



Full wwPDB EM Validation Report ⓘ

Mar 6, 2026 – 01:15 PM UTC

PDB ID : 8JXE / pdb_00008jxe
EMDB ID : EMD-36698
Title : rat megalin RAP complex head
Authors : Goto, S.; Tsutsumi, A.; Lee, Y.; Hosojima, M.; Kabasawa, H.; Komochi, K.; Yun-san, L.; Nagatoshi, S.; Tsumoto, K.; Nishizawa, T.; Kikkawa, M.; Saito, A.
Deposited on : 2023-06-30
Resolution : 3.20 Å(reported)
Based on initial model : .

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.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
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

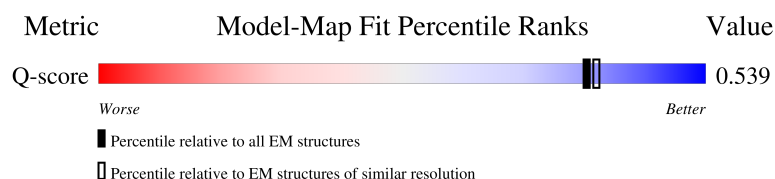
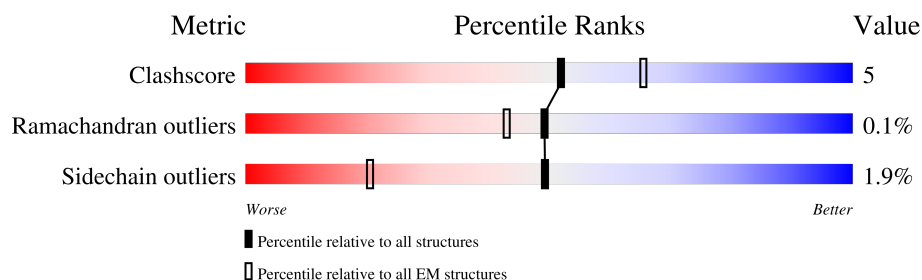
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 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	15020 (2.70 - 3.70)

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	4660	 26% 5% 68%
1	B	4660	 27% 5% 68%
2	C	6	 83% 17%
2	I	6	 83% 17%

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Mol	Chain	Length	Quality of chain
3	D	3	33% 100%
3	J	3	33% 100%
4	G	5	40% 80% 20%
4	K	5	20% 80% 20%
5	H	5	60% 100%
5	L	5	20% 100%
6	E	2	50% 100%
6	M	2	50% 50%
6	N	2	50% 100%
6	P	2	50% 50%
6	S	2	50% 100%
6	T	2	50% 50%
6	V	2	100%
6	W	2	50% 100%
6	Y	2	50% 100%
6	a	2	50% 100%
6	b	2	100%
7	F	3	33% 33% 33%
7	U	3	33% 67%
8	O	5	40% 60% 40%
8	Q	5	80% 20%
8	X	5	80% 60% 40%
9	R	2	50% 100%
10	Z	5	60% 40%

2 Entry composition

There are 14 unique types of molecules in this entry. The entry contains 23977 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 LDL receptor related protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1469	Total	C	N	O	S	0	0
			11477	7193	2014	2187	83		
1	B	1468	Total	C	N	O	S	0	0
			11468	7187	2013	2185	83		

- Molecule 2 is a protein called unclear peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	I	6	Total	C	N	O	0	0
			33	21	6	6		
2	C	6	Total	C	N	O	0	0
			33	21	6	6		

- Molecule 3 is a protein called unclear peptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	J	3	Total	C	N	O	S	0	0
			16	9	3	3	1		
3	D	3	Total	C	N	O	S	0	0
			16	9	3	3	1		

- Molecule 4 is a protein called unclear peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	K	5	Total	C	N	O	0	0
			33	19	5	9		
4	G	5	Total	C	N	O	0	0
			33	19	5	9		

- Molecule 5 is a protein called unclear peptide.

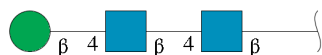
Mol	Chain	Residues	Atoms				AltConf	Trace
5	L	5	Total	C	N	O	0	0
			28	16	6	6		
5	H	5	Total	C	N	O	0	0
			28	16	6	6		

- Molecule 6 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



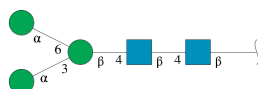
Mol	Chain	Residues	Atoms				AltConf	Trace
6	E	2	Total	C	N	O	0	0
			28	16	2	10		
6	M	2	Total	C	N	O	0	0
			28	16	2	10		
6	N	2	Total	C	N	O	0	0
			28	16	2	10		
6	P	2	Total	C	N	O	0	0
			28	16	2	10		
6	S	2	Total	C	N	O	0	0
			28	16	2	10		
6	T	2	Total	C	N	O	0	0
			28	16	2	10		
6	V	2	Total	C	N	O	0	0
			28	16	2	10		
6	W	2	Total	C	N	O	0	0
			28	16	2	10		
6	Y	2	Total	C	N	O	0	0
			28	16	2	10		
6	a	2	Total	C	N	O	0	0
			28	16	2	10		
6	b	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 7 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
7	F	3	Total	C	N	O	0	0
			39	22	2	15		
7	U	3	Total	C	N	O	0	0
			39	22	2	15		

- Molecule 8 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



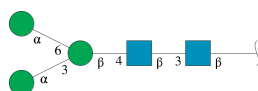
Mol	Chain	Residues	Atoms				AltConf	Trace
8	O	5	Total	C	N	O	0	0
			61	34	2	25		
8	Q	5	Total	C	N	O	0	0
			61	34	2	25		
8	X	5	Total	C	N	O	0	0
			61	34	2	25		

- Molecule 9 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-3)-2-acetamido-2-deoxy-beta-D-glucopyranose.



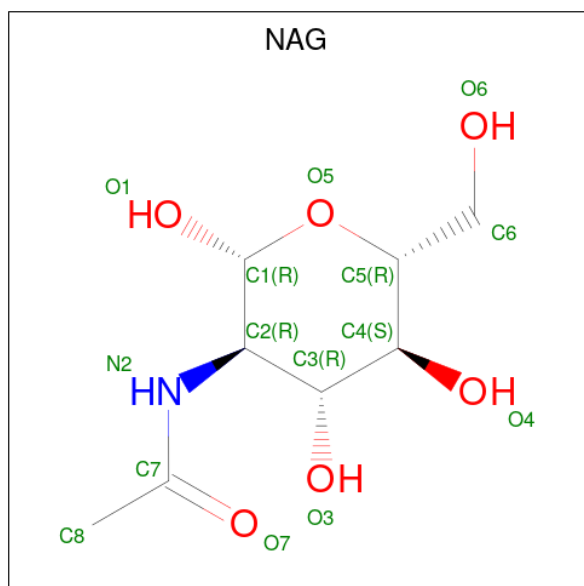
Mol	Chain	Residues	Atoms				AltConf	Trace
9	R	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 10 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-3)-2-acetamido-2-deoxy-beta-D-glucopyranose.



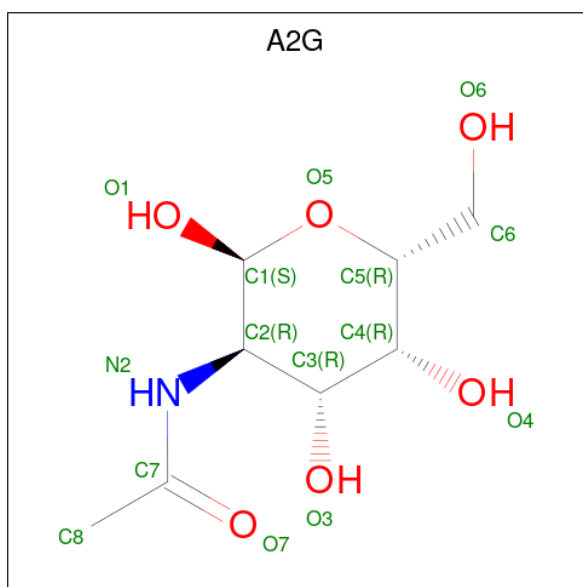
Mol	Chain	Residues	Atoms				AltConf	Trace
10	Z	5	Total	C	N	O	0	0
			61	34	2	25		

- Molecule 11 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



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

- Molecule 12 is 2-acetamido-2-deoxy-alpha-D-galactopyranose (CCD ID: A2G) (formula: $C_8H_{15}NO_6$).



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

- Molecule 13 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
13	A	6	Total	Ca	0
			6	6	
13	B	6	Total	Ca	0
			6	6	

- Molecule 14 is NICKEL (II) ION (CCD ID: NI) (formula: Ni).

Mol	Chain	Residues	Atoms		AltConf
14	A	1	Total	Ni	0
			1	1	
14	B	1	Total	Ni	0
			1	1	





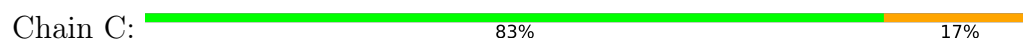








- Molecule 2: unclear peptide



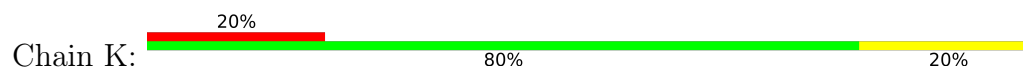
- Molecule 3: unclear peptide



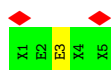
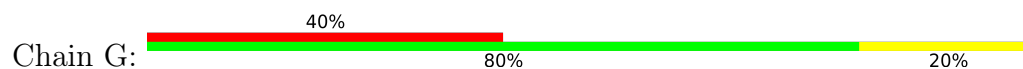
- Molecule 3: unclear peptide



- Molecule 4: unclear peptide



- Molecule 4: unclear peptide



- Molecule 5: unclear peptide



- Molecule 5: unclear peptide





- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



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- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



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- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



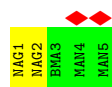
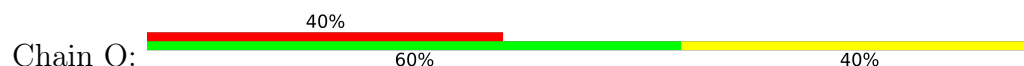
- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



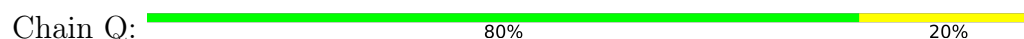
- Molecule 7: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



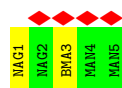
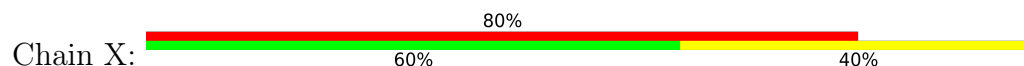
- Molecule 8: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 8: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 8: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 9: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-3)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 10: α -D-mannopyranose-(1-3)-[α -D-mannopyranose-(1-6)] β -D-mannopyranose-(1-4)-2-acetamido-2-deoxy- β -D-glucopyranose-(1-3)-2-acetamido-2-deoxy- β -D-glucopyranose

Chain Z: 

MAG1	MAN3
MAG2	MAN4
MAN5	

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	67775	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.196	Depositor
Minimum map value	-0.098	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.0285	Depositor
Map size ($\text{\AA}$)	366.86002, 366.86002, 366.86002	wwPDB
Map dimensions	260, 260, 260	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.411, 1.411, 1.411	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: NAG, A2G, NI, CA, BMA, MAN

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	0.15	0/11766	0.37	0/16026
1	B	0.19	0/11757	0.41	0/16013
2	C	0.34	0/7	0.84	0/8
2	I	0.29	0/7	0.66	0/8
3	D	0.13	0/5	0.14	0/5
3	J	0.12	0/5	0.18	0/5
4	G	0.10	0/17	0.30	0/21
4	K	0.23	0/17	0.57	0/21
5	H	0.09	0/7	0.16	0/8
5	L	0.17	0/7	0.46	0/8
All	All	0.17	0/23595	0.39	0/32123

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

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	11477	0	10926	134	0
1	B	11468	0	10914	117	0
2	C	33	0	18	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	I	33	0	18	1	0
3	D	16	0	8	0	0
3	J	16	0	8	0	0
4	G	33	0	17	0	0
4	K	33	0	18	2	0
5	H	28	0	13	0	0
5	L	28	0	12	0	0
6	E	28	0	25	0	0
6	M	28	0	25	0	0
6	N	28	0	25	0	0
6	P	28	0	25	0	0
6	S	28	0	25	0	0
6	T	28	0	25	0	0
6	V	28	0	25	0	0
6	W	28	0	25	0	0
6	Y	28	0	25	0	0
6	a	28	0	25	0	0
6	b	28	0	25	0	0
7	F	39	0	34	1	0
7	U	39	0	34	0	0
8	O	61	0	52	0	0
8	Q	61	0	52	0	0
8	X	61	0	52	0	0
9	R	28	0	25	0	0
10	Z	61	0	52	0	0
11	A	56	0	52	0	0
11	B	56	0	52	0	0
12	A	14	0	12	0	0
12	B	14	0	12	0	0
13	A	6	0	0	0	0
13	B	6	0	0	0	0
14	A	1	0	0	0	0
14	B	1	0	0	0	0
All	All	23977	0	22656	250	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 5.

All (250) 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:1564:MET:HE1	1:B:1702:ARG:HE	1.42	0.83
1:A:2708:CYS:SG	1:A:2730:SER:OG	2.45	0.75
1:B:2507:VAL:HG21	1:B:2524:TRP:HE1	1.52	0.74
1:B:1900:LYS:HE2	1:B:1902:ALA:HB2	1.71	0.71
1:B:2203:ARG:NH1	1:B:2361:LEU:O	2.27	0.68
1:B:2651:GLN:N	1:B:2651:GLN:OE1	2.27	0.68
1:B:2349:GLN:OE1	1:B:2349:GLN:N	2.27	0.67
1:A:1435:GLU:OE1	1:A:1435:GLU:N	2.24	0.67
1:A:2705:GLN:HB3	1:A:2713:CYS:HB3	1.78	0.65
1:A:1719:GLN:HG3	1:A:1721:PRO:HD2	1.79	0.65
1:B:2489:GLN:O	1:B:2506:ARG:NH1	2.29	0.65
1:A:2463:LEU:HD11	1:A:2501:ARG:HD2	1.78	0.65
1:A:2391:LEU:HD21	1:A:2641:ILE:HD11	1.77	0.64
1:A:2609:THR:HG22	1:A:2616:ILE:HG12	1.78	0.64
1:B:1923:GLU:HB2	1:B:1937:ALA:HB3	1.80	0.64
1:A:1366:MET:HE3	1:A:1373:THR:HB	1.78	0.64
1:B:2242:MET:HE1	1:B:2264:LEU:HD21	1.80	0.64
1:A:2726:CYS:SG	1:A:2730:SER:OG	2.57	0.63
1:A:1595:GLN:HA	1:A:1598:ILE:HD11	1.80	0.62
1:A:2760:ARG:HA	1:A:2772:ASP:HB2	1.81	0.62
1:B:1382:LEU:HD12	1:B:1386:THR:HA	1.81	0.62
1:A:1853:GLY:O	1:A:1856:ARG:NH2	2.26	0.61
1:A:2149:ARG:NH2	4:K:2:GLU:O	2.33	0.61
1:B:2546:ILE:HD12	1:B:2582:THR:HA	1.83	0.61
1:A:2361:LEU:HD21	1:A:2368:ARG:HG3	1.81	0.60
1:B:2361:LEU:HD12	1:B:2364:LEU:HD22	1.83	0.60
1:B:1614:TYR:HB3	1:B:1649:LEU:HD21	1.83	0.60
1:A:1442:ALA:HB2	1:A:1472:LEU:HD23	1.84	0.60
1:A:2484:SER:HB3	1:A:2513:ILE:HD11	1.83	0.60
1:B:1543:HIS:HB3	1:B:1729:PRO:HG3	1.84	0.59
1:A:2363:GLU:OE2	1:A:2363:GLU:N	2.34	0.59
1:A:2648:GLN:HB3	1:A:2651:GLN:HE21	1.67	0.59
1:B:2062:TYR:OH	1:B:2083:ASP:OD2	2.20	0.59
1:B:1864:ASN:ND2	1:B:2319:ASP:OD1	2.35	0.59
1:A:1367:GLN:NE2	1:A:1371:GLY:O	2.30	0.58
1:A:2767:CYS:SG	1:A:2771:SER:OG	2.62	0.58
1:A:2185:LEU:HB3	1:A:2223:CYS:HB2	1.84	0.58
1:B:2525:THR:HG22	1:B:2533:ILE:HD12	1.86	0.58
1:B:2609:THR:HG22	1:B:2616:ILE:HG12	1.86	0.57
1:B:2737:CYS:HA	1:B:2740:HIS:HB3	1.85	0.57
1:B:2070:MET:HG3	1:B:2072:PRO:HD2	1.86	0.57
1:B:1550:LYS:O	1:B:1590:ARG:NH1	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2285:THR:HG21	1:A:2328:THR:HA	1.87	0.56
1:B:1966:GLY:HA3	1:B:2007:GLY:HA2	1.85	0.56
1:B:1473:ASP:OD1	1:B:1474:PHE:N	2.38	0.56
1:A:2511:ARG:NH2	1:A:2555:ASN:OD1	2.38	0.56
1:A:2484:SER:HB2	1:A:2510:PRO:HB2	1.87	0.56
1:B:2234:ILE:HD11	1:B:2237:PRO:HG3	1.87	0.56
1:A:1560:LEU:HD22	1:A:1585:MET:HE2	1.87	0.56
1:A:2546:ILE:HG22	1:A:2547:VAL:HG13	1.87	0.56
1:A:2601:VAL:HB	1:A:2606:ILE:HG22	1.87	0.55
1:A:1981:TYR:HA	1:B:2279:PRO:HG3	1.88	0.55
1:A:1873:PHE:HB3	1:A:1891:HIS:HB2	1.90	0.54
1:B:2742:CYS:HB3	1:B:2746:ALA:HB3	1.90	0.54
1:A:2500:ASN:HB2	1:A:2666:ILE:HD11	1.90	0.54
1:B:1937:ALA:HB1	1:B:1964:PRO:HG2	1.89	0.54
1:A:1497:ASN:OD1	7:F:1:NAG:N2	2.41	0.54
1:B:2199:ASP:OD2	1:B:2202:HIS:ND1	2.40	0.54
1:A:2139:VAL:HG22	1:A:2175:LEU:HD13	1.90	0.53
1:A:2740:HIS:CD2	1:A:2741:THR:H	2.26	0.53
1:A:2194:ARG:HG3	1:A:2210:TYR:CZ	2.44	0.53
1:B:2722:ASN:HB2	1:B:2753:ARG:CZ	2.39	0.53
1:B:1514:MET:HG3	1:B:1556:ARG:O	2.09	0.52
1:A:1495:PHE:HD2	1:A:1499:THR:HG23	1.74	0.52
1:A:2468:VAL:HG12	1:A:2486:PHE:HB3	1.89	0.52
1:A:1550:LYS:O	1:A:1590:ARG:NH1	2.27	0.52
1:B:1363:HIS:ND1	1:B:1389:CYS:SG	2.83	0.52
1:B:1972:SER:HA	1:B:1989:LYS:HD2	1.92	0.52
1:A:2607:TYR:HE2	1:A:2630:MET:HE2	1.75	0.52
1:B:1903:SER:HB3	1:B:1914:LEU:HD11	1.91	0.52
1:B:1442:ALA:HB3	1:B:1689:GLY:H	1.75	0.51
1:B:2468:VAL:HG23	1:B:2486:PHE:HB3	1.92	0.51
1:B:1598:ILE:HD11	1:B:1601:PRO:HB3	1.91	0.51
1:A:1659:THR:HG22	1:A:1666:VAL:HG22	1.91	0.51
1:A:1636:VAL:HG23	1:A:1637:ILE:HG13	1.92	0.51
1:B:1750:MET:HE2	1:B:2011:TYR:HB2	1.92	0.51
1:A:2547:VAL:HG23	1:A:2551:LEU:HD11	1.92	0.51
1:B:1381:GLN:HB3	1:B:1392:ILE:HD11	1.92	0.51
1:A:2519:ARG:HG3	1:A:2519:ARG:HH11	1.76	0.50
1:B:1879:VAL:HB	1:B:1906:MET:HE3	1.93	0.50
1:A:1802:ILE:HG23	1:A:1815:PHE:HB3	1.94	0.50
1:B:1668:GLN:HG2	1:B:1669:ALA:N	2.26	0.50
1:A:2724:ASN:OD1	1:A:2724:ASN:N	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1416:CYS:SG	1:A:1420:TYR:HB2	2.52	0.50
1:B:2194:ARG:HG3	1:B:2210:TYR:CZ	2.47	0.50
1:B:1667:MET:SD	1:B:1679:VAL:HG22	2.52	0.50
1:A:1926:THR:HG22	1:A:1935:TYR:HB2	1.92	0.50
1:A:2402:LEU:HD21	1:A:2630:MET:HB3	1.92	0.50
1:A:2756:PRO:HD2	1:A:2759:TYR:CD2	2.47	0.50
1:A:2706:PHE:HB2	1:A:2716:GLN:HA	1.94	0.49
1:B:1785:GLU:OE2	1:B:2009:ARG:NH1	2.45	0.49
1:B:2507:VAL:HG21	1:B:2524:TRP:NE1	2.24	0.49
1:A:1907:ASP:HA	1:A:2035:LEU:HD13	1.93	0.49
1:A:1966:GLY:HA2	1:A:2007:GLY:HA2	1.94	0.49
1:B:1412:PHE:O	1:B:1413:ARG:NH1	2.45	0.49
1:B:2286:VAL:HG22	1:B:2291:ILE:HG22	1.94	0.49
1:B:2506:ARG:NH1	1:B:2506:ARG:HB3	2.26	0.49
1:A:2426:ASP:OD2	1:A:2474:PHE:N	2.39	0.49
1:A:2722:ASN:HB3	1:A:2753:ARG:HG3	1.93	0.49
1:A:2740:HIS:CG	1:A:2741:THR:N	2.80	0.49
1:B:2210:TYR:HB2	1:B:2236:THR:HA	1.95	0.49
1:A:2363:GLU:HG2	1:A:2364:LEU:HD22	1.95	0.49
1:A:2573:LEU:HB3	1:A:2575:LYS:HE2	1.95	0.49
1:B:2480:ARG:NH1	1:B:2493:SER:OG	2.46	0.49
1:A:1404:HIS:HB2	1:A:1415:ALA:HB3	1.94	0.49
1:B:1616:MET:CE	1:B:1646:PRO:HB2	2.43	0.49
1:B:1616:MET:HE3	1:B:1646:PRO:HB2	1.94	0.49
1:A:1616:MET:HG2	1:A:1623:ILE:HG12	1.94	0.48
1:B:2000:ASP:OD1	1:B:2001:ASN:ND2	2.41	0.48
1:A:1495:PHE:CD2	1:A:1499:THR:HG23	2.48	0.48
1:A:2663:CYS:SG	1:A:2664:SER:N	2.86	0.48
1:B:2419:ALA:O	1:B:2438:GLN:NE2	2.42	0.48
1:B:2610:ASP:OD1	1:B:2612:TYR:N	2.47	0.48
1:A:1368:GLY:H	1:A:1372:ALA:HA	1.79	0.48
1:A:1775:ILE:HG22	1:A:1778:ILE:HD11	1.96	0.47
1:A:2516:ASP:OD2	1:A:2519:ARG:NH2	2.47	0.47
1:B:1600:TRP:CG	2:C:3:LEU:HD12	2.49	0.47
1:A:2489:GLN:NE2	1:A:2508:SER:O	2.46	0.47
1:A:2766:ASP:OD1	1:A:2766:ASP:N	2.46	0.47
1:B:2210:TYR:CB	1:B:2236:THR:HA	2.44	0.47
1:A:2614:ARG:HG2	1:A:2637:GLN:HA	1.96	0.47
1:B:1616:MET:SD	1:B:1649:LEU:HD13	2.55	0.47
1:A:1734:LEU:HD11	1:A:1738:SER:HA	1.97	0.47
1:A:1754:ASP:HB2	1:A:2004:TYR:HB3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2578:ARG:HD2	1:B:2589:VAL:HG22	1.96	0.47
1:A:2210:TYR:HB2	1:A:2236:THR:HA	1.96	0.47
1:B:2441:ASN:OD1	1:B:2444:ARG:N	2.44	0.47
1:A:1477:VAL:HG23	1:A:1478:THR:HG23	1.97	0.46
1:A:1543:HIS:HB3	1:A:1729:PRO:HG3	1.95	0.46
1:A:2286:VAL:HG22	1:A:2291:ILE:HG22	1.96	0.46
1:A:1734:LEU:CD1	1:A:1738:SER:HA	2.45	0.46
1:A:1442:ALA:HB3	1:A:1689:GLY:H	1.79	0.46
1:B:1710:CYS:HB3	1:B:1726:CYS:HB3	1.80	0.46
1:B:2547:VAL:HG12	1:B:2551:LEU:HD11	1.96	0.46
1:A:2120:ARG:HA	1:A:2120:ARG:HD3	1.75	0.46
1:B:2070:MET:HG2	1:B:2073:ALA:O	2.16	0.46
1:B:2163:THR:HG21	1:B:2193:PRO:O	2.16	0.46
1:A:2259:ILE:HB	1:A:2273:ARG:HB2	1.98	0.45
1:B:1859:LYS:HE3	1:B:1861:LEU:HD23	1.99	0.45
1:B:2066:MET:HG2	1:B:2077:PHE:O	2.16	0.45
1:A:1752:VAL:HG23	1:A:1757:ILE:HG12	1.97	0.45
1:A:1837:TYR:CZ	1:A:1906:MET:HG2	2.52	0.45
1:A:2666:ILE:O	1:A:2677:GLN:N	2.49	0.45
1:B:1788:ASP:OD2	1:B:2013:ARG:HA	2.16	0.45
1:B:2668:ALA:HB2	1:B:2677:GLN:HE22	1.80	0.45
1:B:2688:ASN:HD22	1:B:2692:TYR:HB2	1.81	0.45
1:B:2707:THR:HA	1:B:2713:CYS:HA	1.98	0.45
1:A:1923:GLU:HB2	1:A:1937:ALA:HB3	1.98	0.45
1:A:2406:PRO:HG2	1:A:2618:ARG:HH21	1.82	0.45
1:A:2600:THR:HG21	1:A:2643:THR:HG23	1.98	0.45
1:B:2470:ASP:OD2	1:B:2511:ARG:NH1	2.49	0.45
1:A:2152:ALA:O	1:A:2161:TYR:N	2.43	0.45
1:B:2402:LEU:HD21	1:B:2630:MET:HB3	1.99	0.45
1:A:2210:TYR:OH	4:K:2:GLU:OE2	2.33	0.45
1:A:1847:GLU:HB3	1:A:1860:THR:HA	1.99	0.45
1:B:2160:LEU:HB2	1:B:2177:ILE:HD11	1.97	0.45
1:A:1484:SER:HB3	1:A:1515:ILE:HD11	1.98	0.44
1:A:2164:ASN:ND2	1:A:2173:GLU:OE2	2.51	0.44
1:A:1465:ASP:OD1	1:A:1465:ASP:N	2.51	0.44
1:A:1476:SER:HB3	1:A:1698:GLN:HG3	1.98	0.44
1:B:2715:ASN:OD1	1:B:2716:GLN:N	2.49	0.44
1:A:1623:ILE:HD12	1:A:1637:ILE:HD12	1.98	0.44
1:B:2426:ASP:OD1	1:B:2427:TYR:N	2.49	0.44
1:B:1775:ILE:HG22	1:B:1778:ILE:HD11	1.98	0.44
1:B:1596:GLU:O	1:B:1633:ARG:NH1	2.34	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1599:TYR:HB3	1:A:1619:TYR:HB3	2.00	0.44
1:A:2772:ASP:OD1	1:A:2772:ASP:N	2.50	0.44
1:A:1413:ARG:HB3	1:A:1413:ARG:NH1	2.32	0.44
1:A:2685:TYR:CE2	1:A:2687:ALA:HB2	2.52	0.44
1:B:2192:MET:O	1:B:2192:MET:HG3	2.18	0.44
1:A:1412:PHE:HE2	1:A:1427:ARG:HG2	1.83	0.44
1:B:2484:SER:HB2	1:B:2510:PRO:HG2	2.00	0.44
1:A:2242:MET:HE2	1:A:2242:MET:HB2	1.78	0.43
1:B:1584:SER:HB3	1:B:1589:MET:HE2	1.99	0.43
1:B:2235:VAL:HG12	1:B:2236:THR:HG23	2.00	0.43
1:A:2249:ILE:HD13	1:A:2249:ILE:HA	1.84	0.43
1:A:2709:LEU:HD12	1:A:2730:SER:HB2	2.01	0.43
1:A:1439:LEU:HB3	1:A:1450:ASP:HB2	2.00	0.43
1:A:2192:MET:HG3	1:A:2192:MET:O	2.18	0.43
1:B:2578:ARG:HG2	1:B:2587:GLU:HG2	2.00	0.43
1:A:1450:ASP:OD1	1:A:1459:LEU:HB3	2.18	0.43
1:A:2441:ASN:HD21	1:A:2444:ARG:HD3	1.83	0.43
1:A:2703:GLN:HE21	1:A:2704:LEU:HG	1.83	0.43
1:A:1453:THR:O	1:A:1456:THR:OG1	2.30	0.43
1:A:2357:PHE:HE2	1:A:2372:ALA:HB2	1.84	0.43
1:B:1975:TYR:CE2	1:B:1986:ARG:HD3	2.54	0.43
1:A:1651:LEU:HG	1:A:1656:VAL:HG12	2.01	0.43
1:B:2401:SER:HB2	1:B:2413:PHE:CZ	2.54	0.43
1:A:1600:TRP:CG	2:I:3:LEU:HD22	2.54	0.43
1:A:2740:HIS:CG	1:A:2741:THR:H	2.37	0.43
1:B:1906:MET:SD	1:B:2036:PRO:HG2	2.59	0.43
1:B:1376:CYS:SG	1:B:1382:LEU:HD22	2.59	0.42
1:B:2753:ARG:HD3	1:B:2767:CYS:HA	2.00	0.42
1:A:2152:ALA:HB3	1:A:2161:TYR:HB2	2.01	0.42
1:A:2658:GLN:HG3	1:A:2659:PHE:CD2	2.54	0.42
1:A:2319:ASP:OD1	1:A:2320:LYS:N	2.53	0.42
1:A:2602:TYR:HB2	1:A:2643:THR:HG21	2.01	0.42
1:A:2756:PRO:HD2	1:A:2759:TYR:HD2	1.83	0.42
1:B:1622:TYR:CD1	1:B:1624:GLU:HG3	2.55	0.42
1:B:2196:ILE:HD11	1:B:2205:LEU:HD21	2.00	0.42
1:A:1650:THR:HG22	1:A:1657:TYR:HB2	2.02	0.42
1:A:2206:PHE:CE1	1:A:2242:MET:HE1	2.54	0.42
1:B:2142:GLY:O	1:B:2164:ASN:ND2	2.52	0.42
1:B:2391:LEU:HD23	1:B:2643:THR:HG22	2.02	0.42
1:A:1375:LEU:HA	1:A:1382:LEU:HD21	2.02	0.42
1:A:1838:TYR:CZ	1:A:1847:GLU:HG3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2686:LEU:HD21	1:B:2690:ASN:HB3	2.01	0.42
1:A:1680:VAL:HG12	1:A:1681:MET:HG2	2.02	0.42
1:A:2719:LYS:HE2	1:A:2740:HIS:CG	2.54	0.42
1:B:2428:ASP:HB2	1:B:2435:PHE:HE2	1.83	0.42
1:A:1827:LEU:HD23	1:A:1838:TYR:HB3	2.02	0.42
1:B:2071:LEU:HD12	1:B:2323:LEU:HG	2.00	0.42
1:A:2533:ILE:HB	1:A:2547:VAL:HG22	2.02	0.41
1:B:1596:GLU:HA	1:B:1596:GLU:OE1	2.20	0.41
1:B:2322:ASN:HB3	1:B:2323:LEU:HD22	2.01	0.41
1:B:2538:LEU:HD12	1:B:2669:PRO:O	2.20	0.41
1:B:2577:GLU:OE2	1:B:2586:ARG:NH2	2.39	0.41
1:B:2665:HIS:CD2	1:B:2693:CYS:HB2	2.55	0.41
1:A:1797:GLU:HG3	1:A:1803:HIS:CD2	2.55	0.41
1:B:1507:SER:O	1:B:1544:ARG:NH1	2.42	0.41
1:B:1547:LEU:HD11	1:B:1586:ASP:HA	2.02	0.41
1:B:1900:LYS:HD2	1:B:1913:ILE:HG23	2.01	0.41
1:A:1437:PRO:HB3	1:A:1652:PHE:CZ	2.56	0.41
1:A:2613:THR:O	1:A:2615:LYS:N	2.54	0.41
1:B:1768:SER:OG	1:B:1770:ASP:OD1	2.33	0.41
1:B:1907:ASP:HA	1:B:2035:LEU:HD13	2.02	0.41
1:B:2243:ASP:OD2	1:B:2246:THR:OG1	2.31	0.41
1:A:2254:ASP:OD1	1:A:2254:ASP:N	2.41	0.41
1:A:2428:ASP:HB3	1:A:2433:ARG:HG2	2.03	0.41
1:B:1785:GLU:CG	1:B:1829:LEU:HB2	2.50	0.41
1:B:1886:LEU:N	1:B:1904:ALA:O	2.45	0.41
1:B:2517:PRO:HA	1:B:2538:LEU:HD11	2.01	0.41
1:B:1574:TRP:CE3	2:C:3:LEU:HD13	2.56	0.41
1:B:2706:PHE:HE2	1:B:2731:ASP:HB3	1.84	0.41
1:B:2405:ASP:HB3	1:B:2408:ASP:HB2	2.02	0.41
1:A:2618:ARG:O	1:A:2627:LEU:HA	2.21	0.41
1:A:1401:CYS:HB3	1:A:1414:CYS:HB3	1.98	0.40
1:A:2578:ARG:HD2	1:A:2589:VAL:HG22	2.04	0.40
1:A:2714:ILE:HB	1:A:2718:TRP:CE3	2.57	0.40
1:B:1475:ASP:CG	1:B:1522:ARG:HH22	2.30	0.40
1:B:1919:LEU:HD21	1:B:1954:ARG:HH12	1.86	0.40
1:B:2552:VAL:HB	1:B:2572:SER:HB3	2.03	0.40
1:B:1480:ARG:NH2	1:B:1500:ASP:O	2.54	0.40
1:A:2204:TYR:CD1	1:A:2218:ARG:HD3	2.56	0.40
1:A:2519:ARG:NH2	1:A:2564:ASP:OD1	2.54	0.40
1:A:2663:CYS:HB3	1:A:2667:CYS:HB3	2.04	0.40
1:B:1873:PHE:HB3	1:B:1891:HIS:HB2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2171:LEU:HD22	1:B:2184:VAL:HG11	2.03	0.40
1:B:2268:GLU:OE2	1:B:2268:GLU:HA	2.22	0.40
1:A:1611:ARG:HG2	1:A:1628:TYR:CE2	2.57	0.40

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	1467/4660 (32%)	1401 (96%)	66 (4%)	0	100	100
1	B	1466/4660 (32%)	1394 (95%)	70 (5%)	2 (0%)	48	79
2	C	1/6 (17%)	1 (100%)	0	0	100	100
2	I	1/6 (17%)	1 (100%)	0	0	100	100
3	D	1/3 (33%)	1 (100%)	0	0	100	100
3	J	1/3 (33%)	0	1 (100%)	0	100	100
4	G	2/5 (40%)	2 (100%)	0	0	100	100
4	K	2/5 (40%)	1 (50%)	1 (50%)	0	100	100
5	H	1/5 (20%)	0	1 (100%)	0	100	100
5	L	1/5 (20%)	1 (100%)	0	0	100	100
All	All	2943/9358 (31%)	2802 (95%)	139 (5%)	2 (0%)	49	79

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	1500	ASP
1	B	2743	ARG

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	1274/4089 (31%)	1246 (98%)	28 (2%)	45	71
1	B	1272/4089 (31%)	1254 (99%)	18 (1%)	59	77
2	C	1/1 (100%)	0	1 (100%)	0	0
2	I	1/1 (100%)	1 (100%)	0	100	100
3	D	1/1 (100%)	1 (100%)	0	100	100
3	J	1/1 (100%)	1 (100%)	0	100	100
4	G	2/2 (100%)	1 (50%)	1 (50%)	0	0
4	K	2/2 (100%)	2 (100%)	0	100	100
5	H	1/1 (100%)	1 (100%)	0	100	100
5	L	1/1 (100%)	1 (100%)	0	100	100
All	All	2556/8188 (31%)	2508 (98%)	48 (2%)	49	73

All (48) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1343	THR
1	A	1449	VAL
1	A	1503	VAL
1	A	1594	VAL
1	A	1636	VAL
1	A	1656	VAL
1	A	1728	CYS
1	A	1925	VAL
1	A	1969	VAL
1	A	1985	GLU
1	A	2002	VAL
1	A	2070	MET
1	A	2170	THR
1	A	2174	VAL
1	A	2189	SER
1	A	2210	TYR

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Mol	Chain	Res	Type
1	A	2230	VAL
1	A	2338	SER
1	A	2394	SER
1	A	2507	VAL
1	A	2565	LEU
1	A	2600	THR
1	A	2601	VAL
1	A	2636	THR
1	A	2645	VAL
1	A	2657	ASP
1	A	2741	THR
1	A	2773	GLU
1	B	1388	THR
1	B	1397	ILE
1	B	1449	VAL
1	B	1504	VAL
1	B	1517	VAL
1	B	1636	VAL
1	B	1666	VAL
1	B	1728	CYS
1	B	1734	LEU
1	B	1854	ASP
1	B	2002	VAL
1	B	2110	ILE
1	B	2174	VAL
1	B	2191	ASP
1	B	2323	LEU
1	B	2366	THR
1	B	2741	THR
1	B	2759	TYR
2	C	3	LEU
4	G	3	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1356	HIS
1	A	1488	GLN
1	A	1496	GLN
1	A	1740	ASN
1	A	1963	HIS
1	A	2026	ASN

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Mol	Chain	Res	Type
1	A	2097	ASN
1	A	2333	HIS
1	A	2409	HIS
1	A	2651	GLN
1	A	2703	GLN
1	A	2758	HIS
1	B	1488	GLN
1	B	1645	HIS
1	B	1959	HIS
1	B	1980	GLN
1	B	2297	ASN
1	B	2322	ASN
1	B	2344	ASN
1	B	2378	ASN
1	B	2414	GLN
1	B	2500	ASN
1	B	2665	HIS
1	B	2677	GLN
1	B	2710	ASN
1	B	2770	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

50 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
6	NAG	E	1	1,6	14,14,15	0.43	0	17,19,21	1.52	2 (11%)
6	NAG	E	2	6	14,14,15	0.34	0	17,19,21	0.74	1 (5%)
7	NAG	F	1	1,7	14,14,15	0.44	0	17,19,21	0.94	1 (5%)
7	NAG	F	2	7	14,14,15	0.31	0	17,19,21	0.73	0
7	BMA	F	3	7	11,11,12	0.24	0	15,15,17	1.01	1 (6%)
6	NAG	M	1	1,6	14,14,15	0.32	0	17,19,21	0.75	1 (5%)
6	NAG	M	2	6	14,14,15	0.32	0	17,19,21	0.67	0
6	NAG	N	1	1,6	14,14,15	0.30	0	17,19,21	0.52	0
6	NAG	N	2	6	14,14,15	0.32	0	17,19,21	0.79	0
8	NAG	O	1	8,1	14,14,15	0.42	0	17,19,21	1.51	5 (29%)
8	NAG	O	2	8	14,14,15	0.28	0	17,19,21	1.14	2 (11%)
8	BMA	O	3	8	11,11,12	0.23	0	15,15,17	0.77	0
8	MAN	O	4	8	11,11,12	0.24	0	15,15,17	0.51	0
8	MAN	O	5	8	11,11,12	0.22	0	15,15,17	0.50	0
6	NAG	P	1	1,6	14,14,15	0.31	0	17,19,21	0.86	1 (5%)
6	NAG	P	2	6	14,14,15	0.35	0	17,19,21	0.58	0
8	NAG	Q	1	8,1	14,14,15	0.32	0	17,19,21	0.56	0
8	NAG	Q	2	8	14,14,15	0.29	0	17,19,21	0.66	0
8	BMA	Q	3	8	11,11,12	0.22	0	15,15,17	0.96	1 (6%)
8	MAN	Q	4	8	11,11,12	0.22	0	15,15,17	0.58	0
8	MAN	Q	5	8	11,11,12	0.23	0	15,15,17	0.50	0
9	NAG	R	1	1,9	14,14,15	0.45	0	17,19,21	0.91	0
9	NAG	R	2	9	14,14,15	0.28	0	17,19,21	0.89	0
6	NAG	S	1	1,6	14,14,15	0.47	0	17,19,21	1.34	2 (11%)
6	NAG	S	2	6	14,14,15	0.30	0	17,19,21	0.91	1 (5%)
6	NAG	T	1	1,6	14,14,15	0.30	0	17,19,21	0.65	0
6	NAG	T	2	6	14,14,15	0.33	0	17,19,21	0.76	1 (5%)
7	NAG	U	1	1,7	14,14,15	0.40	0	17,19,21	0.79	1 (5%)
7	NAG	U	2	7	14,14,15	0.48	0	17,19,21	0.74	0
7	BMA	U	3	7	11,11,12	0.23	0	15,15,17	0.87	1 (6%)
6	NAG	V	1	1,6	14,14,15	0.64	0	17,19,21	1.58	1 (5%)
6	NAG	V	2	6	14,14,15	0.45	0	17,19,21	1.03	1 (5%)
6	NAG	W	1	1,6	14,14,15	0.39	0	17,19,21	0.80	0
6	NAG	W	2	6	14,14,15	0.31	0	17,19,21	0.63	0
8	NAG	X	1	8,1	14,14,15	0.39	0	17,19,21	0.81	1 (5%)
8	NAG	X	2	8	14,14,15	0.32	0	17,19,21	0.80	0
8	BMA	X	3	8	11,11,12	0.26	0	15,15,17	1.10	2 (13%)
8	MAN	X	4	8	11,11,12	0.26	0	15,15,17	0.52	0
8	MAN	X	5	8	11,11,12	0.24	0	15,15,17	0.63	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	NAG	Y	1	1,6	14,14,15	0.30	0	17,19,21	0.49	0
6	NAG	Y	2	6	14,14,15	0.31	0	17,19,21	0.69	0
10	NAG	Z	1	10,1	14,14,15	0.63	0	17,19,21	1.29	2 (11%)
10	NAG	Z	2	10	14,14,15	0.36	0	17,19,21	1.14	1 (5%)
10	BMA	Z	3	10	11,11,12	0.21	0	15,15,17	0.91	0
10	MAN	Z	4	10	11,11,12	0.22	0	15,15,17	0.49	0
10	MAN	Z	5	10	11,11,12	0.22	0	15,15,17	0.51	0
6	NAG	a	1	1,6	14,14,15	0.49	0	17,19,21	1.14	3 (17%)
6	NAG	a	2	6	14,14,15	0.30	0	17,19,21	0.88	1 (5%)
6	NAG	b	1	1,6	14,14,15	0.28	0	17,19,21	0.81	0
6	NAG	b	2	6	14,14,15	0.31	0	17,19,21	0.79	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
6	NAG	E	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	E	2	6	-	0/6/23/26	0/1/1/1
7	NAG	F	1	1,7	-	0/6/23/26	0/1/1/1
7	NAG	F	2	7	-	2/6/23/26	0/1/1/1
7	BMA	F	3	7	-	0/2/19/22	0/1/1/1
6	NAG	M	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	M	2	6	-	1/6/23/26	0/1/1/1
6	NAG	N	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	N	2	6	-	3/6/23/26	0/1/1/1
8	NAG	O	1	8,1	-	0/6/23/26	0/1/1/1
8	NAG	O	2	8	-	2/6/23/26	0/1/1/1
8	BMA	O	3	8	-	0/2/19/22	0/1/1/1
8	MAN	O	4	8	-	0/2/19/22	0/1/1/1
8	MAN	O	5	8	-	0/2/19/22	0/1/1/1
6	NAG	P	1	1,6	-	2/6/23/26	0/1/1/1
6	NAG	P	2	6	-	0/6/23/26	0/1/1/1
8	NAG	Q	1	8,1	-	0/6/23/26	0/1/1/1
8	NAG	Q	2	8	-	2/6/23/26	0/1/1/1
8	BMA	Q	3	8	-	0/2/19/22	0/1/1/1
8	MAN	Q	4	8	-	0/2/19/22	0/1/1/1
8	MAN	Q	5	8	-	0/2/19/22	0/1/1/1
9	NAG	R	1	1,9	-	0/6/23/26	0/1/1/1
9	NAG	R	2	9	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	S	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	S	2	6	-	0/6/23/26	0/1/1/1
6	NAG	T	1	1,6	-	1/6/23/26	0/1/1/1
6	NAG	T	2	6	-	1/6/23/26	0/1/1/1
7	NAG	U	1	1,7	-	2/6/23/26	0/1/1/1
7	NAG	U	2	7	-	3/6/23/26	0/1/1/1
7	BMA	U	3	7	-	1/2/19/22	0/1/1/1
6	NAG	V	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	V	2	6	-	0/6/23/26	0/1/1/1
6	NAG	W	1	1,6	-	3/6/23/26	0/1/1/1
6	NAG	W	2	6	-	0/6/23/26	0/1/1/1
8	NAG	X	1	8,1	-	2/6/23/26	0/1/1/1
8	NAG	X	2	8	-	2/6/23/26	0/1/1/1
8	BMA	X	3	8	-	2/2/19/22	0/1/1/1
8	MAN	X	4	8	-	0/2/19/22	0/1/1/1
8	MAN	X	5	8	-	0/2/19/22	0/1/1/1
6	NAG	Y	1	1,6	-	2/6/23/26	0/1/1/1
6	NAG	Y	2	6	-	1/6/23/26	0/1/1/1
10	NAG	Z	1	10,1	-	4/6/23/26	0/1/1/1
10	NAG	Z	2	10	-	2/6/23/26	0/1/1/1
10	BMA	Z	3	10	-	0/2/19/22	0/1/1/1
10	MAN	Z	4	10	-	1/2/19/22	0/1/1/1
10	MAN	Z	5	10	-	1/2/19/22	0/1/1/1
6	NAG	a	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	a	2	6	-	3/6/23/26	0/1/1/1
6	NAG	b	1	1,6	-	3/6/23/26	0/1/1/1
6	NAG	b	2	6	-	1/6/23/26	0/1/1/1

There are no bond length outliers.

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	V	1	NAG	C1-O5-C5	6.30	120.63	112.19
6	E	1	NAG	C1-O5-C5	4.57	118.31	112.19
6	S	1	NAG	C1-O5-C5	4.35	118.01	112.19
8	O	2	NAG	C1-O5-C5	3.46	116.83	112.19
6	V	2	NAG	C1-O5-C5	3.24	116.53	112.19
8	O	1	NAG	O5-C1-C2	-2.98	106.68	111.29
10	Z	1	NAG	C3-C4-C5	2.80	115.31	110.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	F	3	BMA	C1-O5-C5	2.67	115.76	112.19
7	F	1	NAG	C1-O5-C5	2.65	115.74	112.19
8	X	3	BMA	C1-O5-C5	2.58	115.65	112.19
8	O	1	NAG	C1-O5-C5	2.57	115.63	112.19
8	O	1	NAG	C6-C5-C4	-2.56	106.72	113.02
10	Z	1	NAG	O3-C3-C4	-2.56	104.35	110.38
8	O	2	NAG	C2-N2-C7	-2.50	119.55	122.90
6	S	2	NAG	C1-O5-C5	2.37	115.37	112.19
7	U	1	NAG	O5-C1-C2	-2.35	107.66	111.29
8	O	1	NAG	C2-N2-C7	-2.30	119.81	122.90
8	Q	3	BMA	C1-C2-C3	2.29	112.98	109.64
8	X	1	NAG	O5-C1-C2	-2.27	107.78	111.29
6	a	1	NAG	C1-O5-C5	2.25	115.20	112.19
6	E	2	NAG	C1-O5-C5	2.24	115.19	112.19
6	S	1	NAG	C2-N2-C7	-2.23	119.91	122.90
10	Z	2	NAG	O5-C1-C2	-2.21	107.88	111.29
8	O	1	NAG	C3-C4-C5	2.19	114.21	110.23
7	U	3	BMA	C1-O5-C5	2.18	115.11	112.19
6	a	2	NAG	O5-C1-C2	-2.18	107.92	111.29
6	a	1	NAG	C4-C3-C2	2.14	114.16	111.02
6	a	1	NAG	O5-C1-C2	2.14	114.60	111.29
6	M	1	NAG	C1-O5-C5	2.11	115.01	112.19
6	E	1	NAG	O5-C1-C2	2.08	114.51	111.29
6	T	2	NAG	C1-O5-C5	2.07	114.96	112.19
8	X	3	BMA	C1-C2-C3	2.07	112.65	109.64
6	P	1	NAG	O5-C1-C2	-2.04	108.14	111.29

There are no chirality outliers.

All (47) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	N	2	NAG	C1-C2-N2-C7
6	W	1	NAG	C3-C2-N2-C7
6	W	1	NAG	C8-C7-N2-C2
6	W	1	NAG	O7-C7-N2-C2
6	a	2	NAG	C1-C2-N2-C7
6	b	1	NAG	C1-C2-N2-C7
10	Z	1	NAG	C1-C2-N2-C7
10	Z	1	NAG	C8-C7-N2-C2
10	Z	1	NAG	O7-C7-N2-C2
8	O	2	NAG	C8-C7-N2-C2
8	O	2	NAG	O7-C7-N2-C2

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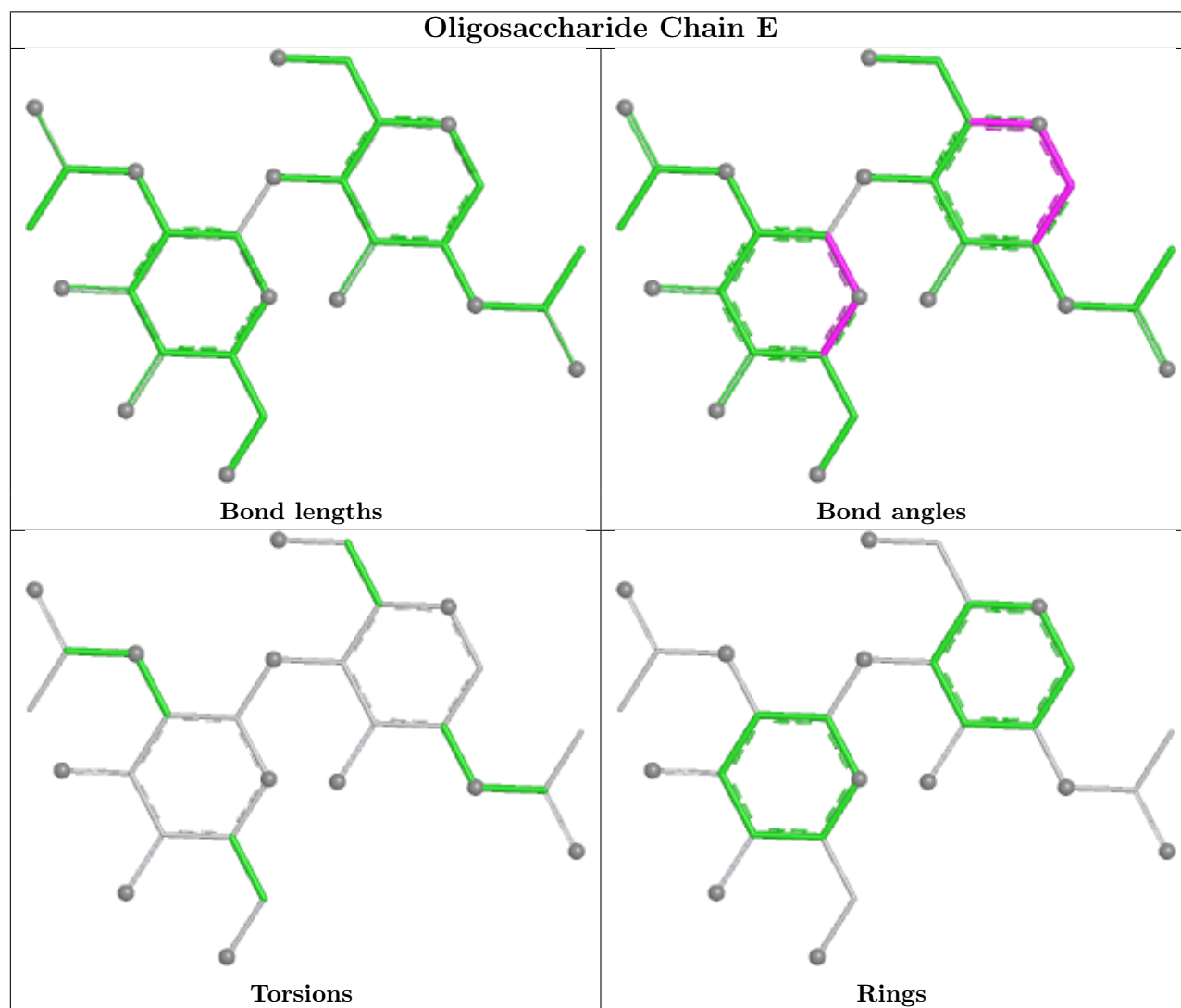
Mol	Chain	Res	Type	Atoms
8	X	3	BMA	O5-C5-C6-O6
6	b	1	NAG	O7-C7-N2-C2
8	X	3	BMA	C4-C5-C6-O6
6	b	1	NAG	C8-C7-N2-C2
7	U	1	NAG	C8-C7-N2-C2
7	U	1	NAG	O7-C7-N2-C2
6	a	2	NAG	C8-C7-N2-C2
6	a	2	NAG	O7-C7-N2-C2
7	F	2	NAG	C8-C7-N2-C2
10	Z	1	NAG	O5-C5-C6-O6
8	Q	2	NAG	O5-C5-C6-O6
7	F	2	NAG	O7-C7-N2-C2
7	U	2	NAG	C8-C7-N2-C2
10	Z	2	NAG	O5-C5-C6-O6
7	U	2	NAG	O5-C5-C6-O6
10	Z	4	MAN	O5-C5-C6-O6
10	Z	5	MAN	O5-C5-C6-O6
7	U	3	BMA	O5-C5-C6-O6
6	M	2	NAG	O5-C5-C6-O6
6	b	2	NAG	O5-C5-C6-O6
7	U	2	NAG	O7-C7-N2-C2
6	P	1	NAG	C8-C7-N2-C2
8	X	2	NAG	C8-C7-N2-C2
6	N	2	NAG	C8-C7-N2-C2
8	X	1	NAG	C8-C7-N2-C2
6	N	2	NAG	O7-C7-N2-C2
6	P	1	NAG	O7-C7-N2-C2
8	X	2	NAG	O7-C7-N2-C2
6	T	1	NAG	C1-C2-N2-C7
6	T	2	NAG	C1-C2-N2-C7
6	Y	2	NAG	C1-C2-N2-C7
8	X	1	NAG	O7-C7-N2-C2
10	Z	2	NAG	C3-C2-N2-C7
6	Y	1	NAG	C8-C7-N2-C2
6	Y	1	NAG	O7-C7-N2-C2
8	Q	2	NAG	C4-C5-C6-O6

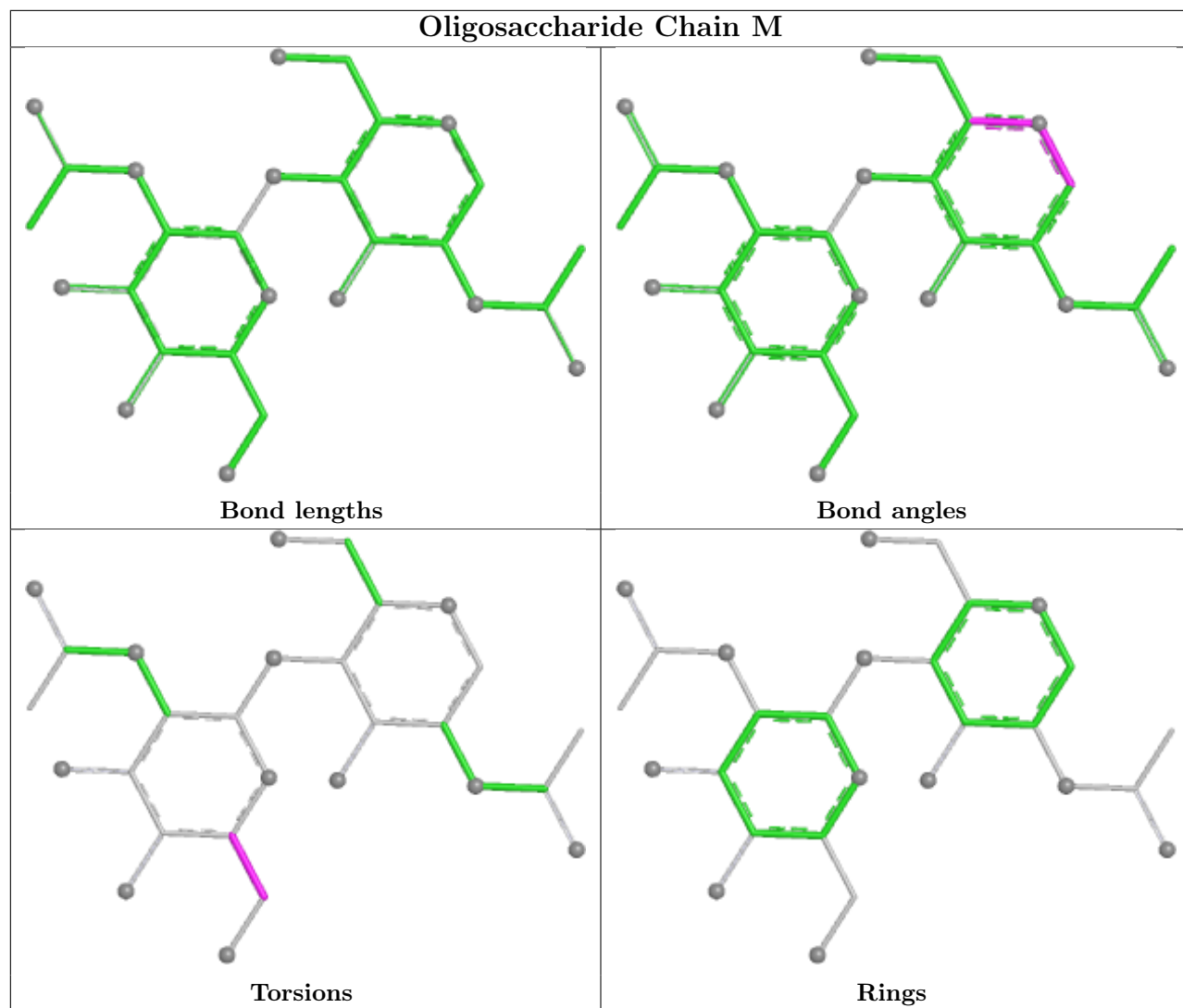
There are no ring outliers.

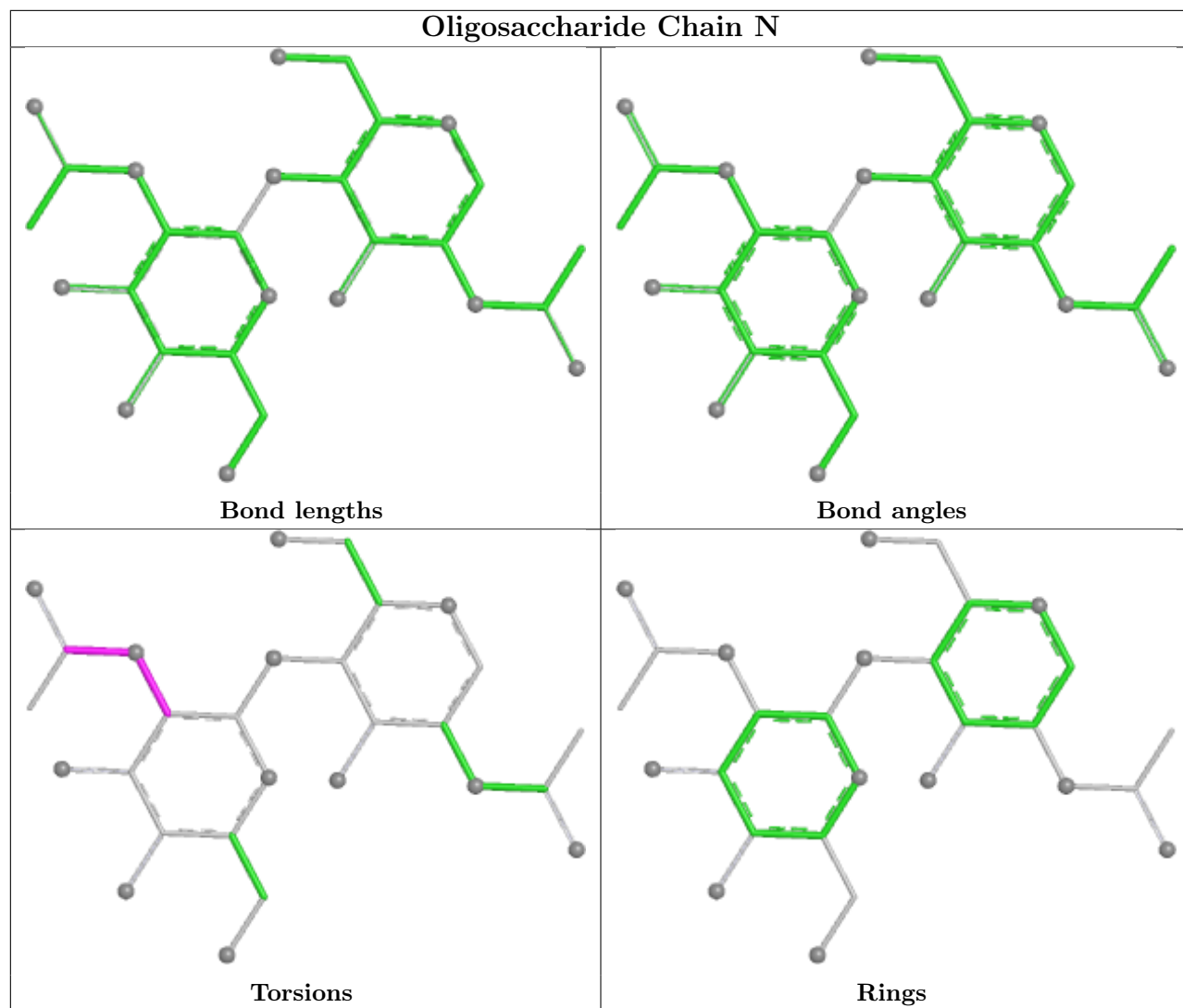
1 monomer is involved in 1 short contact:

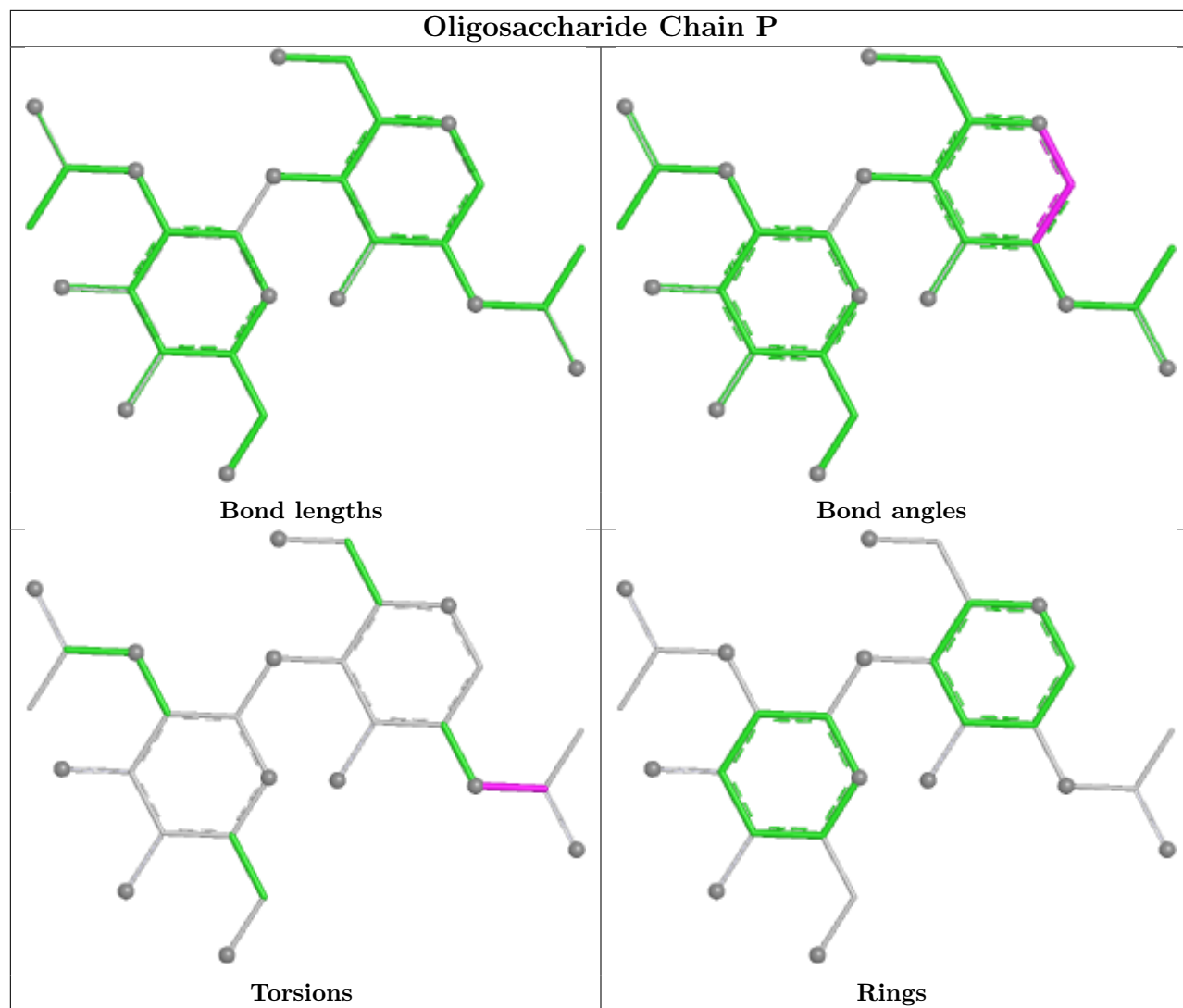
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	F	1	NAG	1	0

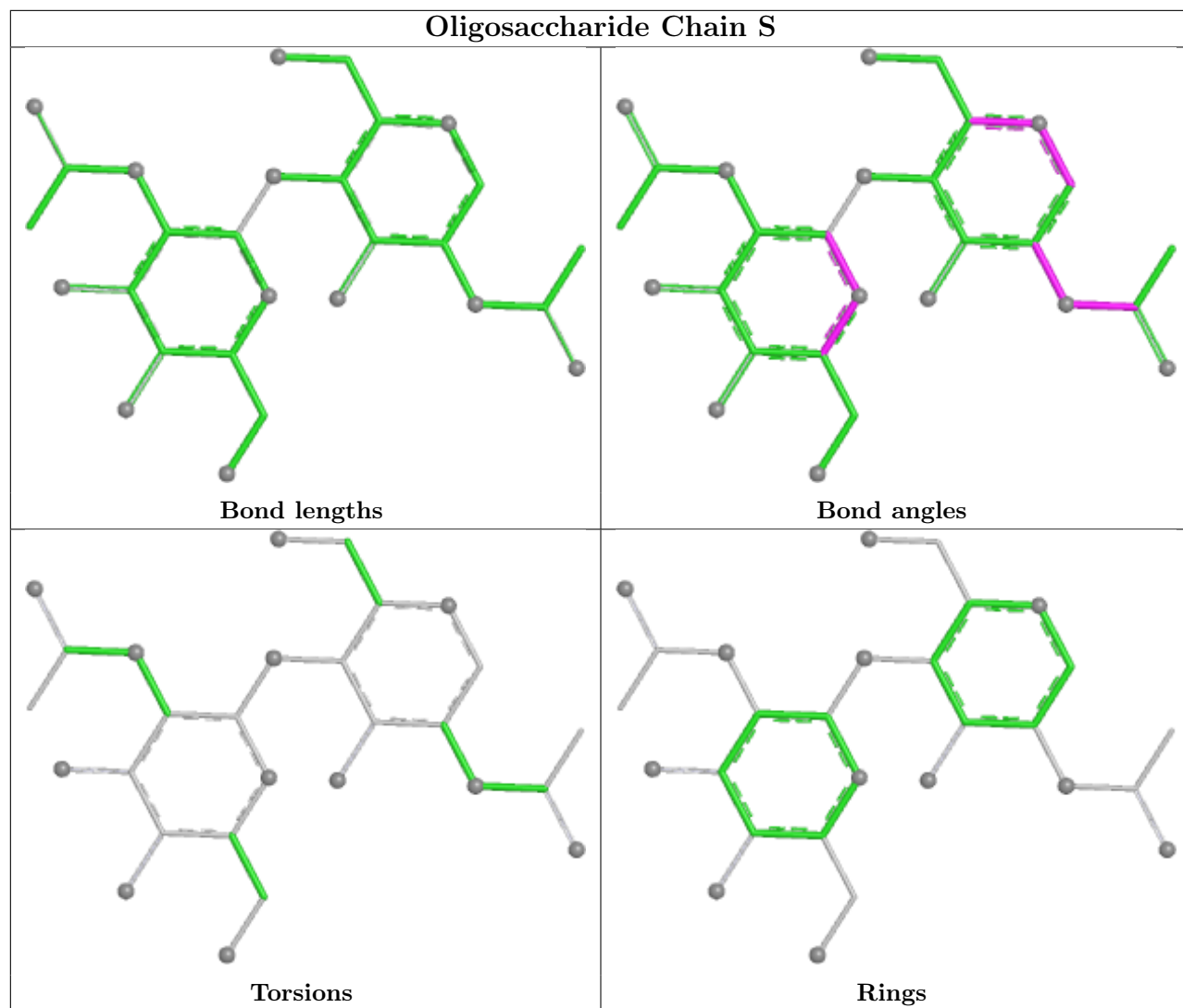
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

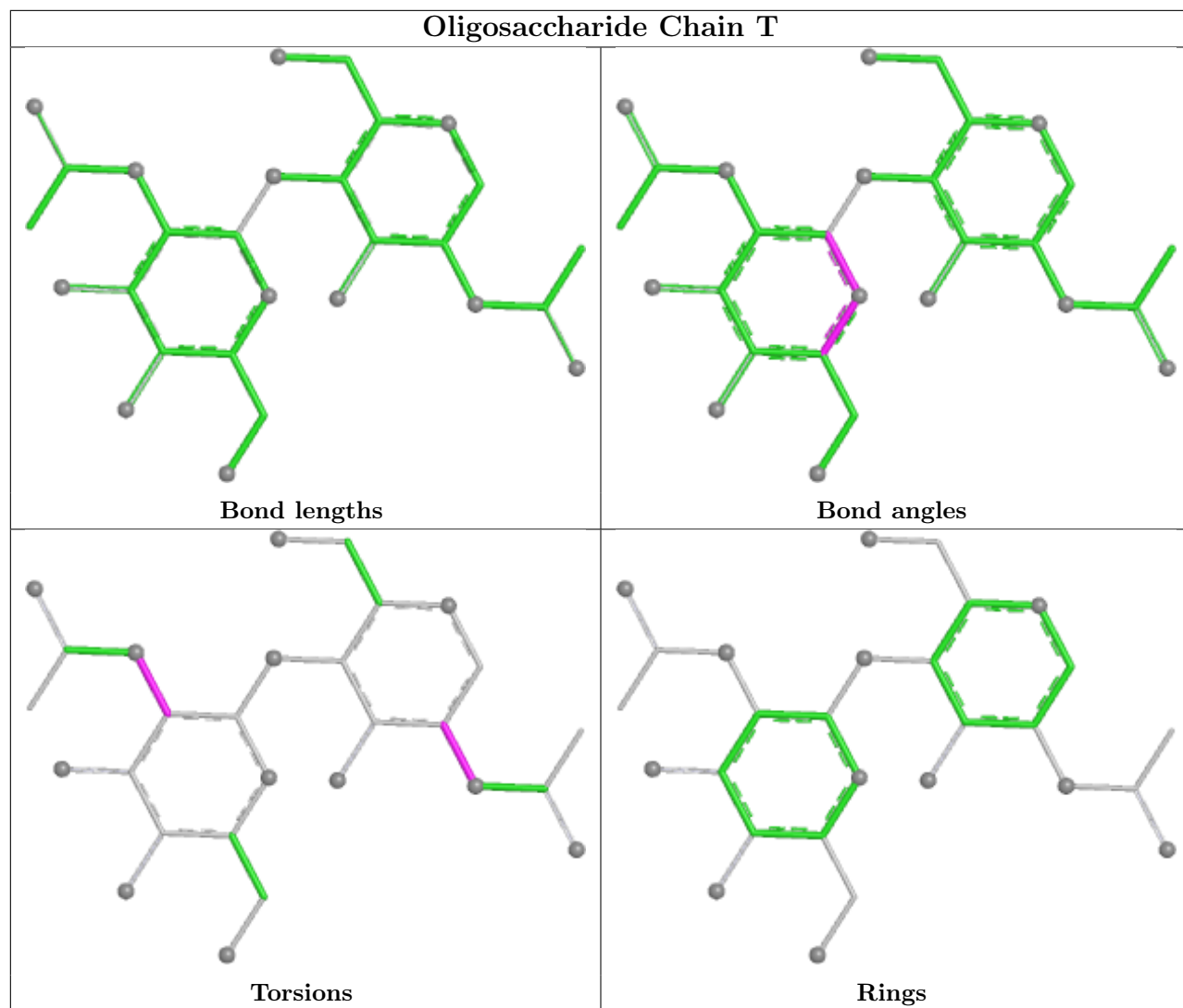


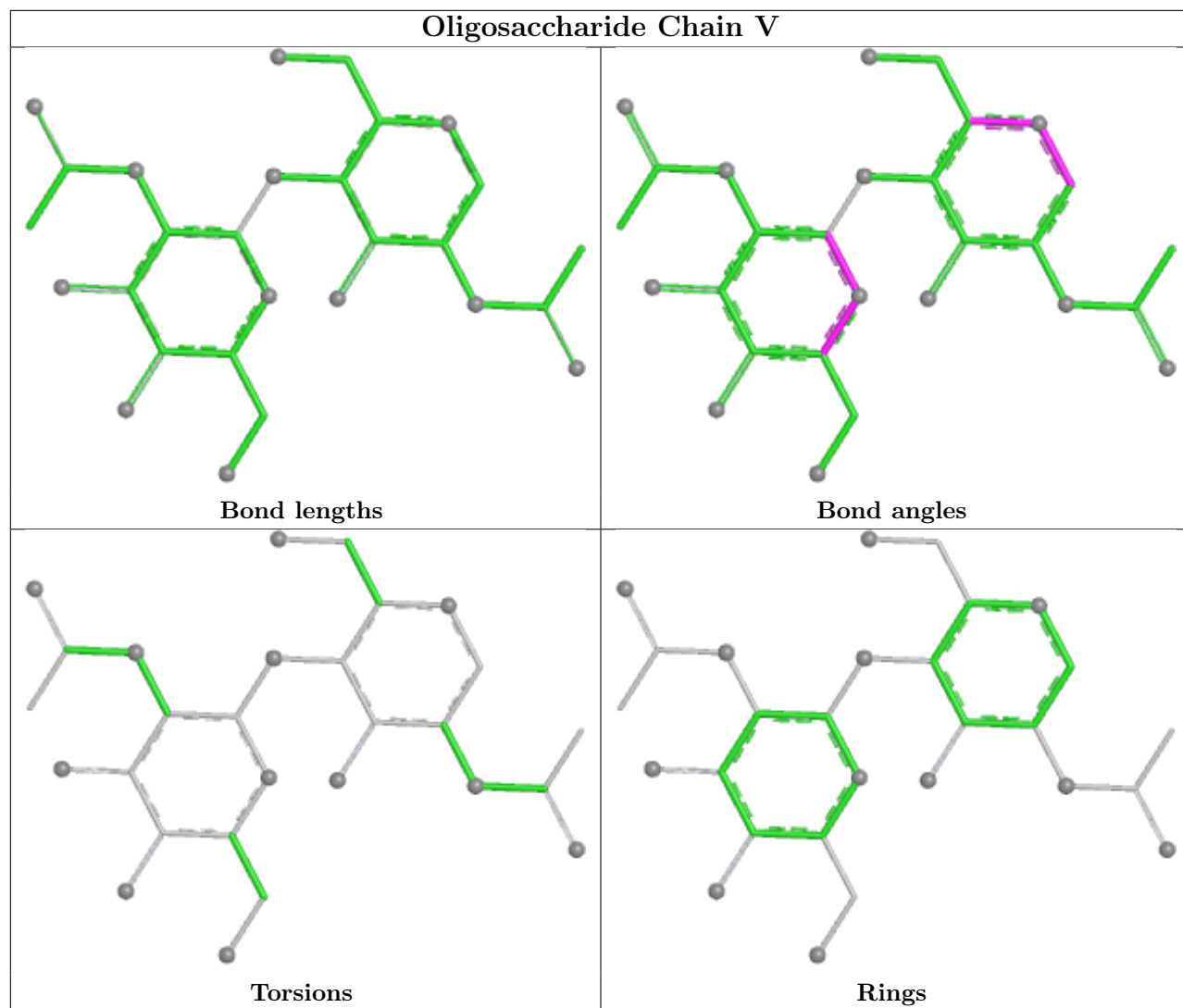


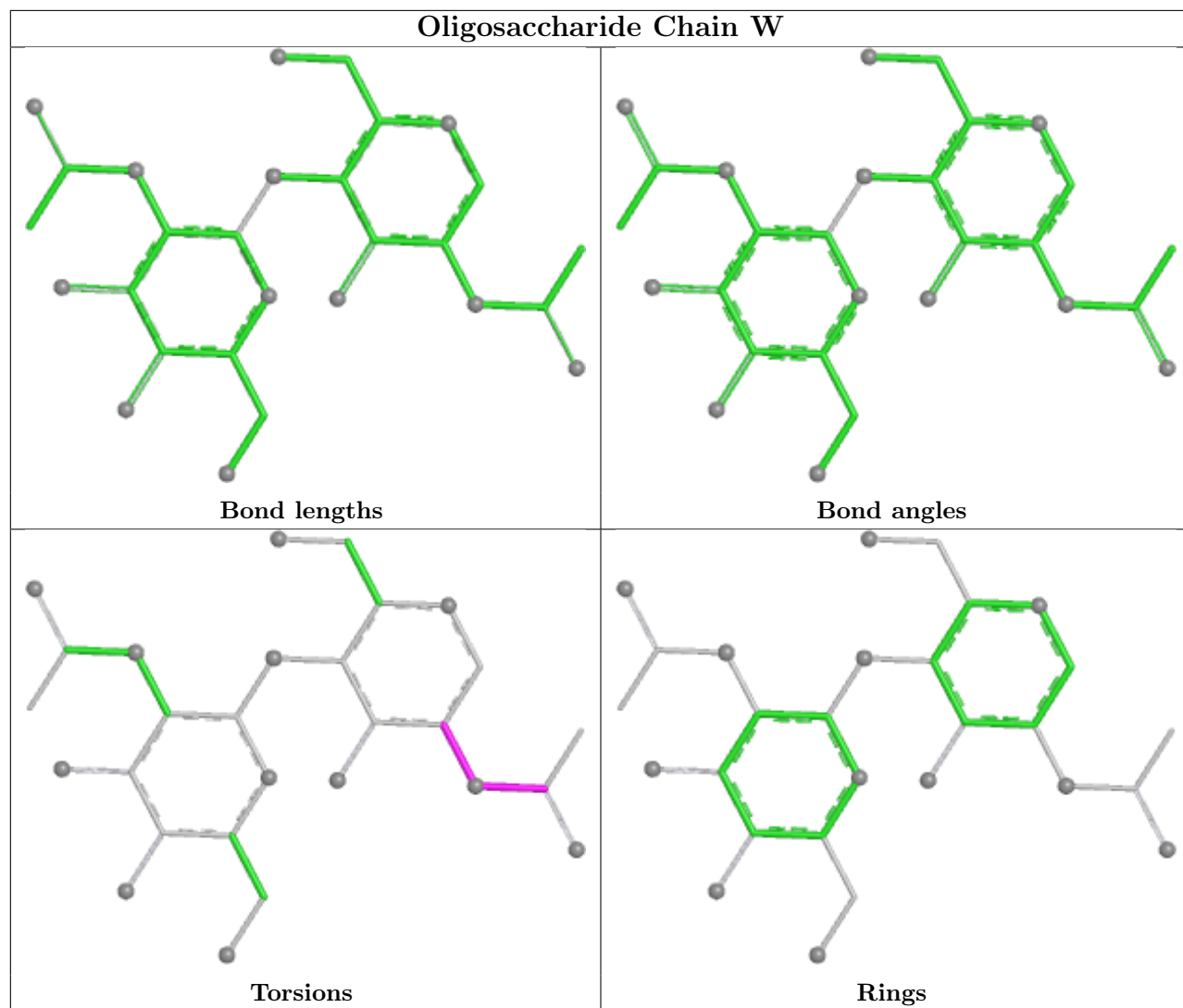


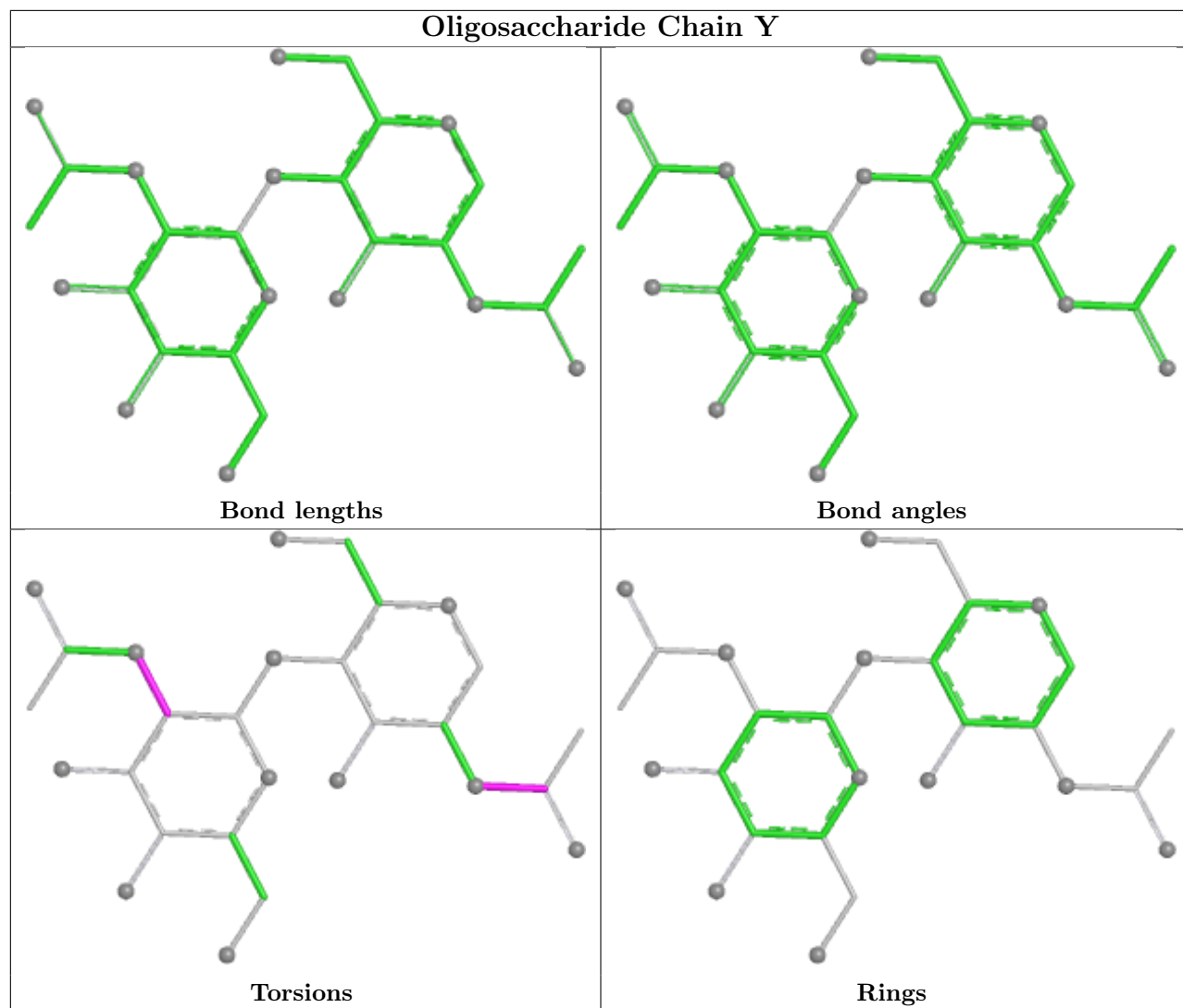


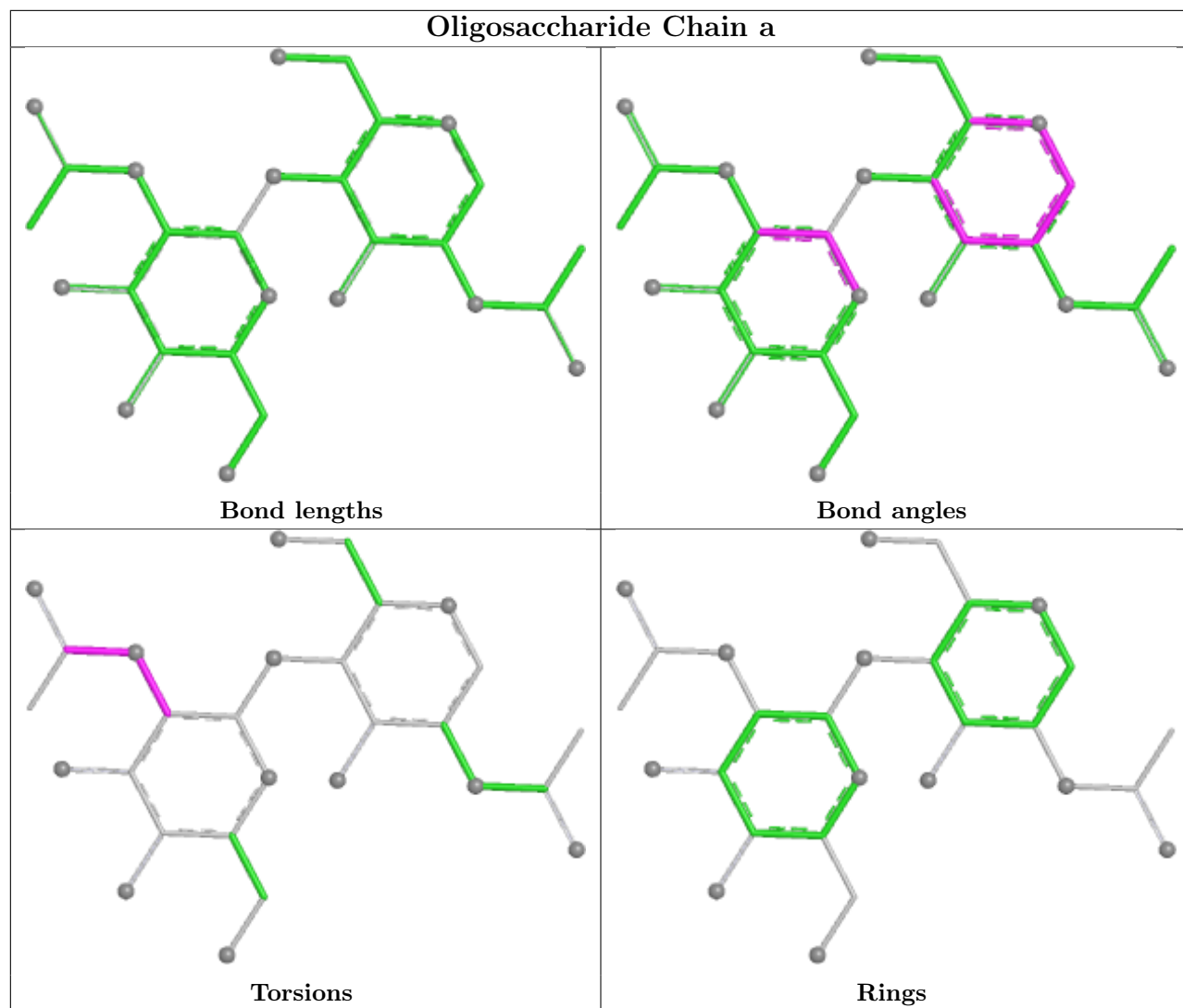


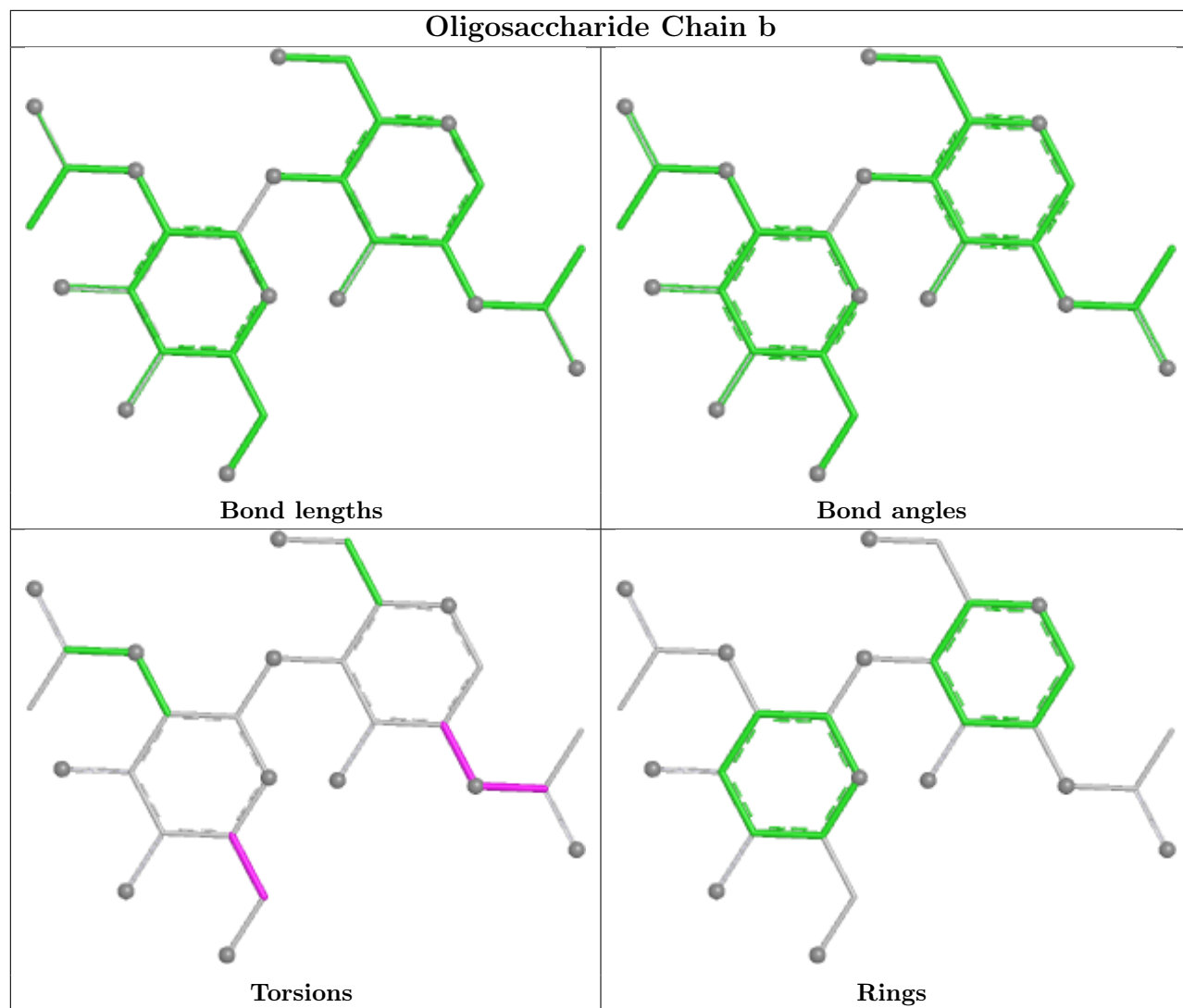


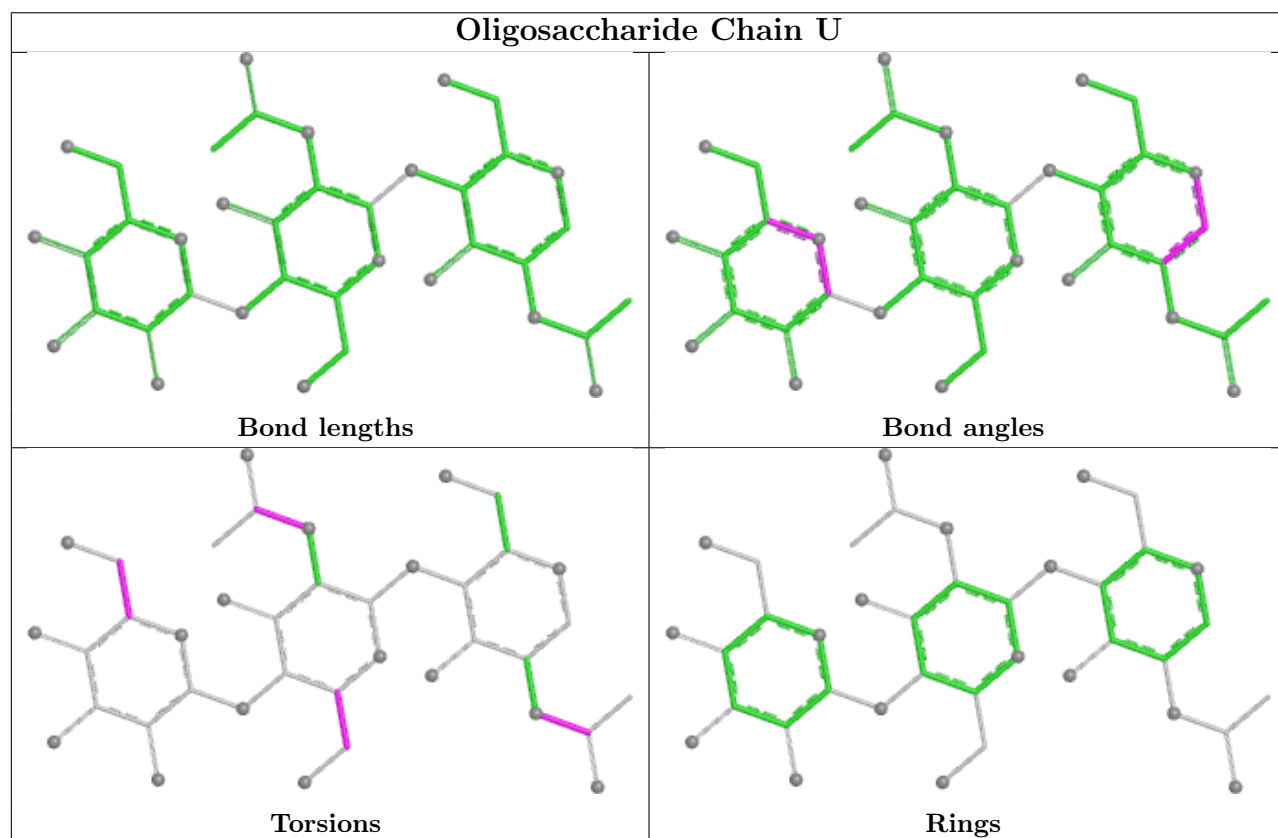
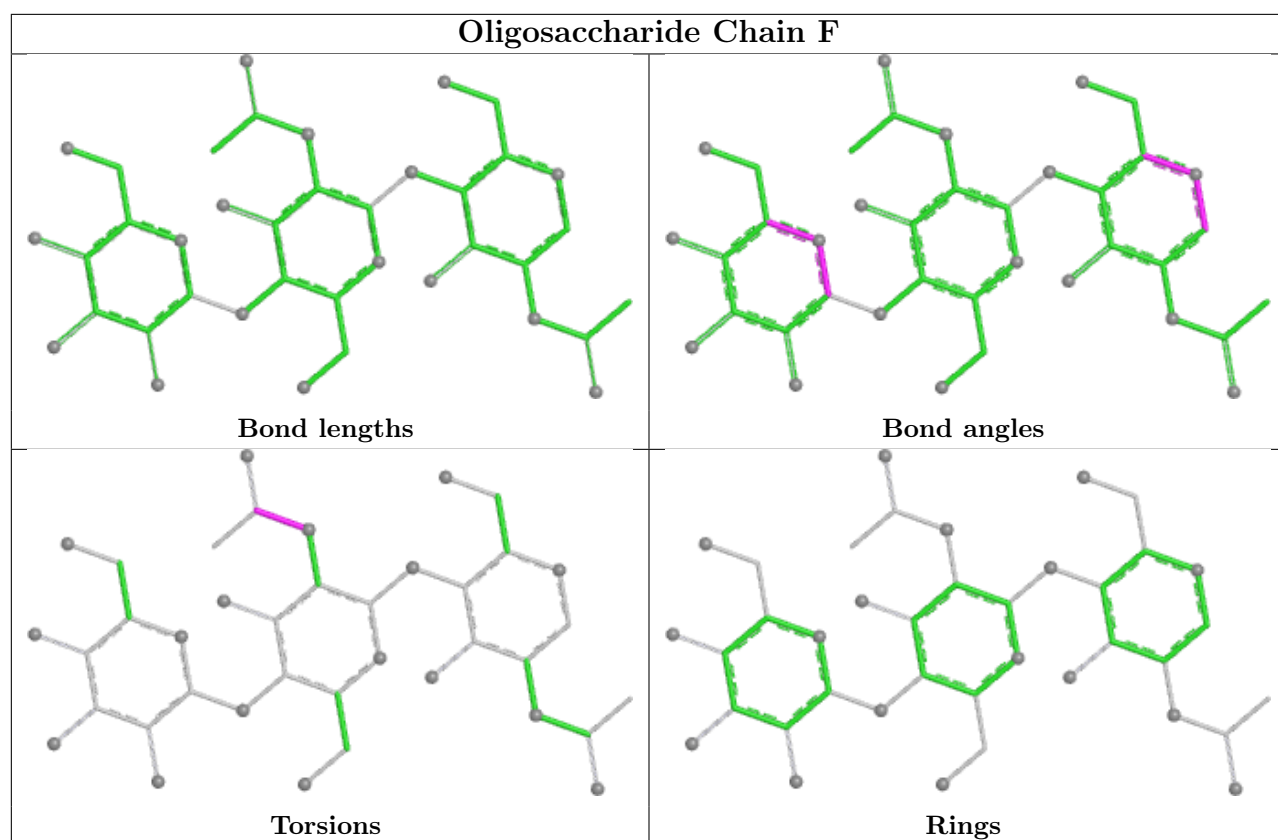


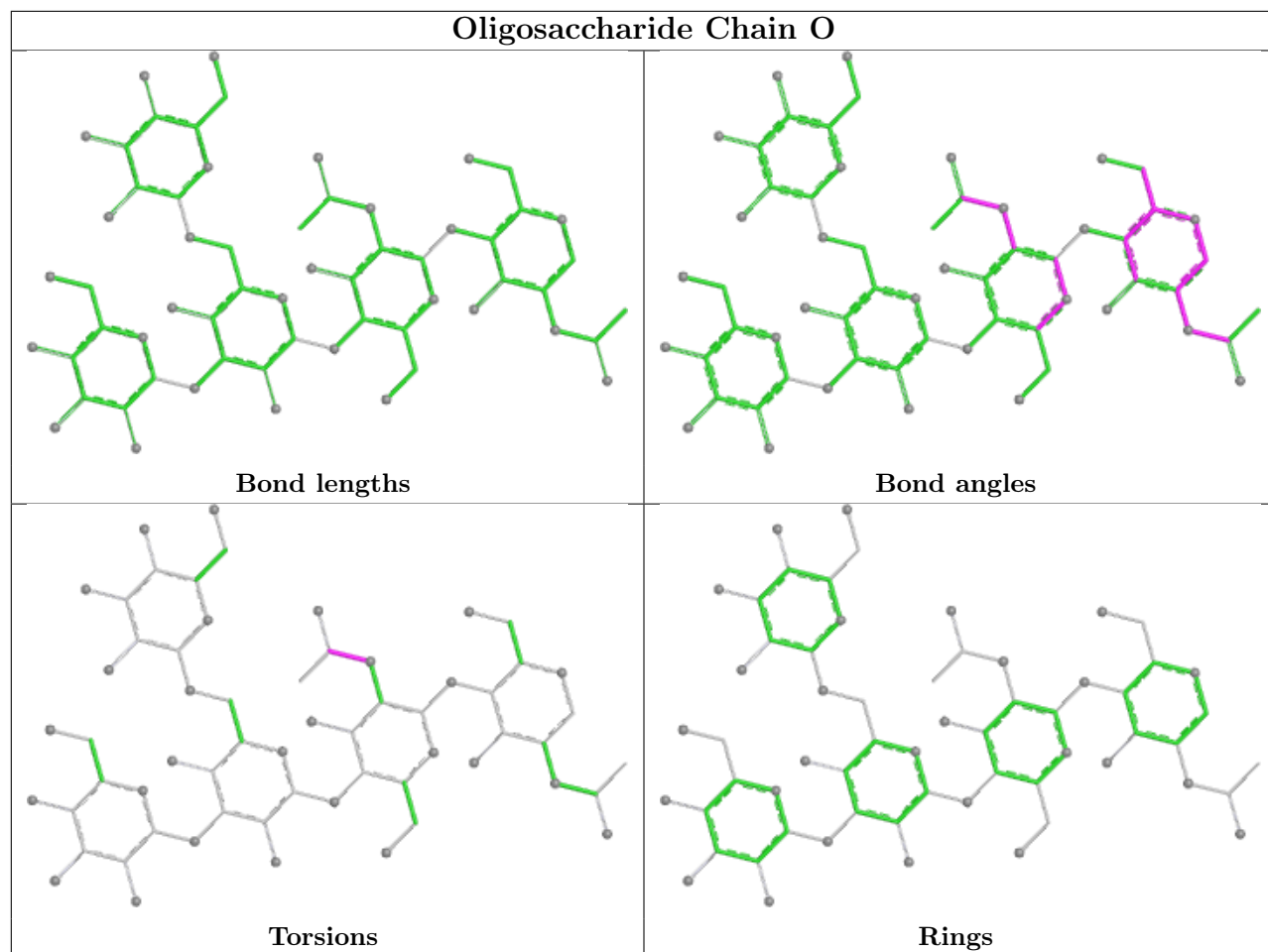


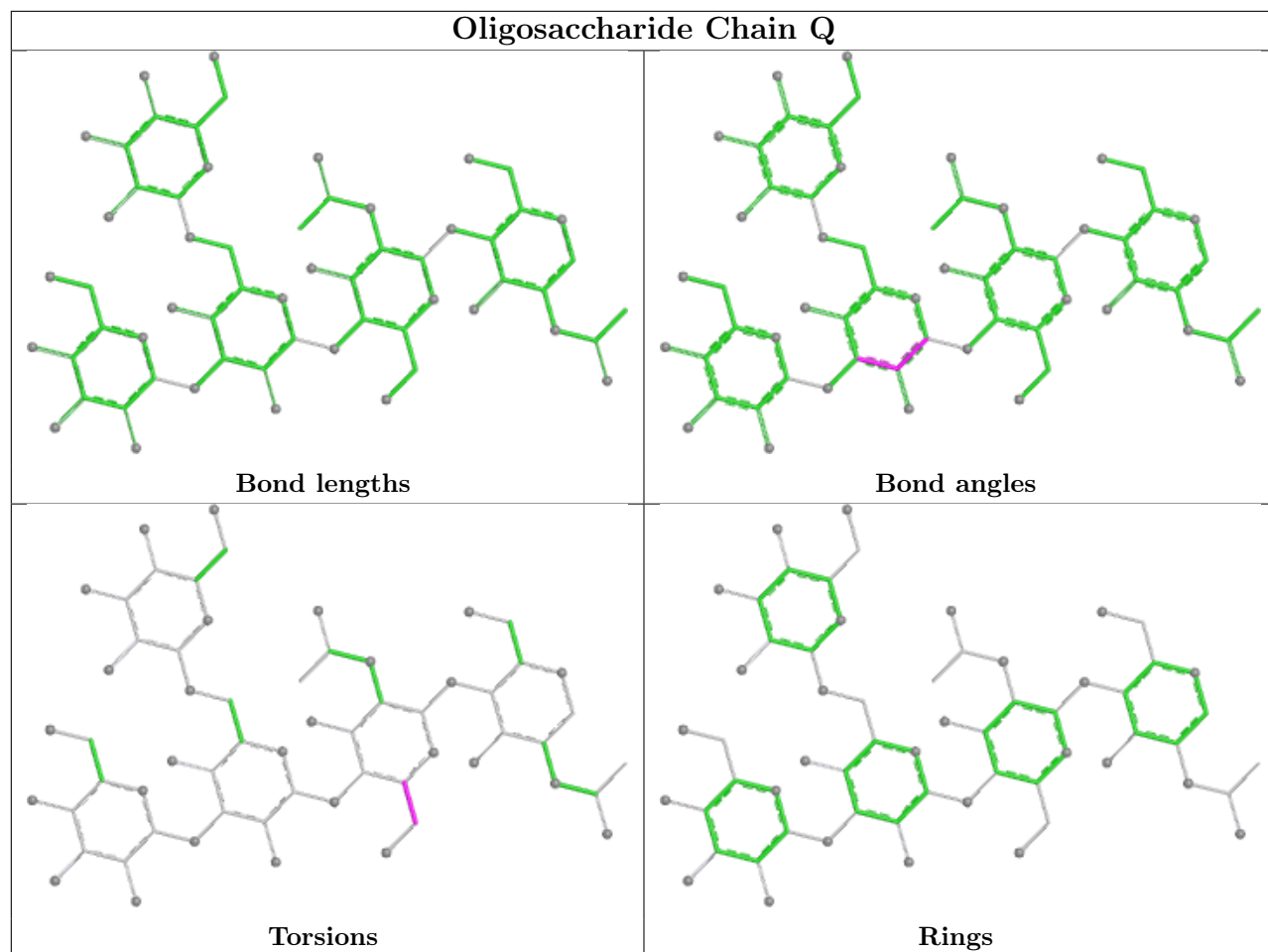


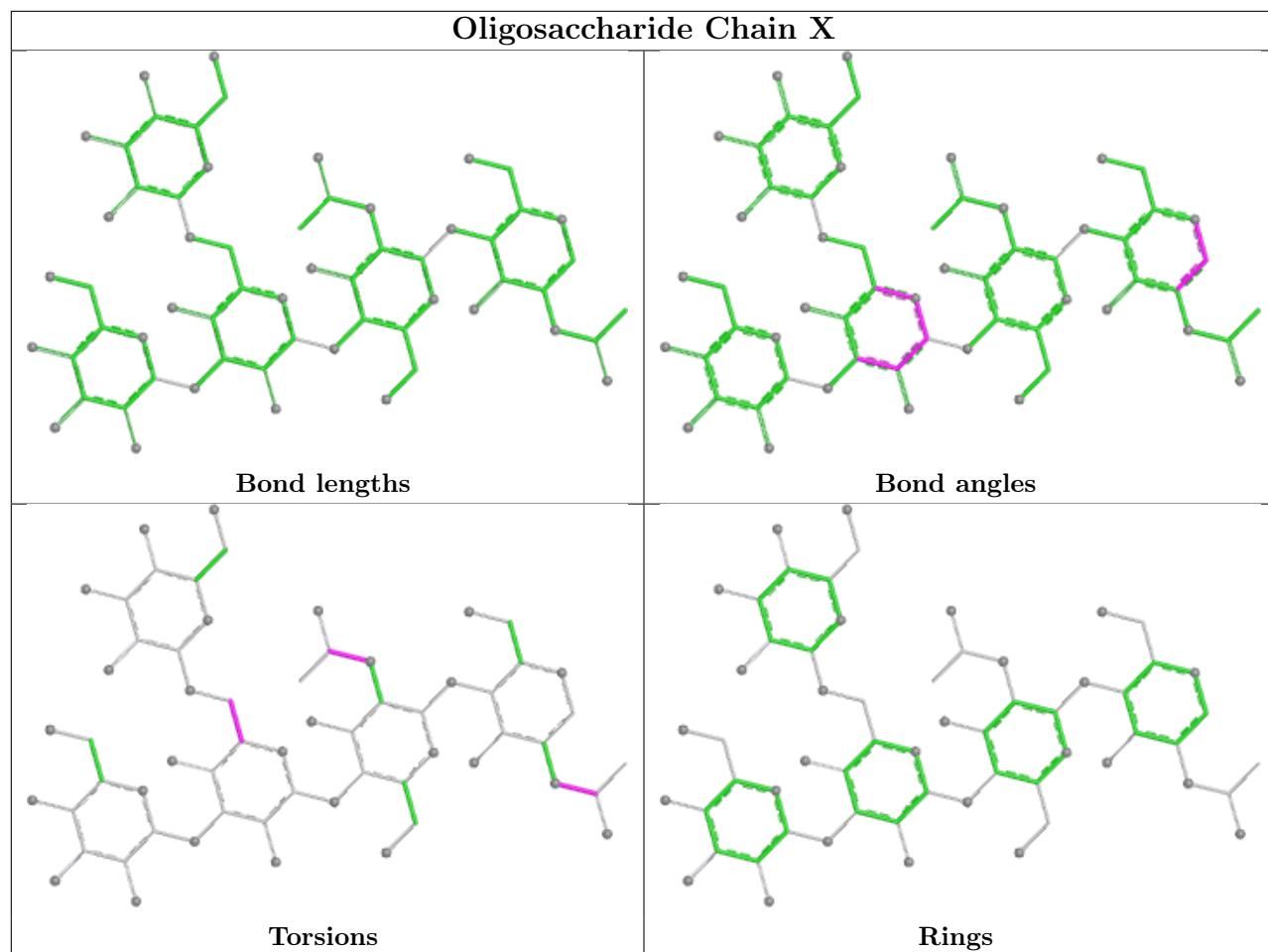


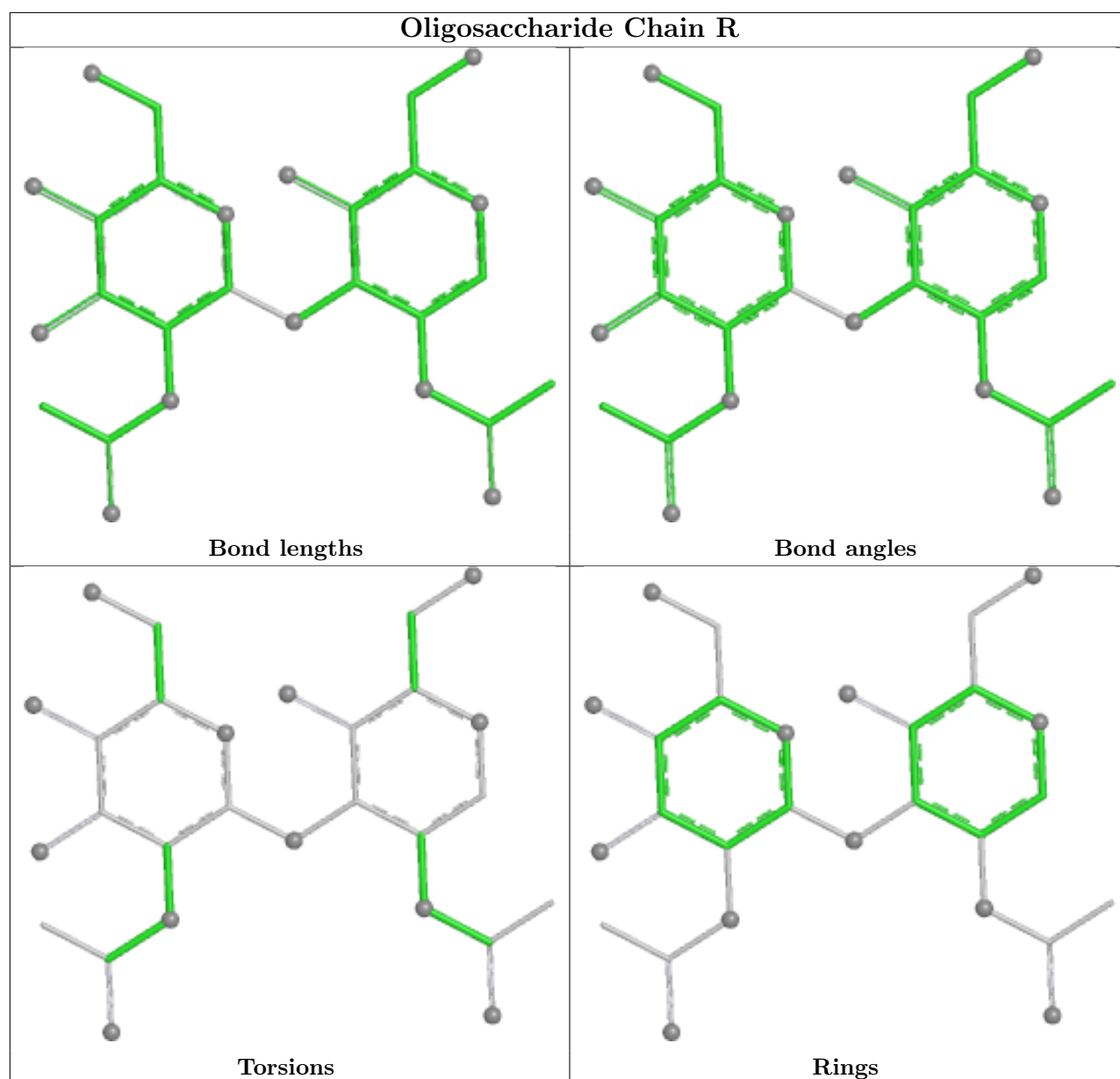


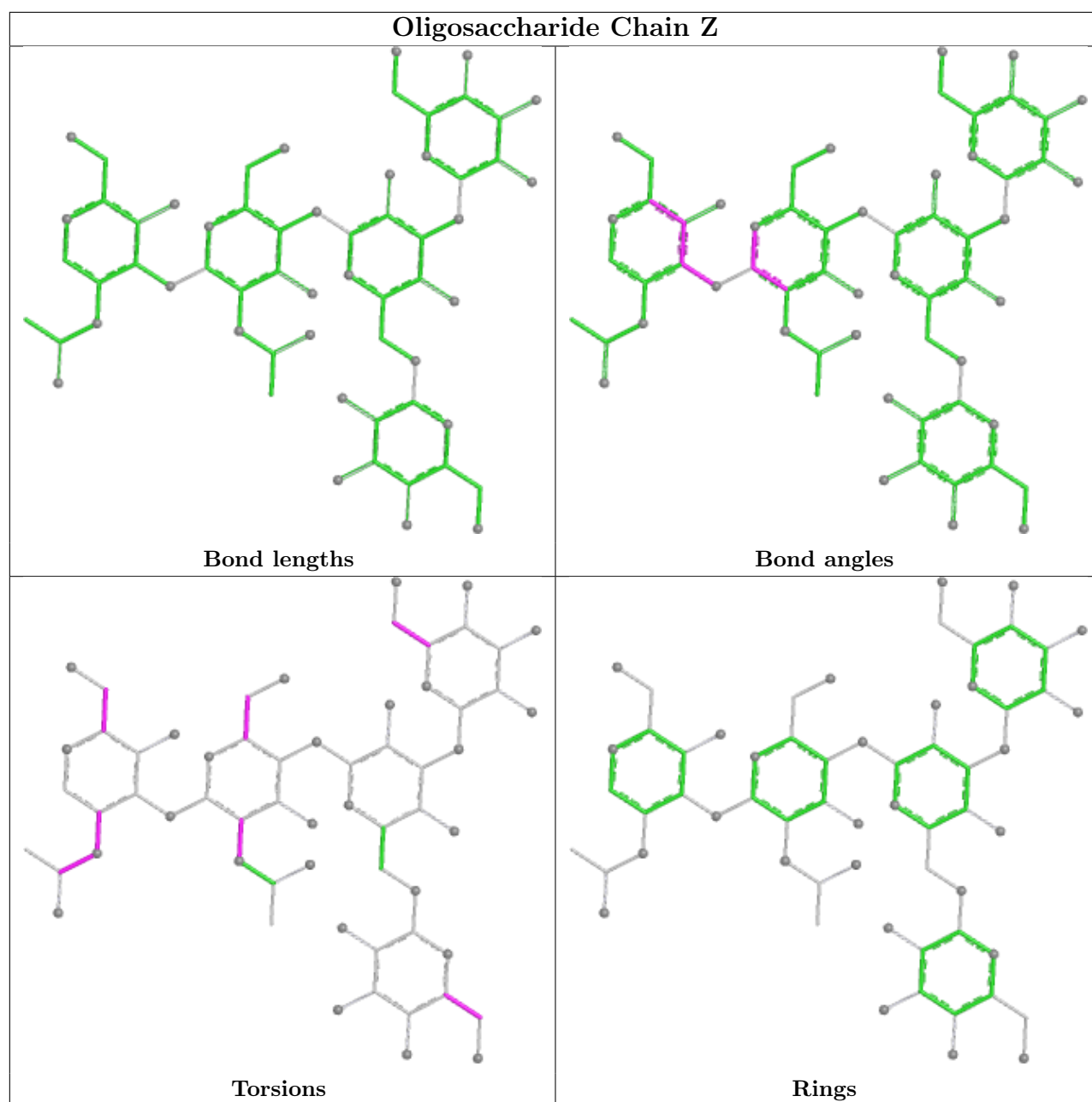












5.6 Ligand geometry [i](#)

Of 24 ligands modelled in this entry, 14 are monoatomic - leaving 10 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
12	A2G	A	4705	1	14,14,15	0.38	0	17,19,21	0.45	0
11	NAG	A	4704	1	14,14,15	0.54	0	17,19,21	2.13	2 (11%)
11	NAG	B	4702	1	14,14,15	0.30	0	17,19,21	0.67	1 (5%)
11	NAG	A	4703	1	14,14,15	0.30	0	17,19,21	0.71	0
11	NAG	B	4701	1	14,14,15	0.33	0	17,19,21	0.72	1 (5%)
11	NAG	B	4703	1	14,14,15	0.87	1 (7%)	17,19,21	1.14	2 (11%)
12	A2G	B	4705	1	14,14,15	0.45	0	17,19,21	1.32	1 (5%)
11	NAG	B	4704	1	14,14,15	0.35	0	17,19,21	0.66	0
11	NAG	A	4702	1	14,14,15	0.31	0	17,19,21	0.52	0
11	NAG	A	4701	1	14,14,15	0.41	0	17,19,21	1.20	1 (5%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
12	A2G	A	4705	1	-	2/6/23/26	0/1/1/1
11	NAG	A	4704	1	-	3/6/23/26	0/1/1/1
11	NAG	B	4702	1	-	0/6/23/26	0/1/1/1
11	NAG	A	4703	1	-	3/6/23/26	0/1/1/1
11	NAG	B	4701	1	-	0/6/23/26	0/1/1/1
11	NAG	B	4703	1	-	0/6/23/26	0/1/1/1
12	A2G	B	4705	1	-	0/6/23/26	0/1/1/1
11	NAG	B	4704	1	-	3/6/23/26	0/1/1/1
11	NAG	A	4702	1	-	0/6/23/26	0/1/1/1
11	NAG	A	4701	1	-	0/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	B	4703	NAG	C1-C2	2.70	1.56	1.52

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	A	4704	NAG	C1-O5-C5	7.34	122.02	112.19
12	B	4705	A2G	O5-C1-C2	4.70	118.57	111.29
11	A	4701	NAG	C1-O5-C5	3.84	117.33	112.19
11	A	4704	NAG	O5-C1-C2	3.83	117.21	111.29

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	B	4703	NAG	O5-C5-C4	-2.38	105.04	110.83
11	B	4703	NAG	C1-O5-C5	-2.37	109.01	112.19
11	B	4701	NAG	C1-O5-C5	2.21	115.15	112.19
11	B	4702	NAG	C1-O5-C5	2.02	114.89	112.19

There are no chirality outliers.

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	A	4703	NAG	C1-C2-N2-C7
11	A	4704	NAG	C3-C2-N2-C7
11	A	4704	NAG	C8-C7-N2-C2
11	A	4704	NAG	O7-C7-N2-C2
11	B	4704	NAG	C1-C2-N2-C7
12	A	4705	A2G	O7-C7-N2-C2
12	A	4705	A2G	C8-C7-N2-C2
11	A	4703	NAG	C8-C7-N2-C2
11	A	4703	NAG	O7-C7-N2-C2
11	B	4704	NAG	C8-C7-N2-C2
11	B	4704	NAG	O7-C7-N2-C2

There are no ring outliers.

No monomer is involved in short contacts.

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.

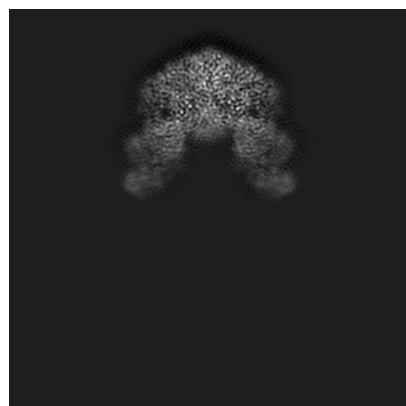
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-36698. These allow visual inspection of the internal detail of the map and identification of artifacts.

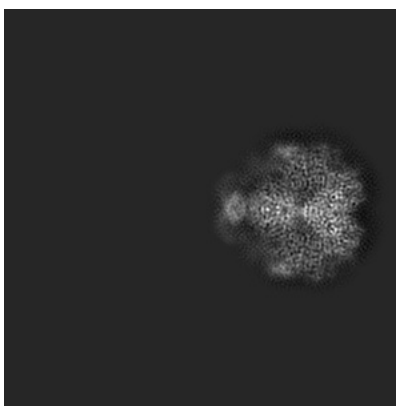
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

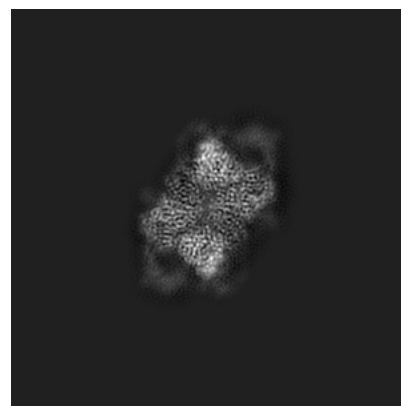
6.1.1 Primary map



X

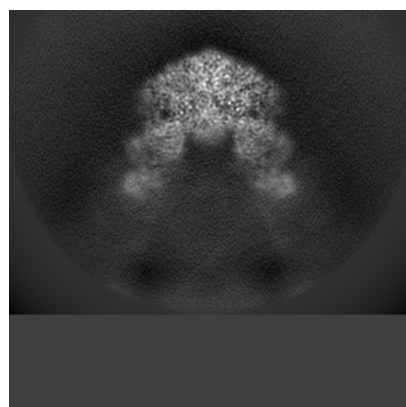


Y

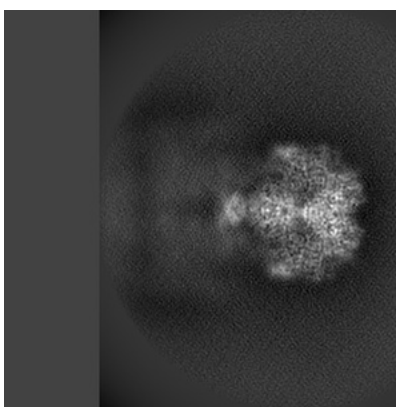


Z

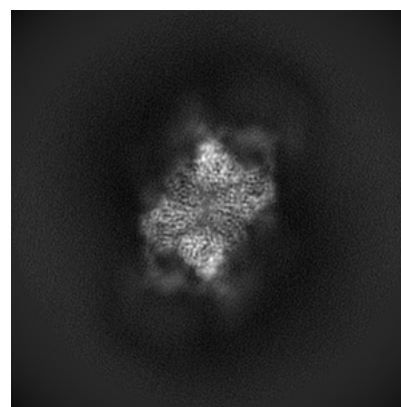
6.1.2 Raw map



X



Y

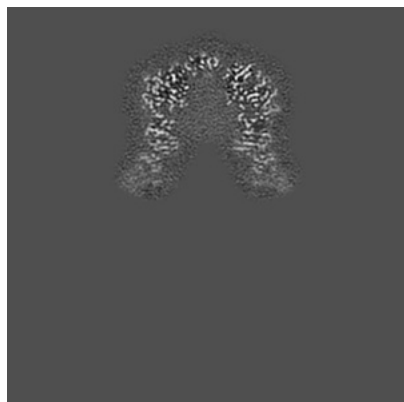


Z

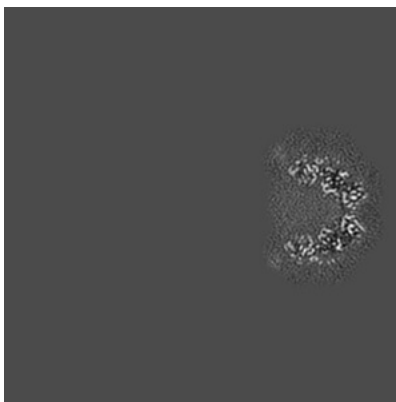
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

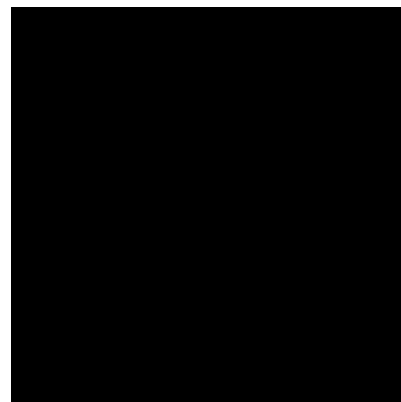
6.2.1 Primary map



X Index: 130

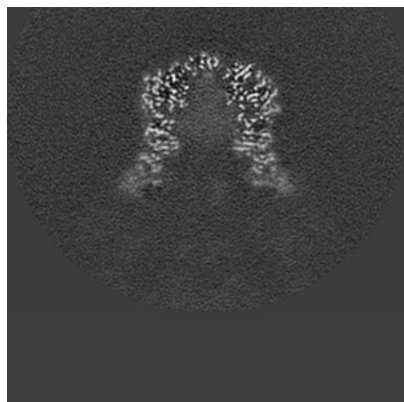


Y Index: 130

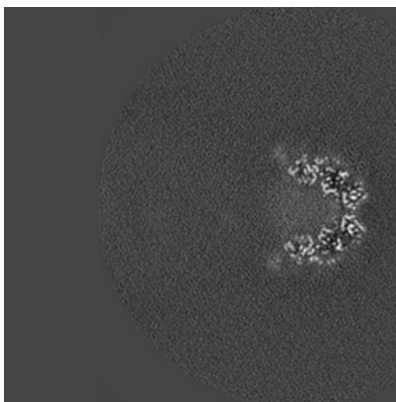


Z Index: 130

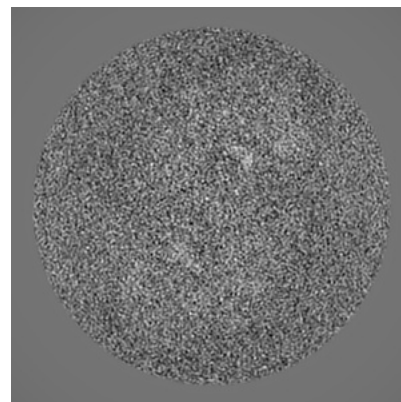
6.2.2 Raw map



X Index: 130



Y Index: 130

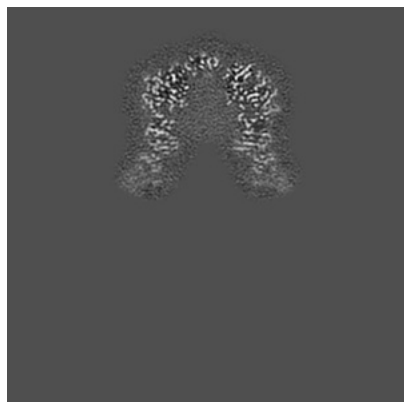


Z Index: 130

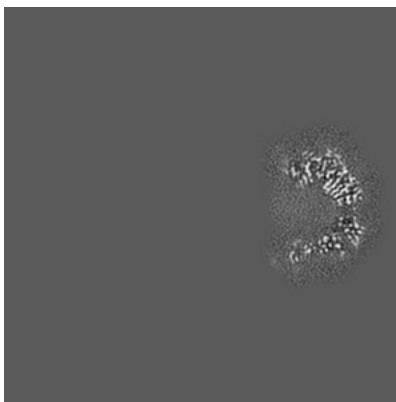
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

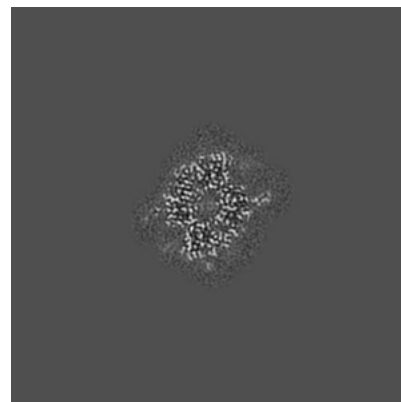
6.3.1 Primary map



X Index: 130

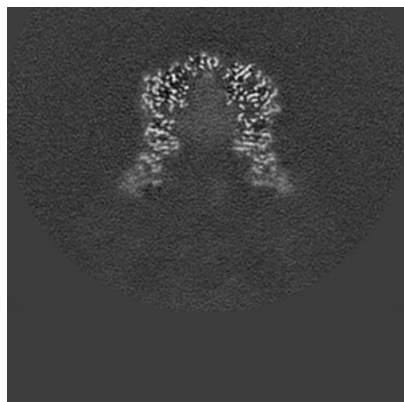


Y Index: 133

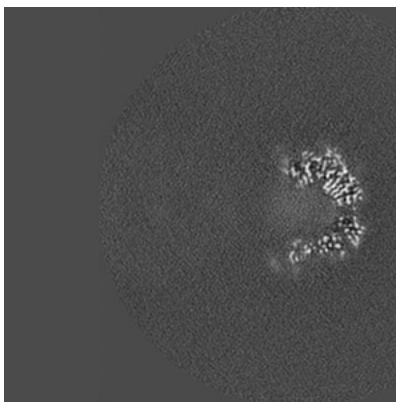


Z Index: 215

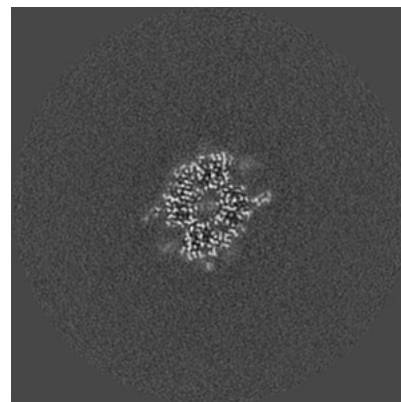
6.3.2 Raw map



X Index: 130



Y Index: 133

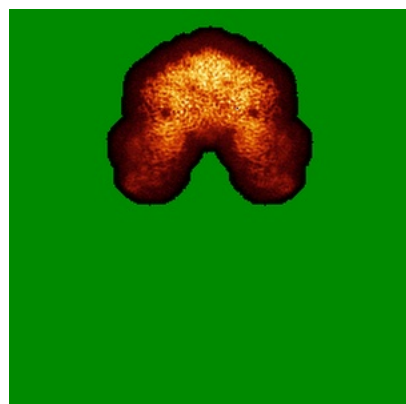


Z Index: 215

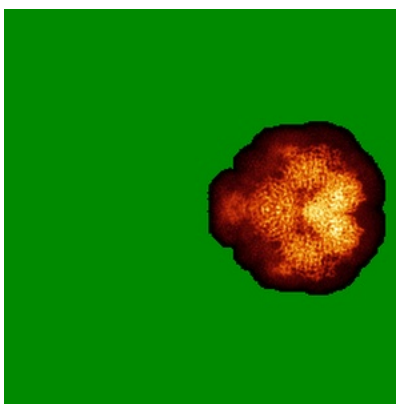
The images above show the largest variance slices of the map in three orthogonal directions.

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

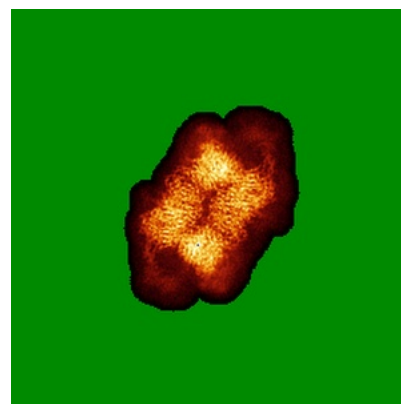
6.4.1 Primary map



X

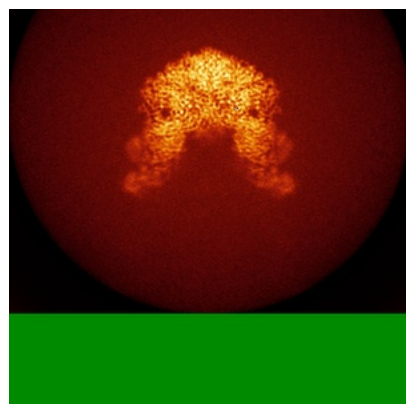


Y

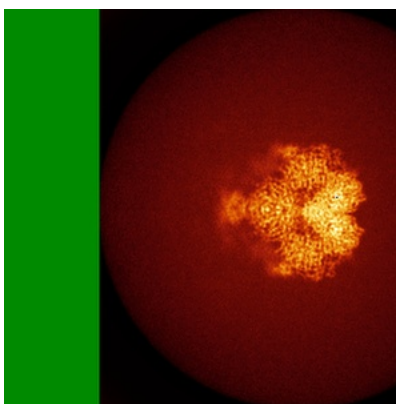


Z

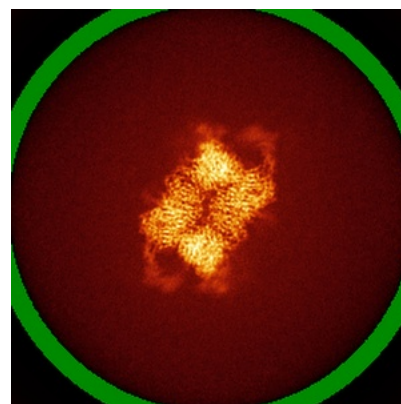
6.4.2 Raw map



X



Y

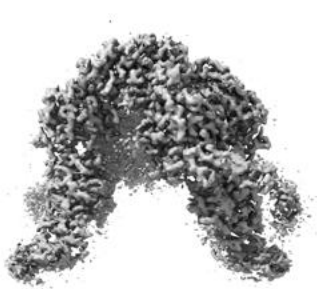


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



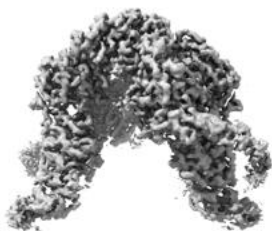
Y



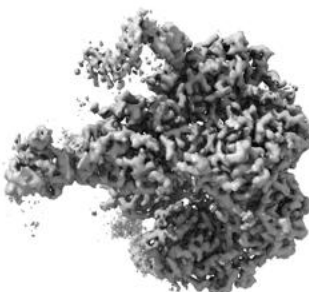
Z

The images above show the 3D surface view of the map at the recommended contour level 0.0285. 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



X



Y



Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

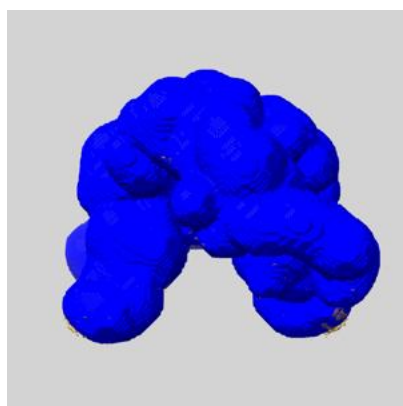
6.6 Mask visualisation [i](#)

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

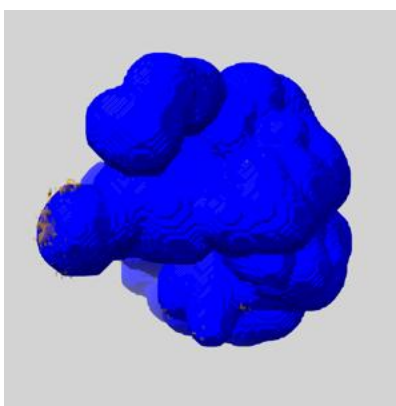
A mask typically either:

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

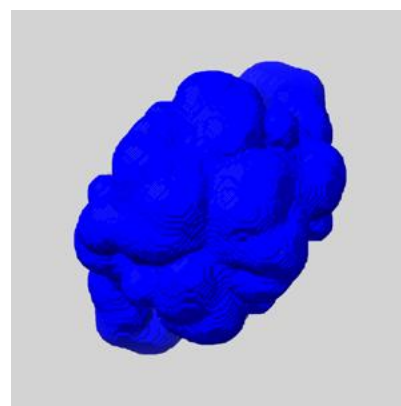
6.6.1 emd_36698_msk_1.map [i](#)



X



Y

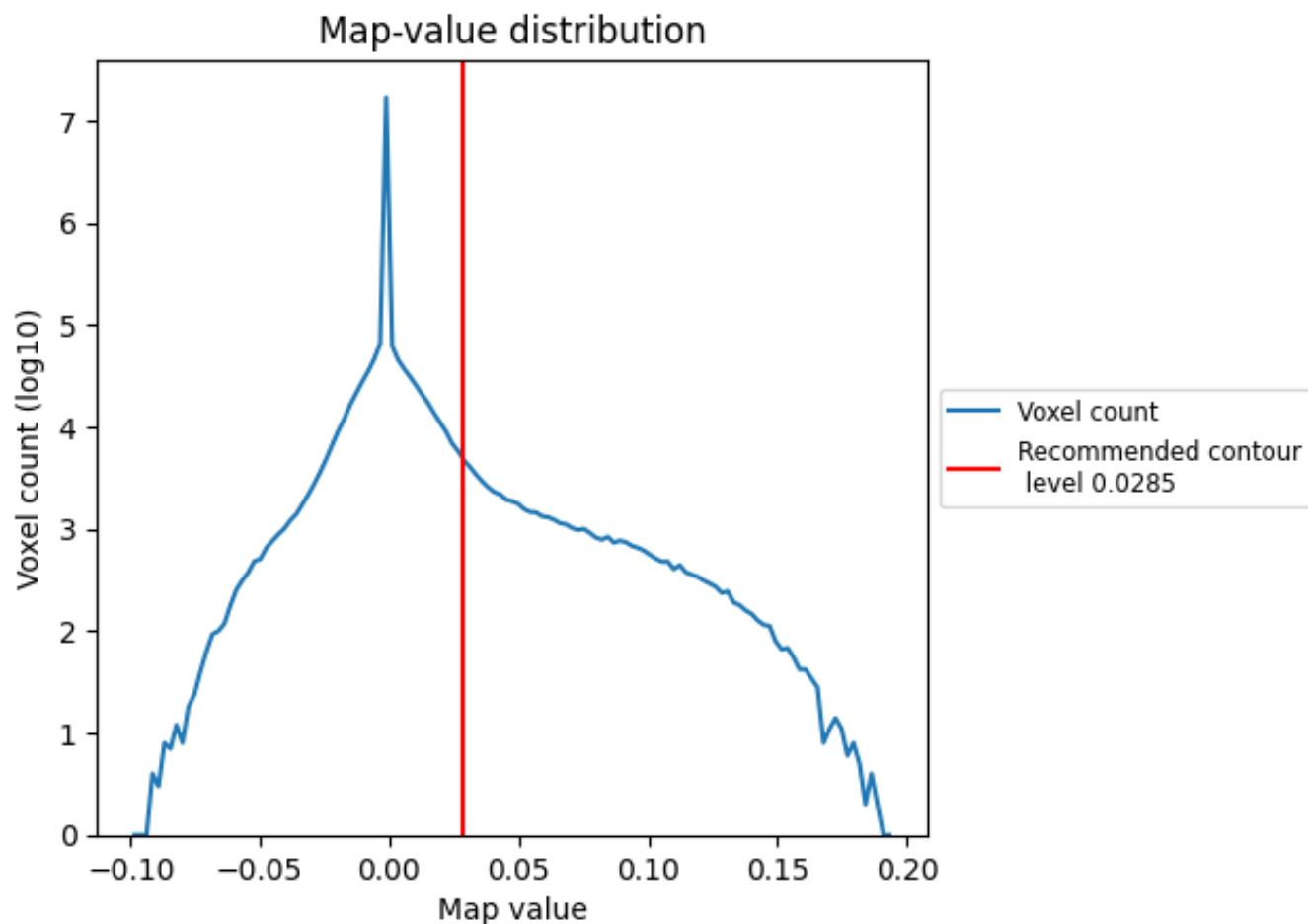


Z

7 Map analysis [i](#)

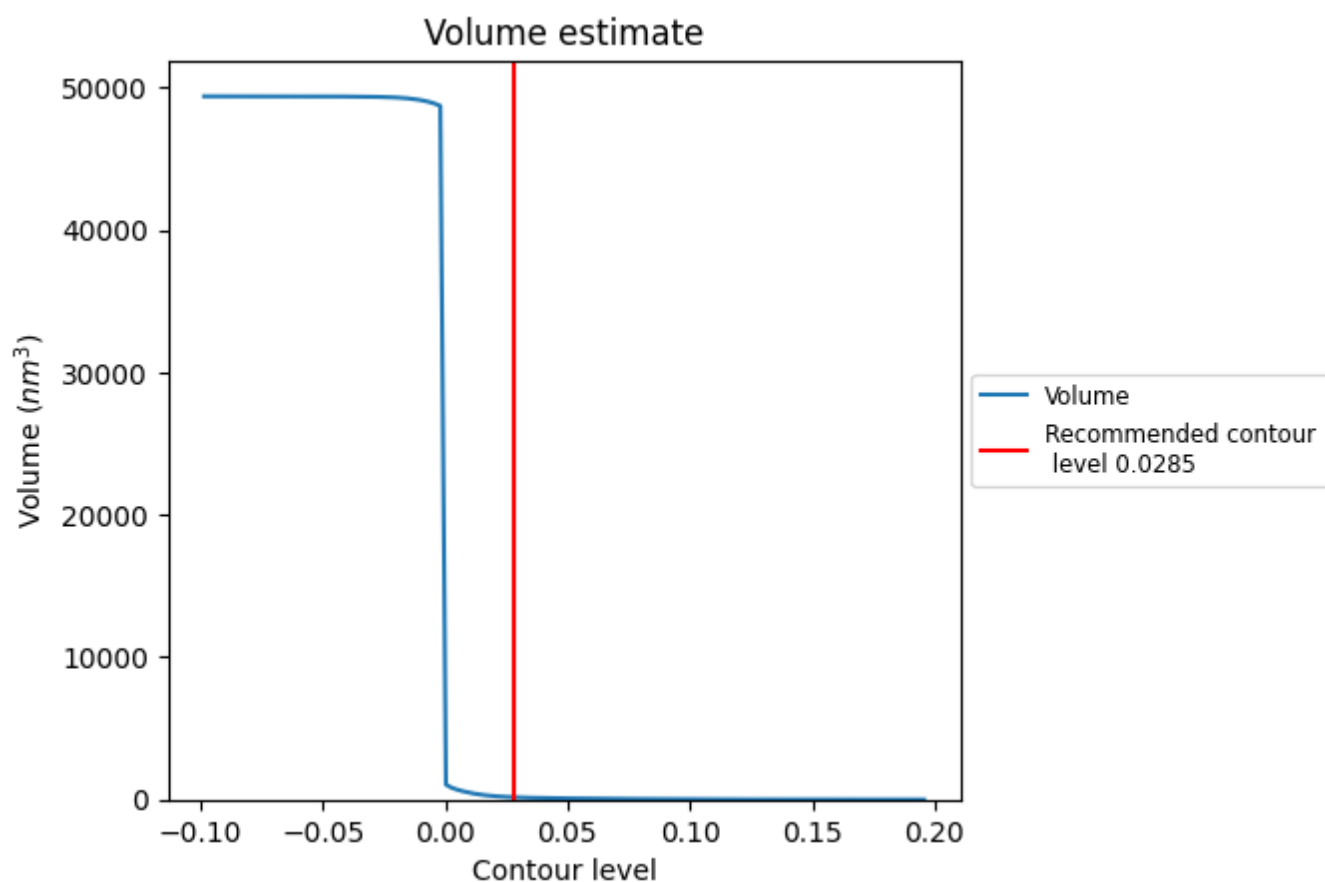
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

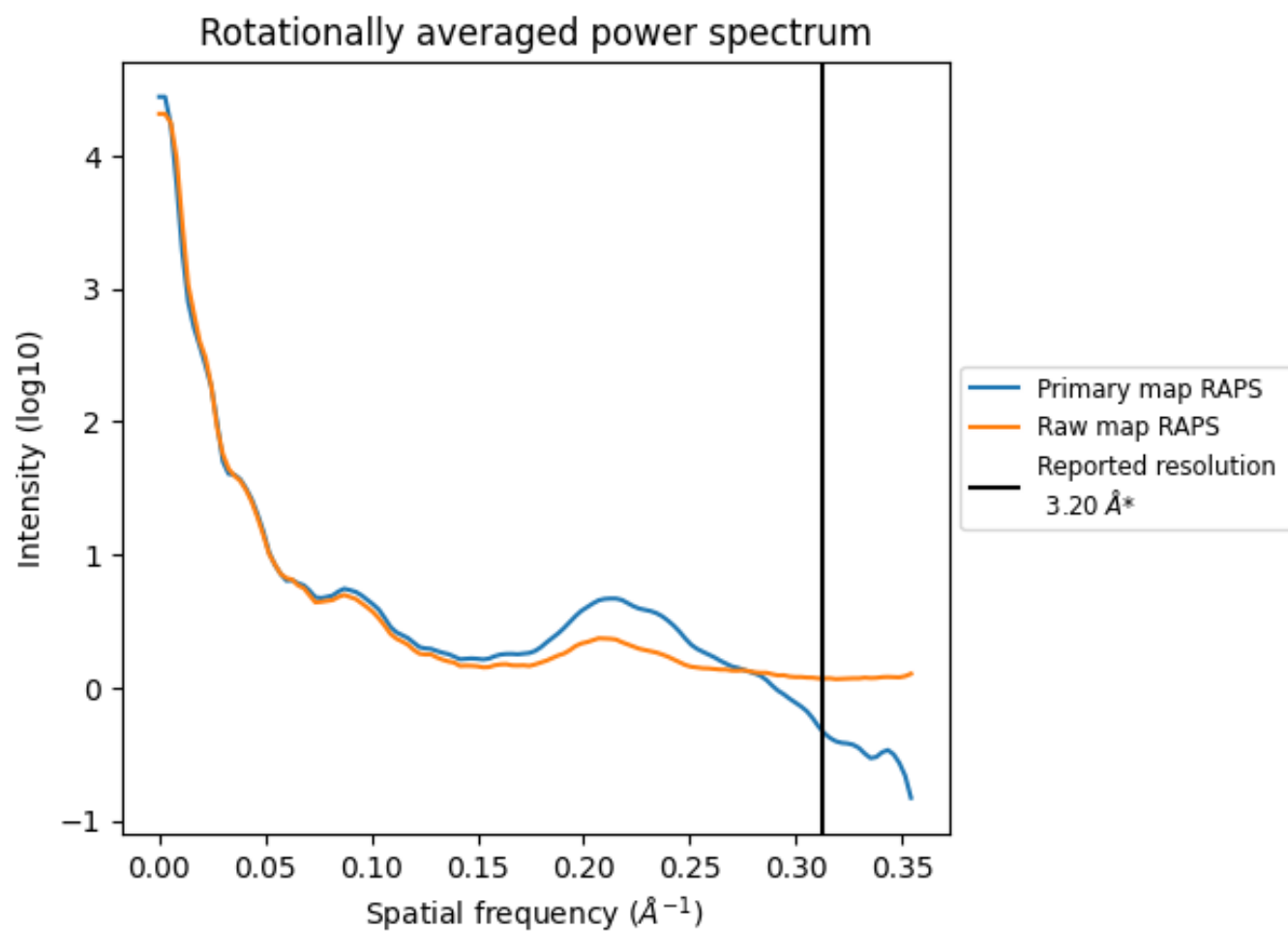
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 159 nm³; this corresponds to an approximate mass of 144 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 ⓘ

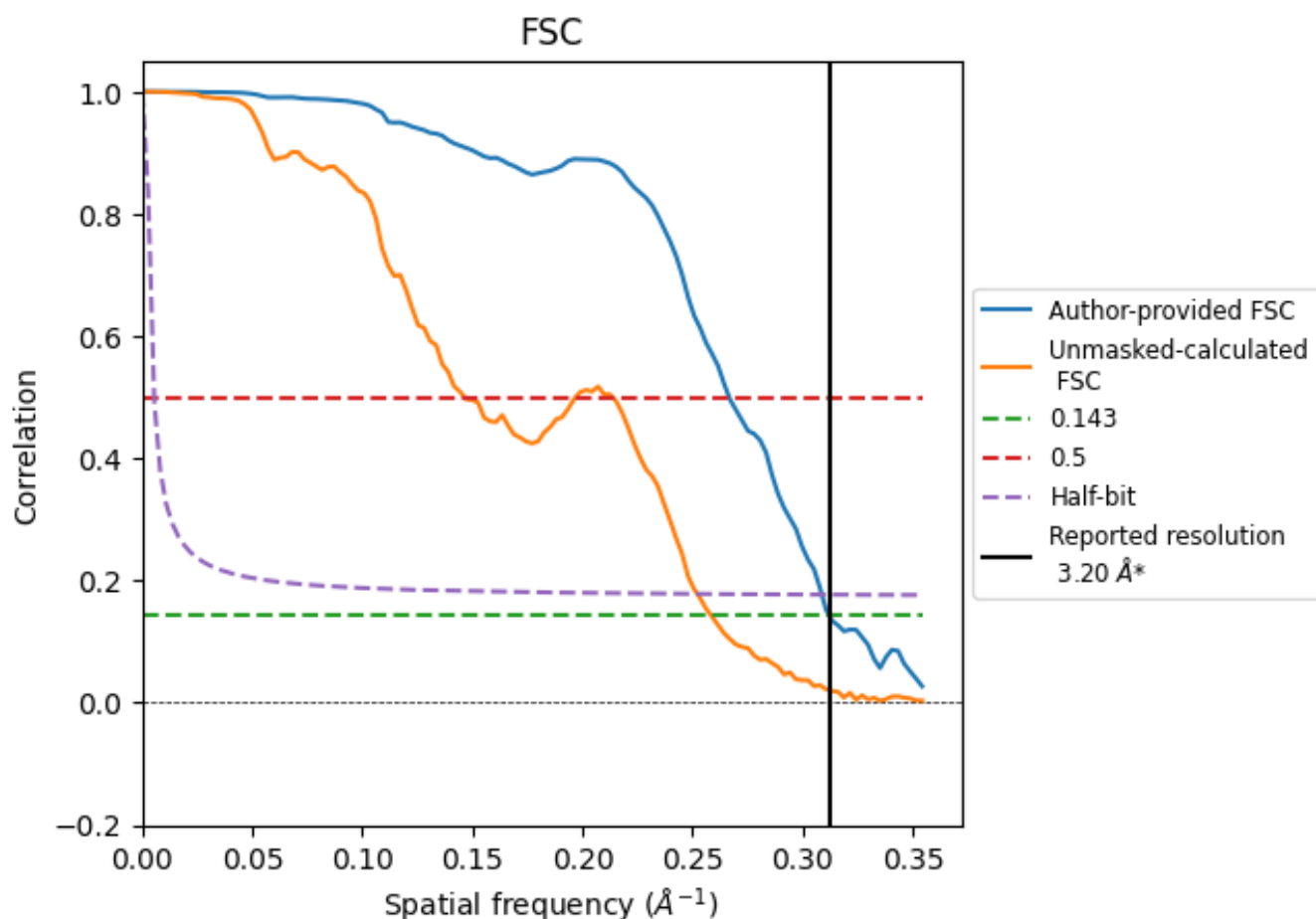


*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

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 0.312 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

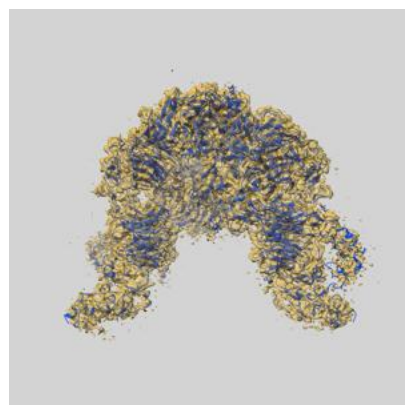
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.20	3.75	3.24
Unmasked-calculated*	3.87	6.83	3.97

*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 3.87 differs from the reported value 3.2 by more than 10 %

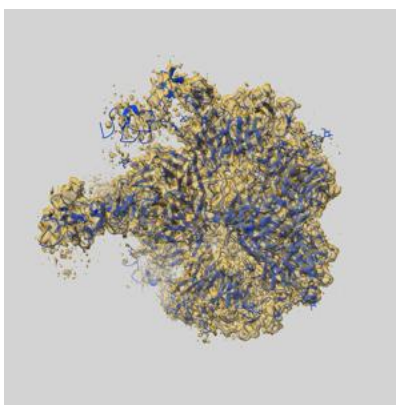
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-36698 and PDB model 8JXE. Per-residue inclusion information can be found in section [3](#) on page [9](#).

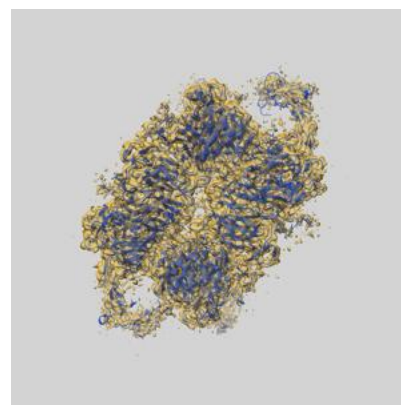
9.1 Map-model overlay [i](#)



X



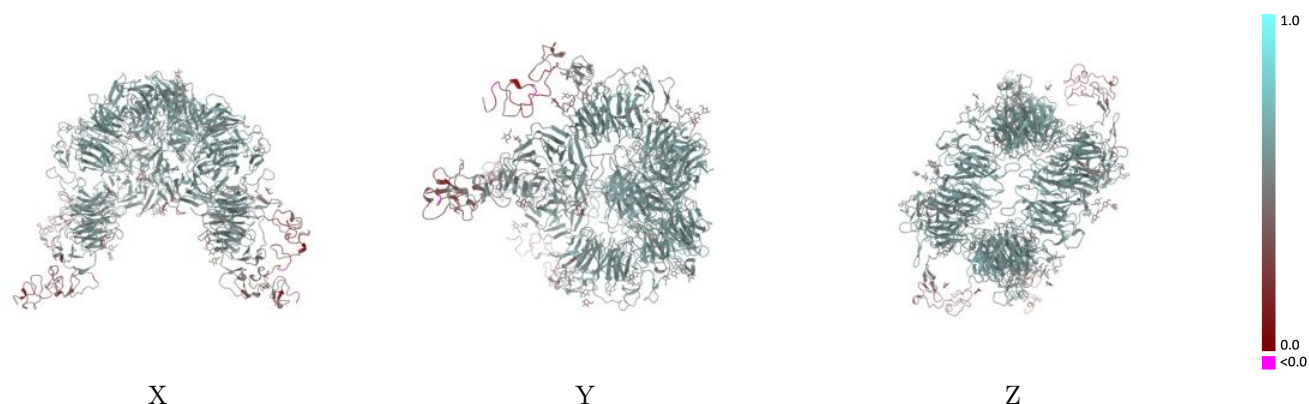
Y



Z

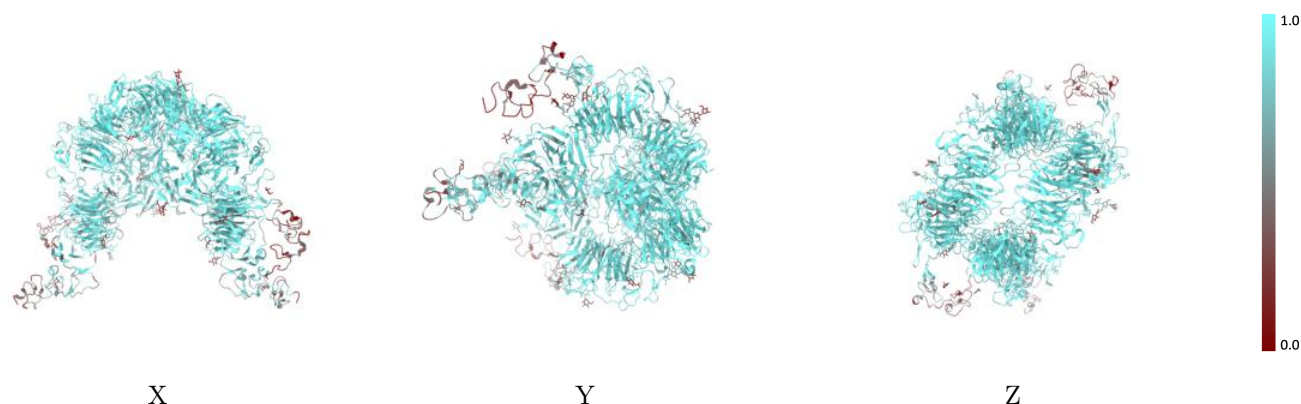
The images above show the 3D surface view of the map at the recommended contour level 0.0285 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



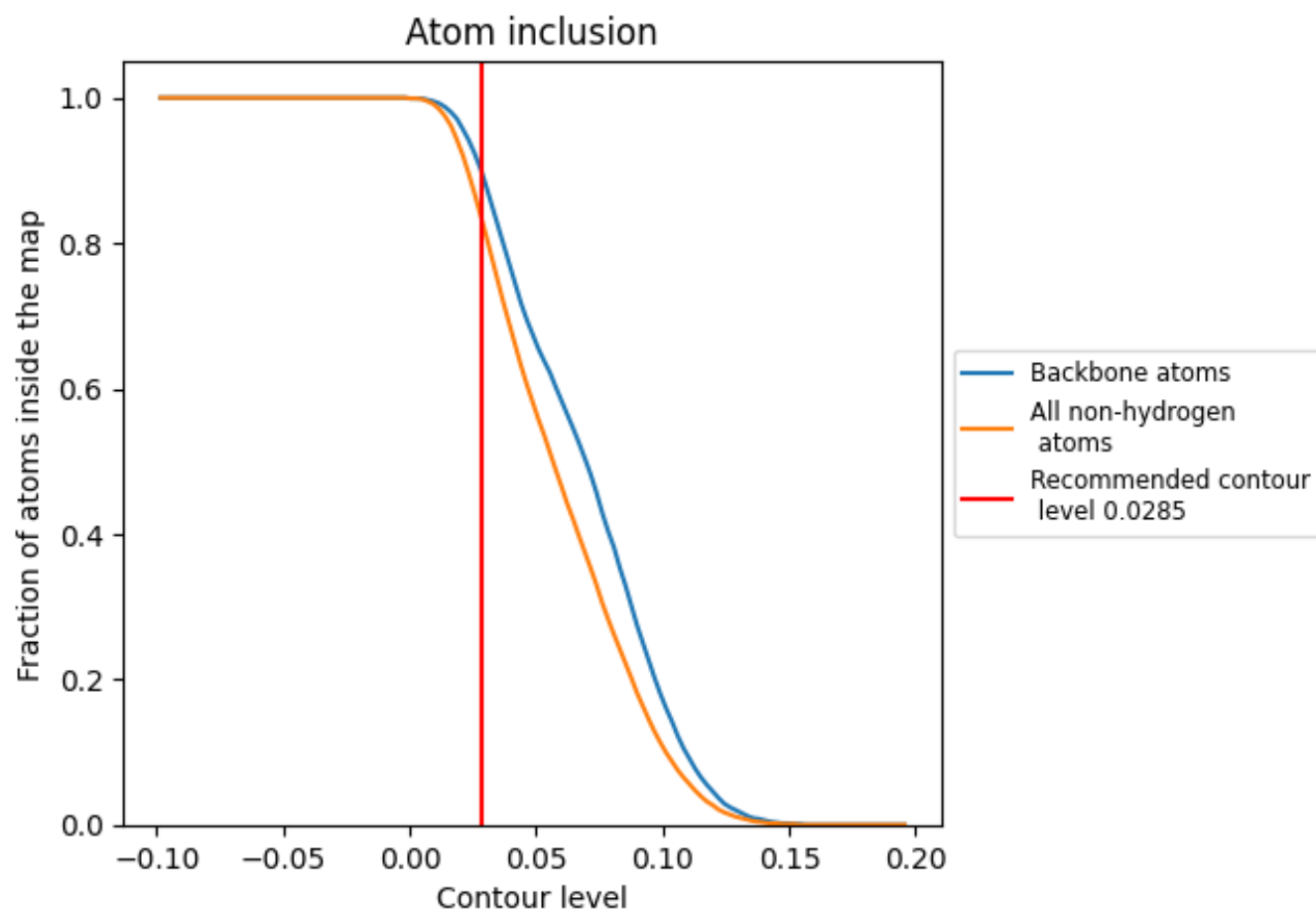
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0285).

9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 83% 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 (0.0285) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8330	 0.5390
A	 0.8460	 0.5460
B	 0.8410	 0.5400
C	 0.9090	 0.5340
D	 0.6250	 0.3670
E	 0.4640	 0.4280
F	 0.6920	 0.4410
G	 0.4850	 0.5190
H	 0.4640	 0.4700
I	 0.8790	 0.5360
J	 0.5620	 0.4460
K	 0.6360	 0.4830
L	 0.6430	 0.5130
M	 0.5360	 0.4340
N	 0.3930	 0.4270
O	 0.4750	 0.4460
P	 0.4640	 0.4690
Q	 0.8030	 0.5310
R	 0.3930	 0.2750
S	 0.5360	 0.4280
T	 0.2140	 0.3370
U	 0.5900	 0.3980
V	 0.6430	 0.4140
W	 0.3570	 0.4020
X	 0.3610	 0.4140
Y	 0.5000	 0.4420
Z	 0.7870	 0.4670
a	 0.3570	 0.3360
b	 0.7500	 0.4560

