W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

wwPDB EM Validation Summary Report (i)

Jun 22, 2023 – 10:14 AM EDT

PDB ID	:	7U0G
EMDB ID	:	EMD-26258
Title	:	structure of LIN28b nucleosome bound 3 OCT4
Authors	:	Lian, T.; Guan, R.; Bai, Y.
Deposited on	:	2022-02-18
Resolution	:	2.60 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:
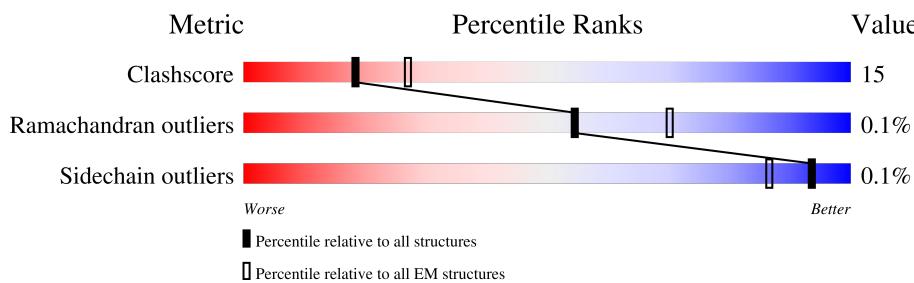
|		
EMDB validation analysis	:	0.0.1.dev50
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.33

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY
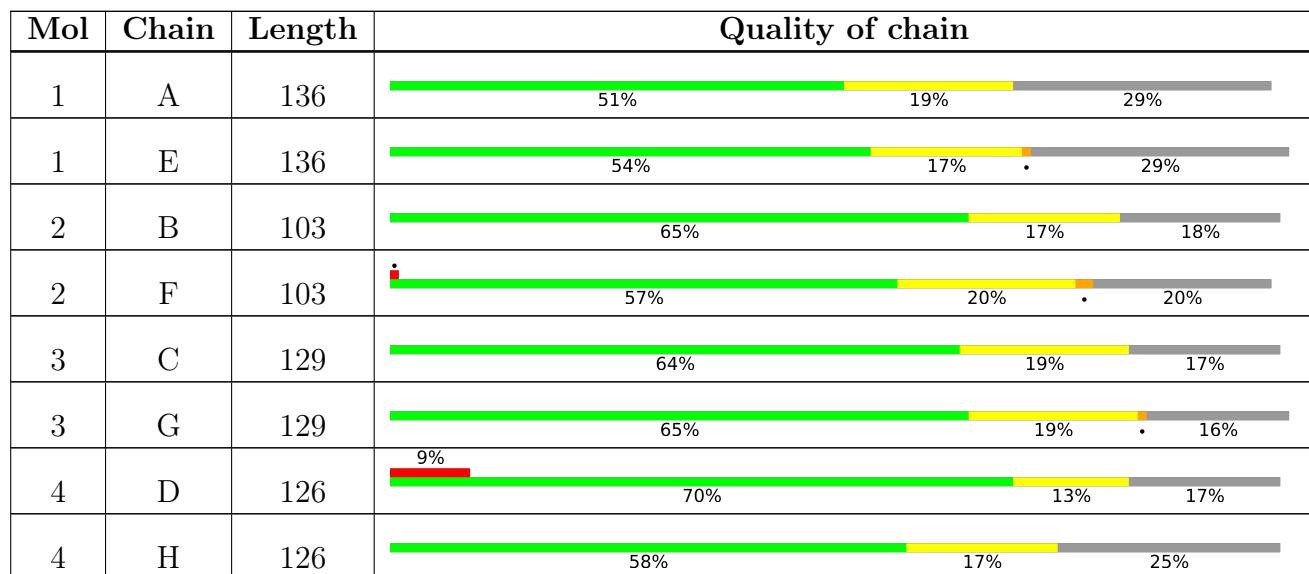
The reported resolution of this entry is 2.60 Å.

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		15
Ramachandran outliers		0.1%
Sidechain outliers		0.1%

Worse   *Better*

▌ Percentile relative to all structures

▯ Percentile relative to all EM structures
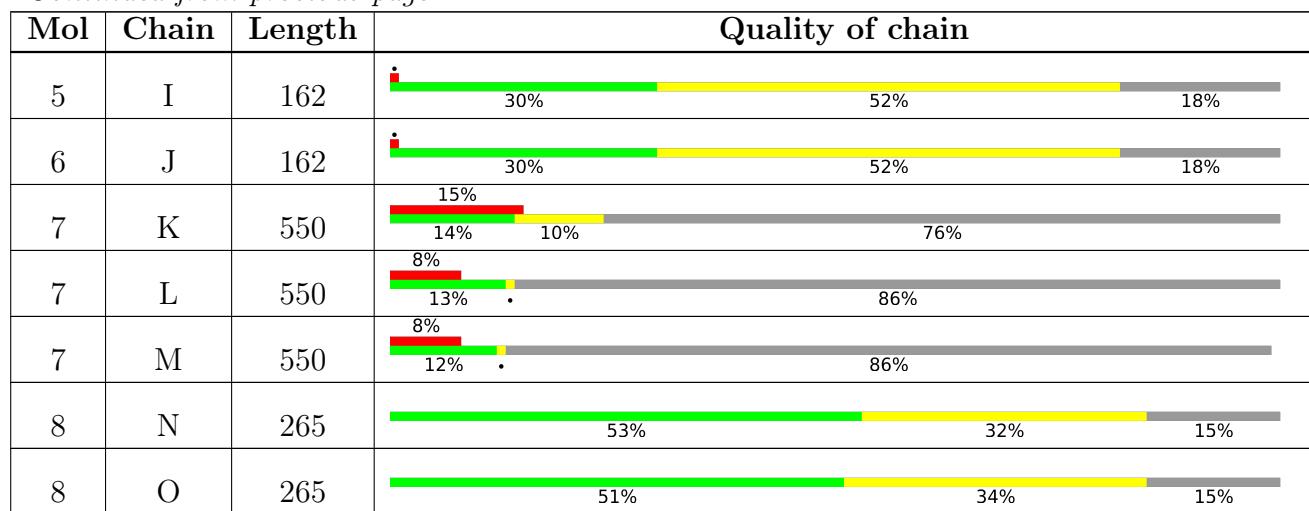
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	136	51% 19% 29%
1	E	136	54% 17% • 29%
2	B	103	65% 17% 18%
2	F	103	• 57% 20% • 20%
3	C	129	64% 19% 17%
3	G	129	65% 19% • 16%
4	D	126	9% 70% 13% 17%
4	H	126	58% 17% 25%

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Mol	Chain	Length	Quality of chain
5	I	162	30%　52%　18%
6	J	162	30%　52%　18%
7	K	550	15%　14%　10%　76%
7	L	550	8%　13%　86%
7	M	550	8%　12%　86%
8	N	265	53%　32%　15%
8	O	265	51%　34%　15%

2   Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 18571 atoms, of which 1244 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 Histone H3.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	96	Total	C	N	O	S	0	0
			790	499	151	136	4		
1	E	97	Total	C	N	O	S	0	0
			801	505	155	137	4		

- Molecule 2 is a protein called Histone H4.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	84	Total	C	N	O	S	0	0
			674	425	134	114	1		
2	F	82	Total	C	N	O	S	0	0
			653	412	127	113	1		

- Molecule 3 is a protein called Histone H2A type 2-C.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	107	Total	C	N	O	S	0	0
			816	515	158	142	1		
3	G	109	Total	C	N	O	S	0	0
			840	530	165	144	1		

- Molecule 4 is a protein called Histone H2B type 2-E.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	104	Total	C	N	O	S	0	0
			791	494	143	152	2		
4	H	95	Total	C	N	O	S	0	0
			747	468	136	141	2		

- Molecule 5 is a DNA chain called DNA (162-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
5	I	133	Total 2758	C 1310	N 535	O 780	P 133	0	0

- Molecule 6 is a DNA chain called DNA (162-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
6	J	133	Total 2695	C 1295	N 451	O 816	P 133	0	0

- Molecule 7 is a protein called Maltodextrin-binding protein,POU domain, class 5, transcription factor 1.

Mol	Chain	Residues	Atoms						AltConf	Trace
7	K	134	Total 1012	C 643	N 184	O 180	S 5		0	0
7	L	75	Total 1228	C 392	H 622	N 104	O 107	S 3	0	0
7	M	75	Total 1228	C 392	H 622	N 104	O 107	S 3	0	0

There are 99 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
K	-251	MET	-	initiating methionine	UNP A0A376KDN7
K	-250	LYS	-	expression tag	UNP A0A376KDN7
K	-249	GLU	-	expression tag	UNP A0A376KDN7
K	1	UNK	THR	conflict	UNP A0A376KDN7
K	114	ALA	LYS	conflict	UNP A0A376KDN7
K	115	ALA	ASP	conflict	UNP A0A376KDN7
K	119	ASN	-	linker	UNP A0A376KDN7
K	120	ALA	-	linker	UNP A0A376KDN7
K	121	GLY	-	linker	UNP A0A376KDN7
K	122	SER	-	linker	UNP A0A376KDN7
K	123	GLU	-	linker	UNP A0A376KDN7
K	124	ASN	-	linker	UNP A0A376KDN7
K	125	LEU	-	linker	UNP A0A376KDN7
K	126	TYR	-	linker	UNP A0A376KDN7
K	127	PHE	-	linker	UNP A0A376KDN7
K	128	GLN	-	linker	UNP A0A376KDN7
K	129	GLY	-	linker	UNP A0A376KDN7
K	130	SER	-	linker	UNP A0A376KDN7
K	131	VAL	-	linker	UNP A0A376KDN7
K	132	ASP	-	linker	UNP A0A376KDN7

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W O R L D W I D E
wwPDB
PROTEIN DATA BANK

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Chain	Residue	Modelled	Actual	Comment	Reference
K	133	SER	-	linker	UNP A0A376KDN7
K	134	ALA	-	linker	UNP A0A376KDN7
K	135	ALA	-	linker	UNP A0A376KDN7
K	136	ALA	-	linker	UNP A0A376KDN7
K	137	SER	-	linker	UNP A0A376KDN7
K	291	GLU	-	expression tag	UNP Q01860
K	292	PHE	-	expression tag	UNP Q01860
K	293	HIS	-	expression tag	UNP Q01860
K	294	HIS	-	expression tag	UNP Q01860
K	295	HIS	-	expression tag	UNP Q01860
K	296	HIS	-	expression tag	UNP Q01860
K	297	HIS	-	expression tag	UNP Q01860
K	298	HIS	-	expression tag	UNP Q01860
L	-251	MET	-	initiating methionine	UNP A0A376KDN7
L	-250	LYS	-	expression tag	UNP A0A376KDN7
L	-249	GLU	-	expression tag	UNP A0A376KDN7
L	1	UNK	THR	conflict	UNP A0A376KDN7
L	114	ALA	LYS	conflict	UNP A0A376KDN7
L	115	ALA	ASP	conflict	UNP A0A376KDN7
L	119	ASN	-	linker	UNP A0A376KDN7
L	120	ALA	-	linker	UNP A0A376KDN7
L	121	GLY	-	linker	UNP A0A376KDN7
L	122	SER	-	linker	UNP A0A376KDN7
L	123	GLU	-	linker	UNP A0A376KDN7
L	124	ASN	-	linker	UNP A0A376KDN7
L	125	LEU	-	linker	UNP A0A376KDN7
L	126	TYR	-	linker	UNP A0A376KDN7
L	127	PHE	-	linker	UNP A0A376KDN7
L	128	GLN	-	linker	UNP A0A376KDN7
L	129	GLY	-	linker	UNP A0A376KDN7
L	130	SER	-	linker	UNP A0A376KDN7
L	131	VAL	-	linker	UNP A0A376KDN7
L	132	ASP	-	linker	UNP A0A376KDN7
L	133	SER	-	linker	UNP A0A376KDN7
L	134	ALA	-	linker	UNP A0A376KDN7
L	135	ALA	-	linker	UNP A0A376KDN7
L	136	ALA	-	linker	UNP A0A376KDN7
L	137	SER	-	linker	UNP A0A376KDN7
L	291	GLU	-	expression tag	UNP Q01860
L	292	PHE	-	expression tag	UNP Q01860
L	293	HIS	-	expression tag	UNP Q01860
L	294	HIS	-	expression tag	UNP Q01860

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
L	295	HIS	-	expression tag	UNP Q01860
L	296	HIS	-	expression tag	UNP Q01860
L	297	HIS	-	expression tag	UNP Q01860
L	298	HIS	-	expression tag	UNP Q01860
M	-251	MET	-	initiating methionine	UNP A0A376KDN7
M	-250	LYS	-	expression tag	UNP A0A376KDN7
M	-249	GLU	-	expression tag	UNP A0A376KDN7
M	1	UNK	THR	conflict	UNP A0A376KDN7
M	114	ALA	LYS	conflict	UNP A0A376KDN7
M	115	ALA	ASP	conflict	UNP A0A376KDN7
M	119	ASN	-	linker	UNP A0A376KDN7
M	120	ALA	-	linker	UNP A0A376KDN7
M	121	GLY	-	linker	UNP A0A376KDN7
M	122	SER	-	linker	UNP A0A376KDN7
M	123	GLU	-	linker	UNP A0A376KDN7
M	124	ASN	-	linker	UNP A0A376KDN7
M	125	LEU	-	linker	UNP A0A376KDN7
M	126	TYR	-	linker	UNP A0A376KDN7
M	127	PHE	-	linker	UNP A0A376KDN7
M	128	GLN	-	linker	UNP A0A376KDN7
M	129	GLY	-	linker	UNP A0A376KDN7
M	130	SER	-	linker	UNP A0A376KDN7
M	131	VAL	-	linker	UNP A0A376KDN7
M	132	ASP	-	linker	UNP A0A376KDN7
M	133	SER	-	linker	UNP A0A376KDN7
M	134	ALA	-	linker	UNP A0A376KDN7
M	135	ALA	-	linker	UNP A0A376KDN7
M	136	ALA	-	linker	UNP A0A376KDN7
M	137	SER	-	linker	UNP A0A376KDN7
M	291	GLU	-	expression tag	UNP Q01860
M	292	PHE	-	expression tag	UNP Q01860
M	293	HIS	-	expression tag	UNP Q01860
M	294	HIS	-	expression tag	UNP Q01860
M	295	HIS	-	expression tag	UNP Q01860
M	296	HIS	-	expression tag	UNP Q01860
M	297	HIS	-	expression tag	UNP Q01860
M	298	HIS	-	expression tag	UNP Q01860

- Molecule 8 is a protein called Single-chain variable fragment.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	N	226	1769	1115	289	357	8	0	0

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WORLDWIDE
wwPDB
PROTEIN DATA BANK
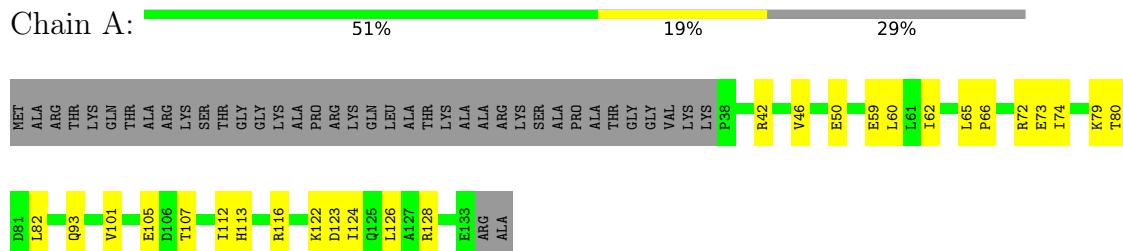
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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	O	226	1769	1115	289	357	8	0	0
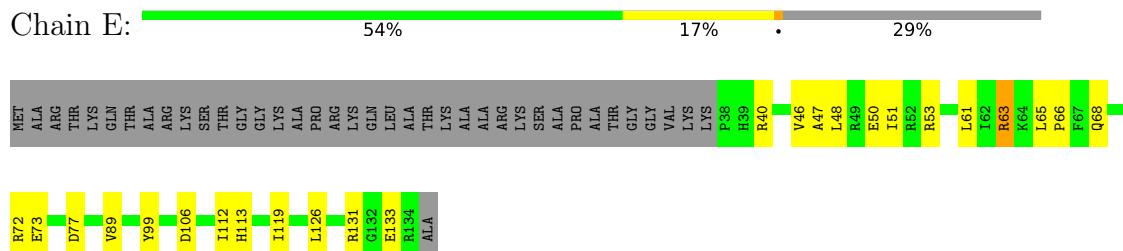
3 Residue-property plots ⓘ

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.
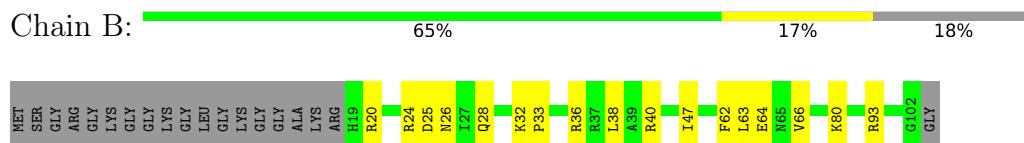
- Molecule 1: Histone H3.1

Chain A:

- Molecule 1: Histone H3.1

Chain E:

- Molecule 2: Histone H4
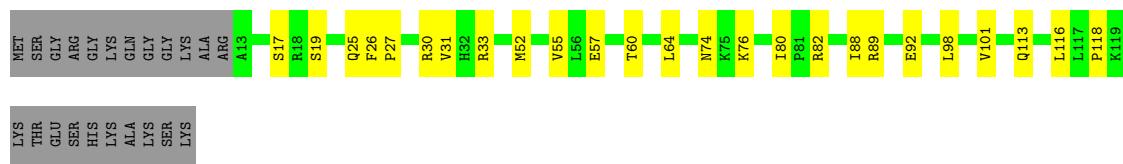
Chain B:

- Molecule 2: Histone H4

Chain F:

• Molecule 3: Histone H2A type 2-C

Chain C:

• Molecule 3: Histone H2A type 2-C

Chain G:

• Molecule 4: Histone H2B type 2-E

Chain D:

• Molecule 4: Histone H2B type 2-E

Chain H:

• Molecule 5: DNA (162-MER)

Chain I:

• Molecule 6: DNA (162-MER)

Chain J:

30%　52%　18%

DT DG DT C4 T5 T6 T7 A8 T9 T10 C11 A12 C13 A14 A15 G16 C17 T18 T19 G20 C21 A22 C23 A24 A25 T30 G31 C32 T33 A36 C37 A38 T43 G44 A45 G46 T47 G48 A49 T50 G51 G52 C53 A54 G55 C56 T57 C58 C59 C60 A61 C62 C63 T64 T65 T66 C67

C68 T69 T73 C74 C75 T76 T77 C78 A79 C80 T81 C86 T87 T96 C100 A101 T104 G105 T106 A107 T108 T109 T112 G113 G116 T117 A118 T122 C123 C124 A125 T126 G127 T128 C134 T135 C136 DA DC DC DA DC DT DG DA DG DA DT DT

DG DT DT DA DA DT DA DC DA DC DT

• Molecule 7: Maltodextrin-binding protein,POU domain, class 5, transcription factor 1

15%

Chain K:

14%　10%　76%

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

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

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

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

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

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

VAL ASP ALA LEU ALA ALA ALA GLN THR ASN ALA GLY SER GLU LEU ASN LEU TYR PHE GLN GLY SER VAL ASP SER ALA ALA SER ASP ILE **K140 A141 L142 Q143 K144 E145** L146 **F149 A150** K151 **L152 L153** K154 Q155 K156 R157 I158 T159 L160 G161 Y162 T163 Q164 A165 D166 V167 G168 L169**

T170 L171 G172 V173 L174 F175 G176 K177 V178 Q181 T182 T183 I184 C185 R186 F187 **E188 A189** L190 Q191 L192 S193 F194 **K195 N196** M197 **L200** R201 P202 **L203 L204** Q205 K206 **W207** E210 **A211 D212 N213 N214** GLN ASN LEU GLN GLU ILE CYS LYS ALA GLU THR LEU VAL GLN **A229 R230 K231 R232**

K233 R234 T235 S236 I237 E238 N239 R240 V241 R242 G243 N244 L245 E246 N247 L248 F249 L250 Q251 C252 P253 K254 P255 T256 L257 Q258 Q259 I260 S261 H262 I263 A264 Q265 Q266 L267 G268 L269 E270 K271 D272 V273 V274 R275 V276 W277 F278 C279 N280 R281 R282 Q283 K284 G285 K286 R287 SER SER GLU PHE

HIS HIS HIS HIS HIS HIS

• Molecule 7: Maltodextrin-binding protein,POU domain, class 5, transcription factor 1

8%

Chain L:

13%　86%

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

• Molecule 7: Maltodextrin-binding protein,POU domain, class 5, transcription factor 1

Chain M:

8%

12%   •   86%

• Molecule 8: Single-chain variable fragment

Chain N:

• Molecule 8: Single-chain variable fragment

Chain O:

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	112532	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/Å^2)$	53.8	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.478	Depositor
Minimum map value	-0.934	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.067	Depositor
Recommended contour level	0.17	Depositor
Map size (Å)	253.44, 253.44, 253.44	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.056, 1.056, 1.056	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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	0.32	0/802	0.53	0/1076
1	E	0.50	1/813 (0.1%)	0.54	0/1090
2	B	0.44	1/682 (0.1%)	0.58	0/914
2	F	0.44	0/660	0.67	2/883 (0.2%)
3	C	0.42	1/826 (0.1%)	0.63	2/1114 (0.2%)
3	G	0.44	2/850 (0.2%)	0.62	2/1143 (0.2%)
4	D	0.36	0/802	0.53	1/1079 (0.1%)
4	H	0.40	0/758	0.49	0/1016
5	I	0.54	0/3106	0.94	0/4797
6	J	0.52	0/3010	0.98	0/4638
7	K	0.26	0/1025	0.64	3/1385 (0.2%)
7	L	0.34	0/614	0.75	2/822 (0.2%)
7	M	0.35	0/614	0.67	0/822
8	N	0.33	0/1811	0.63	3/2454 (0.1%)
8	O	0.33	0/1811	0.63	2/2454 (0.1%)
All	All	0.43	5/18184 (0.0%)	0.76	17/25687 (0.1%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	52	MET	C-O	-5.58	1.12	1.23
1	E	63	ARG	C-O	-5.50	1.12	1.23
3	G	52	MET	C-O	-5.07	1.13	1.23
2	B	93	ARG	C-O	-5.03	1.13	1.23
3	G	52	MET	CG-SD	-5.01	1.68	1.81

The worst 5 of 17 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	N	186	ASP	CB-CG-OD1	9.98	127.29	118.30
7	K	153	LEU	CA-CB-CG	9.76	137.75	115.30
8	O	186	ASP	CB-CG-OD1	9.69	127.02	118.30
2	F	24	ASP	CB-CG-OD1	7.87	125.38	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	N	95	ASP	CB-CG-OD1	7.85	125.37	118.30

There are no chirality outliers.

There are no planarity outliers.

5.2   Too-close contacts   ⓘ

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	790	0	826	19	0
1	E	801	0	839	28	0
2	B	674	0	715	16	0
2	F	653	0	696	16	0
3	C	816	0	869	21	0
3	G	840	0	906	30	0
4	D	791	0	790	14	0
4	H	747	0	771	18	0
5	I	2758	0	1494	83	0
6	J	2695	0	1512	90	0
7	K	1012	0	974	51	0
7	L	606	622	640	2	0
7	M	606	622	640	5	0
8	N	1769	0	1708	66	0
8	O	1769	0	1708	88	0
All	All	17327	1244	15088	473	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 15.

The worst 5 of 473 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:E:63:ARG:NH2	6:J:65:DT:H5"	1.49	1.27
3:G:89:ARG:HB3	3:G:109:LEU:HD11	1.29	1.12
1:E:63:ARG:HH22	6:J:65:DT:C5'	1.71	1.02
1:E:63:ARG:NH2	6:J:65:DT:C5'	2.23	1.00

Continued on next page...

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:63:ARG:HH22	6:J:65:DT:H5"	0.79	0.94

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	94/136 (69%)	94 (100%)	0	0	100	100
1	E	95/136 (70%)	95 (100%)	0	0	100	100
2	B	82/103 (80%)	77 (94%)	5 (6%)	0	100	100
2	F	80/103 (78%)	77 (96%)	3 (4%)	0	100	100
3	C	105/129 (81%)	97 (92%)	8 (8%)	0	100	100
3	G	107/129 (83%)	105 (98%)	1 (1%)	1 (1%)	17	35
4	D	102/126 (81%)	95 (93%)	7 (7%)	0	100	100
4	H	93/126 (74%)	89 (96%)	4 (4%)	0	100	100
7	K	130/550 (24%)	127 (98%)	3 (2%)	0	100	100
7	L	73/550 (13%)	73 (100%)	0	0	100	100
7	M	73/550 (13%)	73 (100%)	0	0	100	100
8	N	222/265 (84%)	209 (94%)	13 (6%)	0	100	100
8	O	222/265 (84%)	210 (95%)	12 (5%)	0	100	100
All	All	1478/3168 (47%)	1421 (96%)	56 (4%)	1 (0%)	54	75

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	G	14	LYS

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	84/111 (76%)	84 (100%)	0	100	100
1	E	85/111 (77%)	85 (100%)	0	100	100
2	B	69/79 (87%)	69 (100%)	0	100	100
2	F	67/79 (85%)	66 (98%)	1 (2%)	65	83
3	C	82/99 (83%)	82 (100%)	0	100	100
3	G	85/99 (86%)	85 (100%)	0	100	100
4	D	83/106 (78%)	83 (100%)	0	100	100
4	H	82/106 (77%)	82 (100%)	0	100	100
7	K	97/451 (22%)	97 (100%)	0	100	100
7	L	66/451 (15%)	66 (100%)	0	100	100
7	M	66/451 (15%)	66 (100%)	0	100	100
8	N	199/224 (89%)	199 (100%)	0	100	100
8	O	199/224 (89%)	199 (100%)	0	100	100
All	All	1264/2591 (49%)	1263 (100%)	1 (0%)	93	98

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	F	92	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
3	G	32	HIS
7	K	164	GLN
7	K	283	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.
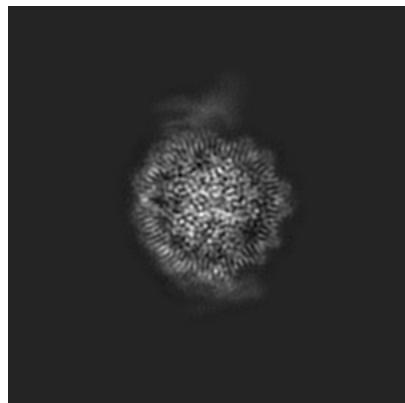
6   Map visualisation (i)

This section contains visualisations of the EMDB entry EMD-26258. These allow visual inspection of the internal detail of the map and identification of artifacts.
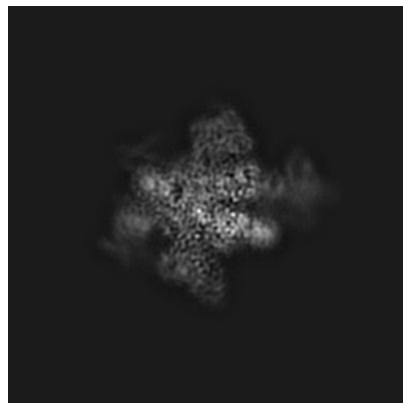
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1   Orthogonal projections (i)
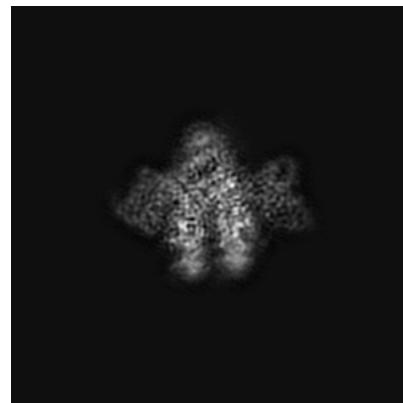
6.1.1   Primary map

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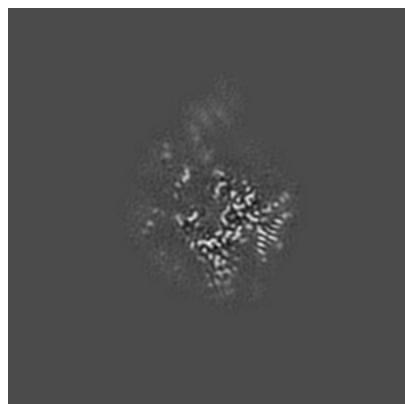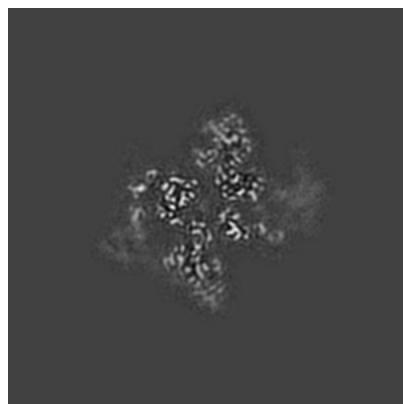
The images above show the map projected in three orthogonal directions.

6.2   Central slices (i)
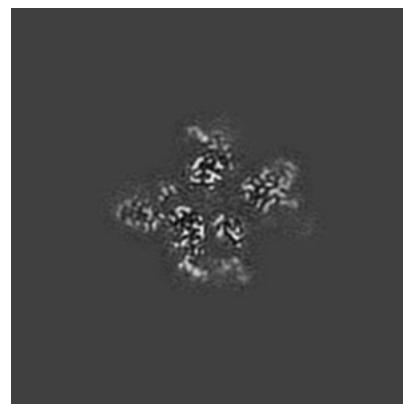
6.2.1   Primary map

X Index: 120   Y Index: 120   Z Index: 120
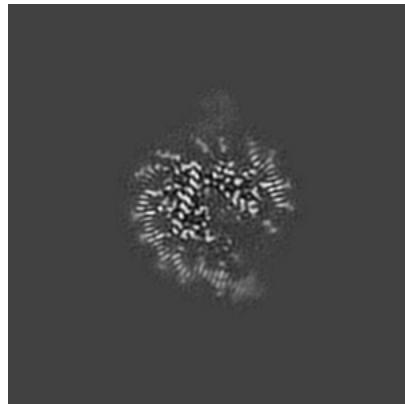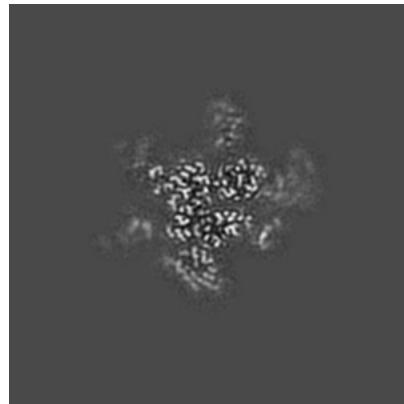
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices ⓘ
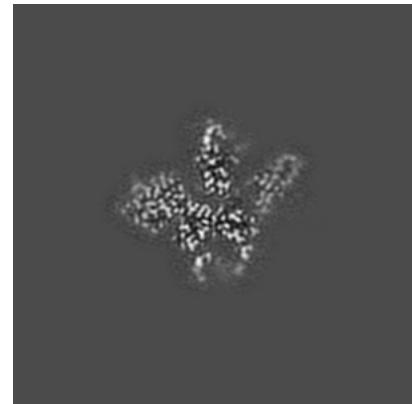
6.3.1 Primary map

X Index: 111	Y Index: 110	Z Index: 114
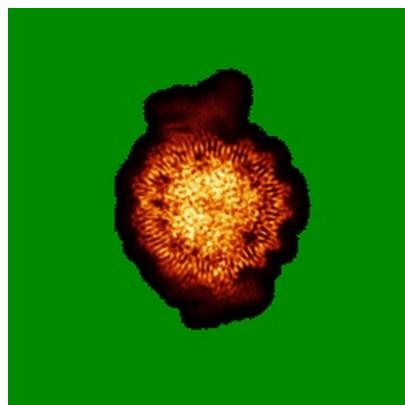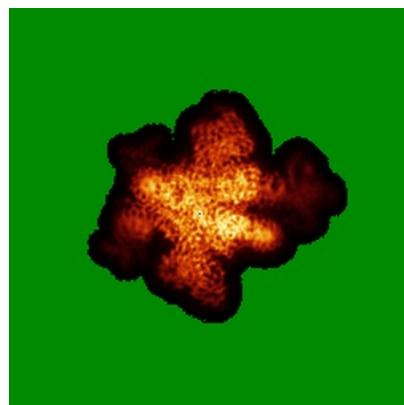
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ
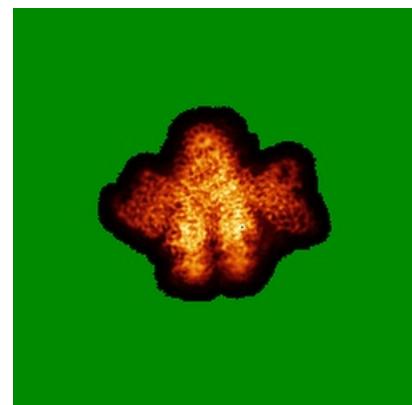
6.4.1 Primary map

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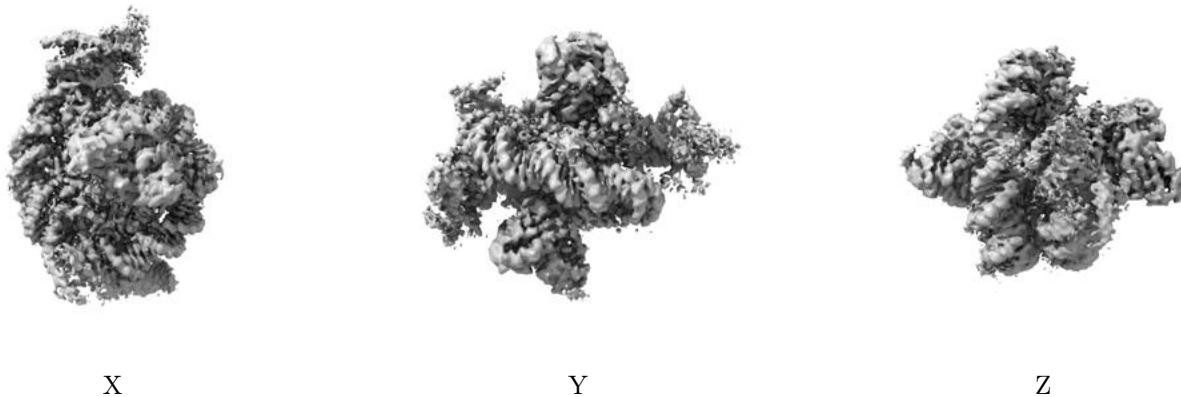
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

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 0.17. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.
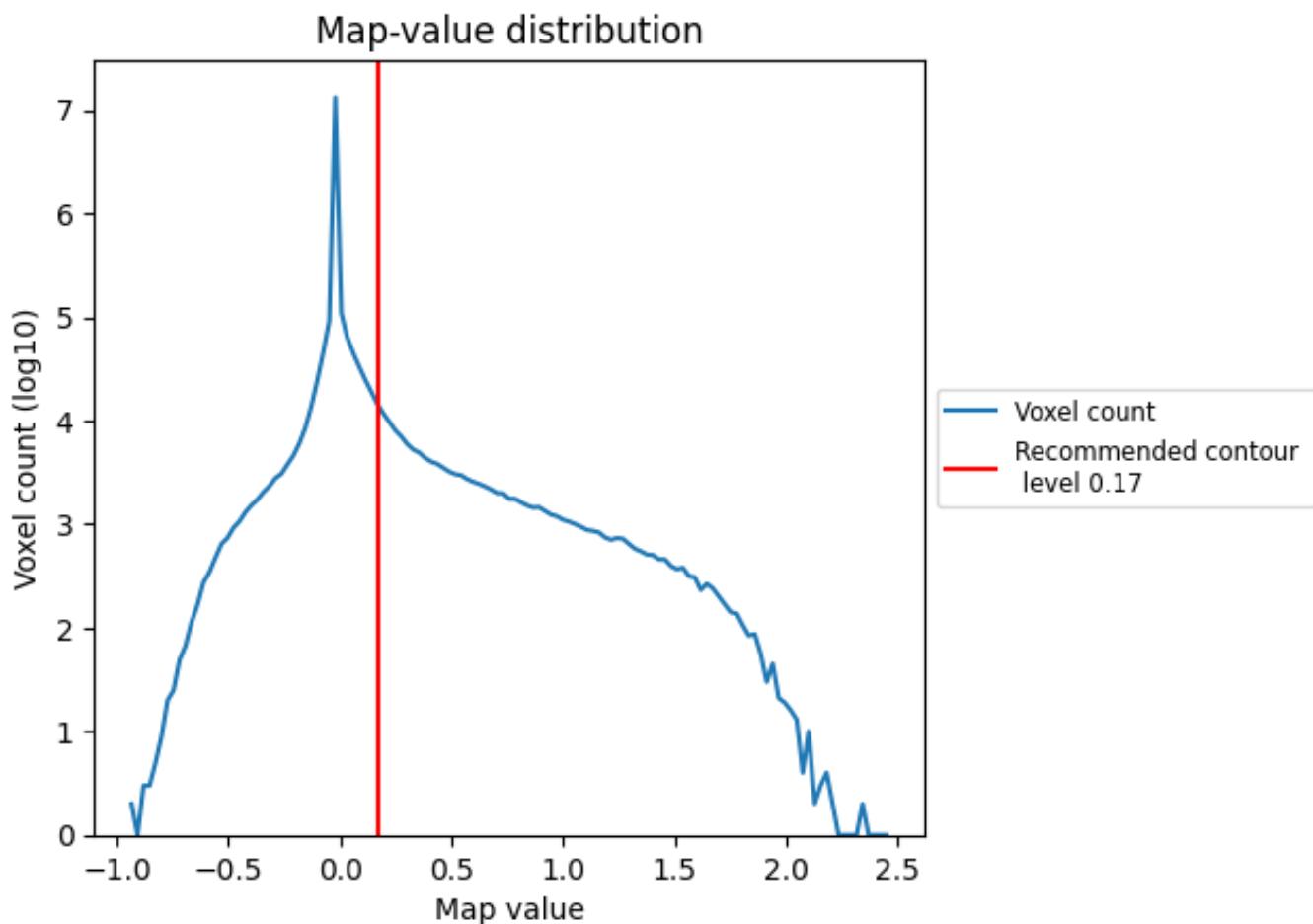
6.6 Mask visualisation (i)

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

7 Map analysis ⓘ
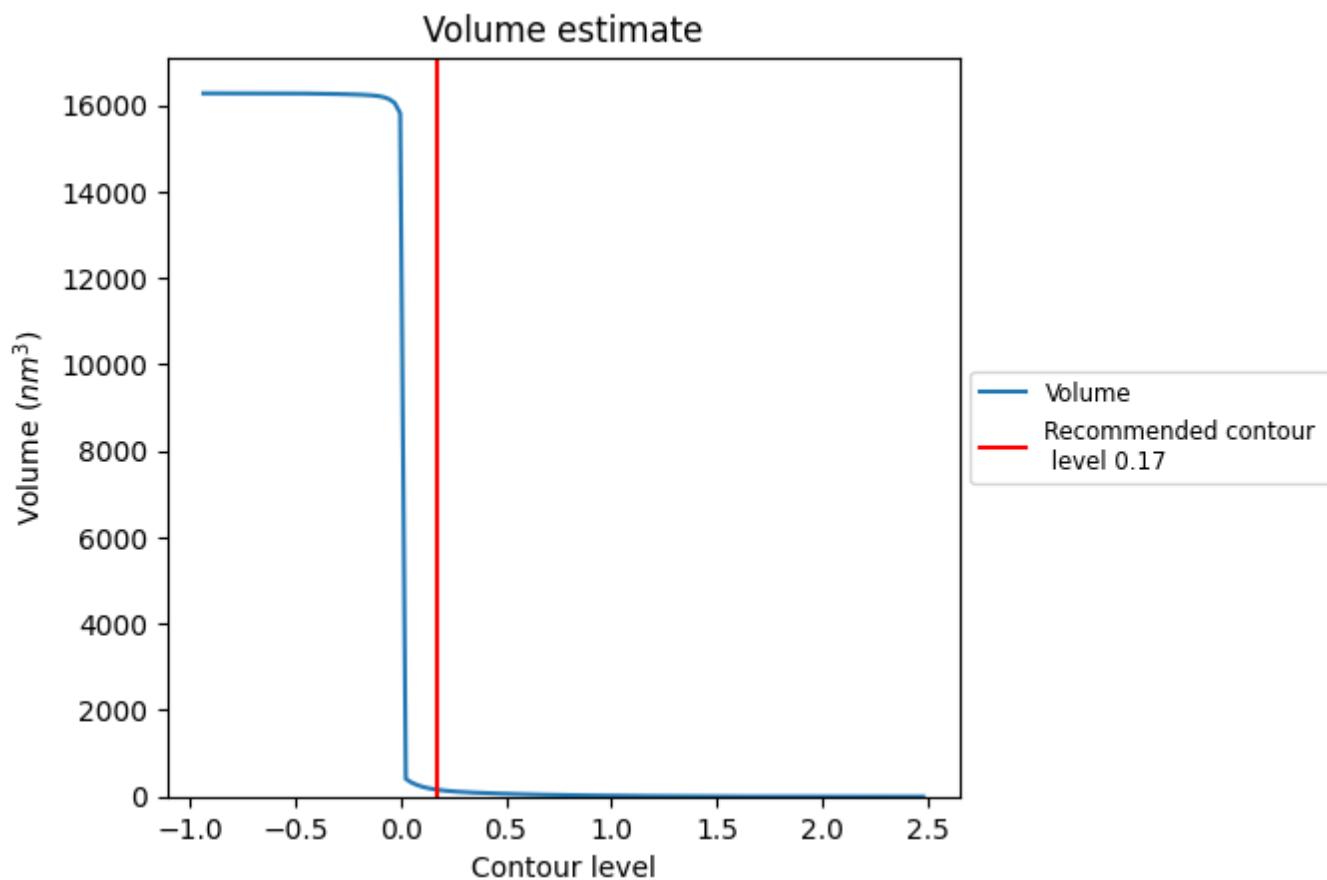
This section contains the results of statistical analysis of the map.

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.
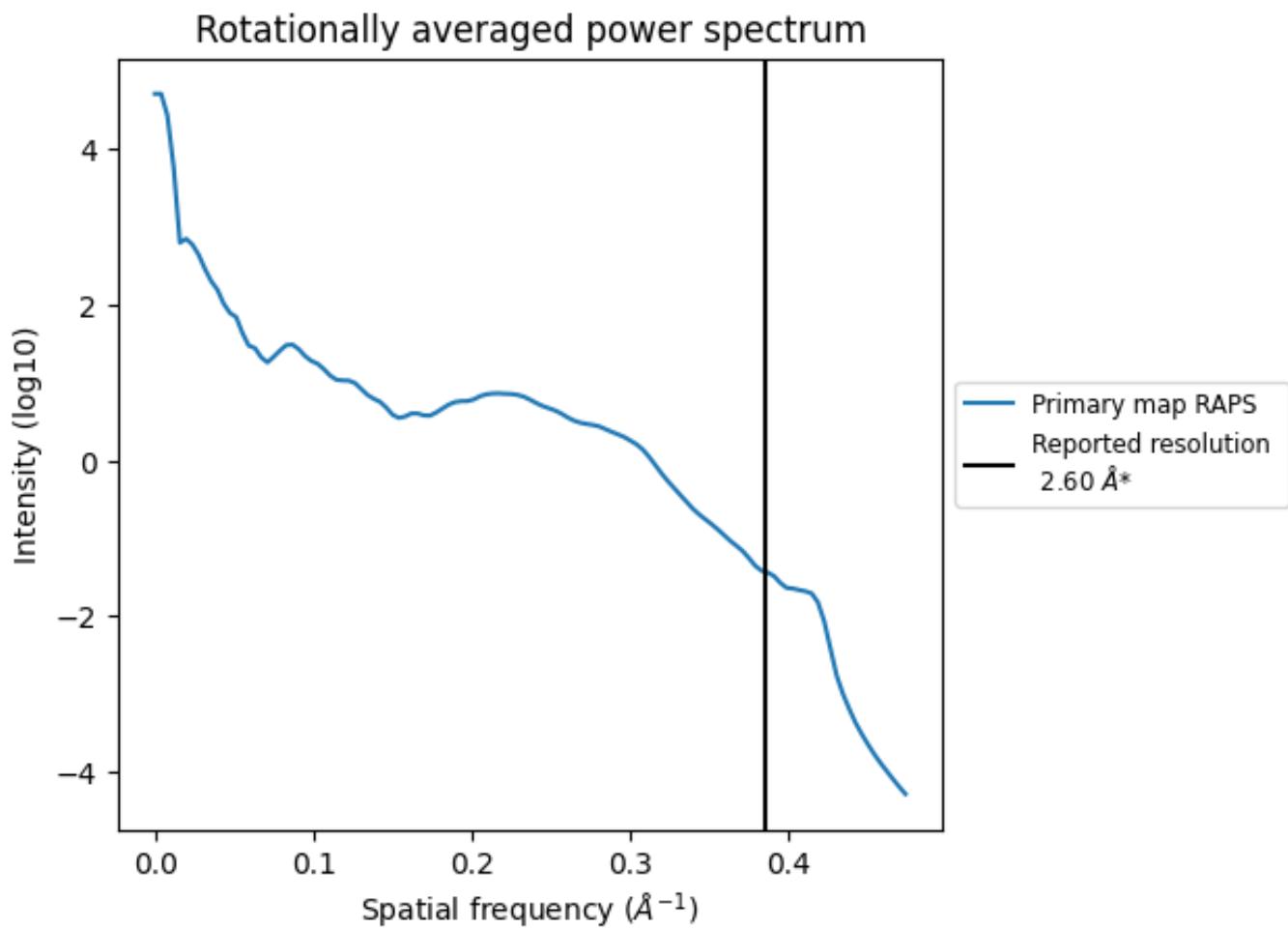
7.2   Volume estimate (i)

The volume at the recommended contour level is 162 nm^3; this corresponds to an approximate mass of 146 kDa.

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

7.3   Rotationally averaged power spectrum (i)

*Reported resolution corresponds to spatial frequency of 0.385 Å^{-1}
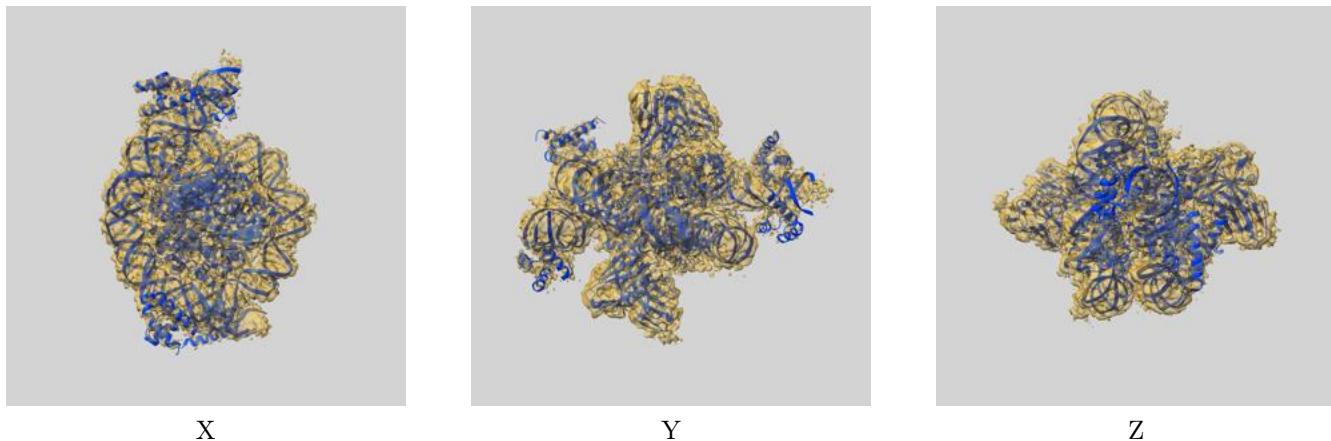
8 Fourier-Shell correlation ⓘ

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

9 Map-model fit ⓘ
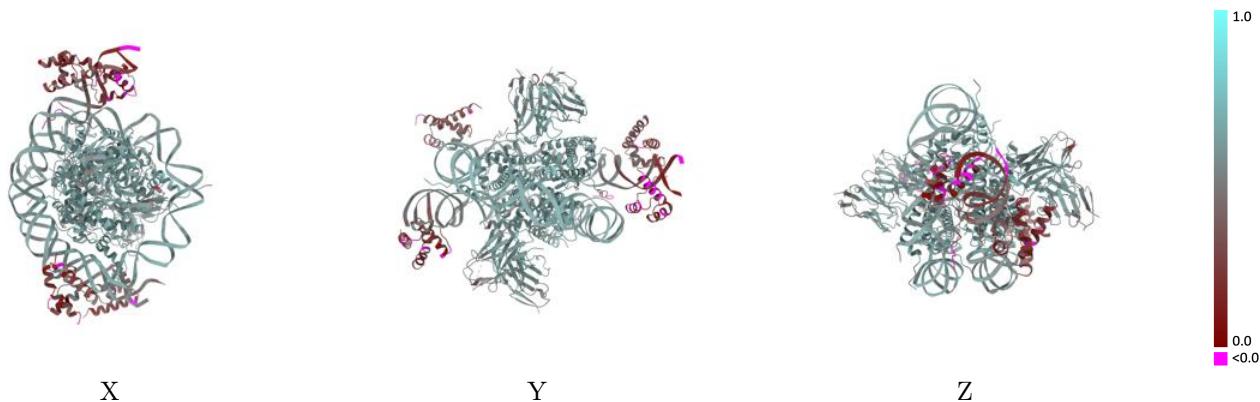
This section contains information regarding the fit between EMDB map EMD-26258 and PDB model 7U0G. Per-residue inclusion information can be found in section 3 on page 9.

9.1 Map-model overlay ⓘ

| X | Y | Z |
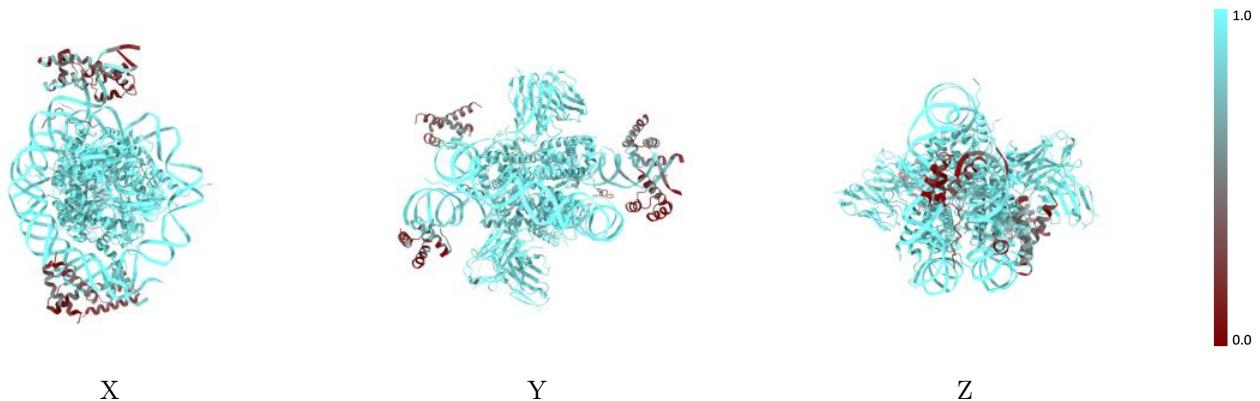
The images above show the 3D surface view of the map at the recommended contour level 0.17 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2   Q-score mapped to coordinate model ⓘ

X   Y   Z
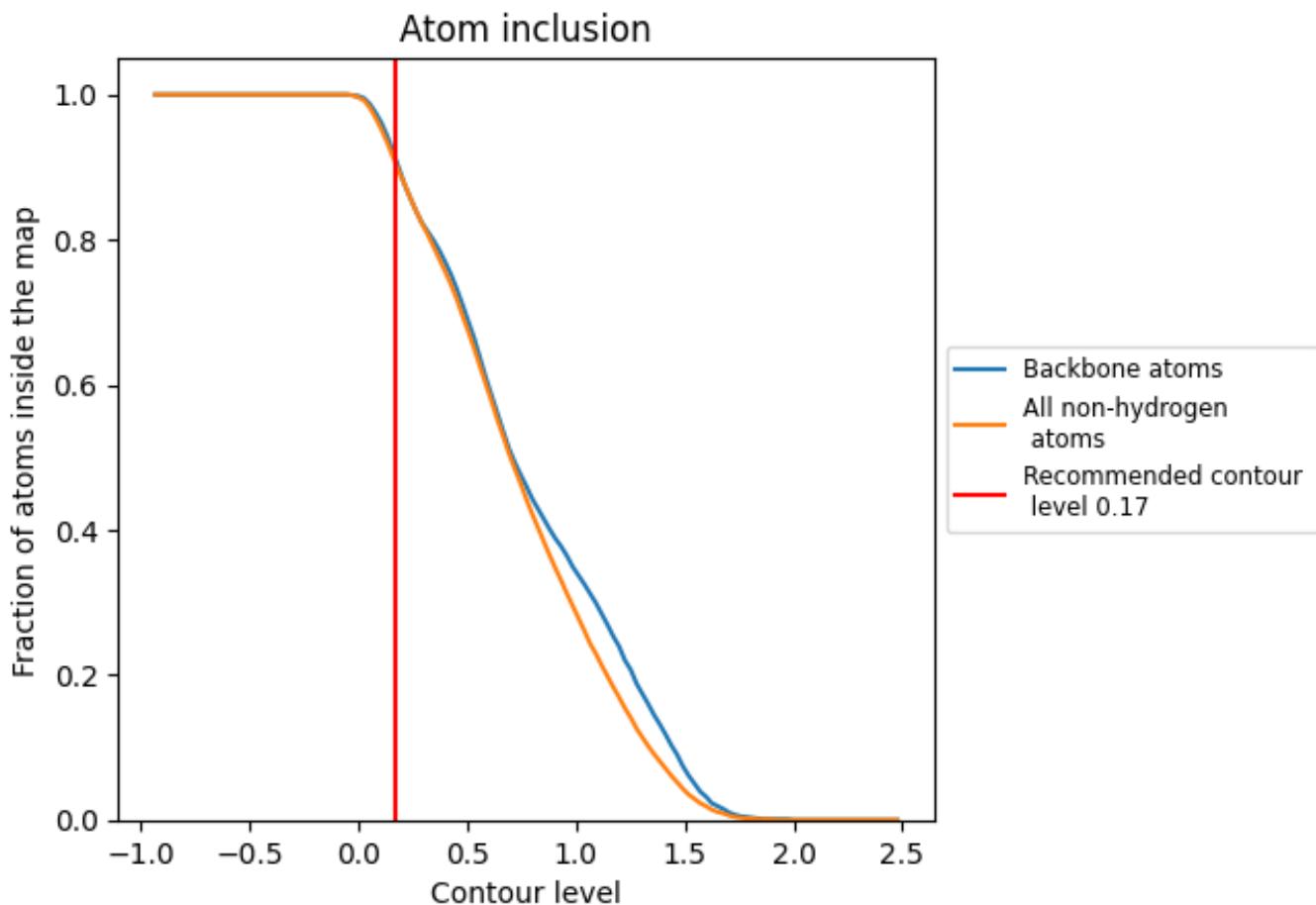
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.17).
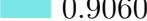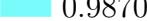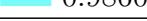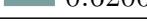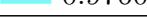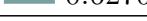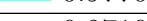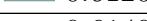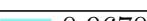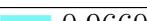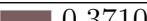
9.4 Atom inclusion ⓘ

At the recommended contour level, 91% of all backbone atoms, 91% 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 (0.17) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9060	0.5310
A	0.9870	0.6250
B	0.9800	0.6240
C	0.9750	0.6150
D	0.8980	0.5700
E	0.9860	0.6200
F	0.9760	0.6270
G	0.9770	0.6120
H	0.9710	0.6140
I	0.9670	0.5500
J	0.9660	0.5380
K	0.3510	0.1920
L	0.3710	0.2800
M	0.3590	0.2310
N	0.9690	0.5630
O	0.9710	0.5620

1.0

0.0
<0.0