



wwPDB X-ray Structure Validation Summary Report ⓘ

May 7, 2026 – 11:00 AM EDT

PDB ID : 6TAV / pdb_00006tav
Title : Crystal structure of endopeptidase-induced alpha2-macroglobulin
Authors : Gomis-Ruth, F.X.; Duquerroy, S.; Trapani, S.; Marrero, A.; Goulas, T.; Guevara, T.; Andersen, G.A.; Sottrup-Jensen, L.; Navaza, J.
Deposited on : 2019-10-30
Resolution : 4.20 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 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:

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

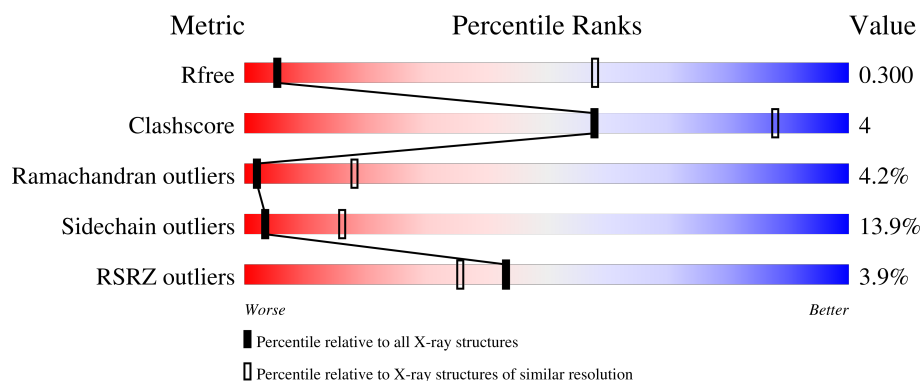
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 4.20 Å.

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



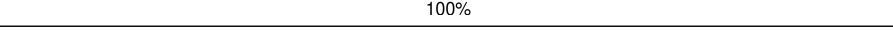
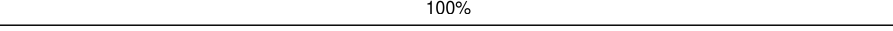
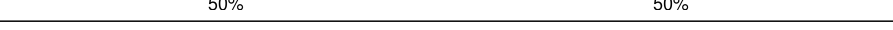
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	1004 (4.52-3.88)
Clashscore	190562	1019 (4.50-3.90)
Ramachandran outliers	187476	1020 (4.56-3.84)
Sidechain outliers	187428	1006 (4.56-3.84)
RSRZ outliers	180081	1001 (4.52-3.88)

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 of 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	1474	
1	B	1474	
1	C	1474	
1	D	1474	
2	E	4	

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Mol	Chain	Length	Quality of chain
2	G	4	 50% 50%
2	J	4	 25% 75%
2	O	4	 50% 50%
2	V	4	 25% 75%
3	F	3	 33% 67%
3	I	3	 33% 67%
3	M	3	 33% 67%
3	R	3	 67% 33%
4	H	2	 50% 50%
4	K	2	 50% 50%
4	L	2	 100%
4	N	2	 100%
4	P	2	 50% 50%
4	Q	2	 50% 50%
4	S	2	 50% 50%
4	T	2	 50% 50%
4	U	2	 50% 50%

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 82015 atoms, of which 40382 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 Alpha-2-macroglobulin.

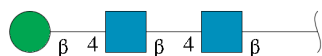
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	1416	Total	C	H	N	O	S	10926	0	0
			21976	7027	10926	1849	2125	49			
1	B	1273	Total	C	H	N	O	S	9812	0	0
			19741	6312	9812	1665	1909	43			
1	C	1274	Total	C	H	N	O	S	9834	0	0
			19770	6315	9834	1668	1910	43			
1	D	1271	Total	C	H	N	O	S	9810	0	0
			19716	6298	9810	1664	1901	43			

- Molecule 2 is an oligosaccharide called 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
2	E	4	Total	C	N	O	0	0	0
			50	28	2	20			
2	G	4	Total	C	N	O	0	0	0
			50	28	2	20			
2	J	4	Total	C	N	O	0	0	0
			50	28	2	20			
2	O	4	Total	C	N	O	0	0	0
			50	28	2	20			
2	V	4	Total	C	N	O	0	0	0
			50	28	2	20			

- Molecule 3 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.



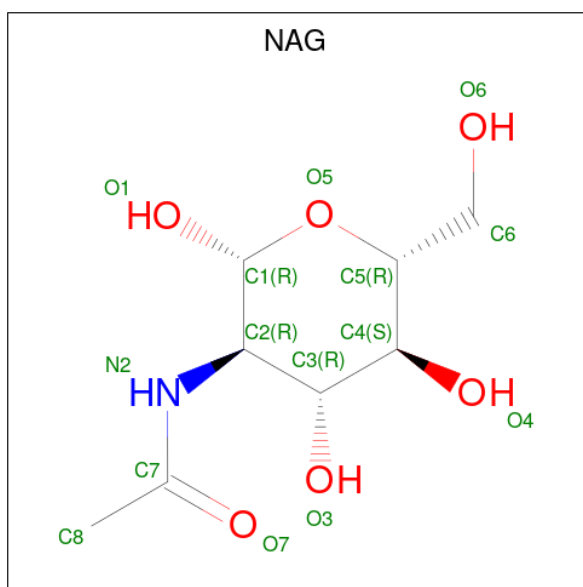
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	F	3	Total	C	N	O	0	0	0
			39	22	2	15			
3	I	3	Total	C	N	O	0	0	0
			39	22	2	15			
3	M	3	Total	C	N	O	0	0	0
			39	22	2	15			
3	R	3	Total	C	N	O	0	0	0
			39	22	2	15			

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



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
4	H	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	K	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	L	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	N	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	P	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	Q	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	S	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	T	2	Total	C	N	O	0	0	0
			28	16	2	10			
4	U	2	Total	C	N	O	0	0	0
			28	16	2	10			

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

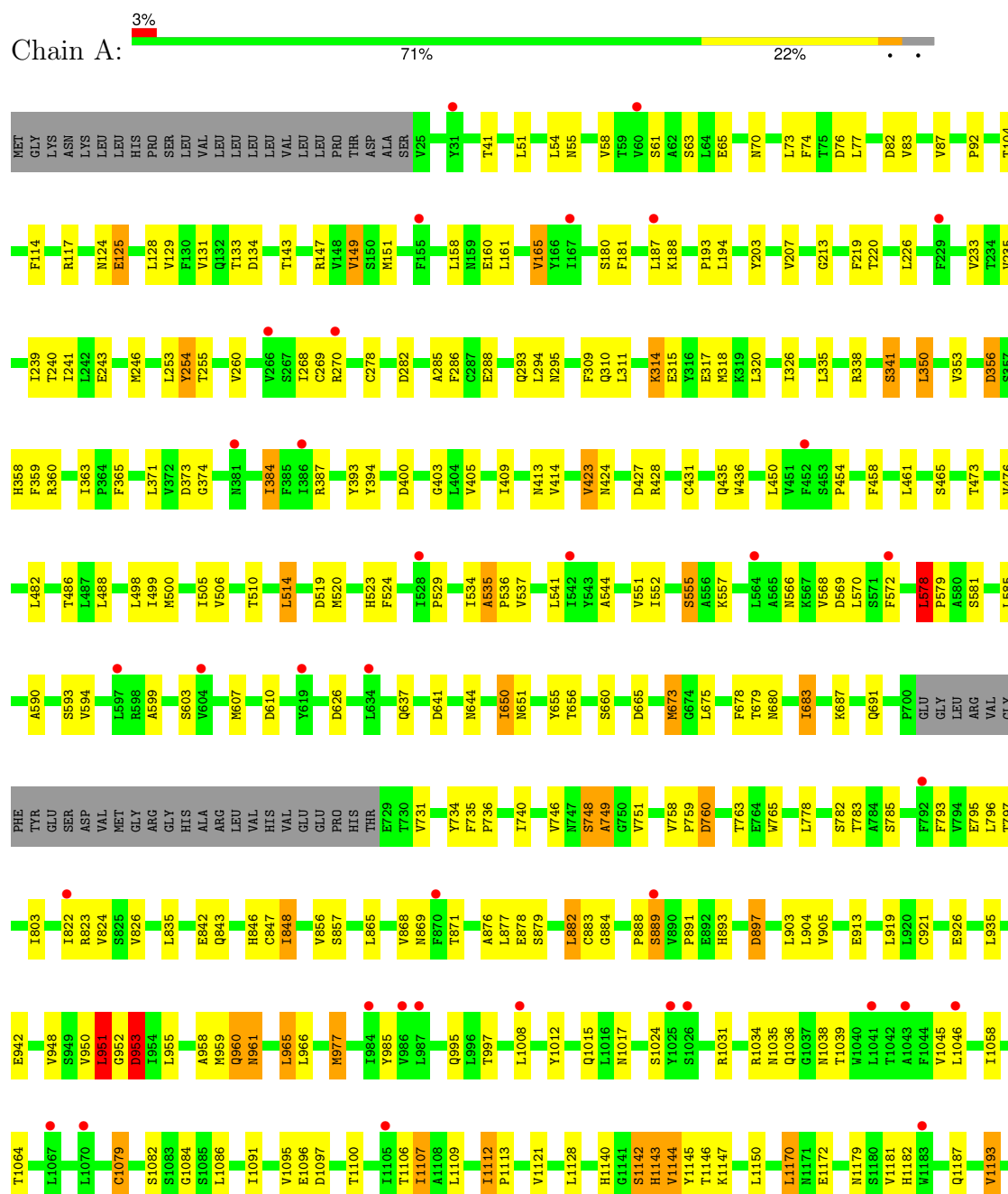


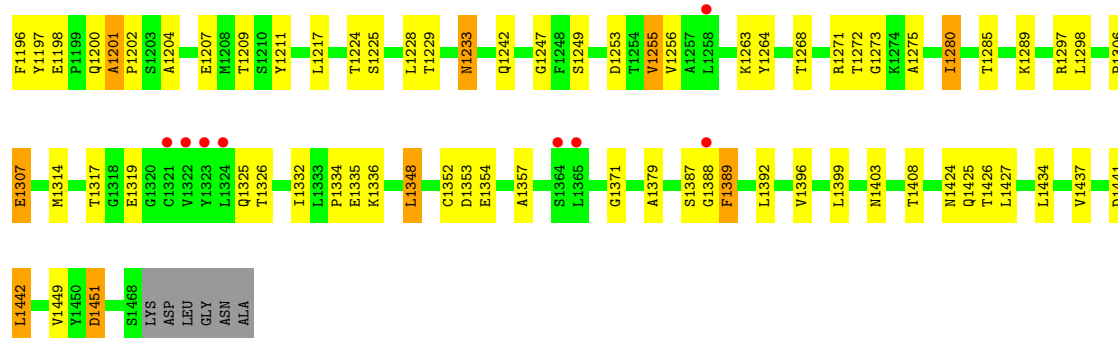
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	N	O	0	0
			14	8	1	5		
5	A	1	Total	C	N	O	0	0
			14	8	1	5		
5	A	1	Total	C	N	O	0	0
			14	8	1	5		
5	B	1	Total	C	N	O	0	0
			14	8	1	5		
5	C	1	Total	C	N	O	0	0
			14	8	1	5		
5	C	1	Total	C	N	O	0	0
			14	8	1	5		
5	C	1	Total	C	N	O	0	0
			14	8	1	5		
5	D	1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

3 Residue-property plots

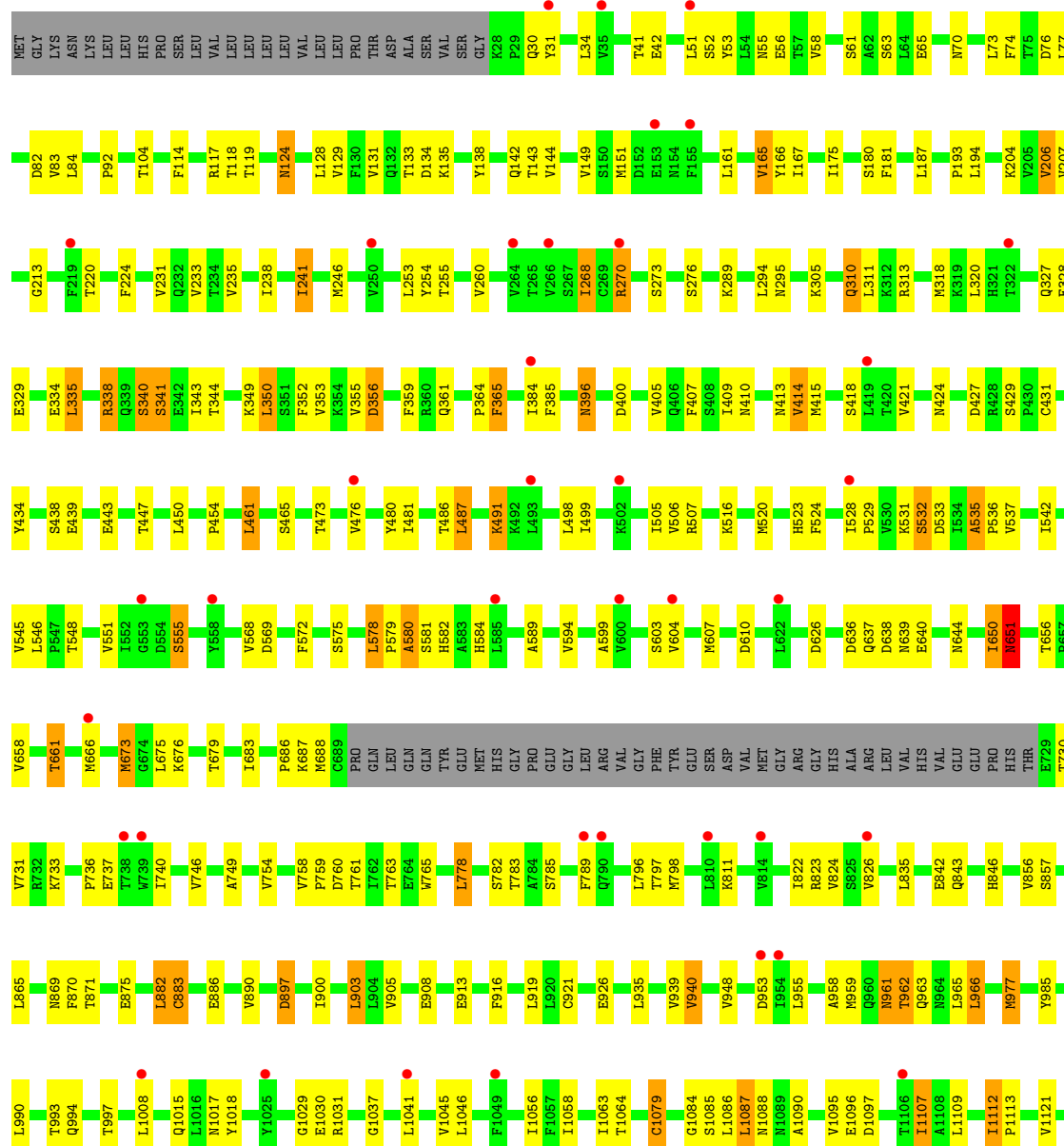
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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.

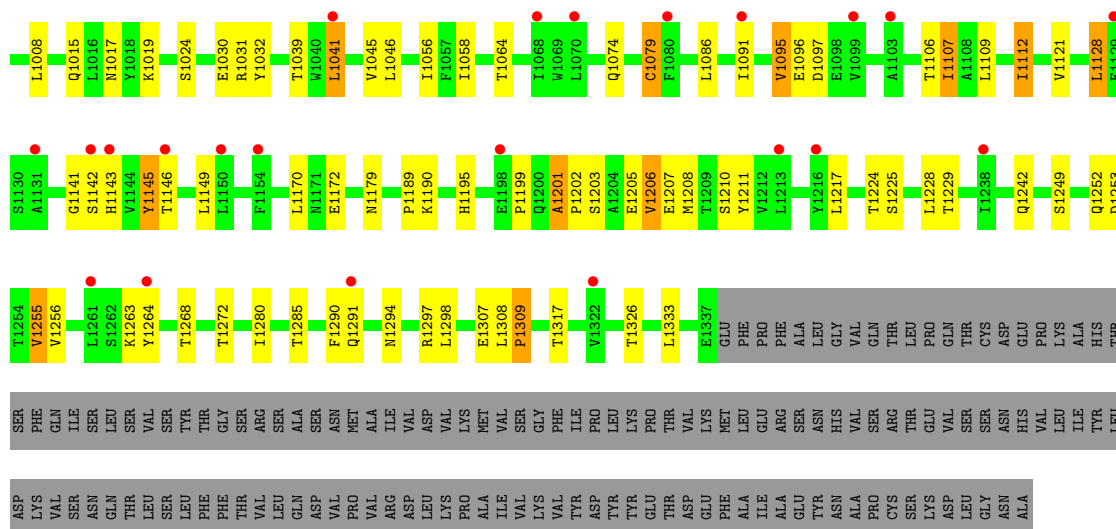
• Molecule 1: Alpha-2-macroglobulin



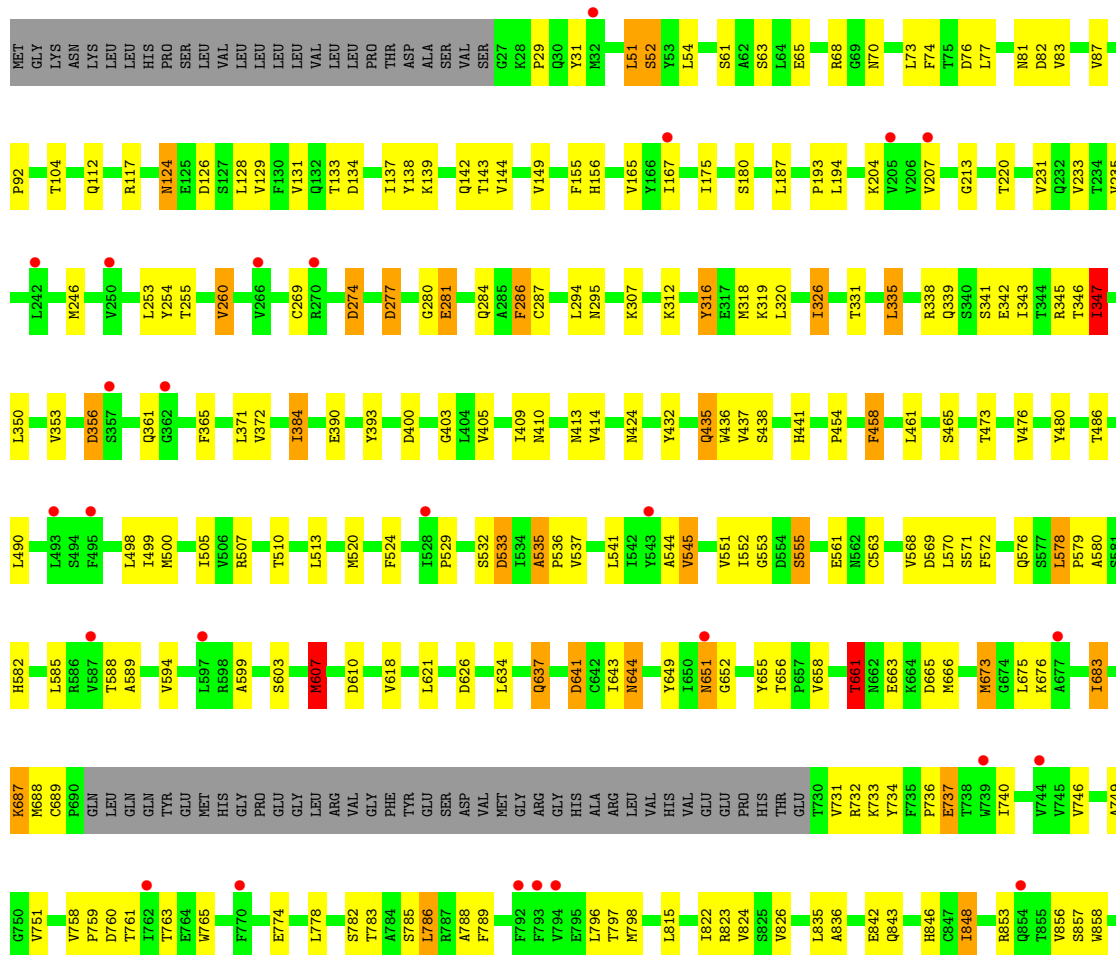


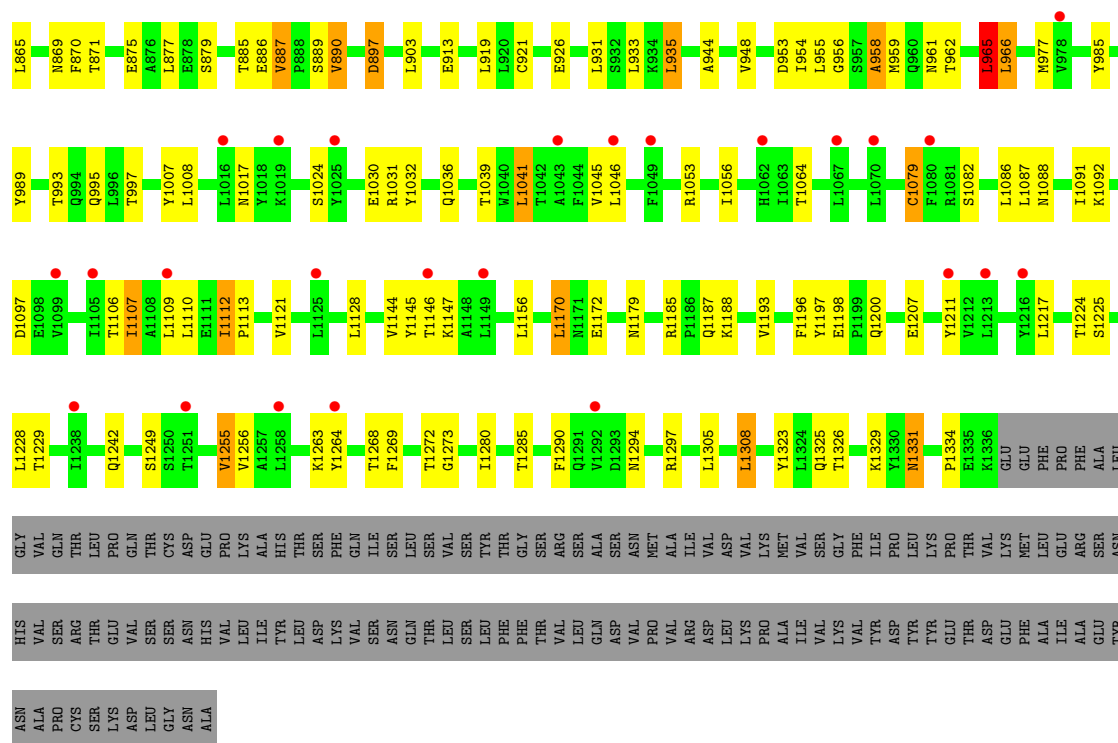
• Molecule 1: Alpha-2-macroglobulin





• Molecule 1: Alpha-2-macroglobulin





• Molecule 2: 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 E: 50% 50%



• Molecule 2: 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 G: 50% 50%



• Molecule 2: 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: 25% 75%



• Molecule 2: 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: 50% 50%



- Molecule 2: 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 V: 25% 75%



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

Chain F: 33% 67%



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

Chain I: 33% 67%



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

Chain M: 33% 67%



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

Chain R: 67% 33%



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

Chain H: 50% 50%

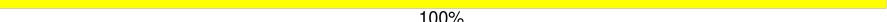


- Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:  50% 50%

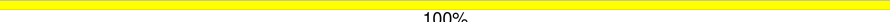
MAG1
MAG2

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

Chain L:  100%

MAG1
MAG2

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

Chain N:  100%

MAG1
MAG2

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

Chain P:  50% 50%

MAG1
MAG2

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

Chain Q:  50% 50%

MAG1
MAG2

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

Chain S:  50% 50%

MAG1
MAG2

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

Chain T:  50% 50%

MAG1
MAG2

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

Chain U: 

MAG1
MAG2

4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	130.80Å 260.30Å 281.80Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	34.24 – 4.20 34.24 – 4.20	Depositor EDS
% Data completeness (in resolution range)	99.2 (34.24-4.20) 99.0 (34.24-4.20)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.03 (at 4.15Å)	Xtriage
Refinement program	BUSTER 2.10.3	Depositor
R, R_{free}	0.235 , 0.282 0.263 , 0.300	Depositor DCC
R_{free} test set	834 reflections (1.19%)	wwPDB-VP
Wilson B-factor (Å ²)	221.9	Xtriage
Anisotropy	0.306	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , 270.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	82015	wwPDB-VP
Average B, all atoms (Å ²)	256.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.43% 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: NAG, MAN, BMA

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	1.00	9/11297 (0.1%)	1.24	54/15352 (0.4%)
1	B	0.96	5/10149 (0.0%)	1.23	42/13786 (0.3%)
1	C	0.97	8/10156 (0.1%)	1.25	52/13798 (0.4%)
1	D	0.94	6/10126 (0.1%)	1.24	44/13757 (0.3%)
All	All	0.97	28/41728 (0.1%)	1.24	192/56693 (0.3%)

The worst 5 of 28 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	889	SER	CA-C	7.52	1.57	1.53
1	C	576	GLN	CA-C	7.12	1.59	1.53
1	C	642	CYS	CA-C	6.56	1.60	1.53
1	C	415	MET	CA-C	5.96	1.60	1.52
1	B	1143	HIS	CA-C	5.90	1.58	1.53

The worst 5 of 192 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	1112	ILE	N-CA-C	-11.47	97.71	108.95
1	B	1112	ILE	N-CA-C	-11.16	98.01	108.95
1	C	1112	ILE	N-CA-C	-11.09	98.08	108.95
1	D	651	ASN	CA-CB-CG	10.61	123.21	112.60
1	C	1107	ILE	N-CA-CB	9.42	121.29	110.65

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	11050	10926	10934	93	0
1	B	9929	9812	9818	88	0
1	C	9936	9834	9836	96	0
1	D	9906	9810	9812	100	0
2	E	50	0	43	1	0
2	G	50	0	43	1	0
2	J	50	0	43	0	0
2	O	50	0	43	0	0
2	V	50	0	43	0	0
3	F	39	0	34	0	0
3	I	39	0	34	0	0
3	M	39	0	34	0	0
3	R	39	0	34	1	0
4	H	28	0	25	0	0
4	K	28	0	25	0	0
4	L	28	0	25	0	0
4	N	28	0	25	0	0
4	P	28	0	25	0	0
4	Q	28	0	25	0	0
4	S	28	0	25	1	0
4	T	28	0	25	0	0
4	U	28	0	25	0	0
5	A	42	0	39	0	0
5	B	14	0	13	0	0
5	C	56	0	52	0	0
5	D	42	0	39	0	0
All	All	41633	40382	41119	371	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 4.

The worst 5 of 371 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:1147:LYS:HB3	1:D:1170:LEU:HD21	1.54	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:77:LEU:HD22	1:D:87:VAL:HG11	1.53	0.89
1:C:77:LEU:HD22	1:C:87:VAL:HG11	1.55	0.89
1:A:77:LEU:HD22	1:A:87:VAL:HG11	1.56	0.87
1:A:977:MET:HE3	1:A:1045:VAL:HG22	1.71	0.72

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	1412/1474 (96%)	1184 (84%)	168 (12%)	60 (4%)	2	18
1	B	1269/1474 (86%)	1064 (84%)	146 (12%)	59 (5%)	2	17
1	C	1270/1474 (86%)	1082 (85%)	141 (11%)	47 (4%)	2	20
1	D	1267/1474 (86%)	1068 (84%)	145 (11%)	54 (4%)	2	18
All	All	5218/5896 (88%)	4398 (84%)	600 (12%)	220 (4%)	2	18

5 of 220 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	125	GLU
1	A	282	ASP
1	A	286	PHE
1	A	374	GLY
1	A	535	ALA

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	1241/1290 (96%)	1066 (86%)	175 (14%)	3	16
1	B	1110/1290 (86%)	957 (86%)	153 (14%)	3	16
1	C	1112/1290 (86%)	959 (86%)	153 (14%)	3	16
1	D	1108/1290 (86%)	953 (86%)	155 (14%)	3	16
All	All	4571/5160 (89%)	3935 (86%)	636 (14%)	3	16

5 of 636 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	1146	THR
1	D	786	LEU
1	C	1272	THR
1	C	1143	HIS
1	D	347	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 79 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	1325	GLN
1	D	976	ASN
1	D	112	GLN
1	D	511	HIS
1	D	1088	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

50 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	NAG	E	1	2,1	14,14,15	0.43	0	17,19,21	1.27	3 (17%)
2	NAG	E	2	2	14,14,15	0.48	0	17,19,21	1.55	2 (11%)
2	BMA	E	3	2	11,11,12	0.51	0	15,15,17	1.12	1 (6%)
2	MAN	E	4	2	11,11,12	0.57	0	15,15,17	1.00	2 (13%)
3	NAG	F	1	1,3	14,14,15	0.47	0	17,19,21	0.98	1 (5%)
3	NAG	F	2	3	14,14,15	0.43	0	17,19,21	0.93	1 (5%)
3	BMA	F	3	3	11,11,12	0.38	0	15,15,17	0.70	0
2	NAG	G	1	2,1	14,14,15	0.40	0	17,19,21	0.85	1 (5%)
2	NAG	G	2	2	14,14,15	0.49	0	17,19,21	1.00	2 (11%)
2	BMA	G	3	2	11,11,12	0.59	0	15,15,17	0.96	1 (6%)
2	MAN	G	4	2	11,11,12	0.69	0	15,15,17	1.47	2 (13%)
4	NAG	H	1	4,1	14,14,15	0.41	0	17,19,21	1.05	1 (5%)
4	NAG	H	2	4	14,14,15	0.39	0	17,19,21	0.58	0
3	NAG	I	1	1,3	14,14,15	0.33	0	17,19,21	0.69	0
3	NAG	I	2	3	14,14,15	0.42	0	17,19,21	0.93	2 (11%)
3	BMA	I	3	3	11,11,12	0.49	0	15,15,17	0.69	1 (6%)
2	NAG	J	1	2,1	14,14,15	0.55	0	17,19,21	1.22	1 (5%)
2	NAG	J	2	2	14,14,15	0.47	0	17,19,21	1.18	2 (11%)
2	BMA	J	3	2	11,11,12	0.47	0	15,15,17	0.70	0
2	MAN	J	4	2	11,11,12	0.53	0	15,15,17	1.06	2 (13%)
4	NAG	K	1	4,1	14,14,15	0.46	0	17,19,21	0.89	1 (5%)
4	NAG	K	2	4	14,14,15	0.43	0	17,19,21	0.65	0
4	NAG	L	1	4,1	14,14,15	0.46	0	17,19,21	1.20	2 (11%)
4	NAG	L	2	4	14,14,15	0.49	0	17,19,21	0.81	1 (5%)
3	NAG	M	1	1,3	14,14,15	0.40	0	17,19,21	0.87	1 (5%)
3	NAG	M	2	3	14,14,15	0.47	0	17,19,21	1.11	2 (11%)
3	BMA	M	3	3	11,11,12	0.38	0	15,15,17	0.54	0
4	NAG	N	1	4,1	14,14,15	0.42	0	17,19,21	1.07	2 (11%)
4	NAG	N	2	4	14,14,15	0.48	0	17,19,21	1.69	3 (17%)
2	NAG	O	1	2,1	14,14,15	0.40	0	17,19,21	0.79	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	NAG	O	2	2	14,14,15	0.47	0	17,19,21	1.22	3 (17%)
2	BMA	O	3	2	11,11,12	0.57	0	15,15,17	0.72	0
2	MAN	O	4	2	11,11,12	0.43	0	15,15,17	0.83	1 (6%)
4	NAG	P	1	4,1	14,14,15	0.43	0	17,19,21	0.61	0
4	NAG	P	2	4	14,14,15	0.52	0	17,19,21	1.04	2 (11%)
4	NAG	Q	1	4,1	14,14,15	0.41	0	17,19,21	1.06	2 (11%)
4	NAG	Q	2	4	14,14,15	0.44	0	17,19,21	0.59	0
3	NAG	R	1	1,3	14,14,15	0.30	0	17,19,21	0.72	0
3	NAG	R	2	3	14,14,15	0.48	0	17,19,21	1.58	3 (17%)
3	BMA	R	3	3	11,11,12	0.49	0	15,15,17	0.91	1 (6%)
4	NAG	S	1	4,1	14,14,15	0.42	0	17,19,21	0.82	1 (5%)
4	NAG	S	2	4	14,14,15	0.44	0	17,19,21	1.21	3 (17%)
4	NAG	T	1	4,1	14,14,15	0.41	0	17,19,21	0.80	0
4	NAG	T	2	4	14,14,15	0.44	0	17,19,21	1.21	3 (17%)
4	NAG	U	1	4,1	14,14,15	0.40	0	17,19,21	1.05	2 (11%)
4	NAG	U	2	4	14,14,15	0.39	0	17,19,21	0.71	0
2	NAG	V	1	2,1	14,14,15	0.42	0	17,19,21	1.44	4 (23%)
2	NAG	V	2	2	14,14,15	0.49	0	17,19,21	1.55	2 (11%)
2	BMA	V	3	2	11,11,12	0.48	0	15,15,17	0.84	0
2	MAN	V	4	2	11,11,12	0.45	0	15,15,17	0.98	1 (6%)

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	2,1	-	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	-	1/2/19/22	0/1/1/1
2	MAN	E	4	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	-	2/6/23/26	0/1/1/1
3	BMA	F	3	3	-	0/2/19/22	0/1/1/1
2	NAG	G	1	2,1	-	2/6/23/26	0/1/1/1
2	NAG	G	2	2	-	2/6/23/26	0/1/1/1
2	BMA	G	3	2	-	2/2/19/22	0/1/1/1
2	MAN	G	4	2	-	1/2/19/22	0/1/1/1
4	NAG	H	1	4,1	-	0/6/23/26	0/1/1/1

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

There are no bond length outliers.

The worst 5 of 65 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	N	2	NAG	C1-C2-N2	5.35	118.87	110.43
2	G	4	MAN	C1-O5-C5	4.78	118.59	112.19
2	V	2	NAG	C1-C2-N2	4.43	117.42	110.43
2	E	2	NAG	C1-O5-C5	4.10	117.69	112.19
2	E	2	NAG	C1-C2-N2	4.08	116.86	110.43

There are no chirality outliers.

5 of 43 torsion outliers are listed below:

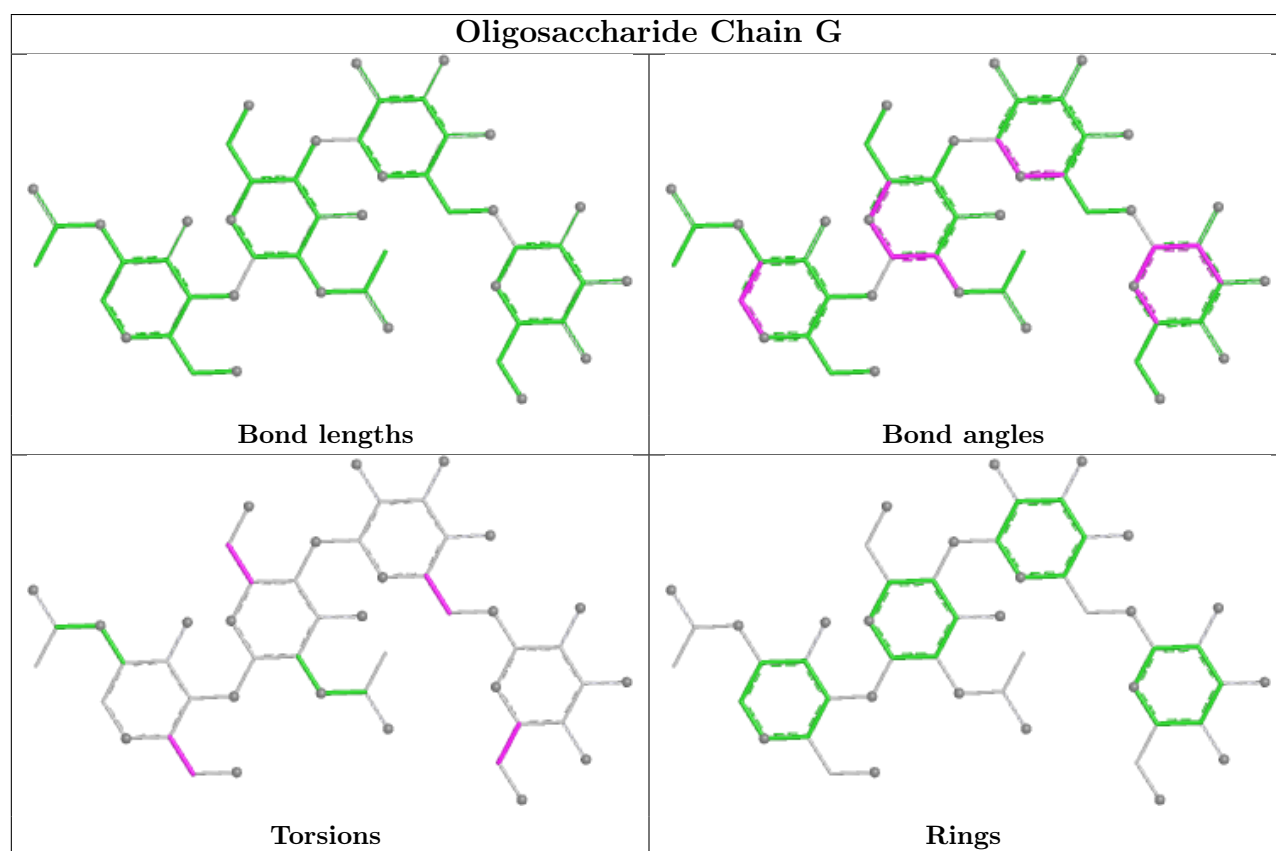
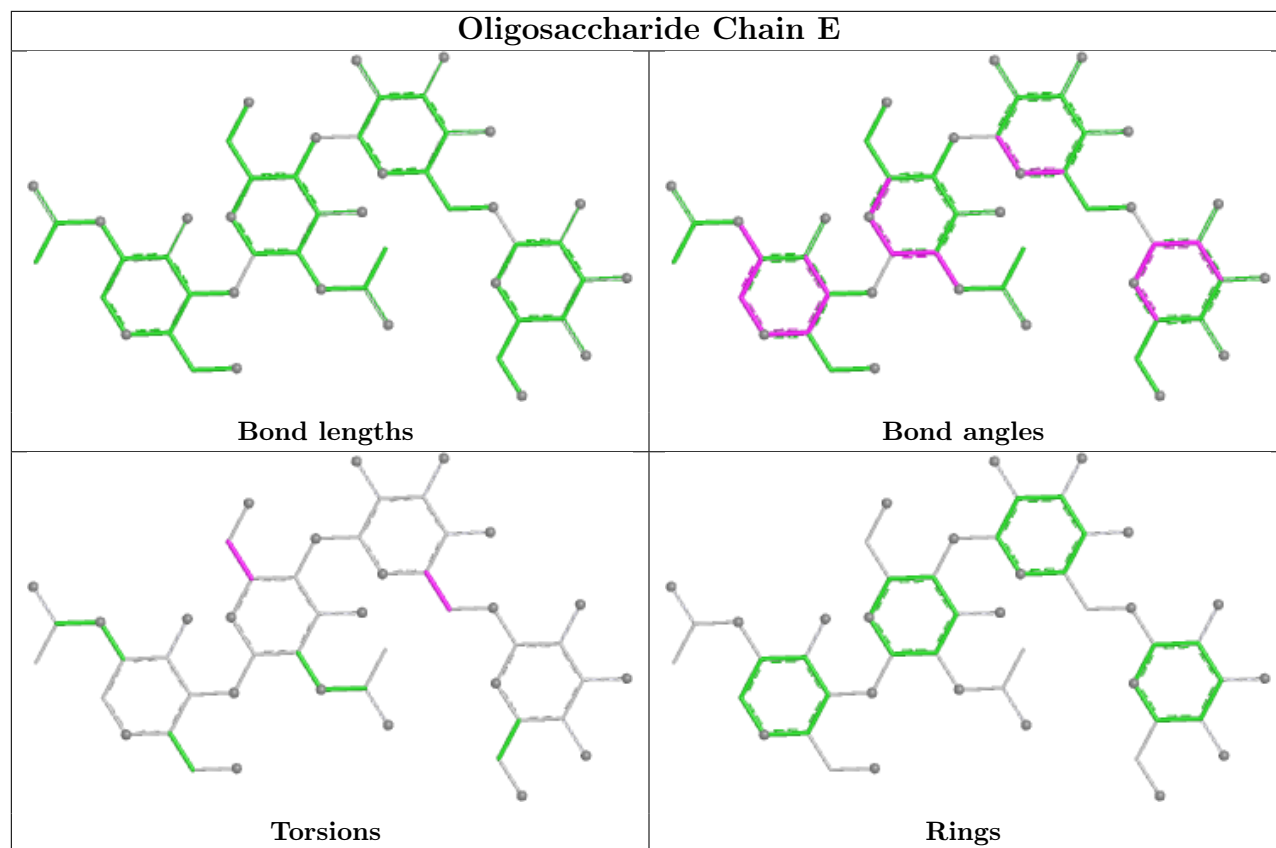
Mol	Chain	Res	Type	Atoms
2	O	1	NAG	C1-C2-N2-C7
3	I	1	NAG	C1-C2-N2-C7
3	M	2	NAG	C1-C2-N2-C7
3	R	1	NAG	C1-C2-N2-C7
3	R	2	NAG	C1-C2-N2-C7

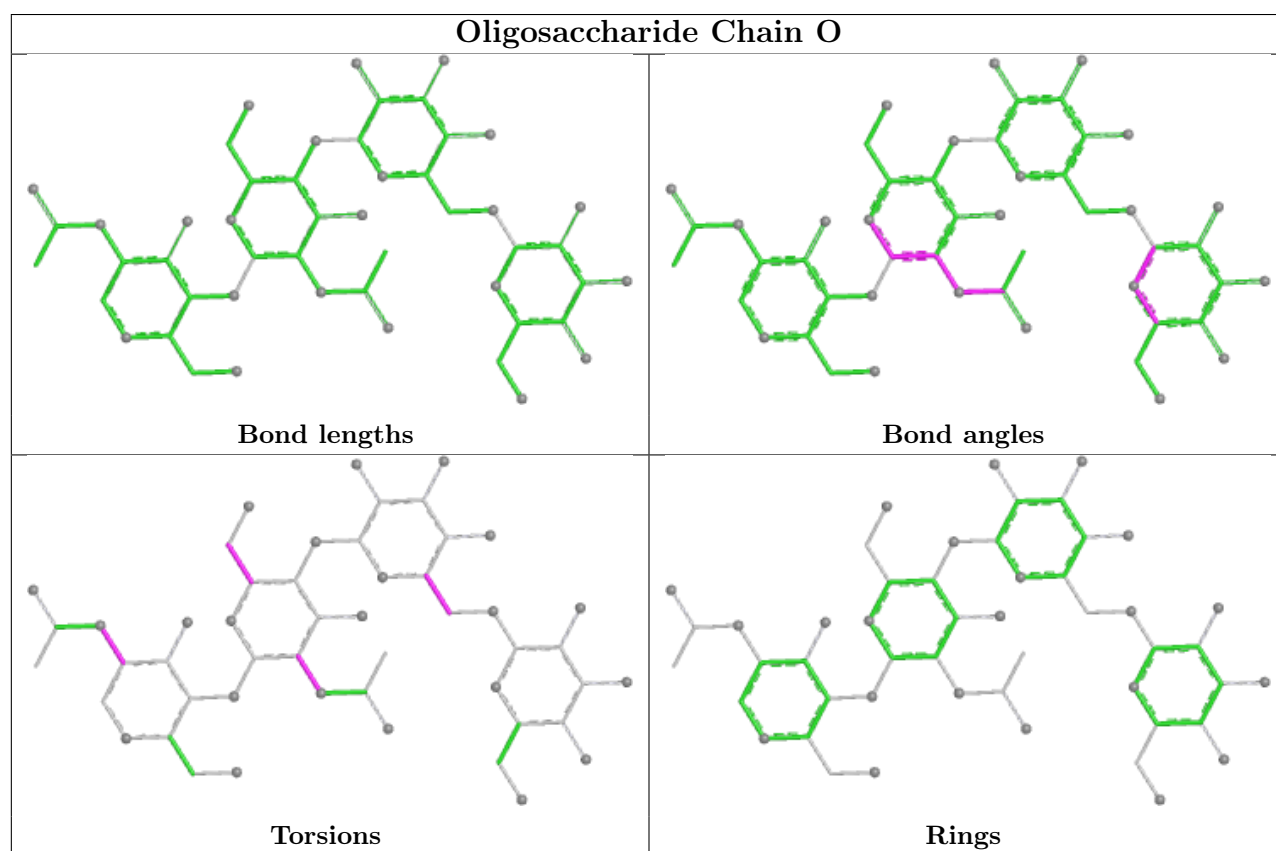
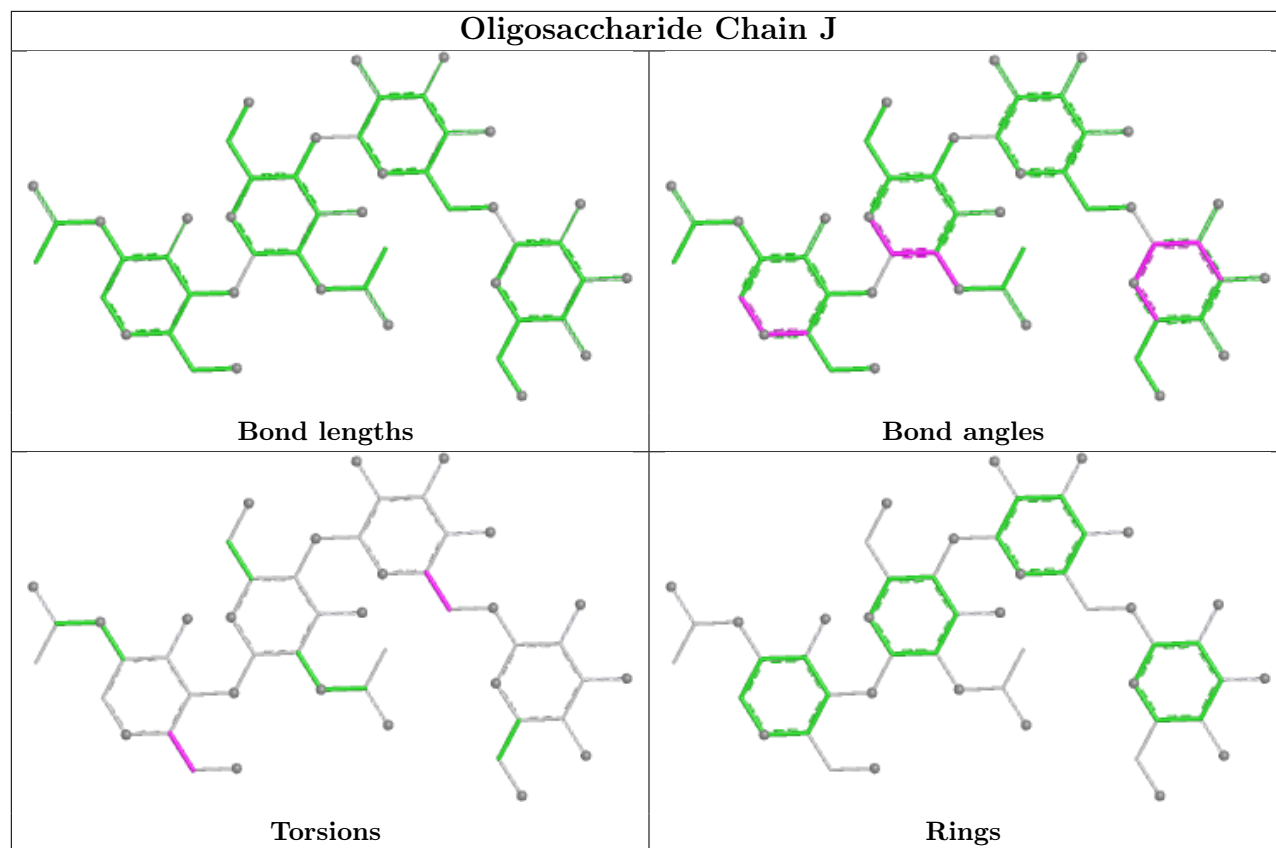
There are no ring outliers.

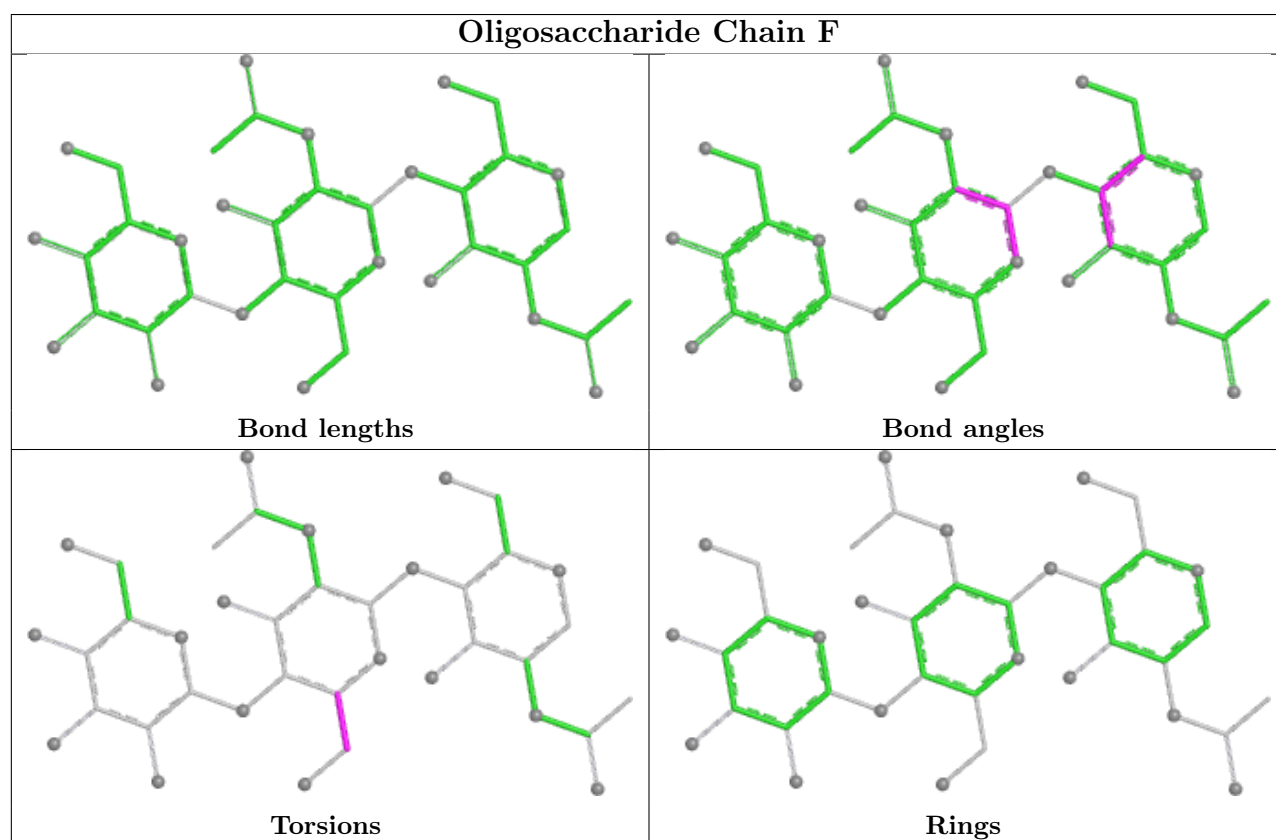
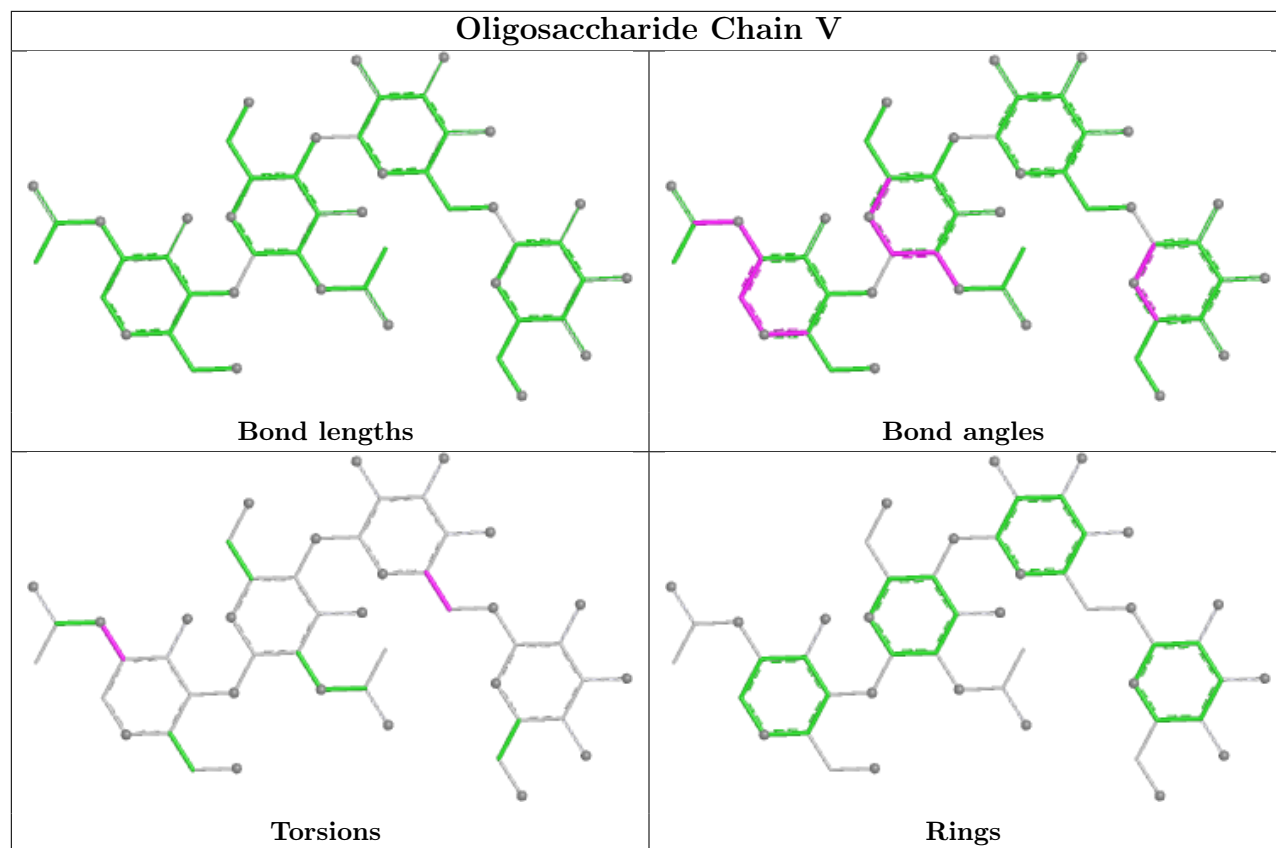
7 monomers are involved in 4 short contacts:

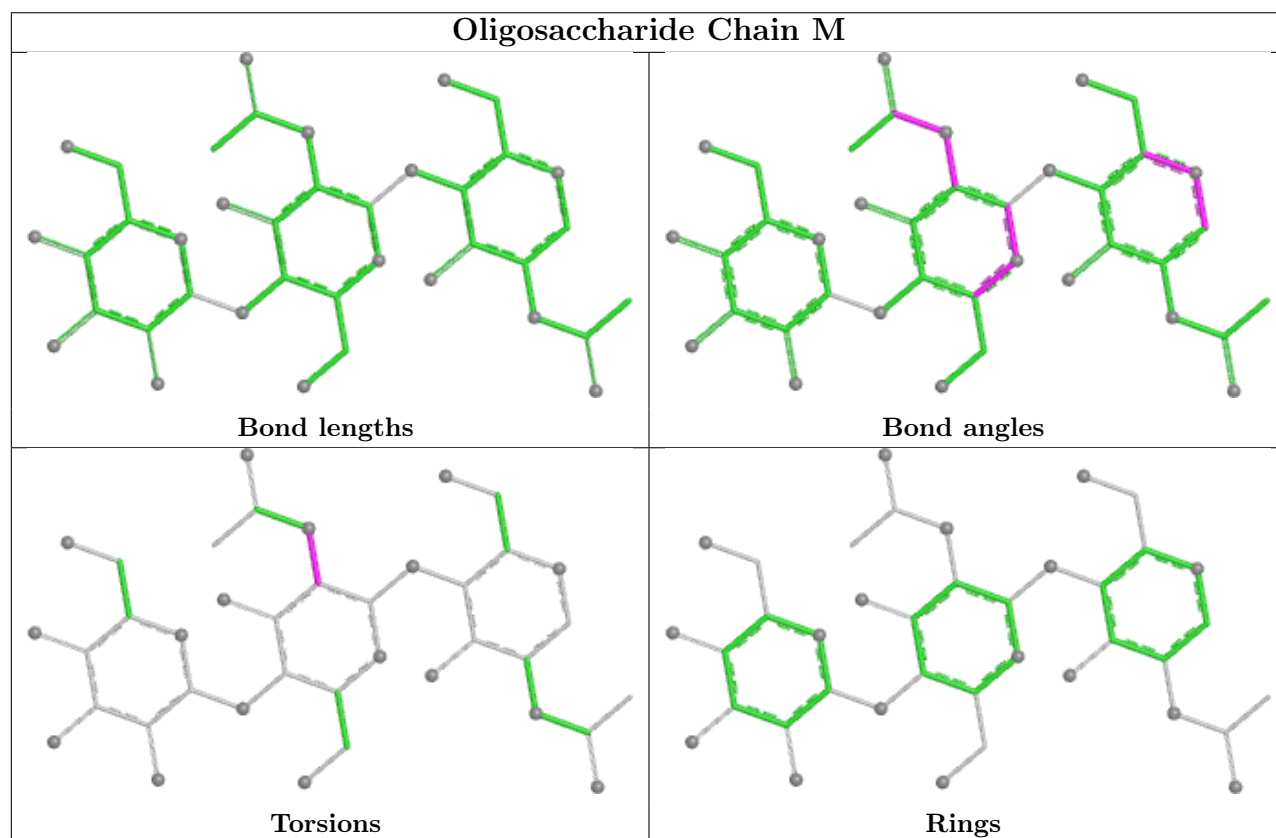
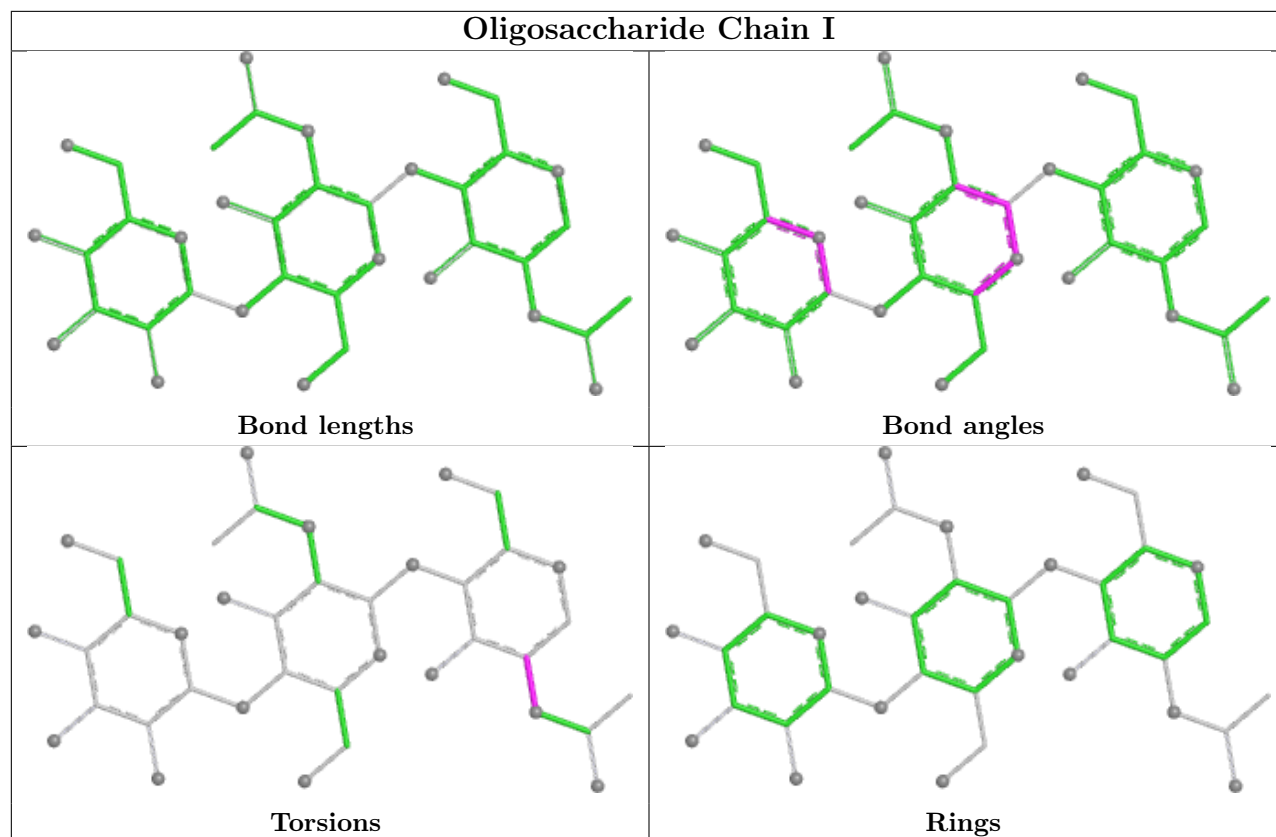
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	R	2	NAG	1	0
3	R	1	NAG	1	0
2	E	2	NAG	1	0
2	E	1	NAG	1	0
4	S	1	NAG	1	0
2	G	1	NAG	1	0
2	G	2	NAG	1	0

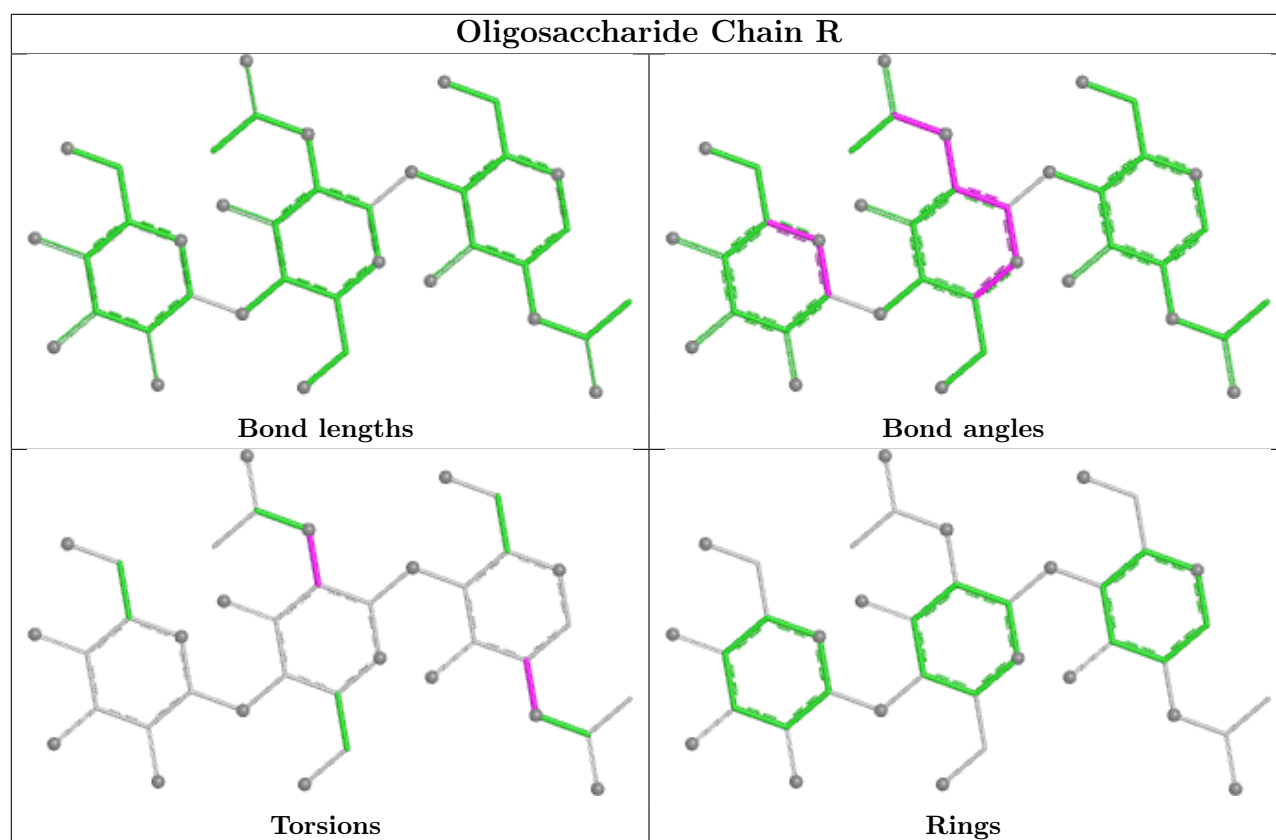
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

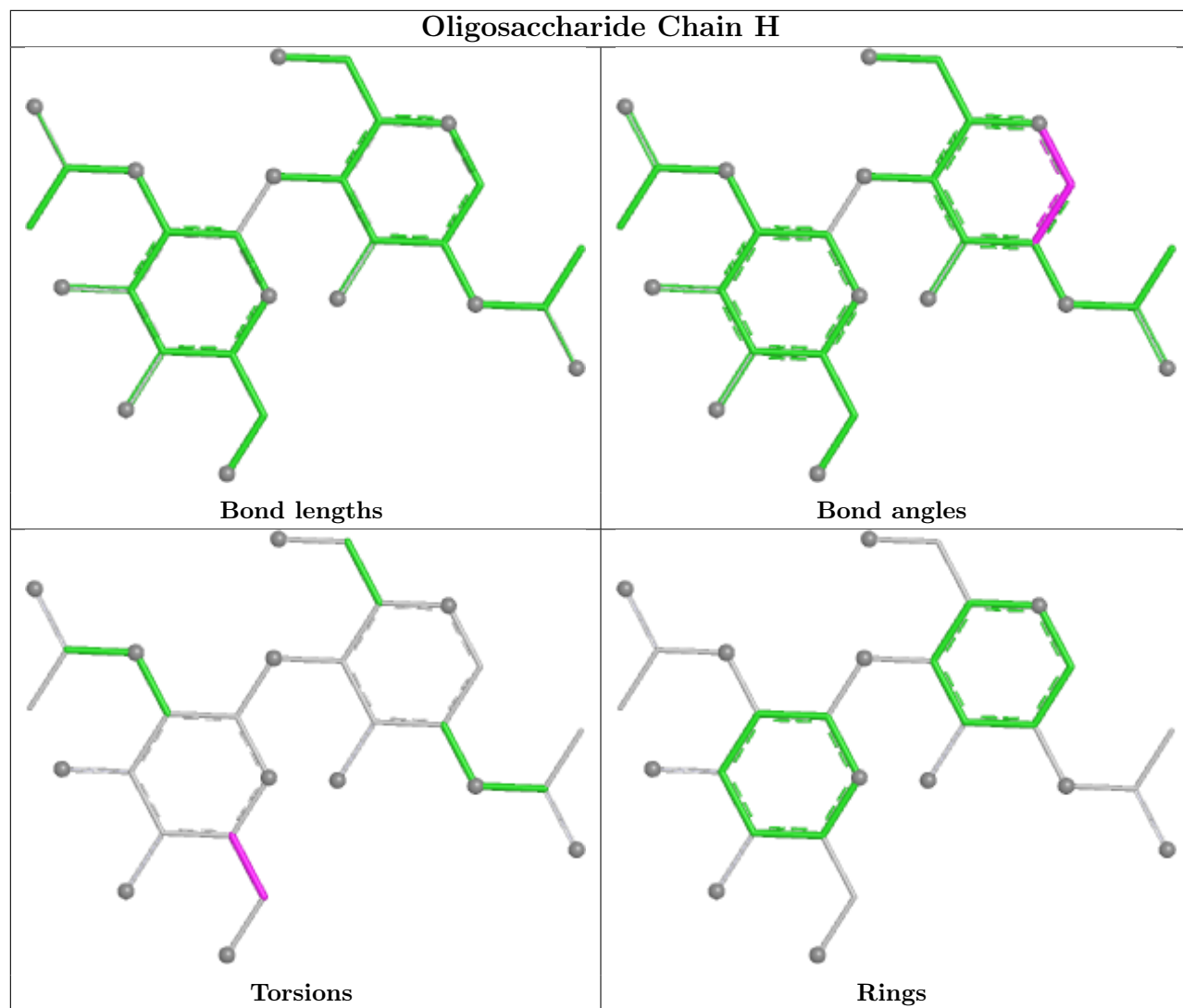


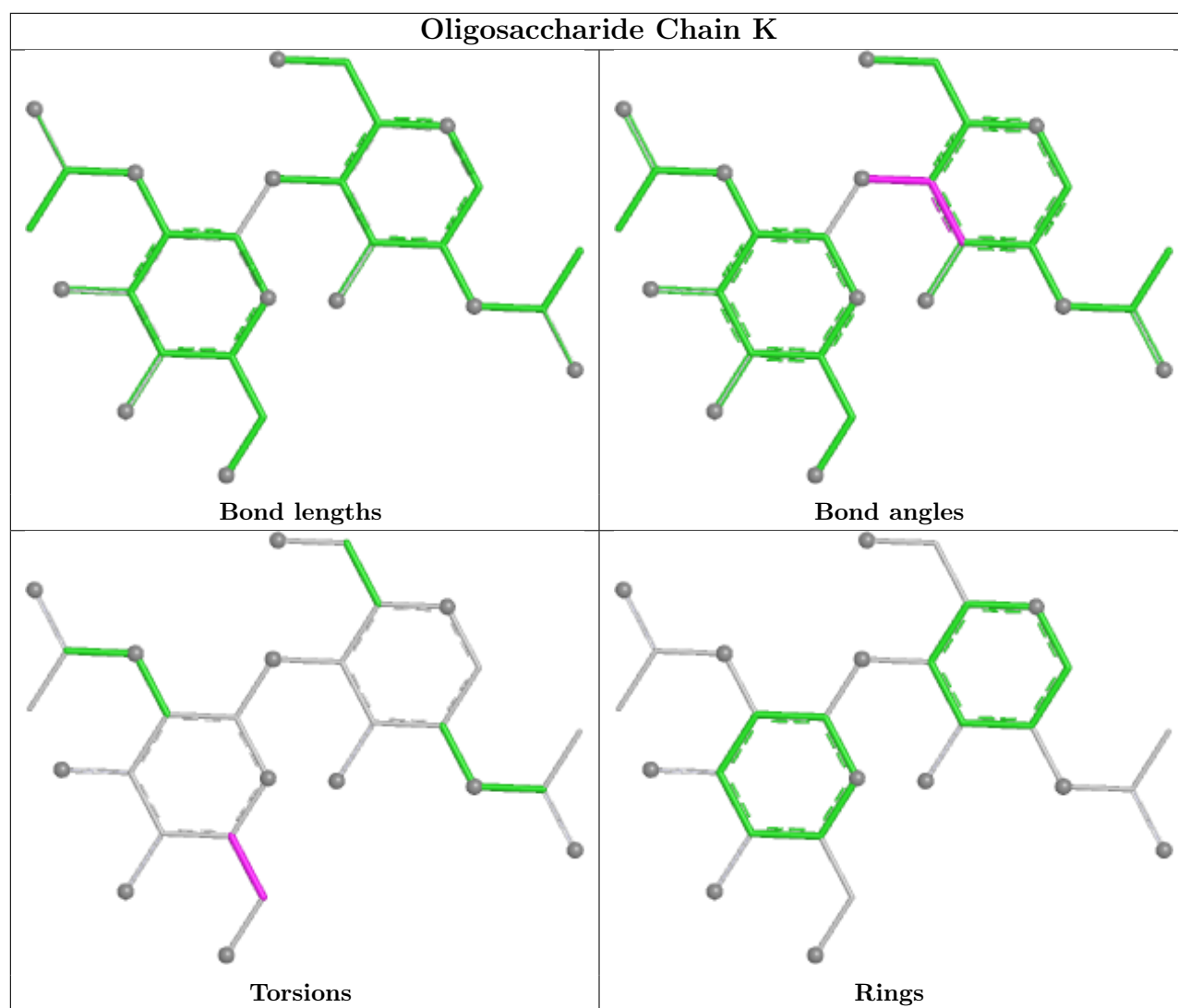


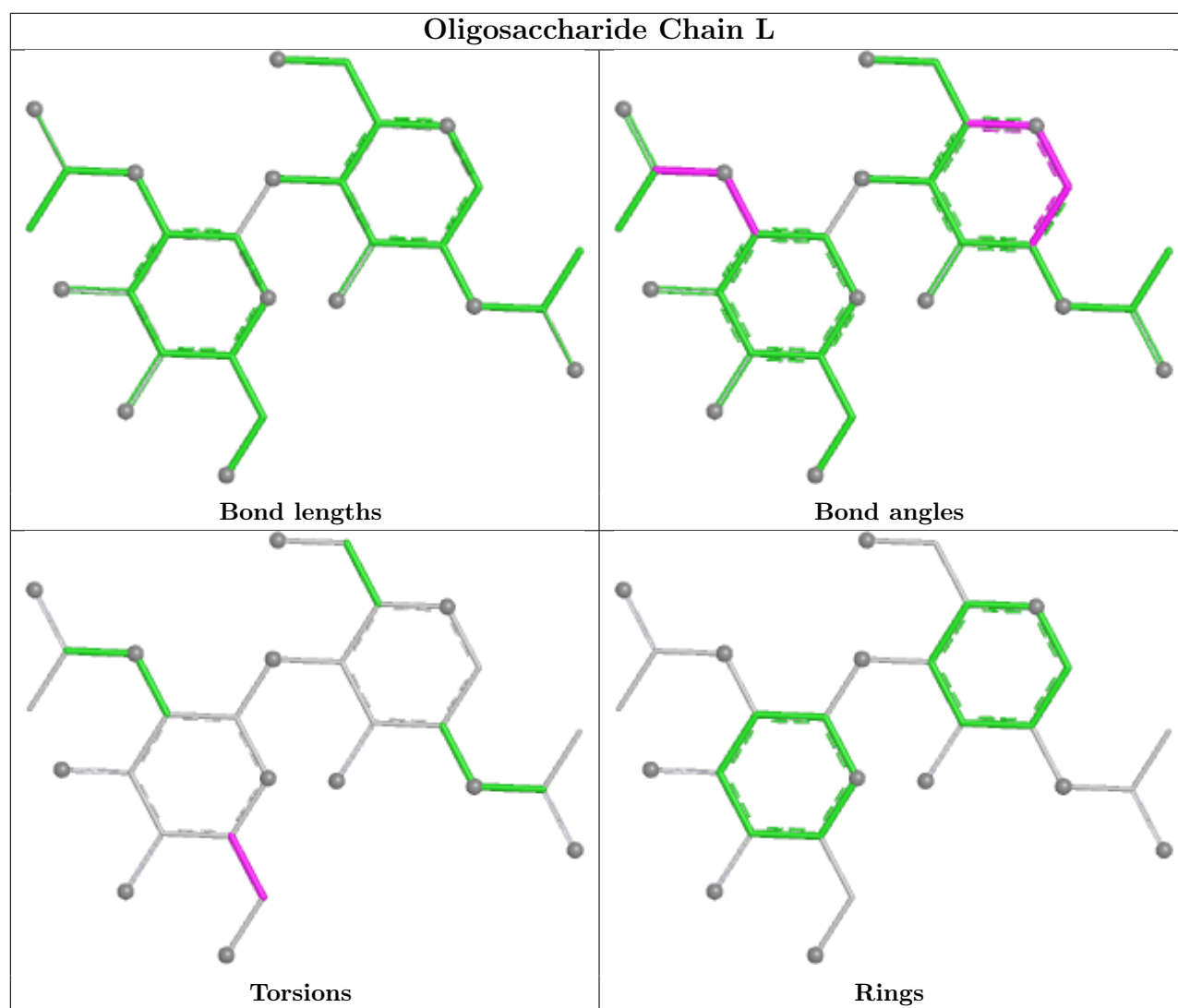


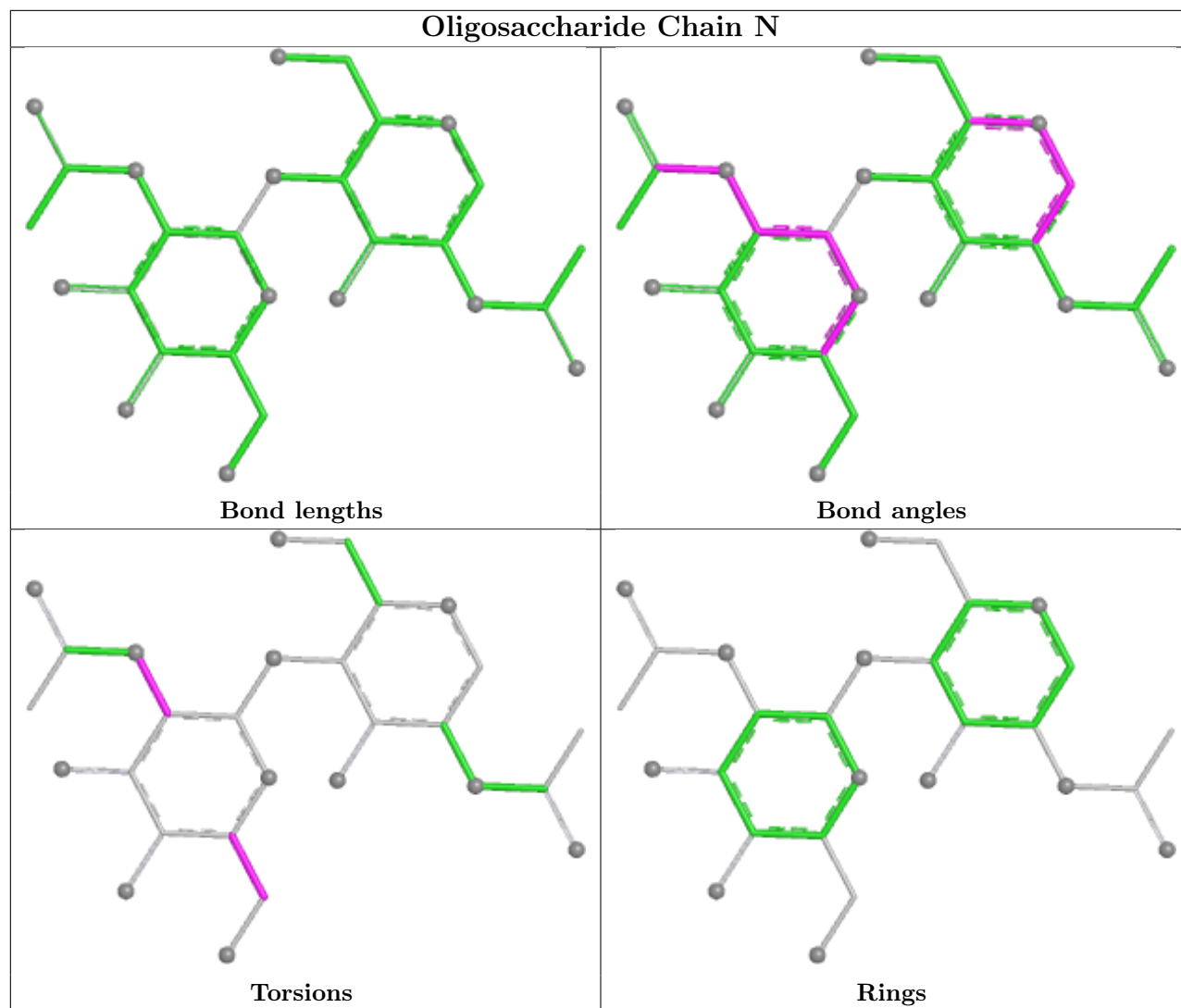


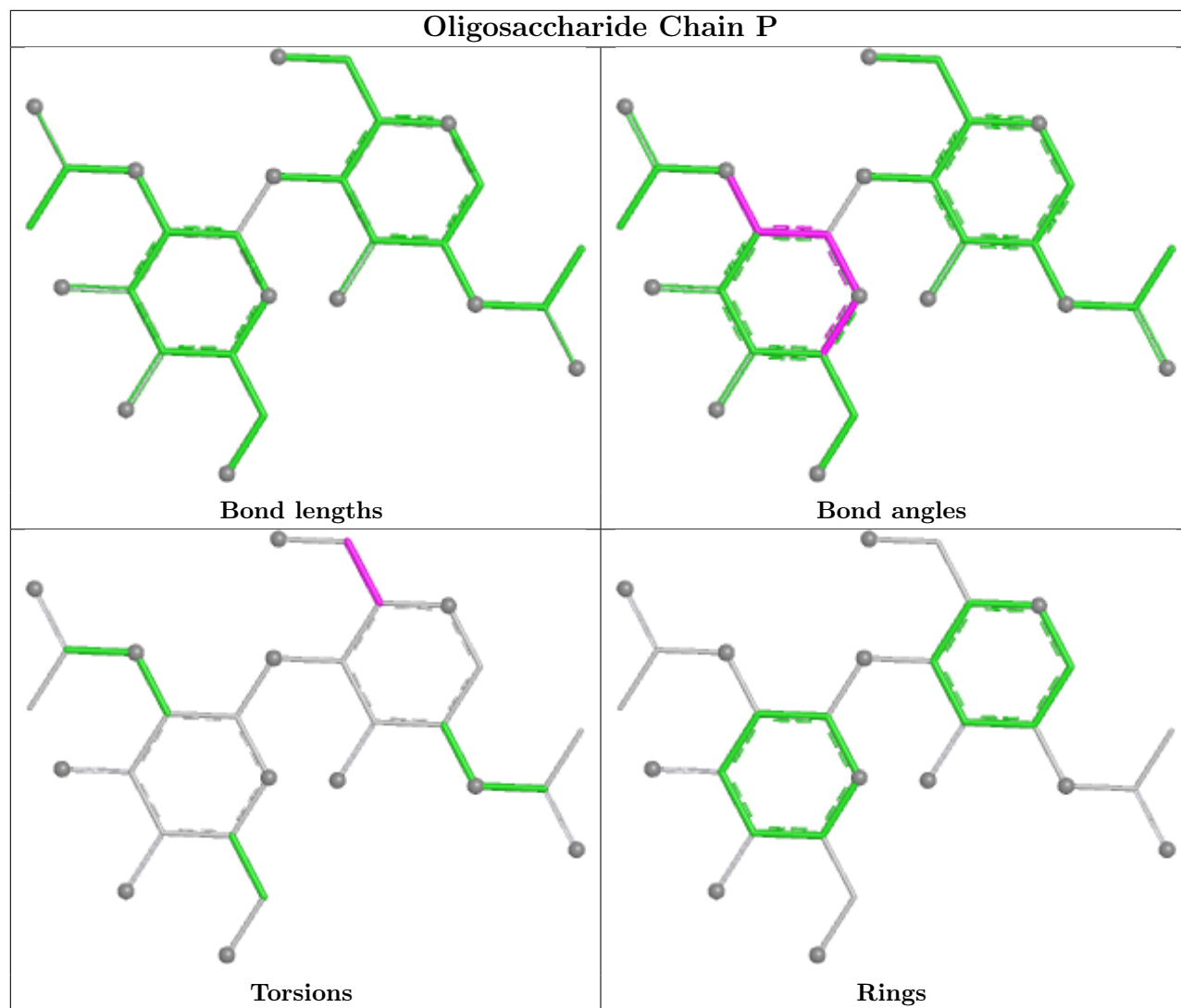


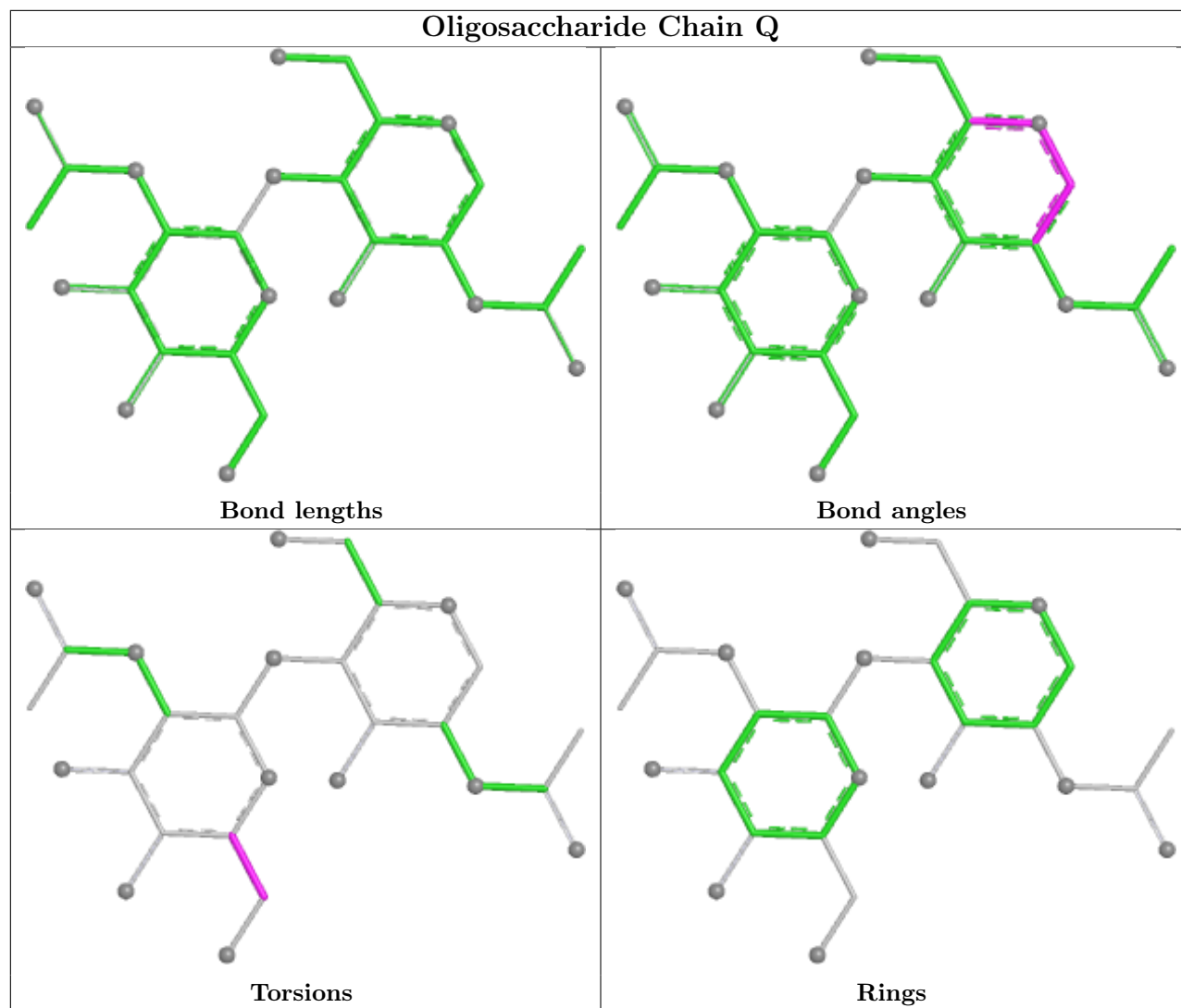


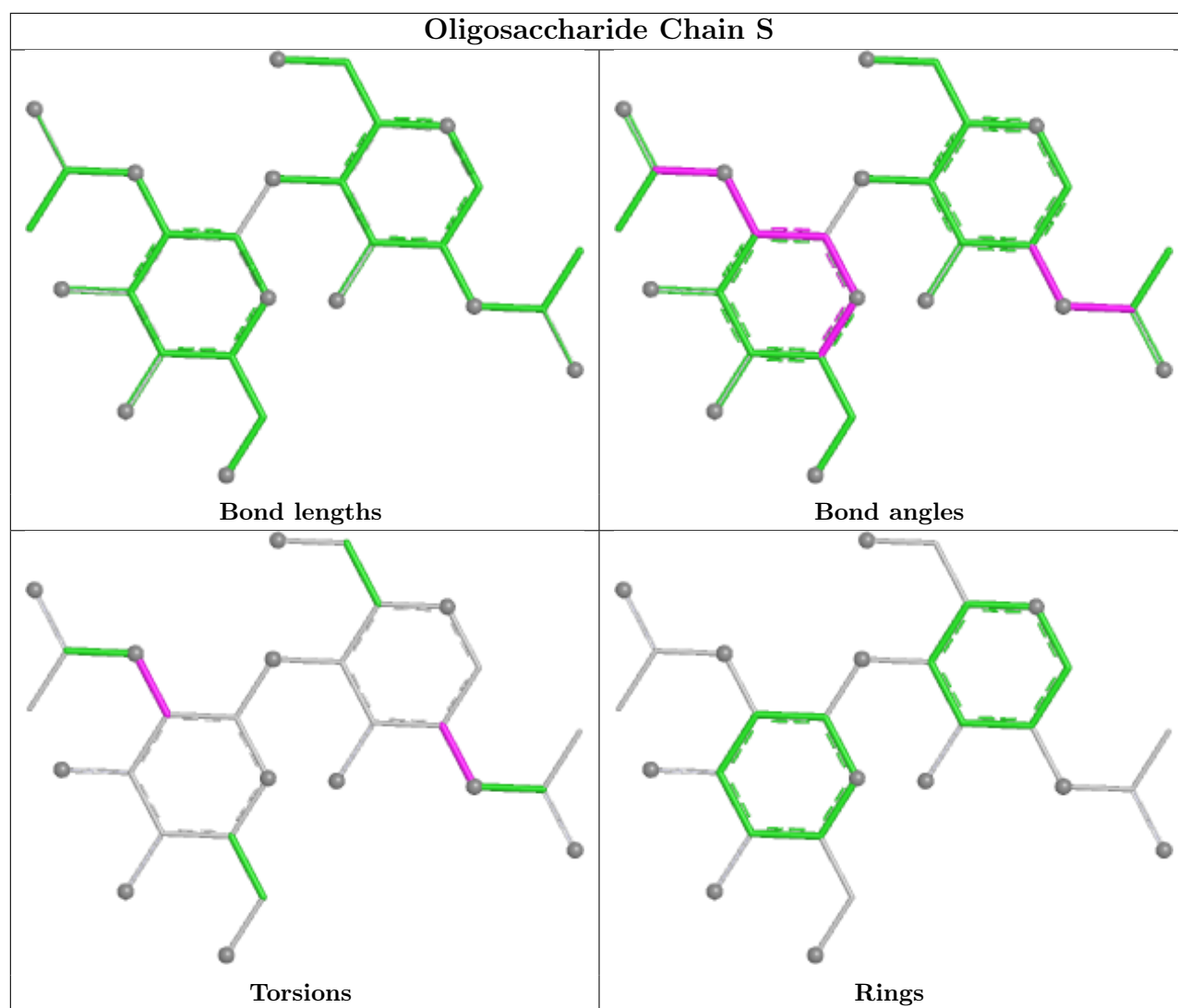


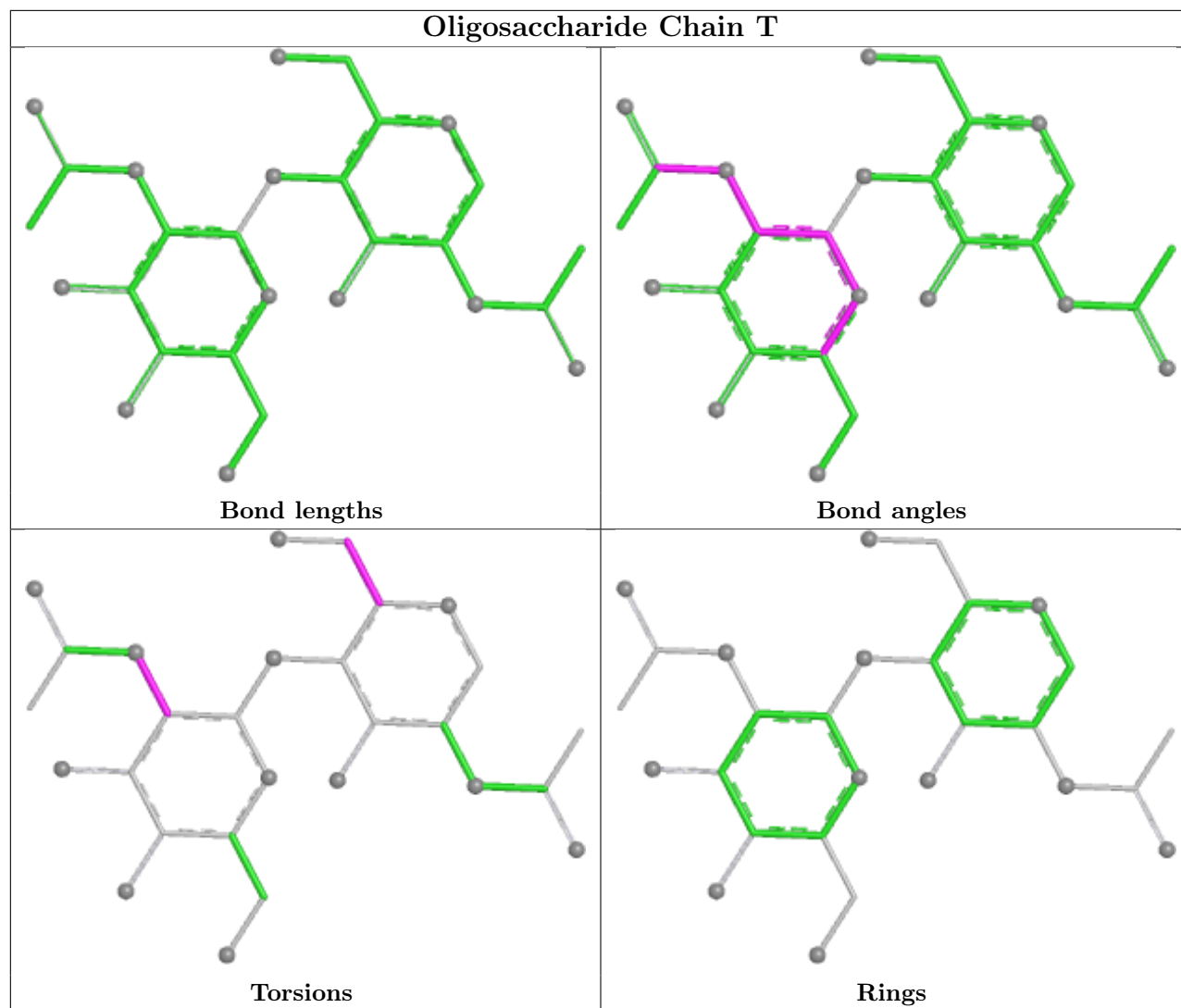


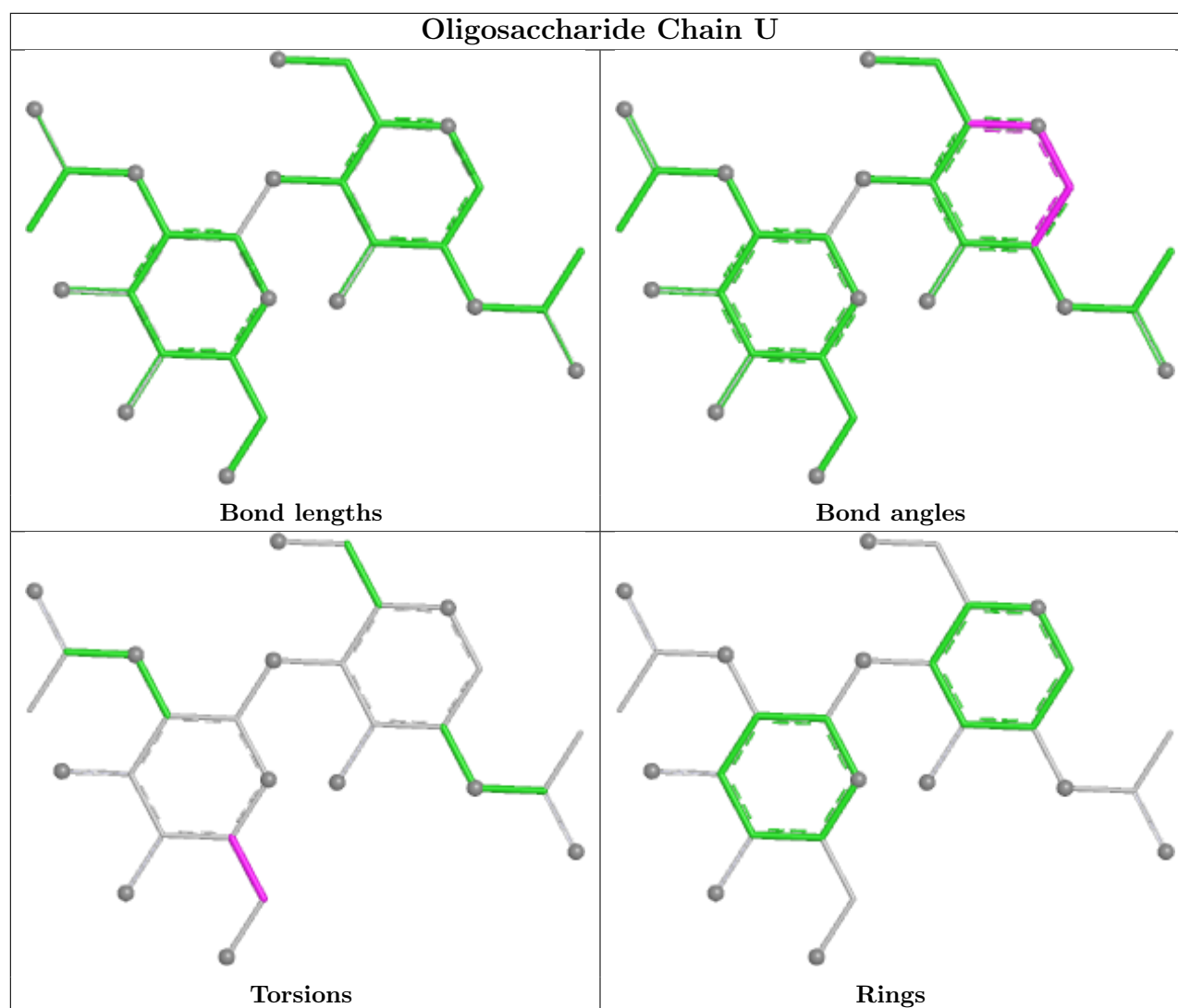












5.6 Ligand geometry [i](#)

11 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
5	NAG	B	2012	1	14,14,15	0.50	0	17,19,21	1.31	3 (17%)
5	NAG	D	2007	1	14,14,15	0.38	0	17,19,21	0.56	0
5	NAG	A	2013	1	14,14,15	0.41	0	17,19,21	0.50	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
5	NAG	C	2003	1	14,14,15	0.35	0	17,19,21	0.59	0
5	NAG	A	2019	1	14,14,15	0.52	0	17,19,21	1.48	3 (17%)
5	NAG	C	2004	1	14,14,15	0.43	0	17,19,21	0.76	0
5	NAG	D	2003	1	14,14,15	0.47	0	17,19,21	0.86	0
5	NAG	C	2002	1	14,14,15	0.40	0	17,19,21	0.72	0
5	NAG	D	2004	1	14,14,15	0.47	0	17,19,21	1.11	3 (17%)
5	NAG	A	2008	1	14,14,15	0.38	0	17,19,21	0.72	0
5	NAG	C	2001	1	14,14,15	0.45	0	17,19,21	1.59	3 (17%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	B	2012	1	-	2/6/23/26	0/1/1/1
5	NAG	D	2007	1	-	2/6/23/26	0/1/1/1
5	NAG	A	2013	1	-	2/6/23/26	0/1/1/1
5	NAG	C	2003	1	-	0/6/23/26	0/1/1/1
5	NAG	A	2019	1	-	1/6/23/26	0/1/1/1
5	NAG	C	2004	1	-	2/6/23/26	0/1/1/1
5	NAG	D	2003	1	-	2/6/23/26	0/1/1/1
5	NAG	C	2002	1	-	0/6/23/26	0/1/1/1
5	NAG	D	2004	1	-	1/6/23/26	0/1/1/1
5	NAG	A	2008	1	-	0/6/23/26	0/1/1/1
5	NAG	C	2001	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

The worst 5 of 12 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	2019	NAG	C1-O5-C5	4.75	118.55	112.19
5	C	2001	NAG	C1-C2-N2	3.99	116.73	110.43
5	C	2001	NAG	O5-C1-C2	-3.49	105.90	111.29
5	C	2001	NAG	C2-N2-C7	3.26	127.27	122.90
5	B	2012	NAG	C1-C2-N2	3.17	115.43	110.43

There are no chirality outliers.

5 of 14 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	D	2007	NAG	O5-C5-C6-O6
5	A	2013	NAG	O5-C5-C6-O6
5	D	2003	NAG	C4-C5-C6-O6
5	D	2007	NAG	C4-C5-C6-O6
5	D	2003	NAG	O5-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 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	1416/1474 (96%)	0.13	44 (3%) 51 39	75, 135, 176, 200	0
1	B	1273/1474 (86%)	0.19	52 (4%) 41 35	89, 147, 180, 214	0
1	C	1274/1474 (86%)	0.24	57 (4%) 38 33	78, 130, 175, 200	0
1	D	1271/1474 (86%)	0.16	51 (4%) 42 35	84, 139, 177, 200	0
All	All	5234/5896 (88%)	0.18	204 (3%) 43 36	75, 138, 178, 214	0

The worst 5 of 204 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	270	ARG	7.8
1	B	1275	ALA	6.0
1	D	1211	TYR	5.3
1	C	744	VAL	5.2
1	D	1025	TYR	4.8

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
3	BMA	R	3	11/12	-0.04	0.14	300,300,300,300	0
2	BMA	O	3	11/12	0.05	0.12	300,300,300,300	0

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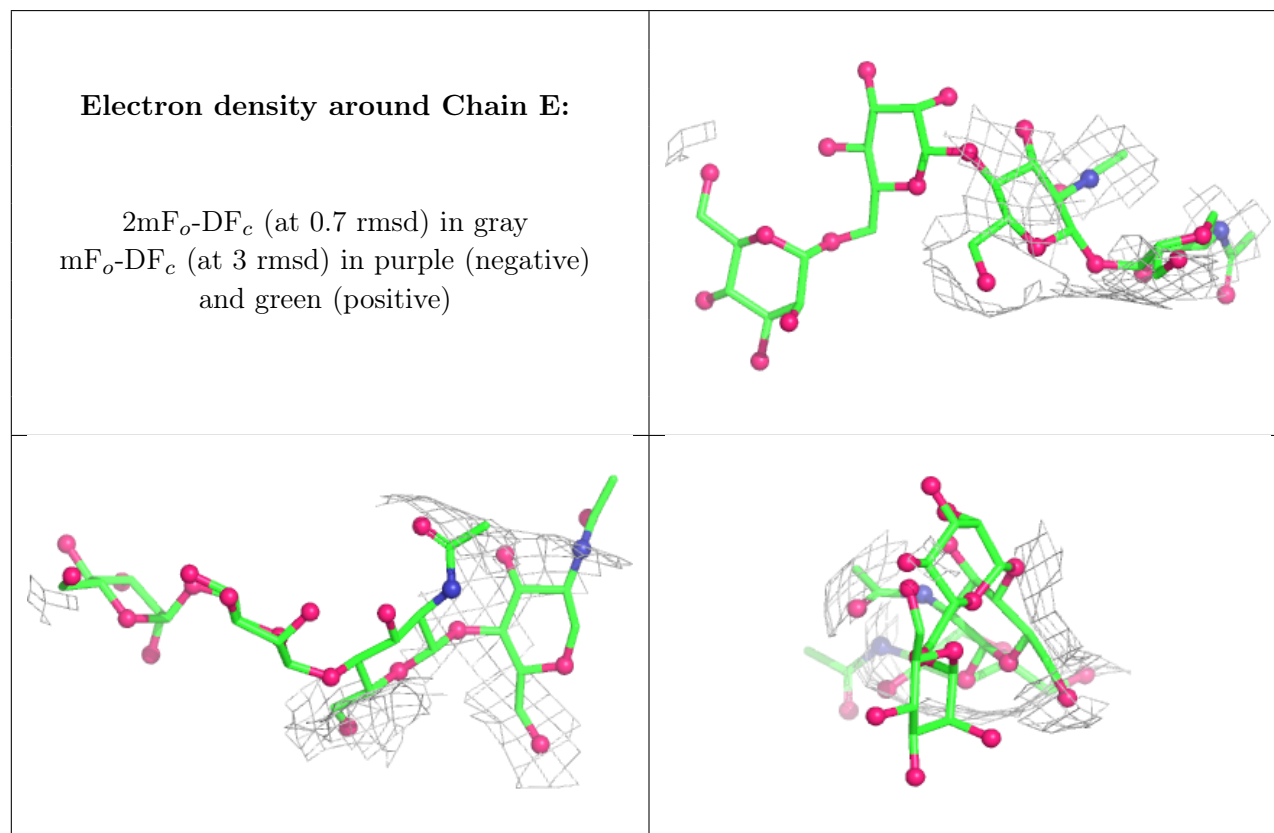
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	BMA	V	3	11/12	0.13	0.10	295,297,298,298	0
3	NAG	M	2	14/15	0.20	0.12	300,300,300,300	0
4	NAG	Q	2	14/15	0.20	0.13	292,295,297,297	0
2	MAN	E	4	11/12	0.22	0.10	293,294,294,294	0
2	MAN	J	4	11/12	0.23	0.09	300,300,300,300	0
4	NAG	L	2	14/15	0.29	0.14	300,300,300,300	0
2	BMA	G	3	11/12	0.32	0.11	292,292,293,294	0
2	BMA	E	3	11/12	0.36	0.09	294,295,295,295	0
2	BMA	J	3	11/12	0.36	0.08	300,300,300,300	0
3	BMA	M	3	11/12	0.36	0.12	300,300,300,300	0
4	NAG	P	2	14/15	0.37	0.11	300,300,300,300	0
2	MAN	O	4	11/12	0.41	0.08	300,300,300,300	0
2	NAG	J	2	14/15	0.42	0.09	300,300,300,300	0
2	NAG	G	2	14/15	0.54	0.09	291,292,293,294	0
3	NAG	M	1	14/15	0.56	0.15	300,300,300,300	0
3	BMA	F	3	11/12	0.62	0.10	289,290,291,291	0
4	NAG	U	2	14/15	0.64	0.08	300,300,300,300	0
4	NAG	H	2	14/15	0.65	0.10	296,299,300,300	0
4	NAG	L	1	14/15	0.65	0.11	300,300,300,300	0
4	NAG	H	1	14/15	0.68	0.12	295,297,299,299	0
4	NAG	T	1	14/15	0.69	0.10	290,291,292,293	0
4	NAG	P	1	14/15	0.69	0.11	300,300,300,300	0
4	NAG	S	1	14/15	0.70	0.10	300,300,300,300	0
2	MAN	V	4	11/12	0.71	0.10	293,294,295,296	0
2	NAG	E	2	14/15	0.71	0.10	295,296,297,297	0
4	NAG	N	2	14/15	0.72	0.09	300,300,300,300	0
4	NAG	T	2	14/15	0.72	0.08	290,291,292,292	0
4	NAG	S	2	14/15	0.72	0.10	300,300,300,300	0
3	BMA	I	3	11/12	0.73	0.08	300,300,300,300	0
3	NAG	F	1	14/15	0.73	0.10	284,285,287,287	0
4	NAG	K	2	14/15	0.74	0.08	300,300,300,300	0
3	NAG	R	2	14/15	0.75	0.13	289,300,300,300	0
3	NAG	F	2	14/15	0.75	0.08	288,289,290,290	0
4	NAG	K	1	14/15	0.76	0.09	296,300,300,300	0
2	NAG	G	1	14/15	0.79	0.09	291,291,292,292	0
2	NAG	V	1	14/15	0.79	0.12	286,293,298,299	0
4	NAG	U	1	14/15	0.80	0.09	296,300,300,300	0
2	NAG	O	1	14/15	0.80	0.14	268,287,296,297	0
2	NAG	O	2	14/15	0.82	0.10	297,299,300,300	0
3	NAG	I	2	14/15	0.82	0.08	295,300,300,300	0
2	NAG	V	2	14/15	0.83	0.08	296,300,300,300	0
4	NAG	N	1	14/15	0.83	0.12	298,300,300,300	0

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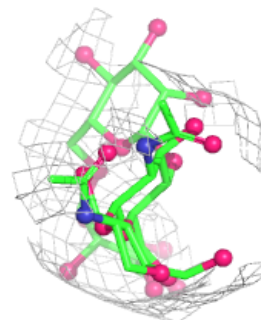
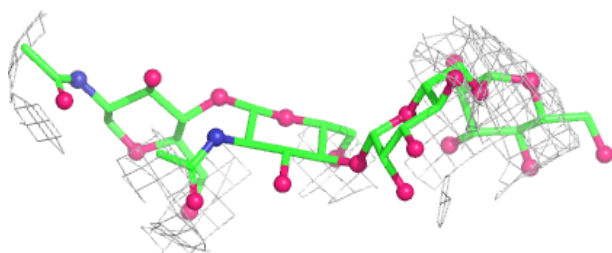
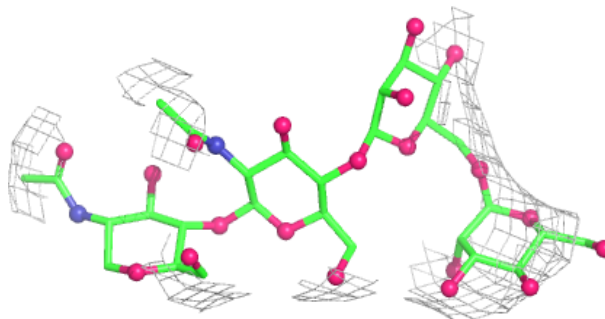
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
2	MAN	G	4	11/12	0.84	0.12	294,295,296,296	0
2	NAG	J	1	14/15	0.87	0.09	300,300,300,300	0
3	NAG	R	1	14/15	0.89	0.14	252,274,288,289	0
4	NAG	Q	1	14/15	0.89	0.09	290,291,292,294	0
2	NAG	E	1	14/15	0.89	0.11	295,297,298,298	0
3	NAG	I	1	14/15	0.90	0.09	259,291,300,300	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.

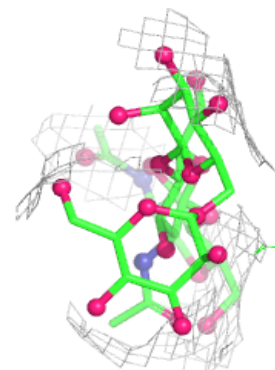
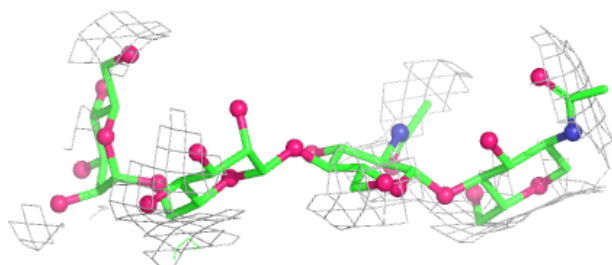
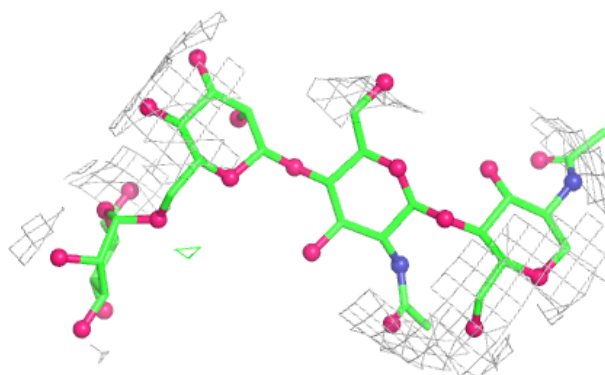


Electron density around Chain G:

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

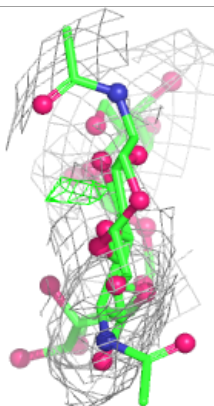
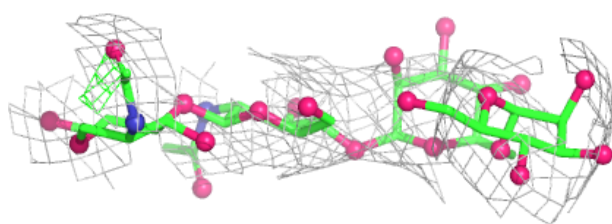
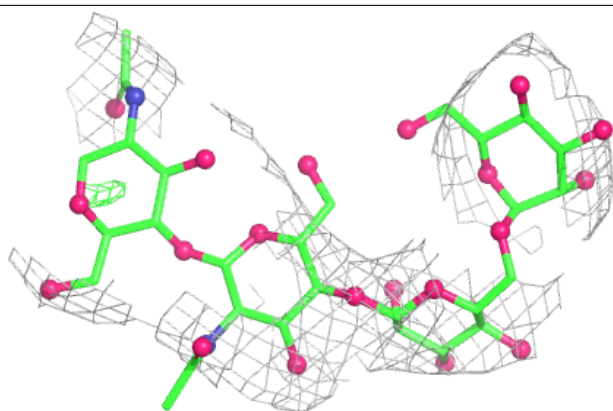
**Electron density around Chain J:**

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

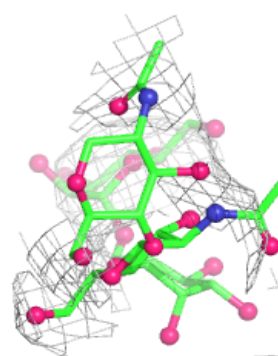
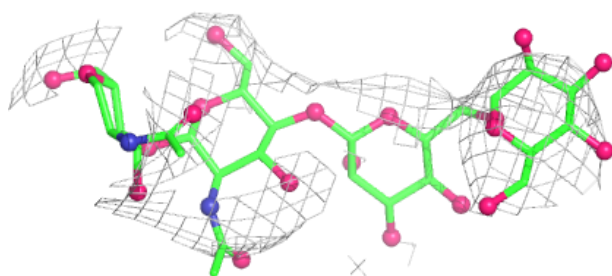
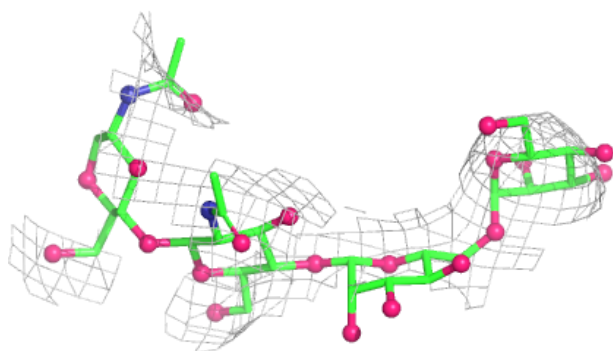


Electron density around Chain O:

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

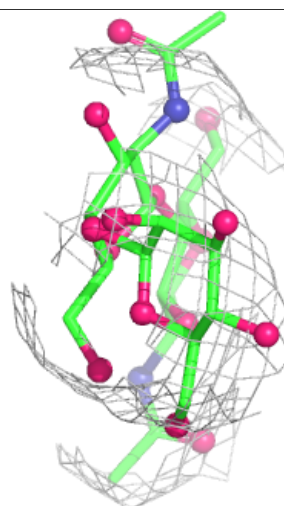
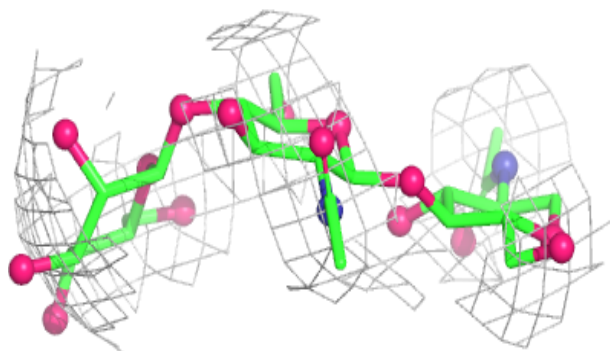
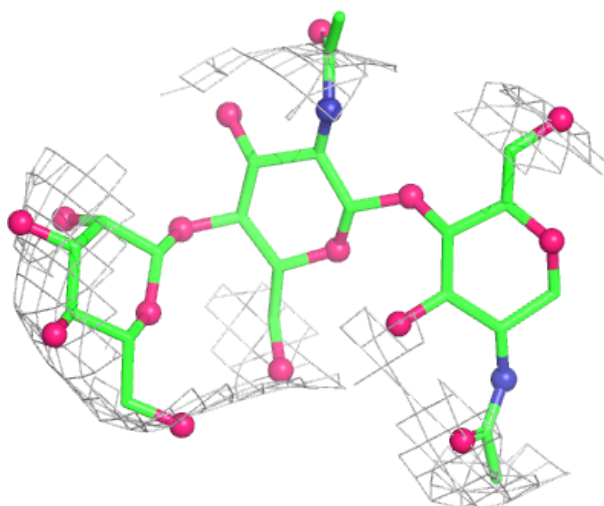
**Electron density around Chain V:**

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



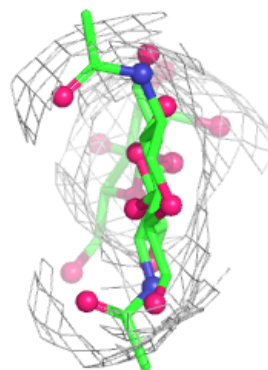
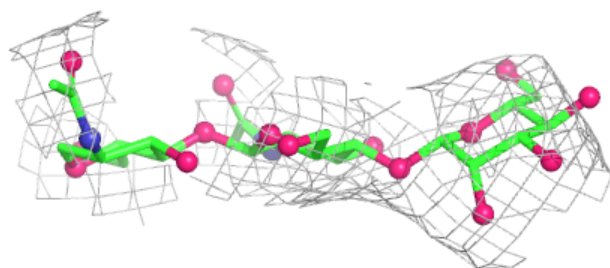
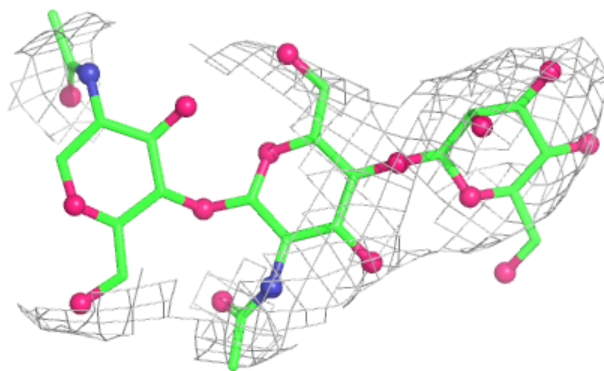
Electron density around Chain F:

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



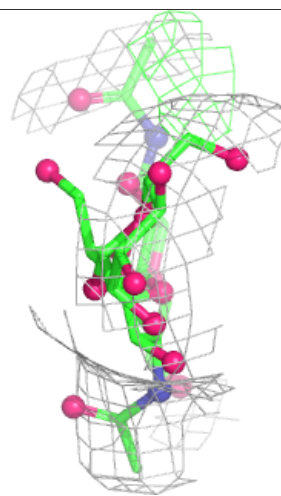
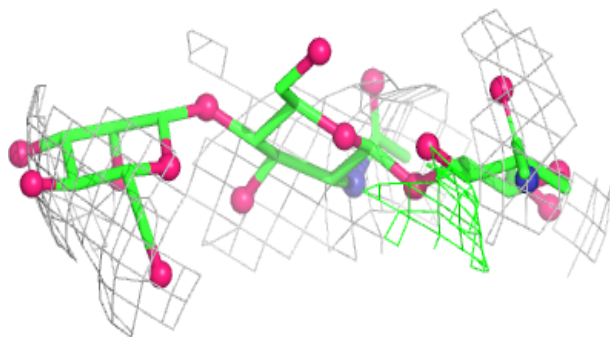
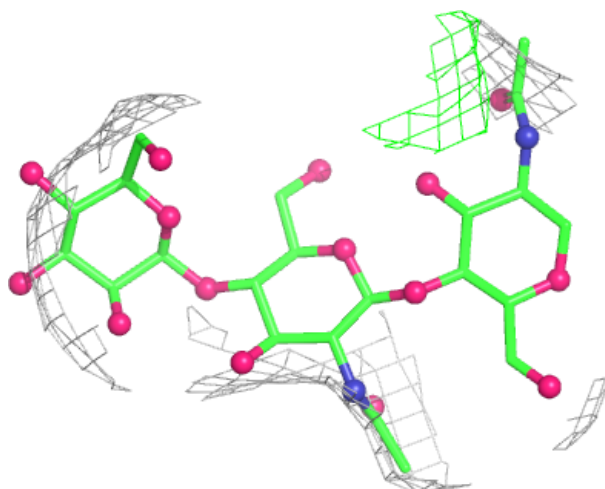
Electron density around Chain I:

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



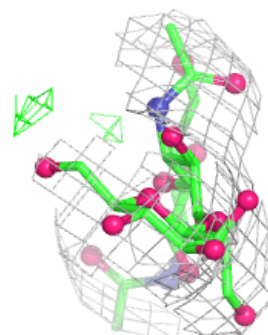
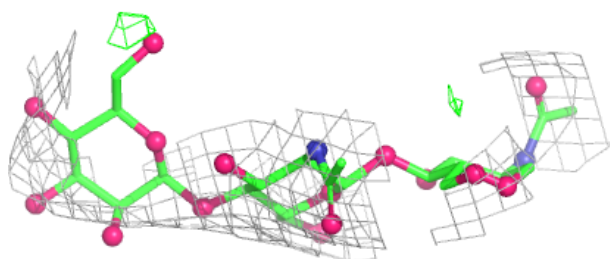
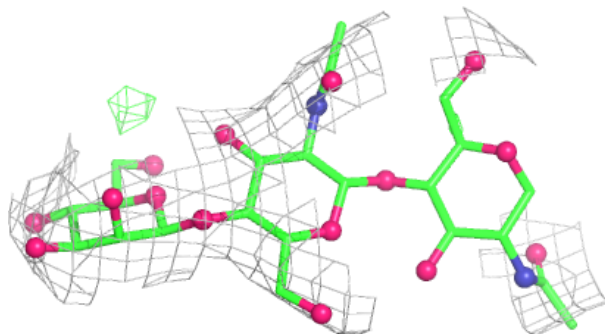
Electron density around Chain M:

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

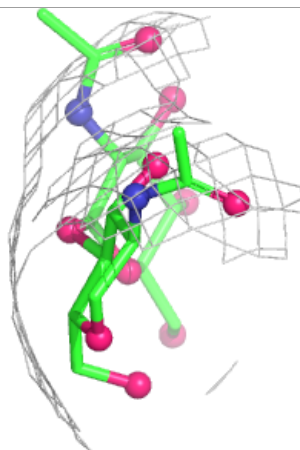
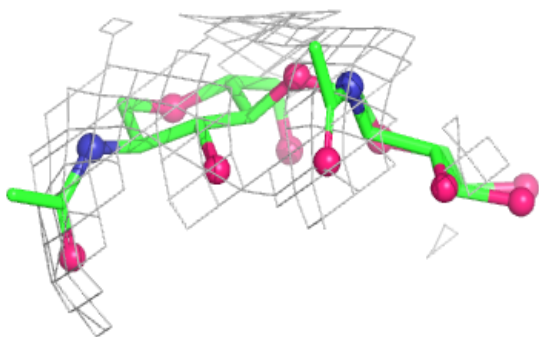
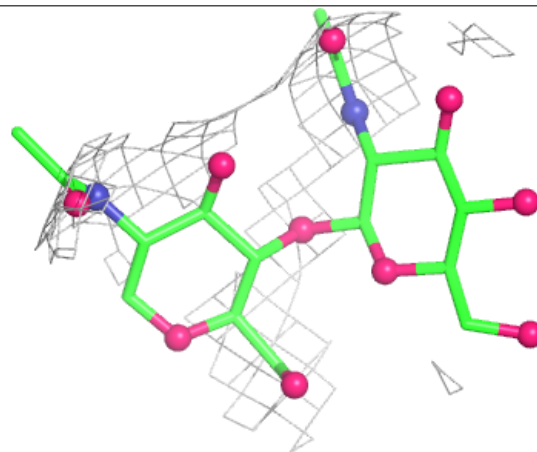


Electron density around Chain R:

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

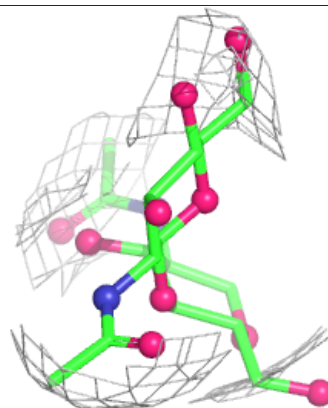
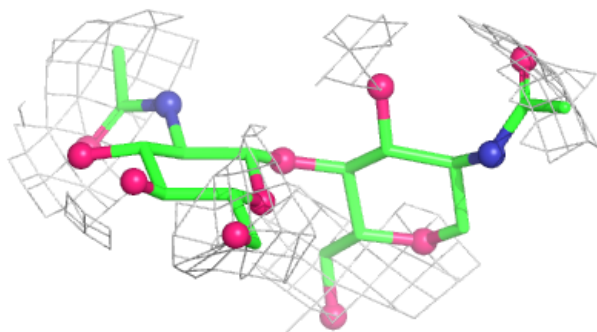
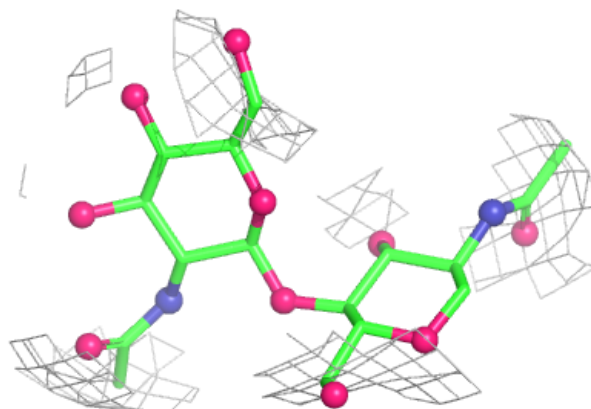
**Electron density around Chain H:**

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



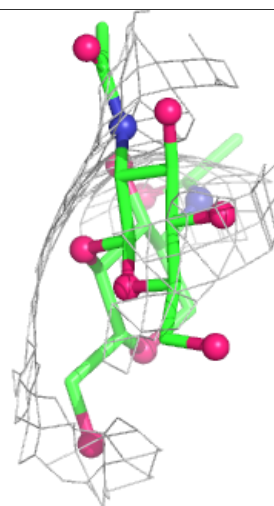
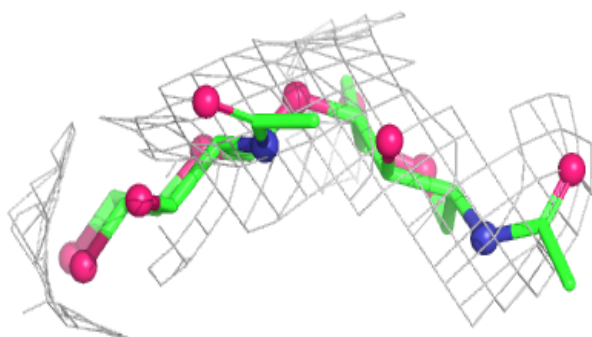
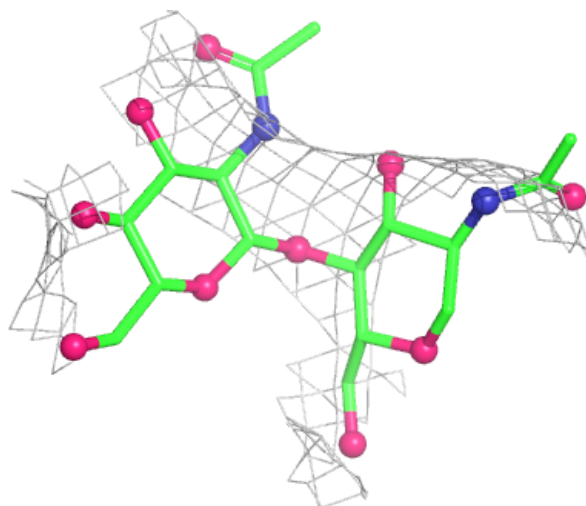
Electron density around Chain K:

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



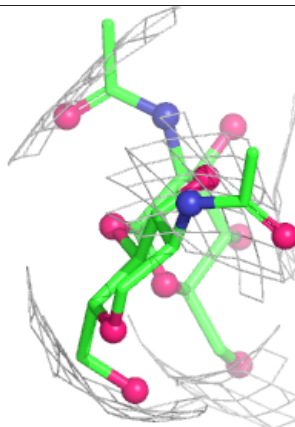
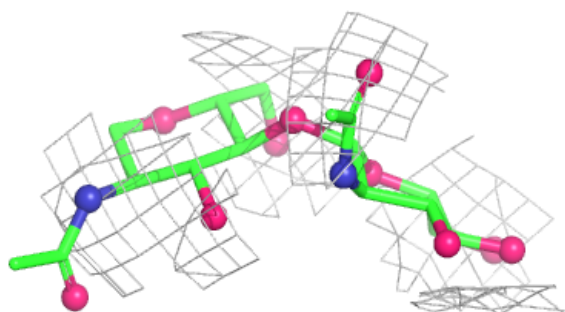
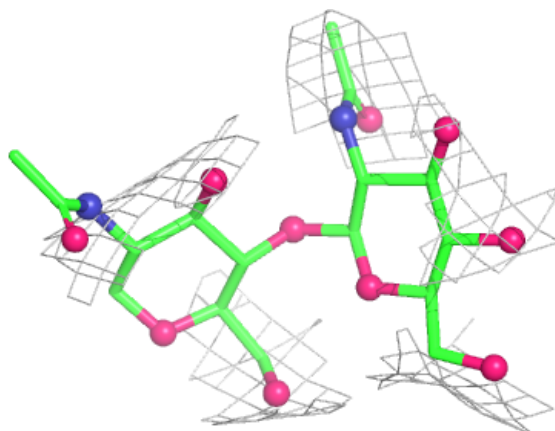
Electron density around Chain L:

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



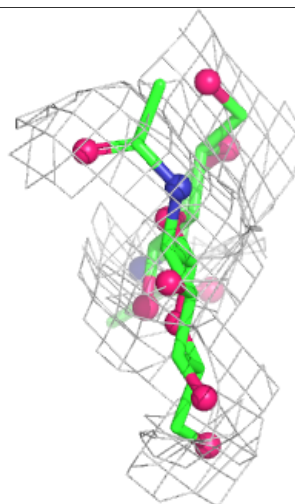
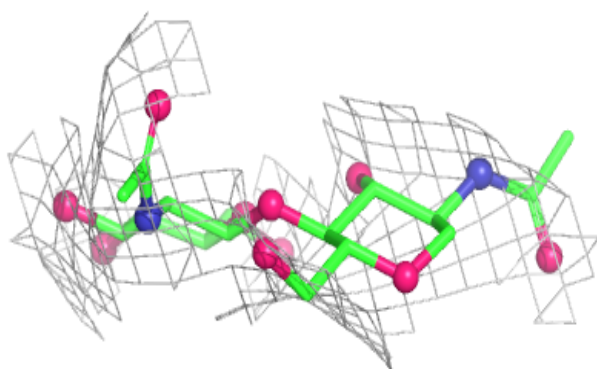
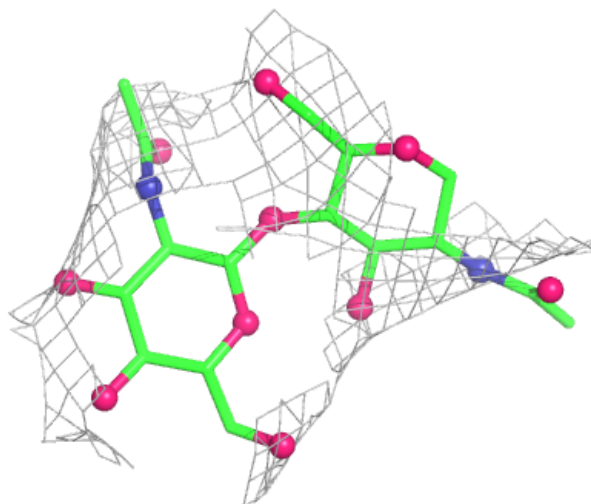
Electron density around Chain N:

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



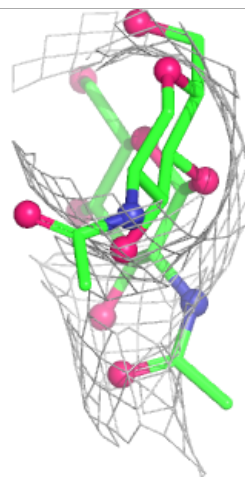
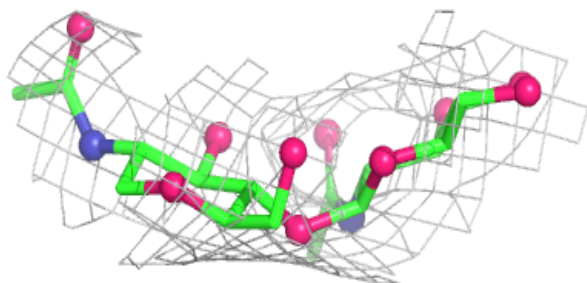
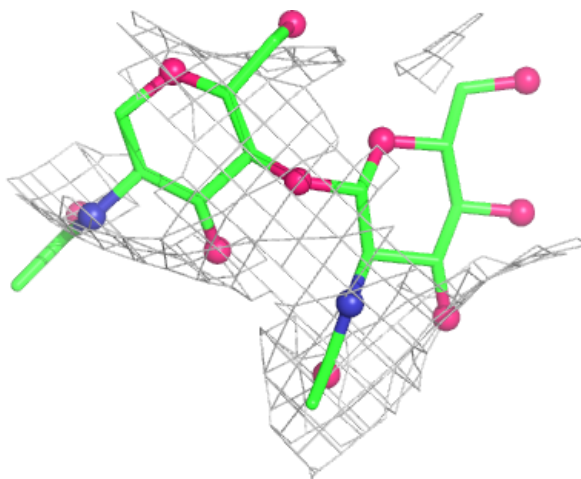
Electron density around Chain P:

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



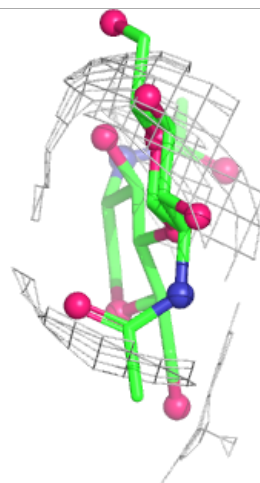
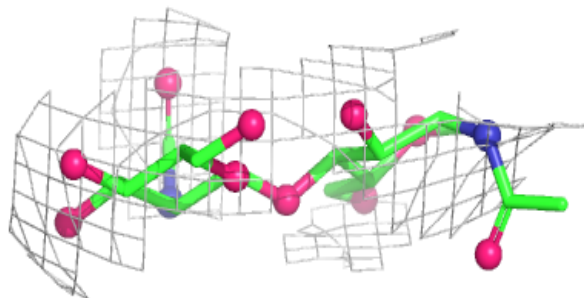
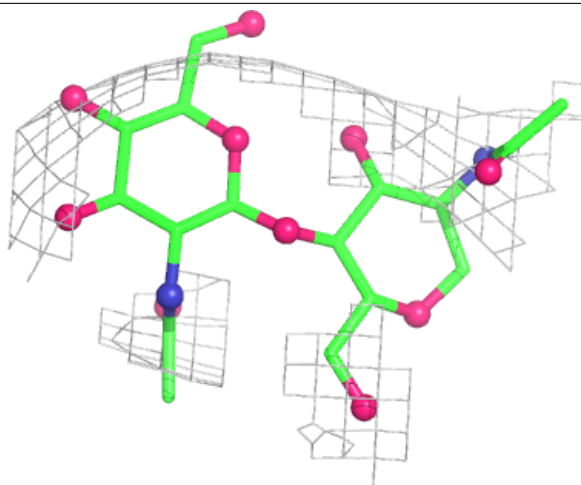
Electron density around Chain Q:

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



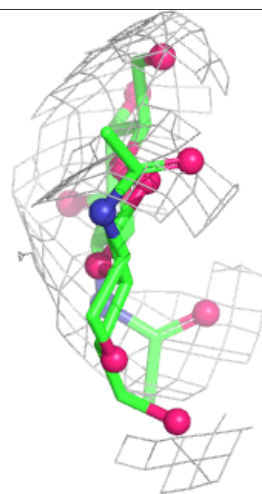
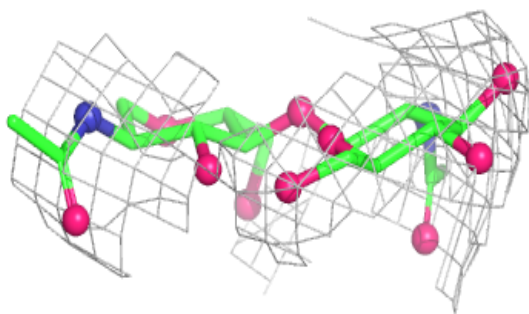
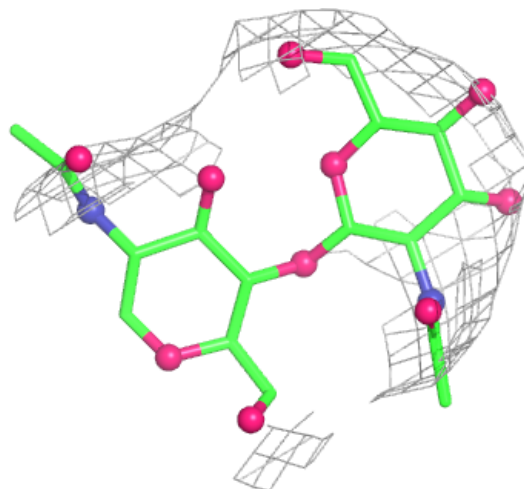
Electron density around Chain S:

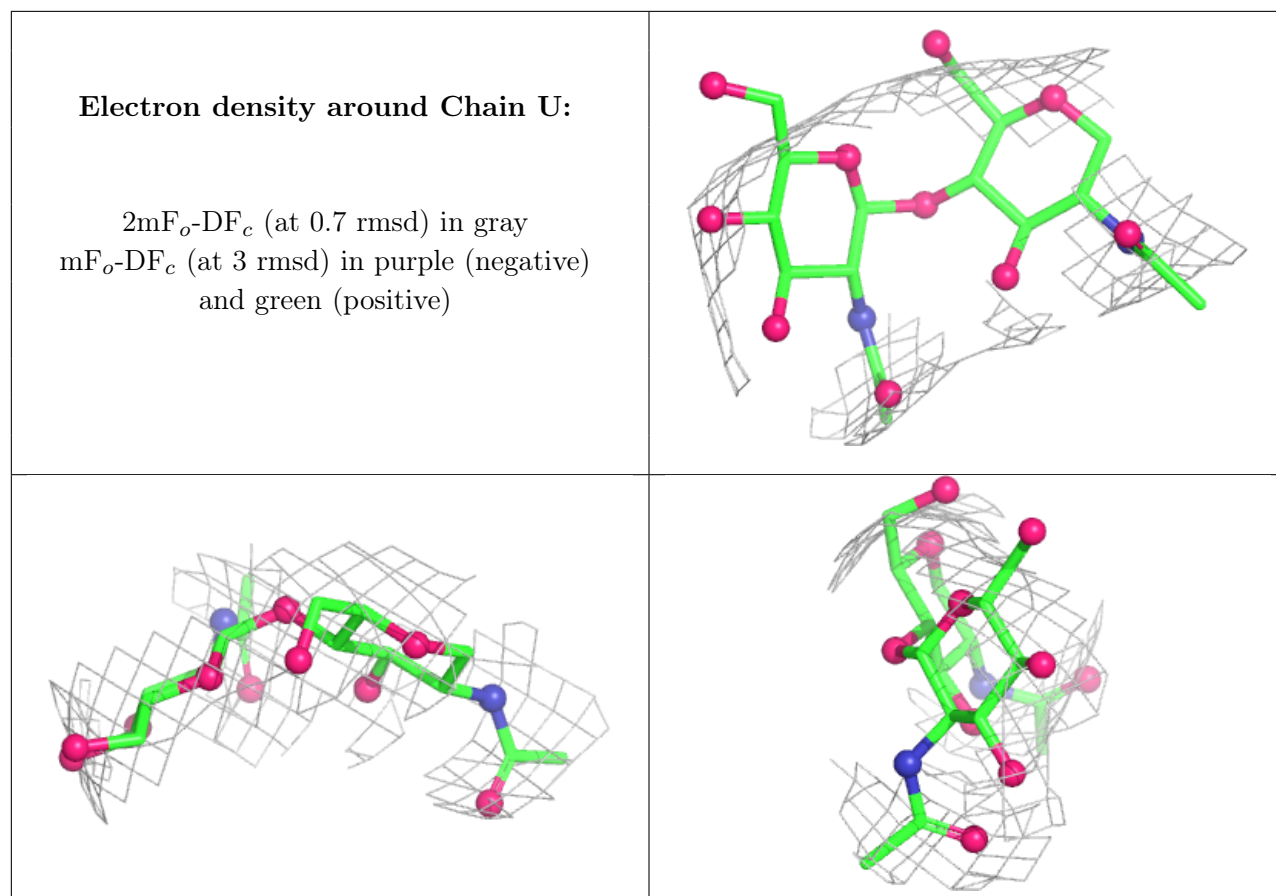
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around Chain T:

$2mF_o-DF_c$ (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
5	NAG	D	2003	14/15	-0.18	0.11	287,287,287,287	0
5	NAG	C	2003	14/15	0.46	0.13	296,297,297,297	0
5	NAG	B	2012	14/15	0.51	0.11	300,300,300,300	0
5	NAG	C	2001	14/15	0.62	0.09	297,298,298,299	0
5	NAG	D	2007	14/15	0.74	0.12	293,294,295,295	0
5	NAG	A	2019	14/15	0.76	0.09	300,300,300,300	0
5	NAG	D	2004	14/15	0.76	0.09	290,292,293,294	0
5	NAG	A	2013	14/15	0.76	0.08	292,299,300,300	0
5	NAG	C	2004	14/15	0.77	0.12	300,300,300,300	0
5	NAG	A	2008	14/15	0.80	0.06	297,299,300,300	0
5	NAG	C	2002	14/15	0.85	0.07	293,295,296,297	0

6.5 Other polymers [i](#)

There are no such residues in this entry.