338

A339 M348 G349 D350 E351 I352 M353 L356 Y360 R366 A367 L368 H373 L376 V377 D381 T382 N383 L384 M385 I386 Y392 L393 P401 D402 I403 M409 P410 E413 C414 F421 E426 G427 I428 K429 D430 E433 E440 E444 D453 H454 Y455 S456

G457 P458 D459 R460 V477 P478 F488 V492 M511 D512 K523

• Molecule 25: MOSC domain-containing protein

Chain Y:

78%   18%

MET ALA SER GLY S5 L6 K7 V10 T11 V14 T15 A23 R24 I25 H28 R43 I59 D63 V66 R69 R84 G94 R95 R96 R100 N101 K102

• Molecule 26: Mitochondrial 28S ribosomal protein S34

Chain Z:

46%   7%   47%

MET ALA ALA THR LEU MET ASN ARG ALA ILE SER ARG GLU THR GLY THR VAL GLY ALA PHE ARG LEU SER LEU ASN LEU ARG ASN PHE SER ALA PRO ALA ALA ALA ALA ALA SER PRO SER THR GLU ASN PRO SER SER ASP SER ILE LYS PRO LYS ARG R48 N52 L53 I54 E55

V56 A57 L60 Y67 L86 Y87 K88 V116 R119 S128 LYS THR THR PRO ALA ALA THR GLY SER ALA PRO ALA ALA GLU VAL GLN ALA ALA

• Molecule 27: EngC GTPase domain-containing protein

Chain 7:

61%   12%   27%

MET GLN ILE SER LEU SER ILE ILE ARG HIS SER PRO PHE LEU LEU ARG ARG ALA SER ILE HIS HIS GLY GLY CYS GLY VAL ARG LEU GLY THR GLY ILE LEU GLY ILE ARG ARG SER PHE HIS LEU LEU THR LEU SER ALA ARG ARG ASP ASN PRO ASP VAL SER ARG LYS PRO HIS

PRO SER LYS ASN MET LEU ARG ALA LYS HIS ILE GLY LYS ASP HIS S13 P21 N24 P25 S26 L27 L28 P29 I33 A39 M44 Q49 ASP GLY ASP GLY ASP GLY ASP ARG SER SER THR SER SER SER LYS D66 L78 R83 L86 V91 L92

V93 I105 V108 F109 Q110 P119 V120 L137 L142 C163 L171 S189 V190 K193 E194 A200 R204 V209 S220 I224 L225 R226 S227 S228 SER GLY GLY GLY ASP VAL GLU ASP GLU ASN TRP PHE GLU ILE GLU ASP ASP PRO ILE ILE G245 F249 R263 G264

K265 V271 S272 L273 I276 Y281 L282 A283 H324 W336 Y339 D347 V351 V368 R369 V372 G373 G374 M375 Q379 P386 R390 S393 V397 E407 TYR GLU ASP GLU GLU SER ASP LEU ASP ILE GLU ASP ASP PRO ILE VAL GLN ALA ILE

GLU ASN GLU LYS GLU ARG

• Molecule 28: Small ribosomal subunit protein mS35 mitochondrial conserved domain-containing protein

Chain a:

57%   17%   26%

MET ARG GLY ALA LEU PHE ARG ASN ALA SER LEU CYS ALA ARG LEU LEU LEU SER PRO ARG ILE ASN THR HIS GLN PRO SER SER SER ASN ALA ARG PHE VAL ALA PRO ILE ALA THR PRO PHE PRO ARG LEU PHE SER GLU SER GLU ASP SER GLY GLU ASN PRO PRO

PRO PRO PRO GLU SER SER SER PRO ILE GLU GLU SER SER ASN LYS LYS ASP LEU ALA VAL GLU ASP V77 G78 F90 N91 E92 G93 N94 I102 E103 A104 L105 R108 T117 D118 V121 M122 D123 S124 L125 Q126 N127 Q128 D151 D155 E177 K178 K179 W180 D181 V182 I183

V184 G187 I192 L193 E201 D205 M206 L207 H208 W209 D210 K211 L212 L213 L217 K218 K219 K220 V221 E222 A223 K224 E236 I237 E238 P239 Q260 MET GLU ALA ALA GLY PRO PRO LYS PHE ASP GLU THR ASP PRO SER TYR SER ASN THR LEU D282 D283 P284 P285

L291 R292 W293 Q294 G302 V313 K314 L315 L322 R330 R333 E334 L335 V336 R339 K344 E352 E358 R361 L365 L371 I372 A376 K380 E383 D384 I385 R386 T387 V390 Q405 M409 K412 GLU SER ASN PRO ILE ASN ALA

• Molecule 29: IMS import disulfide relay-system CHCH-CHCH-like Cx9C domain-containing protein

Chain b:

22%

80%   11%   9%

MET GLY ARG LYS ALA G17 I21 N22 K25 N28 L29 A30 K31 S39 F40 L41 N42 A45 L46 N47 N48 I49 K50 D51 D52 K53 K56 L60 Q68 S69 D70 H71 K72 N73 K74 L86 T87 R88 G89 ARG LYS

• Molecule 30: Small ribosomal subunit protein mS38

Chain c:

19%   80%

MET ALA ASN LEU MET GLN ARG PHE ILE ARG ASN GLN SER CYS LEU ALA ILE PRO LYS LEU THR PRO ASN LEU ILE PRO HIS GLN LYS PRO CYS ILE ILE ASN ASN ASN VAL GLU SER PRO PHE PRO LEU THR ASN PRO VAL ILE ALA PHE SER GLY SER GLY LYS PRO ASP

GLU ALA LEU ARG PHE TYR PRO SER PHE PRO ILE GLY TYR GLY LEU ASN PRO SER VAL VAL HIS GLY SER GLY LEU THR ASP THR VAL VAL GLU GLU LYS GLU LYS GLU VAL VAL ILE HIS ALA D112 K119 G135 R136 K137 SER

• Molecule 31: IGR domain-containing protein

Chain d:

65%   5%   29%

MET ALA TRP GLN MET GLN MET ILE GLN SER ALA ARG PHE LEU ARG LYS THR GLN PRO PHE SER THR PRO SER LEU ALA ARG PHE TYR SER LYS PRO ALA P35 L46 L60 R74 I83 R88 L92 D108 A109 I110 K111 A112

• Molecule 32: mS45

Chain e:

60%   36%

MET PHE LYS LEU SER ARG MET ILE PRO ARG LEU GLN SER VAL SER LEU ASN PRO SER THR THR ALA SER GLY LEU ILE GLU ASN ALA PRO ILE PHE GLN SER LEU GLY ASN SER ARG ALA PHE SER GLY LYS SER SER SER ASP GLY SER GLY SER ASN GLU ASN GLU TRP ASP ILE

ALA THR GLY GLY SER PHE GLY GLY GLY THR THR GLY GLY SER ASP ASP LEU ASP ASP TRP HIS LYS SER MET TRP SER THR GLY LEU SER GLU HIS PHE ASP VAL SER VAL GLY ARG GLN ASN PRO SER SER GLU GLU ALA VAL ASP SER ASP SER GLY ASP VAL MET SER LYS LEU

GLY PRO ARG GLU VAL ALA MET VAL ASN GLU MET ASN GLU GLY TYR ASP ASP M139 E142 I143 F153 M164 L168 V171 E188 R191 L222 D239 R243 D256 Y323 R327 I334 K352 V372 L384 PRO

• Molecule 33: mS47

Chain f:

75%   16%   9%

MET GLN THR VAL ARG ALA LEU ARG ARG VAL THR LYS PRO SER GLN TRP VAL ARG SER VAL SER GLN GLY LYS ARG SER PHE SER ALA LEU PRO ASN PHE S33 A34 S35 D36 A37 D38 V39 I55 L56 D57 R58 S61 L62 N63 A64 L65 R72 N83 K92 G93 S94

T97 D103 V104 L105 P106 K120 N128 K138 I143 V147 G153 G154 I155 S156 I157 A183 Y188 L202 G209 M212 F221 R226 V230 E231 E232 R233 I234 G235 K236 L237 D241 P242 T243 L249 Y252 S253 D254 L255 V256 K266 I267

E268 M269 R272 V279 M286 V290 S293 T301 V305 S309 P310 L317 Q318 S319 G323 D329 R334 R337 L340 R356 D361 W368 L373 A388 T389 D390 A391 D392 E397 L400 P407 TYR PHE

• Molecule 34: (rape) hypothetical protein

Chain h:

18%

61%　　　　　20%　　　　19%

MET GLN TYR LEU ASN SER ARG ARG ILE ALA ARG ALA LEU LYS PRO LEU ALA LEU LEU GLU ALA VAL ARG PHE ALA SER HIS VAL VAL ASP SER THR GLN TRP GLN ASN HIS ARG SER PRO SER VAL SER VAL SER PRO GLY MET ASN THR GLN HIS MET THR GLY LEU MET

MET LEU ARG SER PHE SER SER GLU ALA LYS LEU VAL GLU D81 K87 E88 L89 H90 I93 R101 P104 P105 L108 S123 F124 L125 F126 D127 L137 R152 Q153 V154 V159 I164 N165 H166 R169 A170 L171 W172 A184 H188 Y192 A193 L194

E195 H196 K197 N198 S199 N200 L201 M202 D203 K207 N212 I216 Q217 F225 R226 I227 C228 D232 S233 W234 D235 L236 L237 S241 C245 K246 K250 L251 R252 F256 D257 V258 W259 M260 E261 F262 A263 R266 G267 D268 T269 L272 V275 D276 R279 T287

L288 S289 S293 C294 A295 K296 L299 H302 E305 E306 A307 A308 A309 V310 I311 Q312 I313 I314 C315 Q316 A317 Y318 P319 D320 E321 K322 K323 L326 E327 A328 K331 K332 L333 V334 N335 P338 V339 D340 V341 L342 K343 H344 Q345 N346 E347 E348 D349 K350 V353 A354 A355 S356

L357 D360 I361 P362 A363 M364 V365 N366 A367 L368 V369 N370 S371 G372 L373 R374 V375 S376 V377 D378 L379 D380 E381 L382 N383 K384 N385 E386 A387 L388 L389 S390

• Molecule 35: PROP1-like PPR domain-containing protein

Chain i:

12%

39%　•　　　　58%

MET LYS SER PHE LEU LEU HIS SER ARG GLN ILE ALA ILE HIS ARG ILE SER LEU LEU SER SER LYS THR PRO THR PHE CYS ARG ASN PHE SER ALA ILE THR SER THR ILE SER HIS SER ASP ARG HIS LEU ARG ARG SER TYR ASP GLU GLN THR PRO PHE GLN ASN VAL GLU ILE LEU PRO ARG PRO ILE

SER SER PHE ASN ARG TYR PHE HIS PHE THR ARG GLU SER ARG LEU SER GLU SER SER ALA ALA ILE ASP ASP ASN ASP GLN GLU GLU ASP E93 D94 G95 E99 V105 M108 S113 E114 P117 D118 C119 D120 K121 I124 L128 K134 I139 E140

G143 F144 N145 K146 V147 G148 S153 P154 S155 S156 E157 D160 D161 I166 K185 Q191 S192 P193 M196 E197 M198 F201 I205 G206 I207 R237 T248 V249 D250 G251 E252 V253 E254 GLU GLY PHE VAL PRO SER ASP GLU VAL GLU SER ARG ILE SER LEU

PRO K273 R274 K281 I282 Y283 G284 E303 E304 E305 A306 D307 E310 T315 G316 K319 L320 V321 M322 E323 K324 L328 Q329 E330 G331 D332 D333 P334 L337 L345 E346 I353 N357 Q358 L359 R360 E361 G362 N363 T364 H365 A371 V374 L375 D376 N381 A382

S383 I384 S385 S388 K389 H392 I393 H394 A395 K396 E397 N398 H399 I400 E401 D402 V403 E404 R405 I406 M410 S411 Q412 N413 G414 I415 F416 PRO ASP ILE LEU THR ALA THR ALA LEU VAL HIS MET TYR SER LYS SER GLY ASN PHE GLU ARG ALA THR GLU ALA PHE GLU ASN LEU LYS

SER TYR GLY LEU ARG PRO ASP GLU LYS ILE TYR GLU ALA MET ILE LEU GLY TYR VAL ASN ALA GLY LYS PRO LYS LEU GLY GLU GLU ARG LEU MET LYS GLU MET GLN ALA LYS GLU LEU LYS ALA SER GLU GLU VAL TYR MET ALA LEU LEU ARG ALA TYR ALA GLN MET GLY ASP ALA ASN

GLY ALA ALA GLY ILE SER SER MET GLN TYR ALA ASP GLY PRO LEU SER PHE GLU ALA TYR SER LEU PHE VAL GLU ALA TYR THR THR VAL LEU VAL ASP GLY ILE GLU GLU ALA GLN GLN LEU GLY HIS PRO ASP ASP LYS ILE ALA ASN LEU

VAL ARG ALA TYR GLY GLU ASN SER LEU ASP LYS ALA LEU ARG LEU LEU GLN LEU GLU LYS LYS THR LEU GLN ALA LEU GLY ILE ILE VAL ILE THR TYR THR VAL LEU ASP TRP MET ALA ASN LEU GLY ILE GLU ALA GLN GLN LEU LEU VAL LYS ILE SER GLN GLU GLU GLU GLU

ALA PRO PRO PHE LEU VAL GLN GLN VAL SER LEU CYS CYS MET TYR SER GLY VAL VAL ARG ASN GLU LYS LYS THR LEU GLN ALA LEU LEU GLY VAL LEU LEU LYS ARG GLY GLY PHE GLU LYS ASP ALA ARG ARG

MET TYR LYS TYR MET GLU ALA ARG LYS PHE LEU PRO SER GLN ARG LEU GLN MET ASP MET VAL ALA PRO PRO ARG ALA ALA PHE GLY SER SER GLY VAL ARG ARG PHE ASN SER

● Molecule 36: RRM domain-containing protein

Chain k: 13%   86%

M1 N12 K15 A22 ALA ASN ALA MET LEU GLN ASN LEU SER LEU THR PRO SER LYS PHE VAL GLY GLY LEU SER PRO THR THR ASP ASP ILE LEU LYS GLU VAL GLY LYS PHE GLY LYS PHE GLY LYS LYS ILE VAL ASP VAL VAL VAL VAL SER ASP ARG GLU GLY THR GLY VAL

SER LYS GLY PHE GLY PHE VAL THR TYR ASP SER ILE ASP ALA ALA ASN LYS ALA MET GLN GLN MET ASN ASP GLN LEU ASP ILE ASP ARG ILE ILE GLY VAL ASN PRO ALA ASP SER GLY GLY GLY GLY PHE ALA ARG GLY GLY TYR GLY GLY GLY ARG GLY GLY PHE GLY

ARG GLY GLY PHE GLY ARG GLY GLY PHE GLY ARG GLY GLY TYR ASN PHE VAL ARG

● Molecule 37: 18S rRNA

Chain 2:   69%   27%

C3 A4 U5 A12 A15 A16 G17 U25 U26 G30 A40 G47 C48 U49 A50 U51 C55 U56 U57 A58 A59 C60 U64 G65 U70 C75 G76 U77 U78 G79 C82 U83 A150 A151 G152 A153 G154 U155 U156 G157 A161 C162 A163 A164 A165 A172

U178 A183 A184 G185 G186 C187 G188 U189 G190 G191 G192 A193 A194 U195 C200 A203 G206 U207 U208 U214 A215 A216 A217 G222 A223 A228 G233 A236 G239 C240 U241 G242 U245 G246 U254 G255 C256 G257 U264 A265 G266 G270 G285 C286

U287 G288 C291 A292 U299 G308 U313 U317 U318 A325 A328 G329 A340 C347 G351 C354 G355 C356 A357 A363 C364 G365 G366 G369 G370 C371 A372 G373 C374 G379 C385 U386 C391 G395 G403 C404 A408 U409 C410 C411 A412

A416 U420 G421 G425 A430 A431 G432 A440 U441 U442 C443 C444 G445 C446 U450 A451 U459 U468 G469 C470 C471 C472 G473 U478 A485 G491 G492 A493 A494 G495 C499 A507 A508 C509 C516 G519 G522 G525 A530 G535 G536

A545 G546 U547 G548 A557 A558 U559 G560 A561 C562 G566 A570 A571 A572 G573 G574 G575 U587 A590 U591 C592 G593 U603 G604 A605 G608 U609 U612 C613 A614 G625 G629 G635 A636 A637 G638 U643 G644 U649 G654 A655 G660 A661

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	208855	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 $(e^-/\text{Å}^2)$	50.96	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	165000	Depositor
Image detector	TFS FALCON 4i (4k x 4k)	Depositor
Maximum map value	1.059	Depositor
Minimum map value	-0.572	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.023	Depositor
Recommended contour level	0.0377	Depositor
Map size (Å)	524.87823, 524.87823, 524.87823	wwPDB
Map dimensions	588, 588, 588	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.89265007, 0.89265007, 0.89265007	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, 2MG, UR3, 4OC, ATP, K, MG, G7M, MA6, GTP

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	0.12	0/1647	0.34	0/2227
2	B	0.23	0/3969	0.50	1/5320 (0.0%)
3	C	0.15	0/2859	0.38	1/3828 (0.0%)
4	D	0.15	0/3474	0.38	0/4647
5	E	0.11	0/838	0.32	0/1121
6	F	0.16	0/1225	0.42	0/1641
7	G	0.15	0/1054	0.36	0/1418
8	H	0.20	0/1687	0.49	0/2262
9	I	0.19	0/964	0.43	0/1293
10	J	0.12	0/1005	0.34	0/1346
11	K	0.14	0/1009	0.36	0/1345
12	L	0.14	0/874	0.36	0/1165
13	M	0.17	0/856	0.38	0/1134
14	N	0.13	0/958	0.34	0/1280
15	O	0.16	0/890	0.37	0/1196
16	P	0.17	0/730	0.44	1/984 (0.1%)
17	Q	0.12	0/733	0.32	0/978
18	R	0.17	0/1323	0.37	0/1772
19	S	0.15	0/614	0.33	0/809
20	T	0.16	0/416	0.37	0/547
21	U	0.39	2/1037 (0.2%)	0.55	1/1395 (0.1%)
22	V	0.21	0/1423	0.33	0/1895
23	W	0.17	0/3139	0.40	0/4250
24	X	0.22	0/1644	0.46	0/2216
25	Y	0.42	0/807	0.50	0/1077
26	Z	0.12	0/680	0.34	0/914
27	7	0.18	0/2930	0.45	0/3952
28	a	0.28	0/2523	0.60	5/3386 (0.1%)
29	b	0.19	0/589	0.54	0/785
30	c	0.11	0/233	0.27	0/296
31	d	0.16	0/628	0.33	0/840
32	e	0.15	0/2118	0.38	0/2828

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	f	0.17	0/2955	0.40	1/3999 (0.0%)
34	h	0.18	0/2511	0.44	0/3391
35	i	0.14	0/2532	0.36	0/3400
36	k	0.07	0/181	0.21	0/239
37	2	0.21	2/37258 (0.0%)	0.34	2/58090 (0.0%)
All	All	0.20	4/90313 (0.0%)	0.38	12/129266 (0.0%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
37	2	1650	C	O3'-P	-21.93	1.28	1.61
37	2	921	G	O3'-P	14.79	1.83	1.61
21	U	42	ASN	CA-C	-5.67	1.45	1.52
21	U	40	ARG	CA-C	-5.59	1.45	1.53

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	2	1650	C	P-O3'-C3'	12.01	138.22	120.20
28	a	211	LYS	N-CA-C	-8.81	101.61	114.39
2	B	212	PRO	CA-N-CD	-8.71	99.81	112.00
16	P	3	PRO	CA-N-CD	-8.68	99.84	112.00
37	2	1650	C	O3'-P-O5'	8.60	116.90	104.00

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	A	1611	0	1633	13	0
2	B	3877	0	4008	154	0
3	C	2806	0	2971	29	0
4	D	3425	0	3451	25	0
5	E	823	0	879	4	0

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	F	1254	0	1268	16	0
7	G	1037	0	1058	10	0
8	H	1662	0	1700	17	0
9	I	941	0	970	13	0
10	J	993	0	1034	27	0
11	K	992	0	1051	14	0
12	L	864	0	891	5	0
13	M	843	0	884	18	0
14	N	941	0	978	3	0
15	O	869	0	898	6	0
16	P	717	0	755	8	0
17	Q	724	0	744	22	0
18	R	1299	0	1307	8	0
19	S	611	0	687	18	0
20	T	408	0	444	2	0
21	U	1016	0	1062	19	0
22	V	1399	0	1427	15	0
23	W	3062	0	3029	35	0
24	X	1613	0	1559	66	0
25	Y	793	0	834	15	0
26	Z	660	0	675	7	0
27	7	2878	0	2946	41	0
28	a	2486	0	2376	109	0
29	b	581	0	592	21	0
30	c	232	0	278	2	0
31	d	616	0	674	5	0
32	e	2074	0	2074	16	0
33	f	2898	0	2852	80	0
34	h	2463	0	2488	66	0
35	i	2487	0	2450	21	0
36	k	177	0	179	2	0
37	2	33424	0	16844	214	0
38	2	9	0	0	0	0
38	K	1	0	0	0	0
39	2	82	0	0	0	0
39	7	1	0	0	0	0
39	T	1	0	0	0	0
39	W	1	0	0	0	0
40	W	31	0	12	0	0
41	7	1	0	0	0	0
42	7	32	0	12	0	0
All	All	85715	0	69974	882	0

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

The worst 5 of 882 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)
2:B:231:ARG:HD3	24:X:426:GLU:CD	1.22	1.53
19:S:93:ILE:CG2	29:b:86:LEU:HD13	1.02	1.49
19:S:93:ILE:HG21	29:b:86:LEU:CD1	1.02	1.47
2:B:231:ARG:CD	24:X:426:GLU:OE1	1.66	1.43
34:h:302:HIS:CE1	34:h:356:SER:HB3	1.58	1.38

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	
1	A	202/212 (95%)	198 (98%)	4 (2%)	0	100	100
2	B	457/554 (82%)	430 (94%)	24 (5%)	3 (1%)	19	22
3	C	329/362 (91%)	324 (98%)	5 (2%)	0	100	100
4	D	413/501 (82%)	396 (96%)	17 (4%)	0	100	100
5	E	99/138 (72%)	99 (100%)	0	0	100	100
6	F	146/157 (93%)	140 (96%)	6 (4%)	0	100	100
7	G	126/129 (98%)	124 (98%)	2 (2%)	0	100	100
8	H	207/383 (54%)	198 (96%)	8 (4%)	1 (0%)	25	30
9	I	111/228 (49%)	108 (97%)	3 (3%)	0	100	100
10	J	125/304 (41%)	119 (95%)	6 (5%)	0	100	100
11	K	122/125 (98%)	120 (98%)	2 (2%)	0	100	100
12	L	107/154 (70%)	104 (97%)	3 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	M	99/155 (64%)	99 (100%)	0	0	100	100
14	N	114/414 (28%)	114 (100%)	0	0	100	100
15	O	108/136 (79%)	106 (98%)	2 (2%)	0	100	100
16	P	89/110 (81%)	87 (98%)	2 (2%)	0	100	100
17	Q	88/237 (37%)	87 (99%)	1 (1%)	0	100	100
18	R	162/212 (76%)	157 (97%)	5 (3%)	0	100	100
19	S	73/100 (73%)	73 (100%)	0	0	100	100
20	T	48/94 (51%)	46 (96%)	2 (4%)	0	100	100
21	U	125/192 (65%)	121 (97%)	4 (3%)	0	100	100
22	V	162/193 (84%)	158 (98%)	4 (2%)	0	100	100
23	W	376/483 (78%)	371 (99%)	5 (1%)	0	100	100
24	X	202/496 (41%)	199 (98%)	3 (2%)	0	100	100
25	Y	96/102 (94%)	95 (99%)	0	1 (1%)	13	14
26	Z	79/153 (52%)	78 (99%)	1 (1%)	0	100	100
27	7	357/496 (72%)	340 (95%)	16 (4%)	1 (0%)	37	45
28	a	311/424 (73%)	305 (98%)	5 (2%)	1 (0%)	37	45
29	b	71/80 (89%)	63 (89%)	8 (11%)	0	100	100
30	c	24/128 (19%)	24 (100%)	0	0	100	100
31	d	76/110 (69%)	76 (100%)	0	0	100	100
32	e	244/383 (64%)	234 (96%)	10 (4%)	0	100	100
33	f	373/410 (91%)	364 (98%)	9 (2%)	0	100	100
34	h	308/384 (80%)	297 (96%)	11 (4%)	0	100	100
35	i	302/725 (42%)	295 (98%)	7 (2%)	0	100	100
36	k	20/153 (13%)	18 (90%)	2 (10%)	0	100	100
All	All	6351/9617 (66%)	6167 (97%)	177 (3%)	7 (0%)	50	59

5 of 7 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
28	a	210	ASP
2	B	481	ARG
8	H	225	ILE
25	Y	95	ARG
2	B	104	ALA

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	
1	A	177/182 (97%)	177 (100%)	0	100	100
2	B	421/492 (86%)	420 (100%)	1 (0%)	92	96
3	C	312/343 (91%)	312 (100%)	0	100	100
4	D	370/444 (83%)	370 (100%)	0	100	100
5	E	90/126 (71%)	90 (100%)	0	100	100
6	F	124/124 (100%)	124 (100%)	0	100	100
7	G	112/113 (99%)	112 (100%)	0	100	100
8	H	174/320 (54%)	174 (100%)	0	100	100
9	I	104/197 (53%)	104 (100%)	0	100	100
10	J	109/256 (43%)	109 (100%)	0	100	100
11	K	106/107 (99%)	106 (100%)	0	100	100
12	L	92/128 (72%)	92 (100%)	0	100	100
13	M	90/137 (66%)	90 (100%)	0	100	100
14	N	107/362 (30%)	107 (100%)	0	100	100
15	O	93/117 (80%)	93 (100%)	0	100	100
16	P	78/95 (82%)	78 (100%)	0	100	100
17	Q	75/203 (37%)	75 (100%)	0	100	100
18	R	141/180 (78%)	141 (100%)	0	100	100
19	S	68/90 (76%)	68 (100%)	0	100	100
20	T	44/79 (56%)	44 (100%)	0	100	100
21	U	109/170 (64%)	108 (99%)	1 (1%)	75	86
22	V	147/173 (85%)	147 (100%)	0	100	100
23	W	328/410 (80%)	328 (100%)	0	100	100
24	X	174/395 (44%)	174 (100%)	0	100	100
25	Y	84/86 (98%)	84 (100%)	0	100	100
26	Z	66/119 (56%)	66 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
27	7	321/437 (74%)	321 (100%)	0	100	100
28	a	252/375 (67%)	252 (100%)	0	100	100
29	b	66/71 (93%)	66 (100%)	0	100	100
30	c	25/116 (22%)	25 (100%)	0	100	100
31	d	65/93 (70%)	65 (100%)	0	100	100
32	e	226/339 (67%)	226 (100%)	0	100	100
33	f	319/351 (91%)	319 (100%)	0	100	100
34	h	271/337 (80%)	271 (100%)	0	100	100
35	i	272/629 (43%)	272 (100%)	0	100	100
36	k	17/109 (16%)	17 (100%)	0	100	100
All	All	5629/8305 (68%)	5627 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	462	ASN
21	U	42	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 48 such sidechains are listed below:

Mol	Chain	Res	Type
13	M	65	GLN
24	X	521	ASN
16	P	27	ASN
21	U	42	ASN
25	Y	93	HIS

5.3.3   RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
37	2	1555/1560 (99%)	261 (16%)	10 (0%)

5 of 261 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
37	2	4	A

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Mol	Chain	Res	Type
37	2	5	U
37	2	12	A
37	2	17	G
37	2	30	G

5 of 10 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
37	2	1705	C
37	2	1706	C
37	2	1726	U
37	2	573	G
37	2	998	A

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

6 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	#$|Z| > 2$
37	UR3	2	1807	37	19,22,23	2.81	8 (42%)	26,32,35	1.32	1 (3%)
37	4OC	2	1664	37	20,23,24	3.40	8 (40%)	26,32,35	0.90	1 (3%)
37	MA6	2	1827	37	18,26,27	1.17	3 (16%)	19,38,41	3.70	2 (10%)
37	G7M	2	525	37	20,26,27	2.19	6 (30%)	17,39,42	1.19	2 (11%)
37	2MG	2	1825	37	18,26,27	2.64	6 (33%)	16,38,41	1.75	4 (25%)
37	MA6	2	1828	37	18,26,27	1.11	2 (11%)	19,38,41	3.72	2 (10%)

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
37	UR3	2	1807	37	-	2/7/25/26	0/2/2/2
37	4OC	2	1664	37	-	0/9/29/30	0/2/2/2
37	MA6	2	1827	37	-	5/7/29/30	0/3/3/3
37	G7M	2	525	37	-	3/3/25/26	0/3/3/3
37	2MG	2	1825	37	-	2/5/27/28	0/3/3/3
37	MA6	2	1828	37	-	4/7/29/30	0/3/3/3

The worst 5 of 33 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
37	2	1664	4OC	C4-N3	7.51	1.45	1.32
37	2	1825	2MG	C2-N2	7.36	1.49	1.33
37	2	1807	UR3	C2-N1	7.27	1.49	1.38
37	2	1664	4OC	C2-N3	6.60	1.49	1.36
37	2	1664	4OC	C6-C5	6.58	1.50	1.35

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	2	1828	MA6	N1-C6-N6	-15.12	101.15	117.06
37	2	1827	MA6	N1-C6-N6	-14.73	101.55	117.06
37	2	1827	MA6	N3-C2-N1	-5.66	119.83	128.68
37	2	1828	MA6	N3-C2-N1	-5.30	120.40	128.68
37	2	1807	UR3	C4-N3-C2	-4.96	119.90	124.56

There are no chirality outliers.

5 of 16 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
37	2	1825	2MG	O4'-C4'-C5'-O5'
37	2	1827	MA6	O4'-C4'-C5'-O5'
37	2	1827	MA6	C3'-C4'-C5'-O5'
37	2	1827	MA6	C5-C6-N6-C10
37	2	1828	MA6	C5-C6-N6-C9

There are no ring outliers.

4 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
37	2	1664	4OC	1	0
37	2	1827	MA6	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
37	2	1825	2MG	1	0
37	2	1828	MA6	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 98 ligands modelled in this entry, 96 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	$\#|Z| > 2$
40	ATP	W	501	39	26,33,33	0.64	0	31,52,52	0.75	2 (6%)
42	GTP	7	602	39	26,34,34	1.13	2 (7%)	32,54,54	1.51	7 (21%)

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
40	ATP	W	501	39	-	1/18/38/38	0/3/3/3
42	GTP	7	602	39	-	4/18/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
42	7	602	GTP	C5-C6	-3.99	1.39	1.47
42	7	602	GTP	C2-N3	2.07	1.38	1.33

The worst 5 of 9 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
42	7	602	GTP	C5-C6-N1	3.12	119.46	113.95
42	7	602	GTP	PB-O3B-PG	-3.09	122.24	132.83
42	7	602	GTP	C8-N7-C5	3.03	108.75	102.99
42	7	602	GTP	C3'-C2'-C1'	2.83	105.23	100.98
42	7	602	GTP	C2-N1-C6	-2.78	119.98	125.10

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
42	7	602	GTP	O4'-C4'-C5'-O5'
40	W	501	ATP	PA-O3A-PB-O1B
42	7	602	GTP	PB-O3A-PA-O2A
42	7	602	GTP	PG-O3B-PB-O2B
42	7	602	GTP	C5'-O5'-PA-O1A

There are no ring outliers.

No monomer is involved in short contacts.

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 then 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.

Ligand ATP W 501

Bond lengths

Bond angles

Torsions

Rings

Ligand GTP 7 602

Bond lengths

Bond angles

Torsions

Rings
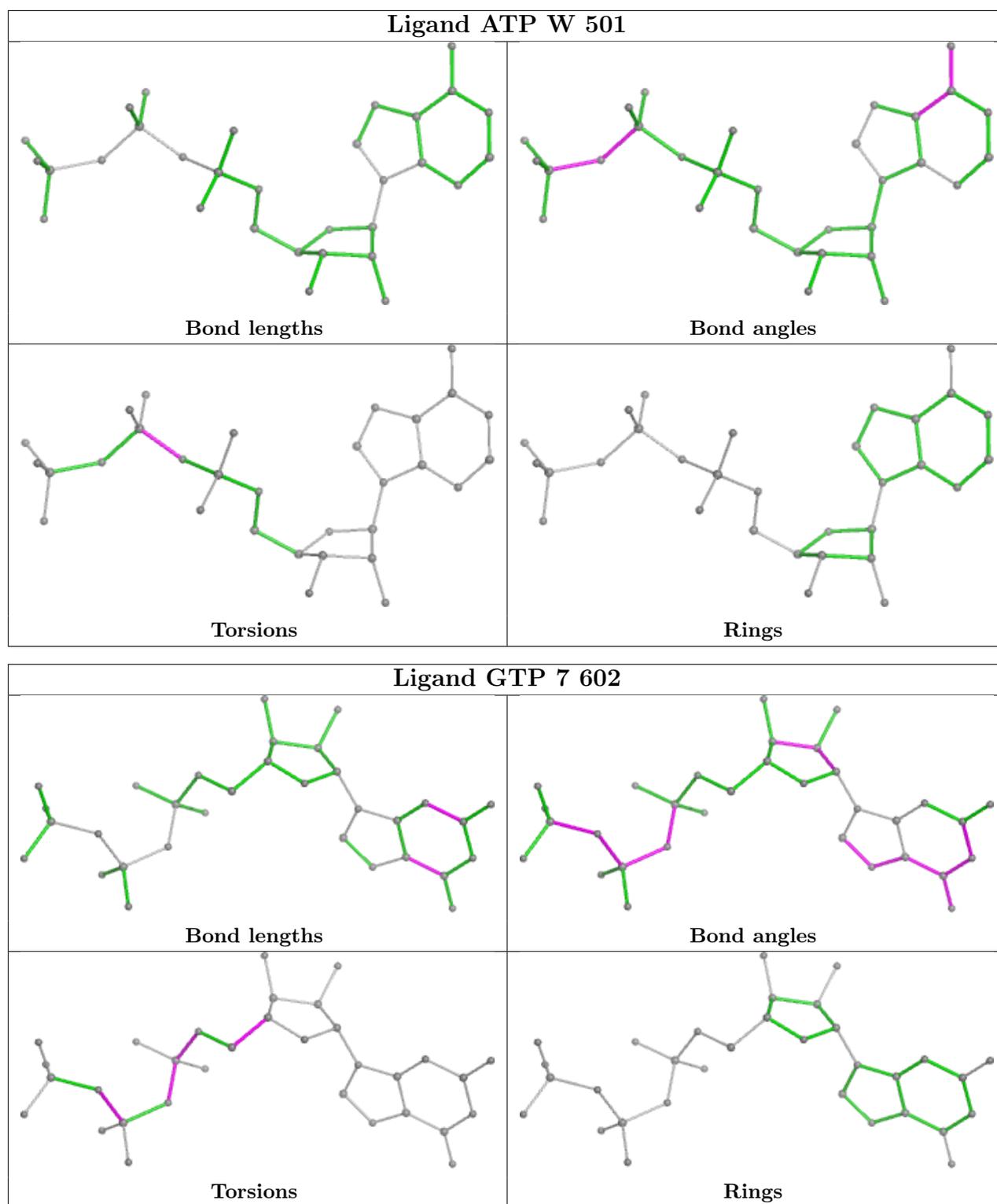
5.7   Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
37	2	6

The worst 5 of 6 chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	2	1142:A	O3'	1379:C	P	16.35
1	2	137:A	O3'	142:U	P	15.19
1	2	84:A	O3'	129:A	P	11.35
1	2	1842:U	O3'	1845:A	P	7.73
1	2	921:G	O3'	922:G	P	1.83

6   Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-50014. 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 ⓘ
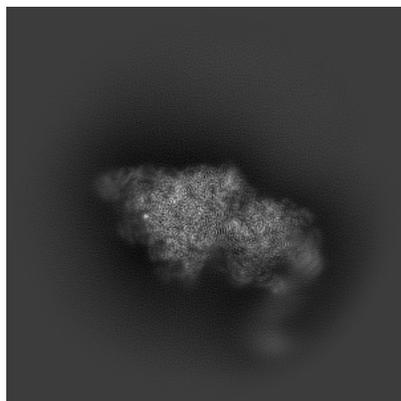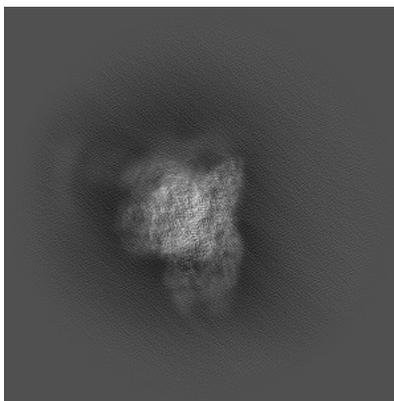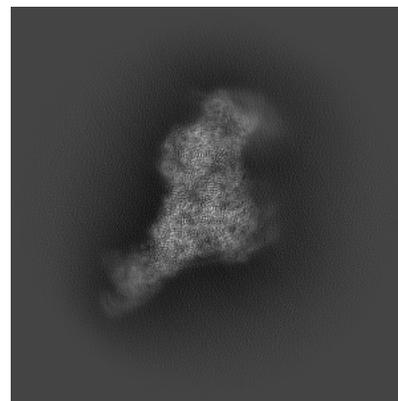
6.1.1   Primary map

X   Y   Z

6.1.2   Raw map

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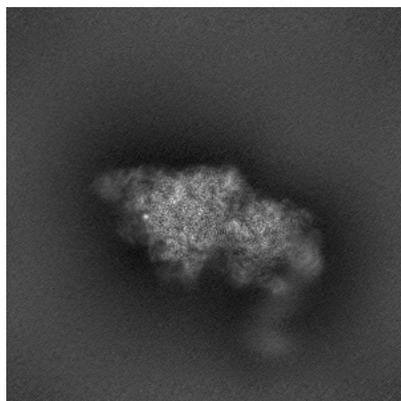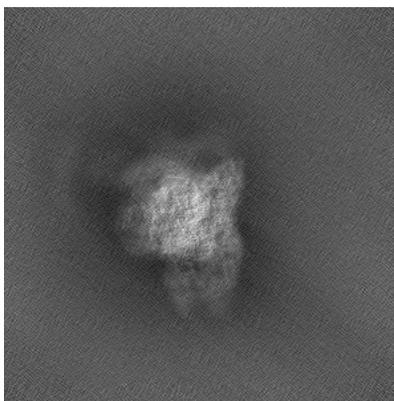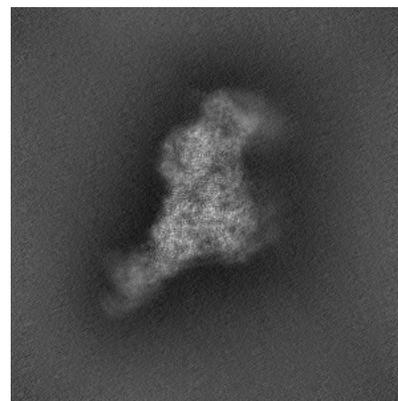
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
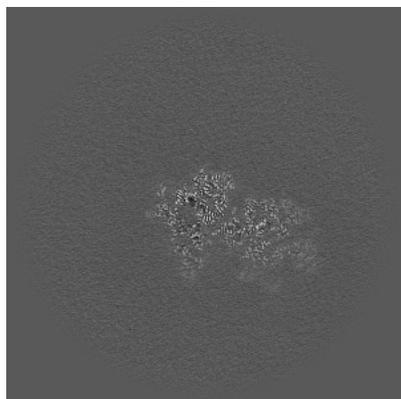
6.2.1 Primary map
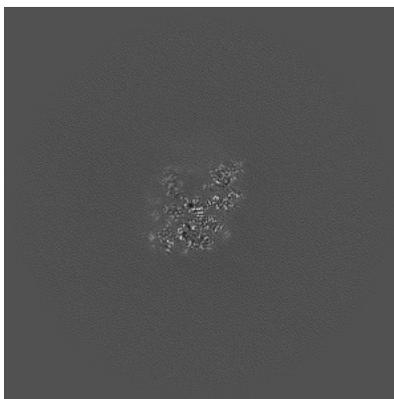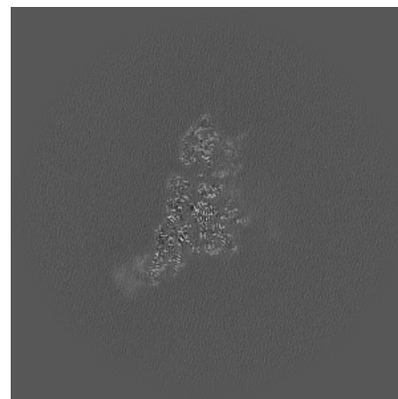
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6.2.2 Raw map
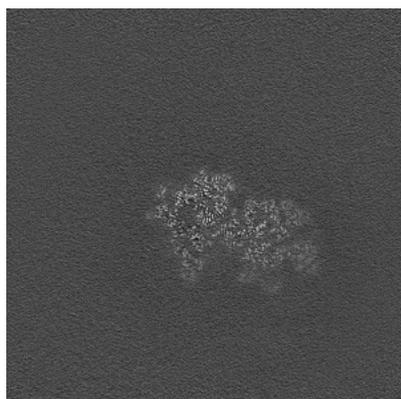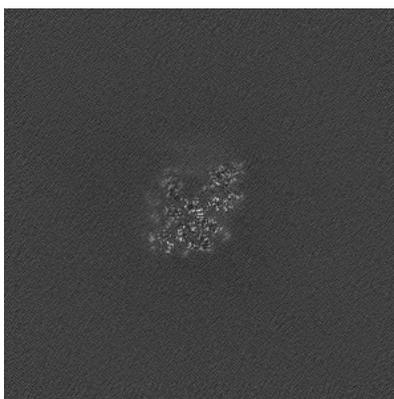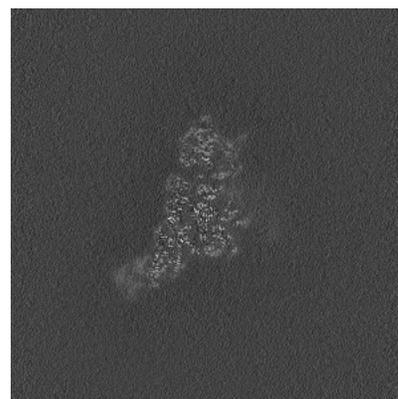
| X Index: 294 | Y Index: 294 | Z Index: 294 |

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

6.3 Largest variance slices ⓘ
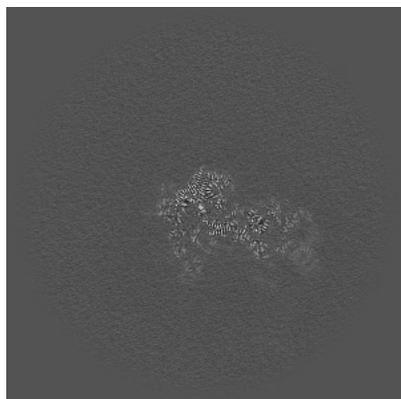
6.3.1 Primary map
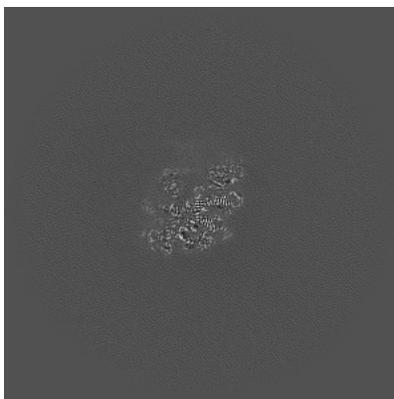
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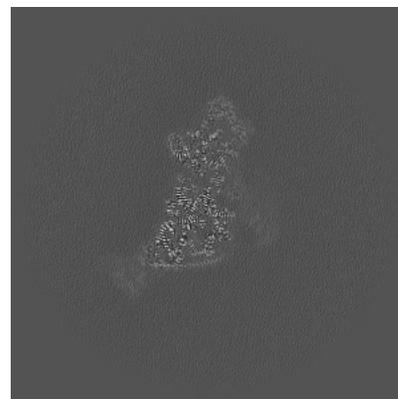
6.3.2 Raw map
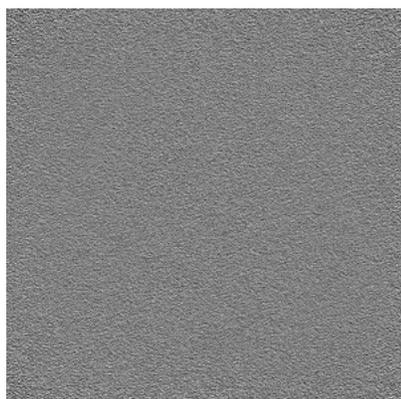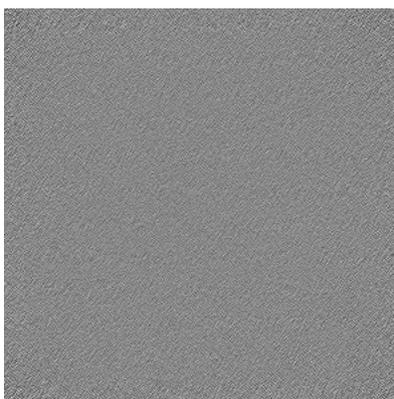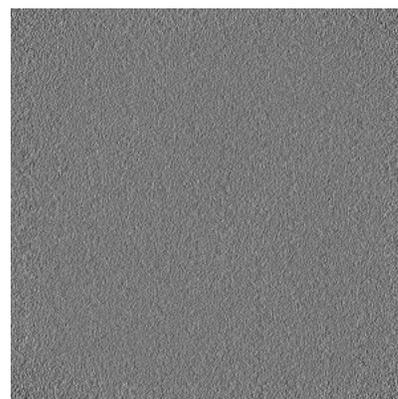
| X Index: 0 | Y Index: 0 | Z Index: 0 |

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

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

6.4.1   Primary map

| X | Y | Z |

6.4.2   Raw map

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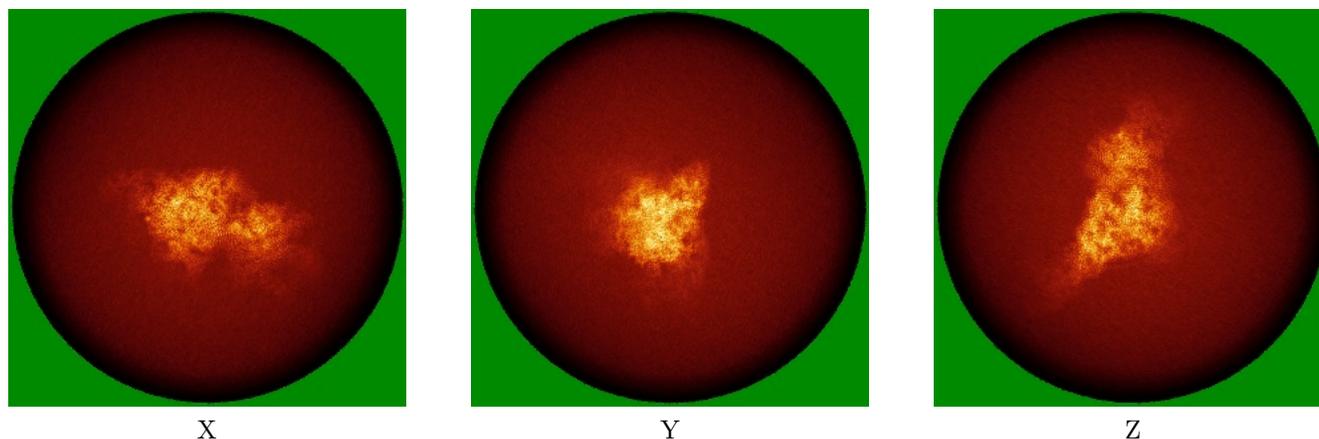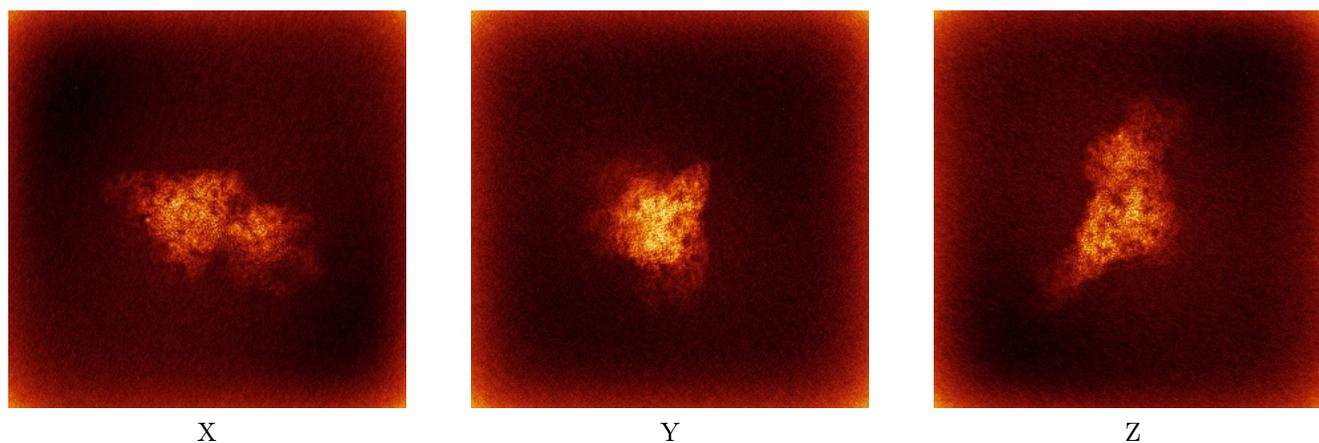
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

X   Y   Z

The images above show the 3D surface view of the map at the recommended contour level 0.0377. 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
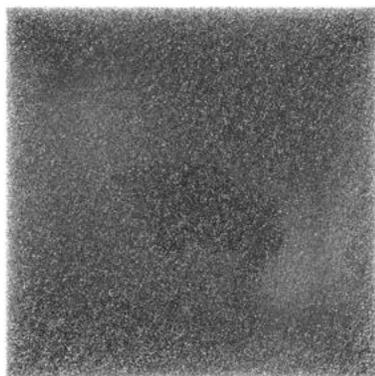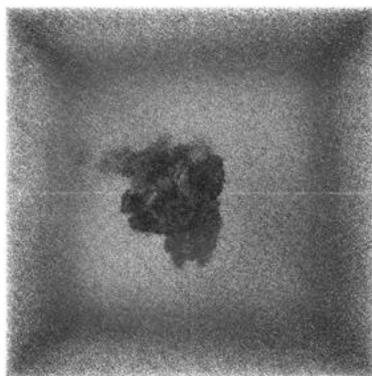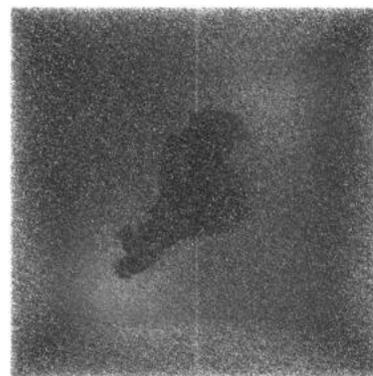
X   Y   Z

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 ⓘ

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_50014_msk_1.map ⓘ

X   Y   Z
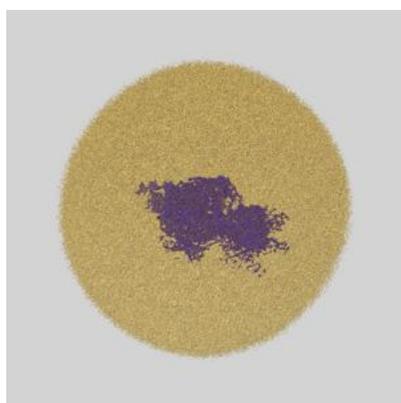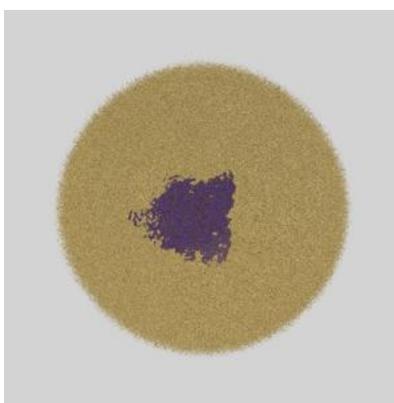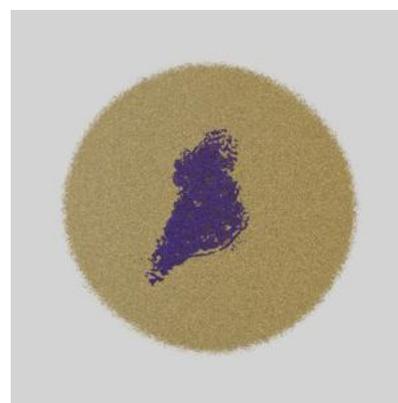
7 Map analysis ⓘ

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 ⓘ
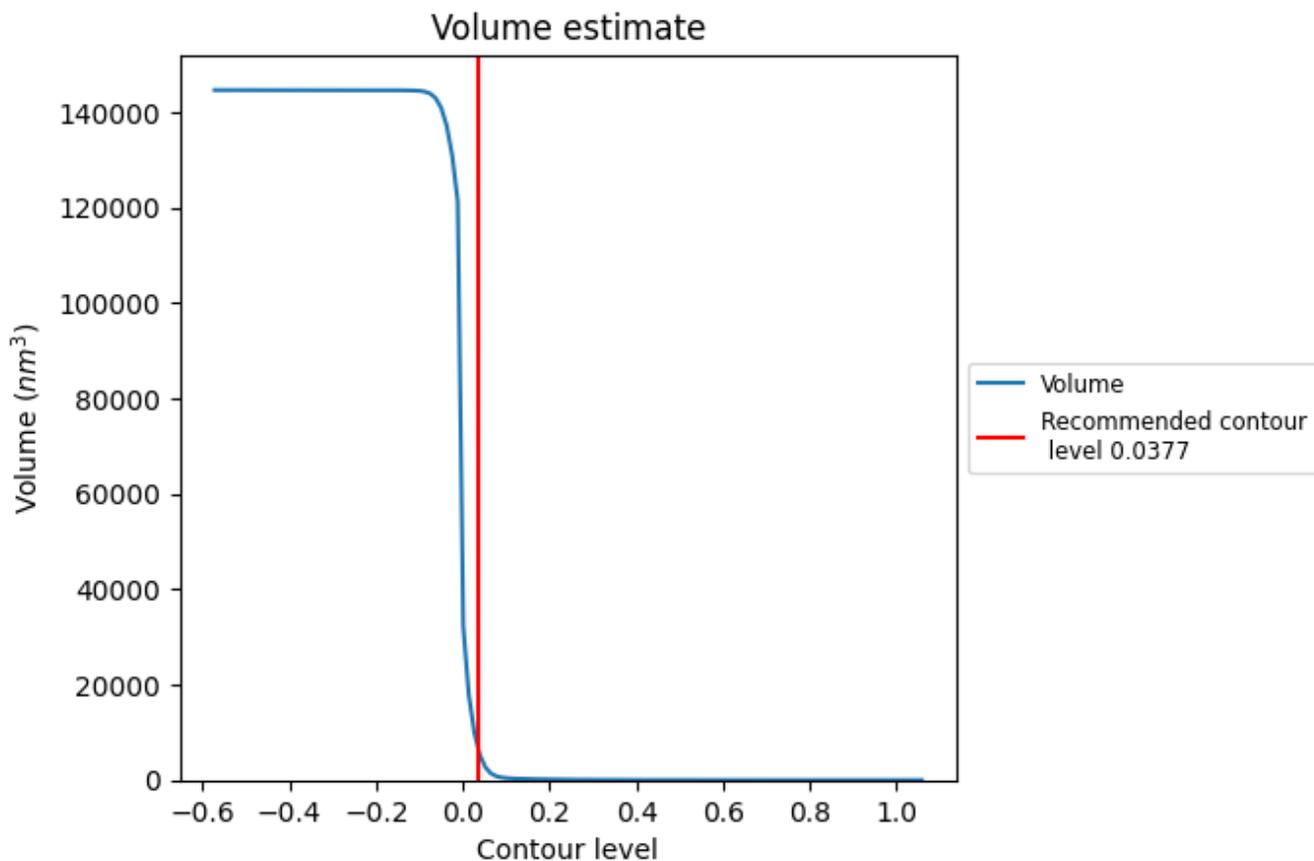
The volume at the recommended contour level is 5856 nm³; this corresponds to an approximate mass of 5290 kDa.

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 ⓘ
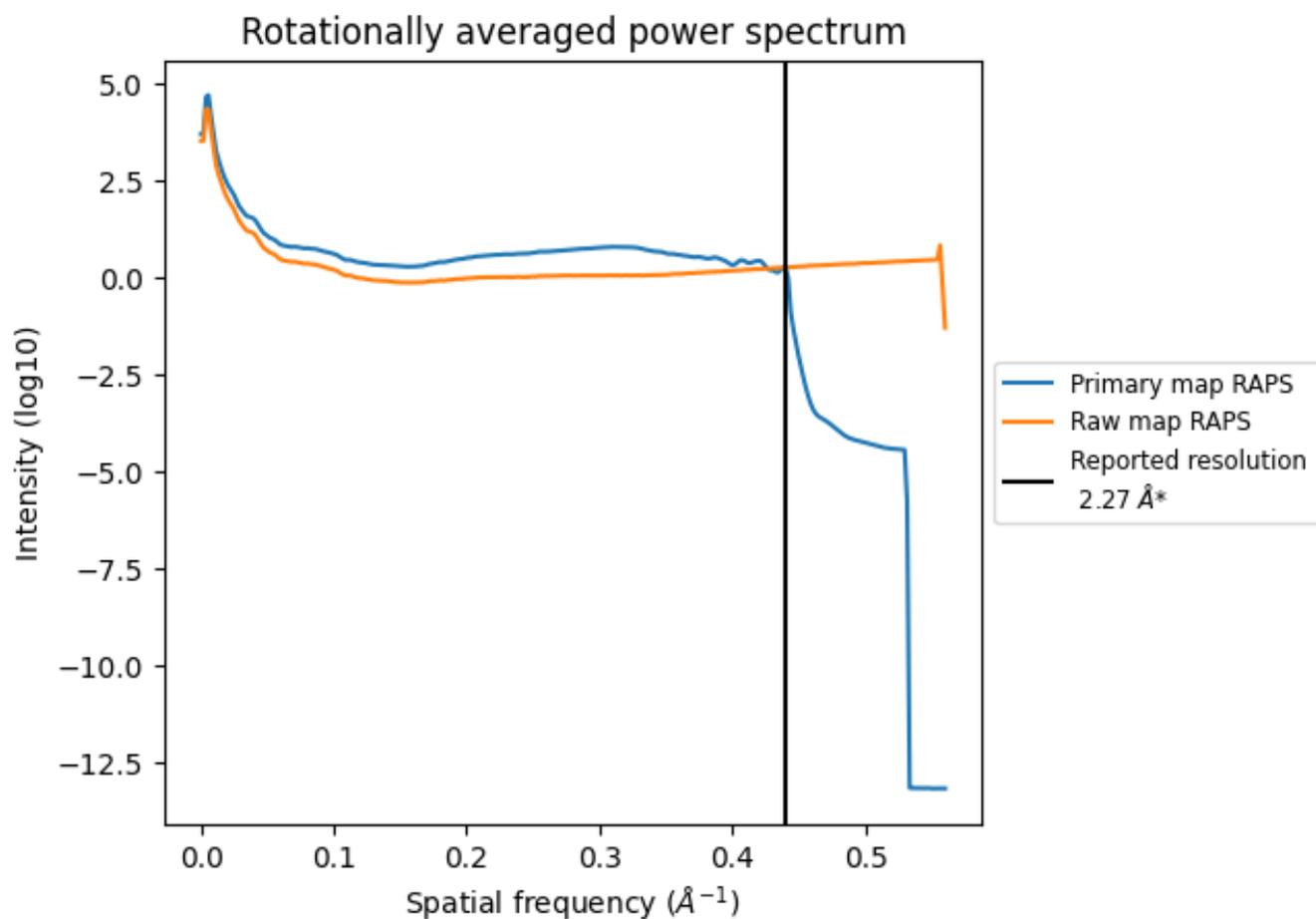
*Reported resolution corresponds to spatial frequency of 0.441 $\mathring{A}^{-1}$

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 ⓘ
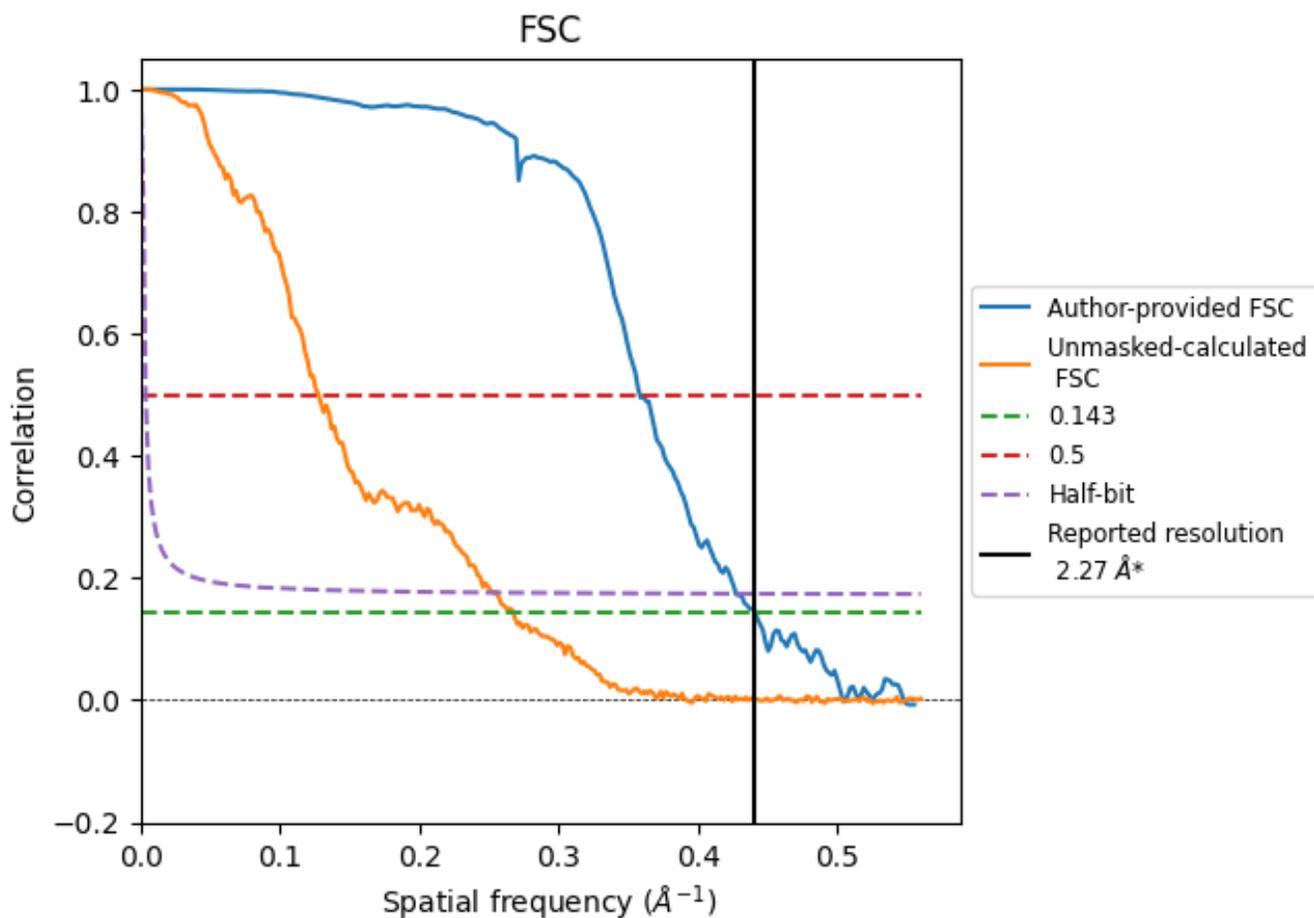
*Reported resolution corresponds to spatial frequency of 0.441 Å^{-1}

8.2 Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.27	-	-
Author-provided FSC curve	2.27	2.79	2.34
Unmasked-calculated*	3.74	7.82	3.95

*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 3.74 differs from the reported value 2.27 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-50014 and PDB model 9EVT. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay ⓘ
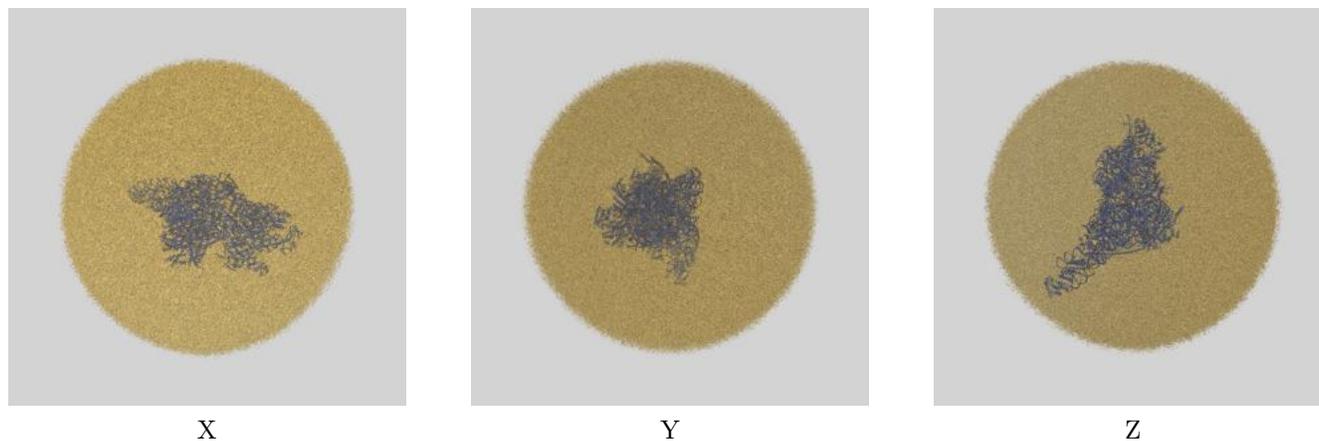
| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.0377 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 ⓘ

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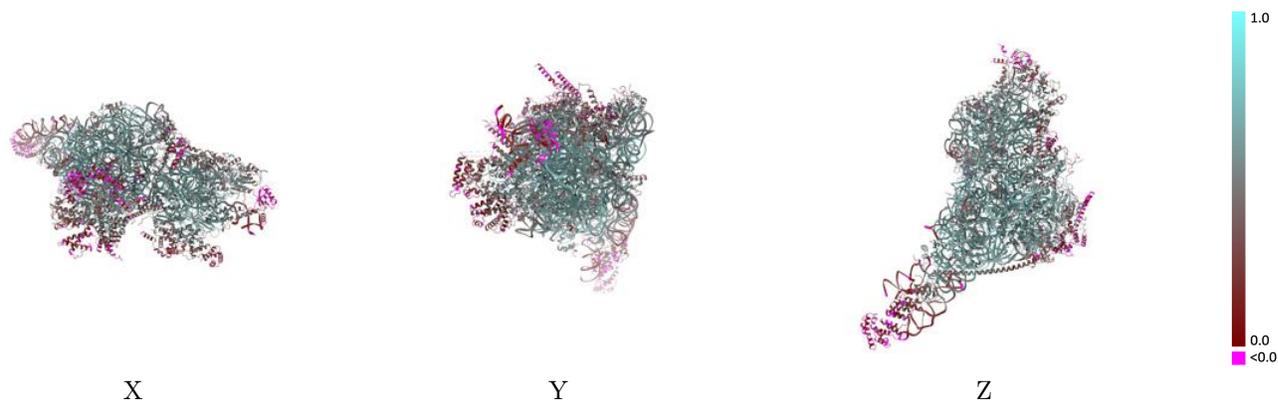
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

X   Y   Z
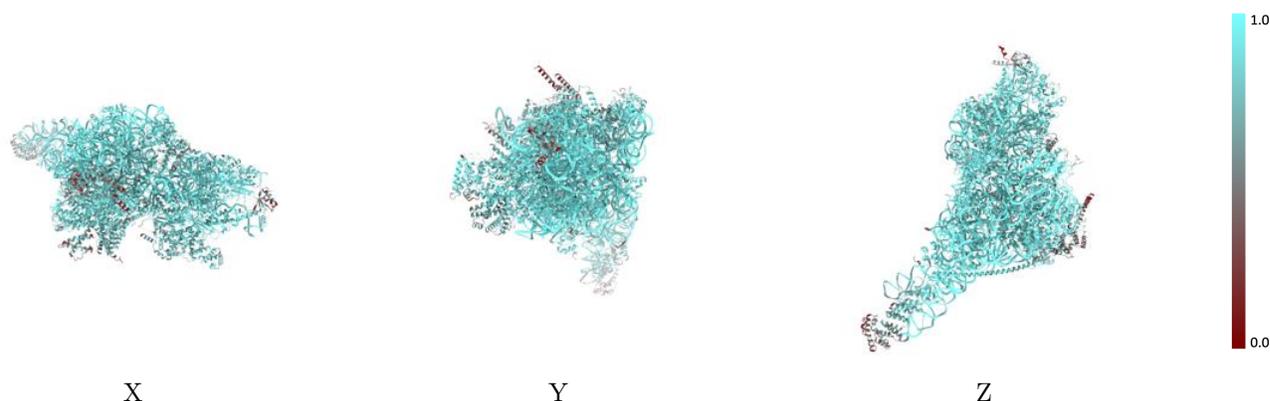
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0377).

9.4   Atom inclusion ⓘ
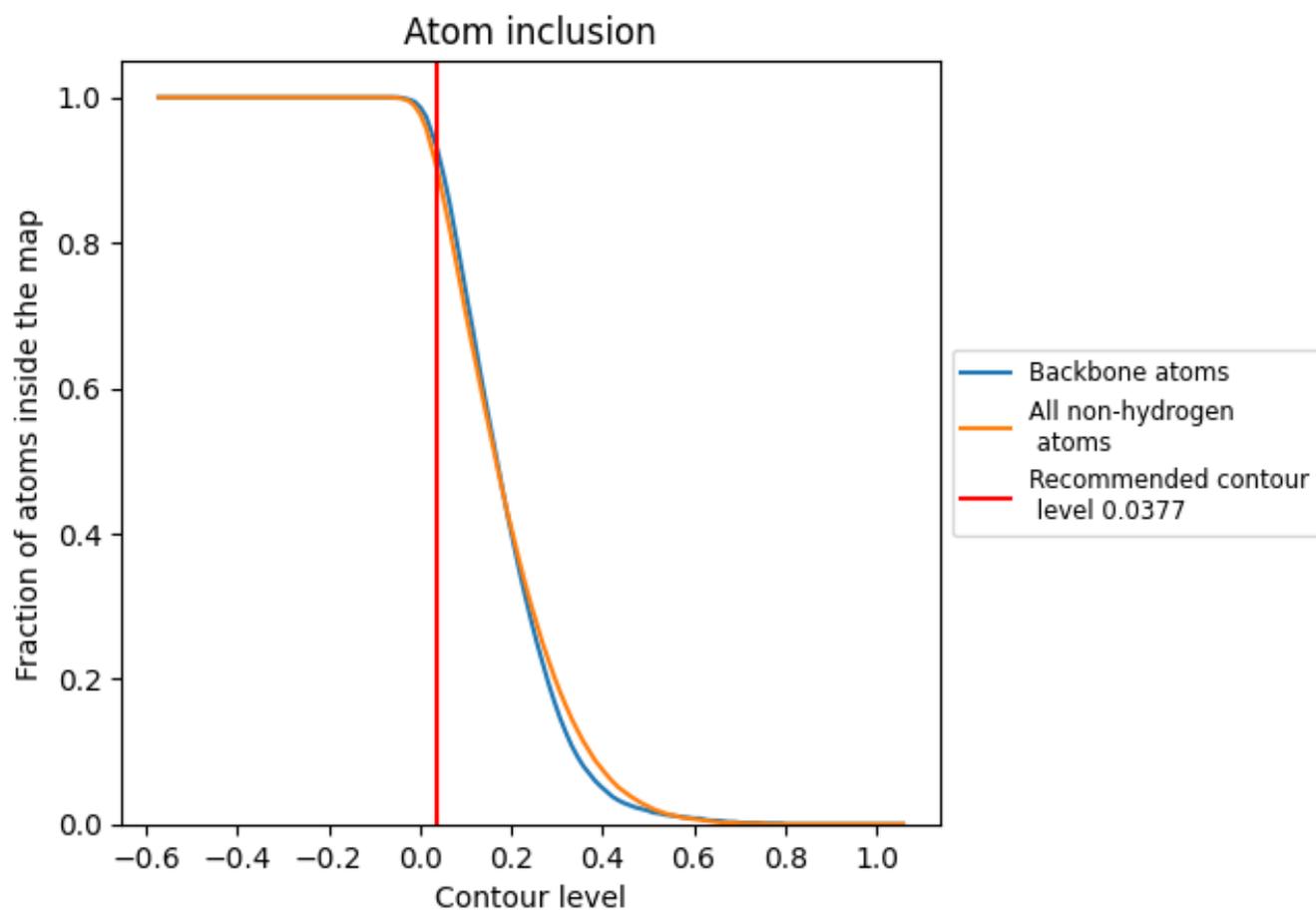
At the recommended contour level, 93% of all backbone atoms, 90% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.0377) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9010	0.5020
2	0.9740	0.5800
7	0.9100	0.5250
A	0.9270	0.5410
B	0.8560	0.4390
C	0.9460	0.5680
D	0.8790	0.4990
E	0.9420	0.5380
F	0.8380	0.3910
G	0.9690	0.6320
H	0.8250	0.4610
I	0.9630	0.6190
J	0.8640	0.4510
K	0.9590	0.6220
L	0.9010	0.4900
M	0.9680	0.6220
N	0.9220	0.5590
O	0.9820	0.6530
P	0.9430	0.5960
Q	0.8900	0.5110
R	0.6400	0.2540
S	0.8690	0.4610
T	0.9770	0.6230
U	0.6340	0.2520
V	0.8850	0.4630
W	0.8980	0.4600
X	0.8460	0.4240
Y	0.9150	0.5370
Z	0.9210	0.4870
a	0.8600	0.4050
b	0.5850	0.1760
c	0.8300	0.4810
d	0.9270	0.5540
e	0.9270	0.5540
f	0.8440	0.3950

1.0

0.0
<0.0

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
h	0.6240	0.1420
i	0.5840	0.1720
k	0.8490	0.3750