



## wwPDB EM Validation Summary Report ⓘ

May 6, 2026 – 07:26 PM EDT

PDB ID : 9O1L / pdb\_00009o1l  
EMDB ID : EMD-70011  
Title : TMEM16F in liposomes in the absence of Ca<sup>2+</sup> (expanded state)  
Authors : Feng, Z.; Accardi, A.  
Deposited on : 2025-04-03  
Resolution : 2.91 Å (reported)  
Based on initial model : 6QPB

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) 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 : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMD 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) : 2.49

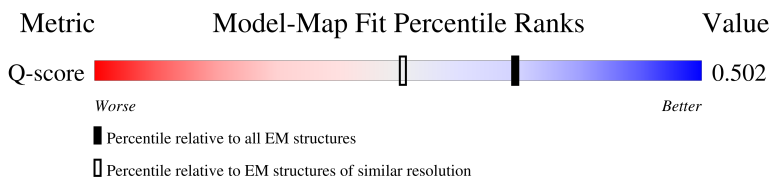
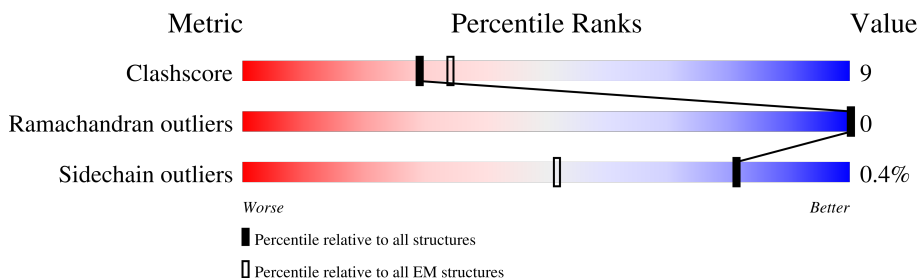
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.91 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	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	12972 ( 2.41 - 3.41 )

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  $\geq 3$ , 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  $\leq 5\%$ . 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	<div> <div>9%</div> <div>72%</div> <div>16%</div> <div>12%</div> </div>
1	B	911	<div> <div>9%</div> <div>71%</div> <div>17%</div> <div>12%</div> </div>

## 2 Entry composition [i](#)

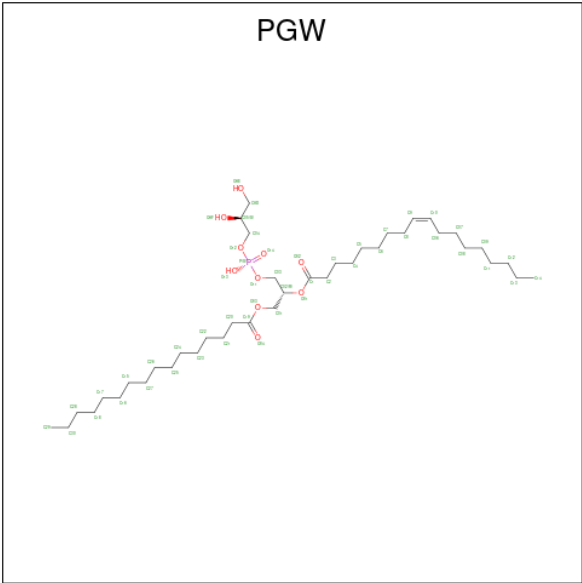
There are 2 unique types of molecules in this entry. The entry contains 13666 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Anoctamin-6.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B	806	Total	C	N	O	S	0	0
			6628	4338	1073	1176	41		
1	A	806	Total	C	N	O	S	0	0
			6628	4338	1073	1176	41		

- Molecule 2 is (1R)-2-{[(S)-{[(2S)-2,3-dihydroxypropyl]oxy}(hydroxy)phosphoryl]oxy}-1-[(hexadecanoyloxy)methyl]ethyl (9Z)-octadec-9-enoate (CCD ID: PGW) (formula: C<sub>40</sub>H<sub>77</sub>O<sub>10</sub>P) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
2	B	1	Total	C	O	P	0
			32	21	10	1	
2	B	1	Total	C	O	P	0
			36	27	8	1	
2	B	1	Total	C	O	P	0
			30	19	10	1	
2	B	1	Total	C	O	P	0
			36	27	8	1	

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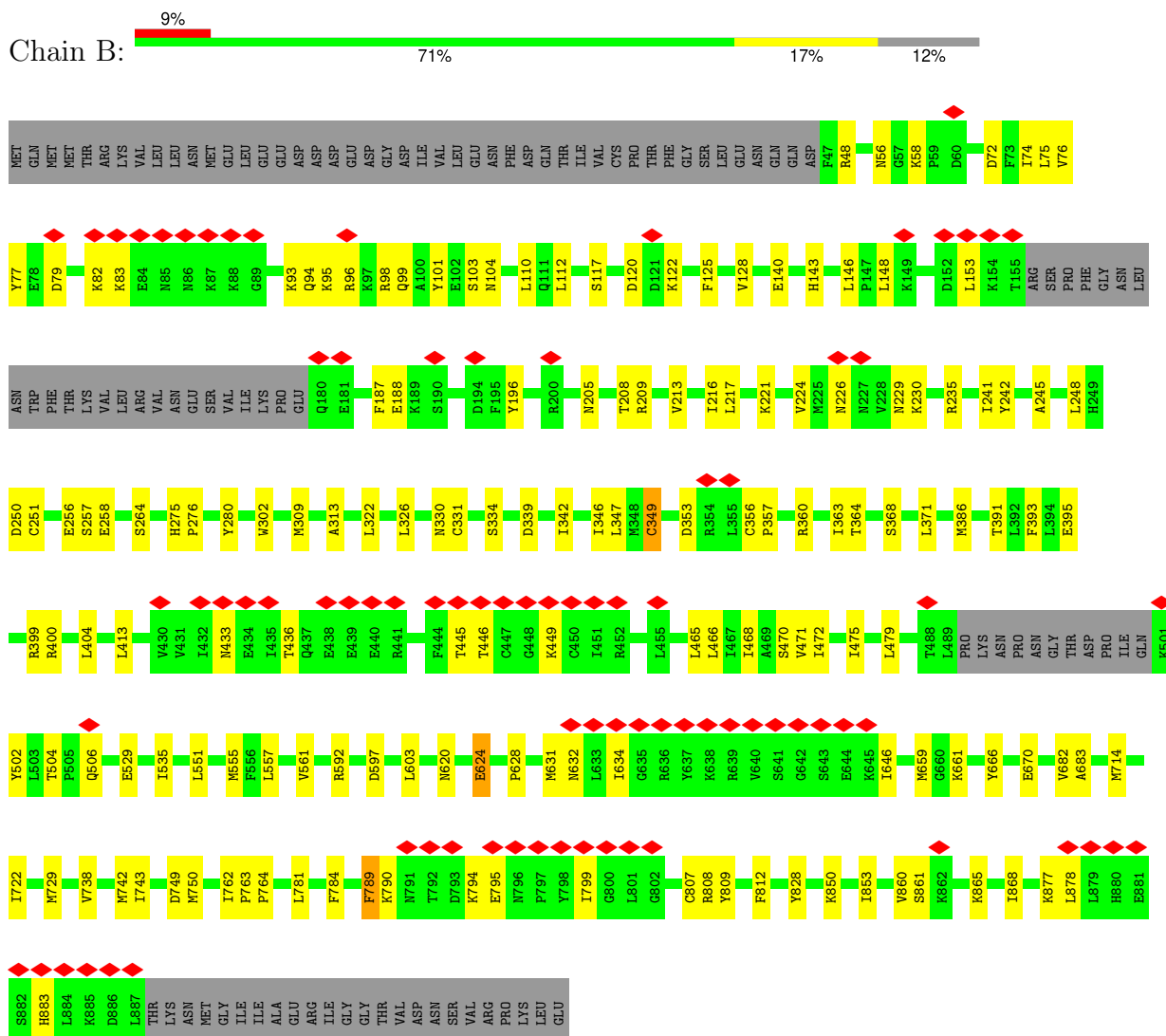
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Mol	Chain	Residues	Atoms				AltConf
2	B	1	Total	C	O	P	0
			39	30	8	1	
2	B	1	Total	C	O	P	0
			32	23	8	1	
2	A	1	Total	C	O	P	0
			32	21	10	1	
2	A	1	Total	C	O	P	0
			36	27	8	1	
2	A	1	Total	C	O	P	0
			30	19	10	1	
2	A	1	Total	C	O	P	0
			36	27	8	1	
2	A	1	Total	C	O	P	0
			39	30	8	1	
2	A	1	Total	C	O	P	0
			32	23	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: Anoctamin-6



#### • Molecule 1: Anoctamin-6



THR	LYS	ASN	MET	GLY	ILE	ILE	ALA	D749	M750	I762	P763	P764	L781	F784	F789	K790	N791	T792	D793	K794	E795	N796	P797	Y798	I799	G800	L801	G802	C807	R808	Y809	F812	Y828	K850	K862	K865	I868	K877	L878	L879	H880	E881	S882	H883	L884	K885	D886	L887							
Q506	T509	E529	I535	L551	M555	F556	L557	V561	R592	D597	L603	N620	E624	P628	M631	N632	L633	I634	G635	R636	Y637	K638	R639	V640	S641	G642	S643	E644	K645	I646	M659	G660	K661	Y666	E670	V682	A683	W714	I722																
R399	R400	L404	V430	V431	I432	N433	E434	I435	T436	Q437	E438	E439	E440	R441	F444	T445	T446	C447	G448	K449	C450	I451	R452	L455	L465	L466	I467	I468	A469	S470	V471	I472	I475	T488	L489	PRO	LYS	ASN	PRO	ASN	ASN	GLY	THR	ASP	PRO	ILE	GLN	K501	Y502	L503	T504	P505			
D250	C251	E256	S257	E258	S264	H275	P276	Y280	W302	M309	A313	L322	L326	N330	C331	S334	D339	T342	L347	M348	C349	C352	D353	R354	L355	C356	P357	R360	T363	T364	S368	L371	M386	T391	L392	F393	L394	E395																	
Y77	E78	D79	K82	K83	E84	N85	N86	K87	K88	G89	K93	Q94	K95	R96	K97	R98	Q99	A100	Y101	F102	S103	N104	L105	L110	Q111	L112	S117	D120	D121	K122	F125	V128	E140	L146	P147	L148	K149	D152	L153	K154	T155	ARG	SER	PRO	PHE	GLY	ASN	LEU	ASN						
THR	PHE	THR	LYS	VAL	LEU	ARG	VAL	ASN	GLU	SER	VAL	ILE	LYS	PRO	GLU	Q180	E181	F187	E188	K189	S190	D194	F195	Y196	R200	N205	T208	R209	V213	I216	L217	V220	K221	V224	M225	N226	N227	V228	N229	K230	R235	T241	Y242	A245	L248	H249									
MET	GLN	MET	MET	THR	ARG	LYS	VAL	LEU	ASN	MET	GLU	LEU	GLU	GLU	ASP	ASP	GLU	ASP	GLY	ASP	ILE	VAL	LEU	GLU	ASN	PHE	ASN	ASP	GLN	THR	ILE	VAL	CYS	PRO	THR	PHE	GLY	SER	LEU	ASN	GLN	GLN	ASP	F47	R48	N56	G57	K58	P59	D60	D72	F73	I74	L75	V76

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	153598	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 ( $e^-/\text{\AA}^2$ )	47.08	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.085	Depositor
Minimum map value	-0.653	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.035	Depositor
Recommended contour level	0.09	Depositor
Map size (Å)	211.2, 211.2, 211.2	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.825, 0.825, 0.825	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: PGW

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	0.14	1/6810 (0.0%)	0.29	0/9238
1	B	0.13	1/6810 (0.0%)	0.29	0/9238
All	All	0.14	2/13620 (0.0%)	0.29	0/18476

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	624	GLU	C-N	-5.10	1.26	1.33
1	B	624	GLU	C-N	-5.06	1.26	1.33

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	6628	0	6553	124	0
1	B	6628	0	6553	126	0
2	A	205	0	236	6	0
2	B	205	0	236	6	0
All	All	13666	0	13578	252	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 9.

The worst 5 of 252 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:74:ILE:HD12	1:A:248:LEU:HD13	1.23	1.18
1:B:74:ILE:HD12	1:B:248:LEU:HD13	1.23	1.15
1:A:76:VAL:HG22	1:A:125:PHE:CD1	1.88	1.08
1:B:76:VAL:HG22	1:B:125:PHE:CD1	1.88	1.08
1:A:76:VAL:HG22	1:A:125:PHE:HD1	1.21	1.04

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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	800/911 (88%)	772 (96%)	28 (4%)	0	100	100
1	B	800/911 (88%)	772 (96%)	28 (4%)	0	100	100
All	All	1600/1822 (88%)	1544 (96%)	56 (4%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains [i](#)

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	722/827 (87%)	719 (100%)	3 (0%)	84	94
1	B	722/827 (87%)	719 (100%)	3 (0%)	84	94
All	All	1444/1654 (87%)	1438 (100%)	6 (0%)	81	94

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

Mol	Chain	Res	Type
1	A	349	CYS
1	A	356	CYS
1	A	789	PHE
1	B	356	CYS
1	B	349	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 30 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	818	HIS
1	A	710	GLN
1	A	99	GLN
1	A	818	HIS
1	A	429	HIS

### 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 ⓘ

12 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	$\# Z  > 2$
2	PGW	A	1004	-	35,35,50	1.14	4 (11%)	38,40,56	1.18	2 (5%)
2	PGW	A	1001	-	31,31,50	1.16	4 (12%)	34,37,56	1.13	2 (5%)
2	PGW	A	1002	-	35,35,50	1.14	5 (14%)	38,40,56	1.18	2 (5%)
2	PGW	A	1006	-	31,31,50	1.20	5 (16%)	34,36,56	1.22	2 (5%)
2	PGW	B	1002	-	35,35,50	1.15	5 (14%)	38,40,56	1.18	2 (5%)
2	PGW	B	1004	-	35,35,50	1.14	4 (11%)	38,40,56	1.18	2 (5%)
2	PGW	B	1003	-	29,29,50	1.20	4 (13%)	32,35,56	1.16	2 (6%)
2	PGW	B	1001	-	31,31,50	1.16	4 (12%)	34,37,56	1.13	2 (5%)
2	PGW	B	1005	-	38,38,50	1.10	4 (10%)	41,43,56	1.26	2 (4%)
2	PGW	A	1003	-	29,29,50	1.20	4 (13%)	32,35,56	1.17	2 (6%)
2	PGW	A	1005	-	38,38,50	1.10	4 (10%)	41,43,56	1.26	2 (4%)
2	PGW	B	1006	-	31,31,50	1.20	5 (16%)	34,36,56	1.22	2 (5%)

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
2	PGW	A	1004	-	-	19/37/37/55	-
2	PGW	A	1001	-	-	10/36/36/55	-
2	PGW	A	1002	-	-	16/37/37/55	-
2	PGW	A	1006	-	-	14/33/33/55	-
2	PGW	B	1002	-	-	16/37/37/55	-
2	PGW	B	1004	-	-	19/37/37/55	-
2	PGW	B	1003	-	-	17/34/34/55	-
2	PGW	B	1001	-	-	10/36/36/55	-
2	PGW	B	1005	-	-	21/40/40/55	-
2	PGW	A	1003	-	-	17/34/34/55	-
2	PGW	A	1005	-	-	20/40/40/55	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PGW	B	1006	-	-	14/33/33/55	-

The worst 5 of 52 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1005	PGW	O01-C1	3.00	1.42	1.34
2	A	1005	PGW	O01-C1	2.98	1.42	1.34
2	B	1004	PGW	O01-C1	2.92	1.42	1.34
2	A	1004	PGW	O01-C1	2.92	1.42	1.34
2	B	1006	PGW	O01-C1	2.88	1.42	1.34

The worst 5 of 24 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1005	PGW	O01-C1-C2	4.58	121.39	111.48
2	B	1005	PGW	O01-C1-C2	4.57	121.37	111.48
2	B	1004	PGW	O01-C1-C2	4.26	120.69	111.48
2	A	1004	PGW	O01-C1-C2	4.24	120.64	111.48
2	A	1003	PGW	O01-C1-C2	3.99	120.11	111.48

There are no chirality outliers.

5 of 193 torsion outliers are listed below:

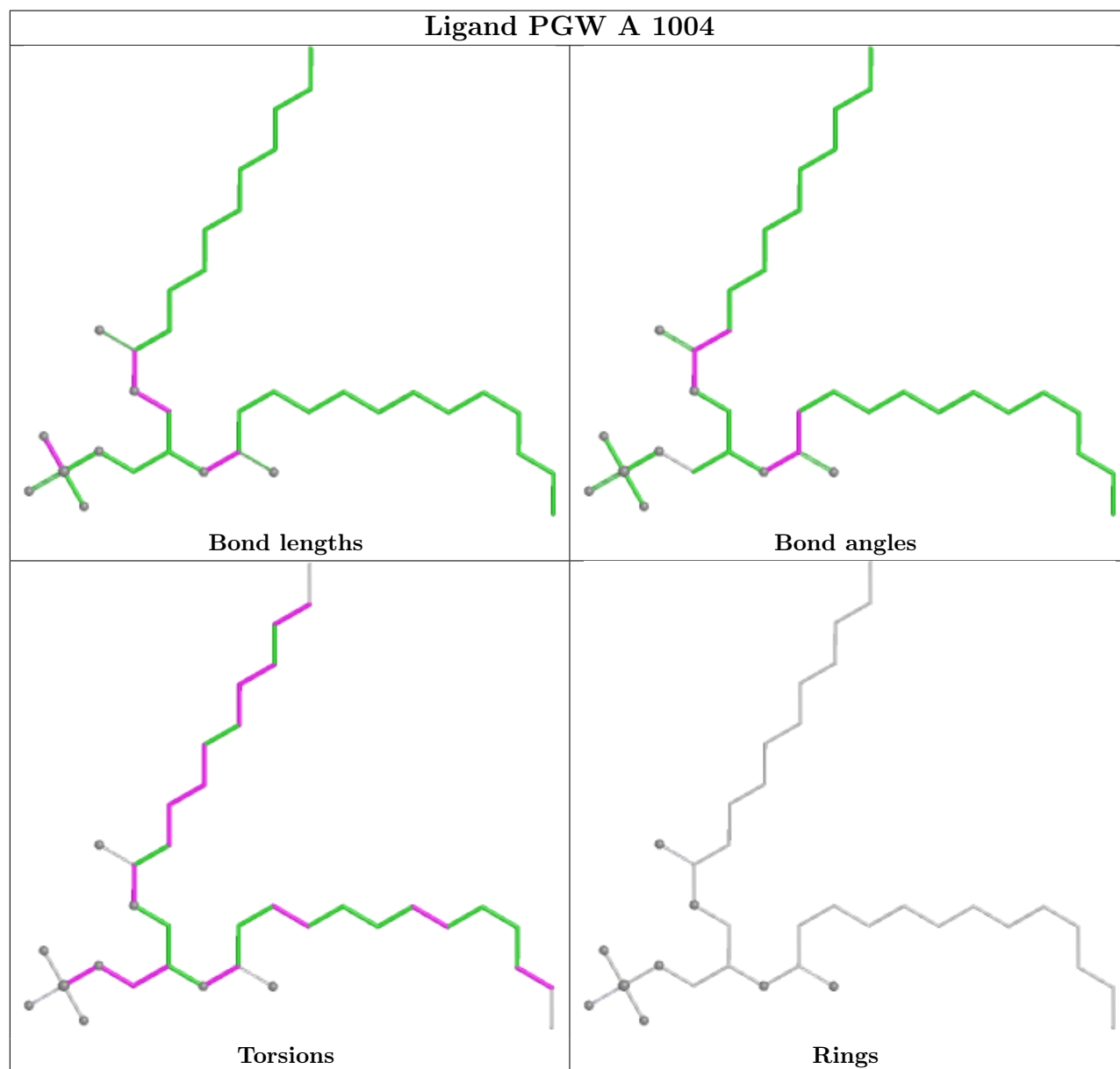
Mol	Chain	Res	Type	Atoms
2	B	1001	PGW	C03-O11-P-O12
2	B	1001	PGW	C03-O11-P-O14
2	B	1002	PGW	C03-O11-P-O12
2	B	1002	PGW	C03-O11-P-O13
2	B	1002	PGW	C10-C06-C07-C08

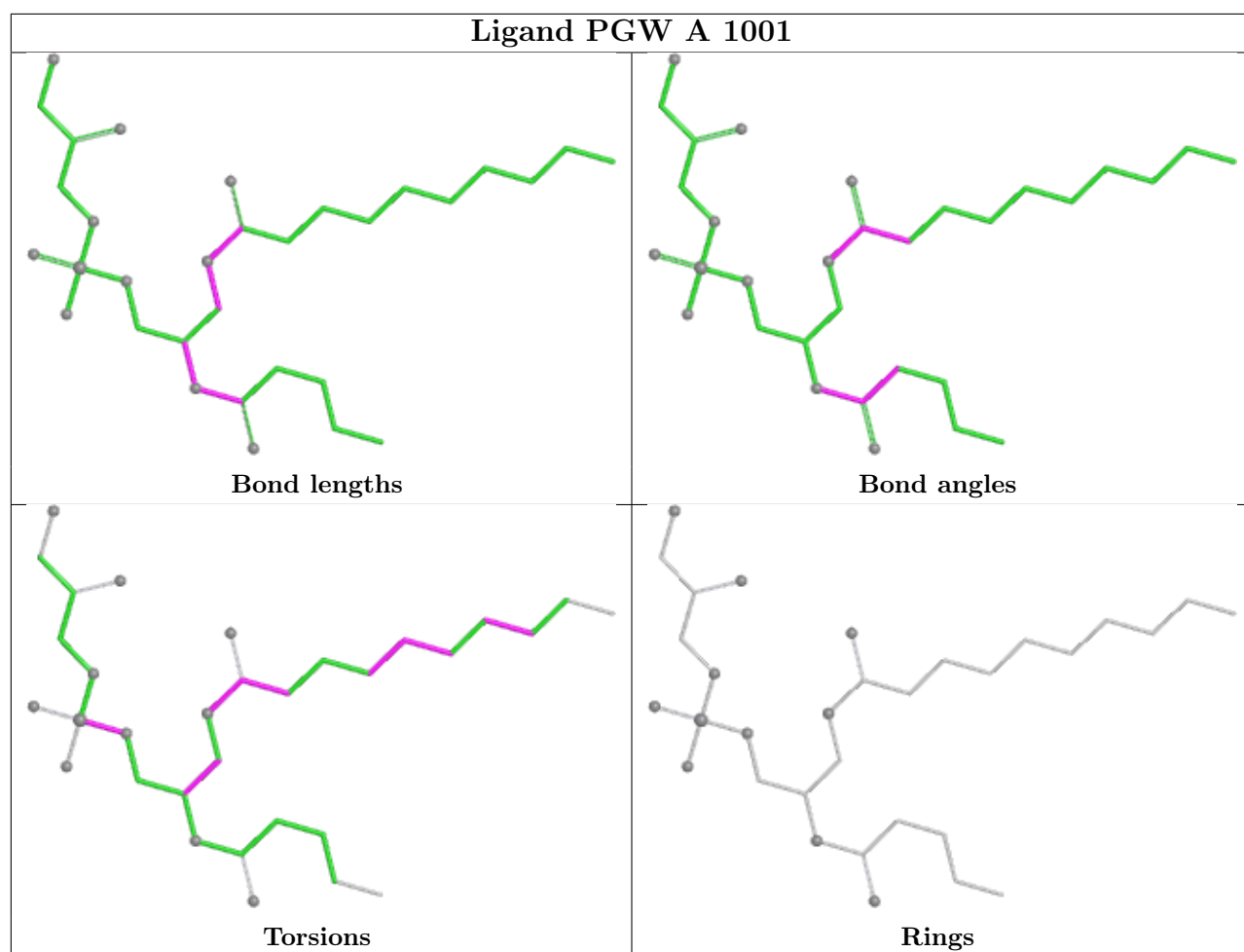
There are no ring outliers.

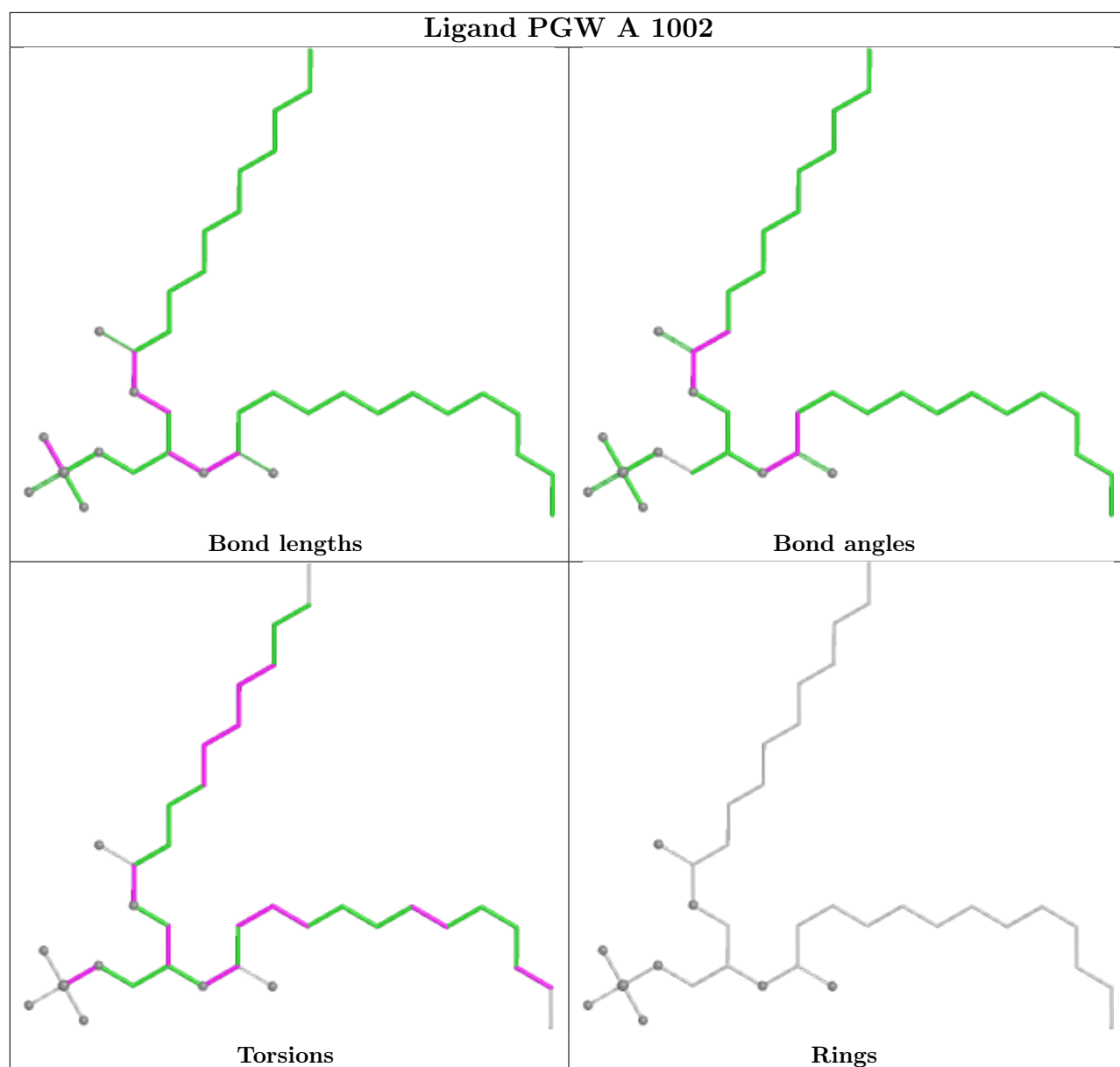
6 monomers are involved in 12 short contacts:

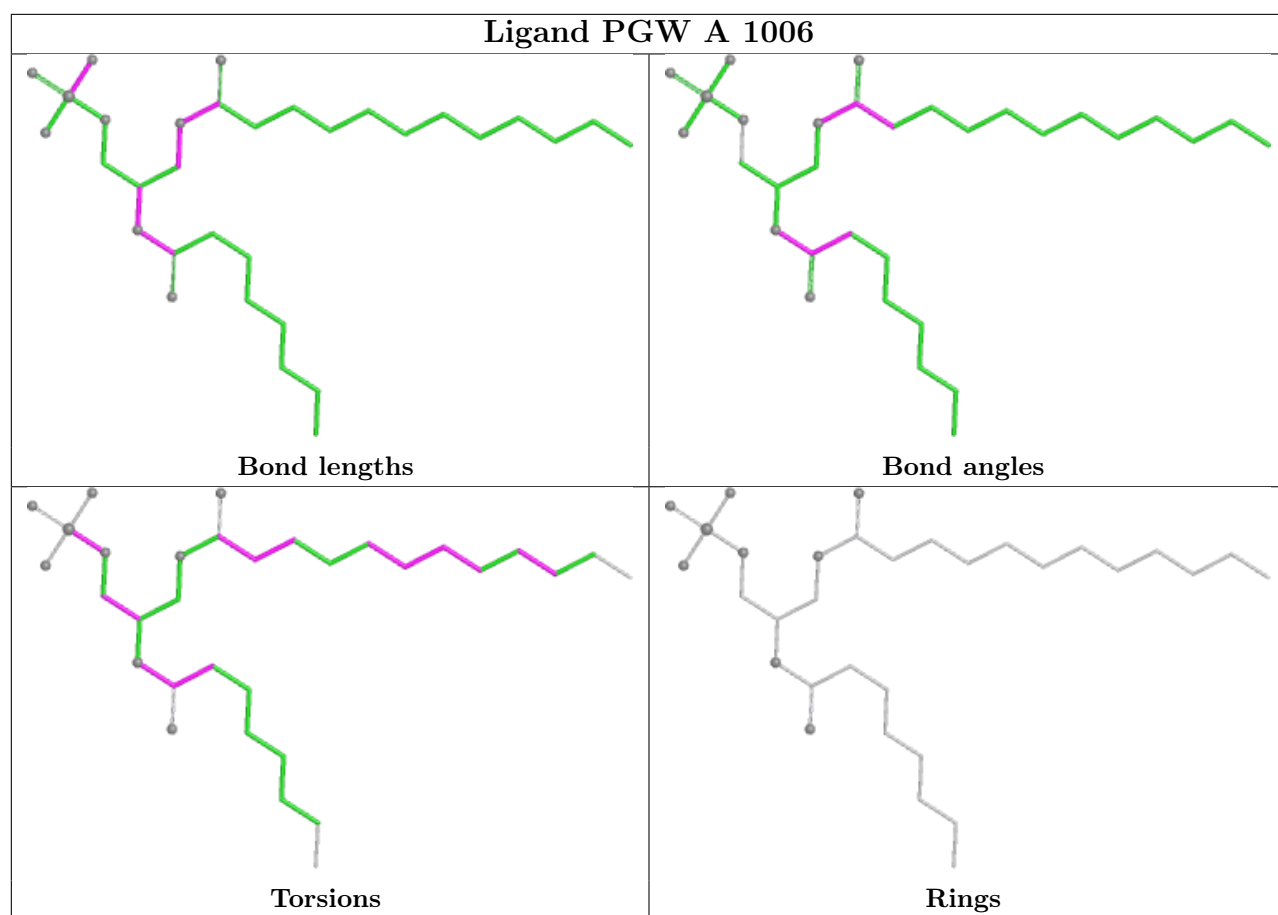
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	1004	PGW	3	0
2	A	1006	PGW	1	0
2	B	1004	PGW	3	0
2	B	1003	PGW	2	0
2	B	1005	PGW	1	0
2	A	1003	PGW	2	0

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 than 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.

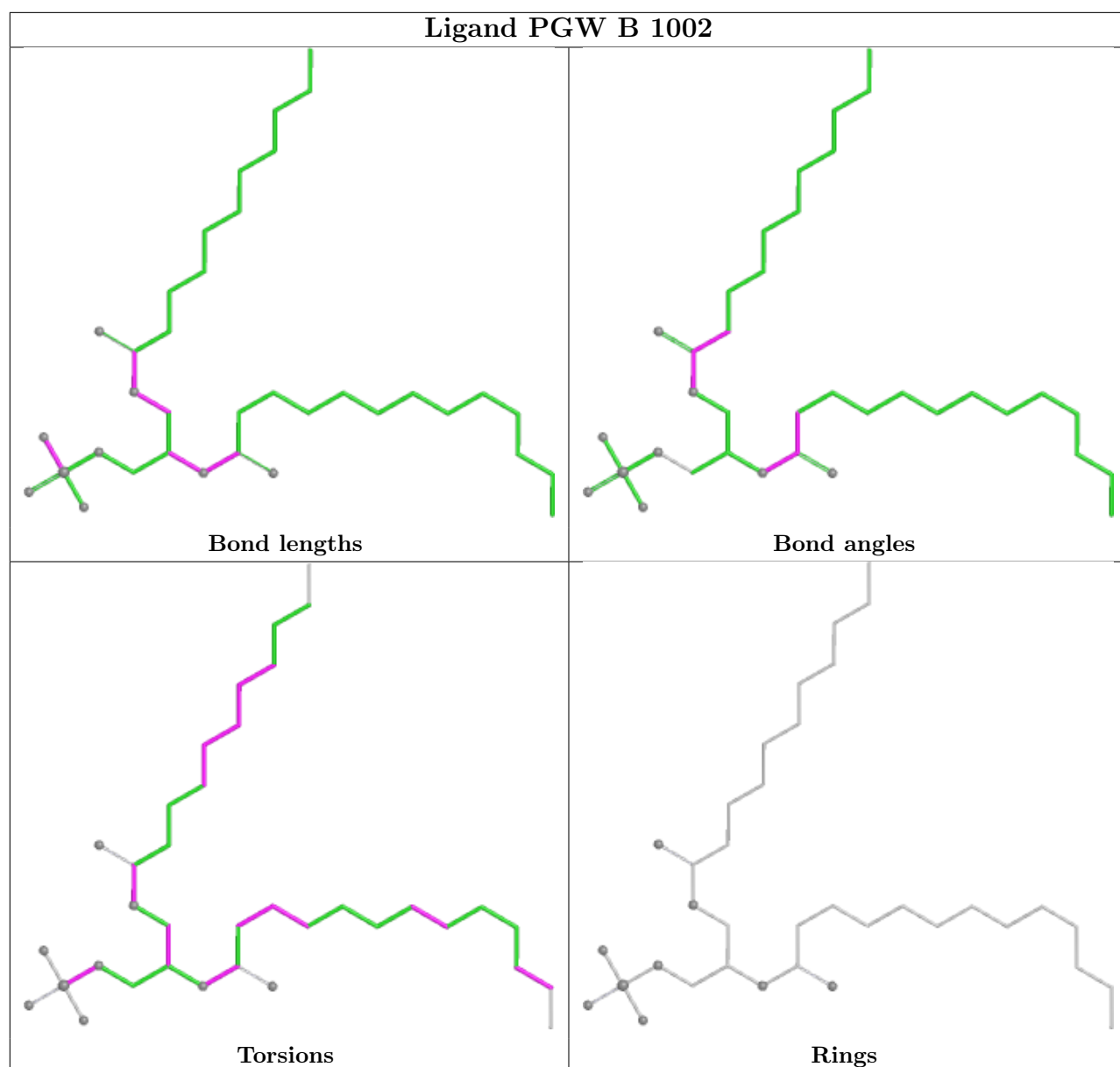


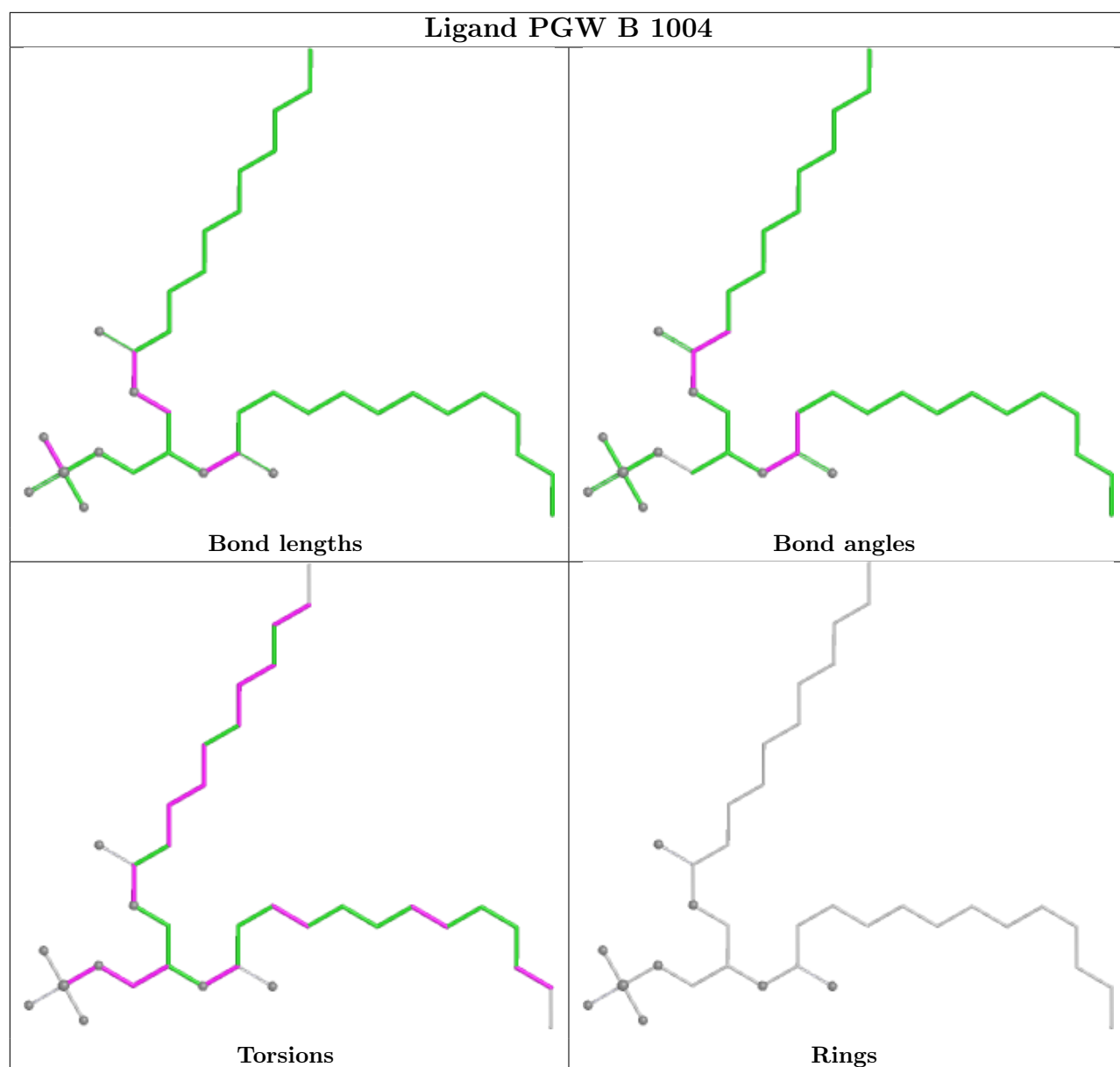


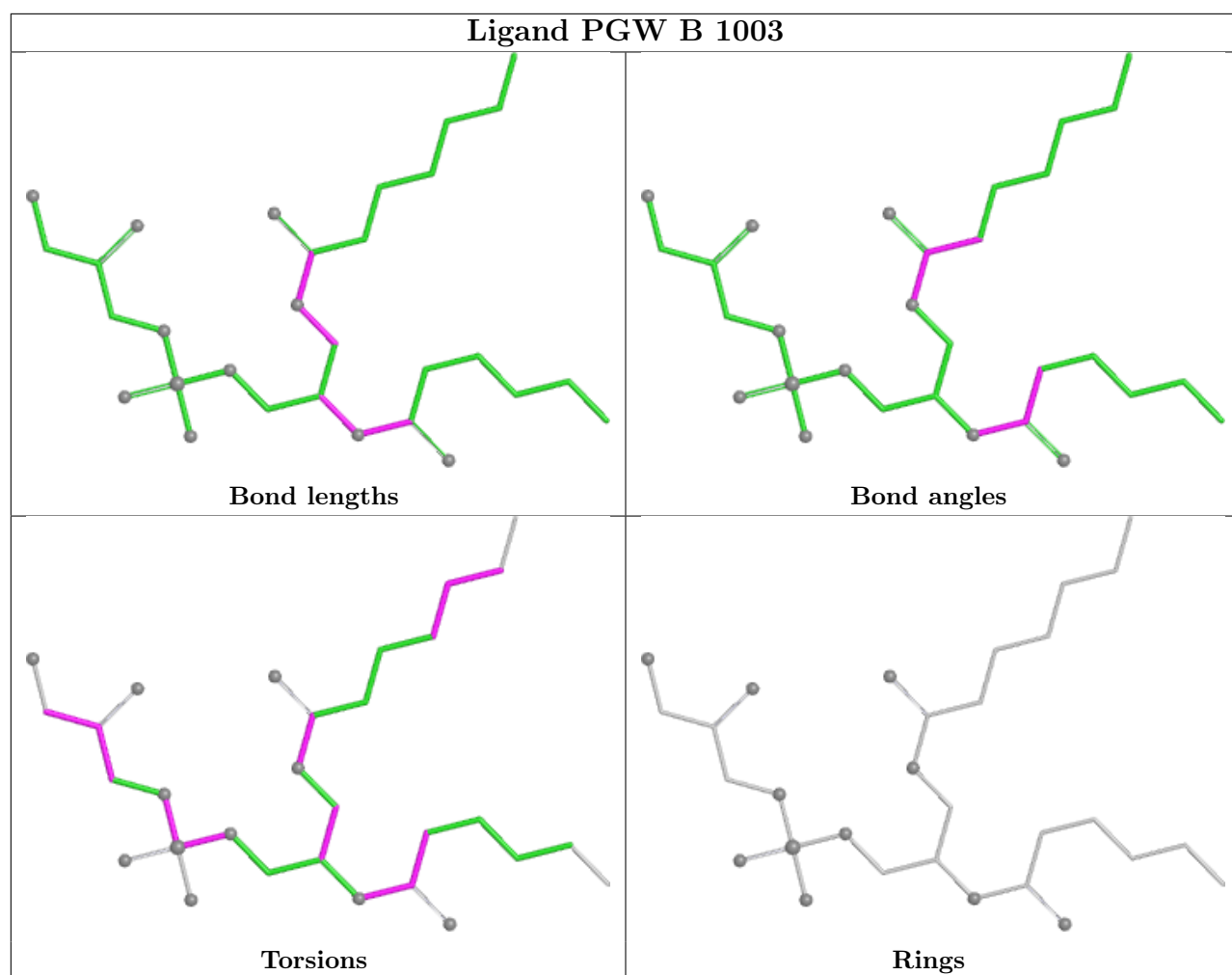


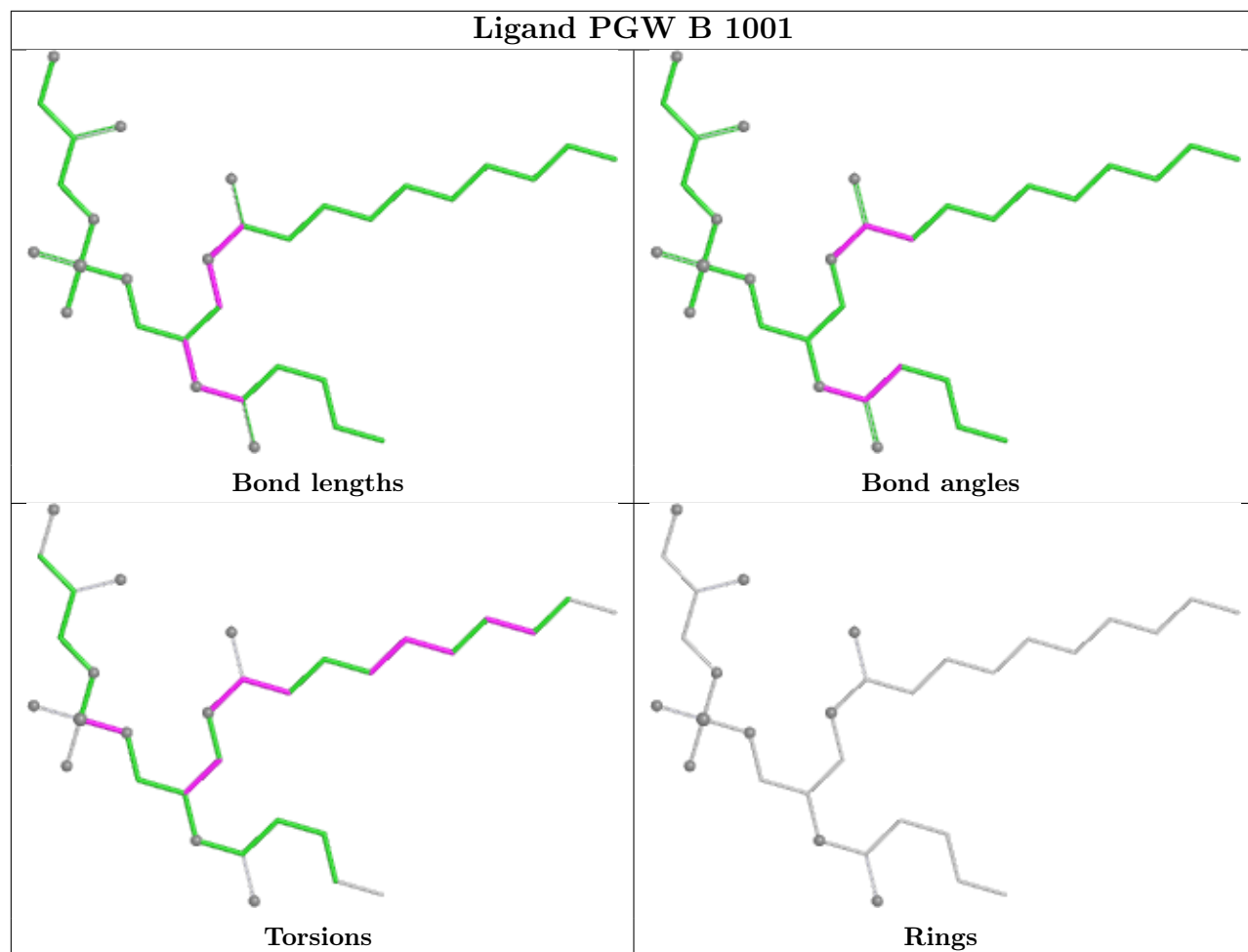


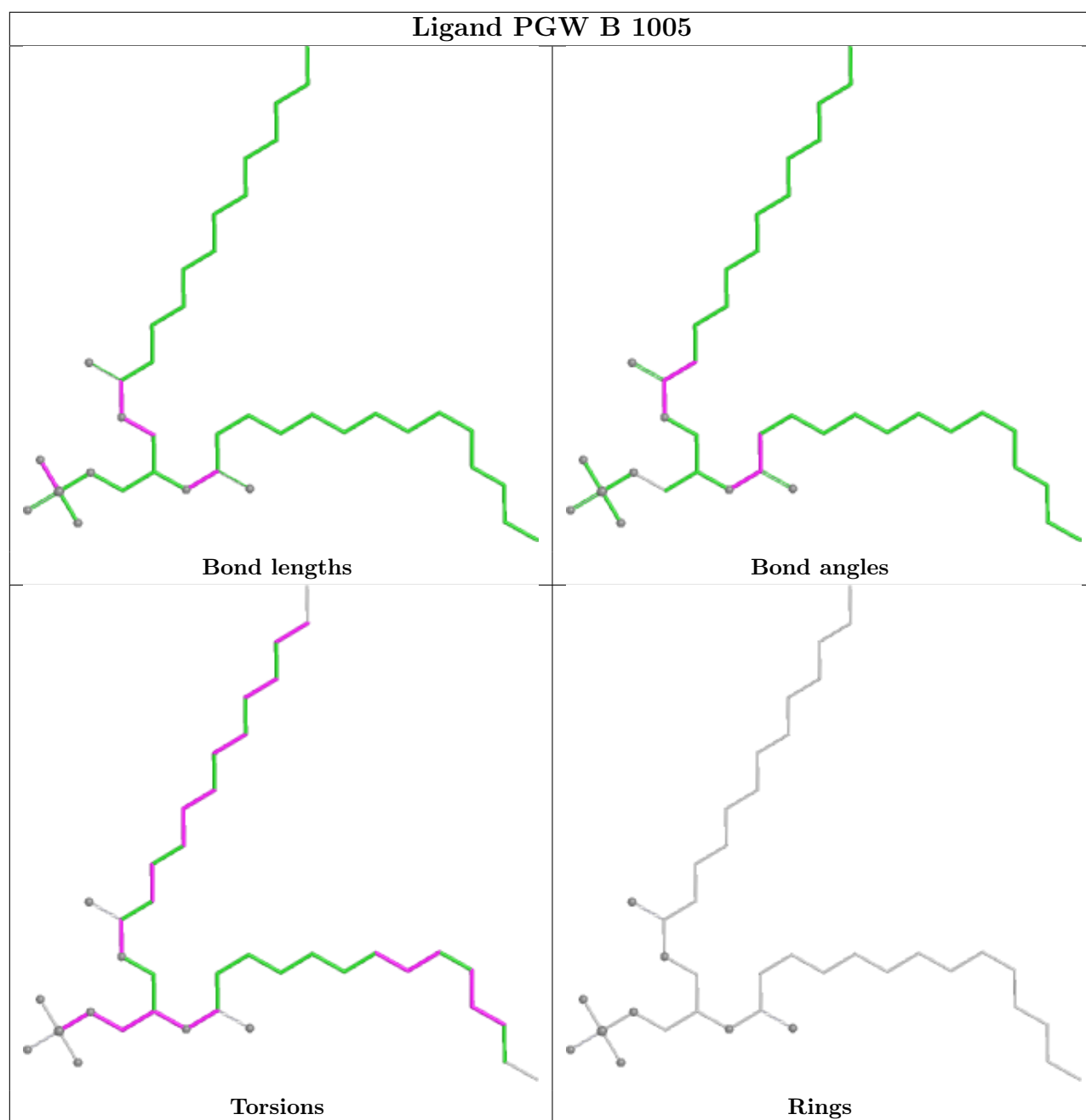


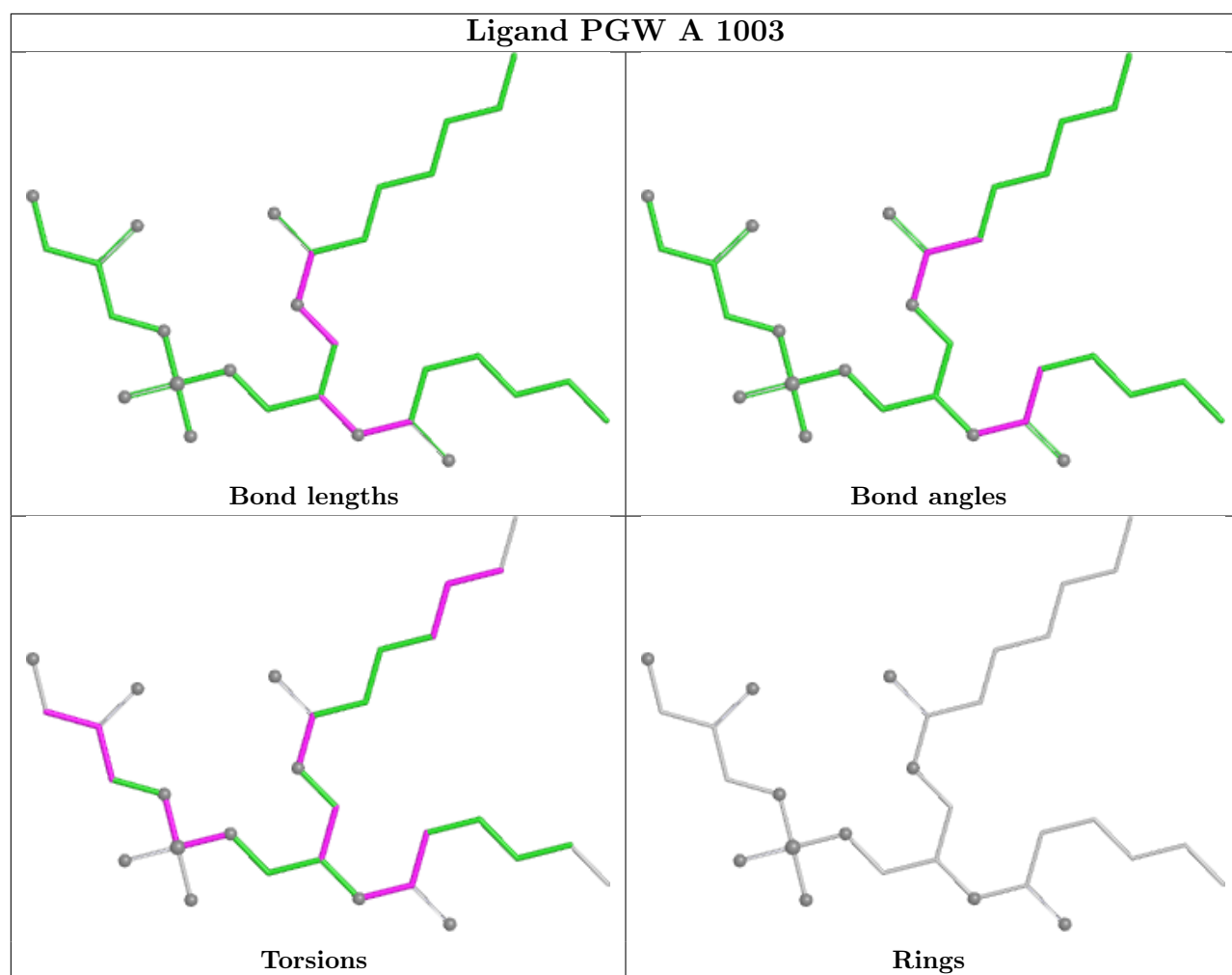


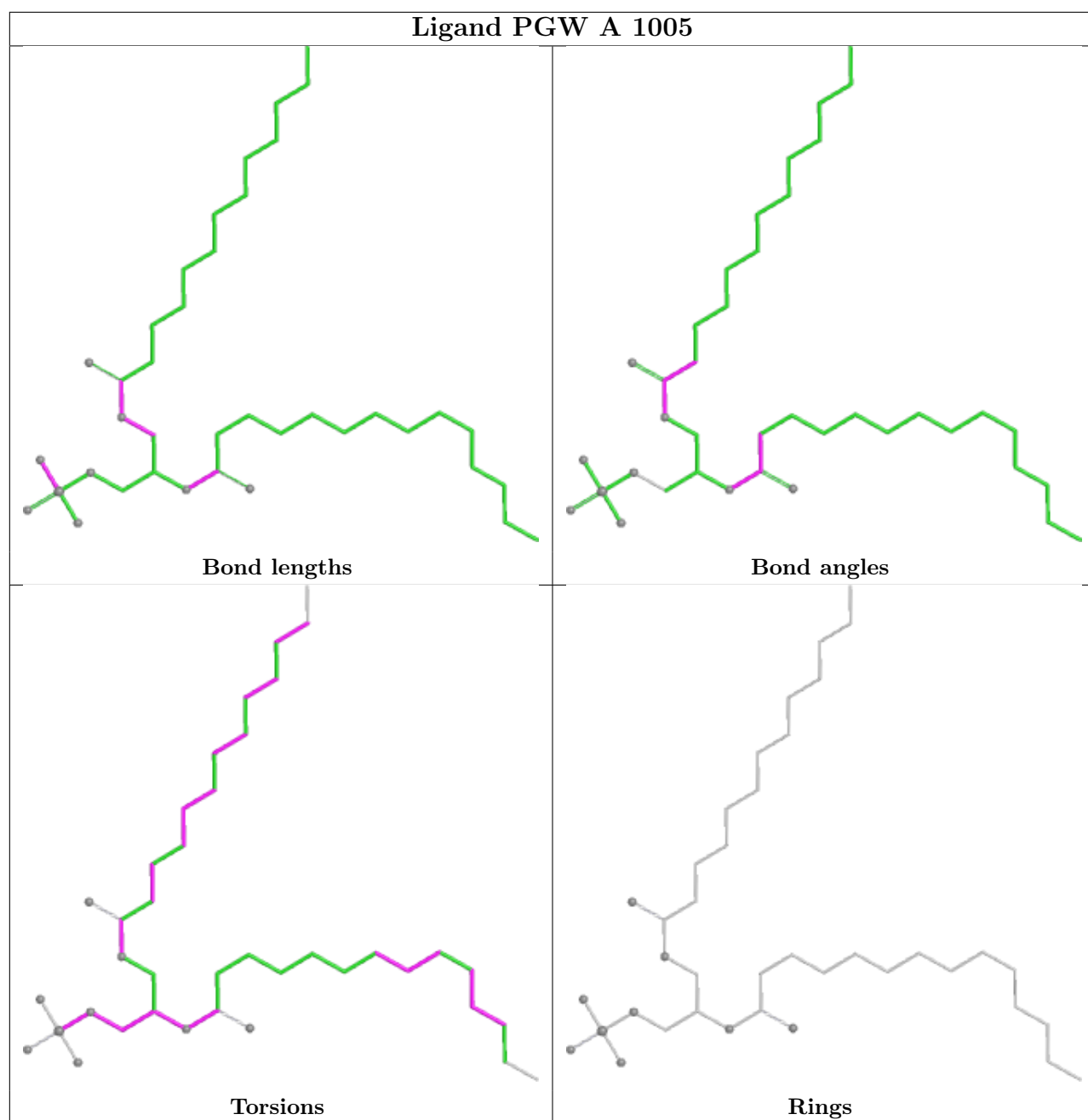


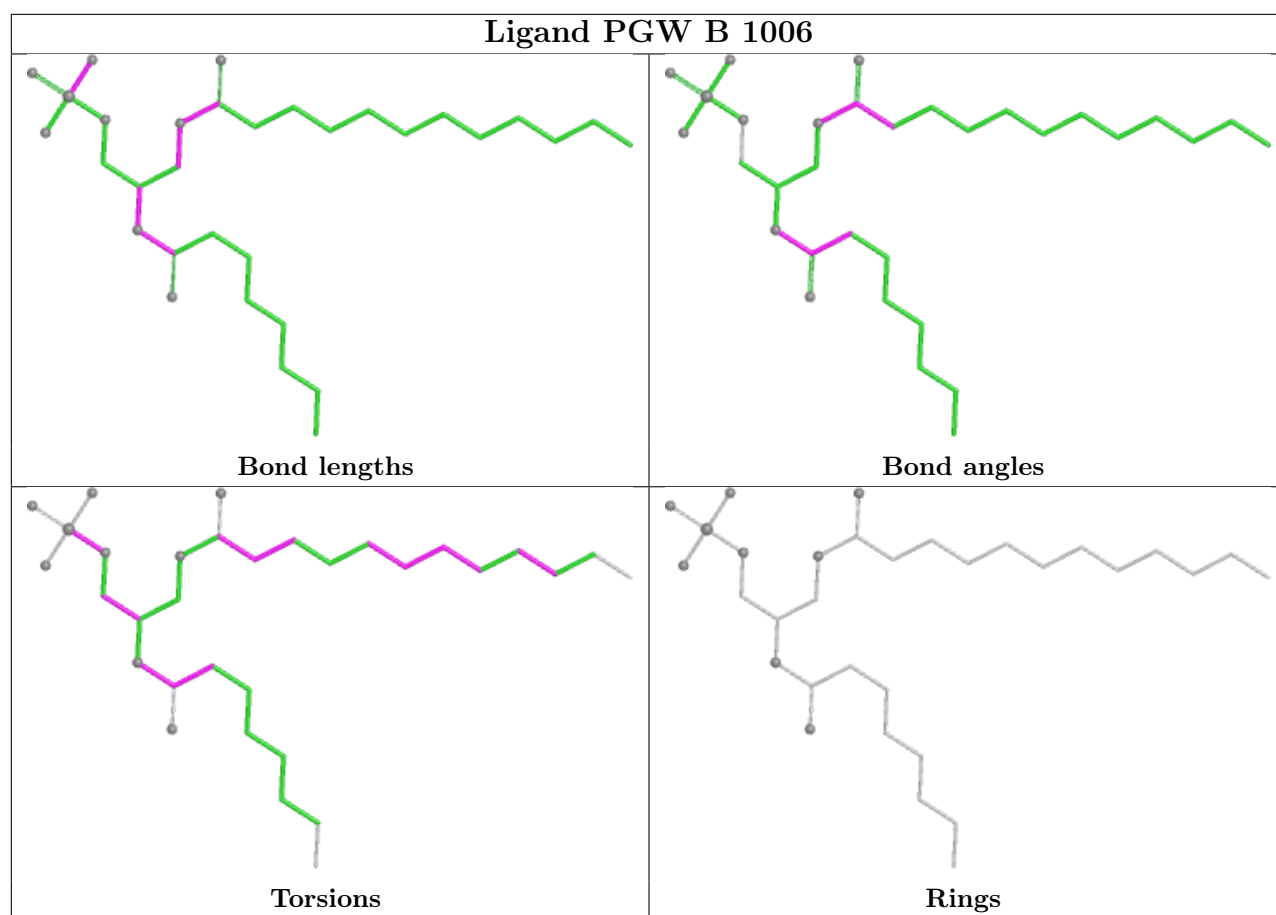












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.



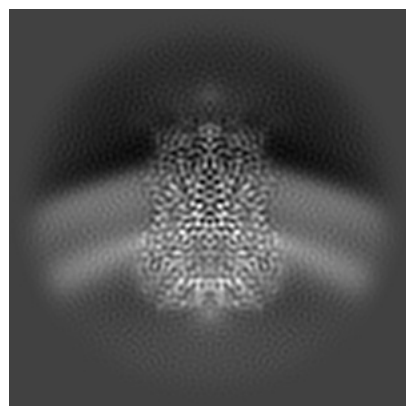
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-70011. These allow visual inspection of the internal detail of the map and identification of artifacts.

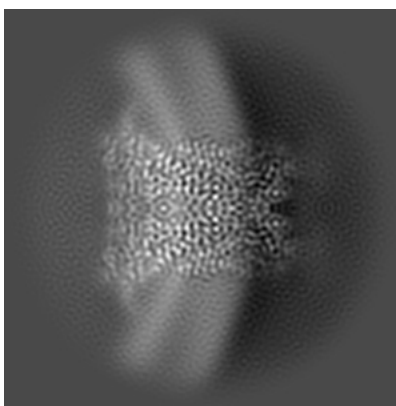
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

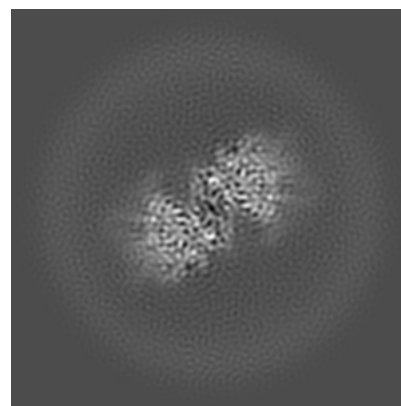
#### 6.1.1 Primary map



X

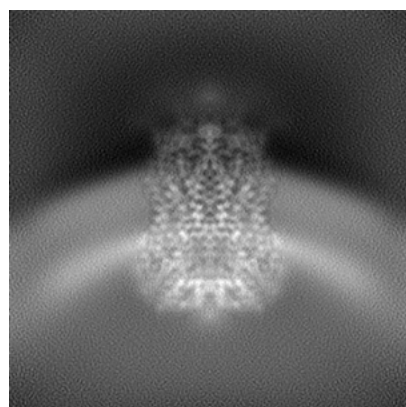


Y

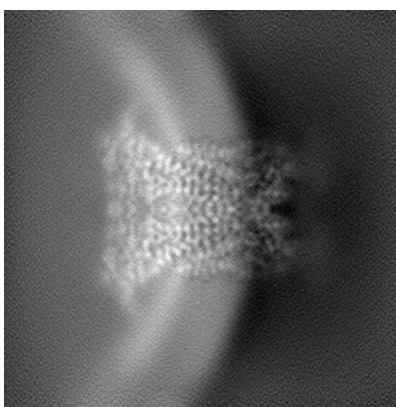


Z

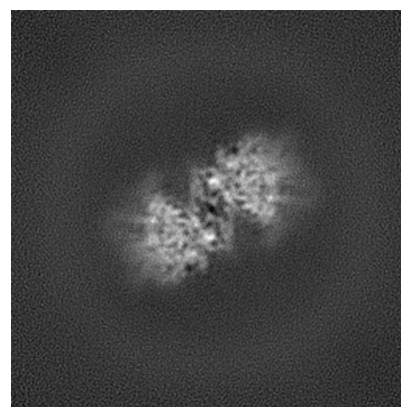
#### 6.1.2 Raw map



X



Y

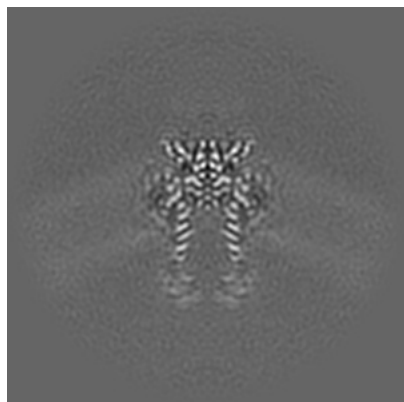


Z

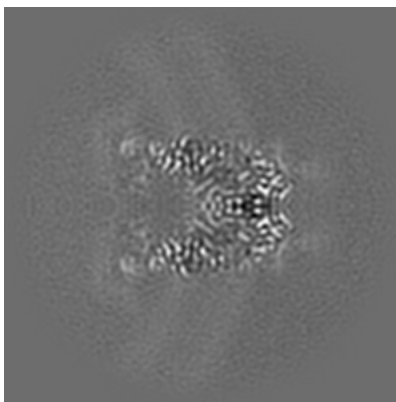
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

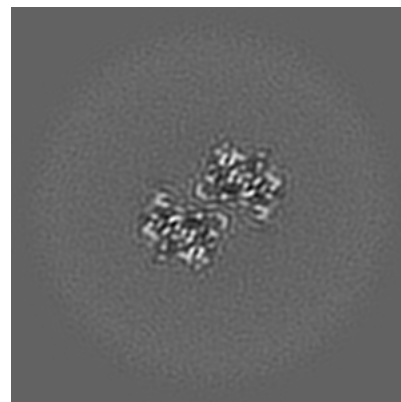
### 6.2.1 Primary map



X Index: 128

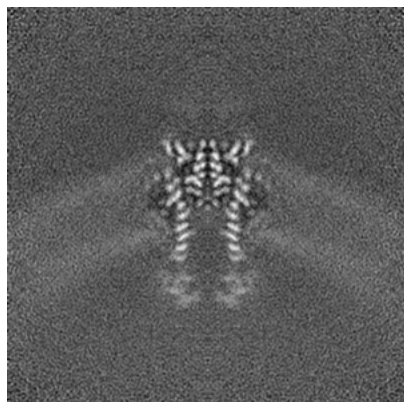


Y Index: 128

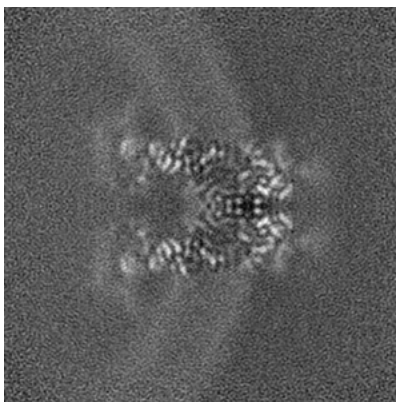


Z Index: 128

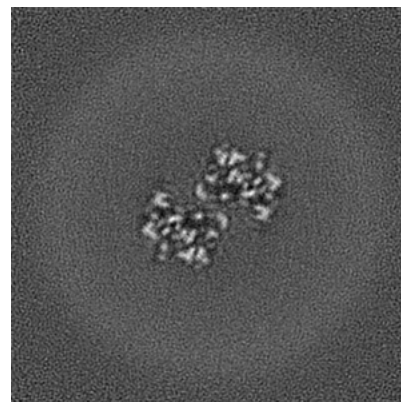
### 6.2.2 Raw map



X Index: 128



Y Index: 128

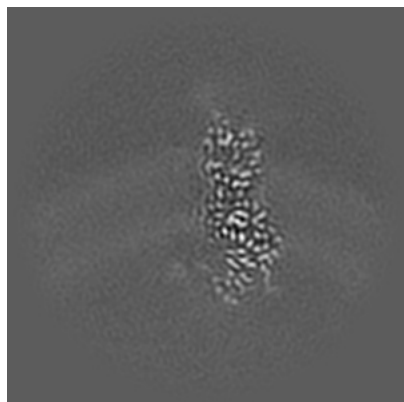


Z Index: 128

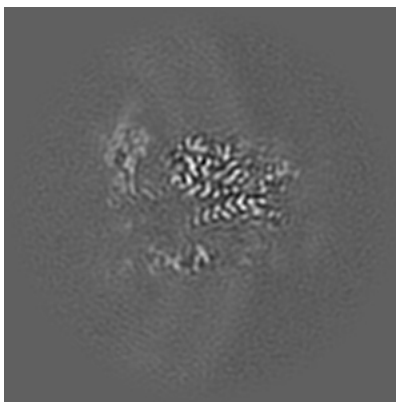
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

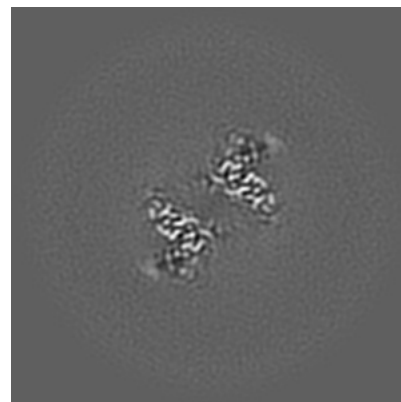
### 6.3.1 Primary map



X Index: 148

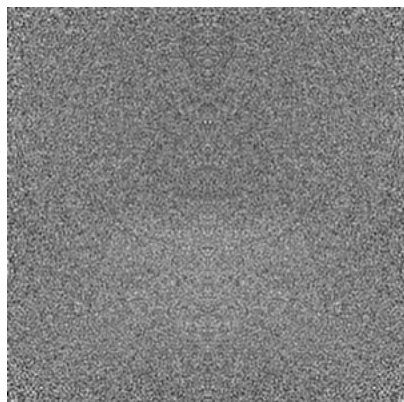


Y Index: 135

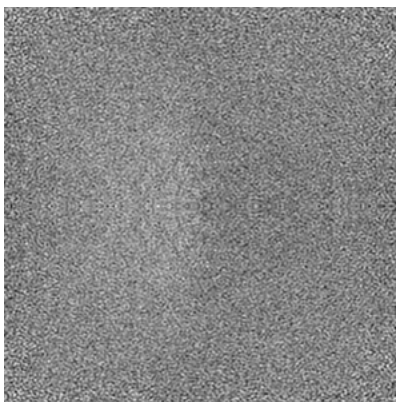


Z Index: 112

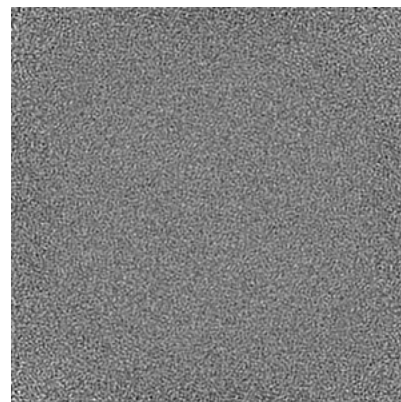
### 6.3.2 Raw map



X Index: 0



Y Index: 0



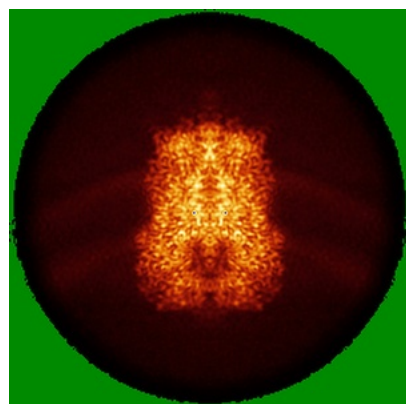
Z Index: 0

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

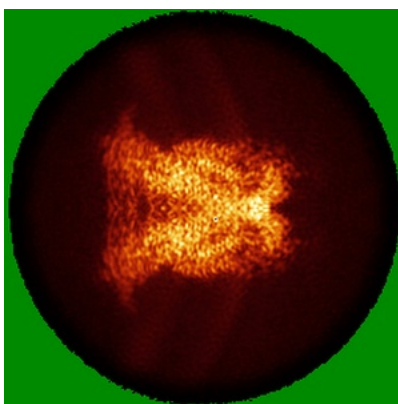


## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

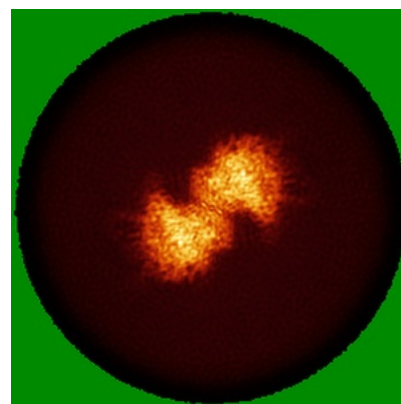
### 6.4.1 Primary map



X

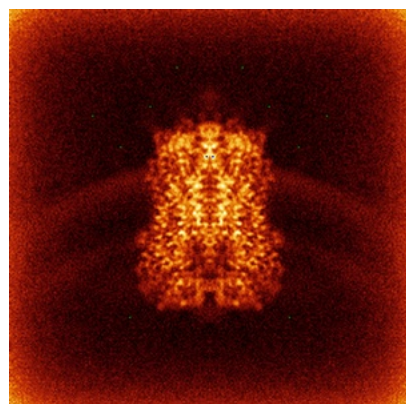


Y

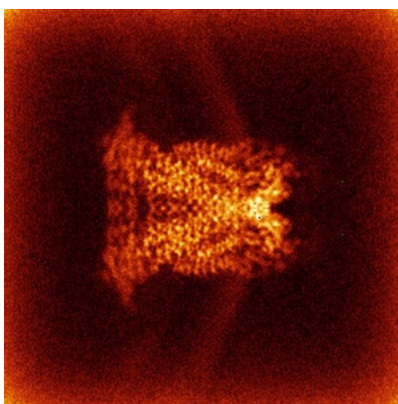


Z

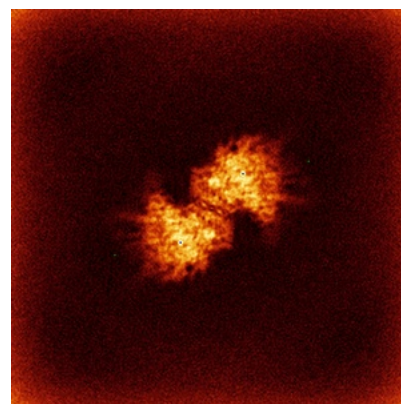
### 6.4.2 Raw map



X



Y

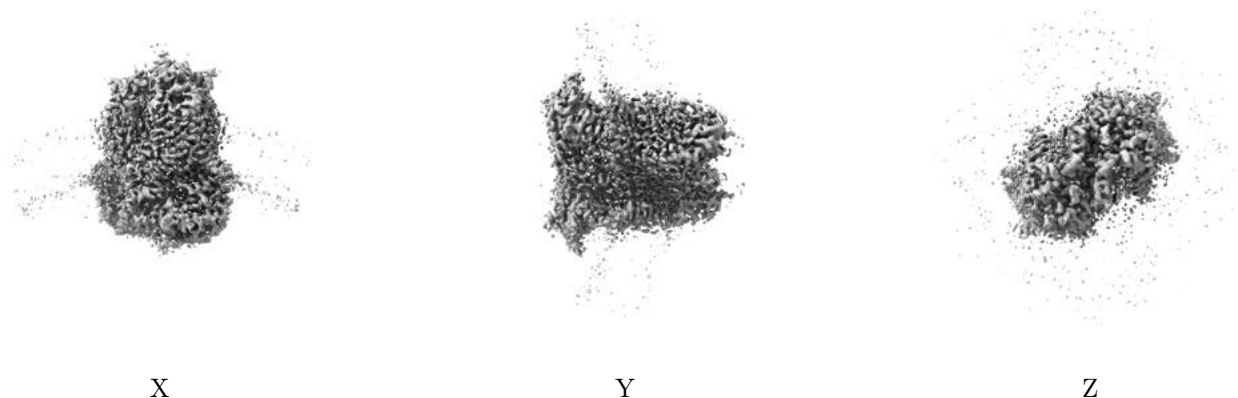


Z

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.

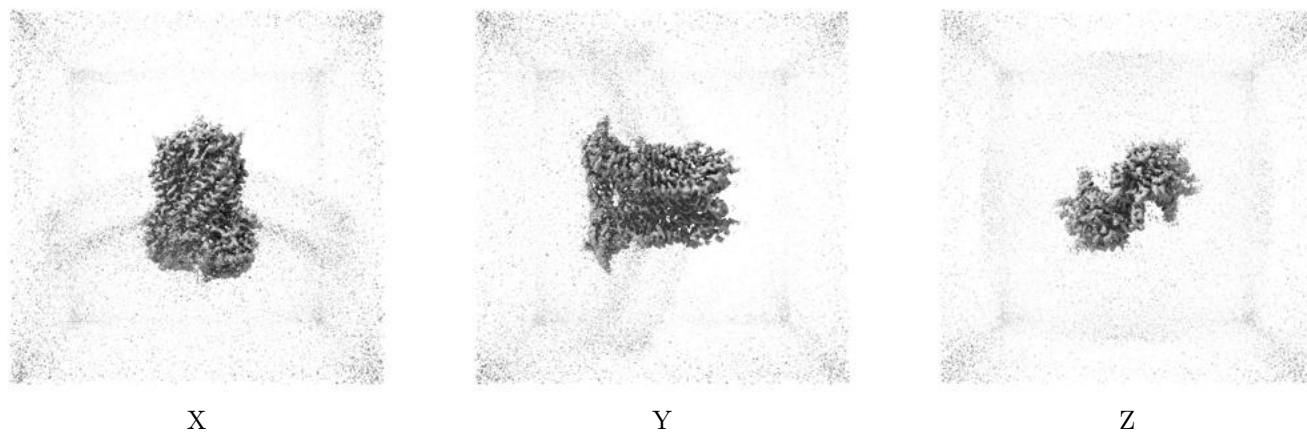
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.09. 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



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.

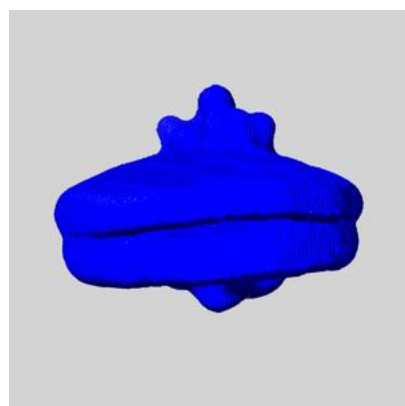
## 6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

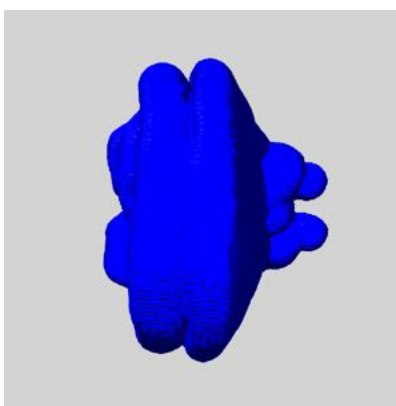
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

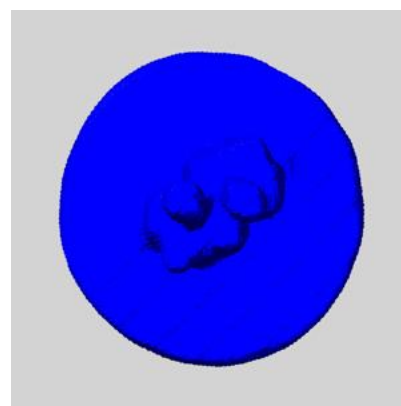
### 6.6.1 emd\_70011\_msk\_1.map [i](#)



X



Y

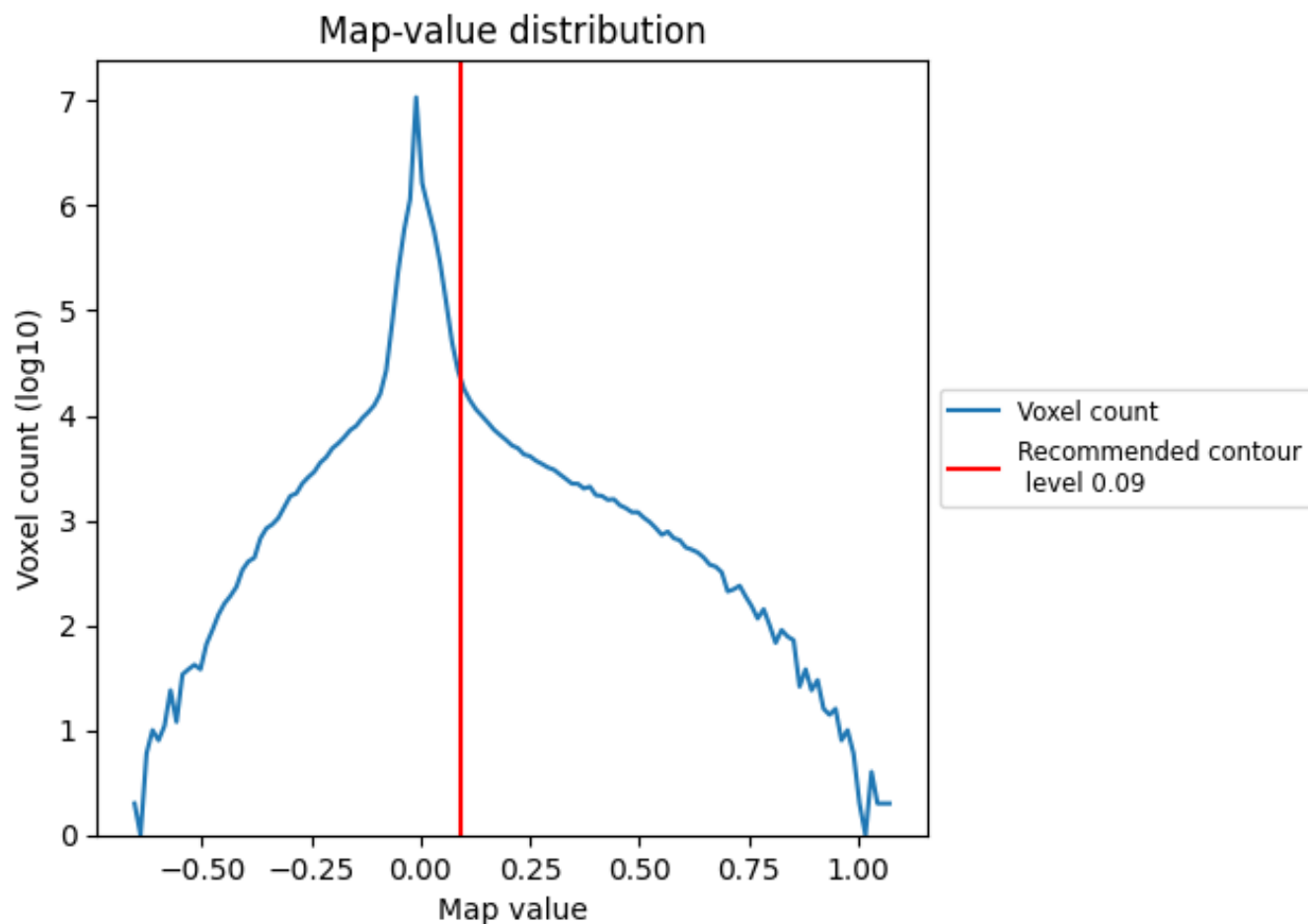


Z

## 7 Map analysis [i](#)

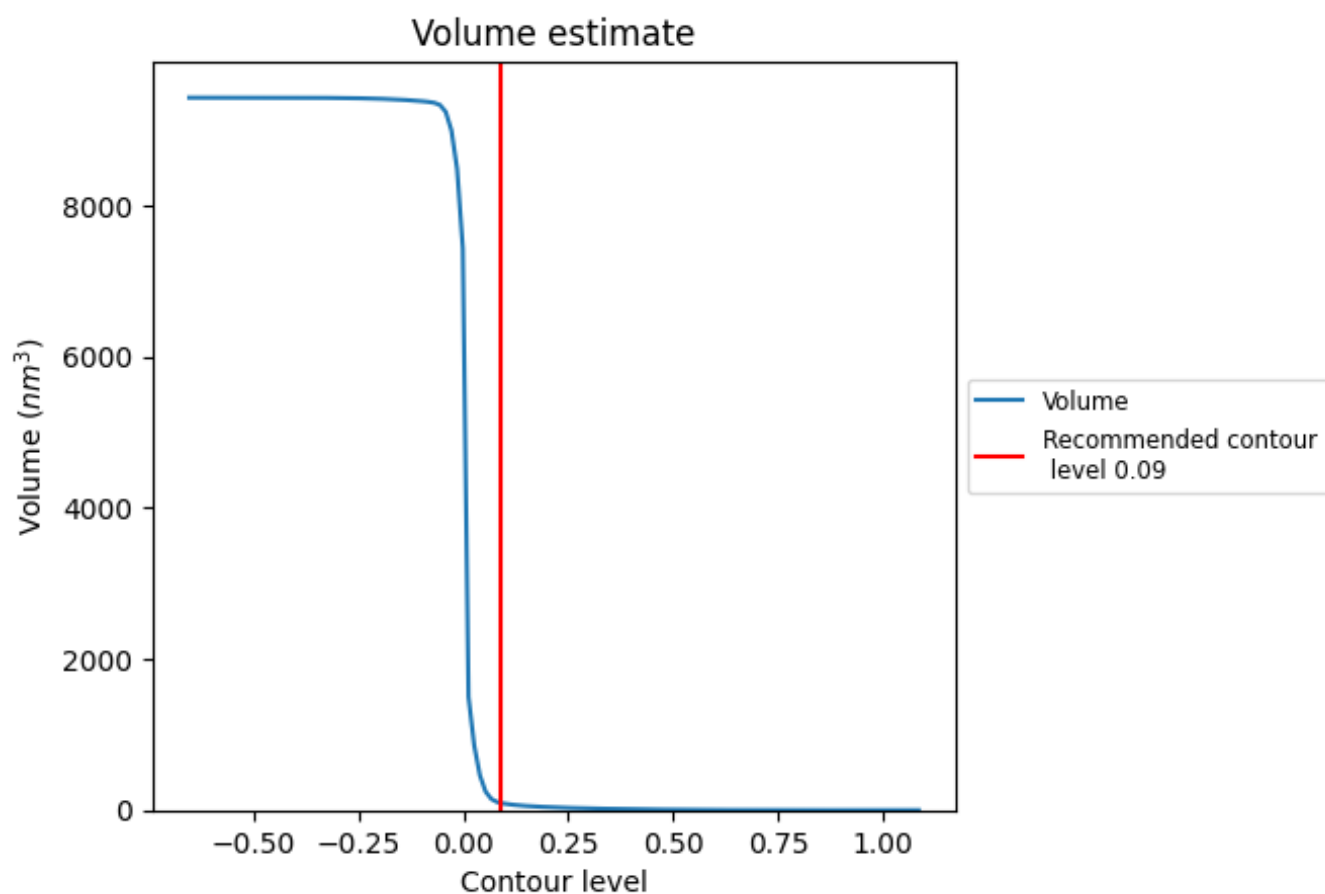
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

## 7.2 Volume estimate [i](#)

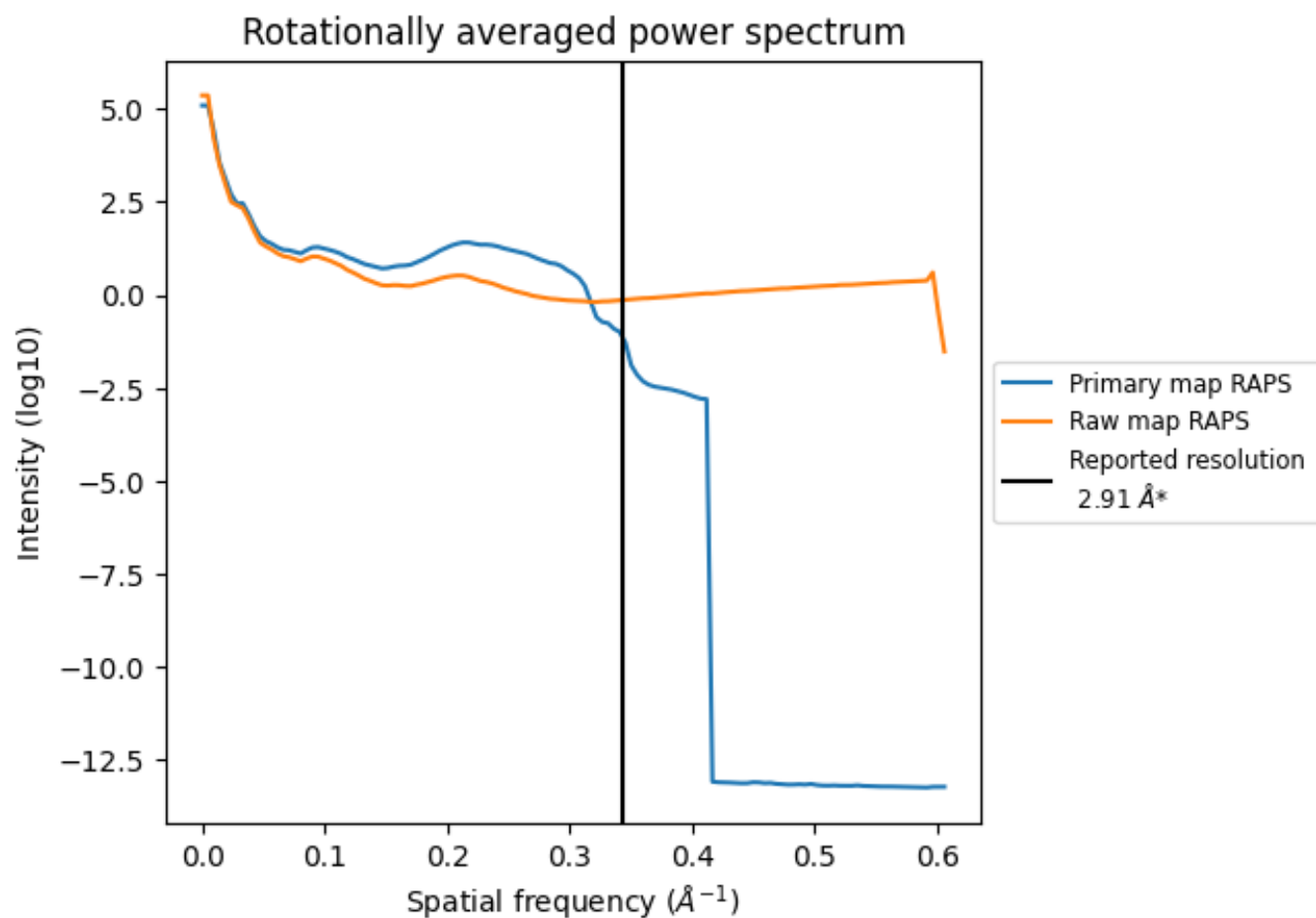


The volume at the recommended contour level is 94 nm<sup>3</sup>; this corresponds to an approximate mass of 85 kDa.

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 ⓘ

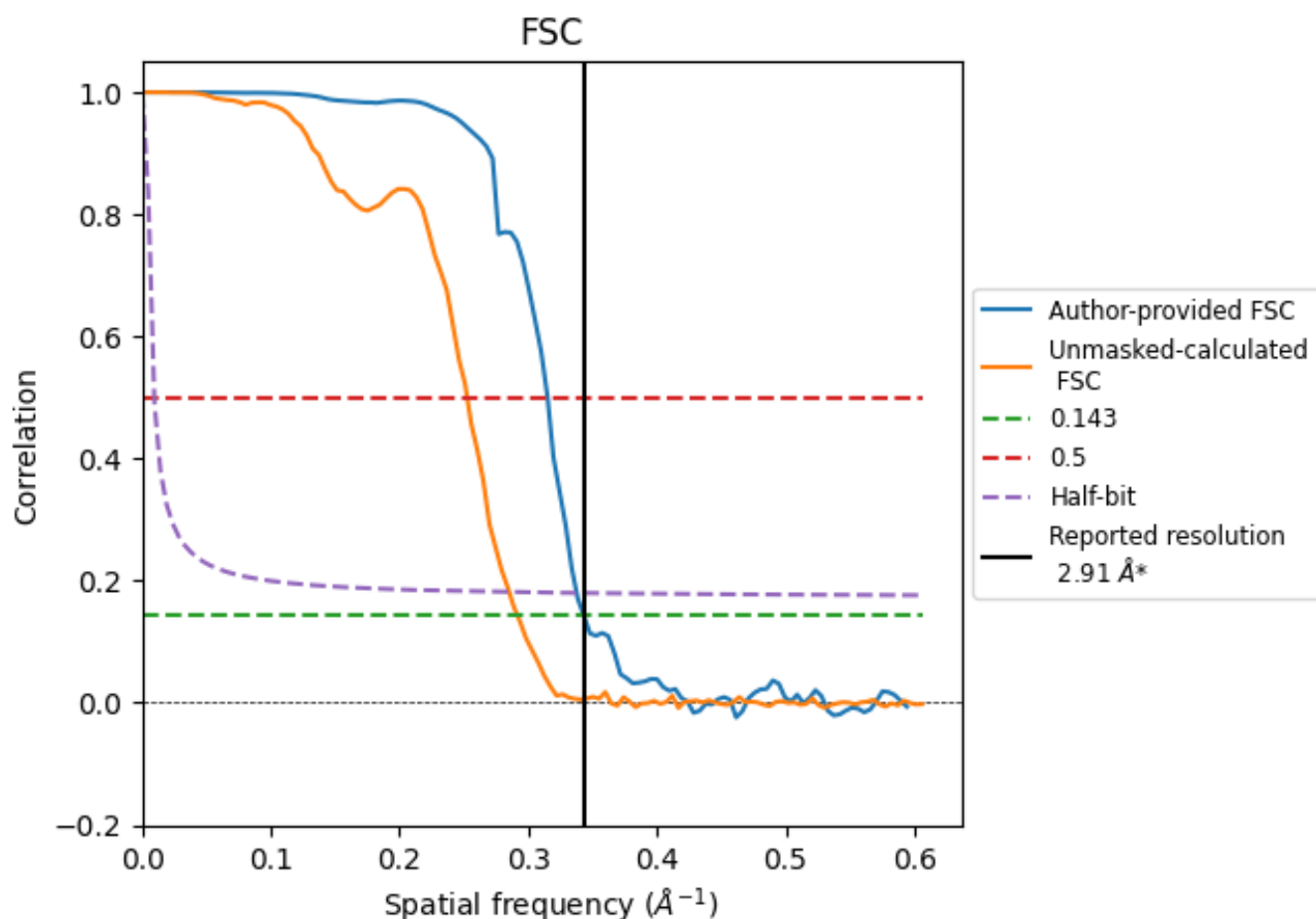


\*Reported resolution corresponds to spatial frequency of 0.344 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

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 [i](#)



\*Reported resolution corresponds to spatial frequency of 0.344  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [i](#)

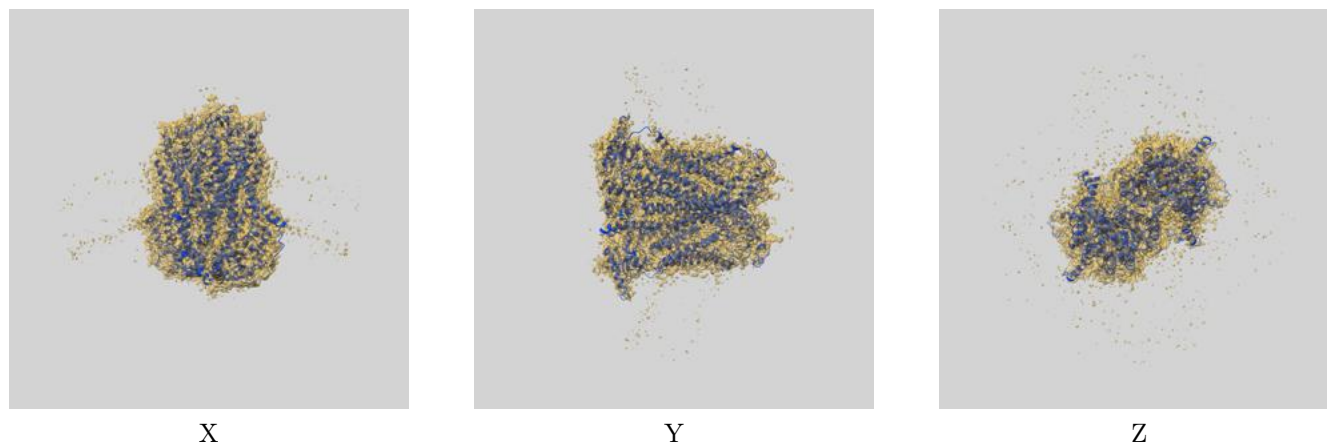
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.91	-	-
Author-provided FSC curve	2.91	3.17	2.96
Unmasked-calculated*	3.43	3.96	3.51

\*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 3.43 differs from the reported value 2.91 by more than 10 %

## 9 Map-model fit [i](#)

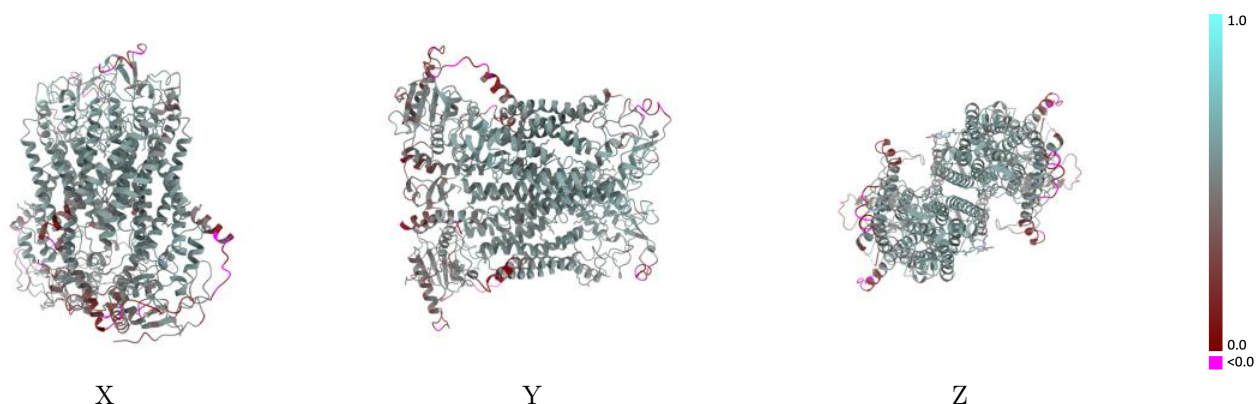
This section contains information regarding the fit between EMDB map EMD-70011 and PDB model 9O1L. Per-residue inclusion information can be found in [section 3](#) on [page 5](#).

### 9.1 Map-model overlay [i](#)



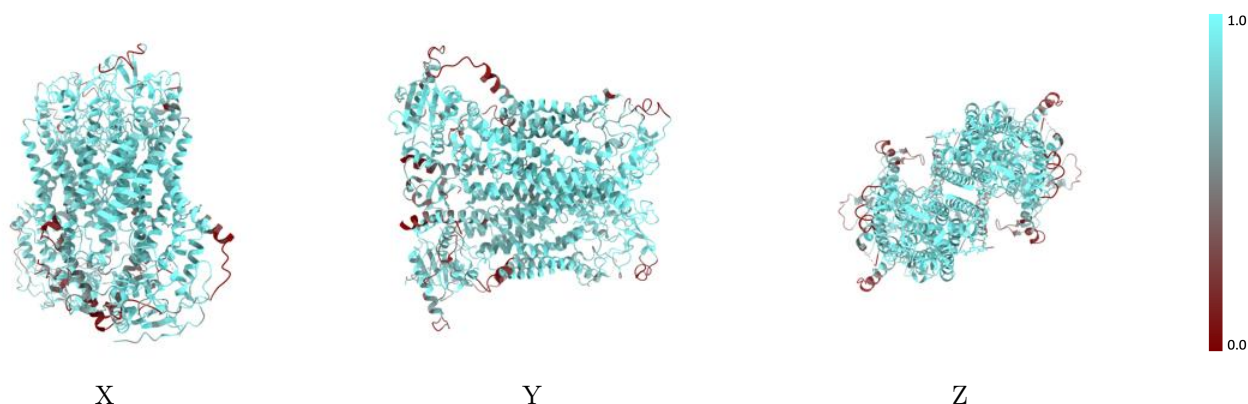
The images above show the 3D surface view of the map at the recommended contour level 0.09 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



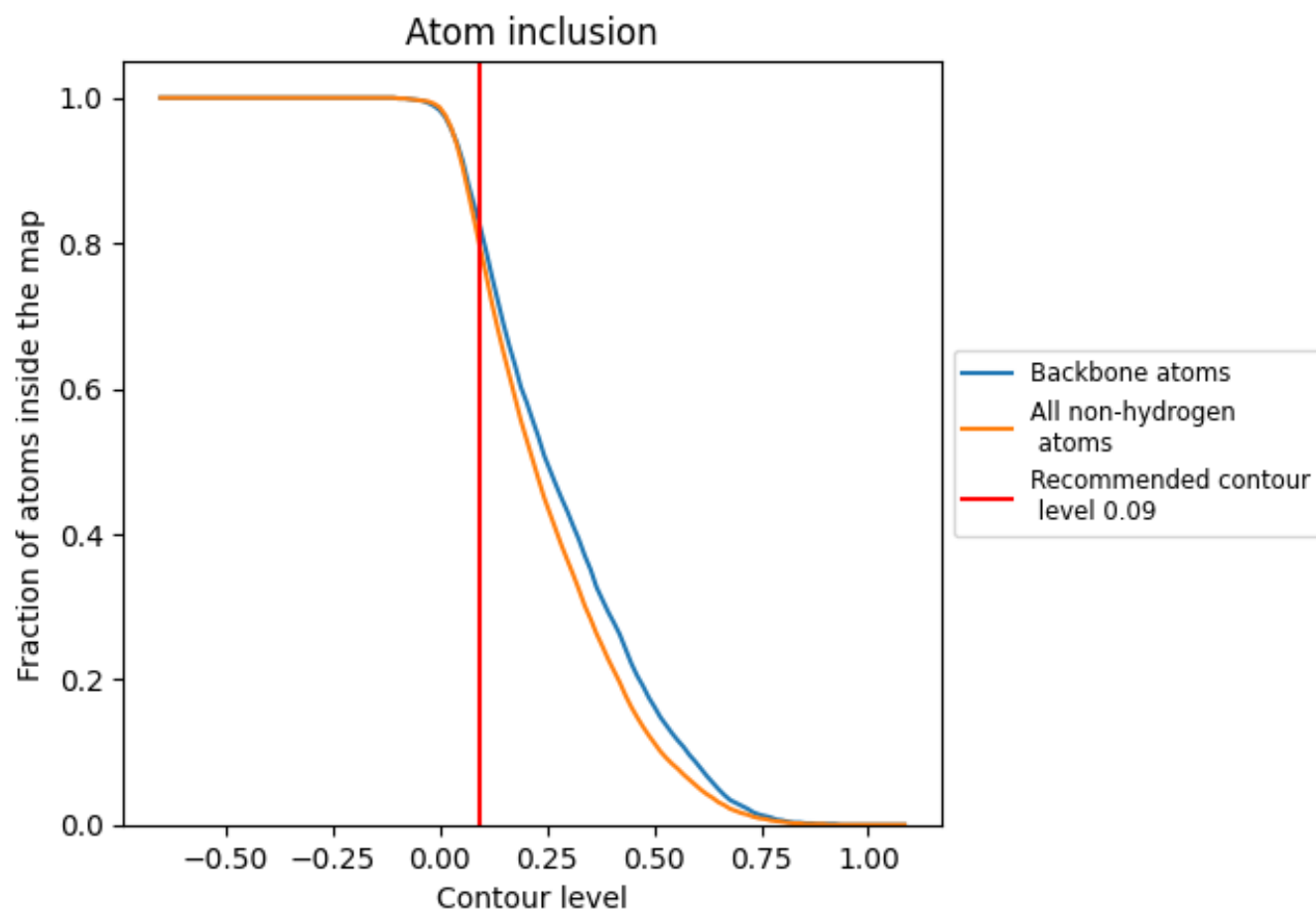
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (0.09).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 80% 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 (0.09) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.8020	<div></div> 0.5020
A	<div></div> 0.8020	<div></div> 0.5030
B	<div></div> 0.8020	<div></div> 0.5010

