



## Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 01:08 AM UTC

PDB ID : 7DXB / pdb\_00007dx  
EMDB ID : EMD-30903  
Title : Structure of TRPC3 at 2.7 angstrom in high calcium state  
Authors : Chen, L.; Guo, W.  
Deposited on : 2021-01-18  
Resolution : 2.70 Å(reported)

This is a Full wwPDB EM Validation 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:

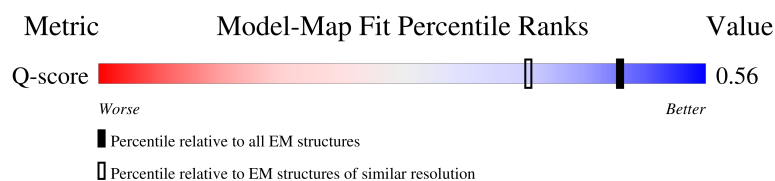
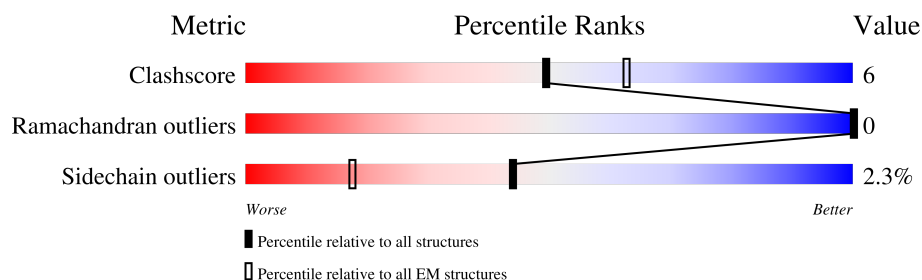
EMDB validation analysis : 0.0.1.dev132  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4-5-2 with Phenix2.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

# 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 2.70 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	10327 ( 2.20 - 3.20 )

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	836	<div> <div>14%</div> <div>75%</div> <div>13%</div> <div>12%</div> </div>
1	B	836	<div> <div>14%</div> <div>76%</div> <div>12%</div> <div>12%</div> </div>
1	C	836	<div> <div>14%</div> <div>76%</div> <div>12%</div> <div>12%</div> </div>
1	D	836	<div> <div>14%</div> <div>76%</div> <div>12%</div> <div>12%</div> </div>

## 2 Entry composition [i](#)

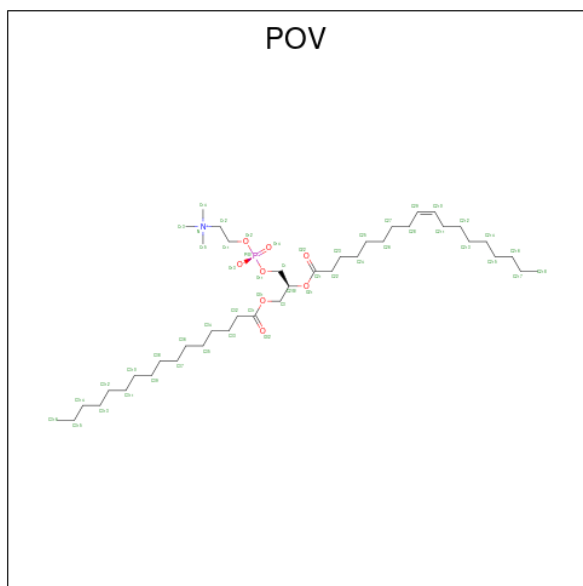
There are 6 unique types of molecules in this entry. The entry contains 24244 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Short transient receptor potential channel 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	738	Total	C	N	O	S	0	0
			5904	3845	954	1072	33		
1	B	738	Total	C	N	O	S	0	0
			5904	3845	954	1072	33		
1	C	738	Total	C	N	O	S	0	0
			5904	3845	954	1072	33		
1	D	738	Total	C	N	O	S	0	0
			5904	3845	954	1072	33		

- Molecule 2 is (2S)-3-(hexadecanoyloxy)-2-[(9Z)-octadec-9-enoyloxy]propyl 2-(trimethylamm onio)ethyl phosphate (CCD ID: POV) (formula: C<sub>42</sub>H<sub>82</sub>NO<sub>8</sub>P).



Mol	Chain	Residues	Atoms				AltConf
2	A	1	Total	C	O	P	0
			48	39	8	1	
2	A	1	Total	C	O	P	0
			48	39	8	1	

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Mol	Chain	Residues	Atoms				AltConf
2	B	1	Total 48	C 39	O 8	P 1	0
2	C	1	Total 48	C 39	O 8	P 1	0

- # Y01

Mol	Chain	Residues	Atoms			AltConf
3	A	1	Total 35	C 31	O 4	0
3	A	1	Total 35	C 31	O 4	0
3	B	1	Total 35	C 31	O 4	0
3	B	1	Total 35	C 31	O 4	0
3	C	1	Total 35	C 31	O 4	0
3	C	1	Total 35	C 31	O 4	0
3	D	1	Total 35	C 31	O 4	0
3	D	1	Total 35	C 31	O 4	0

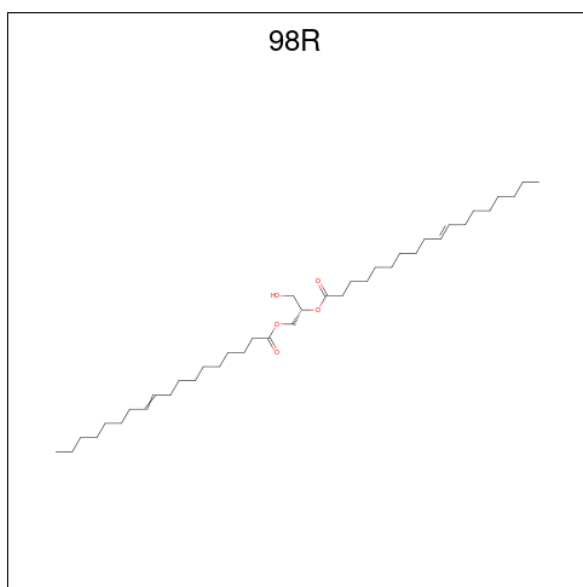
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Mol	Chain	Residues	Atoms		AltConf
4	A	1	Total	Zn	0
			1	1	
4	B	1	Total	Zn	0
			1	1	
4	C	1	Total	Zn	0
			1	1	
4	D	1	Total	Zn	0
			1	1	

- Molecule 5 is CALCIUM ION (CCD ID: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
5	A	3	Total	Ca	0
			3	3	
5	B	3	Total	Ca	0
			3	3	
5	C	3	Total	Ca	0
			3	3	
5	D	3	Total	Ca	0
			3	3	

- Molecule 6 is [(2S)-2-[(E)-octadec-10-enoyl]oxy-3-oxidanyl-propyl] octadec-10-enoate (CCD ID: 98R) (formula: C<sub>39</sub>H<sub>72</sub>O<sub>5</sub>).



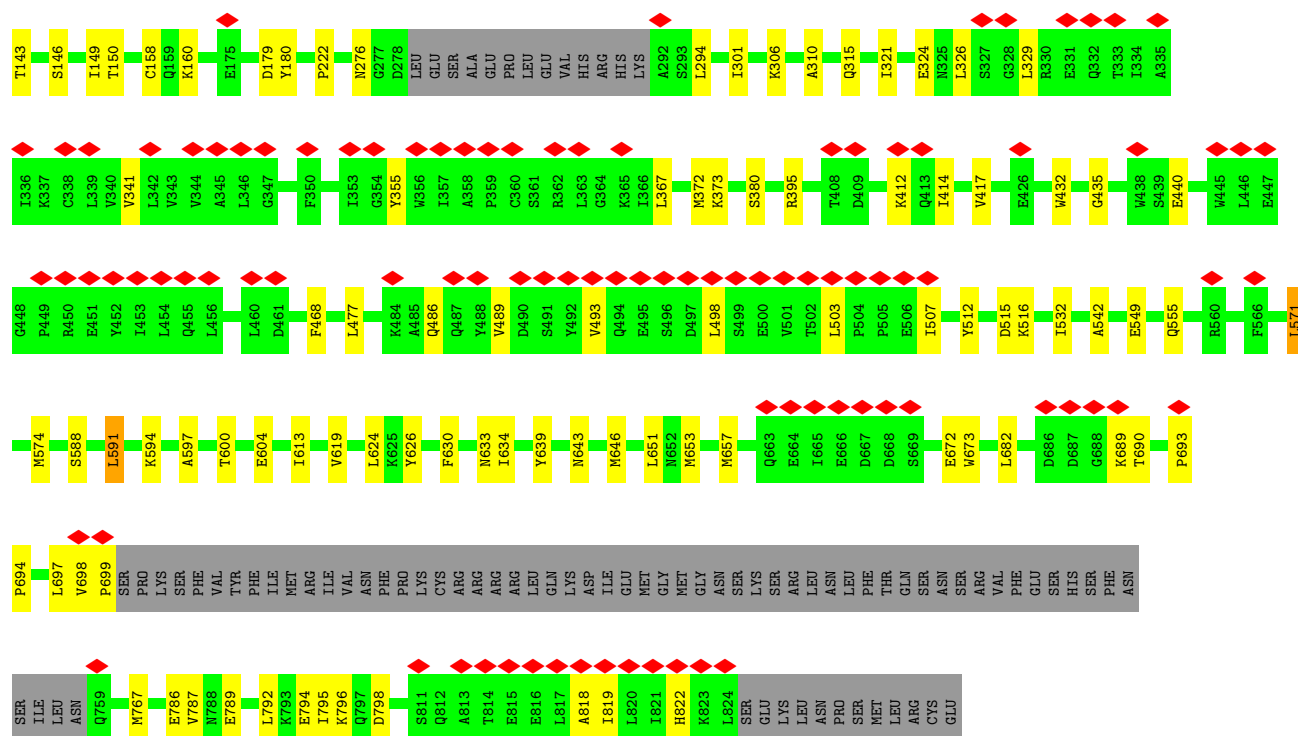
Mol	Chain	Residues	Atoms			AltConf
6	A	1	Total	C	O	0
			35	30	5	

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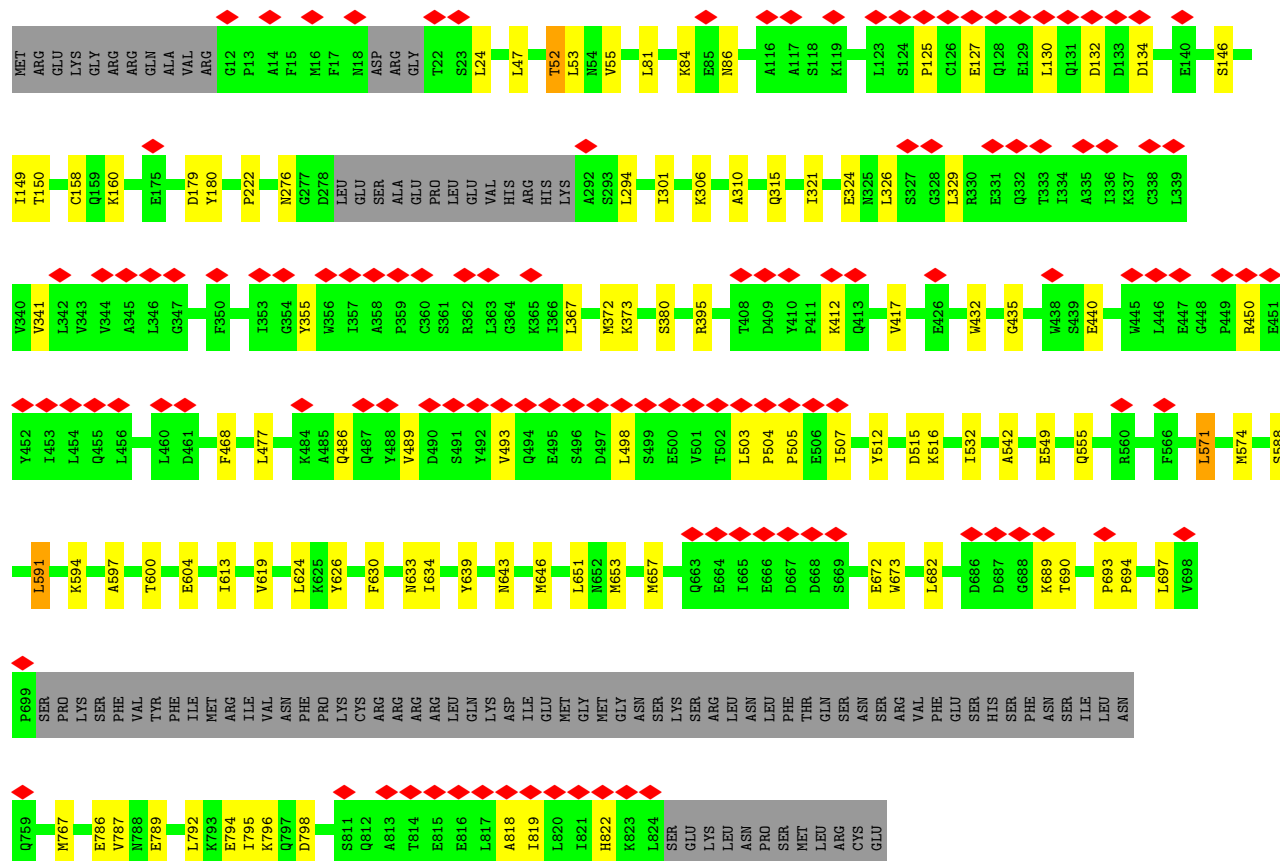
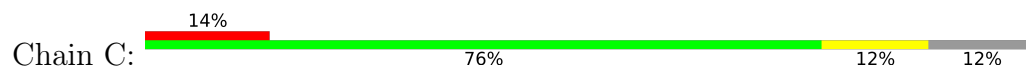
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Mol	Chain	Residues	Atoms			AltConf
6	B	1	Total	C	O	0
			35	30	5	
6	C	1	Total	C	O	0
			35	30	5	
6	D	1	Total	C	O	0
			35	30	5	



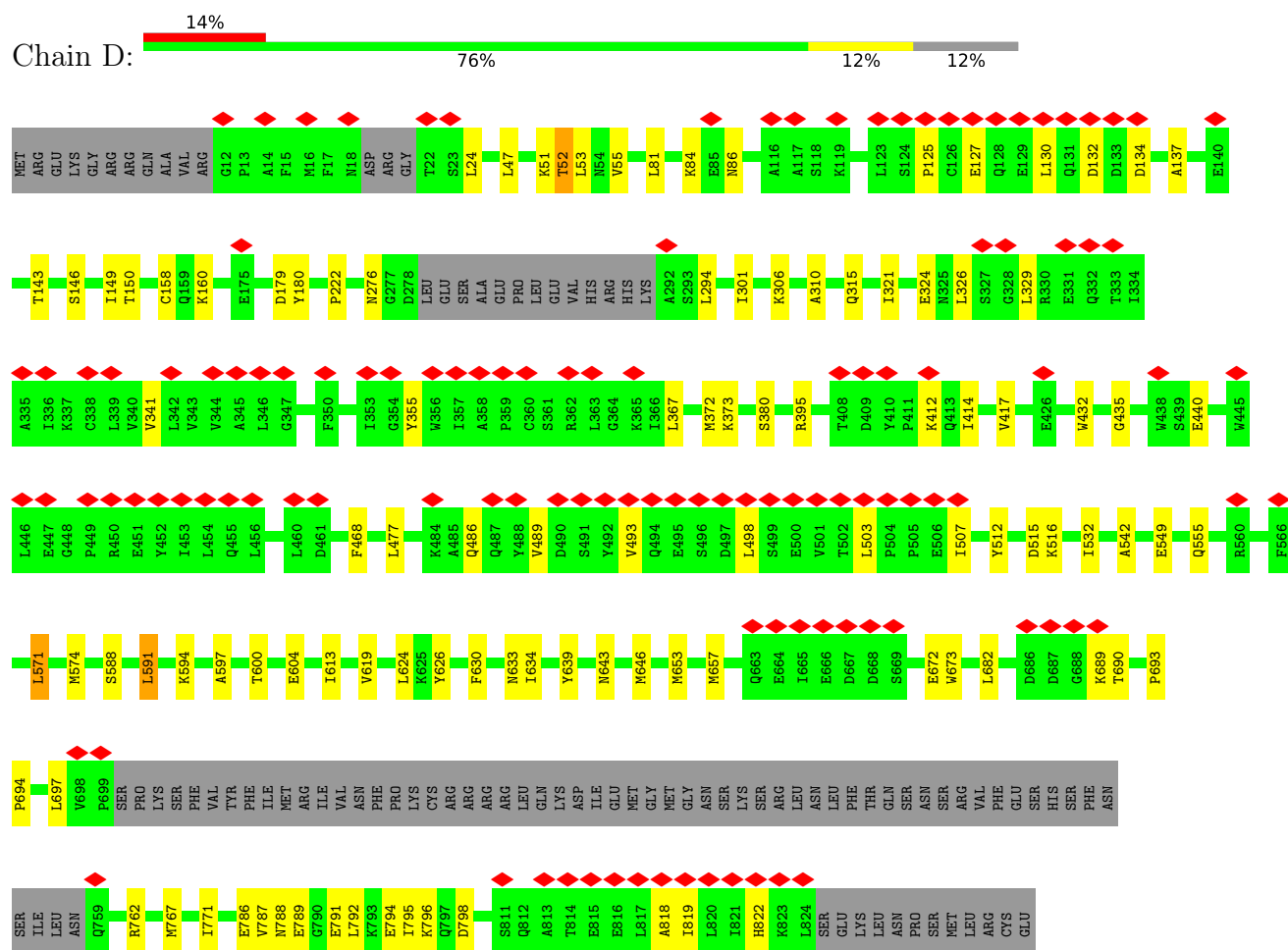


• Molecule 1: Short transient receptor potential channel 3





• Molecule 1: Short transient receptor potential channel 3



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	35441	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	5.544	Depositor
Minimum map value	-2.579	Depositor
Average map value	0.006	Depositor
Map value standard deviation	0.181	Depositor
Recommended contour level	0.94	Depositor
Map size ( $\text{\AA}$ )	292.60004, 292.60004, 292.60004	wwPDB
Map dimensions	280, 280, 280	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.0450001, 1.0450001, 1.0450001	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: POV, Y01, ZN, CA, 98R

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	0.21	2/6035 (0.0%)	0.31	0/8176
1	B	0.21	2/6035 (0.0%)	0.31	0/8176
1	C	0.21	2/6035 (0.0%)	0.31	0/8176
1	D	0.21	2/6035 (0.0%)	0.31	0/8176
All	All	0.21	8/24140 (0.0%)	0.31	0/32704

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	440	GLU	C-N	6.52	1.42	1.33
1	A	440	GLU	C-N	6.52	1.42	1.33
1	B	440	GLU	C-N	6.52	1.42	1.33
1	D	440	GLU	C-N	6.52	1.42	1.33
1	A	789	GLU	C-N	5.57	1.40	1.33
1	B	789	GLU	C-N	5.57	1.40	1.33
1	C	789	GLU	C-N	5.57	1.40	1.33
1	D	789	GLU	C-N	5.57	1.40	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	5904	0	5926	74	0
1	B	5904	0	5926	69	0
1	C	5904	0	5926	67	0
1	D	5904	0	5926	71	0
2	A	96	0	142	7	0
2	B	48	0	71	3	0
2	C	48	0	71	5	0
3	A	70	0	98	7	0
3	B	70	0	98	6	0
3	C	70	0	98	6	0
3	D	70	0	98	4	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
5	A	3	0	0	0	0
5	B	3	0	0	0	0
5	C	3	0	0	0	0
5	D	3	0	0	0	0
6	A	35	0	0	1	0
6	B	35	0	0	1	0
6	C	35	0	0	1	0
6	D	35	0	0	1	0
All	All	24244	0	24380	275	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 6.

All (275) 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:B:795:ILE:HD11	1:C:792:LEU:HG	1.59	0.85
1:A:795:ILE:HD11	1:B:792:LEU:HG	1.59	0.84
1:C:795:ILE:HD11	1:D:792:LEU:HG	1.59	0.84
1:A:792:LEU:HG	1:D:795:ILE:HD11	1.59	0.82
6:C:1101:98R:O3	6:C:1101:98R:O3P	2.05	0.74
6:B:1101:98R:O3P	6:B:1101:98R:O3	2.05	0.74
1:A:796:LYS:HE2	1:D:794:GLU:OE2	1.90	0.72
1:C:794:GLU:OE2	1:D:796:LYS:HE2	1.89	0.72
1:A:794:GLU:OE2	1:B:796:LYS:HE2	1.89	0.71
1:B:794:GLU:OE2	1:C:796:LYS:HE2	1.90	0.71
6:D:1101:98R:O3	6:D:1101:98R:O3P	2.05	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:909:98R:O3P	6:A:909:98R:O3	2.05	0.69
1:C:795:ILE:CD1	1:D:792:LEU:HG	2.24	0.68
1:A:795:ILE:CD1	1:B:792:LEU:HG	2.24	0.68
1:A:792:LEU:HG	1:D:795:ILE:CD1	2.24	0.68
1:A:634:ILE:HD12	1:D:532:ILE:HD11	1.76	0.67
1:B:795:ILE:CD1	1:C:792:LEU:HG	2.24	0.67
1:A:532:ILE:HD11	1:B:634:ILE:HD12	1.76	0.66
1:A:55:VAL:HG11	1:A:84:LYS:HG2	1.77	0.66
1:C:55:VAL:HG11	1:C:84:LYS:HG2	1.77	0.66
1:B:532:ILE:HD11	1:C:634:ILE:HD12	1.76	0.66
1:B:55:VAL:HG11	1:B:84:LYS:HG2	1.77	0.65
1:C:532:ILE:HD11	1:D:634:ILE:HD12	1.76	0.65
1:D:55:VAL:HG11	1:D:84:LYS:HG2	1.77	0.65
1:D:326:LEU:HD11	1:D:372:MET:HG2	1.82	0.62
1:C:326:LEU:HD11	1:C:372:MET:HG2	1.82	0.62
1:B:326:LEU:HD11	1:B:372:MET:HG2	1.82	0.62
1:A:326:LEU:HD11	1:A:372:MET:HG2	1.82	0.62
1:B:306:LYS:NZ	1:B:672:GLU:OE1	2.30	0.61
1:A:512:TYR:HB3	1:A:516:LYS:HB2	1.84	0.60
1:D:512:TYR:HB3	1:D:516:LYS:HB2	1.84	0.60
1:C:512:TYR:HB3	1:C:516:LYS:HB2	1.84	0.59
1:D:127:GLU:HA	1:D:130:LEU:HD23	1.84	0.59
1:B:512:TYR:HB3	1:B:516:LYS:HB2	1.84	0.59
1:C:127:GLU:HA	1:C:130:LEU:HD23	1.84	0.59
1:A:127:GLU:HA	1:A:130:LEU:HD23	1.84	0.59
1:A:306:LYS:NZ	1:A:672:GLU:OE1	2.30	0.58
1:B:310:ALA:HA	1:B:315:GLN:HE21	1.69	0.58
1:B:127:GLU:HA	1:B:130:LEU:HD23	1.84	0.58
1:C:310:ALA:HA	1:C:315:GLN:HE21	1.68	0.58
1:D:653:MET:HG2	1:D:657:MET:HE2	1.85	0.58
1:C:326:LEU:HD13	1:C:329:LEU:HD23	1.86	0.58
1:D:47:LEU:HD11	1:D:81:LEU:HD23	1.86	0.58
1:C:47:LEU:HD11	1:C:81:LEU:HD23	1.86	0.58
1:A:310:ALA:HA	1:A:315:GLN:HE21	1.68	0.58
1:D:310:ALA:HA	1:D:315:GLN:HE21	1.68	0.58
1:B:653:MET:HG2	1:B:657:MET:HE2	1.85	0.58
1:D:326:LEU:HD13	1:D:329:LEU:HD23	1.86	0.57
1:A:653:MET:HG2	1:A:657:MET:HE2	1.85	0.57
1:B:542:ALA:O	1:B:555:GLN:NE2	2.38	0.57
1:C:653:MET:HG2	1:C:657:MET:HE2	1.85	0.57
1:A:542:ALA:O	1:A:555:GLN:NE2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:47:LEU:HD11	1:B:81:LEU:HD23	1.86	0.57
1:B:326:LEU:HD13	1:B:329:LEU:HD23	1.86	0.56
1:A:326:LEU:HD13	1:A:329:LEU:HD23	1.86	0.56
1:C:542:ALA:O	1:C:555:GLN:NE2	2.38	0.56
1:A:47:LEU:HD11	1:A:81:LEU:HD23	1.86	0.56
1:D:542:ALA:O	1:D:555:GLN:NE2	2.38	0.56
1:C:306:LYS:NZ	1:C:672:GLU:OE1	2.30	0.56
1:C:639:TYR:O	1:C:643:ASN:ND2	2.39	0.56
1:A:639:TYR:O	1:A:643:ASN:ND2	2.39	0.56
1:B:639:TYR:O	1:B:643:ASN:ND2	2.39	0.55
1:D:306:LYS:NZ	1:D:672:GLU:OE1	2.30	0.55
2:C:1102:POV:H28	3:C:1104:Y01:HAI	1.89	0.55
2:A:908:POV:H28	3:D:1103:Y01:HAI	1.89	0.55
1:D:639:TYR:O	1:D:643:ASN:ND2	2.39	0.54
2:B:1102:POV:H28	3:B:1104:Y01:HAI	1.89	0.54
1:B:542:ALA:HB1	1:B:555:GLN:HE21	1.72	0.54
1:C:542:ALA:HB1	1:C:555:GLN:HE21	1.72	0.54
1:D:542:ALA:HB1	1:D:555:GLN:HE21	1.72	0.54
1:B:594:LYS:HG2	1:B:624:LEU:HD23	1.91	0.54
1:A:417:VAL:HG21	1:A:486:GLN:HB2	1.90	0.53
2:A:901:POV:H28	3:A:903:Y01:HAI	1.89	0.53
1:C:594:LYS:HG2	1:C:624:LEU:HD23	1.90	0.53
1:B:613:ILE:HA	1:B:646:MET:SD	2.49	0.53
1:C:417:VAL:HG21	1:C:486:GLN:HB2	1.90	0.53
1:D:594:LYS:HG2	1:D:624:LEU:HD23	1.91	0.53
1:A:542:ALA:HB1	1:A:555:GLN:HE21	1.72	0.53
1:A:594:LYS:HG2	1:A:624:LEU:HD23	1.91	0.53
1:C:613:ILE:HA	1:C:646:MET:SD	2.49	0.53
1:A:613:ILE:HA	1:A:646:MET:SD	2.49	0.52
1:D:417:VAL:HG21	1:D:486:GLN:HB2	1.90	0.52
1:B:417:VAL:HG21	1:B:486:GLN:HB2	1.90	0.52
1:D:613:ILE:HA	1:D:646:MET:SD	2.49	0.52
1:D:341:VAL:HG21	3:D:1102:Y01:HAI	1.93	0.51
1:A:341:VAL:HG21	3:A:902:Y01:HAI	1.93	0.51
1:B:301:ILE:HD12	1:B:682:LEU:HD12	1.93	0.51
1:C:301:ILE:HD12	1:C:682:LEU:HD12	1.93	0.51
1:B:52:THR:O	1:B:52:THR:OG1	2.29	0.50
1:D:818:ALA:O	1:D:822:HIS:ND1	2.45	0.50
1:B:341:VAL:HG21	3:B:1103:Y01:HAI	1.93	0.50
1:B:515:ASP:HB3	1:C:626:TYR:CZ	2.47	0.50
1:C:341:VAL:HG21	3:C:1103:Y01:HAI	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:626:TYR:CZ	1:D:515:ASP:HB3	2.47	0.50
1:A:818:ALA:O	1:A:822:HIS:ND1	2.45	0.50
1:C:515:ASP:HB3	1:D:626:TYR:CZ	2.47	0.50
1:A:301:ILE:HD12	1:A:682:LEU:HD12	1.93	0.50
1:D:52:THR:O	1:D:52:THR:OG1	2.29	0.49
1:A:52:THR:O	1:A:52:THR:OG1	2.29	0.49
1:B:158:CYS:HB3	1:B:160:LYS:HE2	1.94	0.49
1:A:515:ASP:HB3	1:B:626:TYR:CZ	2.47	0.49
1:C:818:ALA:O	1:C:822:HIS:ND1	2.45	0.49
1:B:818:ALA:O	1:B:822:HIS:ND1	2.45	0.49
1:D:301:ILE:HD12	1:D:682:LEU:HD12	1.93	0.49
1:A:489:VAL:HG11	1:A:498:LEU:HD11	1.95	0.49
1:B:489:VAL:HG11	1:B:498:LEU:HD11	1.95	0.49
1:C:146:SER:HB3	1:C:149:ILE:HG13	1.95	0.49
1:D:146:SER:HB3	1:D:149:ILE:HG13	1.95	0.49
1:A:146:SER:HB3	1:A:149:ILE:HG13	1.95	0.48
1:A:158:CYS:HB3	1:A:160:LYS:HE2	1.94	0.48
1:A:489:VAL:HG13	1:A:498:LEU:HD21	1.95	0.48
1:D:489:VAL:HG11	1:D:498:LEU:HD11	1.95	0.48
1:B:146:SER:HB3	1:B:149:ILE:HG13	1.95	0.48
1:C:158:CYS:HB3	1:C:160:LYS:HE2	1.94	0.48
1:A:630:PHE:O	1:A:634:ILE:HG12	2.14	0.48
1:D:643:ASN:HA	1:D:646:MET:HE2	1.96	0.48
1:A:643:ASN:HA	1:A:646:MET:HE2	1.96	0.48
2:A:901:POV:H1A	1:B:633:ASN:ND2	2.28	0.48
1:D:158:CYS:HB3	1:D:160:LYS:HE2	1.94	0.48
1:D:489:VAL:HG13	1:D:498:LEU:HD21	1.95	0.48
2:B:1102:POV:H1A	1:C:633:ASN:ND2	2.28	0.48
1:D:630:PHE:O	1:D:634:ILE:HG12	2.14	0.48
1:C:489:VAL:HG11	1:C:498:LEU:HD11	1.95	0.48
1:C:489:VAL:HG13	1:C:498:LEU:HD21	1.95	0.48
1:B:630:PHE:O	1:B:634:ILE:HG12	2.14	0.47
1:A:633:ASN:ND2	2:A:908:POV:H1A	2.28	0.47
1:B:489:VAL:HG13	1:B:498:LEU:HD21	1.95	0.47
1:C:643:ASN:HA	1:C:646:MET:HE2	1.96	0.47
2:C:1102:POV:H1A	1:D:633:ASN:ND2	2.28	0.47
1:C:819:ILE:HA	1:C:822:HIS:HD1	1.79	0.47
1:C:52:THR:O	1:C:52:THR:OG1	2.29	0.47
1:C:630:PHE:O	1:C:634:ILE:HG12	2.14	0.47
1:A:795:ILE:HD12	1:B:792:LEU:HD11	1.96	0.47
1:A:819:ILE:HA	1:A:822:HIS:HD1	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:795:ILE:CD1	1:C:792:LEU:CG	2.93	0.47
1:B:795:ILE:HD12	1:C:792:LEU:HD11	1.96	0.47
1:B:819:ILE:HA	1:B:822:HIS:HD1	1.79	0.47
1:D:819:ILE:HA	1:D:822:HIS:HD1	1.79	0.47
1:B:643:ASN:HA	1:B:646:MET:HE2	1.96	0.47
1:A:412:LYS:NZ	1:A:493:VAL:O	2.48	0.47
1:B:412:LYS:NZ	1:B:493:VAL:O	2.48	0.46
1:B:571:LEU:HA	1:B:574:MET:HE2	1.97	0.46
1:A:792:LEU:HD11	1:D:795:ILE:HD12	1.96	0.46
3:C:1104:Y01:HBB	3:C:1104:Y01:HAE2	1.61	0.46
1:C:795:ILE:HD12	1:D:792:LEU:HD11	1.97	0.46
1:D:571:LEU:HA	1:D:574:MET:HE2	1.97	0.46
1:B:132:ASP:C	1:B:134:ASP:H	2.24	0.46
1:B:786:GLU:O	1:B:786:GLU:HG3	2.16	0.46
1:C:412:LYS:NZ	1:C:493:VAL:O	2.48	0.46
1:A:435:GLY:HA2	1:A:697:LEU:HD21	1.98	0.46
1:A:571:LEU:HA	1:A:574:MET:HE2	1.97	0.46
1:A:795:ILE:CD1	1:B:792:LEU:CG	2.93	0.46
1:C:571:LEU:HA	1:C:574:MET:HE2	1.97	0.45
1:C:786:GLU:HG3	1:C:786:GLU:O	2.16	0.45
1:D:412:LYS:NZ	1:D:493:VAL:O	2.48	0.45
1:A:132:ASP:C	1:A:134:ASP:H	2.24	0.45
1:A:792:LEU:CG	1:D:795:ILE:CD1	2.93	0.45
1:B:222:PRO:HD2	1:B:767:MET:HE2	1.99	0.45
1:C:435:GLY:HA2	1:C:697:LEU:HD21	1.98	0.45
3:C:1103:Y01:HAE2	3:C:1103:Y01:HBB	1.71	0.45
3:A:903:Y01:HAE2	3:A:903:Y01:HBB	1.61	0.45
1:D:435:GLY:HA2	1:D:697:LEU:HD21	1.98	0.45
1:C:132:ASP:C	1:C:134:ASP:H	2.24	0.45
1:D:132:ASP:C	1:D:134:ASP:H	2.24	0.45
1:D:321:ILE:O	1:D:324:GLU:HG3	2.17	0.45
1:D:786:GLU:O	1:D:786:GLU:HG3	2.16	0.45
3:D:1103:Y01:HAA1	3:D:1103:Y01:HAJ1	1.77	0.45
1:C:86:ASN:ND2	1:C:86:ASN:O	2.50	0.45
1:C:355:TYR:CZ	1:C:690:THR:HG21	2.52	0.45
1:A:86:ASN:O	1:A:86:ASN:ND2	2.50	0.45
1:C:222:PRO:HD2	1:C:767:MET:HE2	1.99	0.45
1:A:594:LYS:HB3	1:A:594:LYS:HE2	1.73	0.44
1:B:355:TYR:CZ	1:B:690:THR:HG21	2.52	0.44
1:B:435:GLY:HA2	1:B:697:LEU:HD21	1.98	0.44
1:A:597:ALA:O	1:A:604:GLU:HG2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:86:ASN:O	1:B:86:ASN:ND2	2.50	0.44
1:C:693:PRO:N	1:C:694:PRO:HD2	2.32	0.44
1:A:222:PRO:HD2	1:A:767:MET:HE2	1.99	0.44
1:D:355:TYR:CZ	1:D:690:THR:HG21	2.52	0.44
1:D:597:ALA:O	1:D:604:GLU:HG2	2.18	0.44
1:D:693:PRO:N	1:D:694:PRO:HD2	2.32	0.44
1:A:321:ILE:O	1:A:324:GLU:HG3	2.17	0.44
1:A:693:PRO:N	1:A:694:PRO:HD2	2.32	0.44
1:A:450:ARG:HA	1:A:450:ARG:HD3	1.86	0.44
1:C:321:ILE:O	1:C:324:GLU:HG3	2.17	0.44
3:B:1104:Y01:HAA1	3:B:1104:Y01:HAJ1	1.77	0.44
3:B:1104:Y01:HAE2	3:B:1104:Y01:HBB	1.61	0.44
1:B:597:ALA:O	1:B:604:GLU:HG2	2.18	0.44
1:B:321:ILE:O	1:B:324:GLU:HG3	2.17	0.44
1:B:693:PRO:N	1:B:694:PRO:HD2	2.32	0.44
3:B:1103:Y01:HAE2	3:B:1103:Y01:HBB	1.71	0.44
1:A:355:TYR:CZ	1:A:690:THR:HG21	2.52	0.43
1:A:786:GLU:O	1:A:786:GLU:HG3	2.16	0.43
1:B:132:ASP:OD1	1:B:132:ASP:N	2.51	0.43
1:D:86:ASN:O	1:D:86:ASN:ND2	2.50	0.43
1:D:222:PRO:HD2	1:D:767:MET:HE2	1.99	0.43
1:A:395:ARG:NH2	1:B:588:SER:OG	2.52	0.43
1:B:594:LYS:HB3	1:B:594:LYS:HE2	1.73	0.43
1:C:597:ALA:O	1:C:604:GLU:HG2	2.18	0.43
1:D:276:ASN:HD22	1:D:294:LEU:HA	1.84	0.43
1:B:276:ASN:HD22	1:B:294:LEU:HA	1.84	0.43
1:C:795:ILE:CD1	1:D:792:LEU:CG	2.93	0.43
3:C:1104:Y01:HAO1	3:C:1104:Y01:HAP1	1.76	0.43
1:A:588:SER:OG	1:D:395:ARG:NH2	2.52	0.43
1:B:395:ARG:NH2	1:C:588:SER:OG	2.52	0.43
1:C:179:ASP:OD1	1:C:180:TYR:N	2.52	0.43
1:A:651:LEU:HD12	1:A:651:LEU:HA	1.90	0.42
1:B:179:ASP:OD1	1:B:180:TYR:N	2.52	0.42
3:A:902:Y01:HAP1	3:A:902:Y01:HAO1	1.61	0.42
1:C:276:ASN:HD22	1:C:294:LEU:HA	1.84	0.42
1:C:395:ARG:NH2	1:D:588:SER:OG	2.52	0.42
1:B:651:LEU:HD12	1:B:651:LEU:HA	1.90	0.42
1:D:594:LYS:HB3	1:D:594:LYS:HE2	1.73	0.42
1:A:276:ASN:HD22	1:A:294:LEU:HA	1.84	0.42
3:C:1104:Y01:HAA1	3:C:1104:Y01:HAJ1	1.77	0.42
3:B:1104:Y01:HAO1	3:B:1104:Y01:HAP1	1.76	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:125:PRO:HB3	1:D:150:THR:HG23	2.02	0.42
1:D:179:ASP:OD1	1:D:180:TYR:N	2.52	0.42
1:B:532:ILE:HD13	2:B:1102:POV:H36	2.02	0.42
1:D:762:ARG:HD2	1:D:762:ARG:HA	1.91	0.42
1:A:762:ARG:HD2	1:A:762:ARG:HA	1.91	0.42
1:C:594:LYS:HB3	1:C:594:LYS:HE2	1.73	0.41
1:C:646:MET:HE2	1:C:646:MET:HB3	1.99	0.41
1:A:179:ASP:OD1	1:A:180:TYR:N	2.52	0.41
2:A:908:POV:H28A	2:A:908:POV:H211	1.82	0.41
2:A:908:POV:H36	1:D:532:ILE:HD13	2.01	0.41
1:A:132:ASP:OD1	1:A:132:ASP:N	2.51	0.41
1:C:532:ILE:HD13	2:C:1102:POV:H36	2.01	0.41
1:A:532:ILE:HD13	2:A:901:POV:H36	2.01	0.41
1:B:698:VAL:HA	1:B:699:PRO:HD3	1.96	0.41
1:D:132:ASP:OD1	1:D:132:ASP:N	2.51	0.41
3:D:1103:Y01:HAJ1	3:D:1103:Y01:HAC3	1.89	0.41
1:A:414:ILE:HD11	1:A:489:VAL:HG21	2.03	0.41
1:A:591:LEU:HG	1:A:600:THR:HG21	2.03	0.41
3:A:903:Y01:HAC3	3:A:903:Y01:HAJ1	1.89	0.41
1:C:450:ARG:HA	1:C:450:ARG:HD3	1.86	0.41
1:D:414:ILE:HD11	1:D:489:VAL:HG21	2.03	0.41
1:B:591:LEU:HG	1:B:600:THR:HG21	2.03	0.41
1:C:132:ASP:N	1:C:132:ASP:OD1	2.51	0.41
1:A:373:LYS:HD2	1:A:689:LYS:O	2.21	0.41
1:A:698:VAL:HA	1:A:699:PRO:HD3	1.96	0.41
1:B:119:LYS:HE3	1:B:119:LYS:HB2	1.90	0.41
1:B:125:PRO:HB3	1:B:150:THR:HG23	2.02	0.41
1:C:125:PRO:HB3	1:C:150:THR:HG23	2.02	0.41
1:D:549:GLU:HA	1:D:673:TRP:CZ2	2.56	0.41
1:A:125:PRO:HB3	1:A:150:THR:HG23	2.02	0.41
1:A:504:PRO:HA	1:A:505:PRO:HD3	1.97	0.41
3:A:903:Y01:HAJ1	3:A:903:Y01:HAA1	1.77	0.41
1:B:549:GLU:HA	1:B:673:TRP:CZ2	2.56	0.41
1:C:549:GLU:HA	1:C:673:TRP:CZ2	2.56	0.41
2:C:1102:POV:H22A	2:C:1102:POV:H25A	1.93	0.41
1:D:222:PRO:HG2	1:D:771:ILE:HG13	2.03	0.41
1:B:414:ILE:HD11	1:B:489:VAL:HG21	2.03	0.41
1:C:504:PRO:HA	1:C:505:PRO:HD3	1.97	0.41
1:C:591:LEU:HG	1:C:600:THR:HG21	2.03	0.41
2:C:1102:POV:H28A	2:C:1102:POV:H211	1.82	0.41
1:A:409:ASP:OD1	1:A:410:TYR:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:903:Y01:HAD2	3:A:903:Y01:HAS2	1.85	0.40
1:D:51:LYS:HE3	1:D:51:LYS:HB2	1.92	0.40
1:D:591:LEU:HG	1:D:600:THR:HG21	2.03	0.40
1:D:791:GLU:O	1:D:794:GLU:HB3	2.21	0.40
1:A:437:MET:HA	1:A:465:LEU:HD13	2.03	0.40
1:B:373:LYS:HD2	1:B:689:LYS:O	2.21	0.40
1:B:373:LYS:HD2	1:B:690:THR:HA	2.03	0.40
1:C:373:LYS:HD2	1:C:689:LYS:O	2.21	0.40
1:D:373:LYS:HD2	1:D:690:THR:HA	2.03	0.40
1:A:549:GLU:HA	1:A:673:TRP:CZ2	2.56	0.40
1:A:788:ASN:HB2	1:A:791:GLU:HG3	2.03	0.40
1:D:373:LYS:HD2	1:D:689:LYS:O	2.21	0.40
1:D:788:ASN:HB2	1:D:791:GLU:HG3	2.03	0.40
1:A:222:PRO:HG2	1:A:771:ILE:HG13	2.03	0.40
1:A:791:GLU:O	1:A:794:GLU:HB3	2.21	0.40
1:B:137:ALA:HA	1:B:143:THR:HG22	2.04	0.40
1:C:651:LEU:HD12	1:C:651:LEU:HA	1.90	0.40
1:D:137:ALA:HA	1:D:143:THR:HG22	2.04	0.40

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	730/836 (87%)	703 (96%)	27 (4%)	0	100	100
1	B	730/836 (87%)	703 (96%)	27 (4%)	0	100	100
1	C	730/836 (87%)	703 (96%)	27 (4%)	0	100	100
1	D	730/836 (87%)	703 (96%)	27 (4%)	0	100	100
All	All	2920/3344 (87%)	2812 (96%)	108 (4%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	640/744 (86%)	625 (98%)	15 (2%)	44	73
1	B	640/744 (86%)	625 (98%)	15 (2%)	44	73
1	C	640/744 (86%)	625 (98%)	15 (2%)	44	73
1	D	640/744 (86%)	625 (98%)	15 (2%)	44	73
All	All	2560/2976 (86%)	2500 (98%)	60 (2%)	44	73

All (60) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	LEU
1	A	52	THR
1	A	53	LEU
1	A	367	LEU
1	A	380	SER
1	A	432	TRP
1	A	468	PHE
1	A	477	LEU
1	A	503	LEU
1	A	507	ILE
1	A	571	LEU
1	A	591	LEU
1	A	619	VAL
1	A	787	VAL
1	A	798	ASP
1	B	24	LEU
1	B	52	THR
1	B	53	LEU
1	B	367	LEU
1	B	380	SER
1	B	432	TRP
1	B	468	PHE
1	B	477	LEU
1	B	503	LEU

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Mol	Chain	Res	Type
1	B	507	ILE
1	B	571	LEU
1	B	591	LEU
1	B	619	VAL
1	B	787	VAL
1	B	798	ASP
1	C	24	LEU
1	C	52	THR
1	C	53	LEU
1	C	367	LEU
1	C	380	SER
1	C	432	TRP
1	C	468	PHE
1	C	477	LEU
1	C	503	LEU
1	C	507	ILE
1	C	571	LEU
1	C	591	LEU
1	C	619	VAL
1	C	787	VAL
1	C	798	ASP
1	D	24	LEU
1	D	52	THR
1	D	53	LEU
1	D	367	LEU
1	D	380	SER
1	D	432	TRP
1	D	468	PHE
1	D	477	LEU
1	D	503	LEU
1	D	507	ILE
1	D	571	LEU
1	D	591	LEU
1	D	619	VAL
1	D	787	VAL
1	D	798	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	74	HIS
1	A	198	HIS

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Mol	Chain	Res	Type
1	A	231	ASN
1	A	315	GLN
1	A	325	ASN
1	A	555	GLN
1	A	797	GLN
1	B	198	HIS
1	B	276	ASN
1	B	315	GLN
1	B	325	ASN
1	B	797	GLN
1	C	74	HIS
1	C	198	HIS
1	C	231	ASN
1	C	276	ASN
1	C	315	GLN
1	C	325	ASN
1	C	797	GLN
1	D	74	HIS
1	D	198	HIS
1	D	231	ASN
1	D	276	ASN
1	D	315	GLN
1	D	325	ASN
1	D	555	GLN
1	D	797	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

Of 32 ligands modelled in this entry, 16 are monoatomic - leaving 16 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
3	Y01	B	1103	-	38,38,38	1.00	1 (2%)	57,57,57	1.34	6 (10%)
6	98R	B	1101	-	34,34,43	1.06	2 (5%)	36,36,45	1.33	3 (8%)
3	Y01	B	1104	-	38,38,38	1.00	2 (5%)	57,57,57	1.52	11 (19%)
3	Y01	C	1103	-	38,38,38	1.01	1 (2%)	57,57,57	1.34	6 (10%)
2	POV	A	908	-	47,47,51	0.98	2 (4%)	50,52,59	1.20	5 (10%)
3	Y01	D	1103	-	38,38,38	1.00	2 (5%)	57,57,57	1.51	11 (19%)
6	98R	C	1101	-	34,34,43	1.05	2 (5%)	36,36,45	1.33	3 (8%)
2	POV	C	1102	-	47,47,51	0.98	2 (4%)	50,52,59	1.20	5 (10%)
3	Y01	D	1102	-	38,38,38	1.01	1 (2%)	57,57,57	1.34	6 (10%)
2	POV	A	901	-	47,47,51	0.98	2 (4%)	50,52,59	1.20	5 (10%)
3	Y01	A	902	-	38,38,38	1.00	1 (2%)	57,57,57	1.34	6 (10%)
3	Y01	C	1104	-	38,38,38	1.00	2 (5%)	57,57,57	1.51	11 (19%)
6	98R	D	1101	-	34,34,43	1.05	2 (5%)	36,36,45	1.33	3 (8%)
3	Y01	A	903	-	38,38,38	1.00	2 (5%)	57,57,57	1.51	11 (19%)
2	POV	B	1102	-	47,47,51	0.98	2 (4%)	50,52,59	1.19	5 (10%)
6	98R	A	909	-	34,34,43	1.05	2 (5%)	36,36,45	1.33	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
3	Y01	B	1103	-	-	11/19/77/77	0/4/4/4
6	98R	B	1101	-	-	15/36/36/45	-
3	Y01	B	1104	-	-	11/19/77/77	0/4/4/4
3	Y01	C	1103	-	-	11/19/77/77	0/4/4/4

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	POV	A	908	-	-	11/51/51/55	-
3	Y01	D	1103	-	-	11/19/77/77	0/4/4/4
6	98R	C	1101	-	-	15/36/36/45	-
2	POV	C	1102	-	-	11/51/51/55	-
3	Y01	D	1102	-	-	11/19/77/77	0/4/4/4
2	POV	A	901	-	-	11/51/51/55	-
3	Y01	A	902	-	-	11/19/77/77	0/4/4/4
3	Y01	C	1104	-	-	11/19/77/77	0/4/4/4
6	98R	D	1101	-	-	15/36/36/45	-
3	Y01	A	903	-	-	11/19/77/77	0/4/4/4
2	POV	B	1102	-	-	11/51/51/55	-
6	98R	A	909	-	-	15/36/36/45	-

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	901	POV	O31-C31	4.38	1.46	1.33
2	A	908	POV	O31-C31	4.38	1.46	1.33
2	B	1102	POV	O31-C31	4.38	1.46	1.33
2	C	1102	POV	O31-C31	4.38	1.46	1.33
2	A	901	POV	O21-C21	4.32	1.46	1.34
2	A	908	POV	O21-C21	4.32	1.46	1.34
2	B	1102	POV	O21-C21	4.32	1.46	1.34
2	C	1102	POV	O21-C21	4.32	1.46	1.34
3	A	902	Y01	OAW-CAY	4.31	1.46	1.34
3	B	1103	Y01	OAW-CAY	4.31	1.46	1.34
3	D	1102	Y01	OAW-CAY	4.31	1.46	1.34
3	C	1103	Y01	OAW-CAY	4.30	1.46	1.34
3	A	903	Y01	OAW-CAY	4.15	1.46	1.34
3	B	1104	Y01	OAW-CAY	4.15	1.46	1.34
3	C	1104	Y01	OAW-CAY	4.15	1.46	1.34
3	D	1103	Y01	OAW-CAY	4.13	1.46	1.34
6	C	1101	98R	O3-C11	4.12	1.45	1.33
6	D	1101	98R	O3-C11	4.12	1.45	1.33
6	B	1101	98R	O3-C11	4.11	1.45	1.33
6	A	909	98R	O3-C11	4.10	1.45	1.33
6	B	1101	98R	O2-C31	3.92	1.45	1.34
6	D	1101	98R	O2-C31	3.92	1.45	1.34
6	A	909	98R	O2-C31	3.90	1.45	1.34
6	C	1101	98R	O2-C31	3.90	1.45	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1104	Y01	CBH-CBF	-2.10	1.52	1.56
3	C	1104	Y01	CBH-CBF	-2.10	1.52	1.56
3	D	1103	Y01	CBH-CBF	-2.10	1.52	1.56
3	A	903	Y01	CBH-CBF	-2.05	1.52	1.56

All (100) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	B	1101	98R	O2-C31-C32	4.75	121.75	111.48
6	A	909	98R	O2-C31-C32	4.74	121.74	111.48
6	C	1101	98R	O2-C31-C32	4.74	121.74	111.48
6	D	1101	98R	O2-C31-C32	4.73	121.71	111.48
3	A	903	Y01	CBI-CBE-CBB	-4.26	112.91	119.50
3	B	1104	Y01	CBI-CBE-CBB	-4.26	112.91	119.50
3	C	1104	Y01	CBI-CBE-CBB	-4.26	112.91	119.50
3	D	1103	Y01	CBI-CBE-CBB	-4.26	112.91	119.50
2	A	901	POV	O21-C21-C22	4.20	120.56	111.48
2	A	908	POV	O21-C21-C22	4.18	120.53	111.48
2	B	1102	POV	O21-C21-C22	4.18	120.53	111.48
2	C	1102	POV	O21-C21-C22	4.18	120.53	111.48
3	D	1103	Y01	OAW-CAY-CAM	3.93	119.99	111.48
3	B	1104	Y01	OAW-CAY-CAM	3.93	119.98	111.48
3	A	903	Y01	OAW-CAY-CAM	3.92	119.96	111.48
3	C	1104	Y01	OAW-CAY-CAM	3.92	119.96	111.48
2	A	908	POV	O31-C31-C32	3.61	122.83	111.83
2	B	1102	POV	O31-C31-C32	3.61	122.83	111.83
2	C	1102	POV	O31-C31-C32	3.61	122.83	111.83
2	A	901	POV	O31-C31-C32	3.60	122.81	111.83
3	A	902	Y01	CBD-CAK-CAI	-3.50	107.91	112.76
3	B	1103	Y01	CBD-CAK-CAI	-3.50	107.91	112.76
3	C	1103	Y01	CBD-CAK-CAI	-3.48	107.94	112.76
3	D	1102	Y01	CBD-CAK-CAI	-3.48	107.95	112.76
3	B	1103	Y01	OAW-CAY-CAM	3.43	118.90	111.48
3	D	1102	Y01	OAW-CAY-CAM	3.43	118.90	111.48
3	C	1103	Y01	OAW-CAY-CAM	3.42	118.88	111.48
3	A	902	Y01	OAW-CAY-CAM	3.41	118.86	111.48
3	A	903	Y01	CAV-CAZ-CBH	3.36	120.72	116.42
3	B	1104	Y01	CAV-CAZ-CBH	3.36	120.72	116.42
3	C	1104	Y01	CAV-CAZ-CBH	3.36	120.72	116.42
3	D	1103	Y01	CAV-CAZ-CBH	3.36	120.72	116.42
3	B	1103	Y01	CBI-CBE-CBB	-3.14	114.64	119.50
3	C	1103	Y01	CBI-CBE-CBB	-3.14	114.64	119.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	D	1102	Y01	CBI-CBE-CBB	-3.14	114.64	119.50
3	A	902	Y01	CBI-CBE-CBB	-3.12	114.67	119.50
6	B	1101	98R	O3-C11-C12	2.89	120.63	111.83
6	D	1101	98R	O3-C11-C12	2.87	120.60	111.83
6	C	1101	98R	O3-C11-C12	2.87	120.59	111.83
6	A	909	98R	O3-C11-C12	2.87	120.57	111.83
3	B	1104	Y01	CBG-CBI-CBE	2.70	103.20	100.10
3	A	903	Y01	CBG-CBI-CBE	2.68	103.18	100.10
3	D	1103	Y01	CBG-CBI-CBE	2.68	103.18	100.10
3	C	1104	Y01	CBG-CBI-CBE	2.67	103.17	100.10
2	A	901	POV	C3-C2-C1	-2.57	105.79	111.78
2	C	1102	POV	C3-C2-C1	-2.56	105.81	111.78
2	B	1102	POV	C3-C2-C1	-2.56	105.81	111.78
2	A	908	POV	C3-C2-C1	-2.55	105.84	111.78
3	B	1104	Y01	CBD-CAK-CAI	-2.54	109.25	112.76
3	C	1104	Y01	CBD-CAK-CAI	-2.54	109.25	112.76
3	D	1103	Y01	CBD-CAK-CAI	-2.54	109.25	112.76
3	A	903	Y01	CBD-CAK-CAI	-2.52	109.28	112.76
3	A	903	Y01	CBC-OAW-CAY	-2.46	111.91	117.80
3	B	1104	Y01	CBC-OAW-CAY	-2.46	111.91	117.80
3	C	1104	Y01	CBC-OAW-CAY	-2.46	111.91	117.80
3	D	1103	Y01	CBC-OAW-CAY	-2.45	111.94	117.80
3	C	1103	Y01	CBF-CBH-CAZ	2.45	113.23	109.65
3	A	902	Y01	CBF-CBH-CAZ	2.42	113.20	109.65
3	B	1103	Y01	CBF-CBH-CAZ	2.42	113.20	109.65
3	D	1102	Y01	CBF-CBH-CAZ	2.41	113.18	109.65
3	A	903	Y01	CAS-CBF-CBH	-2.38	110.16	113.08
3	B	1104	Y01	CAS-CBF-CBH	-2.36	110.18	113.08
3	C	1104	Y01	CAS-CBF-CBH	-2.36	110.18	113.08
3	D	1103	Y01	CAS-CBF-CBH	-2.36	110.18	113.08
2	A	908	POV	O31-C3-C2	2.31	115.06	108.40
2	C	1102	POV	O31-C3-C2	2.30	115.03	108.40
2	A	901	POV	O31-C3-C2	2.30	115.03	108.40
2	B	1102	POV	O31-C3-C2	2.30	115.03	108.40
3	A	903	Y01	CBI-CBG-CBD	-2.27	111.19	114.41
3	C	1104	Y01	CBI-CBG-CBD	-2.27	111.19	114.41
3	D	1103	Y01	CBI-CBG-CBD	-2.27	111.19	114.41
3	B	1104	Y01	CAS-CAU-CBI	-2.26	108.92	112.74
3	B	1104	Y01	CBI-CBG-CBD	-2.26	111.20	114.41
3	D	1103	Y01	CAS-CAU-CBI	-2.25	108.95	112.74
3	A	903	Y01	CAS-CAU-CBI	-2.25	108.95	112.74
3	C	1104	Y01	CAS-CAU-CBI	-2.25	108.95	112.74

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	901	POV	O31-C31-O32	-2.24	118.02	123.63
2	A	908	POV	O31-C31-O32	-2.24	118.02	123.63
2	B	1102	POV	O31-C31-O32	-2.24	118.02	123.63
2	C	1102	POV	O31-C31-O32	-2.24	118.02	123.63
6	B	1101	98R	O2-C31-O31	-2.17	118.64	123.70
6	A	909	98R	O2-C31-O31	-2.16	118.66	123.70
6	C	1101	98R	O2-C31-O31	-2.16	118.66	123.70
3	A	903	Y01	CAR-CBC-CAV	-2.15	107.98	110.97
3	B	1104	Y01	CAR-CBC-CAV	-2.15	107.98	110.97
3	C	1104	Y01	CAR-CBC-CAV	-2.15	107.98	110.97
3	D	1103	Y01	CAR-CBC-CAV	-2.15	107.98	110.97
6	D	1101	98R	O2-C31-O31	-2.15	118.69	123.70
3	A	902	Y01	OAH-CAX-CAL	2.14	120.76	114.00
3	B	1103	Y01	OAH-CAX-CAL	2.14	120.76	114.00
3	D	1102	Y01	OAH-CAX-CAL	2.14	120.76	114.00
3	C	1103	Y01	OAH-CAX-CAL	2.13	120.72	114.00
3	A	902	Y01	CBC-CAV-CAZ	-2.06	108.41	111.45
3	C	1103	Y01	CBC-CAV-CAZ	-2.05	108.43	111.45
3	D	1102	Y01	CBC-CAV-CAZ	-2.05	108.43	111.45
3	B	1104	Y01	CAV-CAZ-CAI	-2.05	117.79	120.57
3	B	1103	Y01	CBC-CAV-CAZ	-2.04	108.44	111.45
3	A	903	Y01	CAV-CAZ-CAI	-2.03	117.82	120.57
3	C	1104	Y01	CAV-CAZ-CAI	-2.03	117.82	120.57
3	D	1103	Y01	CAV-CAZ-CAI	-2.01	117.84	120.57

There are no chirality outliers.

All (192) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	901	POV	C1-O11-P-O12
2	A	901	POV	C1-O11-P-O14
2	A	901	POV	C11-O12-P-O14
2	A	901	POV	O22-C21-O21-C2
2	A	908	POV	C1-O11-P-O12
2	A	908	POV	C1-O11-P-O14
2	A	908	POV	C11-O12-P-O14
2	A	908	POV	O22-C21-O21-C2
2	B	1102	POV	C1-O11-P-O12
2	B	1102	POV	C1-O11-P-O14
2	B	1102	POV	C11-O12-P-O14
2	B	1102	POV	O22-C21-O21-C2
2	C	1102	POV	C1-O11-P-O12

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Mol	Chain	Res	Type	Atoms
2	C	1102	POV	C1-O11-P-O14
2	C	1102	POV	C11-O12-P-O14
2	C	1102	POV	O22-C21-O21-C2
6	A	909	98R	O31-C31-O2-C2
6	B	1101	98R	O31-C31-O2-C2
6	C	1101	98R	O31-C31-O2-C2
6	D	1101	98R	O31-C31-O2-C2
6	A	909	98R	O11-C11-O3-C3
6	B	1101	98R	O11-C11-O3-C3
6	C	1101	98R	O11-C11-O3-C3
6	D	1101	98R	O11-C11-O3-C3
3	A	902	Y01	CAV-CBC-OAW-CAY
3	B	1103	Y01	CAV-CBC-OAW-CAY
3	C	1103	Y01	CAV-CBC-OAW-CAY
3	D	1102	Y01	CAV-CBC-OAW-CAY
3	A	903	Y01	CAO-CBB-CBE-CBI
3	B	1104	Y01	CAO-CBB-CBE-CBI
3	C	1104	Y01	CAO-CBB-CBE-CBI
3	D	1103	Y01	CAO-CBB-CBE-CBI
6	A	909	98R	C12-C11-O3-C3
6	B	1101	98R	C12-C11-O3-C3
6	C	1101	98R	C12-C11-O3-C3
6	D	1101	98R	C12-C11-O3-C3
2	A	901	POV	C22-C21-O21-C2
2	A	908	POV	C22-C21-O21-C2
2	B	1102	POV	C22-C21-O21-C2
2	C	1102	POV	C22-C21-O21-C2
6	A	909	98R	C32-C31-O2-C2
6	B	1101	98R	C32-C31-O2-C2
6	C	1101	98R	C32-C31-O2-C2
6	D	1101	98R	C32-C31-O2-C2
3	A	903	Y01	CAC-CBB-CBE-CBI
3	B	1104	Y01	CAC-CBB-CBE-CBI
3	C	1104	Y01	CAC-CBB-CBE-CBI
3	D	1103	Y01	CAC-CBB-CBE-CBI
3	A	903	Y01	CAC-CBB-CBE-CAP
3	B	1104	Y01	CAC-CBB-CBE-CAP
3	C	1104	Y01	CAC-CBB-CBE-CAP
3	D	1103	Y01	CAC-CBB-CBE-CAP
3	A	902	Y01	CAO-CBB-CBE-CBI
3	B	1103	Y01	CAO-CBB-CBE-CBI
3	D	1102	Y01	CAO-CBB-CBE-CBI

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Mol	Chain	Res	Type	Atoms
3	C	1103	Y01	CAO-CBB-CBE-CBI
6	A	909	98R	C11-C12-C13-C14
6	B	1101	98R	C11-C12-C13-C14
6	C	1101	98R	C11-C12-C13-C14
6	D	1101	98R	C11-C12-C13-C14
3	A	902	Y01	CAM-CAY-OAW-CBC
3	B	1103	Y01	CAM-CAY-OAW-CBC
3	C	1103	Y01	CAM-CAY-OAW-CBC
3	D	1102	Y01	CAM-CAY-OAW-CBC
3	A	902	Y01	OAG-CAY-OAW-CBC
3	B	1103	Y01	OAG-CAY-OAW-CBC
3	C	1103	Y01	OAG-CAY-OAW-CBC
3	D	1102	Y01	OAG-CAY-OAW-CBC
3	A	902	Y01	CAC-CBB-CBE-CBI
3	B	1103	Y01	CAC-CBB-CBE-CBI
3	C	1103	Y01	CAC-CBB-CBE-CBI
3	D	1102	Y01	CAC-CBB-CBE-CBI
3	A	903	Y01	CAO-CBB-CBE-CAP
3	B	1104	Y01	CAO-CBB-CBE-CAP
3	C	1104	Y01	CAO-CBB-CBE-CAP
3	D	1103	Y01	CAO-CBB-CBE-CAP
3	A	903	Y01	CAM-CAY-OAW-CBC
3	B	1104	Y01	CAM-CAY-OAW-CBC
3	C	1104	Y01	CAM-CAY-OAW-CBC
3	D	1103	Y01	CAM-CAY-OAW-CBC
3	A	903	Y01	OAG-CAY-OAW-CBC
3	B	1104	Y01	OAG-CAY-OAW-CBC
3	C	1104	Y01	OAG-CAY-OAW-CBC
3	D	1103	Y01	OAG-CAY-OAW-CBC
6	A	909	98R	C43-C44-C45-C46
6	B	1101	98R	C43-C44-C45-C46
6	C	1101	98R	C43-C44-C45-C46
6	D	1101	98R	C43-C44-C45-C46
6	A	909	98R	C42-C43-C44-C45
6	B	1101	98R	C42-C43-C44-C45
6	C	1101	98R	C42-C43-C44-C45
6	D	1101	98R	C42-C43-C44-C45
6	A	909	98R	C14-C15-C16-C17
6	B	1101	98R	C14-C15-C16-C17
6	C	1101	98R	C14-C15-C16-C17
6	D	1101	98R	C14-C15-C16-C17
3	A	902	Y01	CAC-CBB-CBE-CAP

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Mol	Chain	Res	Type	Atoms
3	B	1103	Y01	CAC-CBB-CBE-CAP
3	C	1103	Y01	CAC-CBB-CBE-CAP
3	D	1102	Y01	CAC-CBB-CBE-CAP
6	A	909	98R	C37-C38-C39-C40
6	B	1101	98R	C37-C38-C39-C40
6	C	1101	98R	C37-C38-C39-C40
6	D	1101	98R	C37-C38-C39-C40
3	A	902	Y01	CAO-CBB-CBE-CAP
3	B	1103	Y01	CAO-CBB-CBE-CAP
3	C	1103	Y01	CAO-CBB-CBE-CAP
3	D	1102	Y01	CAO-CBB-CBE-CAP
2	A	901	POV	O11-C1-C2-C3
2	A	908	POV	O11-C1-C2-C3
2	B	1102	POV	O11-C1-C2-C3
2	C	1102	POV	O11-C1-C2-C3
2	A	901	POV	C210-C211-C212-C213
2	A	908	POV	C210-C211-C212-C213
2	B	1102	POV	C210-C211-C212-C213
2	C	1102	POV	C210-C211-C212-C213
2	A	901	POV	C23-C24-C25-C26
2	A	908	POV	C23-C24-C25-C26
2	B	1102	POV	C23-C24-C25-C26
2	C	1102	POV	C23-C24-C25-C26
2	A	901	POV	O11-C1-C2-O21
2	A	908	POV	O11-C1-C2-O21
2	B	1102	POV	O11-C1-C2-O21
2	C	1102	POV	O11-C1-C2-O21
2	A	901	POV	C22-C23-C24-C25
2	B	1102	POV	C22-C23-C24-C25
2	C	1102	POV	C22-C23-C24-C25
2	A	908	POV	C22-C23-C24-C25
6	A	909	98R	C38-C39-C40-C41
6	B	1101	98R	C38-C39-C40-C41
6	C	1101	98R	C38-C39-C40-C41
6	D	1101	98R	C38-C39-C40-C41
6	A	909	98R	C45-C46-C47-C48
6	B	1101	98R	C45-C46-C47-C48
6	C	1101	98R	C45-C46-C47-C48
6	D	1101	98R	C45-C46-C47-C48
6	B	1101	98R	C32-C33-C34-C35
6	A	909	98R	C32-C33-C34-C35
6	C	1101	98R	C32-C33-C34-C35

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Mol	Chain	Res	Type	Atoms
6	D	1101	98R	C32-C33-C34-C35
3	B	1104	Y01	CAM-CAL-CAX-OAF
3	A	903	Y01	CAM-CAL-CAX-OAF
3	C	1104	Y01	CAM-CAL-CAX-OAF
3	D	1103	Y01	CAM-CAL-CAX-OAF
3	A	903	Y01	CAM-CAL-CAX-OAH
3	C	1104	Y01	CAM-CAL-CAX-OAH
3	D	1103	Y01	CAM-CAL-CAX-OAH
3	B	1104	Y01	CAM-CAL-CAX-OAH
6	B	1101	98R	C34-C35-C36-C37
6	A	909	98R	C34-C35-C36-C37
6	D	1101	98R	C34-C35-C36-C37
6	C	1101	98R	C34-C35-C36-C37
3	A	903	Y01	CAO-CAJ-CAN-CBA
3	B	1104	Y01	CAO-CAJ-CAN-CBA
3	C	1104	Y01	CAO-CAJ-CAN-CBA
3	D	1103	Y01	CAO-CAJ-CAN-CBA
3	C	1103	Y01	CAJ-CAO-CBB-CAC
3	A	902	Y01	CAJ-CAO-CBB-CAC
3	B	1103	Y01	CAJ-CAO-CBB-CAC
3	D	1102	Y01	CAJ-CAO-CBB-CAC
3	C	1103	Y01	CAL-CAM-CAY-OAW
6	B	1101	98R	C31-C32-C33-C34
3	A	902	Y01	CAL-CAM-CAY-OAW
3	B	1103	Y01	CAL-CAM-CAY-OAW
3	D	1102	Y01	CAL-CAM-CAY-OAW
6	C	1101	98R	C31-C32-C33-C34
3	C	1103	Y01	CAJ-CAO-CBB-CBE
6	A	909	98R	C31-C32-C33-C34
6	D	1101	98R	C31-C32-C33-C34
3	A	902	Y01	CAJ-CAO-CBB-CBE
3	B	1103	Y01	CAJ-CAO-CBB-CBE
3	D	1102	Y01	CAJ-CAO-CBB-CBE
2	C	1102	POV	C24-C25-C26-C27
2	A	901	POV	C24-C25-C26-C27
2	A	908	POV	C24-C25-C26-C27
2	B	1102	POV	C24-C25-C26-C27
6	D	1101	98R	C12-C13-C14-C15
6	A	909	98R	C12-C13-C14-C15
6	B	1101	98R	C12-C13-C14-C15
6	C	1101	98R	C12-C13-C14-C15
3	A	903	Y01	CAL-CAM-CAY-OAW

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Atoms
3	B	1104	Y01	CAL-CAM-CAY-OAW
3	C	1104	Y01	CAL-CAM-CAY-OAW
3	D	1103	Y01	CAL-CAM-CAY-OAW
3	A	902	Y01	CAL-CAM-CAY-OAG
3	B	1103	Y01	CAL-CAM-CAY-OAG
3	C	1103	Y01	CAL-CAM-CAY-OAG
3	D	1102	Y01	CAL-CAM-CAY-OAG
3	A	903	Y01	CAL-CAM-CAY-OAG
3	B	1104	Y01	CAL-CAM-CAY-OAG
3	C	1104	Y01	CAL-CAM-CAY-OAG
3	D	1103	Y01	CAL-CAM-CAY-OAG

There are no ring outliers.

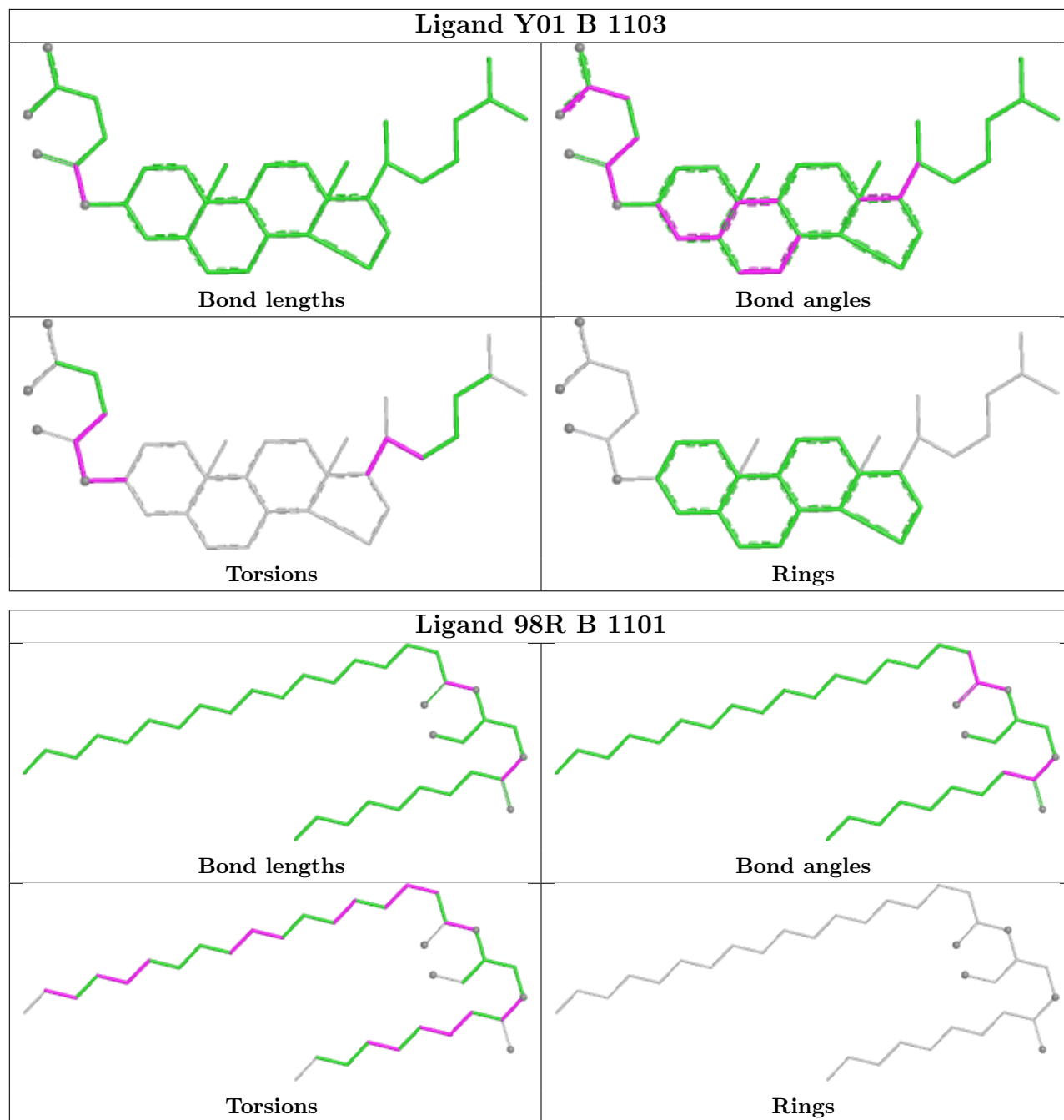
16 monomers are involved in 38 short contacts:

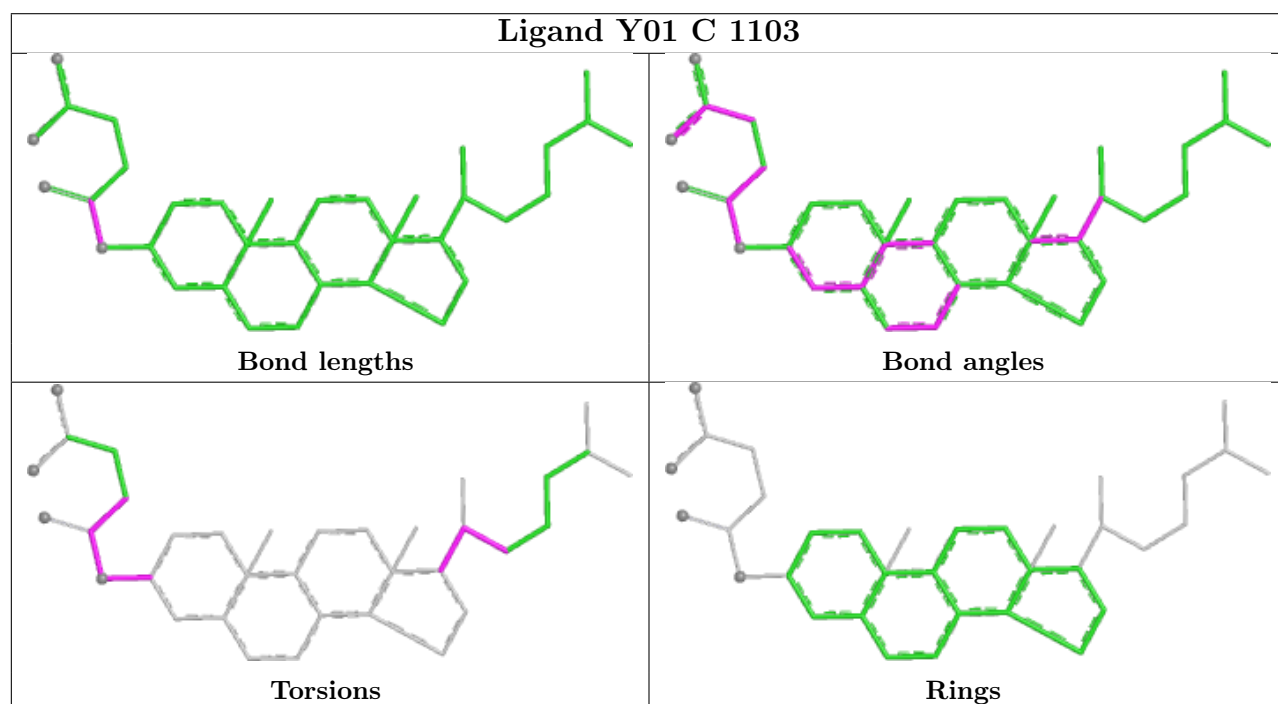
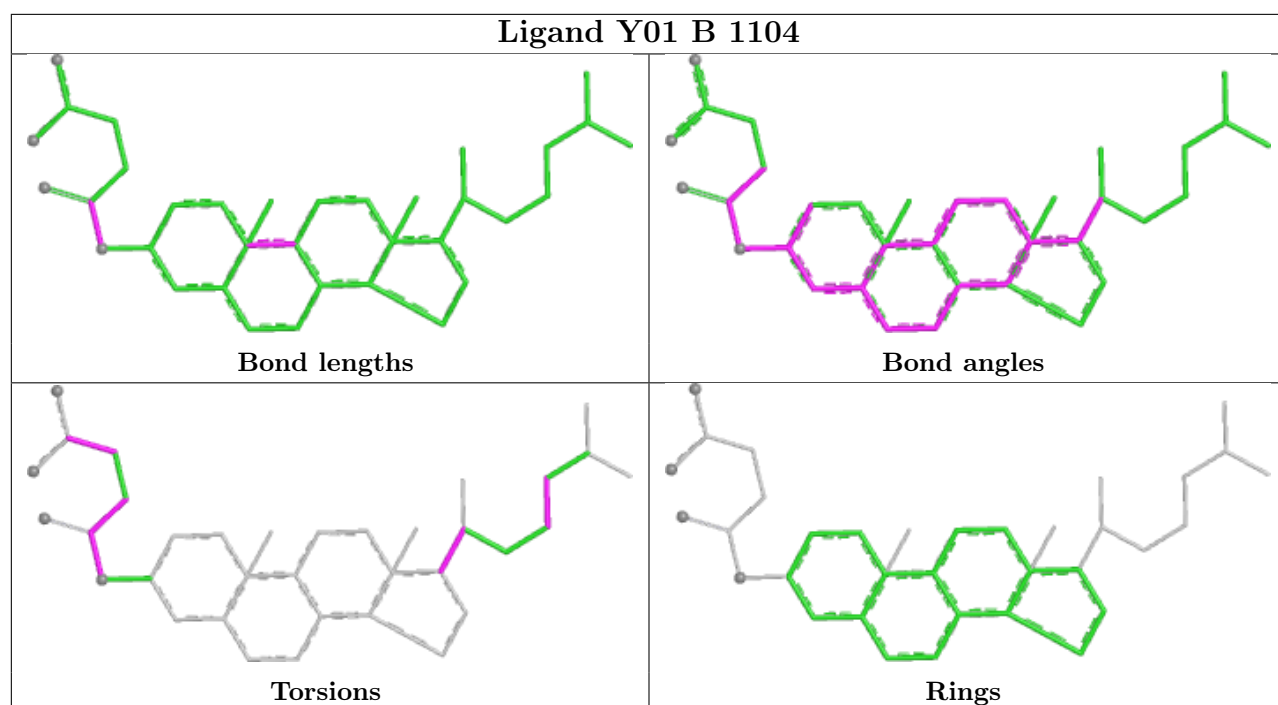
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	1103	Y01	2	0
6	B	1101	98R	1	0
3	B	1104	Y01	4	0
3	C	1103	Y01	2	0
2	A	908	POV	4	0
3	D	1103	Y01	3	0
6	C	1101	98R	1	0
2	C	1102	POV	5	0
3	D	1102	Y01	1	0
2	A	901	POV	3	0
3	A	902	Y01	2	0
3	C	1104	Y01	4	0
6	D	1101	98R	1	0
3	A	903	Y01	5	0
2	B	1102	POV	3	0
6	A	909	98R	1	0

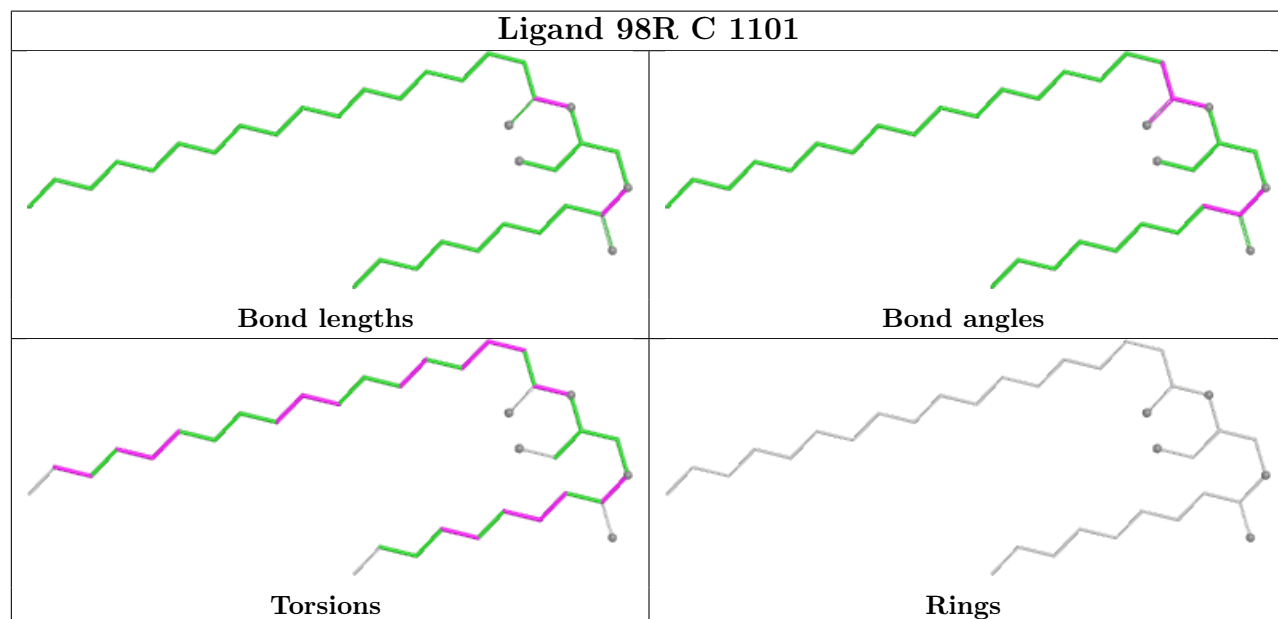
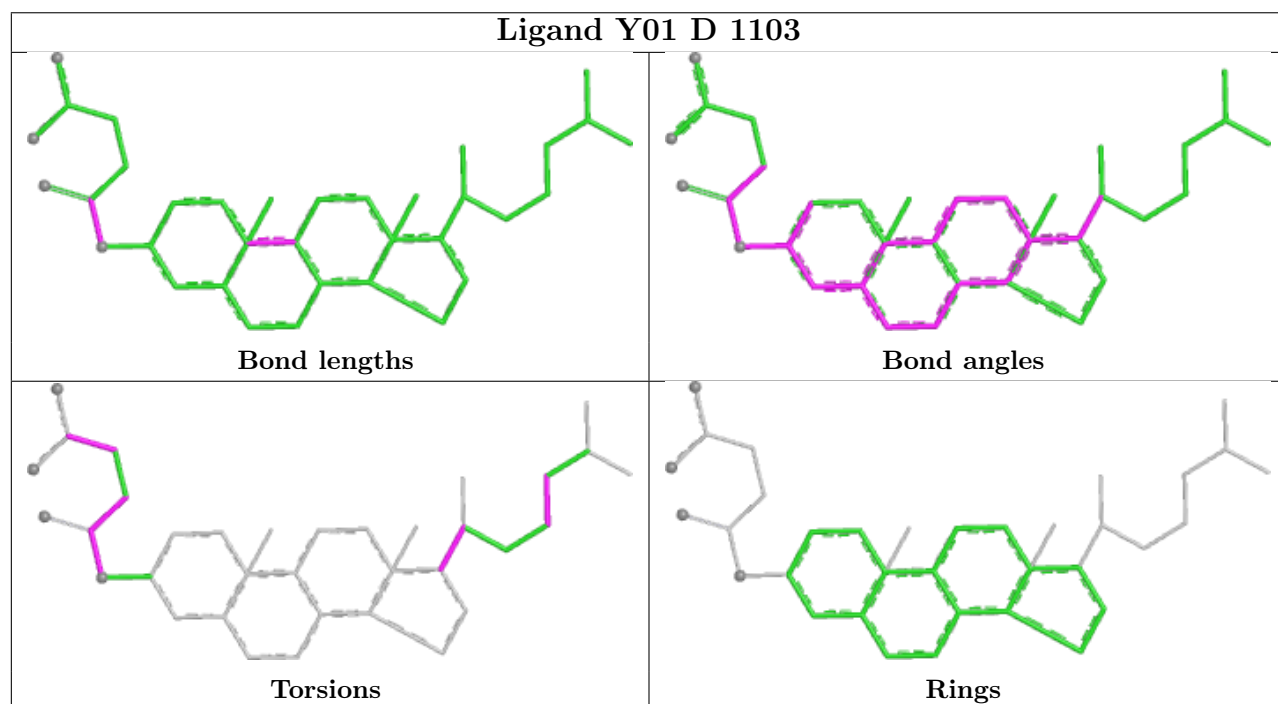
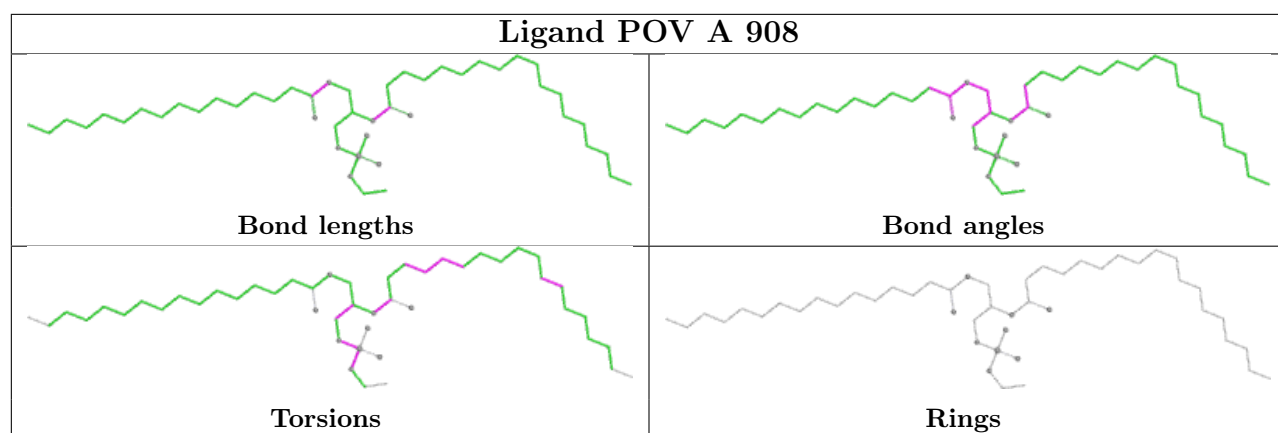
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

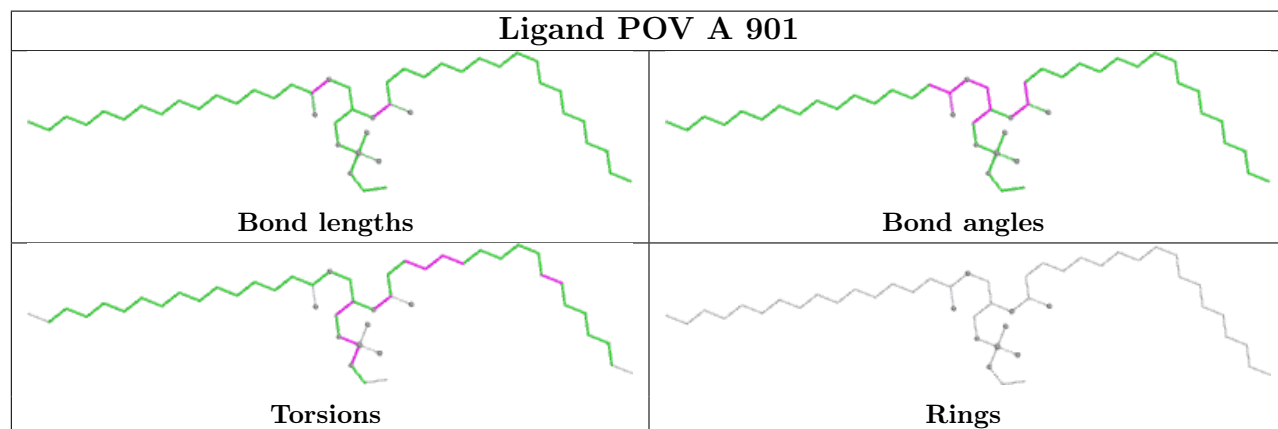
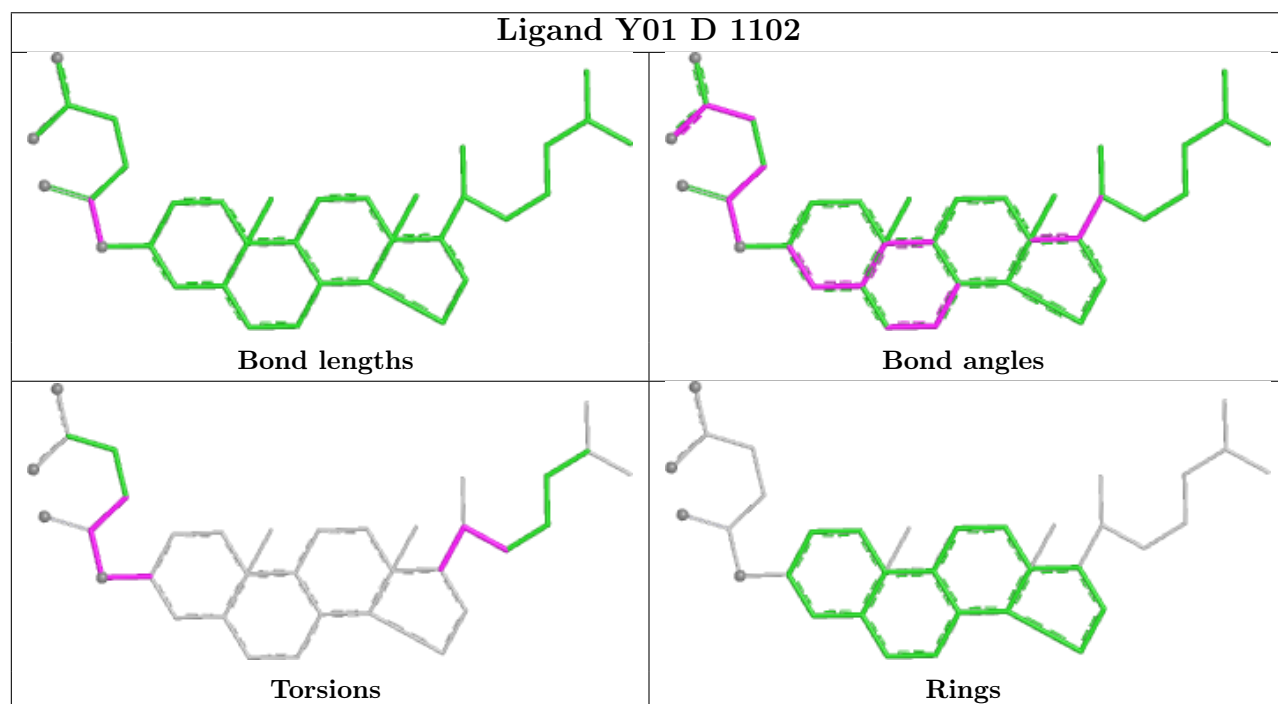
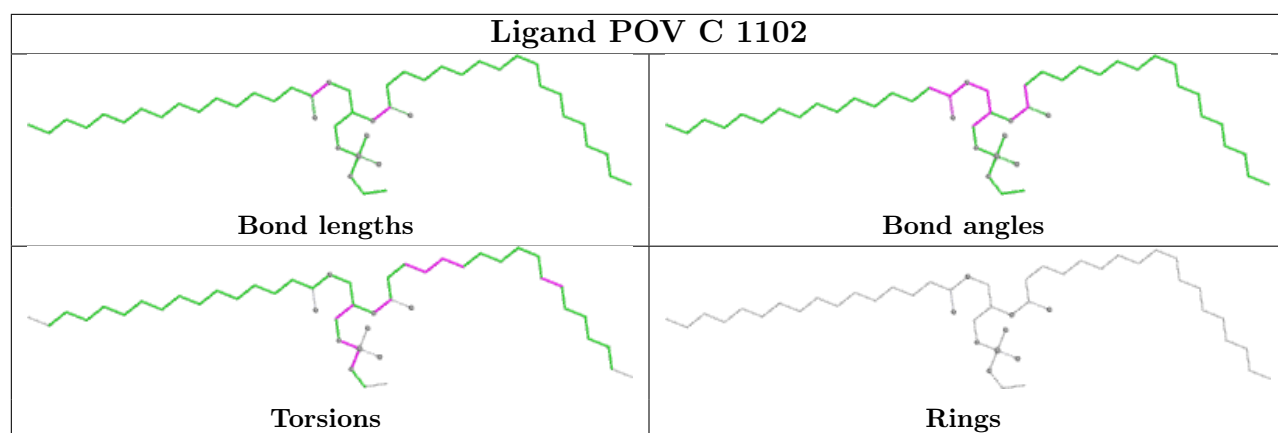


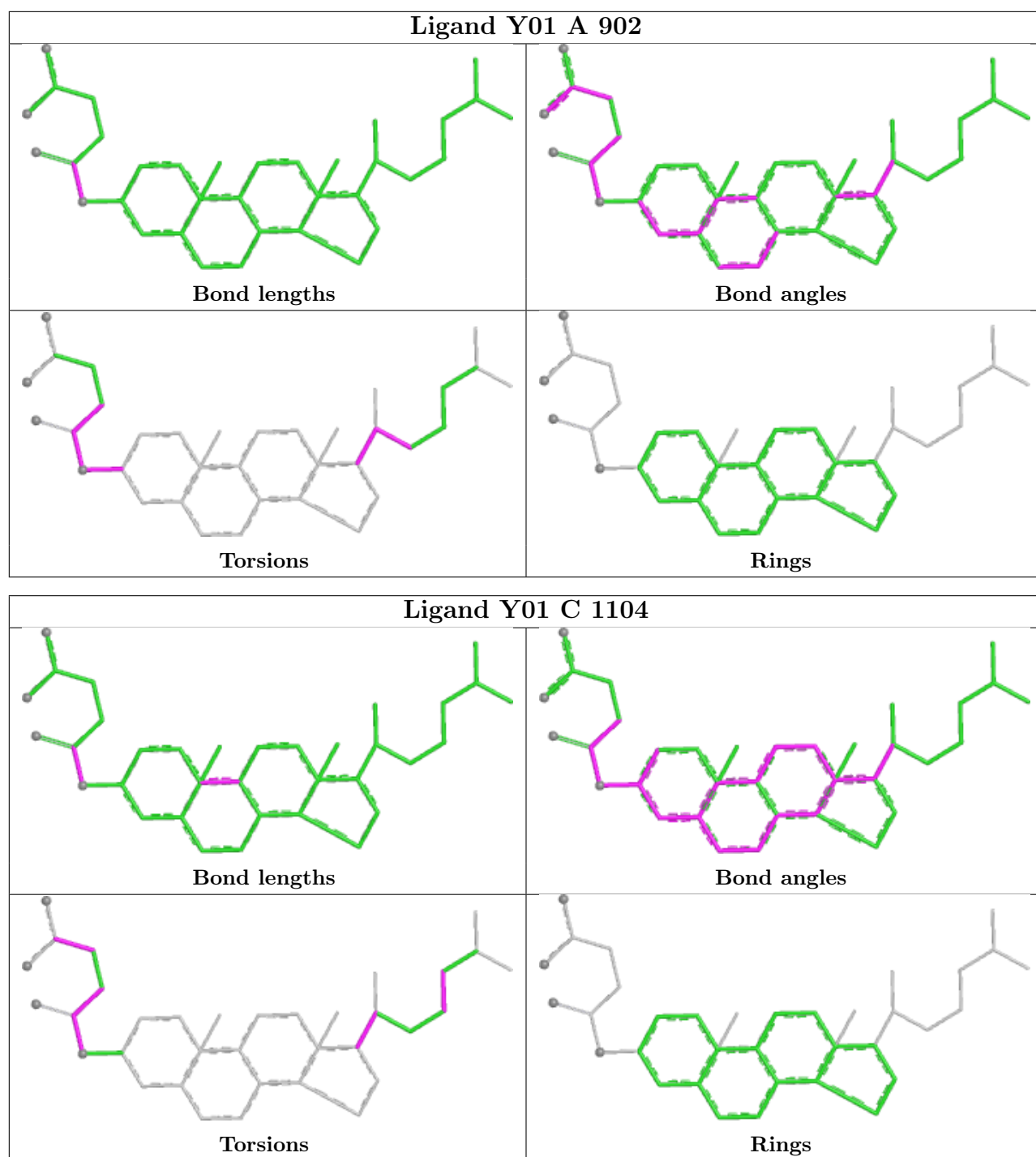
any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

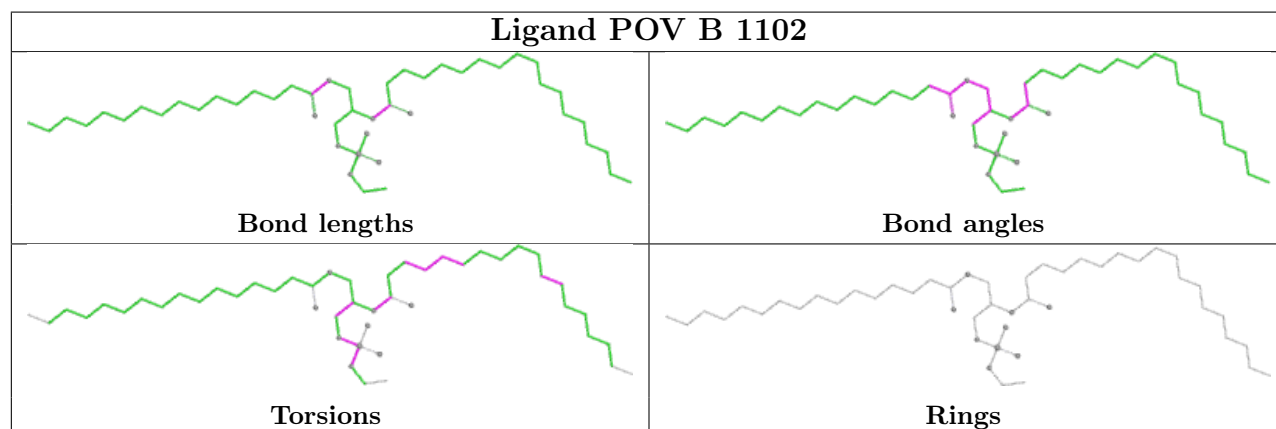
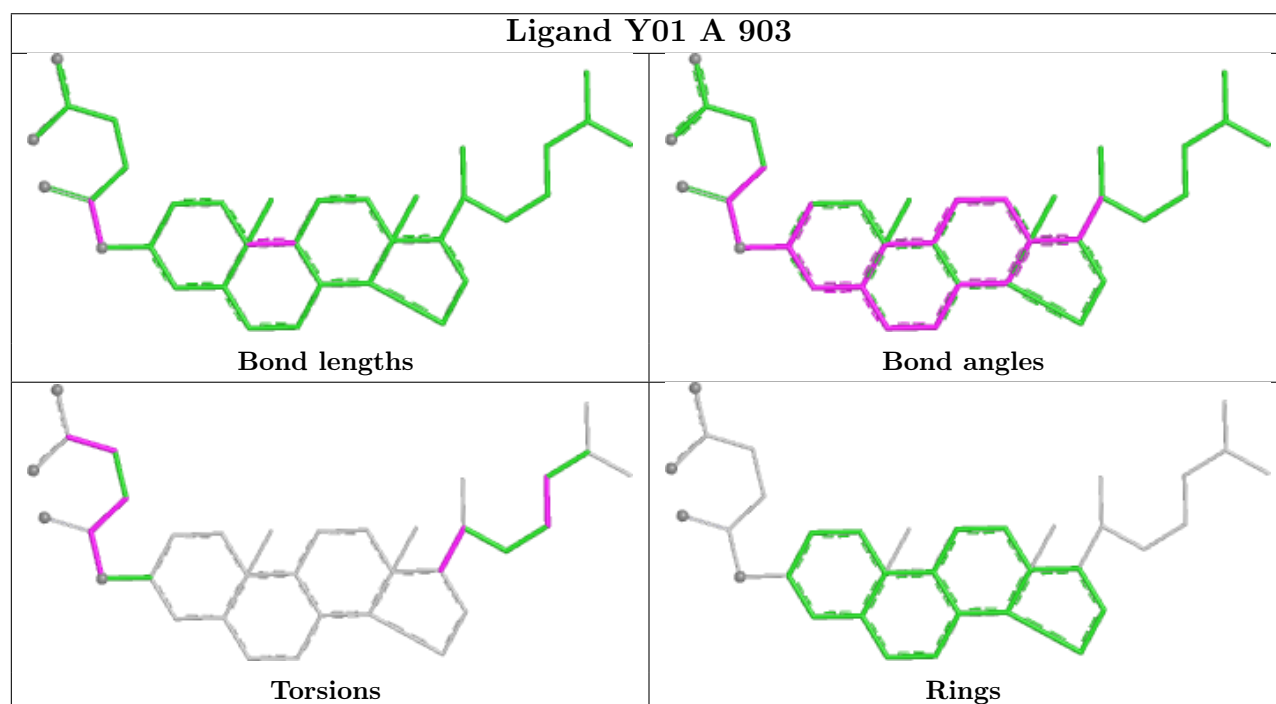
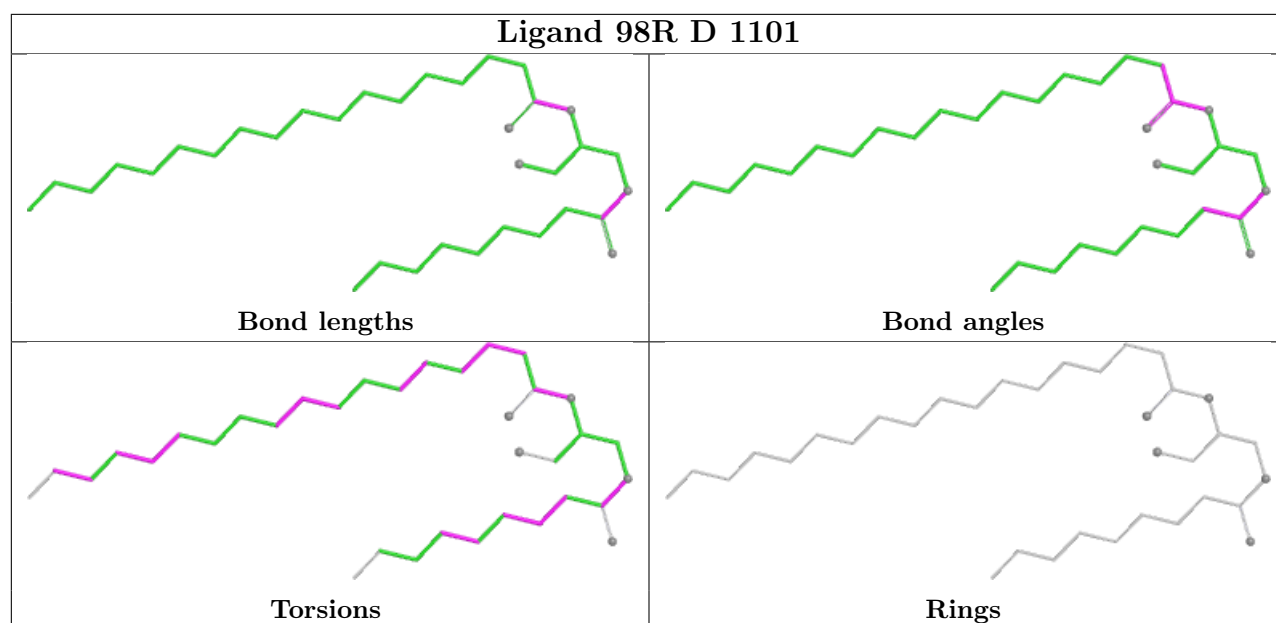


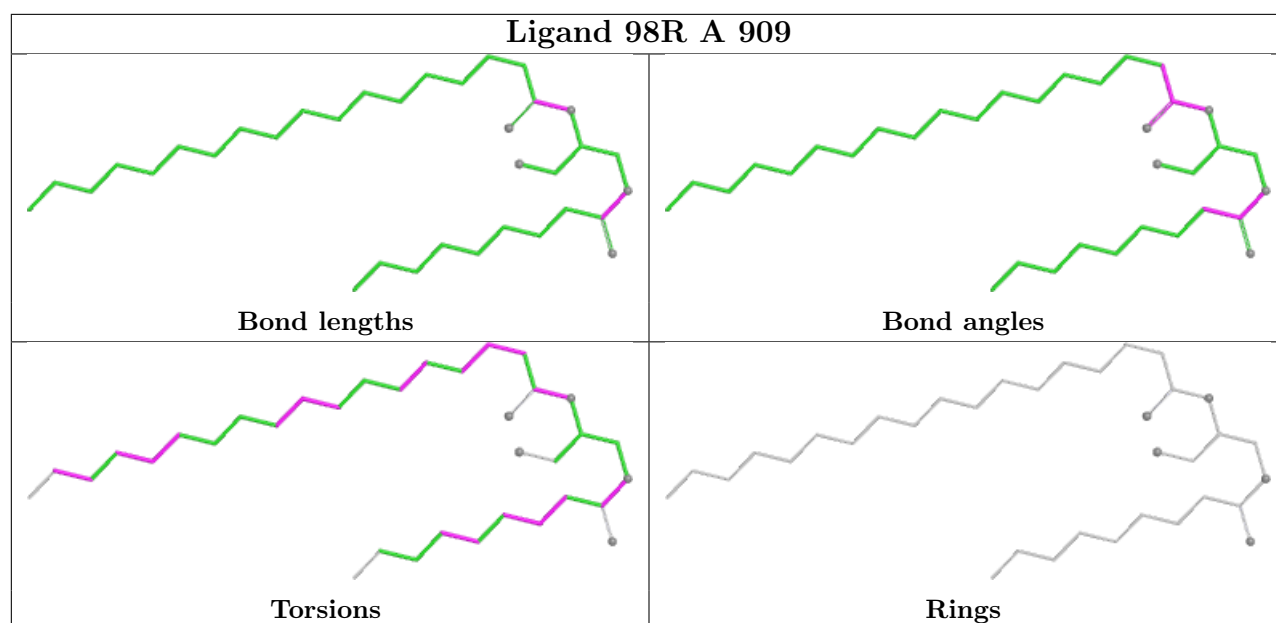












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

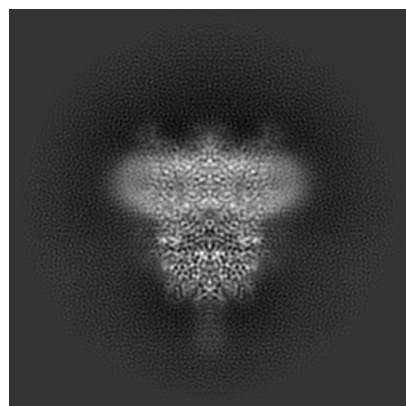
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-30903. These allow visual inspection of the internal detail of the map and identification of artifacts.

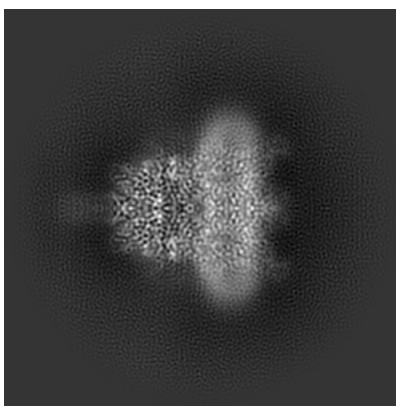
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

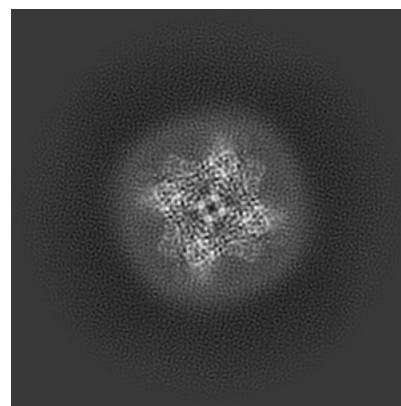
#### 6.1.1 Primary map



X

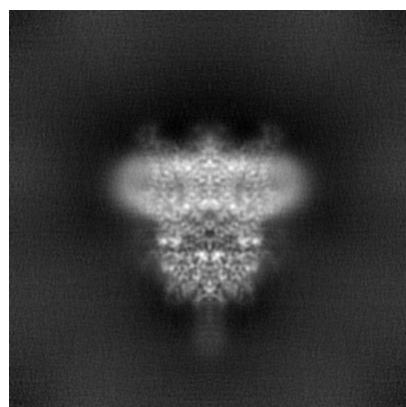


Y

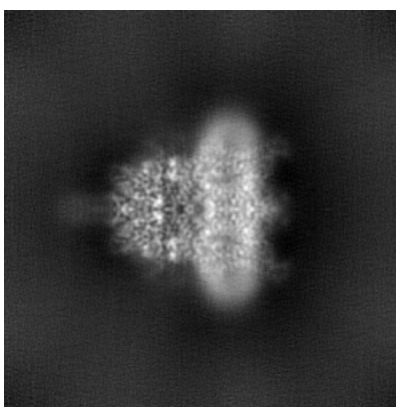


Z

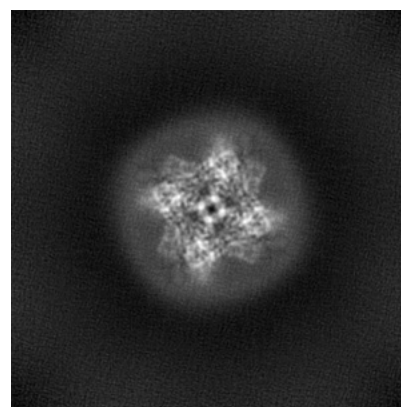
#### 6.1.2 Raw map



X



Y



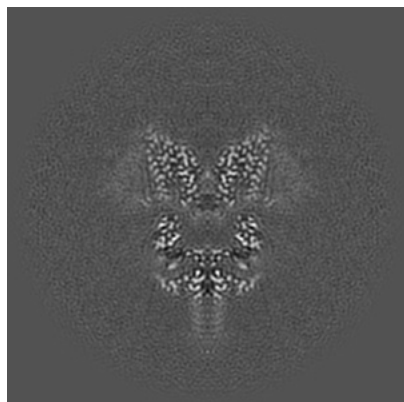
Z

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

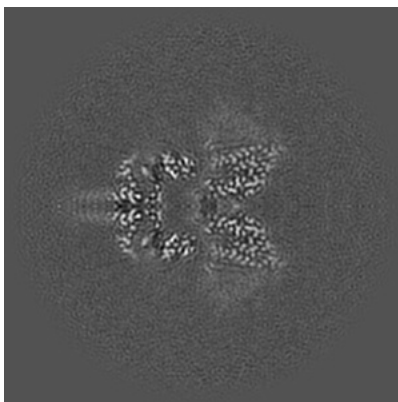


## 6.2 Central slices [i](#)

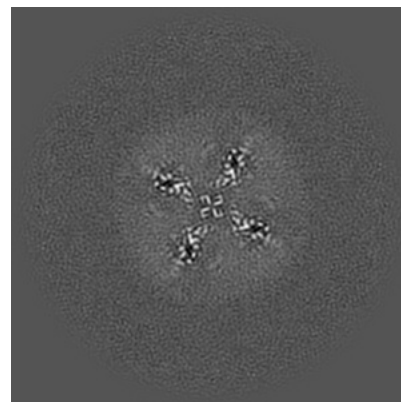
### 6.2.1 Primary map



X Index: 140

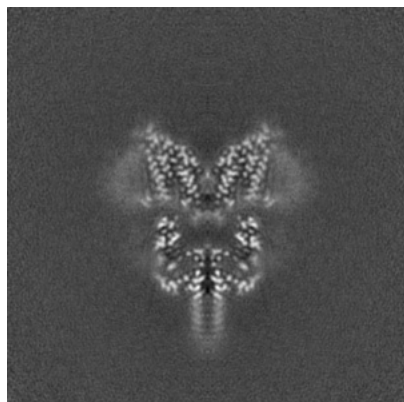


Y Index: 140

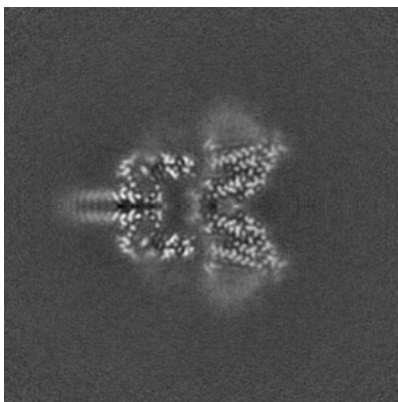


Z Index: 140

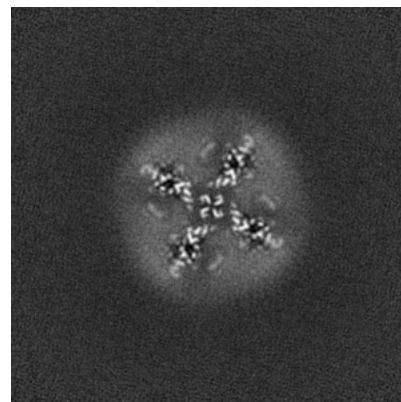
### 6.2.2 Raw map



X Index: 140



Y Index: 140

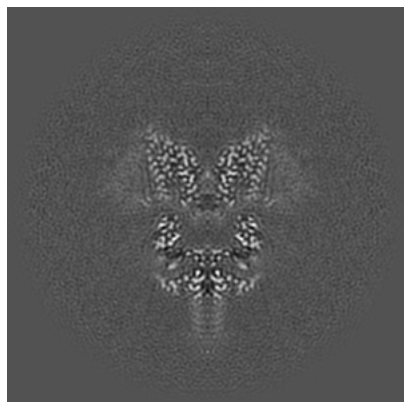


Z Index: 140

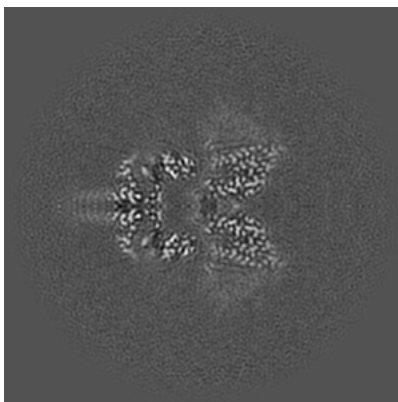
The images above show central slices of the map in three orthogonal directions.

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

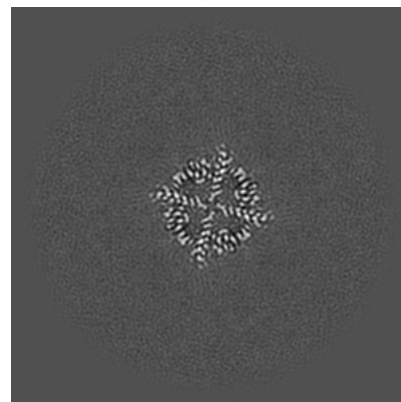
### 6.3.1 Primary map



X Index: 140

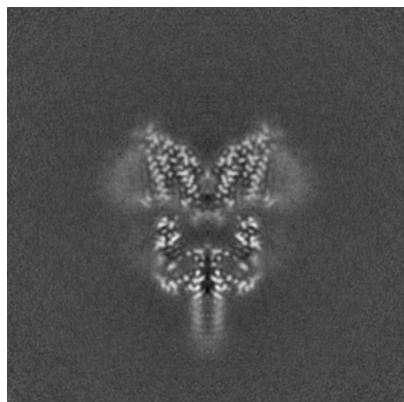


Y Index: 140

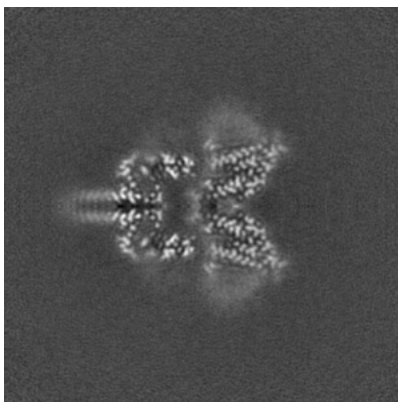


Z Index: 108

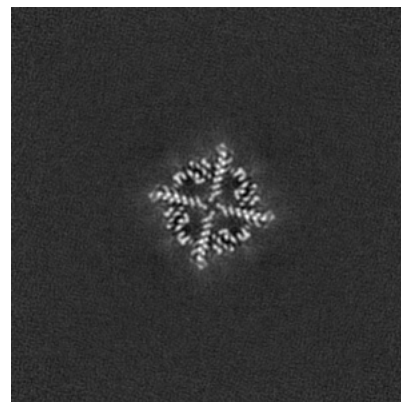
### 6.3.2 Raw map



X Index: 140



Y Index: 140

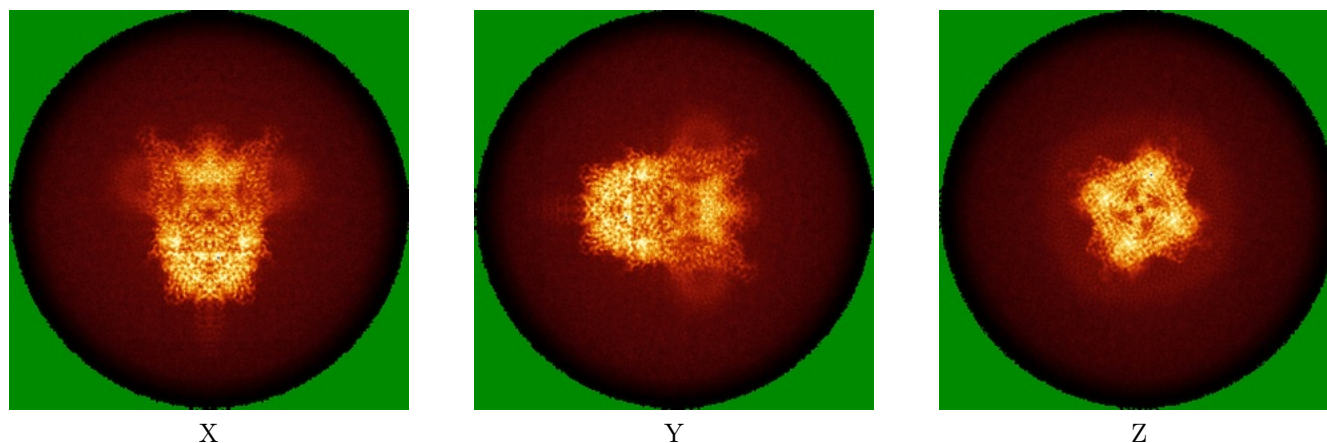


Z Index: 108

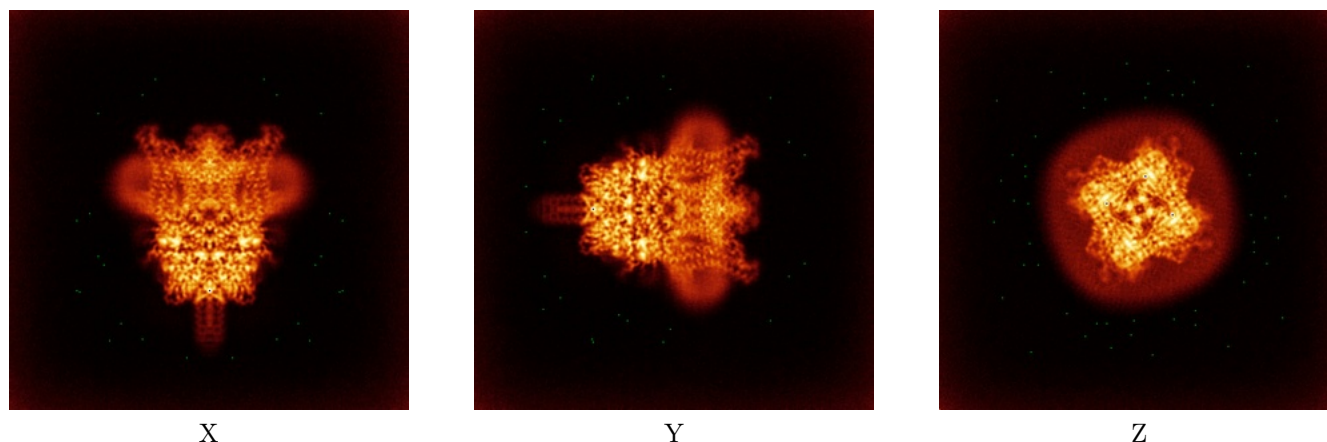
The images above show the largest variance slices of the map in three orthogonal directions.

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

### 6.4.1 Primary map



### 6.4.2 Raw map



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](#)

This section was not generated.

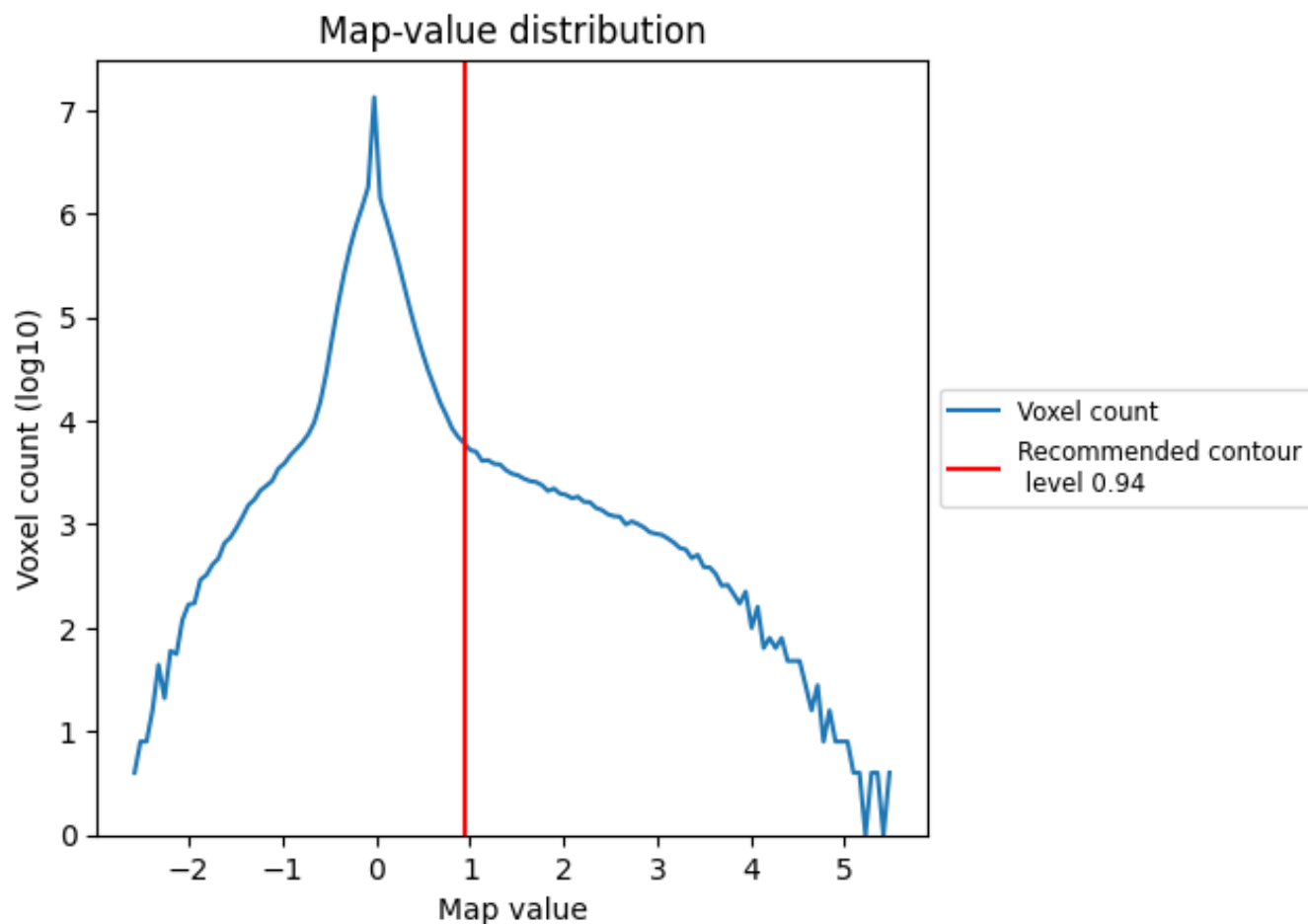
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

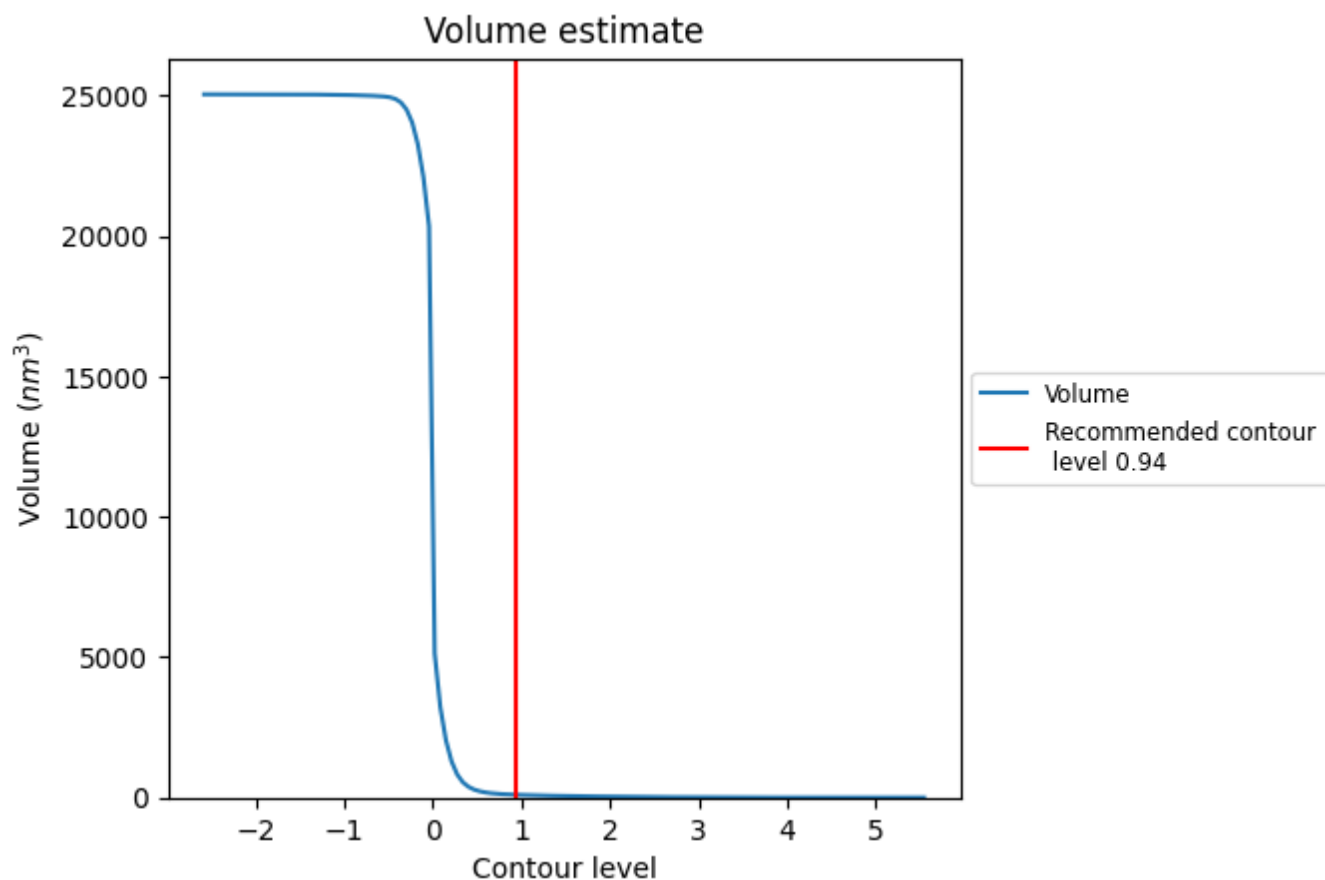
This section contains the results of statistical analysis of the map.

### 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.

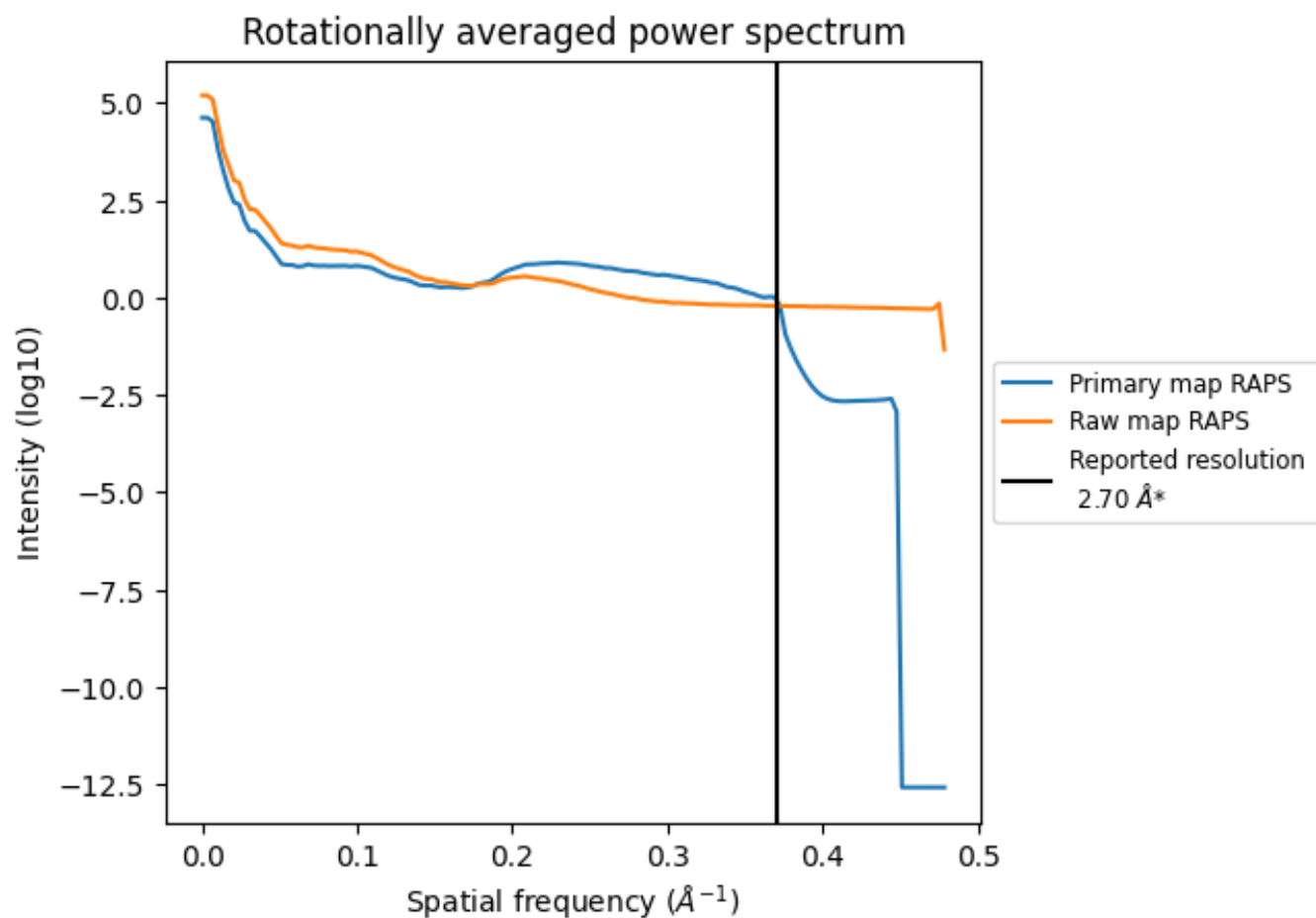
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 99  $\text{nm}^3$ ; this corresponds to an approximate mass of 89 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 ⓘ

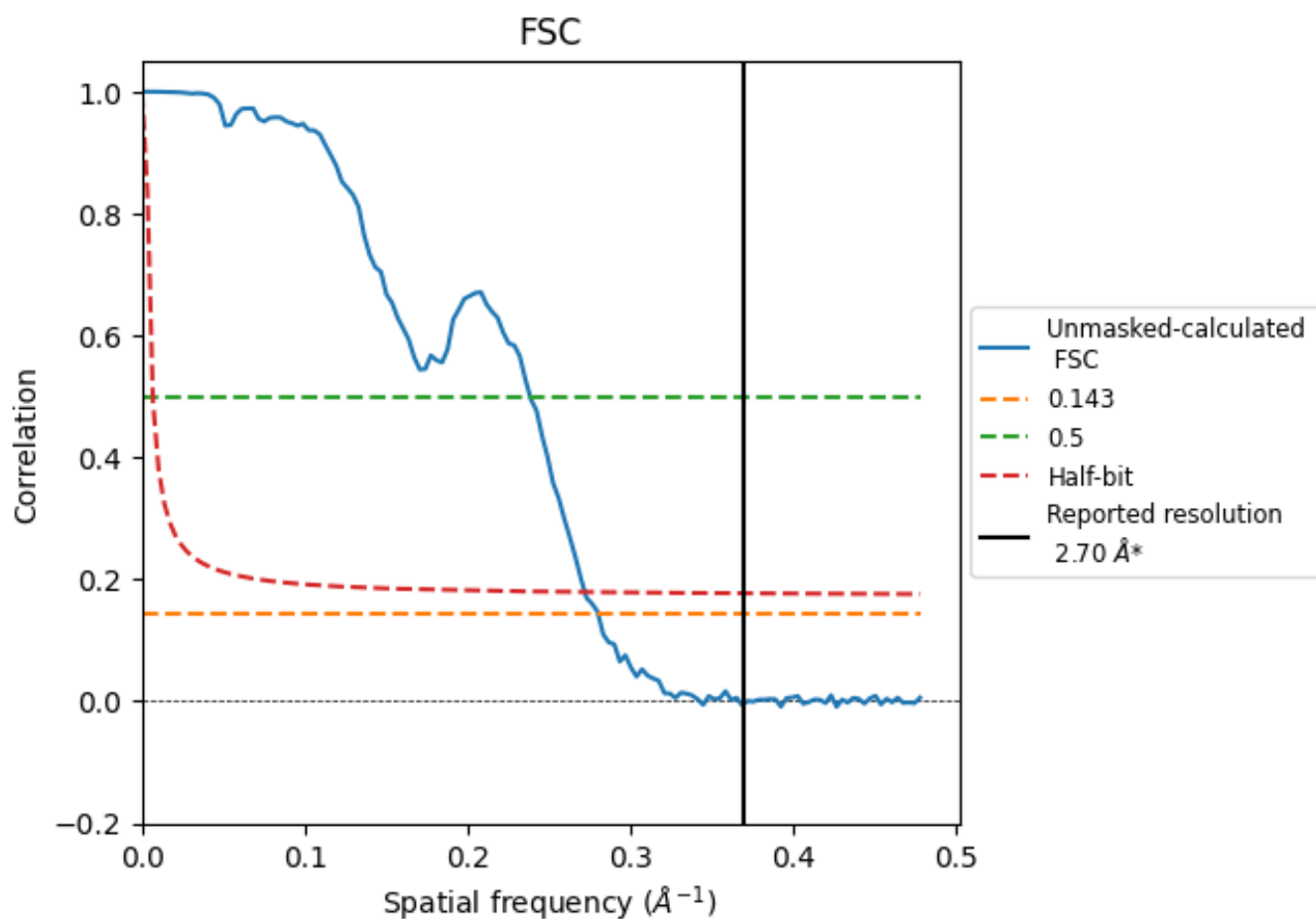


\*Reported resolution corresponds to spatial frequency of 0.370  $\text{\AA}^{-1}$

## 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 0.370  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.56	4.19	3.67

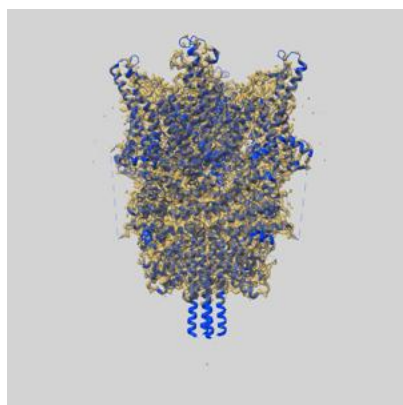
\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.56 differs from the reported value 2.7 by more than 10 %



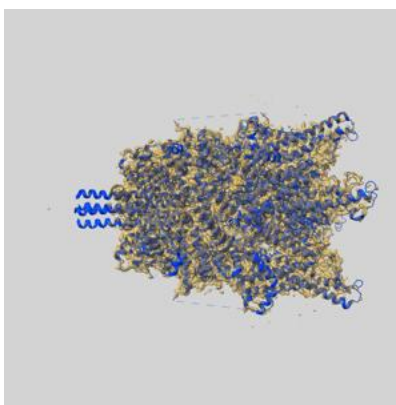
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-30903 and PDB model 7DXB. Per-residue inclusion information can be found in section [3](#) on page [7](#).

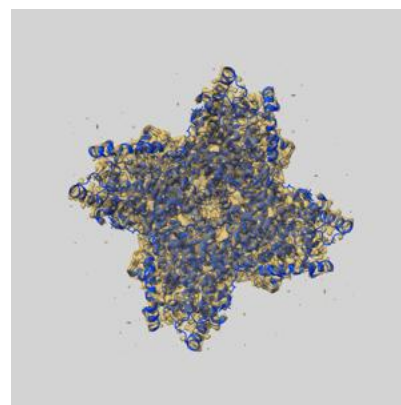
### 9.1 Map-model overlay [i](#)



X



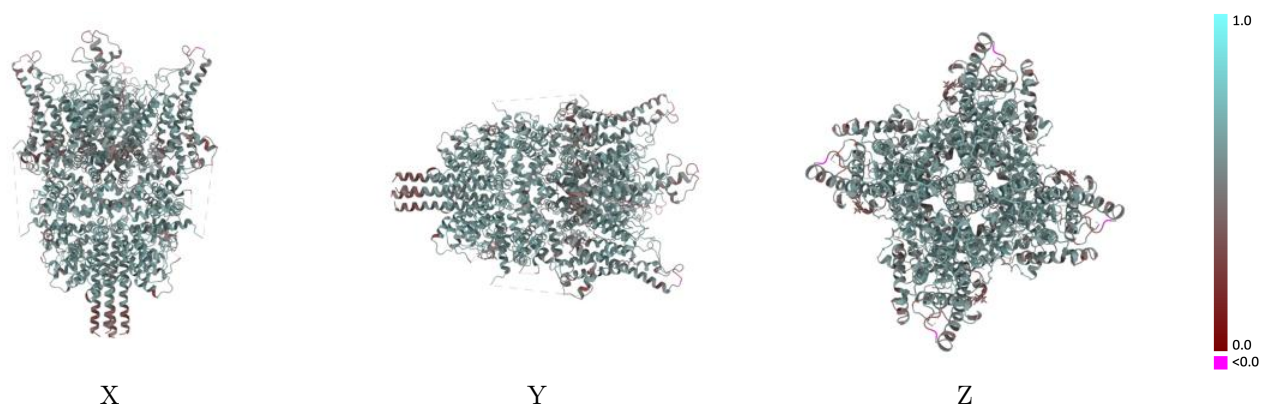
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.94 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](#)

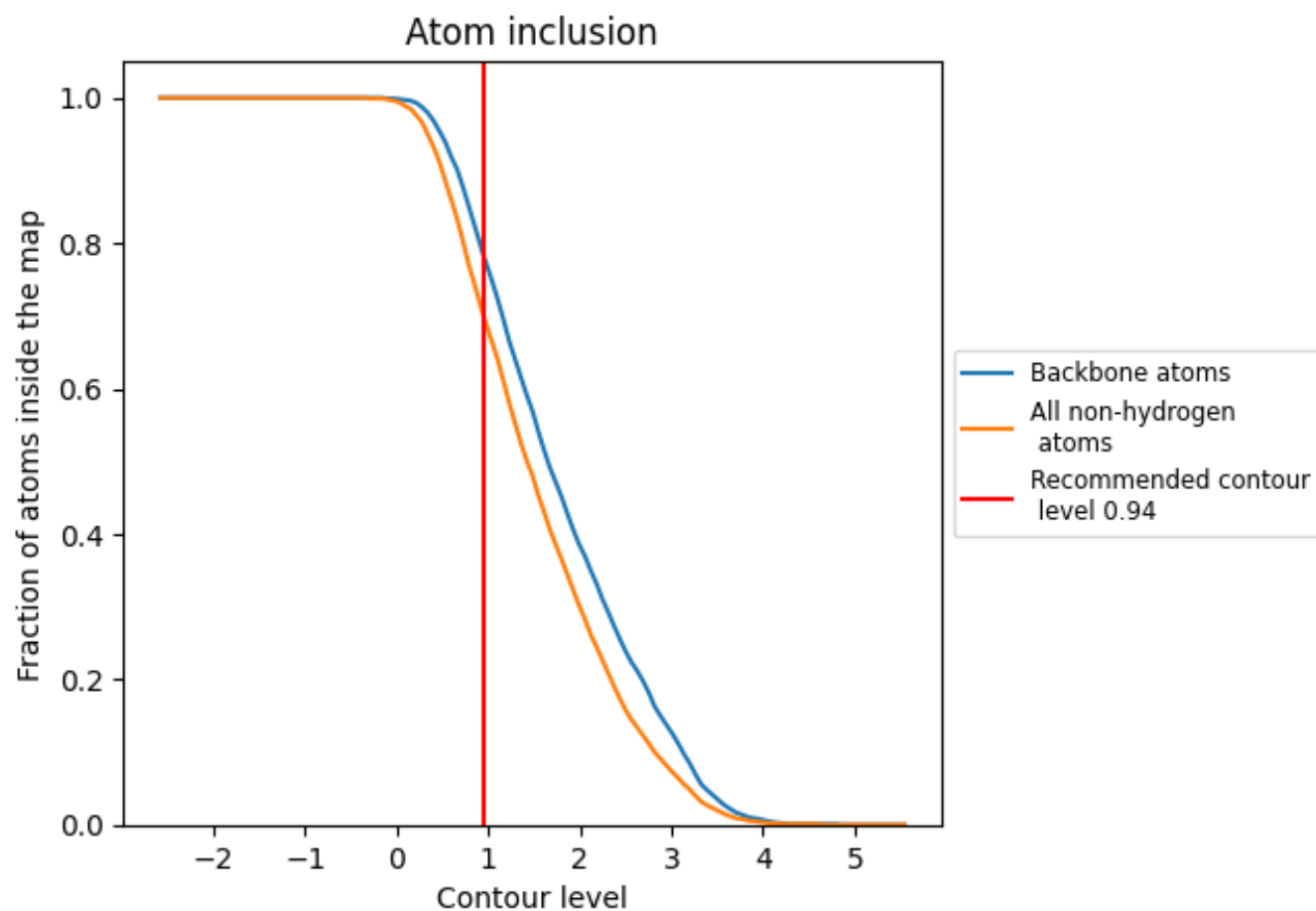


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

This section was not generated.

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 70% 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 (0.94) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.7030	<div></div> 0.5600
A	<div></div> 0.6990	<div></div> 0.5600
B	<div></div> 0.7020	<div></div> 0.5600
C	<div></div> 0.7020	<div></div> 0.5610
D	<div></div> 0.7070	<div></div> 0.5610

