WORLDWIDE PDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Mar 9, 2026 – 11:10 AM EDT

PDB ID	:	9Y80 / pdb_00009y80
EMDB ID	:	EMD-72676
Title	:	Homomeric Glycine Receptor alpha2 with PTX in a Desensitized State
Authors	:	Klemm, E.; Gibbs, E.; Chakrapani, S.
Deposited on	:	2025-09-11
Resolution	:	3.55 Å(reported)

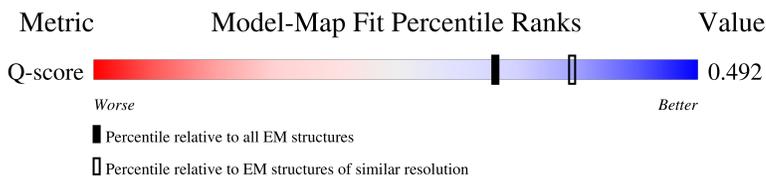The following versions of software and data (see references (i)) were used in the production of this report:

EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
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 3.55 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		4
Ramachandran outliers		0
Sidechain outliers		0

Worse   *Better*

▮ Percentile relative to all structures

❒ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.492

Worse   *Better*

▮ Percentile relative to all EM structures

❒ Percentile relative to EM structures of similar resolution
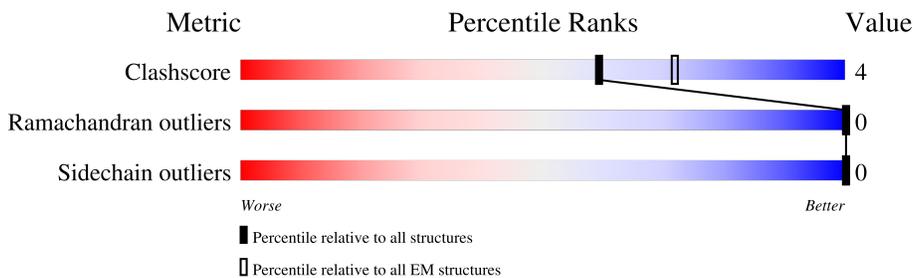
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	12819 (3.05 - 4.05)

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	466	65% 9% 26%
1	B	466	66% 8% 26%
1	C	466	67% 7% 26%
1	D	466	67% 7% 26%

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Mol	Chain	Length	Quality of chain
1	E	466	66%　　　　　　　　　8%　　　26%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 14393 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 Glycine receptor subunit alpha-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	346	Total	C	N	O	S	0	0
			2803	1822	458	505	18		
1	B	345	Total	C	N	O	S	0	0
			2794	1816	456	504	18		
1	C	345	Total	C	N	O	S	0	0
			2793	1816	455	504	18		
1	D	345	Total	C	N	O	S	0	0
			2794	1816	456	504	18		
1	E	345	Total	C	N	O	S	0	0
			2794	1816	456	504	18		

There are 70 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	453	LEU	-	expression tag	UNP P23416
A	454	VAL	-	expression tag	UNP P23416
A	455	PRO	-	expression tag	UNP P23416
A	456	ARG	-	expression tag	UNP P23416
A	457	GLY	-	expression tag	UNP P23416
A	458	SER	-	expression tag	UNP P23416
A	459	HIS	-	expression tag	UNP P23416
A	460	HIS	-	expression tag	UNP P23416
A	461	HIS	-	expression tag	UNP P23416
A	462	HIS	-	expression tag	UNP P23416
A	463	HIS	-	expression tag	UNP P23416
A	464	HIS	-	expression tag	UNP P23416
A	465	HIS	-	expression tag	UNP P23416
A	466	HIS	-	expression tag	UNP P23416
B	453	LEU	-	expression tag	UNP P23416
B	454	VAL	-	expression tag	UNP P23416
B	455	PRO	-	expression tag	UNP P23416
B	456	ARG	-	expression tag	UNP P23416
B	457	GLY	-	expression tag	UNP P23416
B	458	SER	-	expression tag	UNP P23416

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Chain	Residue	Modelled	Actual	Comment	Reference
B	459	HIS	-	expression tag	UNP P23416
B	460	HIS	-	expression tag	UNP P23416
B	461	HIS	-	expression tag	UNP P23416
B	462	HIS	-	expression tag	UNP P23416
B	463	HIS	-	expression tag	UNP P23416
B	464	HIS	-	expression tag	UNP P23416
B	465	HIS	-	expression tag	UNP P23416
B	466	HIS	-	expression tag	UNP P23416
C	453	LEU	-	expression tag	UNP P23416
C	454	VAL	-	expression tag	UNP P23416
C	455	PRO	-	expression tag	UNP P23416
C	456	ARG	-	expression tag	UNP P23416
C	457	GLY	-	expression tag	UNP P23416
C	458	SER	-	expression tag	UNP P23416
C	459	HIS	-	expression tag	UNP P23416
C	460	HIS	-	expression tag	UNP P23416
C	461	HIS	-	expression tag	UNP P23416
C	462	HIS	-	expression tag	UNP P23416
C	463	HIS	-	expression tag	UNP P23416
C	464	HIS	-	expression tag	UNP P23416
C	465	HIS	-	expression tag	UNP P23416
C	466	HIS	-	expression tag	UNP P23416
D	453	LEU	-	expression tag	UNP P23416
D	454	VAL	-	expression tag	UNP P23416
D	455	PRO	-	expression tag	UNP P23416
D	456	ARG	-	expression tag	UNP P23416
D	457	GLY	-	expression tag	UNP P23416
D	458	SER	-	expression tag	UNP P23416
D	459	HIS	-	expression tag	UNP P23416
D	460	HIS	-	expression tag	UNP P23416
D	461	HIS	-	expression tag	UNP P23416
D	462	HIS	-	expression tag	UNP P23416
D	463	HIS	-	expression tag	UNP P23416
D	464	HIS	-	expression tag	UNP P23416
D	465	HIS	-	expression tag	UNP P23416
D	466	HIS	-	expression tag	UNP P23416
E	453	LEU	-	expression tag	UNP P23416
E	454	VAL	-	expression tag	UNP P23416
E	455	PRO	-	expression tag	UNP P23416
E	456	ARG	-	expression tag	UNP P23416
E	457	GLY	-	expression tag	UNP P23416
E	458	SER	-	expression tag	UNP P23416

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Chain	Residue	Modelled	Actual	Comment	Reference
E	459	HIS	-	expression tag	UNP P23416
E	460	HIS	-	expression tag	UNP P23416
E	461	HIS	-	expression tag	UNP P23416
E	462	HIS	-	expression tag	UNP P23416
E	463	HIS	-	expression tag	UNP P23416
E	464	HIS	-	expression tag	UNP P23416
E	465	HIS	-	expression tag	UNP P23416
E	466	HIS	-	expression tag	UNP P23416

- Molecule 2 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).
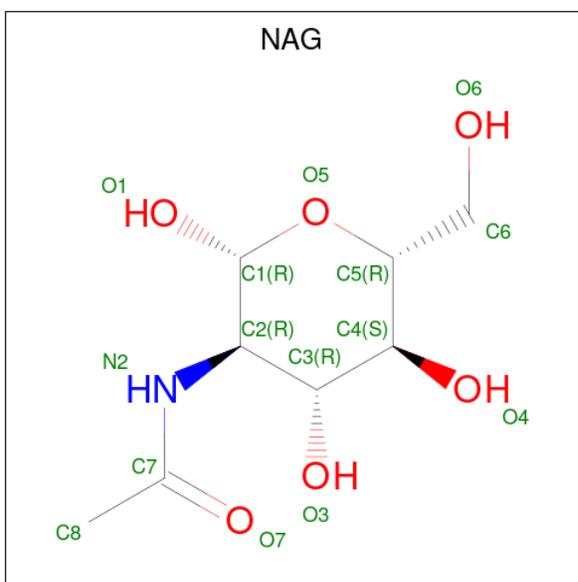
Mol	Chain	Residues	Atoms				AltConf
2	A	1	Total	C	N	O	0
			14	8	1	5	
2	A	1	Total	C	N	O	0
			14	8	1	5	
2	B	1	Total	C	N	O	0
			14	8	1	5	
2	B	1	Total	C	N	O	0
			14	8	1	5	
2	C	1	Total	C	N	O	0
			14	8	1	5	
2	C	1	Total	C	N	O	0
			14	8	1	5	
2	D	1	Total	C	N	O	0
			14	8	1	5	

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Mol	Chain	Residues	Atoms				AltConf
2	D	1	Total 14	C 8	N 1	O 5	0
2	E	1	Total 14	C 8	N 1	O 5	0
2	E	1	Total 14	C 8	N 1	O 5	0

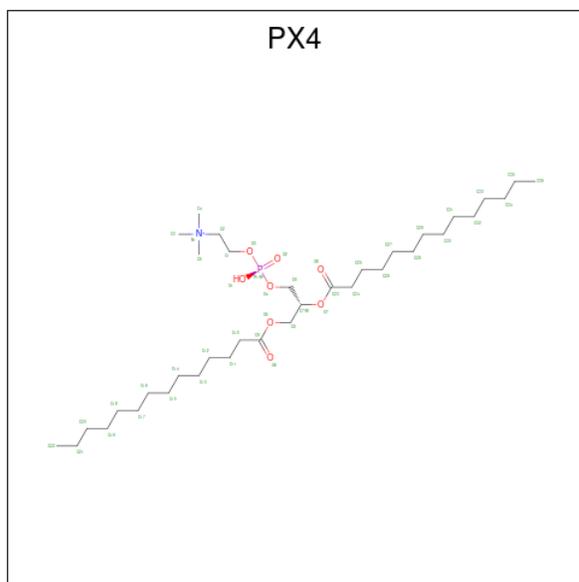- Molecule 3 is GLYCINE (CCD ID: GLY) (formula: $C_2H_5NO_2$) (labeled as "Ligand of Interest" by depositor).
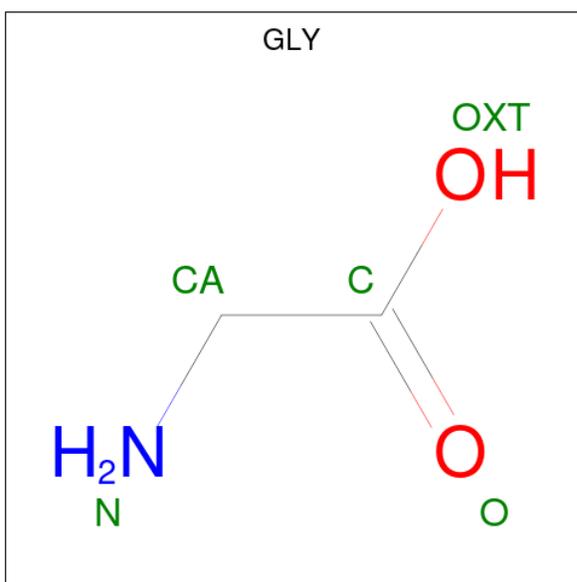
Mol	Chain	Residues	Atoms				AltConf
3	A	1	Total 5	C 2	N 1	O 2	0
3	B	1	Total 5	C 2	N 1	O 2	0
3	C	1	Total 5	C 2	N 1	O 2	0
3	D	1	Total 5	C 2	N 1	O 2	0
3	E	1	Total 5	C 2	N 1	O 2	0

- Molecule 4 is (1aR,2aR,3S,6R,6aS,8aS,8bR,9R)-2a-hydroxy-8b-methyl-9-(prop-1-en-2-yl)h exahydro-3,6-methano-1,5,7-trioxacyclopenta[ij]c yclopropa[a]azulene-4,8(3H)-dione (CCD ID: RI5) (formula: $C_{15}H_{16}O_6$) (labeled as "Ligand of Interest" by depositor).
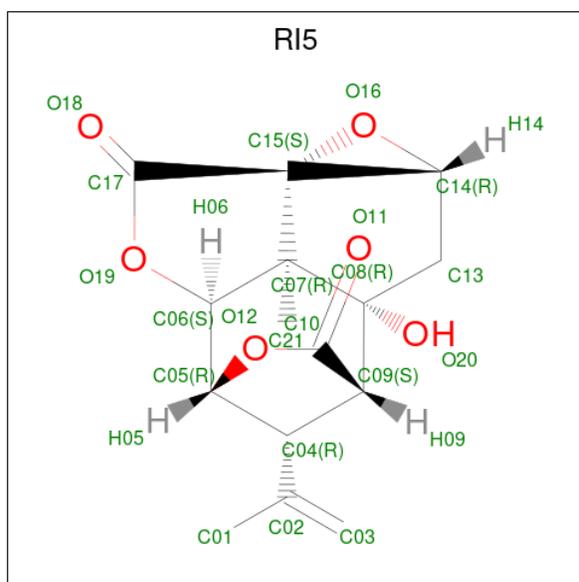
Mol	Chain	Residues	Atoms			AltConf
4	A	1	Total	C	O	0
			21	15	6	

- Molecule 5 is 1,2-DIMYRISTOYL-SN-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: PX4) (formula: $C_{36}H_{73}NO_8P$).

Mol	Chain	Residues	Atoms			AltConf
5	A	1	Total	C	O	0
			16	14	2	
5	A	1	Total	C	O	0
			16	14	2	

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Mol	Chain	Residues	Atoms			AltConf
5	A	1	Total 14	C 12	O 2	0
5	B	1	Total 16	C 14	O 2	0
5	B	1	Total 14	C 12	O 2	0
5	B	1	Total 14	C 12	O 2	0
5	C	1	Total 15	C 13	O 2	0
5	C	1	Total 15	C 13	O 2	0
5	C	1	Total 16	C 14	O 2	0
5	D	1	Total 16	C 14	O 2	0
5	D	1	Total 16	C 14	O 2	0
5	D	1	Total 16	C 14	O 2	0
5	D	1	Total 14	C 12	O 2	0
5	E	1	Total 16	C 14	O 2	0
5	E	1	Total 15	C 13	O 2	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: Glycine receptor subunit alpha-2

Chain A:

• Molecule 1: Glycine receptor subunit alpha-2

Chain B:

• Molecule 1: Glycine receptor subunit alpha-2

Chain C:

MET ASN ARG GLN LEU VAL ASN ILE LEU THR ALA LEU PHE ALA PHE LEU GLU THR ASN HIS PHE ARG THR ALA PHE CYS LYS ASP HIS SER ARG SER GLY LYS GLN PRO SER GLN THR **L42** D49 G53 R54 N72 E87 D115 L119 M123 L124 D125

L132 F133 F134 E137 K138 F142 T146 K150 L151 L152 Y162 S171 P180 M181 D182 V183 Q184 L190 W204 L205 P209 L229 I244 L289 G290 I291 T292 R305 L308 K315 D318 H345 LYS GLU PHE LEU ARG LEU ARG ARG GLN

LYS ARG GLN ASN LYS GLU GLU ASP VAL THR ARG GLU GLU SER ARG PHE ASN PHE SER GLY TYR GLY MET GLY HIS CYS LEU GLN GLN VAL LYS ASP GLY THR ALA VAL LYS ALA THR PRO ALA ASN PRO LEU PRO GLN PRO PRO LYS ASP ASP ALA ILE LYS **K409** H446 E447 D448 V449 HIS

LYS LYS LEU VAL PRO ARG GLY SER HIS HIS HIS HIS HIS HIS HIS HIS

• Molecule 1: Glycine receptor subunit alpha-2

Chain D:

67% 7% 26%

MET ASN ARG GLN LEU VAL ASN ILE LEU THR ALA LEU PHE ALA PHE LEU GLU THR ASN HIS PHE ARG THR ALA PHE CYS ASP HIS SER ARG SER GLY LYS GLN PRO SER GLN THR **L42** L48 D49 G53 R54 N72 V73 S84 R93 L98 W102

M123 L124 D125 L132 F142 H143 T146 T147 D148 N149 K150 L151 L152 S163 T167 L190 P209 V210 Q211 L229 I244 M254 I291 T292 L295 S307 H345 LYS GLU PHE LEU ARG LEU ARG ARG GLN LYS ARG GLN ASN LYS GLU GLU ASP VAL

THR ARG GLU SER ARG PHE ASN PHE SER GLY TYR GLY MET GLY HIS CYS LEU GLN VAL LYS ASP GLY THR ALA VAL LYS ALA THR PRO ALA ASN PRO LEU PRO GLN PRO PRO LYS ASP ASP ALA ILE LYS LYS **K410** D448 V449 H450 LYS LYS LEU VAL PRO ARG GLY SER HIS HIS

HIS HIS HIS HIS HIS HIS

• Molecule 1: Glycine receptor subunit alpha-2

Chain E:

66% 8% 26%

MET ASN ARG GLN LEU VAL ASN ILE LEU THR ALA LEU PHE ALA PHE LEU GLU THR ASN HIS PHE ARG THR ALA PHE CYS LYS ASP HIS SER ARG SER GLY LYS GLN PRO SER GLN THR **L42** D49 G53 R54 N72 E87 N95 D115 S116 L117 D118 L119 D120

P121 D125 L132 E137 K138 F142 K150 T167 S171 L190 T196 M197 N198 W204 L205 P209 V210 L229 N237 I244 E245 V246 P264 L267 D281 G290 I291 T292 R305 L308 I317 D318 M321 L332 H345 LYS

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

ILE LYS LYS **K410** F411 V412 H446 E447 D448 V449 H450 LYS LYS LEU VAL PRO ARG GLY SER HIS HIS HIS HIS HIS HIS HIS HIS

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	100331	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 $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.022	Depositor
Minimum map value	-0.013	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.004	Depositor
Map size (Å)	255.35999, 255.35999, 255.35999	wwPDB
Map dimensions	304, 304, 304	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.84, 0.84, 0.84	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: NAG, RI5, PX4

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	0.19	0/2874	0.38	0/3900
1	B	0.30	0/2865	0.44	0/3889
1	C	0.22	0/2863	0.38	0/3885
1	D	0.19	0/2865	0.39	0/3889
1	E	0.20	0/2865	0.37	0/3889
All	All	0.22	0/14332	0.39	0/19452

There are no bond length outliers.

There are no bond angle outliers.

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	2803	0	2794	28	0
1	B	2794	0	2781	23	0
1	C	2793	0	2787	24	0
1	D	2794	0	2781	24	0
1	E	2794	0	2781	24	0
2	A	28	0	26	1	0
2	B	28	0	26	1	0
2	C	28	0	26	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	28	0	26	1	0
2	E	28	0	26	1	0
3	A	5	0	2	0	0
3	B	5	0	2	0	0
3	C	5	0	2	0	0
3	D	5	0	2	0	0
3	E	5	0	2	0	0
4	A	21	0	15	1	0
5	A	46	0	74	3	0
5	B	44	0	67	2	0
5	C	46	0	71	5	0
5	D	62	0	101	5	0
5	E	31	0	49	2	0
All	All	14393	0	14441	126	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 4.

All (126) 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:D:48:LEU:HD22	1:D:123:MET:HE1	1.75	0.68
1:C:132:LEU:HD11	1:C:190:LEU:HD23	1.78	0.66
1:E:132:LEU:HD11	1:E:190:LEU:HD23	1.79	0.64
1:E:209:PRO:HG3	1:E:229:LEU:HD11	1.81	0.63
1:A:291:ILE:HD12	1:E:292:THR:HG21	1.81	0.62
1:B:87:GLU:HG3	1:B:308:LEU:HD23	1.82	0.62
1:A:183:VAL:HG22	1:A:251:GLU:HG2	1.83	0.61
1:D:209:PRO:HG3	1:D:229:LEU:HD11	1.82	0.60
1:B:209:PRO:HG3	1:B:229:LEU:HD11	1.83	0.60
1:E:49:ASP:HA	1:E:53:GLY:HA3	1.84	0.60
1:C:182:ASP:OD2	1:C:184:GLN:NE2	2.37	0.58
1:B:132:LEU:HD11	1:B:190:LEU:HD23	1.86	0.57
1:C:180:PRO:HD2	1:C:181:MET:HE2	1.85	0.56
1:E:305:ARG:NH1	1:E:318:ASP:OD1	2.38	0.56
1:D:124:LEU:HD12	1:D:150:LYS:HD3	1.86	0.56
1:D:292:THR:HG21	1:E:291:ILE:HG21	1.87	0.55
1:C:124:LEU:HD12	1:C:150:LYS:HD3	1.87	0.55
1:A:49:ASP:HA	1:A:53:GLY:HA3	1.87	0.55
4:A:504:RI5:O20	4:A:504:RI5:H03A	2.06	0.55
5:B:504:PX4:H49	5:B:505:PX4:H53	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:95:ASN:ND2	1:E:167:THR:OG1	2.39	0.55
1:C:305:ARG:NH1	1:C:318:ASP:OD1	2.40	0.54
1:A:146:THR:H	1:B:142:PHE:HZ	1.56	0.54
1:A:98:LEU:HD21	1:A:132:LEU:HD23	1.89	0.53
1:A:124:LEU:HD12	1:A:150:LYS:HD3	1.89	0.53
1:C:87:GLU:HG3	1:C:308:LEU:HD23	1.90	0.53
1:B:292:THR:HG21	1:C:291:ILE:HG21	1.91	0.53
1:D:132:LEU:HD21	1:D:190:LEU:HD23	1.91	0.53
1:C:209:PRO:HG3	1:C:229:LEU:HD11	1.90	0.52
1:E:121:PRO:HB3	1:E:150:LYS:HB2	1.90	0.52
1:D:151:LEU:HB3	1:D:163:SER:HB3	1.91	0.52
1:A:95:ASN:HD21	1:A:165:ARG:HH21	1.58	0.52
1:B:190:LEU:HB2	1:B:244:ILE:HG13	1.92	0.52
1:E:87:GLU:HG3	1:E:308:LEU:HD23	1.91	0.51
1:E:196:THR:OG1	1:E:198:ASN:OD1	2.28	0.51
1:A:182:ASP:OD2	1:A:184:GLN:NE2	2.32	0.51
1:A:292:THR:HG21	1:B:291:ILE:HG21	1.92	0.51
1:D:148:ASP:OD1	1:D:148:ASP:N	2.44	0.51
1:C:119:LEU:HD12	1:C:123:MET:HE1	1.94	0.50
1:A:115:ASP:OD1	1:A:116:SER:N	2.45	0.50
1:B:115:ASP:OD1	1:B:116:SER:N	2.45	0.50
1:C:205:LEU:HB3	1:C:209:PRO:HA	1.93	0.50
1:A:295:LEU:HD11	1:E:292:THR:HB	1.92	0.50
1:B:49:ASP:HA	1:B:53:GLY:HA3	1.93	0.50
1:D:49:ASP:HA	1:D:53:GLY:HA3	1.94	0.49
1:E:290:GLY:HA3	1:E:332:LEU:HD13	1.93	0.49
1:C:134:PHE:HB2	1:C:137:GLU:HB2	1.93	0.49
1:B:72:ASN:OD1	2:B:501:NAG:N2	2.45	0.49
1:E:204:TRP:NE1	1:E:244:ILE:HB	2.28	0.49
1:A:195:TYR:OH	1:E:120:ASP:OD1	2.27	0.49
1:A:132:LEU:HD21	1:A:190:LEU:HD23	1.94	0.48
1:B:276:PHE:O	1:B:423:ARG:NH1	2.46	0.48
1:E:264:PRO:HA	1:E:267:LEU:HD12	1.95	0.48
1:C:72:ASN:OD1	2:C:501:NAG:N2	2.46	0.48
1:D:143:HIS:NE2	1:D:167:THR:OG1	2.35	0.48
1:E:72:ASN:OD1	2:E:502:NAG:N2	2.46	0.48
1:B:43:SER:C	1:B:45:SER:H	2.21	0.48
1:E:115:ASP:OD1	1:E:116:SER:N	2.47	0.48
1:D:72:ASN:OD1	2:D:501:NAG:N2	2.46	0.48
1:C:138:LYS:HD2	1:C:171:SER:HB3	1.94	0.47
1:B:43:SER:C	1:B:45:SER:N	2.70	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:72:ASN:OD1	2:A:501:NAG:N2	2.47	0.47
1:C:292:THR:HB	1:D:295:LEU:HD11	1.95	0.47
1:D:190:LEU:HB2	1:D:244:ILE:HG13	1.96	0.47
1:A:124:LEU:HD21	1:A:152:LEU:HB2	1.96	0.47
1:A:209:PRO:HG3	1:A:229:LEU:HD11	1.96	0.47
1:B:342:SER:O	1:B:345:HIS:ND1	2.40	0.47
5:C:506:PX4:H55	5:C:506:PX4:H60	1.65	0.47
1:B:308:LEU:HD13	1:B:315:LYS:HE3	1.96	0.47
1:C:190:LEU:HB2	1:C:244:ILE:HG13	1.97	0.46
1:D:98:LEU:HD21	1:D:132:LEU:HD23	1.98	0.46
1:A:76:ASN:OD1	1:A:99:ARG:HB2	2.16	0.46
1:E:205:LEU:HB3	1:E:209:PRO:HA	1.98	0.46
1:B:124:LEU:HD21	1:B:152:LEU:HB2	1.97	0.46
1:D:146:THR:H	1:E:142:PHE:HZ	1.64	0.45
1:E:138:LYS:HD2	1:E:171:SER:HB3	1.97	0.45
1:B:150:LYS:HG2	1:B:164:ILE:HG22	1.99	0.45
1:C:124:LEU:HD13	1:C:162:TYR:HE1	1.82	0.45
1:B:210:VAL:HG21	1:B:246:VAL:HG21	1.98	0.45
5:D:506:PX4:H55	5:D:506:PX4:H60	1.63	0.45
1:E:317:ILE:O	1:E:321:MET:HG2	2.17	0.45
1:C:204:TRP:NE1	1:C:244:ILE:HB	2.32	0.45
5:B:504:PX4:H53	5:B:504:PX4:H47	1.82	0.45
1:C:124:LEU:HD21	1:C:152:LEU:HB2	1.99	0.45
1:E:210:VAL:HG21	1:E:246:VAL:HG21	1.99	0.45
1:C:292:THR:HG21	1:D:291:ILE:HG21	1.98	0.45
5:C:504:PX4:H53	5:C:504:PX4:H47	1.83	0.45
5:C:504:PX4:H58	5:C:504:PX4:H65	1.75	0.44
1:A:190:LEU:HB2	1:A:244:ILE:HG13	1.98	0.44
1:A:293:THR:O	1:A:297:MET:N	2.46	0.44
5:A:505:PX4:H57	5:A:505:PX4:H51	1.89	0.44
1:B:84:SER:HB2	1:B:93:ARG:HB2	1.98	0.44
1:D:211:GLN:NE2	1:E:237:ASN:OD1	2.51	0.44
5:D:504:PX4:H60	5:D:504:PX4:H54	1.85	0.43
1:A:254:MET:HE3	1:A:258:LEU:HD11	2.00	0.43
5:E:504:PX4:H49	5:E:505:PX4:H53	2.00	0.43
5:D:504:PX4:H58	5:D:504:PX4:H65	1.81	0.43
1:A:151:LEU:HB3	1:A:163:SER:HB3	2.00	0.43
1:C:49:ASP:HA	1:C:53:GLY:HA3	2.00	0.43
1:C:146:THR:H	1:D:142:PHE:HZ	1.65	0.43
1:B:290:GLY:HA3	1:B:332:LEU:HD13	2.00	0.42
5:D:506:PX4:H65	5:D:506:PX4:H59	1.78	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:A:505:PX4:H47	5:A:505:PX4:H53	1.85	0.42
1:C:289:LEU:HG	1:D:291:ILE:HD11	2.01	0.42
1:A:124:LEU:HD13	1:A:162:TYR:HE1	1.83	0.42
1:B:204:TRP:NE1	1:B:244:ILE:HB	2.34	0.42
1:B:218:LEU:HD22	1:B:221:PHE:HB2	2.02	0.42
1:A:73:VAL:HG22	1:A:102:TRP:HB3	2.01	0.42
1:D:124:LEU:HD21	1:D:152:LEU:HB2	2.00	0.42
5:E:504:PX4:H57	5:E:504:PX4:H51	1.83	0.41
5:C:504:PX4:H60	5:C:504:PX4:H54	1.91	0.41
1:C:308:LEU:HD13	1:C:315:LYS:HE3	2.02	0.41
1:D:84:SER:HB2	1:D:93:ARG:HB2	2.02	0.41
1:D:254:MET:HE2	1:D:254:MET:HB3	1.94	0.41
5:A:505:PX4:H60	5:A:505:PX4:H54	1.86	0.41
1:A:228:GLU:OE2	1:A:249:HIS:NE2	2.46	0.41
1:B:146:THR:H	1:C:142:PHE:HZ	1.68	0.41
1:A:138:LYS:HD2	1:A:171:SER:HB3	2.03	0.41
5:D:505:PX4:H55	5:D:505:PX4:H60	1.89	0.41
1:D:143:HIS:ND1	1:E:137:GLU:OE2	2.54	0.41
1:A:291:ILE:HG13	1:A:292:THR:N	2.36	0.40
1:D:307:SER:O	1:D:307:SER:OG	2.35	0.40
5:C:506:PX4:H65	5:C:506:PX4:H59	1.81	0.40
1:D:73:VAL:HG22	1:D:102:TRP:HB3	2.03	0.40
1:A:95:ASN:HD21	1:A:165:ARG:NH2	2.20	0.40
1:A:258:LEU:HA	1:A:262:TYR:HB2	2.03	0.40

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	342/466 (73%)	337 (98%)	5 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	341/466 (73%)	333 (98%)	8 (2%)	0	100	100
1	C	341/466 (73%)	335 (98%)	6 (2%)	0	100	100
1	D	341/466 (73%)	333 (98%)	8 (2%)	0	100	100
1	E	341/466 (73%)	335 (98%)	6 (2%)	0	100	100
All	All	1706/2330 (73%)	1673 (98%)	33 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	312/418 (75%)	312 (100%)	0	100	100
1	B	311/418 (74%)	311 (100%)	0	100	100
1	C	311/418 (74%)	311 (100%)	0	100	100
1	D	311/418 (74%)	311 (100%)	0	100	100
1	E	311/418 (74%)	311 (100%)	0	100	100
All	All	1556/2090 (74%)	1556 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	95	ASN
1	A	178	ASN
1	A	211	GLN
1	A	253	GLN
1	A	339	ASN
1	A	446	HIS
1	B	95	ASN
1	B	141	ASN

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Mol	Chain	Res	Type
1	B	178	ASN
1	B	189	GLN
1	B	446	HIS
1	C	95	ASN
1	C	211	GLN
1	D	95	ASN
1	D	100	GLN
1	D	141	ASN
1	D	149	ASN
1	D	178	ASN
1	D	189	GLN
1	D	211	GLN
1	E	178	ASN
1	E	339	ASN
1	E	344	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 oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

31 ligands 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
3	GLY	A	503	-	4,4,4	1.02	0	3,4,4	0.80	0
2	NAG	D	501	1	14,14,15	0.42	0	17,19,21	0.49	0
5	PX4	B	504	-	15,15,45	1.42	1 (6%)	15,15,53	1.13	0
2	NAG	E	502	1	14,14,15	0.43	0	17,19,21	0.50	0
3	GLY	D	503	-	4,4,4	1.02	0	3,4,4	0.76	0
5	PX4	C	506	-	15,15,45	1.42	1 (6%)	15,15,53	1.12	0
4	RI5	A	504	-	25,25,25	0.79	1 (4%)	32,46,46	1.52	5 (15%)
2	NAG	A	502	1	14,14,15	0.24	0	17,19,21	0.46	0
5	PX4	A	507	-	13,13,45	1.50	1 (7%)	13,13,53	1.16	0
2	NAG	D	502	1	14,14,15	0.24	0	17,19,21	0.46	0
5	PX4	B	506	-	13,13,45	1.50	1 (7%)	13,13,53	1.15	0
2	NAG	B	501	1	14,14,15	0.41	0	17,19,21	0.49	0
5	PX4	D	504	-	15,15,45	1.41	1 (6%)	15,15,53	1.13	0
2	NAG	E	503	1	14,14,15	0.24	0	17,19,21	0.46	0
5	PX4	D	507	-	13,13,45	1.50	1 (7%)	13,13,53	1.16	0
5	PX4	E	505	-	14,14,45	1.46	1 (7%)	14,14,53	1.14	0
2	NAG	B	502	1	14,14,15	0.23	0	17,19,21	0.46	0
5	PX4	B	505	-	13,13,45	1.50	1 (7%)	13,13,53	1.16	0
5	PX4	A	506	-	15,15,45	1.42	1 (6%)	15,15,53	1.12	0
5	PX4	D	506	-	15,15,45	1.42	1 (6%)	15,15,53	1.12	0
5	PX4	C	505	-	14,14,45	1.46	1 (7%)	14,14,53	1.15	0
3	GLY	C	503	-	4,4,4	1.01	0	3,4,4	0.81	0
2	NAG	C	501	1	14,14,15	0.42	0	17,19,21	0.51	0
5	PX4	A	505	-	15,15,45	1.42	1 (6%)	15,15,53	1.13	0
5	PX4	E	504	-	15,15,45	1.41	1 (6%)	15,15,53	1.13	0
5	PX4	D	505	-	15,15,45	1.42	1 (6%)	15,15,53	1.15	0
3	GLY	B	503	-	4,4,4	1.01	0	3,4,4	0.79	0
3	GLY	E	501	-	4,4,4	1.03	0	3,4,4	0.79	0
2	NAG	A	501	1	14,14,15	0.42	0	17,19,21	0.50	0
2	NAG	C	502	1	14,14,15	0.25	0	17,19,21	0.46	0
5	PX4	C	504	-	14,14,45	1.47	1 (7%)	14,14,53	1.14	0

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
3	GLY	A	503	-	-	2/2/2/2	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	D	501	1	-	2/6/23/26	0/1/1/1
5	PX4	B	504	-	-	7/13/13/49	-
2	NAG	E	502	1	-	2/6/23/26	0/1/1/1
3	GLY	D	503	-	-	2/2/2/2	-
5	PX4	C	506	-	-	6/13/13/49	-
4	RI5	A	504	-	-	0/4/77/77	0/6/5/5
2	NAG	A	502	1	-	2/6/23/26	0/1/1/1
5	PX4	A	507	-	-	5/11/11/49	-
2	NAG	D	502	1	-	1/6/23/26	0/1/1/1
5	PX4	B	506	-	-	6/11/11/49	-
2	NAG	B	501	1	-	2/6/23/26	0/1/1/1
5	PX4	D	504	-	-	5/13/13/49	-
2	NAG	E	503	1	-	2/6/23/26	0/1/1/1
5	PX4	D	507	-	-	6/11/11/49	-
5	PX4	E	505	-	-	5/12/12/49	-
2	NAG	B	502	1	-	2/6/23/26	0/1/1/1
5	PX4	B	505	-	-	5/11/11/49	-
5	PX4	A	506	-	-	3/13/13/49	-
5	PX4	D	506	-	-	5/13/13/49	-
5	PX4	C	505	-	-	4/12/12/49	-
3	GLY	C	503	-	-	2/2/2/2	-
2	NAG	C	501	1	-	2/6/23/26	0/1/1/1
5	PX4	A	505	-	-	5/13/13/49	-
5	PX4	E	504	-	-	5/13/13/49	-
5	PX4	D	505	-	-	7/13/13/49	-
3	GLY	B	503	-	-	2/2/2/2	-
3	GLY	E	501	-	-	2/2/2/2	-
2	NAG	A	501	1	-	2/6/23/26	0/1/1/1
2	NAG	C	502	1	-	2/6/23/26	0/1/1/1
5	PX4	C	504	-	-	6/12/12/49	-

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	506	PX4	O7-C23	3.54	1.42	1.30
5	C	504	PX4	O7-C23	3.54	1.42	1.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	506	PX4	O7-C23	3.54	1.42	1.30
5	C	506	PX4	O7-C23	3.53	1.42	1.30
5	D	507	PX4	O7-C23	3.52	1.42	1.30
5	D	505	PX4	O7-C23	3.52	1.42	1.30
5	A	505	PX4	O7-C23	3.52	1.42	1.30
5	B	505	PX4	O7-C23	3.52	1.42	1.30
5	A	507	PX4	O7-C23	3.52	1.42	1.30
5	D	506	PX4	O7-C23	3.51	1.42	1.30
5	E	505	PX4	O7-C23	3.51	1.42	1.30
5	E	504	PX4	O7-C23	3.51	1.42	1.30
5	B	504	PX4	O7-C23	3.51	1.42	1.30
5	C	505	PX4	O7-C23	3.50	1.42	1.30
5	D	504	PX4	O7-C23	3.48	1.42	1.30
4	A	504	RI5	C07-C06	3.02	1.59	1.55

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	504	RI5	O12-C05-C06	5.16	115.58	108.26
4	A	504	RI5	C08-C09-C04	3.43	116.50	112.82
4	A	504	RI5	C21-C07-C15	-3.28	105.76	114.17
4	A	504	RI5	O12-C10-C09	-2.28	107.17	109.71
4	A	504	RI5	C05-C04-C02	-2.03	117.47	121.29

There are no chirality outliers.

All (109) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	503	GLY	O-C-CA-N
3	A	503	GLY	OXT-C-CA-N
3	D	503	GLY	OXT-C-CA-N
3	E	501	GLY	OXT-C-CA-N
2	D	501	NAG	O5-C5-C6-O6
2	E	502	NAG	O5-C5-C6-O6
2	B	501	NAG	O5-C5-C6-O6
2	A	501	NAG	O5-C5-C6-O6
2	C	501	NAG	O5-C5-C6-O6
2	A	501	NAG	C4-C5-C6-O6
2	E	503	NAG	O5-C5-C6-O6
2	D	501	NAG	C4-C5-C6-O6
2	B	501	NAG	C4-C5-C6-O6
2	E	502	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
3	C	503	GLY	O-C-CA-N
3	D	503	GLY	O-C-CA-N
3	E	501	GLY	O-C-CA-N
3	B	503	GLY	OXT-C-CA-N
3	C	503	GLY	OXT-C-CA-N
2	C	501	NAG	C4-C5-C6-O6
2	E	503	NAG	C4-C5-C6-O6
2	B	502	NAG	O5-C5-C6-O6
3	B	503	GLY	O-C-CA-N
5	E	504	PX4	C27-C28-C29-C30
2	C	502	NAG	O5-C5-C6-O6
5	C	505	PX4	C27-C28-C29-C30
5	D	504	PX4	C27-C28-C29-C30
5	A	505	PX4	C27-C28-C29-C30
2	A	502	NAG	O5-C5-C6-O6
5	C	505	PX4	C30-C31-C32-C33
5	C	506	PX4	C27-C28-C29-C30
5	D	505	PX4	C32-C33-C34-C35
5	E	505	PX4	C24-C25-C26-C27
5	D	506	PX4	C27-C28-C29-C30
5	C	504	PX4	C27-C28-C29-C30
2	B	502	NAG	C4-C5-C6-O6
5	E	505	PX4	C23-C24-C25-C26
5	D	506	PX4	C28-C29-C30-C31
5	E	504	PX4	C23-C24-C25-C26
5	B	504	PX4	C27-C28-C29-C30
5	A	506	PX4	C26-C27-C28-C29
5	C	504	PX4	C23-C24-C25-C26
5	C	506	PX4	C28-C29-C30-C31
5	A	506	PX4	C24-C25-C26-C27
2	D	502	NAG	O5-C5-C6-O6
5	C	504	PX4	C30-C31-C32-C33
5	B	506	PX4	C30-C31-C32-C33
5	E	504	PX4	C30-C31-C32-C33
5	D	505	PX4	C30-C31-C32-C33
5	D	507	PX4	C30-C31-C32-C33
5	A	505	PX4	C23-C24-C25-C26
5	D	504	PX4	C30-C31-C32-C33
5	A	505	PX4	C30-C31-C32-C33
5	B	504	PX4	C31-C32-C33-C34
5	D	504	PX4	C23-C24-C25-C26
5	E	505	PX4	C30-C31-C32-C33

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Mol	Chain	Res	Type	Atoms
5	B	505	PX4	C30-C31-C32-C33
5	D	505	PX4	C27-C28-C29-C30
5	D	505	PX4	C24-C25-C26-C27
5	D	506	PX4	O7-C23-C24-C25
5	A	505	PX4	O7-C23-C24-C25
5	A	505	PX4	O8-C23-C24-C25
5	E	505	PX4	C27-C28-C29-C30
5	D	504	PX4	O8-C23-C24-C25
5	D	506	PX4	O8-C23-C24-C25
5	C	504	PX4	O8-C23-C24-C25
5	E	504	PX4	O7-C23-C24-C25
5	D	504	PX4	O7-C23-C24-C25
5	B	504	PX4	C23-C24-C25-C26
5	B	504	PX4	O7-C23-C24-C25
5	D	505	PX4	C26-C27-C28-C29
5	A	507	PX4	C30-C31-C32-C33
5	C	506	PX4	O7-C23-C24-C25
5	A	507	PX4	O7-C23-C24-C25
5	A	507	PX4	C24-C25-C26-C27
5	E	504	PX4	O8-C23-C24-C25
5	C	506	PX4	C30-C31-C32-C33
5	B	504	PX4	O8-C23-C24-C25
5	D	507	PX4	O7-C23-C24-C25
5	C	506	PX4	C23-C24-C25-C26
5	B	506	PX4	C27-C28-C29-C30
5	B	505	PX4	O7-C23-C24-C25
5	B	506	PX4	O7-C23-C24-C25
5	C	506	PX4	O8-C23-C24-C25
5	C	505	PX4	O7-C23-C24-C25
5	A	507	PX4	O8-C23-C24-C25
5	C	504	PX4	O7-C23-C24-C25
5	B	506	PX4	C24-C25-C26-C27
5	D	505	PX4	O7-C23-C24-C25
2	C	502	NAG	C4-C5-C6-O6
5	D	507	PX4	C28-C29-C30-C31
5	D	507	PX4	O8-C23-C24-C25
5	D	507	PX4	C27-C28-C29-C30
5	B	506	PX4	O8-C23-C24-C25
5	C	505	PX4	O8-C23-C24-C25
5	D	507	PX4	C24-C25-C26-C27
5	D	505	PX4	O8-C23-C24-C25
5	B	505	PX4	O8-C23-C24-C25

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Mol	Chain	Res	Type	Atoms
5	B	504	PX4	C28-C29-C30-C31
5	D	506	PX4	C30-C31-C32-C33
2	A	502	NAG	C4-C5-C6-O6
5	A	507	PX4	C28-C29-C30-C31
5	B	505	PX4	C24-C25-C26-C27
5	A	506	PX4	C27-C28-C29-C30
5	B	504	PX4	C30-C31-C32-C33
5	C	504	PX4	C31-C32-C33-C34
5	E	505	PX4	C28-C29-C30-C31
5	B	506	PX4	C28-C29-C30-C31
5	B	505	PX4	C27-C28-C29-C30

There are no ring outliers.

16 monomers are involved in 23 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	501	NAG	1	0
5	B	504	PX4	2	0
2	E	502	NAG	1	0
5	C	506	PX4	2	0
4	A	504	RI5	1	0
2	B	501	NAG	1	0
5	D	504	PX4	2	0
5	E	505	PX4	1	0
5	B	505	PX4	1	0
5	D	506	PX4	2	0
2	C	501	NAG	1	0
5	A	505	PX4	3	0
5	E	504	PX4	2	0
5	D	505	PX4	1	0
2	A	501	NAG	1	0
5	C	504	PX4	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less 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 GLY A 503

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 B 504

Bond lengths

Bond angles

Torsions

Rings

Ligand GLY D 503

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 C 506

Bond lengths

Bond angles

Torsions

Rings

Ligand RI5 A 504

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 A 507

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 B 506

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 D 504

Bond lengths	Bond angles
Torsions	Rings

Ligand PX4 D 507

Bond lengths	Bond angles
Torsions	Rings

Ligand PX4 E 505

Bond lengths	Bond angles
Torsions	Rings

Ligand PX4 B 505

Bond lengths	Bond angles
Torsions	Rings

Ligand PX4 A 506

Bond lengths	Bond angles
Torsions	Rings

Ligand PX4 D 506

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 C 505

Bond lengths

Bond angles

Torsions

Rings

Ligand GLY C 503

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 A 505

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 E 504

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 D 505

Bond lengths

Bond angles

Torsions

Rings

Ligand GLY B 503

Bond lengths

Bond angles

Torsions

Rings

Ligand GLY E 501

Bond lengths

Bond angles

Torsions

Rings

Ligand PX4 C 504	
Bond lengths	Bond angles
Torsions	Rings

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-72676. 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 ⓘ
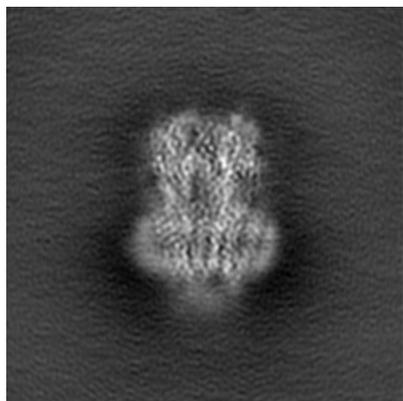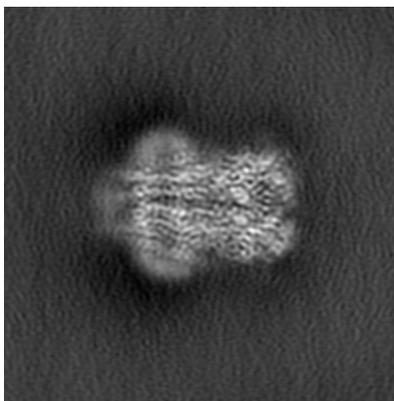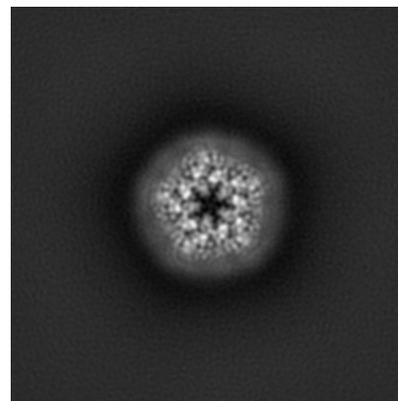
6.1.1 Primary map

X   Y   Z

6.1.2 Raw map

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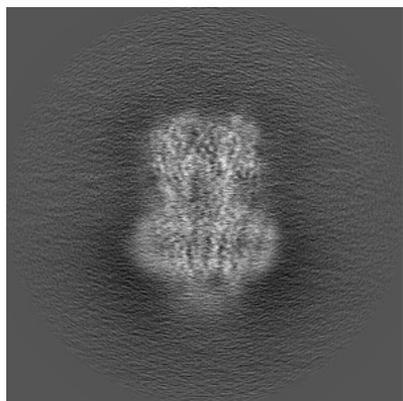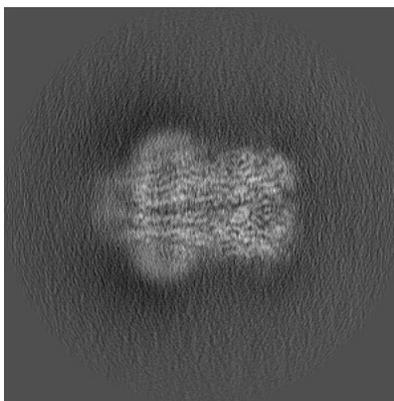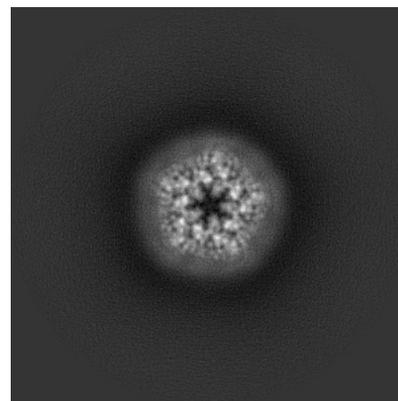
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
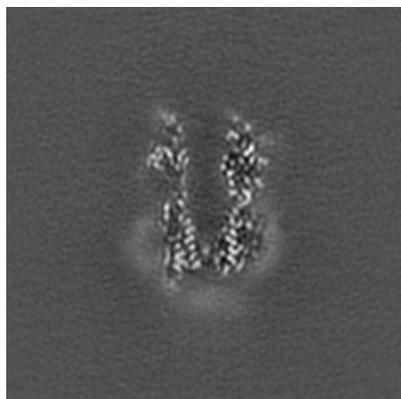
6.2.1 Primary map
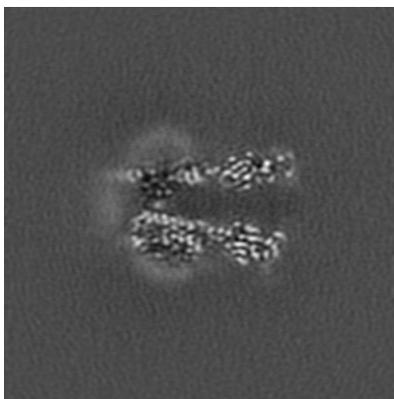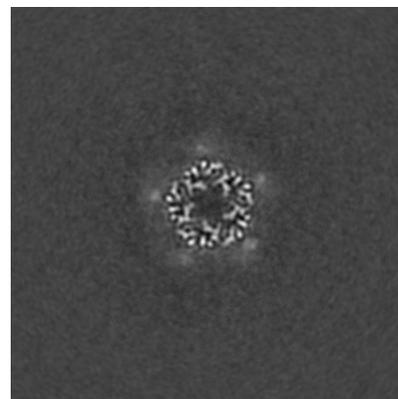
| X Index: 152 | Y Index: 152 | Z Index: 152 |

6.2.2 Raw map
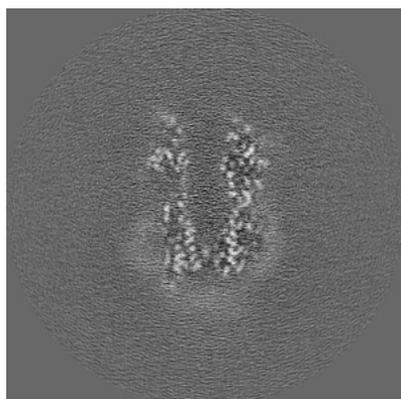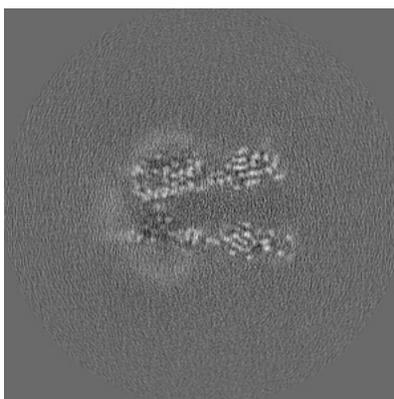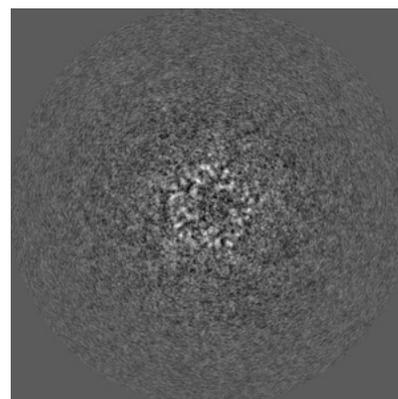
| X Index: 152 | Y Index: 152 | Z Index: 152 |

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

6.3 Largest variance slices ⓘ

6.3.1 Primary map
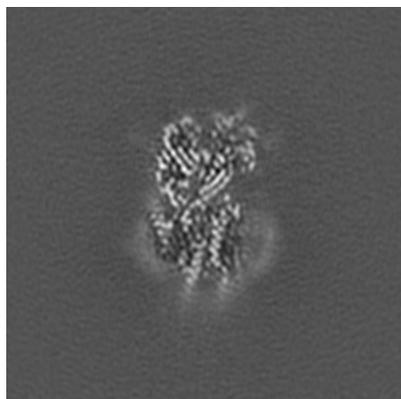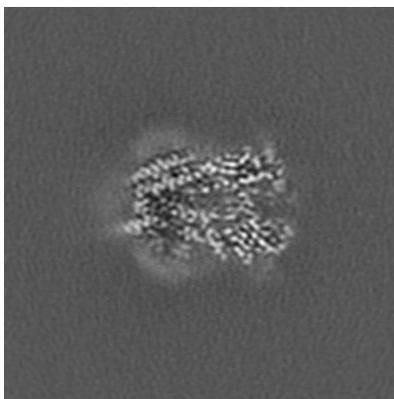
| X Index: 133 | Y Index: 167 | Z Index: 182 |
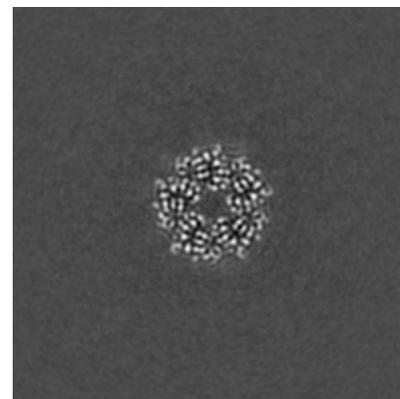
6.3.2 Raw map
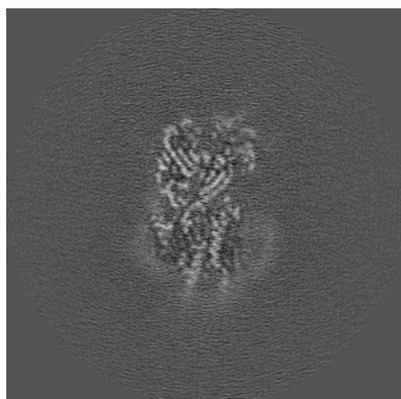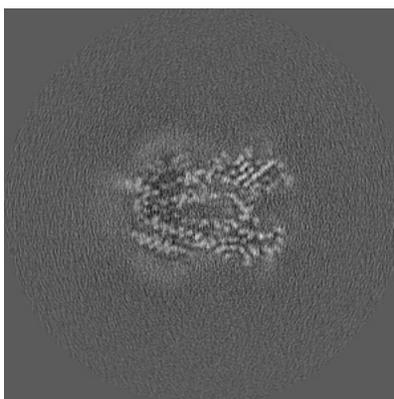
| X Index: 171 | Y Index: 166 | Z Index: 182 |
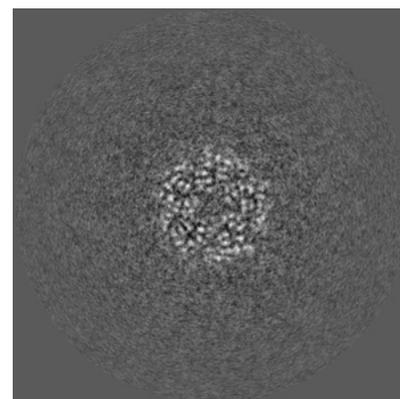
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1   Primary map
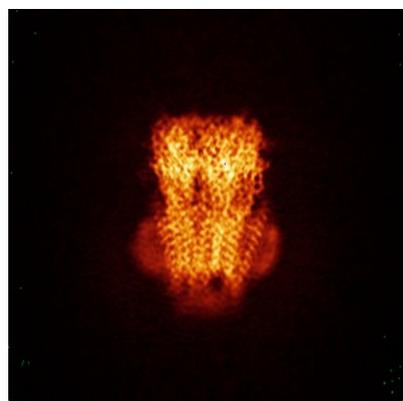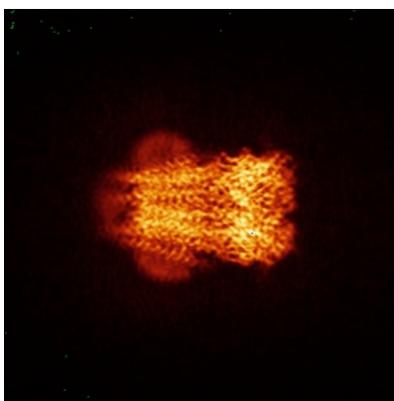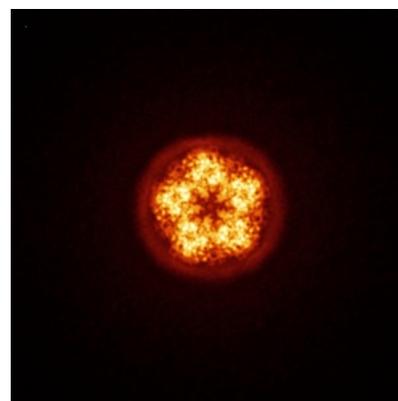
X   Y   Z

6.4.2   Raw map

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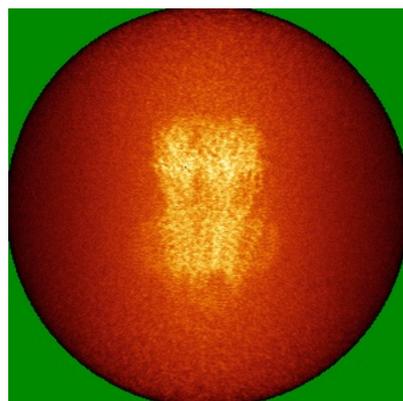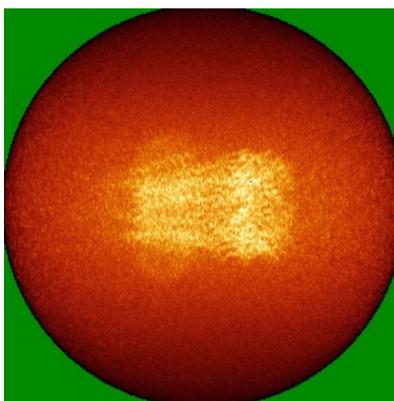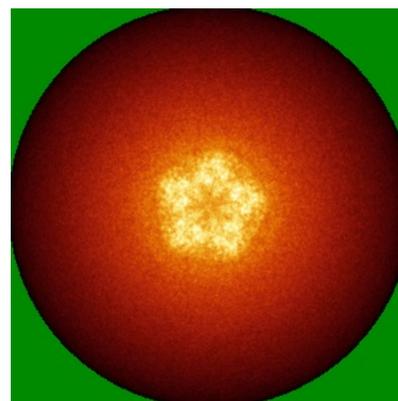
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (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 0.004. 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_72676_msk_1.map ⓘ

X　　　　　　　　　　Y　　　　　　　　　　Z
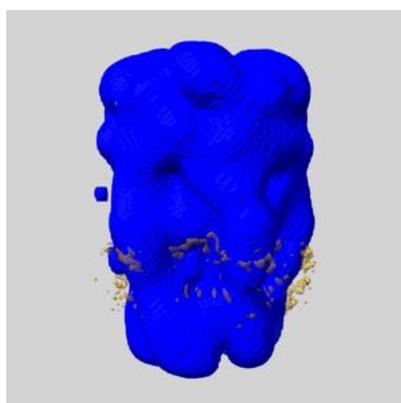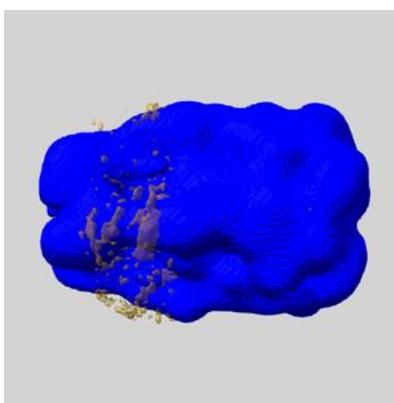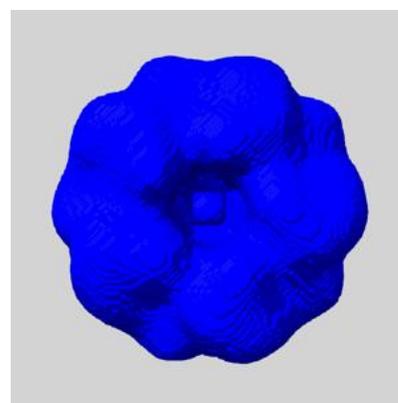
7 Map analysis ⓘ

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 ⓘ
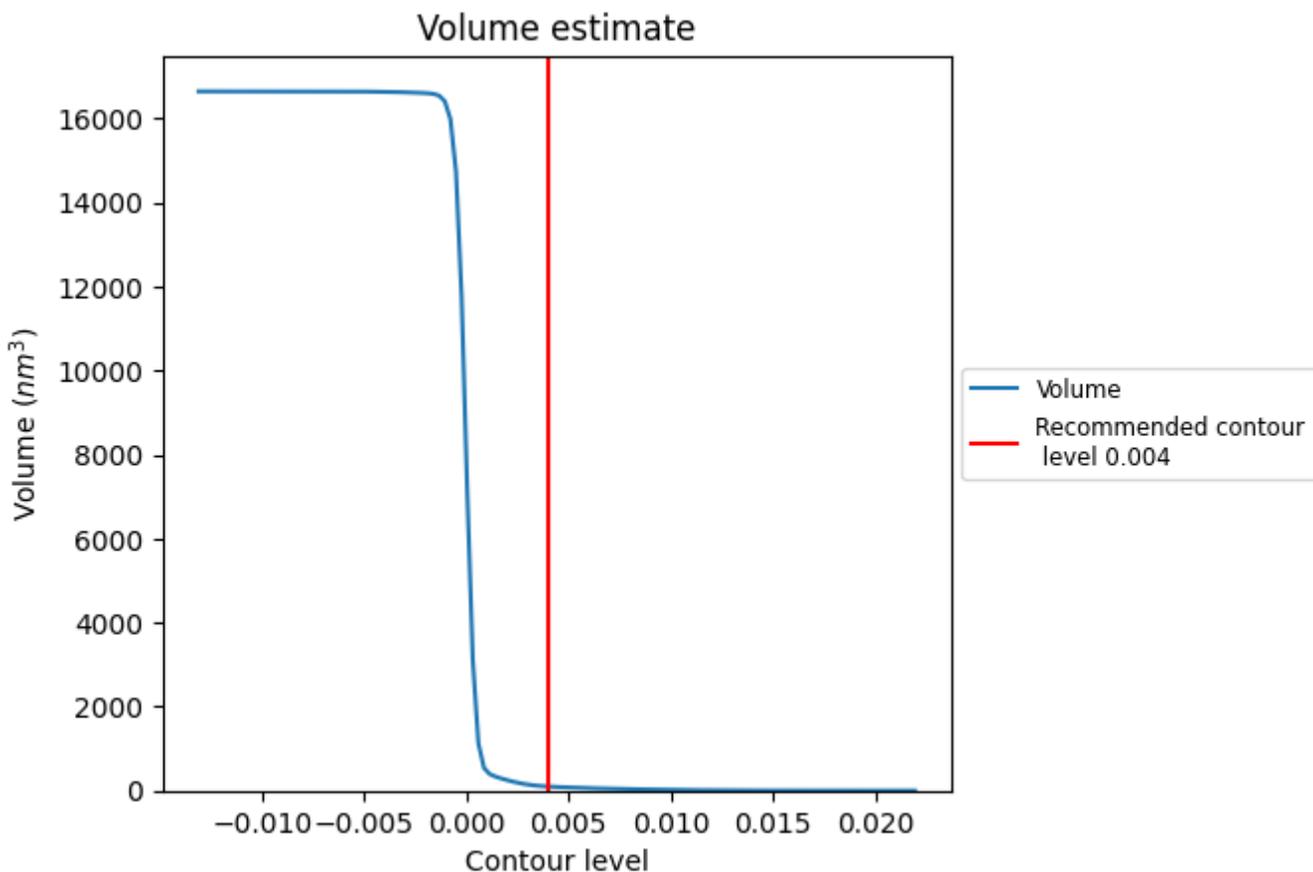
The volume at the recommended contour level is 97 nm^3; this corresponds to an approximate mass of 88 kDa.

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 ⓘ
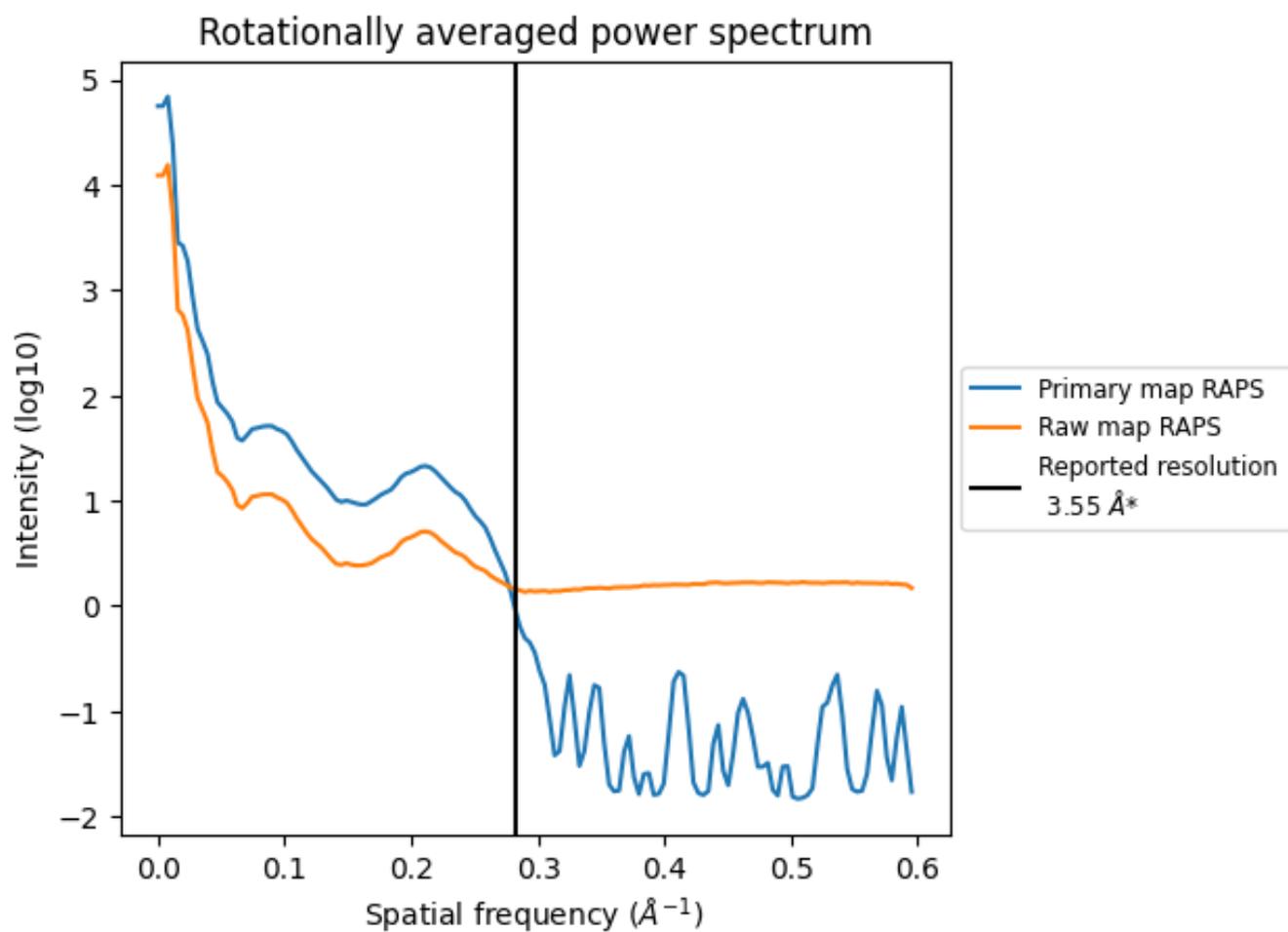
*Reported resolution corresponds to spatial frequency of 0.282 Å^{-1}

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 ⓘ
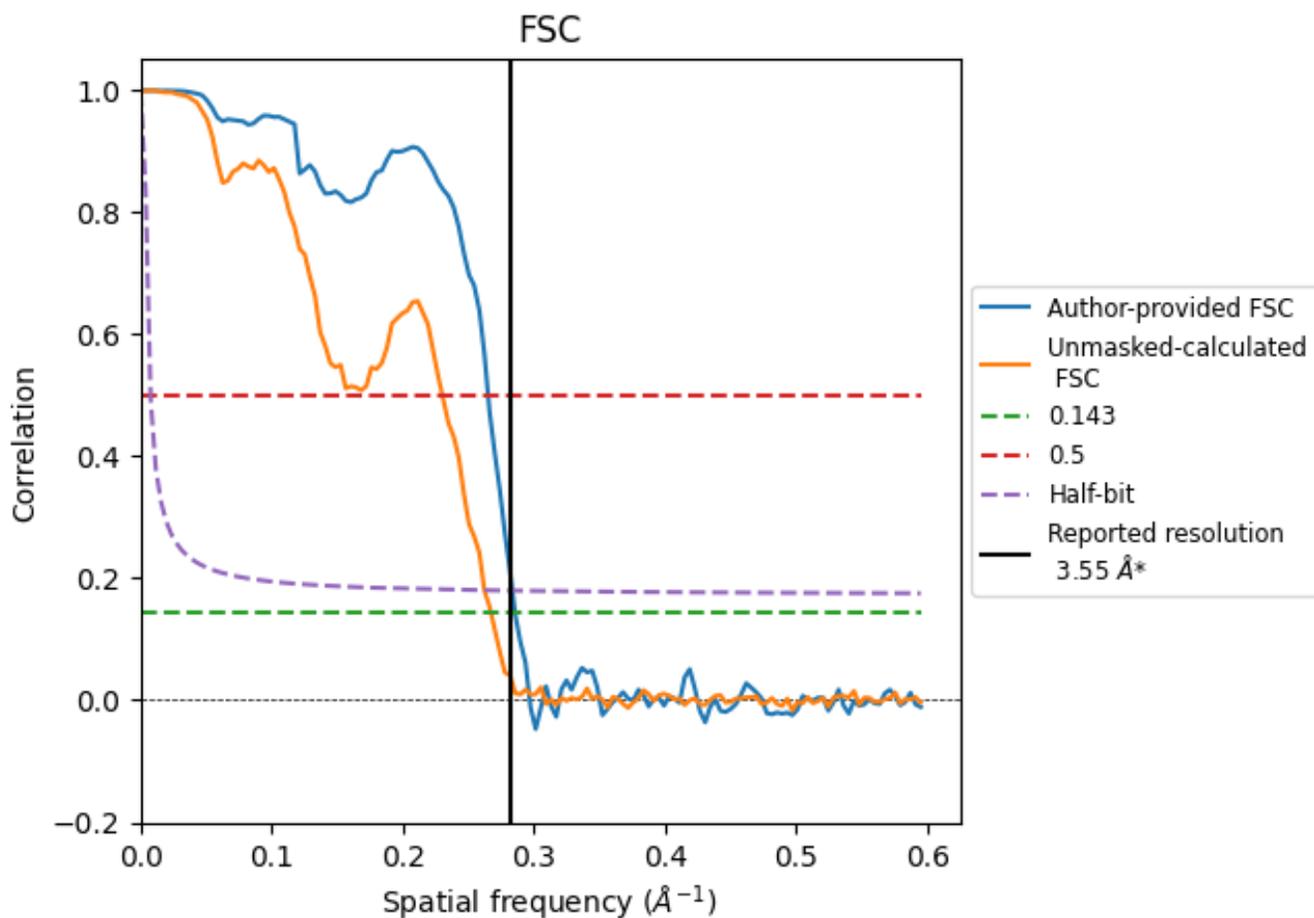
*Reported resolution corresponds to spatial frequency of 0.282 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.55	-	-
Author-provided FSC curve	3.50	3.77	3.53
Unmasked-calculated*	3.74	4.34	3.81

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

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-72676 and PDB model 9Y80. Per-residue inclusion information can be found in section 3 on page 10.

9.1 Map-model overlay ⓘ

X   Y   Z
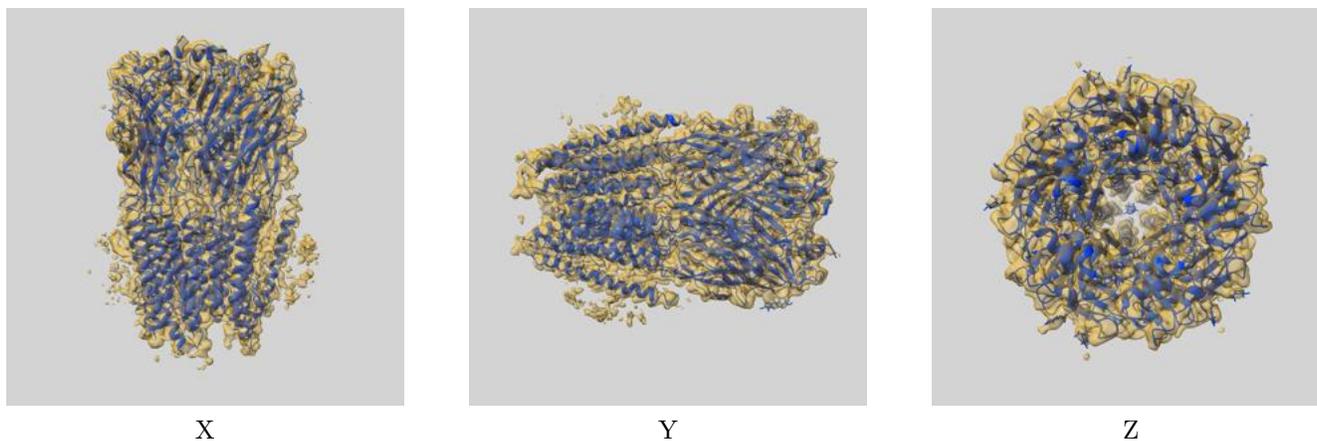
The images above show the 3D surface view of the map at the recommended contour level 0.004 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model　ⓘ
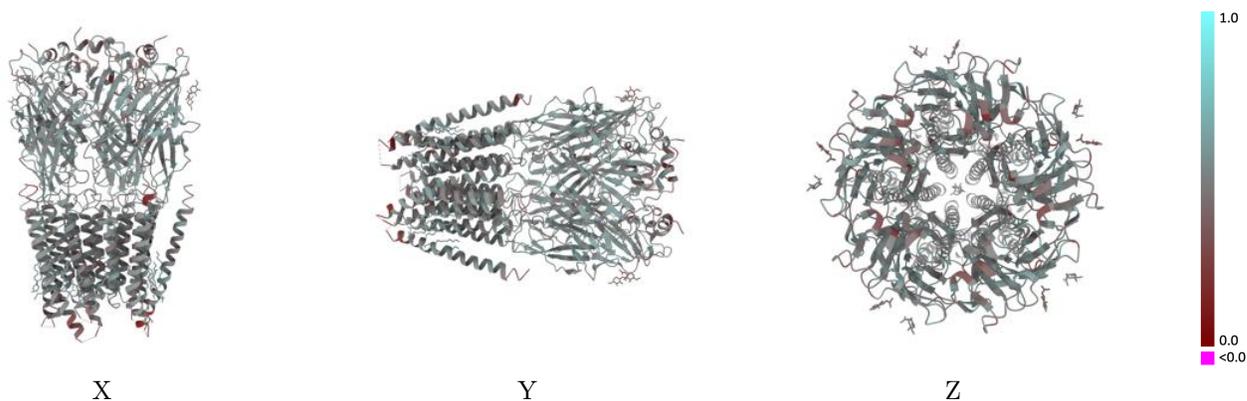

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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　ⓘ
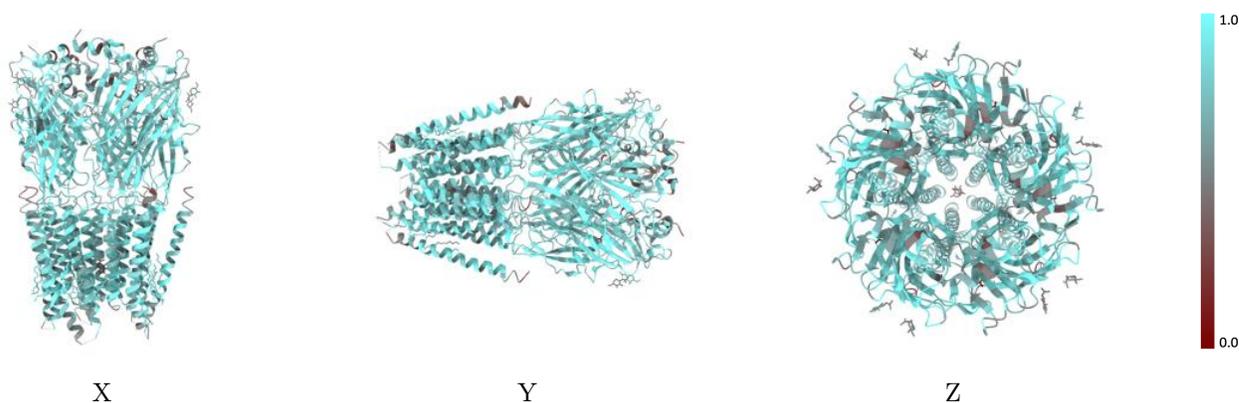
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.004).

9.4 Atom inclusion ⓘ
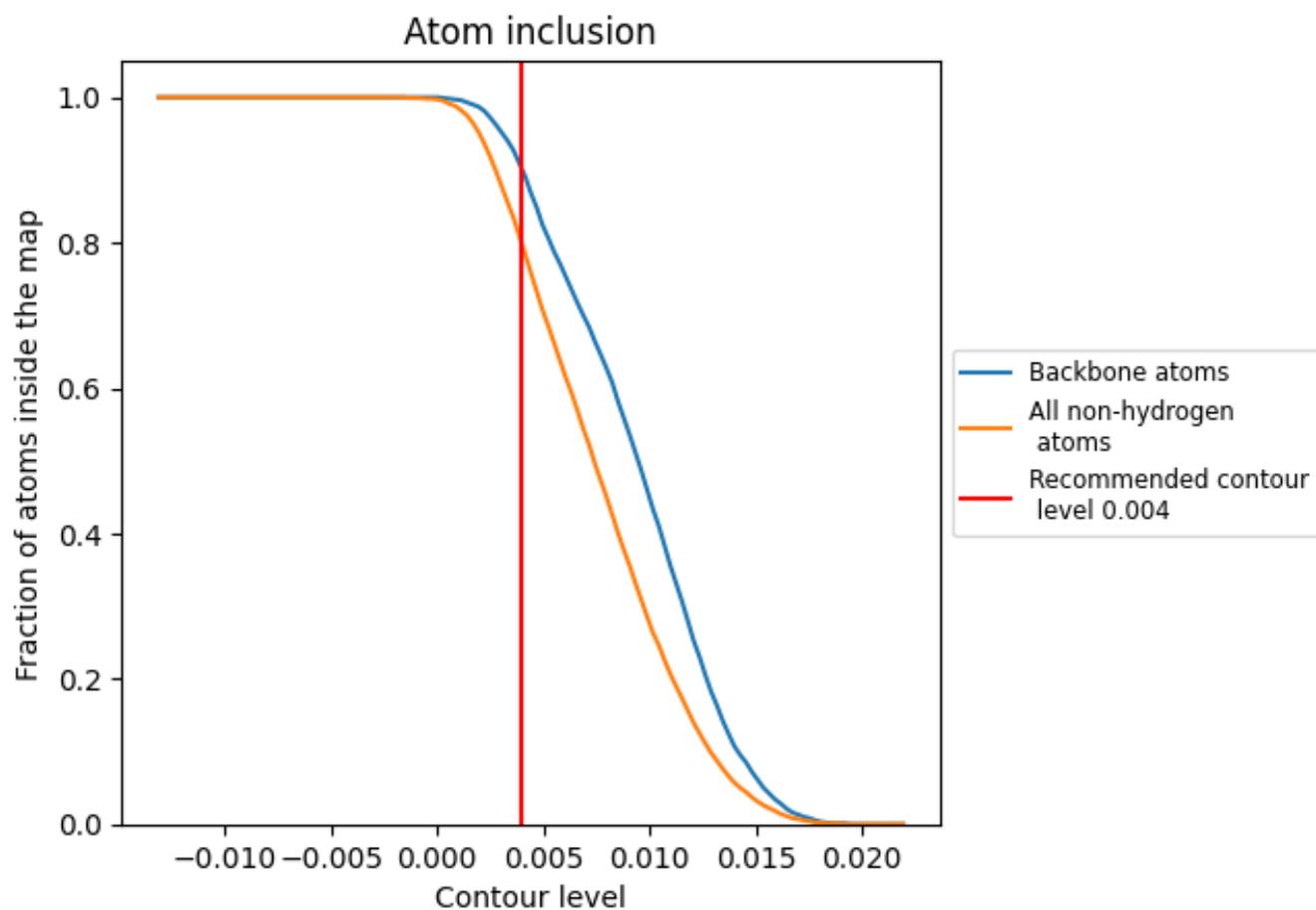
At the recommended contour level, 90% of all backbone atoms, 80% of all non-hydrogen atoms, are inside the map.

9.5   Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.004) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7980	0.4920
A	0.7960	0.4910
B	0.8010	0.4930
C	0.8000	0.4910
D	0.7970	0.4930
E	0.7950	0.4910

1.0

0.0

<0.0