wwPDB EM Validation Summary Report (i)

Nov 30, 2022 – 06:45 AM JST

PDB ID	:	7YP7
EMDB ID	:	EMD-33995
Title	:	apo-ADGRG2 coupled to Gs
Authors	:	Liu, Z.M.; Bu, R.Q.; Xue, C.Y.; Guo, S.C.; Yuan, D.P.; Xiao, P.; Sun, J.P.
Deposited on	:	2022-08-02
Resolution	:	3.10 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:

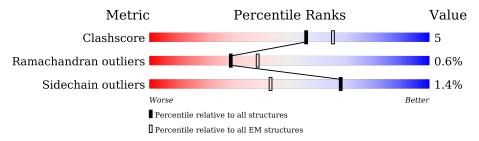|		
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 3.10 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		5
Ramachandran outliers		0.6%
Sidechain outliers		1.4%

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	394	7% / 53% / 6% / 41%
2	B	358	· / 83% / 11% / 5%
3	G	71	8% / 72% / 10% / 18%
4	N	160	· / 76% / · / 20%
5	R	903	· / 24% / · / 73%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 7909 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 Guanine nucleotide-binding protein G(s) subunit alpha isoforms short.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	234	Total 1859	C 1168	N 341	O 344	S 6	0	0

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	54	ASN	SER	engineered mutation	UNP P63092
A	226	ALA	GLY	engineered mutation	UNP P63092
A	268	ALA	GLU	engineered mutation	UNP P63092
A	271	LYS	ASN	engineered mutation	UNP P63092
A	274	ASP	LYS	engineered mutation	UNP P63092
A	280	LYS	ARG	engineered mutation	UNP P63092
A	284	ASP	THR	engineered mutation	UNP P63092
A	285	THR	ILE	engineered mutation	UNP P63092

- Molecule 2 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	340	Total 2616	C 1612	N 470	O 513	S 21	0	0

There are 19 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-17	MET	-	initiating methionine	UNP P62873
B	-16	HIS	-	expression tag	UNP P62873
B	-15	HIS	-	expression tag	UNP P62873
B	-14	HIS	-	expression tag	UNP P62873
B	-13	HIS	-	expression tag	UNP P62873
B	-12	HIS	-	expression tag	UNP P62873
B	-11	HIS	-	expression tag	UNP P62873

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-10	LEU	-	expression tag	UNP P62873
B	-9	GLU	-	expression tag	UNP P62873
B	-8	VAL	-	expression tag	UNP P62873
B	-7	LEU	-	expression tag	UNP P62873
B	-6	PHE	-	expression tag	UNP P62873
B	-5	GLN	-	expression tag	UNP P62873
B	-4	GLY	-	expression tag	UNP P62873
B	-3	PRO	-	expression tag	UNP P62873
B	-2	GLY	-	expression tag	UNP P62873
B	-1	SER	-	expression tag	UNP P62873
B	0	SER	-	expression tag	UNP P62873
B	1	GLN	-	expression tag	UNP P62873

- Molecule 3 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	58	Total	C	N	O	S	0	0
			444	277	79	85	3		

- Molecule 4 is a protein called Nano-body 35.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	N	128	Total	C	N	O	S	0	0
			973	605	170	192	6		

- Molecule 5 is a protein called Adhesion G-protein coupled receptor G2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	R	247	Total	C	N	O	S	0	0
			2017	1376	311	318	12		

There are 51 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	14	MET	-	initiating methionine	UNP Q8CJ12
R	15	LYS	-	expression tag	UNP Q8CJ12
R	16	THR	-	expression tag	UNP Q8CJ12
R	17	ILE	-	expression tag	UNP Q8CJ12
R	18	ILE	-	expression tag	UNP Q8CJ12
R	19	ALA	-	expression tag	UNP Q8CJ12
R	20	LEU	-	expression tag	UNP Q8CJ12

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Chain	Residue	Modelled	Actual	Comment	Reference
R	21	SER	-	expression tag	UNP Q8CJ12
R	22	TYR	-	expression tag	UNP Q8CJ12
R	23	ILE	-	expression tag	UNP Q8CJ12
R	24	PHE	-	expression tag	UNP Q8CJ12
R	25	CYS	-	expression tag	UNP Q8CJ12
R	26	LEU	-	expression tag	UNP Q8CJ12
R	27	VAL	-	expression tag	UNP Q8CJ12
R	28	PHE	-	expression tag	UNP Q8CJ12
R	29	ALA	-	expression tag	UNP Q8CJ12
R	30	ASP	-	expression tag	UNP Q8CJ12
R	31	TYR	-	expression tag	UNP Q8CJ12
R	32	LYS	-	expression tag	UNP Q8CJ12
R	33	ASP	-	expression tag	UNP Q8CJ12
R	34	ASP	-	expression tag	UNP Q8CJ12
R	35	ASP	-	expression tag	UNP Q8CJ12
R	36	ASP	-	expression tag	UNP Q8CJ12
R	37	LYS	-	expression tag	UNP Q8CJ12
R	597	ALA	HIS	engineered mutation	UNP Q8CJ12
R	599	ALA	THR	engineered mutation	UNP Q8CJ12
R	892	PHE	-	expression tag	UNP Q8CJ12
R	893	TRP	-	expression tag	UNP Q8CJ12
R	894	PHE	-	expression tag	UNP Q8CJ12
R	895	PRO	-	expression tag	UNP Q8CJ12
R	896	GLU	-	expression tag	UNP Q8CJ12
R	897	LYS	-	expression tag	UNP Q8CJ12
R	898	GLY	-	expression tag	UNP Q8CJ12
R	899	ALA	-	expression tag	UNP Q8CJ12
R	900	ILE	-	expression tag	UNP Q8CJ12
R	901	LEU	-	expression tag	UNP Q8CJ12
R	902	THR	-	expression tag	UNP Q8CJ12
R	903	ASP	-	expression tag	UNP Q8CJ12
R	904	THR	-	expression tag	UNP Q8CJ12
R	905	SER	-	expression tag	UNP Q8CJ12
R	906	VAL	-	expression tag	UNP Q8CJ12
R	907	LYS	-	expression tag	UNP Q8CJ12
R	908	ARG	-	expression tag	UNP Q8CJ12
R	909	ASN	-	expression tag	UNP Q8CJ12
R	910	ASP	-	expression tag	UNP Q8CJ12
R	911	LEU	-	expression tag	UNP Q8CJ12
R	912	SER	-	expression tag	UNP Q8CJ12
R	913	ILE	-	expression tag	UNP Q8CJ12
R	914	ILE	-	expression tag	UNP Q8CJ12

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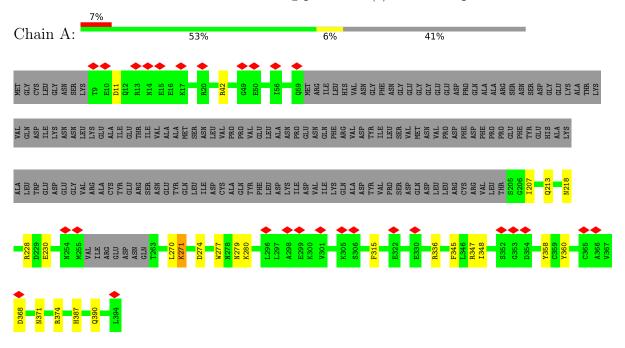
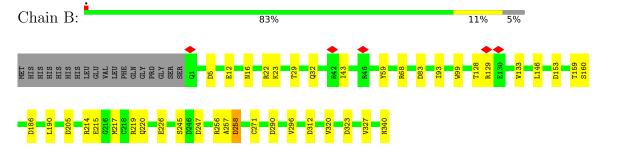| Chain	Residue	Modelled	Actual	Comment	Reference
R	915	SER	-	expression tag	UNP Q8CJ12
R	916	GLY	-	expression tag	UNP Q8CJ12

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: Guanine nucleotide-binding protein G(s) subunit alpha isoforms short
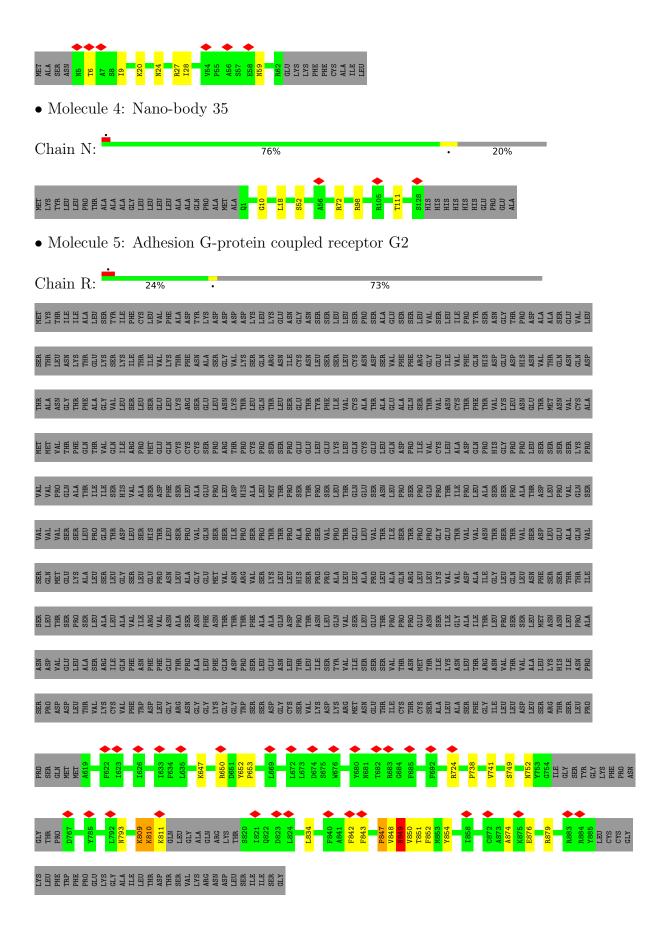

• Molecule 2: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1

• Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2

MET ALA SER ASN N5 T6 A7 S8 I9 K20 N24 R27 I28 V54 P55 A56 S57 E58 N59 R62 GLU LYS LYS PHE PHE CYS ALA ILE LEU

● Molecule 4: Nano-body 35

Chain N:

76%   20%

MET LYS TYR LEU LEU PRO THR ALA ALA ALA GLY LEU LEU LEU LEU ALA ALA GLN PRO ALA MET ALA Q1 G10 L18 S52 A56 R72 R98 R105 T111 S128 HIS HIS HIS HIS HIS HIS GLU PRO GLU ALA

● Molecule 5: Adhesion G-protein coupled receptor G2

Chain R:

24%   73%

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

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

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

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

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

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

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

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

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

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

PRO SER GLN MET MET A619 F622 I623 I626 I633 F634 L635 K647 R650 D651 Y652 P653 L669 I672 L673 D674 S675 W676 Y680 N681 T682 R683 G684 F685 F692 R724 P738 V741 S749 N752 Y753 G754 ILE GLY SER TYR GLY LYS LYS PHE PRO ASN

GLY THR PRO D767 Y785 L792 N793 K809 K810 K811 GLN LEU GLY ALA GLN LYS ARG ASN ASP LEU SER ILE ILE SER GLY S820 I821 Q822 D823 L824 L834 F840 A841 F842 F843 P847 V848 N849 V850 T851 F852 M853 Y854 I858 C872 A873 A874 K875 E876 R879 R883 R884 Y885 LEU CYS CYS GLY

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

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	92087	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.111	Depositor
Minimum map value	-0.047	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.0231	Depositor
Map size (Å)	259.2, 259.2, 259.2	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.08, 1.08, 1.08	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	0.37	0/1894	0.55	0/2557
2	B	0.39	0/2663	0.59	0/3609
3	G	0.31	0/450	0.44	0/608
4	N	0.42	0/993	0.53	0/1345
5	R	0.35	0/2074	0.55	1/2818 (0.0%)
All	All	0.37	0/8074	0.55	1/10937 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	R	650	ARG	N-CA-C	5.01	124.54	111.00

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	1859	0	1728	27	0
2	B	2616	0	2521	33	0
3	G	444	0	454	5	0
4	N	973	0	940	4	0
5	R	2017	0	2082	21	0
All	All	7909	0	7725	82	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 5.

The worst 5 of 82 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:213:GLN:HG2	1:A:218:ASN:OD1	1.44	1.16
1:A:274:ASP:OD1	1:A:348:ILE:HG21	1.47	1.14
1:A:213:GLN:NE2	1:A:218:ASN:OD1	1.82	1.13
2:B:312:ASP:OD1	5:R:647:LYS:HD3	1.56	1.06
1:A:274:ASP:OD1	1:A:348:ILE:HD13	1.57	1.03

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	228/394 (58%)	205 (90%)	21 (9%)	2 (1%)	17	52
2	B	338/358 (94%)	311 (92%)	26 (8%)	1 (0%)	41	73
3	G	56/71 (79%)	52 (93%)	4 (7%)	0	100	100
4	N	126/160 (79%)	119 (94%)	7 (6%)	0	100	100
5	R	241/903 (27%)	220 (91%)	18 (8%)	3 (1%)	13	44
All	All	989/1886 (52%)	907 (92%)	76 (8%)	6 (1%)	29	59

5 of 6 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	280	LYS
5	R	847	PRO
2	B	258	ASP
5	R	849	ASN
5	R	848	VAL

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	181/349 (52%)	177 (98%)	4 (2%)	52	78
2	B	283/299 (95%)	282 (100%)	1 (0%)	91	96
3	G	47/58 (81%)	47 (100%)	0	100	100
4	N	106/129 (82%)	106 (100%)	0	100	100
5	R	217/807 (27%)	210 (97%)	7 (3%)	39	69
All	All	834/1642 (51%)	822 (99%)	12 (1%)	68	86

5 of 12 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	R	810	LYS
5	R	811	LYS
5	R	849	ASN
5	R	842	PHE
1	A	374	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 13 such sidechains are listed below:

Mol	Chain	Res	Type
3	G	59	ASN
4	N	13	GLN
5	R	860	ASN
4	N	77	ASN
5	R	681	ASN

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.
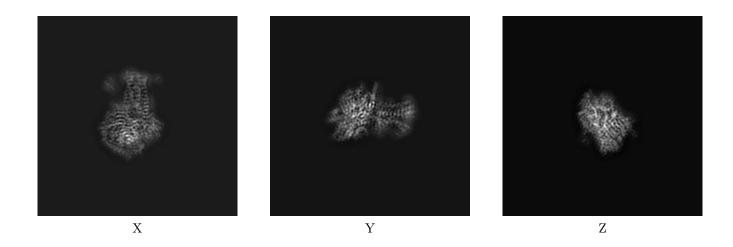
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-33995. These allow visual inspection of the internal detail of the map and identification of artifacts.
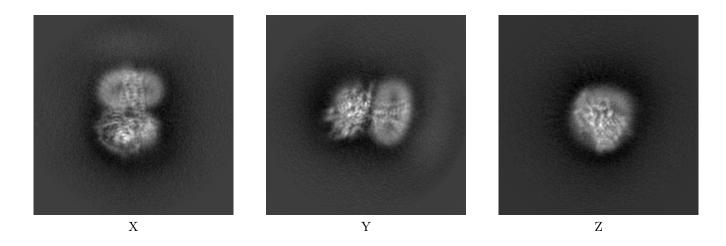
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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
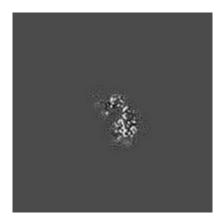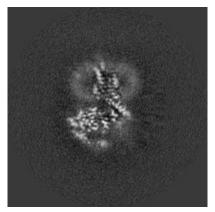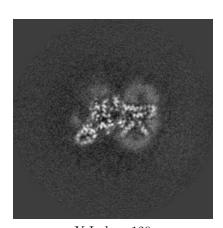
X Index: 120	Y Index: 120	Z Index: 120
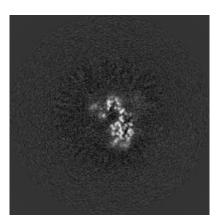
6.2.2   Raw map

X Index: 120	Y Index: 120	Z Index: 120
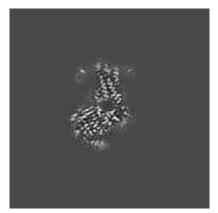
The images above show central slices of the map in three orthogonal directions.
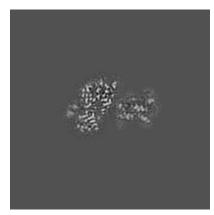
6.3 Largest variance slices (i)

6.3.1 Primary map
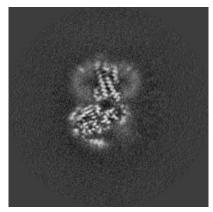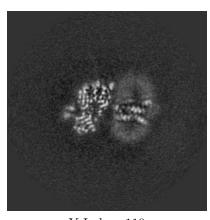
X Index: 123	Y Index: 110	Z Index: 110
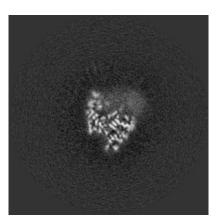
6.3.2 Raw map

X Index: 123	Y Index: 110	Z Index: 96
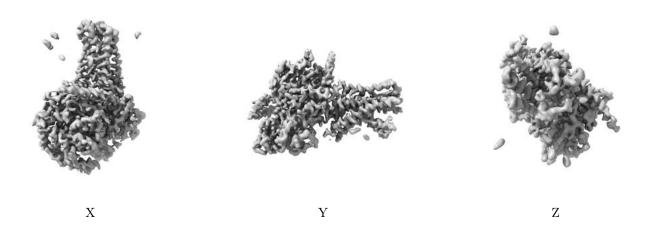
The images above show the largest variance slices of the map in three orthogonal directions.
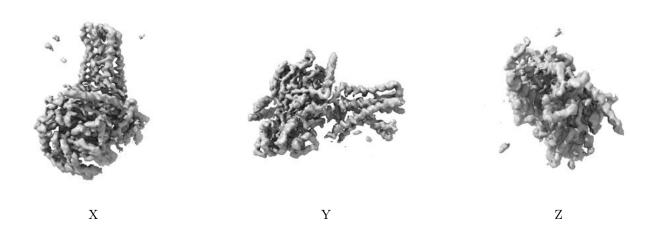
6.4 Orthogonal surface views ⓘ

6.4.1 Primary map

| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.0231. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 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.

6.5 Mask visualisation ⓘ
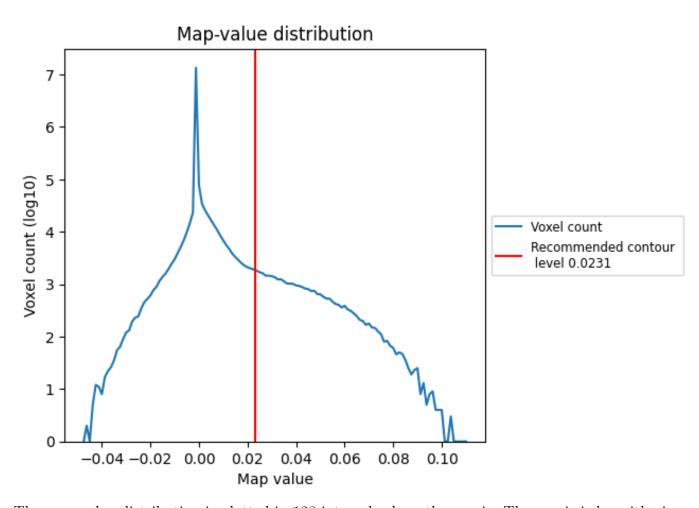
This section was not generated. No masks/segmentation were deposited.

7   Map analysis ⓘ

This section contains the results of statistical analysis of the map.
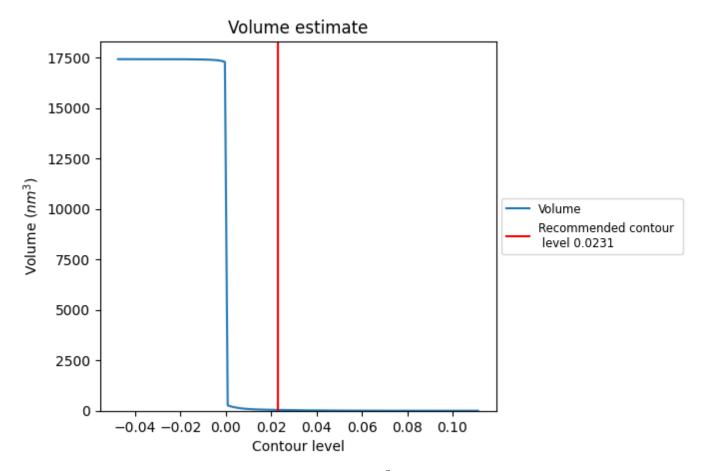
7.1   Map-value distribution ⓘ

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)
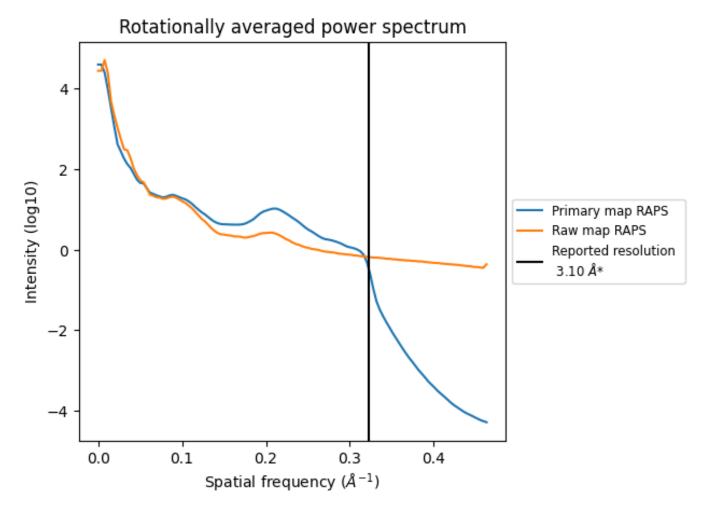
The volume at the recommended contour level is 41 nm^3; this corresponds to an approximate mass of 37 kDa.

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 ⓘ
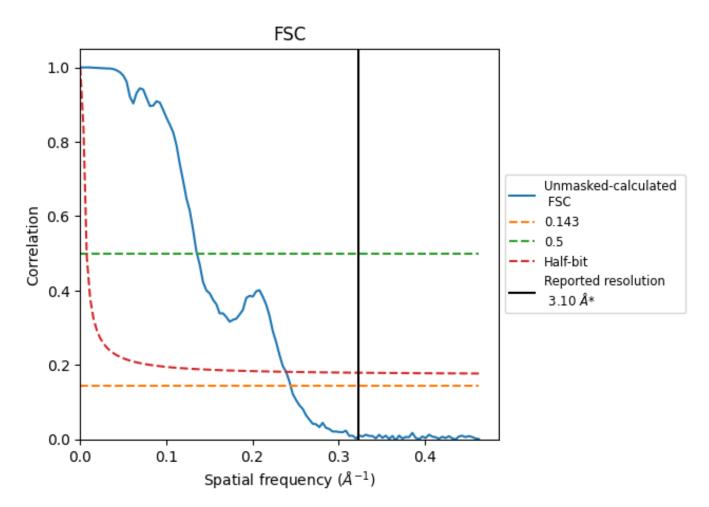
*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

8   Fourier-Shell correlation ⓘ

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

8.1   FSC ⓘ

*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

8.2   Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.09	7.38	4.18
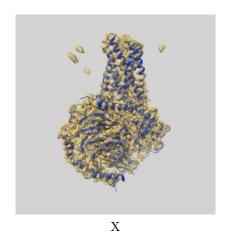
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.09 differs from the reported value 3.1 by more than 10 %
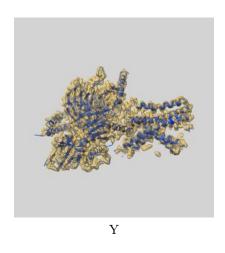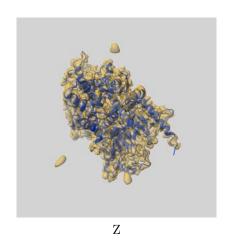
9   Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-33995 and PDB model 7YP7. Per-residue inclusion information can be found in section 3 on page 7.

9.1   Map-model overlay ⓘ
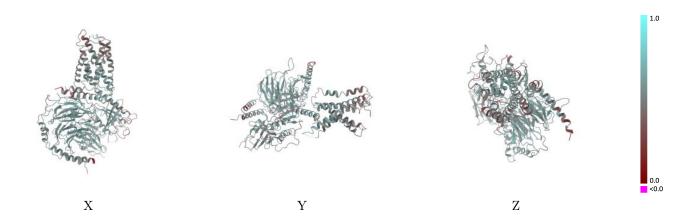

X   Y   Z

The images above show the 3D surface view of the map at the recommended contour level 0.0231 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.
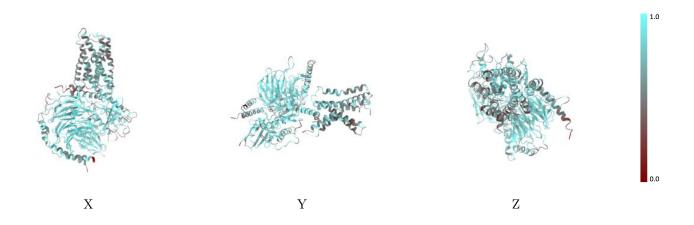
9.2   Q-score mapped to coordinate model ⓘ

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.
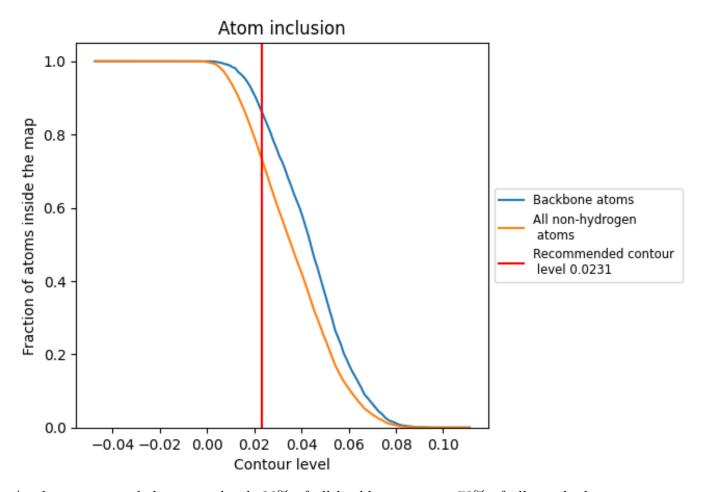
9.3   Atom inclusion mapped to coordinate model ⓘ

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 (0.0231).

9.4 Atom inclusion ⓘ

At the recommended contour level, 86% of all backbone atoms, 73% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0231) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7346	0.5320
A	0.7148	0.5170
B	0.8306	0.5670
G	0.6545	0.5010
N	0.8158	0.5590
R	0.6074	0.4970

1.0

0.0
<0.0