



wwPDB EM Validation Summary Report ⓘ

Nov 8, 2022 – 10:23 AM JST

PDB ID : 5ZX5
EMDB ID : EMD-6975
Title : 3.3 angstrom structure of mouse TRPM7 with EDTA
Authors : Zhang, J.; Li, Z.; Duan, J.; Li, J.; Hulse, R.E.; Santa-Cruz, A.; Abiria, S.A.; Krapivinsky, G.; Clapham, D.E.
Deposited on : 2018-05-18
Resolution : 3.28 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

The types of validation reports are described at

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

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

EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

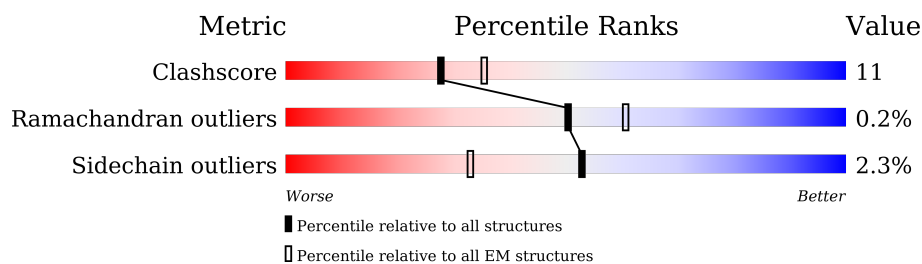
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.28 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)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	1229	
1	B	1229	
1	C	1229	
1	D	1229	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	Y01	A	1305	-	-	X	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	Y01	D	1303	-	-	X	-

2 Entry composition ⓘ

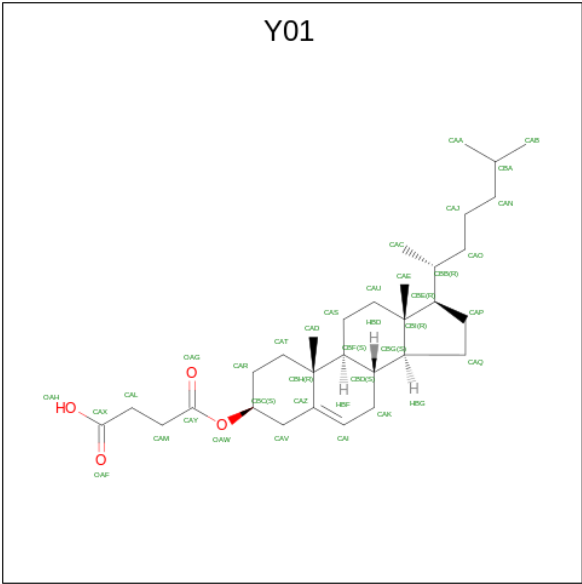
There are 2 unique types of molecules in this entry. The entry contains 25440 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Transient receptor potential cation channel subfamily M member 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	814	Total	C	N	O	S	0	0
			6255	4095	1032	1087	41		
1	B	814	Total	C	N	O	S	0	0
			6255	4095	1032	1087	41		
1	C	814	Total	C	N	O	S	0	0
			6255	4095	1032	1087	41		
1	D	814	Total	C	N	O	S	0	0
			6255	4095	1032	1087	41		

- Molecule 2 is CHOLESTEROL HEMISUCCINATE (three-letter code: Y01) (formula: C₃₁H₅₀O₄).



Mol	Chain	Residues	Atoms			AltConf
2	A	1	Total	C	O	0
			175	155	20	
2	A	1	Total	C	O	0
			175	155	20	

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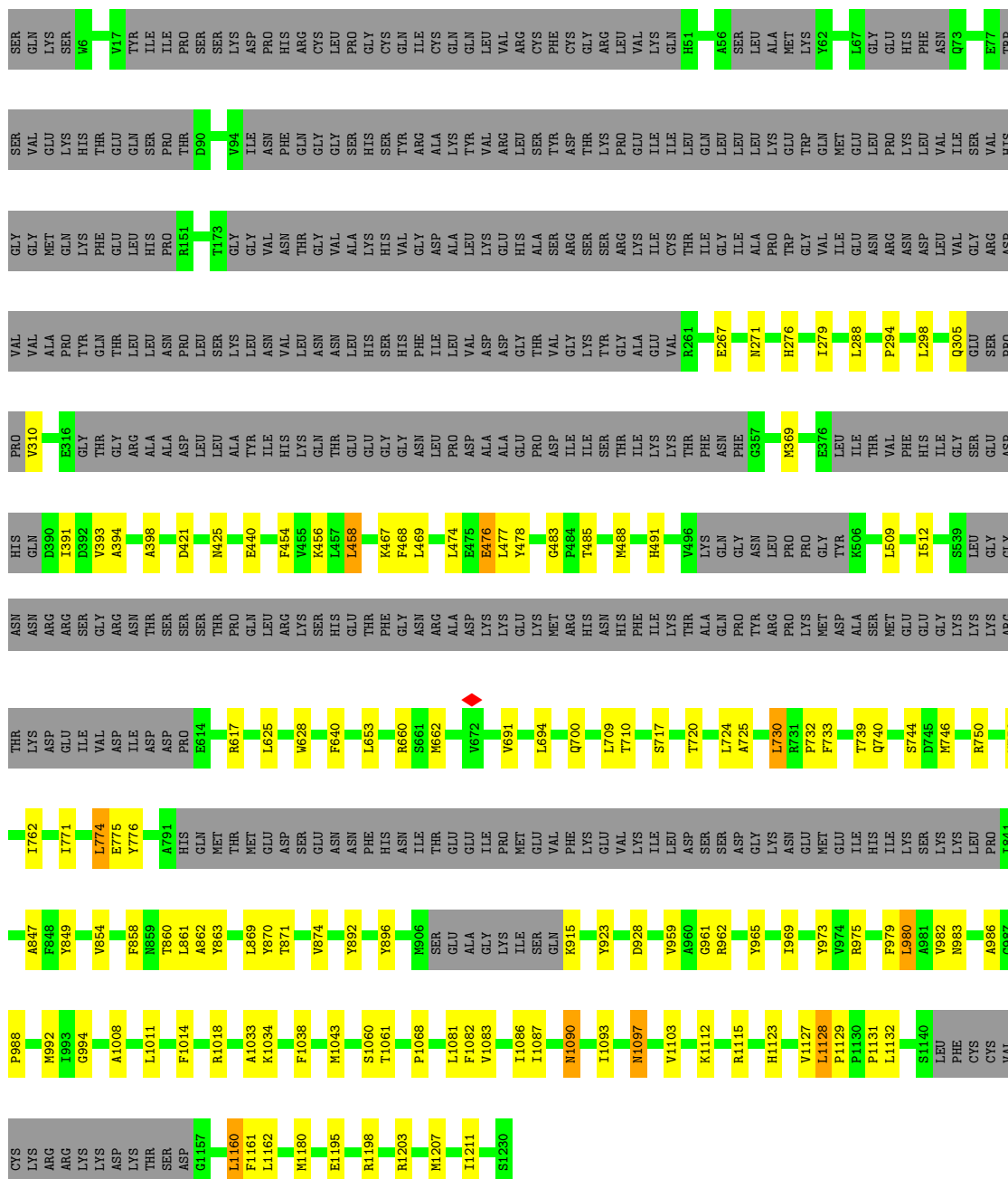
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Mol	Chain	Residues	Atoms			AltConf
2	A	1	Total	C	O	0
			175	155	20	
2	A	1	Total	C	O	0
			175	155	20	
2	A	1	Total	C	O	0
			175	155	20	
2	B	1	Total	C	O	0
			70	62	8	
2	B	1	Total	C	O	0
			70	62	8	
2	C	1	Total	C	O	0
			70	62	8	
2	C	1	Total	C	O	0
			70	62	8	
2	D	1	Total	C	O	0
			105	93	12	
2	D	1	Total	C	O	0
			105	93	12	
2	D	1	Total	C	O	0
			105	93	12	



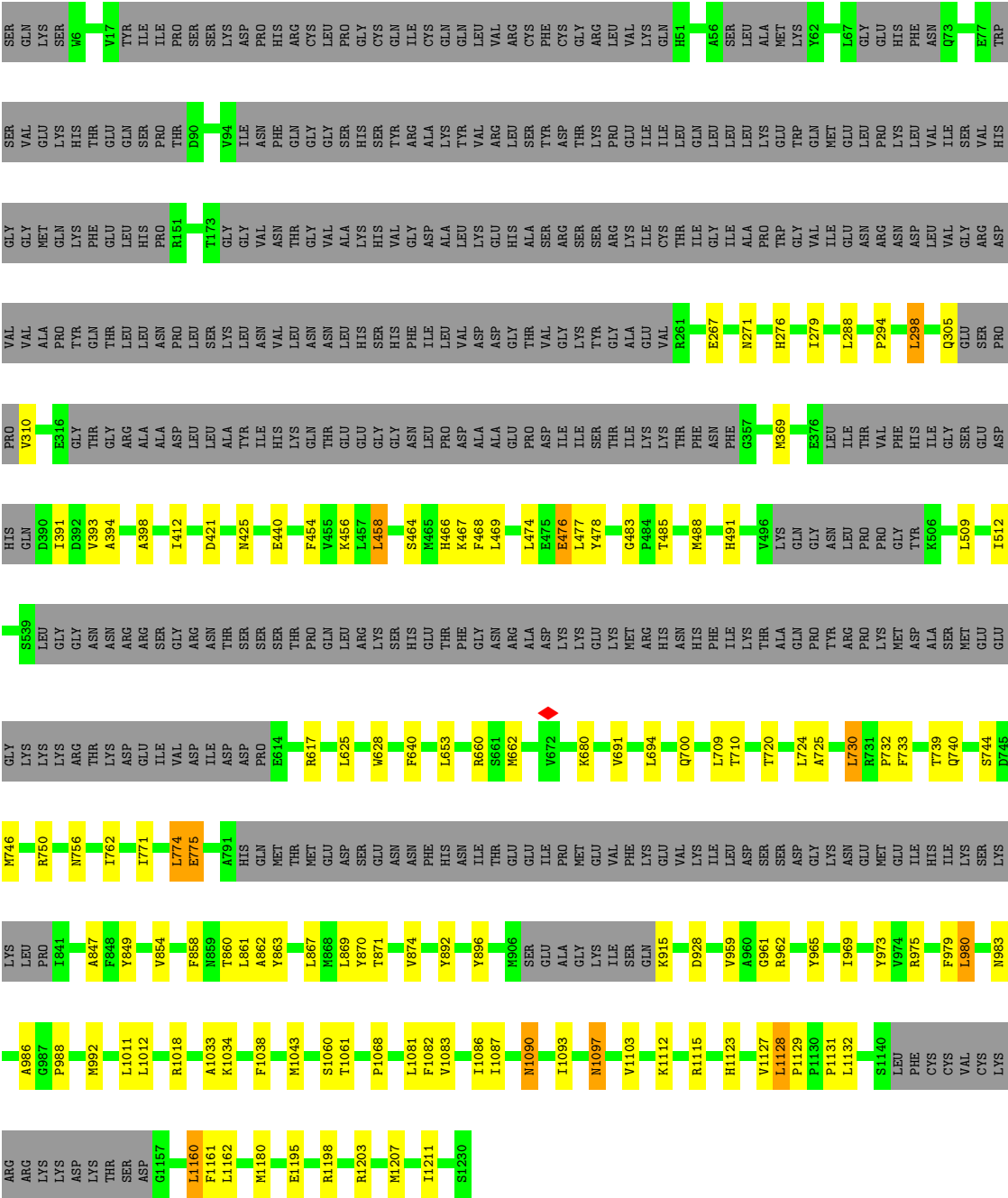
- Molecule 1: Transient receptor potential cation channel subfamily M member 7

Chain B: 55% 10% 34%

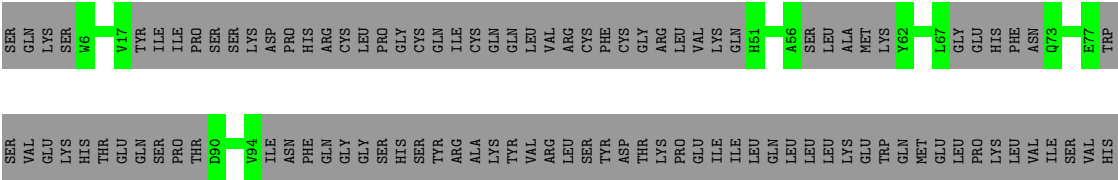


- Molecule 1: Transient receptor potential cation channel subfamily M member 7

Chain C: 56% 10% 34%



● Molecule 1: Transient receptor potential cation channel subfamily M member 7



G1157	V1010	A847	I771	I1E	SER	HIS	PRO	VAL	GLY
L1160	L1011	F845	L774	VAL	GLY	GLN	V310	VAL	GLY
F1161	L1012	Y849	E775	ASP	ARG	D390	E316	ALA	MET
L1162	S1013	F1014	Y776	ILE	ASN	I391	GLY	PRO	GLN
M1180	F1014	V854	P786	ASP	THR	D392	THR	TYR	PHE
E1195	R1018	K855		ASP	SER	V393	GLY	THR	GLU
R1198	F856	F856		PRO	SER	A394	ARG	LEU	LEU
R1203	F857	F857	A791	E614	SER	A398	ALA	LEU	HIS
M1207	A1033	F858	HIS	R617	THR	E440	ASP	ALA	PRO
I1211	K1034	L861	GLN	L625	PRO	E454	LEU	PRO	ASN
S1230	F1038	M868	MET	W628	LEU	V455	LEU	SER	GLY
	M1043	L889	THR	F640	ARG	K456	ALA	LYS	T173
	P1068	T871	MET	L653	LYS	L457	TYR	LEU	GLY
	L1081	V874	GLU	R660	HIS	L458	ILE	ASN	VAL
	F1082	Y892	ASP	S661	THR	K467	LYS	LEU	THR
	V1083	Y896	SER	M662	PHE	F468	GLN	ASN	GLY
	I1086	Y896	ASN	V672	GLY	L469	THR	ASN	VAL
	I1087	M906	ASN	V691	ASN	L474	GLU	LEU	ALA
	N1090	SER	ILE	L694	ARG	E475	GLY	HIS	LYS
	I1093	GLU	THR	Q700	LYS	L477	ASN	GLY	VAL
	N1097	ALA	GLU	L709	ASP	Y478	GLY	ALA	ASP
	V1103	GLY	VAL	T710	LYS	G483	PRO	LEU	ALA
	K1112	GLN	PHE	S717	ALA	P484	ASP	ASP	GLY
	R1115	D928	LYS	T720	THR	T485	PRO	THR	HIS
	H1123	V959	ILE	L724	ALA	M488	ASP	VAL	ALA
	V1127	G961	LEU	A725	GLN	H491	ILE	GLY	ILE
	L1128	R962	ASP	L730	PRO	V496	LYS	VAL	ARG
	P1131	Y965	SER	R731	TYR	L509	ASN	ALA	LYS
	S1140	Y969	ASP	F732	PRO	I512	PHE	GLU	ILE
	LEU	Y973	GLY	F733	LYS	S639	THR	ILE	CYS
	PHE	V974	ASN	T739	ARG	W746	VAL	ARG	ASN
	CYS	R975	GLU	Q740	THR	M747	PHE	ASN	ARG
	CYS	L980	MET	S744	MET	R750	LEU	ASP	LEU
	VAL	A981	ILE	D745	GLY	N756	GLY	LEU	VAL
	LYS	V982	HIS	M746	GLY	I762	ILE	GLY	VAL
	ARG	N983	ILE	W747	LYS		THR	SER	GLY
	ARG	P988	LYS	R750	LYS		ARG	GLU	ASP
	LYS	N992	LYS	N756	THR		ASN	ASP	PRO
	ASP	A1008	LEU	I762	LYS		ARG	SER	GLY
	LYS	L1009	PRO		ASP		ASN	GLU	ASP
	THR		I841		GLU		ARG	ASP	
	SER								
	ASP								

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	1039775	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	56	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 BASE (4k x 4k)	Depositor
Maximum map value	0.377	Depositor
Minimum map value	-0.206	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.009	Depositor
Recommended contour level	0.013	Depositor
Map size (Å)	314.88, 314.88, 314.88	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.23, 1.23, 1.23	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: Y01

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	0.68	0/6390	0.71	1/8683 (0.0%)
1	B	0.69	0/6390	0.71	2/8683 (0.0%)
1	C	0.68	0/6390	0.71	2/8683 (0.0%)
1	D	0.68	0/6390	0.70	2/8683 (0.0%)
All	All	0.68	0/25560	0.71	7/34732 (0.0%)

There are no bond length outliers.

The worst 5 of 7 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	476	GLU	N-CA-C	-5.47	96.24	111.00
1	D	476	GLU	N-CA-C	-5.46	96.27	111.00
1	C	476	GLU	N-CA-C	-5.45	96.30	111.00
1	B	298	LEU	CA-CB-CG	-5.37	102.94	115.30
1	C	298	LEU	CA-CB-CG	-5.37	102.94	115.30

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	6255	0	6057	142	0
1	B	6255	0	6057	132	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	6255	0	6057	116	0
1	D	6255	0	6057	125	0
2	A	175	0	245	57	0
2	B	70	0	98	17	0
2	C	70	0	98	13	0
2	D	105	0	147	32	0
All	All	25440	0	24816	536	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 11.

The worst 5 of 536 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:982:VAL:HG23	2:D:1303:Y01:CAB	1.59	1.32
1:B:982:VAL:HG23	2:B:1302:Y01:CAA	1.75	1.16
2:C:1301:Y01:HAA3	2:C:1302:Y01:HAR2	1.16	1.13
2:C:1301:Y01:HAA3	2:C:1302:Y01:CAR	1.82	1.10
1:D:982:VAL:HG23	2:D:1303:Y01:HAB1	1.31	1.08

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	784/1229 (64%)	750 (96%)	32 (4%)	2 (0%)	41	72
1	B	784/1229 (64%)	751 (96%)	32 (4%)	1 (0%)	51	82
1	C	784/1229 (64%)	750 (96%)	32 (4%)	2 (0%)	41	72
1	D	784/1229 (64%)	753 (96%)	30 (4%)	1 (0%)	51	82
All	All	3136/4916 (64%)	3004 (96%)	126 (4%)	6 (0%)	50	77

5 of 6 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	369	MET
1	B	369	MET
1	C	369	MET
1	D	369	MET
1	A	775	GLU

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	625/1094 (57%)	610 (98%)	15 (2%)	49	73
1	B	625/1094 (57%)	611 (98%)	14 (2%)	52	74
1	C	625/1094 (57%)	611 (98%)	14 (2%)	52	74
1	D	625/1094 (57%)	610 (98%)	15 (2%)	49	73
All	All	2500/4376 (57%)	2442 (98%)	58 (2%)	53	73

5 of 58 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	1160	LEU
1	D	1097	ASN
1	C	915	LYS
1	D	1090	ASN
1	D	774	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 40 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	1123	HIS
1	D	789	GLN
1	C	1137	HIS
1	D	432	GLN
1	D	1090	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

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	Y01	B	1302	-	38,38,38	1.84	8 (21%)	57,57,57	2.04	16 (28%)
2	Y01	C	1302	-	38,38,38	1.89	6 (15%)	57,57,57	1.50	6 (10%)
2	Y01	A	1301	-	38,38,38	1.78	5 (13%)	57,57,57	1.57	8 (14%)
2	Y01	A	1302	-	38,38,38	1.70	4 (10%)	57,57,57	1.80	13 (22%)
2	Y01	D	1301	-	38,38,38	1.76	6 (15%)	57,57,57	1.76	12 (21%)
2	Y01	D	1302	-	38,38,38	2.20	6 (15%)	57,57,57	2.57	20 (35%)
2	Y01	C	1301	-	38,38,38	2.19	6 (15%)	57,57,57	2.53	20 (35%)
2	Y01	A	1303	-	38,38,38	2.08	7 (18%)	57,57,57	2.42	19 (33%)
2	Y01	A	1304	-	38,38,38	2.27	7 (18%)	57,57,57	2.60	18 (31%)
2	Y01	A	1305	-	38,38,38	1.84	6 (15%)	57,57,57	1.55	8 (14%)
2	Y01	D	1303	-	38,38,38	1.74	6 (15%)	57,57,57	1.65	13 (22%)
2	Y01	B	1301	-	38,38,38	1.76	4 (10%)	57,57,57	1.63	10 (17%)

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	Y01	B	1302	-	-	10/19/77/77	0/4/4/4
2	Y01	C	1302	-	-	10/19/77/77	0/4/4/4
2	Y01	A	1301	-	-	5/19/77/77	0/4/4/4
2	Y01	A	1302	-	-	6/19/77/77	0/4/4/4
2	Y01	D	1301	-	-	4/19/77/77	0/4/4/4
2	Y01	D	1302	-	-	12/19/77/77	0/4/4/4
2	Y01	C	1301	-	-	10/19/77/77	0/4/4/4
2	Y01	A	1303	-	-	10/19/77/77	0/4/4/4
2	Y01	A	1304	-	-	10/19/77/77	0/4/4/4
2	Y01	A	1305	-	-	9/19/77/77	0/4/4/4
2	Y01	D	1303	-	-	5/19/77/77	0/4/4/4
2	Y01	B	1301	-	-	3/19/77/77	0/4/4/4

The worst 5 of 71 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1303	Y01	CBH-CAZ	-6.17	1.40	1.52
2	A	1304	Y01	CBH-CAZ	-6.13	1.40	1.52
2	D	1302	Y01	CAK-CAI	-6.09	1.37	1.50
2	A	1304	Y01	CAK-CAI	-6.03	1.37	1.50
2	C	1301	Y01	CBH-CAZ	-6.00	1.41	1.52

The worst 5 of 163 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1304	Y01	CBG-CBI-CBE	-9.30	89.06	100.07
2	A	1303	Y01	CAC-CBB-CBE	-8.67	99.65	112.92
2	C	1301	Y01	CAC-CBB-CBE	-8.20	100.36	112.92
2	D	1302	Y01	CAC-CBB-CBE	-8.06	100.58	112.92
2	C	1301	Y01	CBG-CBI-CBE	-7.81	90.83	100.07

There are no chirality outliers.

5 of 94 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	1301	Y01	CAX-CAL-CAM-CAY
2	D	1303	Y01	CAV-CBC-OAW-CAY

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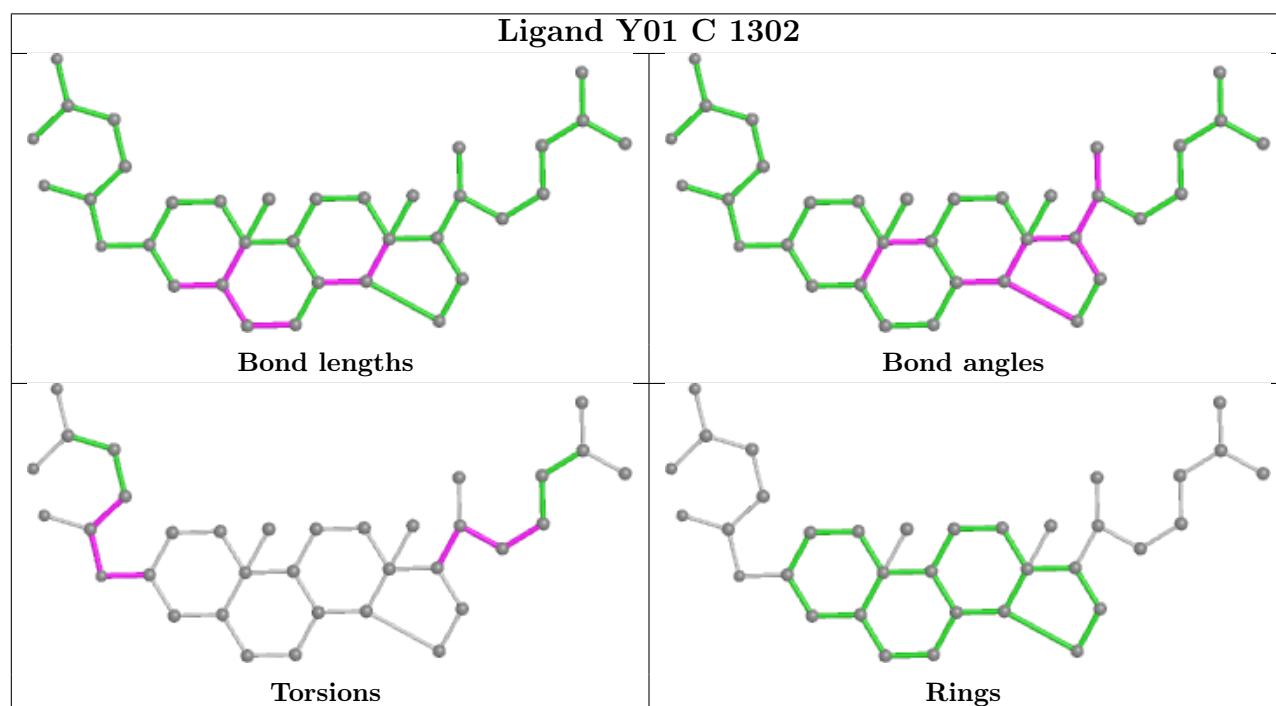
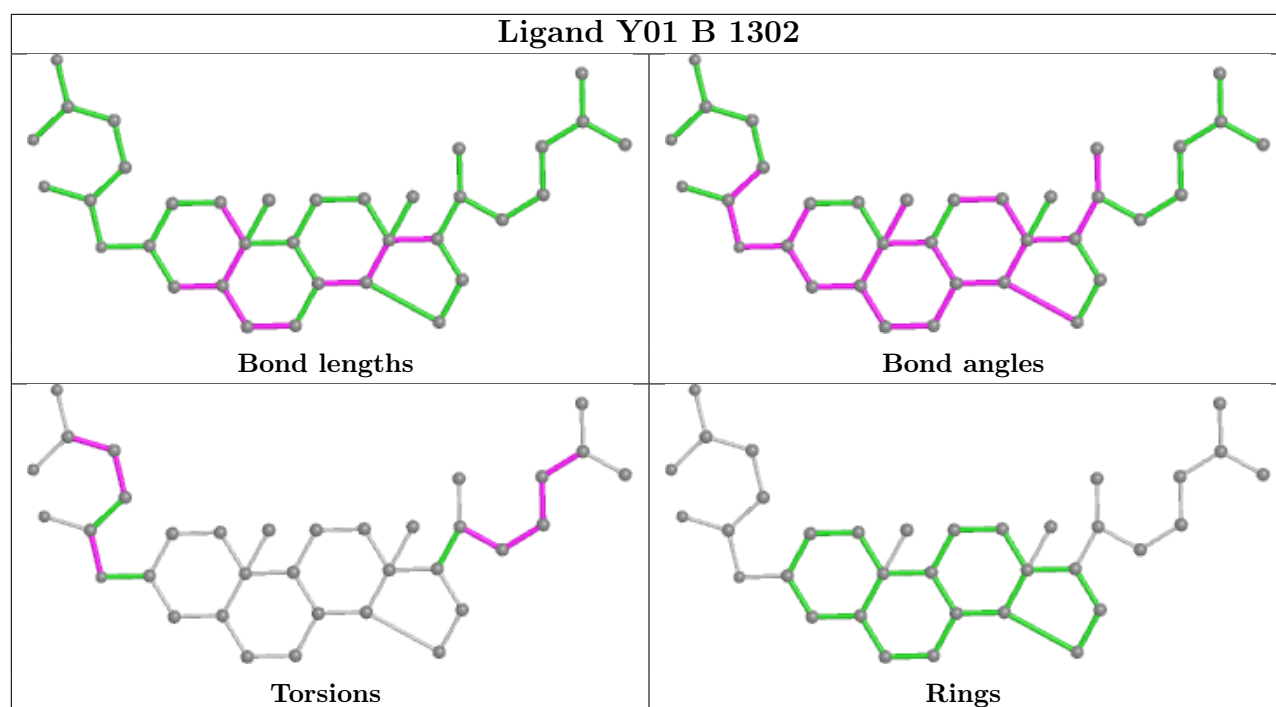
Mol	Chain	Res	Type	Atoms
2	A	1305	Y01	CAO-CBB-CBE-CAP
2	A	1305	Y01	CAO-CBB-CBE-CBI
2	B	1302	Y01	CAM-CAY-OAW-CBC

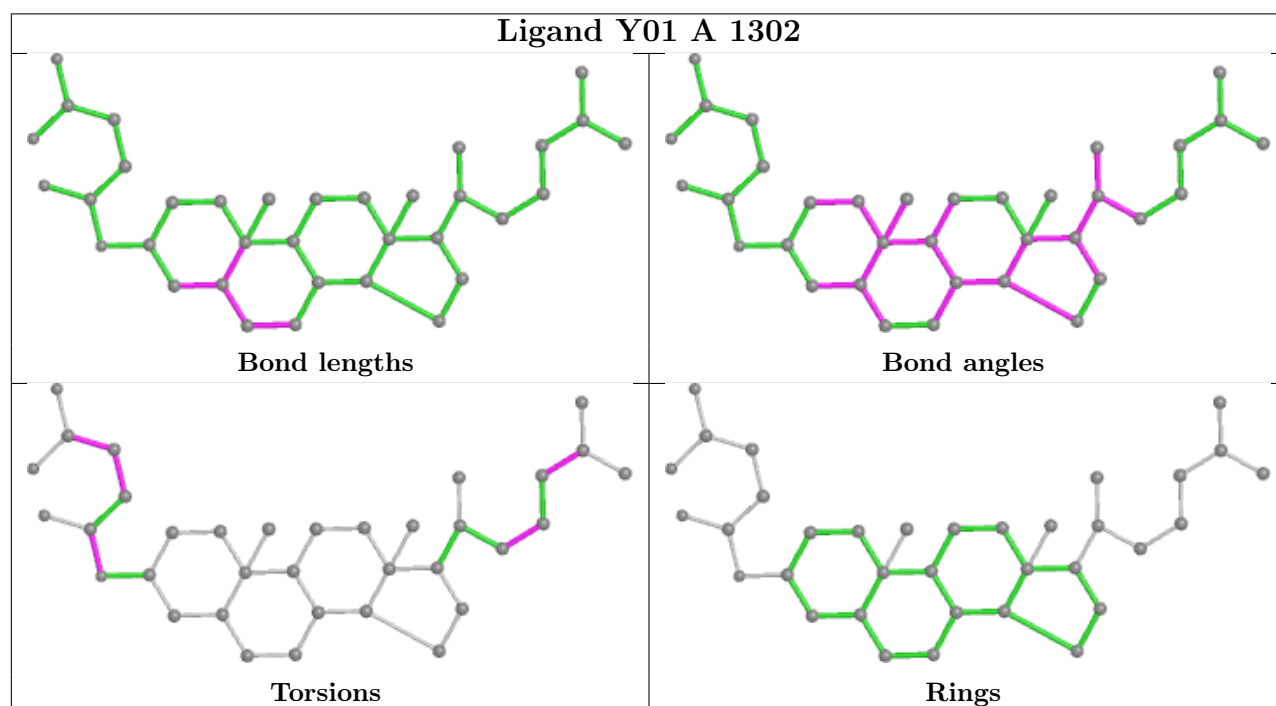
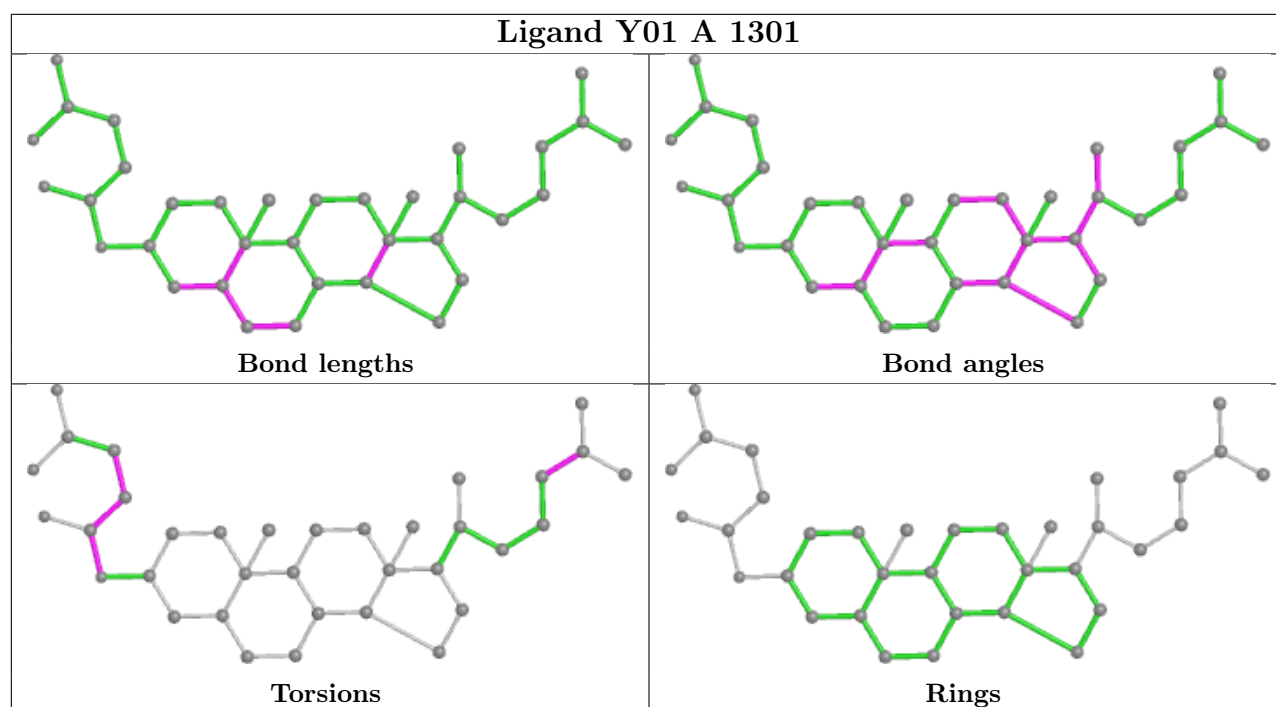
There are no ring outliers.

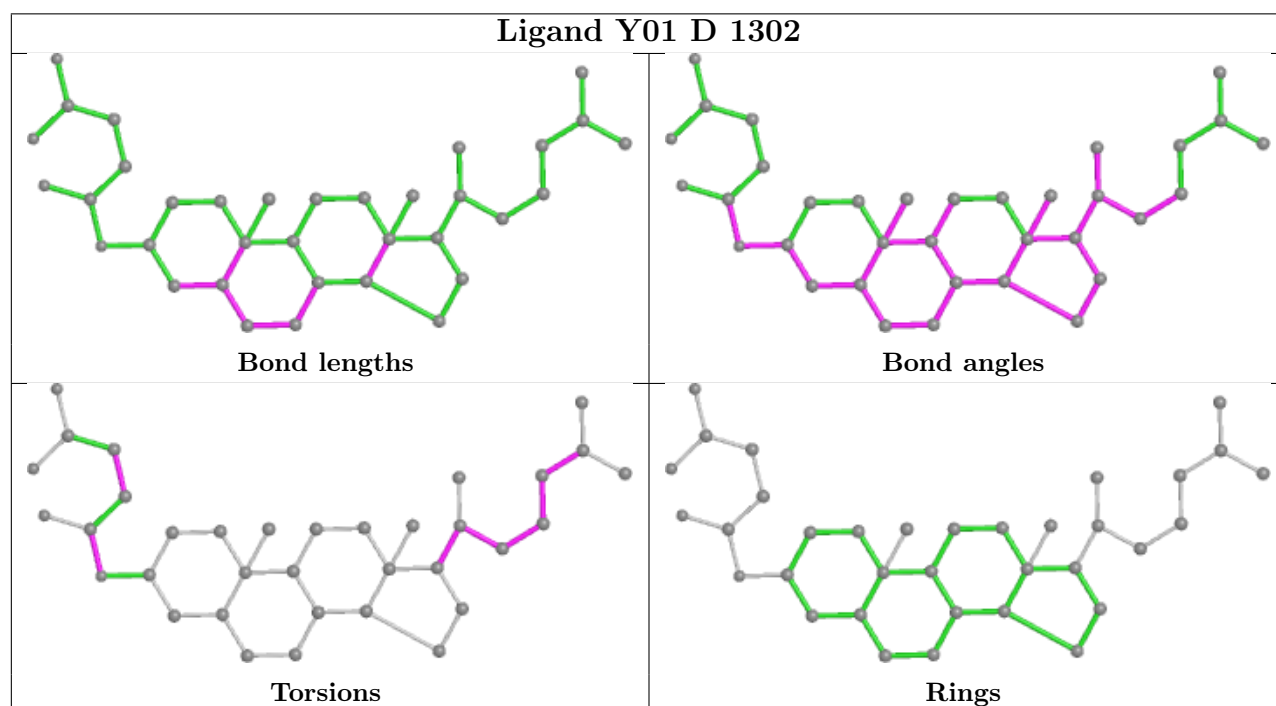
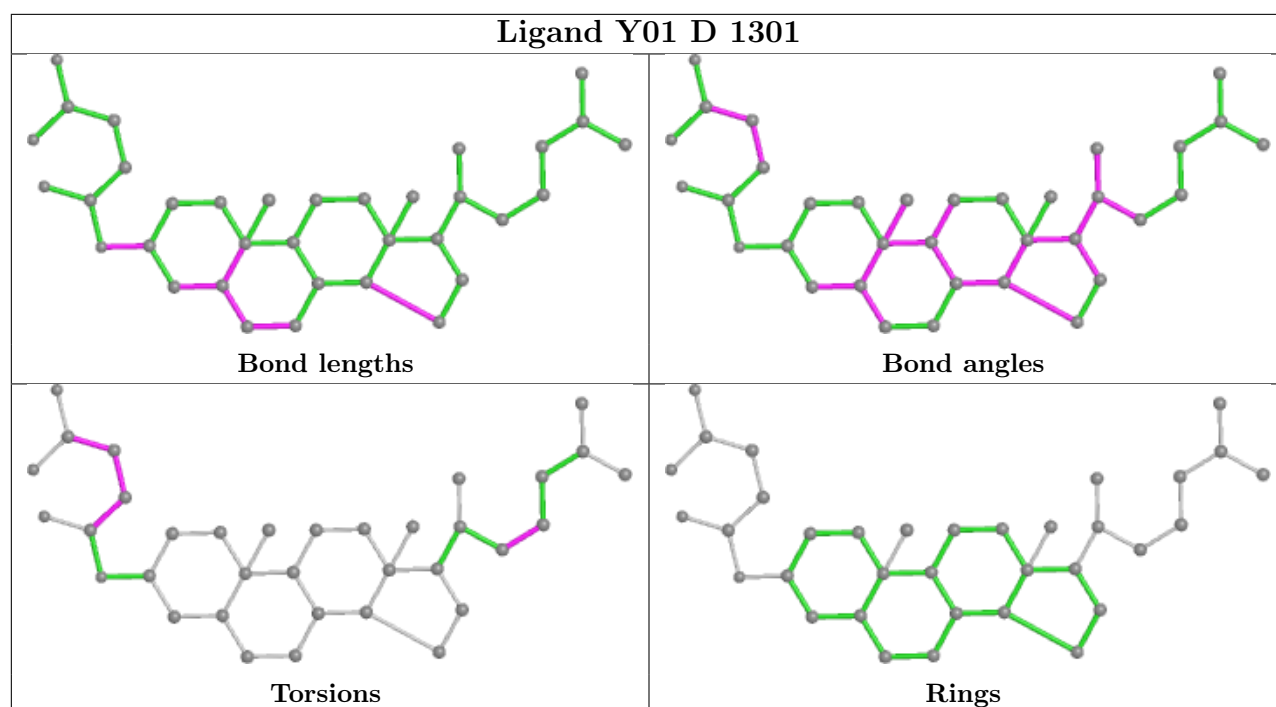
12 monomers are involved in 116 short contacts:

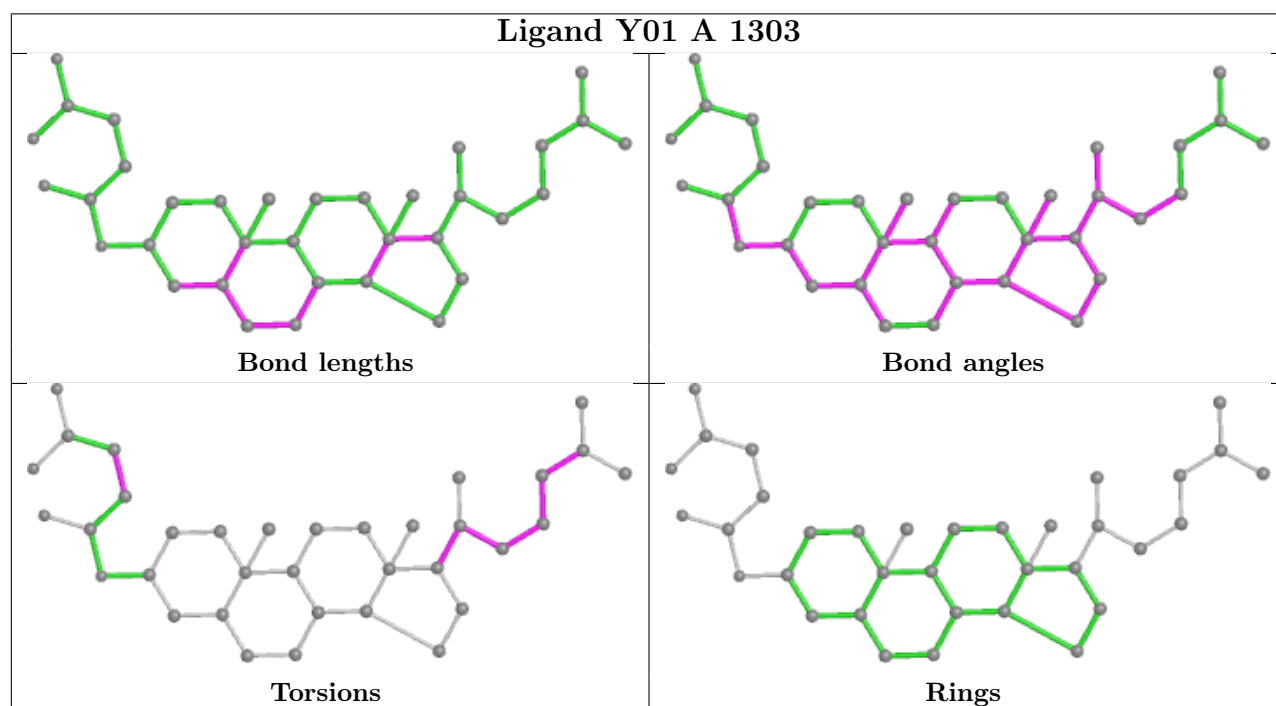
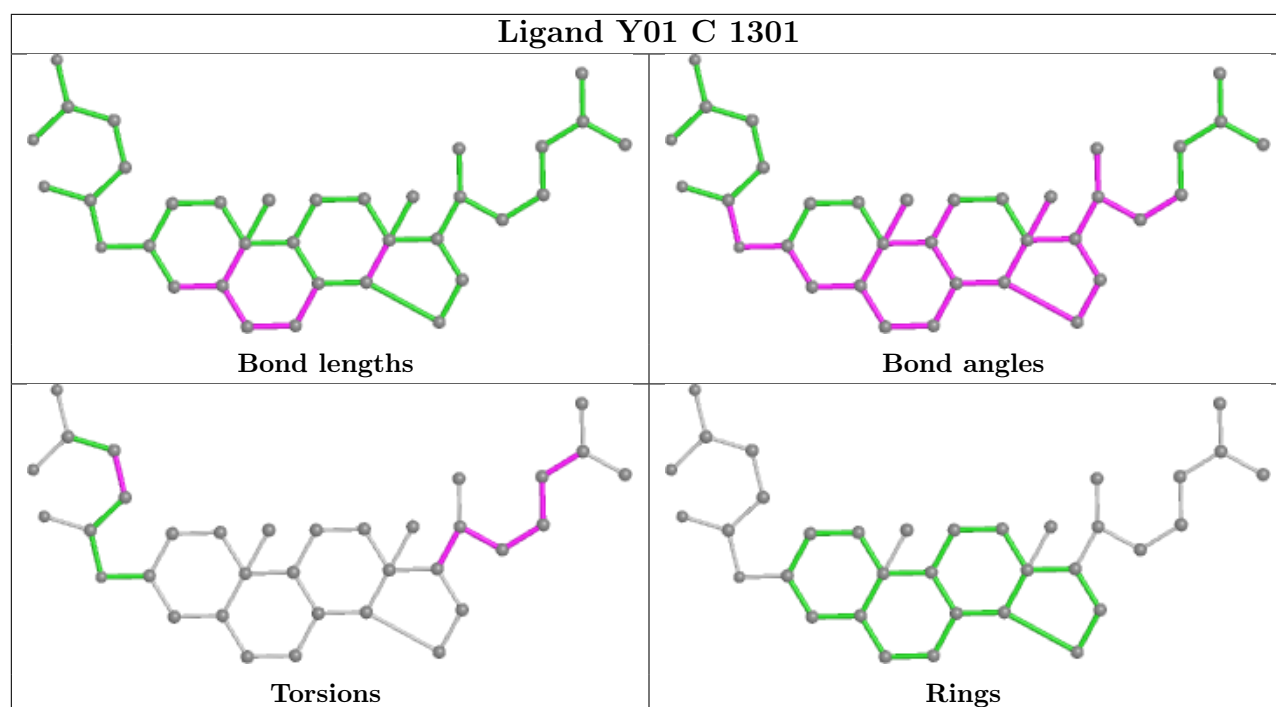
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1302	Y01	15	0
2	C	1302	Y01	12	0
2	A	1301	Y01	7	0
2	A	1302	Y01	1	0
2	D	1301	Y01	1	0
2	D	1302	Y01	11	0
2	C	1301	Y01	6	0
2	A	1303	Y01	6	0
2	A	1304	Y01	3	0
2	A	1305	Y01	42	0
2	D	1303	Y01	29	0
2	B	1301	Y01	2	0

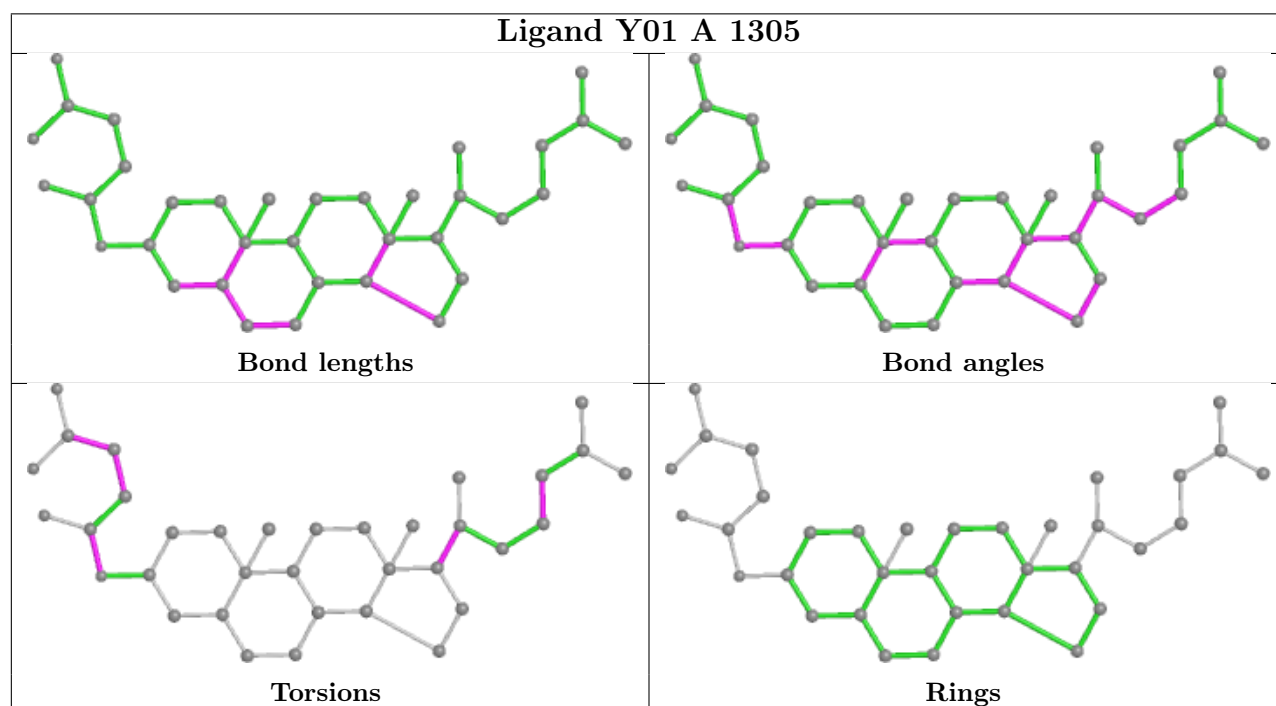
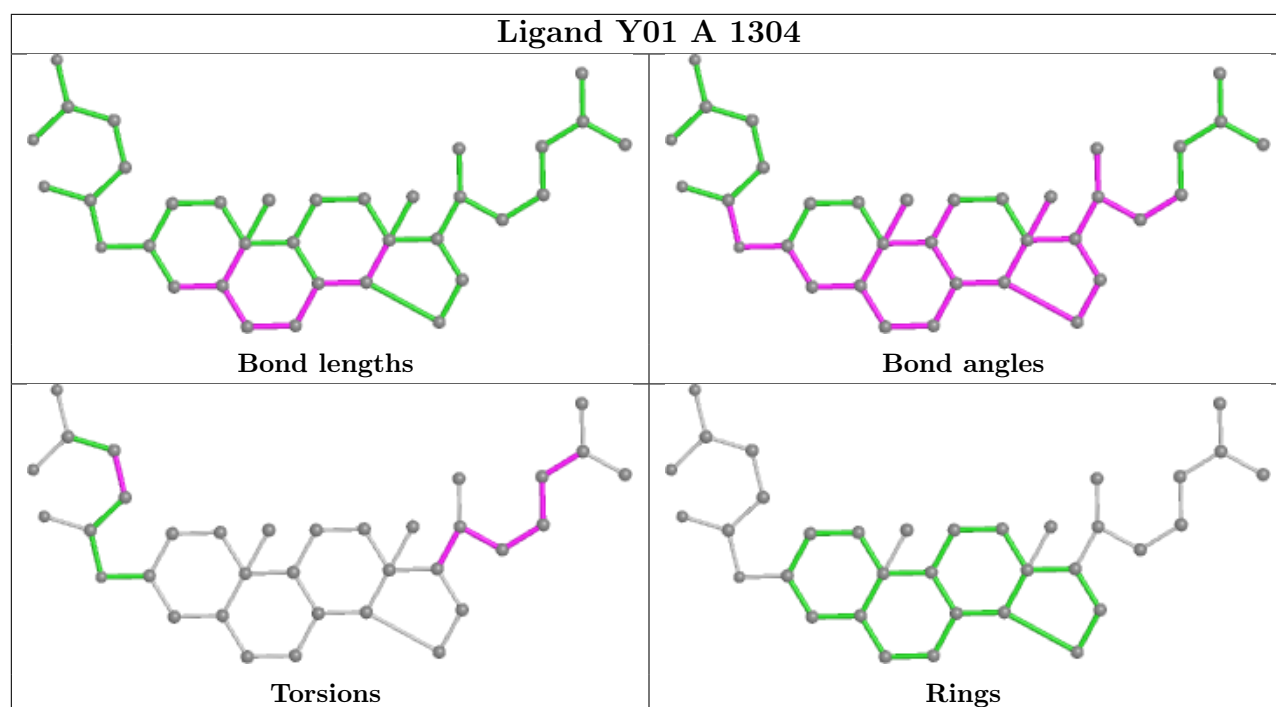
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

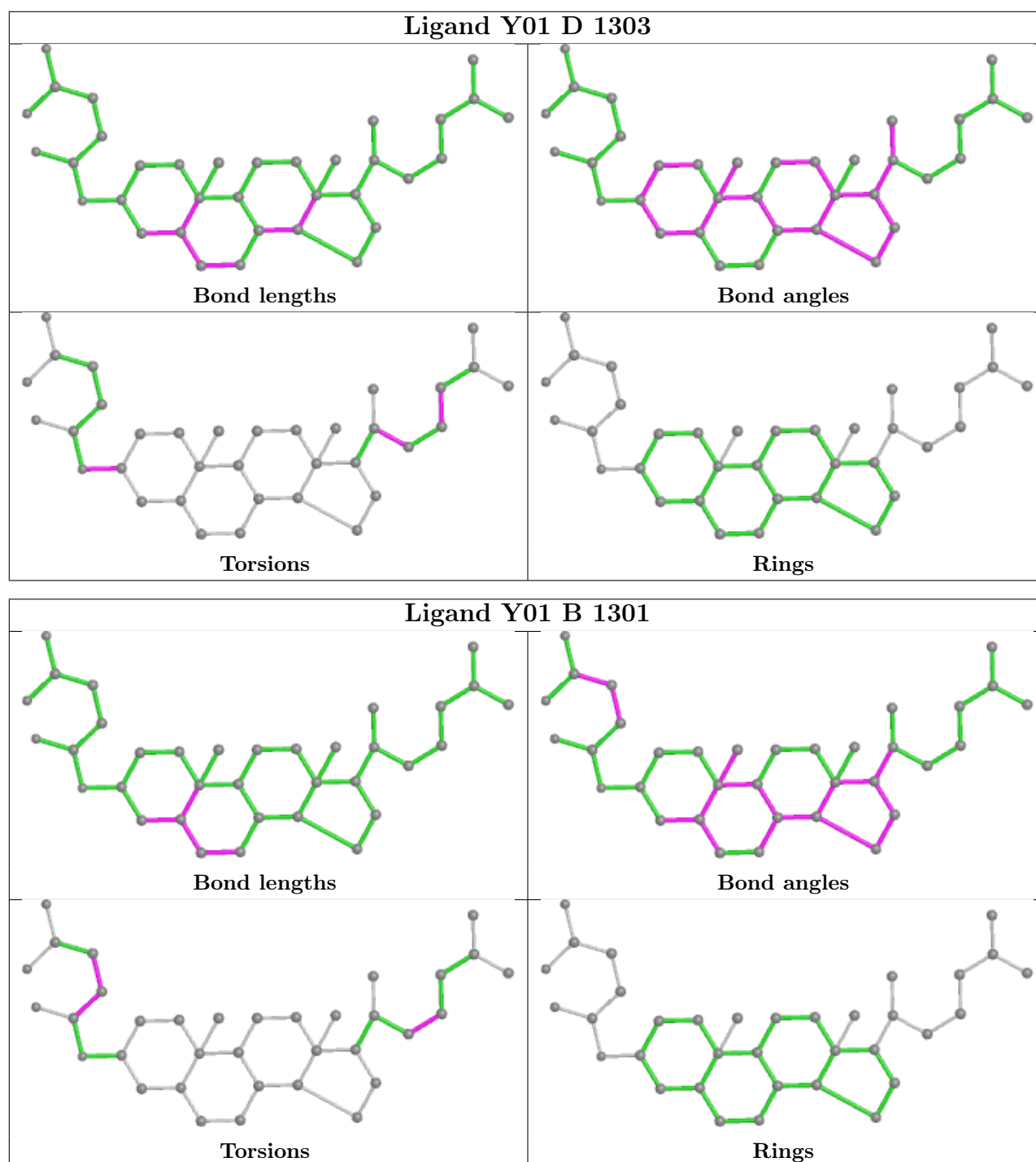












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

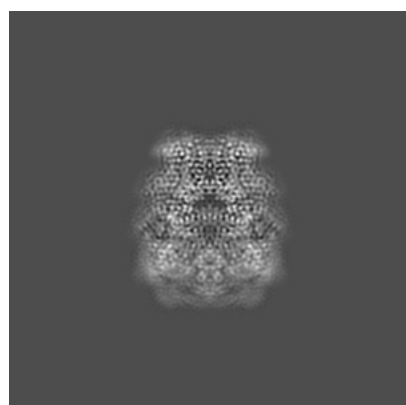
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-6975. These allow visual inspection of the internal detail of the map and identification of artifacts.

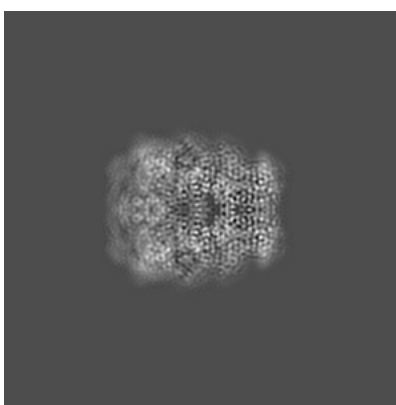
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

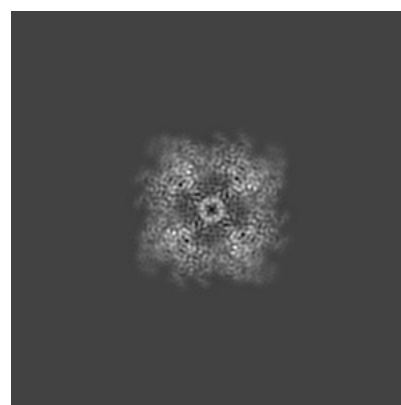
6.1.1 Primary map



X



Y

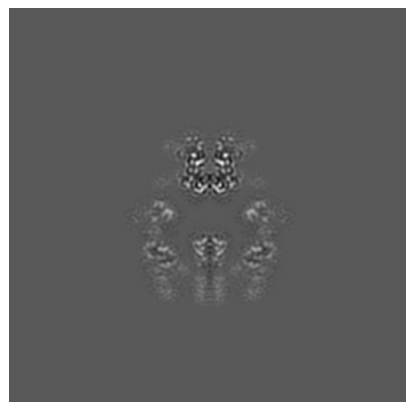


Z

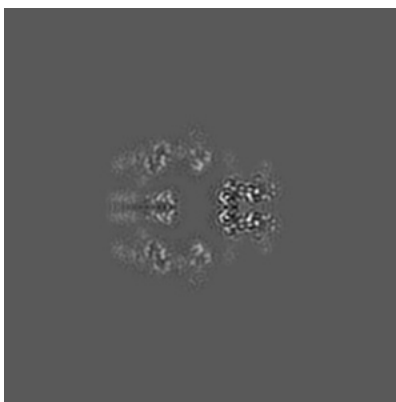
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

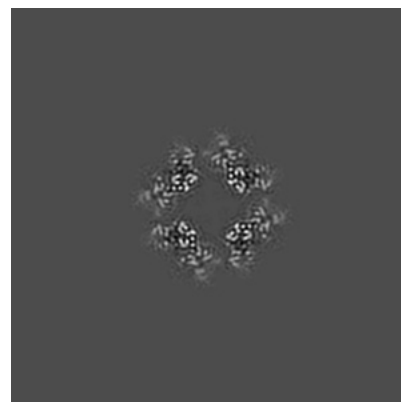
6.2.1 Primary map



X Index: 128



Y Index: 128



Z Index: 128

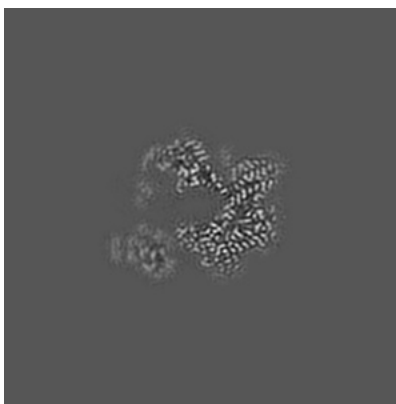
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

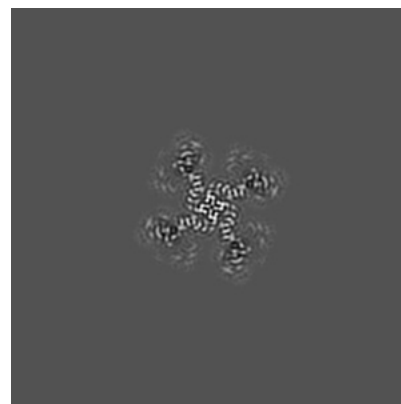
6.3.1 Primary map



X Index: 142



Y Index: 114

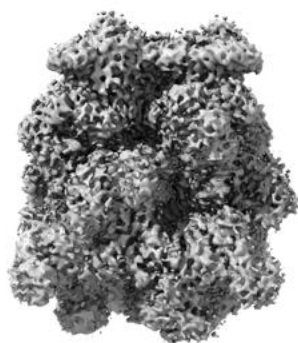


Z Index: 142

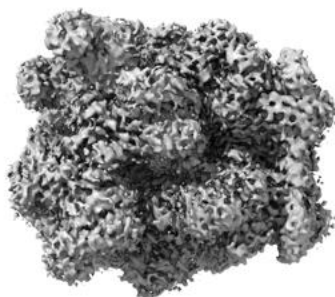
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

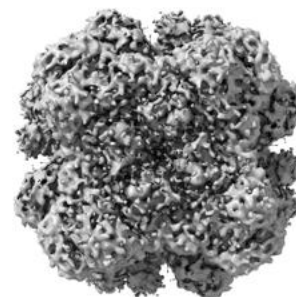
6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.013. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

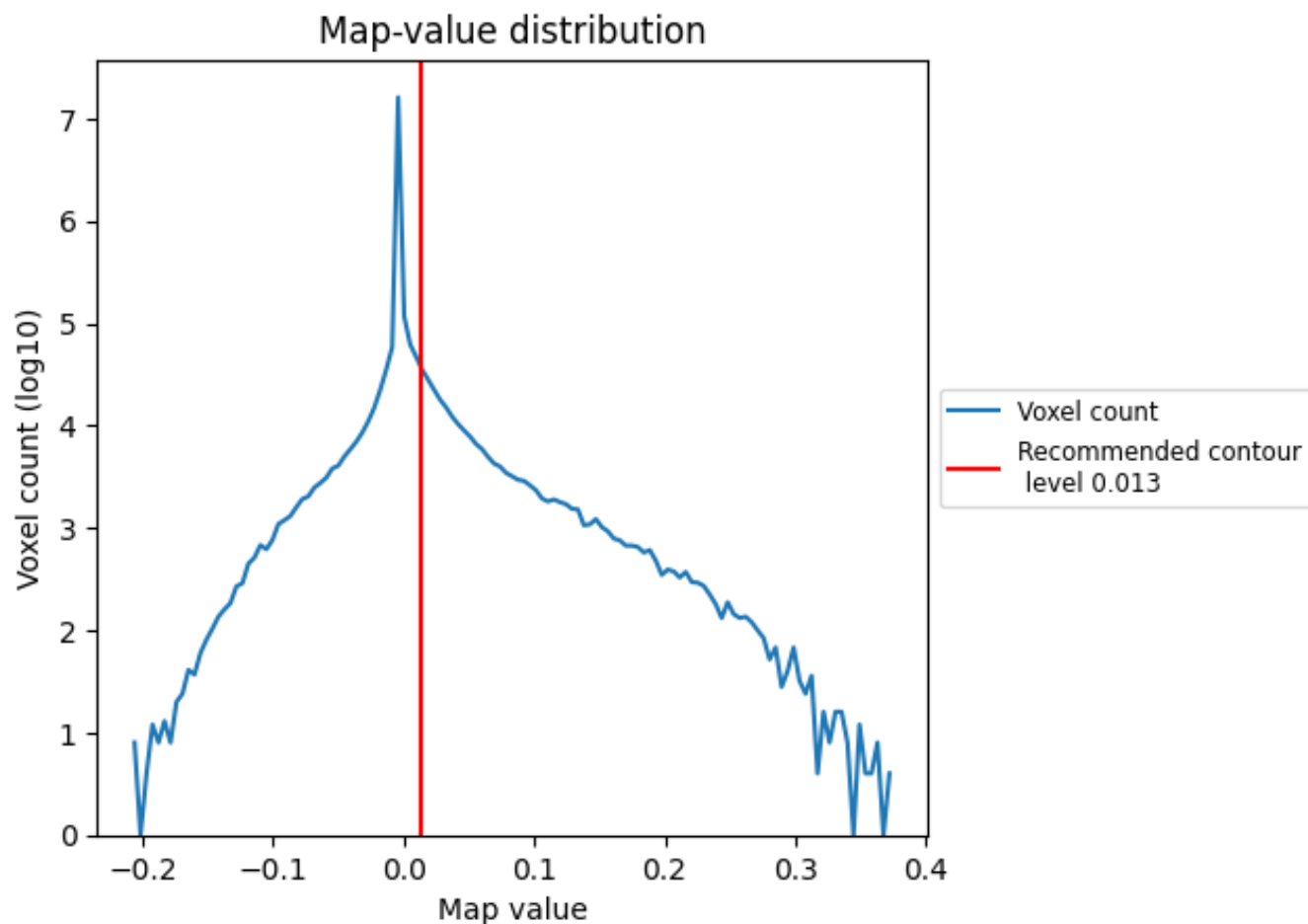
6.5 Mask visualisation

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

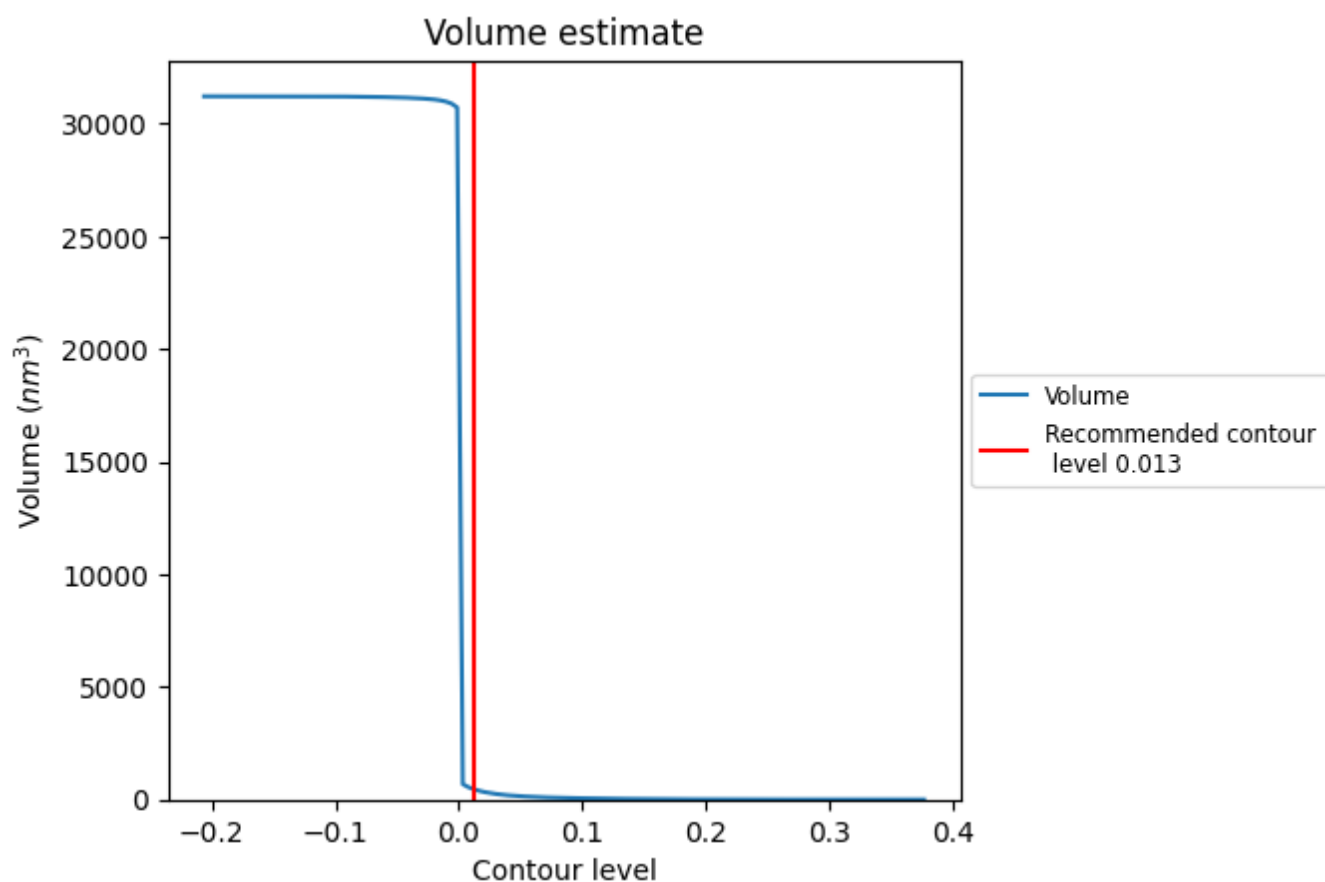
This section contains the results of statistical analysis of the map.

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.

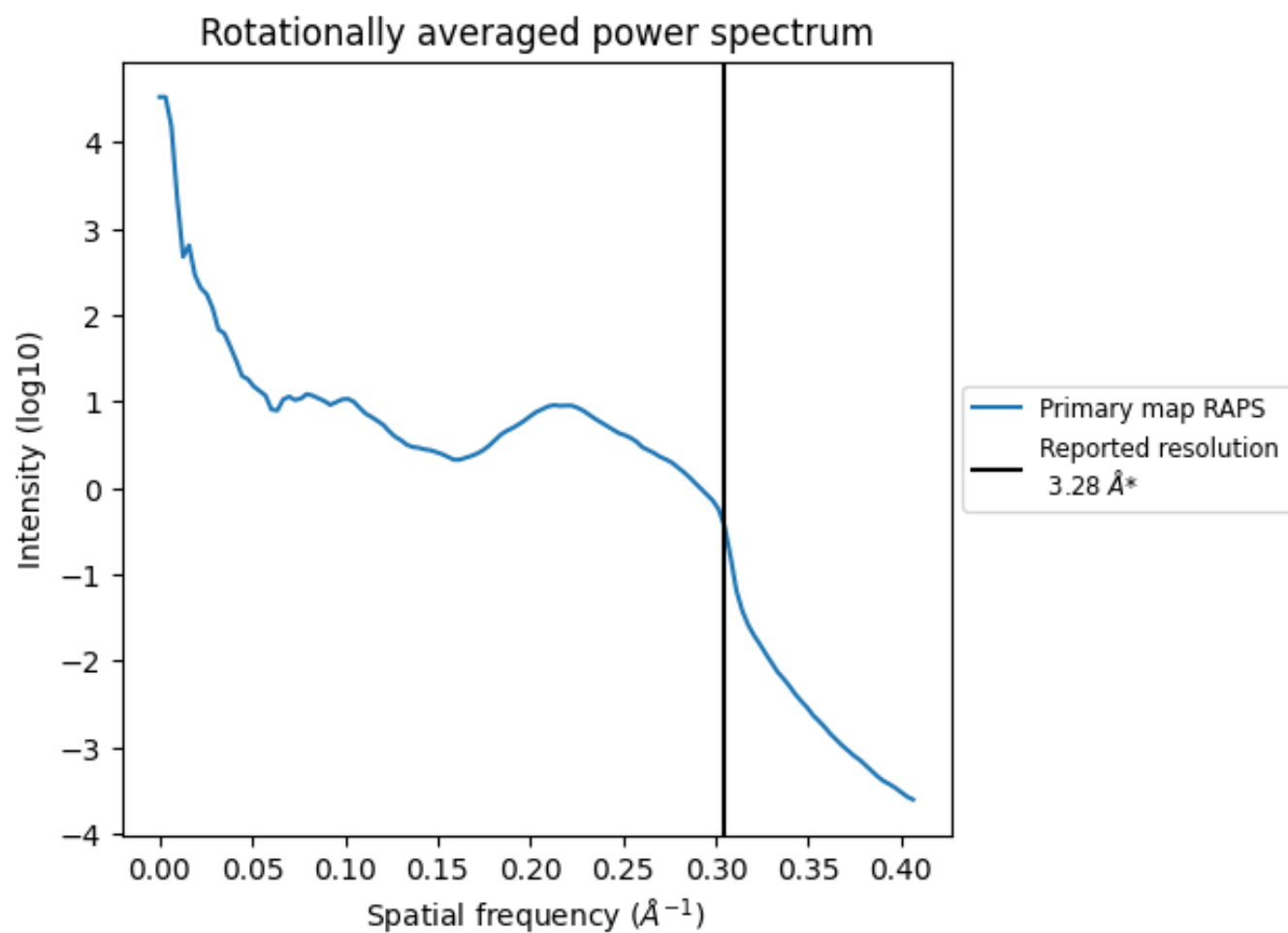
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 445 nm^3 ; this corresponds to an approximate mass of 402 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 ⓘ

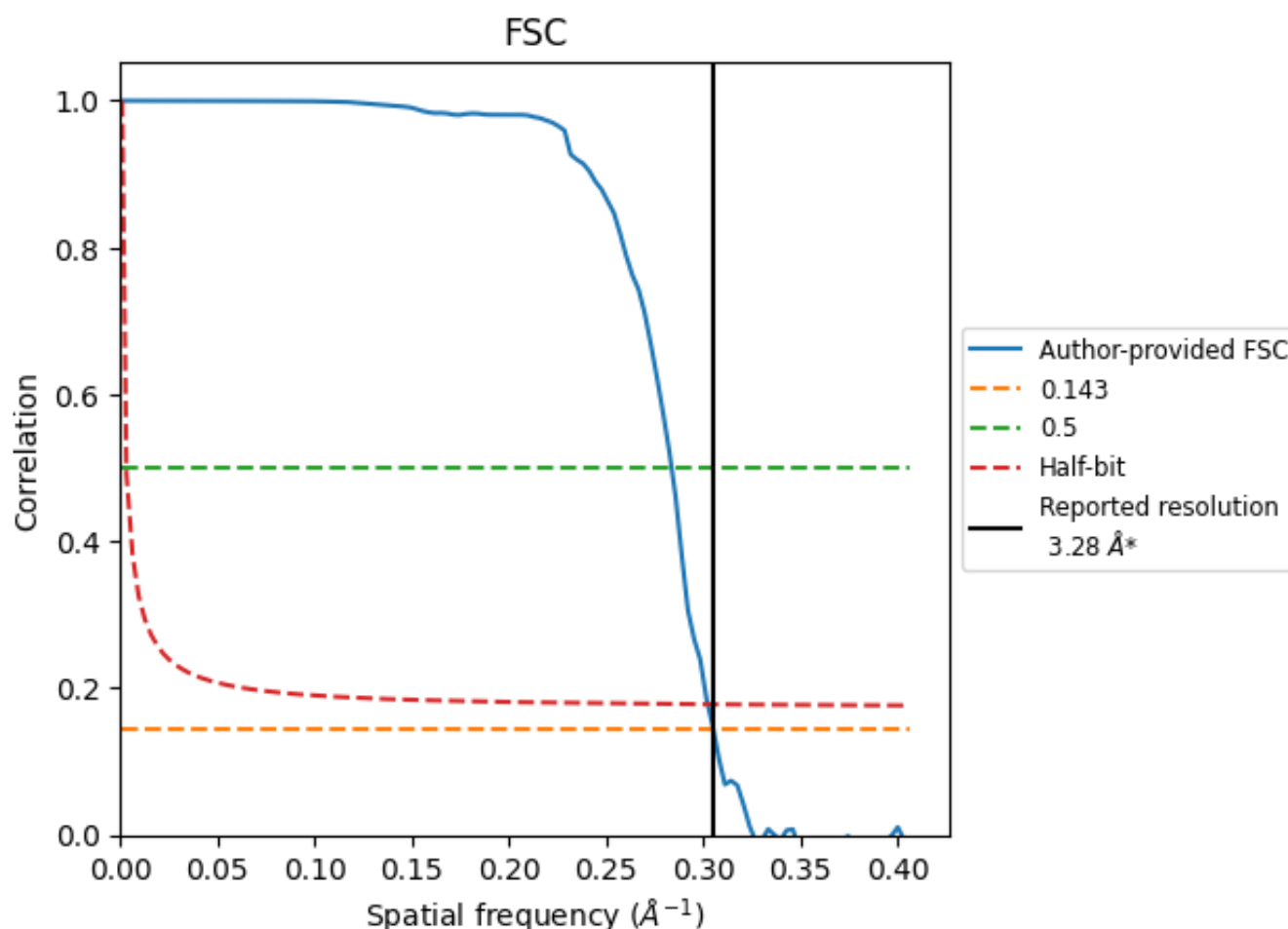


*Reported resolution corresponds to spatial frequency of 0.305 \AA^{-1}

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 0.305 Å⁻¹

8.2 Resolution estimates [i](#)

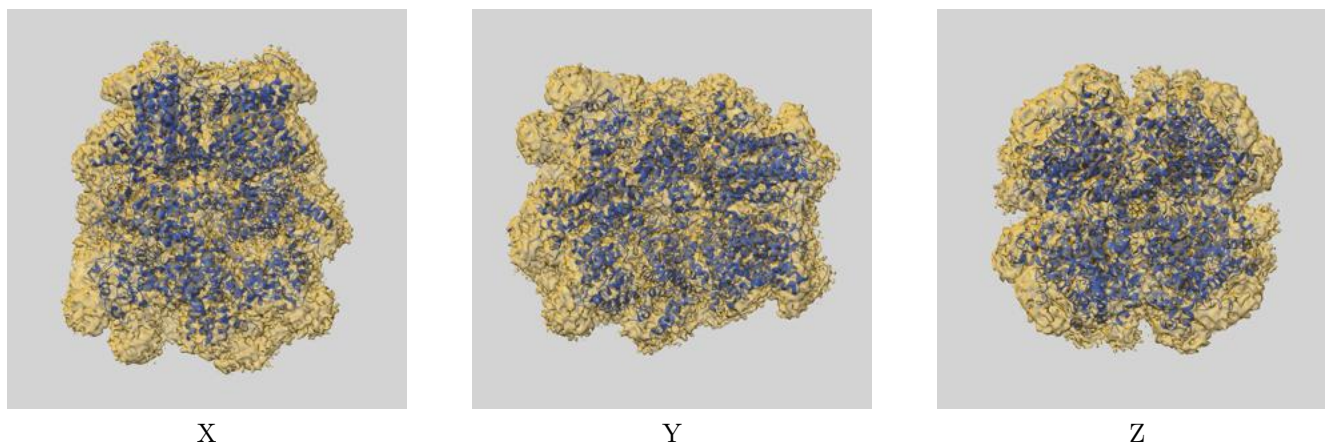
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.28	-	-
Author-provided FSC curve	3.28	3.52	3.31
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

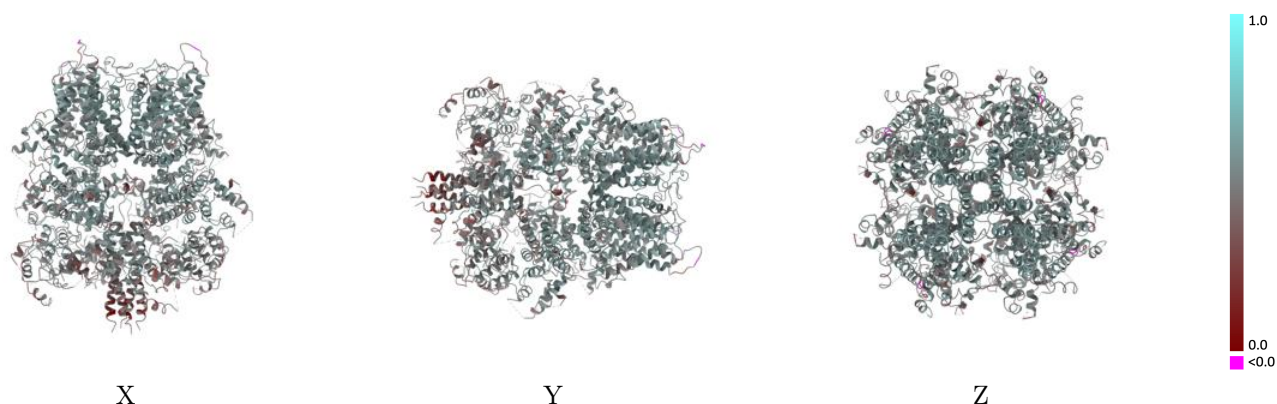
This section contains information regarding the fit between EMDB map EMD-6975 and PDB model 5ZX5. Per-residue inclusion information can be found in section [3](#) on page [6](#).

9.1 Map-model overlay [i](#)



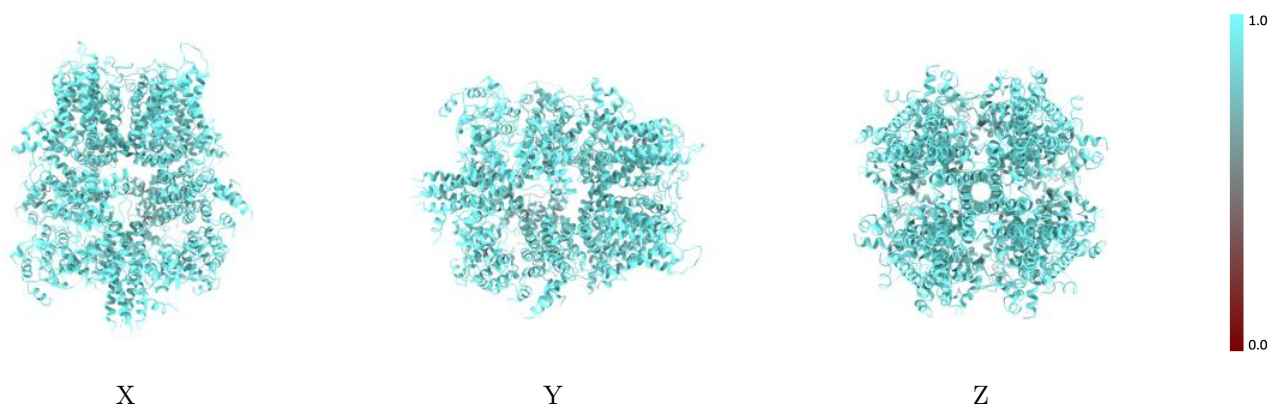
The images above show the 3D surface view of the map at the recommended contour level 0.013 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



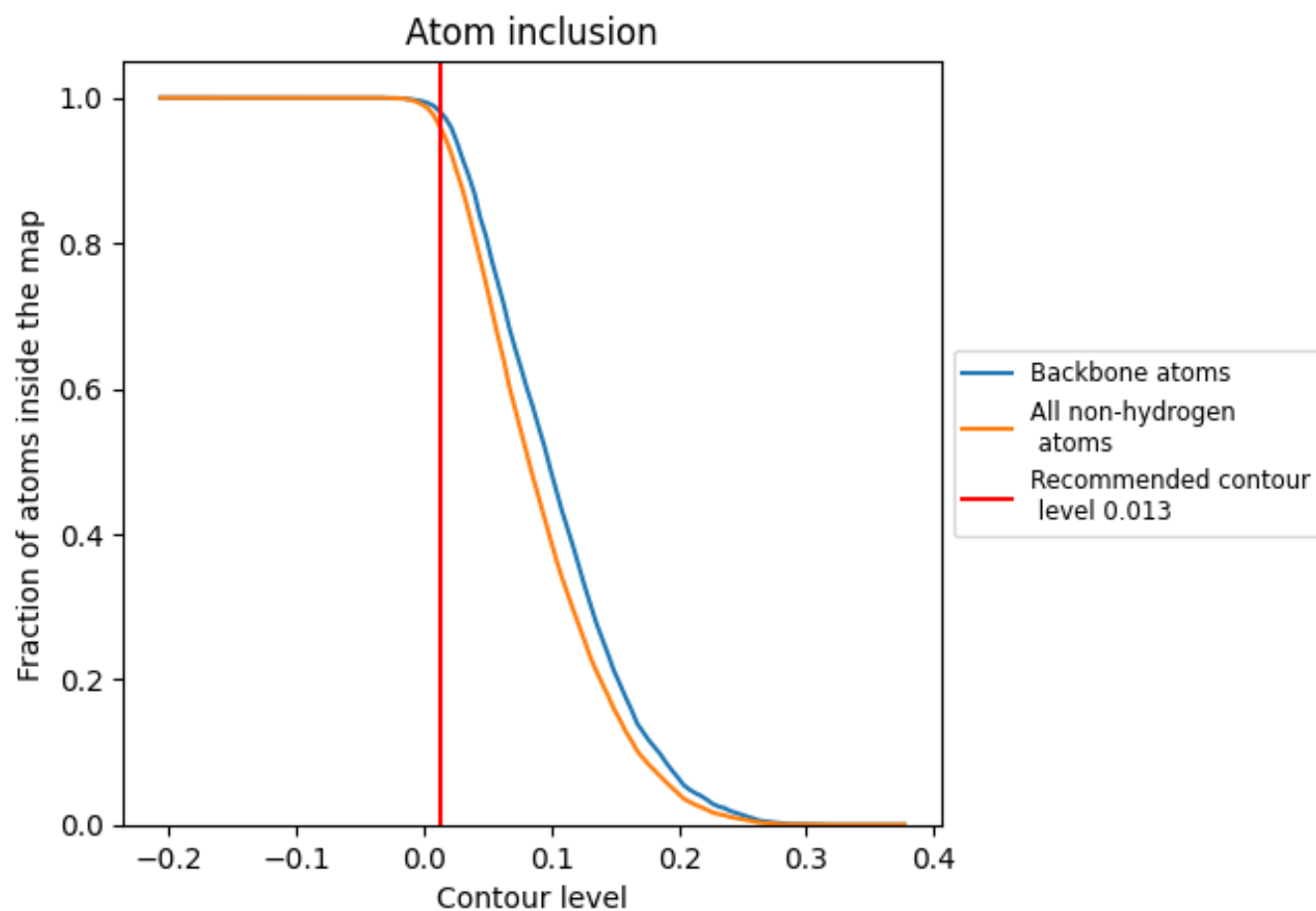
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.013).

9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 96% 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 (0.013) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.9590	<div></div> 0.5110
A	<div></div> 0.9585	<div></div> 0.5110
B	<div></div> 0.9595	<div></div> 0.5110
C	<div></div> 0.9588	<div></div> 0.5110
D	<div></div> 0.9592	<div></div> 0.5110

