



Full wwPDB EM Validation Report ⓘ

Jun 12, 2025 – 04:36 PM EDT

PDB ID : 9D55 / pdb_00009d55
EMDB ID : EMD-46574
Title : Apo ACE full dimer 2 prepared by chameleon
Authors : Mancl, J.M.; Tang, W.J.
Deposited on : 2024-08-13
Resolution : 3.15 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

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.dev118
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : **FAILED**
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.43.1

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.15 Å.

There are no overall percentile quality scores available for this entry.

MolProbity failed to run properly - the sequence quality summary graphics cannot be shown.

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 20016 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.

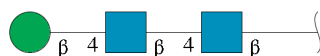
- Molecule 1 is a protein called Angiotensin-converting enzyme.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1201	Total	C	N	O	S	0	0
			9783	6273	1673	1794	43		
1	B	1199	Total	C	N	O	S	0	0
			9773	6267	1671	1792	43		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1207	HIS	-	expression tag	UNP P12821
A	1208	HIS	-	expression tag	UNP P12821
A	1209	HIS	-	expression tag	UNP P12821
A	1210	HIS	-	expression tag	UNP P12821
A	1211	HIS	-	expression tag	UNP P12821
A	1212	HIS	-	expression tag	UNP P12821
B	1207	HIS	-	expression tag	UNP P12821
B	1208	HIS	-	expression tag	UNP P12821
B	1209	HIS	-	expression tag	UNP P12821
B	1210	HIS	-	expression tag	UNP P12821
B	1211	HIS	-	expression tag	UNP P12821
B	1212	HIS	-	expression tag	UNP P12821

- Molecule 2 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



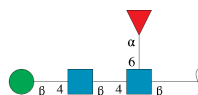
Mol	Chain	Residues	Atoms				AltConf	Trace
2	D	3	Total	C	N	O	0	0
			39	22	2	15		
2	N	3	Total	C	N	O	0	0
			39	22	2	15		

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Mol	Chain	Residues	Atoms				AltConf	Trace
2	P	3	Total	C	N	O	0	0
			39	22	2	15		

- Molecule 3 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
3	F	4	Total	C	N	O	0	0
			49	28	2	19		

- Molecule 4 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
4	G	2	Total	C	N	O	0	0
			28	16	2	10		
4	H	2	Total	C	N	O	0	0
			28	16	2	10		
4	I	2	Total	C	N	O	0	0
			28	16	2	10		
4	L	2	Total	C	N	O	0	0
			28	16	2	10		
4	Q	2	Total	C	N	O	0	0
			28	16	2	10		
4	R	2	Total	C	N	O	0	0
			28	16	2	10		
4	S	2	Total	C	N	O	0	0
			28	16	2	10		
4	U	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 5 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆).



Mol	Chain	Residues	Atoms				AltConf
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	A	1	Total	C	N	O	0
			14	8	1	5	
5	B	1	Total	C	N	O	0
			14	8	1	5	
5	B	1	Total	C	N	O	0
			14	8	1	5	

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3 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	36947	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	52.82	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.563	Depositor
Minimum map value	-0.335	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.014	Depositor
Recommended contour level	0.06	Depositor
Map size (Å)	297.36, 297.36, 297.36	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.826, 0.826, 0.826	Depositor

4 Model quality [i](#)

4.1 Standard geometry [i](#)

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4.2 Too-close contacts [i](#)

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4.3 Torsion angles [i](#)

4.3.1 Protein backbone [i](#)

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4.3.2 Protein sidechains [i](#)

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4.3.3 RNA [i](#)

MolProbity failed to run properly - this section is therefore empty.

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

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

4.5 Carbohydrates [i](#)

29 monosaccharides 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	NAG	D	1	1,2	14,14,15	0.72	0	17,19,21	0.82	0
2	NAG	D	2	2	14,14,15	0.73	0	17,19,21	1.25	1 (5%)
2	BMA	D	3	2	11,11,12	0.83	0	15,15,17	1.96	3 (20%)
3	NAG	F	1	1,3	14,14,15	0.76	0	17,19,21	1.14	1 (5%)
3	NAG	F	2	3	14,14,15	0.66	0	17,19,21	1.31	2 (11%)
3	BMA	F	3	3	11,11,12	0.84	0	15,15,17	2.36	3 (20%)
3	FUC	F	4	3	10,10,11	0.80	0	14,14,16	0.90	0
4	NAG	G	1	1,4	14,14,15	0.63	0	17,19,21	1.28	2 (11%)
4	NAG	G	2	4	14,14,15	0.74	0	17,19,21	1.16	1 (5%)
4	NAG	H	1	1,4	14,14,15	0.75	0	17,19,21	0.81	0
4	NAG	H	2	4	14,14,15	0.73	0	17,19,21	0.82	0
4	NAG	I	1	1,4	14,14,15	0.74	0	17,19,21	1.46	1 (5%)
4	NAG	I	2	4	14,14,15	0.72	0	17,19,21	1.22	1 (5%)
4	NAG	L	1	1,4	14,14,15	0.73	0	17,19,21	0.92	0
4	NAG	L	2	4	14,14,15	0.73	0	17,19,21	0.85	0
2	NAG	N	1	1,2	14,14,15	0.67	0	17,19,21	0.98	1 (5%)
2	NAG	N	2	2	14,14,15	0.73	0	17,19,21	1.22	1 (5%)
2	BMA	N	3	2	11,11,12	0.83	0	15,15,17	2.02	3 (20%)
2	NAG	P	1	1,2	14,14,15	0.74	0	17,19,21	0.89	0
2	NAG	P	2	2	14,14,15	0.74	0	17,19,21	1.31	1 (5%)
2	BMA	P	3	2	11,11,12	0.82	0	15,15,17	1.99	3 (20%)
4	NAG	Q	1	1,4	14,14,15	0.78	0	17,19,21	1.60	5 (29%)
4	NAG	Q	2	4	14,14,15	0.98	1 (7%)	17,19,21	1.94	4 (23%)
4	NAG	R	1	1,4	14,14,15	0.74	0	17,19,21	1.46	4 (23%)
4	NAG	R	2	4	14,14,15	0.85	1 (7%)	17,19,21	1.19	2 (11%)
4	NAG	S	1	1,4	14,14,15	0.76	0	17,19,21	0.88	0
4	NAG	S	2	4	14,14,15	0.72	0	17,19,21	0.79	0
4	NAG	U	1	1,4	14,14,15	0.74	0	17,19,21	1.27	1 (5%)
4	NAG	U	2	4	14,14,15	0.70	0	17,19,21	0.92	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	NAG	D	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	D	2	2	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	BMA	D	3	2	-	1/2/19/22	0/1/1/1
3	NAG	F	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	F	2	3	-	2/6/23/26	0/1/1/1
3	BMA	F	3	3	-	1/2/19/22	0/1/1/1
3	FUC	F	4	3	-	-	0/1/1/1
4	NAG	G	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	G	2	4	-	3/6/23/26	0/1/1/1
4	NAG	H	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	H	2	4	-	0/6/23/26	0/1/1/1
4	NAG	I	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	I	2	4	-	2/6/23/26	0/1/1/1
4	NAG	L	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	L	2	4	-	0/6/23/26	0/1/1/1
2	NAG	N	1	1,2	-	0/6/23/26	0/1/1/1
2	NAG	N	2	2	-	2/6/23/26	0/1/1/1
2	BMA	N	3	2	-	1/2/19/22	0/1/1/1
2	NAG	P	1	1,2	-	0/6/23/26	0/1/1/1
2	NAG	P	2	2	-	3/6/23/26	0/1/1/1
2	BMA	P	3	2	-	1/2/19/22	0/1/1/1
4	NAG	Q	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	Q	2	4	-	3/6/23/26	0/1/1/1
4	NAG	R	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	R	2	4	-	2/6/23/26	0/1/1/1
4	NAG	S	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	S	2	4	-	0/6/23/26	0/1/1/1
4	NAG	U	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	U	2	4	-	3/6/23/26	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	Q	2	NAG	C1-C2	3.02	1.56	1.52
4	R	2	NAG	C1-C2	2.11	1.55	1.52

All (40) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	F	3	BMA	C1-O5-C5	7.62	122.40	112.19
2	N	3	BMA	C1-O5-C5	6.05	120.30	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	P	3	BMA	C1-O5-C5	6.04	120.28	112.19
2	D	3	BMA	C1-O5-C5	5.75	119.89	112.19
4	Q	2	NAG	C1-O5-C5	5.49	119.54	112.19
4	I	1	NAG	C1-O5-C5	4.26	117.89	112.19
2	P	2	NAG	C2-N2-C7	3.36	127.41	122.90
2	D	2	NAG	C2-N2-C7	3.31	127.33	122.90
4	Q	1	NAG	C1-O5-C5	3.29	116.60	112.19
4	I	2	NAG	C2-N2-C7	3.22	127.22	122.90
4	G	1	NAG	C2-N2-C7	3.22	127.22	122.90
4	G	2	NAG	C2-N2-C7	3.22	127.21	122.90
4	U	1	NAG	C2-N2-C7	3.22	127.21	122.90
3	F	2	NAG	O4-C4-C5	3.20	117.22	109.32
2	N	2	NAG	C2-N2-C7	3.17	127.15	122.90
4	Q	2	NAG	C2-N2-C7	3.11	127.07	122.90
4	R	1	NAG	C4-C3-C2	-3.05	106.55	111.02
4	Q	2	NAG	C3-C4-C5	-2.97	104.84	110.23
3	F	2	NAG	C1-O5-C5	2.89	116.05	112.19
4	Q	2	NAG	O5-C1-C2	2.82	115.65	111.29
4	Q	1	NAG	C3-C4-C5	-2.70	105.34	110.23
2	N	1	NAG	O5-C1-C2	-2.64	107.20	111.29
3	F	1	NAG	O4-C4-C3	-2.60	104.24	110.38
4	R	1	NAG	C3-C4-C5	-2.54	105.62	110.23
4	R	1	NAG	O3-C3-C4	2.42	116.07	110.38
4	R	2	NAG	C1-C2-N2	2.34	114.12	110.43
4	R	2	NAG	C2-N2-C7	2.32	126.00	122.90
4	R	1	NAG	C1-O5-C5	2.30	115.27	112.19
3	F	3	BMA	C2-C3-C4	2.29	114.88	110.86
4	Q	1	NAG	C4-C3-C2	-2.23	107.75	111.02
2	N	3	BMA	C3-C4-C5	2.20	114.22	110.23
2	N	3	BMA	C2-C3-C4	2.20	114.72	110.86
3	F	3	BMA	C3-C4-C5	2.19	114.20	110.23
2	D	3	BMA	C3-C4-C5	2.18	114.19	110.23
4	G	1	NAG	O5-C1-C2	-2.13	107.99	111.29
2	D	3	BMA	C2-C3-C4	2.12	114.59	110.86
4	Q	1	NAG	O5-C5-C4	-2.10	105.72	110.83
2	P	3	BMA	C2-C3-C4	2.09	114.53	110.86
2	P	3	BMA	C3-C4-C5	2.08	114.00	110.23
4	Q	1	NAG	O5-C1-C2	2.05	114.46	111.29

There are no chirality outliers.

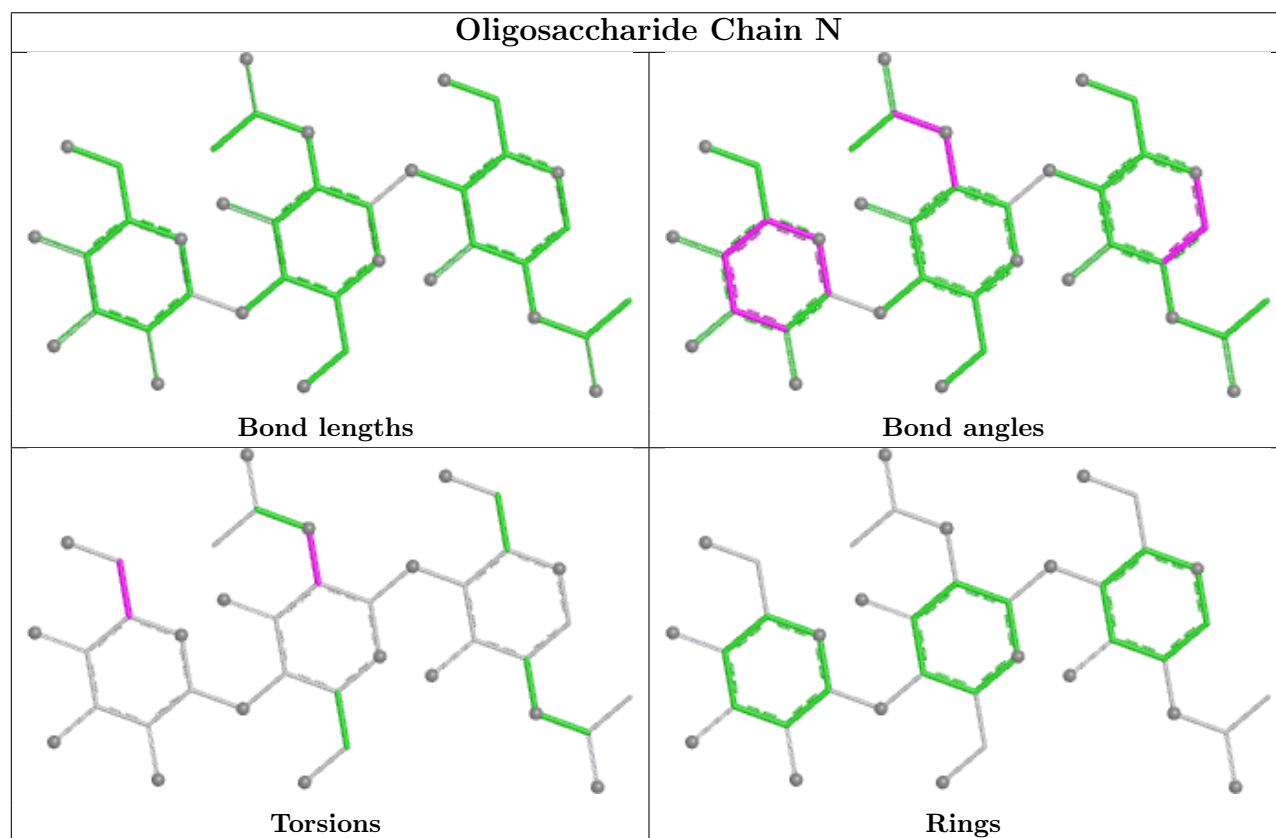
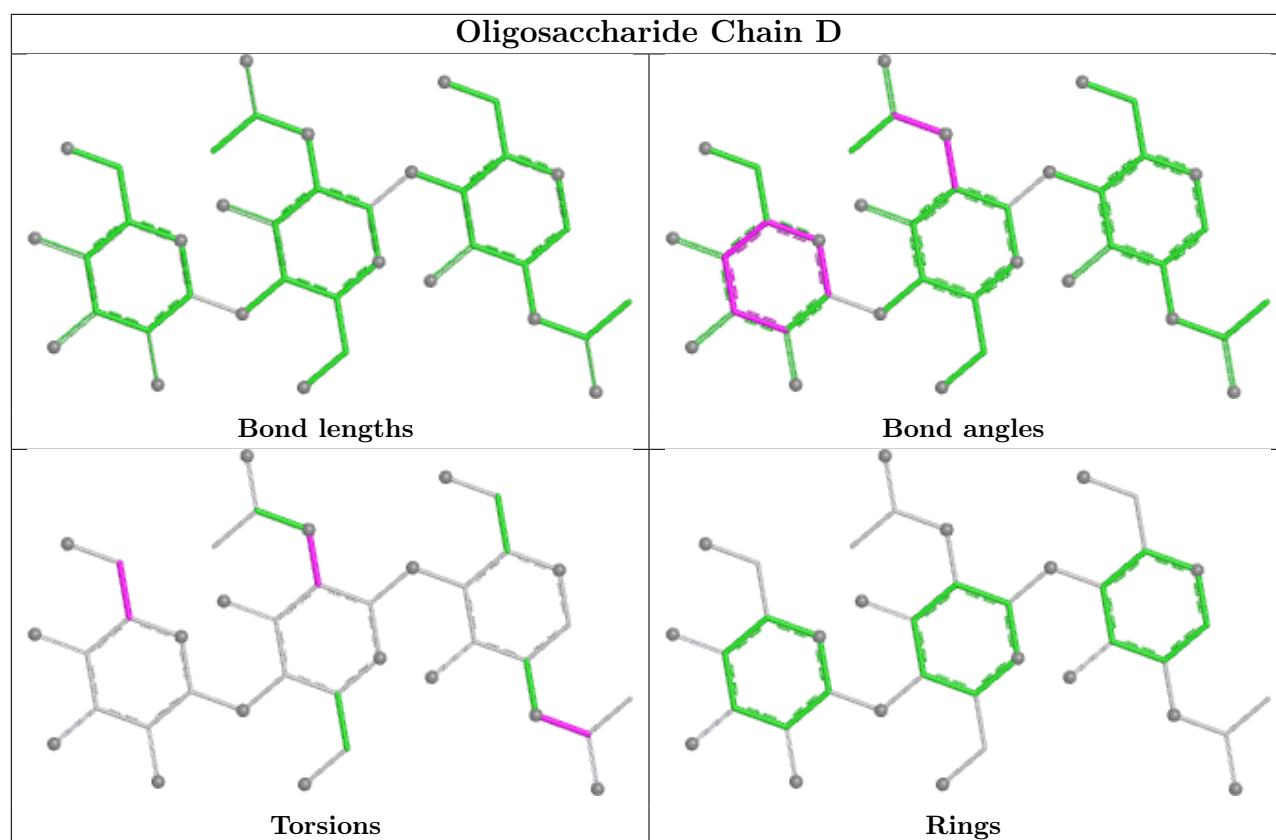
All (34) torsion outliers are listed below:

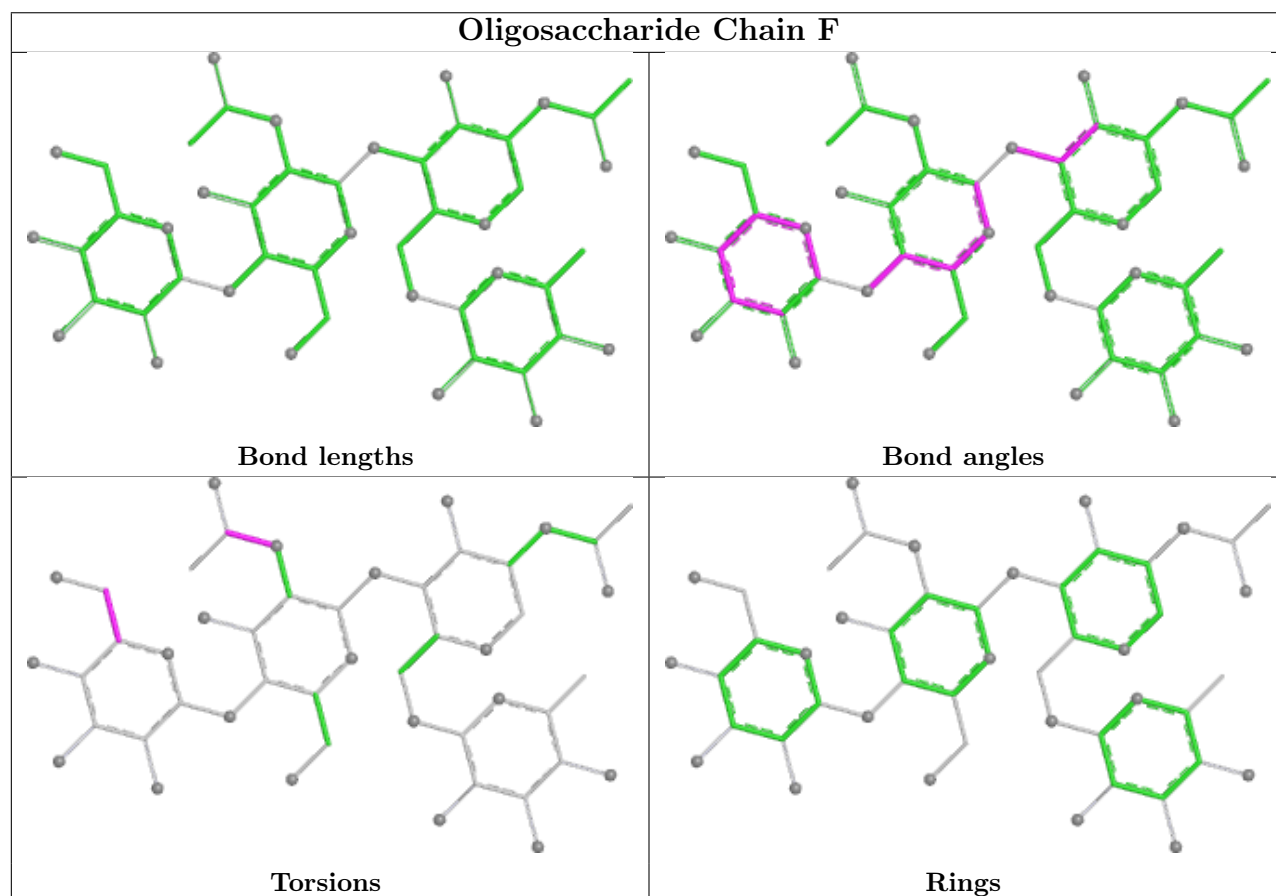
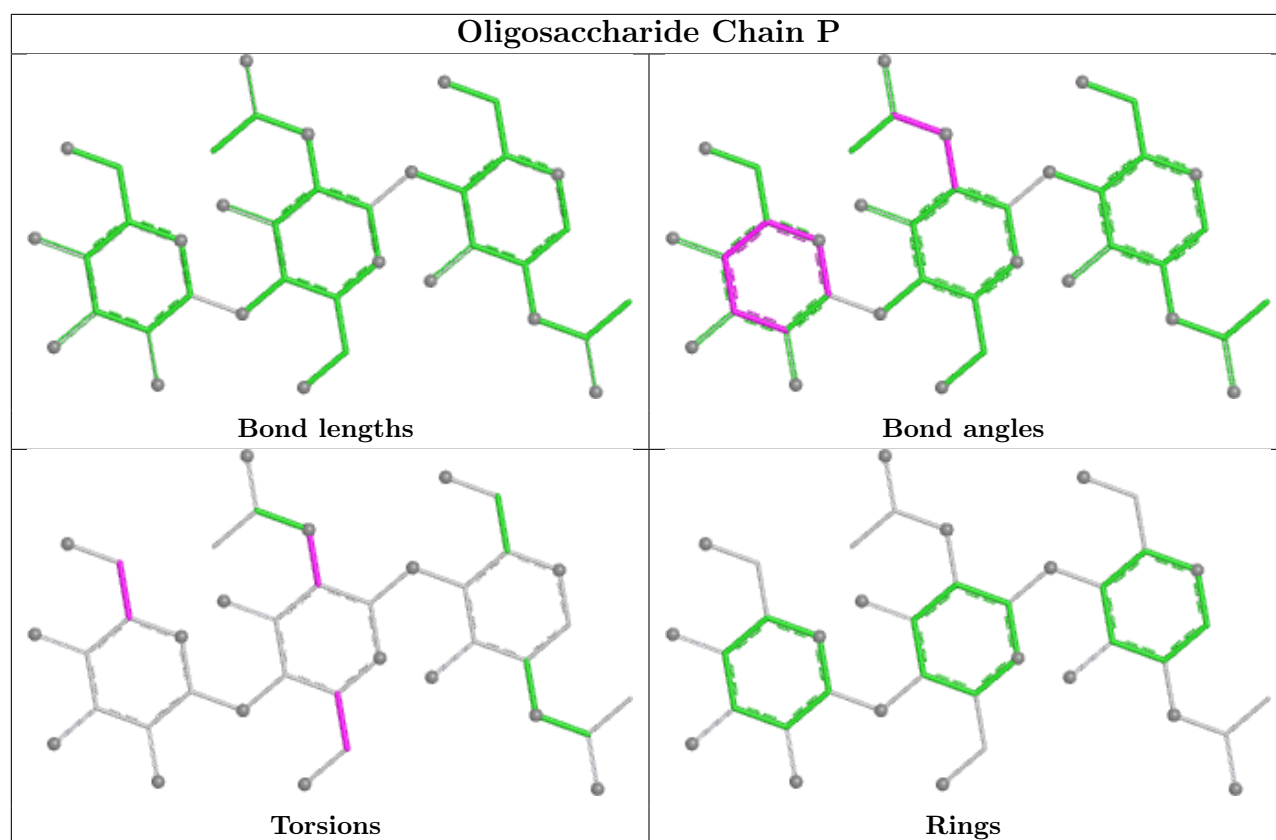
Mol	Chain	Res	Type	Atoms
2	D	1	NAG	C8-C7-N2-C2
2	D	1	NAG	O7-C7-N2-C2
3	F	2	NAG	C8-C7-N2-C2
3	F	2	NAG	O7-C7-N2-C2
4	Q	1	NAG	C8-C7-N2-C2
4	Q	1	NAG	O7-C7-N2-C2
4	Q	2	NAG	C8-C7-N2-C2
4	Q	2	NAG	O7-C7-N2-C2
4	R	2	NAG	C8-C7-N2-C2
4	R	2	NAG	O7-C7-N2-C2
4	U	2	NAG	C8-C7-N2-C2
4	U	2	NAG	O7-C7-N2-C2
2	N	3	BMA	O5-C5-C6-O6
2	D	3	BMA	O5-C5-C6-O6
4	Q	2	NAG	O5-C5-C6-O6
4	U	2	NAG	O5-C5-C6-O6
2	P	3	BMA	O5-C5-C6-O6
4	G	2	NAG	O5-C5-C6-O6
3	F	3	BMA	O5-C5-C6-O6
2	D	2	NAG	C1-C2-N2-C7
2	P	2	NAG	C1-C2-N2-C7
4	G	2	NAG	C1-C2-N2-C7
4	I	2	NAG	C1-C2-N2-C7
4	U	1	NAG	C1-C2-N2-C7
2	D	2	NAG	C3-C2-N2-C7
4	G	1	NAG	C3-C2-N2-C7
4	G	2	NAG	C3-C2-N2-C7
2	P	2	NAG	O5-C5-C6-O6
2	N	2	NAG	C1-C2-N2-C7
4	G	1	NAG	C1-C2-N2-C7
2	N	2	NAG	C3-C2-N2-C7
2	P	2	NAG	C3-C2-N2-C7
4	I	2	NAG	C3-C2-N2-C7
4	U	1	NAG	C3-C2-N2-C7

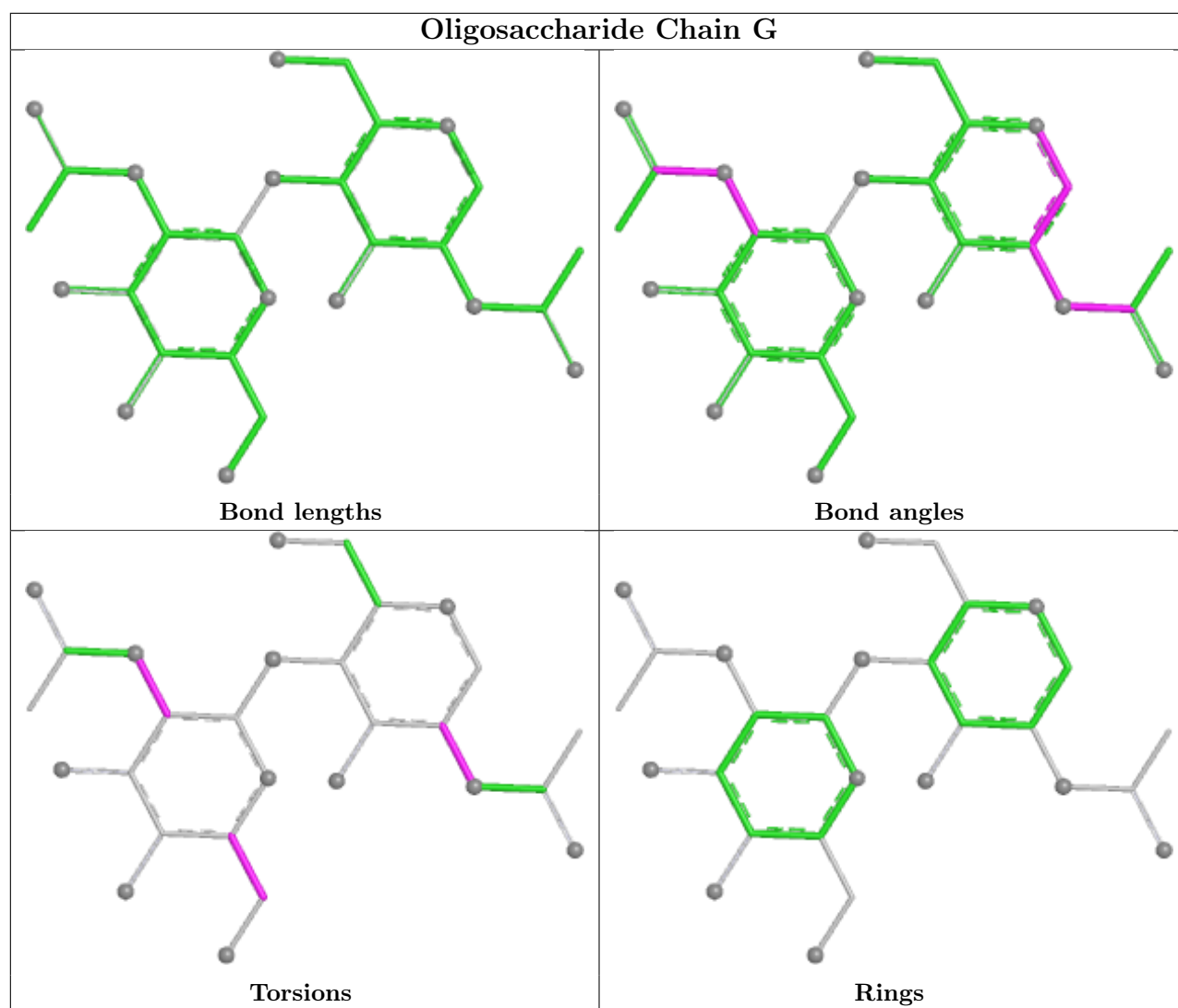
There are no ring outliers.

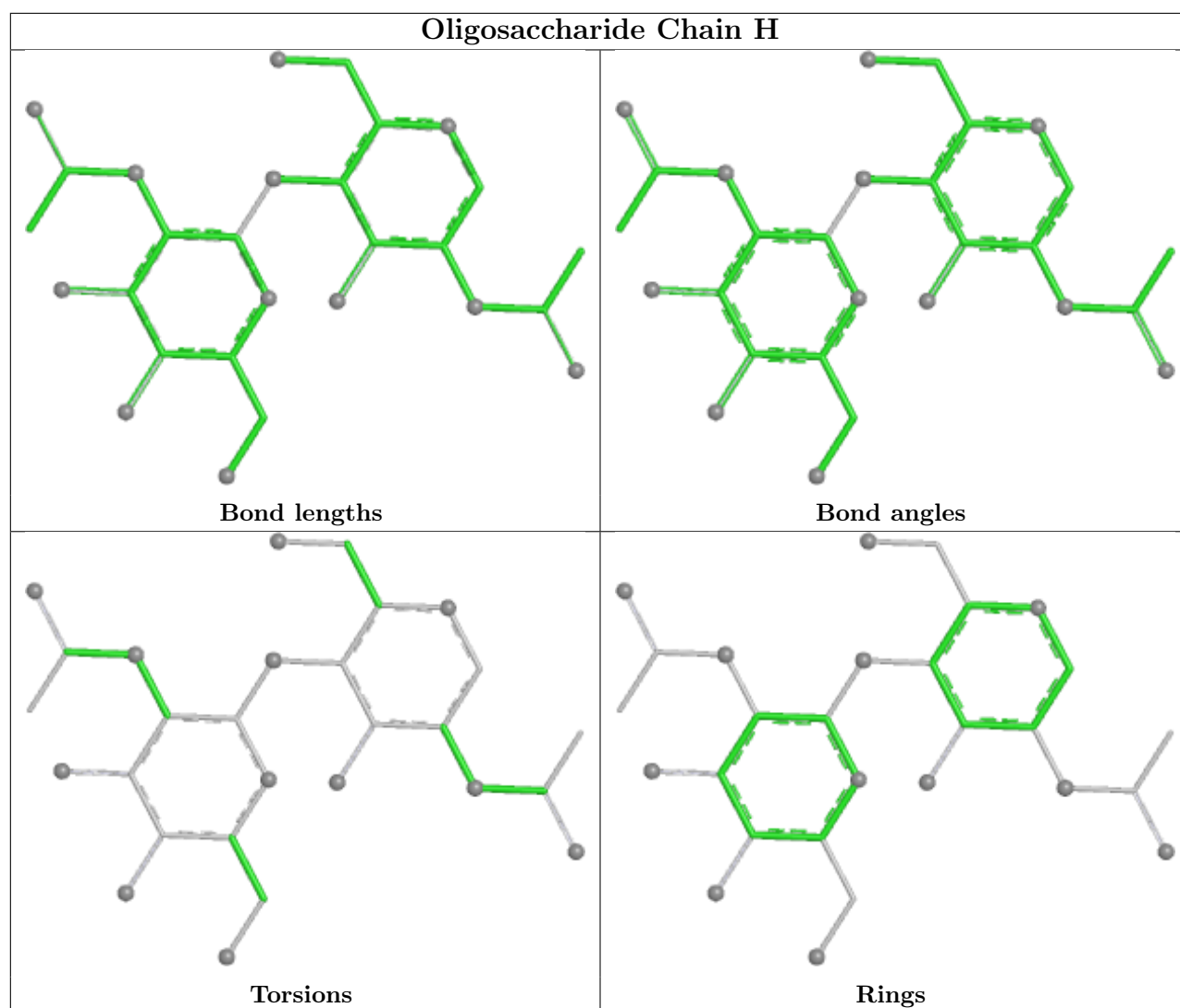
No monomer is involved in short contacts.

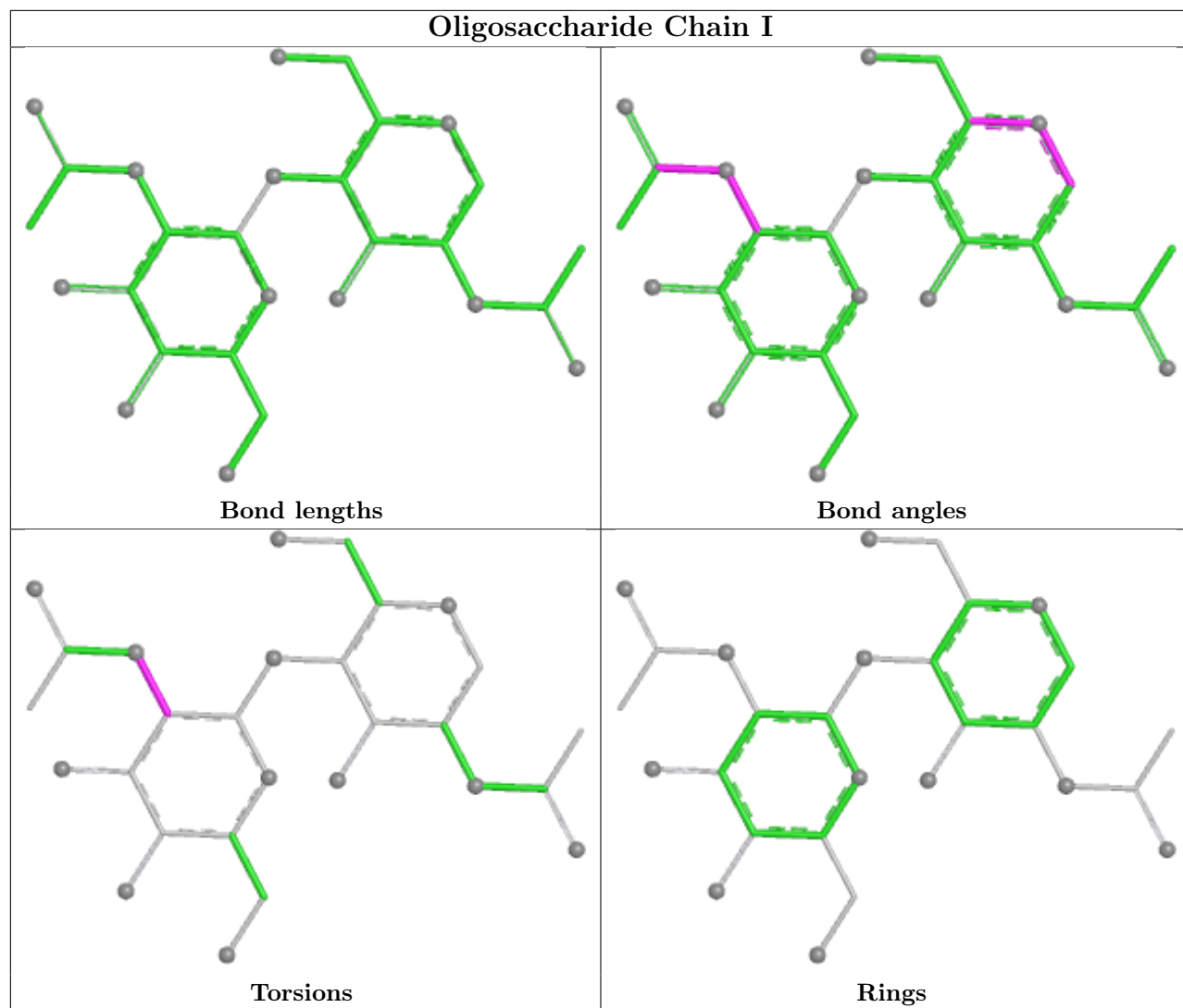
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

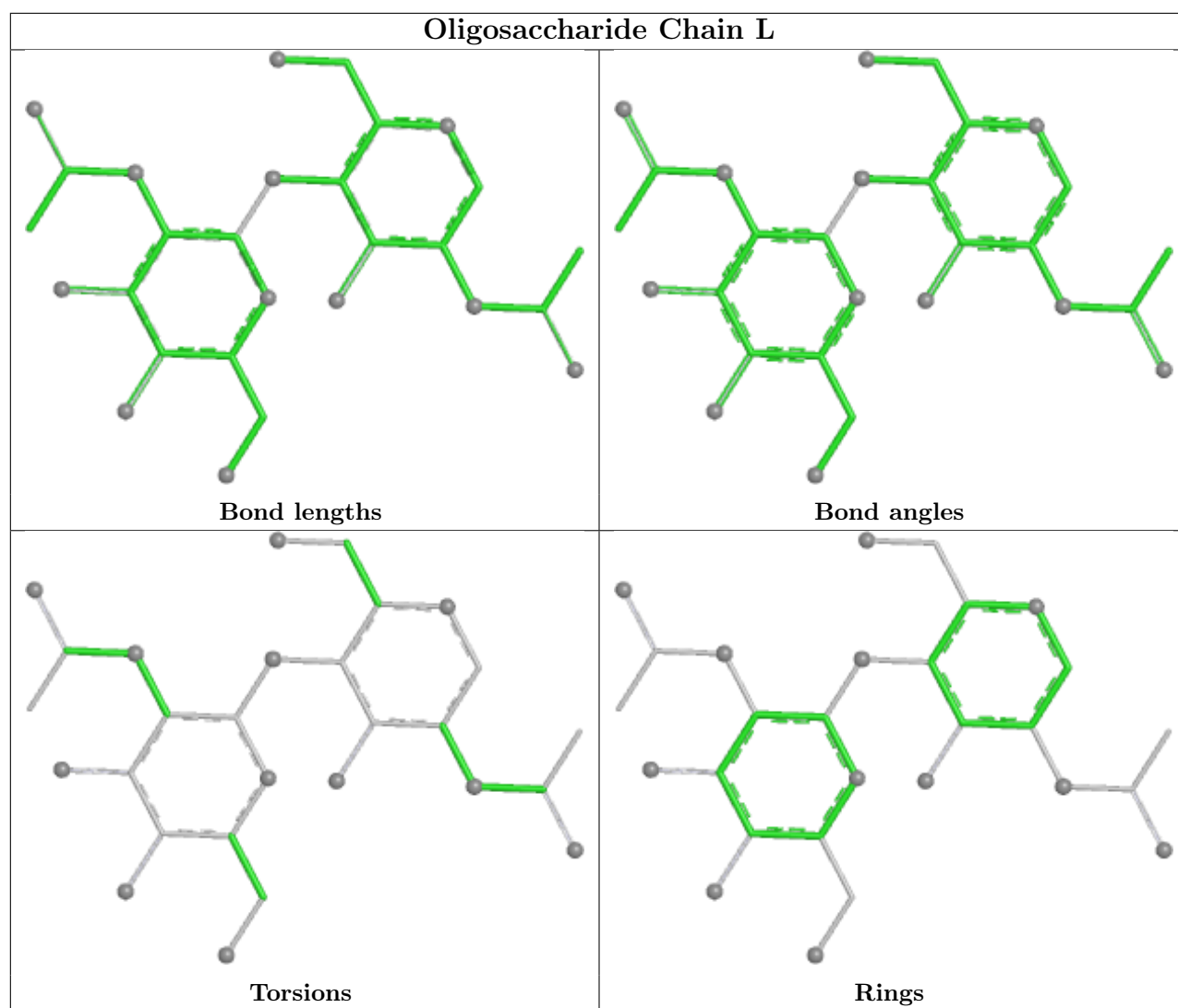


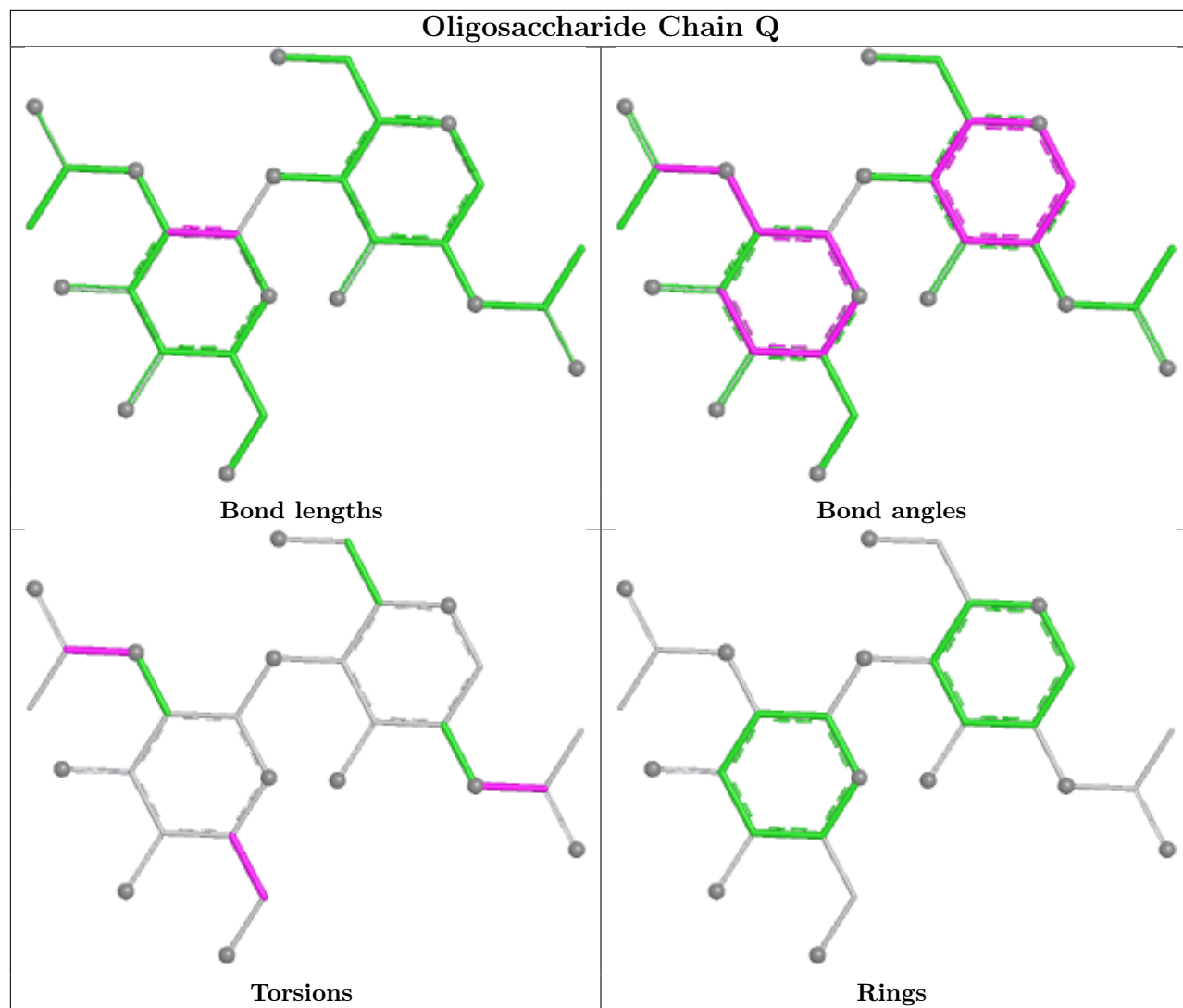


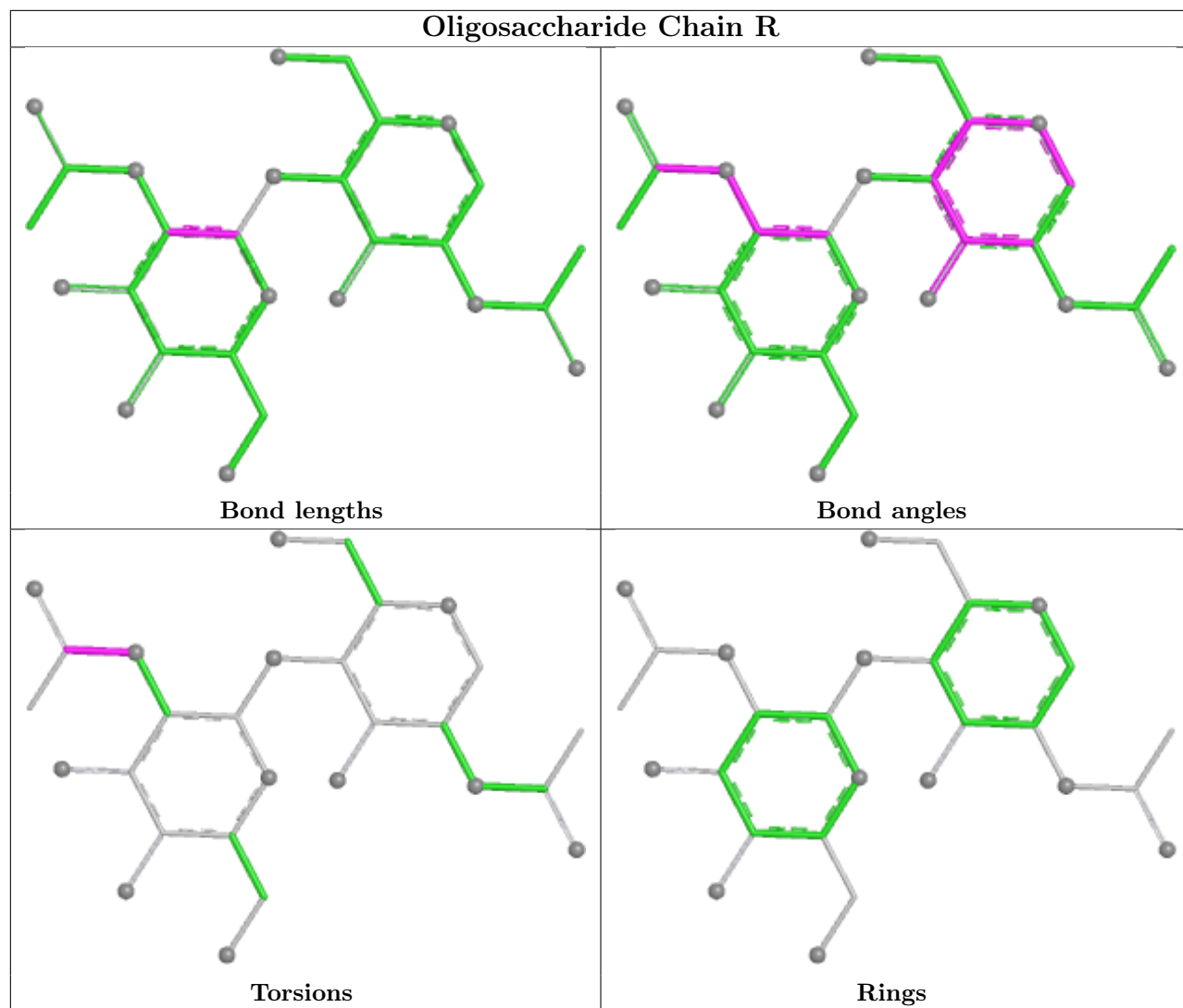


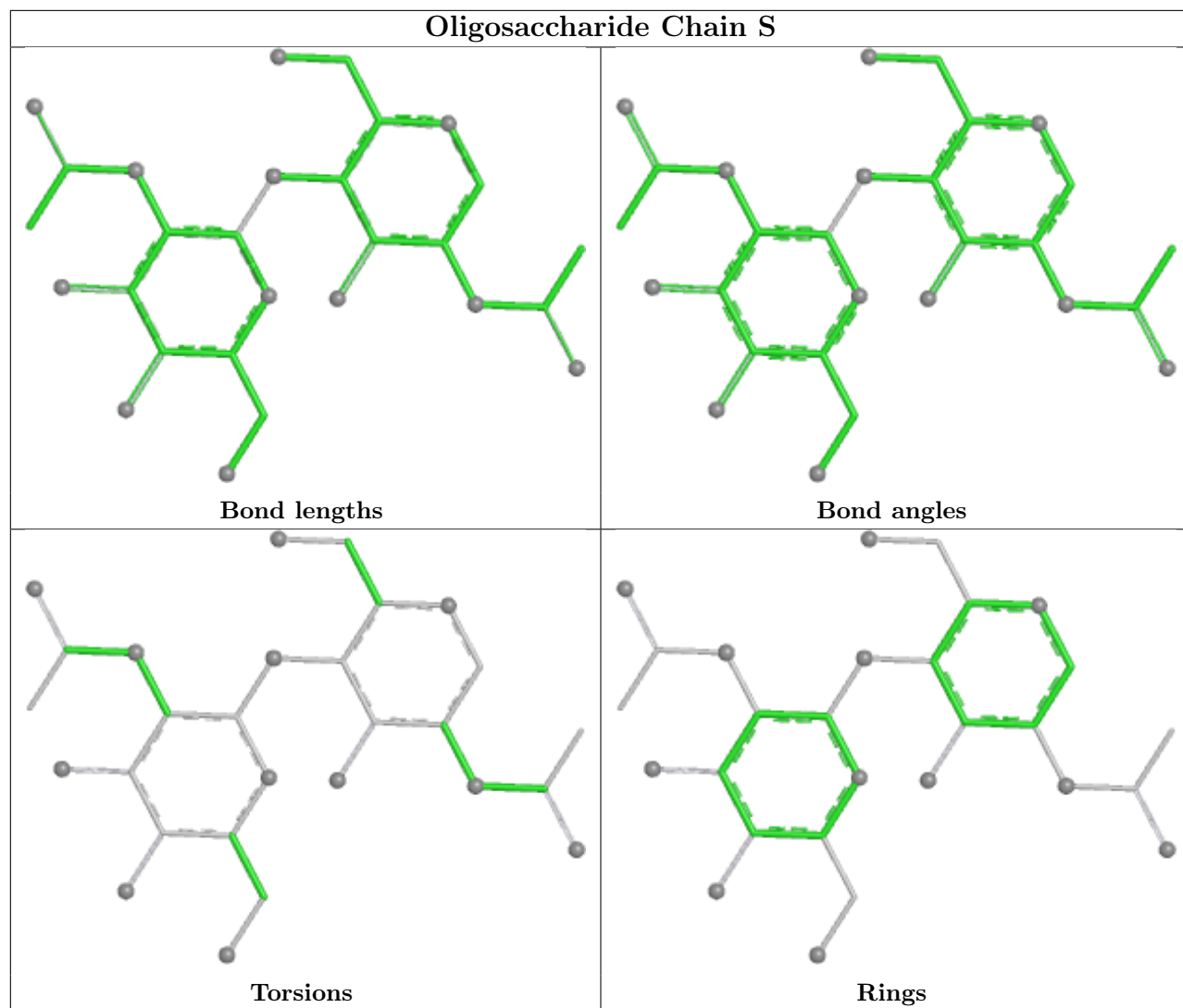


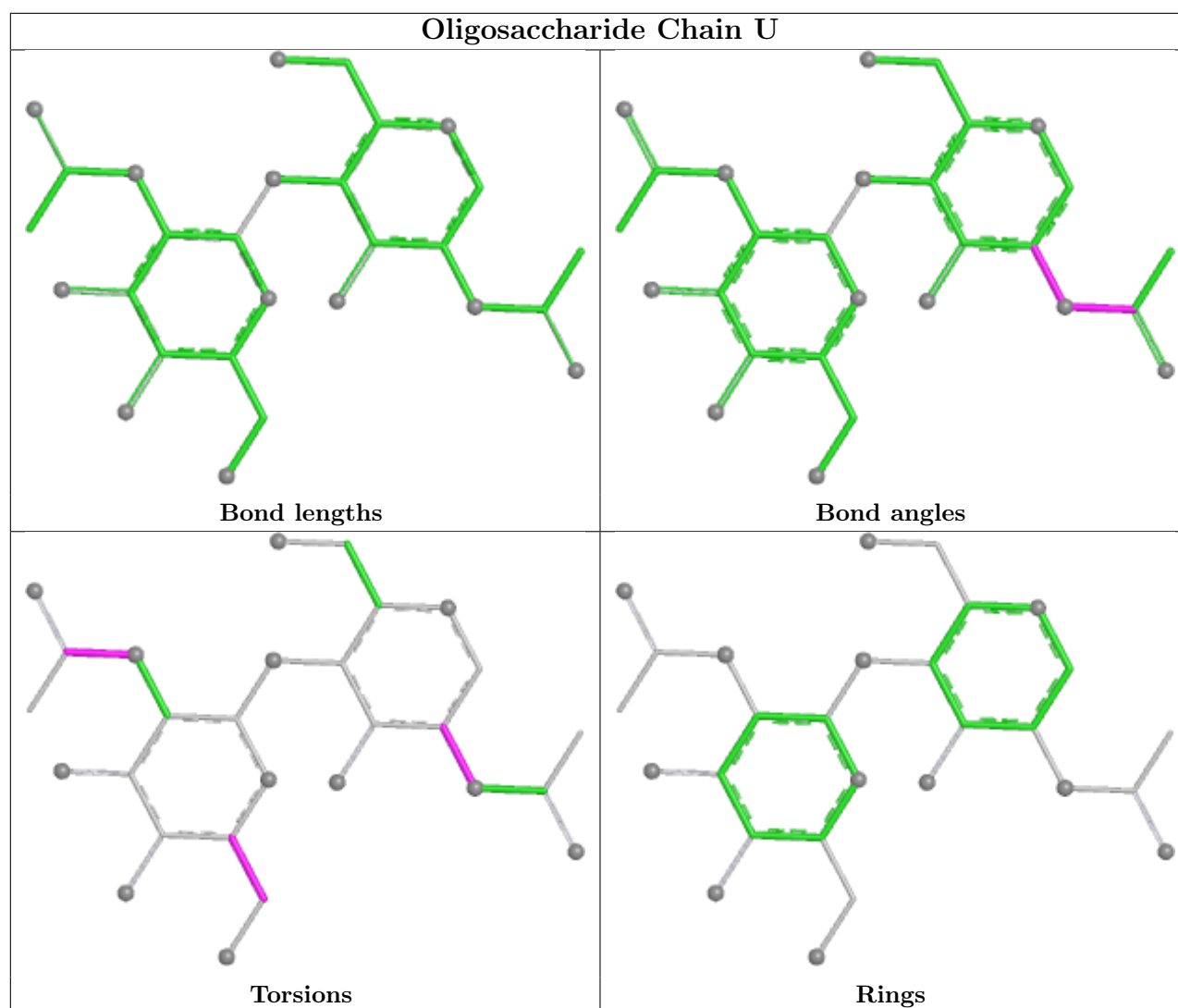












4.6 Ligand geometry [i](#)

5 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	$\# Z > 2$
5	NAG	A	1302	1	14,14,15	0.74	0	17,19,21	0.87	0
5	NAG	A	1303	1	14,14,15	0.70	0	17,19,21	0.77	0
5	NAG	B	1301	1	14,14,15	0.72	0	17,19,21	0.76	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	NAG	B	1302	1	14,14,15	0.90	1 (7%)	17,19,21	1.28	1 (5%)
5	NAG	A	1301	1	14,14,15	0.78	0	17,19,21	1.10	2 (11%)

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
5	NAG	A	1302	1	-	1/6/23/26	0/1/1/1
5	NAG	A	1303	1	-	1/6/23/26	0/1/1/1
5	NAG	B	1301	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1302	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1301	1	-	3/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	1302	NAG	C1-C2	2.36	1.55	1.52

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	B	1302	NAG	C1-O5-C5	3.63	117.06	112.19
5	A	1301	NAG	C1-O5-C5	2.85	116.00	112.19
5	A	1301	NAG	C2-N2-C7	2.08	125.69	122.90

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	1301	NAG	O5-C5-C6-O6
5	A	1301	NAG	C8-C7-N2-C2
5	A	1301	NAG	O7-C7-N2-C2
5	B	1302	NAG	O5-C5-C6-O6
5	A	1301	NAG	O5-C5-C6-O6
5	A	1302	NAG	O5-C5-C6-O6
5	A	1303	NAG	O5-C5-C6-O6
5	B	1302	NAG	C4-C5-C6-O6
5	B	1301	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

4.7 Other polymers

There are no such residues in this entry.

4.8 Polymer linkage issues

There are no chain breaks in this entry.

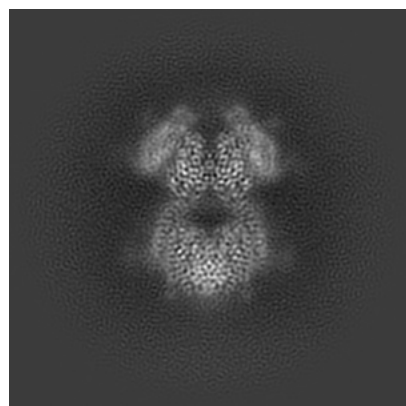
5 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-46574. These allow visual inspection of the internal detail of the map and identification of artifacts.

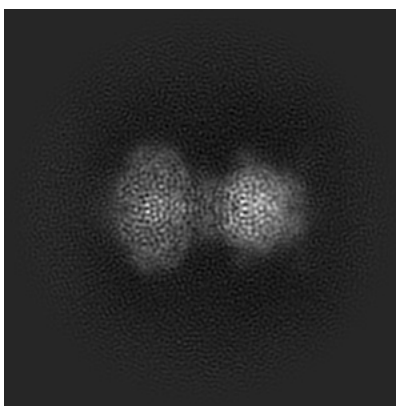
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

5.1 Orthogonal projections [i](#)

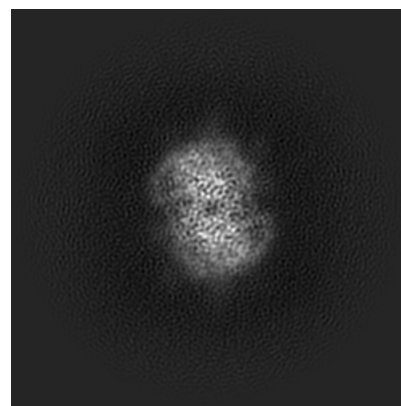
5.1.1 Primary map



X

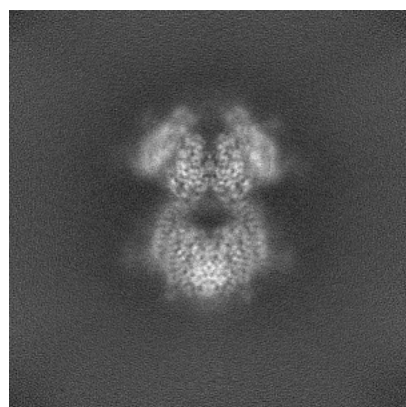


Y

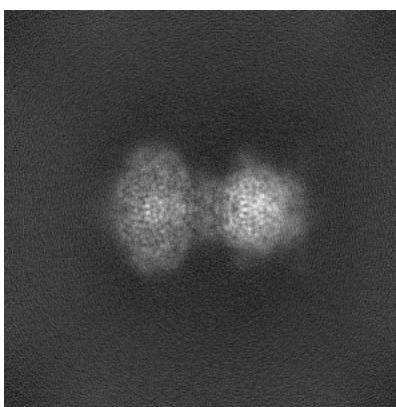


Z

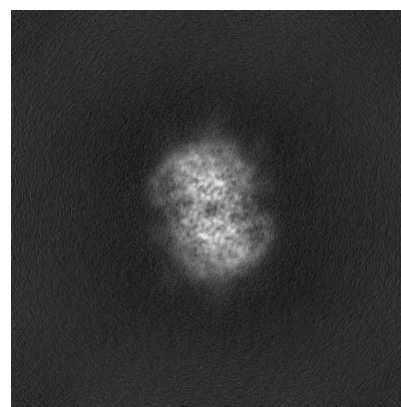
5.1.2 Raw map



X



Y

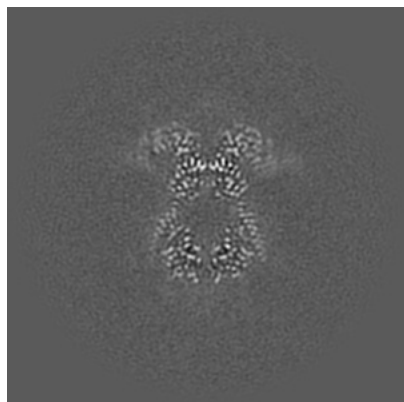


Z

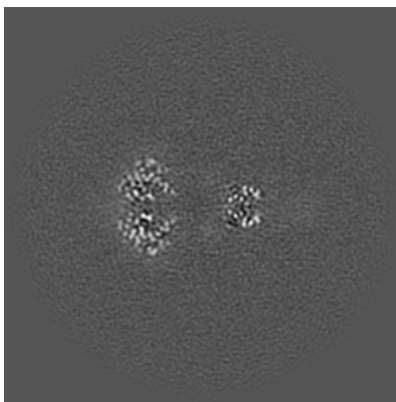
The images above show the map projected in three orthogonal directions.

5.2 Central slices [i](#)

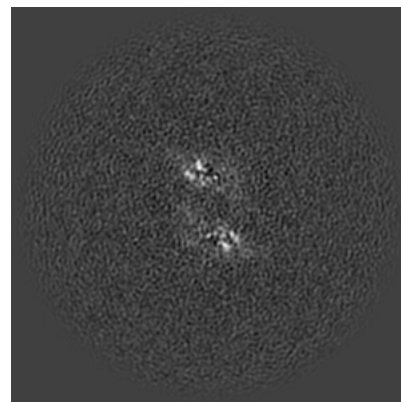
5.2.1 Primary map



X Index: 180

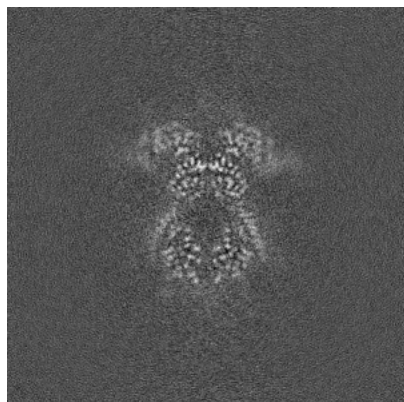


Y Index: 180

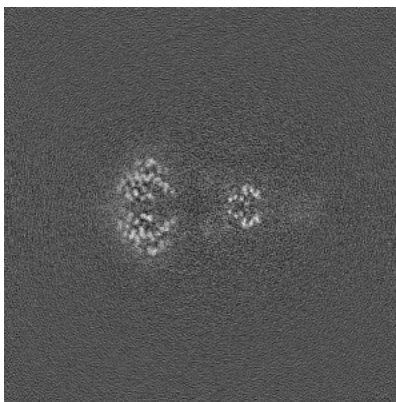


Z Index: 180

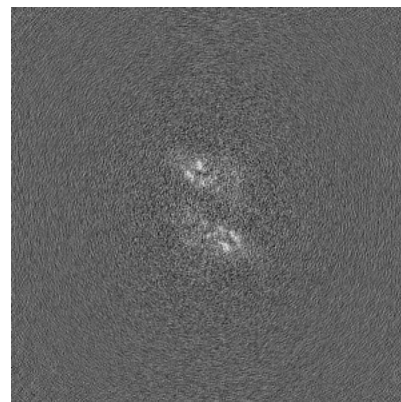
5.2.2 Raw map



X Index: 180



Y Index: 180

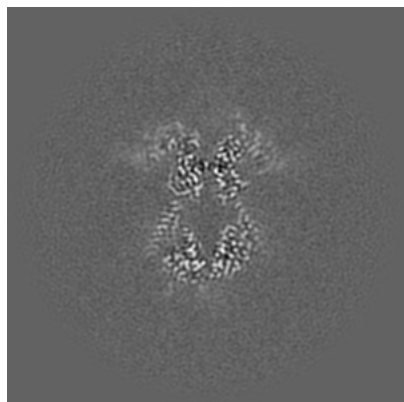


Z Index: 180

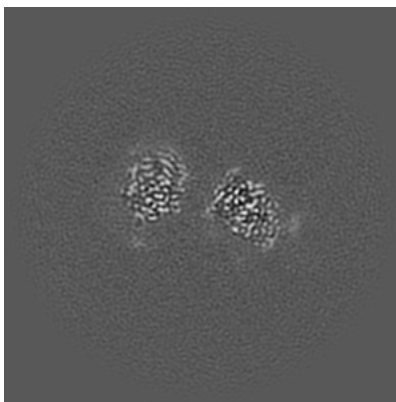
The images above show central slices of the map in three orthogonal directions.

5.3 Largest variance slices [i](#)

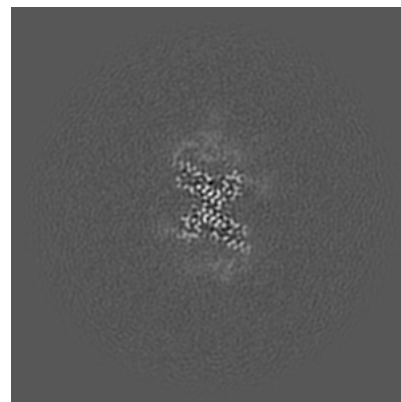
5.3.1 Primary map



X Index: 183

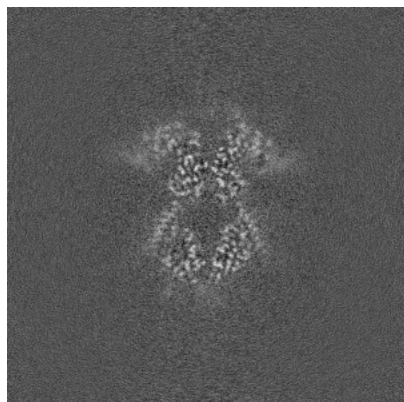


Y Index: 166

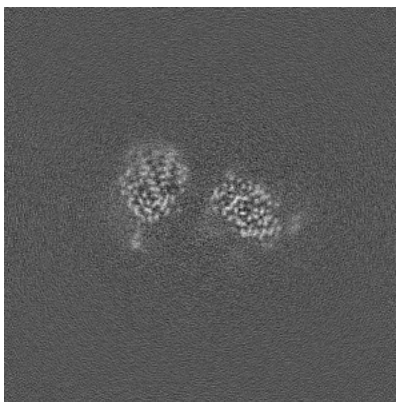


Z Index: 214

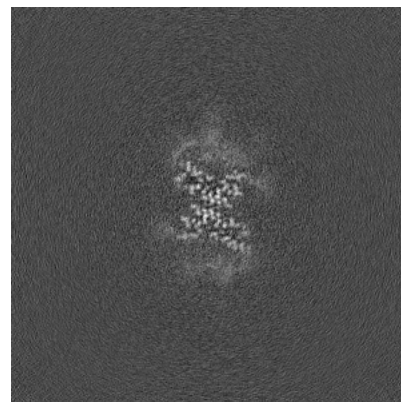
5.3.2 Raw map



X Index: 182



Y Index: 168

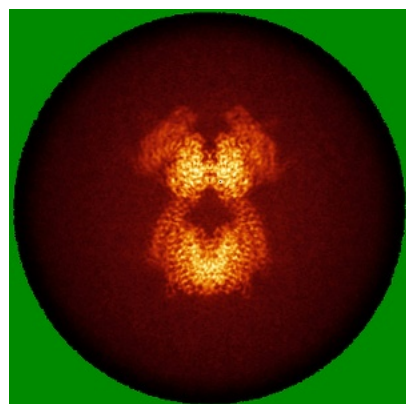


Z Index: 215

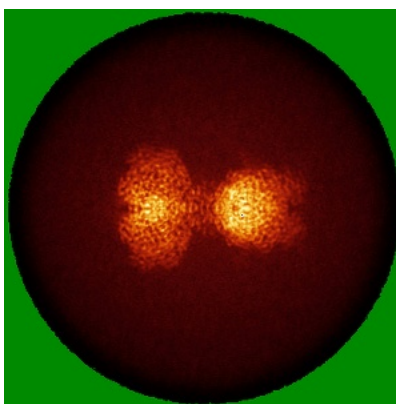
The images above show the largest variance slices of the map in three orthogonal directions.

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

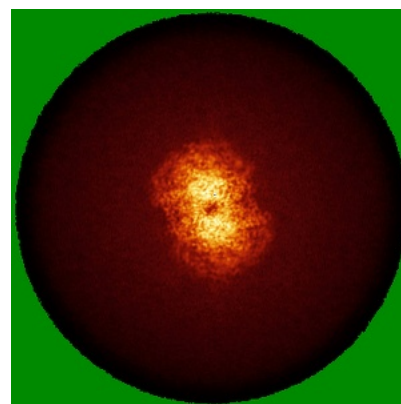
5.4.1 Primary map



X

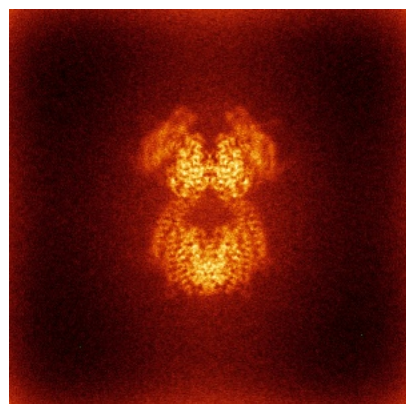


Y

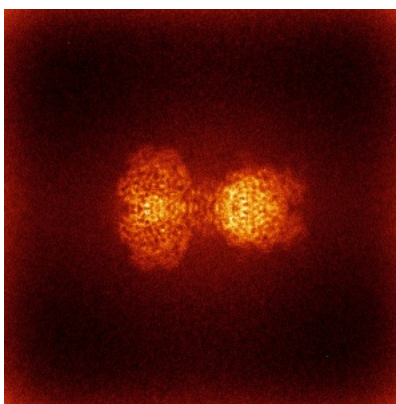


Z

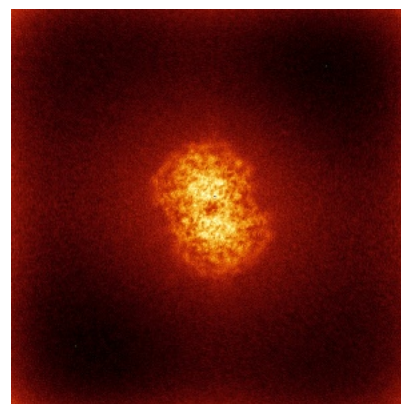
5.4.2 Raw map



X



Y

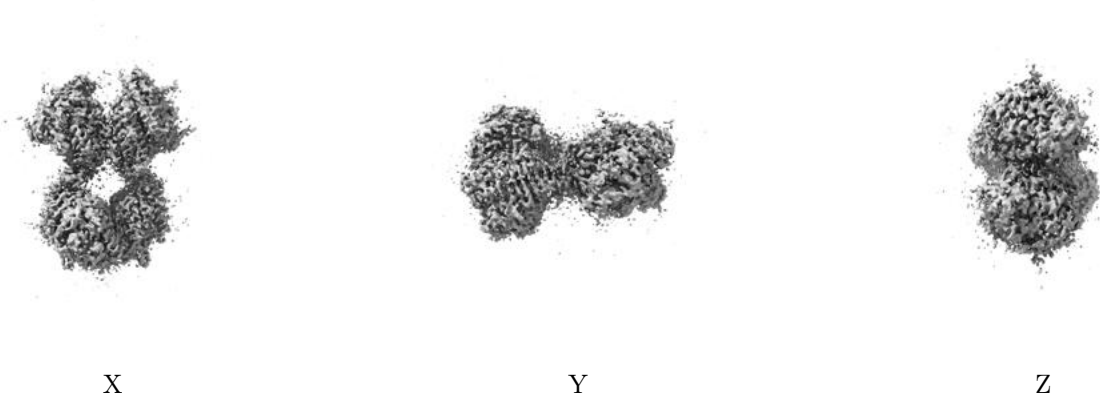


Z

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.

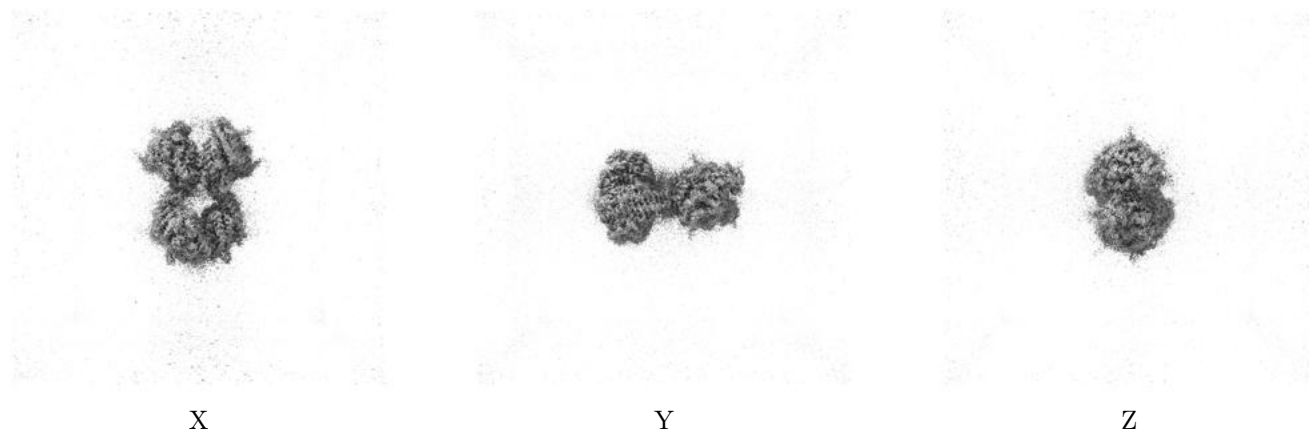
5.5 Orthogonal surface views [i](#)

5.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.06. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

5.5.2 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.

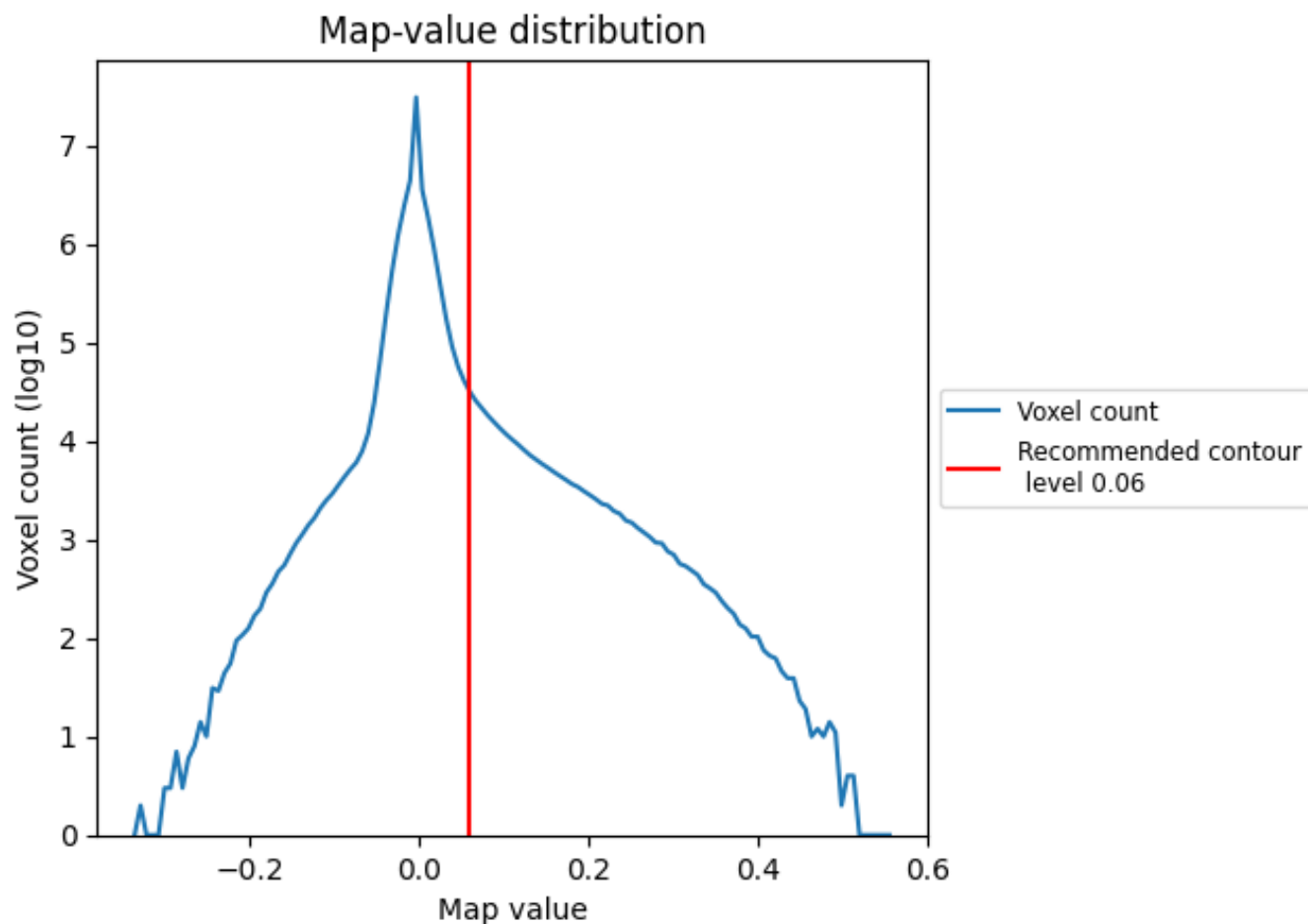
5.6 Mask visualisation [i](#)

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

6 Map analysis [i](#)

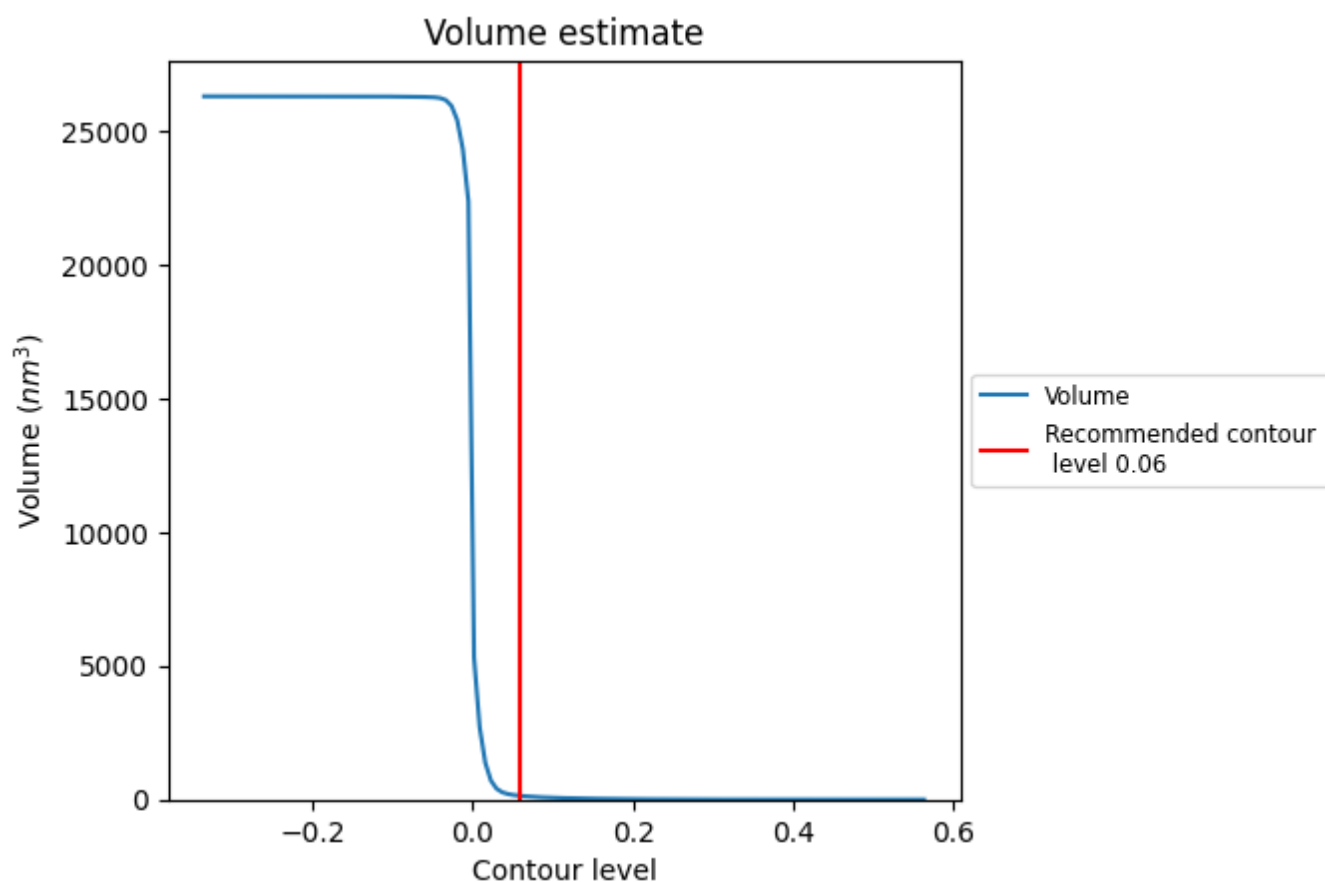
This section contains the results of statistical analysis of the map.

6.1 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.

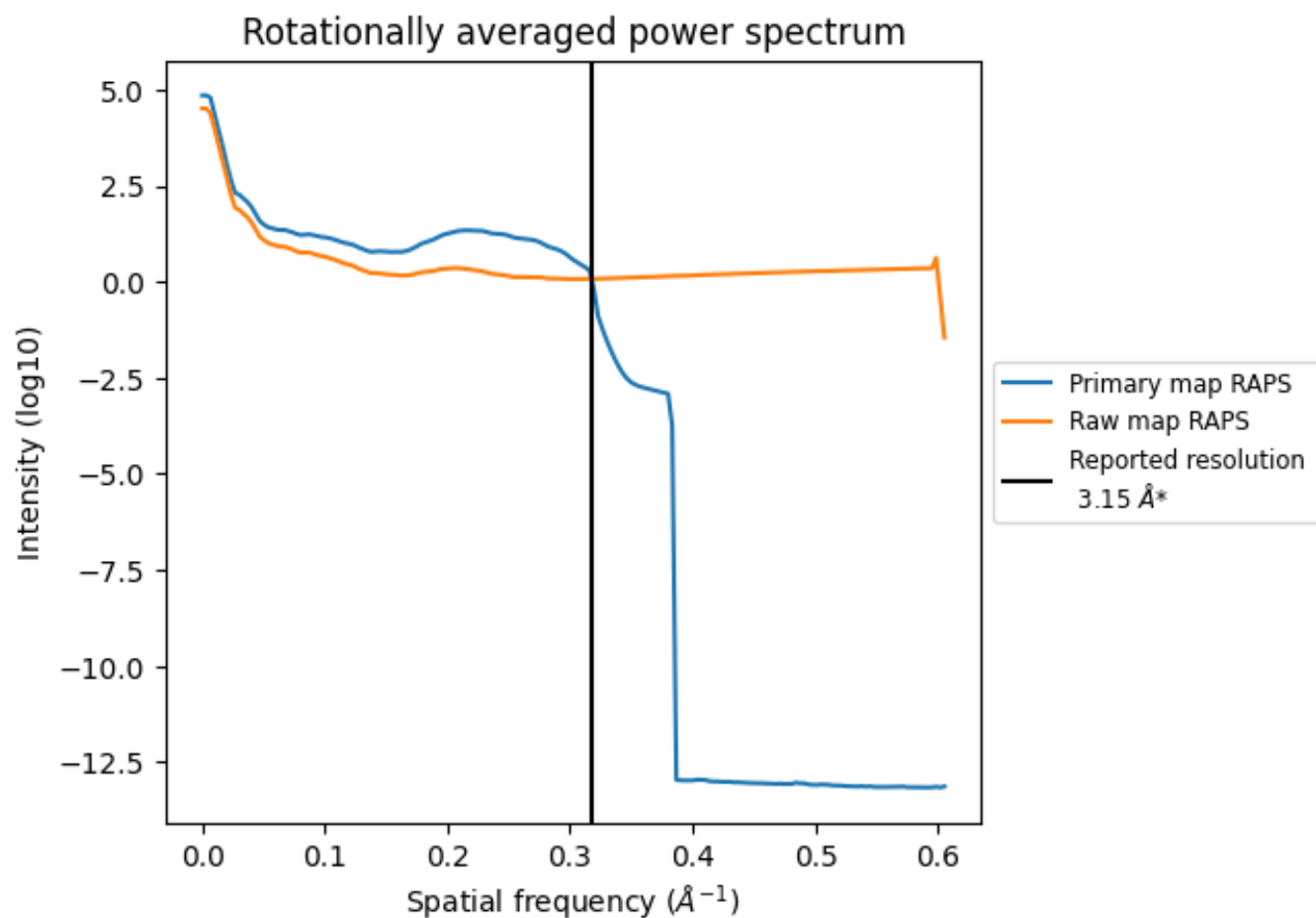
6.2 Volume estimate [i](#)



The volume at the recommended contour level is 138 nm³; this corresponds to an approximate mass of 125 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.

6.3 Rotationally averaged power spectrum ⓘ

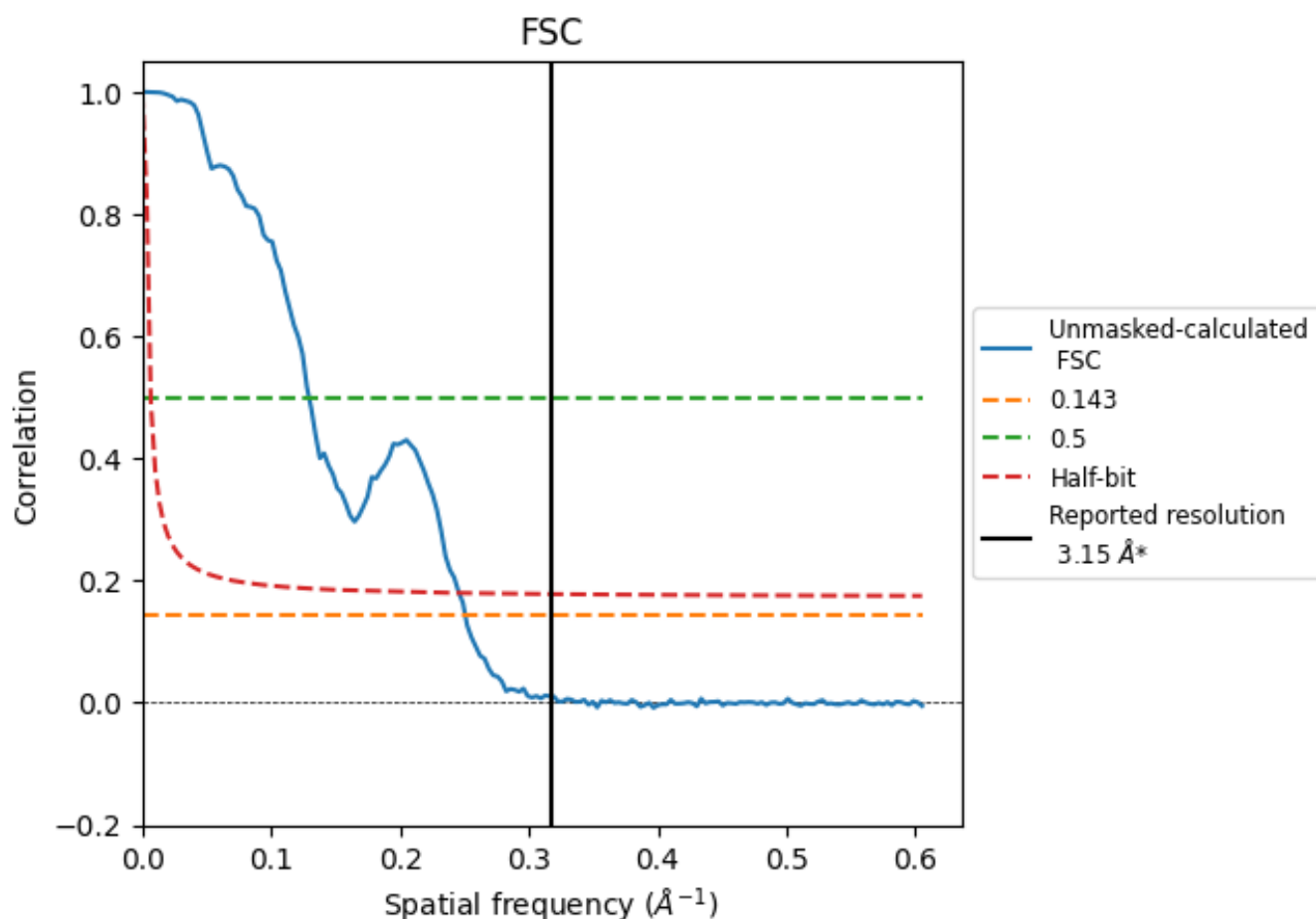


*Reported resolution corresponds to spatial frequency of 0.317 Å⁻¹

7 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.

7.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.317 \AA^{-1}

7.2 Resolution estimates [i](#)

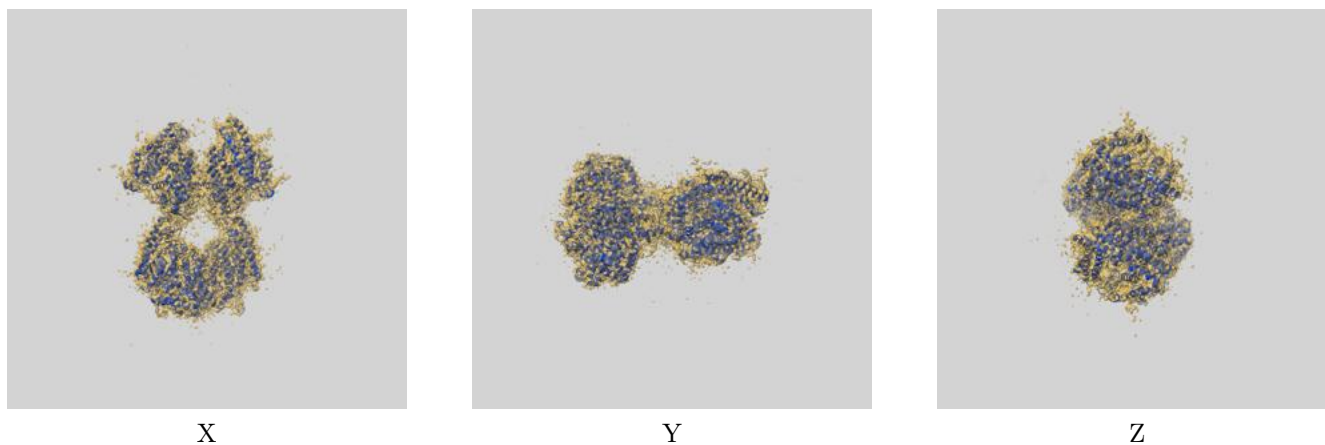
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.15	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.99	7.73	4.07

*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 3.99 differs from the reported value 3.15 by more than 10 %

8 Map-model fit [i](#)

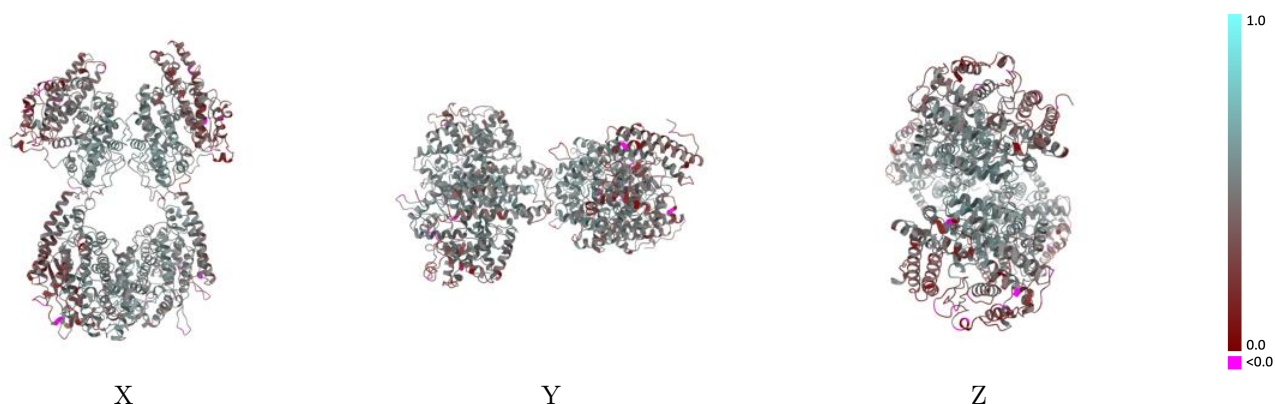
This section contains information regarding the fit between EMDB map EMD-46574 and PDB model 9D55. Per-residue inclusion information can be found in section ?? on page ??.

8.1 Map-model overlay [i](#)



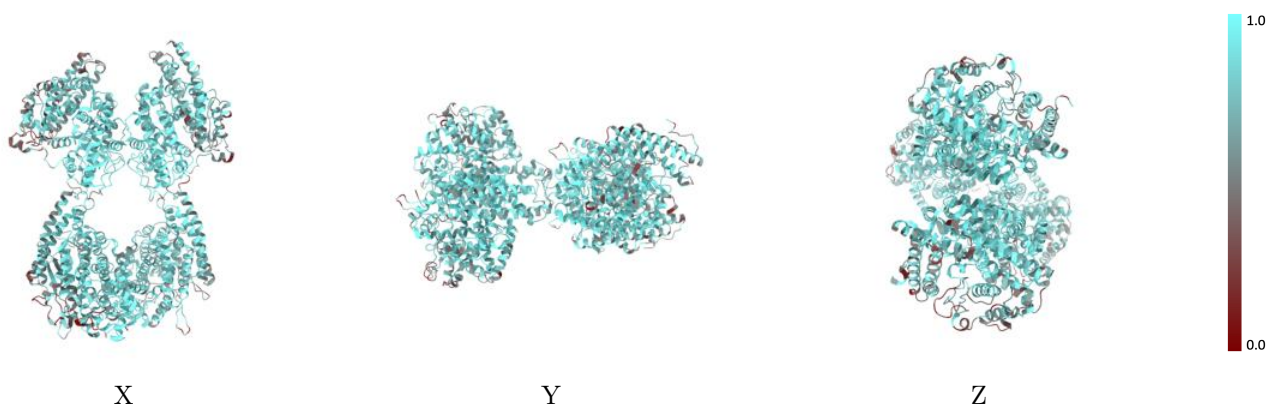
The images above show the 3D surface view of the map at the recommended contour level 0.06 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



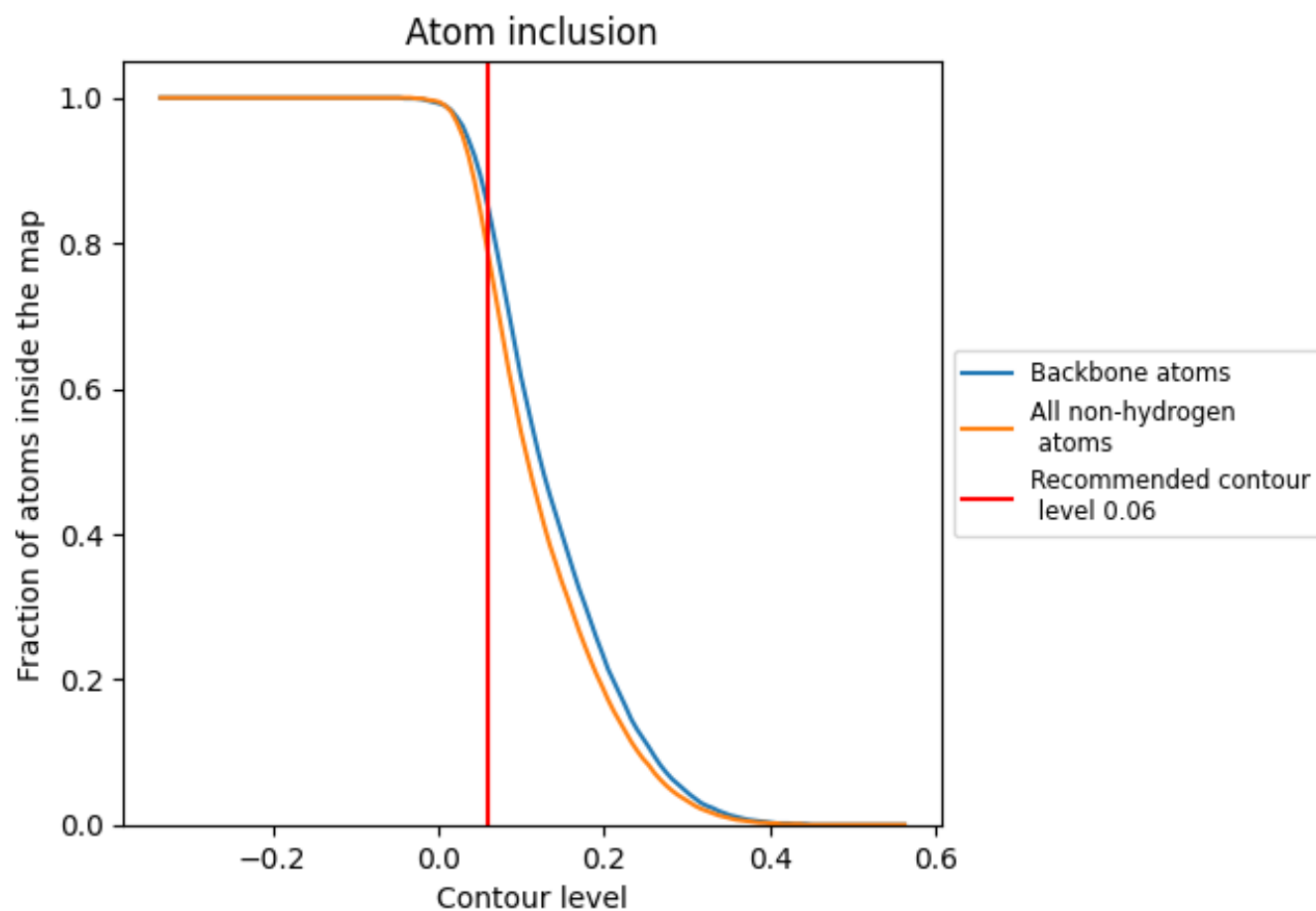
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

8.3 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 (0.06).































8.4 Atom inclusion [i](#)



At the recommended contour level, 85% of all backbone atoms, 79% of all non-hydrogen atoms, are inside the map.

8.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.06) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7880	 0.4530
A	 0.8030	 0.4610
B	 0.7870	 0.4510
D	 0.5130	 0.3460
F	 0.4690	 0.3070
G	 0.4640	 0.2700
H	 0.3570	 0.3170
I	 0.6070	 0.3650
L	 0.3930	 0.2950
N	 0.4360	 0.4160
P	 0.5130	 0.2700
Q	 0.1430	 0.1440
R	 0.2500	 0.2720
S	 0.6790	 0.3960
U	 0.3930	 0.1950

