WORLDWIDE wwPDB PROTEIN DATA BANK

wwPDB EM Validation Summary Report (i)

Dec 11, 2024 – 02:20 PM EST

PDB ID	:	9C5A
EMDB ID	:	EMD-45209
Title	:	AP-3 Arf1 dimeric interface, focused refinement
Authors	:	Begley, M.C.; Baker, R.W.
Deposited on	:	2024-06-06
Resolution	:	4.20 Å(reported)
Based on initial model	:	.

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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 4.20 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
Ramachandran outliers		0.2%
Sidechain outliers		0.3%

Worse   *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures
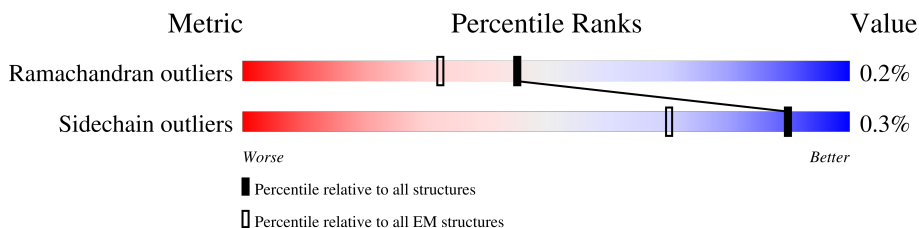
Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	B	684	56% 44%
1	b	684	56% 44%
2	M	418	18% 99%
2	m	418	18% 99%
3	C	182	6% 98%
3	c	182	7% 98%
4	Y	12	8% 67% 33%
4	y	12	8% 67% 33%

2　Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 15806 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 AP-3 complex subunit beta-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B	383	Total 3052	C 1952	N 530	O 556	S 14	0	0
1	b	383	Total 3052	C 1952	N 530	O 556	S 14	0	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	678	GLY	-	expression tag	UNP O00203
B	679	LEU	-	expression tag	UNP O00203
B	680	GLU	-	expression tag	UNP O00203
B	681	VAL	-	expression tag	UNP O00203
B	682	LEU	-	expression tag	UNP O00203
B	683	PHE	-	expression tag	UNP O00203
B	684	GLN	-	expression tag	UNP O00203
b	678	GLY	-	expression tag	UNP O00203
b	679	LEU	-	expression tag	UNP O00203
b	680	GLU	-	expression tag	UNP O00203
b	681	VAL	-	expression tag	UNP O00203
b	682	LEU	-	expression tag	UNP O00203
b	683	PHE	-	expression tag	UNP O00203
b	684	GLN	-	expression tag	UNP O00203

- Molecule 2 is a protein called AP-3 complex subunit mu-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	M	418	Total 3309	C 2135	N 545	O 615	S 14	0	0
2	m	418	Total 3309	C 2135	N 545	O 615	S 14	0	0

- Molecule 3 is a protein called ADP-ribosylation factor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	180	Total	C	N	O	S	0	0
			1447	922	253	266	6		
3	c	180	Total	C	N	O	S	0	0
			1447	922	253	266	6		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	71	LEU	GLN	engineered mutation	UNP P84077
C	182	SER	-	expression tag	UNP P84077
C	183	LEU	-	expression tag	UNP P84077
c	71	LEU	GLN	engineered mutation	UNP P84077
c	182	SER	-	expression tag	UNP P84077
c	183	LEU	-	expression tag	UNP P84077

- Molecule 4 is a protein called Lysosome-associated membrane glycoprotein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	Y	8	Total	C	N	O	0	0
			62	38	11	13		
4	y	8	Total	C	N	O	0	0
			62	38	11	13		

- Molecule 5 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
5	C	1	Total	Mg	0
			1	1	
5	c	1	Total	Mg	0
			1	1	

- Molecule 6 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: $C_{10}H_{16}N_5O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).

GTP
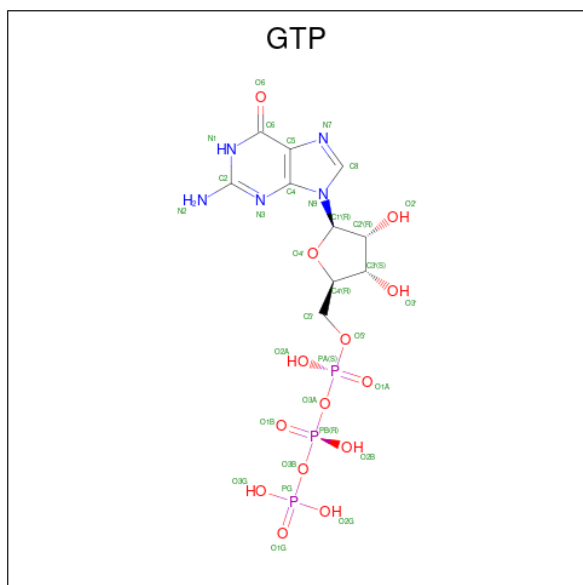
| Mol	Chain	Residues	Atoms					AltConf
6	C	1	Total	C	N	O	P	0
			32	10	5	14	3	
6	c	1	Total	C	N	O	P	0
			32	10	5	14	3	

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: AP-3 complex subunit beta-1

Chain B:

• Molecule 1: AP-3 complex subunit beta-1

Chain b:
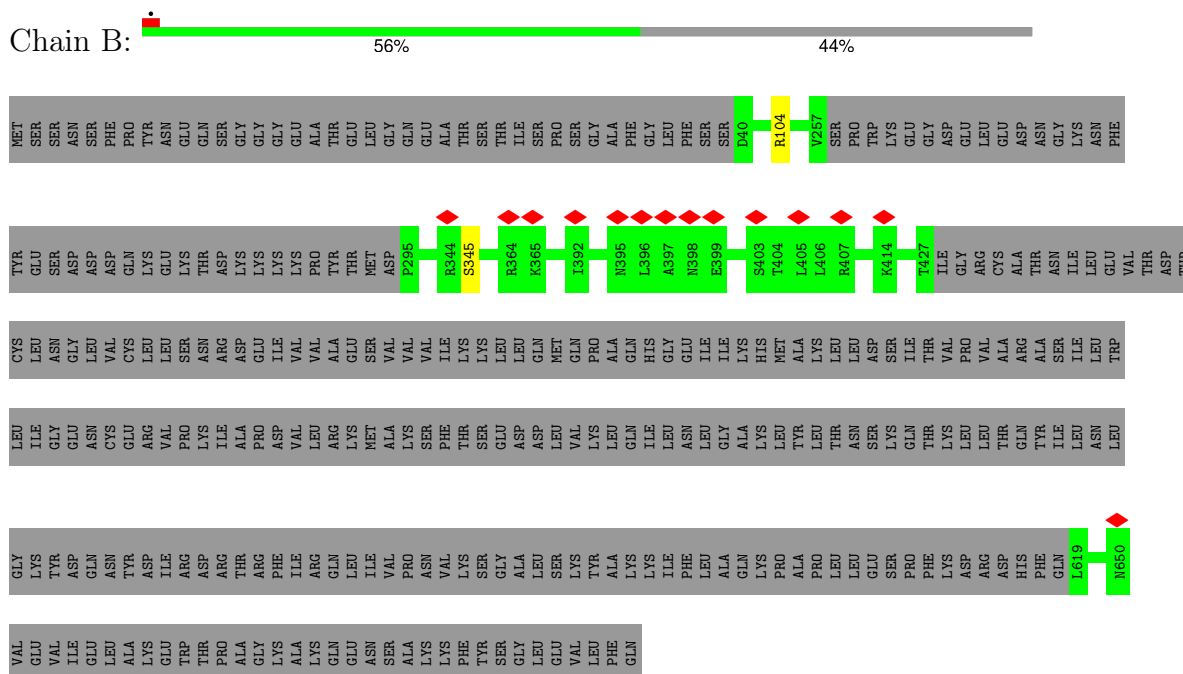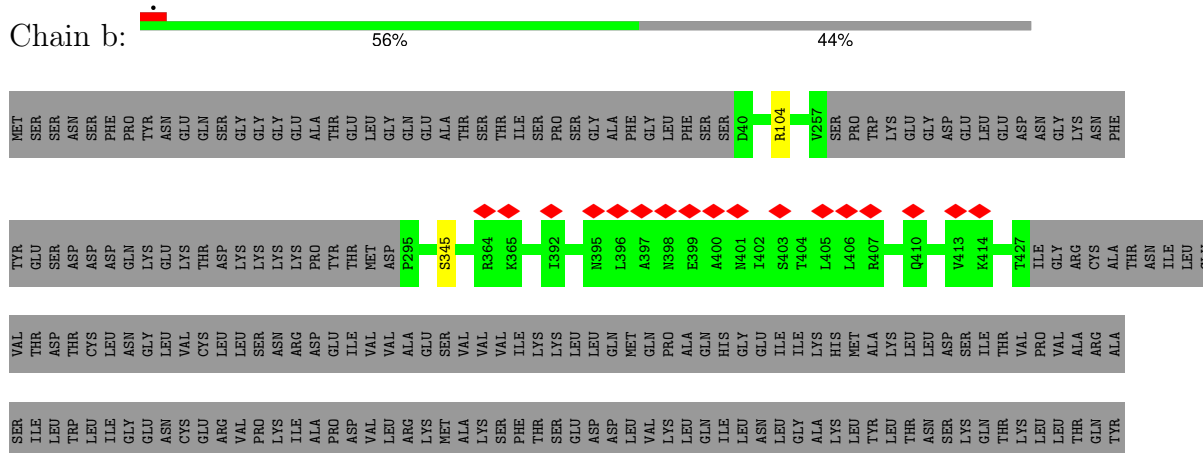
ILE LEU ASN LEU GLY LYS TYR ASP GLN ASN TYR ASP ILE ARG ASP ARG THR ARG PHE ILE ARG GLN LEU ILE VAL PRO ASN VAL LYS SER GLY ALA LEU SER LYS TYR ALA LYS LYS ILE PHE LEU ALA GLN LYS PRO ALA PRO LEU GLU SER PRO PHE LYS ASP ARG ASP HIS PHE
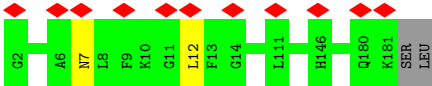
GLN L619 N650 VAL GLU VAL ILE GLU LEU ALA LYS GLU TRP THR PRO ALA GLY LYS ALA LYS GLU GLN ASN SER ALA LYS LYS PHE TYR SER GLY LEU GLU VAL LEU PHE GLN

• Molecule 2: AP-3 complex subunit mu-1

18%

Chain M:

99%

M1 Y93 T138 T148 G149 S150 D155 G160 R169 N176 D192 K193 S194 D230 R241 R263 V270 H278 S279 I280 S281 F282 K283 E284 N285 S286 S287 C288 G289 R290 F291 D292 I305 E306 G307 H313 M314 P315 K316 V317 V318 L319 N320 M321 N322

L323 T324 P325 T326 Q327 G328 S329 Y330 T331 F332 D333 P334 K337 V338 L339 T347 P348 Q349 K350 L351 L354 K355 G356 L357 V358 Q361 S362 G363 A364 P365 K366 P367 E368 E369 N370 P371 Q415 V416 R417 T418

• Molecule 2: AP-3 complex subunit mu-1

18%

Chain m:

99%

M1 Y93 T138 G149 S150 D155 R169 D192 K193 S194 D230 R241 R263 S279 I280 S281 F282 K283 E284 N285 S286 S287 C288 G289 R290 F291 D292 I305 E306 G307 M314 P315 K316 V317 V318 L319 N320 M321 N322 L323 T324 P325 T326 Q327 G328 S329 Y330 T331

F332 D333 P334 K337 V338 L339 T347 P348 Q349 K350 L351 L354 K355 G356 L357 V358 N359 L360 Q361 S362 G363 A364 P365 K366 P367 E368 E369 N370 P371 N374 R417 T418

• Molecule 3: ADP-ribosylation factor 1

6%

Chain C:

98%

G2 A6 N7 L8 F9 K10 G11 L12 F13 G14 L111 H146 Q180 K181 SER LEU

• Molecule 3: ADP-ribosylation factor 1

7%

Chain c:

98%

G2 F5 A6 N7 L8 F9 K10 G11 L12 F13 G14 L111 A125 Q180 K181 SER LEU

• Molecule 4: Lysosome-associated membrane glycoprotein 1

8%

Chain Y:

67% 33%

GLY ARG LYS ARG S410 I417

• Molecule 4: Lysosome-associated membrane glycoprotein 1

Chain y:

8%

67%   33%

GLY ARG LYS ARG S410 I417

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	122155	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 $(e^-/\text{Å}^2)$	53.37	Depositor
Minimum defocus (nm)	400	Depositor
Maximum defocus (nm)	1400	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.089	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.022	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	423.19998, 423.19998, 423.19998	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.058, 1.058, 1.058	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	B	0.82	0/3097	0.69	0/4183
1	b	0.82	0/3097	0.69	0/4183
2	M	0.80	0/3387	0.72	3/4598 (0.1%)
2	m	0.80	0/3387	0.72	3/4598 (0.1%)
3	C	0.81	0/1473	0.70	0/1989
3	c	0.81	0/1473	0.70	0/1989
4	Y	0.40	0/63	0.53	0/83
4	y	0.41	0/63	0.54	0/83
All	All	0.80	0/16040	0.70	6/21706 (0.0%)

There are no bond length outliers.

The worst 5 of 6 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	m	330	TYR	CB-CG-CD2	-6.50	117.10	121.00
2	M	330	TYR	CB-CG-CD2	-6.39	117.16	121.00
2	m	263	ARG	NE-CZ-NH2	-5.20	117.70	120.30
2	M	93	TYR	CB-CG-CD2	-5.17	117.90	121.00
2	M	263	ARG	NE-CZ-NH2	-5.15	117.72	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	B	377/684 (55%)	363 (96%)	13 (3%)	1 (0%)	37	71
1	b	377/684 (55%)	363 (96%)	13 (3%)	1 (0%)	37	71
2	M	416/418 (100%)	400 (96%)	16 (4%)	0	100	100
2	m	416/418 (100%)	400 (96%)	15 (4%)	1 (0%)	44	77
3	C	178/182 (98%)	172 (97%)	6 (3%)	0	100	100
3	c	178/182 (98%)	172 (97%)	6 (3%)	0	100	100
4	Y	6/12 (50%)	6 (100%)	0	0	100	100
4	y	6/12 (50%)	6 (100%)	0	0	100	100
All	All	1954/2592 (75%)	1882 (96%)	69 (4%)	3 (0%)	45	77

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	345	SER
1	b	345	SER
2	m	150	SER

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	B	342/606 (56%)	341 (100%)	1 (0%)	91	92
1	b	342/606 (56%)	341 (100%)	1 (0%)	91	92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	M	379/379 (100%)	379 (100%)	0	100	100
2	m	379/379 (100%)	379 (100%)	0	100	100
3	C	154/156 (99%)	152 (99%)	2 (1%)	65	76
3	c	154/156 (99%)	152 (99%)	2 (1%)	65	76
4	Y	6/9 (67%)	6 (100%)	0	100	100
4	y	6/9 (67%)	6 (100%)	0	100	100
All	All	1762/2300 (77%)	1756 (100%)	6 (0%)	90	92

5 of 6 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	b	104	ARG
3	c	7	ASN
3	c	12	LEU
3	C	7	ASN
1	B	104	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	309	GLN
2	M	105	ASN
1	b	309	GLN
2	m	105	ASN

5.3.3   RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5   Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6   Ligand geometry   ⓘ

Of 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
6	GTP	C	1001	5	29,34,34	1.26	4 (13%)	35,54,54	1.13	3 (8%)
6	GTP	c	1001	5	29,34,34	1.26	4 (13%)	35,54,54	1.13	3 (8%)

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
6	GTP	C	1001	5	-	2/18/38/38	0/3/3/3
6	GTP	c	1001	5	-	2/18/38/38	0/3/3/3

The worst 5 of 8 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	C	1001	GTP	C5-C6	-3.73	1.40	1.47
6	c	1001	GTP	C5-C6	-3.73	1.40	1.47
6	C	1001	GTP	PB-O3B	2.84	1.62	1.59
6	c	1001	GTP	PB-O3B	2.77	1.62	1.59
6	c	1001	GTP	PA-O3A	2.39	1.62	1.59

The worst 5 of 6 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	C	1001	GTP	C8-N7-C5	3.78	108.98	102.55
6	c	1001	GTP	C8-N7-C5	3.76	108.95	102.55
6	C	1001	GTP	C5-C6-N1	2.19	118.25	114.07
6	c	1001	GTP	C5-C6-N1	2.18	118.23	114.07
6	c	1001	GTP	O6-C6-N1	-2.04	118.20	120.62

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	C	1001	GTP	PA-O3A-PB-O2B
6	c	1001	GTP	PA-O3A-PB-O2B
6	C	1001	GTP	PA-O3A-PB-O1B
6	c	1001	GTP	PA-O3A-PB-O1B

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand GTP C 1001

Bond lengths

Bond angles

Torsions

Rings

Ligand GTP c 1001

Bond lengths

Bond angles

Torsions

Rings
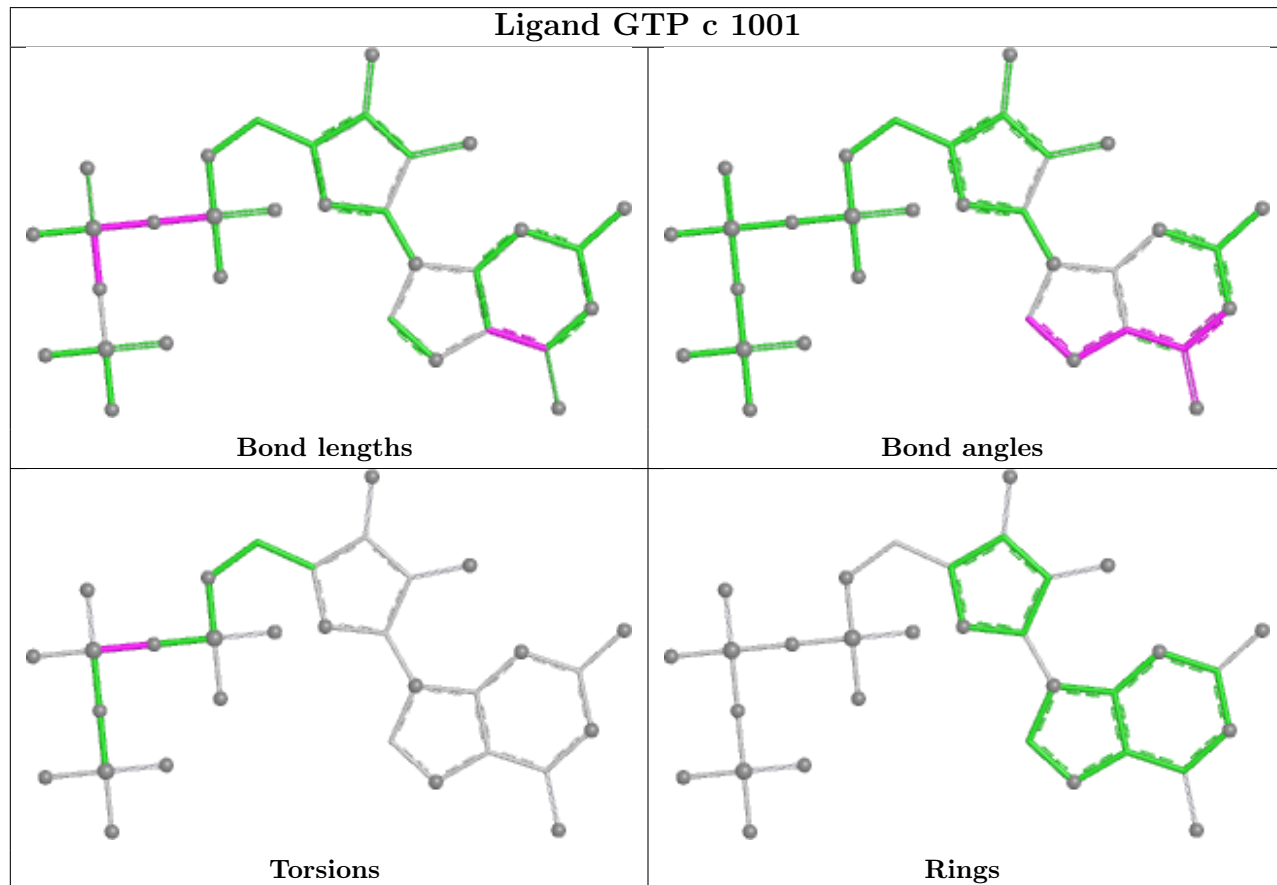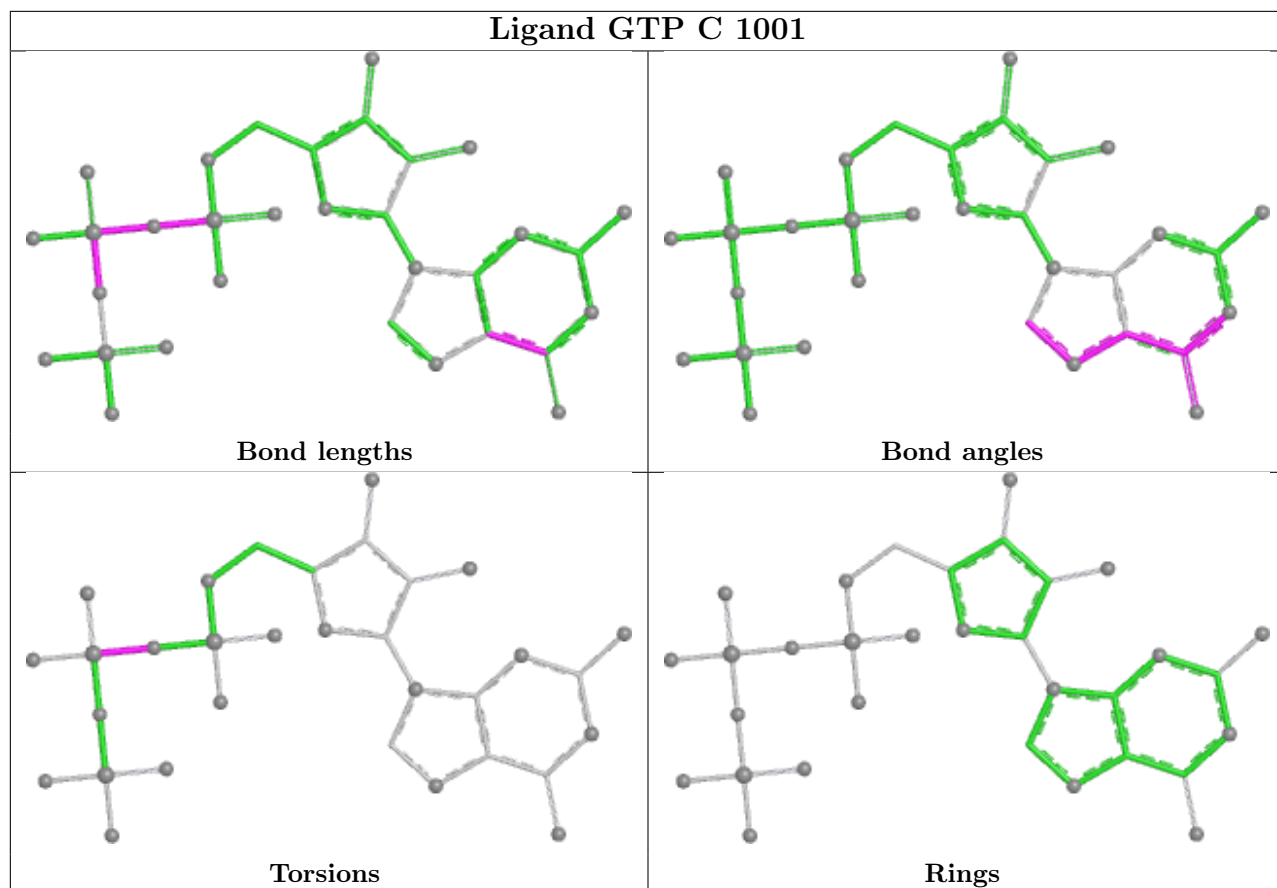
5.7 Other polymers ⓘ

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-45209. 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 ⓘ
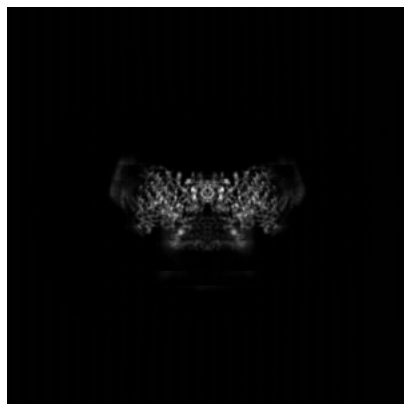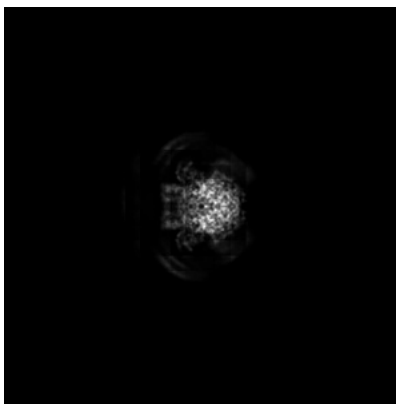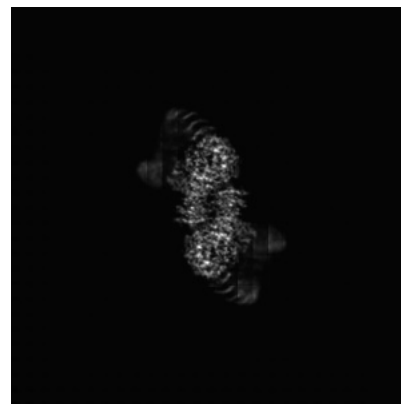
6.1.1   Primary map

X   Y   Z

6.1.2   Raw map

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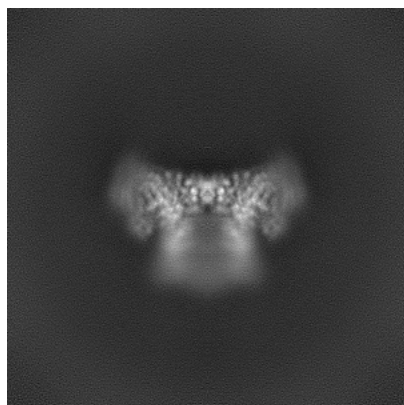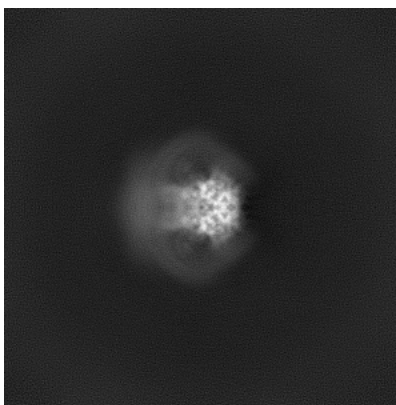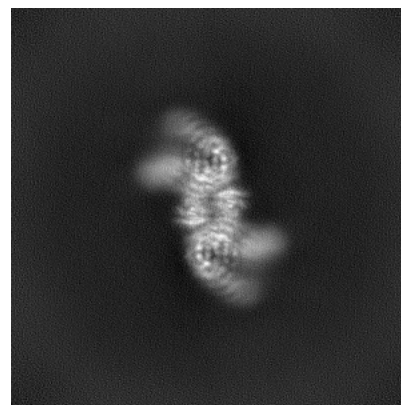
The images above show the map projected in three orthogonal directions.

6.2   Central slices (i)

6.2.1   Primary map

X Index: 200   Y Index: 200   Z Index: 200

6.2.2   Raw map
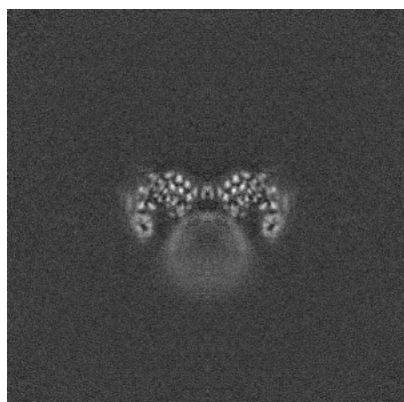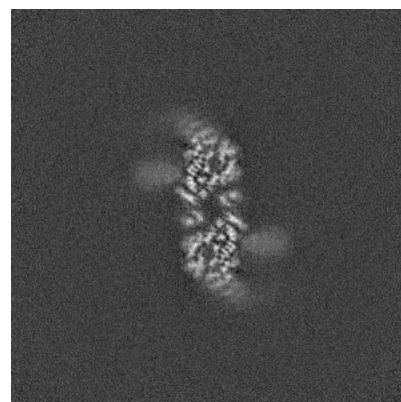
X Index: 200   Y Index: 200   Z Index: 200

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

6.3   Largest variance slices ⓘ

6.3.1   Primary map
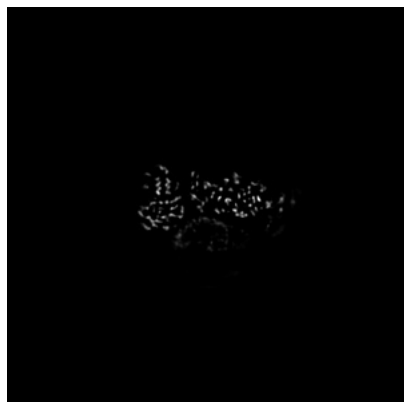
X Index: 187	Y Index: 187	Z Index: 209

6.3.2   Raw map
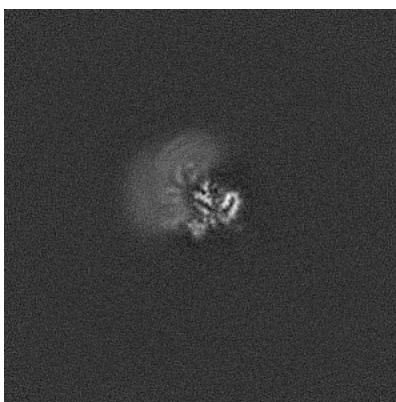
X Index: 187	Y Index: 171	Z Index: 209
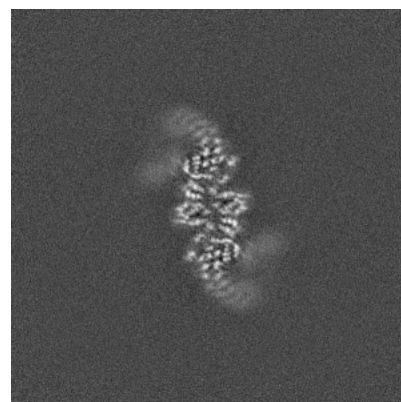
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map
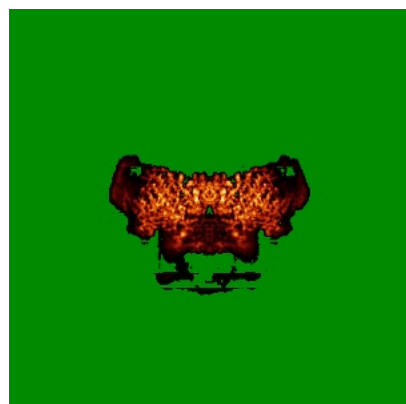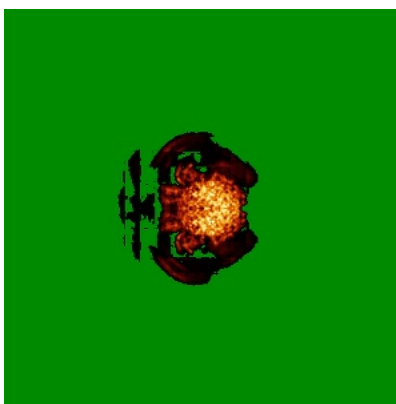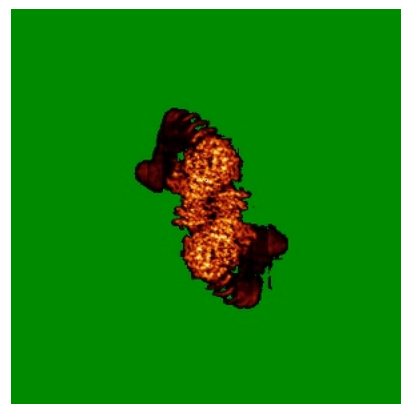
| X | Y | Z |

6.4.2 Raw map

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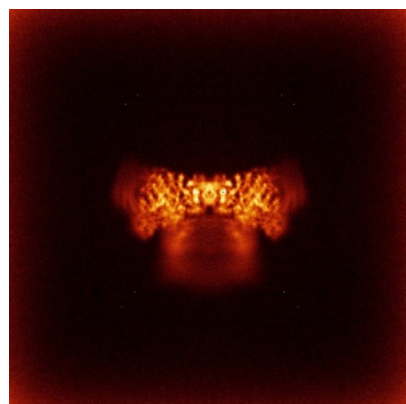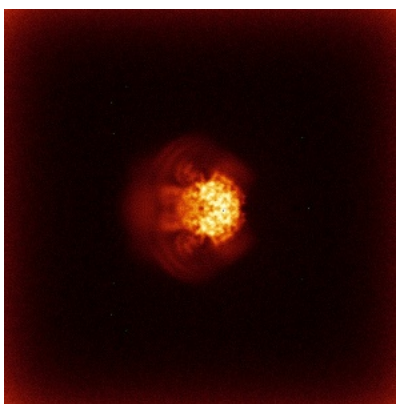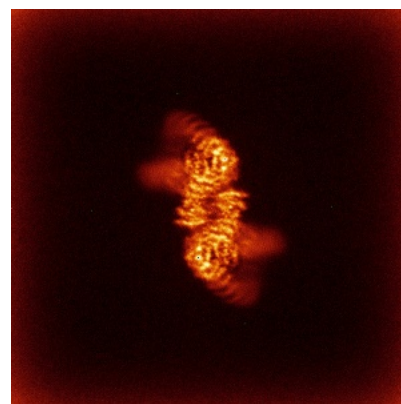
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

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 0.1. 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 |
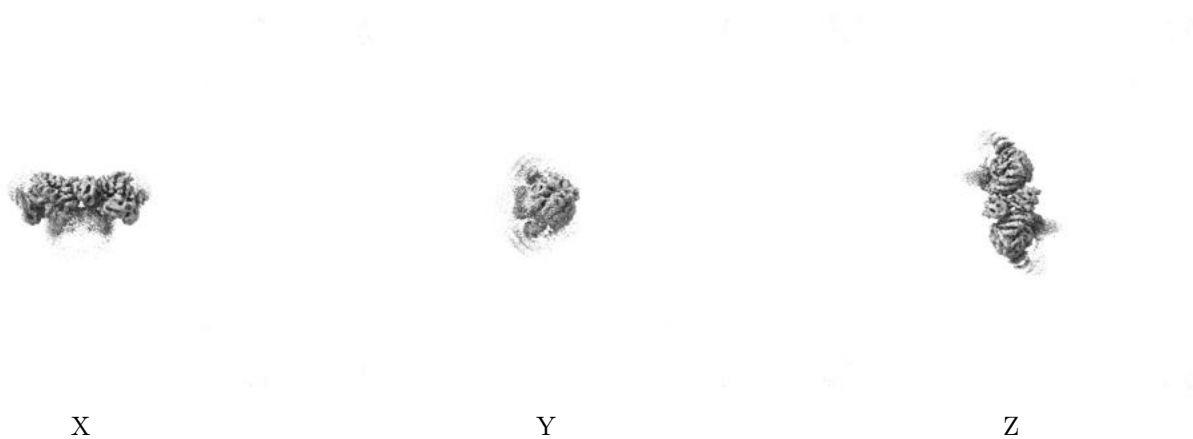
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

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_45209_msk_1.map ⓘ
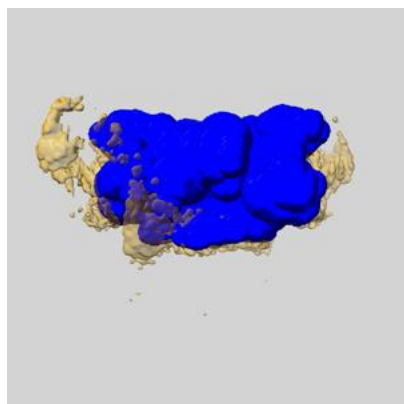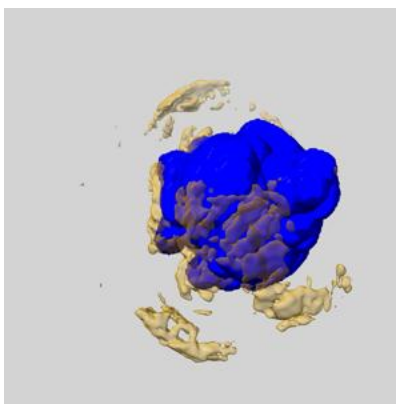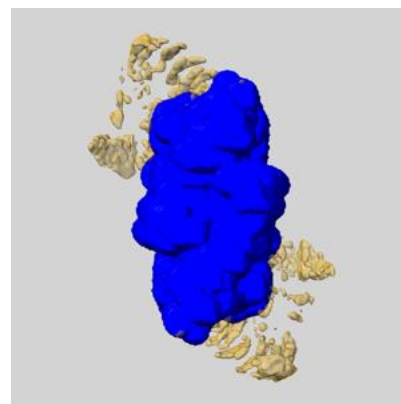
| X | Y | Z |

6.6.2   emd_45209_msk_2.map ⓘ

| X | Y | Z |
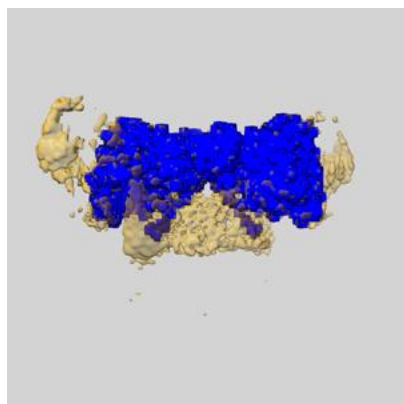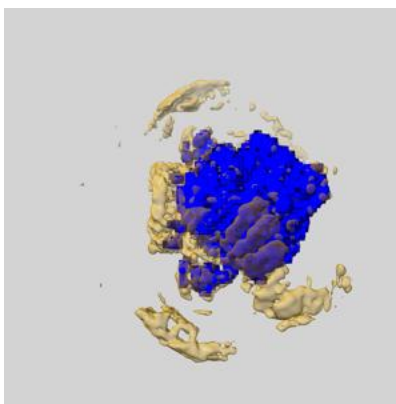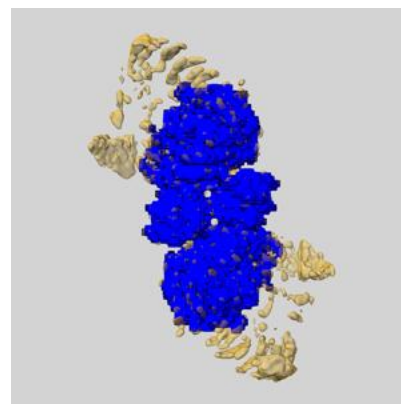
7 Map analysis ⓘ

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 ⓘ
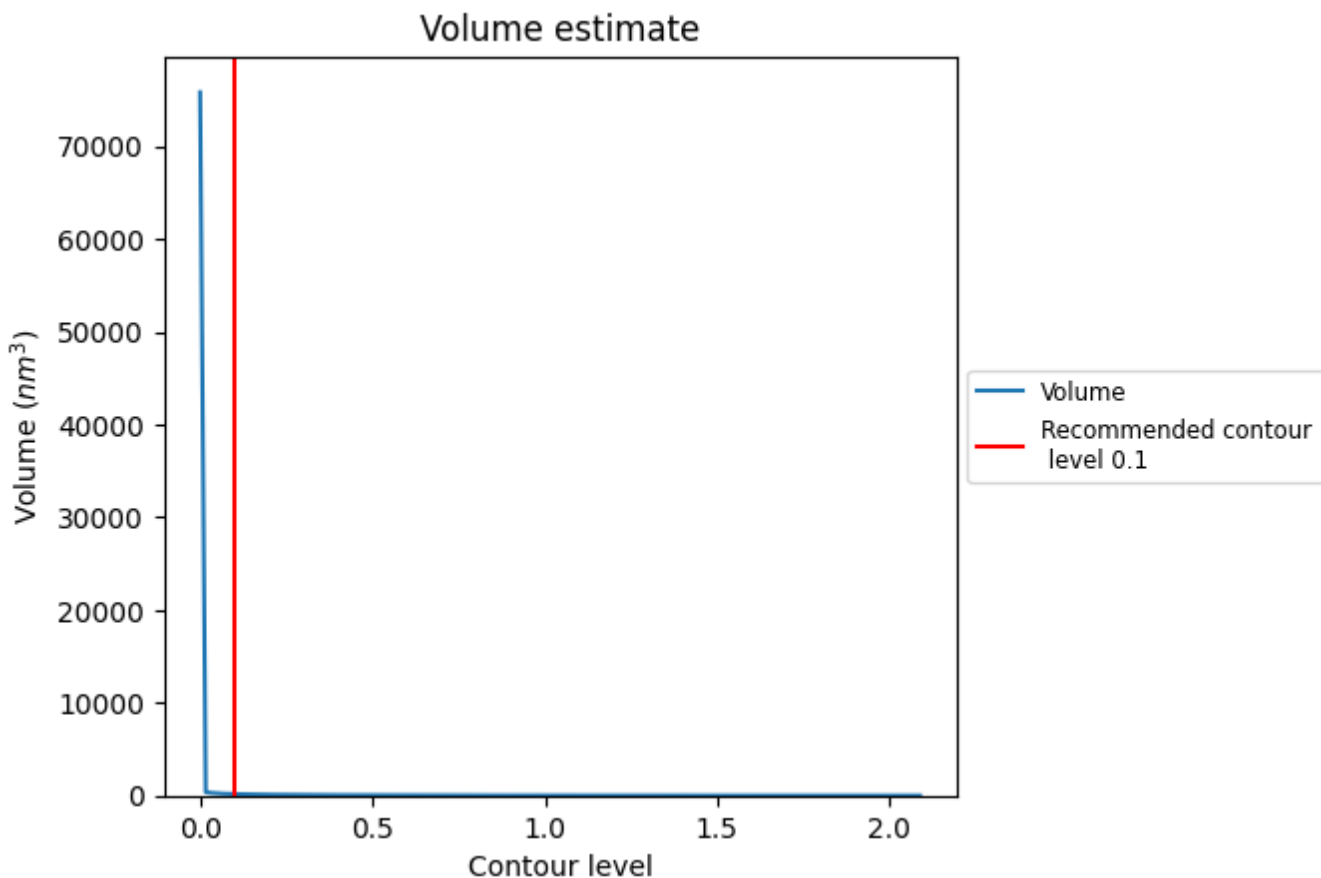
The volume at the recommended contour level is 160 nm^3; this corresponds to an approximate mass of 144 kDa.

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

7.3 Rotationally averaged power spectrum (i)
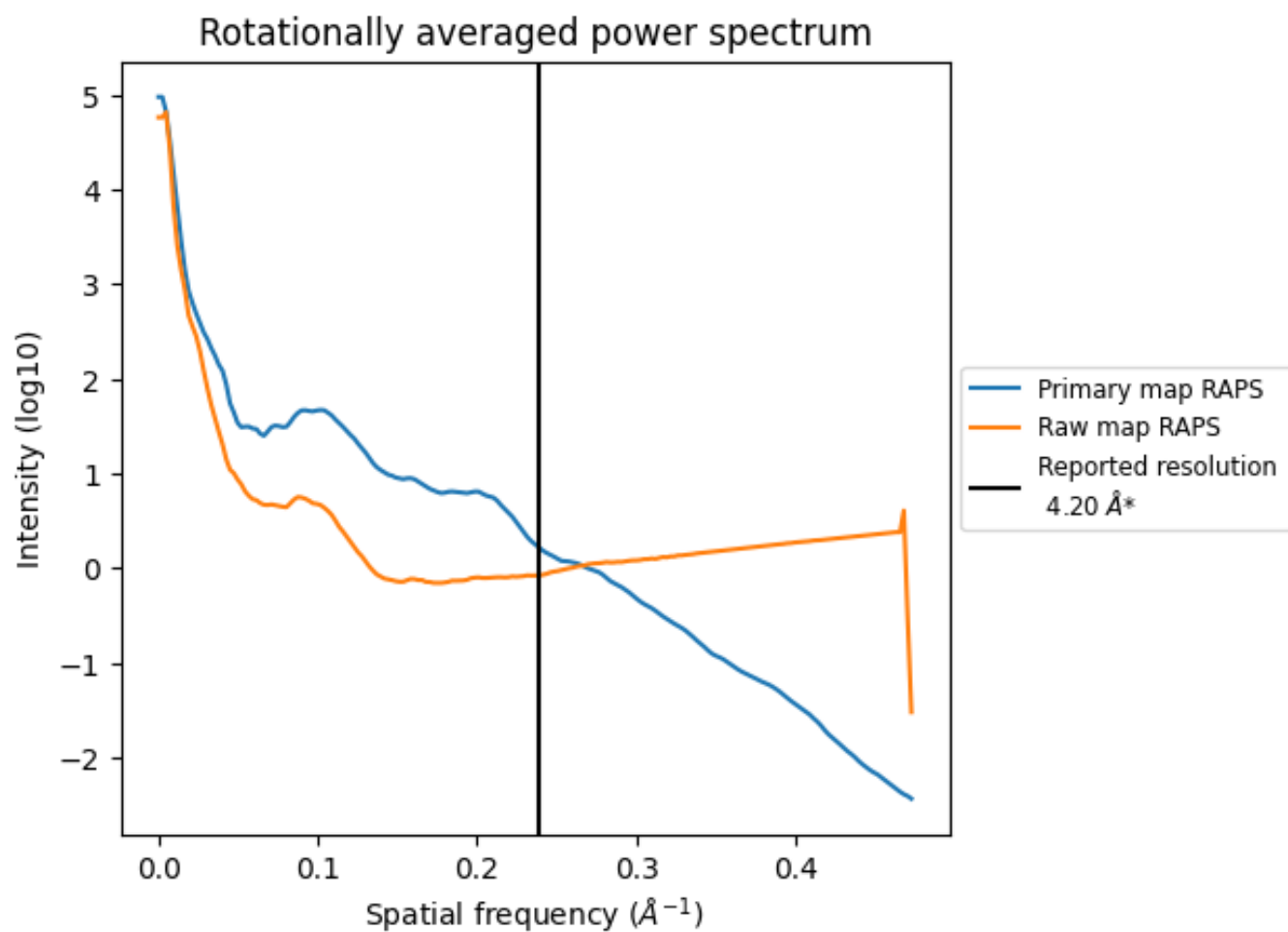
*Reported resolution corresponds to spatial frequency of 0.238 Å^{-1}

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 ⓘ
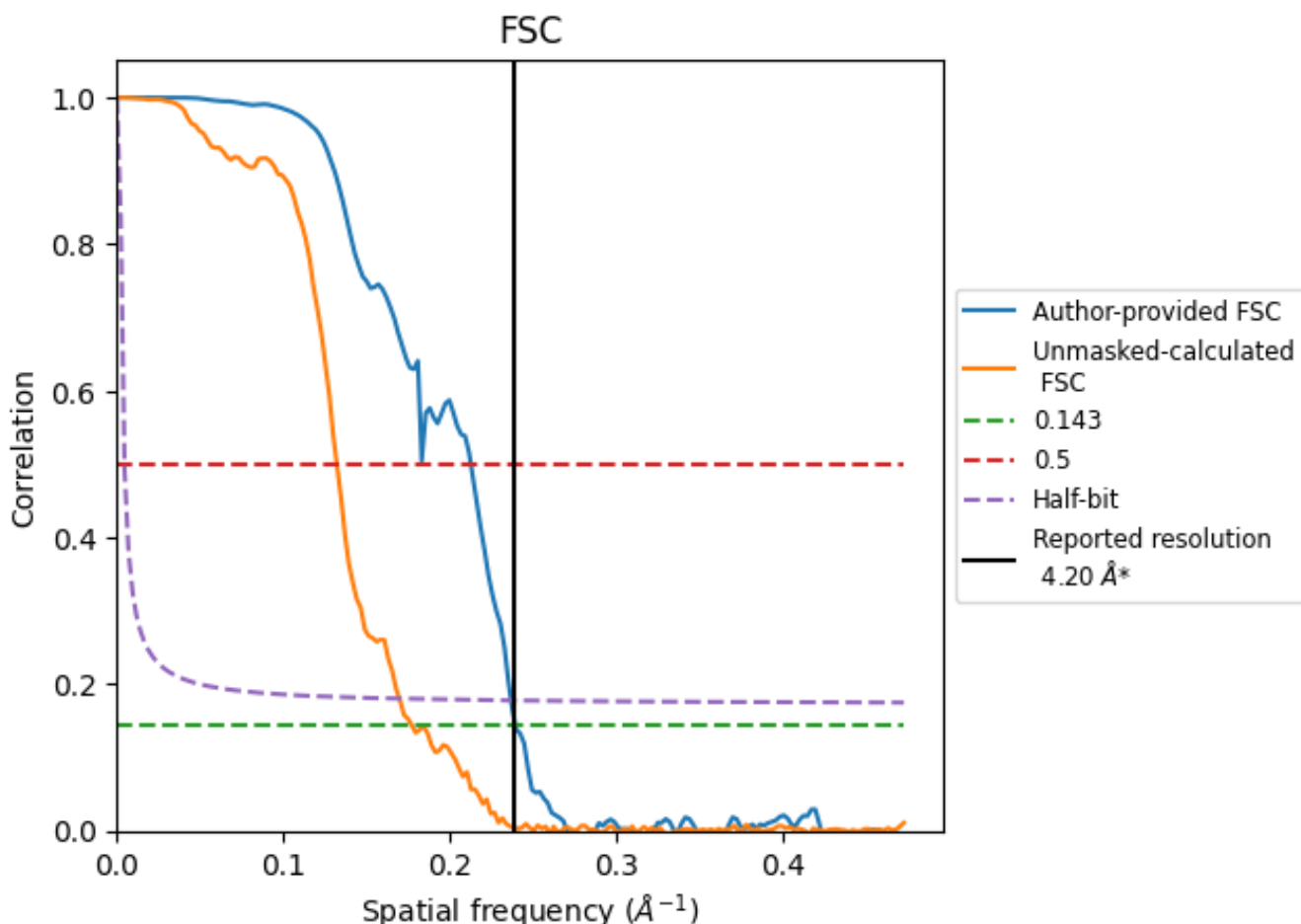
*Reported resolution corresponds to spatial frequency of 0.238 Å^{-1}

8.2　Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.20	-	-
Author-provided FSC curve	4.18	4.70	4.22
Unmasked-calculated*	5.64	7.56	5.89

*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 5.64 differs from the reported value 4.2 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-45209 and PDB model 9C5A. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay ⓘ

| X | Y | Z |
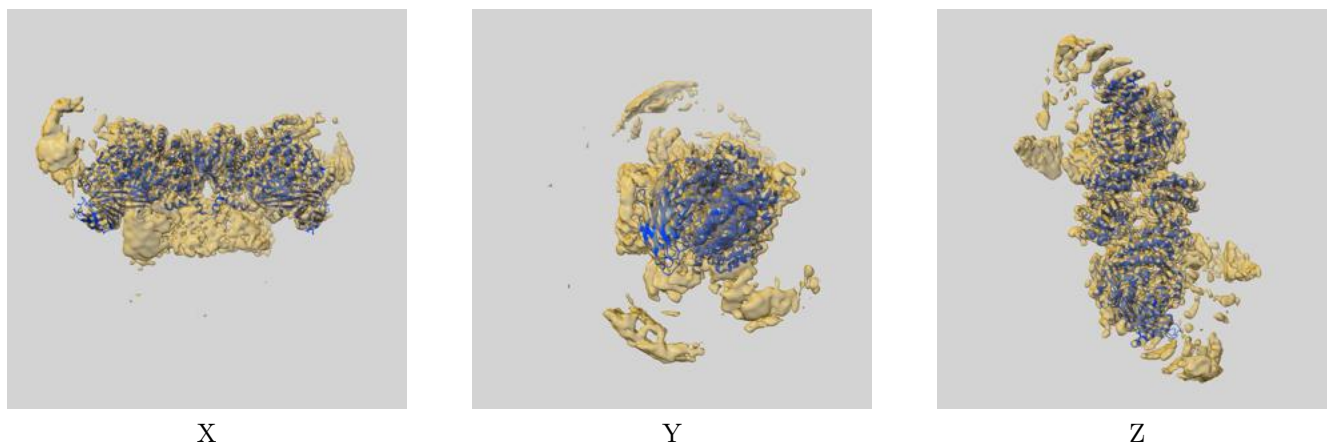
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2   Q-score mapped to coordinate model ⓘ

X   Y   Z
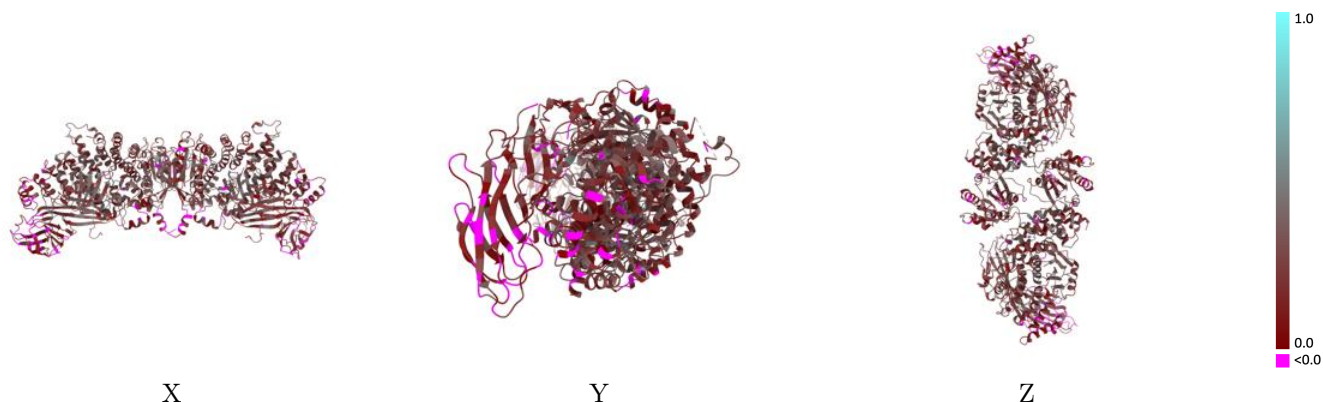
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
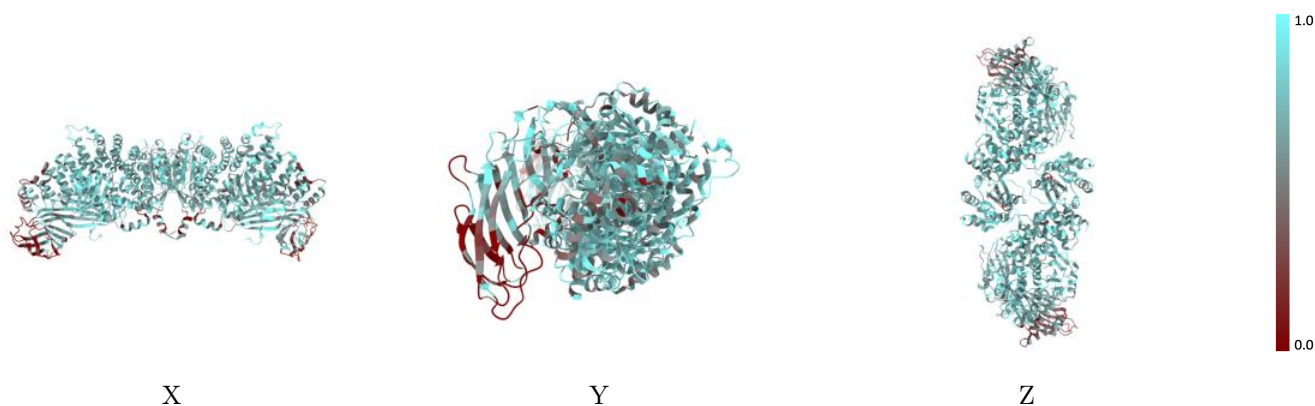
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.1).

9.4   Atom inclusion (i)
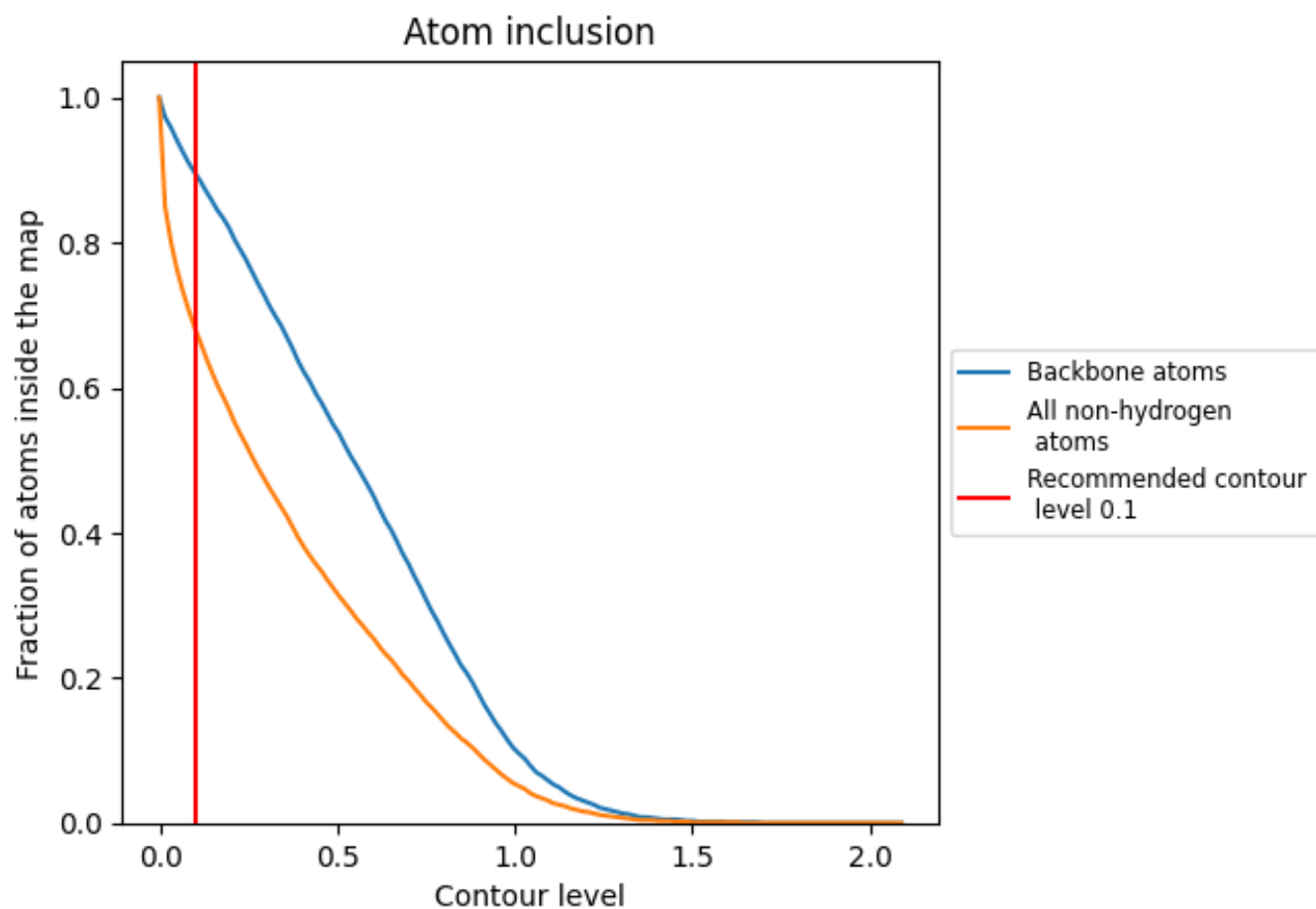
At the recommended contour level, 90% of all backbone atoms, 68% of all non-hydrogen atoms, are inside the map.

9.5　Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6800	0.2330
B	0.7200	0.2470
C	0.7120	0.2260
M	0.6330	0.2260
Y	0.6560	0.1260
b	0.7120	0.2470
c	0.7040	0.2260
m	0.6360	0.2260
y	0.6390	0.1390

1.0

0.0
<0.0