



wwPDB EM Validation Summary Report ⓘ

Jan 18, 2026 – 09:08 PM EST

PDB ID : 9ZA3 / pdb_00009za3
EMDB ID : EMD-73965
Title : Asymmetrically gated state sheep connexin-46 in DMPC nanodiscs at low pH
Authors : Jarodsky, J.M.; Myers, J.B.; Reichow, S.L.
Deposited on : 2025-11-19
Resolution : 2.40 Å (reported)
Based on initial model : 7jkc

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:

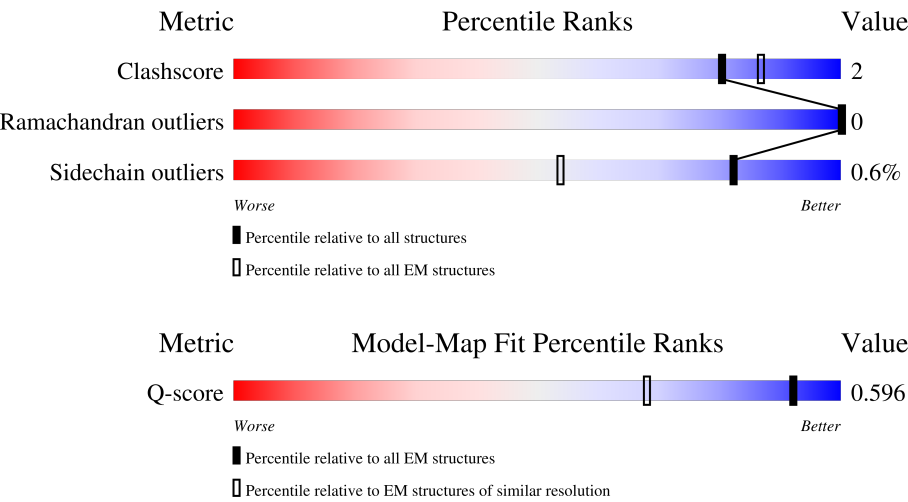
EMDB validation analysis : 0.0.1.dev129
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive 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) : 2.47

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 2.40 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	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	5628 (1.90 - 2.90)

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	413	41% 56%
1	B	413	41% 56%
1	C	413	42% 56%
1	D	413	41% 56%

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Mol	Chain	Length	Quality of chain
1	E	413	
1	F	413	
1	G	413	
1	H	413	
1	I	413	
1	J	413	
1	K	413	
1	L	413	

2 Entry composition

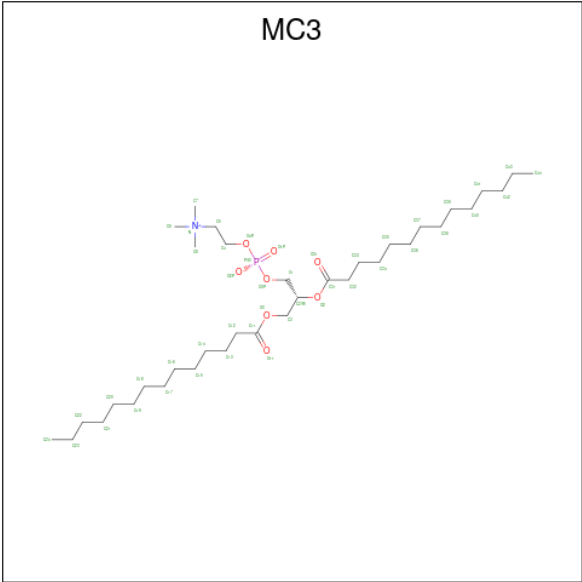
There are 3 unique types of molecules in this entry. The entry contains 44016 atoms, of which 22830 are hydrogens and 0 are deuteriums.

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 Gap junction alpha-3 protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	183	Total	C	H	N	O	S	0	0
			2971	988	1485	239	251	8		
1	B	183	Total	C	H	N	O	S	0	0
			2971	988	1485	239	251	8		
1	C	183	Total	C	H	N	O	S	0	0
			2971	988	1485	239	251	8		
1	D	183	Total	C	H	N	O	S	0	0
			2971	988	1485	239	251	8		
1	E	183	Total	C	H	N	O	S	0	0
			2971	988	1485	239	251	8		
1	F	183	Total	C	H	N	O	S	0	0
			2971	988	1485	239	251	8		
1	G	185	Total	C	H	N	O	S	0	0
			2869	964	1417	235	244	9		
1	H	185	Total	C	H	N	O	S	0	0
			2869	964	1417	235	244	9		
1	I	185	Total	C	H	N	O	S	0	0
			2869	964	1417	235	244	9		
1	J	185	Total	C	H	N	O	S	0	0
			2869	964	1417	235	244	9		
1	K	185	Total	C	H	N	O	S	0	0
			2869	964	1417	235	244	9		
1	L	185	Total	C	H	N	O	S	0	0
			2869	964	1417	235	244	9		

- Molecule 2 is 1,2-DIMYRISTOYL-RAC-GLYCERO-3-PHOSPHOCHOLINE (CCD ID: MC3) (formula: C₃₆H₇₂NO₈P).



Mol	Chain	Residues	Atoms			AltConf
2	A	1	Total	C	H	0
			33	11	22	
2	A	1	Total	C	H	0
			39	13	26	
2	A	1	Total	C	H	0
			36	12	24	
2	A	1	Total	C	H	0
			30	10	20	
2	A	1	Total	C	H	0
			39	13	26	
2	A	1	Total	C	H	0
			27	9	18	
2	A	1	Total	C	H	0
			33	11	22	
2	A	1	Total	C	H	0
			30	10	20	
2	A	1	Total	C	H	0
			18	6	12	
2	A	1	Total	C	H	0
			30	10	20	
2	A	1	Total	C	H	0
			24	8	16	
2	A	1	Total	C	H	0
			39	13	26	
2	A	1	Total	C	H	0
			39	13	26	
2	A	1	Total	C	H	0
			36	12	24	

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Mol	Chain	Residues	Atoms			AltConf
2	A	1	Total	C	H	0
			30	10	20	
2	A	1	Total	C	H	0
			33	11	22	
2	A	1	Total	C	H	0
			27	9	18	
2	A	1	Total	C	H	0
			30	10	20	
2	A	1	Total	C	H	0
			24	8	16	
2	B	1	Total	C	H	0
			39	13	26	
2	B	1	Total	C	H	0
			39	13	26	
2	B	1	Total	C	H	0
			36	12	24	
2	B	1	Total	C	H	0
			30	10	20	
2	B	1	Total	C	H	0
			33	11	22	
2	B	1	Total	C	H	0
			27	9	18	
2	B	1	Total	C	H	0
			30	10	20	
2	B	1	Total	C	H	0
			24	8	16	
2	B	1	Total	C	H	0
			33	11	22	
2	B	1	Total	C	H	0
			39	13	26	
2	B	1	Total	C	H	0
			36	12	24	
2	B	1	Total	C	H	0
			30	10	20	
2	B	1	Total	C	H	0
			39	13	26	
2	B	1	Total	C	H	0
			27	9	18	
2	B	1	Total	C	H	0
			33	11	22	
2	B	1	Total	C	H	0
			30	10	20	

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Mol	Chain	Residues	Atoms			AltConf
2	B	1	Total	C	H	0
			18	6	12	
2	B	1	Total	C	H	0
			30	10	20	
2	B	1	Total	C	H	0
			24	8	16	
2	C	1	Total	C	H	0
			39	13	26	
2	C	1	Total	C	H	0
			39	13	26	
2	C	1	Total	C	H	0
			36	12	24	
2	C	1	Total	C	H	0
			30	10	20	
2	C	1	Total	C	H	0
			33	11	22	
2	C	1	Total	C	H	0
			27	9	18	
2	C	1	Total	C	H	0
			30	10	20	
2	C	1	Total	C	H	0
			24	8	16	
2	C	1	Total	C	H	0
			33	11	22	
2	C	1	Total	C	H	0
			39	13	26	
2	C	1	Total	C	H	0
			36	12	24	
2	C	1	Total	C	H	0
			30	10	20	
2	C	1	Total	C	H	0
			39	13	26	
2	C	1	Total	C	H	0
			27	9	18	
2	C	1	Total	C	H	0
			33	11	22	
2	C	1	Total	C	H	0
			30	10	20	
2	C	1	Total	C	H	0
			18	6	12	
2	C	1	Total	C	H	0
			30	10	20	

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Mol	Chain	Residues	Atoms			AltConf
2	C	1	Total	C	H	0
			24	8	16	
2	D	1	Total	C	H	0
			39	13	26	
2	D	1	Total	C	H	0
			39	13	26	
2	D	1	Total	C	H	0
			36	12	24	
2	D	1	Total	C	H	0
			30	10	20	
2	D	1	Total	C	H	0
			33	11	22	
2	D	1	Total	C	H	0
			27	9	18	
2	D	1	Total	C	H	0
			30	10	20	
2	D	1	Total	C	H	0
			24	8	16	
2	D	1	Total	C	H	0
			33	11	22	
2	D	1	Total	C	H	0
			39	13	26	
2	D	1	Total	C	H	0
			36	12	24	
2	D	1	Total	C	H	0
			30	10	20	
2	D	1	Total	C	H	0
			39	13	26	
2	D	1	Total	C	H	0
			27	9	18	
2	D	1	Total	C	H	0
			33	11	22	
2	D	1	Total	C	H	0
			30	10	20	
2	D	1	Total	C	H	0
			18	6	12	
2	D	1	Total	C	H	0
			30	10	20	
2	D	1	Total	C	H	0
			24	8	16	
2	E	1	Total	C	H	0
			39	13	26	

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Mol	Chain	Residues	Atoms			AltConf
2	E	1	Total	C	H	0
			39	13	26	
2	E	1	Total	C	H	0
			36	12	24	
2	E	1	Total	C	H	0
			30	10	20	
2	E	1	Total	C	H	0
			33	11	22	
2	E	1	Total	C	H	0
			27	9	18	
2	E	1	Total	C	H	0
			30	10	20	
2	E	1	Total	C	H	0
			24	8	16	
2	E	1	Total	C	H	0
			33	11	22	
2	E	1	Total	C	H	0
			39	13	26	
2	E	1	Total	C	H	0
			36	12	24	
2	E	1	Total	C	H	0
			30	10	20	
2	E	1	Total	C	H	0
			39	13	26	
2	E	1	Total	C	H	0
			27	9	18	
2	E	1	Total	C	H	0
			33	11	22	
2	E	1	Total	C	H	0
			30	10	20	
2	E	1	Total	C	H	0
			18	6	12	
2	E	1	Total	C	H	0
			30	10	20	
2	E	1	Total	C	H	0
			24	8	16	
2	F	1	Total	C	H	0
			39	13	26	
2	F	1	Total	C	H	0
			39	13	26	
2	F	1	Total	C	H	0
			36	12	24	

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Mol	Chain	Residues	Atoms				AltConf
2	F	1	Total 30	C 10	H 20	0	
2	F	1	Total 33	C 11	H 22	0	
2	F	1	Total 27	C 9	H 18	0	
2	F	1	Total 30	C 10	H 20	0	
2	F	1	Total 24	C 8	H 16	0	
2	F	1	Total 33	C 11	H 22	0	
2	F	1	Total 39	C 13	H 26	0	
2	F	1	Total 36	C 12	H 24	0	
2	F	1	Total 30	C 10	H 20	0	
2	F	1	Total 39	C 13	H 26	0	
2	F	1	Total 27	C 9	H 18	0	
2	F	1	Total 33	C 11	H 22	0	
2	F	1	Total 30	C 10	H 20	0	
2	F	1	Total 18	C 6	H 12	0	
2	F	1	Total 30	C 10	H 20	0	
2	F	1	Total 24	C 8	H 16	0	
2	G	1	Total 27	C 9	H 18	0	
2	G	1	Total 52	C 16	H 27 O 8 P 1	0	
2	G	1	Total 33	C 11	H 22	0	
2	G	1	Total 39	C 13	H 26	0	
2	G	1	Total 36	C 12	H 24	0	

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Mol	Chain	Residues	Atoms					AltConf
2	G	1	Total	C	H			0
			33	11	22			
2	G	1	Total	C	H			0
			38	13	25			
2	G	1	Total	C	H			0
			15	5	10			
2	G	1	Total	C	H			0
			36	12	24			
2	G	1	Total	C	H			0
			36	12	24			
2	G	1	Total	C	H			0
			33	11	22			
2	G	1	Total	C	H			0
			24	8	16			
2	G	1	Total	C	H			0
			30	10	20			
2	G	1	Total	C	H			0
			27	9	18			
2	G	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	G	1	Total	C	H			0
			39	13	26			
2	G	1	Total	C	H			0
			36	12	24			
2	G	1	Total	C	H			0
			39	13	26			
2	G	1	Total	C	H			0
			39	13	26			
2	G	1	Total	C	H			0
			30	10	20			
2	G	1	Total	C	H			0
			36	12	24			
2	G	1	Total	C	H			0
			27	9	18			
2	G	1	Total	C	H			0
			24	8	16			
2	H	1	Total	C	H			0
			27	9	18			
2	H	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	H	1	Total	C	H			0
			33	11	22			

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Mol	Chain	Residues	Atoms					AltConf
2	H	1	Total	C	H			0
			39	13	26			
2	H	1	Total	C	H			0
			36	12	24			
2	H	1	Total	C	H			0
			33	11	22			
2	H	1	Total	C	H			0
			38	13	25			
2	H	1	Total	C	H			0
			15	5	10			
2	H	1	Total	C	H			0
			36	12	24			
2	H	1	Total	C	H			0
			36	12	24			
2	H	1	Total	C	H			0
			33	11	22			
2	H	1	Total	C	H			0
			24	8	16			
2	H	1	Total	C	H			0
			30	10	20			
2	H	1	Total	C	H			0
			27	9	18			
2	H	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	H	1	Total	C	H			0
			39	13	26			
2	H	1	Total	C	H			0
			36	12	24			
2	H	1	Total	C	H			0
			39	13	26			
2	H	1	Total	C	H			0
			39	13	26			
2	H	1	Total	C	H			0
			30	10	20			
2	H	1	Total	C	H			0
			36	12	24			
2	H	1	Total	C	H			0
			27	9	18			
2	H	1	Total	C	H			0
			24	8	16			
2	I	1	Total	C	H			0
			27	9	18			

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Mol	Chain	Residues	Atoms					AltConf
2	I	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	I	1	Total	C	H			0
			33	11	22			
2	I	1	Total	C	H			0
			39	13	26			
2	I	1	Total	C	H			0
			36	12	24			
2	I	1	Total	C	H			0
			33	11	22			
2	I	1	Total	C	H			0
			38	13	25			
2	I	1	Total	C	H			0
			15	5	10			
2	I	1	Total	C	H			0
			36	12	24			
2	I	1	Total	C	H			0
			36	12	24			
2	I	1	Total	C	H			0
			33	11	22			
2	I	1	Total	C	H			0
			24	8	16			
2	I	1	Total	C	H			0
			30	10	20			
2	I	1	Total	C	H			0
			27	9	18			
2	I	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	I	1	Total	C	H			0
			39	13	26			
2	I	1	Total	C	H			0
			36	12	24			
2	I	1	Total	C	H			0
			39	13	26			
2	I	1	Total	C	H			0
			39	13	26			
2	I	1	Total	C	H			0
			30	10	20			
2	I	1	Total	C	H			0
			36	12	24			
2	I	1	Total	C	H			0
			27	9	18			

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Mol	Chain	Residues	Atoms					AltConf
2	I	1	Total	C	H			0
			24	8	16			
2	J	1	Total	C	H			0
			27	9	18			
2	J	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	J	1	Total	C	H			0
			33	11	22			
2	J	1	Total	C	H			0
			39	13	26			
2	J	1	Total	C	H			0
			36	12	24			
2	J	1	Total	C	H			0
			33	11	22			
2	J	1	Total	C	H			0
			38	13	25			
2	J	1	Total	C	H			0
			15	5	10			
2	J	1	Total	C	H			0
			36	12	24			
2	J	1	Total	C	H			0
			36	12	24			
2	J	1	Total	C	H			0
			33	11	22			
2	J	1	Total	C	H			0
			24	8	16			
2	J	1	Total	C	H			0
			30	10	20			
2	J	1	Total	C	H			0
			27	9	18			
2	J	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	J	1	Total	C	H			0
			39	13	26			
2	J	1	Total	C	H			0
			36	12	24			
2	J	1	Total	C	H			0
			39	13	26			
2	J	1	Total	C	H			0
			39	13	26			
2	J	1	Total	C	H			0
			30	10	20			

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Mol	Chain	Residues	Atoms					AltConf
2	J	1	Total	C	H			0
			36	12	24			
2	J	1	Total	C	H			0
			27	9	18			
2	J	1	Total	C	H			0
			24	8	16			
2	K	1	Total	C	H			0
			27	9	18			
2	K	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	K	1	Total	C	H			0
			33	11	22			
2	K	1	Total	C	H			0
			39	13	26			
2	K	1	Total	C	H			0
			36	12	24			
2	K	1	Total	C	H			0
			33	11	22			
2	K	1	Total	C	H			0
			38	13	25			
2	K	1	Total	C	H			0
			15	5	10			
2	K	1	Total	C	H			0
			36	12	24			
2	K	1	Total	C	H			0
			36	12	24			
2	K	1	Total	C	H			0
			33	11	22			
2	K	1	Total	C	H			0
			24	8	16			
2	K	1	Total	C	H			0
			30	10	20			
2	K	1	Total	C	H			0
			27	9	18			
2	K	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	K	1	Total	C	H			0
			39	13	26			
2	K	1	Total	C	H			0
			36	12	24			
2	K	1	Total	C	H			0
			39	13	26			

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Mol	Chain	Residues	Atoms					AltConf
2	K	1	Total	C	H			0
			39	13	26			
2	K	1	Total	C	H			0
			30	10	20			
2	K	1	Total	C	H			0
			36	12	24			
2	K	1	Total	C	H			0
			27	9	18			
2	K	1	Total	C	H			0
			24	8	16			
2	L	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	L	1	Total	C	H			0
			39	13	26			
2	L	1	Total	C	H			0
			36	12	24			
2	L	1	Total	C	H			0
			39	13	26			
2	L	1	Total	C	H			0
			39	13	26			
2	L	1	Total	C	H			0
			30	10	20			
2	L	1	Total	C	H			0
			36	12	24			
2	L	1	Total	C	H			0
			27	9	18			
2	L	1	Total	C	H			0
			24	8	16			
2	L	1	Total	C	H			0
			27	9	18			
2	L	1	Total	C	H	O	P	0
			52	16	27	8	1	
2	L	1	Total	C	H			0
			33	11	22			
2	L	1	Total	C	H			0
			39	13	26			
2	L	1	Total	C	H			0
			36	12	24			
2	L	1	Total	C	H			0
			33	11	22			
2	L	1	Total	C	H			0
			38	13	25			

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Mol	Chain	Residues	Atoms			AltConf
2	L	1	Total	C	H	0
			15	5	10	
2	L	1	Total	C	H	0
			36	12	24	
2	L	1	Total	C	H	0
			36	12	24	
2	L	1	Total	C	H	0
			33	11	22	
2	L	1	Total	C	H	0
			24	8	16	
2	L	1	Total	C	H	0
			30	10	20	
2	L	1	Total	C	H	0
			27	9	18	

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		AltConf
3	A	63	Total	O	0
			63	63	
3	B	63	Total	O	0
			63	63	
3	C	63	Total	O	0
			63	63	
3	D	63	Total	O	0
			63	63	
3	E	63	Total	O	0
			63	63	
3	F	63	Total	O	0
			63	63	
3	G	55	Total	O	0
			55	55	
3	H	55	Total	O	0
			55	55	
3	I	55	Total	O	0
			55	55	
3	J	55	Total	O	0
			55	55	
3	K	55	Total	O	0
			55	55	
3	L	55	Total	O	0
			55	55	

[illegible]

Chain D: 41% 0% 56%

GLY	ARG	GLU	TYR	GL140	MET
SER	GLN	PRO	TYR	G2	G2
SER	THR	THR	PRO	D3	D3
LYS	SER	SER	SER	V4	V4
ALA	ALA	ALA	ALA	L7	L7
SER	ARG	SER	SER	E16	E16
SER	LYS	SER	SER	R177	R177
SER	ALA	GLY	LEU	L212	L212
SER	PRO	GLN	GLN	G223	T19
GLY	PRO	ALA	ALA	TRP	V20
GLY	ALA	SER	SER	LYS	L37
ARG	ALA	ALA	ALA	LYS	L37
ARG	THR	PRO	PRO	LEU	A41
ALA	ALA	PRO	TYR	LYS	A41
ALA	ALA	PRO	PRO	GLN	Q81
ASP	ALA	ALA	PRO	GLY	Q81
LEU	PRO	ALA	PRO	MET	V85
ALA	ALA	ALA	PRO	THR	V85
ILE	GLY	GLY	LEU	SER	V100
	GLY	GLY	PRO	PHE	ARG
	GLN	ALA	ALA	ARG	GLU
	GLN	LEU	ALA	PRO	GLU
	PHE	PRO	PRO	ASP	LYS
	LEU	GLY	PRO	THR	ARG
	PRO	PRO	THR	GLY	LYS
	GLY	GLY	PRO	SER	GLU
	GLY	ALA	THR	ALA	GLU
	ALA	ALA	GLY	GLY	GLU
	GLY	GLY	GLY	SER	PRO
	SER	SER	THR	ALA	PRO
	GLY	GLY	PRO	LYS	LYS
	ASP	THR	THR	PRO	ALA
	ASP	THR	THR	MET	ALA
	ASP	GLY	LEU	GLY	ALA
	GLY	GLY	GLY	SER	PRO
	GLY	GLY	GLY	PRO	ALA
	GLY	GLY	GLY	LEU	GLU
	VAL	ASN	GLY	LEU	HIS
	THR	GLN	GLN	PRO	GLN
	ALA	GLY	GLY	PRO	ASP
	VAL	LEU	LEU	ASN	PRO
	GLU	ARG	ARG	SER	ALA
	GLU	ALA	ALA	SER	PRO
	HIS	PRO	PRO	ALA	VAL
	ALA	ALA	ALA	PRO	ARG
	PRO	GLN	GLN	ALA	ASP
	PRO	ASN	ASN	VAL	ASP
	GLU	CYS	THR	THR	ARG
	PRO	ALA	ILE	ILE	GLY
	ALA	ASN	ASN	PHE	LYS
	ASP	GLY	ARG	PRO	VAL
	PRO	ALA	ALA	PRO	ILE
	THR	THR	THR	PRO	ALA

Chain E: 41% . 56%

GLY	GLU	TYR	G140	MET
ARG	PRO	TYR		G2
SER	GLN	ALA	N149	D3
SER	THR	PRO		N4
LYS	SER	SER	E157	
ALA	ALA	ALA		L7
SER	ARG	SER	R177	E16
SER	LYS	SER		
SER	ALA	LEU	L212	T19
SER	SER	GLY		V20
GLY	PRO	GLN	G223	
GLY	PRO	ALA	TRP	L37
ARG	ALA	SER	LYS	
ALA	SER	ALA	LYS	A41
ALA	THR	PRO	LEU	
ALA	PRO	TYR	LYS	Q61
ALA	PRO	PRO	GLN	
ASP	ALA	PRO	GLY	V85
LEU	ALA	GLU	MET	
ALA	ALA	PRO	THR	I100
ILE	GLY	PRO	SER	ARG
	GLY	LEU	PRO	GLU
	GLY	PRO	PHE	GLU
	PRO	ALA	ARG	GLU
	GLN	ALA	PRO	LYS
	GLN	LEU	ASP	LYS
	PHE	PRO	THR	ARG
	LEU	THR	PRO	LYS
	PRO	THR	GLY	GLU
	GLY	PRO	SER	PRO
	GLY	THR	ALA	PRO
	SER	PRO	LYS	LYS
	GLY	THR	PRO	ALA
	ASP	THR	MET	ALA
	SER	LEU	GLY	ALA
	ASP	GLY	SER	PRO
	GLY	GLY	ALA	ALA
	GLU	GLY	PRO	GLU
	GLY	GLY	LEU	GLU
	ALA	GLY	LEU	HIS
	VAL	ASN	LEU	GLN
	THR	GLN	PRO	ASP
	ALA	GLY	PRO	PRO
	VAL	LEU	ASN	ALA
	GLU	ARG	SER	PRO
	GLY	ALA	ALA	VAL
	LEU	PRO	PRO	ARG
	HIS	ALA	PRO	ASP
	ALA	GLN	ALA	ASP
	PRO	ASN	VAL	ARG
	PRO	CYS	THR	ARG
	GLU	ALA	ILE	GLY
	PRO	ASN	PHE	LYS
	ALA	GLY	ARG	VAL
	ASP	GLY	PRO	ARG
	PRO	ALA	PRO	ILE
	THR	ALA	PRO	ALA

ALA SER
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● Molecule 1: Gap junction alpha-3 protein



MET
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L37
A40
A41
E42
E43
V44
D51
F52
T53
E104
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C6	Depositor
Number of particles used	162334	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50.00	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.902	Depositor
Minimum map value	-2.039	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.050	Depositor
Recommended contour level	0.03	Depositor
Map size ($\text{\AA}$)	315.648, 315.648, 315.648	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.822, 0.822, 0.822	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: MC3

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	0.13	0/1529	0.33	0/2084
1	B	0.14	0/1529	0.33	0/2084
1	C	0.14	0/1529	0.33	0/2084
1	D	0.14	0/1529	0.33	0/2084
1	E	0.14	0/1529	0.33	0/2084
1	F	0.14	0/1529	0.33	0/2084
1	G	0.09	0/1492	0.21	0/2037
1	H	0.09	0/1492	0.21	0/2037
1	I	0.09	0/1492	0.21	0/2037
1	J	0.09	0/1492	0.21	0/2037
1	K	0.09	0/1492	0.21	0/2037
1	L	0.09	0/1492	0.21	0/2037
All	All	0.11	0/18126	0.28	0/24726

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [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	1486	1485	1478	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	1486	1485	1478	13	0
1	C	1486	1485	1478	10	0
1	D	1486	1485	1478	12	0
1	E	1486	1485	1478	12	0
1	F	1486	1485	1478	11	0
1	G	1452	1417	1414	6	0
1	H	1452	1417	1414	6	0
1	I	1452	1417	1414	6	0
1	J	1452	1417	1414	6	0
1	K	1452	1417	1414	6	0
1	L	1452	1417	1414	5	0
2	A	199	398	343	0	0
2	B	199	398	343	0	0
2	C	199	398	343	0	0
2	D	199	398	343	0	0
2	E	199	398	343	0	0
2	F	199	398	343	0	0
2	G	276	505	441	0	0
2	H	276	505	441	0	0
2	I	276	505	441	0	0
2	J	276	505	441	0	0
2	K	276	505	441	0	0
2	L	276	505	441	0	0
3	A	63	0	0	1	0
3	B	63	0	0	1	0
3	C	63	0	0	1	0
3	D	63	0	0	2	0
3	E	63	0	0	1	0
3	F	63	0	0	1	0
3	G	55	0	0	1	0
3	H	55	0	0	1	0
3	I	55	0	0	1	0
3	J	55	0	0	1	0
3	K	55	0	0	1	0
3	L	55	0	0	1	0
All	All	21186	22830	22056	105	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 2.

The worst 5 of 105 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:4:TRP:CE3	1:D:7:LEU:HD23	2.24	0.72
1:E:4:TRP:CE3	1:E:7:LEU:HD23	2.24	0.72
1:B:4:TRP:CE3	1:B:7:LEU:HD23	2.24	0.72
1:A:4:TRP:CE3	1:A:7:LEU:HD23	2.24	0.72
1:C:4:TRP:CE3	1:C:7:LEU:HD23	2.25	0.72

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	179/413 (43%)	176 (98%)	3 (2%)	0	100	100
1	B	179/413 (43%)	176 (98%)	3 (2%)	0	100	100
1	C	179/413 (43%)	176 (98%)	3 (2%)	0	100	100
1	D	179/413 (43%)	176 (98%)	3 (2%)	0	100	100
1	E	179/413 (43%)	176 (98%)	3 (2%)	0	100	100
1	F	179/413 (43%)	176 (98%)	3 (2%)	0	100	100
1	G	181/413 (44%)	180 (99%)	1 (1%)	0	100	100
1	H	181/413 (44%)	179 (99%)	2 (1%)	0	100	100
1	I	181/413 (44%)	179 (99%)	2 (1%)	0	100	100
1	J	181/413 (44%)	180 (99%)	1 (1%)	0	100	100
1	K	181/413 (44%)	179 (99%)	2 (1%)	0	100	100
1	L	181/413 (44%)	179 (99%)	2 (1%)	0	100	100
All	All	2160/4956 (44%)	2132 (99%)	28 (1%)	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	162/325 (50%)	161 (99%)	1 (1%)	84	92
1	B	162/325 (50%)	161 (99%)	1 (1%)	84	92
1	C	162/325 (50%)	161 (99%)	1 (1%)	84	92
1	D	162/325 (50%)	161 (99%)	1 (1%)	84	92
1	E	162/325 (50%)	161 (99%)	1 (1%)	84	92
1	F	162/325 (50%)	161 (99%)	1 (1%)	84	92
1	G	151/325 (46%)	150 (99%)	1 (1%)	81	91
1	H	151/325 (46%)	150 (99%)	1 (1%)	81	91
1	I	151/325 (46%)	150 (99%)	1 (1%)	81	91
1	J	151/325 (46%)	150 (99%)	1 (1%)	81	91
1	K	151/325 (46%)	150 (99%)	1 (1%)	81	91
1	L	151/325 (46%)	150 (99%)	1 (1%)	81	91
All	All	1878/3900 (48%)	1866 (99%)	12 (1%)	82	92

5 of 12 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	H	149	ASN
1	I	149	ASN
1	L	149	ASN
1	J	149	ASN
1	D	149	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 12 such sidechains are listed below:

Mol	Chain	Res	Type
1	H	58	GLN
1	I	58	GLN
1	L	58	GLN
1	J	58	GLN

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Mol	Chain	Res	Type
1	D	58	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 [i](#)

252 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	MC3	K	522	-	8,8,45	0.35	0	7,7,53	0.78	0
2	MC3	I	516	-	12,12,45	0.31	0	11,11,53	0.83	0
2	MC3	H	511	-	10,10,45	0.34	0	9,9,53	0.82	0
2	MC3	I	509	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	B	517	-	5,5,45	0.37	0	4,4,53	0.62	0
2	MC3	F	507	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	F	513	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	D	515	-	10,10,45	0.35	0	9,9,53	0.82	0
2	MC3	A	515	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	J	503	-	10,10,45	0.32	0	9,9,53	0.80	0
2	MC3	G	517	-	11,11,45	0.32	0	10,10,53	0.84	0
2	MC3	D	514	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	E	505	-	10,10,45	0.36	0	9,9,53	0.84	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MC3	G	505	-	11,11,45	0.33	0	10,10,53	0.82	0
2	MC3	G	511	-	10,10,45	0.34	0	9,9,53	0.82	0
2	MC3	K	518	-	12,12,45	0.33	0	11,11,53	0.85	0
2	MC3	D	512	-	9,9,45	0.35	0	8,8,53	0.80	0
2	MC3	A	519	-	7,7,45	0.36	0	6,6,53	0.75	0
2	MC3	I	502	-	24,24,45	0.83	1 (4%)	27,29,53	1.26	2 (7%)
2	MC3	I	522	-	8,8,45	0.35	0	7,7,53	0.78	0
2	MC3	E	516	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	E	509	-	10,10,45	0.35	0	9,9,53	0.82	0
2	MC3	F	508	-	7,7,45	0.36	0	6,6,53	0.75	0
2	MC3	J	502	-	24,24,45	0.83	1 (4%)	27,29,53	1.26	2 (7%)
2	MC3	J	522	-	8,8,45	0.35	0	7,7,53	0.78	0
2	MC3	H	517	-	11,11,45	0.33	0	10,10,53	0.84	0
2	MC3	A	518	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	G	507	-	12,12,45	0.34	0	11,11,53	0.83	0
2	MC3	G	513	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	I	517	-	11,11,45	0.33	0	10,10,53	0.84	0
2	MC3	I	523	-	7,7,45	0.35	0	6,6,53	0.74	0
2	MC3	J	510	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	H	514	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	F	503	-	11,11,45	0.36	0	10,10,53	0.85	0
2	MC3	I	521	-	11,11,45	0.34	0	10,10,53	0.84	0
2	MC3	L	520	-	10,10,45	0.35	0	9,9,53	0.82	0
2	MC3	C	516	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	E	517	-	5,5,45	0.37	0	4,4,53	0.62	0
2	MC3	I	515	-	24,24,45	0.52	0	27,29,53	0.72	1 (3%)
2	MC3	H	520	-	9,9,45	0.34	0	8,8,53	0.79	0
2	MC3	J	509	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	K	509	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	D	501	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	I	511	-	10,10,45	0.34	0	9,9,53	0.82	0
2	MC3	A	512	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	K	505	-	11,11,45	0.32	0	10,10,53	0.82	0
2	MC3	L	513	-	12,12,45	0.33	0	11,11,53	0.82	0
2	MC3	C	509	-	10,10,45	0.35	0	9,9,53	0.82	0
2	MC3	H	507	-	12,12,45	0.34	0	11,11,53	0.84	0
2	MC3	E	510	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	H	513	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	D	516	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	J	511	-	10,10,45	0.34	0	9,9,53	0.82	0
2	MC3	B	503	-	11,11,45	0.35	0	10,10,53	0.85	0
2	MC3	C	508	-	7,7,45	0.36	0	6,6,53	0.75	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MC3	F	518	-	9,9,45	0.35	0	8,8,53	0.82	0
2	MC3	K	514	-	8,8,45	0.35	0	7,7,53	0.79	0
2	MC3	C	502	-	12,12,45	0.36	0	11,11,53	0.86	0
2	MC3	B	516	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	C	514	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	G	506	-	10,10,45	0.33	0	9,9,53	0.81	0
2	MC3	F	510	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	H	506	-	10,10,45	0.34	0	9,9,53	0.81	0
2	MC3	C	512	-	9,9,45	0.35	0	8,8,53	0.80	0
2	MC3	I	506	-	10,10,45	0.33	0	9,9,53	0.80	0
2	MC3	C	501	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	C	506	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	E	511	-	11,11,45	0.35	0	10,10,53	0.85	0
2	MC3	J	506	-	10,10,45	0.34	0	9,9,53	0.81	0
2	MC3	H	515	-	24,24,45	0.51	0	27,29,53	0.75	1 (3%)
2	MC3	G	520	-	9,9,45	0.34	0	8,8,53	0.79	0
2	MC3	B	510	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	E	519	-	7,7,45	0.37	0	6,6,53	0.76	0
2	MC3	L	504	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	G	522	-	8,8,45	0.35	0	7,7,53	0.78	0
2	MC3	L	507	-	11,11,45	0.34	0	10,10,53	0.84	0
2	MC3	D	506	-	8,8,45	0.37	0	7,7,53	0.79	0
2	MC3	I	503	-	10,10,45	0.32	0	9,9,53	0.80	0
2	MC3	A	513	-	12,12,45	0.36	0	11,11,53	0.86	0
2	MC3	K	519	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	A	509	-	5,5,45	0.37	0	4,4,53	0.62	0
2	MC3	L	510	-	8,8,45	0.24	0	7,7,53	0.19	0
2	MC3	H	516	-	12,12,45	0.32	0	11,11,53	0.83	0
2	MC3	H	522	-	8,8,45	0.35	0	7,7,53	0.78	0
2	MC3	L	512	-	10,10,45	0.32	0	9,9,53	0.80	0
2	MC3	A	508	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	G	521	-	11,11,45	0.34	0	10,10,53	0.84	0
2	MC3	D	513	-	12,12,45	0.35	0	11,11,53	0.84	0
2	MC3	E	506	-	8,8,45	0.37	0	7,7,53	0.79	0
2	MC3	K	521	-	11,11,45	0.34	0	10,10,53	0.84	0
2	MC3	A	511	-	7,7,45	0.36	0	6,6,53	0.76	0
2	MC3	I	513	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	B	501	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	L	517	-	4,4,45	0.37	0	3,3,53	0.57	0
2	MC3	A	514	-	11,11,45	0.35	0	10,10,53	0.85	0
2	MC3	L	523	-	8,8,45	0.35	0	7,7,53	0.79	0
2	MC3	G	514	-	8,8,45	0.35	0	7,7,53	0.79	0
2	MC3	D	502	-	12,12,45	0.35	0	11,11,53	0.86	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MC3	J	519	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	H	518	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	F	506	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	D	517	-	5,5,45	0.36	0	4,4,53	0.62	0
2	MC3	I	510	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	B	507	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	A	502	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	C	517	-	5,5,45	0.36	0	4,4,53	0.62	0
2	MC3	F	519	-	7,7,45	0.37	0	6,6,53	0.76	0
2	MC3	J	523	-	7,7,45	0.35	0	6,6,53	0.74	0
2	MC3	J	515	-	24,24,45	0.53	0	27,29,53	0.73	1 (3%)
2	MC3	C	518	-	9,9,45	0.36	0	8,8,53	0.82	0
2	MC3	K	501	-	8,8,45	0.24	0	7,7,53	0.20	0
2	MC3	J	504	-	12,12,45	0.33	0	11,11,53	0.83	0
2	MC3	A	504	-	9,9,45	0.35	0	8,8,53	0.80	0
2	MC3	K	516	-	12,12,45	0.31	0	11,11,53	0.83	0
2	MC3	G	518	-	12,12,45	0.33	0	11,11,53	0.85	0
2	MC3	B	513	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	K	520	-	9,9,45	0.34	0	8,8,53	0.79	0
2	MC3	B	515	-	10,10,45	0.36	0	9,9,53	0.82	0
2	MC3	I	507	-	12,12,45	0.34	0	11,11,53	0.83	0
2	MC3	I	518	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	L	503	-	11,11,45	0.33	0	10,10,53	0.84	0
2	MC3	C	511	-	11,11,45	0.35	0	10,10,53	0.85	0
2	MC3	K	513	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	E	508	-	7,7,45	0.36	0	6,6,53	0.75	0
2	MC3	F	515	-	10,10,45	0.36	0	9,9,53	0.82	0
2	MC3	G	519	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	A	505	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	C	507	-	9,9,45	0.36	0	8,8,53	0.82	0
2	MC3	G	508	-	4,4,45	0.37	0	3,3,53	0.57	0
2	MC3	D	503	-	11,11,45	0.36	0	10,10,53	0.85	0
2	MC3	F	504	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	D	511	-	11,11,45	0.35	0	10,10,53	0.84	0
2	MC3	G	510	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	I	505	-	11,11,45	0.33	0	10,10,53	0.82	0
2	MC3	J	508	-	4,4,45	0.37	0	3,3,53	0.57	0
2	MC3	D	504	-	9,9,45	0.36	0	8,8,53	0.82	0
2	MC3	E	515	-	10,10,45	0.36	0	9,9,53	0.81	0
2	MC3	B	508	-	7,7,45	0.36	0	6,6,53	0.75	0
2	MC3	H	519	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	I	519	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	B	504	-	9,9,45	0.36	0	8,8,53	0.81	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MC3	J	514	-	8,8,45	0.35	0	7,7,53	0.79	0
2	MC3	K	515	-	24,24,45	0.52	0	27,29,53	0.73	1 (3%)
2	MC3	G	502	-	24,24,45	0.83	1 (4%)	27,29,53	1.26	2 (7%)
2	MC3	K	502	-	24,24,45	0.83	1 (4%)	27,29,53	1.26	2 (7%)
2	MC3	G	512	-	7,7,45	0.36	0	6,6,53	0.75	0
2	MC3	H	509	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	G	503	-	10,10,45	0.32	0	9,9,53	0.80	0
2	MC3	K	506	-	10,10,45	0.33	0	9,9,53	0.81	0
2	MC3	G	504	-	12,12,45	0.33	0	11,11,53	0.83	0
2	MC3	B	506	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	C	505	-	10,10,45	0.36	0	9,9,53	0.83	0
2	MC3	E	501	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	L	506	-	9,9,45	0.34	0	8,8,53	0.80	0
2	MC3	L	505	-	12,12,45	0.34	0	11,11,53	0.85	0
2	MC3	A	517	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	F	501	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	F	509	-	10,10,45	0.36	0	9,9,53	0.83	0
2	MC3	F	516	-	9,9,45	0.35	0	8,8,53	0.80	0
2	MC3	L	511	-	24,24,45	0.83	1 (4%)	27,29,53	1.26	2 (7%)
2	MC3	C	513	-	12,12,45	0.35	0	11,11,53	0.84	0
2	MC3	E	503	-	11,11,45	0.35	0	10,10,53	0.85	0
2	MC3	H	501	-	8,8,45	0.24	0	7,7,53	0.19	0
2	MC3	H	504	-	12,12,45	0.33	0	11,11,53	0.83	0
2	MC3	A	506	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	H	510	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	I	504	-	12,12,45	0.32	0	11,11,53	0.82	0
2	MC3	K	511	-	10,10,45	0.34	0	9,9,53	0.82	0
2	MC3	A	501	-	10,10,45	0.35	0	9,9,53	0.83	0
2	MC3	J	505	-	11,11,45	0.33	0	10,10,53	0.82	0
2	MC3	L	522	-	9,9,45	0.34	0	8,8,53	0.81	0
2	MC3	B	505	-	10,10,45	0.36	0	9,9,53	0.84	0
2	MC3	B	511	-	11,11,45	0.35	0	10,10,53	0.84	0
2	MC3	C	510	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	D	519	-	7,7,45	0.37	0	6,6,53	0.76	0
2	MC3	D	508	-	7,7,45	0.36	0	6,6,53	0.75	0
2	MC3	G	516	-	12,12,45	0.31	0	11,11,53	0.83	0
2	MC3	F	505	-	10,10,45	0.36	0	9,9,53	0.83	0
2	MC3	G	509	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	K	523	-	7,7,45	0.35	0	6,6,53	0.74	0
2	MC3	L	508	-	8,8,45	0.35	0	7,7,53	0.78	0
2	MC3	L	521	-	7,7,45	0.35	0	6,6,53	0.75	0
2	MC3	F	502	-	12,12,45	0.35	0	11,11,53	0.86	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MC3	C	515	-	10,10,45	0.35	0	9,9,53	0.82	0
2	MC3	L	514	-	11,11,45	0.32	0	10,10,53	0.81	0
2	MC3	C	503	-	11,11,45	0.36	0	10,10,53	0.85	0
2	MC3	D	518	-	9,9,45	0.35	0	8,8,53	0.82	0
2	MC3	H	505	-	11,11,45	0.33	0	10,10,53	0.82	0
2	MC3	D	510	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	H	508	-	4,4,45	0.37	0	3,3,53	0.58	0
2	MC3	L	515	-	10,10,45	0.33	0	9,9,53	0.80	0
2	MC3	F	512	-	9,9,45	0.36	0	8,8,53	0.80	0
2	MC3	E	504	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	H	512	-	7,7,45	0.35	0	6,6,53	0.75	0
2	MC3	J	518	-	12,12,45	0.33	0	11,11,53	0.85	0
2	MC3	K	517	-	11,11,45	0.33	0	10,10,53	0.84	0
2	MC3	B	514	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	B	518	-	9,9,45	0.35	0	8,8,53	0.82	0
2	MC3	I	501	-	8,8,45	0.24	0	7,7,53	0.19	0
2	MC3	I	508	-	4,4,45	0.37	0	3,3,53	0.57	0
2	MC3	B	502	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	B	512	-	9,9,45	0.36	0	8,8,53	0.80	0
2	MC3	K	503	-	10,10,45	0.32	0	9,9,53	0.80	0
2	MC3	I	514	-	8,8,45	0.35	0	7,7,53	0.79	0
2	MC3	J	521	-	11,11,45	0.34	0	10,10,53	0.84	0
2	MC3	L	519	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	A	503	-	11,11,45	0.35	0	10,10,53	0.84	0
2	MC3	A	516	-	10,10,45	0.36	0	9,9,53	0.84	0
2	MC3	E	514	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	E	518	-	9,9,45	0.36	0	8,8,53	0.83	0
2	MC3	G	515	-	24,24,45	0.53	0	27,29,53	0.73	1 (3%)
2	MC3	E	502	-	12,12,45	0.35	0	11,11,53	0.86	0
2	MC3	D	507	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	L	516	-	12,12,45	0.34	0	11,11,53	0.84	0
2	MC3	L	509	-	7,7,45	0.35	0	6,6,53	0.74	0
2	MC3	A	510	-	9,9,45	0.36	0	8,8,53	0.82	0
2	MC3	H	502	-	24,24,45	0.83	1 (4%)	27,29,53	1.26	2 (7%)
2	MC3	F	511	-	11,11,45	0.35	0	10,10,53	0.84	0
2	MC3	E	513	-	12,12,45	0.35	0	11,11,53	0.85	0
2	MC3	H	503	-	10,10,45	0.32	0	9,9,53	0.80	0
2	MC3	J	517	-	11,11,45	0.33	0	10,10,53	0.84	0
2	MC3	E	507	-	9,9,45	0.36	0	8,8,53	0.81	0
2	MC3	B	519	-	7,7,45	0.37	0	6,6,53	0.76	0
2	MC3	C	519	-	7,7,45	0.36	0	6,6,53	0.76	0
2	MC3	K	507	-	12,12,45	0.34	0	11,11,53	0.84	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	MC3	D	509	-	10,10,45	0.35	0	9,9,53	0.83	0
2	MC3	I	512	-	7,7,45	0.36	0	6,6,53	0.76	0
2	MC3	D	505	-	10,10,45	0.36	0	9,9,53	0.84	0
2	MC3	L	502	-	12,12,45	0.31	0	11,11,53	0.83	0
2	MC3	H	523	-	7,7,45	0.35	0	6,6,53	0.74	0
2	MC3	B	509	-	10,10,45	0.35	0	9,9,53	0.83	0
2	MC3	J	512	-	7,7,45	0.35	0	6,6,53	0.75	0
2	MC3	J	501	-	8,8,45	0.24	0	7,7,53	0.19	0
2	MC3	J	513	-	9,9,45	0.35	0	8,8,53	0.81	0
2	MC3	L	518	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	J	507	-	12,12,45	0.34	0	11,11,53	0.84	0
2	MC3	A	507	-	10,10,45	0.36	0	9,9,53	0.82	0
2	MC3	I	520	-	9,9,45	0.34	0	8,8,53	0.79	0
2	MC3	J	516	-	12,12,45	0.31	0	11,11,53	0.83	0
2	MC3	F	517	-	5,5,45	0.36	0	4,4,53	0.62	0
2	MC3	G	523	-	7,7,45	0.36	0	6,6,53	0.74	0
2	MC3	K	508	-	4,4,45	0.37	0	3,3,53	0.58	0
2	MC3	G	501	-	8,8,45	0.24	0	7,7,53	0.19	0
2	MC3	J	520	-	9,9,45	0.34	0	8,8,53	0.79	0
2	MC3	E	512	-	9,9,45	0.35	0	8,8,53	0.80	0
2	MC3	F	514	-	8,8,45	0.36	0	7,7,53	0.79	0
2	MC3	K	504	-	12,12,45	0.33	0	11,11,53	0.83	0
2	MC3	H	521	-	11,11,45	0.34	0	10,10,53	0.84	0
2	MC3	L	501	-	24,24,45	0.52	0	27,29,53	0.72	1 (3%)
2	MC3	K	512	-	7,7,45	0.35	0	6,6,53	0.75	0
2	MC3	K	510	-	11,11,45	0.34	0	10,10,53	0.83	0
2	MC3	C	504	-	9,9,45	0.36	0	8,8,53	0.81	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	K	522	-	-	0/6/6/49	-
2	MC3	I	516	-	-	0/10/10/49	-
2	MC3	H	511	-	-	0/8/8/49	-
2	MC3	I	509	-	-	0/9/9/49	-
2	MC3	B	517	-	-	0/3/3/49	-
2	MC3	F	507	-	-	0/7/7/49	-
2	MC3	F	513	-	-	0/10/10/49	-
2	MC3	D	515	-	-	0/8/8/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	A	515	-	-	0/7/7/49	-
2	MC3	J	503	-	-	0/8/8/49	-
2	MC3	G	517	-	-	0/9/9/49	-
2	MC3	D	514	-	-	0/6/6/49	-
2	MC3	E	505	-	-	0/8/8/49	-
2	MC3	G	505	-	-	0/9/9/49	-
2	MC3	G	511	-	-	0/8/8/49	-
2	MC3	K	518	-	-	0/10/10/49	-
2	MC3	D	512	-	-	0/7/7/49	-
2	MC3	A	519	-	-	0/5/5/49	-
2	MC3	I	502	-	-	9/26/26/49	-
2	MC3	I	522	-	-	0/6/6/49	-
2	MC3	E	516	-	-	0/7/7/49	-
2	MC3	E	509	-	-	0/8/8/49	-
2	MC3	F	508	-	-	0/5/5/49	-
2	MC3	J	502	-	-	9/26/26/49	-
2	MC3	J	522	-	-	0/6/6/49	-
2	MC3	H	517	-	-	0/9/9/49	-
2	MC3	A	518	-	-	0/7/7/49	-
2	MC3	G	507	-	-	0/10/10/49	-
2	MC3	G	513	-	-	0/7/7/49	-
2	MC3	I	517	-	-	0/9/9/49	-
2	MC3	I	523	-	-	0/5/5/49	-
2	MC3	J	510	-	-	0/9/9/49	-
2	MC3	H	514	-	-	0/6/6/49	-
2	MC3	F	503	-	-	0/9/9/49	-
2	MC3	I	521	-	-	0/9/9/49	-
2	MC3	L	520	-	-	0/8/8/49	-
2	MC3	C	516	-	-	0/7/7/49	-
2	MC3	E	517	-	-	0/3/3/49	-
2	MC3	I	515	-	-	18/26/26/49	-
2	MC3	H	520	-	-	0/7/7/49	-
2	MC3	J	509	-	-	0/9/9/49	-
2	MC3	K	509	-	-	0/9/9/49	-
2	MC3	D	501	-	-	0/10/10/49	-
2	MC3	I	511	-	-	0/8/8/49	-
2	MC3	A	512	-	-	0/10/10/49	-
2	MC3	K	505	-	-	0/9/9/49	-
2	MC3	L	513	-	-	0/10/10/49	-
2	MC3	C	509	-	-	0/8/8/49	-
2	MC3	H	507	-	-	0/10/10/49	-
2	MC3	E	510	-	-	0/10/10/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	H	513	-	-	0/7/7/49	-
2	MC3	D	516	-	-	0/7/7/49	-
2	MC3	J	511	-	-	0/8/8/49	-
2	MC3	B	503	-	-	0/9/9/49	-
2	MC3	C	508	-	-	0/5/5/49	-
2	MC3	F	518	-	-	0/7/7/49	-
2	MC3	K	514	-	-	0/6/6/49	-
2	MC3	C	502	-	-	0/10/10/49	-
2	MC3	B	516	-	-	0/7/7/49	-
2	MC3	C	514	-	-	0/6/6/49	-
2	MC3	G	506	-	-	0/8/8/49	-
2	MC3	F	510	-	-	0/10/10/49	-
2	MC3	H	506	-	-	0/8/8/49	-
2	MC3	C	512	-	-	0/7/7/49	-
2	MC3	I	506	-	-	0/8/8/49	-
2	MC3	C	501	-	-	0/10/10/49	-
2	MC3	C	506	-	-	0/6/6/49	-
2	MC3	E	511	-	-	0/9/9/49	-
2	MC3	J	506	-	-	0/8/8/49	-
2	MC3	H	515	-	-	10/26/26/49	-
2	MC3	G	520	-	-	0/7/7/49	-
2	MC3	B	510	-	-	0/10/10/49	-
2	MC3	E	519	-	-	0/5/5/49	-
2	MC3	L	504	-	-	0/10/10/49	-
2	MC3	G	522	-	-	0/6/6/49	-
2	MC3	L	507	-	-	0/9/9/49	-
2	MC3	D	506	-	-	0/6/6/49	-
2	MC3	I	503	-	-	0/8/8/49	-
2	MC3	A	513	-	-	0/10/10/49	-
2	MC3	K	519	-	-	0/10/10/49	-
2	MC3	A	509	-	-	0/3/3/49	-
2	MC3	L	510	-	-	1/6/6/49	-
2	MC3	H	516	-	-	0/10/10/49	-
2	MC3	H	522	-	-	0/6/6/49	-
2	MC3	L	512	-	-	0/8/8/49	-
2	MC3	A	508	-	-	0/7/7/49	-
2	MC3	G	521	-	-	0/9/9/49	-
2	MC3	D	513	-	-	0/10/10/49	-
2	MC3	E	506	-	-	0/6/6/49	-
2	MC3	K	521	-	-	0/9/9/49	-
2	MC3	A	511	-	-	0/5/5/49	-
2	MC3	I	513	-	-	0/7/7/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	B	501	-	-	0/10/10/49	-
2	MC3	L	517	-	-	0/2/2/49	-
2	MC3	A	514	-	-	0/9/9/49	-
2	MC3	L	523	-	-	0/6/6/49	-
2	MC3	G	514	-	-	0/6/6/49	-
2	MC3	D	502	-	-	0/10/10/49	-
2	MC3	J	519	-	-	0/10/10/49	-
2	MC3	H	518	-	-	0/10/10/49	-
2	MC3	F	506	-	-	0/6/6/49	-
2	MC3	D	517	-	-	0/3/3/49	-
2	MC3	I	510	-	-	0/9/9/49	-
2	MC3	B	507	-	-	0/7/7/49	-
2	MC3	A	502	-	-	0/10/10/49	-
2	MC3	C	517	-	-	0/3/3/49	-
2	MC3	F	519	-	-	0/5/5/49	-
2	MC3	J	523	-	-	0/5/5/49	-
2	MC3	J	515	-	-	11/26/26/49	-
2	MC3	C	518	-	-	0/7/7/49	-
2	MC3	K	501	-	-	1/6/6/49	-
2	MC3	J	504	-	-	0/10/10/49	-
2	MC3	A	504	-	-	0/7/7/49	-
2	MC3	K	516	-	-	0/10/10/49	-
2	MC3	G	518	-	-	0/10/10/49	-
2	MC3	B	513	-	-	0/10/10/49	-
2	MC3	K	520	-	-	0/7/7/49	-
2	MC3	B	515	-	-	0/8/8/49	-
2	MC3	I	507	-	-	0/10/10/49	-
2	MC3	I	518	-	-	0/10/10/49	-
2	MC3	L	503	-	-	0/9/9/49	-
2	MC3	C	511	-	-	0/9/9/49	-
2	MC3	K	513	-	-	0/7/7/49	-
2	MC3	E	508	-	-	0/5/5/49	-
2	MC3	F	515	-	-	0/8/8/49	-
2	MC3	G	519	-	-	0/10/10/49	-
2	MC3	A	505	-	-	0/10/10/49	-
2	MC3	C	507	-	-	0/7/7/49	-
2	MC3	G	508	-	-	0/2/2/49	-
2	MC3	D	503	-	-	0/9/9/49	-
2	MC3	F	504	-	-	0/7/7/49	-
2	MC3	D	511	-	-	0/9/9/49	-
2	MC3	G	510	-	-	0/9/9/49	-
2	MC3	I	505	-	-	0/9/9/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	J	508	-	-	0/2/2/49	-
2	MC3	D	504	-	-	0/7/7/49	-
2	MC3	E	515	-	-	0/8/8/49	-
2	MC3	B	508	-	-	0/5/5/49	-
2	MC3	H	519	-	-	0/10/10/49	-
2	MC3	I	519	-	-	0/10/10/49	-
2	MC3	B	504	-	-	0/7/7/49	-
2	MC3	J	514	-	-	0/6/6/49	-
2	MC3	K	515	-	-	10/26/26/49	-
2	MC3	G	502	-	-	9/26/26/49	-
2	MC3	K	502	-	-	9/26/26/49	-
2	MC3	G	512	-	-	0/5/5/49	-
2	MC3	H	509	-	-	0/9/9/49	-
2	MC3	G	503	-	-	0/8/8/49	-
2	MC3	K	506	-	-	0/8/8/49	-
2	MC3	G	504	-	-	0/10/10/49	-
2	MC3	B	506	-	-	0/6/6/49	-
2	MC3	C	505	-	-	0/8/8/49	-
2	MC3	E	501	-	-	0/10/10/49	-
2	MC3	L	506	-	-	0/7/7/49	-
2	MC3	L	505	-	-	0/10/10/49	-
2	MC3	A	517	-	-	0/6/6/49	-
2	MC3	F	501	-	-	0/10/10/49	-
2	MC3	F	509	-	-	0/8/8/49	-
2	MC3	F	516	-	-	0/7/7/49	-
2	MC3	L	511	-	-	9/26/26/49	-
2	MC3	C	513	-	-	0/10/10/49	-
2	MC3	E	503	-	-	0/9/9/49	-
2	MC3	H	501	-	-	1/6/6/49	-
2	MC3	H	504	-	-	0/10/10/49	-
2	MC3	A	506	-	-	0/6/6/49	-
2	MC3	H	510	-	-	0/9/9/49	-
2	MC3	I	504	-	-	0/10/10/49	-
2	MC3	K	511	-	-	0/8/8/49	-
2	MC3	A	501	-	-	0/8/8/49	-
2	MC3	J	505	-	-	0/9/9/49	-
2	MC3	L	522	-	-	0/7/7/49	-
2	MC3	B	505	-	-	0/8/8/49	-
2	MC3	B	511	-	-	0/9/9/49	-
2	MC3	C	510	-	-	0/10/10/49	-
2	MC3	D	519	-	-	0/5/5/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	D	508	-	-	0/5/5/49	-
2	MC3	G	516	-	-	0/10/10/49	-
2	MC3	F	505	-	-	0/8/8/49	-
2	MC3	G	509	-	-	0/9/9/49	-
2	MC3	K	523	-	-	0/5/5/49	-
2	MC3	L	508	-	-	0/6/6/49	-
2	MC3	L	521	-	-	0/5/5/49	-
2	MC3	F	502	-	-	0/10/10/49	-
2	MC3	C	515	-	-	0/8/8/49	-
2	MC3	L	514	-	-	0/9/9/49	-
2	MC3	C	503	-	-	0/9/9/49	-
2	MC3	D	518	-	-	0/7/7/49	-
2	MC3	H	505	-	-	0/9/9/49	-
2	MC3	D	510	-	-	0/10/10/49	-
2	MC3	H	508	-	-	0/2/2/49	-
2	MC3	L	515	-	-	0/8/8/49	-
2	MC3	F	512	-	-	0/7/7/49	-
2	MC3	E	504	-	-	0/7/7/49	-
2	MC3	H	512	-	-	0/5/5/49	-
2	MC3	J	518	-	-	0/10/10/49	-
2	MC3	K	517	-	-	0/9/9/49	-
2	MC3	B	514	-	-	0/6/6/49	-
2	MC3	B	518	-	-	0/7/7/49	-
2	MC3	I	501	-	-	1/6/6/49	-
2	MC3	I	508	-	-	0/2/2/49	-
2	MC3	B	502	-	-	0/10/10/49	-
2	MC3	B	512	-	-	0/7/7/49	-
2	MC3	K	503	-	-	0/8/8/49	-
2	MC3	I	514	-	-	0/6/6/49	-
2	MC3	J	521	-	-	0/9/9/49	-
2	MC3	L	519	-	-	0/9/9/49	-
2	MC3	A	503	-	-	0/9/9/49	-
2	MC3	A	516	-	-	0/8/8/49	-
2	MC3	E	514	-	-	0/6/6/49	-
2	MC3	E	518	-	-	0/7/7/49	-
2	MC3	G	515	-	-	11/26/26/49	-
2	MC3	E	502	-	-	0/10/10/49	-
2	MC3	D	507	-	-	0/7/7/49	-
2	MC3	L	516	-	-	0/10/10/49	-
2	MC3	L	509	-	-	0/5/5/49	-
2	MC3	A	510	-	-	0/7/7/49	-
2	MC3	H	502	-	-	9/26/26/49	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	MC3	F	511	-	-	0/9/9/49	-
2	MC3	E	513	-	-	0/10/10/49	-
2	MC3	H	503	-	-	0/8/8/49	-
2	MC3	J	517	-	-	0/9/9/49	-
2	MC3	E	507	-	-	0/7/7/49	-
2	MC3	B	519	-	-	0/5/5/49	-
2	MC3	C	519	-	-	0/5/5/49	-
2	MC3	K	507	-	-	0/10/10/49	-
2	MC3	D	509	-	-	0/8/8/49	-
2	MC3	I	512	-	-	0/5/5/49	-
2	MC3	D	505	-	-	0/8/8/49	-
2	MC3	L	502	-	-	0/10/10/49	-
2	MC3	H	523	-	-	0/5/5/49	-
2	MC3	B	509	-	-	0/8/8/49	-
2	MC3	J	512	-	-	0/5/5/49	-
2	MC3	J	501	-	-	1/6/6/49	-
2	MC3	J	513	-	-	0/7/7/49	-
2	MC3	L	518	-	-	0/9/9/49	-
2	MC3	J	507	-	-	0/10/10/49	-
2	MC3	A	507	-	-	0/8/8/49	-
2	MC3	I	520	-	-	0/7/7/49	-
2	MC3	J	516	-	-	0/10/10/49	-
2	MC3	F	517	-	-	0/3/3/49	-
2	MC3	G	523	-	-	0/5/5/49	-
2	MC3	K	508	-	-	0/2/2/49	-
2	MC3	G	501	-	-	1/6/6/49	-
2	MC3	J	520	-	-	0/7/7/49	-
2	MC3	E	512	-	-	0/7/7/49	-
2	MC3	F	514	-	-	0/6/6/49	-
2	MC3	K	504	-	-	0/10/10/49	-
2	MC3	H	521	-	-	0/9/9/49	-
2	MC3	L	501	-	-	16/26/26/49	-
2	MC3	K	512	-	-	0/5/5/49	-
2	MC3	K	510	-	-	0/9/9/49	-
2	MC3	C	504	-	-	0/7/7/49	-

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

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L	511	MC3	P-O4P	2.85	1.65	1.54
2	G	502	MC3	P-O4P	2.84	1.65	1.54
2	H	502	MC3	P-O4P	2.84	1.65	1.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	K	502	MC3	P-O4P	2.84	1.65	1.54
2	I	502	MC3	P-O4P	2.83	1.65	1.54

The worst 5 of 18 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	502	MC3	O4P-P-O3P	-5.18	93.17	106.67
2	L	511	MC3	O4P-P-O3P	-5.17	93.19	106.67
2	K	502	MC3	O4P-P-O3P	-5.16	93.21	106.67
2	J	502	MC3	O4P-P-O3P	-5.16	93.22	106.67
2	I	502	MC3	O4P-P-O3P	-5.16	93.22	106.67

There are no chirality outliers.

5 of 136 torsion outliers are listed below:

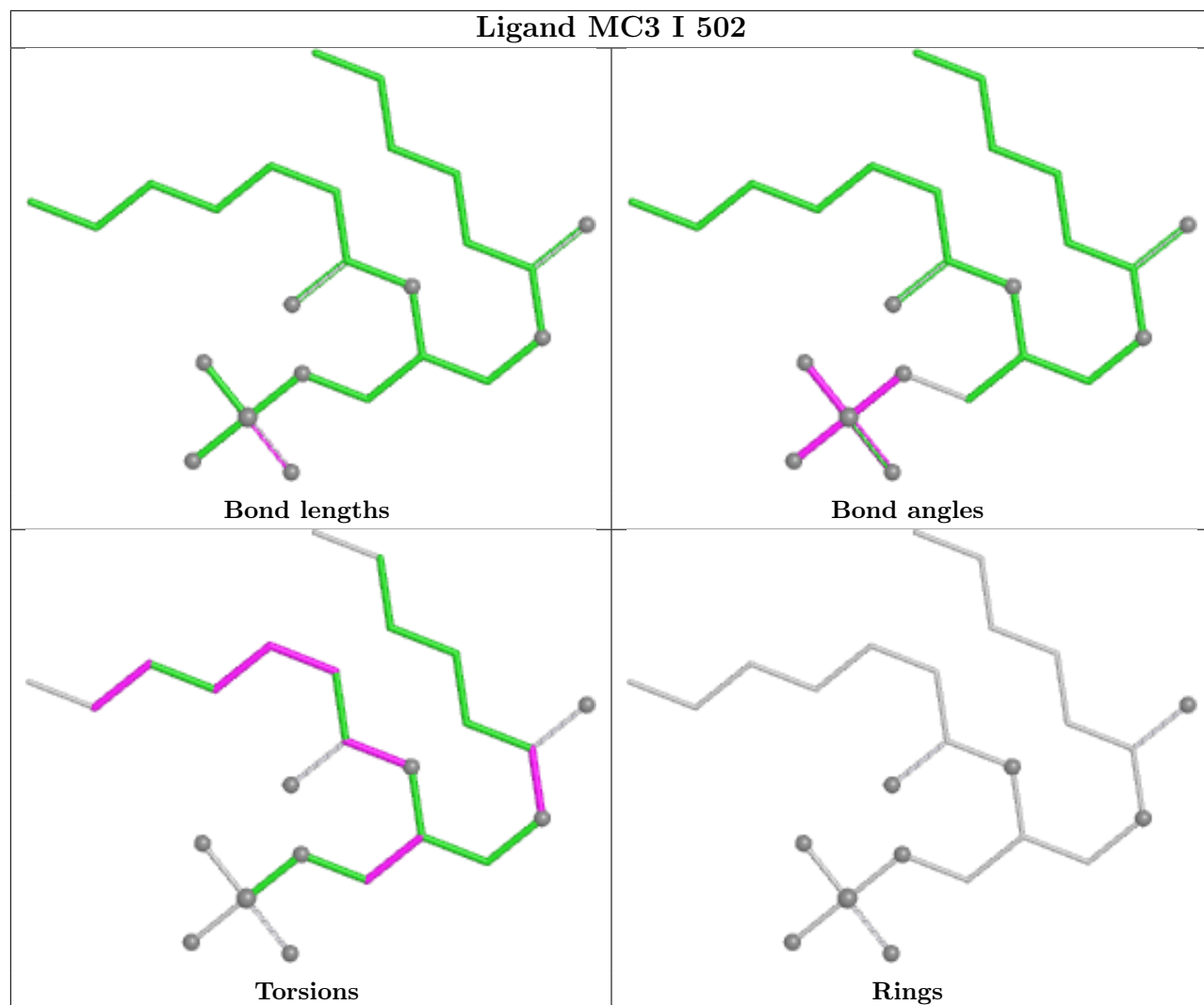
Mol	Chain	Res	Type	Atoms
2	G	515	MC3	O3P-C1-C2-O2
2	G	515	MC3	C1-O3P-P-O4P
2	H	515	MC3	C1-O3P-P-O4P
2	I	515	MC3	C1-O3P-P-O1P
2	J	515	MC3	O3P-C1-C2-O2

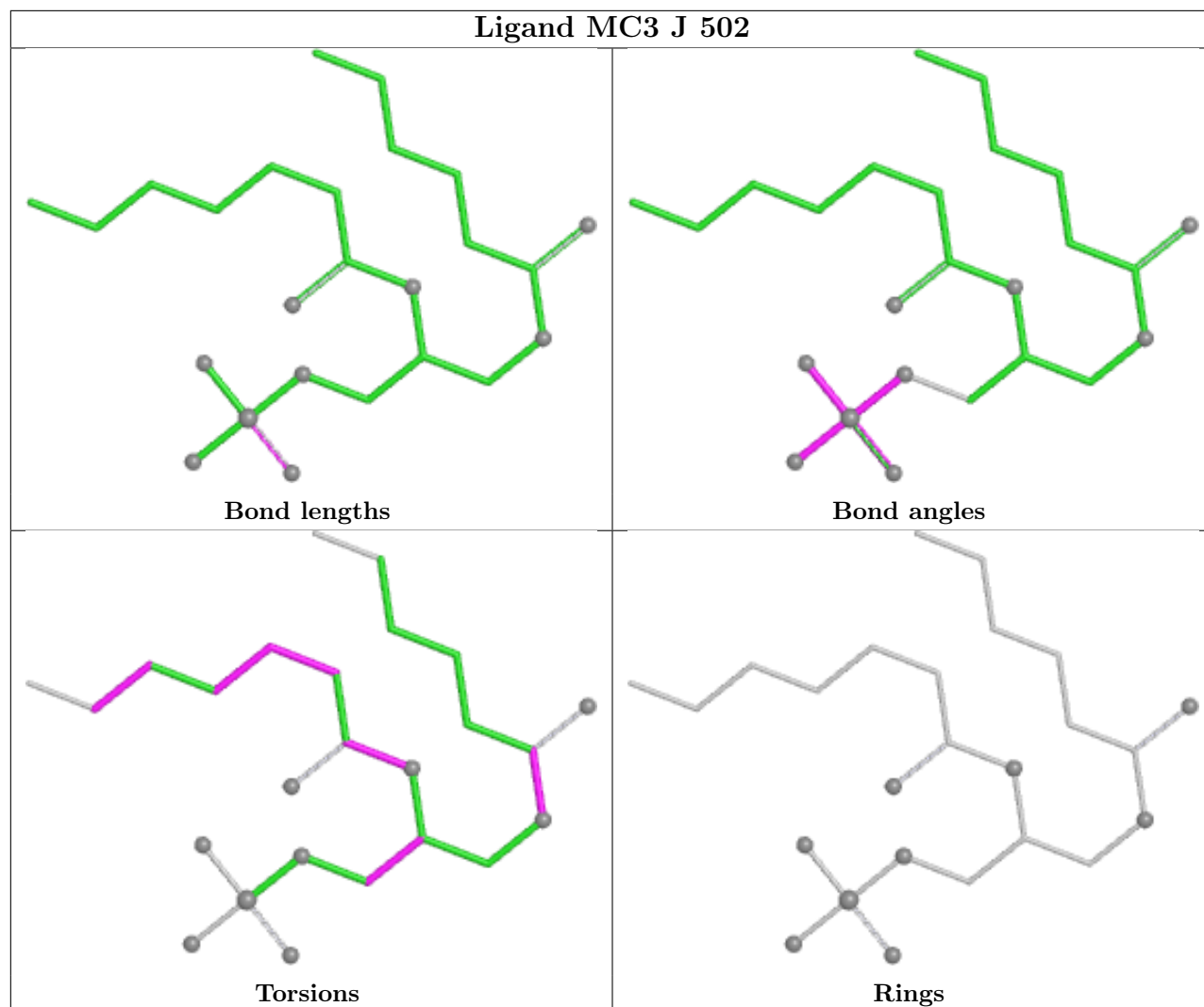
There are no ring outliers.

No monomer is involved in short contacts.

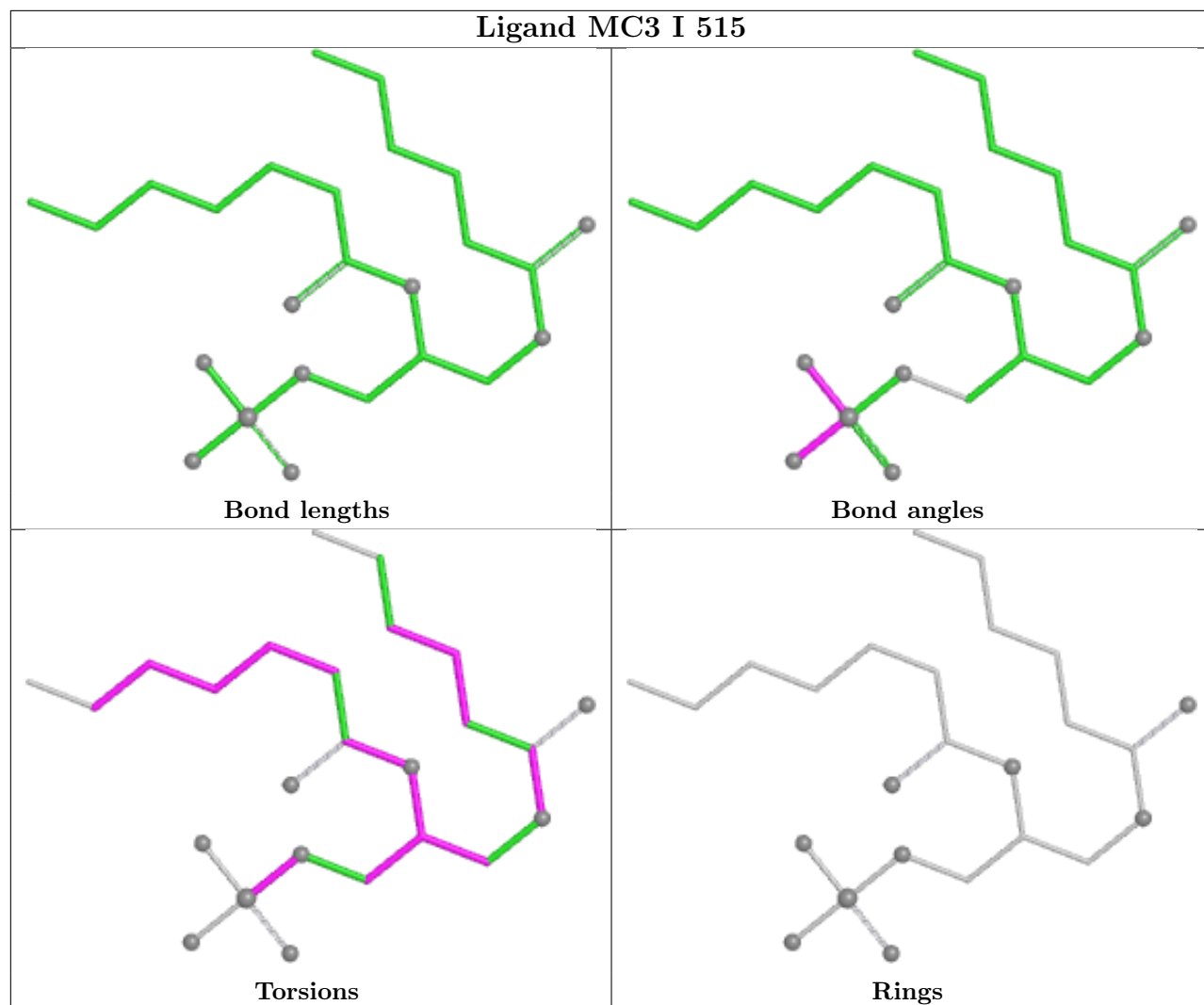
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

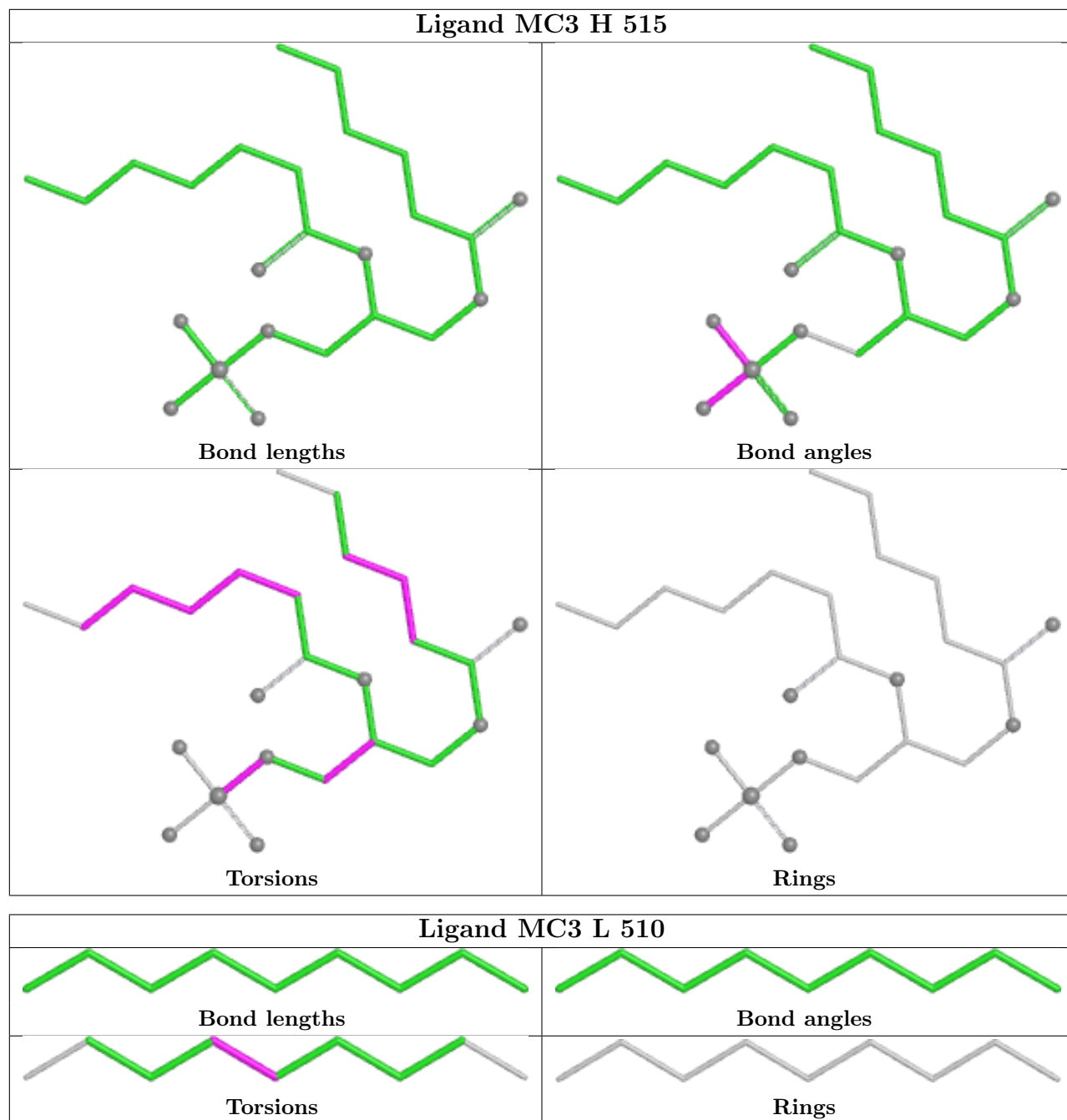
Ligand MC3 I 502

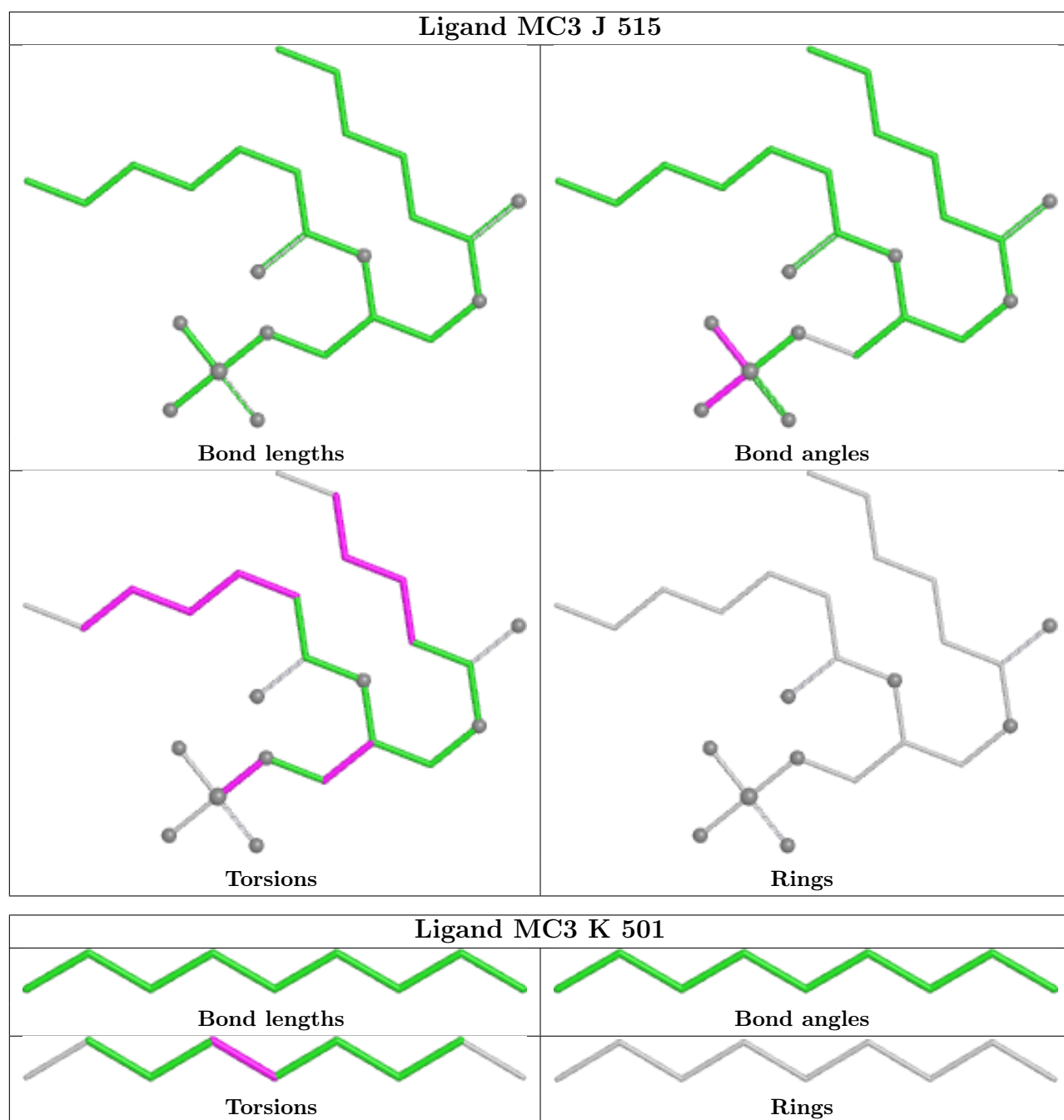


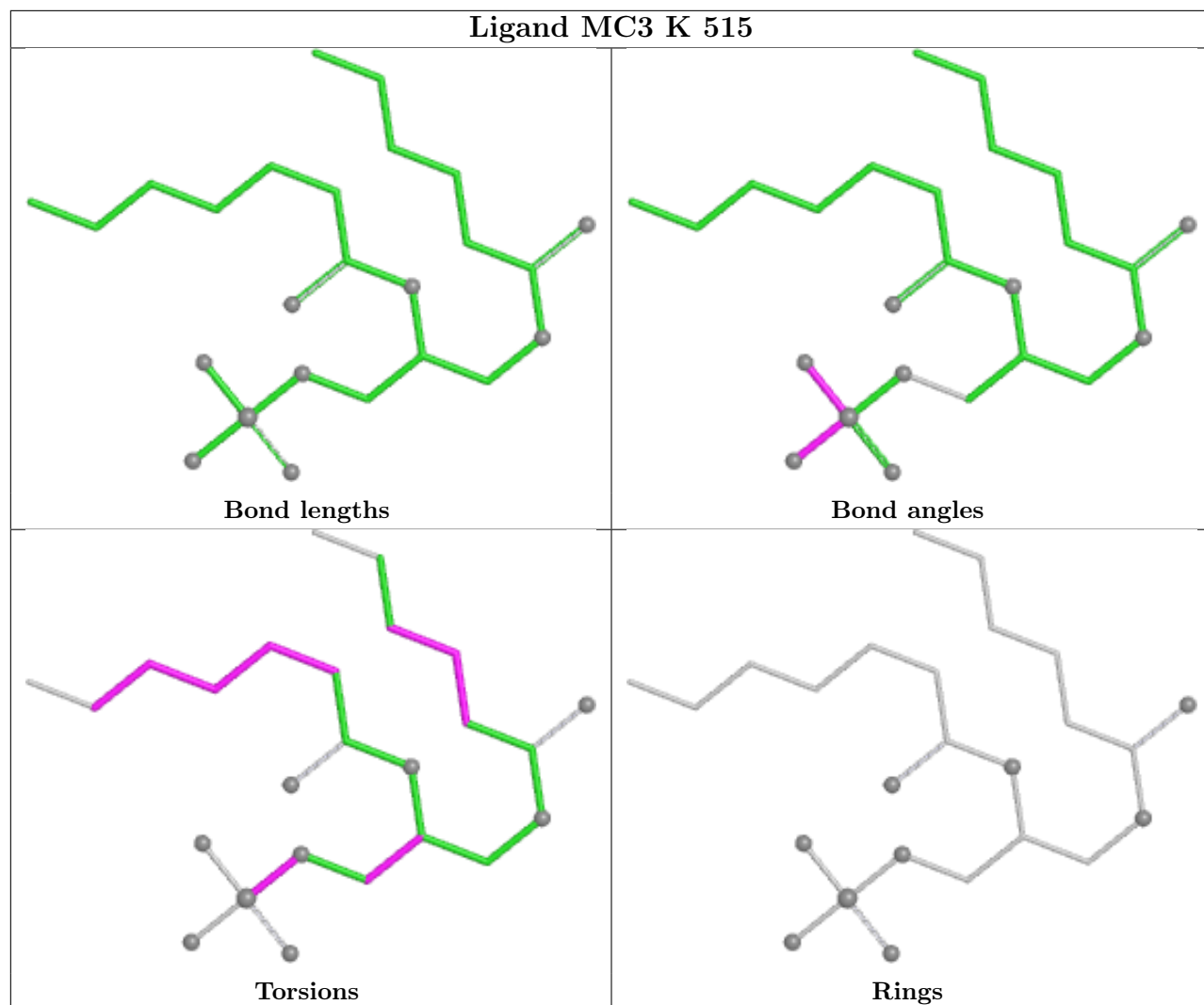


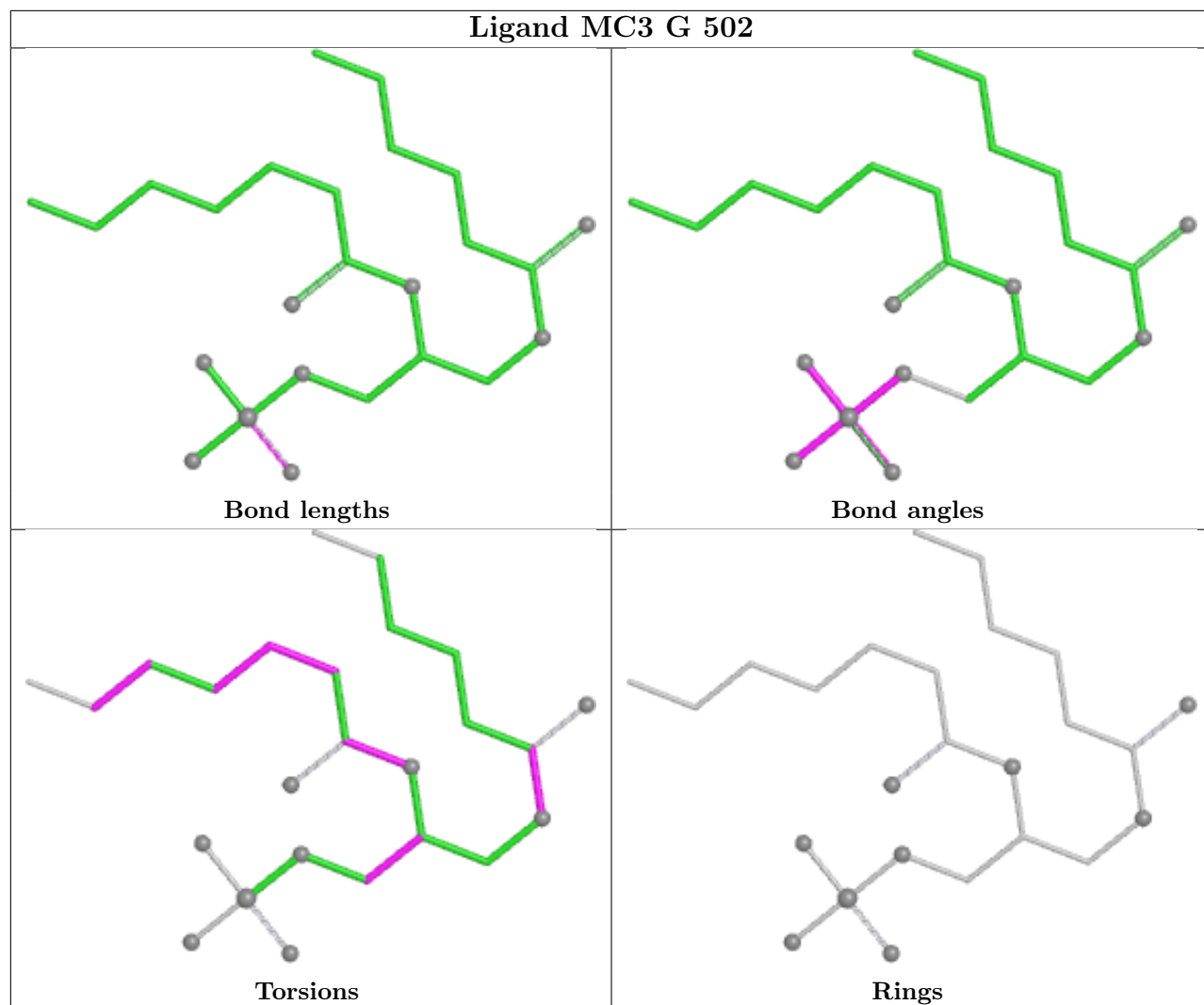
Ligand MC3 I 515

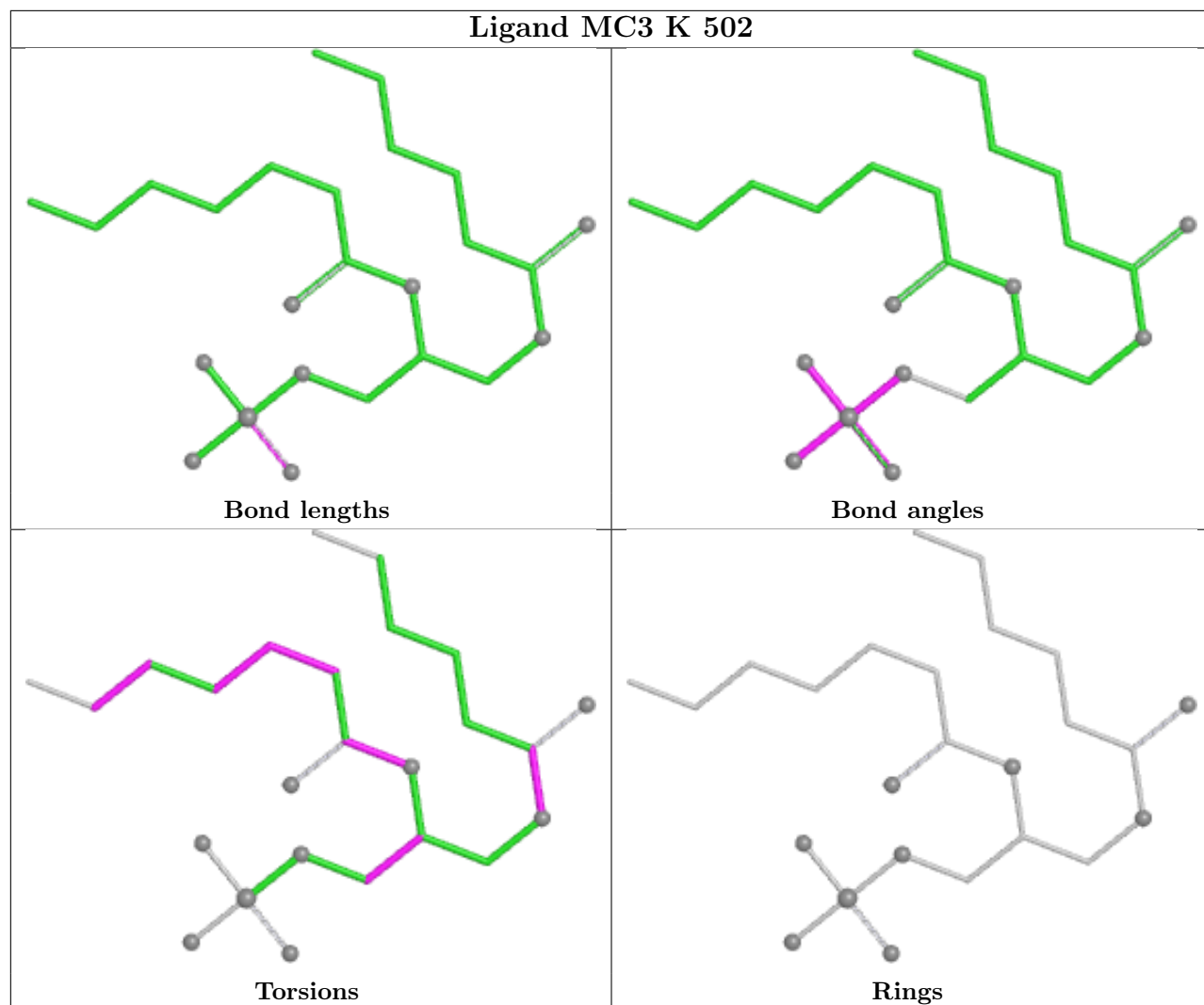


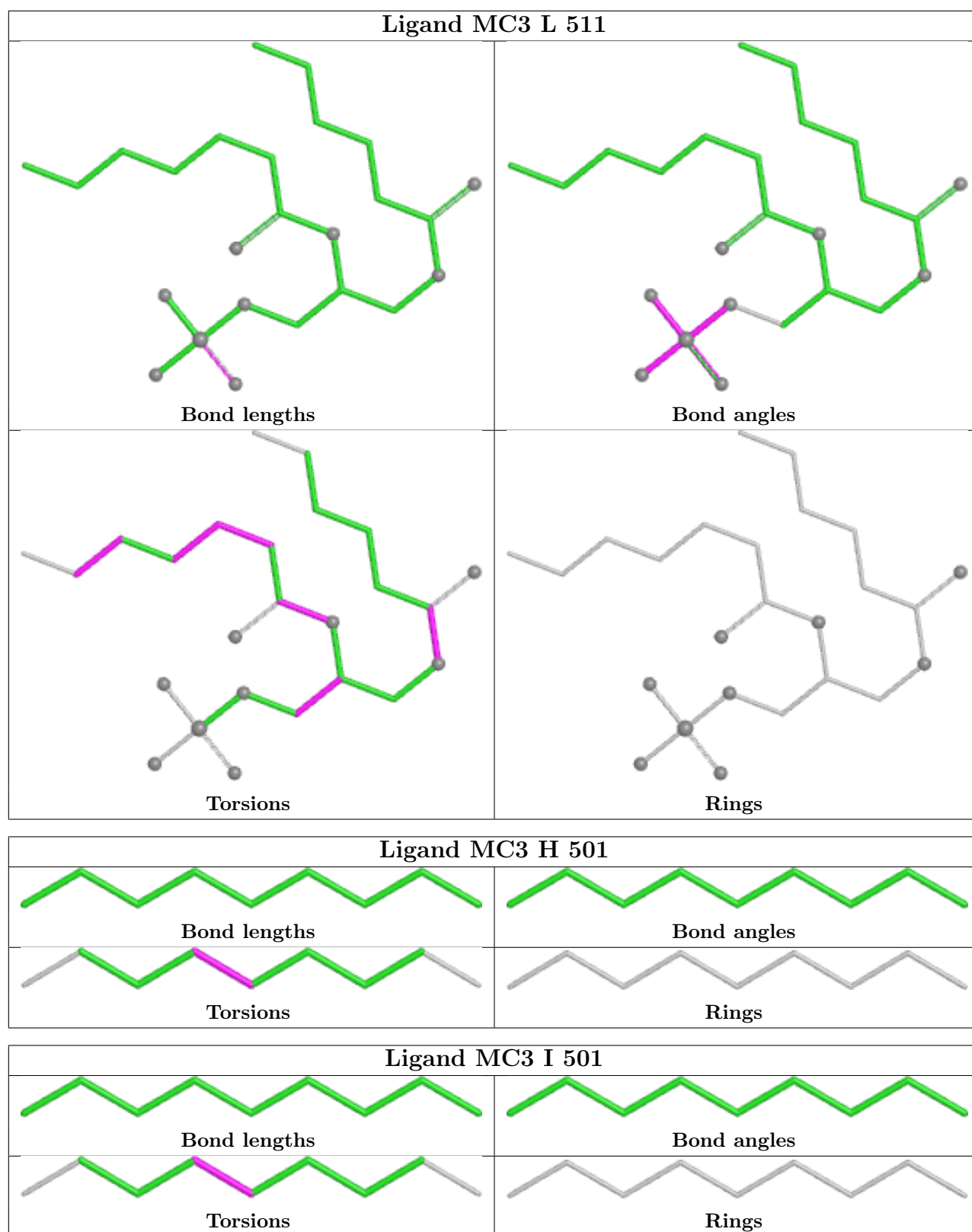


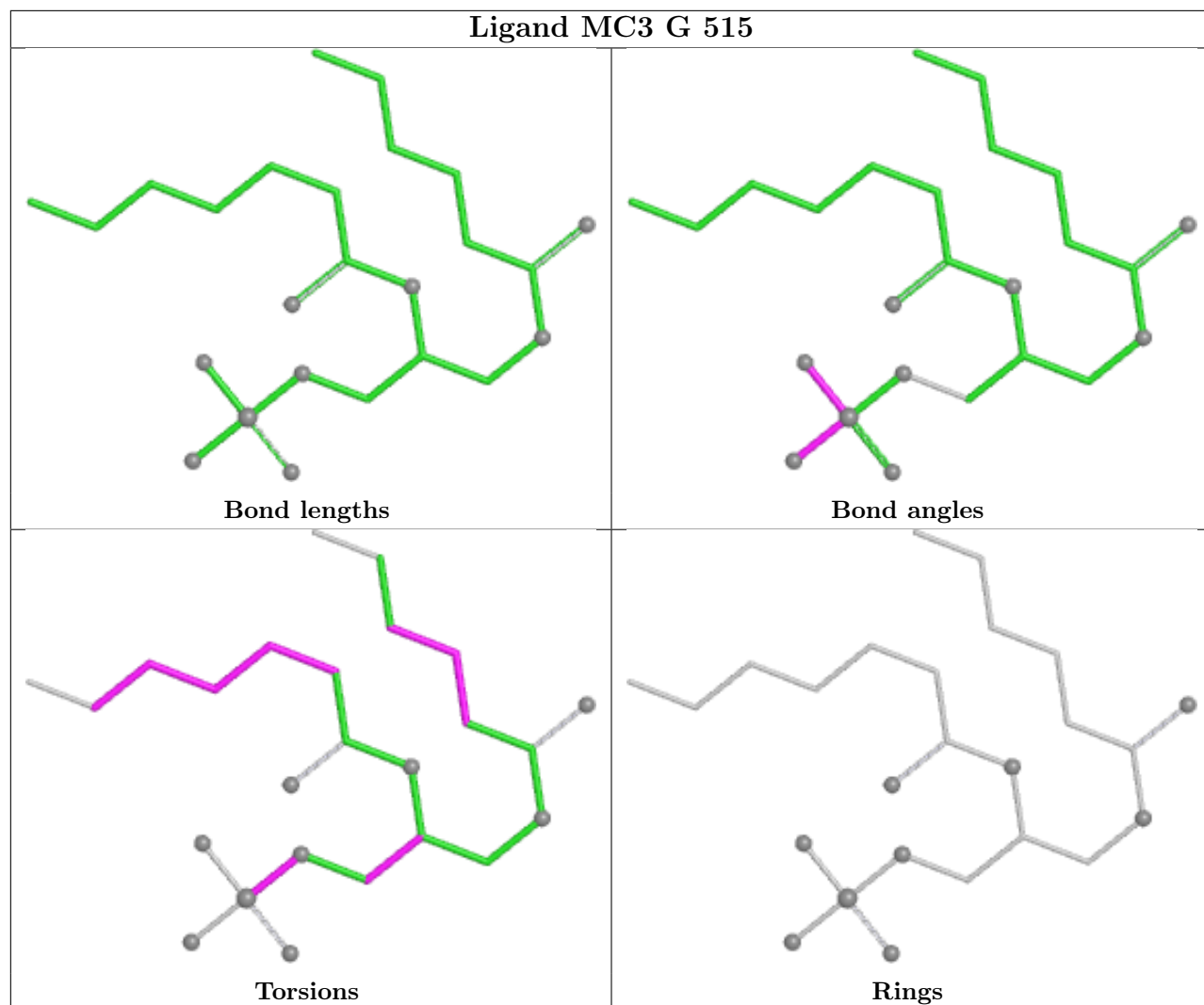


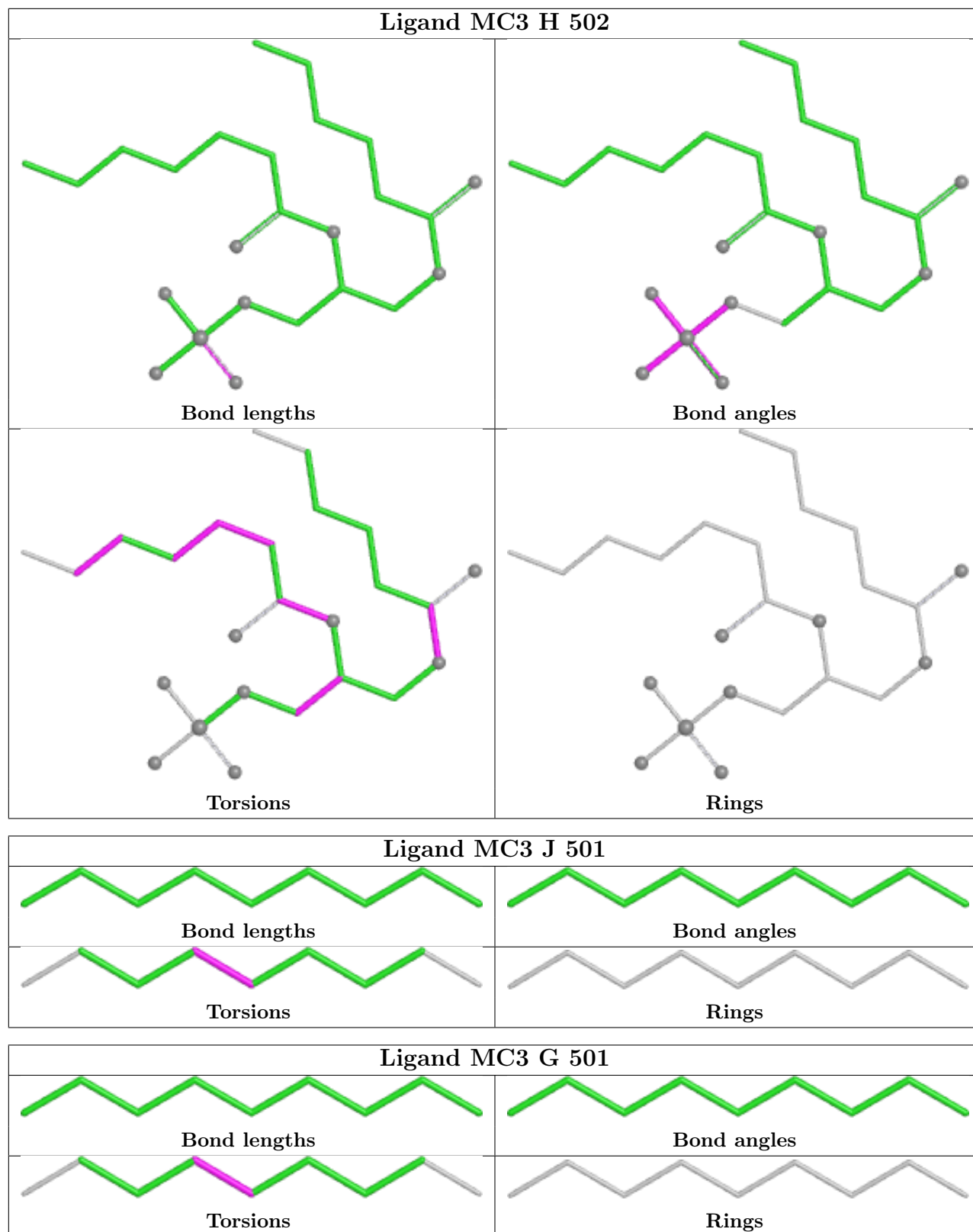


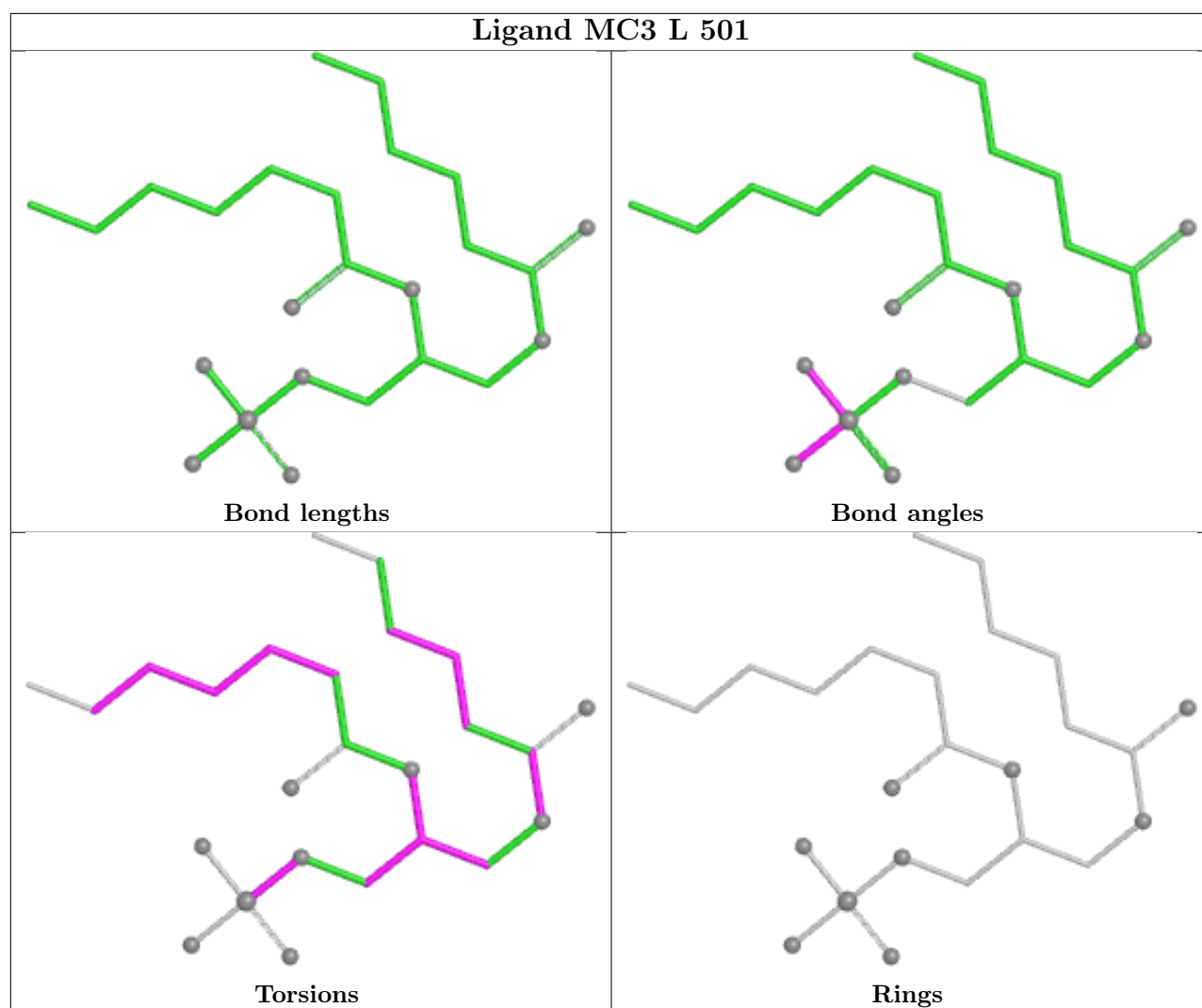












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

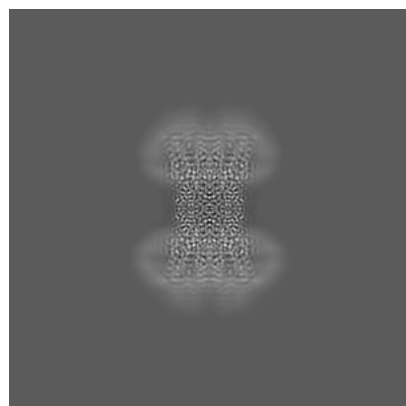
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-73965. These allow visual inspection of the internal detail of the map and identification of artifacts.

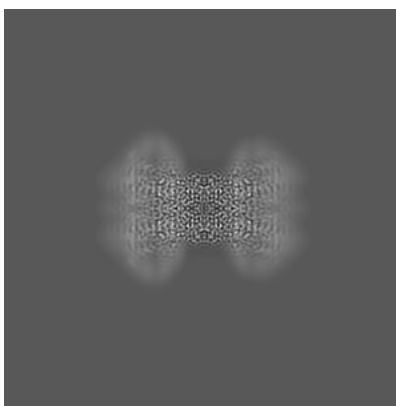
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

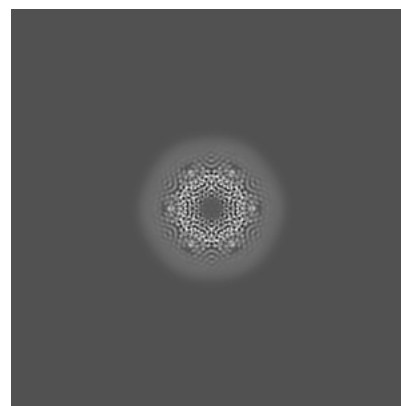
6.1.1 Primary map



X

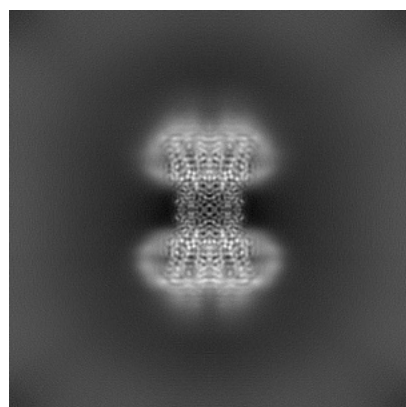


Y

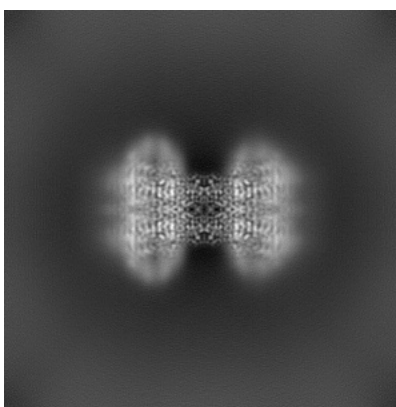


Z

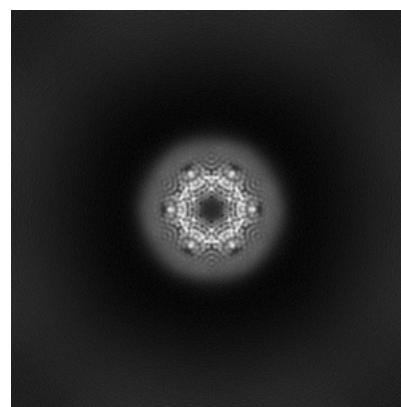
6.1.2 Raw map



X



Y

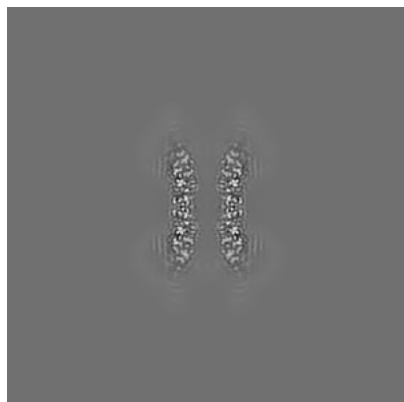


Z

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

6.2 Central slices [i](#)

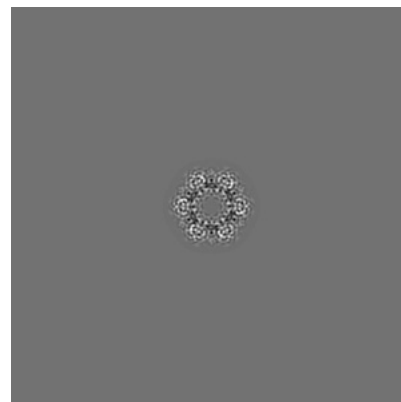
6.2.1 Primary map



X Index: 192

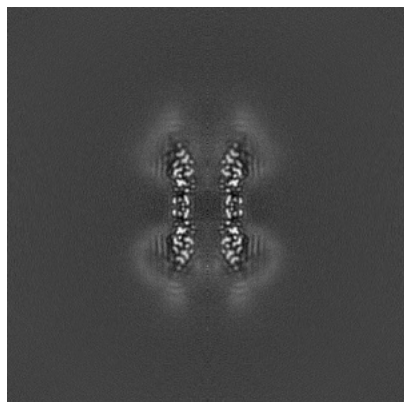


Y Index: 192

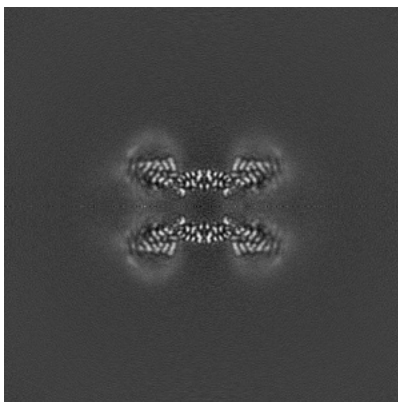


Z Index: 192

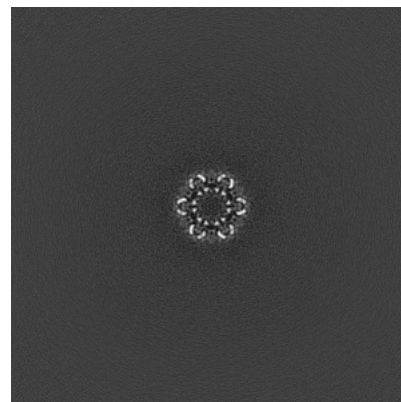
6.2.2 Raw map



X Index: 192



Y Index: 192

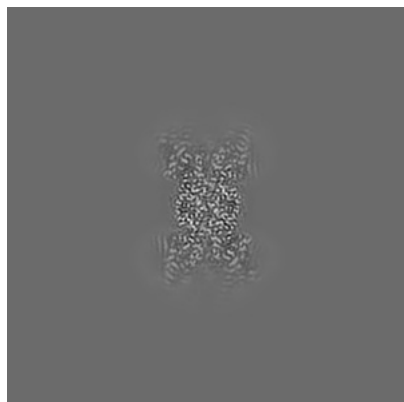


Z Index: 192

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

6.3 Largest variance slices [i](#)

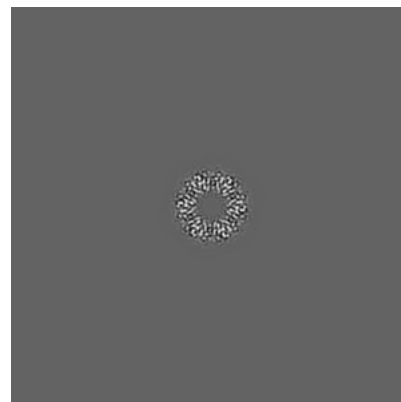
6.3.1 Primary map



X Index: 175

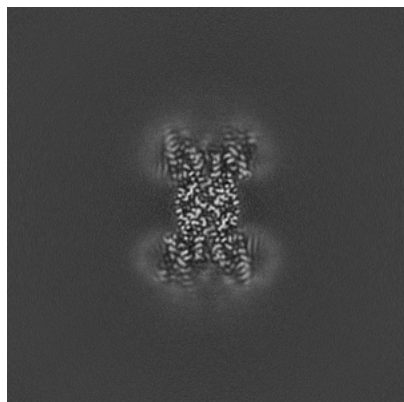


Y Index: 212

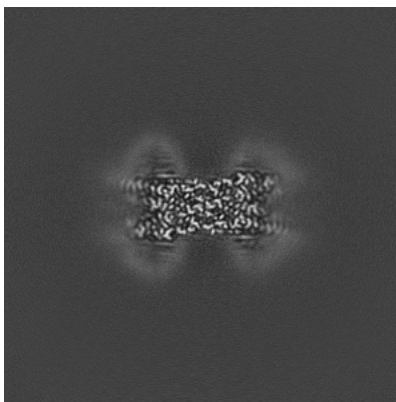


Z Index: 180

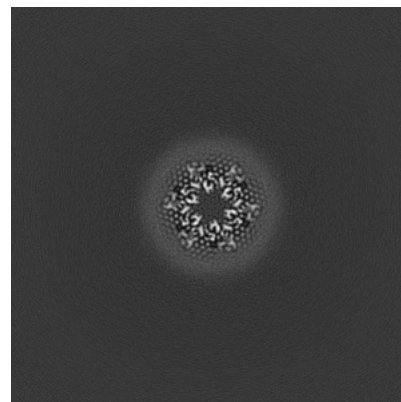
6.3.2 Raw map



X Index: 209



Y Index: 172

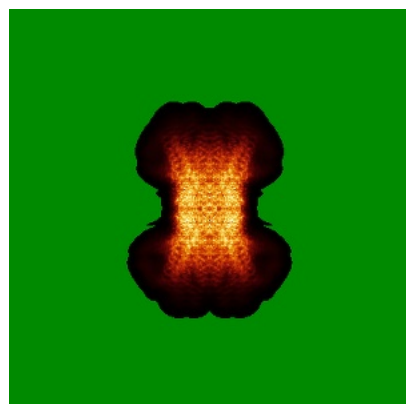


Z Index: 161

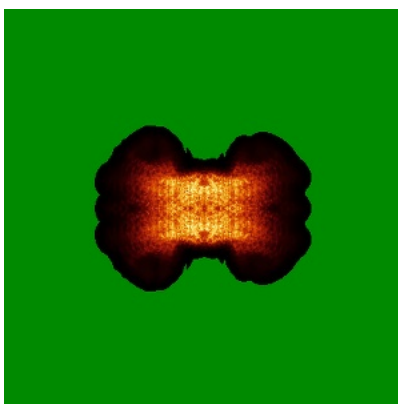
The images above show the largest variance slices of the map in three orthogonal directions.

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

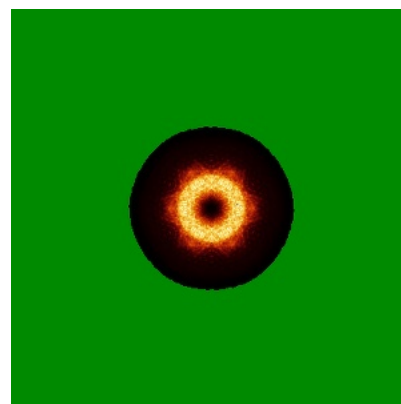
6.4.1 Primary map



X

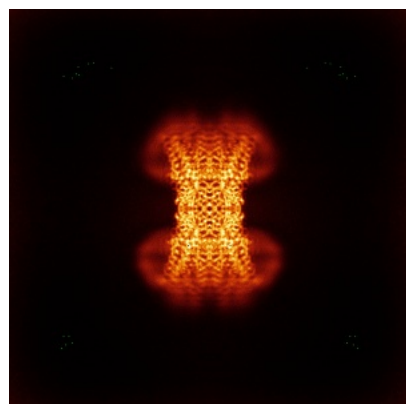


Y

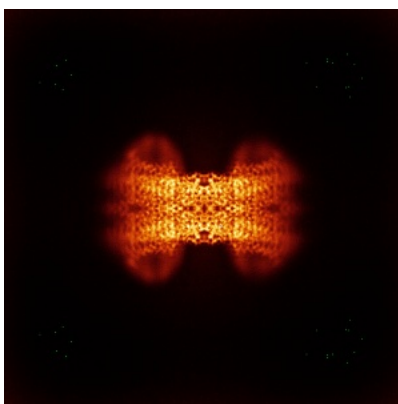


Z

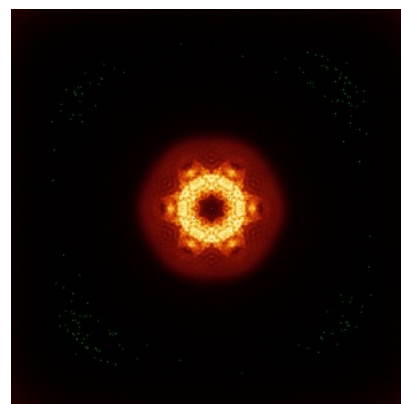
6.4.2 Raw map



X



Y

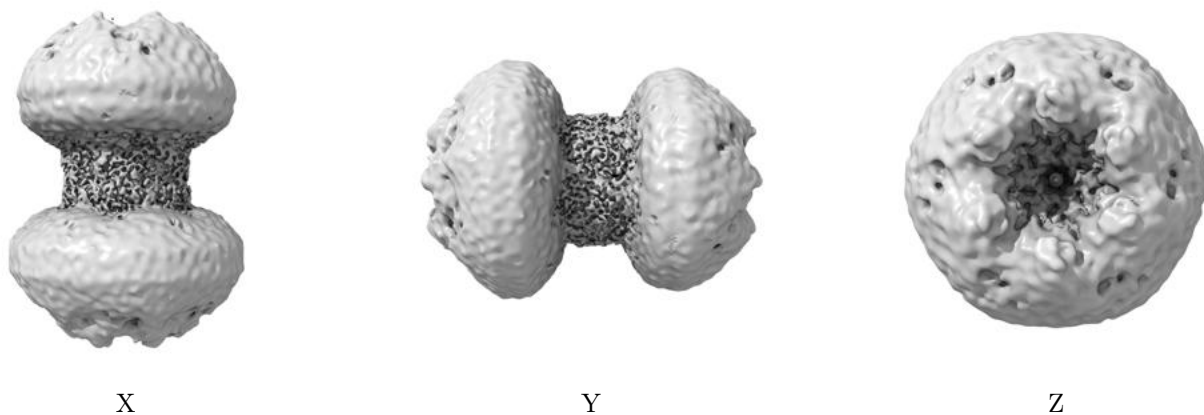


Z

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

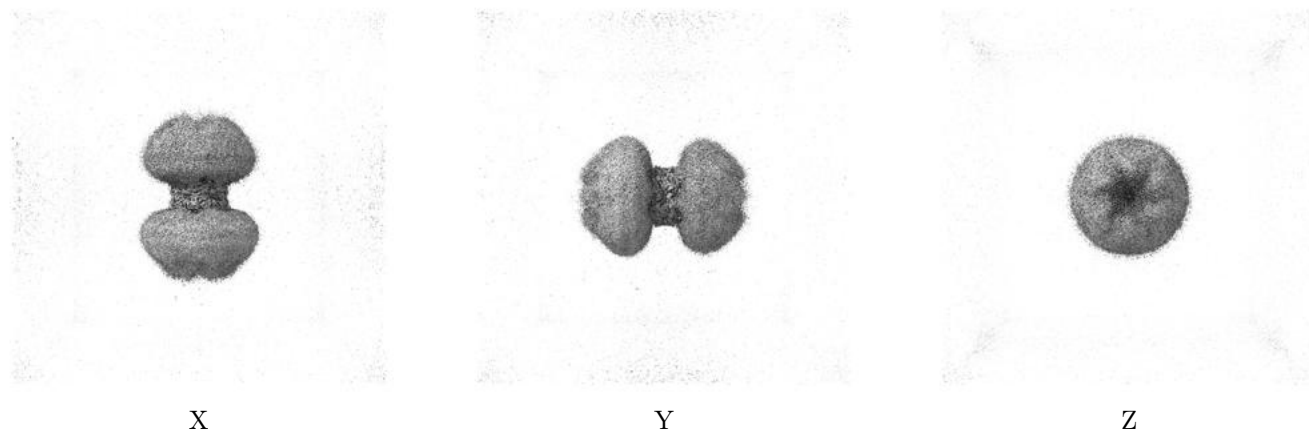
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.03. 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.

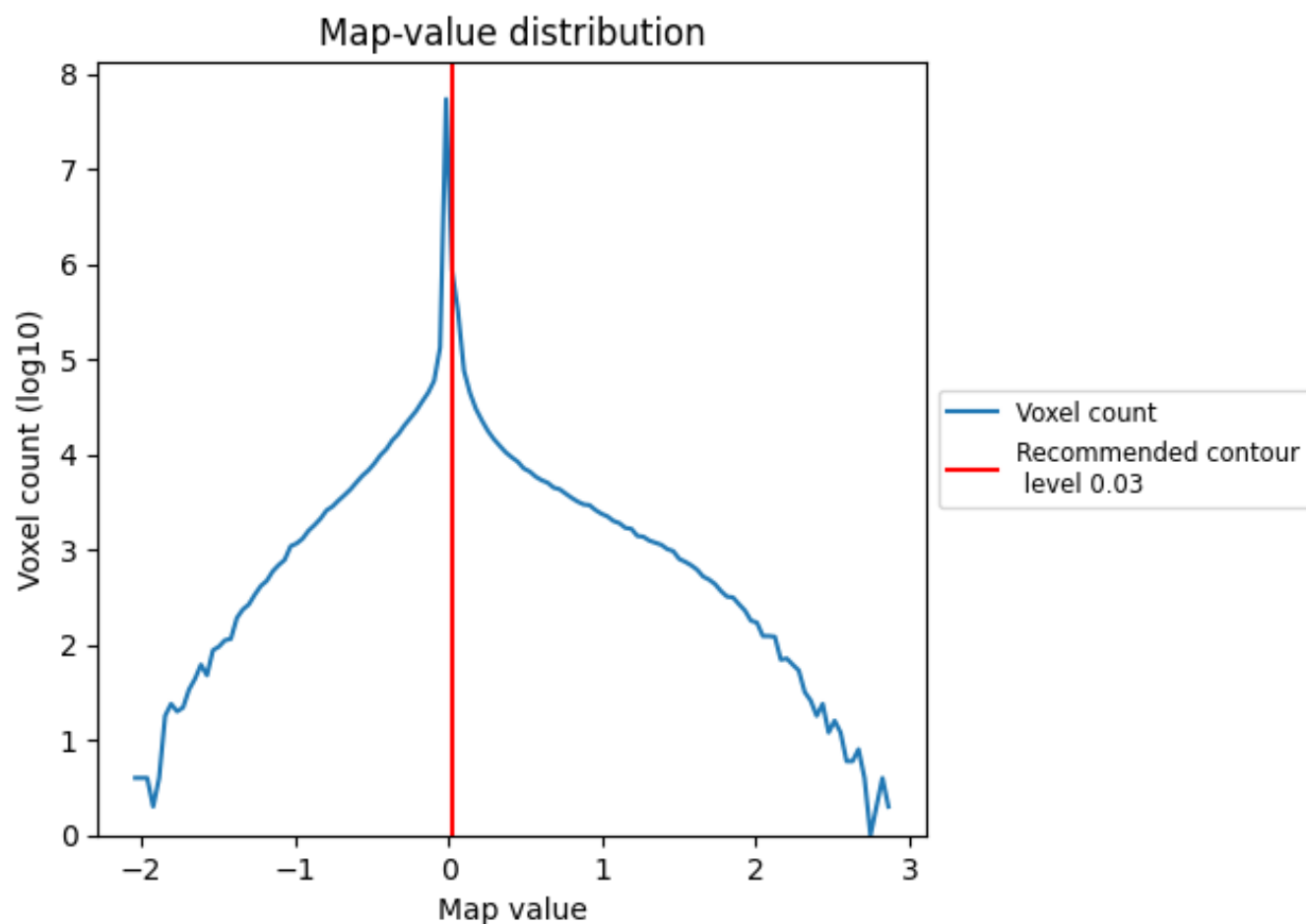
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

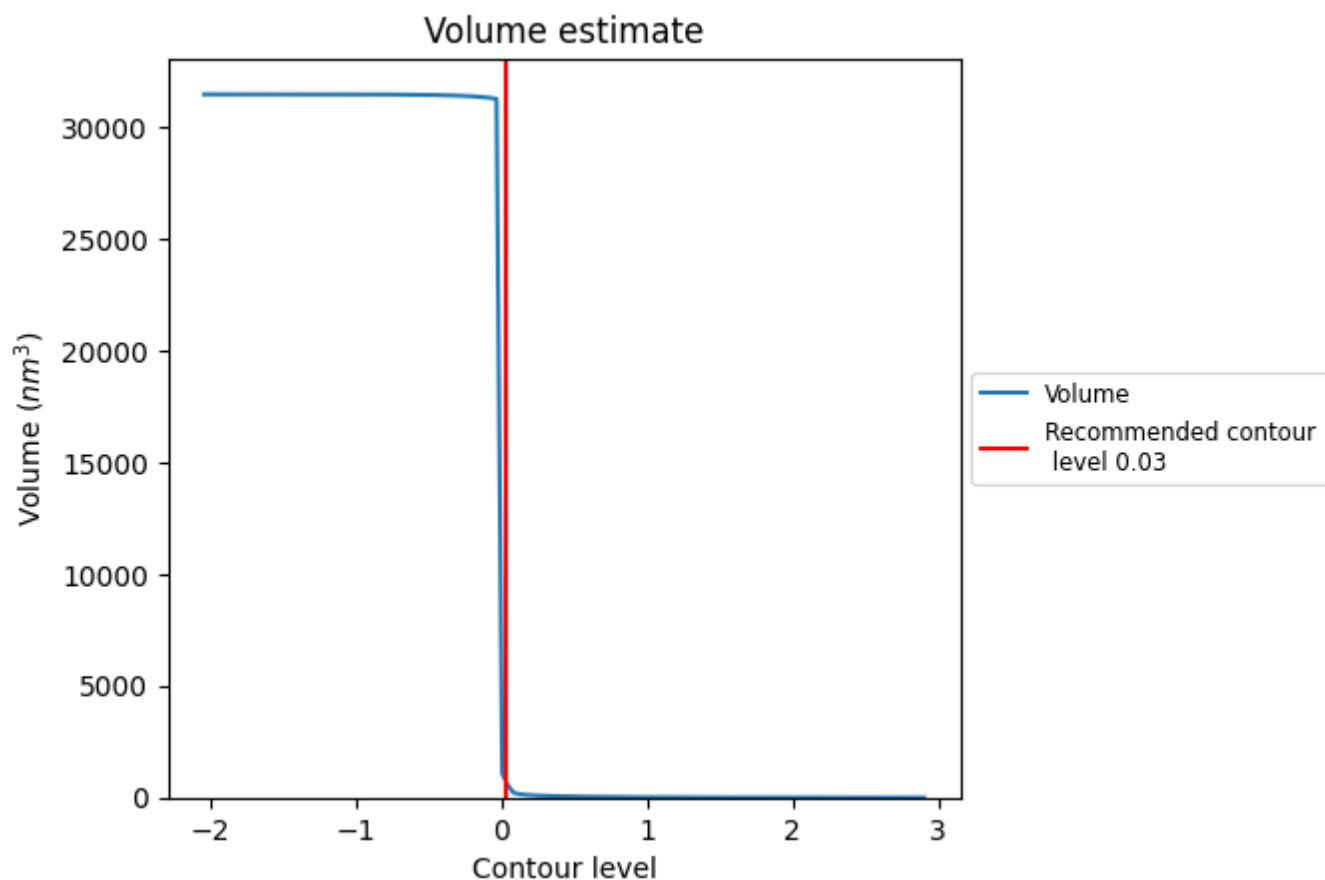
This section contains the results of statistical analysis of the map.

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.

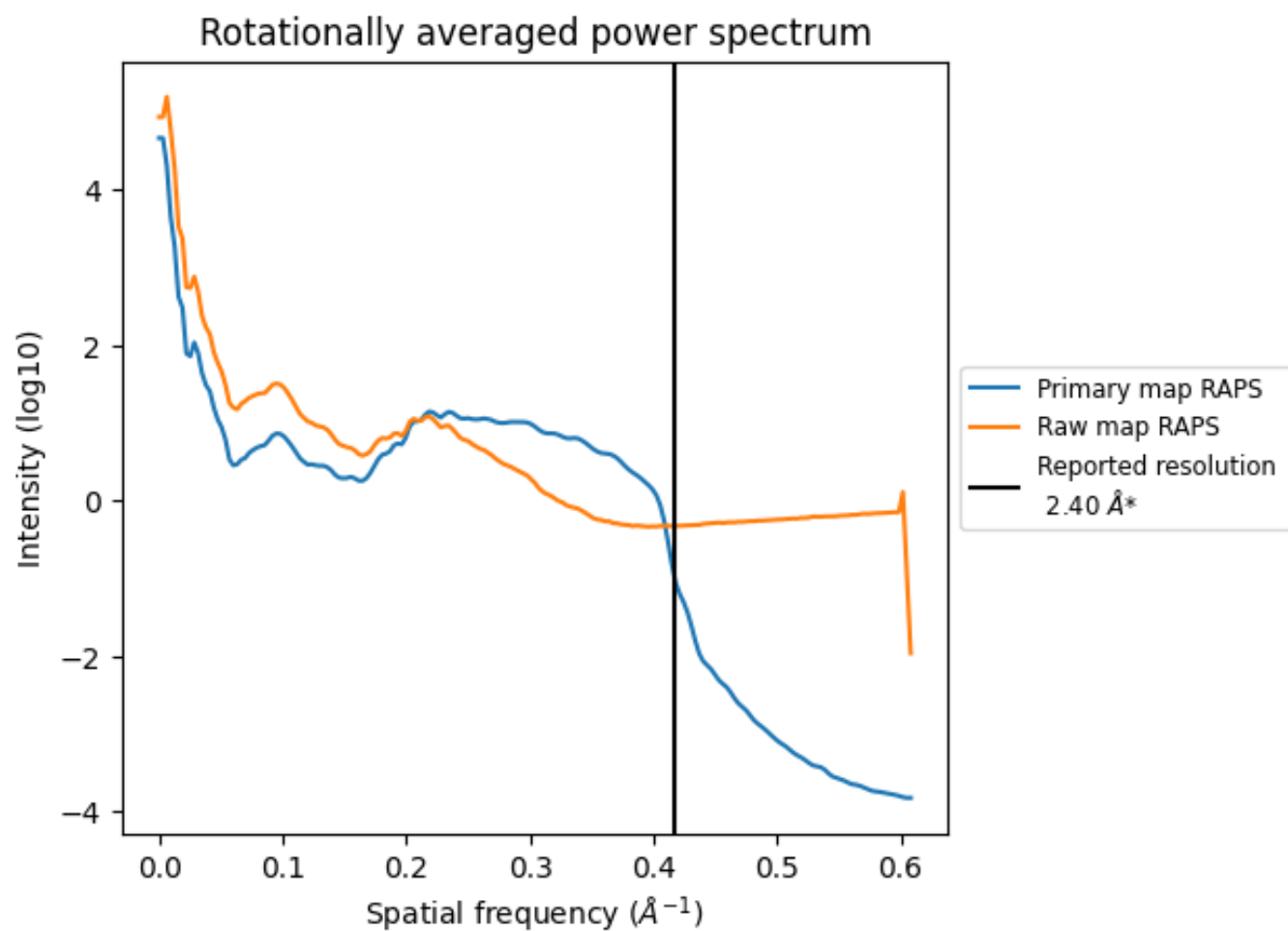
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 764 nm³; this corresponds to an approximate mass of 690 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 ⓘ

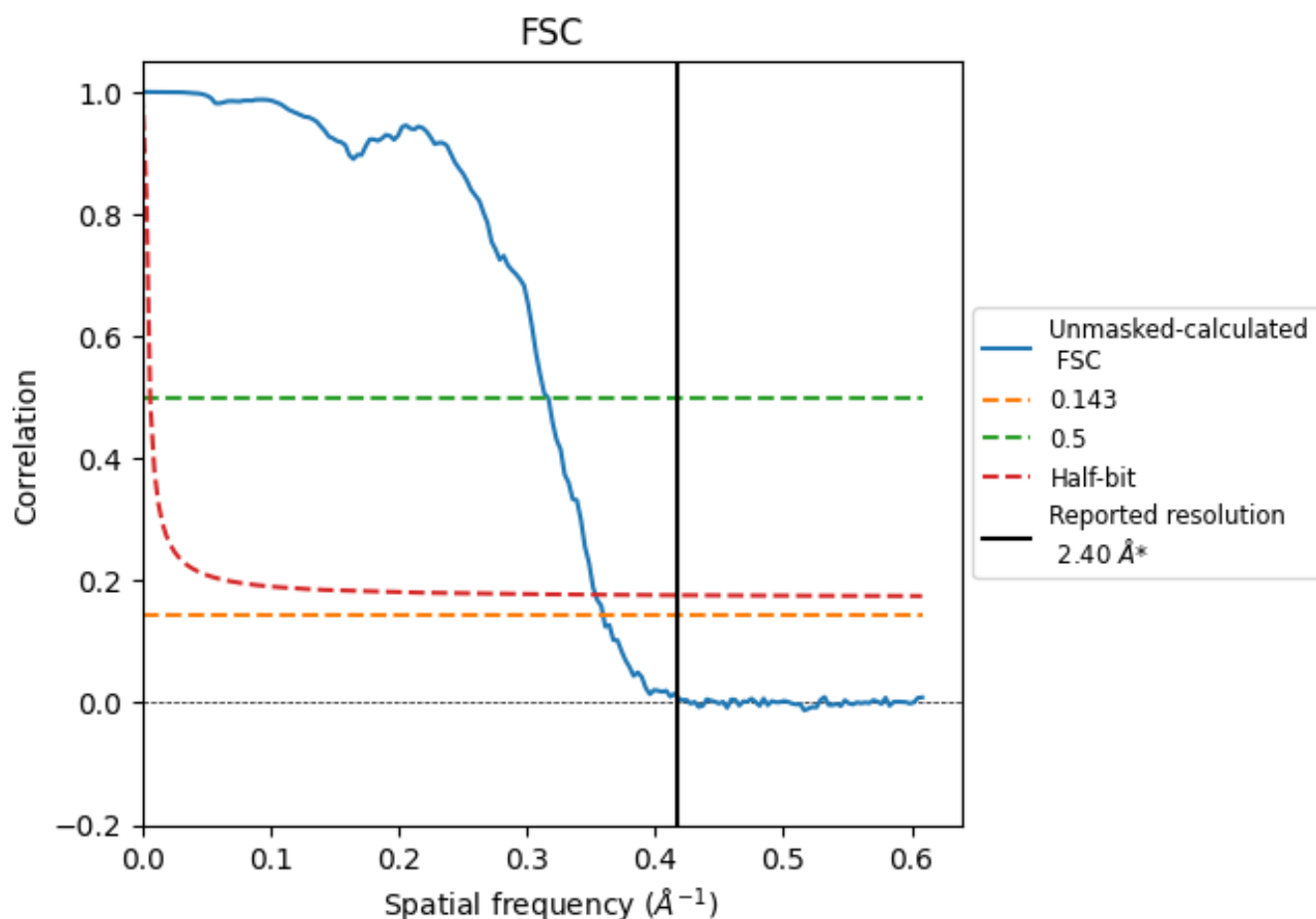


*Reported resolution corresponds to spatial frequency of 0.417 Å⁻¹

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 0.417 Å⁻¹

8.2 Resolution estimates [i](#)

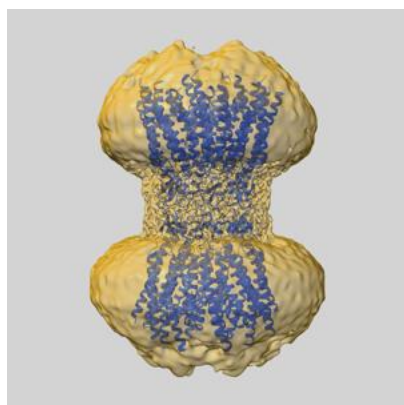
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.40	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	2.78	3.16	2.83

*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 2.78 differs from the reported value 2.4 by more than 10 %

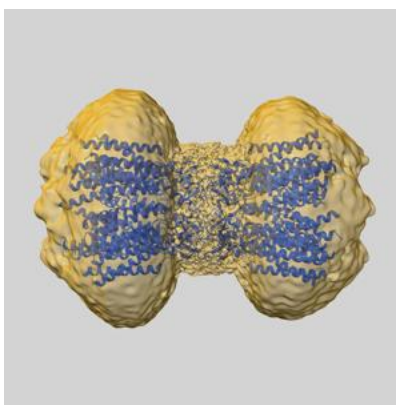
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-73965 and PDB model 9ZA3. Per-residue inclusion information can be found in section [3](#) on page [18](#).

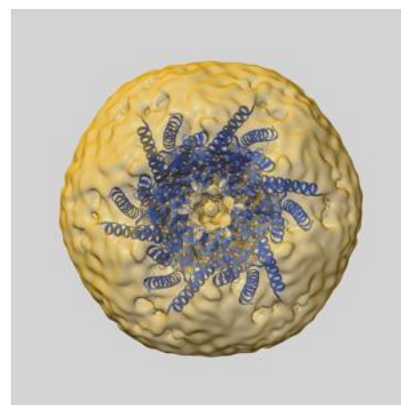
9.1 Map-model overlay [i](#)



X



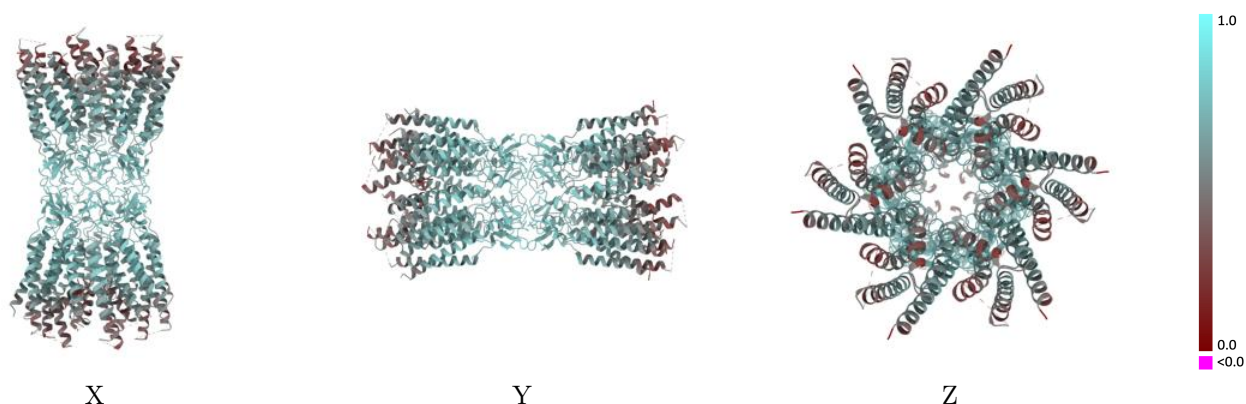
Y



Z

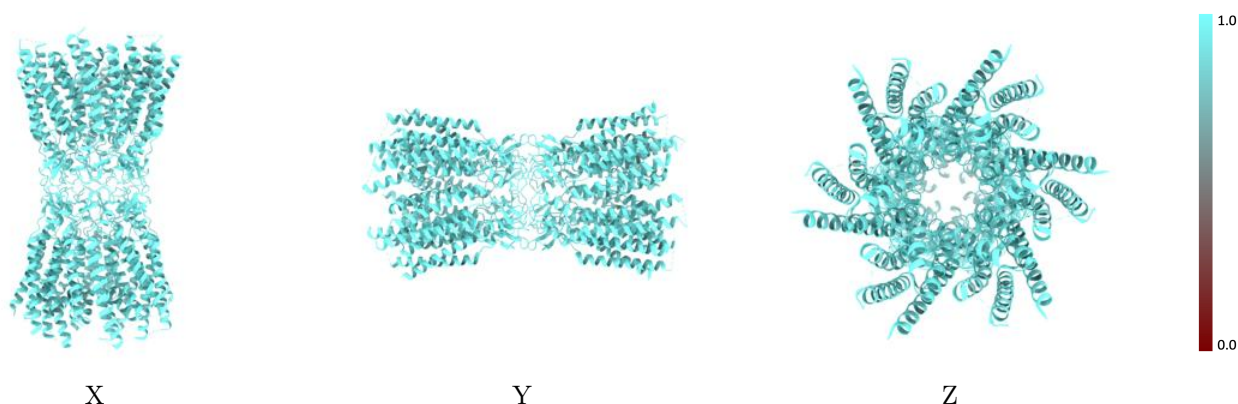
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



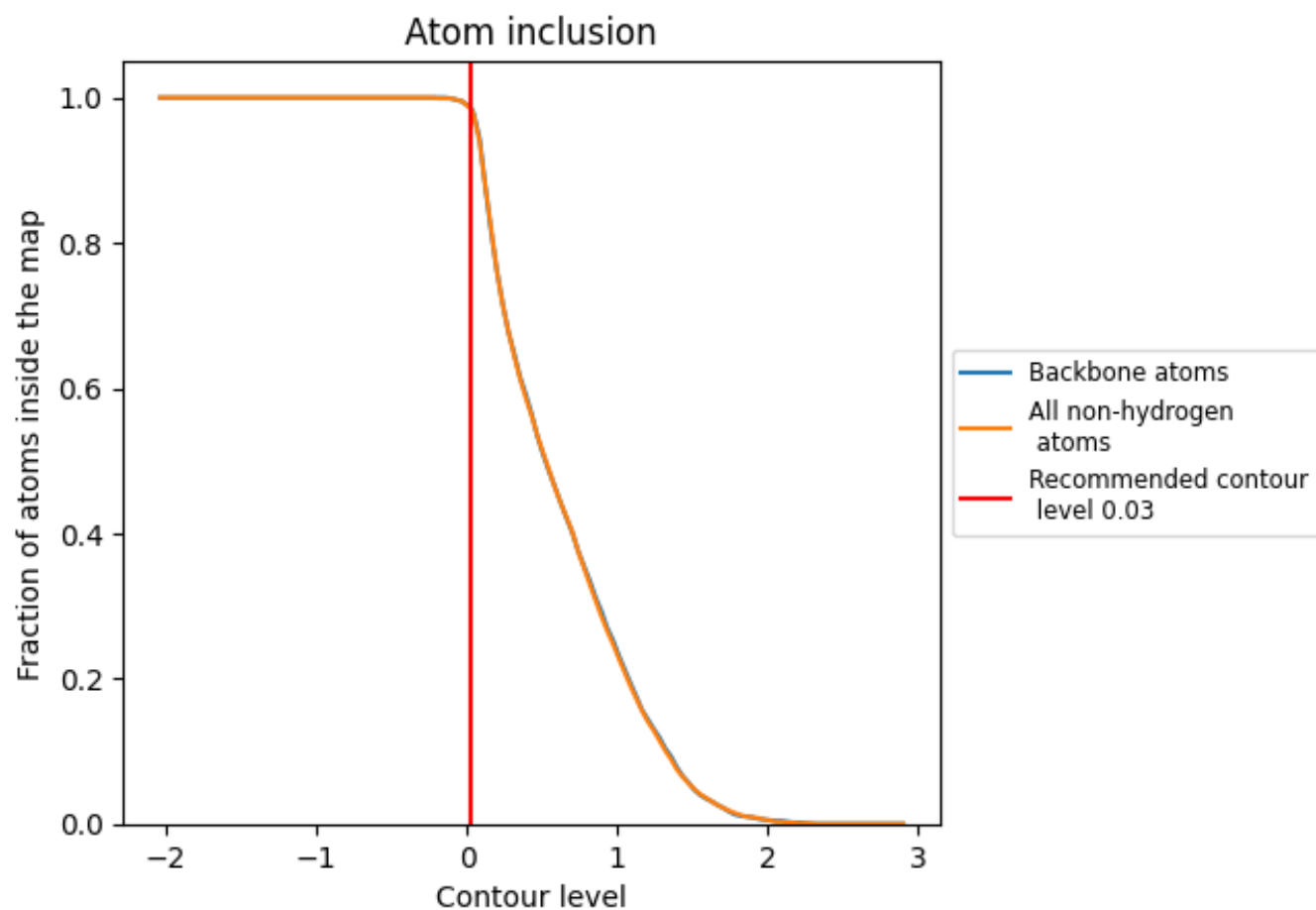
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.03).

9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 98% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9840	0.5960
A	0.9800	0.5790
B	0.9800	0.5770
C	0.9800	0.5760
D	0.9800	0.5750
E	0.9800	0.5750
F	0.9810	0.5750
G	0.9920	0.6160
H	0.9910	0.6160
I	0.9910	0.6170
J	0.9910	0.6140
K	0.9920	0.6130
L	0.9910	0.6150

1.0

0.0

<0.0