



Full wwPDB EM Validation Report ⓘ

Mar 29, 2026 – 11:39 AM UTC

PDB ID : 6V0R / pdb_00006v0r
EMDB ID : EMD-20396
Title : BG505 SOSIP.664 Trimer
Authors : Nogal, B.; Cottrell, C.A.; Ward, A.B.
Deposited on : 2019-11-19
Resolution : 3.87 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:

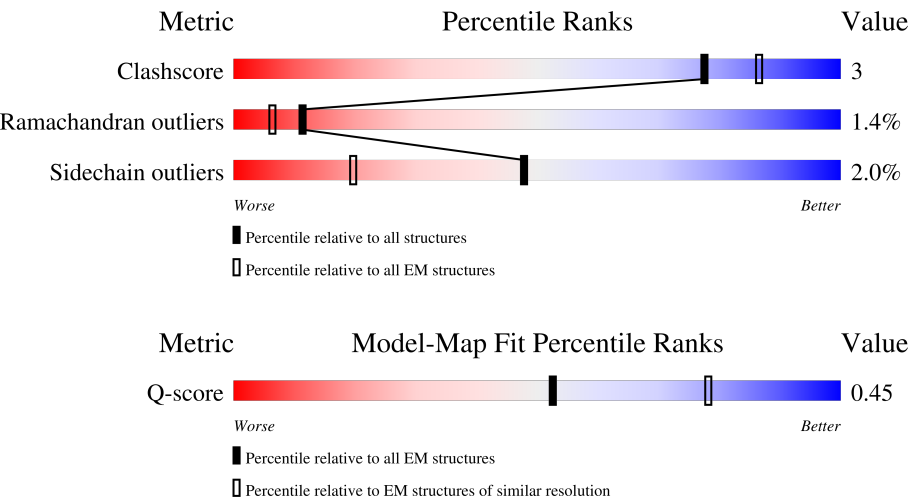
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
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 i

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

The reported resolution of this entry is 3.87 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.



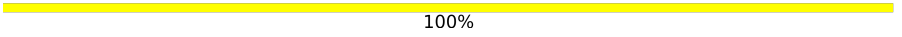
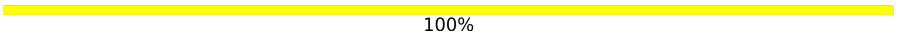
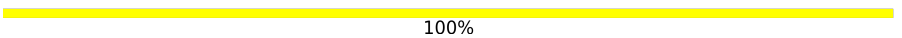
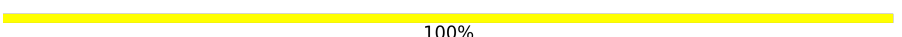
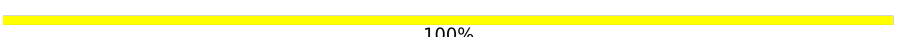
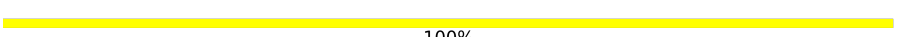
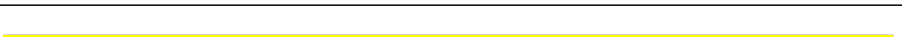
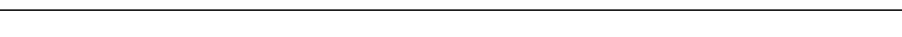
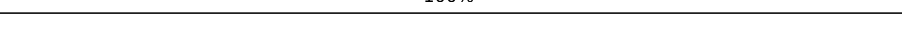
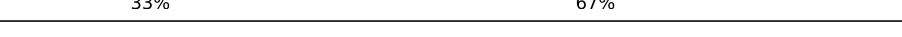
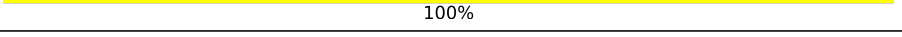
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	8831 (3.37 - 4.37)

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	475	
1	C	475	
1	D	475	
2	B	153	

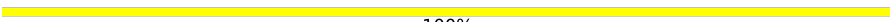
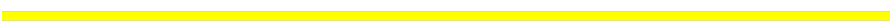
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Mol	Chain	Length	Quality of chain
2	E	153	 74%8%16%
2	F	153	 74%8%16%
3	G	2	 100%
3	H	2	 100%
3	I	2	 100%
3	N	2	 50%50%
3	P	2	 100%
3	Q	2	 100%
3	R	2	 100%
3	W	2	 50%50%
3	Y	2	 100%
3	Z	2	 100%
3	a	2	 100%
3	f	2	 50%50%
4	J	6	 100%
4	S	6	 100%
4	b	6	 100%
5	K	3	 33%67%
5	L	3	 33%67%
5	T	3	 33%67%
5	U	3	 33%67%
5	c	3	 33%67%
5	d	3	 33%67%
6	M	3	 100%
6	V	3	 100%

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Mol	Chain	Length	Quality of chain
6	e	3	 100%
7	O	2	 100%
7	X	2	 100%
7	g	2	 100%

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 14910 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 BG505 SOSIPv5.2 gp120.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	439	Total	C	N	O	S	0	0
			3462	2177	610	646	29		
1	C	439	Total	C	N	O	S	0	0
			3462	2177	610	646	29		
1	D	439	Total	C	N	O	S	0	0
			3462	2177	610	646	29		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	73	CYS	ALA	conflict	UNP Q2N0S6
A	316	TRP	ALA	conflict	UNP Q2N0S6
A	332	ASN	THR	conflict	UNP Q2N0S6
A	501	CYS	ALA	conflict	UNP Q2N0S6
C	73	CYS	ALA	conflict	UNP Q2N0S6
C	316	TRP	ALA	conflict	UNP Q2N0S6
C	332	ASN	THR	conflict	UNP Q2N0S6
C	501	CYS	ALA	conflict	UNP Q2N0S6
D	73	CYS	ALA	conflict	UNP Q2N0S6
D	316	TRP	ALA	conflict	UNP Q2N0S6
D	332	ASN	THR	conflict	UNP Q2N0S6
D	501	CYS	ALA	conflict	UNP Q2N0S6

- Molecule 2 is a protein called BG505 SOSIPv5.2 gp41.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	129	Total	C	N	O	S	0	0
			1030	650	180	193	7		
2	E	129	Total	C	N	O	S	0	0
			1030	650	180	193	7		
2	F	129	Total	C	N	O	S	0	0
			1030	650	180	193	7		

There are 9 discrepancies between the modelled and reference sequences:

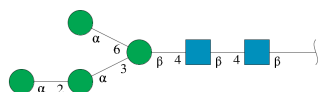
Chain	Residue	Modelled	Actual	Comment	Reference
B	559	PRO	ILE	conflict	UNP Q2N0S6
B	561	CYS	ALA	conflict	UNP Q2N0S6
B	605	CYS	THR	conflict	UNP Q2N0S6
E	559	PRO	ILE	conflict	UNP Q2N0S6
E	561	CYS	ALA	conflict	UNP Q2N0S6
E	605	CYS	THR	conflict	UNP Q2N0S6
F	559	PRO	ILE	conflict	UNP Q2N0S6
F	561	CYS	ALA	conflict	UNP Q2N0S6
F	605	CYS	THR	conflict	UNP Q2N0S6

- Molecule 3 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



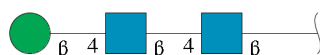
Mol	Chain	Residues	Atoms				AltConf	Trace
3	G	2	Total	C	N	O	0	0
			28	16	2	10		
3	H	2	Total	C	N	O	0	0
			28	16	2	10		
3	I	2	Total	C	N	O	0	0
			28	16	2	10		
3	N	2	Total	C	N	O	0	0
			28	16	2	10		
3	P	2	Total	C	N	O	0	0
			28	16	2	10		
3	Q	2	Total	C	N	O	0	0
			28	16	2	10		
3	R	2	Total	C	N	O	0	0
			28	16	2	10		
3	W	2	Total	C	N	O	0	0
			28	16	2	10		
3	Y	2	Total	C	N	O	0	0
			28	16	2	10		
3	Z	2	Total	C	N	O	0	0
			28	16	2	10		
3	a	2	Total	C	N	O	0	0
			28	16	2	10		
3	f	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 4 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-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.



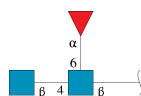
Mol	Chain	Residues	Atoms				AltConf	Trace
4	J	6	Total	C	N	O	0	0
			72	40	2	30		
4	S	6	Total	C	N	O	0	0
			72	40	2	30		
4	b	6	Total	C	N	O	0	0
			72	40	2	30		

- Molecule 5 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
5	K	3	Total	C	N	O	0	0
			39	22	2	15		
5	L	3	Total	C	N	O	0	0
			39	22	2	15		
5	T	3	Total	C	N	O	0	0
			39	22	2	15		
5	U	3	Total	C	N	O	0	0
			39	22	2	15		
5	c	3	Total	C	N	O	0	0
			39	22	2	15		
5	d	3	Total	C	N	O	0	0
			39	22	2	15		

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



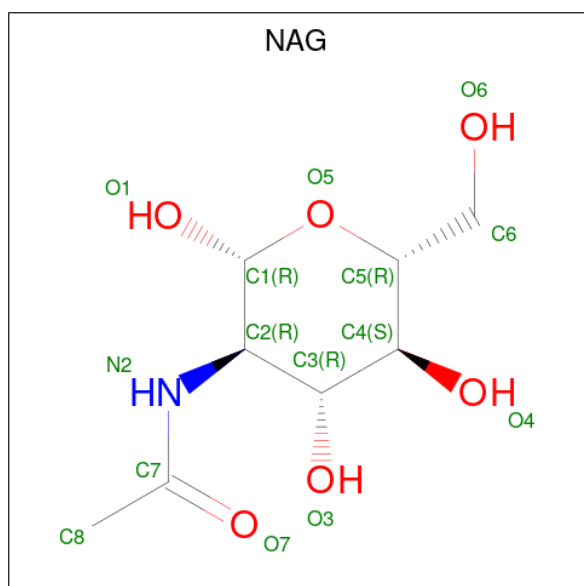
Mol	Chain	Residues	Atoms				AltConf	Trace
6	M	3	Total	C	N	O	0	0
			38	22	2	14		
6	V	3	Total	C	N	O	0	0
			38	22	2	14		
6	e	3	Total	C	N	O	0	0
			38	22	2	14		

- Molecule 7 is an oligosaccharide called alpha-L-fucopyranose-(1-6)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
7	O	2	Total	C	N	O	0	0
			24	14	1	9		
7	X	2	Total	C	N	O	0	0
			24	14	1	9		
7	g	2	Total	C	N	O	0	0
			24	14	1	9		

- Molecule 8 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆).



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

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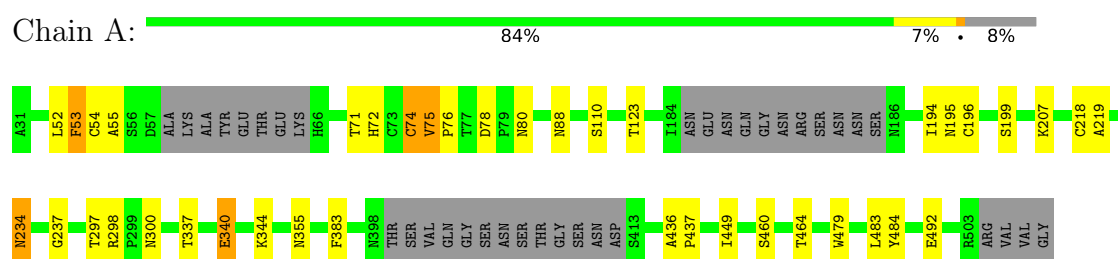
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Mol	Chain	Residues	Atoms				AltConf
8	D	1	Total	C	N	O	0
			14	8	1	5	
8	D	1	Total	C	N	O	0
			14	8	1	5	
8	D	1	Total	C	N	O	0
			14	8	1	5	
8	D	1	Total	C	N	O	0
			14	8	1	5	
8	D	1	Total	C	N	O	0
			14	8	1	5	
8	D	1	Total	C	N	O	0
			14	8	1	5	
8	D	1	Total	C	N	O	0
			14	8	1	5	
8	F	1	Total	C	N	O	0
			14	8	1	5	
8	F	1	Total	C	N	O	0
			14	8	1	5	

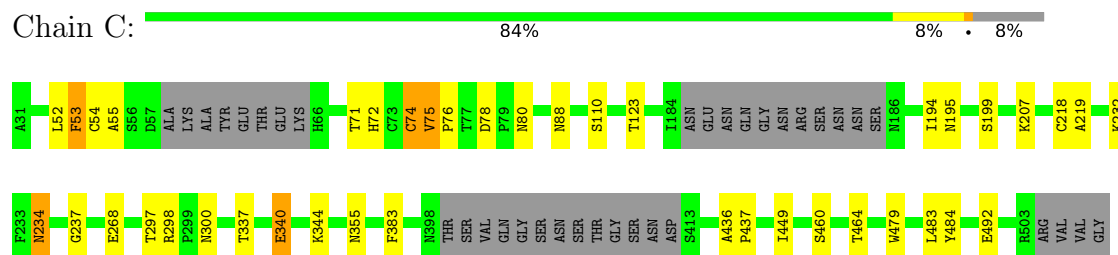
3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

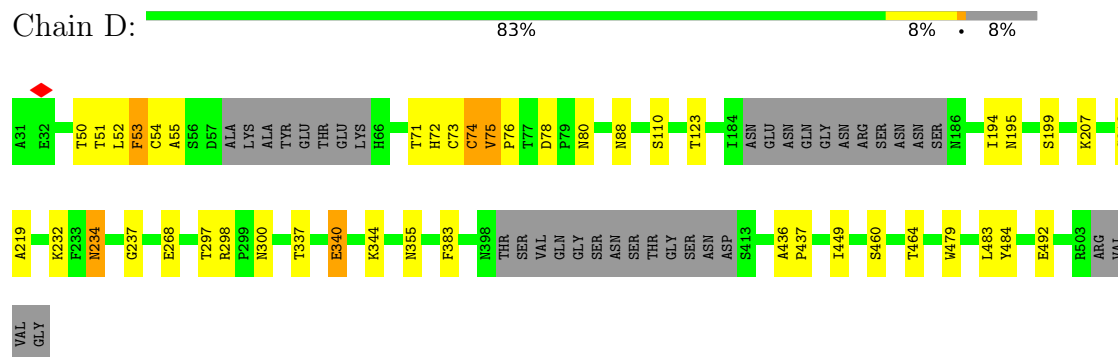
• Molecule 1: BG505 SOSIPv5.2 gp120



• Molecule 1: BG505 SOSIPv5.2 gp120

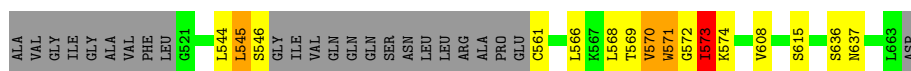


• Molecule 1: BG505 SOSIPv5.2 gp120

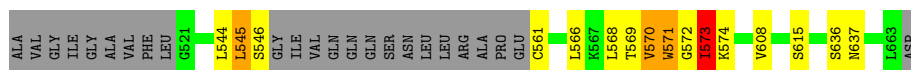


• Molecule 2: BG505 SOSIPv5.2 gp41

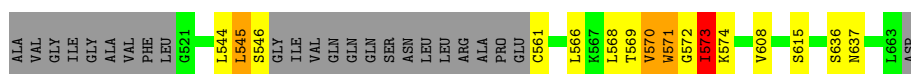




- Molecule 2: BG505 SOSIPv5.2 gp41



- Molecule 2: BG505 SOSIPv5.2 gp41



- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain P:  100%

NAG1
NAG2

- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Q:  100%

NAG1
NAG2

- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain R:  100%

NAG1
NAG2

- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain W:  50% 50%

NAG1
NAG2

- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Y:  100%

NAG1
NAG2

- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Z:  100%

NAG1
NAG2

- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain a:  100%

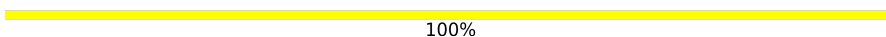
NAG1
NAG2

- Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain f:  50% 50%

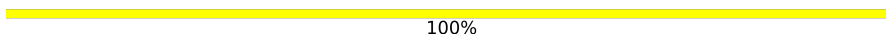
NAG1
NAG2

- Molecule 4: alpha-D-mannopyranose-(1-2)-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

Chain J:  100%

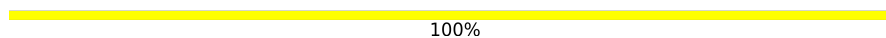
NAG1
NAG2
BMA3
MAN4
MAN5
MAN6

- Molecule 4: alpha-D-mannopyranose-(1-2)-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

Chain S:  100%

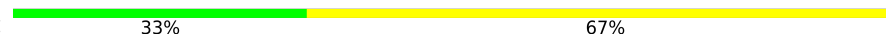
NAG1
NAG2
BMA3
MAN4
MAN5
MAN6

- Molecule 4: alpha-D-mannopyranose-(1-2)-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

Chain b:  100%

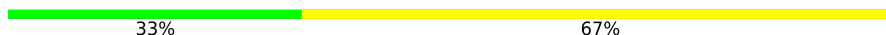
NAG1
NAG2
BMA3
MAN4
MAN5
MAN6

- Molecule 5: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:  33% 67%

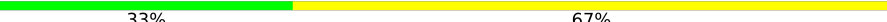
NAG1
NAG2
BMA3

- Molecule 5: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain L:  33% 67%

NAG1
NAG2
BMA3

- Molecule 5: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain T:  33% 67%

MAG1
MAG2
BMA3

- Molecule 5: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain U:  33% 67%

MAG1
MAG2
BMA3

- Molecule 5: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain c:  33% 67%

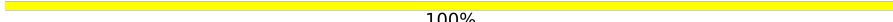
MAG1
MAG2
BMA3

- Molecule 5: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain d:  33% 67%

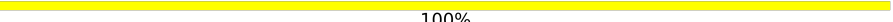
MAG1
MAG2
BMA3

- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain M:  100%

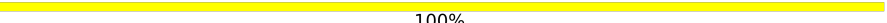
MAG1
MAG2
FUC3

- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain V:  100%

MAG1
MAG2
FUC3

- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain e:  100%

MAG1
MAG2
FUC3

- Molecule 7: alpha-L-fucopyranose-(1-6)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain O:  100%

MAG1
FUC2

- Molecule 7: alpha-L-fucopyranose-(1-6)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain X:  100%

MAG1
FUC2

- Molecule 7: alpha-L-fucopyranose-(1-6)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain g:  100%

MAG1
FUC2

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	155394	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 ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	3.195	Depositor
Minimum map value	-1.938	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.086	Depositor
Recommended contour level	0.275	Depositor
Map size (Å)	329.59998, 329.59998, 329.59998	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.03, 1.03, 1.03	Depositor

5 Model quality

5.1 Standard geometry

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

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	1.01	1/3536 (0.0%)	1.25	32/4802 (0.7%)
1	C	1.01	1/3536 (0.0%)	1.25	31/4802 (0.6%)
1	D	1.00	1/3536 (0.0%)	1.25	31/4802 (0.6%)
2	B	0.96	0/1048	1.02	2/1420 (0.1%)
2	E	0.96	0/1048	1.02	2/1420 (0.1%)
2	F	0.96	0/1048	1.02	2/1420 (0.1%)
All	All	1.00	3/13752 (0.0%)	1.20	100/18666 (0.5%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	484	TYR	CB-CG	-5.76	1.39	1.51
1	C	484	TYR	CB-CG	-5.75	1.39	1.51
1	D	484	TYR	CB-CG	-5.74	1.39	1.51

All (100) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	298	ARG	CA-C-N	7.87	127.51	119.56
1	A	298	ARG	C-N-CA	7.87	127.51	119.56
1	D	298	ARG	CA-C-N	7.84	127.48	119.56
1	D	298	ARG	C-N-CA	7.84	127.48	119.56
1	C	298	ARG	CA-C-N	7.84	127.48	119.56
1	C	298	ARG	C-N-CA	7.84	127.48	119.56
1	C	219	ALA	CA-C-N	6.73	126.91	120.31
1	C	219	ALA	C-N-CA	6.73	126.91	120.31
1	A	492	GLU	CA-C-N	6.69	126.83	119.87
1	A	492	GLU	C-N-CA	6.69	126.83	119.87
1	D	219	ALA	CA-C-N	6.68	126.86	120.31
1	D	219	ALA	C-N-CA	6.68	126.86	120.31

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	219	ALA	CA-C-N	6.68	126.86	120.31
1	A	219	ALA	C-N-CA	6.68	126.86	120.31
1	C	492	GLU	CA-C-N	6.68	126.81	119.87
1	C	492	GLU	C-N-CA	6.68	126.81	119.87
1	D	492	GLU	CA-C-N	6.67	126.81	119.87
1	D	492	GLU	C-N-CA	6.67	126.81	119.87
1	A	483	LEU	CA-C-N	6.67	129.52	120.38
1	A	483	LEU	C-N-CA	6.67	129.52	120.38
1	C	483	LEU	CA-C-N	6.66	129.51	120.38
1	C	483	LEU	C-N-CA	6.66	129.51	120.38
1	D	483	LEU	CA-C-N	6.65	129.49	120.38
1	D	483	LEU	C-N-CA	6.65	129.49	120.38
1	D	479	TRP	N-CA-C	-6.46	105.97	114.31
1	C	479	TRP	N-CA-C	-6.45	105.99	114.31
1	A	479	TRP	N-CA-C	-6.44	106.00	114.31
1	A	437	PRO	N-CA-C	-6.40	104.32	110.47
1	D	437	PRO	N-CA-C	-6.39	104.33	110.47
1	C	437	PRO	N-CA-C	-6.38	104.35	110.47
1	A	437	PRO	CA-C-N	6.31	126.22	119.85
1	A	437	PRO	C-N-CA	6.31	126.22	119.85
1	C	437	PRO	CA-C-N	6.29	126.20	119.85
1	C	437	PRO	C-N-CA	6.29	126.20	119.85
1	D	437	PRO	CA-C-N	6.29	126.20	119.85
1	D	437	PRO	C-N-CA	6.29	126.20	119.85
1	C	383	PHE	CA-CB-CG	6.01	119.81	113.80
1	D	383	PHE	CA-CB-CG	6.00	119.81	113.80
1	A	383	PHE	CA-CB-CG	6.00	119.80	113.80
1	C	337	THR	N-CA-C	-5.91	106.11	113.55
1	D	337	THR	N-CA-C	-5.89	106.13	113.55
1	A	337	THR	N-CA-C	-5.86	106.17	113.55
1	C	80	ASN	CA-C-N	5.83	125.84	119.90
1	C	80	ASN	C-N-CA	5.83	125.84	119.90
1	A	80	ASN	CA-C-N	5.81	125.82	119.90
1	A	80	ASN	C-N-CA	5.81	125.82	119.90
1	D	80	ASN	CA-C-N	5.81	125.82	119.90
1	D	80	ASN	C-N-CA	5.81	125.82	119.90
1	A	199	SER	N-CA-C	5.75	117.81	109.07
1	C	199	SER	N-CA-C	5.74	117.80	109.07
1	D	199	SER	N-CA-C	5.74	117.80	109.07
1	A	449	ILE	N-CA-C	-5.61	101.49	108.89
1	D	449	ILE	N-CA-C	-5.60	101.49	108.89
1	C	449	ILE	N-CA-C	-5.60	101.50	108.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	436	ALA	CA-C-N	5.57	123.73	119.66
1	A	436	ALA	C-N-CA	5.57	123.73	119.66
1	D	436	ALA	CA-C-N	5.54	123.71	119.66
1	D	436	ALA	C-N-CA	5.54	123.71	119.66
1	C	436	ALA	CA-C-N	5.54	123.70	119.66
1	C	436	ALA	C-N-CA	5.54	123.70	119.66
1	A	237	GLY	CA-C-N	5.46	125.22	119.76
1	A	237	GLY	C-N-CA	5.46	125.22	119.76
1	D	237	GLY	CA-C-N	5.43	125.19	119.76
1	D	237	GLY	C-N-CA	5.43	125.19	119.76
1	C	237	GLY	CA-C-N	5.41	125.17	119.76
1	C	237	GLY	C-N-CA	5.41	125.17	119.76
1	A	78	ASP	N-CA-C	-5.41	102.77	109.64
1	D	78	ASP	N-CA-C	-5.41	102.77	109.64
1	C	78	ASP	N-CA-C	-5.40	102.78	109.64
1	C	297	THR	N-CA-C	5.36	117.22	109.07
1	D	71	THR	N-CA-C	-5.36	105.81	112.93
1	A	71	THR	N-CA-C	-5.35	105.81	112.93
1	C	71	THR	N-CA-C	-5.33	105.84	112.93
1	D	297	THR	N-CA-C	5.31	117.26	109.24
1	A	297	THR	N-CA-C	5.31	117.26	109.24
1	A	194	ILE	N-CA-C	5.26	117.63	111.05
1	D	194	ILE	N-CA-C	5.26	117.62	111.05
1	C	194	ILE	N-CA-C	5.25	117.61	111.05
1	A	195	ASN	CA-CB-CG	-5.20	107.40	112.60
1	A	76	PRO	CA-C-O	-5.20	115.53	121.56
1	C	195	ASN	CA-CB-CG	-5.20	107.40	112.60
1	D	195	ASN	CA-CB-CG	-5.20	107.40	112.60
1	C	76	PRO	CA-C-O	-5.19	115.53	121.56
1	D	76	PRO	CA-C-O	-5.18	115.55	121.56
1	A	123	THR	CA-C-N	5.11	124.77	119.56
1	A	123	THR	C-N-CA	5.11	124.77	119.56
1	D	123	THR	CA-C-N	5.11	124.77	119.56
1	D	123	THR	C-N-CA	5.11	124.77	119.56
1	C	123	THR	CA-C-N	5.10	124.77	119.56
1	C	123	THR	C-N-CA	5.10	124.77	119.56
1	A	300	ASN	CA-CB-CG	-5.07	107.53	112.60
1	D	300	ASN	CA-CB-CG	-5.06	107.54	112.60
1	C	300	ASN	CA-CB-CG	-5.05	107.55	112.60
2	E	608	VAL	CA-C-N	5.02	124.92	119.85
2	E	608	VAL	C-N-CA	5.02	124.92	119.85
2	F	608	VAL	CA-C-N	5.02	124.92	119.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	608	VAL	C-N-CA	5.02	124.92	119.85
2	B	608	VAL	CA-C-N	5.00	124.90	119.85
2	B	608	VAL	C-N-CA	5.00	124.90	119.85
1	A	196	CYS	N-CA-C	5.00	117.46	111.71

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	3462	0	3395	15	0
1	C	3462	0	3395	16	0
1	D	3462	0	3395	19	0
2	B	1030	0	1013	14	0
2	E	1030	0	1013	13	0
2	F	1030	0	1013	13	0
3	G	28	0	25	0	0
3	H	28	0	25	0	0
3	I	28	0	25	0	0
3	N	28	0	25	0	0
3	P	28	0	25	0	0
3	Q	28	0	25	0	0
3	R	28	0	25	0	0
3	W	28	0	25	0	0
3	Y	28	0	25	0	0
3	Z	28	0	25	0	0
3	a	28	0	25	0	0
3	f	28	0	25	0	0
4	J	72	0	58	0	0
4	S	72	0	58	0	0
4	b	72	0	58	0	0
5	K	39	0	33	0	0
5	L	39	0	33	0	0
5	T	39	0	33	0	0
5	U	39	0	33	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	c	39	0	33	0	0
5	d	39	0	33	0	0
6	M	38	0	34	0	0
6	V	38	0	34	0	0
6	e	38	0	34	0	0
7	O	24	0	22	0	0
7	X	24	0	22	0	0
7	g	24	0	22	0	0
8	A	126	0	117	0	0
8	B	28	0	26	0	0
8	C	126	0	117	0	0
8	D	126	0	117	0	0
8	E	28	0	26	0	0
8	F	28	0	26	0	0
All	All	14910	0	14493	80	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 3.

All (80) 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:54:CYS:HG	1:D:73:CYS:HG	0.84	0.69
2:F:568:LEU:C	2:F:570:VAL:H	2.05	0.64
2:B:568:LEU:HD21	2:B:571:TRP:CE3	2.33	0.64
2:E:568:LEU:HD21	2:E:571:TRP:CE3	2.33	0.64
2:B:568:LEU:C	2:B:570:VAL:H	2.05	0.63
2:E:568:LEU:C	2:E:570:VAL:H	2.05	0.63
2:F:568:LEU:HD21	2:F:571:TRP:CE3	2.33	0.63
1:D:53:PHE:CE1	1:D:218:CYS:HB2	2.34	0.62
1:A:53:PHE:CE1	1:A:218:CYS:HB2	2.34	0.62
1:C:72:HIS:O	1:C:72:HIS:CG	2.53	0.62
1:A:72:HIS:CG	1:A:72:HIS:O	2.53	0.62
1:C:53:PHE:CE1	1:C:218:CYS:HB2	2.34	0.62
1:D:74:CYS:HG	2:F:561:CYS:HG	0.96	0.60
1:D:72:HIS:CG	1:D:72:HIS:O	2.53	0.59
1:C:53:PHE:C	1:C:53:PHE:CD1	2.81	0.59
1:D:53:PHE:C	1:D:53:PHE:CD1	2.81	0.58
1:A:54:CYS:SG	1:A:55:ALA:N	2.77	0.58
1:C:54:CYS:SG	1:C:55:ALA:N	2.77	0.58
1:C:53:PHE:C	1:C:53:PHE:HD1	2.12	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:54:CYS:SG	1:D:55:ALA:N	2.77	0.58
1:A:53:PHE:CD1	1:A:53:PHE:C	2.81	0.57
1:A:53:PHE:C	1:A:53:PHE:HD1	2.12	0.57
1:D:53:PHE:C	1:D:53:PHE:HD1	2.12	0.57
1:D:74:CYS:CB	2:F:561:CYS:SG	2.96	0.54
1:A:74:CYS:CB	2:B:561:CYS:SG	2.96	0.54
1:C:74:CYS:CB	2:E:561:CYS:SG	2.96	0.53
1:C:52:LEU:HD22	1:C:52:LEU:N	2.26	0.51
2:E:572:GLY:C	2:E:574:LYS:H	2.19	0.51
2:F:572:GLY:C	2:F:574:LYS:H	2.19	0.51
1:A:52:LEU:N	1:A:52:LEU:HD22	2.26	0.50
1:D:52:LEU:HD22	1:D:52:LEU:N	2.26	0.50
2:E:568:LEU:C	2:E:570:VAL:N	2.70	0.50
2:B:568:LEU:C	2:B:570:VAL:N	2.69	0.50
2:B:572:GLY:C	2:B:574:LYS:H	2.19	0.50
1:A:53:PHE:CD1	1:A:53:PHE:O	2.66	0.49
1:D:53:PHE:CD1	1:D:53:PHE:O	2.66	0.49
1:D:52:LEU:N	1:D:52:LEU:CD2	2.77	0.48
1:C:53:PHE:CD1	1:C:53:PHE:O	2.66	0.48
1:C:52:LEU:N	1:C:52:LEU:CD2	2.77	0.48
1:A:52:LEU:N	1:A:52:LEU:CD2	2.77	0.47
2:B:545:LEU:HD23	2:B:545:LEU:HA	1.68	0.47
2:B:573:ILE:HD13	2:E:566:LEU:HD23	1.96	0.47
2:B:566:LEU:HD23	2:F:573:ILE:HD13	1.96	0.47
2:B:545:LEU:O	2:B:546:SER:HB3	2.16	0.46
2:E:573:ILE:HD13	2:F:566:LEU:HD23	1.96	0.46
2:F:545:LEU:O	2:F:546:SER:HB3	2.16	0.46
1:C:110:SER:HB3	2:E:571:TRP:CH2	2.51	0.46
1:A:110:SER:HB3	2:B:571:TRP:CH2	2.51	0.45
1:D:110:SER:HB3	2:F:571:TRP:CH2	2.51	0.45
1:A:234:ASN:CG	1:A:234:ASN:O	2.59	0.45
1:A:340:GLU:OE2	1:A:344:LYS:NZ	2.50	0.45
1:C:234:ASN:O	1:C:234:ASN:CG	2.59	0.45
2:E:545:LEU:O	2:E:546:SER:HB3	2.16	0.45
1:D:234:ASN:CG	1:D:234:ASN:O	2.59	0.45
1:C:53:PHE:HD1	1:C:53:PHE:O	2.00	0.45
1:A:53:PHE:HD1	1:A:53:PHE:O	2.00	0.45
1:D:88:ASN:N	1:D:88:ASN:OD1	2.50	0.45
1:D:340:GLU:OE2	1:D:344:LYS:NZ	2.50	0.45
1:D:53:PHE:HD1	1:D:53:PHE:O	2.00	0.44
1:C:340:GLU:OE2	1:C:344:LYS:NZ	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:568:LEU:C	2:F:570:VAL:N	2.70	0.44
1:D:232:LYS:NZ	1:D:268:GLU:OE1	2.48	0.44
1:C:88:ASN:OD1	1:C:88:ASN:N	2.50	0.43
2:E:572:GLY:C	2:E:574:LYS:N	2.76	0.43
2:B:572:GLY:C	2:B:574:LYS:N	2.76	0.43
1:C:232:LYS:NZ	1:C:268:GLU:OE1	2.48	0.43
2:F:572:GLY:C	2:F:574:LYS:N	2.76	0.43
1:C:74:CYS:O	1:C:75:VAL:C	2.62	0.42
1:A:88:ASN:OD1	1:A:88:ASN:N	2.50	0.42
1:D:74:CYS:O	1:D:75:VAL:C	2.62	0.42
2:F:573:ILE:CG1	2:F:573:ILE:O	2.68	0.42
2:F:637:ASN:OD1	2:F:637:ASN:N	2.53	0.42
1:A:74:CYS:O	1:A:75:VAL:C	2.62	0.41
2:E:637:ASN:N	2:E:637:ASN:OD1	2.53	0.41
2:B:637:ASN:N	2:B:637:ASN:OD1	2.53	0.41
2:E:573:ILE:O	2:E:573:ILE:CG1	2.68	0.41
2:B:568:LEU:HD21	2:B:571:TRP:HE3	1.85	0.41
2:E:545:LEU:HD23	2:E:545:LEU:HA	1.68	0.40
1:D:50:THR:OG1	1:D:51:THR:N	2.55	0.40
2:B:573:ILE:O	2:B:573:ILE:CG1	2.68	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	431/475 (91%)	405 (94%)	22 (5%)	4 (1%)	14	47
1	C	431/475 (91%)	405 (94%)	22 (5%)	4 (1%)	14	47
1	D	431/475 (91%)	405 (94%)	22 (5%)	4 (1%)	14	47
2	B	125/153 (82%)	119 (95%)	2 (2%)	4 (3%)	3	25

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	E	125/153 (82%)	119 (95%)	2 (2%)	4 (3%)	3	25
2	F	125/153 (82%)	119 (95%)	2 (2%)	4 (3%)	3	25
All	All	1668/1884 (88%)	1572 (94%)	72 (4%)	24 (1%)	11	38

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	569	THR
2	B	636	SER
2	E	569	THR
2	E	636	SER
2	F	569	THR
2	F	636	SER
1	A	340	GLU
1	C	340	GLU
1	D	340	GLU
1	A	207	LYS
2	B	573	ILE
1	C	207	LYS
2	E	573	ILE
1	D	207	LYS
2	F	573	ILE
1	A	460	SER
2	B	615	SER
1	C	460	SER
2	E	615	SER
1	D	460	SER
2	F	615	SER
1	A	464	THR
1	C	464	THR
1	D	464	THR

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	394/424 (93%)	389 (99%)	5 (1%)	61	71
1	C	394/424 (93%)	389 (99%)	5 (1%)	61	71
1	D	394/424 (93%)	389 (99%)	5 (1%)	61	71
2	B	112/130 (86%)	107 (96%)	5 (4%)	24	49
2	E	112/130 (86%)	107 (96%)	5 (4%)	24	49
2	F	112/130 (86%)	107 (96%)	5 (4%)	24	49
All	All	1518/1662 (91%)	1488 (98%)	30 (2%)	48	65

All (30) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	53	PHE
1	A	74	CYS
1	A	75	VAL
1	A	234	ASN
1	A	355	ASN
2	B	544	LEU
2	B	545	LEU
2	B	570	VAL
2	B	571	TRP
2	B	573	ILE
1	C	53	PHE
1	C	74	CYS
1	C	75	VAL
1	C	234	ASN
1	C	355	ASN
2	E	544	LEU
2	E	545	LEU
2	E	570	VAL
2	E	571	TRP
2	E	573	ILE
1	D	53	PHE
1	D	74	CYS
1	D	75	VAL
1	D	234	ASN
1	D	355	ASN
2	F	544	LEU
2	F	545	LEU
2	F	570	VAL
2	F	571	TRP
2	F	573	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	114	GLN
1	C	114	GLN
1	D	72	HIS
1	D	114	GLN
1	D	328	GLN

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 ⓘ

75 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	$\# Z > 2$
3	NAG	G	1	3,1	14,14,15	0.81	0	17,19,21	1.25	2 (11%)
3	NAG	G	2	3	14,14,15	0.79	0	17,19,21	0.96	1 (5%)
3	NAG	H	1	3,1	14,14,15	0.88	0	17,19,21	1.95	5 (29%)
3	NAG	H	2	3	14,14,15	0.75	0	17,19,21	0.92	1 (5%)
3	NAG	I	1	3,1	14,14,15	0.78	0	17,19,21	1.03	1 (5%)
3	NAG	I	2	3	14,14,15	0.78	0	17,19,21	1.21	2 (11%)
4	NAG	J	1	4,1	14,14,15	0.76	0	17,19,21	1.14	1 (5%)
4	NAG	J	2	4	14,14,15	0.80	1 (7%)	17,19,21	1.17	2 (11%)
4	BMA	J	3	4	11,11,12	1.85	2 (18%)	15,15,17	1.05	1 (6%)
4	MAN	J	4	4	11,11,12	1.57	1 (9%)	15,15,17	0.97	1 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	MAN	J	5	4	11,11,12	1.85	2 (18%)	15,15,17	1.04	2 (13%)
4	MAN	J	6	4	11,11,12	1.81	2 (18%)	15,15,17	0.99	1 (6%)
5	NAG	K	1	5,1	14,14,15	0.78	0	17,19,21	1.16	2 (11%)
5	NAG	K	2	5	14,14,15	0.81	0	17,19,21	0.81	0
5	BMA	K	3	5	11,11,12	1.80	2 (18%)	15,15,17	0.82	1 (6%)
5	NAG	L	1	5,1	14,14,15	0.82	1 (7%)	17,19,21	1.37	2 (11%)
5	NAG	L	2	5	14,14,15	0.81	0	17,19,21	0.98	0
5	BMA	L	3	5	11,11,12	1.80	2 (18%)	15,15,17	0.91	1 (6%)
6	NAG	M	1	6,1	14,14,15	0.81	1 (7%)	17,19,21	1.03	0
6	NAG	M	2	6	14,14,15	0.79	0	17,19,21	1.18	1 (5%)
6	FUC	M	3	6	10,10,11	0.77	0	14,14,16	0.93	1 (7%)
3	NAG	N	1	3,1	14,14,15	0.80	0	17,19,21	0.96	0
3	NAG	N	2	3	14,14,15	0.79	0	17,19,21	1.24	2 (11%)
7	NAG	O	1	7,2	14,14,15	0.76	0	17,19,21	1.11	1 (5%)
7	FUC	O	2	7	10,10,11	1.32	1 (10%)	14,14,16	4.14	5 (35%)
3	NAG	P	1	3,1	14,14,15	0.81	0	17,19,21	1.24	2 (11%)
3	NAG	P	2	3	14,14,15	0.80	0	17,19,21	0.96	1 (5%)
3	NAG	Q	1	3,1	14,14,15	0.89	0	17,19,21	1.94	5 (29%)
3	NAG	Q	2	3	14,14,15	0.75	0	17,19,21	0.92	1 (5%)
3	NAG	R	1	3,1	14,14,15	0.77	0	17,19,21	1.03	1 (5%)
3	NAG	R	2	3	14,14,15	0.77	0	17,19,21	1.21	2 (11%)
4	NAG	S	1	4,1	14,14,15	0.77	0	17,19,21	1.14	1 (5%)
4	NAG	S	2	4	14,14,15	0.80	1 (7%)	17,19,21	1.17	2 (11%)
4	BMA	S	3	4	11,11,12	1.84	2 (18%)	15,15,17	1.05	1 (6%)
4	MAN	S	4	4	11,11,12	1.57	1 (9%)	15,15,17	0.97	1 (6%)
4	MAN	S	5	4	11,11,12	1.85	2 (18%)	15,15,17	1.04	2 (13%)
4	MAN	S	6	4	11,11,12	1.80	2 (18%)	15,15,17	1.00	1 (6%)
5	NAG	T	1	5,1	14,14,15	0.77	0	17,19,21	1.16	2 (11%)
5	NAG	T	2	5	14,14,15	0.81	0	17,19,21	0.81	0
5	BMA	T	3	5	11,11,12	1.81	2 (18%)	15,15,17	0.82	1 (6%)
5	NAG	U	1	5,1	14,14,15	0.83	1 (7%)	17,19,21	1.38	2 (11%)
5	NAG	U	2	5	14,14,15	0.81	0	17,19,21	0.98	0
5	BMA	U	3	5	11,11,12	1.80	2 (18%)	15,15,17	0.92	1 (6%)
6	NAG	V	1	6,1	14,14,15	0.82	1 (7%)	17,19,21	1.03	0
6	NAG	V	2	6	14,14,15	0.79	0	17,19,21	1.18	1 (5%)
6	FUC	V	3	6	10,10,11	0.77	0	14,14,16	0.94	1 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	NAG	W	1	3,1	14,14,15	0.80	0	17,19,21	0.96	0
3	NAG	W	2	3	14,14,15	0.79	0	17,19,21	1.24	2 (11%)
7	NAG	X	1	7,2	14,14,15	0.76	0	17,19,21	1.11	1 (5%)
7	FUC	X	2	7	10,10,11	1.33	1 (10%)	14,14,16	4.14	6 (42%)
3	NAG	Y	1	3,1	14,14,15	0.81	0	17,19,21	1.25	2 (11%)
3	NAG	Y	2	3	14,14,15	0.80	0	17,19,21	0.96	1 (5%)
3	NAG	Z	1	3,1	14,14,15	0.88	0	17,19,21	1.94	5 (29%)
3	NAG	Z	2	3	14,14,15	0.75	0	17,19,21	0.91	1 (5%)
3	NAG	a	1	3,1	14,14,15	0.78	0	17,19,21	1.03	1 (5%)
3	NAG	a	2	3	14,14,15	0.77	0	17,19,21	1.21	2 (11%)
4	NAG	b	1	4,1	14,14,15	0.76	0	17,19,21	1.15	1 (5%)
4	NAG	b	2	4	14,14,15	0.79	1 (7%)	17,19,21	1.17	2 (11%)
4	BMA	b	3	4	11,11,12	1.85	2 (18%)	15,15,17	1.06	1 (6%)
4	MAN	b	4	4	11,11,12	1.57	1 (9%)	15,15,17	0.97	0
4	MAN	b	5	4	11,11,12	1.85	2 (18%)	15,15,17	1.04	2 (13%)
4	MAN	b	6	4	11,11,12	1.80	2 (18%)	15,15,17	1.00	1 (6%)
5	NAG	c	1	5,1	14,14,15	0.77	0	17,19,21	1.15	2 (11%)
5	NAG	c	2	5	14,14,15	0.81	0	17,19,21	0.81	0
5	BMA	c	3	5	11,11,12	1.81	2 (18%)	15,15,17	0.82	1 (6%)
5	NAG	d	1	5,1	14,14,15	0.82	1 (7%)	17,19,21	1.38	2 (11%)
5	NAG	d	2	5	14,14,15	0.80	0	17,19,21	0.98	0
5	BMA	d	3	5	11,11,12	1.81	2 (18%)	15,15,17	0.91	1 (6%)
6	NAG	e	1	6,1	14,14,15	0.82	1 (7%)	17,19,21	1.03	0
6	NAG	e	2	6	14,14,15	0.79	0	17,19,21	1.17	1 (5%)
6	FUC	e	3	6	10,10,11	0.77	0	14,14,16	0.94	1 (7%)
3	NAG	f	1	3,1	14,14,15	0.80	0	17,19,21	0.96	0
3	NAG	f	2	3	14,14,15	0.79	0	17,19,21	1.24	2 (11%)
7	NAG	g	1	7,2	14,14,15	0.75	0	17,19,21	1.10	1 (5%)
7	FUC	g	2	7	10,10,11	1.33	1 (10%)	14,14,16	4.14	6 (42%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	G	1	3,1	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	G	2	3	-	2/6/23/26	0/1/1/1
3	NAG	H	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	H	2	3	-	1/6/23/26	0/1/1/1
3	NAG	I	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	I	2	3	-	2/6/23/26	0/1/1/1
4	NAG	J	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	J	2	4	-	0/6/23/26	0/1/1/1
4	BMA	J	3	4	-	2/2/19/22	0/1/1/1
4	MAN	J	4	4	-	1/2/19/22	0/1/1/1
4	MAN	J	5	4	-	2/2/19/22	0/1/1/1
4	MAN	J	6	4	-	1/2/19/22	0/1/1/1
5	NAG	K	1	5,1	-	0/6/23/26	0/1/1/1
5	NAG	K	2	5	-	2/6/23/26	0/1/1/1
5	BMA	K	3	5	-	1/2/19/22	0/1/1/1
5	NAG	L	1	5,1	-	2/6/23/26	0/1/1/1
5	NAG	L	2	5	-	2/6/23/26	0/1/1/1
5	BMA	L	3	5	-	1/2/19/22	0/1/1/1
6	NAG	M	1	6,1	-	0/6/23/26	0/1/1/1
6	NAG	M	2	6	-	2/6/23/26	0/1/1/1
6	FUC	M	3	6	-	-	0/1/1/1
3	NAG	N	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	N	2	3	-	2/6/23/26	0/1/1/1
7	NAG	O	1	7,2	-	2/6/23/26	0/1/1/1
7	FUC	O	2	7	-	-	0/1/1/1
3	NAG	P	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	P	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Q	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	Q	2	3	-	1/6/23/26	0/1/1/1
3	NAG	R	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	R	2	3	-	2/6/23/26	0/1/1/1
4	NAG	S	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	S	2	4	-	0/6/23/26	0/1/1/1
4	BMA	S	3	4	-	2/2/19/22	0/1/1/1
4	MAN	S	4	4	-	1/2/19/22	0/1/1/1
4	MAN	S	5	4	-	2/2/19/22	0/1/1/1
4	MAN	S	6	4	-	1/2/19/22	0/1/1/1
5	NAG	T	1	5,1	-	0/6/23/26	0/1/1/1
5	NAG	T	2	5	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	BMA	T	3	5	-	1/2/19/22	0/1/1/1
5	NAG	U	1	5,1	-	2/6/23/26	0/1/1/1
5	NAG	U	2	5	-	2/6/23/26	0/1/1/1
5	BMA	U	3	5	-	1/2/19/22	0/1/1/1
6	NAG	V	1	6,1	-	0/6/23/26	0/1/1/1
6	NAG	V	2	6	-	2/6/23/26	0/1/1/1
6	FUC	V	3	6	-	-	0/1/1/1
3	NAG	W	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	W	2	3	-	2/6/23/26	0/1/1/1
7	NAG	X	1	7,2	-	2/6/23/26	0/1/1/1
7	FUC	X	2	7	-	-	0/1/1/1
3	NAG	Y	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	Y	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Z	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	Z	2	3	-	1/6/23/26	0/1/1/1
3	NAG	a	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	a	2	3	-	2/6/23/26	0/1/1/1
4	NAG	b	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	b	2	4	-	0/6/23/26	0/1/1/1
4	BMA	b	3	4	-	2/2/19/22	0/1/1/1
4	MAN	b	4	4	-	1/2/19/22	0/1/1/1
4	MAN	b	5	4	-	2/2/19/22	0/1/1/1
4	MAN	b	6	4	-	1/2/19/22	0/1/1/1
5	NAG	c	1	5,1	-	0/6/23/26	0/1/1/1
5	NAG	c	2	5	-	2/6/23/26	0/1/1/1
5	BMA	c	3	5	-	1/2/19/22	0/1/1/1
5	NAG	d	1	5,1	-	2/6/23/26	0/1/1/1
5	NAG	d	2	5	-	2/6/23/26	0/1/1/1
5	BMA	d	3	5	-	1/2/19/22	0/1/1/1
6	NAG	e	1	6,1	-	0/6/23/26	0/1/1/1
6	NAG	e	2	6	-	2/6/23/26	0/1/1/1
6	FUC	e	3	6	-	-	0/1/1/1
3	NAG	f	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	f	2	3	-	2/6/23/26	0/1/1/1
7	NAG	g	1	7,2	-	2/6/23/26	0/1/1/1
7	FUC	g	2	7	-	-	0/1/1/1

All (45) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	S	5	MAN	O2-C2	-4.31	1.34	1.43
4	J	5	MAN	O2-C2	-4.30	1.34	1.43
4	b	5	MAN	O2-C2	-4.30	1.34	1.43
5	T	3	BMA	O2-C2	-4.22	1.34	1.43
5	c	3	BMA	O2-C2	-4.20	1.34	1.43
5	K	3	BMA	O2-C2	-4.20	1.34	1.43
4	J	3	BMA	O2-C2	-4.19	1.34	1.43
4	b	3	BMA	O2-C2	-4.19	1.34	1.43
4	S	3	BMA	O2-C2	-4.18	1.34	1.43
4	J	6	MAN	O2-C2	-4.13	1.34	1.43
4	b	6	MAN	O2-C2	-4.13	1.34	1.43
4	S	6	MAN	O2-C2	-4.10	1.34	1.43
5	d	3	BMA	O2-C2	-4.09	1.34	1.43
5	U	3	BMA	O2-C2	-4.08	1.34	1.43
5	L	3	BMA	O2-C2	-4.05	1.34	1.43
4	S	4	MAN	O2-C2	-3.19	1.36	1.43
4	J	4	MAN	O2-C2	-3.18	1.36	1.43
4	b	4	MAN	O2-C2	-3.17	1.36	1.43
7	g	2	FUC	O5-C1	2.92	1.48	1.43
7	X	2	FUC	O5-C1	2.91	1.48	1.43
7	O	2	FUC	O5-C1	2.87	1.48	1.43
5	L	3	BMA	C2-C3	-2.47	1.48	1.52
5	d	3	BMA	C2-C3	-2.46	1.48	1.52
5	U	3	BMA	C2-C3	-2.46	1.48	1.52
5	c	3	BMA	C2-C3	-2.31	1.48	1.52
5	K	3	BMA	C2-C3	-2.30	1.49	1.52
5	T	3	BMA	C2-C3	-2.28	1.49	1.52
4	b	3	BMA	C2-C3	-2.26	1.49	1.52
4	J	3	BMA	C2-C3	-2.24	1.49	1.52
4	S	3	BMA	C2-C3	-2.24	1.49	1.52
5	U	1	NAG	C3-C2	-2.13	1.48	1.52
4	J	2	NAG	C3-C2	-2.11	1.48	1.52
5	d	1	NAG	C3-C2	-2.11	1.48	1.52
4	S	2	NAG	C3-C2	-2.10	1.48	1.52
4	b	6	MAN	C2-C3	-2.10	1.49	1.52
5	L	1	NAG	C3-C2	-2.09	1.48	1.52
6	V	1	NAG	C3-C2	-2.09	1.48	1.52
6	e	1	NAG	C3-C2	-2.08	1.48	1.52
6	M	1	NAG	C3-C2	-2.08	1.48	1.52
4	S	6	MAN	C2-C3	-2.08	1.49	1.52
4	J	6	MAN	C2-C3	-2.08	1.49	1.52
4	b	2	NAG	C3-C2	-2.08	1.48	1.52
4	J	5	MAN	C2-C3	-2.03	1.49	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	b	5	MAN	C2-C3	-2.02	1.49	1.52
4	S	5	MAN	C2-C3	-2.02	1.49	1.52

All (109) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	X	2	FUC	C6-C5-C4	-11.64	91.79	113.08
7	O	2	FUC	C6-C5-C4	-11.64	91.80	113.08
7	g	2	FUC	C6-C5-C4	-11.63	91.80	113.08
7	g	2	FUC	C3-C4-C5	6.70	120.00	109.81
7	O	2	FUC	C3-C4-C5	6.70	120.00	109.81
7	X	2	FUC	C3-C4-C5	6.69	119.99	109.81
7	g	2	FUC	O5-C5-C6	4.80	117.82	107.40
7	O	2	FUC	O5-C5-C6	4.80	117.82	107.40
3	H	1	NAG	O4-C4-C3	-4.80	99.06	110.38
7	X	2	FUC	O5-C5-C6	4.80	117.81	107.40
3	Q	1	NAG	O4-C4-C3	-4.80	99.07	110.38
3	Z	1	NAG	O4-C4-C3	-4.79	99.09	110.38
7	g	2	FUC	C2-C3-C4	-4.16	103.55	110.86
7	O	2	FUC	C2-C3-C4	-4.15	103.56	110.86
7	X	2	FUC	C2-C3-C4	-4.15	103.57	110.86
3	H	1	NAG	O5-C5-C6	-4.00	99.87	107.66
3	Q	1	NAG	O5-C5-C6	-4.00	99.88	107.66
3	Z	1	NAG	O5-C5-C6	-4.00	99.88	107.66
7	g	2	FUC	O5-C5-C4	-3.60	103.07	109.55
7	X	2	FUC	O5-C5-C4	-3.60	103.08	109.55
7	O	2	FUC	O5-C5-C4	-3.60	103.08	109.55
6	V	2	NAG	C4-C3-C2	-3.46	105.95	111.02
6	M	2	NAG	C4-C3-C2	-3.44	105.97	111.02
6	e	2	NAG	C4-C3-C2	-3.44	105.97	111.02
3	R	2	NAG	C4-C3-C2	-3.37	106.08	111.02
3	a	2	NAG	C4-C3-C2	-3.37	106.08	111.02
3	I	2	NAG	C4-C3-C2	-3.36	106.09	111.02
7	X	1	NAG	C4-C3-C2	-3.16	106.38	111.02
7	g	1	NAG	C4-C3-C2	-3.16	106.39	111.02
7	O	1	NAG	C4-C3-C2	-3.15	106.41	111.02
3	N	2	NAG	C4-C3-C2	-2.97	106.66	111.02
3	f	2	NAG	C4-C3-C2	-2.97	106.66	111.02
3	W	2	NAG	C4-C3-C2	-2.96	106.68	111.02
4	b	1	NAG	C3-C4-C5	-2.83	105.10	110.23
4	S	1	NAG	C3-C4-C5	-2.82	105.11	110.23
4	J	1	NAG	C3-C4-C5	-2.82	105.12	110.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	G	2	NAG	C4-C3-C2	-2.79	106.93	111.02
3	P	2	NAG	C4-C3-C2	-2.77	106.95	111.02
3	Y	2	NAG	C4-C3-C2	-2.77	106.96	111.02
5	d	1	NAG	C8-C7-N2	2.75	120.67	116.12
3	H	1	NAG	C3-C4-C5	-2.74	105.26	110.23
3	Z	1	NAG	C3-C4-C5	-2.74	105.27	110.23
5	U	1	NAG	C8-C7-N2	2.73	120.65	116.12
3	Q	1	NAG	C3-C4-C5	-2.73	105.28	110.23
5	L	1	NAG	C8-C7-N2	2.72	120.64	116.12
4	J	3	BMA	C2-C3-C4	-2.71	106.10	110.86
4	b	3	BMA	C2-C3-C4	-2.70	106.11	110.86
4	S	3	BMA	C2-C3-C4	-2.69	106.13	110.86
5	T	1	NAG	O5-C5-C6	-2.53	102.73	107.66
5	K	1	NAG	O5-C5-C6	-2.53	102.73	107.66
5	c	1	NAG	O5-C5-C6	-2.53	102.73	107.66
3	Q	2	NAG	C4-C3-C2	-2.52	107.32	111.02
3	R	1	NAG	C3-C4-C5	-2.51	105.69	110.23
3	a	1	NAG	C3-C4-C5	-2.50	105.69	110.23
3	H	2	NAG	C4-C3-C2	-2.50	107.35	111.02
3	I	1	NAG	C3-C4-C5	-2.50	105.69	110.23
3	Z	2	NAG	C4-C3-C2	-2.50	107.36	111.02
3	Z	1	NAG	O4-C4-C5	2.50	115.47	109.32
3	Q	1	NAG	O4-C4-C5	2.49	115.45	109.32
3	H	1	NAG	O4-C4-C5	2.49	115.45	109.32
5	T	1	NAG	C3-C4-C5	-2.48	105.74	110.23
5	c	1	NAG	C3-C4-C5	-2.48	105.74	110.23
5	K	1	NAG	C3-C4-C5	-2.47	105.75	110.23
4	b	2	NAG	O5-C1-C2	-2.41	107.56	111.29
4	J	2	NAG	O5-C1-C2	-2.41	107.57	111.29
4	S	2	NAG	O5-C1-C2	-2.40	107.58	111.29
3	G	1	NAG	C4-C3-C2	-2.40	107.51	111.02
3	Y	1	NAG	C4-C3-C2	-2.39	107.51	111.02
3	f	2	NAG	O5-C1-C2	-2.39	107.59	111.29
3	W	2	NAG	O5-C1-C2	-2.39	107.59	111.29
3	P	1	NAG	C4-C3-C2	-2.38	107.53	111.02
3	N	2	NAG	O5-C1-C2	-2.38	107.61	111.29
5	U	3	BMA	C2-C3-C4	-2.34	106.75	110.86
4	S	5	MAN	C2-C3-C4	-2.32	106.78	110.86
5	d	3	BMA	C2-C3-C4	-2.32	106.78	110.86
4	b	5	MAN	C2-C3-C4	-2.31	106.79	110.86
4	J	5	MAN	C2-C3-C4	-2.31	106.80	110.86
5	L	3	BMA	C2-C3-C4	-2.31	106.81	110.86

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	U	1	NAG	O5-C1-C2	-2.29	107.74	111.29
5	d	1	NAG	O5-C1-C2	-2.28	107.77	111.29
5	L	1	NAG	O5-C1-C2	-2.27	107.78	111.29
4	S	2	NAG	O5-C5-C6	-2.14	103.50	107.66
4	b	2	NAG	O5-C5-C6	-2.14	103.50	107.66
4	J	2	NAG	O5-C5-C6	-2.13	103.52	107.66
5	T	3	BMA	C2-C3-C4	-2.12	107.13	110.86
5	c	3	BMA	C2-C3-C4	-2.11	107.14	110.86
4	J	5	MAN	C1-C2-C3	2.11	112.72	109.64
4	b	5	MAN	C1-C2-C3	2.11	112.72	109.64
4	S	5	MAN	C1-C2-C3	2.11	112.71	109.64
5	K	3	BMA	C2-C3-C4	-2.11	107.15	110.86
3	I	2	NAG	O5-C1-C2	-2.10	108.04	111.29
3	a	2	NAG	O5-C1-C2	-2.09	108.06	111.29
6	V	3	FUC	C2-C3-C4	-2.07	107.23	110.86
3	R	2	NAG	O5-C1-C2	-2.07	108.09	111.29
6	e	3	FUC	C2-C3-C4	-2.06	107.23	110.86
6	M	3	FUC	C2-C3-C4	-2.05	107.25	110.86
3	H	1	NAG	C4-C3-C2	2.05	114.02	111.02
4	J	6	MAN	C2-C3-C4	-2.04	107.27	110.86
3	Q	1	NAG	C4-C3-C2	2.04	114.00	111.02
3	Z	1	NAG	C4-C3-C2	2.03	114.00	111.02
4	b	6	MAN	C2-C3-C4	-2.03	107.28	110.86
4	S	6	MAN	C2-C3-C4	-2.03	107.29	110.86
3	G	1	NAG	O5-C1-C2	-2.01	108.17	111.29
3	P	1	NAG	O5-C1-C2	-2.01	108.17	111.29
7	X	2	FUC	O4-C4-C3	-2.01	105.63	110.38
3	Y	1	NAG	O5-C1-C2	-2.01	108.18	111.29
4	S	4	MAN	C2-C3-C4	-2.01	107.33	110.86
7	g	2	FUC	O4-C4-C3	-2.00	105.66	110.38
4	J	4	MAN	C2-C3-C4	-2.00	107.34	110.86

There are no chirality outliers.

All (87) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	H	1	NAG	O5-C5-C6-O6
3	Q	1	NAG	O5-C5-C6-O6
3	Z	1	NAG	O5-C5-C6-O6
3	N	2	NAG	O5-C5-C6-O6
3	W	2	NAG	O5-C5-C6-O6
3	f	2	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
6	M	2	NAG	O5-C5-C6-O6
6	V	2	NAG	O5-C5-C6-O6
6	e	2	NAG	O5-C5-C6-O6
7	O	1	NAG	O5-C5-C6-O6
7	X	1	NAG	O5-C5-C6-O6
7	g	1	NAG	O5-C5-C6-O6
4	J	5	MAN	O5-C5-C6-O6
4	S	5	MAN	O5-C5-C6-O6
4	b	5	MAN	O5-C5-C6-O6
3	G	1	NAG	O5-C5-C6-O6
3	P	1	NAG	O5-C5-C6-O6
3	Y	1	NAG	O5-C5-C6-O6
3	I	2	NAG	O5-C5-C6-O6
3	R	2	NAG	O5-C5-C6-O6
3	a	2	NAG	O5-C5-C6-O6
3	H	1	NAG	C4-C5-C6-O6
3	Q	1	NAG	C4-C5-C6-O6
3	Z	1	NAG	C4-C5-C6-O6
3	G	2	NAG	O5-C5-C6-O6
3	P	2	NAG	O5-C5-C6-O6
3	Y	2	NAG	O5-C5-C6-O6
7	O	1	NAG	C4-C5-C6-O6
7	X	1	NAG	C4-C5-C6-O6
7	g	1	NAG	C4-C5-C6-O6
3	I	2	NAG	C4-C5-C6-O6
3	R	2	NAG	C4-C5-C6-O6
3	a	2	NAG	C4-C5-C6-O6
5	K	3	BMA	O5-C5-C6-O6
5	T	3	BMA	O5-C5-C6-O6
5	c	3	BMA	O5-C5-C6-O6
5	L	1	NAG	C8-C7-N2-C2
5	L	1	NAG	O7-C7-N2-C2
5	U	1	NAG	C8-C7-N2-C2
5	U	1	NAG	O7-C7-N2-C2
5	d	1	NAG	C8-C7-N2-C2
5	d	1	NAG	O7-C7-N2-C2
4	J	6	MAN	O5-C5-C6-O6
4	S	6	MAN	O5-C5-C6-O6
4	b	6	MAN	O5-C5-C6-O6
3	G	1	NAG	C4-C5-C6-O6
3	P	1	NAG	C4-C5-C6-O6
3	Y	1	NAG	C4-C5-C6-O6

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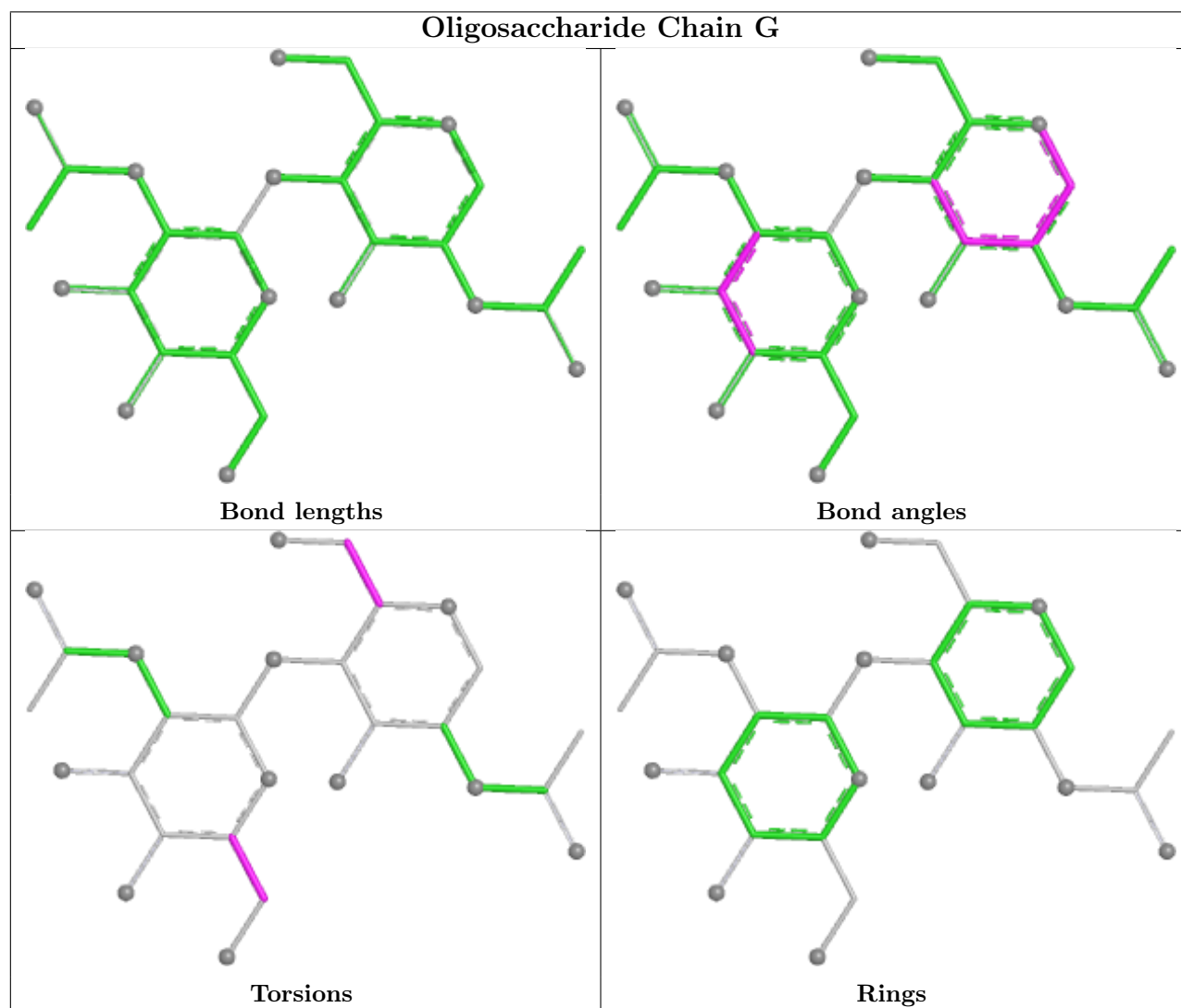
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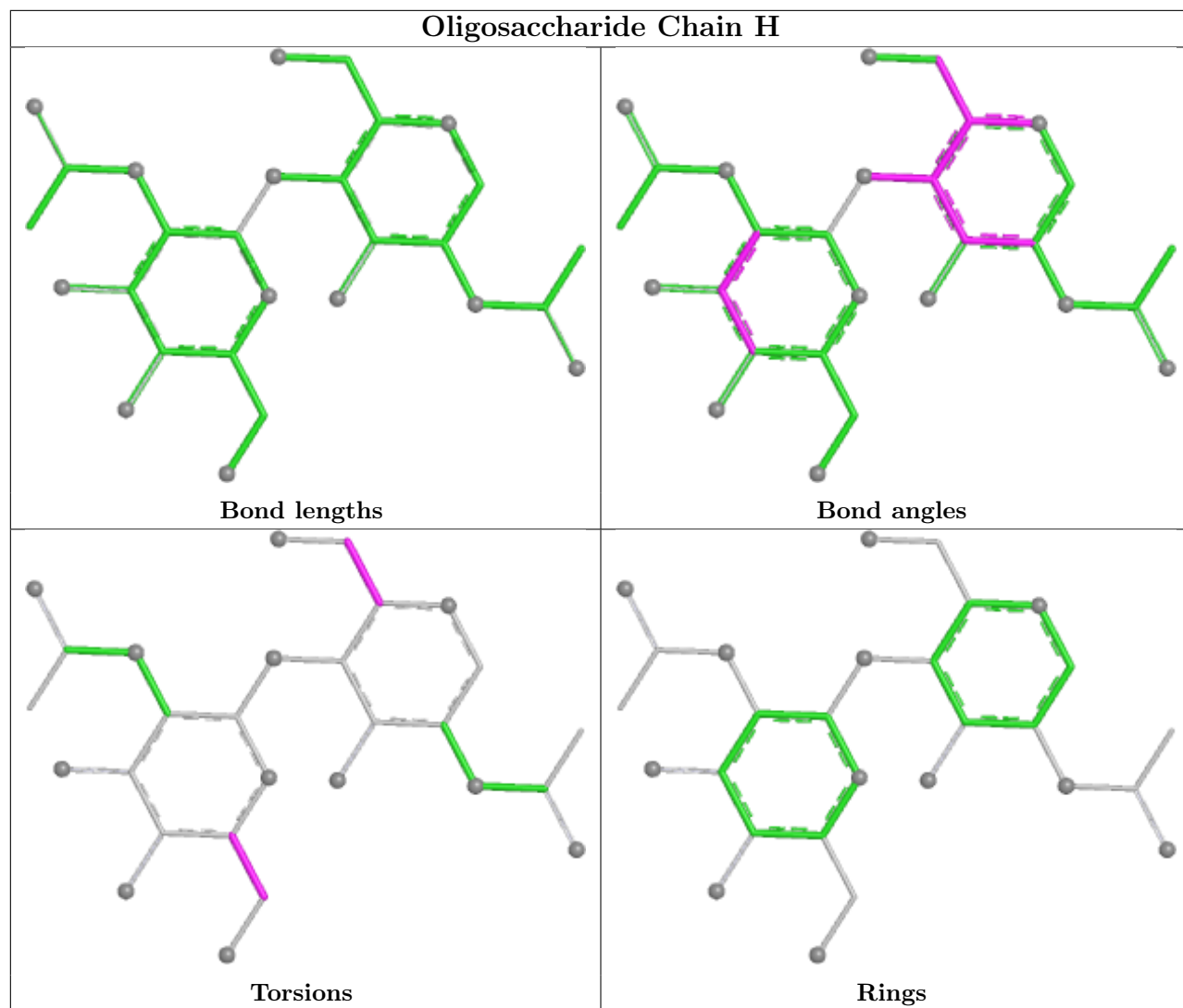
Mol	Chain	Res	Type	Atoms
4	J	4	MAN	O5-C5-C6-O6
4	S	4	MAN	O5-C5-C6-O6
4	b	4	MAN	O5-C5-C6-O6
5	L	3	BMA	O5-C5-C6-O6
5	U	3	BMA	O5-C5-C6-O6
5	d	3	BMA	O5-C5-C6-O6
4	J	3	BMA	C4-C5-C6-O6
4	S	3	BMA	C4-C5-C6-O6
4	b	3	BMA	C4-C5-C6-O6
3	H	2	NAG	O5-C5-C6-O6
3	Q	2	NAG	O5-C5-C6-O6
3	Z	2	NAG	O5-C5-C6-O6
3	N	2	NAG	C4-C5-C6-O6
3	W	2	NAG	C4-C5-C6-O6
3	f	2	NAG	C4-C5-C6-O6
4	J	5	MAN	C4-C5-C6-O6
4	S	5	MAN	C4-C5-C6-O6
4	b	5	MAN	C4-C5-C6-O6
6	M	2	NAG	C4-C5-C6-O6
6	V	2	NAG	C4-C5-C6-O6
6	e	2	NAG	C4-C5-C6-O6
5	T	2	NAG	O5-C5-C6-O6
5	K	2	NAG	O5-C5-C6-O6
5	c	2	NAG	O5-C5-C6-O6
4	J	3	BMA	O5-C5-C6-O6
4	S	3	BMA	O5-C5-C6-O6
4	b	3	BMA	O5-C5-C6-O6
5	d	2	NAG	C4-C5-C6-O6
5	d	2	NAG	O5-C5-C6-O6
5	L	2	NAG	O5-C5-C6-O6
5	U	2	NAG	O5-C5-C6-O6
5	K	2	NAG	C4-C5-C6-O6
5	T	2	NAG	C4-C5-C6-O6
5	c	2	NAG	C4-C5-C6-O6
5	L	2	NAG	C4-C5-C6-O6
5	U	2	NAG	C4-C5-C6-O6
3	Y	2	NAG	C4-C5-C6-O6
3	P	2	NAG	C4-C5-C6-O6
3	G	2	NAG	C4-C5-C6-O6

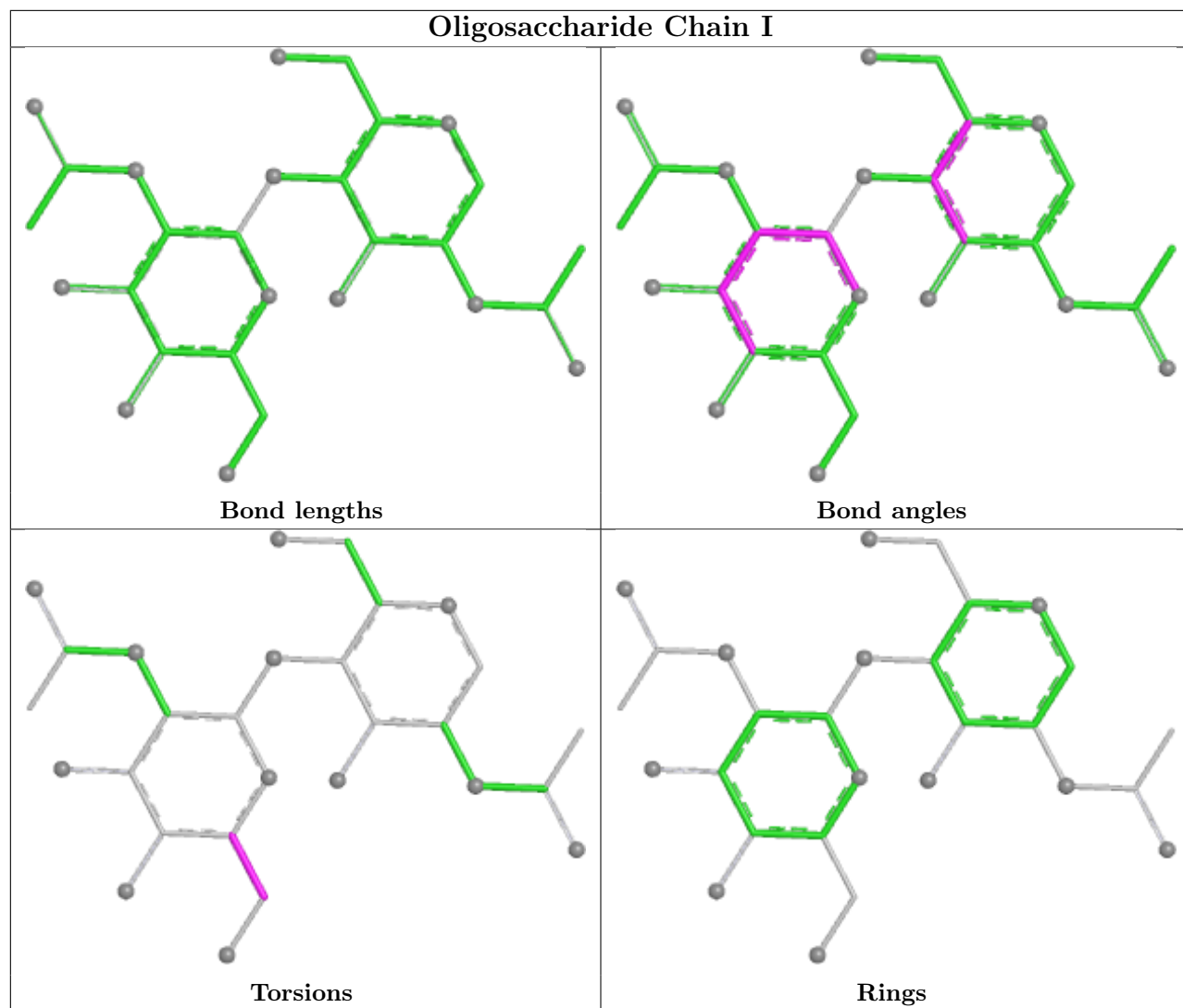
There are no ring outliers.

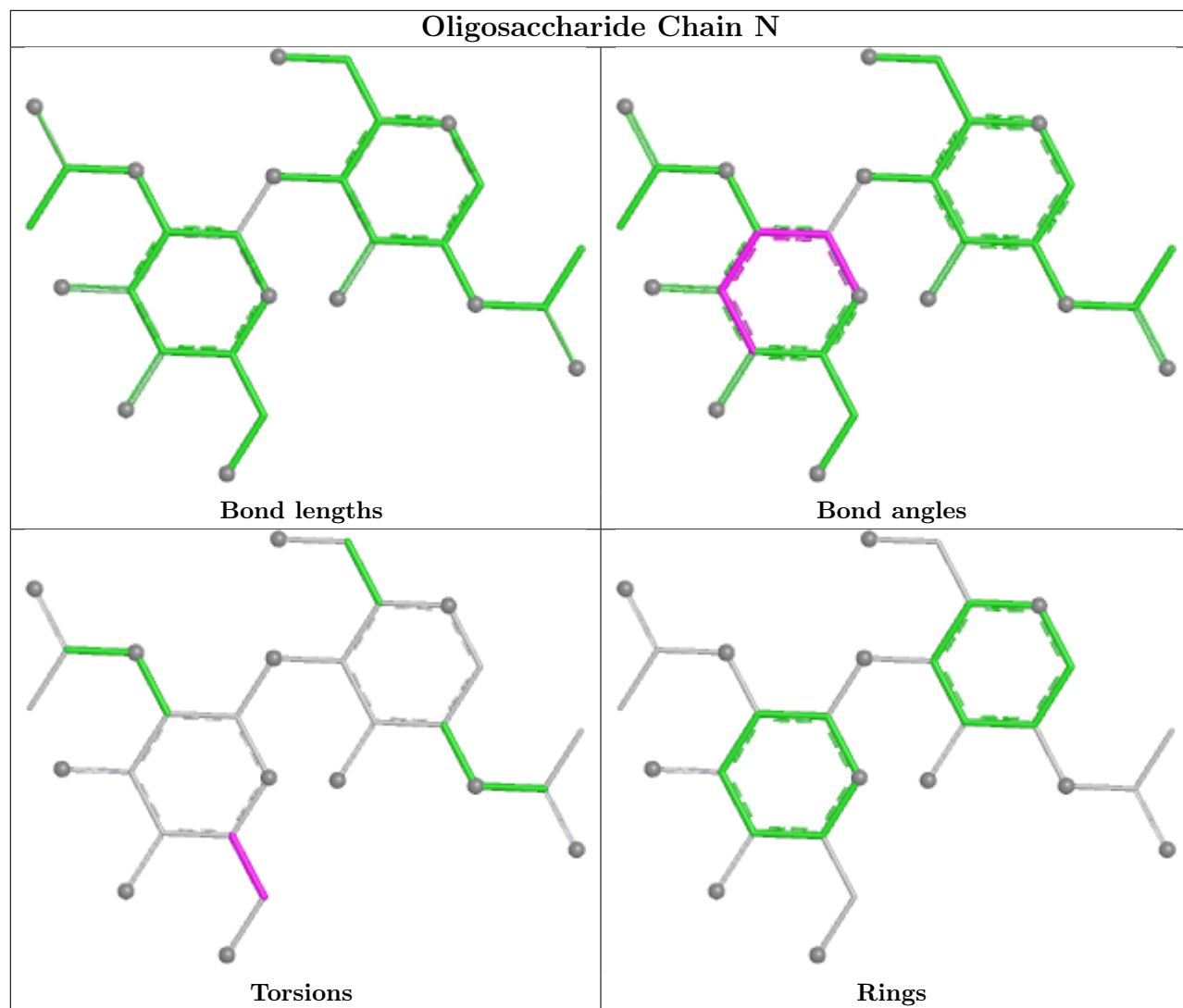
No monomer is involved in short contacts.

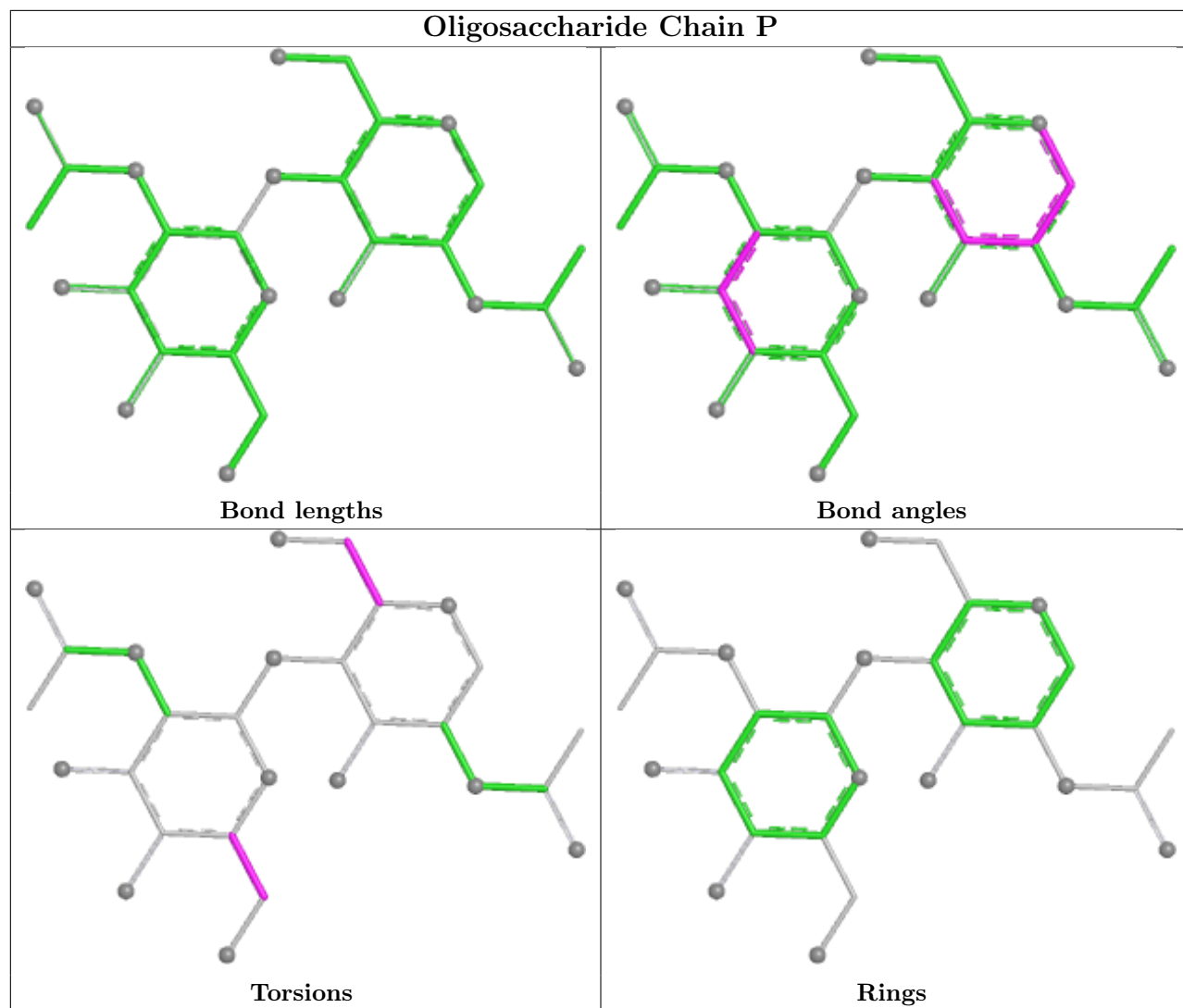
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

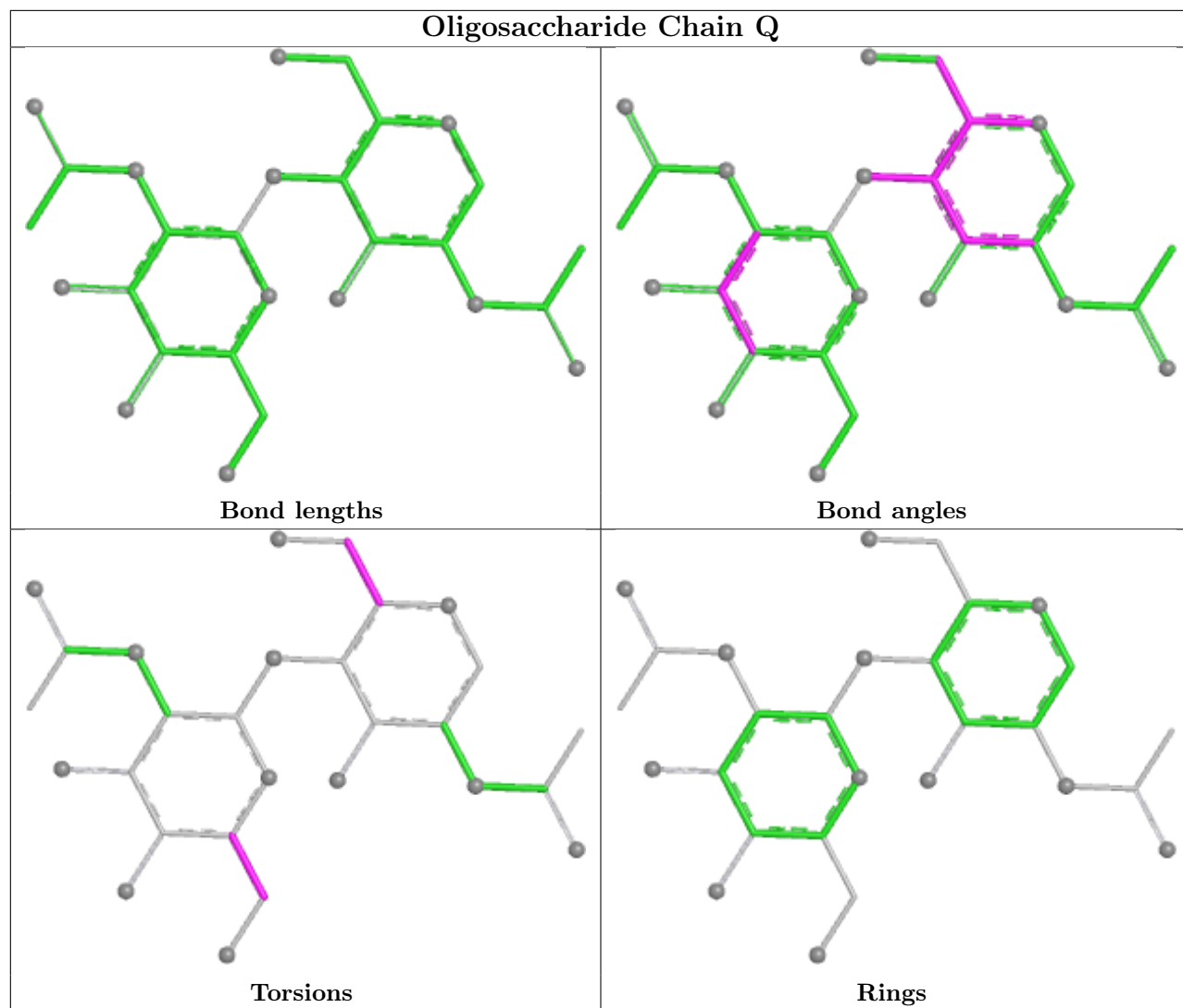


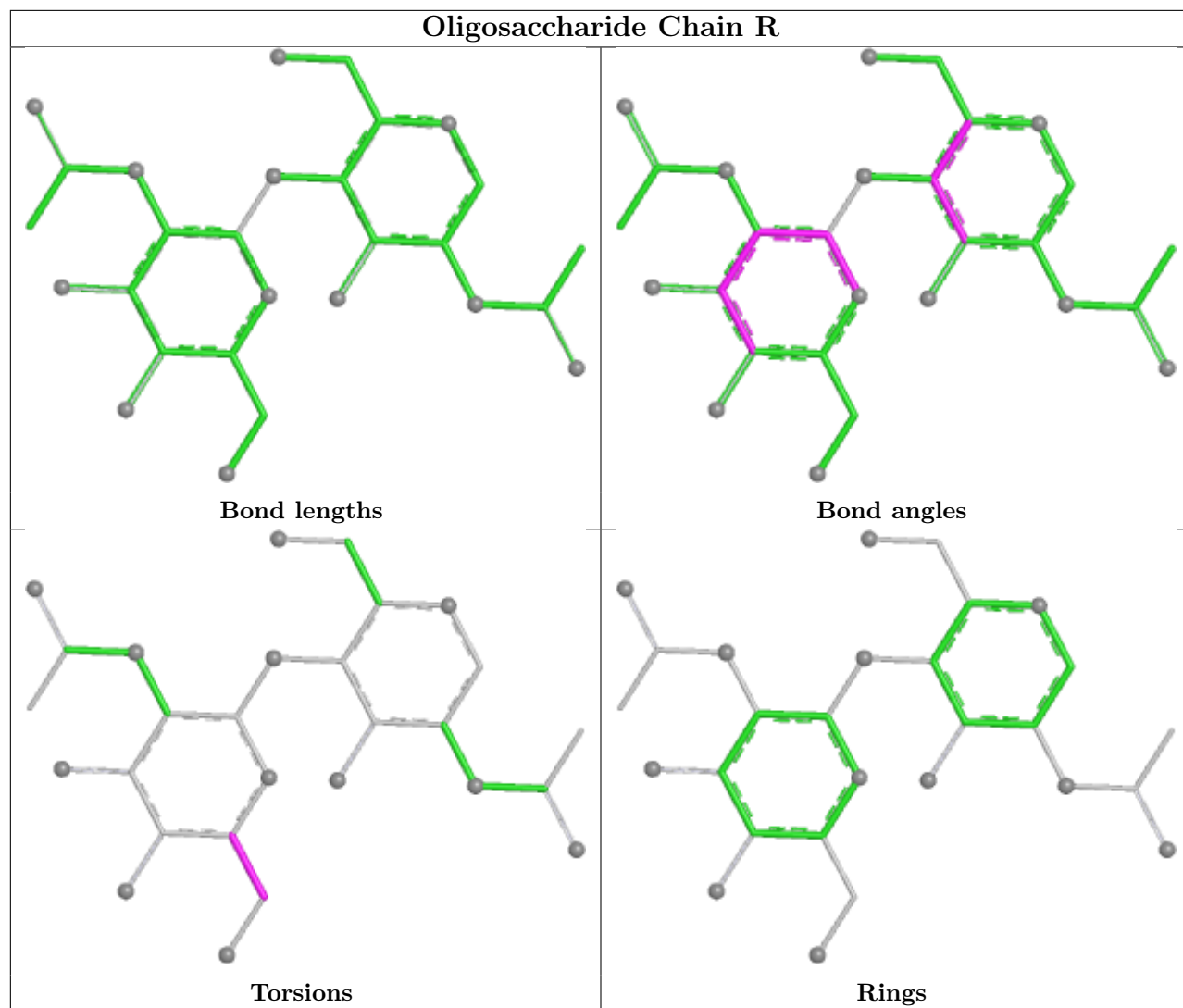


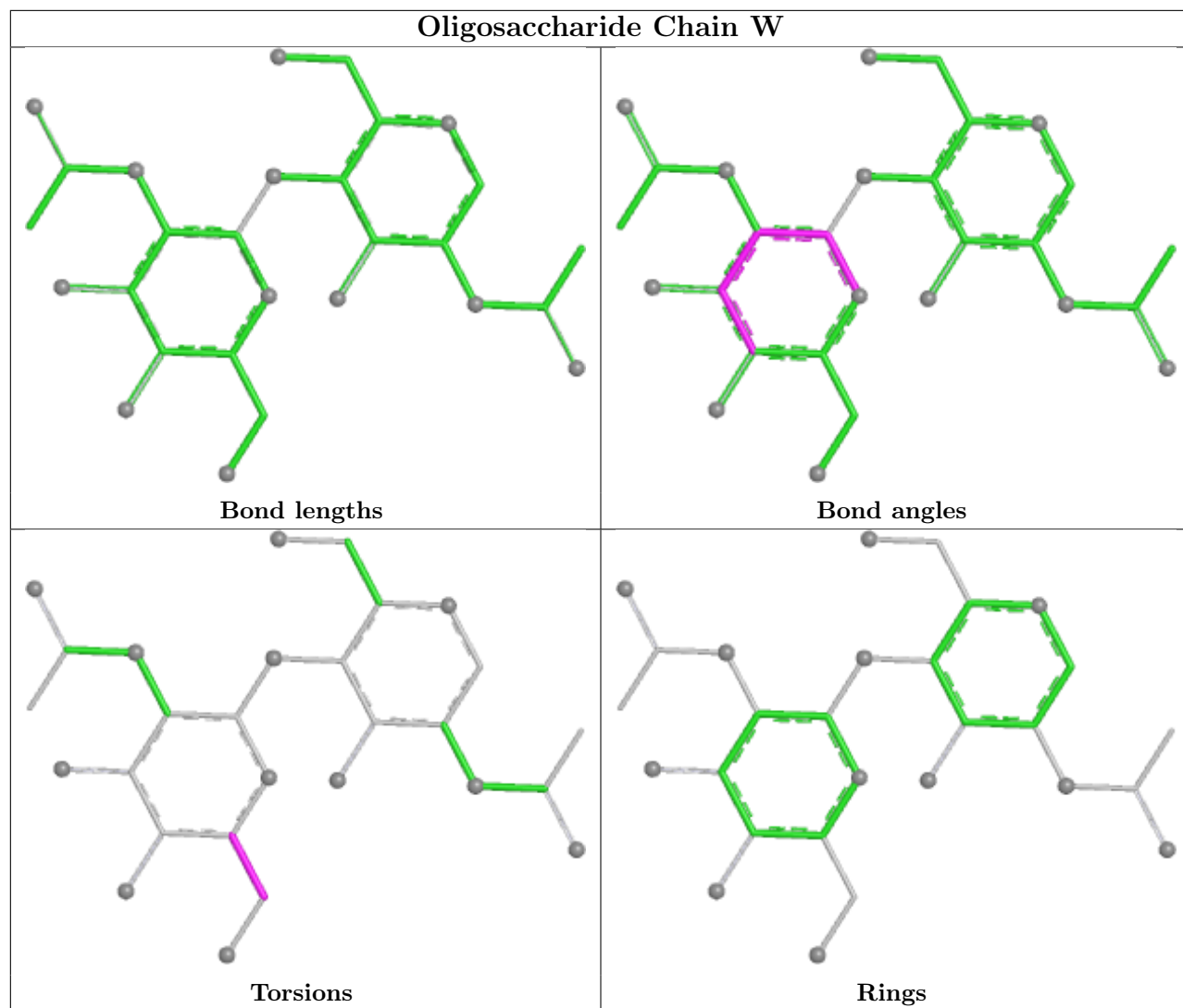


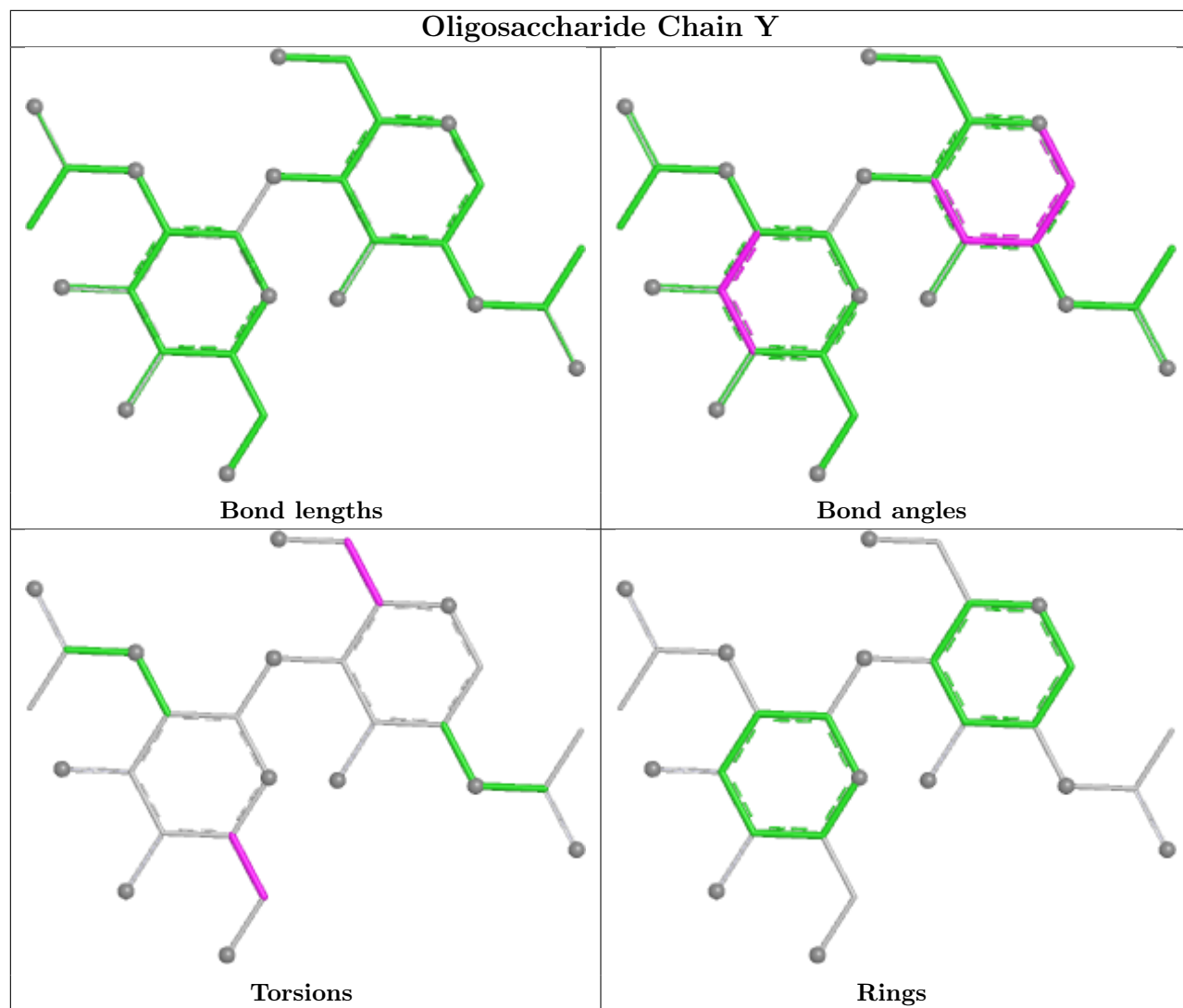


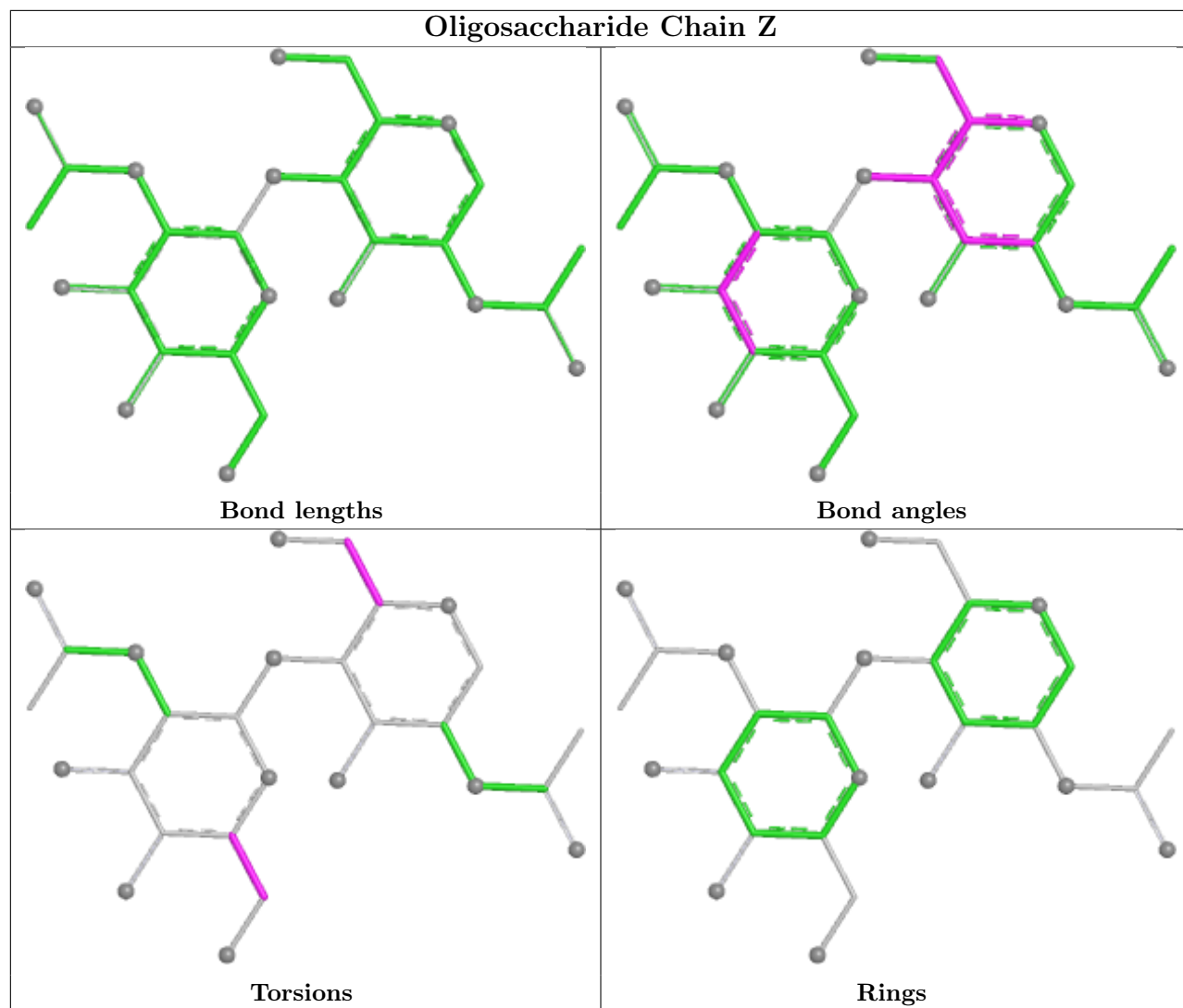


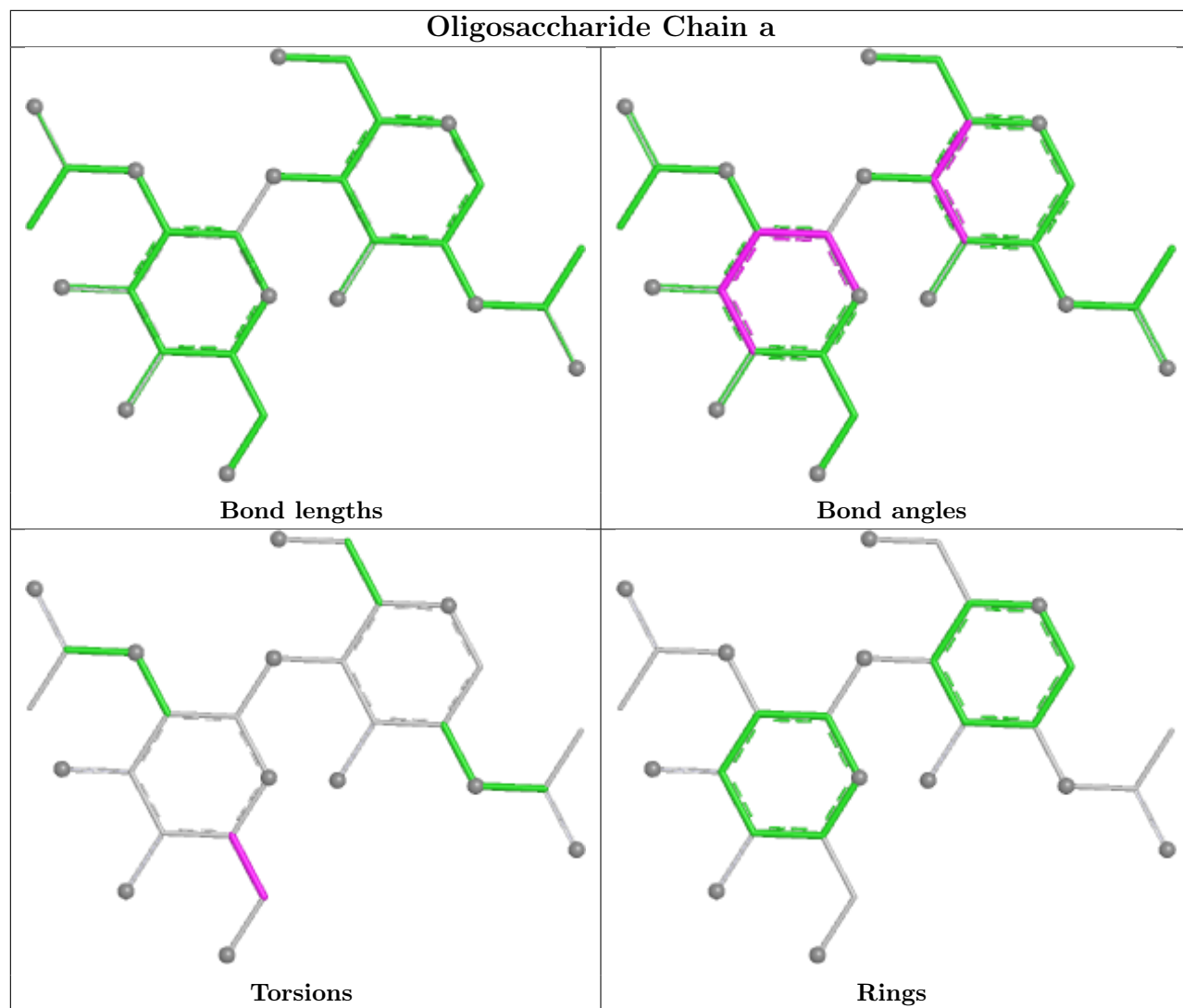


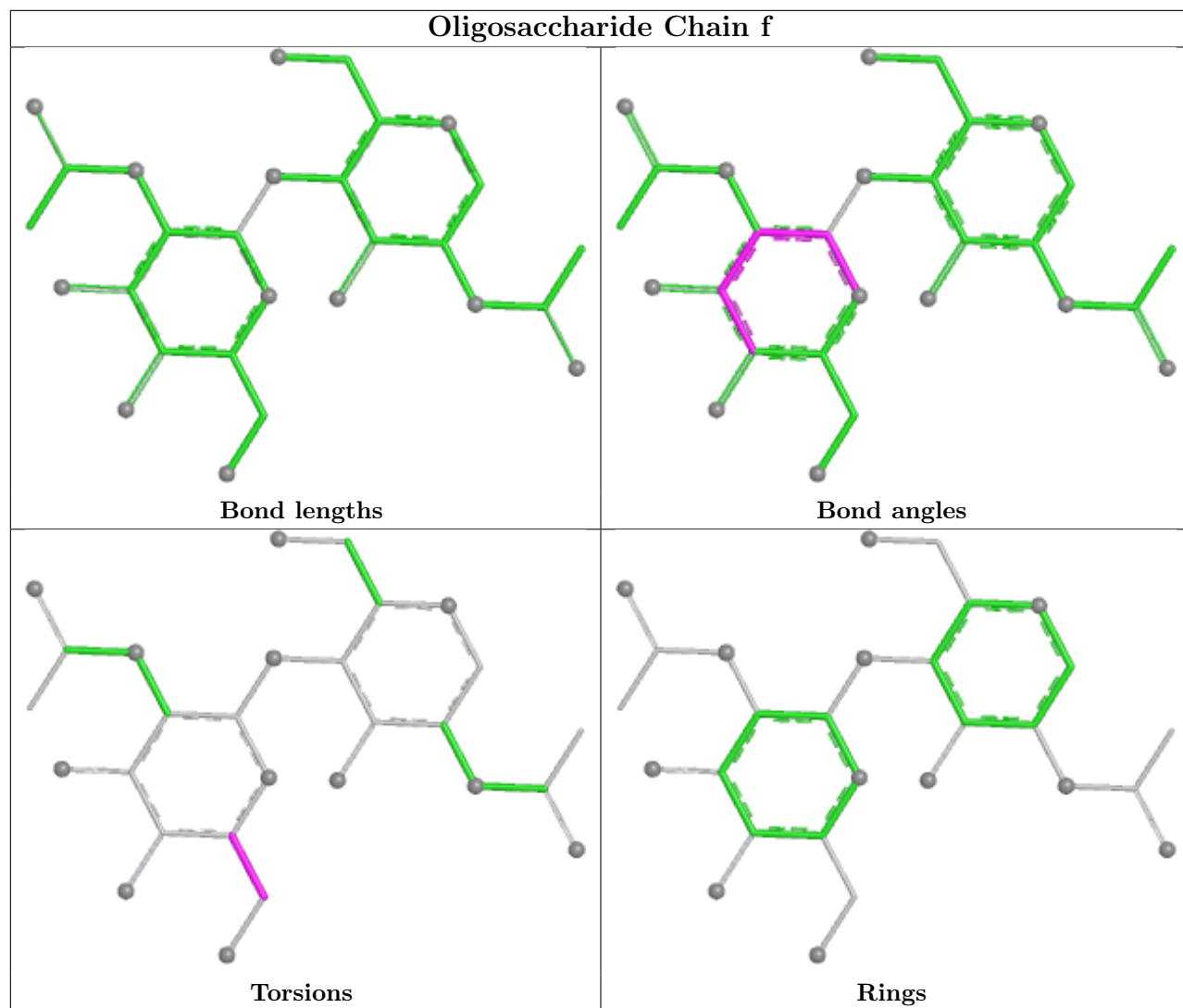


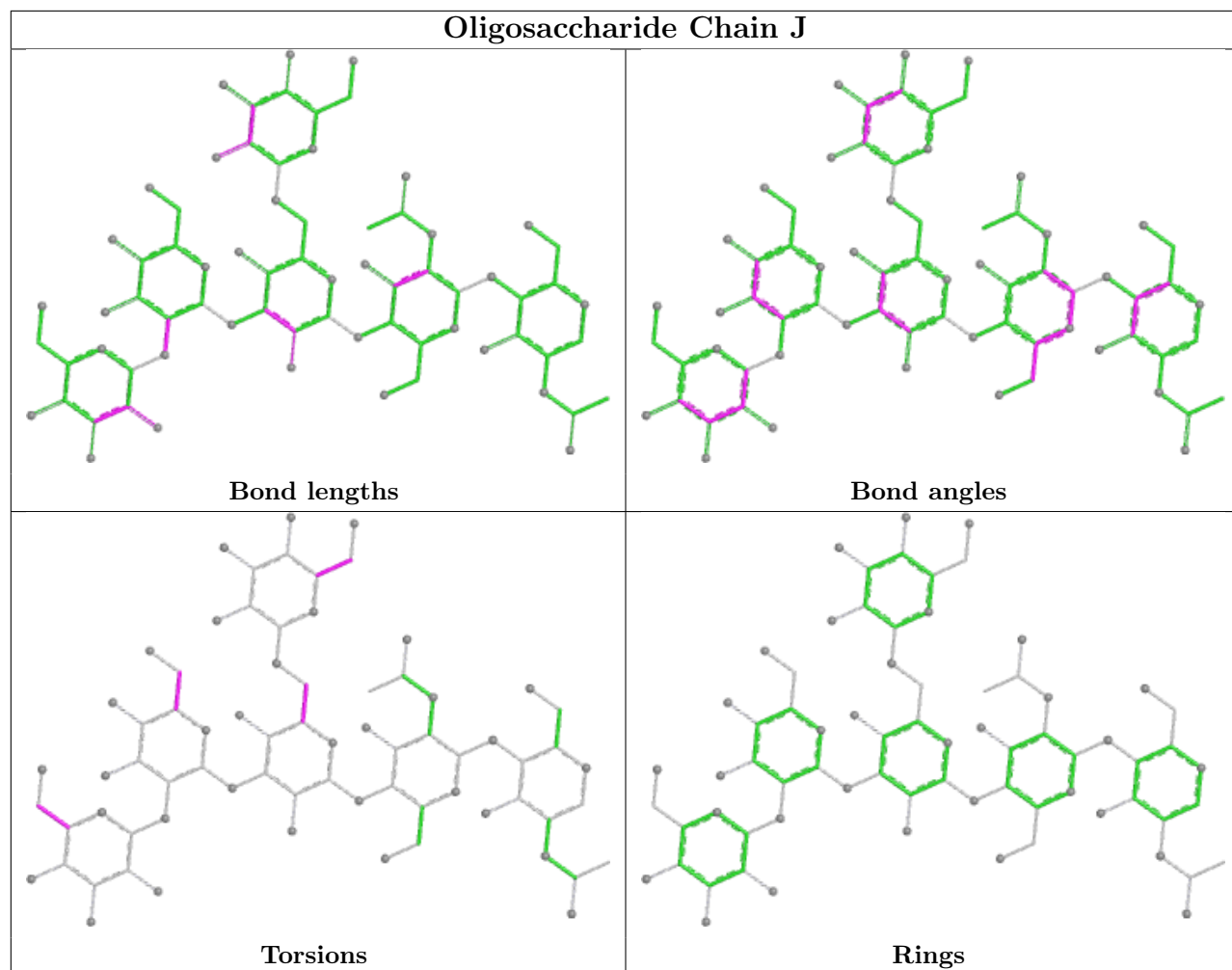


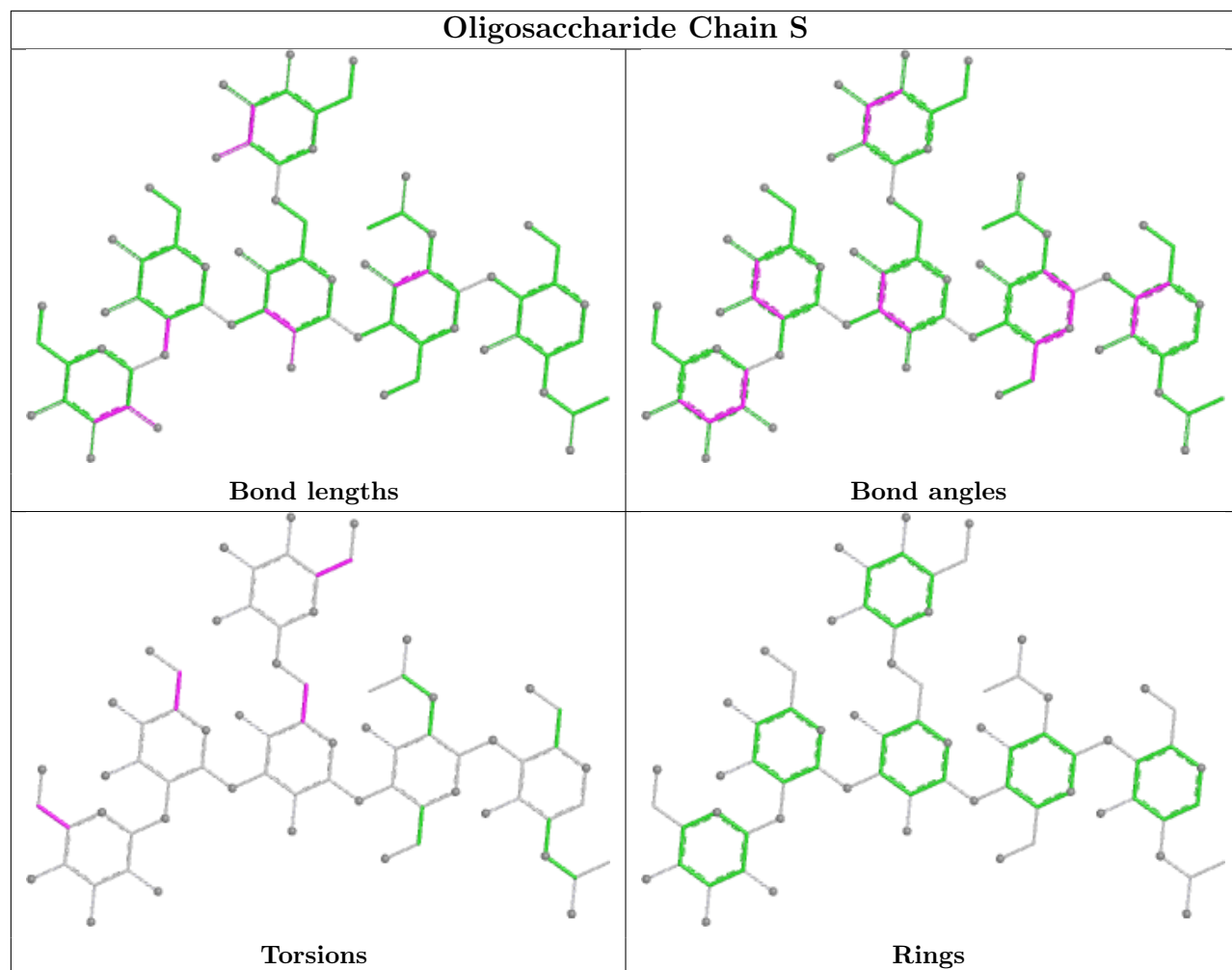


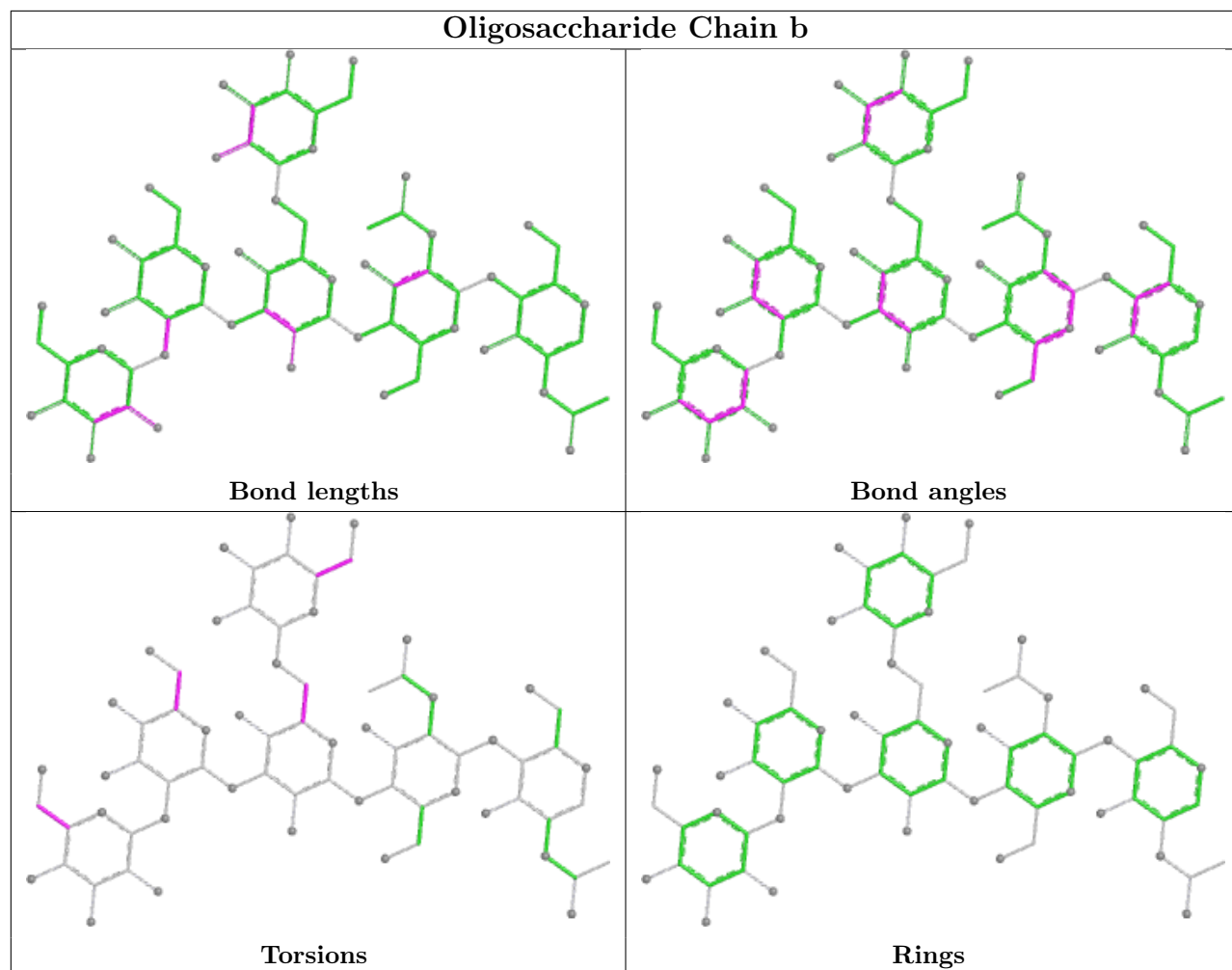


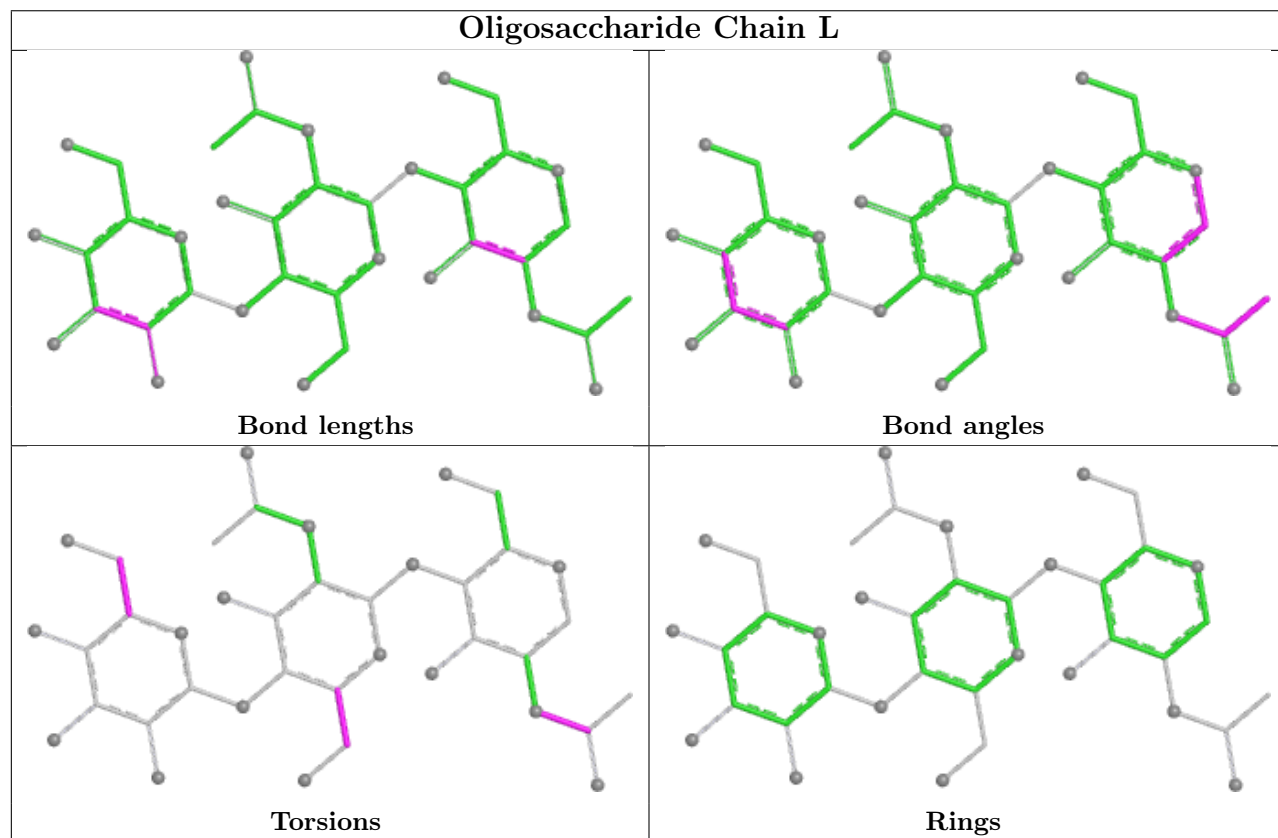
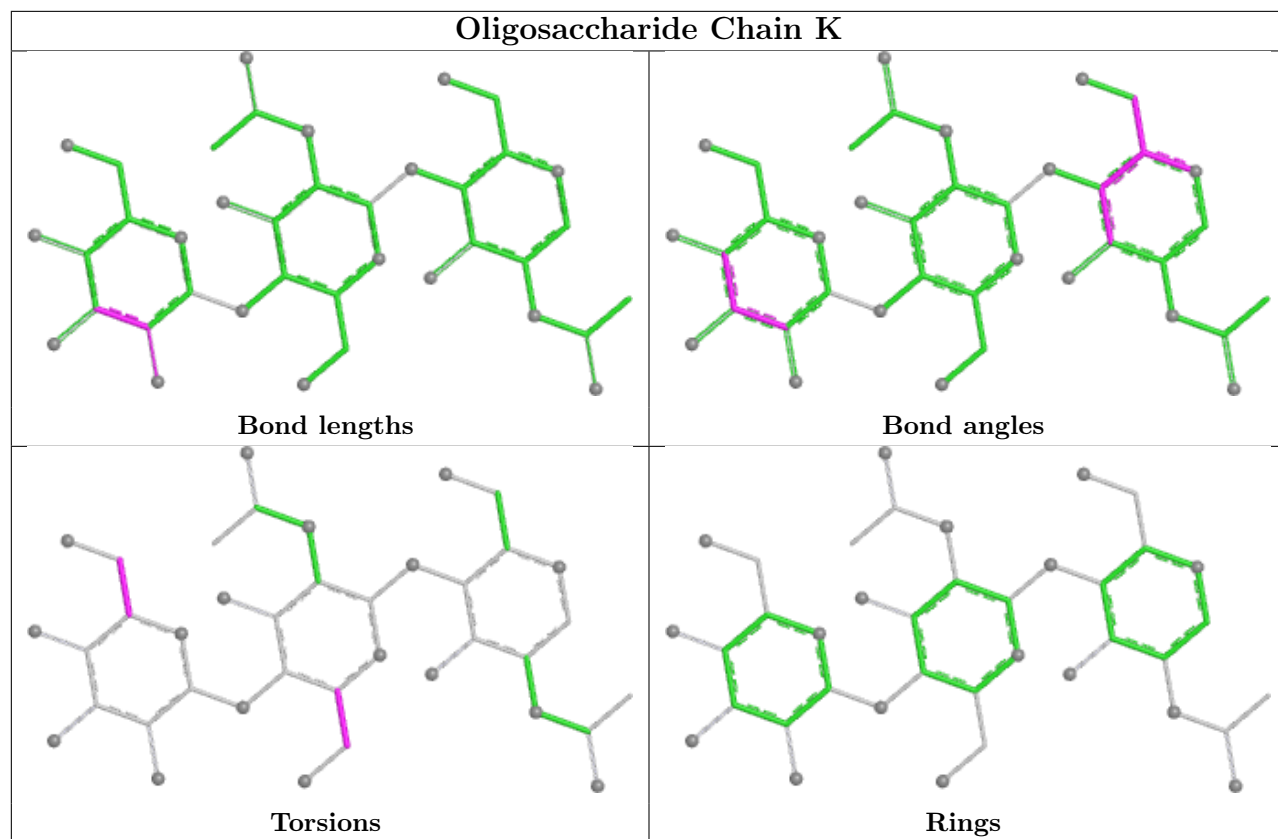


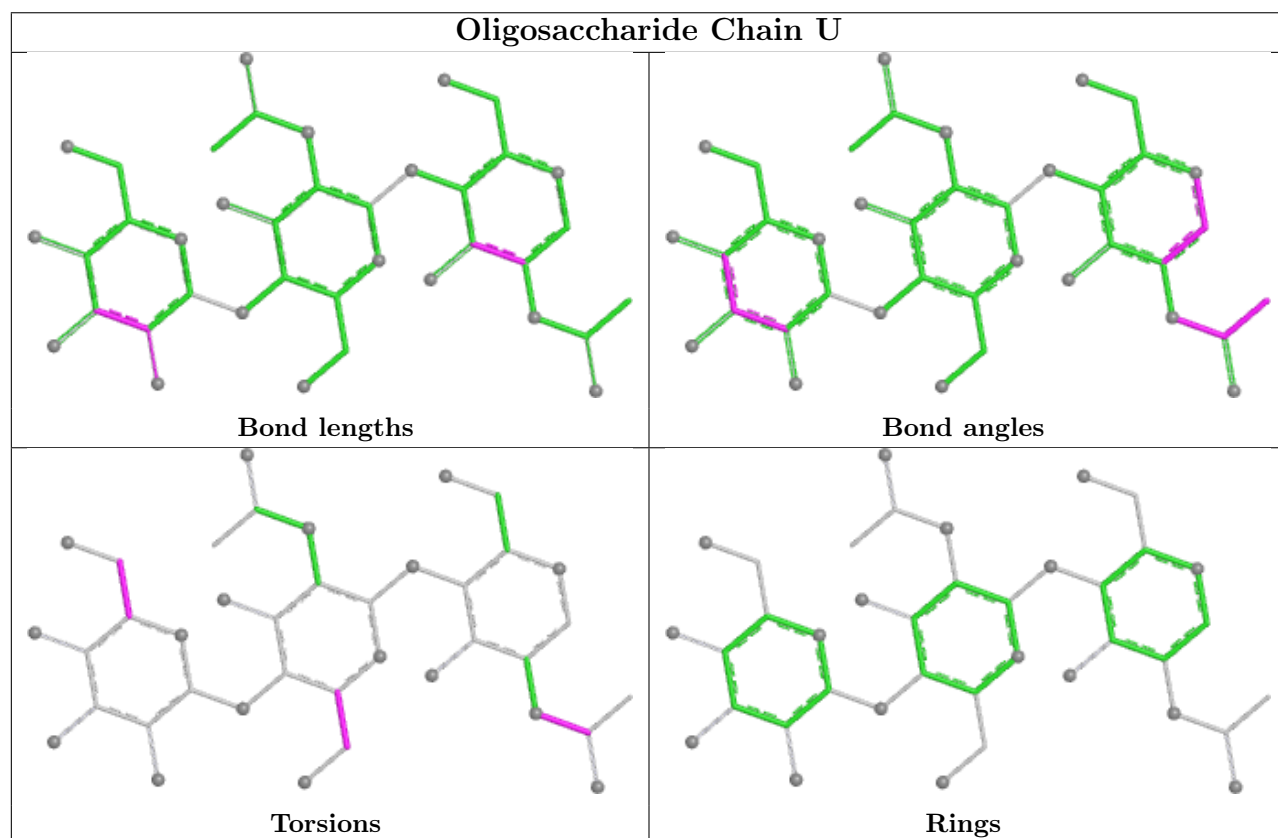
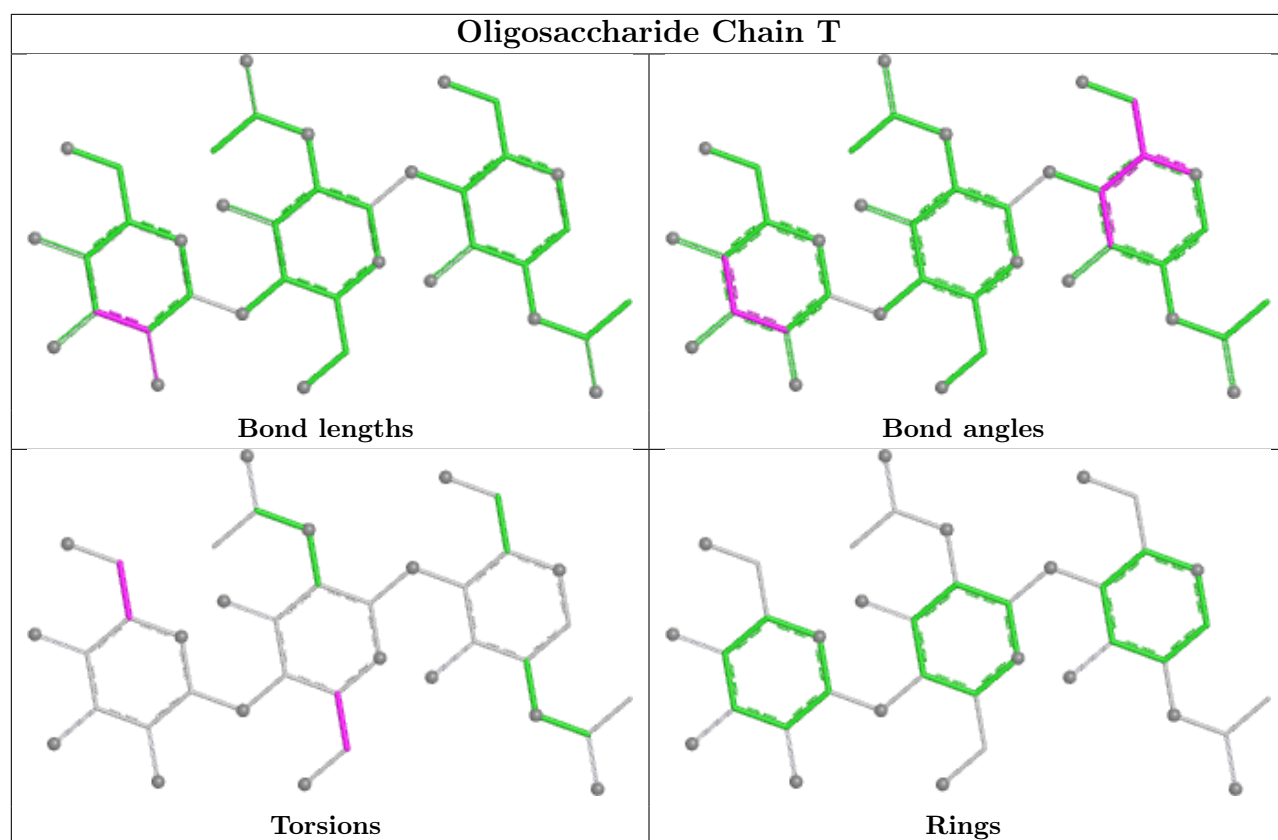


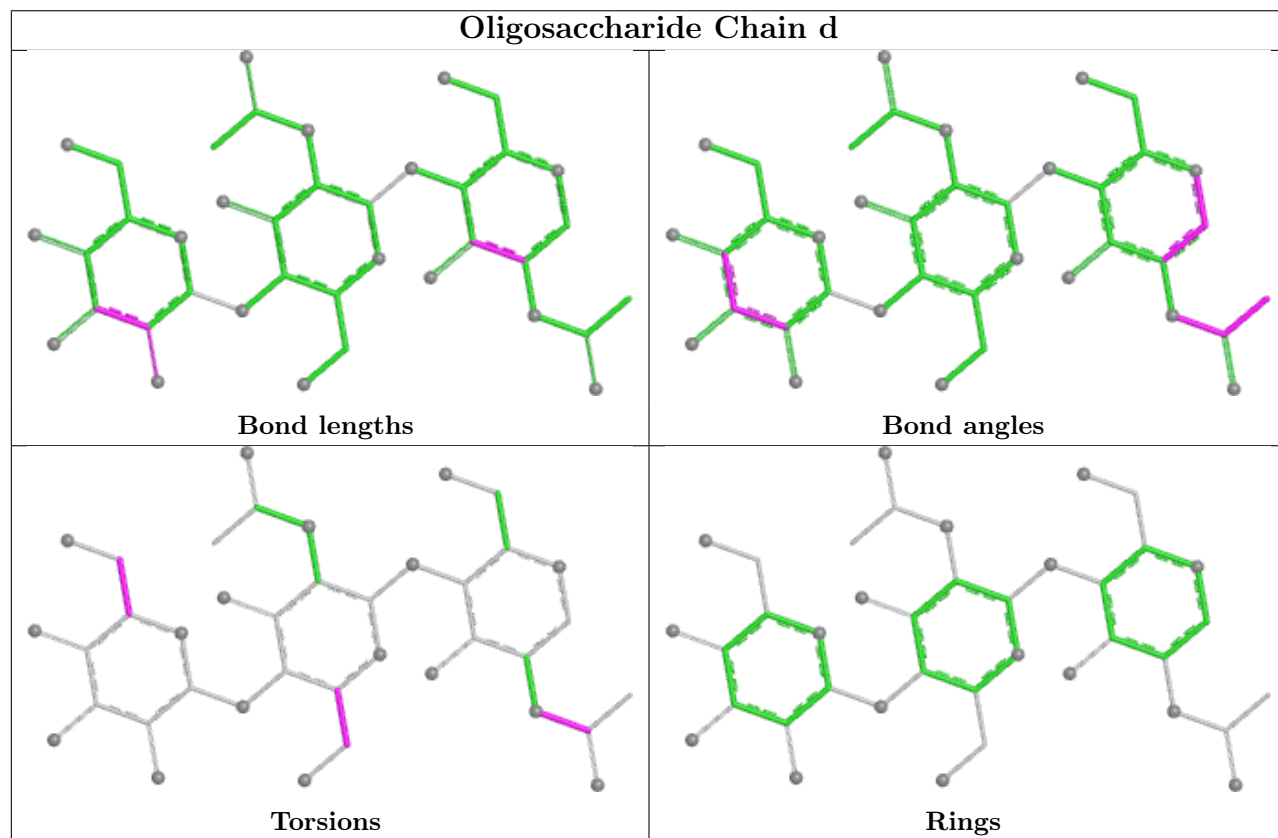
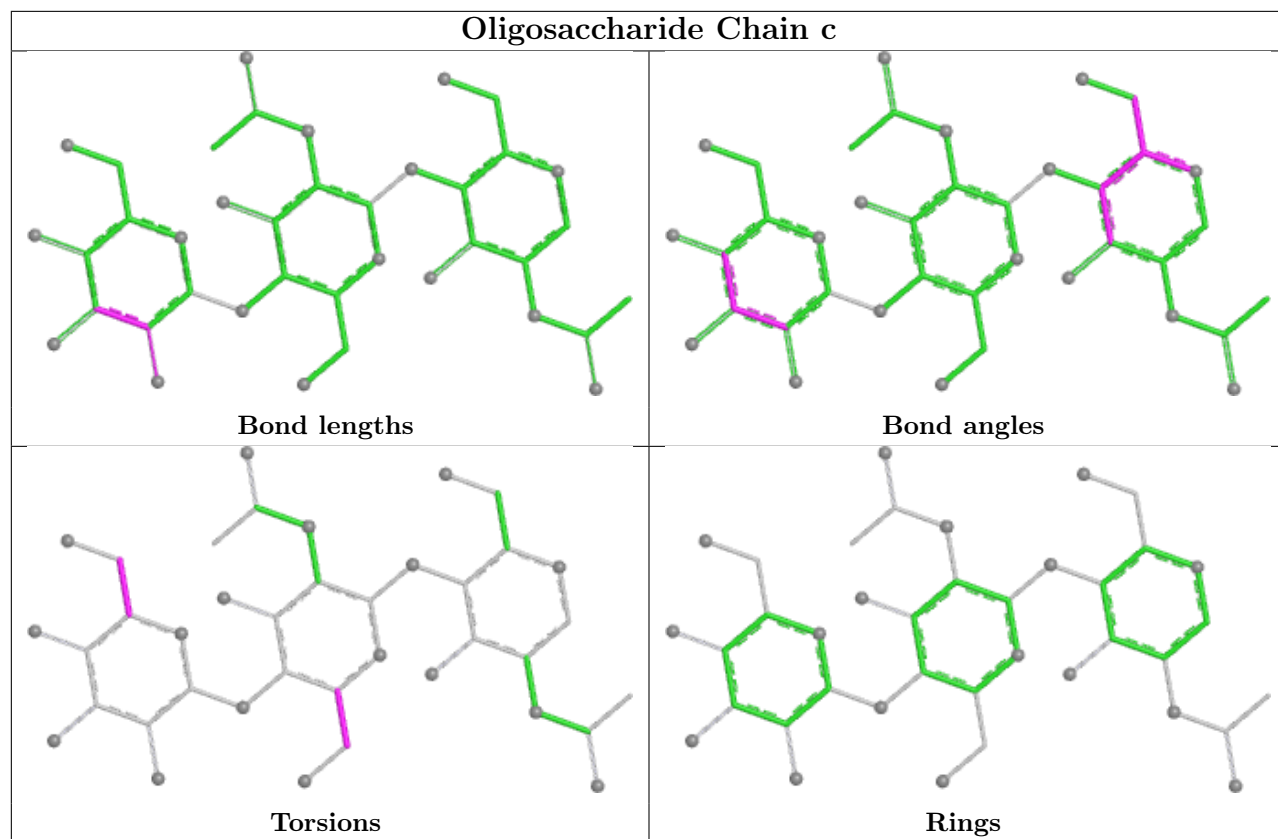


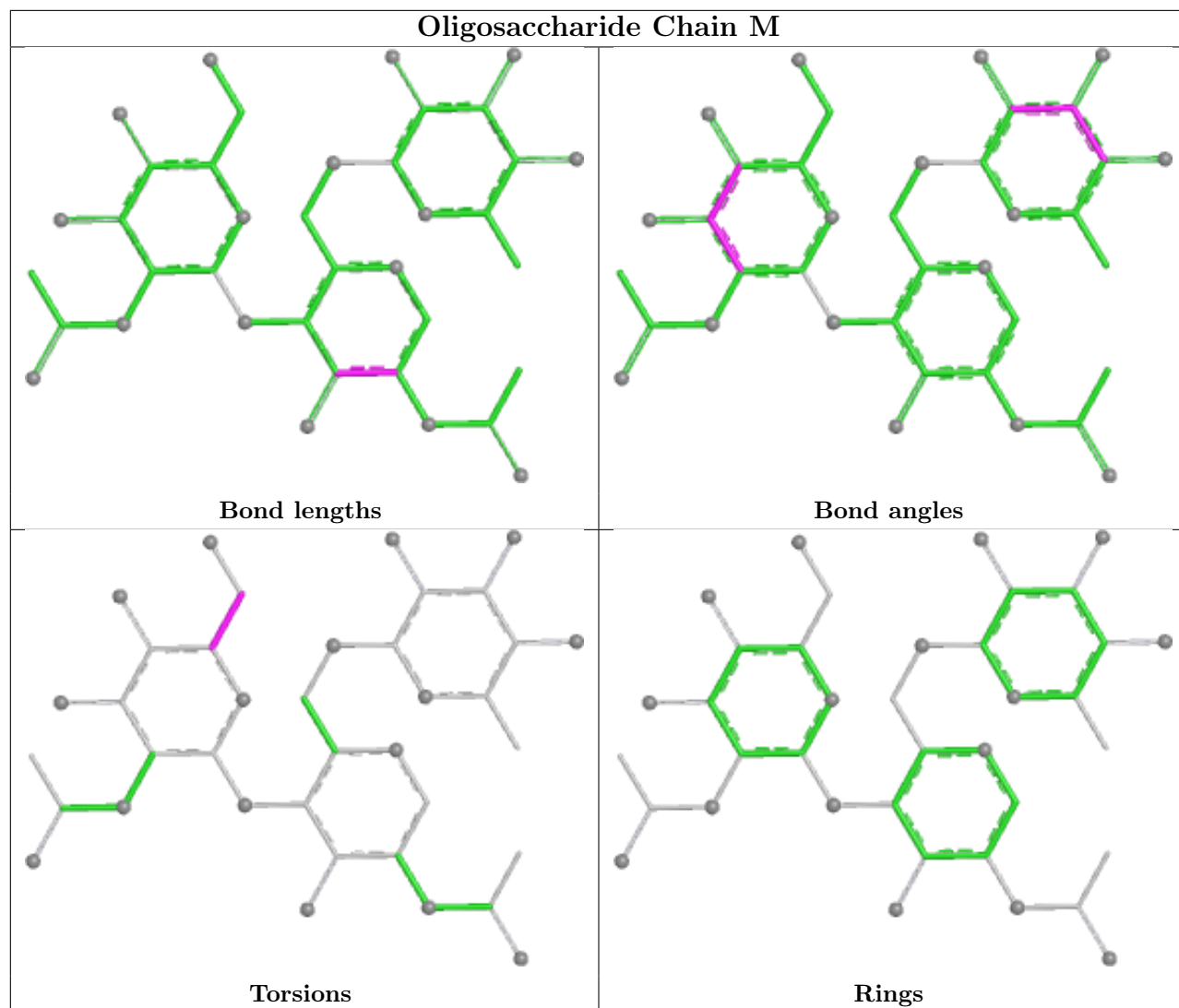


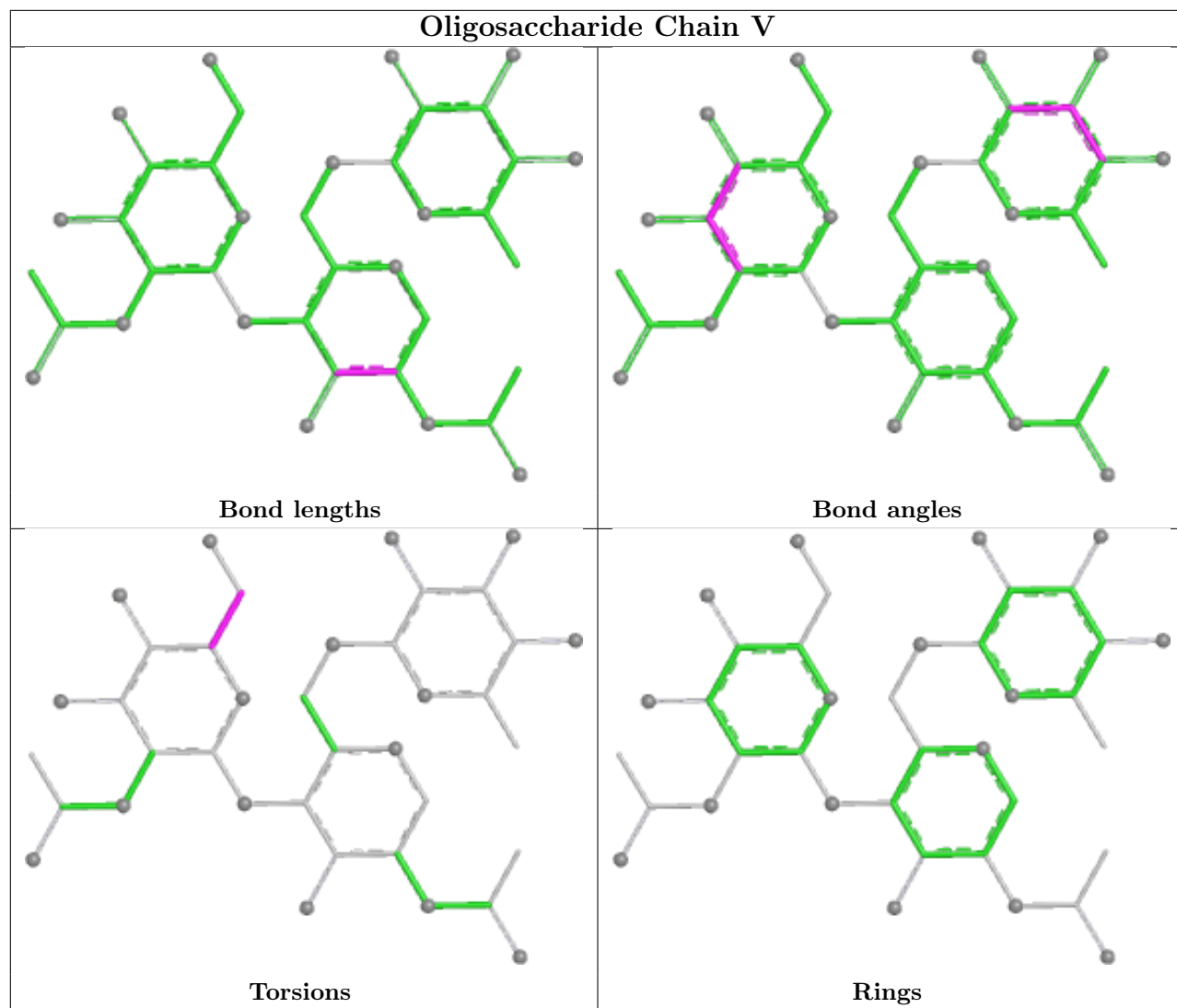


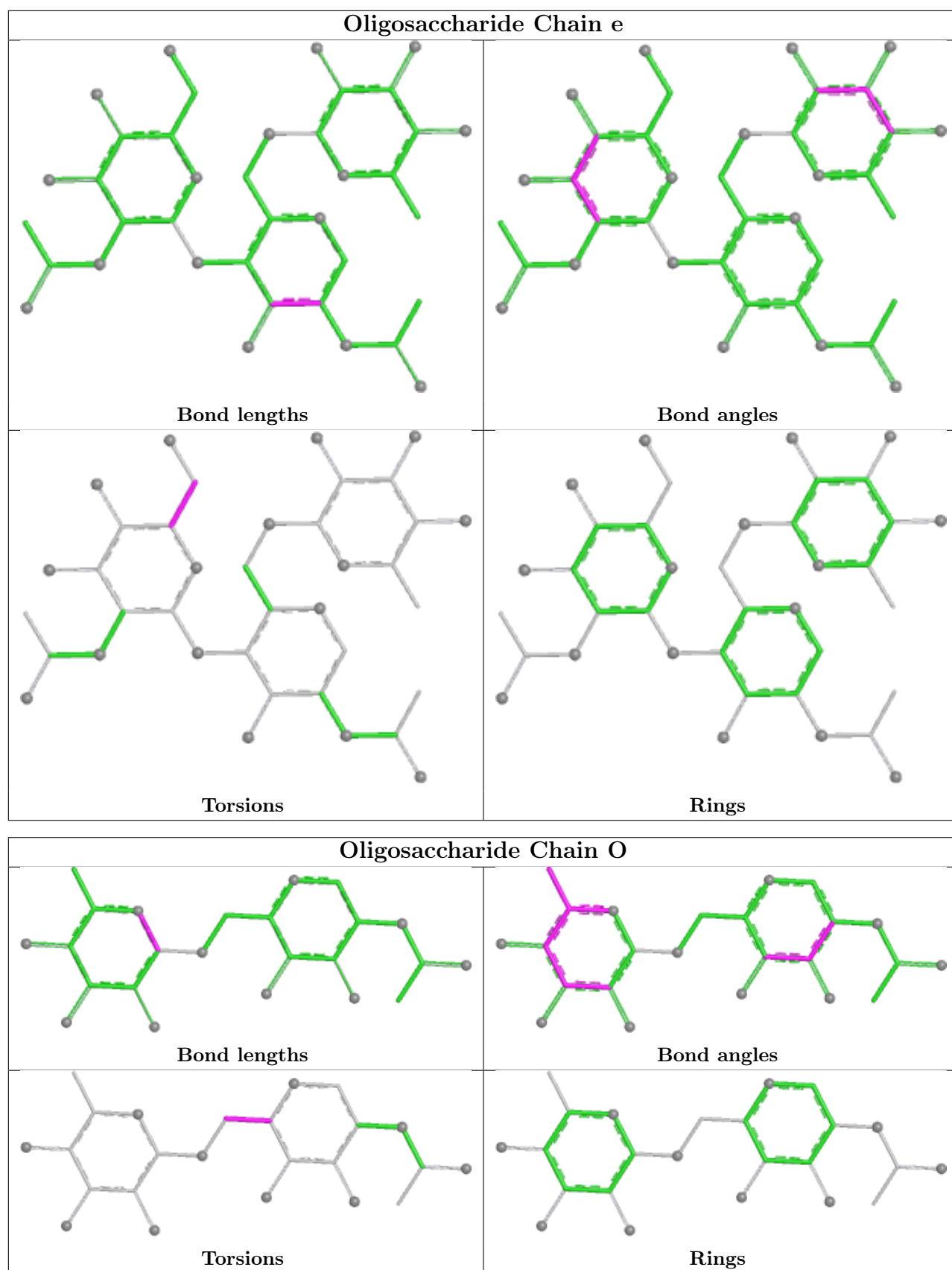


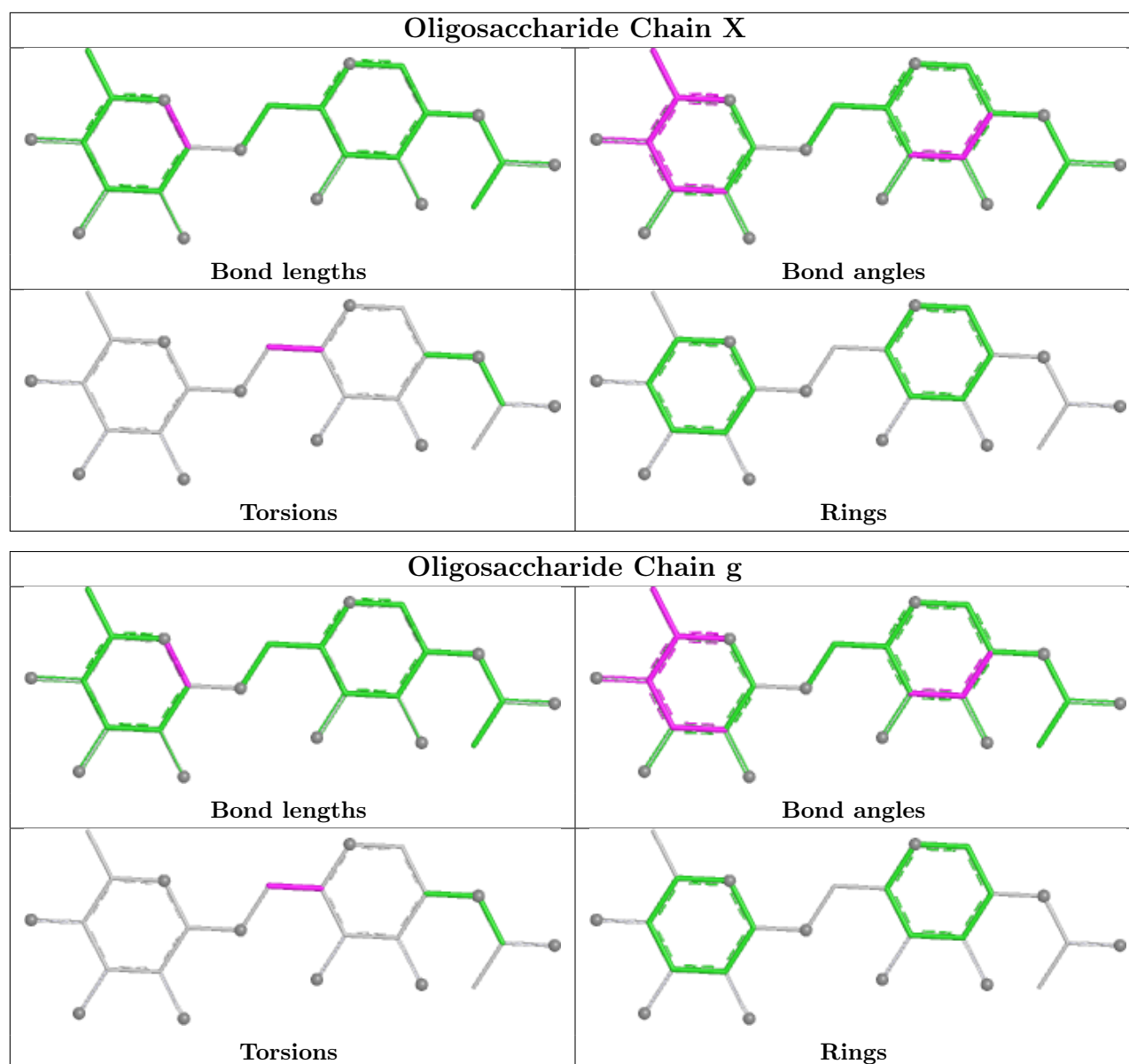












5.6 Ligand geometry [i](#)

33 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
8	NAG	C	618	1	14,14,15	0.90	1 (7%)	17,19,21	1.04	2 (11%)
8	NAG	E	704	2	14,14,15	0.92	0	17,19,21	0.96	1 (5%)
8	NAG	B	704	2	14,14,15	0.92	0	17,19,21	0.97	1 (5%)
8	NAG	A	603	1	14,14,15	0.73	0	17,19,21	0.96	1 (5%)
8	NAG	E	703	2	14,14,15	0.87	0	17,19,21	0.82	1 (5%)
8	NAG	D	618	1	14,14,15	0.90	1 (7%)	17,19,21	1.04	2 (11%)
8	NAG	C	632	1	14,14,15	0.81	0	17,19,21	1.08	1 (5%)
8	NAG	A	632	1	14,14,15	0.82	0	17,19,21	1.08	1 (5%)
8	NAG	C	606	1	14,14,15	0.78	0	17,19,21	0.91	1 (5%)
8	NAG	A	610	1	14,14,15	0.83	0	17,19,21	0.99	1 (5%)
8	NAG	C	611	1	14,14,15	0.88	1 (7%)	17,19,21	1.21	2 (11%)
8	NAG	C	603	1	14,14,15	0.72	0	17,19,21	0.96	1 (5%)
8	NAG	C	622	1	14,14,15	0.84	0	17,19,21	0.75	0
8	NAG	A	623	1	14,14,15	0.89	0	17,19,21	0.88	1 (5%)
8	NAG	A	622	1	14,14,15	0.83	0	17,19,21	0.75	0
8	NAG	C	623	1	14,14,15	0.89	0	17,19,21	0.88	1 (5%)
8	NAG	A	609	1	14,14,15	0.86	0	17,19,21	1.26	1 (5%)
8	NAG	C	610	1	14,14,15	0.83	0	17,19,21	0.99	1 (5%)
8	NAG	D	606	1	14,14,15	0.78	0	17,19,21	0.90	1 (5%)
8	NAG	D	610	1	14,14,15	0.83	0	17,19,21	0.99	1 (5%)
8	NAG	D	622	1	14,14,15	0.83	0	17,19,21	0.75	0
8	NAG	D	603	1	14,14,15	0.73	0	17,19,21	0.96	1 (5%)
8	NAG	A	606	1	14,14,15	0.78	0	17,19,21	0.91	1 (5%)
8	NAG	D	623	1	14,14,15	0.90	0	17,19,21	0.88	2 (11%)
8	NAG	F	703	2	14,14,15	0.86	0	17,19,21	0.83	1 (5%)
8	NAG	D	611	1	14,14,15	0.89	1 (7%)	17,19,21	1.21	2 (11%)
8	NAG	B	703	2	14,14,15	0.87	0	17,19,21	0.82	1 (5%)
8	NAG	F	704	2	14,14,15	0.92	0	17,19,21	0.97	1 (5%)
8	NAG	C	609	1	14,14,15	0.87	0	17,19,21	1.26	1 (5%)
8	NAG	A	611	1	14,14,15	0.88	1 (7%)	17,19,21	1.21	2 (11%)
8	NAG	D	632	1	14,14,15	0.82	0	17,19,21	1.08	1 (5%)
8	NAG	D	609	1	14,14,15	0.86	0	17,19,21	1.26	1 (5%)
8	NAG	A	618	1	14,14,15	0.90	1 (7%)	17,19,21	1.04	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
8	NAG	C	618	1	-	1/6/23/26	0/1/1/1
8	NAG	E	704	2	-	1/6/23/26	0/1/1/1
8	NAG	B	704	2	-	1/6/23/26	0/1/1/1
8	NAG	A	603	1	-	1/6/23/26	0/1/1/1
8	NAG	E	703	2	-	1/6/23/26	0/1/1/1
8	NAG	D	618	1	-	1/6/23/26	0/1/1/1
8	NAG	C	632	1	-	2/6/23/26	0/1/1/1
8	NAG	A	632	1	-	2/6/23/26	0/1/1/1
8	NAG	C	606	1	-	2/6/23/26	0/1/1/1
8	NAG	A	610	1	-	1/6/23/26	0/1/1/1
8	NAG	C	611	1	-	2/6/23/26	0/1/1/1
8	NAG	C	603	1	-	1/6/23/26	0/1/1/1
8	NAG	C	622	1	-	2/6/23/26	0/1/1/1
8	NAG	A	623	1	-	2/6/23/26	0/1/1/1
8	NAG	A	622	1	-	2/6/23/26	0/1/1/1
8	NAG	C	623	1	-	2/6/23/26	0/1/1/1
8	NAG	A	609	1	-	1/6/23/26	0/1/1/1
8	NAG	C	610	1	-	1/6/23/26	0/1/1/1
8	NAG	D	606	1	-	2/6/23/26	0/1/1/1
8	NAG	D	610	1	-	1/6/23/26	0/1/1/1
8	NAG	D	622	1	-	2/6/23/26	0/1/1/1
8	NAG	D	603	1	-	1/6/23/26	0/1/1/1
8	NAG	A	606	1	-	2/6/23/26	0/1/1/1
8	NAG	D	623	1	-	2/6/23/26	0/1/1/1
8	NAG	F	703	2	-	1/6/23/26	0/1/1/1
8	NAG	D	611	1	-	2/6/23/26	0/1/1/1
8	NAG	B	703	2	-	1/6/23/26	0/1/1/1
8	NAG	F	704	2	-	1/6/23/26	0/1/1/1
8	NAG	C	609	1	-	1/6/23/26	0/1/1/1
8	NAG	A	611	1	-	2/6/23/26	0/1/1/1
8	NAG	D	632	1	-	2/6/23/26	0/1/1/1
8	NAG	D	609	1	-	1/6/23/26	0/1/1/1
8	NAG	A	618	1	-	1/6/23/26	0/1/1/1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	D	618	NAG	C3-C2	-2.06	1.48	1.52
8	D	611	NAG	C3-C2	-2.05	1.48	1.52
8	A	611	NAG	C3-C2	-2.04	1.48	1.52
8	C	618	NAG	C3-C2	-2.04	1.48	1.52
8	C	611	NAG	C3-C2	-2.04	1.48	1.52
8	A	618	NAG	C3-C2	-2.03	1.48	1.52

All (37) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	A	609	NAG	C4-C3-C2	-4.04	105.10	111.02
8	D	609	NAG	C4-C3-C2	-4.04	105.10	111.02
8	C	609	NAG	C4-C3-C2	-4.03	105.11	111.02
8	C	632	NAG	C4-C3-C2	-3.35	106.11	111.02
8	A	632	NAG	C4-C3-C2	-3.35	106.11	111.02
8	D	632	NAG	C4-C3-C2	-3.34	106.12	111.02
8	A	611	NAG	C4-C3-C2	-3.21	106.31	111.02
8	D	611	NAG	C4-C3-C2	-3.20	106.32	111.02
8	C	611	NAG	C4-C3-C2	-3.20	106.33	111.02
8	B	704	NAG	C4-C3-C2	-2.83	106.87	111.02
8	F	704	NAG	C4-C3-C2	-2.83	106.87	111.02
8	E	704	NAG	C4-C3-C2	-2.83	106.88	111.02
8	C	618	NAG	C4-C3-C2	-2.79	106.94	111.02
8	D	618	NAG	C4-C3-C2	-2.78	106.94	111.02
8	A	618	NAG	C4-C3-C2	-2.78	106.95	111.02
8	A	610	NAG	C4-C3-C2	-2.75	106.99	111.02
8	D	610	NAG	C4-C3-C2	-2.75	106.99	111.02
8	C	610	NAG	C4-C3-C2	-2.74	107.00	111.02
8	D	611	NAG	O5-C1-C2	-2.51	107.41	111.29
8	C	606	NAG	C4-C3-C2	-2.50	107.35	111.02
8	A	606	NAG	C4-C3-C2	-2.49	107.36	111.02
8	C	611	NAG	O5-C1-C2	-2.49	107.44	111.29
8	D	606	NAG	C4-C3-C2	-2.49	107.37	111.02
8	A	611	NAG	O5-C1-C2	-2.49	107.44	111.29
8	A	603	NAG	C4-C3-C2	-2.43	107.46	111.02
8	D	603	NAG	C4-C3-C2	-2.43	107.46	111.02
8	C	603	NAG	C4-C3-C2	-2.42	107.47	111.02
8	C	618	NAG	O5-C1-C2	-2.34	107.66	111.29
8	D	618	NAG	O5-C1-C2	-2.34	107.67	111.29
8	A	618	NAG	O5-C1-C2	-2.33	107.68	111.29
8	F	703	NAG	C4-C3-C2	-2.14	107.89	111.02
8	B	703	NAG	C4-C3-C2	-2.11	107.93	111.02
8	E	703	NAG	C4-C3-C2	-2.11	107.93	111.02

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	A	623	NAG	C4-C3-C2	-2.05	108.01	111.02
8	C	623	NAG	C4-C3-C2	-2.04	108.03	111.02
8	D	623	NAG	C4-C3-C2	-2.04	108.03	111.02
8	D	623	NAG	O5-C1-C2	-2.01	108.18	111.29

There are no chirality outliers.

All (48) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	A	632	NAG	O5-C5-C6-O6
8	C	632	NAG	O5-C5-C6-O6
8	D	632	NAG	O5-C5-C6-O6
8	A	611	NAG	O5-C5-C6-O6
8	A	623	NAG	O5-C5-C6-O6
8	C	611	NAG	O5-C5-C6-O6
8	C	623	NAG	O5-C5-C6-O6
8	D	611	NAG	O5-C5-C6-O6
8	D	623	NAG	O5-C5-C6-O6
8	A	622	NAG	O5-C5-C6-O6
8	C	622	NAG	O5-C5-C6-O6
8	D	622	NAG	O5-C5-C6-O6
8	A	606	NAG	O5-C5-C6-O6
8	C	606	NAG	O5-C5-C6-O6
8	D	606	NAG	O5-C5-C6-O6
8	A	609	NAG	O5-C5-C6-O6
8	C	609	NAG	O5-C5-C6-O6
8	D	609	NAG	O5-C5-C6-O6
8	B	704	NAG	O5-C5-C6-O6
8	E	704	NAG	O5-C5-C6-O6
8	F	704	NAG	O5-C5-C6-O6
8	A	610	NAG	O5-C5-C6-O6
8	C	610	NAG	O5-C5-C6-O6
8	D	610	NAG	O5-C5-C6-O6
8	A	618	NAG	O5-C5-C6-O6
8	C	618	NAG	O5-C5-C6-O6
8	D	618	NAG	O5-C5-C6-O6
8	E	703	NAG	O5-C5-C6-O6
8	B	703	NAG	O5-C5-C6-O6
8	F	703	NAG	O5-C5-C6-O6
8	A	632	NAG	C4-C5-C6-O6
8	C	632	NAG	C4-C5-C6-O6
8	D	632	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
8	A	603	NAG	O5-C5-C6-O6
8	C	603	NAG	O5-C5-C6-O6
8	D	603	NAG	O5-C5-C6-O6
8	C	611	NAG	C4-C5-C6-O6
8	A	611	NAG	C4-C5-C6-O6
8	D	611	NAG	C4-C5-C6-O6
8	A	623	NAG	C4-C5-C6-O6
8	C	623	NAG	C4-C5-C6-O6
8	D	623	NAG	C4-C5-C6-O6
8	C	606	NAG	C4-C5-C6-O6
8	A	606	NAG	C4-C5-C6-O6
8	D	606	NAG	C4-C5-C6-O6
8	D	622	NAG	C4-C5-C6-O6
8	A	622	NAG	C4-C5-C6-O6
8	C	622	NAG	C4-C5-C6-O6

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.

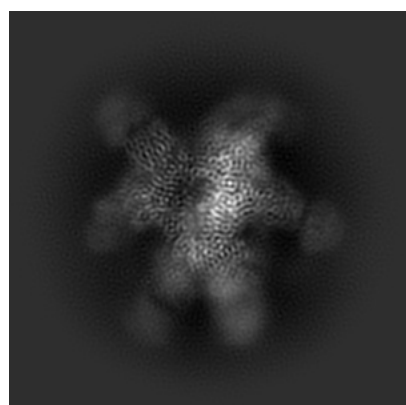
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-20396. These allow visual inspection of the internal detail of the map and identification of artifacts.

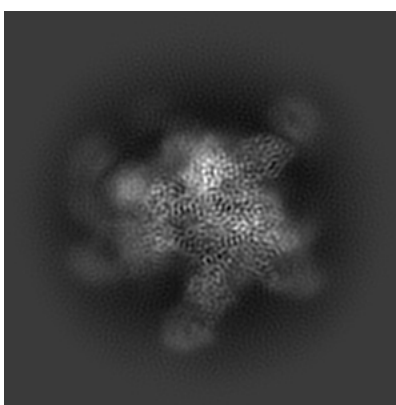
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

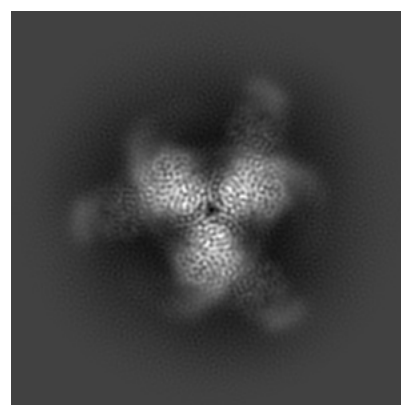
6.1.1 Primary map



X



Y

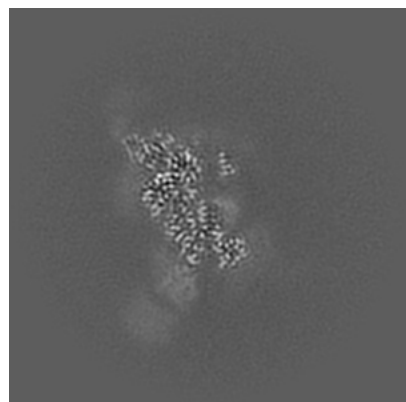


Z

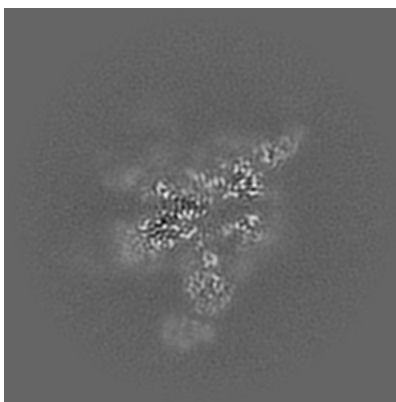
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

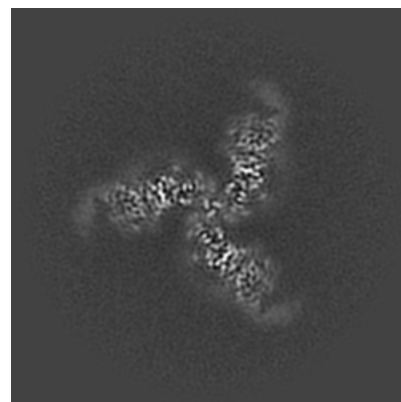
6.2.1 Primary map



X Index: 160



Y Index: 160

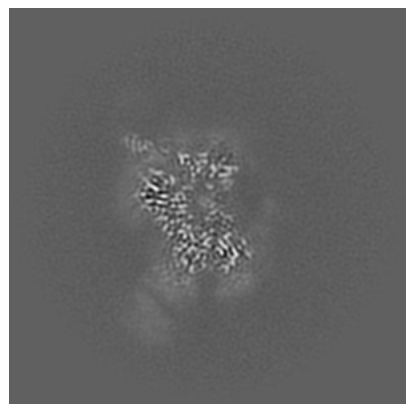


Z Index: 160

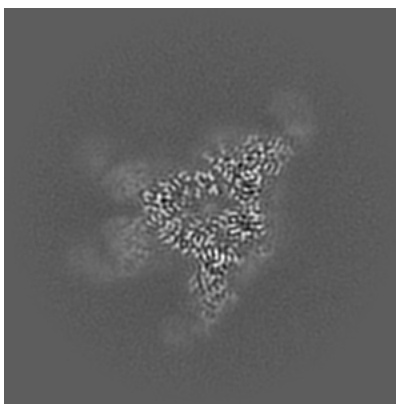
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

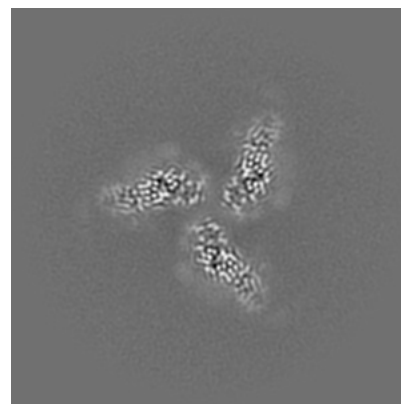
6.3.1 Primary map



X Index: 168



Y Index: 170

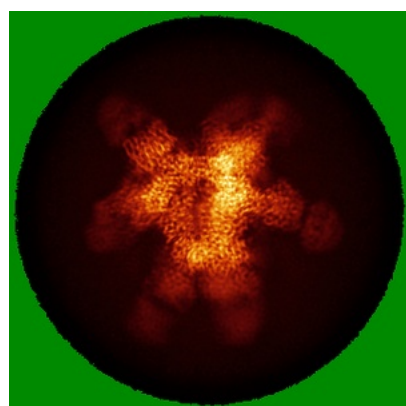


Z Index: 170

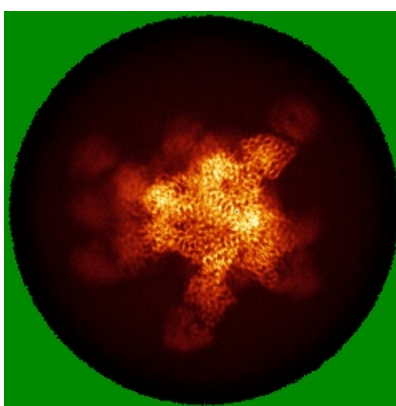
The images above show the largest variance slices of the map in three orthogonal directions.

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

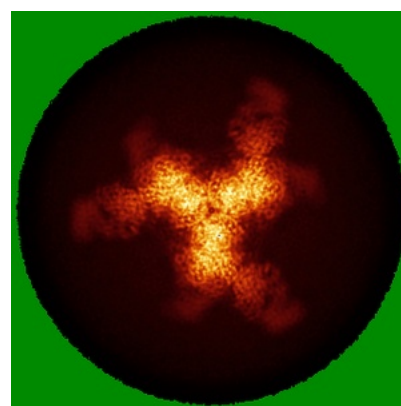
6.4.1 Primary map



X



Y

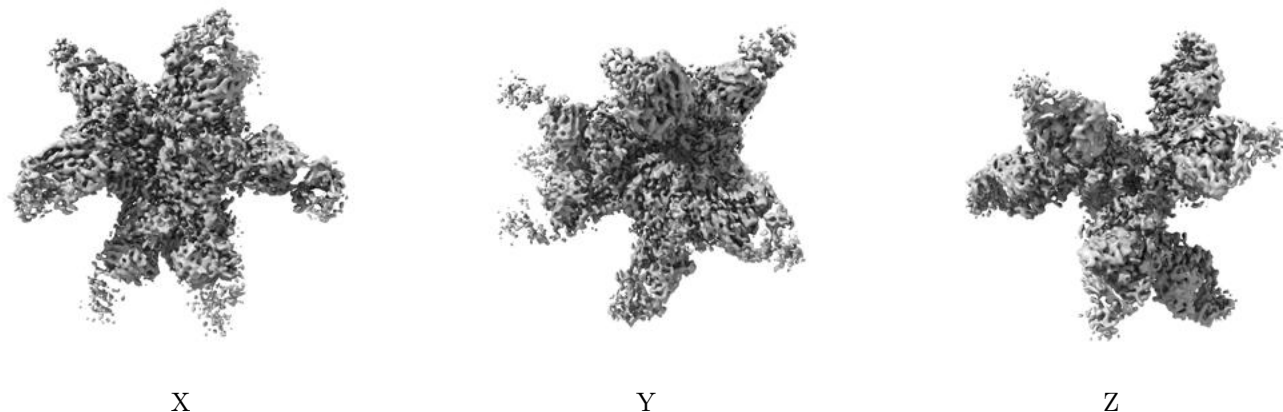


Z

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 0.275. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

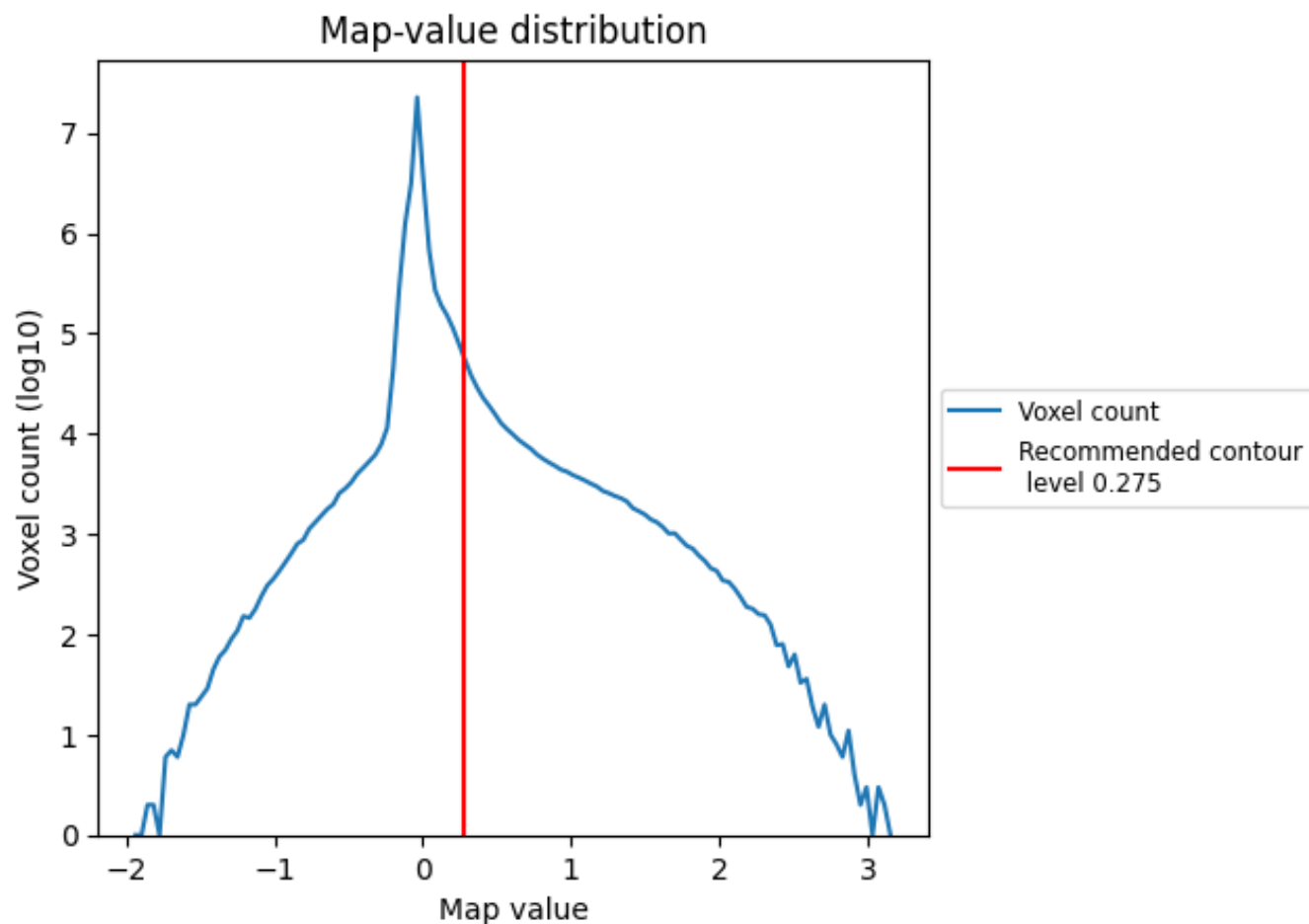
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

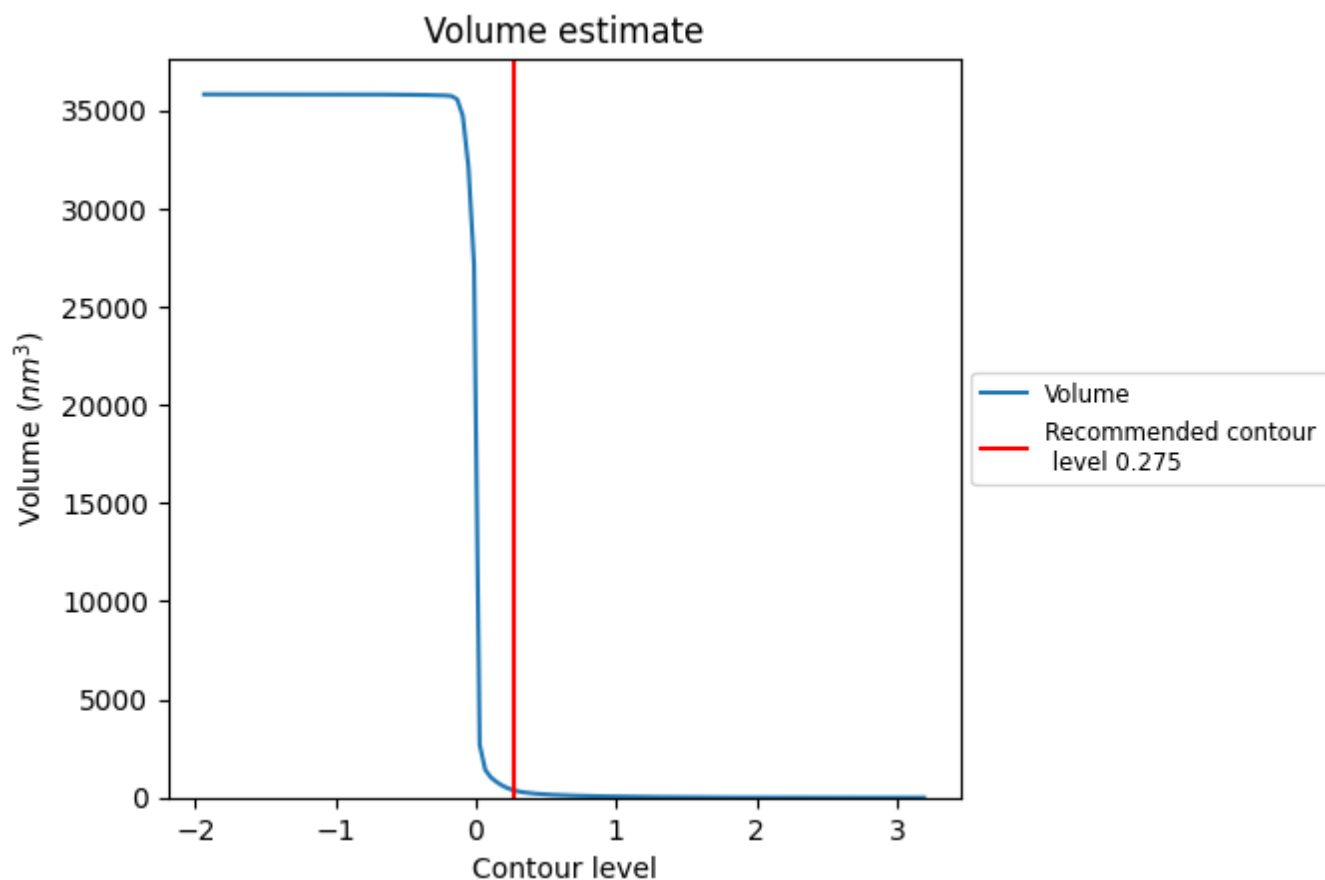
This section contains the results of statistical analysis of the map.

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.

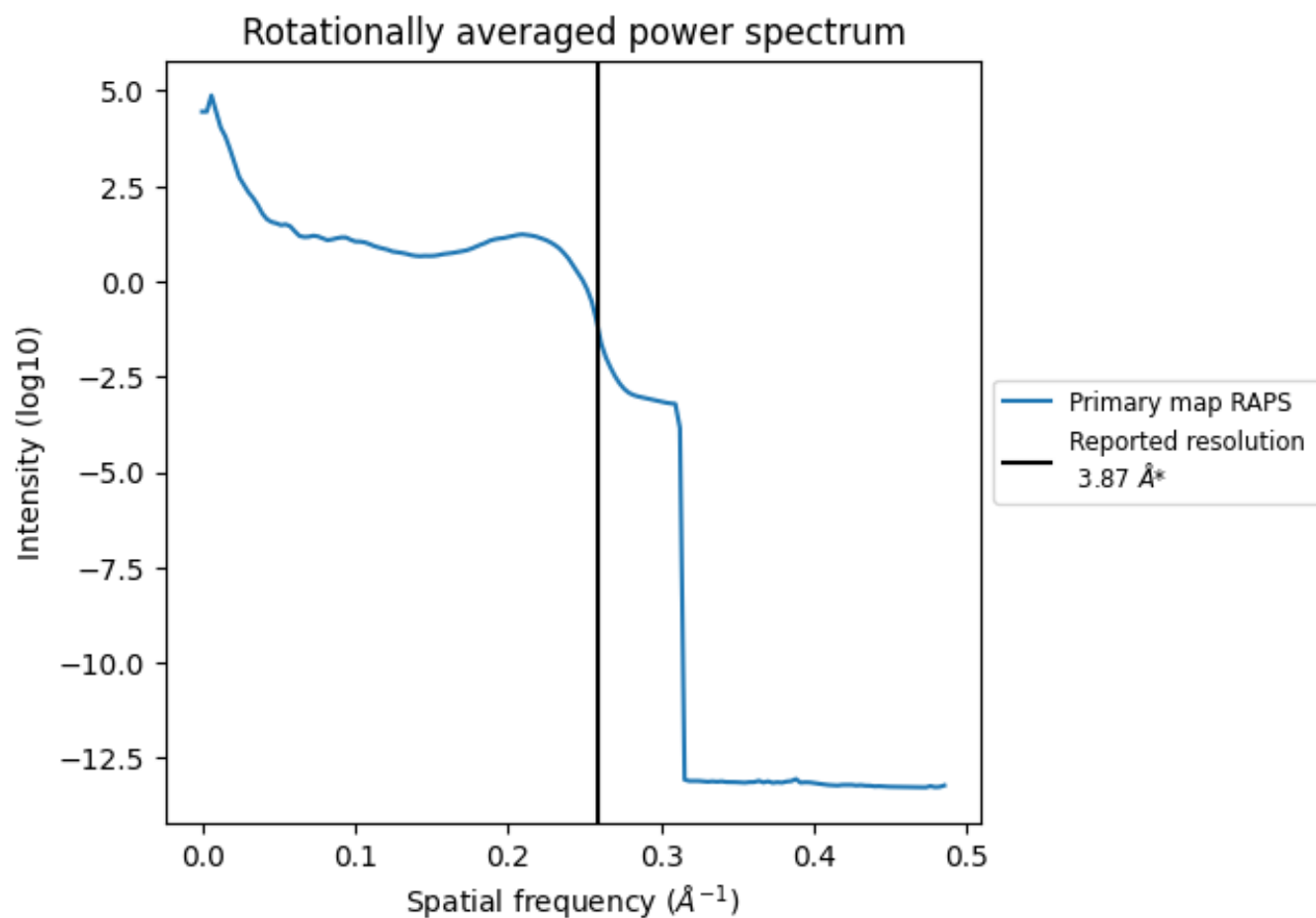
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 363 nm³; this corresponds to an approximate mass of 328 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 0.258 Å⁻¹

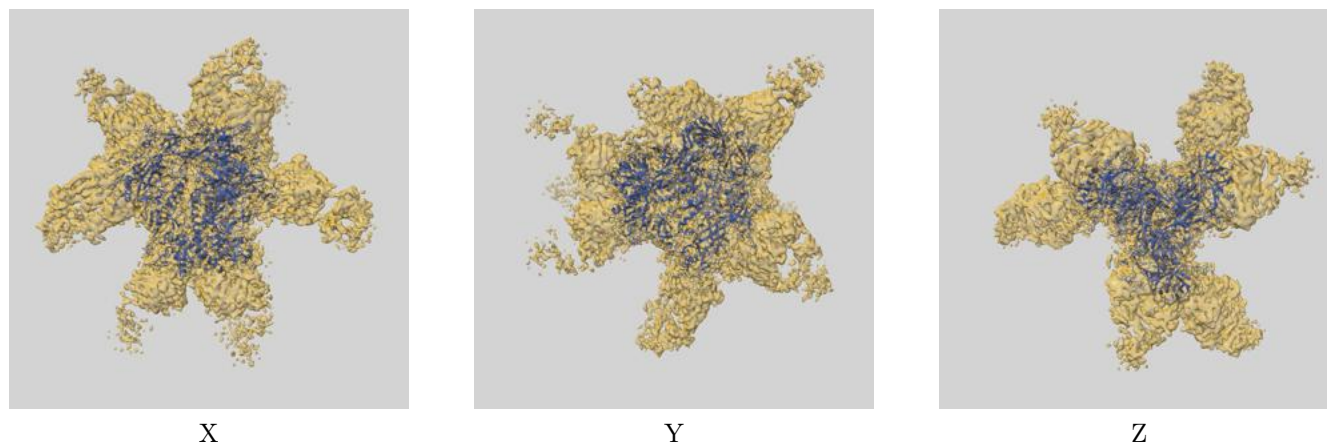
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

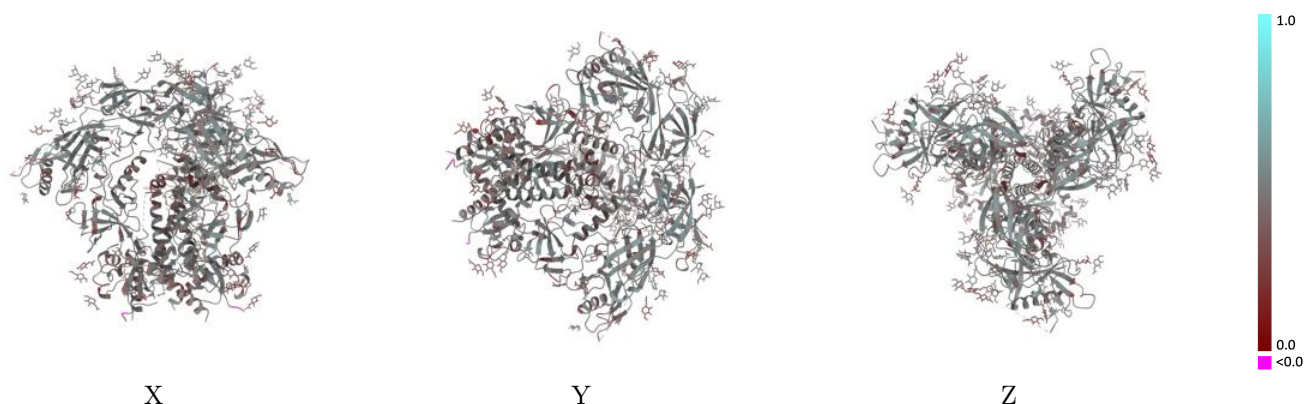
This section contains information regarding the fit between EMDB map EMD-20396 and PDB model 6V0R. Per-residue inclusion information can be found in section [3](#) on page [11](#).

9.1 Map-model overlay [i](#)



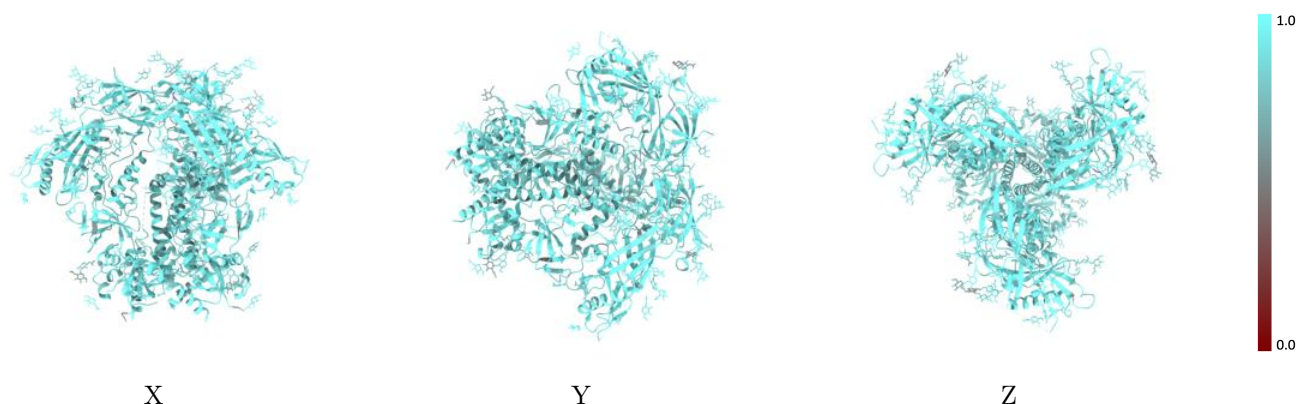
The images above show the 3D surface view of the map at the recommended contour level 0.275 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



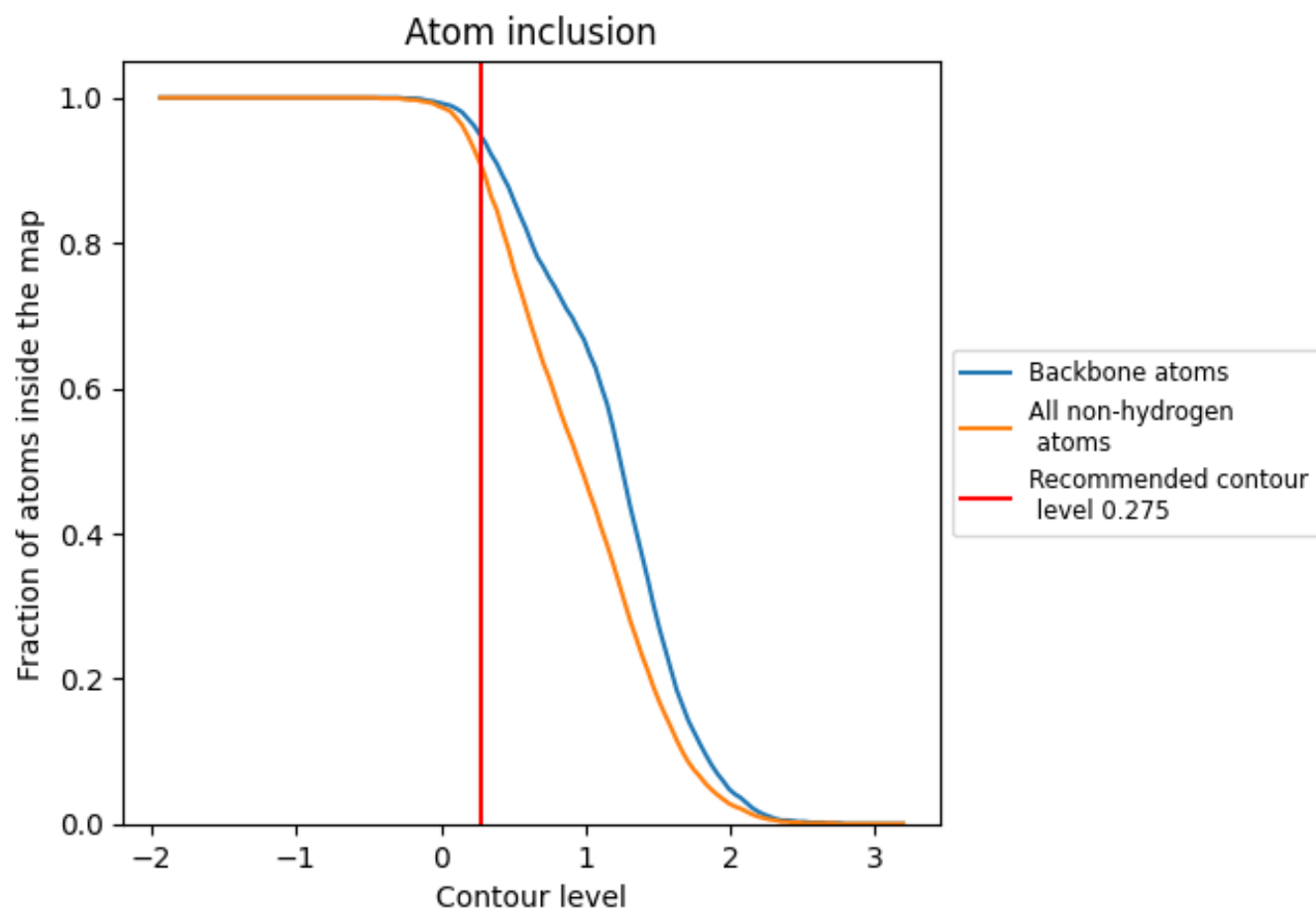
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.275).

9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 91% 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 (0.275) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9080	 0.4500
A	 0.9130	 0.4610
B	 0.8980	 0.4260
C	 0.9150	 0.4600
D	 0.9150	 0.4600
E	 0.8960	 0.4250
F	 0.9020	 0.4230
G	 0.6790	 0.3410
H	 0.8570	 0.3620
I	 1.0000	 0.4780
J	 0.9310	 0.4510
K	 0.8970	 0.4390
L	 0.9490	 0.4620
M	 0.7370	 0.3740
N	 0.9290	 0.4090
O	 0.7920	 0.3270
P	 0.6790	 0.3380
Q	 0.8570	 0.3550
R	 0.9640	 0.4820
S	 0.9310	 0.4410
T	 0.8970	 0.4280
U	 0.9490	 0.4600
V	 0.7630	 0.3760
W	 0.9290	 0.4040
X	 0.7920	 0.3240
Y	 0.6790	 0.3500
Z	 0.8570	 0.3540
a	 1.0000	 0.4660
b	 0.9310	 0.4520
c	 0.8970	 0.4360
d	 0.9490	 0.4560
e	 0.7110	 0.3830
f	 0.8930	 0.3980
g	 0.7920	 0.3240

