



wwPDB X-ray Structure Validation Summary Report ⓘ

Aug 6, 2020 – 07:15 PM BST

PDB ID : 6JBS
Title : Bifunctional xylosidase/glucosidase LXYL
Authors : Gong, W.M.; Yang, L.Y.
Deposited on : 2019-01-26
Resolution : 2.40 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.13.1
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.13.1

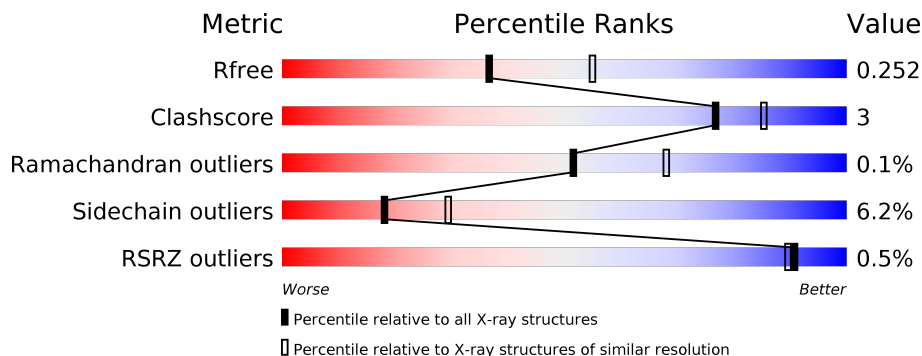
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



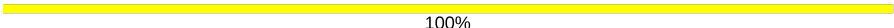
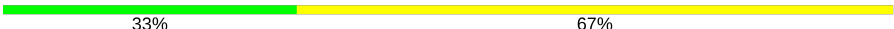
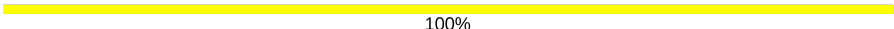
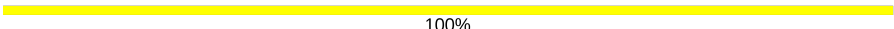
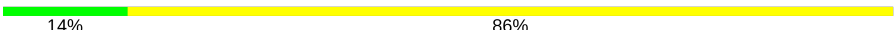
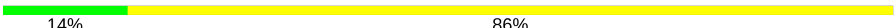


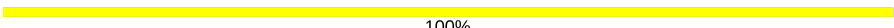
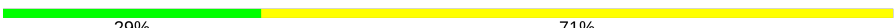
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3907 (2.40-2.40)
Clashscore	141614	4398 (2.40-2.40)
Ramachandran outliers	138981	4318 (2.40-2.40)
Sidechain outliers	138945	4319 (2.40-2.40)
RSRZ outliers	127900	3811 (2.40-2.40)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	809	85% 7% • 6%
1	B	809	84% 8% • 6%
1	C	809	84% 9% • 6%
1	D	809	86% 7% • 6%
2	E	3	100%
2	N	3	100%

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Mol	Chain	Length	Quality of chain
3	F	7	 100%
4	G	6	 33% 67%
5	H	3	 100%
5	K	3	 100%
6	I	7	 14% 86%
6	L	7	 14% 86%
6	O	7	 14% 86%
7	J	2	 50% 50%
8	M	5	 100%
9	P	7	 29% 71%

2 Entry composition i

There are 12 unique types of molecules in this entry. The entry contains 25512 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 Beta-D-xylosidase/beta-D-glucosidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	762	5752	3640	963	1132	17	0	1	0
1	B	761	5744	3635	962	1130	17	0	0	0
1	C	761	5744	3635	962	1130	17	0	0	0
1	D	761	5744	3635	962	1130	17	0	0	0

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	804	HIS	-	expression tag	UNP G8GLP2
A	805	HIS	-	expression tag	UNP G8GLP2
A	806	HIS	-	expression tag	UNP G8GLP2
A	807	HIS	-	expression tag	UNP G8GLP2
A	808	HIS	-	expression tag	UNP G8GLP2
A	809	HIS	-	expression tag	UNP G8GLP2
B	804	HIS	-	expression tag	UNP G8GLP2
B	805	HIS	-	expression tag	UNP G8GLP2
B	806	HIS	-	expression tag	UNP G8GLP2
B	807	HIS	-	expression tag	UNP G8GLP2
B	808	HIS	-	expression tag	UNP G8GLP2
B	809	HIS	-	expression tag	UNP G8GLP2
C	804	HIS	-	expression tag	UNP G8GLP2
C	805	HIS	-	expression tag	UNP G8GLP2
C	806	HIS	-	expression tag	UNP G8GLP2
C	807	HIS	-	expression tag	UNP G8GLP2
C	808	HIS	-	expression tag	UNP G8GLP2
C	809	HIS	-	expression tag	UNP G8GLP2
D	804	HIS	-	expression tag	UNP G8GLP2
D	805	HIS	-	expression tag	UNP G8GLP2
D	806	HIS	-	expression tag	UNP G8GLP2

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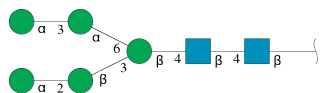
Chain	Residue	Modelled	Actual	Comment	Reference
D	807	HIS	-	expression tag	UNP G8GLP2
D	808	HIS	-	expression tag	UNP G8GLP2
D	809	HIS	-	expression tag	UNP G8GLP2

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



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

- Molecule 3 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-beta-D-mannopyranose-(1-3)-[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				ZeroOcc	AltConf	Trace
			Total	C	N	O			
3	F	7	83	46	2	35	0	0	0

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



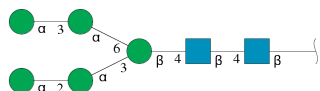
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
4	G	6	72	40	2	30	0	0	0

- Molecule 5 is an oligosaccharide called alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



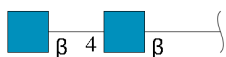
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
5	H	3	39	22	2	15	0	0	0
5	K	3	39	22	2	15	0	0	0

- Molecule 6 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[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.



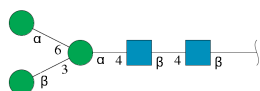
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
6	I	7	83	46	2	35	0	0	0
6	L	7	83	46	2	35	0	0	0
6	O	7	83	46	2	35	0	0	0

- Molecule 7 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



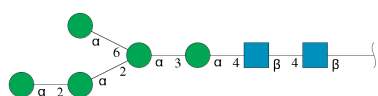
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
7	J	2	28	16	2	10	0	0	0

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



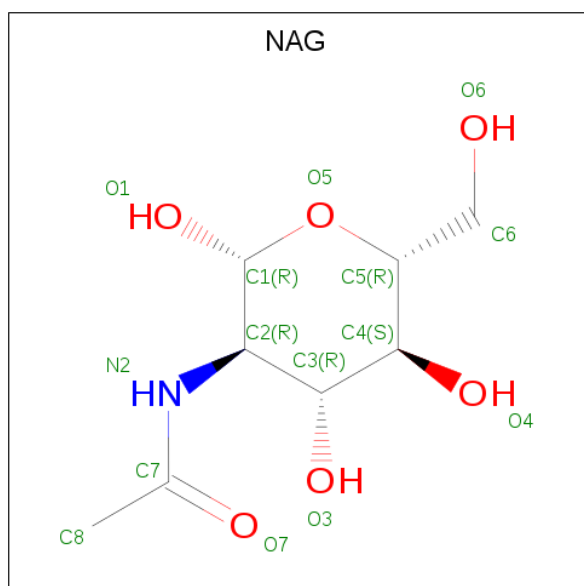
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
8	M	5	61	34	2	25	0	0	0

- Molecule 9 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-[alpha-D-mannopyranose-(1-6)]alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
9	P	7	83	46	2	35	0	0	0

- Molecule 10 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: C₈H₁₅NO₆).



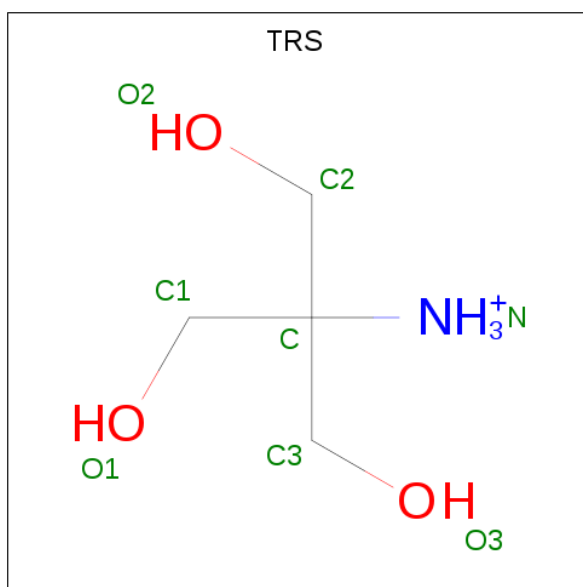
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
10	A	1	14	8	1	5	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
10	A	1	Total	C	N	O	0	0
			13	8	1	4		
10	A	1	Total	C	N	O	0	0
			14	8	1	5		
10	A	1	Total	C	N	O	0	0
			14	8	1	5		
10	B	1	Total	C	N	O	0	0
			14	8	1	5		
10	B	1	Total	C	N	O	0	0
			13	8	1	4		
10	B	1	Total	C	N	O	0	0
			14	8	1	5		
10	B	1	Total	C	N	O	0	0
			14	8	1	5		
10	C	1	Total	C	N	O	0	0
			14	8	1	5		
10	C	1	Total	C	N	O	0	0
			13	8	1	4		
10	C	1	Total	C	N	O	0	0
			14	8	1	5		
10	C	1	Total	C	N	O	0	0
			14	8	1	5		
10	D	1	Total	C	N	O	0	0
			14	8	1	5		
10	D	1	Total	C	N	O	0	0
			13	8	1	4		
10	D	1	Total	C	N	O	0	0
			14	8	1	5		
10	D	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 11 is 2-AMINO-2-HYDROXYMETHYL-PROPANE-1,3-DIOL (three-letter code: TRS) (formula: C₄H₁₂NO₃).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
11	A	1	8	4	1	3	0	0
11	B	1	8	4	1	3	0	0
11	C	1	8	4	1	3	0	0
11	D	1	8	4	1	3	0	0

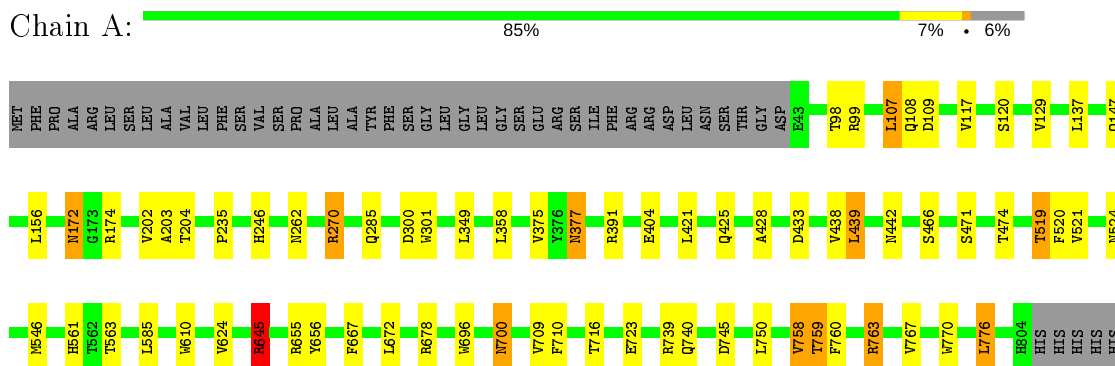
- Molecule 12 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
12	A	402	402	402	0	0
12	B	311	311	311	0	0
12	C	398	398	398	0	0
12	D	433	433	433	0	0

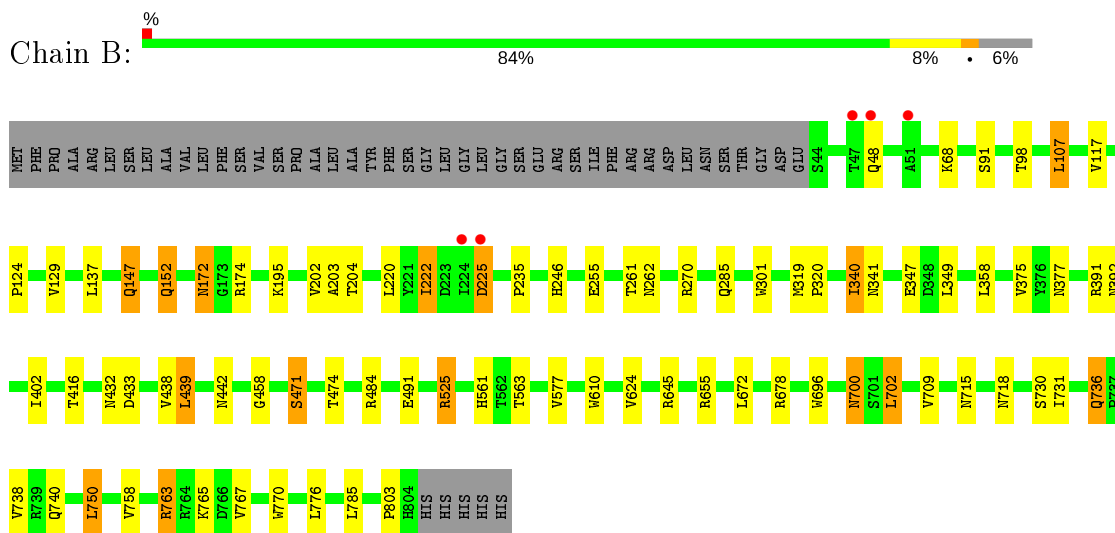
3 Residue-property plots [i](#)

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 electron 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 dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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.

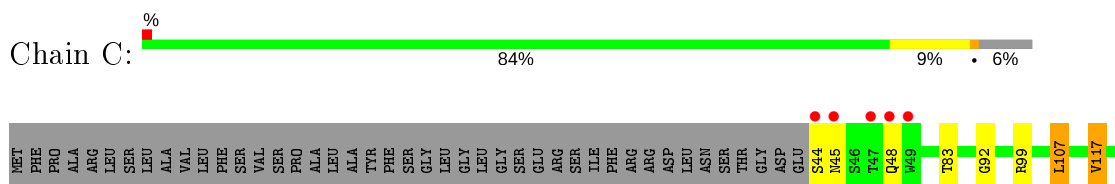
- Molecule 1: Beta-D-xylosidase/beta-D-glucosidase

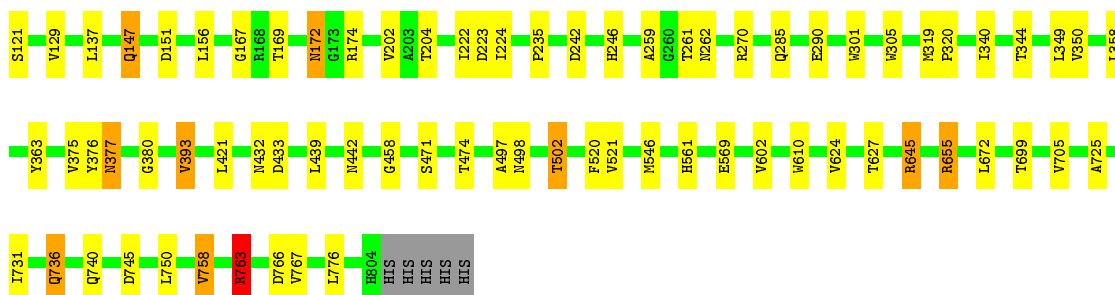


- Molecule 1: Beta-D-xylosidase/beta-D-glucosidase



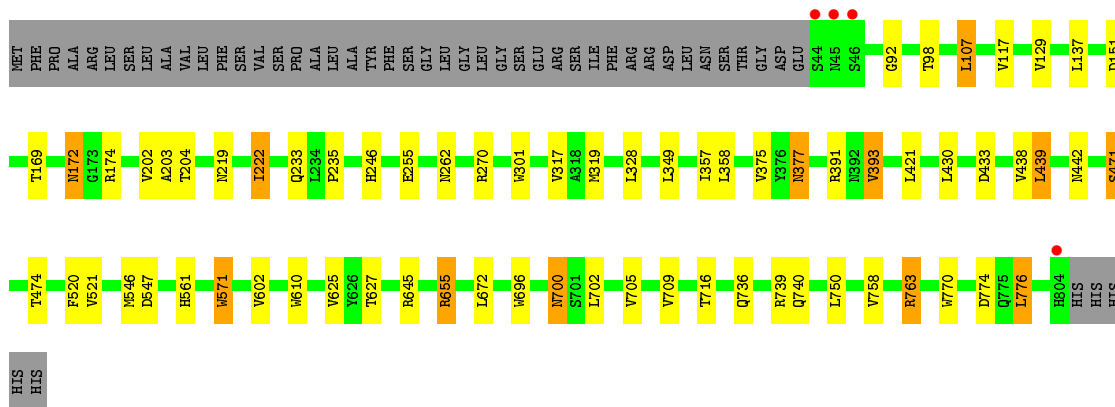
- Molecule 1: Beta-D-xylosidase/beta-D-glucosidase





- Molecule 1: Beta-D-xylosidase/beta-D-glucosidase

Chain D: 86% 7% 6%



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

Chain E: 100%

MAG1
MAG2
BMA3

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

Chain N: 100%

MAG1
MAG2
BMA3

- Molecule 3: alpha-D-mannopyranose-(1-2)-beta-D-mannopyranose-(1-3)-[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 F: 100%

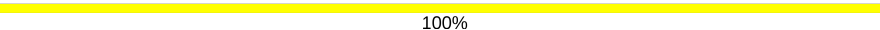
MAG1
MAG2
BMA3
BMA4
MAN5
MAN6
MAN7

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

Chain G:  33% 67%

MAG1
MAG2
MAN3
MAN4
MAN5
MAN6

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

Chain H:  100%

MAG1
MAG2
MAN3

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

Chain K:  100%

MAG1
MAG2
MAN3

- Molecule 6: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[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 I:  14% 86%

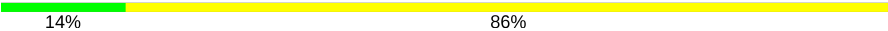
MAG1
MAG2
MAN3
MAN4
MAN5
MAN6
MAN7

- Molecule 6: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[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 L:  14% 86%

MAG1
MAG2
MAN3
MAN4
MAN5
MAN6
MAN7

- Molecule 6: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[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 O:  14% 86%

MAG1
MAG2
MAN3
MAN4
MAN5
MAN6
MAN7

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

Chain J:  50% 50%


MAG1
MAG2

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

Chain M:  100%

MAG1
MAG2
MAN3
EMA4
MAN5

- Molecule 9: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-[alpha-D-mannopyranose-(1-6)]alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain P:  29% 71%

MAG1
MAG2
MAN3
MAN4
MAN5
MAN6
MAN7

4 Data and refinement statistics

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α , β , γ	131.91Å 131.91Å 385.94Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 2.40 48.24 – 2.40	Depositor EDS
% Data completeness (in resolution range)	99.7 (50.00-2.40) 99.7 (48.24-2.40)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.86 (at 2.39Å)	Xtrriage
Refinement program	REFMAC 5.8.0158	Depositor
R, R_{free}	0.184 , 0.251 0.190 , 0.252	Depositor DCC
R_{free} test set	6872 reflections (5.16%)	wwPDB-VP
Wilson B-factor (Å ²)	33.2	Xtrriage
Anisotropy	0.031	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.30 , 22.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.35$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	25512	wwPDB-VP
Average B, all atoms (Å ²)	35.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 15.10% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: TRS, BMA, NAG, 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	0.48	0/5896	0.71	4/8067 (0.0%)
1	B	0.47	0/5885	0.70	5/8052 (0.1%)
1	C	0.49	0/5885	0.71	2/8052 (0.0%)
1	D	0.48	0/5885	0.70	5/8052 (0.1%)
All	All	0.48	0/23551	0.71	16/32223 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	2

There are no bond length outliers.

The worst 5 of 16 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	C	763	ARG	NE-CZ-NH1	6.99	123.80	120.30
1	A	645	ARG	NE-CZ-NH1	6.82	123.71	120.30
1	D	763	ARG	NE-CZ-NH1	5.97	123.29	120.30
1	D	391	ARG	NE-CZ-NH1	5.87	123.23	120.30
1	A	776	LEU	CA-CB-CG	5.75	128.54	115.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	259	ALA	Peptide

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Mol	Chain	Res	Type	Group
1	C	699	THR	Peptide

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5752	0	5533	37	0
1	B	5744	0	5526	35	0
1	C	5744	0	5526	38	0
1	D	5744	0	5526	31	0
2	E	39	0	34	0	0
2	N	39	0	34	0	0
3	F	83	0	70	0	0
4	G	72	0	61	0	0
5	H	39	0	34	0	0
5	K	39	0	34	0	0
6	I	83	0	70	0	0
6	L	83	0	70	0	0
6	O	83	0	70	0	0
7	J	28	0	25	0	0
8	M	61	0	52	0	0
9	P	83	0	69	0	0
10	A	55	0	50	0	0
10	B	55	0	50	1	0
10	C	55	0	50	0	0
10	D	55	0	50	0	0
11	A	8	0	12	2	0
11	B	8	0	12	0	0
11	C	8	0	12	0	0
11	D	8	0	12	0	0
12	A	402	0	0	2	0
12	B	311	0	0	5	0
12	C	398	0	0	3	0
12	D	433	0	0	0	0
All	All	25512	0	22982	139	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.

The worst 5 of 139 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:525:ARG:NH2	12:B:1001:HOH:O	1.99	0.95
1:C:319:MET:SD	12:C:1344:HOH:O	2.26	0.92
1:C:497:ALA:HB1	1:C:502:THR:HG21	1.59	0.85
1:B:696:TRP:HA	1:B:700:ASN:HD21	1.43	0.83
1:D:92:GLY:HA3	1:D:319:MET:HE2	1.64	0.78

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 X-ray entries followed by that with respect to entries of similar resolution.

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	761/809 (94%)	733 (96%)	28 (4%)	0	100	100
1	B	759/809 (94%)	727 (96%)	30 (4%)	2 (0%)	41	55
1	C	759/809 (94%)	729 (96%)	28 (4%)	2 (0%)	41	55
1	D	759/809 (94%)	730 (96%)	29 (4%)	0	100	100
All	All	3038/3236 (94%)	2919 (96%)	115 (4%)	4 (0%)	51	68

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	803	PRO
1	C	224	ILE
1	B	225	ASP
1	C	167	GLY

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	613/654 (94%)	578 (94%)	35 (6%)	20	33
1	B	612/654 (94%)	569 (93%)	43 (7%)	15	24
1	C	612/654 (94%)	573 (94%)	39 (6%)	17	28
1	D	612/654 (94%)	577 (94%)	35 (6%)	20	33
All	All	2449/2616 (94%)	2297 (94%)	152 (6%)	18	29

5 of 152 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	700	ASN
1	C	169	THR
1	D	627	THR
1	B	709	VAL
1	B	776	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 54 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	561	HIS
1	C	152	GLN
1	D	561	HIS
1	B	676	HIS
1	B	736	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates i

60 monosaccharides are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	NAG	E	1	1,2	14,14,15	1.05	1 (7%)	17,19,21	1.36	1 (5%)
2	NAG	E	2	2	14,14,15	0.58	0	17,19,21	1.20	2 (11%)
2	BMA	E	3	2	11,11,12	0.64	0	15,15,17	0.84	1 (6%)
3	NAG	F	1	1,3	14,14,15	1.25	1 (7%)	17,19,21	1.12	1 (5%)
3	NAG	F	2	3	14,14,15	0.54	0	17,19,21	0.98	1 (5%)
3	BMA	F	3	3	11,11,12	0.62	0	15,15,17	1.69	2 (13%)
3	BMA	F	4	3	11,11,12	0.64	0	15,15,17	1.43	3 (20%)
3	MAN	F	5	3	11,11,12	0.72	0	15,15,17	1.67	1 (6%)
3	MAN	F	6	3	11,11,12	0.94	0	15,15,17	3.20	5 (33%)
3	MAN	F	7	3	11,11,12	0.25	0	15,15,17	0.89	1 (6%)
4	NAG	G	1	1,4	14,14,15	0.44	0	17,19,21	0.81	0
4	NAG	G	2	4	14,14,15	0.39	0	17,19,21	0.89	0
4	MAN	G	3	4	11,11,12	0.69	0	15,15,17	1.83	3 (20%)
4	MAN	G	4	4	11,11,12	0.68	0	15,15,17	1.78	1 (6%)
4	MAN	G	5	4	11,11,12	0.66	0	15,15,17	2.03	1 (6%)
4	MAN	G	6	4	11,11,12	0.49	0	15,15,17	1.27	2 (13%)
5	NAG	H	1	1,5	14,14,15	1.00	1 (7%)	17,19,21	1.21	2 (11%)
5	NAG	H	2	5	14,14,15	0.39	0	17,19,21	0.81	1 (5%)
5	MAN	H	3	5	11,11,12	0.68	0	15,15,17	1.31	3 (20%)
6	NAG	I	1	1,6	14,14,15	1.11	1 (7%)	17,19,21	1.51	3 (17%)
6	NAG	I	2	6	14,14,15	0.46	0	17,19,21	0.86	0
6	BMA	I	3	6	11,11,12	0.28	0	15,15,17	0.97	1 (6%)
6	MAN	I	4	6	11,11,12	0.48	0	15,15,17	1.12	2 (13%)
6	MAN	I	5	6	11,11,12	0.53	0	15,15,17	1.42	2 (13%)
6	MAN	I	6	6	11,11,12	0.77	0	15,15,17	2.57	5 (33%)
6	MAN	I	7	6	11,11,12	0.39	0	15,15,17	0.95	2 (13%)
7	NAG	J	1	1,7	14,14,15	0.29	0	17,19,21	0.90	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	NAG	J	2	7	14,14,15	0.61	0	17,19,21	1.08	2 (11%)
5	NAG	K	1	1,5	14,14,15	1.19	1 (7%)	17,19,21	1.02	1 (5%)
5	NAG	K	2	5	14,14,15	0.52	0	17,19,21	1.12	1 (5%)
5	MAN	K	3	5	11,11,12	0.55	0	15,15,17	0.98	1 (6%)
6	NAG	L	1	1,6	14,14,15	1.16	1 (7%)	17,19,21	0.95	1 (5%)
6	NAG	L	2	6	14,14,15	0.51	0	17,19,21	1.01	0
6	BMA	L	3	6	11,11,12	0.46	0	15,15,17	1.03	1 (6%)
6	MAN	L	4	6	11,11,12	0.65	0	15,15,17	2.09	3 (20%)
6	MAN	L	5	6	11,11,12	0.70	0	15,15,17	0.93	1 (6%)
6	MAN	L	6	6	11,11,12	0.79	0	15,15,17	3.22	4 (26%)
6	MAN	L	7	6	11,11,12	0.48	0	15,15,17	1.00	2 (13%)
8	NAG	M	1	1,8	14,14,15	0.44	0	17,19,21	1.07	2 (11%)
8	NAG	M	2	8	14,14,15	0.43	0	17,19,21	1.06	1 (5%)
8	MAN	M	3	8	11,11,12	0.54	0	15,15,17	1.72	4 (26%)
8	BMA	M	4	8	11,11,12	0.61	0	15,15,17	1.71	3 (20%)
8	MAN	M	5	8	11,11,12	0.88	0	15,15,17	1.43	3 (20%)
2	NAG	N	1	1,2	14,14,15	0.96	1 (7%)	17,19,21	1.01	1 (5%)
2	NAG	N	2	2	14,14,15	0.56	0	17,19,21	1.18	2 (11%)
2	BMA	N	3	2	11,11,12	0.66	0	15,15,17	1.16	2 (13%)
6	NAG	O	1	1,6	14,14,15	1.12	1 (7%)	17,19,21	0.81	0
6	NAG	O	2	6	14,14,15	0.28	0	17,19,21	0.71	0
6	BMA	O	3	6	11,11,12	0.37	0	15,15,17	1.28	2 (13%)
6	MAN	O	4	6	11,11,12	0.54	0	15,15,17	1.41	1 (6%)
6	MAN	O	5	6	11,11,12	0.59	0	15,15,17	2.20	4 (26%)
6	MAN	O	6	6	11,11,12	0.69	0	15,15,17	3.10	3 (20%)
6	MAN	O	7	6	11,11,12	0.32	0	15,15,17	1.07	1 (6%)
9	NAG	P	1	1,9	14,14,15	0.39	0	17,19,21	0.96	0
9	NAG	P	2	9	14,14,15	0.44	0	17,19,21	0.92	0
9	MAN	P	3	9	11,11,12	0.66	0	15,15,17	2.30	5 (33%)
9	MAN	P	4	9	11,11,12	0.60	0	15,15,17	2.26	1 (6%)
9	MAN	P	5	9	11,11,12	0.45	0	15,15,17	1.65	2 (13%)
9	MAN	P	6	9	11,11,12	0.31	0	15,15,17	1.31	1 (6%)
9	MAN	P	7	9	11,11,12	0.89	0	15,15,17	2.47	5 (33%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the

Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns.
'-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	E	1	1,2	-	0/6/23/26	0/1/1/1
2	NAG	E	2	2	-	1/6/23/26	0/1/1/1
2	BMA	E	3	2	-	0/2/19/22	0/1/1/1
3	NAG	F	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	F	2	3	-	0/6/23/26	0/1/1/1
3	BMA	F	3	3	-	0/2/19/22	0/1/1/1
3	BMA	F	4	3	-	0/2/19/22	0/1/1/1
3	MAN	F	5	3	-	1/2/19/22	0/1/1/1
3	MAN	F	6	3	-	1/2/19/22	0/1/1/1
3	MAN	F	7	3	-	0/2/19/22	0/1/1/1
4	NAG	G	1	1,4	-	0/6/23/26	0/1/1/1
4	NAG	G	2	4	-	2/6/23/26	0/1/1/1
4	MAN	G	3	4	-	1/2/19/22	0/1/1/1
4	MAN	G	4	4	-	2/2/19/22	0/1/1/1
4	MAN	G	5	4	-	2/2/19/22	0/1/1/1
4	MAN	G	6	4	-	2/2/19/22	0/1/1/1
5	NAG	H	1	1,5	-	0/6/23/26	0/1/1/1
5	NAG	H	2	5	-	2/6/23/26	0/1/1/1
5	MAN	H	3	5	-	1/2/19/22	0/1/1/1
6	NAG	I	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	I	2	6	-	1/6/23/26	0/1/1/1
6	BMA	I	3	6	-	0/2/19/22	0/1/1/1
6	MAN	I	4	6	-	0/2/19/22	0/1/1/1
6	MAN	I	5	6	-	0/2/19/22	0/1/1/1
6	MAN	I	6	6	-	2/2/19/22	0/1/1/1
6	MAN	I	7	6	-	0/2/19/22	0/1/1/1
7	NAG	J	1	1,7	-	0/6/23/26	0/1/1/1
7	NAG	J	2	7	-	0/6/23/26	0/1/1/1
5	NAG	K	1	1,5	-	0/6/23/26	0/1/1/1
5	NAG	K	2	5	-	2/6/23/26	0/1/1/1
5	MAN	K	3	5	-	2/2/19/22	1/1/1/1
6	NAG	L	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	L	2	6	-	0/6/23/26	0/1/1/1
6	BMA	L	3	6	-	0/2/19/22	0/1/1/1
6	MAN	L	4	6	-	1/2/19/22	0/1/1/1
6	MAN	L	5	6	-	0/2/19/22	0/1/1/1
6	MAN	L	6	6	-	1/2/19/22	0/1/1/1
6	MAN	L	7	6	-	0/2/19/22	0/1/1/1
8	NAG	M	1	1,8	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	NAG	M	2	8	-	1/6/23/26	0/1/1/1
8	MAN	M	3	8	-	1/2/19/22	0/1/1/1
8	BMA	M	4	8	-	2/2/19/22	0/1/1/1
8	MAN	M	5	8	-	0/2/19/22	0/1/1/1
2	NAG	N	1	1,2	-	0/6/23/26	0/1/1/1
2	NAG	N	2	2	-	0/6/23/26	0/1/1/1
2	BMA	N	3	2	-	1/2/19/22	0/1/1/1
6	NAG	O	1	1,6	-	0/6/23/26	0/1/1/1
6	NAG	O	2	6	-	0/6/23/26	0/1/1/1
6	BMA	O	3	6	-	0/2/19/22	0/1/1/1
6	MAN	O	4	6	-	0/2/19/22	0/1/1/1
6	MAN	O	5	6	-	0/2/19/22	0/1/1/1
6	MAN	O	6	6	-	2/2/19/22	0/1/1/1
6	MAN	O	7	6	-	0/2/19/22	0/1/1/1
9	NAG	P	1	1,9	-	0/6/23/26	0/1/1/1
9	NAG	P	2	9	-	0/6/23/26	0/1/1/1
9	MAN	P	3	9	-	2/2/19/22	1/1/1/1
9	MAN	P	4	9	-	0/2/19/22	0/1/1/1
9	MAN	P	5	9	-	0/2/19/22	0/1/1/1
9	MAN	P	6	9	-	2/2/19/22	0/1/1/1
9	MAN	P	7	9	-	2/2/19/22	0/1/1/1

The worst 5 of 8 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	1	NAG	O4-C4	-4.44	1.32	1.43
6	L	1	NAG	O4-C4	-4.19	1.33	1.43
5	K	1	NAG	O4-C4	-4.17	1.33	1.43
6	O	1	NAG	O4-C4	-3.82	1.34	1.43
6	I	1	NAG	O4-C4	-3.77	1.34	1.43

The worst 5 of 106 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	L	6	MAN	C1-O5-C5	10.08	125.85	112.19
6	O	6	MAN	C1-O5-C5	9.83	125.51	112.19
3	F	6	MAN	C1-O5-C5	9.47	125.02	112.19
9	P	4	MAN	C1-O5-C5	7.87	122.86	112.19
6	I	6	MAN	C1-O5-C5	7.09	121.80	112.19

There are no chirality outliers.

5 of 37 torsion outliers are listed below:

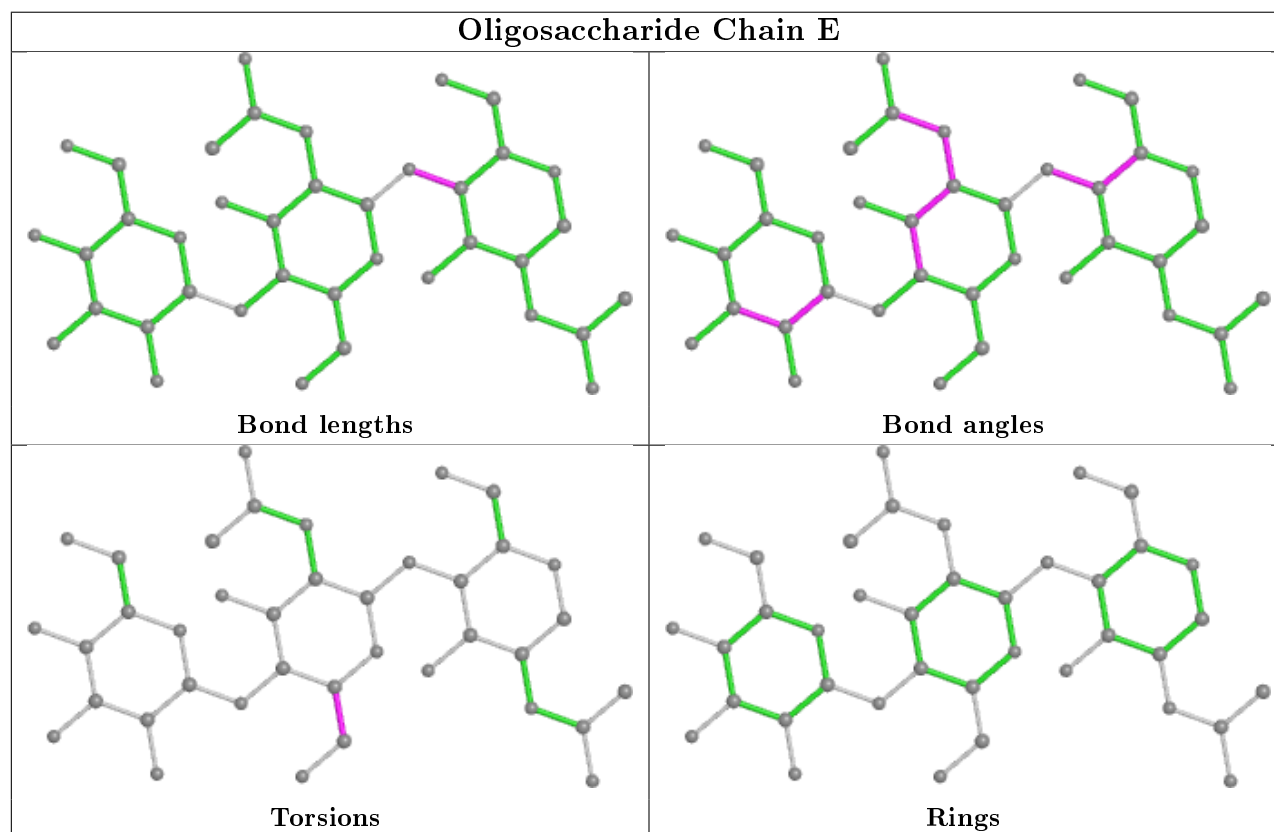
Mol	Chain	Res	Type	Atoms
6	O	6	MAN	O5-C5-C6-O6
5	K	3	MAN	O5-C5-C6-O6
4	G	6	MAN	C4-C5-C6-O6
4	G	5	MAN	C4-C5-C6-O6
4	G	6	MAN	O5-C5-C6-O6

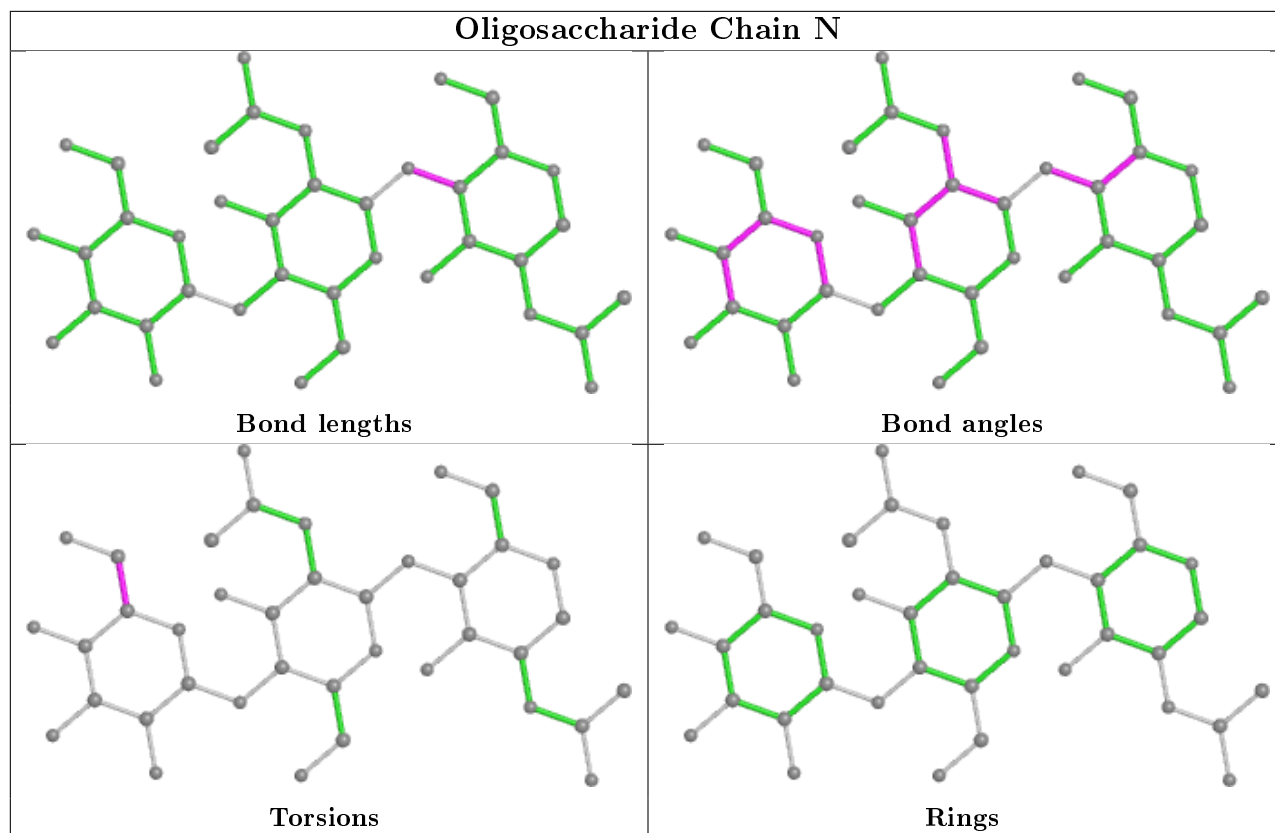
All (2) ring outliers are listed below:

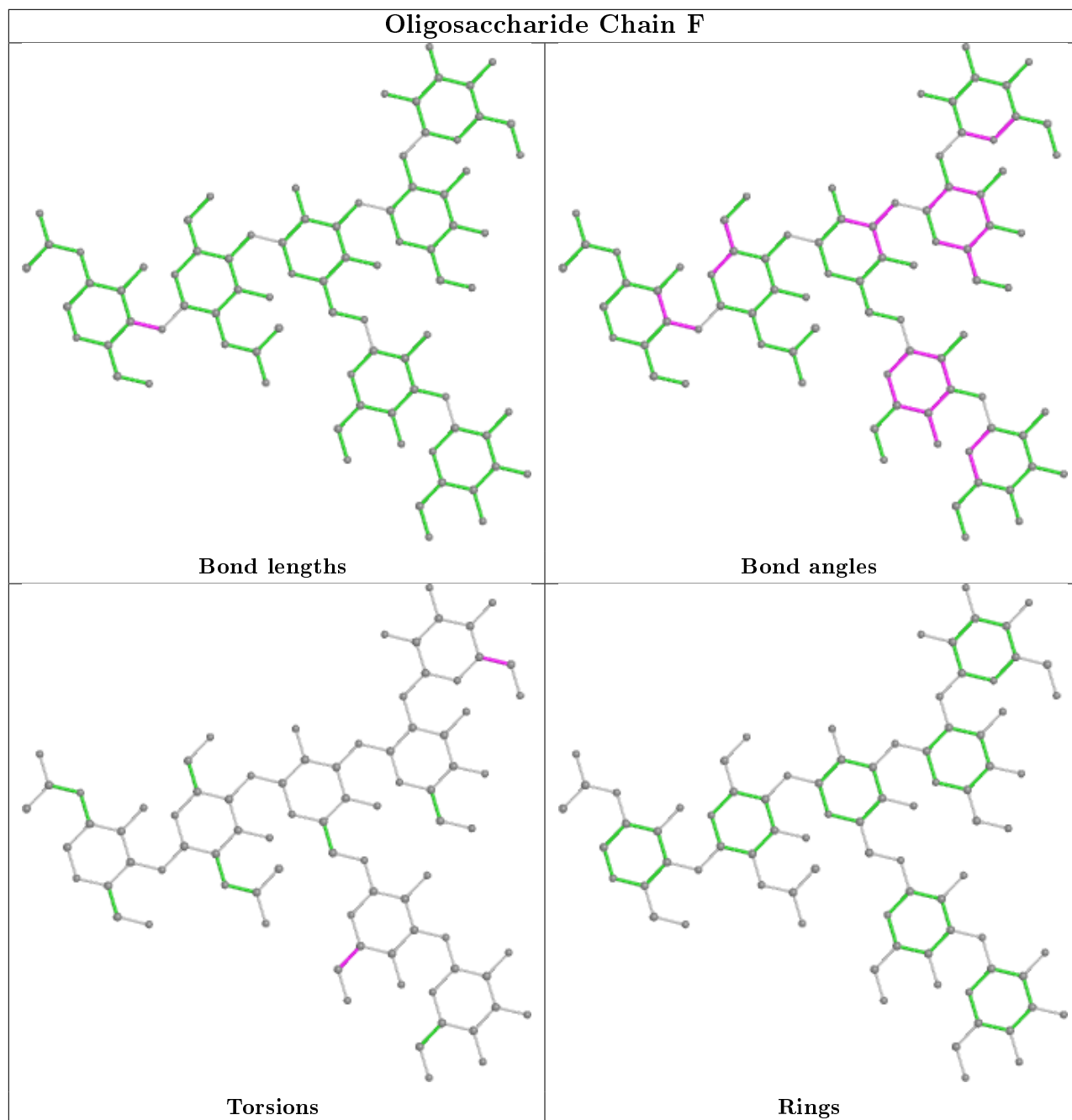
Mol	Chain	Res	Type	Atoms
9	P	3	MAN	C1-C2-C3-C4-C5-O5
5	K	3	MAN	C1-C2-C3-C4-C5-O5

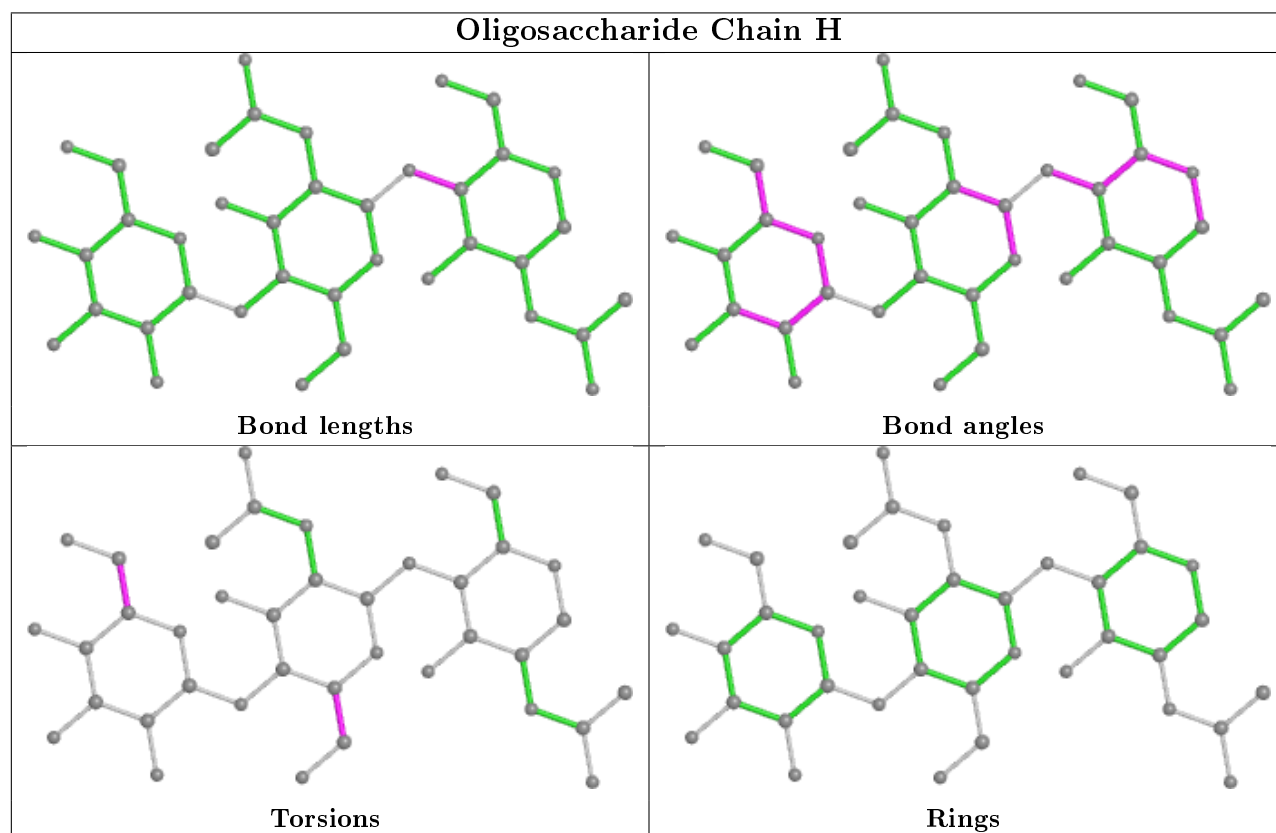
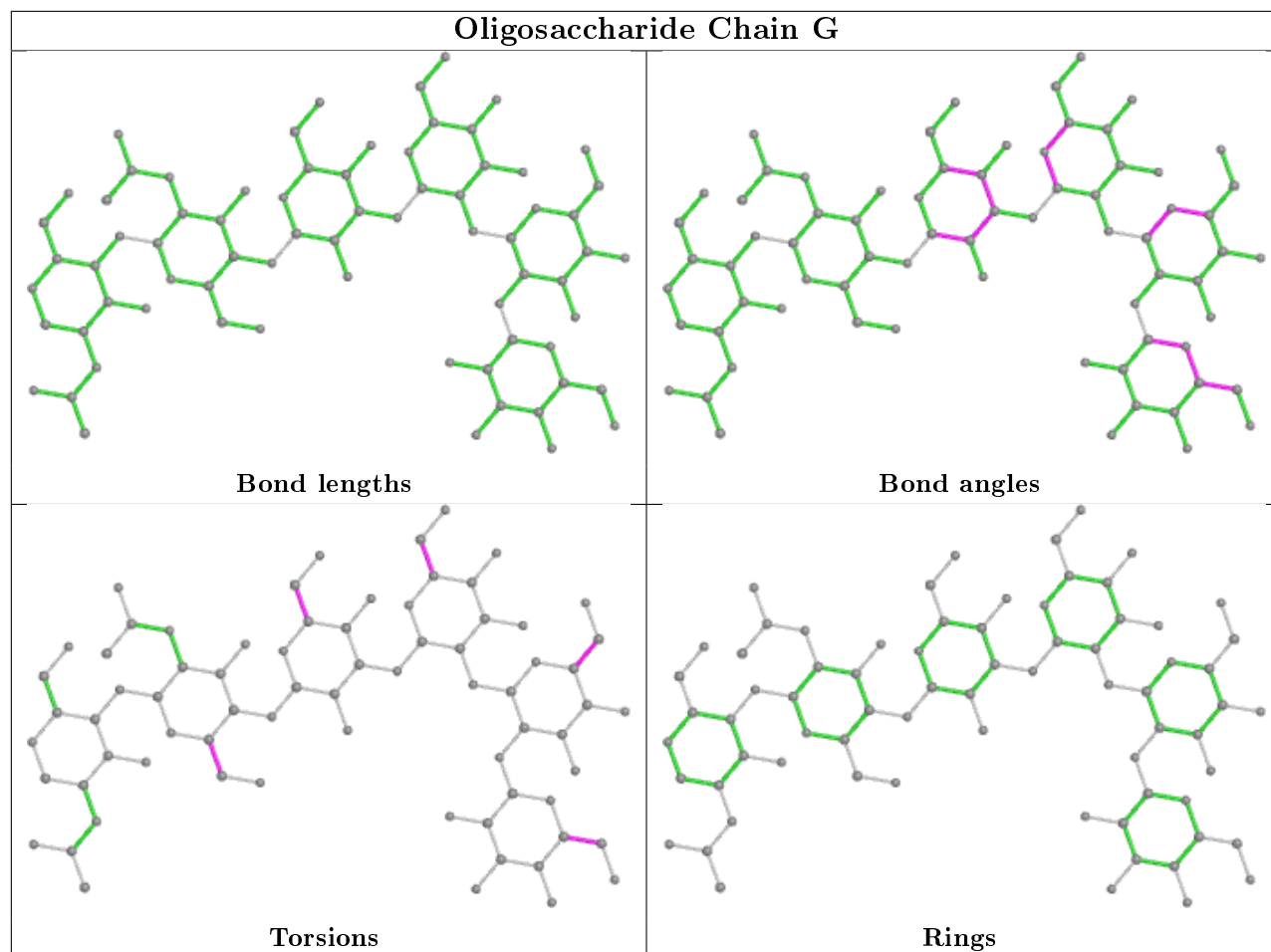
No monomer is involved in short contacts.

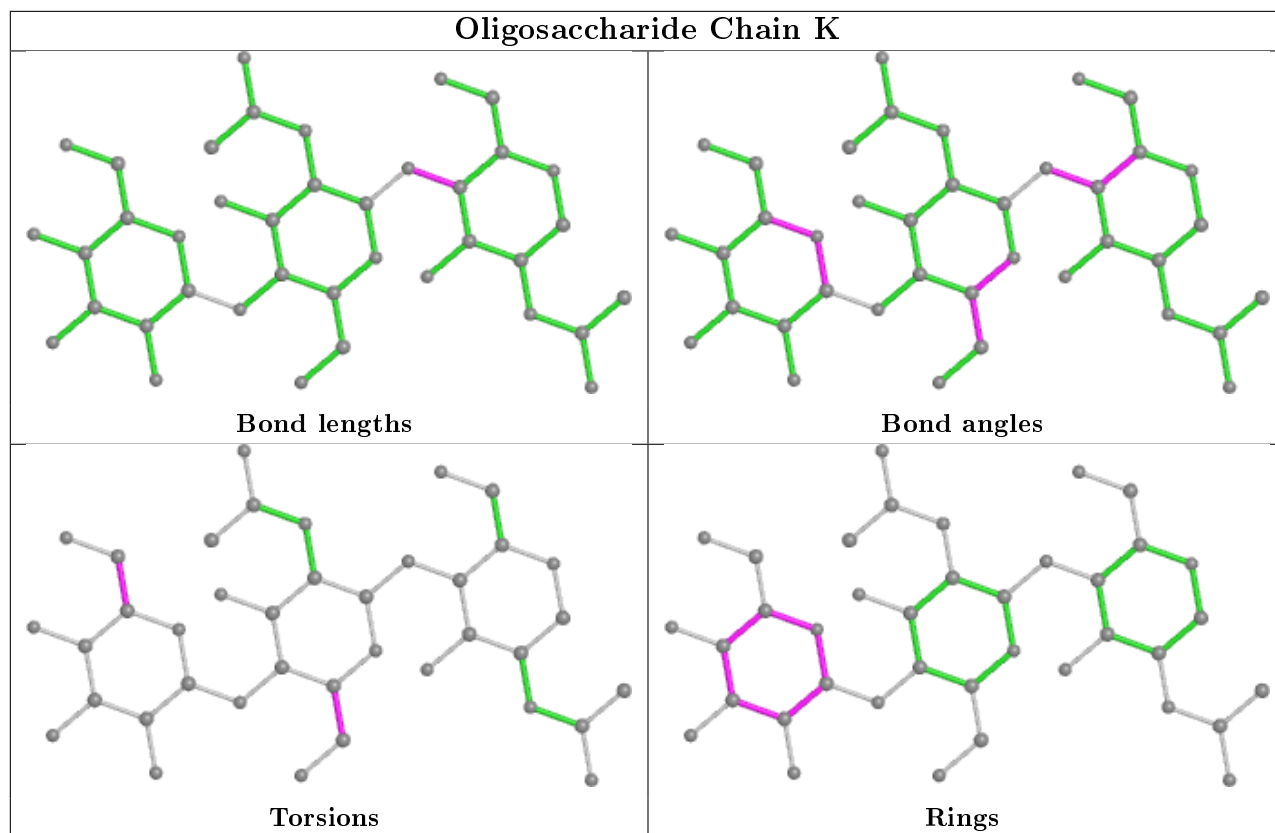
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

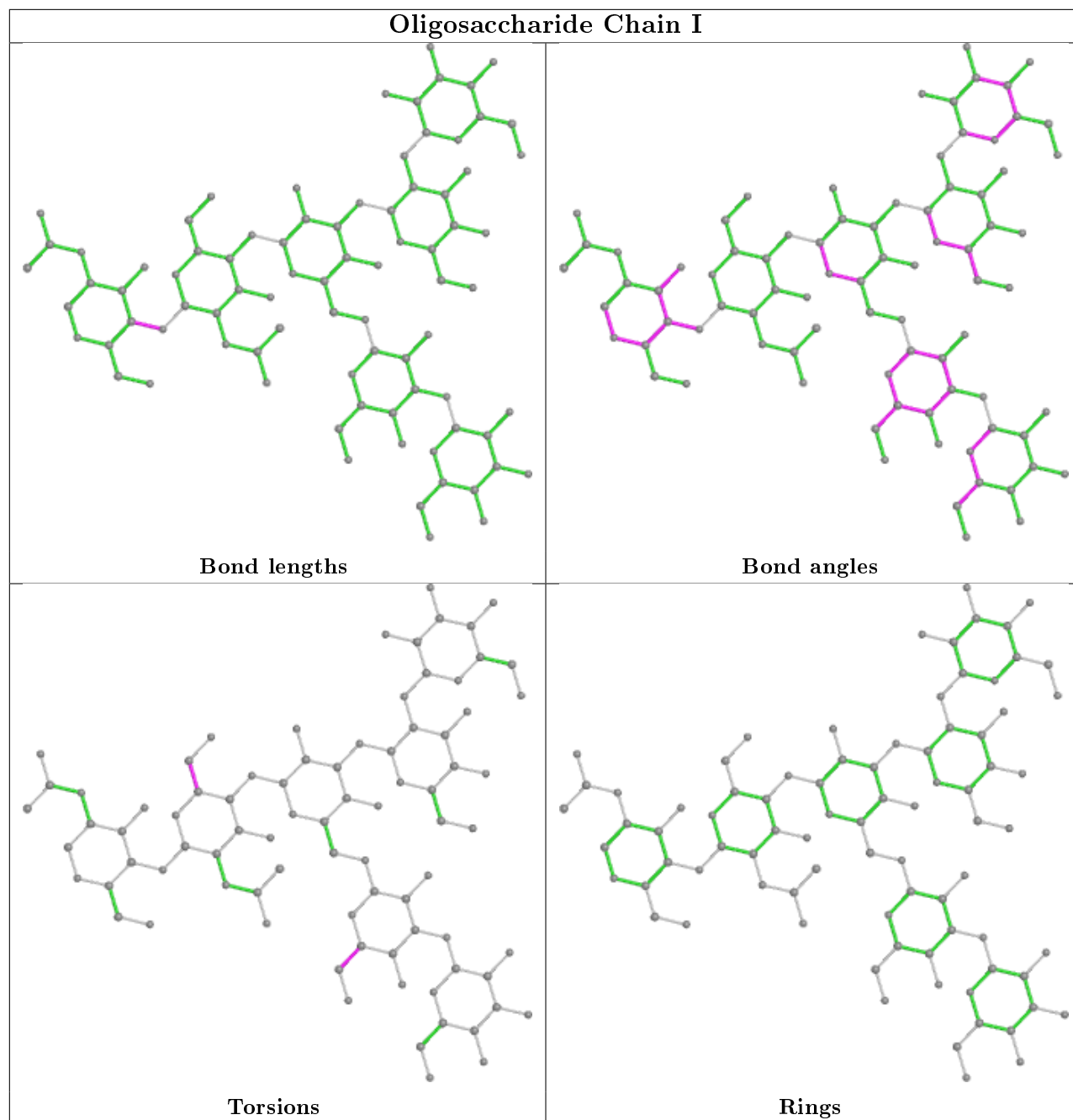


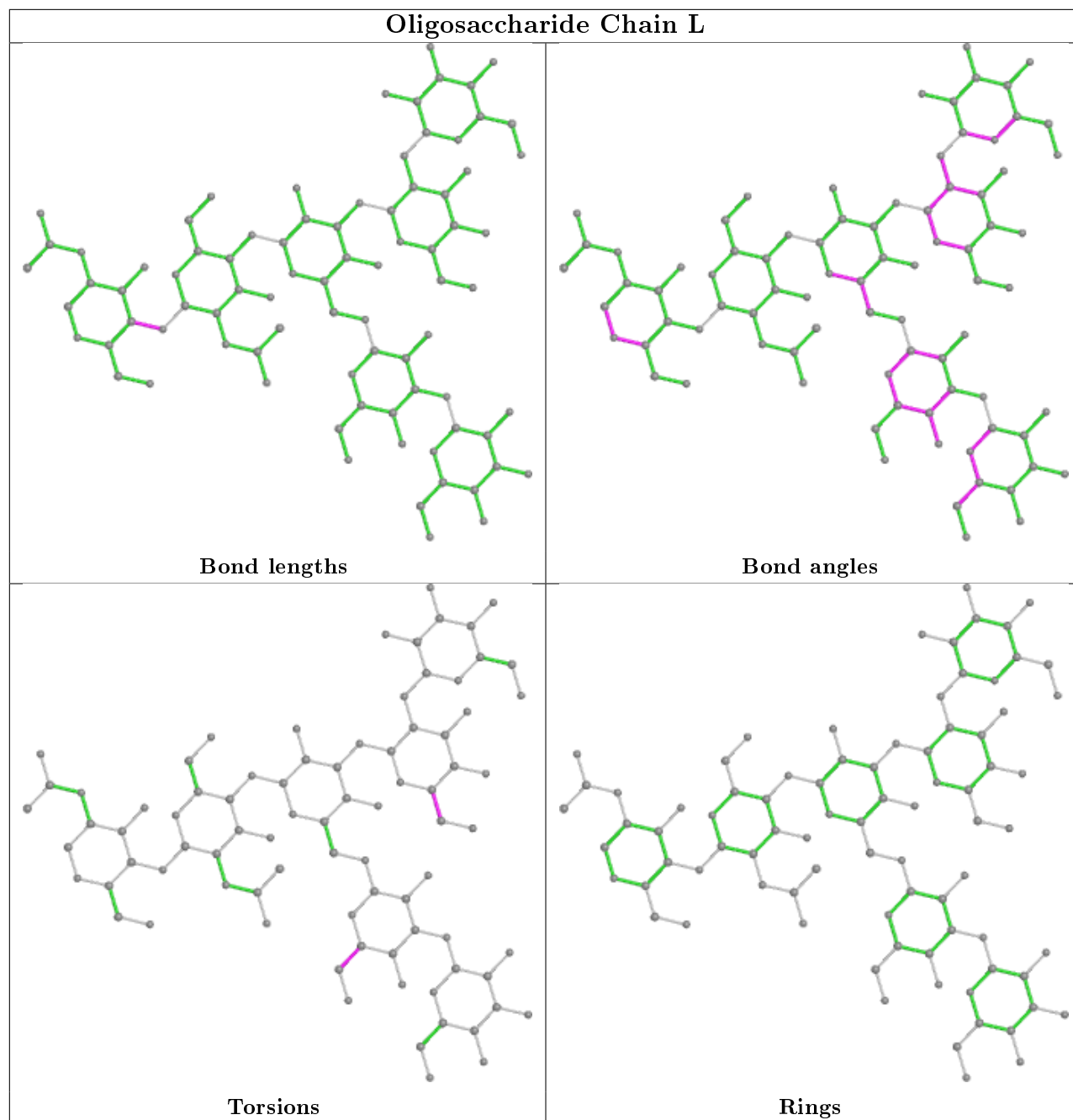


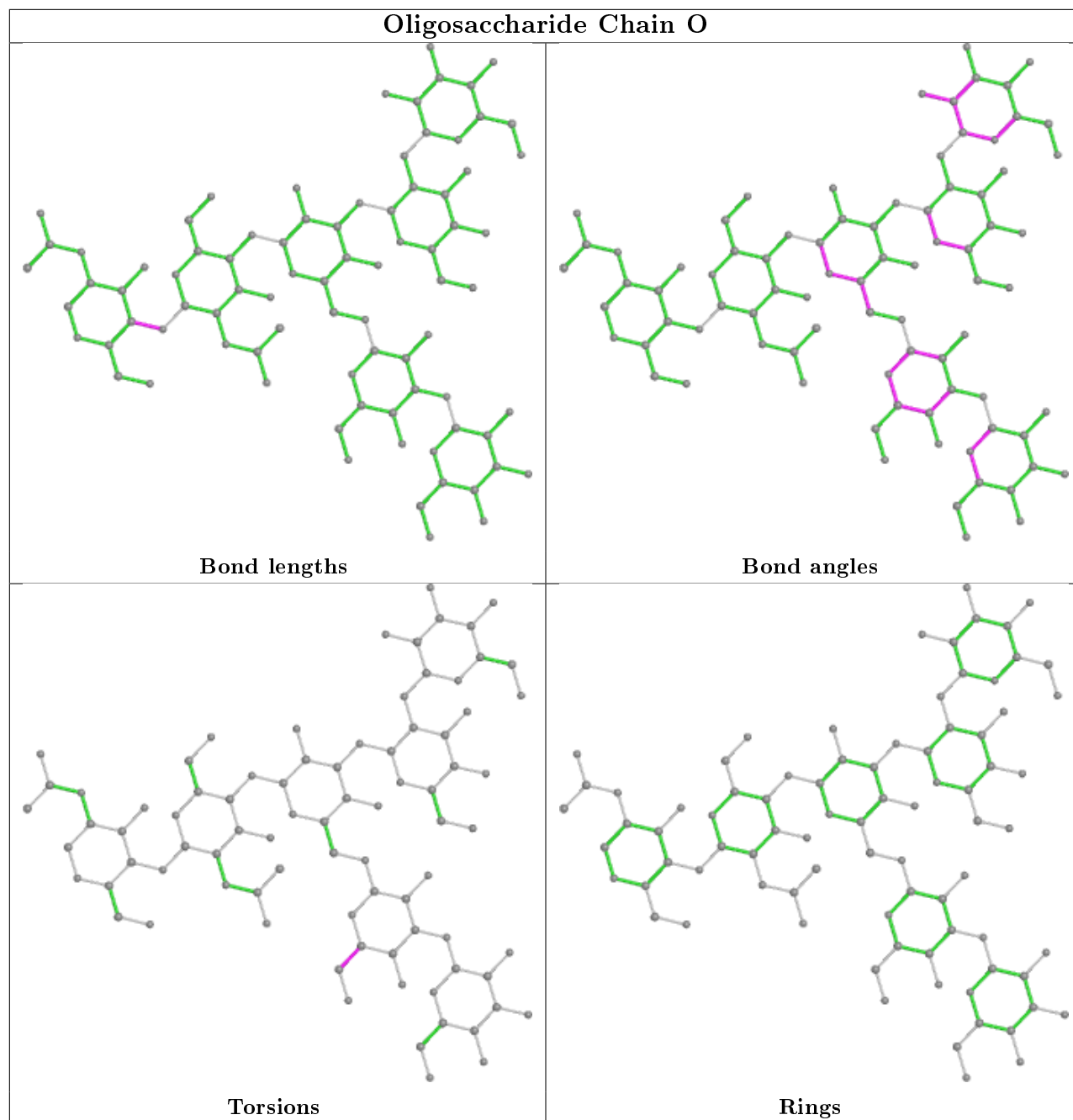


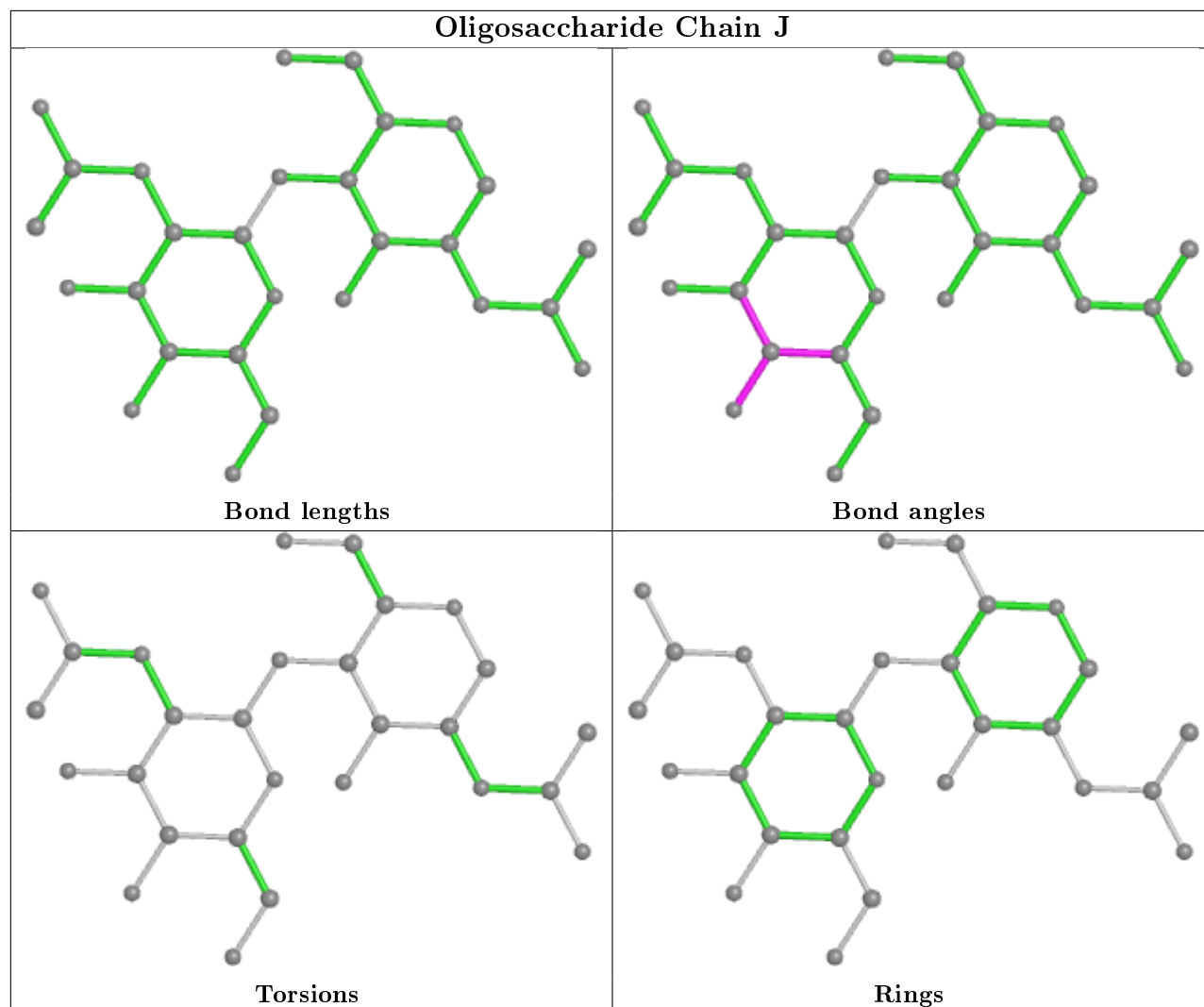


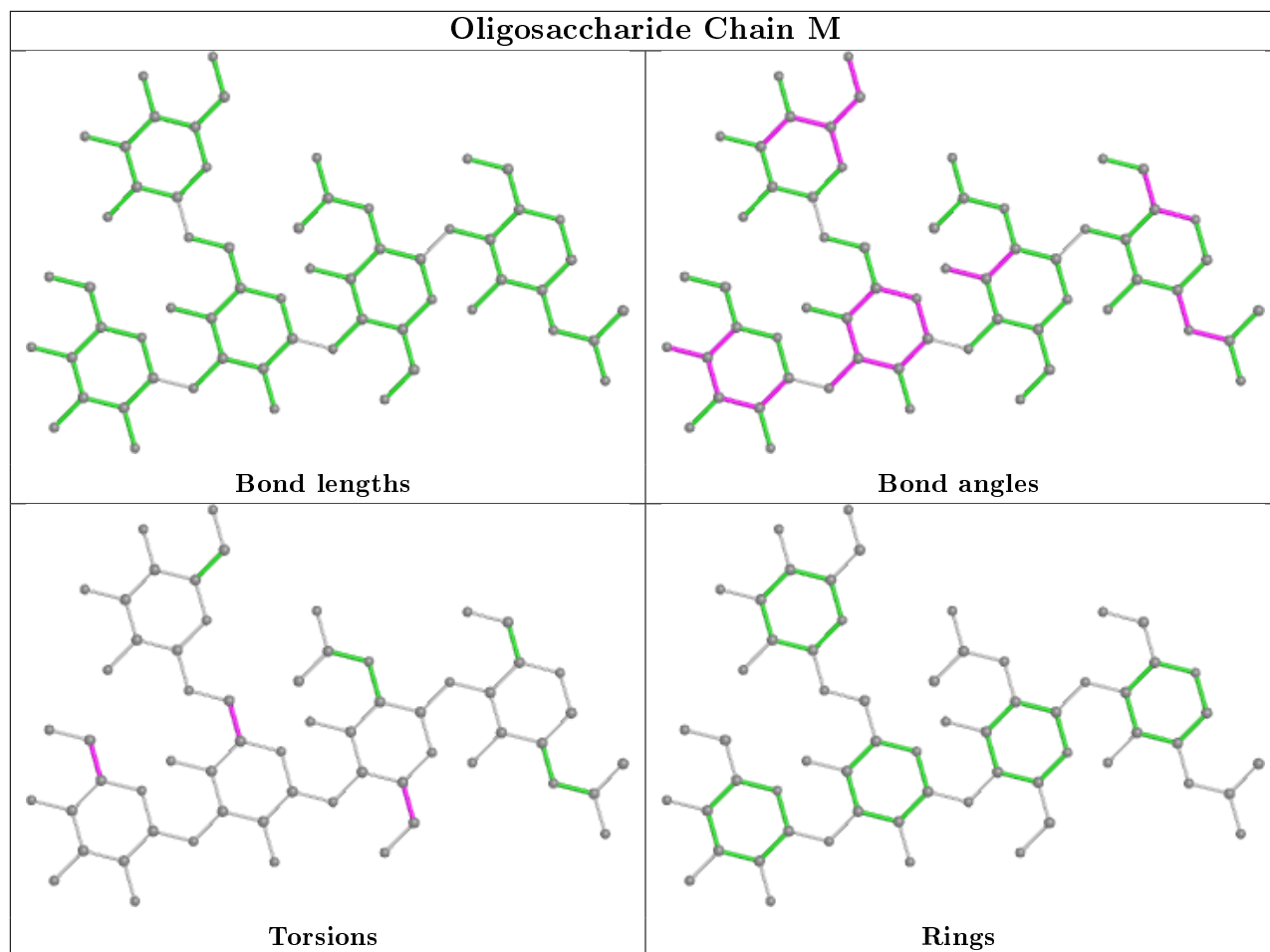


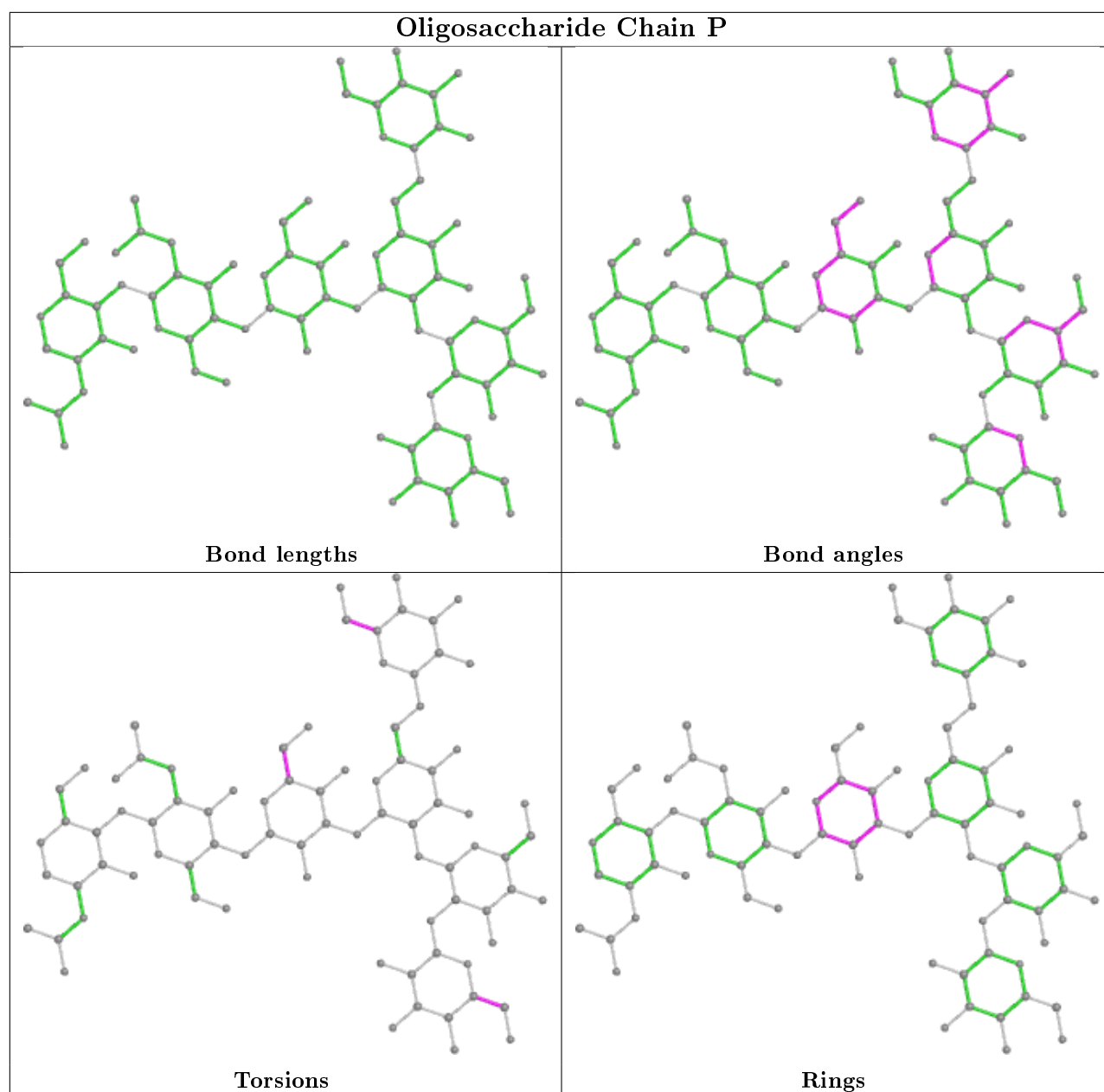












5.6 Ligand geometry [i](#)

20 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
10	NAG	A	920	1	14,14,15	0.46	0	17,19,21	1.43	2 (11%)
10	NAG	A	911	1	14,14,15	0.35	0	17,19,21	0.94	2 (11%)
10	NAG	C	911	1	14,14,15	0.39	0	17,19,21	1.88	3 (17%)
10	NAG	A	919	1	14,14,15	0.33	0	17,19,21	0.95	1 (5%)
10	NAG	C	919	1	14,14,15	0.35	0	17,19,21	1.49	3 (17%)
10	NAG	C	912	1	13,13,15	0.97	1 (7%)	16,17,21	1.70	3 (18%)
10	NAG	C	918	1	14,14,15	0.31	0	17,19,21	0.79	0
10	NAG	D	911	1	14,14,15	0.35	0	17,19,21	1.19	1 (5%)
11	TRS	B	917	-	7,7,7	0.49	0	9,9,9	0.76	0
11	TRS	C	920	-	7,7,7	0.61	0	9,9,9	1.04	1 (11%)
11	TRS	D	922	-	7,7,7	0.51	0	9,9,9	1.11	1 (11%)
10	NAG	D	920	1	14,14,15	0.46	0	17,19,21	0.73	0
10	NAG	B	916	1	14,14,15	0.50	0	17,19,21	2.49	3 (17%)
10	NAG	A	912	1	13,13,15	0.97	1 (7%)	16,17,21	1.88	3 (18%)
10	NAG	D	912	1	13,13,15	0.85	1 (7%)	16,17,21	1.86	3 (18%)
10	NAG	B	912	1	13,13,15	0.69	0	16,17,21	1.78	6 (37%)
10	NAG	B	915	1	14,14,15	0.55	0	17,19,21	1.01	1 (5%)
10	NAG	B	911	1	14,14,15	0.48	0	17,19,21	2.15	7 (41%)
11	TRS	A	921	-	7,7,7	0.54	0	9,9,9	1.02	0
10	NAG	D	921	1	14,14,15	0.38	0	17,19,21	0.97	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
10	NAG	A	920	1	-	0/6/23/26	0/1/1/1
10	NAG	A	911	1	-	2/6/23/26	0/1/1/1
10	NAG	C	911	1	-	2/6/23/26	0/1/1/1
10	NAG	A	919	1	-	0/6/23/26	0/1/1/1
10	NAG	C	919	1	-	0/6/23/26	0/1/1/1
10	NAG	C	912	1	-	0/6/19/26	0/1/1/1
10	NAG	C	918	1	-	0/6/23/26	0/1/1/1
10	NAG	D	911	1	-	0/6/23/26	0/1/1/1
11	TRS	B	917	-	-	6/9/9/9	-
11	TRS	C	920	-	-	3/9/9/9	-
11	TRS	D	922	-	-	0/9/9/9	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
10	NAG	D	920	1	-	0/6/23/26	0/1/1/1
10	NAG	B	916	1	-	1/6/23/26	0/1/1/1
10	NAG	A	912	1	-	0/6/19/26	0/1/1/1
10	NAG	D	912	1	-	4/6/19/26	0/1/1/1
10	NAG	B	912	1	-	1/6/19/26	0/1/1/1
10	NAG	B	915	1	-	0/6/23/26	0/1/1/1
10	NAG	B	911	1	-	3/6/23/26	0/1/1/1
11	TRS	A	921	-	-	6/9/9/9	-
10	NAG	D	921	1	-	0/6/23/26	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	A	912	NAG	C1-C2	3.08	1.54	1.51
10	C	912	NAG	C1-C2	3.04	1.54	1.51
10	D	912	NAG	C1-C2	2.53	1.54	1.51

The worst 5 of 41 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
10	B	916	NAG	C1-O5-C5	8.56	123.79	112.19
10	C	911	NAG	C1-O5-C5	6.22	120.62	112.19
10	B	911	NAG	C2-N2-C7	5.09	130.15	122.90
10	A	912	NAG	C3-C2-C1	4.59	113.72	109.50
10	B	911	NAG	C8-C7-N2	4.58	123.85	116.10

There are no chirality outliers.

5 of 28 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	C	920	TRS	C3-C-C2-O2
11	C	920	TRS	N-C-C2-O2
10	B	911	NAG	C3-C2-N2-C7
11	B	917	TRS	C3-C-C1-O1
11	B	917	TRS	N-C-C1-O1

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	B	911	NAG	1	0
11	A	921	TRS	2	0

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 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled '#RSRZ > 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q < 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	762/809 (94%)	-0.62	0 100 100	24, 30, 42, 80	0
1	B	761/809 (94%)	-0.40	5 (0%) 87 86	26, 36, 57, 103	0
1	C	761/809 (94%)	-0.54	5 (0%) 87 86	24, 31, 44, 99	0
1	D	761/809 (94%)	-0.59	4 (0%) 91 89	24, 32, 45, 81	0
All	All	3045/3236 (94%)	-0.54	14 (0%) 91 89	24, 32, 49, 103	0

The worst 5 of 14 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	47	THR	4.3
1	B	47	THR	4.1
1	C	44	SER	3.9
1	B	51	ALA	3.7
1	C	48	GLN	3.7

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

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

6.3 Carbohydrates [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q < 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	MAN	H	3	11/12	0.71	0.19	73,77,84,89	0
3	MAN	F	6	11/12	0.73	0.15	46,48,52,53	0

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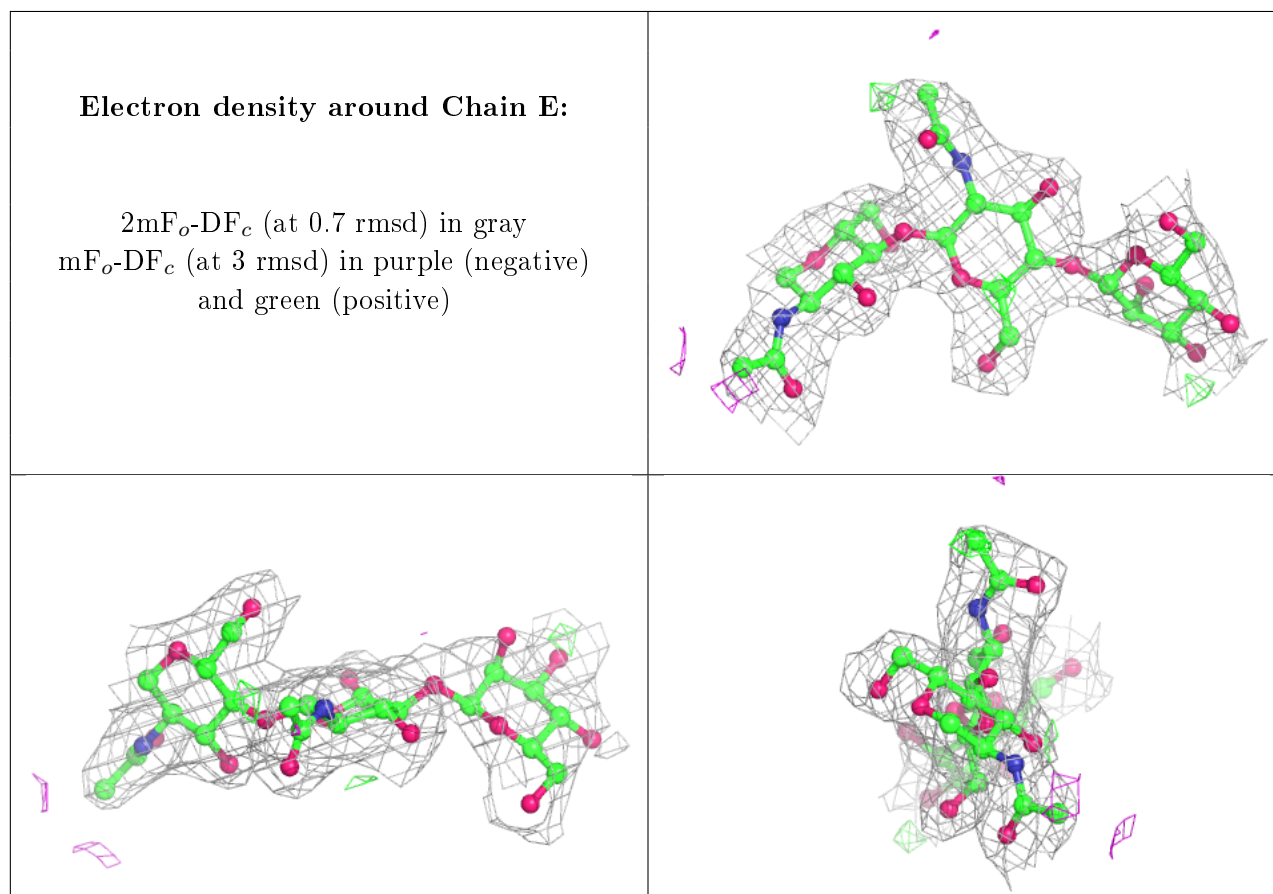
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
6	MAN	I	5	11/12	0.74	0.23	69,73,83,83	0
2	BMA	E	3	11/12	0.74	0.25	73,76,79,80	0
2	BMA	N	3	11/12	0.75	0.15	69,73,76,78	0
4	MAN	G	5	11/12	0.76	0.22	86,91,95,102	0
6	MAN	O	4	11/12	0.77	0.18	60,63,67,67	0
8	MAN	M	5	11/12	0.77	0.19	51,54,57,61	0
4	MAN	G	4	11/12	0.78	0.19	56,67,74,81	0
4	MAN	G	3	11/12	0.78	0.17	71,74,78,79	0
6	MAN	I	6	11/12	0.80	0.15	54,57,57,59	0
4	MAN	G	6	11/12	0.81	0.25	100,106,111,112	0
3	MAN	F	5	11/12	0.81	0.17	68,75,78,79	0
8	BMA	M	4	11/12	0.82	0.19	55,58,62,63	0
3	BMA	F	4	11/12	0.84	0.14	62,66,70,71	0
5	MAN	K	3	11/12	0.84	0.13	69,76,80,82	0
6	MAN	L	6	11/12	0.85	0.10	44,46,48,49	0
6	MAN	I	4	11/12	0.89	0.18	65,67,74,76	0
6	MAN	L	4	11/12	0.89	0.12	51,55,57,63	0
6	MAN	O	5	11/12	0.89	0.13	54,61,69,71	0
2	NAG	E	2	14/15	0.90	0.13	43,46,55,66	0
9	MAN	P	7	11/12	0.90	0.15	46,52,56,56	0
6	MAN	L	5	11/12	0.90	0.15	56,62,66,67	0
7	NAG	J	2	14/15	0.90	0.13	38,41,46,47	0
9	MAN	P	3	11/12	0.90	0.13	42,43,45,46	0
6	MAN	O	6	11/12	0.91	0.11	47,48,52,52	0
9	MAN	P	5	11/12	0.91	0.14	52,54,55,57	0
6	MAN	I	7	11/12	0.92	0.18	52,55,56,59	0
3	BMA	F	3	11/12	0.92	0.10	42,44,47,54	0
5	NAG	K	2	14/15	0.92	0.14	40,49,59,69	0
9	MAN	P	4	11/12	0.93	0.13	39,44,49,51	0
6	NAG	O	2	14/15	0.93	0.13	40,41,44,44	0
8	MAN	M	3	11/12	0.93	0.11	45,51,54,56	0
6	BMA	L	3	11/12	0.93	0.12	40,43,45,50	0
4	NAG	G	1	14/15	0.93	0.10	29,32,35,37	0
6	BMA	O	3	11/12	0.93	0.08	40,45,48,57	0
5	NAG	H	2	14/15	0.94	0.12	50,53,59,67	0
6	NAG	L	2	14/15	0.94	0.11	37,39,41,41	0
4	NAG	G	2	14/15	0.94	0.12	38,43,52,65	0
6	BMA	I	3	11/12	0.94	0.15	52,55,57,63	0
6	NAG	I	2	14/15	0.94	0.21	48,51,56,56	0
6	MAN	L	7	11/12	0.95	0.18	41,43,48,51	0
6	NAG	I	1	14/15	0.95	0.10	39,43,45,50	0
9	MAN	P	6	11/12	0.95	0.15	44,50,52,54	0

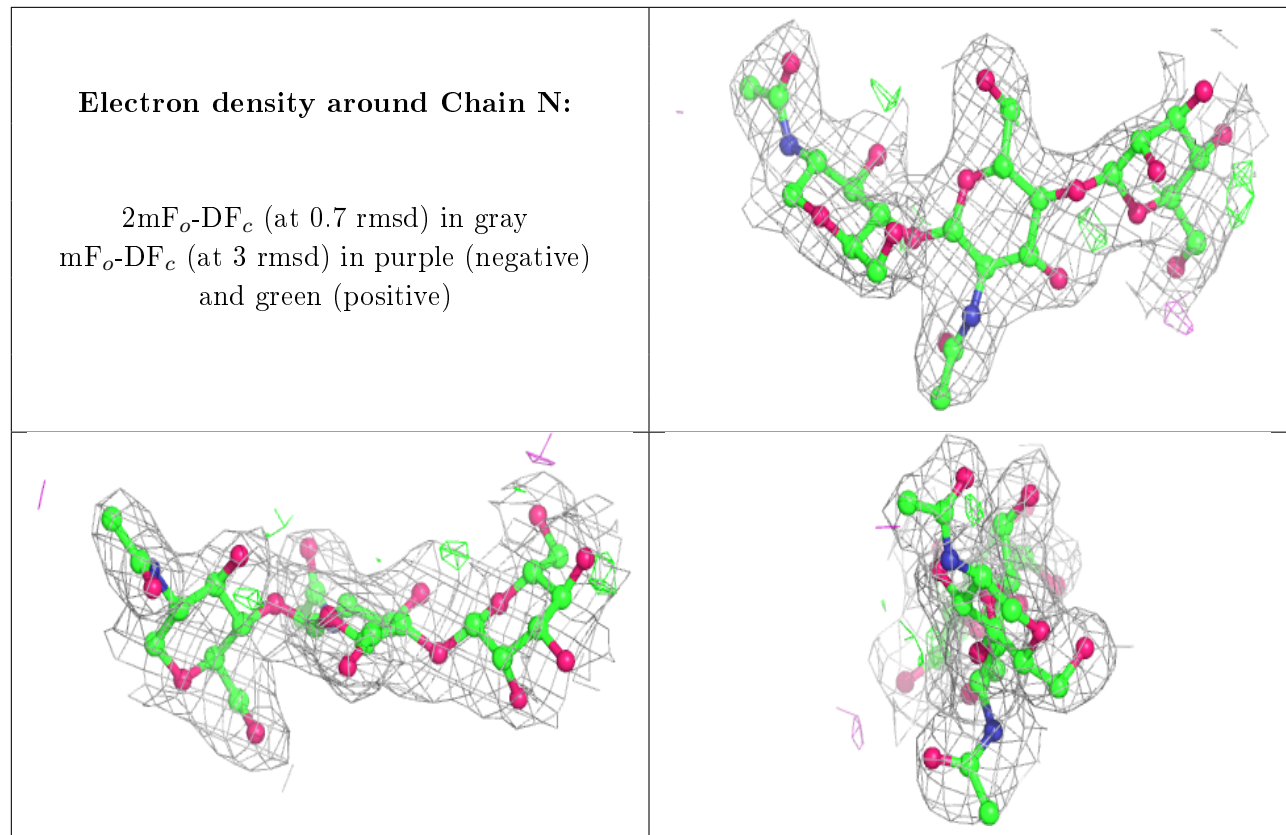
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	NAG	N	1	14/15	0.95	0.14	27,31,34,41	0
5	NAG	H	1	14/15	0.95	0.11	42,43,47,50	0
8	NAG	M	2	14/15	0.95	0.10	35,37,42,45	0
6	MAN	O	7	11/12	0.95	0.12	44,45,46,46	0
6	NAG	O	1	14/15	0.95	0.12	36,39,41,42	0
9	NAG	P	2	14/15	0.95	0.12	33,35,36,40	0
3	MAN	F	7	11/12	0.95	0.13	41,43,45,45	0
8	NAG	M	1	14/15	0.96	0.09	28,29,30,32	0
2	NAG	N	2	14/15	0.96	0.14	41,46,52,62	0
6	NAG	L	1	14/15	0.96	0.09	30,31,35,35	0
3	NAG	F	2	14/15	0.96	0.10	35,38,39,41	0
5	NAG	K	1	14/15	0.96	0.12	32,35,39,43	0
3	NAG	F	1	14/15	0.96	0.11	28,29,31,34	0
9	NAG	P	1	14/15	0.97	0.11	30,32,33,33	0
2	NAG	E	1	14/15	0.97	0.11	31,33,35,40	0
7	NAG	J	1	14/15	0.97	0.10	30,33,34,36	0

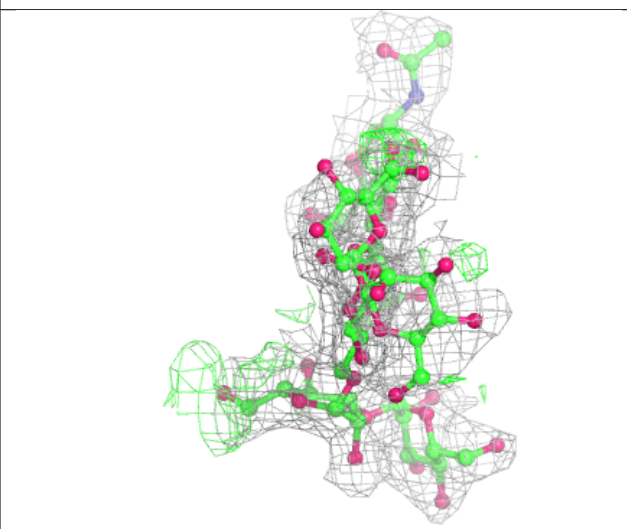
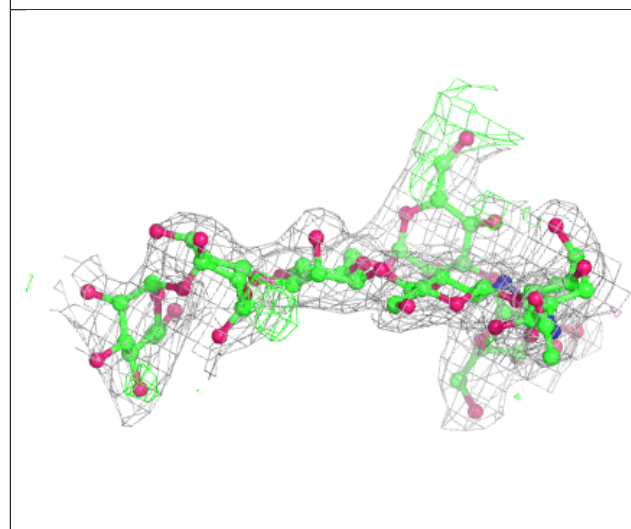
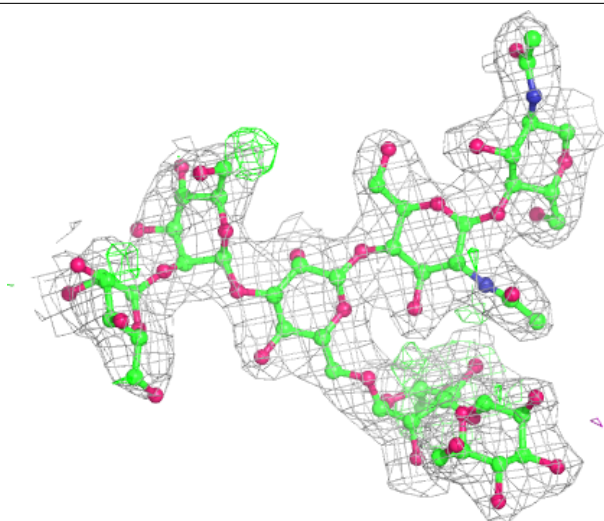
The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.





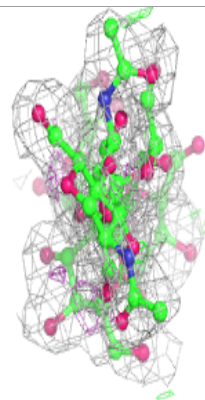
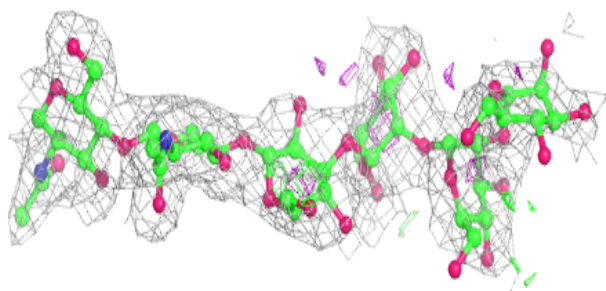
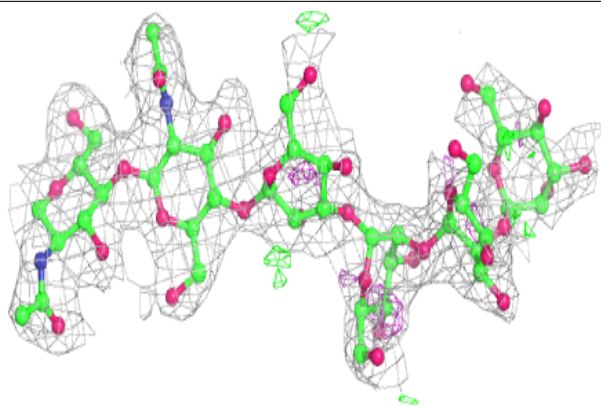
Electron density around Chain F:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

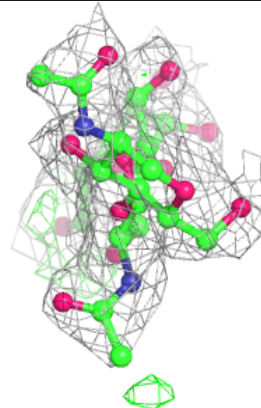
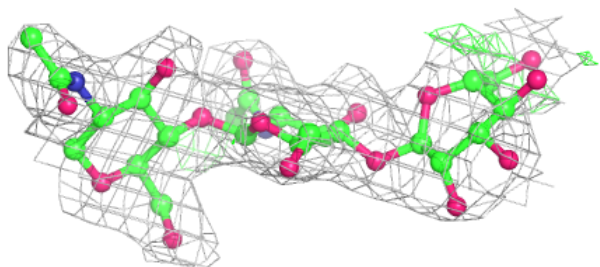
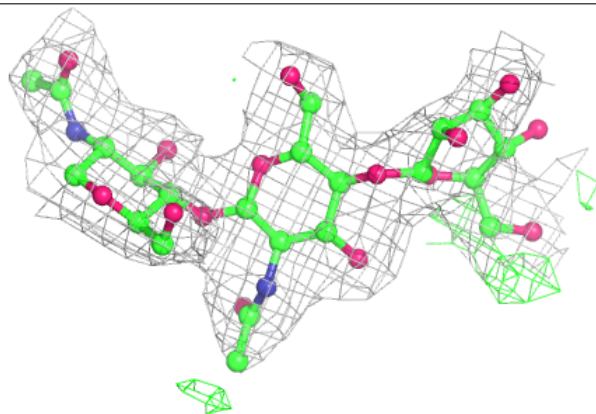


Electron density around Chain G:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)

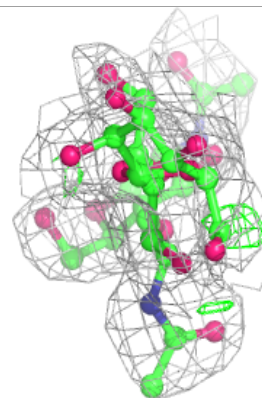
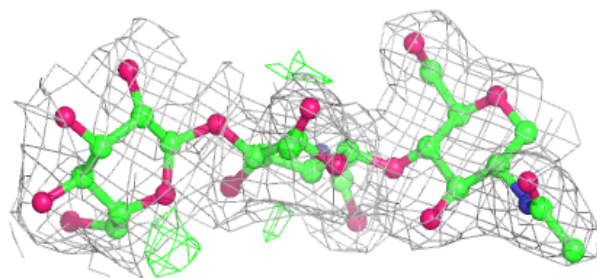
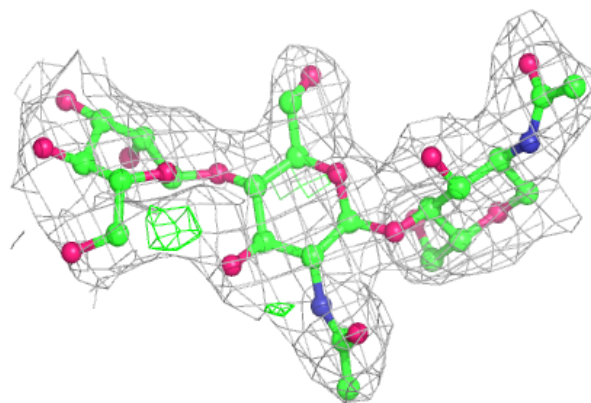
**Electron density around Chain H:**

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



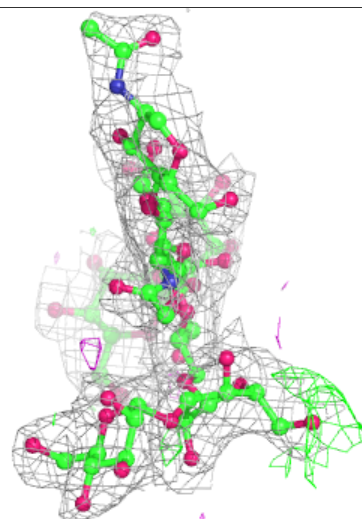
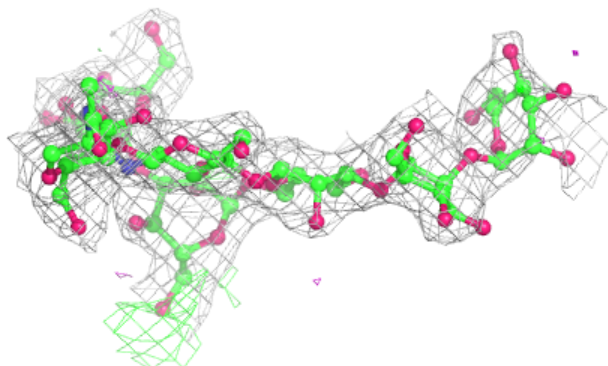
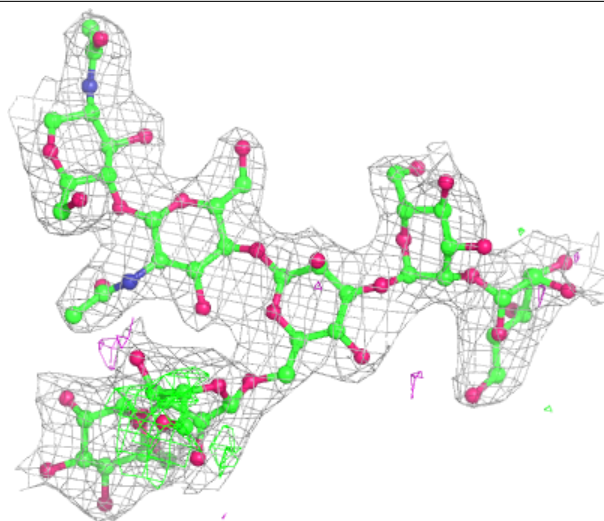
Electron density around Chain K:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



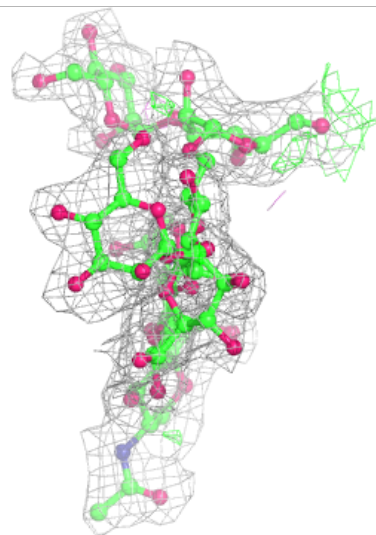
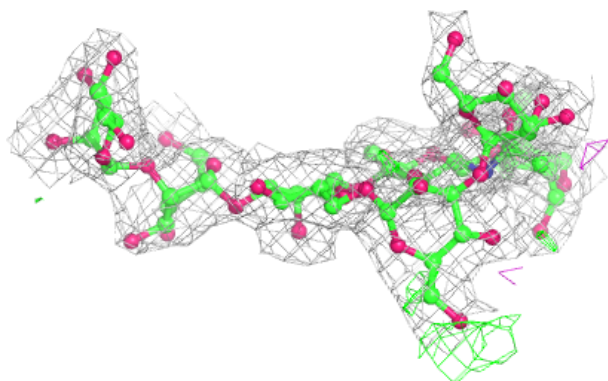
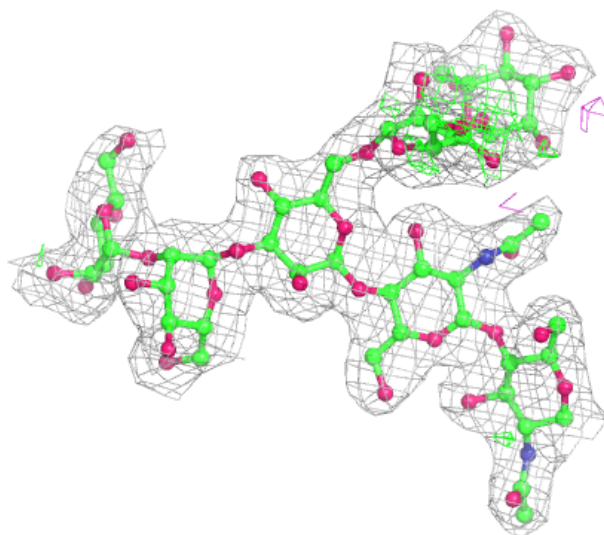
Electron density around Chain I:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



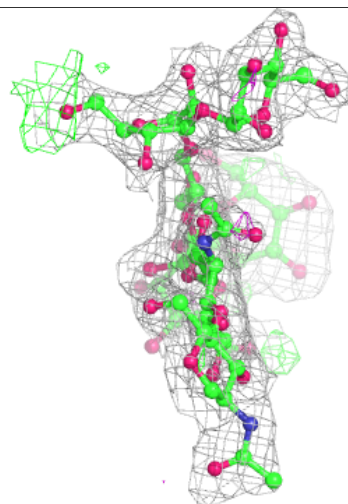
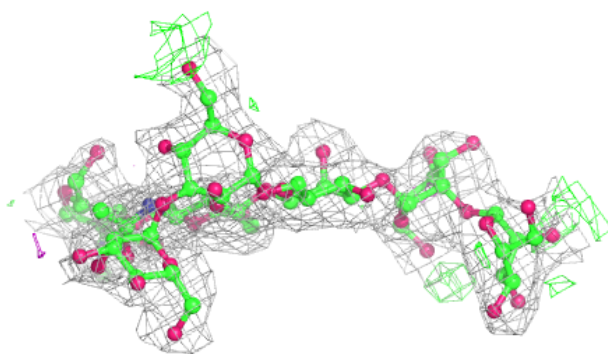
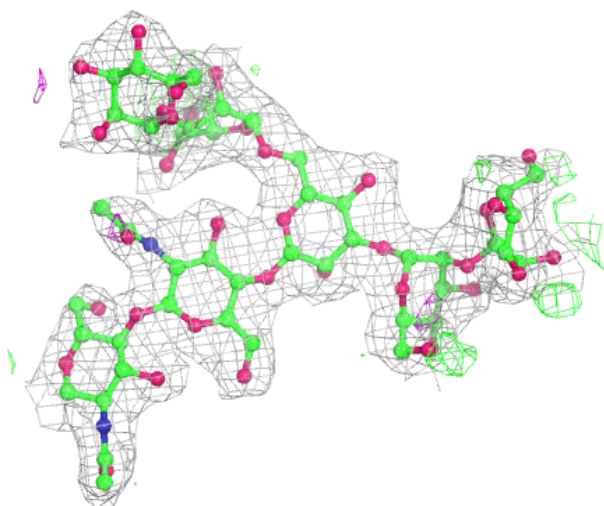
Electron density around Chain L:

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 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



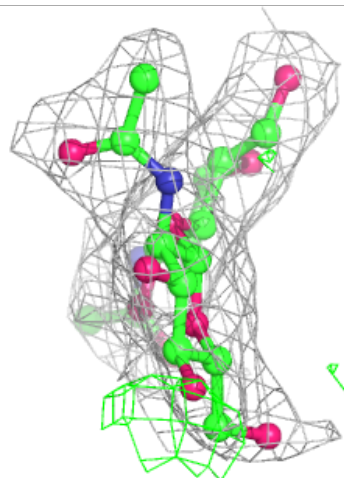
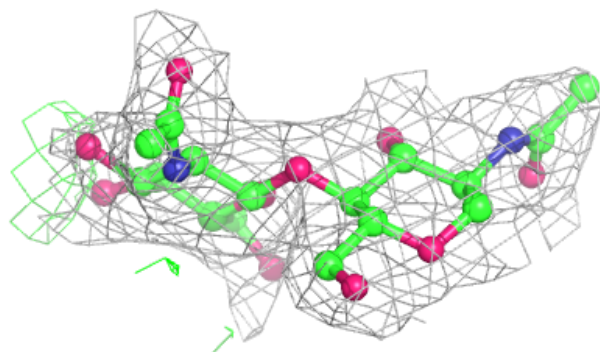
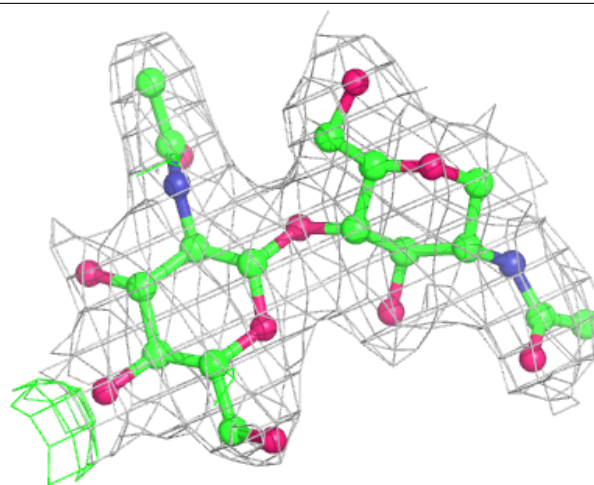
Electron density around Chain O:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



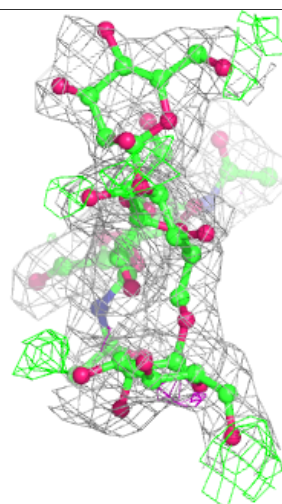
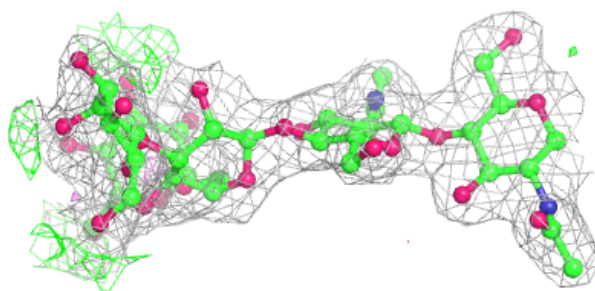
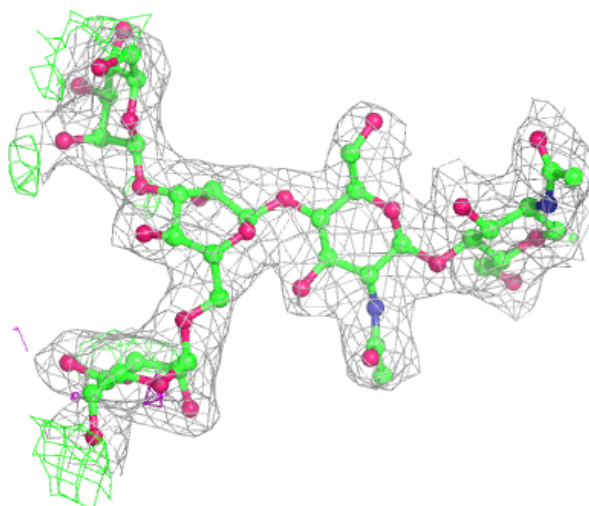
Electron density around Chain J:

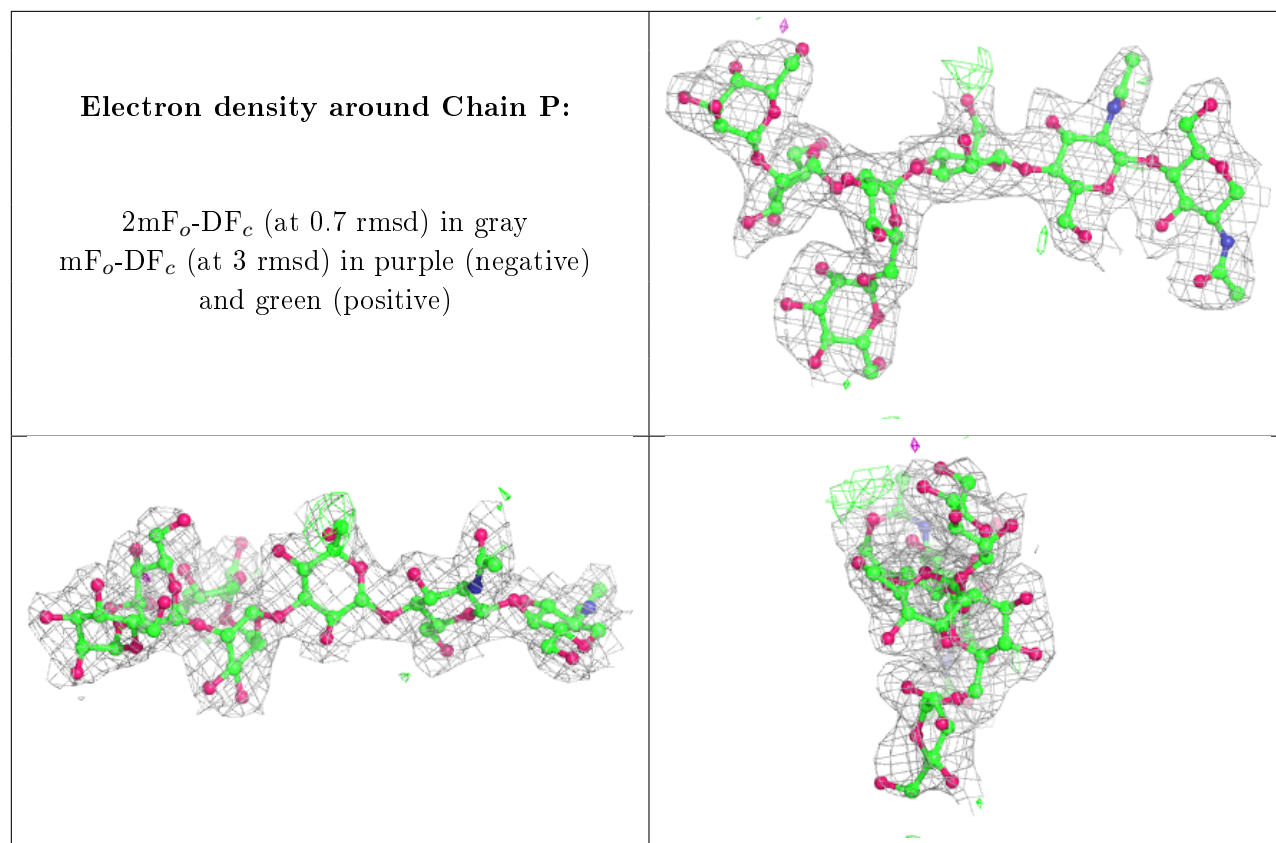
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around Chain M:

$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)





6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
10	NAG	A	920	14/15	0.74	0.25	61,77,82,85	0
11	TRS	C	920	8/8	0.84	0.19	40,43,45,45	0
10	NAG	B	916	14/15	0.85	0.17	70,75,79,83	0
11	TRS	A	921	8/8	0.85	0.20	37,41,47,49	0
10	NAG	D	912	13/15	0.86	0.13	46,47,51,52	0
11	TRS	D	922	8/8	0.89	0.18	35,40,41,44	0
11	TRS	B	917	8/8	0.89	0.20	38,42,44,44	0
10	NAG	D	921	14/15	0.90	0.18	48,53,54,55	0
10	NAG	A	912	13/15	0.90	0.10	43,47,50,51	0
10	NAG	B	911	14/15	0.90	0.15	62,67,69,69	0
10	NAG	D	911	14/15	0.90	0.15	47,54,69,69	0
10	NAG	C	919	14/15	0.91	0.25	58,64,65,66	0
10	NAG	A	911	14/15	0.91	0.13	54,60,68,69	0
10	NAG	B	912	13/15	0.92	0.19	47,57,62,67	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
10	NAG	C	911	14/15	0.92	0.23	46,50,59,60	0
10	NAG	C	912	13/15	0.93	0.22	43,46,49,50	0
10	NAG	D	920	14/15	0.95	0.11	34,35,38,39	0
10	NAG	B	915	14/15	0.95	0.10	35,42,43,43	0
10	NAG	A	919	14/15	0.96	0.10	32,36,39,41	0
10	NAG	C	918	14/15	0.96	0.12	34,38,39,42	0

6.5 Other polymers [i](#)

There are no such residues in this entry.