WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report ⓘ

Nov 19, 2024 – 12:24 PM EST

PDB ID	:	9DX7
EMDB ID	:	EMD-47282
Title	:	LRRC8A:D Conformation 1
Authors	:	Lurie, A.; Brohawn, S.G.
Deposited on	:	2024-10-10
Resolution	:	3.30 Å(reported)

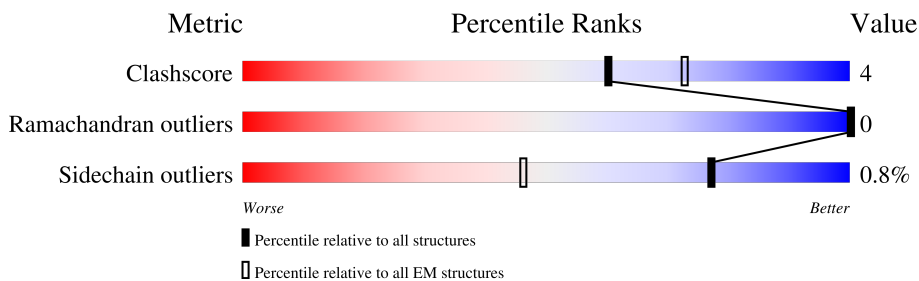The following versions of software and data (see references ⓘ) were used in the production of this report:

EMDB validation analysis	:	0.0.1.dev113
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 3.30 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		0.8%

Worse   *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	911	29% 5% 65%
1	B	911	30% 5% 65%
1	C	911	32% · 65%
1	D	911	31% · 66%
2	E	868	32% · 64%
2	F	868	29% 7% 64%

2 Entry composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 16238 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 Volume-regulated anion channel subunit LRRC8A,Soluble cytochrome b562.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	C	316	Total	C	N	O	S	0	0
			2658	1755	427	459	17		
1	A	315	Total	C	N	O	S	0	0
			2654	1753	426	458	17		
1	B	316	Total	C	N	O	S	0	0
			2658	1755	427	459	17		
1	D	308	Total	C	N	O	S	0	0
			2600	1724	417	443	16		

There are 60 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	68O	TRP	MET	conflict	UNP P0ABE8
C	68Y	ILE	VAL	conflict	UNP P0ABE8
C	72D	ALA	SER	conflict	UNP P0ABE8
C	72F	ILE	HIS	conflict	UNP P0ABE8
C	72G	GLN	LYS	conflict	UNP P0ABE8
C	72J	LEU	-	linker	UNP P0ABE8
C	811	SER	-	expression tag	UNP Q80WG5
C	812	ASN	-	expression tag	UNP Q80WG5
C	813	SER	-	expression tag	UNP Q80WG5
C	814	LEU	-	expression tag	UNP Q80WG5
C	815	GLU	-	expression tag	UNP Q80WG5
C	816	VAL	-	expression tag	UNP Q80WG5
C	817	LEU	-	expression tag	UNP Q80WG5
C	818	PHE	-	expression tag	UNP Q80WG5
C	819	GLN	-	expression tag	UNP Q80WG5
A	68O	TRP	MET	conflict	UNP P0ABE8
A	68Y	ILE	VAL	conflict	UNP P0ABE8
A	72D	ALA	SER	conflict	UNP P0ABE8
A	72F	ILE	HIS	conflict	UNP P0ABE8
A	72G	GLN	LYS	conflict	UNP P0ABE8
A	72J	LEU	-	linker	UNP P0ABE8

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Chain	Residue	Modelled	Actual	Comment	Reference
A	811	SER	-	expression tag	UNP Q80WG5
A	812	ASN	-	expression tag	UNP Q80WG5
A	813	SER	-	expression tag	UNP Q80WG5
A	814	LEU	-	expression tag	UNP Q80WG5
A	815	GLU	-	expression tag	UNP Q80WG5
A	816	VAL	-	expression tag	UNP Q80WG5
A	817	LEU	-	expression tag	UNP Q80WG5
A	818	PHE	-	expression tag	UNP Q80WG5
A	819	GLN	-	expression tag	UNP Q80WG5
B	68O	TRP	MET	conflict	UNP P0ABE8
B	68Y	ILE	VAL	conflict	UNP P0ABE8
B	72D	ALA	SER	conflict	UNP P0ABE8
B	72F	ILE	HIS	conflict	UNP P0ABE8
B	72G	GLN	LYS	conflict	UNP P0ABE8
B	72J	LEU	-	linker	UNP P0ABE8
B	811	SER	-	expression tag	UNP Q80WG5
B	812	ASN	-	expression tag	UNP Q80WG5
B	813	SER	-	expression tag	UNP Q80WG5
B	814	LEU	-	expression tag	UNP Q80WG5
B	815	GLU	-	expression tag	UNP Q80WG5
B	816	VAL	-	expression tag	UNP Q80WG5
B	817	LEU	-	expression tag	UNP Q80WG5
B	818	PHE	-	expression tag	UNP Q80WG5
B	819	GLN	-	expression tag	UNP Q80WG5
D	60W	TRP	MET	conflict	UNP P0ABE8
D	61G	ILE	VAL	conflict	UNP P0ABE8
D	64L	ALA	SER	conflict	UNP P0ABE8
D	64N	ILE	HIS	conflict	UNP P0ABE8
D	64O	GLN	LYS	conflict	UNP P0ABE8
D	64R	LEU	-	linker	UNP P0ABE8
D	811	SER	-	expression tag	UNP Q80WG5
D	812	ASN	-	expression tag	UNP Q80WG5
D	813	SER	-	expression tag	UNP Q80WG5
D	814	LEU	-	expression tag	UNP Q80WG5
D	815	GLU	-	expression tag	UNP Q80WG5
D	816	VAL	-	expression tag	UNP Q80WG5
D	817	LEU	-	expression tag	UNP Q80WG5
D	818	PHE	-	expression tag	UNP Q80WG5
D	819	GLN	-	expression tag	UNP Q80WG5

- Molecule 2 is a protein called Volume-regulated anion channel subunit LRRC8D.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	309	Total 2580	C 1715	N 402	O 445	S 18	0	0
2	F	309	Total 2580	C 1715	N 402	O 445	S 18	0	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	860	SER	-	expression tag	UNP Q8BGR2
E	861	ASN	-	expression tag	UNP Q8BGR2
E	862	SER	-	expression tag	UNP Q8BGR2
E	863	GLU	-	expression tag	UNP Q8BGR2
E	864	ASN	-	expression tag	UNP Q8BGR2
E	865	LEU	-	expression tag	UNP Q8BGR2
E	866	TYR	-	expression tag	UNP Q8BGR2
E	867	PHE	-	expression tag	UNP Q8BGR2
E	868	GLN	-	expression tag	UNP Q8BGR2
F	860	SER	-	expression tag	UNP Q8BGR2
F	861	ASN	-	expression tag	UNP Q8BGR2
F	862	SER	-	expression tag	UNP Q8BGR2
F	863	GLU	-	expression tag	UNP Q8BGR2
F	864	ASN	-	expression tag	UNP Q8BGR2
F	865	LEU	-	expression tag	UNP Q8BGR2
F	866	TYR	-	expression tag	UNP Q8BGR2
F	867	PHE	-	expression tag	UNP Q8BGR2
F	868	GLN	-	expression tag	UNP Q8BGR2

- Molecule 3 is 1,2-dioleoyl-sn-glycero-3-phosphoethanolamine (three-letter code: PEE) (formula: $C_{41}H_{78}NO_8P$).
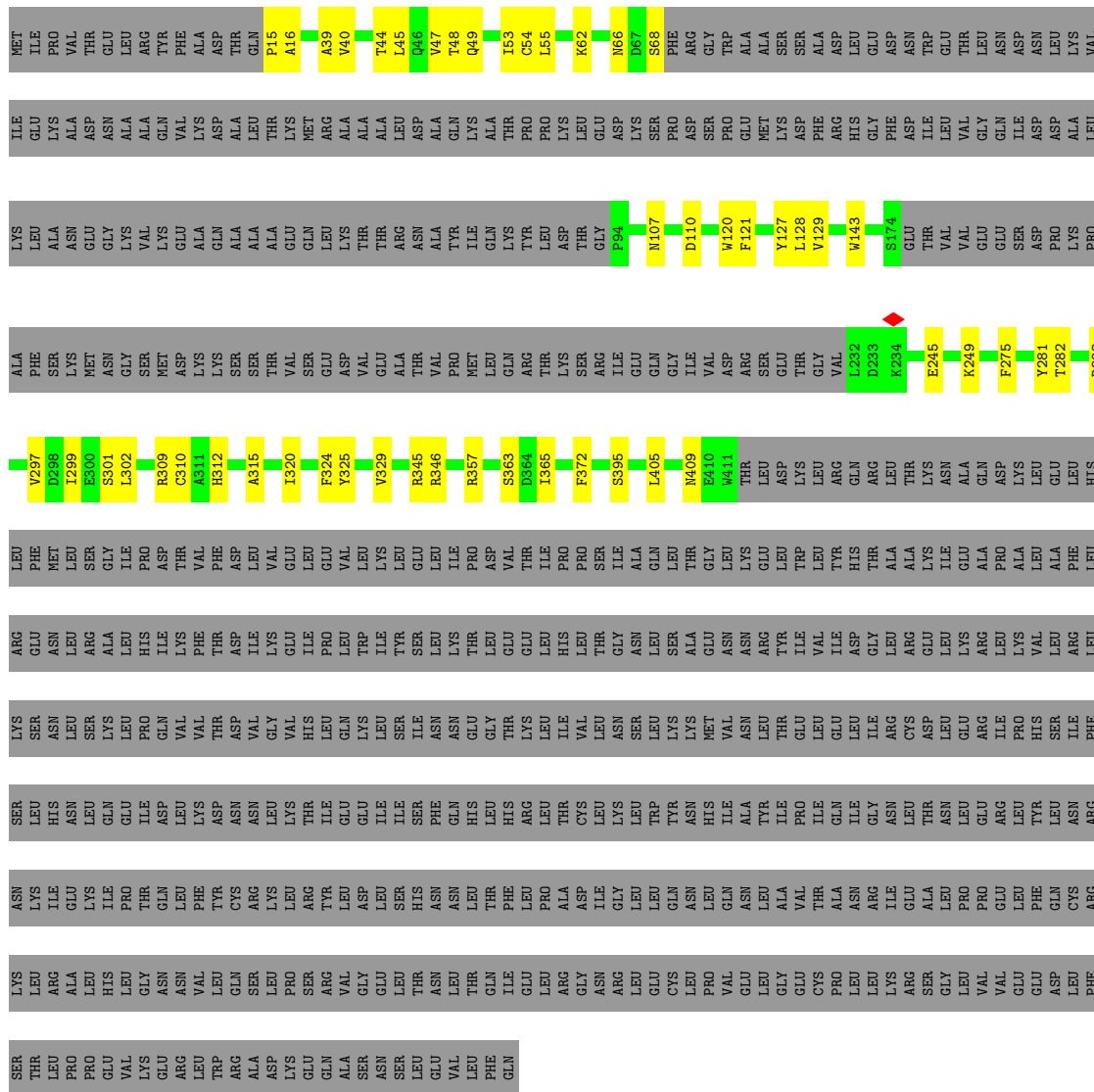
PEE

Mol	Chain	Residues	Atoms					AltConf
3	C	1	Total 51	C 41	N 1	O 8	P 1	0
3	C	1	Total 14	C 12	O 2			0
3	C	1	Total 13	C 11	O 2			0
3	C	1	Total 39	C 29	N 1	O 8	P 1	0
3	A	1	Total 51	C 41	N 1	O 8	P 1	0
3	A	1	Total 39	C 29	N 1	O 8	P 1	0
3	A	1	Total 14	C 12	O 2			0
3	A	1	Total 13	C 11	O 2			0
3	B	1	Total 14	C 12	O 2			0
3	B	1	Total 13	C 11	O 2			0
3	B	1	Total 39	C 29	N 1	O 8	P 1	0
3	D	1	Total 14	C 12	O 2			0
3	D	1	Total 39	C 29	N 1	O 8	P 1	0
3	E	1	Total 14	C 12	O 2			0

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Mol	Chain	Residues	Atoms					AltConf
3	E	1	Total	C	N	O	P	0
			39	29	1	8	1	
3	F	1	Total	C	N	O	P	0
			51	41	1	8	1	
3	F	1	Total	C	O			0
			12	10	2			
3	F	1	Total	C	N	O	P	0
			39	29	1	8	1	

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: Volume-regulated anion channel subunit LRRC8A,Soluble cytochrome b562

Chain C:

- Molecule 1: Volume-regulated anion channel subunit LRRC8A,Soluble cytochrome b562

Chain A:

• Molecule 1: Volume-regulated anion channel subunit LRRC8A,Soluble cytochrome b562

Chain B:

A311 H312 A315 I320 F324 R357 S363 D364 I365 A373 H377 S395 L405 N409 E410 W411 THR ASP LYS LEU ARG GLN LEU THR LYS ASN ALA GLN ASP LYS LEU GLU LEU HIS LEU PHE MET LEU SER GLY ILE PRO ASP THR VAL PHE ASP LEU

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

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

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

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

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

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

ASP LYS GLU GLN ALA SER SER LEU VAL LEU PHE GLN

● Molecule 1: Volume-regulated anion channel subunit LRRC8A,Soluble cytochrome b562

Chain D: 31% • 66%

MET ILE PRO VAL THR GLU ARG TYR PHE ALA ASP THR GLN P15 A39 Q46 V47 T48 Q49 D50 I53 C54 V60 THR LYS SER CYS ASN ASP SER PHE ARG GLY TRP ALA ALA SER SER ALA ASP LEU GLU ASP ASN TRP LEU ASN ASP LYS VAL

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

LYS LEU ALA ASN GLU GLY LYS VAL LYS GLU ALA GLN ALA ALA ALA GLU GLN LEU LYS THR THR ARG ASN ALA TYR ILE GLN LYS TYR LEU ASP G93 R103 N107 Y114 V129 K162 D165 S174 GLU THR VAL VAL GLU GLU SER PRO LYS PRO ALA PHE

SER LYS MET ASN GLY SER MET ASP LYS LYS SER SER THR VAL SER GLU ASP VAL GLU GLY ALA THR VAL PRO MET LEU GLN ARG THR LYS SER ARG ILE GLU GLY GLY ILE VAL ASP ARG SER GLU THR GLY VAL L232 E238 L243 Y281 V297 D298 I299 R306 C310 A311

H312 A315 F318 R357 S363 F372 A373 H377 E396 N400 N408 W411 THR LEU ASP LYS LEU ARG LEU GLN ARG THR LYS ASN ALA GLN ASP LYS LEU GLU LEU HIS LEU PHE MET LEU SER GLY ILE PRO ASP THR VAL PHE ASP VAL GLU LEU GLU LEU GLU LEU GLU

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

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

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

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

• Molecule 2: Volume-regulated anion channel subunit LRRC8D

Chain E: 32% • 64%

• Molecule 2: Volume-regulated anion channel subunit LRRC8D

Chain F: 29% 7% 64%

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	43907	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 $(e^-/Å^2)$	50	Depositor
Minimum defocus (nm)	6000	Depositor
Maximum defocus (nm)	18000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.600	Depositor
Minimum map value	-0.794	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.026	Depositor
Recommended contour level	0.12	Depositor
Map size (Å)	435.968, 435.968, 435.968	wwPDB
Map dimensions	416, 416, 416	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.048, 1.048, 1.048	Depositor

5　Model quality ⓘ

5.1　Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: PEE

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	0.26	0/2731	0.42	0/3698
1	B	0.25	0/2735	0.42	0/3704
1	C	0.25	0/2735	0.41	0/3704
1	D	0.25	0/2677	0.41	0/3626
2	E	0.25	0/2656	0.38	0/3596
2	F	0.25	0/2656	0.39	0/3596
All	All	0.25	0/16190	0.41	0/21924

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 ⓘ

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	2654	0	2643	31	0
1	B	2658	0	2645	32	0
1	C	2658	0	2645	18	0
1	D	2600	0	2598	17	0
2	E	2580	0	2580	19	0
2	F	2580	0	2580	43	0
3	A	117	0	166	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	66	0	86	2	0
3	C	117	0	168	3	0
3	D	53	0	70	1	0
3	E	53	0	72	5	0
3	F	102	0	150	10	0
All	All	16238	0	16403	141	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 (141) 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)
3:F:901:PEE:H56	3:F:901:PEE:H23	1.69	0.73
1:C:48:THR:HG22	1:C:49:GLN:HG3	1.71	0.72
2:F:158:ALA:HB2	2:F:340:CYS:HB3	1.70	0.72
2:E:168:TYR:HB3	3:E:902:PEE:H30	1.74	0.70
2:E:59:PRO:HG3	2:F:135:PRO:HD2	1.79	0.64
2:F:390:ARG:HG3	2:F:391:ILE:HG13	1.78	0.64
1:B:296:THR:O	1:B:296:THR:HG22	1.99	0.63
1:C:47:VAL:O	1:D:49:GLN:NE2	2.32	0.62
2:E:294:LYS:NZ	2:F:205:PHE:O	2.34	0.61
1:A:68:SER:H	2:F:346:HIS:HB3	1.65	0.60
1:A:47:VAL:O	1:B:49:GLN:NE2	2.35	0.60
2:E:169:LEU:HD21	3:E:902:PEE:H19	1.84	0.59
1:A:40:VAL:HG22	3:A:901:PEE:H39	1.85	0.59
1:C:405:LEU:O	1:C:409:ASN:ND2	2.36	0.58
1:B:373:ALA:O	1:B:377:HIS:ND1	2.36	0.58
1:B:405:LEU:O	1:B:409:ASN:ND2	2.36	0.58
1:A:405:LEU:O	1:A:409:ASN:ND2	2.38	0.57
2:F:371:ILE:HA	2:F:374:ILE:HG22	1.86	0.57
1:C:46:GLN:HA	1:C:50:ASP:HB2	1.86	0.57
1:D:46:GLN:NE2	1:D:114:TYR:OH	2.38	0.57
2:F:20:LEU:HD12	2:F:194:VAL:HG13	1.88	0.56
2:F:395:GLU:HA	2:F:414:LYS:HA	1.86	0.56
1:A:365:ILE:HG13	1:A:395:SER:HB3	1.86	0.56
1:B:127:TYR:HB3	3:B:903:PEE:H26	1.87	0.56
1:A:53:ILE:HD13	2:F:152:GLN:HG3	1.88	0.55
2:F:317:THR:HG1	2:F:381:CYS:HG	1.55	0.55
1:C:365:ILE:HG12	1:C:395:SER:HB3	1.90	0.54
1:C:48:THR:HG22	1:C:49:GLN:CG	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:143:ASP:OD1	2:E:146:GLN:NE2	2.41	0.54
1:D:396:GLU:O	1:D:400:ASN:ND2	2.39	0.53
1:A:245:GLU:OE2	1:A:249:LYS:NZ	2.40	0.53
1:D:312:HIS:HB3	1:D:315:ALA:HB2	1.91	0.53
1:D:373:ALA:O	1:D:377:HIS:ND1	2.41	0.53
1:A:302:LEU:HD11	1:B:309:ARG:HD3	1.90	0.53
2:F:409:ASP:HB3	2:F:441:GLU:H	1.73	0.53
1:A:48:THR:HG23	3:A:901:PEE:O4	2.09	0.53
1:A:357:ARG:HB2	1:A:363:SER:HA	1.91	0.52
1:A:127:TYR:HB3	3:A:902:PEE:H25	1.92	0.52
2:E:188:PRO:HB2	2:F:427:TYR:HE1	1.75	0.52
2:F:342:PRO:HG2	2:F:344:VAL:HG22	1.92	0.52
1:D:103:ARG:O	1:D:107:ASN:ND2	2.43	0.52
1:B:312:HIS:HB3	1:B:315:ALA:HB2	1.92	0.52
2:F:212:LYS:HE3	2:F:277:LEU:HD21	1.91	0.52
1:B:46:GLN:HA	1:B:50:ASP:HB2	1.92	0.51
1:B:357:ARG:NH2	1:B:365:ILE:O	2.42	0.51
3:A:901:PEE:H16	1:B:48:THR:HG21	1.92	0.51
2:F:441:GLU:OE1	2:F:445:ASN:ND2	2.45	0.50
1:D:297:VAL:HG23	1:D:299:ILE:HG12	1.93	0.50
1:A:44:THR:HG21	3:F:901:PEE:H35	1.94	0.50
2:F:327:THR:HG22	2:F:371:ILE:HD11	1.92	0.50
2:E:52:VAL:HG12	2:E:357:HIS:HA	1.93	0.50
2:F:184:TRP:N	2:F:312:GLN:OE1	2.44	0.49
2:F:365:LYS:HE3	3:F:902:PEE:H16	1.94	0.49
2:F:401:VAL:HG13	2:F:433:LYS:HG3	1.94	0.49
2:F:341:LYS:HG2	2:F:352:VAL:HG22	1.94	0.49
1:C:312:HIS:HB3	1:C:315:ALA:HB2	1.95	0.49
1:B:295:CYS:HB2	1:B:297:VAL:HG13	1.95	0.49
1:B:365:ILE:HG12	1:B:395:SER:HB3	1.95	0.49
2:F:190:THR:HG21	2:F:308:LEU:HD12	1.93	0.49
1:A:297:VAL:HG23	1:A:299:ILE:HG12	1.95	0.48
1:A:292:ASP:HB2	1:A:309:ARG:HE	1.77	0.48
3:C:901:PEE:H8	3:C:901:PEE:H49	1.49	0.48
3:A:901:PEE:H12	1:B:49:GLN:HE21	1.79	0.48
3:A:902:PEE:H16	1:B:320:ILE:HD13	1.96	0.48
2:E:342:PRO:HG2	2:E:344:VAL:HG22	1.96	0.48
3:C:901:PEE:H54	3:F:901:PEE:H60	1.95	0.47
2:E:322:PHE:HZ	3:E:902:PEE:H59	1.79	0.47
2:F:396:TYR:OH	2:F:425:ASP:OD2	2.31	0.47
2:F:399:GLU:HA	2:F:402:ARG:HD2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:39:ALA:HB2	1:C:129:VAL:HG12	1.97	0.47
1:A:312:HIS:HB3	1:A:315:ALA:HB2	1.97	0.47
1:B:265:MET:HE3	1:B:269:ILE:HD11	1.96	0.47
1:A:45:LEU:HD21	2:F:47:LEU:HD13	1.97	0.47
1:B:303:THR:OG1	1:B:308:TYR:OH	2.25	0.47
2:E:402:ARG:HB2	2:E:408:SER:HA	1.96	0.47
1:C:49:GLN:NE2	1:B:47:VAL:O	2.47	0.47
1:B:54:CYS:HA	1:B:310:CYS:HA	1.96	0.47
1:D:47:VAL:HG13	2:E:49:LYS:HE2	1.97	0.47
2:F:409:ASP:HB2	2:F:442:VAL:HG23	1.97	0.46
1:D:46:GLN:HA	1:D:50:ASP:HB2	1.98	0.46
1:C:159:ILE:HG22	1:C:390:PHE:HE1	1.81	0.46
1:B:292:ASP:OD2	1:B:309:ARG:NH2	2.49	0.46
1:A:309:ARG:HG2	2:F:347:LEU:HD11	1.98	0.46
1:B:130:LEU:HD23	3:B:903:PEE:H33	1.98	0.45
3:A:901:PEE:H78	1:B:130:LEU:HD22	1.98	0.45
1:B:39:ALA:HB2	1:B:129:VAL:HG12	1.98	0.45
1:C:292:ASP:OD1	1:C:292:ASP:N	2.39	0.45
1:A:54:CYS:HA	1:A:310:CYS:HA	1.99	0.45
1:A:121:PHE:HZ	1:A:282:THR:HG23	1.81	0.45
2:F:150:ILE:HD11	2:F:348:THR:HG21	1.99	0.45
1:B:15:PRO:HB2	1:B:16:ALA:H	1.63	0.45
1:D:39:ALA:HB2	1:D:129:VAL:HG12	1.98	0.45
2:E:201:LEU:HD11	2:E:431:TYR:HB3	1.99	0.44
1:A:110:ASP:OD2	2:F:145:GLN:NE2	2.50	0.44
1:A:62:LYS:HG2	1:A:66:ASN:HB2	1.98	0.44
2:F:152:GLN:HE22	3:F:901:PEE:H12	1.81	0.44
1:A:39:ALA:HB2	1:A:129:VAL:HG12	2.00	0.44
1:A:107:ASN:HB3	1:B:53:ILE:HD13	2.00	0.44
3:E:902:PEE:H29	2:F:366:LEU:HD21	2.00	0.44
2:F:328:ALA:HA	2:F:331:VAL:HG23	1.99	0.43
2:E:310:VAL:HG22	2:E:388:LEU:HD21	2.00	0.43
1:A:55:LEU:HD11	2:F:146:GLN:HA	2.00	0.43
1:D:46:GLN:HB2	1:D:318:PHE:HZ	1.83	0.43
1:C:68:SER:H	1:B:301:SER:HB3	1.84	0.43
2:E:58:LEU:HD21	2:E:140:THR:HG22	1.99	0.43
2:E:322:PHE:CZ	3:E:902:PEE:H59	2.53	0.43
2:F:181:SER:O	2:F:312:GLN:NE2	2.52	0.43
1:C:49:GLN:HE22	1:B:47:VAL:HG12	1.84	0.43
1:A:325:TYR:O	1:A:329:VAL:HG23	2.19	0.43
2:E:18:ARG:NH1	2:E:427:TYR:OH	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:368:ILE:HG21	3:F:902:PEE:H19	2.01	0.43
1:A:345:ARG:HG3	1:A:346:ARG:HG2	2.00	0.42
3:A:901:PEE:H76	1:B:43:GLY:HA3	2.01	0.42
1:D:357:ARG:HB2	1:D:363:SER:HA	2.00	0.42
2:F:387:TRP:HE3	2:F:388:LEU:HD12	1.83	0.42
1:C:48:THR:HG22	1:C:49:GLN:CD	2.40	0.42
3:C:904:PEE:H3	3:D:901:PEE:H13	2.01	0.42
1:A:15:PRO:HB2	1:A:16:ALA:H	1.62	0.42
1:D:306:ARG:HH12	2:E:135:PRO:HB3	1.84	0.42
2:F:168:TYR:HB3	3:F:903:PEE:H26	2.02	0.42
2:F:212:LYS:HG3	2:F:277:LEU:HD11	2.00	0.42
2:F:48:THR:O	3:F:901:PEE:H3	2.20	0.42
2:E:145:GLN:HG3	2:F:147:TYR:HB3	2.02	0.41
2:F:317:THR:OG1	2:F:381:CYS:SG	2.66	0.41
1:B:52:MET:HG2	1:B:310:CYS:HB3	2.02	0.41
2:E:301:ASP:OD1	2:E:301:ASP:N	2.53	0.41
2:F:396:TYR:N	2:F:413:VAL:O	2.44	0.41
1:A:49:GLN:NE2	2:F:47:LEU:O	2.51	0.41
1:B:295:CYS:SG	1:B:308:TYR:HB2	2.61	0.41
1:C:55:LEU:HD11	1:B:105:GLN:HA	2.03	0.41
1:C:107:ASN:HB3	1:D:53:ILE:HD13	2.02	0.41
2:F:48:THR:HG23	3:F:901:PEE:O5	2.21	0.41
1:C:54:CYS:HA	1:C:310:CYS:HA	2.03	0.41
1:D:162:LYS:HD2	1:D:243:LEU:HD13	2.03	0.41
1:A:320:ILE:HG21	3:F:903:PEE:H21	2.03	0.40
1:C:50:ASP:OD2	1:C:114:TYR:OH	2.32	0.40
1:A:301:SER:HB3	1:B:68:SER:H	1.86	0.40
1:D:162:LYS:HG2	1:D:243:LEU:HD22	2.03	0.40
1:A:120:TRP:HZ3	1:A:128:LEU:HD11	1.87	0.40
1:B:357:ARG:HB2	1:B:363:SER:HA	2.02	0.40
1:D:54:CYS:HA	1:D:310:CYS:HA	2.02	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	309/911 (34%)	301 (97%)	8 (3%)	0	100	100
1	B	310/911 (34%)	301 (97%)	9 (3%)	0	100	100
1	C	310/911 (34%)	302 (97%)	8 (3%)	0	100	100
1	D	302/911 (33%)	298 (99%)	4 (1%)	0	100	100
2	E	303/868 (35%)	298 (98%)	5 (2%)	0	100	100
2	F	303/868 (35%)	300 (99%)	3 (1%)	0	100	100
All	All	1837/5380 (34%)	1800 (98%)	37 (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	294/830 (35%)	289 (98%)	5 (2%)	56	74
1	B	294/830 (35%)	291 (99%)	3 (1%)	73	84
1	C	294/830 (35%)	294 (100%)	0	100	100
1	D	286/830 (34%)	284 (99%)	2 (1%)	81	88
2	E	288/798 (36%)	285 (99%)	3 (1%)	73	84
2	F	288/798 (36%)	287 (100%)	1 (0%)	91	94
All	All	1744/4916 (36%)	1730 (99%)	14 (1%)	77	87

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	143	TRP
1	A	275	PHE
1	A	281	TYR
1	A	324	PHE

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Mol	Chain	Res	Type
1	A	372	PHE
1	B	143	TRP
1	B	275	PHE
1	B	324	PHE
1	D	281	TYR
1	D	372	PHE
2	E	326	TYR
2	E	435	PHE
2	E	438	PHE
2	F	295	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	155	HIS
1	C	381	GLN
1	C	409	ASN
1	A	409	ASN
1	B	49	GLN
1	B	406	ASN
1	B	409	ASN
1	D	46	GLN
1	D	409	ASN
2	E	152	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 (i)

18 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	PEE	A	901	-	50,50,50	0.31	0	53,55,55	0.34	0
3	PEE	F	902	-	11,11,50	0.47	0	11,11,55	0.27	0
3	PEE	E	901	-	13,13,50	0.42	0	13,13,55	0.25	0
3	PEE	F	903	-	38,38,50	0.33	0	41,43,55	0.39	0
3	PEE	C	901	-	50,50,50	0.30	0	53,55,55	0.35	0
3	PEE	D	901	-	13,13,50	0.42	0	13,13,55	0.25	0
3	PEE	F	901	-	50,50,50	0.29	0	53,55,55	0.61	1 (1%)
3	PEE	C	903	-	12,12,50	0.43	0	12,12,55	0.29	0
3	PEE	A	904	-	12,12,50	0.43	0	12,12,55	0.31	0
3	PEE	A	902	-	38,38,50	0.33	0	41,43,55	0.43	0
3	PEE	C	902	-	13,13,50	0.42	0	13,13,55	0.26	0
3	PEE	B	903	-	38,38,50	0.33	0	41,43,55	0.41	0
3	PEE	C	904	-	38,38,50	0.33	0	41,43,55	0.42	0
3	PEE	A	903	-	13,13,50	0.42	0	13,13,55	0.26	0
3	PEE	E	902	-	38,38,50	0.33	0	41,43,55	0.40	0
3	PEE	B	902	-	12,12,50	0.44	0	12,12,55	0.32	0
3	PEE	B	901	-	13,13,50	0.41	0	13,13,55	0.25	0
3	PEE	D	902	-	38,38,50	0.33	0	41,43,55	0.36	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	PEE	A	901	-	-	4/54/54/54	-
3	PEE	F	902	-	-	1/9/9/54	-
3	PEE	E	901	-	-	3/11/11/54	-
3	PEE	F	903	-	-	5/42/42/54	-
3	PEE	C	901	-	-	4/54/54/54	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	PEE	D	901	-	-	3/11/11/54	-
3	PEE	F	901	-	-	11/54/54/54	-
3	PEE	C	903	-	-	1/10/10/54	-
3	PEE	A	904	-	-	1/10/10/54	-
3	PEE	A	902	-	-	1/42/42/54	-
3	PEE	C	902	-	-	1/11/11/54	-
3	PEE	B	903	-	-	6/42/42/54	-
3	PEE	C	904	-	-	4/42/42/54	-
3	PEE	A	903	-	-	4/11/11/54	-
3	PEE	E	902	-	-	2/42/42/54	-
3	PEE	B	902	-	-	1/10/10/54	-
3	PEE	B	901	-	-	4/11/11/54	-
3	PEE	D	902	-	-	6/42/42/54	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	F	901	PEE	O2-C2-C1	2.40	116.95	108.34

There are no chirality outliers.

All (62) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	C	901	PEE	O5-C30-O3-C3
3	C	901	PEE	C31-C30-O3-C3
3	F	903	PEE	C1-O3P-P-O1P
3	F	901	PEE	C11-C12-C13-C14
3	F	901	PEE	O3P-C1-C2-O2
3	F	901	PEE	O3P-C1-C2-C3
3	D	902	PEE	O3P-C1-C2-O2
3	C	901	PEE	C2-C1-O3P-P
3	C	904	PEE	O2-C2-C3-O3
3	B	903	PEE	O2-C2-C3-O3
3	F	902	PEE	C16-C17-C18-C19
3	A	903	PEE	C18-C19-C20-C21
3	B	901	PEE	C18-C19-C20-C21
3	D	901	PEE	C18-C19-C20-C21
3	B	903	PEE	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
3	C	904	PEE	C5-C4-O4P-P
3	A	901	PEE	C5-C4-O4P-P
3	E	902	PEE	C5-C4-O4P-P
3	A	901	PEE	O3-C30-C31-C32
3	A	902	PEE	C18-C19-C20-C21
3	A	904	PEE	C16-C17-C18-C19
3	E	901	PEE	C16-C17-C18-C19
3	B	903	PEE	C1-C2-C3-O3
3	C	901	PEE	C38-C39-C40-C41
3	B	903	PEE	C36-C37-C38-C39
3	F	903	PEE	C36-C37-C38-C39
3	F	901	PEE	C1-O3P-P-O1P
3	F	903	PEE	C4-O4P-P-O1P
3	D	902	PEE	C34-C35-C36-C37
3	F	901	PEE	C18-C19-C20-C21
3	F	901	PEE	C1-C2-O2-C10
3	F	901	PEE	C3-C2-O2-C10
3	C	902	PEE	C16-C17-C18-C19
3	A	903	PEE	C16-C17-C18-C19
3	E	902	PEE	C36-C37-C38-C39
3	B	902	PEE	C16-C17-C18-C19
3	A	901	PEE	C36-C37-C38-C39
3	A	901	PEE	C16-C17-C18-C19
3	B	901	PEE	C16-C17-C18-C19
3	F	903	PEE	O2-C2-C3-O3
3	C	903	PEE	C16-C17-C18-C19
3	B	903	PEE	C16-C17-C18-C19
3	D	902	PEE	C36-C37-C38-C39
3	F	903	PEE	C16-C17-C18-C19
3	C	904	PEE	C10-C11-C12-C13
3	F	901	PEE	C38-C39-C40-C41
3	D	902	PEE	O3P-C1-C2-C3
3	E	901	PEE	O2-C10-C11-C12
3	D	901	PEE	O2-C10-C11-C12
3	F	901	PEE	C16-C17-C18-C19
3	A	903	PEE	O2-C10-C11-C12
3	B	901	PEE	O2-C10-C11-C12
3	C	904	PEE	C36-C37-C38-C39
3	D	901	PEE	O4-C10-C11-C12
3	E	901	PEE	O4-C10-C11-C12
3	B	901	PEE	O4-C10-C11-C12
3	F	901	PEE	C34-C35-C36-C37

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Mol	Chain	Res	Type	Atoms
3	A	903	PEE	O4-C10-C11-C12
3	B	903	PEE	C31-C32-C33-C34
3	D	902	PEE	O3-C30-C31-C32
3	D	902	PEE	O5-C30-C31-C32
3	F	901	PEE	O4-C10-C11-C12

There are no ring outliers.

10 monomers are involved in 27 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	901	PEE	6	0
3	F	902	PEE	2	0
3	F	903	PEE	2	0
3	C	901	PEE	2	0
3	D	901	PEE	1	0
3	F	901	PEE	6	0
3	A	902	PEE	2	0
3	B	903	PEE	2	0
3	C	904	PEE	1	0
3	E	902	PEE	5	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 PEE A 901

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE F 902

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE E 901

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE F 903

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE C 901

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE D 901

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE F 901

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE C 903

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE A 904

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE A 902

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE C 902

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE B 903

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE C 904

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE A 903

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE E 902

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE B 902

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE B 901

Bond lengths

Bond angles

Torsions

Rings

Ligand PEE D 902

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 (i)

This section contains visualisations of the EMDB entry EMD-47282. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections (i)

6.1.1 Primary map
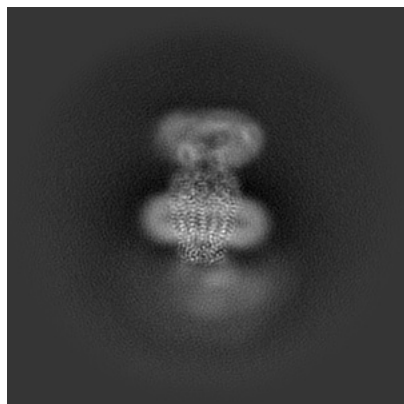
X
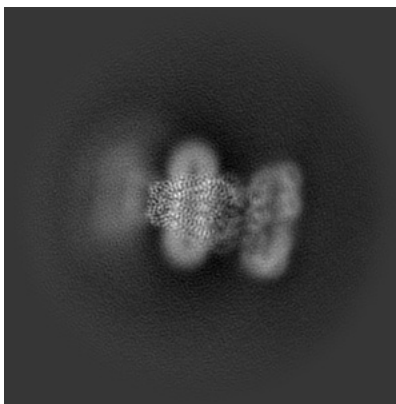
Y
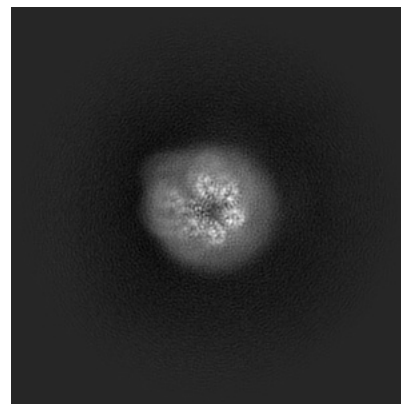
Z

6.1.2 Raw map

X

Y

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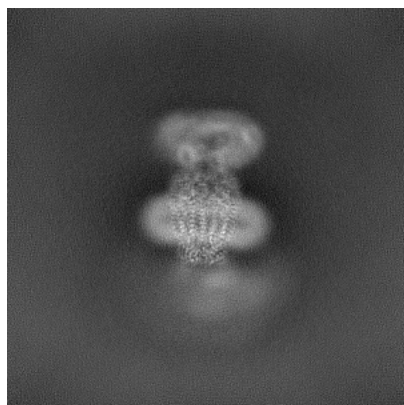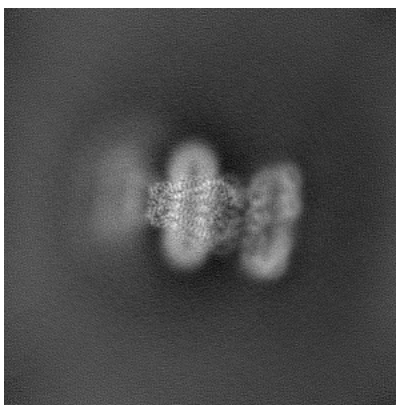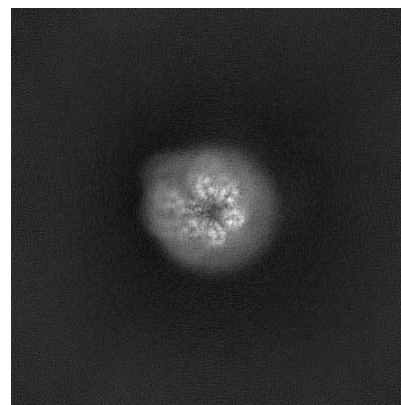
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ

6.2.1 Primary map
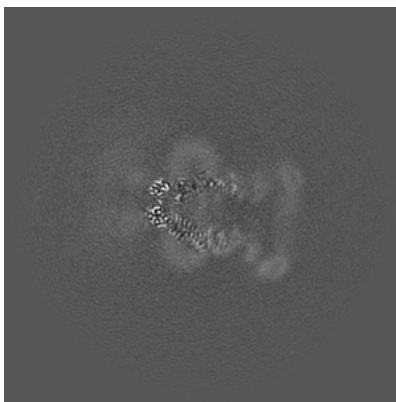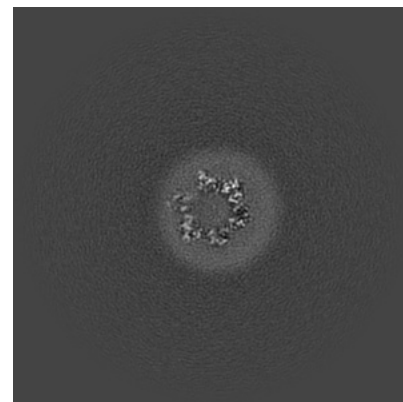
| X Index: 208 | Y Index: 208 | Z Index: 208 |

6.2.2 Raw map
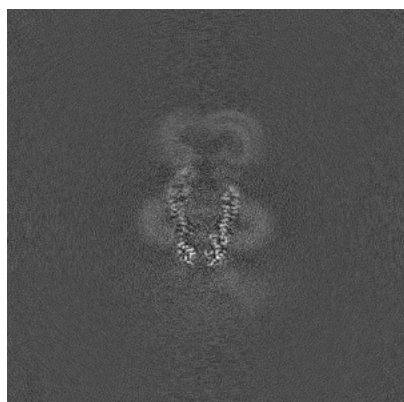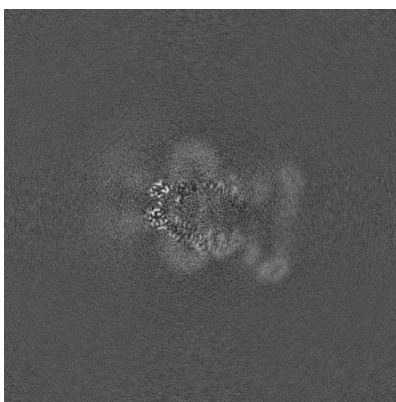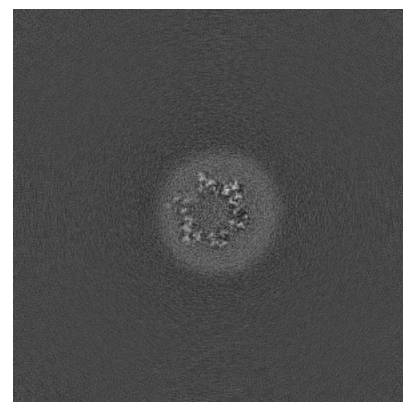
| X Index: 208 | Y Index: 208 | Z Index: 208 |

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

6.3　Largest variance slices ⓘ

6.3.1　Primary map
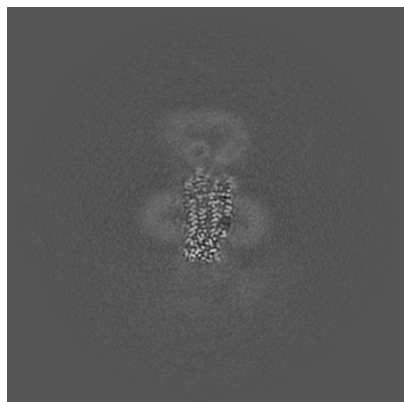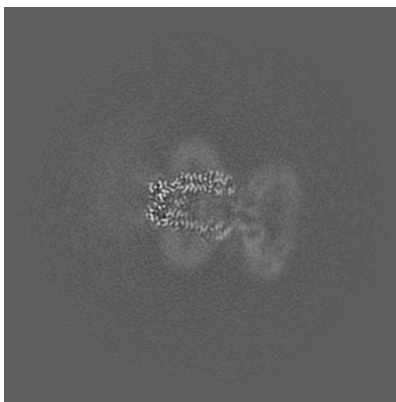
| X Index: 228 | Y Index: 193 | Z Index: 182 |
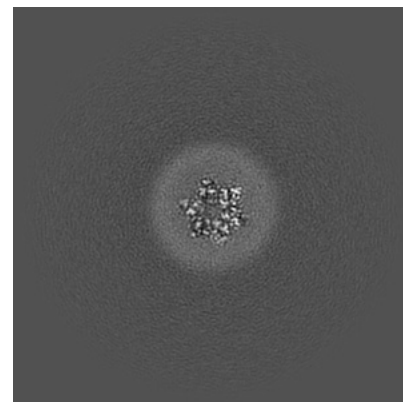
6.3.2　Raw map
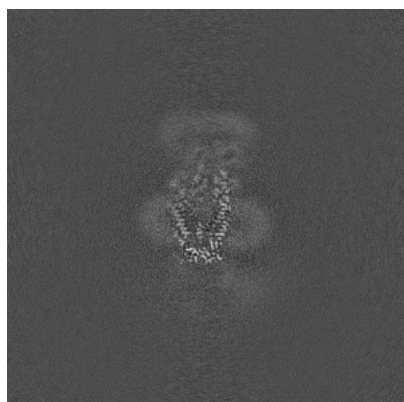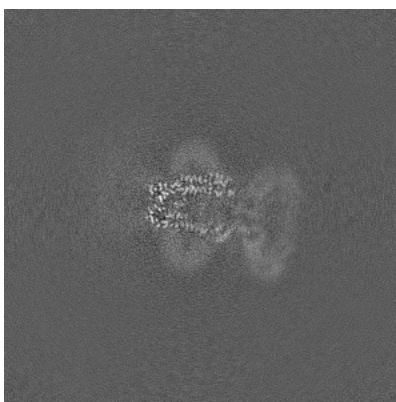
| X Index: 221 | Y Index: 193 | Z Index: 183 |
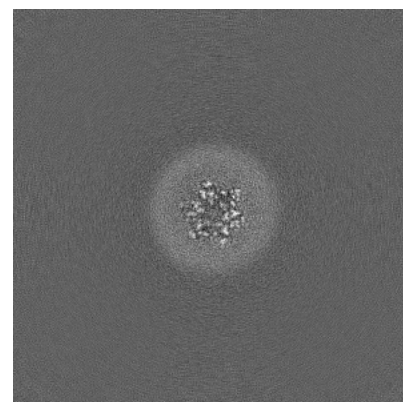
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map

| X | Y | Z |

6.4.2 Raw map

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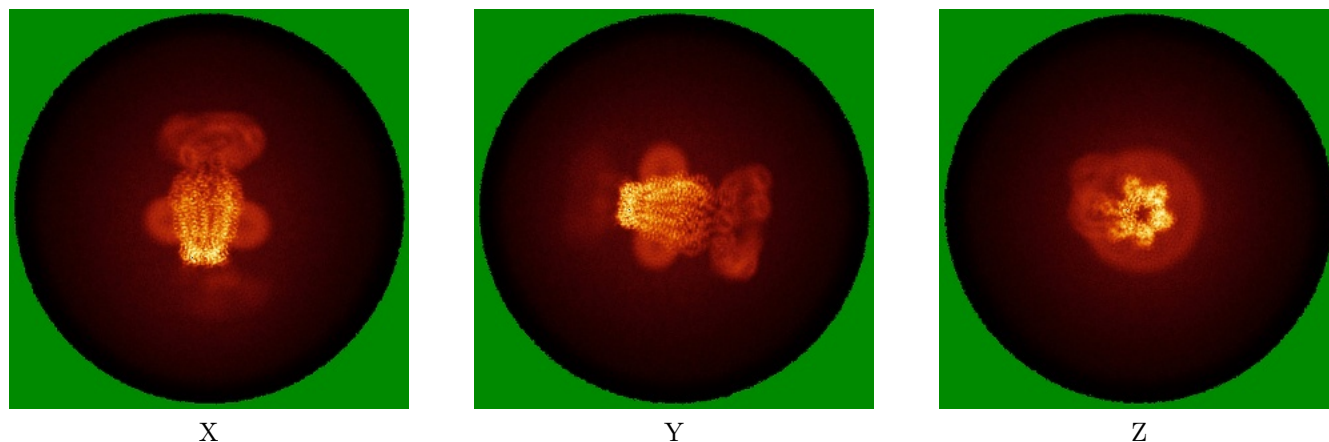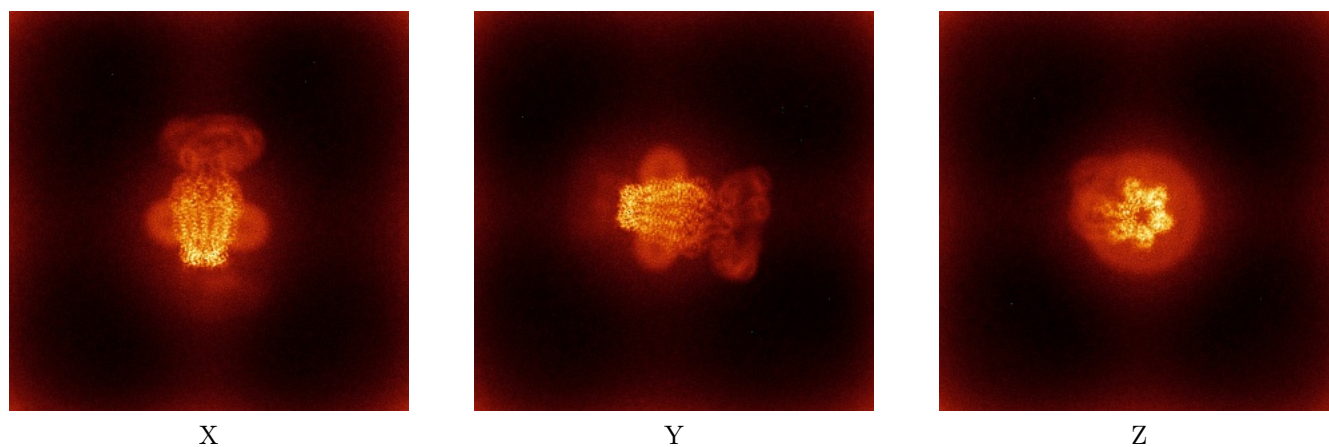
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5　Orthogonal surface views ⓘ

6.5.1　Primary map

X	Y	Z
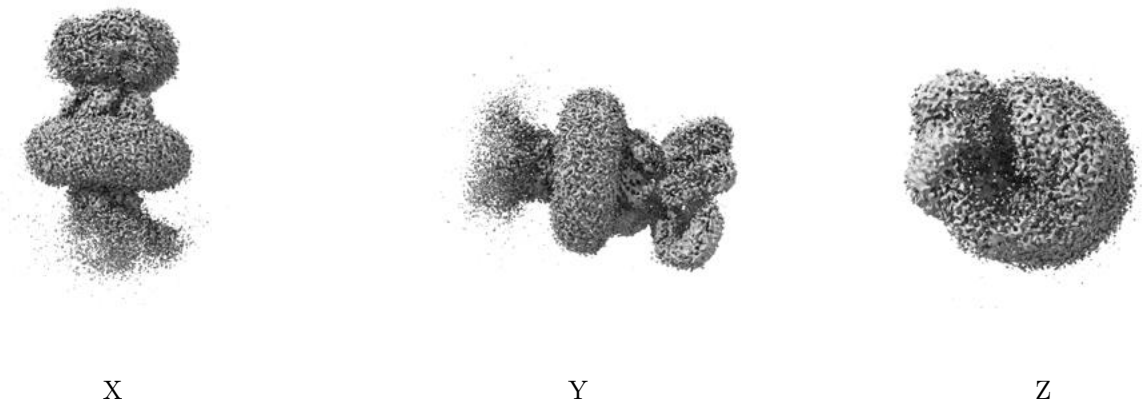
The images above show the 3D surface view of the map at the recommended contour level 0.12. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2　Raw map

X	Y	Z
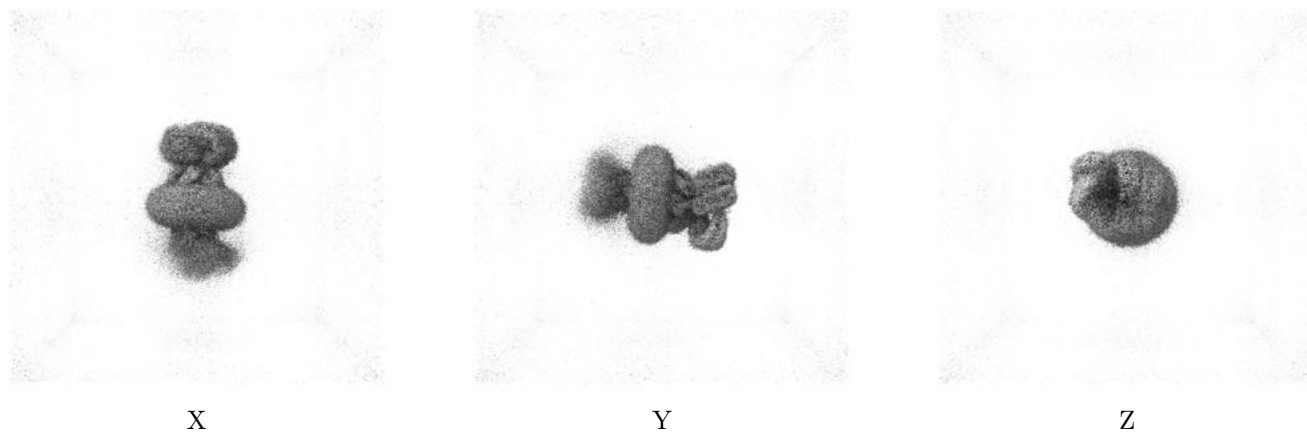
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6　Mask visualisation ⓘ

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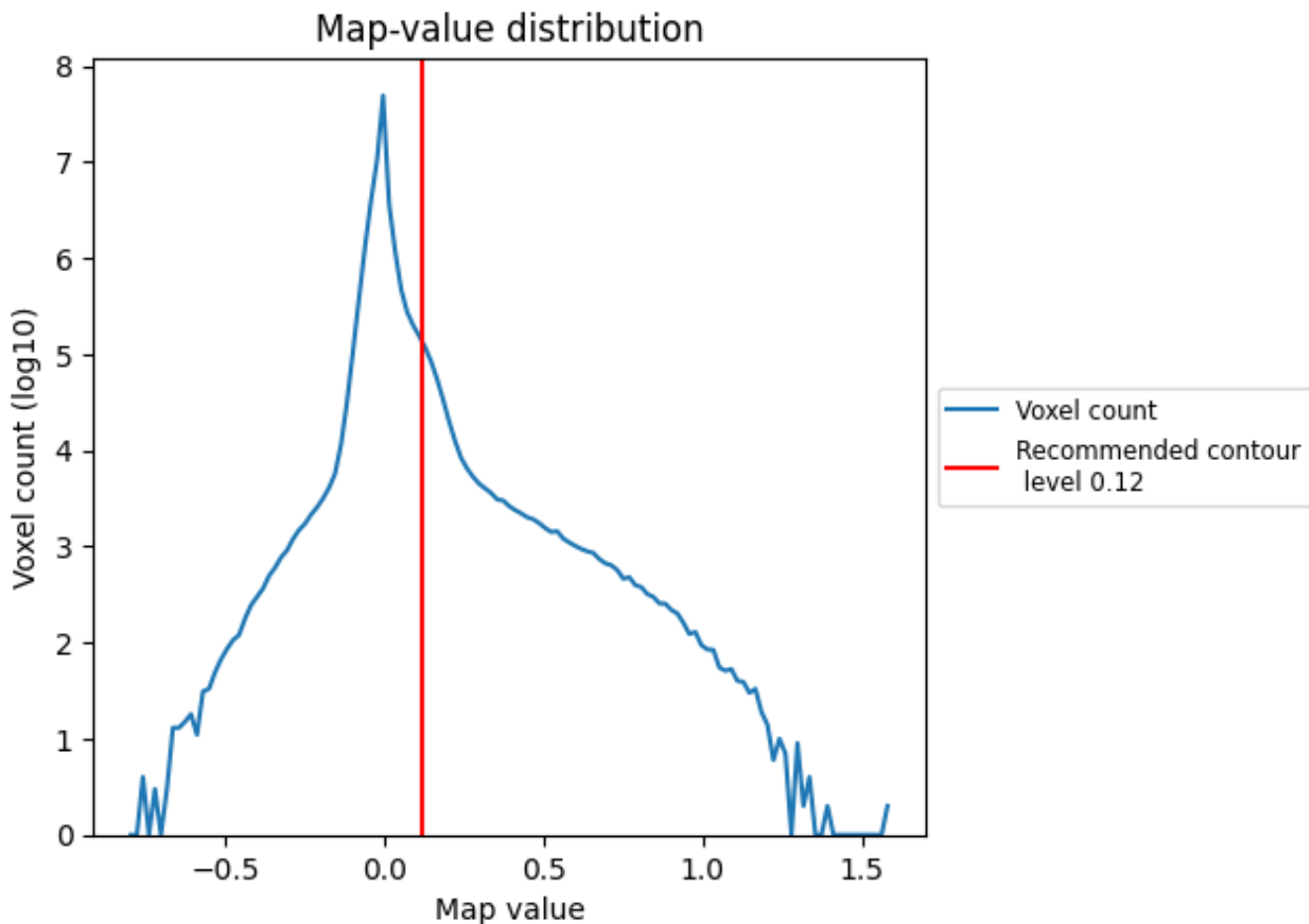
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2   Volume estimate ⓘ
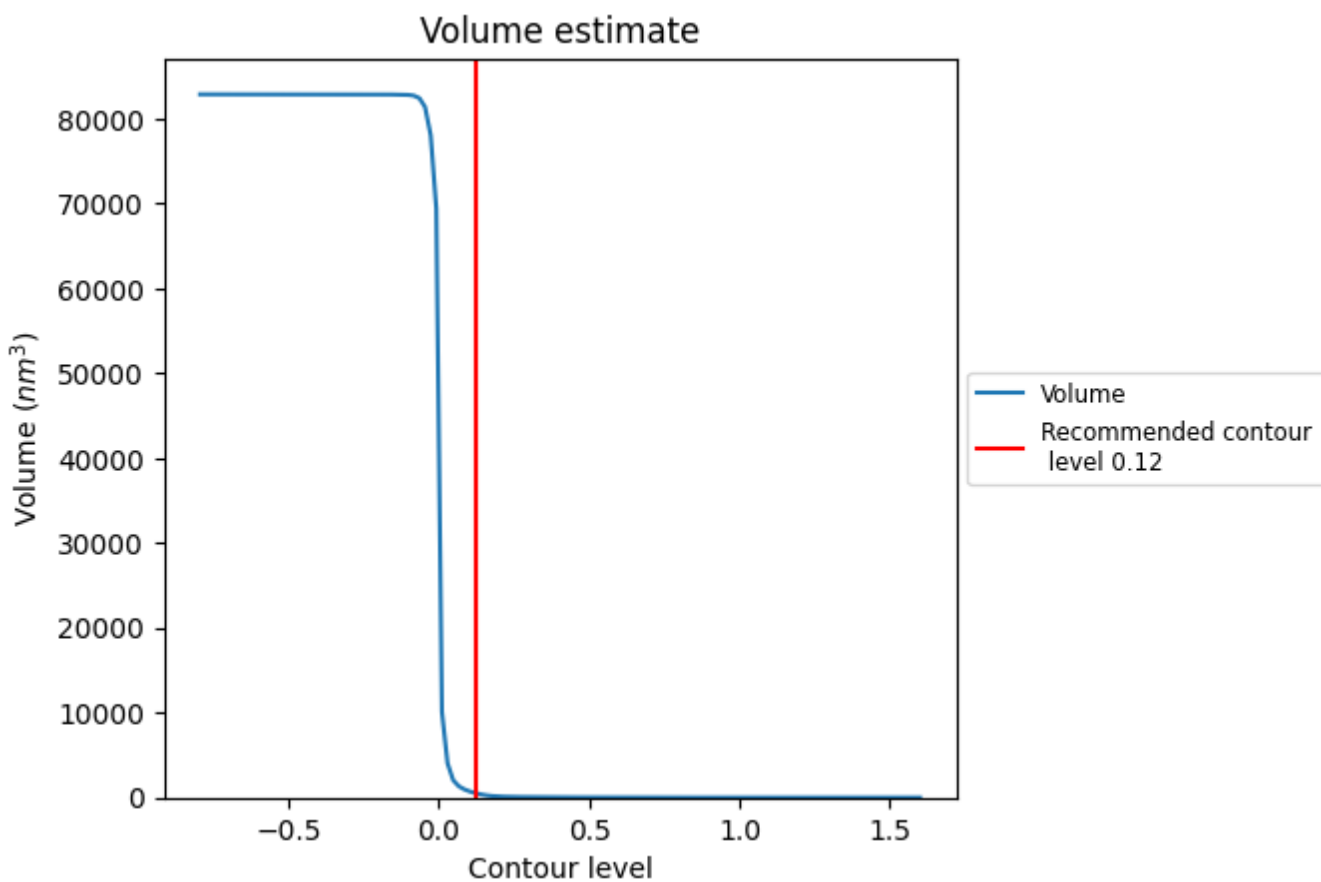
The volume at the recommended contour level is 540 nm^3; this corresponds to an approximate mass of 487 kDa.

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   ⓘ
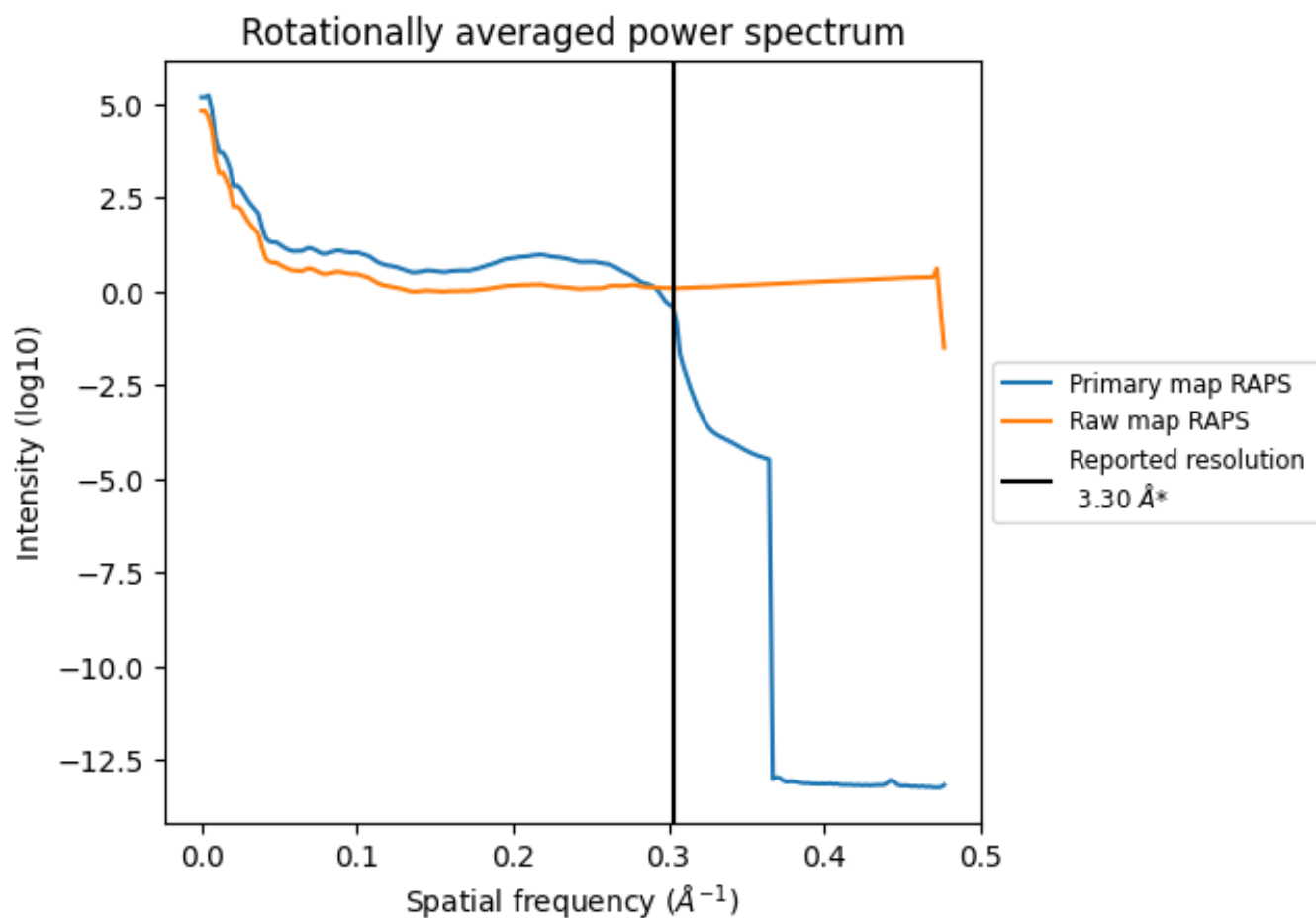
*Reported resolution corresponds to spatial frequency of 0.303 Å^{-1}

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 ⓘ
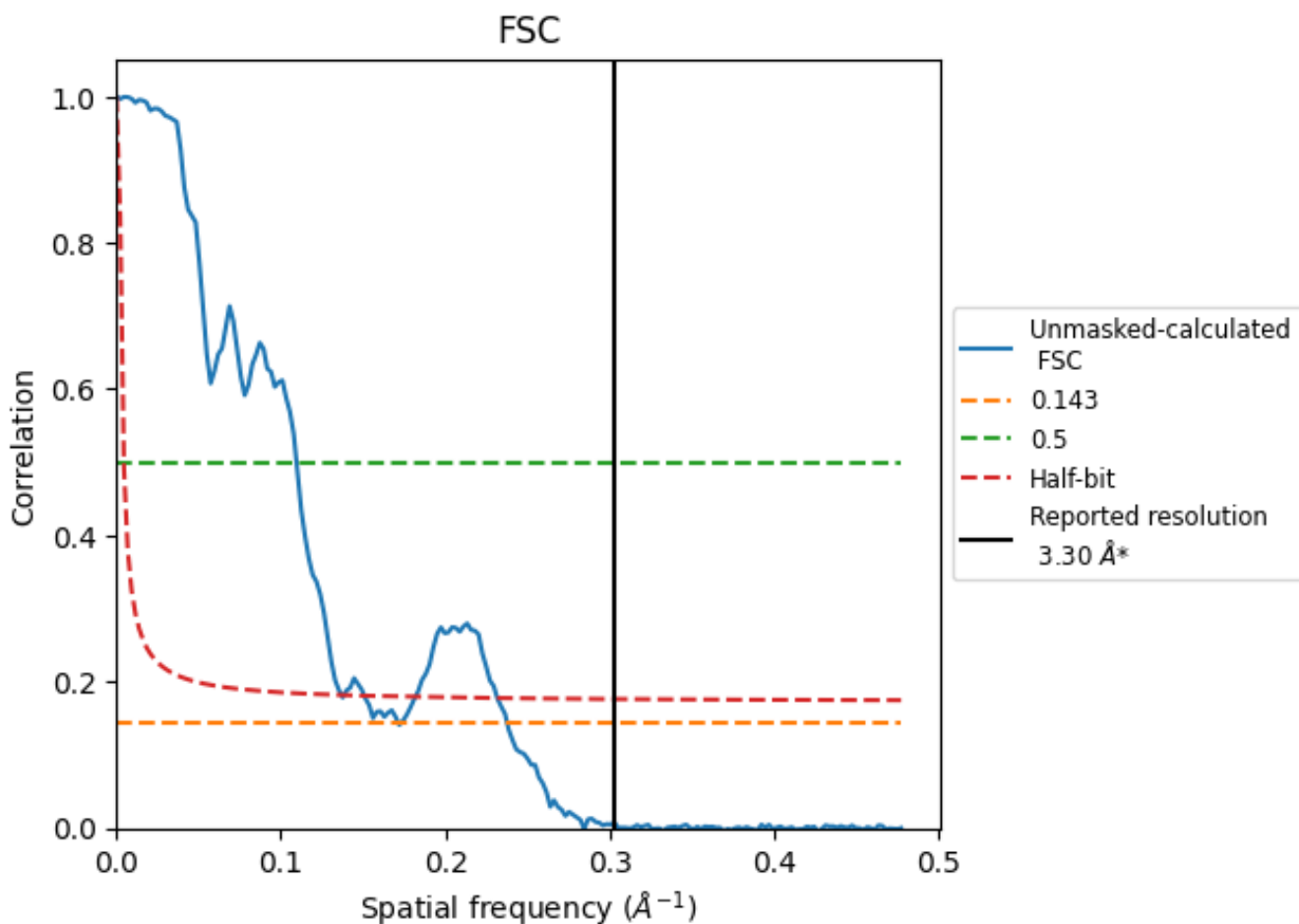
*Reported resolution corresponds to spatial frequency of 0.303 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	5.83	9.13	7.30

*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 5.83 differs from the reported value 3.3 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-47282 and PDB model 9DX7. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay ⓘ

X	Y	Z
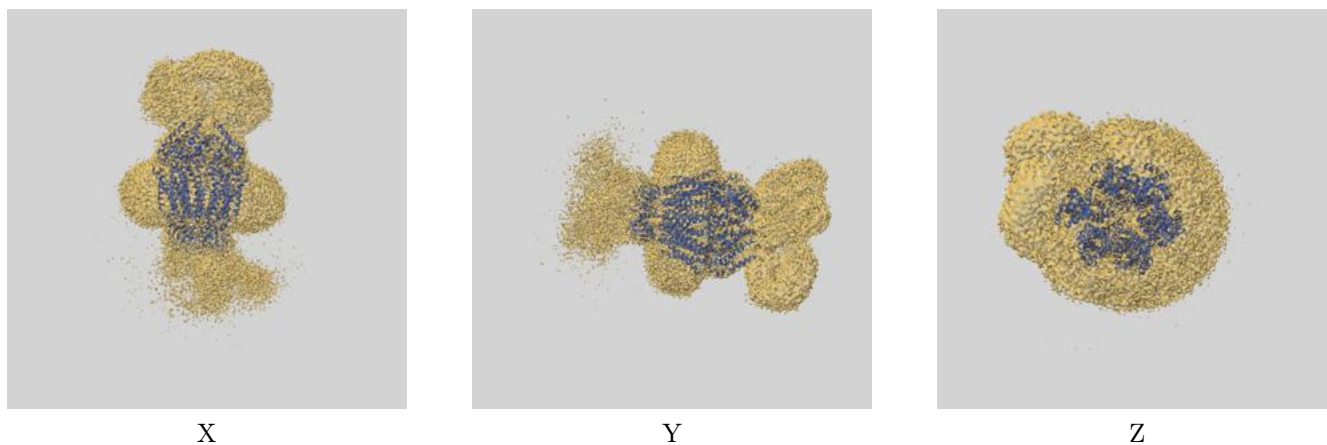
The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2　Q-score mapped to coordinate model　ⓘ

X　　　　　　　　　　　Y　　　　　　　　　　　Z
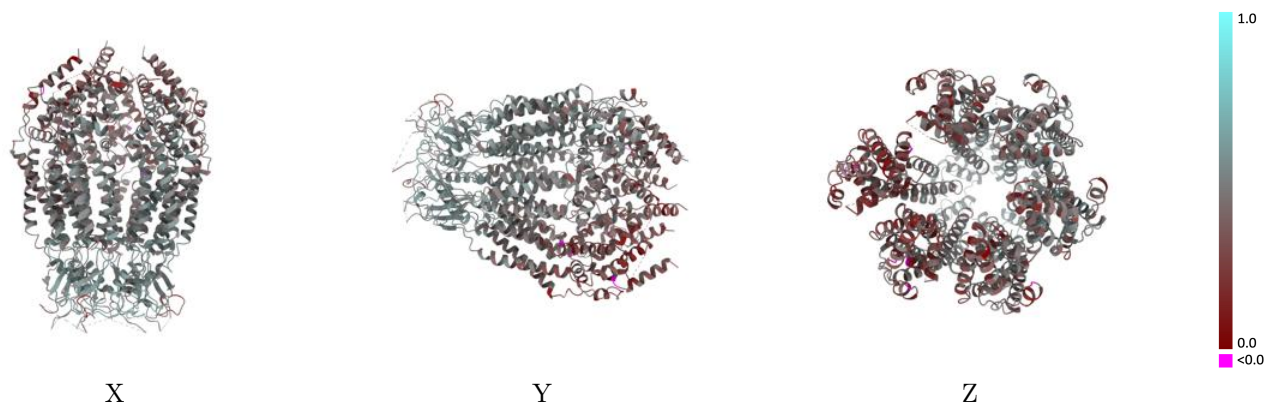
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
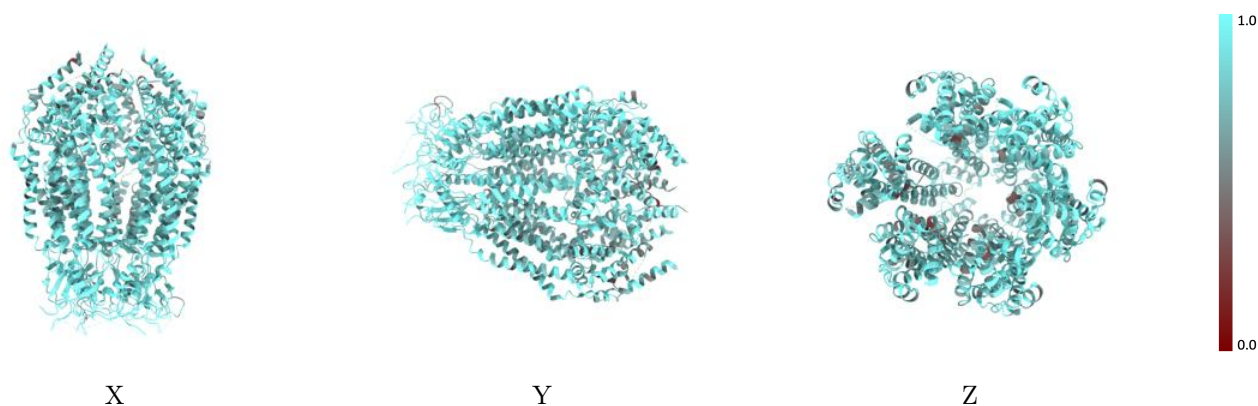
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.12).

9.4 Atom inclusion ⓘ
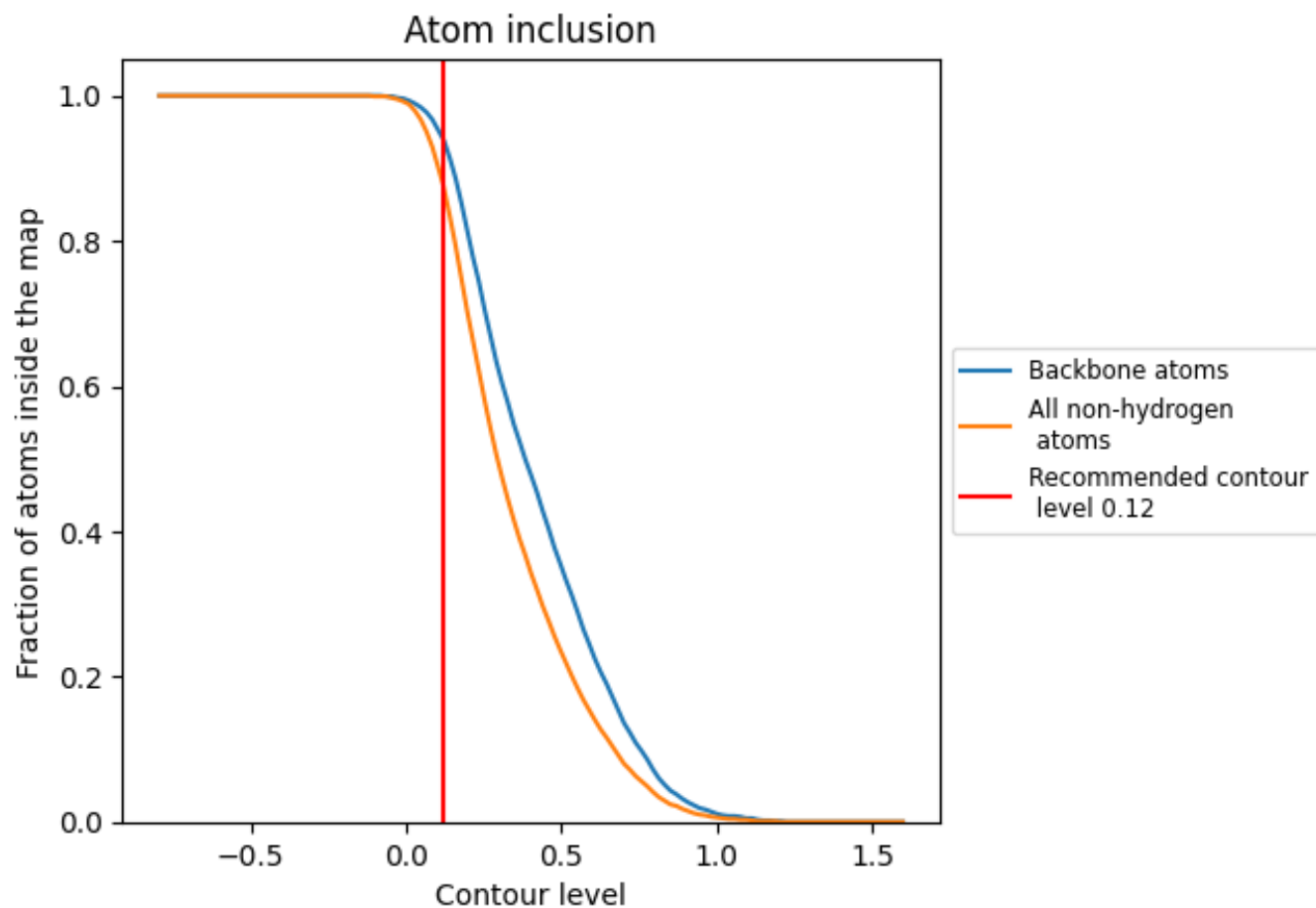
At the recommended contour level, 94% of all backbone atoms, 88% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8770	0.4380
A	0.8840	0.4510
B	0.9090	0.4850
C	0.8870	0.4650
D	0.8740	0.4320
E	0.8600	0.4100
F	0.8450	0.3840

1.0

0.0
<0.0

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