Full wwPDB X-ray Structure Validation Report (i)

Aug 24, 2022 – 01:16 am BST

PDB ID	:	7QQF
Title	:	Crystal structure of unliganded MYORG
Authors	:	Meek, R.W.; Davies, G.J.
Deposited on	:	2022-01-07
Resolution	:	2.43 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the (i) 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 (1)) were used in the production of this report:

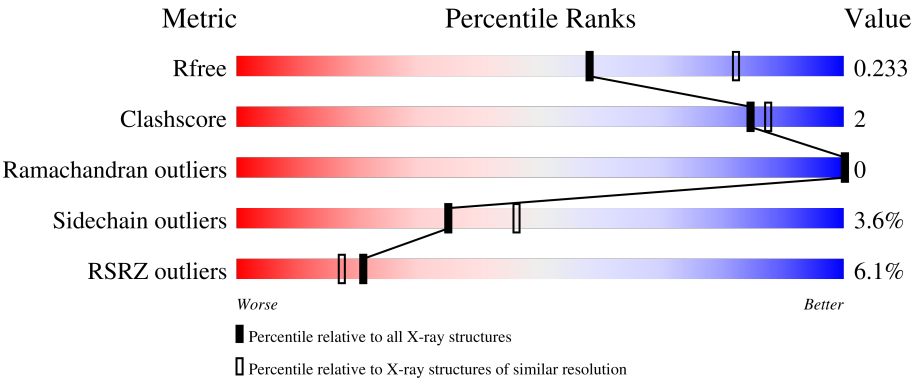
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.30
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.30

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.43 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	1564 (2.46-2.42)
Clashscore	141614	1631 (2.46-2.42)
Ramachandran outliers	138981	1617 (2.46-2.42)
Sidechain outliers	138945	1617 (2.46-2.42)
RSRZ outliers	127900	1547 (2.46-2.42)

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 <=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	636	8% 90% 6%
1	B	636	2% 90% 7%
1	C	636	2% 90% 7%
1	D	636	12% 81% 10% 9%
2	E	4	50% 50%

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Mol	Chain	Length	Quality of chain
3	F	2	100%
3	G	2	50% 50%
3	H	2	100%
3	K	2	50% 50%
3	L	2	50% 50%
3	M	2	100%
3	N	2	100%
4	I	3	100%
5	J	4	100%

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 20264 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 Myogenesis-regulating glycosidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	612	Total	C	N	O	S	0	0	0
			4898	3164	845	873	16			
1	B	616	Total	C	N	O	S	0	2	0
			4960	3201	861	882	16			
1	C	618	Total	C	N	O	S	0	0	0
			4934	3187	849	882	16			
1	D	581	Total	C	N	O	S	0	1	0
			4622	2990	794	824	14			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	79	GLY	-	expression tag	UNP Q6NSJ0
B	79	GLY	-	expression tag	UNP Q6NSJ0
C	79	GLY	-	expression tag	UNP Q6NSJ0
D	79	GLY	-	expression tag	UNP Q6NSJ0

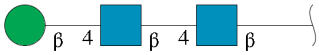
- Molecule 2 is an oligosaccharide called alpha-D-mannopyranose-(1-6)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	E	4	Total	C	N	O	0	0	0
			50	28	2	20			

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

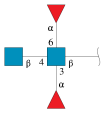
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	F	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	G	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	H	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	K	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	L	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	M	2	Total	C	N	O	0	0	0
			28	16	2	10			
3	N	2	Total	C	N	O	0	0	0
			28	16	2	10			

- Molecule 4 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.



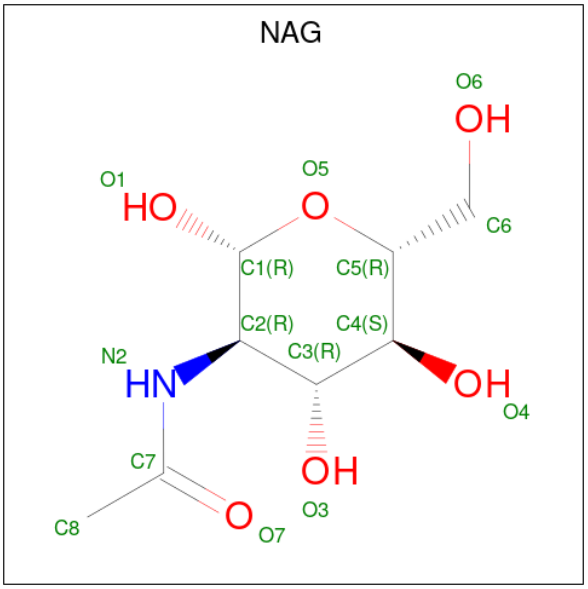
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
4	I	3	Total	C	N	O	0	0	0
			39	22	2	15			

- Molecule 5 is an oligosaccharide called alpha-L-fucopyranose-(1-3)-[2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)][alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.



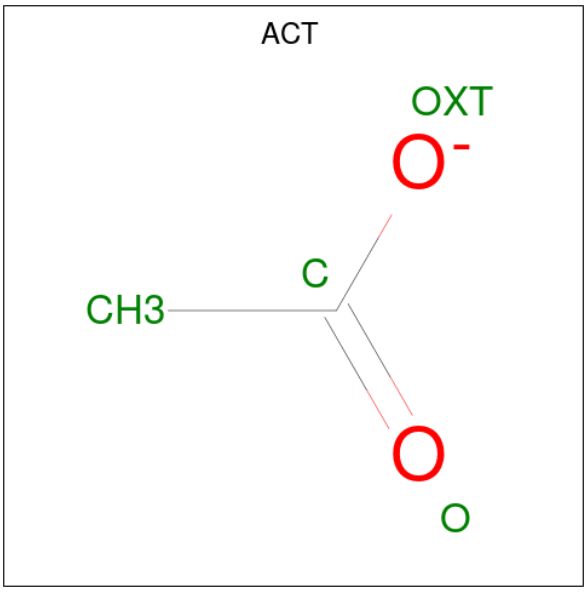
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
5	J	4	Total	C	N	O	0	0	0
			48	28	2	18			

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



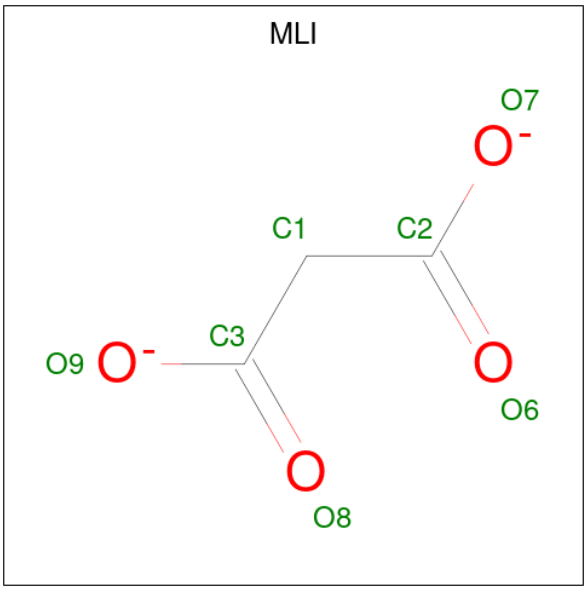
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total C N O 14 8 1 5	0	0
6	A	1	Total C N O 14 8 1 5	0	0
6	A	1	Total C N O 14 8 1 5	0	0
6	B	1	Total C N O 14 8 1 5	0	0
6	B	1	Total C N O 14 8 1 5	0	0
6	B	1	Total C N O 14 8 1 5	0	0
6	C	1	Total C N O 14 8 1 5	0	0
6	C	1	Total C N O 14 8 1 5	0	0
6	C	1	Total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

- Molecule 7 is ACETATE ION (three-letter code: ACT) (formula: $C_2H_3O_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	A	1	Total C O 4 2 2	0	0
7	B	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	D	1	Total C O 4 2 2	0	0

- Molecule 8 is MALONATE ION (three-letter code: MLI) (formula: $C_3H_2O_4$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	1	Total C O 7 3 4	0	0
8	B	1	Total C O 7 3 4	0	0
8	C	1	Total C O 7 3 4	0	0
8	D	1	Total C O 7 3 4	0	0

- Molecule 9 is water.

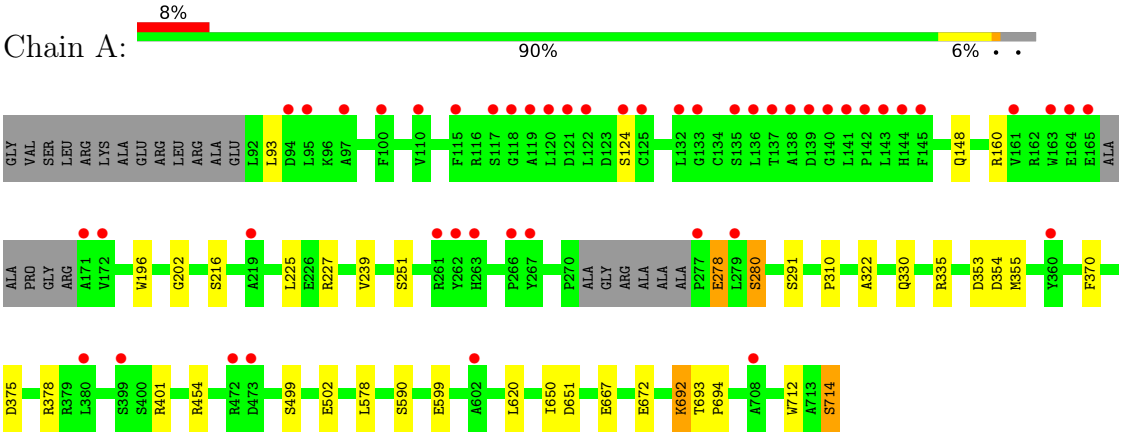
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	80	Total O 80 80	0	0
9	B	92	Total O 92 92	0	0
9	C	104	Total O 104 104	0	0
9	D	43	Total O 43 43	0	0

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.

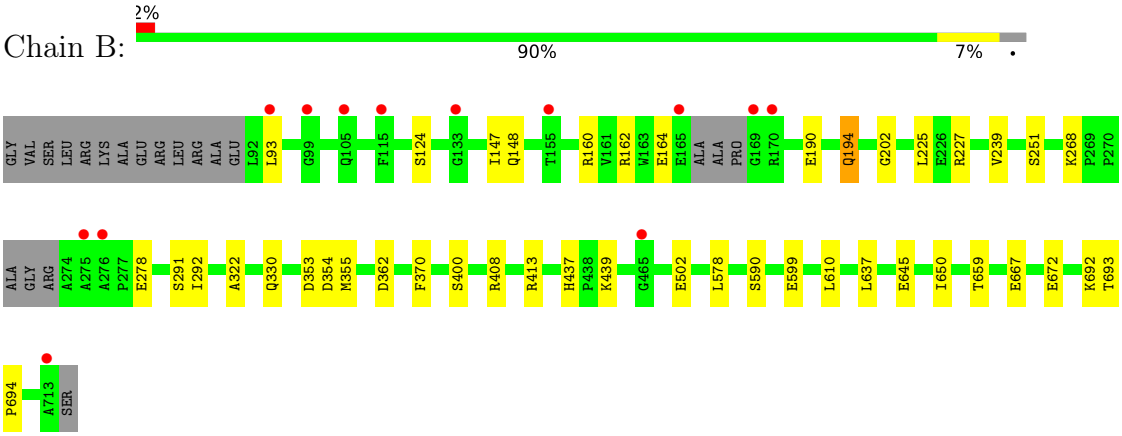
• Molecule 1: Myogenesis-regulating glycosidase

Chain A:



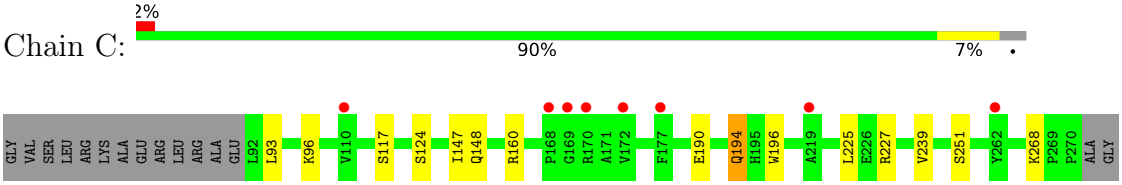
• Molecule 1: Myogenesis-regulating glycosidase

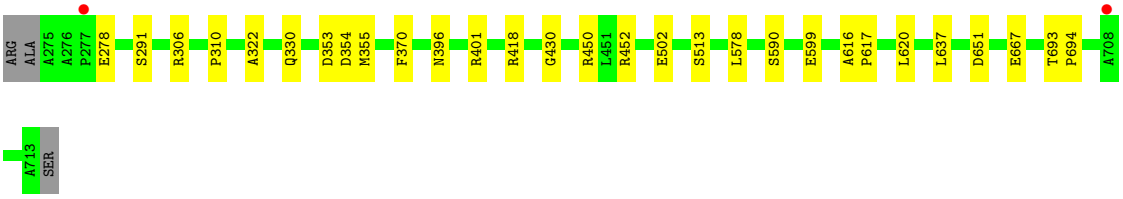
Chain B:



• Molecule 1: Myogenesis-regulating glycosidase

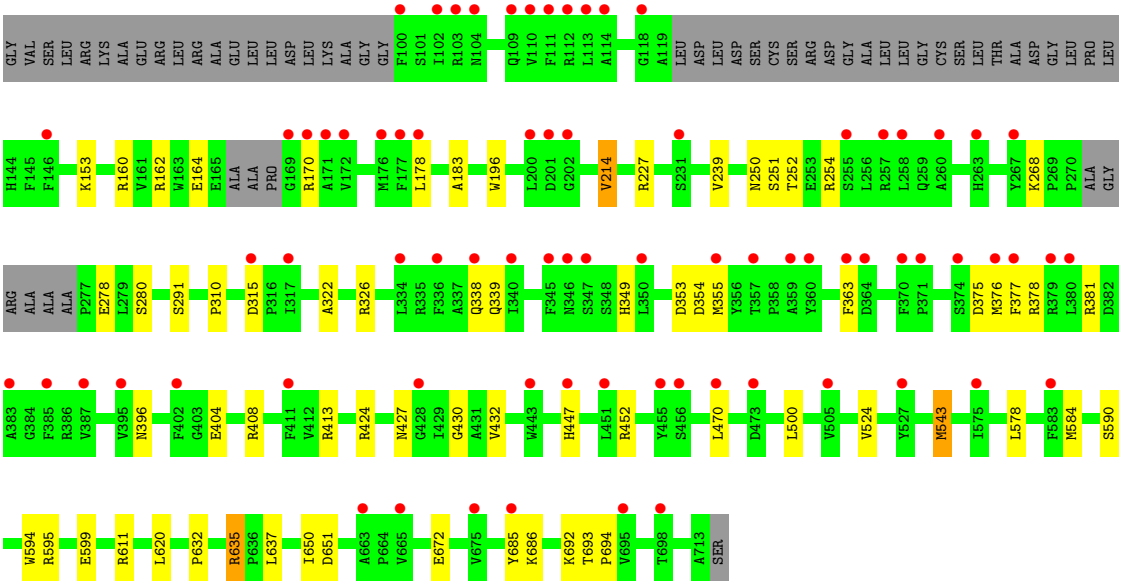
Chain C:





• Molecule 1: Myogenesis-regulating glycosidase

Chain D:

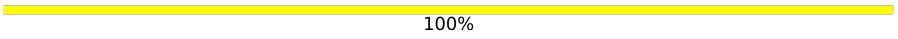


• Molecule 2: alpha-D-mannopyranose-(1-6)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain E:

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

Chain F:

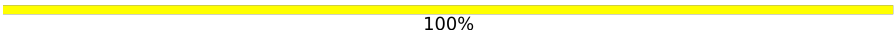


• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain G:

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

Chain H:



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

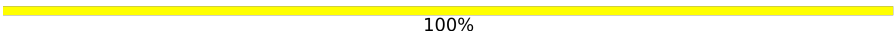
Chain K:

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

Chain L:

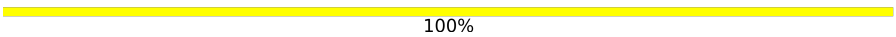
• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain M:



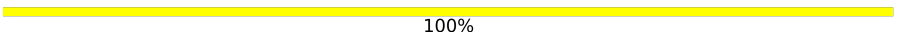
• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain N:



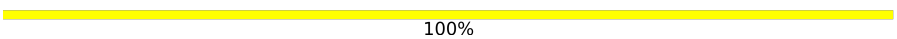
• Molecule 4: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain I:



• Molecule 5: alpha-L-fucopyranose-(1-3)-[2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)][alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain J:




NAG1
FUC2
NAG3
FUC4

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	74.11Å 78.99Å 180.11Å 88.06° 78.80° 62.71°	Depositor
Resolution (Å)	66.57 – 2.43 66.57 – 2.43	Depositor EDS
% Data completeness (in resolution range)	98.1 (66.57-2.43) 90.0 (66.57-2.43)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.40 (at 2.42Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.211 , 0.233 0.213 , 0.233	Depositor DCC
R_{free} test set	5921 reflections (4.91%)	wwPDB-VP
Wilson B-factor (Å^2)	48.0	Xtriage
Anisotropy	0.291	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	(Not available) , (Not available)	EDS
L-test for twinning[2]	$< \|L\| > = 0.51$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.010 for h,h-k,h-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	20264	wwPDB-VP
Average B, all atoms (Å^2)	63.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.59% of the height of the origin peak. No significant pseudotranslation is detected.*

[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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

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	0.63	0/5052	0.76	0/6886
1	B	0.63	0/5114	0.77	0/6966
1	C	0.63	0/5090	0.77	0/6942
1	D	0.64	0/4769	0.76	0/6507
All	All	0.63	0/20025	0.76	0/27301

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4898	0	4692	15	0
1	B	4960	0	4765	19	0
1	C	4934	0	4724	19	0
1	D	4622	0	4376	35	0
2	E	50	0	43	1	0
3	F	28	0	25	0	0
3	G	28	0	25	0	0
3	H	28	0	25	0	0
3	K	28	0	25	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	L	28	0	25	0	0
3	M	28	0	25	0	0
3	N	28	0	25	0	0
4	I	39	0	34	0	0
5	J	48	0	43	0	0
6	A	42	0	39	0	0
6	B	42	0	39	0	0
6	C	42	0	39	0	0
6	D	28	0	26	1	0
7	A	4	0	3	0	0
7	B	4	0	3	0	0
7	C	4	0	3	0	0
7	D	4	0	3	0	0
8	A	7	0	2	0	0
8	B	7	0	2	0	0
8	C	7	0	2	0	0
8	D	7	0	2	1	0
9	A	80	0	0	1	0
9	B	92	0	0	3	0
9	C	104	0	0	4	0
9	D	43	0	0	2	0
All	All	20264	0	19015	89	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 2.

All (89) 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:375:ASP:OD2	1:D:378:ARG:NH2	2.20	0.74
1:C:268:LYS:HE2	9:C:955:HOH:O	1.86	0.74
1:A:375:ASP:OD1	1:A:378:ARG:NH2	2.22	0.72
1:D:584:MET:O	1:D:611:ARG:NH1	2.23	0.71
1:D:543:MET:HA	1:D:543:MET:HE3	1.74	0.69
1:B:162:ARG:NH1	1:B:164:GLU:OE1	2.27	0.67
1:D:363:PHE:CD2	1:D:447:HIS:ND1	2.63	0.67
1:C:194:GLN:HG3	9:C:942:HOH:O	1.95	0.66
1:D:432:VAL:HG11	1:D:470:LEU:HD22	1.79	0.64
1:D:162:ARG:NH1	1:D:164:GLU:OE1	2.35	0.59
1:D:339:GLN:HG2	1:D:594:TRP:NE1	2.18	0.57
1:B:194:GLN:HG3	9:B:946:HOH:O	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:610:LEU:C	1:B:610:LEU:HD13	2.28	0.55
1:D:183:ALA:O	1:D:254:ARG:NH2	2.37	0.55
1:D:632:PRO:O	1:D:635:ARG:NH1	2.35	0.54
1:B:354:ASP:OD1	1:B:355:MET:HB2	2.09	0.53
1:C:268:LYS:HE3	9:C:912:HOH:O	2.07	0.53
1:D:685:TYR:CZ	1:D:686:LYS:HE2	2.44	0.52
1:D:378:ARG:HA	1:D:381:ARG:NH1	2.24	0.52
1:D:326:ARG:NH2	1:D:427:ASN:OD1	2.42	0.52
1:A:354:ASP:OD2	1:A:355:MET:HB2	2.11	0.51
1:C:354:ASP:OD2	1:C:355:MET:HB2	2.10	0.51
1:D:354:ASP:OD1	1:D:355:MET:HB2	2.10	0.51
1:B:268:LYS:HE3	9:B:911:HOH:O	2.10	0.50
1:D:349:HIS:ND1	1:D:500:LEU:HD23	2.27	0.50
1:B:268:LYS:NZ	9:B:903:HOH:O	2.44	0.50
1:D:378:ARG:HA	1:D:381:ARG:CZ	2.42	0.49
1:D:524:VAL:HG23	9:D:942:HOH:O	2.12	0.49
1:C:227:ARG:HB3	1:C:239:VAL:HB	1.96	0.48
1:C:190:GLU:HA	1:C:194:GLN:OE1	2.13	0.47
1:C:693:THR:HA	1:C:694:PRO:C	2.35	0.47
1:B:362:ASP:OD2	1:B:400:SER:OG	2.25	0.47
1:B:190:GLU:HA	1:B:194:GLN:OE1	2.15	0.47
1:B:693:THR:HA	1:B:694:PRO:C	2.35	0.47
1:B:227:ARG:HB3	1:B:239:VAL:HB	1.97	0.47
1:D:250:ASN:OD1	1:D:252:THR:OG1	2.27	0.46
1:D:196:TRP:HH2	1:D:543:MET:SD	2.37	0.46
1:D:178:LEU:HB3	1:D:254:ARG:CZ	2.45	0.46
1:A:278:GLU:OE2	1:A:280:SER:HB3	2.15	0.46
1:A:693:THR:HA	1:A:694:PRO:C	2.36	0.46
1:D:404:GLU:HG2	1:D:408:ARG:HD2	1.97	0.46
1:A:310:PRO:HA	1:A:620:LEU:HD21	1.97	0.46
1:C:418:ARG:NH1	9:C:908:HOH:O	2.49	0.45
1:D:693:THR:HA	1:D:694:PRO:C	2.37	0.45
1:D:322:ALA:HB3	1:D:590:SER:HB3	1.98	0.45
1:C:637:LEU:HD23	1:C:637:LEU:HA	1.79	0.44
1:A:354:ASP:HA	1:A:355:MET:HA	1.85	0.44
1:A:227:ARG:HB3	1:A:239:VAL:HB	1.99	0.44
1:D:227:ARG:HB3	1:D:239:VAL:HB	1.99	0.44
1:B:202:GLY:N	1:B:251:SER:OG	2.51	0.44
1:D:268:LYS:HE3	9:D:916:HOH:O	2.17	0.44
1:D:685:TYR:OH	1:D:686:LYS:HE2	2.18	0.44
1:C:148:GLN:OE1	1:C:160:ARG:HD3	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:322:ALA:HB3	1:C:590:SER:HB3	1.98	0.44
1:C:578:LEU:C	1:C:578:LEU:HD23	2.38	0.43
1:A:322:ALA:HB3	1:A:590:SER:HB3	2.01	0.43
1:A:148:GLN:OE1	1:A:160:ARG:HD3	2.18	0.43
1:B:322:ALA:HB3	1:B:590:SER:HB3	1.99	0.43
1:A:202:GLY:N	1:A:251:SER:OG	2.52	0.43
1:A:578:LEU:C	1:A:578:LEU:HD23	2.39	0.43
1:B:578:LEU:C	1:B:578:LEU:HD23	2.39	0.43
1:C:93:LEU:HD13	1:C:147:ILE:HG21	2.00	0.43
1:B:292:ILE:HD12	1:B:292:ILE:HA	1.91	0.43
1:D:178:LEU:HB3	1:D:254:ARG:NH2	2.34	0.43
1:B:148:GLN:OE1	1:B:160:ARG:HD3	2.19	0.43
1:D:310:PRO:HA	1:D:620:LEU:HD21	2.00	0.42
1:D:196:TRP:O	1:D:651:ASP:HB3	2.19	0.42
1:D:354:ASP:HA	1:D:355:MET:HA	1.85	0.42
1:D:376:MET:CE	1:D:377:PHE:CE1	3.02	0.42
1:D:578:LEU:C	1:D:578:LEU:HD23	2.39	0.42
1:A:196:TRP:O	1:A:651:ASP:HB3	2.19	0.42
1:B:610:LEU:HD13	1:B:610:LEU:O	2.19	0.42
1:C:330:GLN:HB2	1:C:370:PHE:HA	2.01	0.42
1:A:712:TRP:CZ2	1:A:714:SER:HB2	2.55	0.42
1:C:196:TRP:O	1:C:651:ASP:HB3	2.20	0.42
1:D:214:VAL:HG13	1:D:214:VAL:O	2.20	0.42
1:A:692:LYS:NZ	9:A:908:HOH:O	2.53	0.41
1:B:330:GLN:HB2	1:B:370:PHE:HA	2.03	0.41
1:D:160:ARG:NH1	8:D:804:MLI:O7	2.53	0.41
1:C:310:PRO:HA	1:C:620:LEU:HD21	2.02	0.41
1:A:330:GLN:HB2	1:A:370:PHE:HA	2.02	0.41
1:B:93:LEU:HD13	1:B:147:ILE:HG21	2.02	0.41
1:C:396:ASN:HA	1:C:430:GLY:HA3	2.03	0.41
1:B:437:HIS:CE1	1:B:439:LYS:HB2	2.56	0.41
1:C:616:ALA:HB3	1:C:617:PRO:HD3	2.02	0.40
1:C:306:ARG:HB2	1:C:513:SER:CB	2.51	0.40
1:D:396:ASN:HA	1:D:430:GLY:HA3	2.03	0.40
2:E:1:NAG:C6	2:E:2:NAG:C1	3.00	0.40
1:D:315:ASP:OD1	6:D:802:NAG:H83	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	606/636 (95%)	583 (96%)	23 (4%)	0	100	100
1	B	612/636 (96%)	587 (96%)	25 (4%)	0	100	100
1	C	614/636 (96%)	591 (96%)	23 (4%)	0	100	100
1	D	574/636 (90%)	550 (96%)	24 (4%)	0	100	100
All	All	2406/2544 (95%)	2311 (96%)	95 (4%)	0	100	100

There are no Ramachandran outliers to report.

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	506/533 (95%)	487 (96%)	19 (4%)	33	43
1	B	511/533 (96%)	494 (97%)	17 (3%)	38	49
1	C	508/533 (95%)	493 (97%)	15 (3%)	41	53
1	D	469/533 (88%)	449 (96%)	20 (4%)	29	38
All	All	1994/2132 (94%)	1923 (96%)	71 (4%)	35	46

All (71) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	93	LEU
1	A	124	SER

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Mol	Chain	Res	Type
1	A	216	SER
1	A	225	LEU
1	A	278	GLU
1	A	280	SER
1	A	291	SER
1	A	335	ARG
1	A	353	ASP
1	A	401	ARG
1	A	454	ARG
1	A	499	SER
1	A	502	GLU
1	A	599	GLU
1	A	650	ILE
1	A	667	GLU
1	A	672	GLU
1	A	692	LYS
1	A	714	SER
1	B	124	SER
1	B	194	GLN
1	B	225	LEU
1	B	278	GLU
1	B	291	SER
1	B	353	ASP
1	B	408	ARG
1	B	413	ARG
1	B	502	GLU
1	B	599	GLU
1	B	637	LEU
1	B	645	GLU
1	B	650	ILE
1	B	659	THR
1	B	667	GLU
1	B	672	GLU
1	B	692	LYS
1	C	96	LYS
1	C	117	SER
1	C	124	SER
1	C	194	GLN
1	C	225	LEU
1	C	251	SER
1	C	278	GLU
1	C	291	SER

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Mol	Chain	Res	Type
1	C	353	ASP
1	C	401	ARG
1	C	450	ARG
1	C	452	ARG
1	C	502	GLU
1	C	599	GLU
1	C	667	GLU
1	D	153	LYS
1	D	170	ARG
1	D	214	VAL
1	D	251	SER
1	D	278	GLU
1	D	280	SER
1	D	291	SER
1	D	338	GLN
1	D	353	ASP
1	D	413	ARG
1	D	424	ARG
1	D	452	ARG
1	D	543	MET
1	D	595	ARG
1	D	599	GLU
1	D	635	ARG
1	D	637	LEU
1	D	650	ILE
1	D	672	GLU
1	D	692	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	195	HIS
1	D	605	GLN

5.3.3 RNA

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)

25 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	0.34	0	17,19,21	1.13	2 (11%)
2	NAG	E	2	2	14,14,15	0.68	0	17,19,21	1.56	2 (11%)
2	BMA	E	3	2	11,11,12	0.84	1 (9%)	15,15,17	1.23	1 (6%)
2	MAN	E	4	2	11,11,12	0.59	0	15,15,17	0.86	1 (6%)
3	NAG	F	1	1,3	14,14,15	0.44	0	17,19,21	1.08	2 (11%)
3	NAG	F	2	3	14,14,15	0.72	0	17,19,21	1.78	4 (23%)
3	NAG	G	1	1,3	14,14,15	0.34	0	17,19,21	1.36	1 (5%)
3	NAG	G	2	3	14,14,15	0.42	0	17,19,21	0.75	0
3	NAG	H	1	1,3	14,14,15	0.35	0	17,19,21	1.18	1 (5%)
3	NAG	H	2	3	14,14,15	0.80	0	17,19,21	1.86	4 (23%)
4	NAG	I	1	4,1	14,14,15	0.20	0	17,19,21	1.32	2 (11%)
4	NAG	I	2	4	14,14,15	0.32	0	17,19,21	1.22	1 (5%)
4	BMA	I	3	4	11,11,12	0.62	0	15,15,17	1.19	1 (6%)
5	NAG	J	1	1,5	14,14,15	0.56	0	17,19,21	1.15	1 (5%)
5	FUC	J	2	5	10,10,11	0.73	0	14,14,16	1.37	2 (14%)
5	NAG	J	3	5	14,14,15	0.37	0	17,19,21	1.13	1 (5%)
5	FUC	J	4	5	10,10,11	0.48	0	14,14,16	1.01	1 (7%)
3	NAG	K	1	1,3	14,14,15	0.48	0	17,19,21	1.15	2 (11%)
3	NAG	K	2	3	14,14,15	0.41	0	17,19,21	0.87	0
3	NAG	L	1	1,3	14,14,15	0.59	0	17,19,21	0.67	0
3	NAG	L	2	3	14,14,15	0.57	0	17,19,21	1.11	2 (11%)
3	NAG	M	1	1,3	14,14,15	0.44	0	17,19,21	1.01	2 (11%)
3	NAG	M	2	3	14,14,15	0.37	0	17,19,21	1.15	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
3	NAG	N	1	1,3	14,14,15	0.45	0	17,19,21	1.15	2 (11%)
3	NAG	N	2	3	14,14,15	0.43	0	17,19,21	1.11	2 (11%)

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

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

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	E	3	BMA	C2-C3	2.17	1.55	1.52

All (38) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	H	2	NAG	C8-C7-N2	4.62	123.92	116.10
2	E	2	NAG	C1-O5-C5	4.27	117.97	112.19
3	F	2	NAG	C8-C7-N2	4.05	122.95	116.10
3	H	2	NAG	O7-C7-N2	-3.91	114.76	121.95
3	F	2	NAG	O7-C7-N2	-3.87	114.84	121.95
3	G	1	NAG	C1-O5-C5	3.70	117.21	112.19
2	E	1	NAG	C1-O5-C5	3.55	117.00	112.19
3	M	2	NAG	C1-O5-C5	3.25	116.60	112.19
5	J	1	NAG	C1-O5-C5	3.22	116.56	112.19
2	E	2	NAG	O5-C1-C2	3.16	116.28	111.29
5	J	2	FUC	O5-C5-C4	3.12	115.12	109.52
4	I	1	NAG	O5-C5-C6	3.03	111.95	107.20
5	J	2	FUC	C1-O5-C5	3.02	119.63	112.78
5	J	4	FUC	O5-C1-C2	-2.98	106.17	110.77
3	N	1	NAG	C1-O5-C5	2.87	116.09	112.19
3	N	2	NAG	O5-C5-C6	2.65	111.36	107.20
3	K	1	NAG	O5-C1-C2	-2.63	107.13	111.29
3	L	2	NAG	C1-C2-N2	2.61	114.95	110.49
3	F	2	NAG	C4-C3-C2	-2.59	107.22	111.02
2	E	3	BMA	C1-O5-C5	-2.56	108.73	112.19
3	K	1	NAG	O5-C5-C4	-2.51	104.72	110.83
4	I	3	BMA	O5-C5-C6	2.42	111.00	107.20
3	M	1	NAG	O5-C5-C4	-2.40	104.99	110.83
3	N	2	NAG	O5-C1-C2	-2.36	107.57	111.29
3	L	2	NAG	O5-C5-C6	2.33	110.86	107.20
3	M	1	NAG	O5-C1-C2	-2.30	107.66	111.29
3	H	2	NAG	C1-C2-N2	-2.29	106.57	110.49
3	H	2	NAG	C4-C3-C2	-2.29	107.66	111.02
3	F	2	NAG	O5-C1-C2	-2.21	107.79	111.29
5	J	3	NAG	C4-C3-C2	2.19	114.23	111.02
4	I	1	NAG	O4-C4-C3	-2.15	105.39	110.35
3	F	1	NAG	O5-C1-C2	-2.14	107.91	111.29
2	E	4	MAN	C1-O5-C5	2.12	115.07	112.19
2	E	1	NAG	O3-C3-C2	-2.12	105.09	109.47
4	I	2	NAG	O5-C5-C4	-2.11	105.69	110.83
3	F	1	NAG	C4-C3-C2	2.10	114.10	111.02
3	H	1	NAG	O5-C5-C4	-2.04	105.87	110.83
3	N	1	NAG	O5-C5-C6	-2.01	104.06	107.20

There are no chirality outliers.

All (20) torsion outliers are listed below:

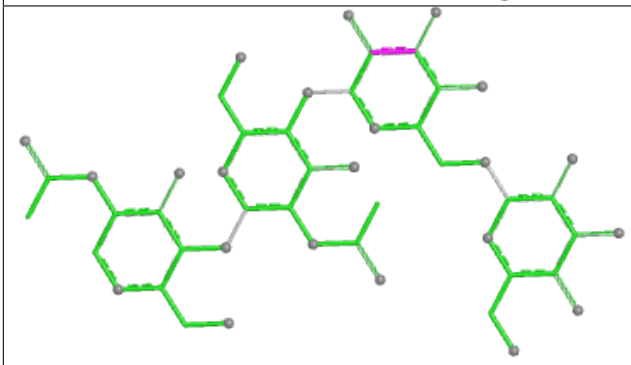
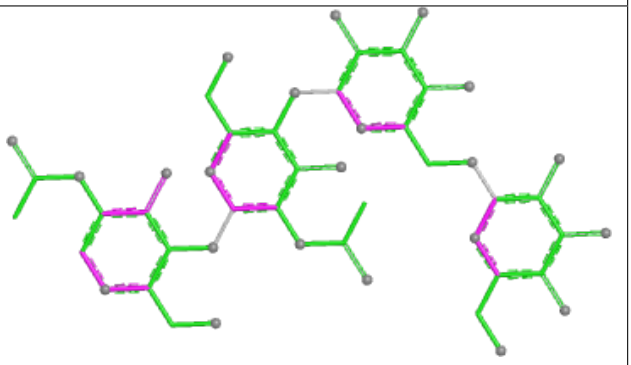
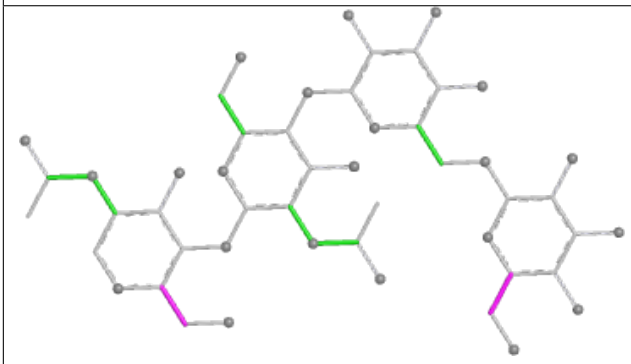
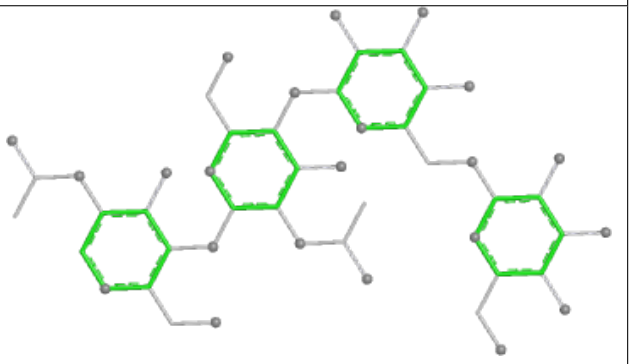
Mol	Chain	Res	Type	Atoms
3	F	2	NAG	C8-C7-N2-C2
3	F	2	NAG	O7-C7-N2-C2
3	H	2	NAG	C8-C7-N2-C2
3	H	2	NAG	O7-C7-N2-C2
3	N	2	NAG	O5-C5-C6-O6
3	L	2	NAG	O5-C5-C6-O6
3	N	2	NAG	C4-C5-C6-O6
2	E	4	MAN	O5-C5-C6-O6
2	E	4	MAN	C4-C5-C6-O6
3	L	2	NAG	C4-C5-C6-O6
3	G	2	NAG	O5-C5-C6-O6
2	E	1	NAG	O5-C5-C6-O6
3	F	2	NAG	C1-C2-N2-C7
3	G	2	NAG	C4-C5-C6-O6
3	H	1	NAG	O5-C5-C6-O6
3	H	2	NAG	O5-C5-C6-O6
3	H	1	NAG	C4-C5-C6-O6
3	H	2	NAG	C1-C2-N2-C7
2	E	1	NAG	C4-C5-C6-O6
4	I	1	NAG	C4-C5-C6-O6

There are no ring outliers.

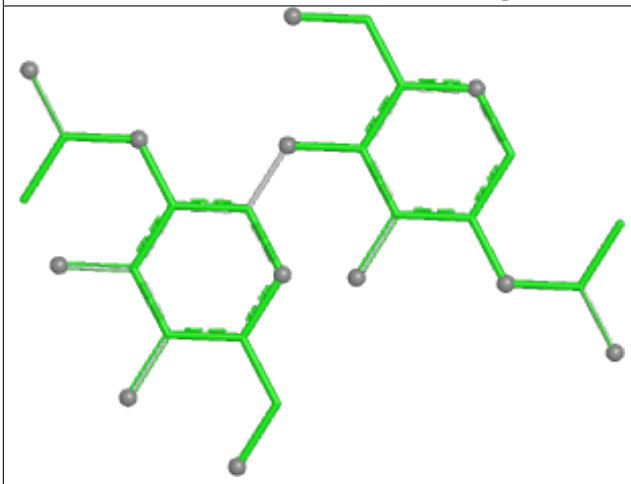
2 monomers are involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	2	NAG	1	0
2	E	1	NAG	1	0

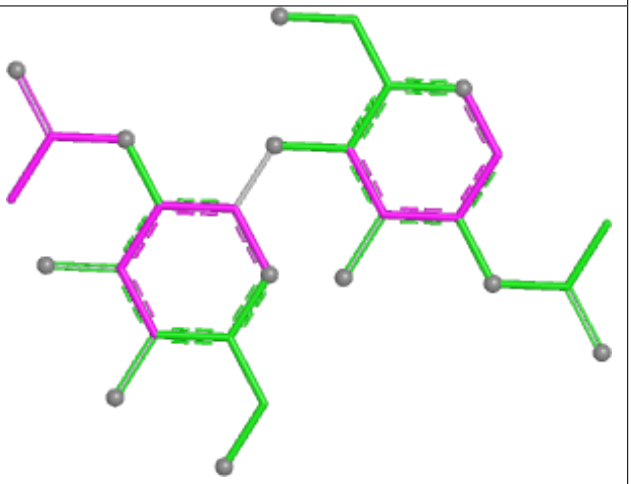
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

Oligosaccharide Chain E	
	
Bond lengths	**Bond angles**
	
Torsions	**Rings**

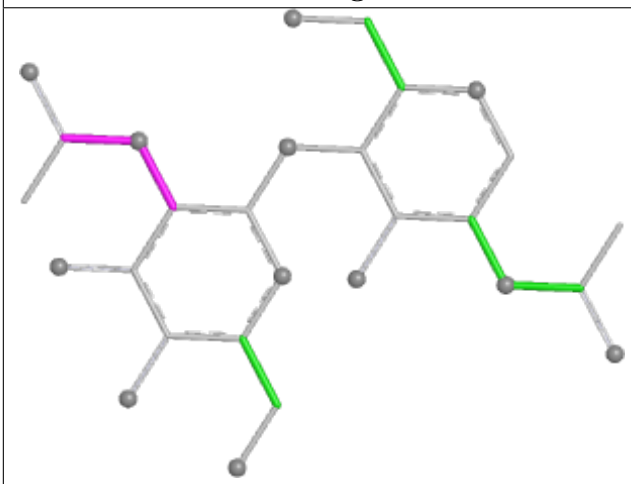
Oligosaccharide Chain F



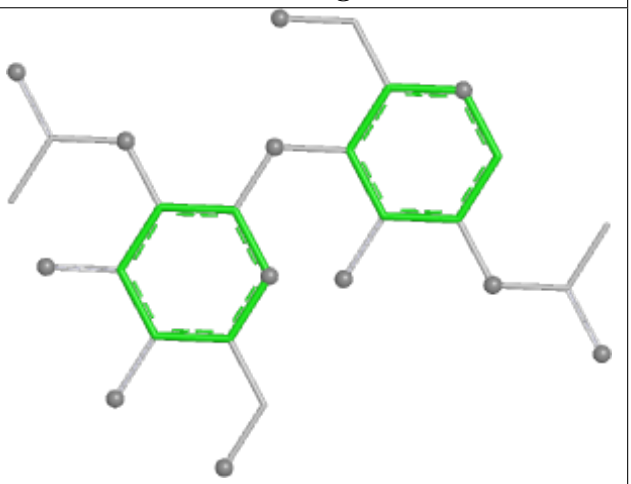
Bond lengths



Bond angles

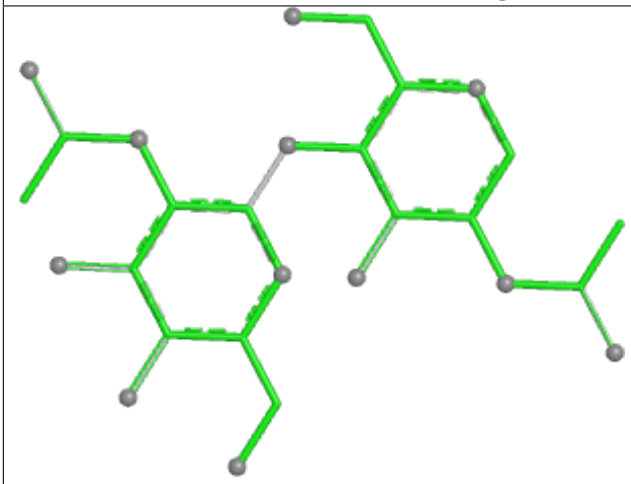


Torsions

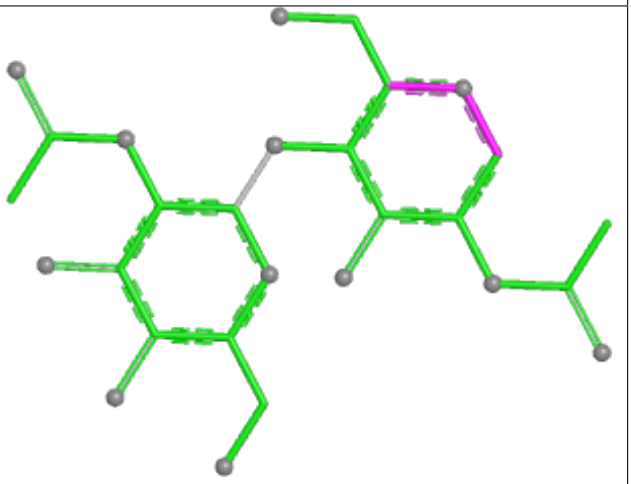


Rings

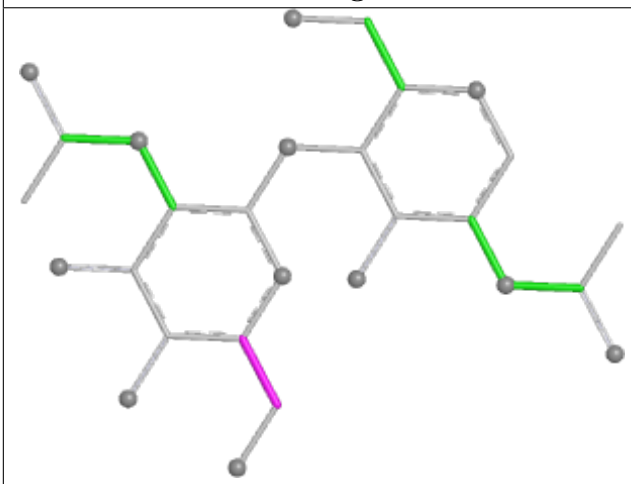
Oligosaccharide Chain G



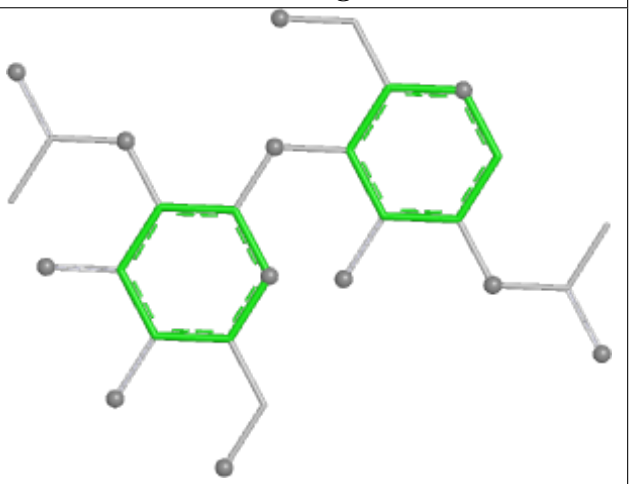
Bond lengths



Bond angles

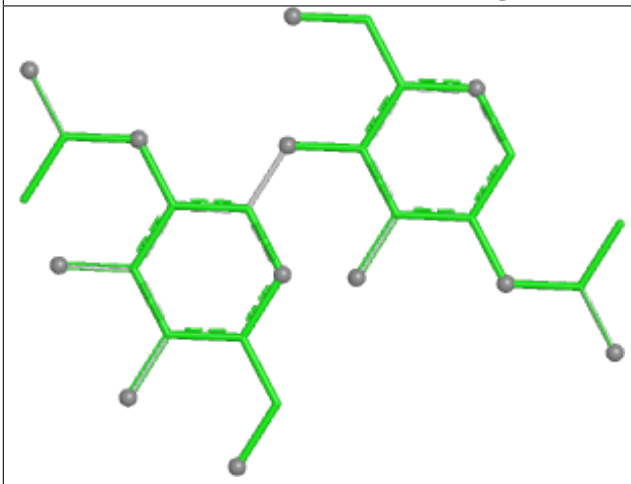


Torsions

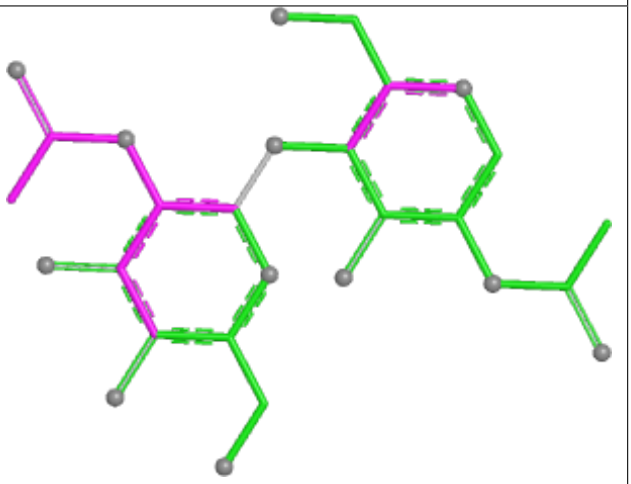


Rings

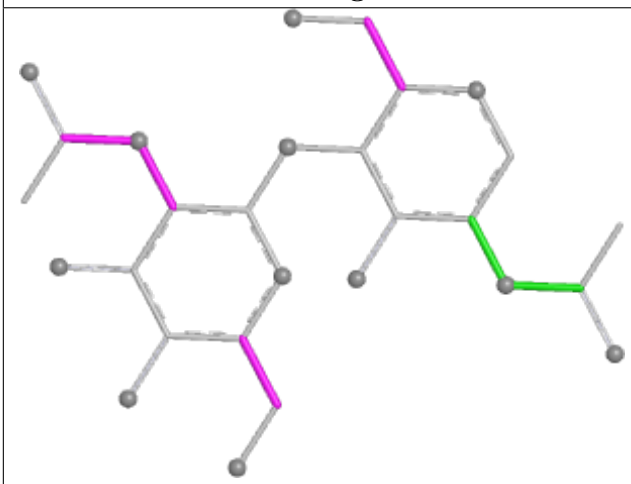
Oligosaccharide Chain H



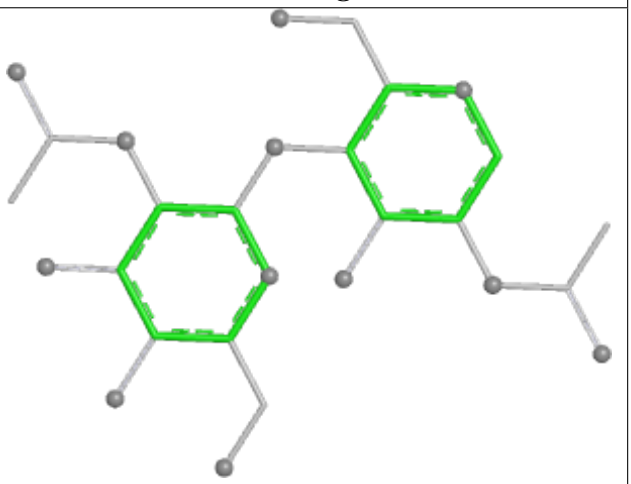
Bond lengths



Bond angles

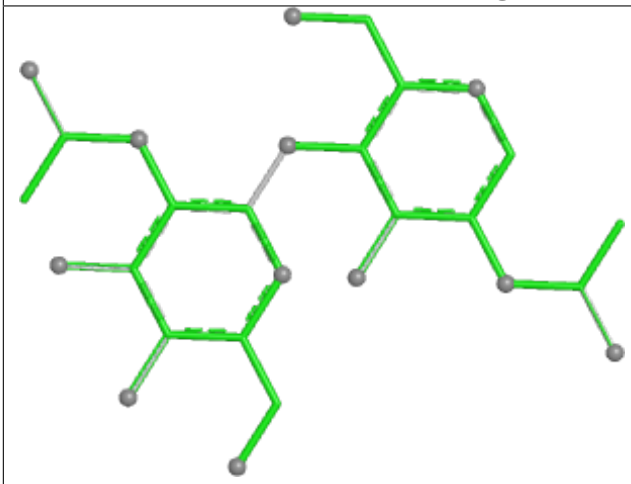


Torsions

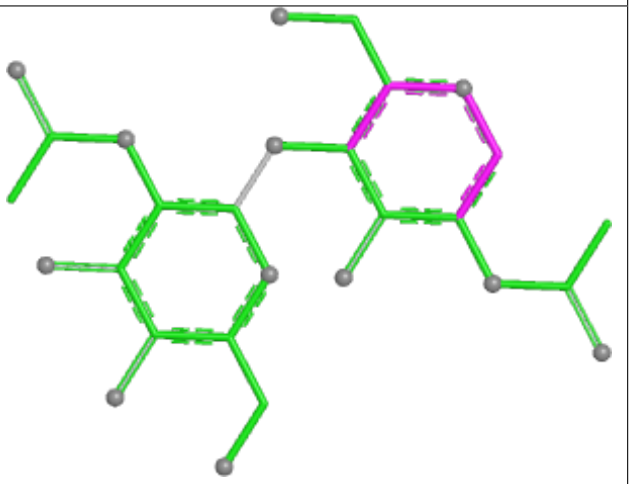


Rings

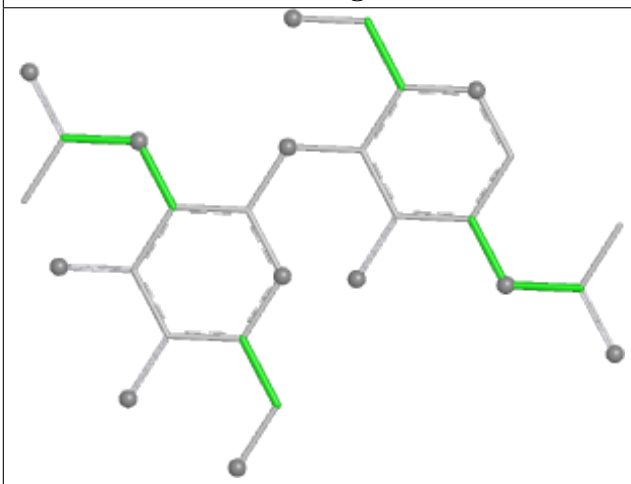
Oligosaccharide Chain K



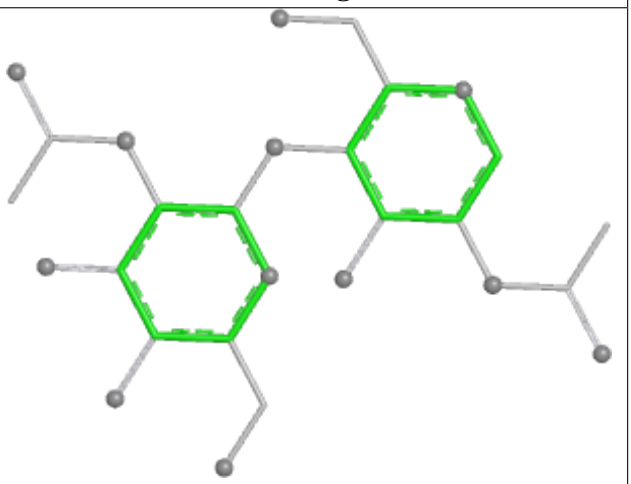
Bond lengths



Bond angles

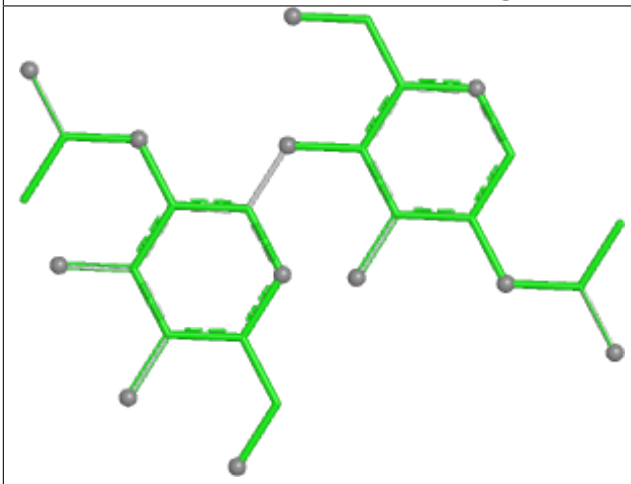


Torsions

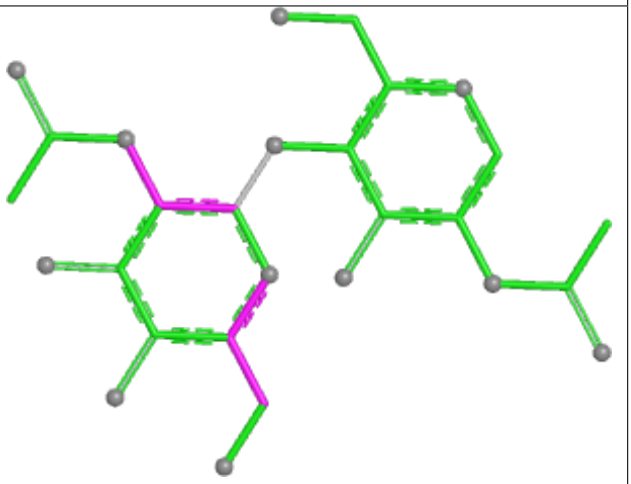


Rings

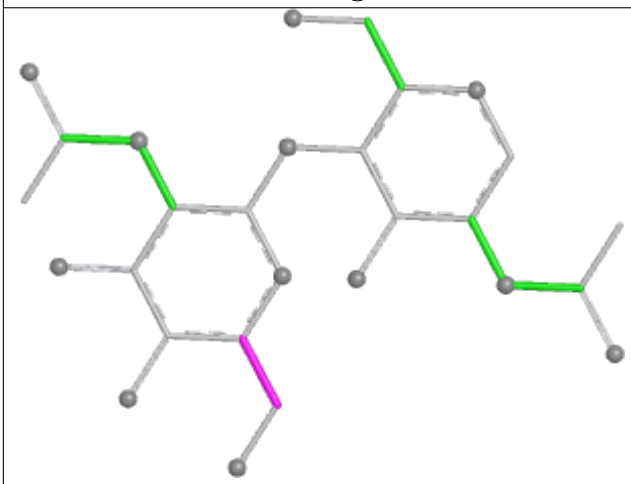
Oligosaccharide Chain L



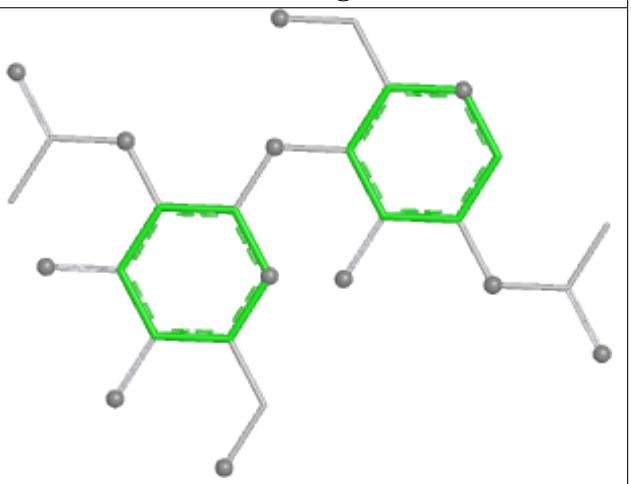
Bond lengths



Bond angles

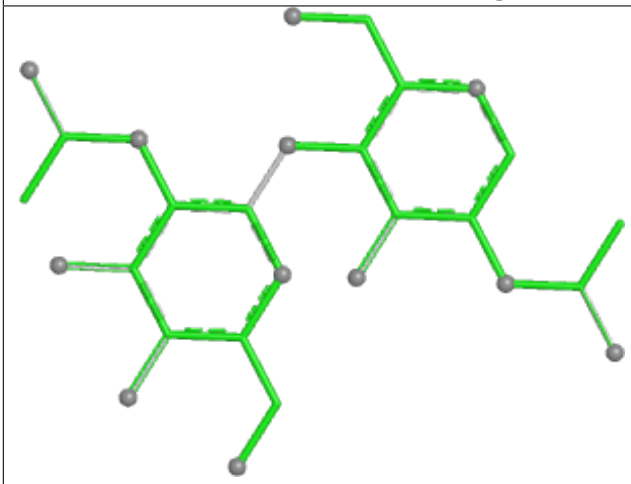


Torsions

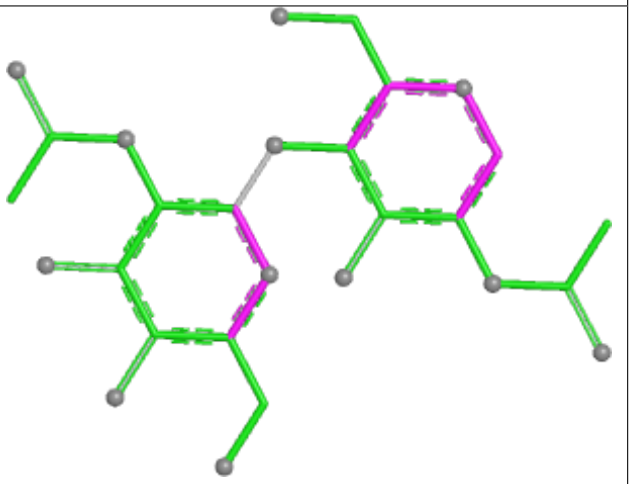


Rings

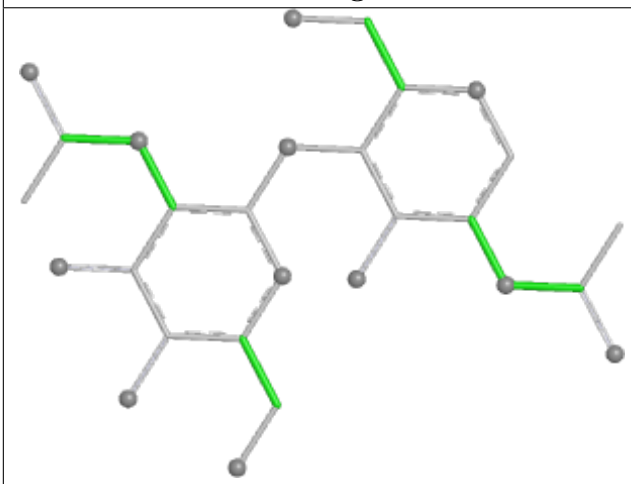
Oligosaccharide Chain M



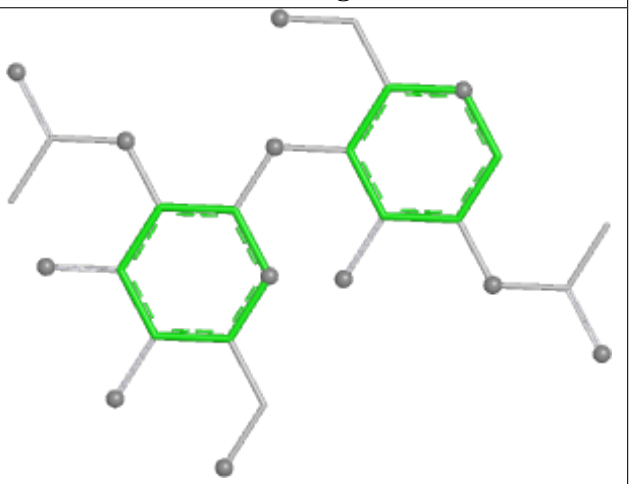
Bond lengths



Bond angles

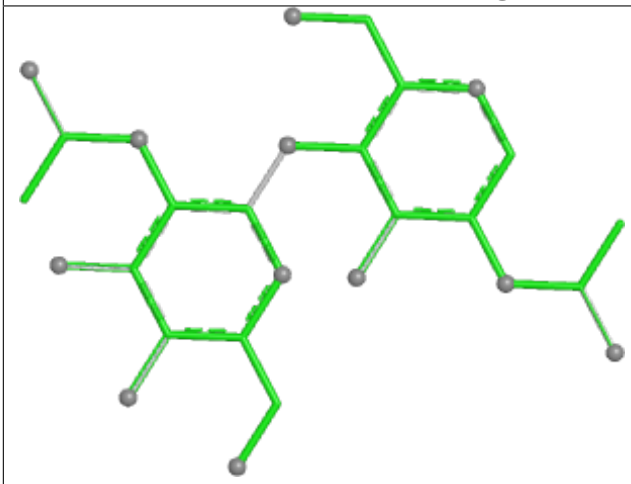


Torsions

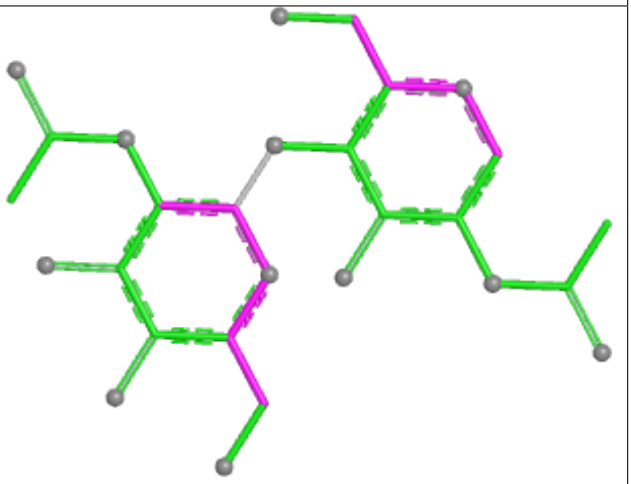


Rings

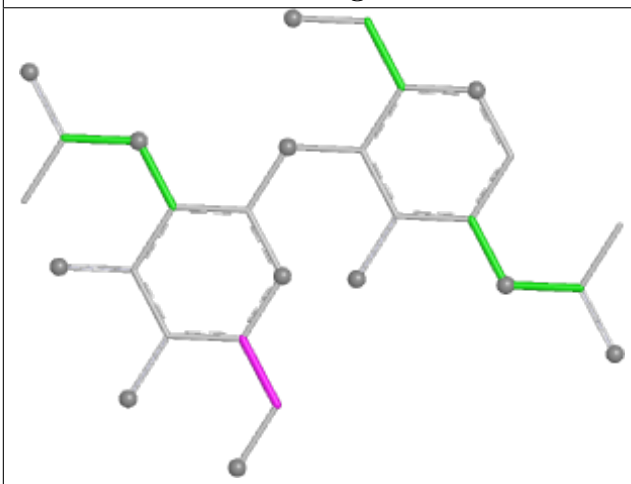
Oligosaccharide Chain N



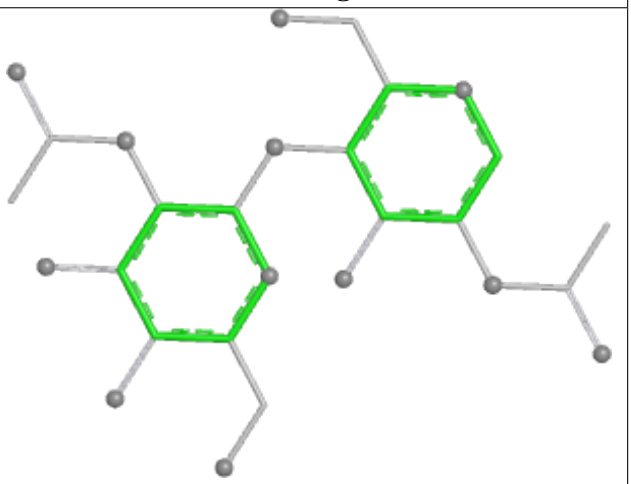
Bond lengths



Bond angles

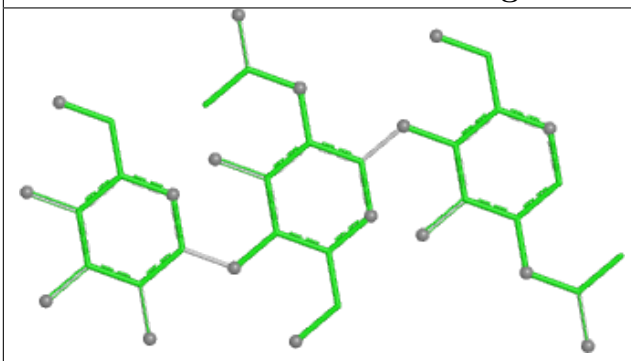


Torsions

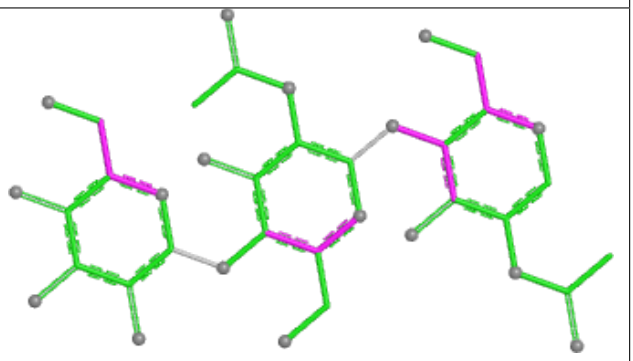


Rings

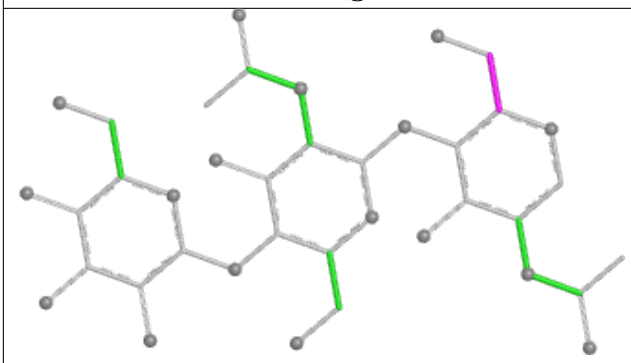
Oligosaccharide Chain I



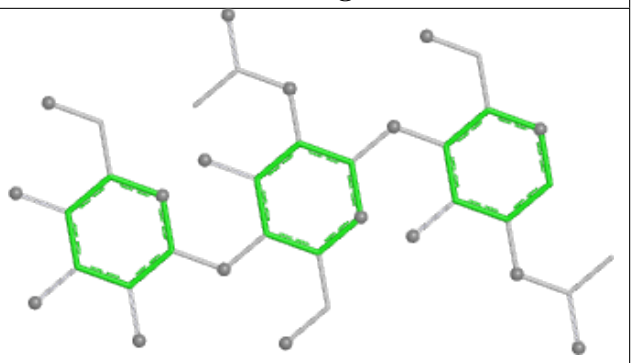
Bond lengths



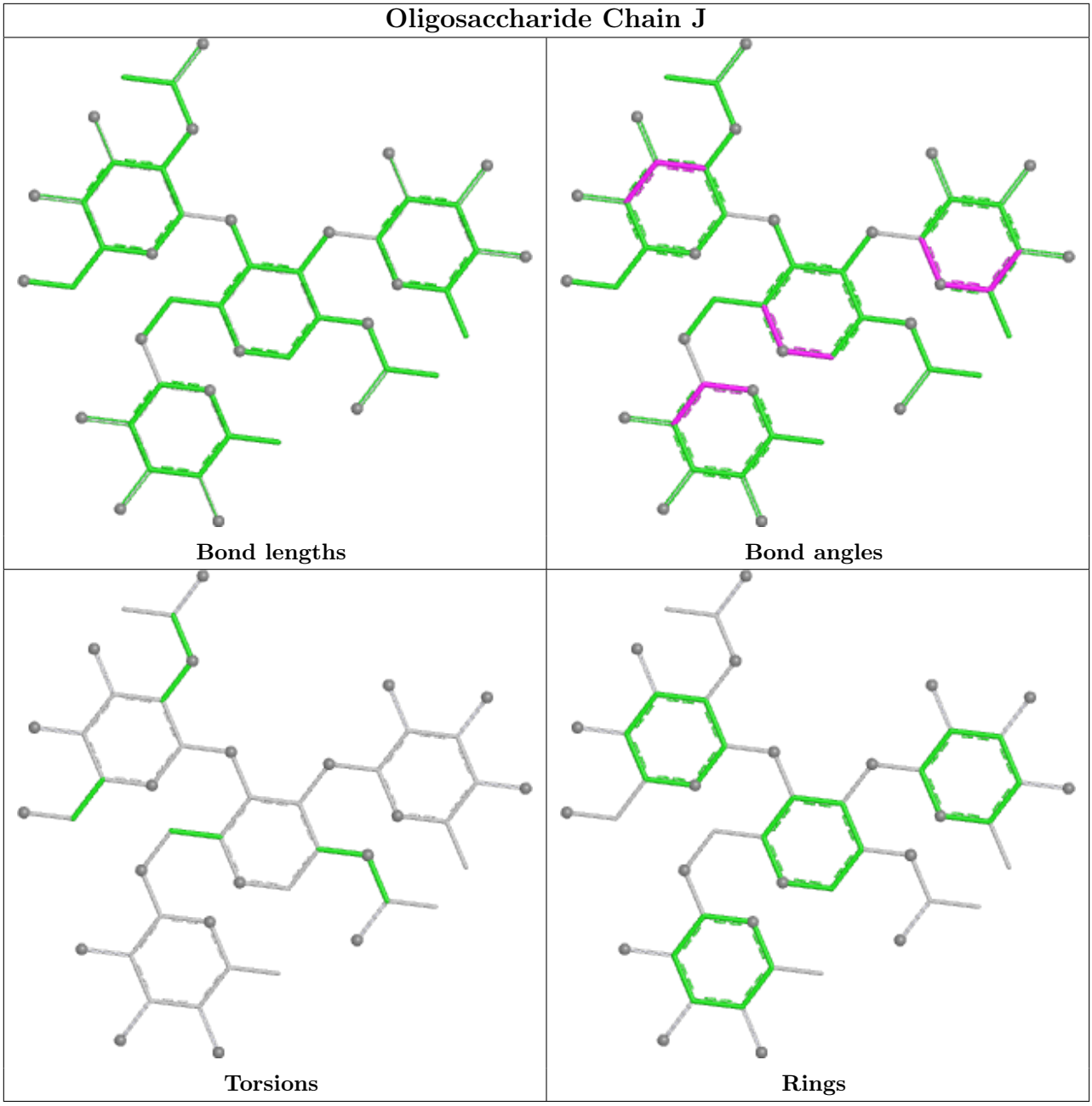
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

19 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	$\#\|Z\|>2$
6	NAG	D	802	1	14,14,15	0.73	0	17,19,21	1.70	4 (23%)
7	ACT	D	803	-	3,3,3	1.04	0	3,3,3	0.72	0
7	ACT	A	804	-	3,3,3	0.90	0	3,3,3	0.99	0
8	MLI	C	804	-	6,6,6	1.32	0	7,7,7	1.08	0
6	NAG	C	803	1	14,14,15	0.77	0	17,19,21	0.87	1 (5%)
8	MLI	B	804	-	6,6,6	1.27	0	7,7,7	0.95	0
6	NAG	C	802	1	14,14,15	0.66	0	17,19,21	2.13	4 (23%)
8	MLI	A	805	-	6,6,6	1.32	0	7,7,7	0.97	0
6	NAG	C	801	1	14,14,15	0.65	0	17,19,21	1.60	3 (17%)
7	ACT	C	805	-	3,3,3	1.07	0	3,3,3	0.69	0
6	NAG	A	803	1	14,14,15	1.13	1 (7%)	17,19,21	2.23	6 (35%)
6	NAG	A	802	1	14,14,15	0.38	0	17,19,21	0.96	1 (5%)
6	NAG	B	803	1	14,14,15	0.86	0	17,19,21	1.50	2 (11%)
6	NAG	A	801	1	14,14,15	0.85	0	17,19,21	1.87	3 (17%)
6	NAG	B	802	1	14,14,15	0.66	0	17,19,21	1.22	1 (5%)
6	NAG	D	801	1	14,14,15	0.56	0	17,19,21	1.38	3 (17%)
6	NAG	B	801	1	14,14,15	0.62	0	17,19,21	1.59	5 (29%)
7	ACT	B	805	-	3,3,3	0.88	0	3,3,3	0.92	0
8	MLI	D	804	-	6,6,6	1.28	0	7,7,7	0.98	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	C	802	1	-	3/6/23/26	0/1/1/1
6	NAG	A	801	1	-	2/6/23/26	0/1/1/1
6	NAG	D	802	1	-	2/6/23/26	0/1/1/1
6	NAG	C	801	1	-	0/6/23/26	0/1/1/1
8	MLI	A	805	-	-	0/4/4/4	-
6	NAG	A	802	1	-	0/6/23/26	0/1/1/1
6	NAG	B	802	1	-	0/6/23/26	0/1/1/1
6	NAG	D	801	1	-	1/6/23/26	0/1/1/1
8	MLI	C	804	-	-	0/4/4/4	-
6	NAG	C	803	1	-	2/6/23/26	0/1/1/1
6	NAG	B	801	1	-	0/6/23/26	0/1/1/1
6	NAG	A	803	1	-	3/6/23/26	0/1/1/1
8	MLI	B	804	-	-	0/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	B	803	1	-	0/6/23/26	0/1/1/1
8	MLI	D	804	-	-	0/4/4/4	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	803	NAG	C2-N2	2.46	1.50	1.46

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	803	NAG	C2-N2-C7	6.69	132.43	122.90
6	A	801	NAG	C1-O5-C5	6.07	120.42	112.19
6	C	802	NAG	C2-N2-C7	4.54	129.37	122.90
6	D	801	NAG	C1-O5-C5	3.78	117.31	112.19
6	D	802	NAG	C2-N2-C7	3.76	128.26	122.90
6	C	801	NAG	C3-C4-C5	-3.67	103.70	110.24
6	A	803	NAG	O7-C7-N2	3.56	128.50	121.95
6	C	802	NAG	C8-C7-N2	3.46	121.96	116.10
6	C	802	NAG	C4-C3-C2	-3.38	106.07	111.02
6	D	802	NAG	C1-O5-C5	3.14	116.44	112.19
6	B	803	NAG	C1-O5-C5	3.09	116.38	112.19
6	C	802	NAG	C6-C5-C4	3.00	120.03	113.00
6	D	802	NAG	C8-C7-N2	2.88	120.98	116.10
6	C	801	NAG	O4-C4-C5	2.85	116.39	109.30
6	C	803	NAG	O4-C4-C5	2.79	116.21	109.30
6	A	801	NAG	C1-C2-N2	2.76	115.21	110.49
6	B	801	NAG	O5-C5-C4	-2.76	104.11	110.83
6	B	803	NAG	C4-C3-C2	-2.73	107.02	111.02
6	C	801	NAG	C1-O5-C5	2.65	115.79	112.19
6	A	803	NAG	C1-O5-C5	2.62	115.74	112.19
6	B	801	NAG	C6-C5-C4	2.57	119.03	113.00
6	A	801	NAG	O5-C1-C2	-2.40	107.50	111.29
6	A	803	NAG	C8-C7-N2	-2.29	112.22	116.10
6	B	801	NAG	O5-C1-C2	2.27	114.87	111.29
6	A	803	NAG	O5-C5-C6	2.25	110.74	107.20
6	A	802	NAG	C1-O5-C5	2.24	115.23	112.19
6	B	801	NAG	C1-C2-N2	-2.15	106.82	110.49
6	D	802	NAG	O7-C7-C8	-2.09	118.18	122.06
6	B	802	NAG	C4-C3-C2	2.03	113.99	111.02
6	D	801	NAG	O5-C5-C6	2.02	110.37	107.20
6	D	801	NAG	O5-C5-C4	-2.02	105.92	110.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	803	NAG	C1-C2-N2	2.01	113.92	110.49
6	B	801	NAG	C2-N2-C7	2.01	125.76	122.90

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	C	802	NAG	C8-C7-N2-C2
6	C	802	NAG	O7-C7-N2-C2
6	D	802	NAG	C8-C7-N2-C2
6	D	802	NAG	O7-C7-N2-C2
6	C	803	NAG	O5-C5-C6-O6
6	A	801	NAG	C4-C5-C6-O6
6	A	801	NAG	O5-C5-C6-O6
6	C	803	NAG	C4-C5-C6-O6
6	A	803	NAG	C4-C5-C6-O6
6	A	803	NAG	O5-C5-C6-O6
6	A	803	NAG	C1-C2-N2-C7
6	C	802	NAG	C3-C2-N2-C7
6	D	801	NAG	C3-C2-N2-C7

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	D	802	NAG	1	0
8	D	804	MLI	1	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

6.1 Protein, DNA and RNA chains

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, 95^{th} 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	612/636 (96%)	0.69	48 (7%)	13	10	42, 63, 94, 121	0
1	B	616/636 (96%)	0.53	13 (2%)	63	60	40, 60, 83, 96	0
1	C	618/636 (97%)	0.45	10 (1%)	72	69	35, 52, 79, 97	0
1	D	581/636 (91%)	0.95	76 (13%)	3	2	44, 69, 99, 114	0
All	All	2427/2544 (95%)	0.65	147 (6%)	21	17	35, 60, 92, 121	0

All (147) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	110	VAL	9.0
1	D	177	PHE	5.3
1	D	347	SER	5.2
1	A	118	GLY	5.0
1	A	141	LEU	4.9
1	D	267	TYR	4.7
1	D	451	LEU	4.7
1	D	455	TYR	4.7
1	A	143	LEU	4.5
1	A	120	LEU	4.5
1	A	136	LEU	4.4
1	A	121	ASP	4.3
1	A	165	GLU	4.3
1	D	363	PHE	4.3
1	A	171	ALA	4.2
1	D	346	ASN	4.1
1	A	163	TRP	4.1
1	C	177	PHE	3.9
1	D	111	PHE	3.9
1	B	169	GLY	3.9
1	D	336	PHE	3.8

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Mol	Chain	Res	Type	RSRZ
1	A	140	GLY	3.8
1	B	115	PHE	3.8
1	D	360	TYR	3.8
1	D	102	ILE	3.8
1	D	170	ARG	3.7
1	D	178	LEU	3.7
1	A	138	ALA	3.7
1	A	161	VAL	3.7
1	A	124	SER	3.6
1	A	122	LEU	3.6
1	D	112	ARG	3.6
1	A	117	SER	3.5
1	A	110	VAL	3.5
1	D	146	PHE	3.5
1	D	104	ASN	3.5
1	D	447	HIS	3.4
1	D	103	ARG	3.4
1	D	350	LEU	3.3
1	A	267	TYR	3.3
1	D	385	PHE	3.3
1	A	135	SER	3.3
1	D	359	ALA	3.3
1	D	376	MET	3.2
1	A	277	PRO	3.2
1	C	172	VAL	3.2
1	D	109	GLN	3.2
1	A	137	THR	3.2
1	D	255	SER	3.1
1	A	142	PRO	3.1
1	B	276	ALA	3.1
1	D	371	PRO	3.1
1	D	100	PHE	3.1
1	A	144	HIS	3.1
1	D	370	PHE	3.0
1	D	695	VAL	3.0
1	D	260	ALA	3.0
1	D	202	GLY	3.0
1	A	95	LEU	2.9
1	D	428	GLY	2.9
1	B	170	ARG	2.9
1	D	257	ARG	2.8
1	C	169	GLY	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	602	ALA	2.8
1	D	340	ILE	2.8
1	D	113	LEU	2.8
1	B	105	GLN	2.8
1	A	125	CYS	2.8
1	B	93	LEU	2.8
1	D	357	THR	2.7
1	A	115	PHE	2.7
1	D	345	PHE	2.7
1	D	176	MET	2.7
1	A	139	ASP	2.7
1	D	231	SER	2.6
1	D	258	LEU	2.6
1	D	380	LEU	2.6
1	D	118	GLY	2.6
1	D	171	ALA	2.6
1	D	443	TRP	2.6
1	A	472	ARG	2.6
1	D	402	PHE	2.5
1	A	380	LEU	2.5
1	D	200	LEU	2.5
1	D	317	ILE	2.5
1	B	713	ALA	2.5
1	D	387	VAL	2.5
1	D	663	ALA	2.5
1	D	473	ASP	2.5
1	C	110	VAL	2.5
1	B	99	GLY	2.5
1	D	470	LEU	2.4
1	A	97	ALA	2.4
1	A	164	GLU	2.4
1	D	527	TYR	2.4
1	D	334	LEU	2.4
1	A	100	PHE	2.4
1	C	168	PRO	2.4
1	B	275	ALA	2.4
1	D	114	ALA	2.4
1	D	364	ASP	2.4
1	D	338	GLN	2.4
1	D	355	MET	2.4
1	D	411	PHE	2.4
1	D	456	SER	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	315	ASP	2.3
1	A	145	PHE	2.3
1	D	583	PHE	2.3
1	C	708	ALA	2.3
1	D	383	ALA	2.3
1	A	132	LEU	2.3
1	A	263	HIS	2.3
1	A	261	ARG	2.3
1	A	473	ASP	2.2
1	A	360	TYR	2.2
1	D	505	VAL	2.2
1	A	399	SER	2.2
1	C	219	ALA	2.2
1	D	395	VAL	2.2
1	D	379	ARG	2.2
1	A	266	PRO	2.2
1	D	665	VAL	2.2
1	A	133	GLY	2.2
1	D	172	VAL	2.2
1	A	219	ALA	2.2
1	A	172	VAL	2.2
1	B	155	THR	2.2
1	B	165	GLU	2.2
1	D	263	HIS	2.1
1	A	262	TYR	2.1
1	B	133	GLY	2.1
1	D	575	ILE	2.1
1	C	170	ARG	2.1
1	D	169	GLY	2.1
1	D	675	VAL	2.1
1	B	465	GLY	2.1
1	D	685	TYR	2.1
1	D	698	THR	2.1
1	D	201	ASP	2.1
1	A	708	ALA	2.1
1	D	374	SER	2.1
1	C	277	PRO	2.0
1	A	279	LEU	2.0
1	A	119	ALA	2.0
1	C	262	TYR	2.0
1	D	377	PHE	2.0
1	A	94	ASP	2.0

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)

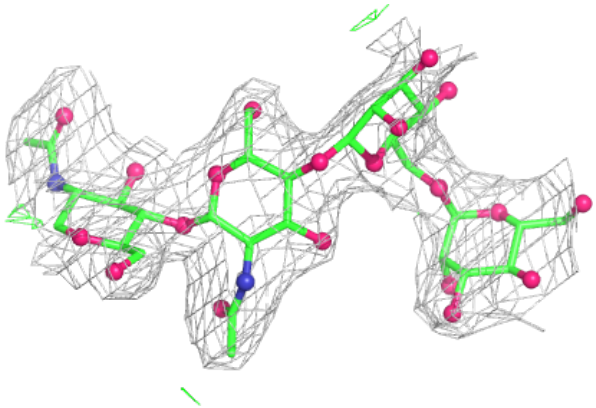
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

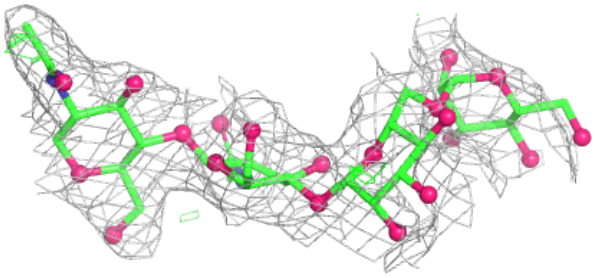
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	MAN	E	4	11/12	0.68	0.20	126,128,131,131	0
4	BMA	I	3	11/12	0.71	0.15	82,86,87,88	0
2	BMA	E	3	11/12	0.76	0.18	104,111,118,124	0
3	NAG	N	2	14/15	0.78	0.25	104,111,115,120	0
3	NAG	F	2	14/15	0.78	0.23	91,98,103,104	0
5	NAG	J	3	14/15	0.82	0.18	97,105,109,109	0
3	NAG	H	2	14/15	0.83	0.21	81,84,89,90	0
3	NAG	G	2	14/15	0.83	0.20	85,88,90,92	0
5	NAG	J	1	14/15	0.84	0.15	94,98,106,106	0
3	NAG	F	1	14/15	0.87	0.19	84,86,90,92	0
4	NAG	I	2	14/15	0.88	0.15	56,63,68,76	0
3	NAG	L	2	14/15	0.88	0.34	81,87,91,95	0
3	NAG	N	1	14/15	0.88	0.12	82,86,93,99	0
5	FUC	J	2	10/11	0.88	0.23	107,109,112,114	0
2	NAG	E	2	14/15	0.88	0.14	71,82,88,96	0
3	NAG	M	2	14/15	0.90	0.15	66,75,79,79	0
3	NAG	K	2	14/15	0.90	0.14	57,61,67,68	0
3	NAG	G	1	14/15	0.90	0.17	71,74,78,81	0
3	NAG	M	1	14/15	0.90	0.15	62,66,68,70	0
5	FUC	J	4	10/11	0.91	0.13	107,111,113,113	0
3	NAG	L	1	14/15	0.92	0.17	68,71,74,78	0
4	NAG	I	1	14/15	0.92	0.17	51,54,57,57	0
3	NAG	H	1	14/15	0.93	0.15	63,65,69,74	0
3	NAG	K	1	14/15	0.93	0.15	44,49,52,56	0
2	NAG	E	1	14/15	0.94	0.19	57,60,64,70	0

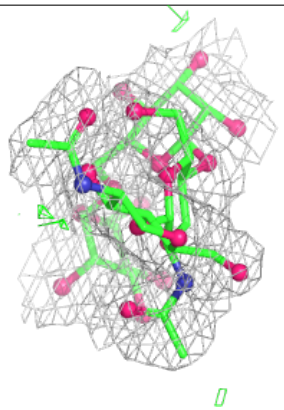
The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around Chain E:

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

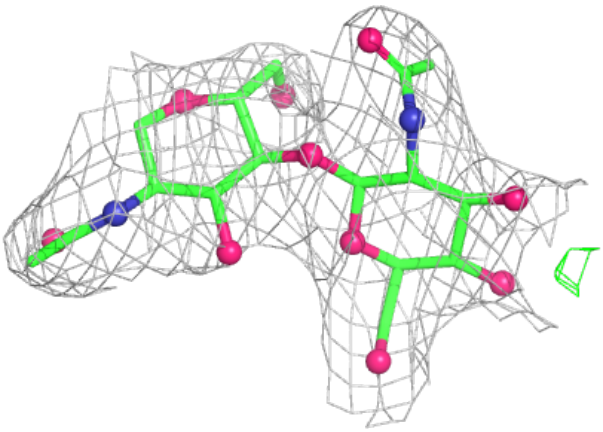


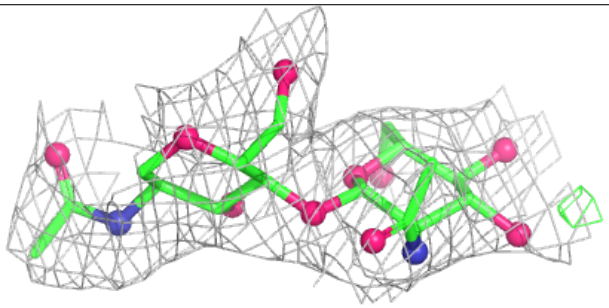


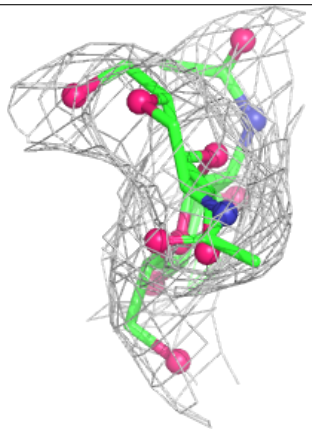


Electron density around Chain F:

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

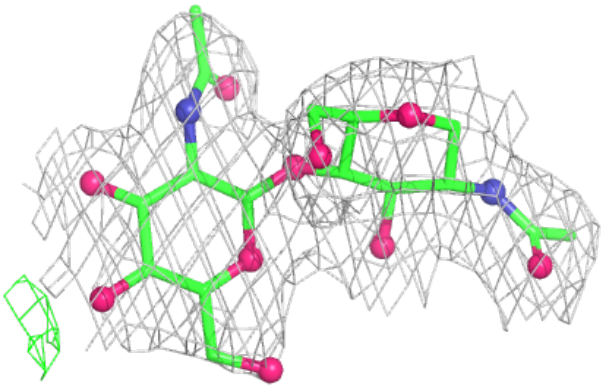


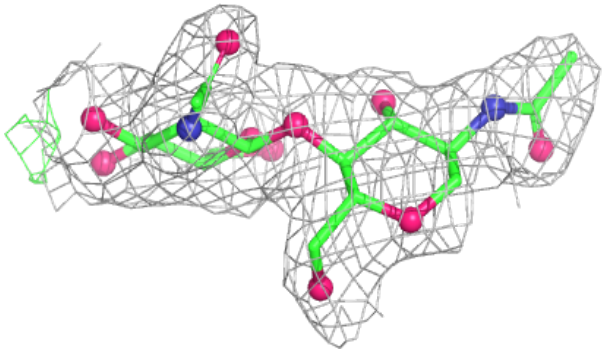


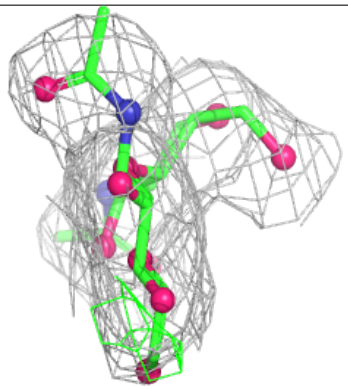


Electron density around Chain G:

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

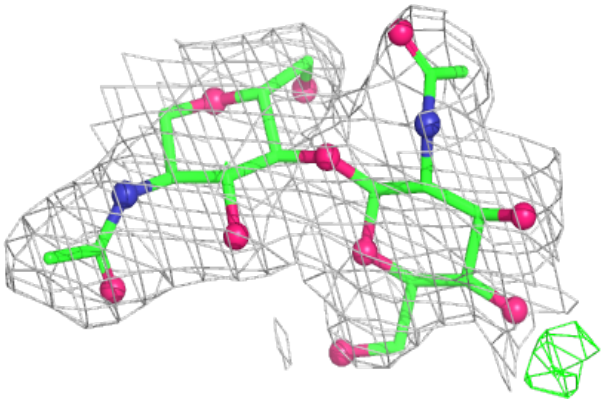


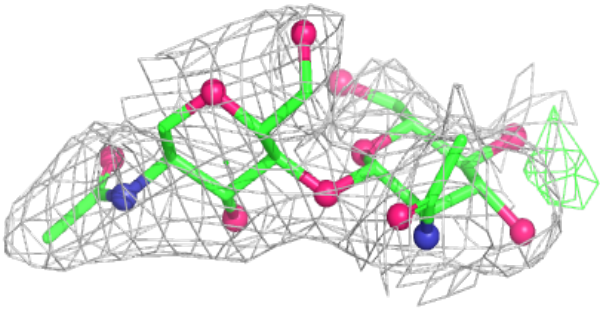


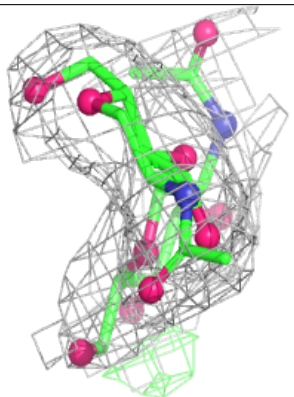


Electron density around Chain H:

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

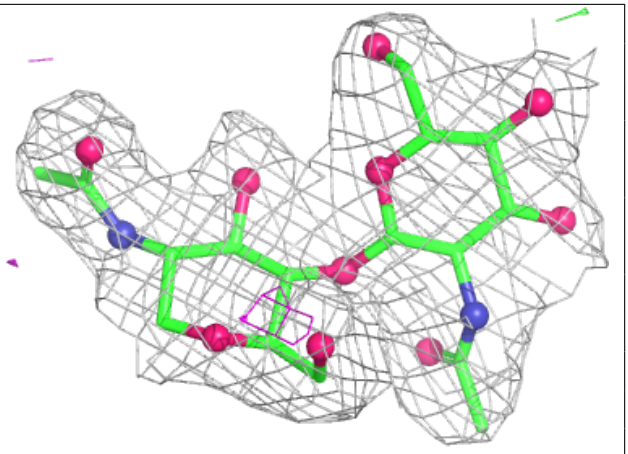


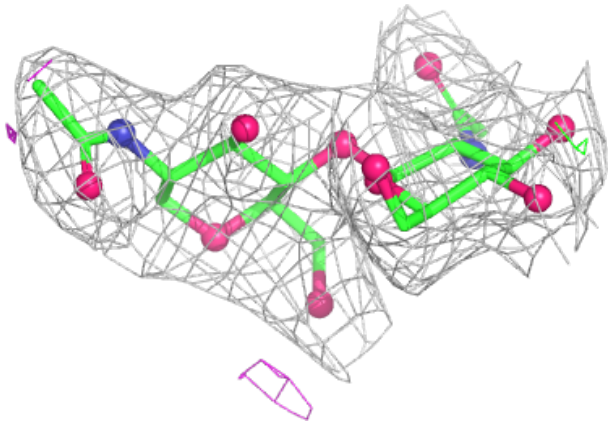


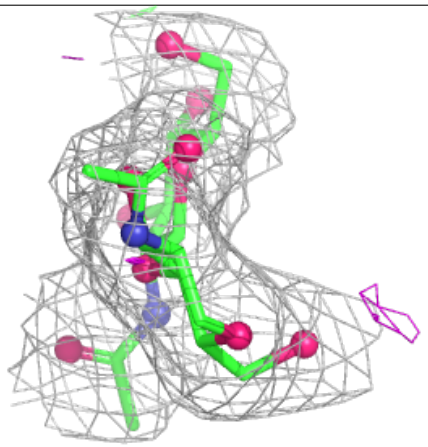


Electron density around Chain K:

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

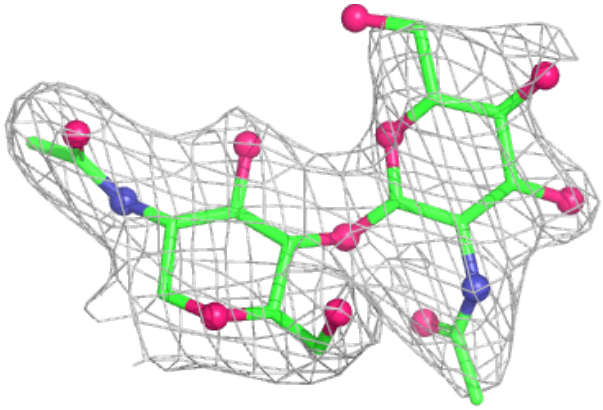


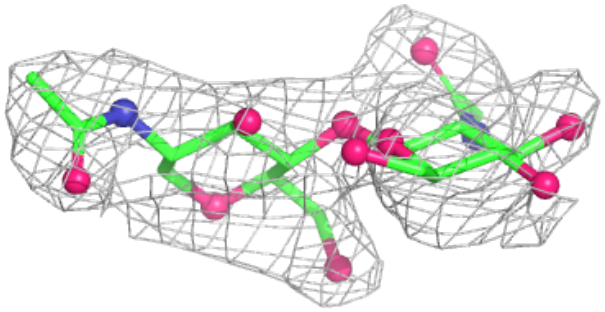


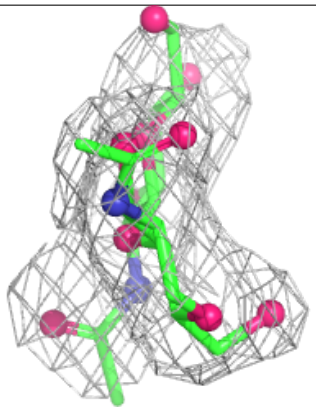


Electron density around Chain L:

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

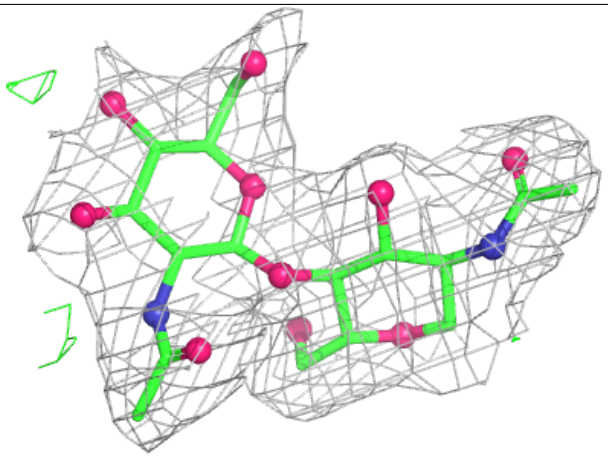


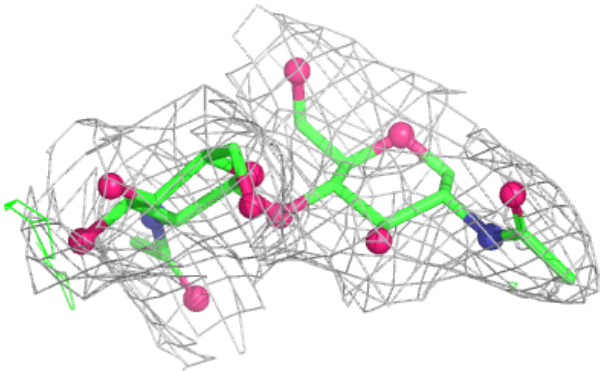


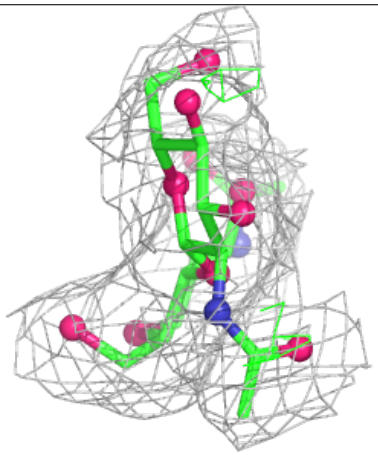


Electron density around Chain M:

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

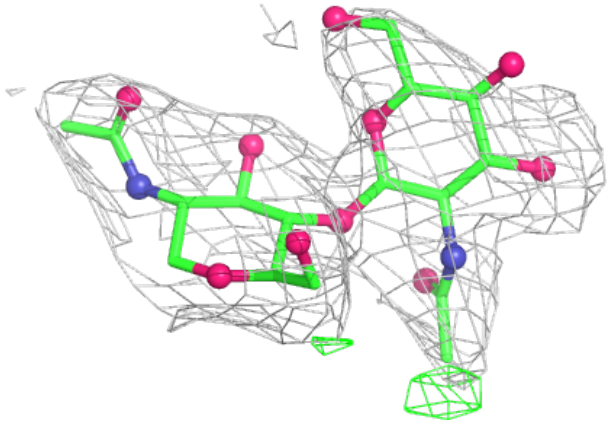


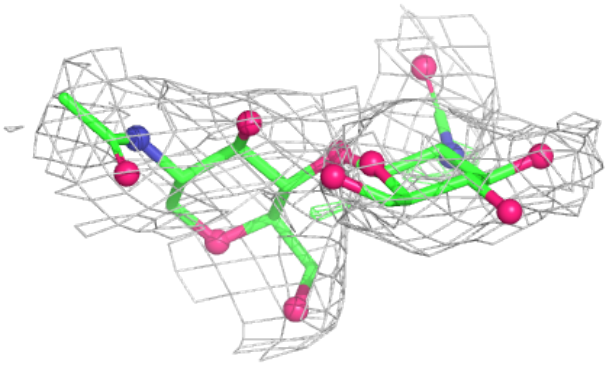


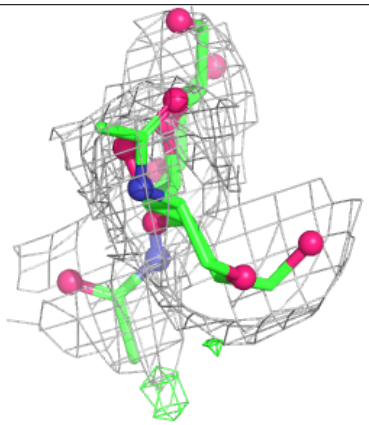


Electron density around Chain N:

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

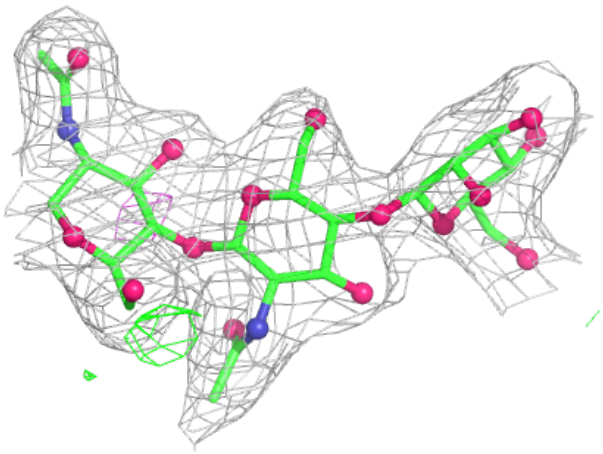


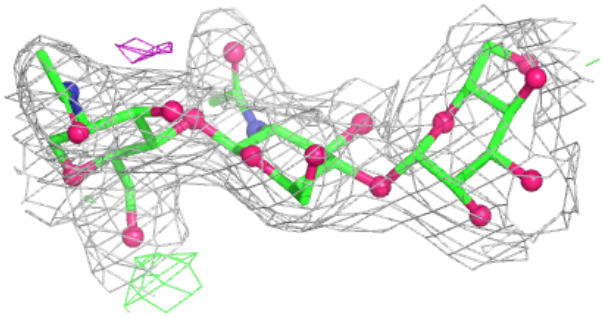


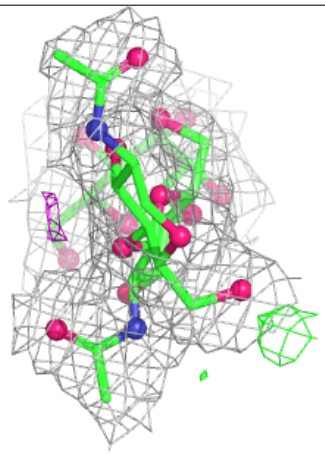


Electron density around Chain I:

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

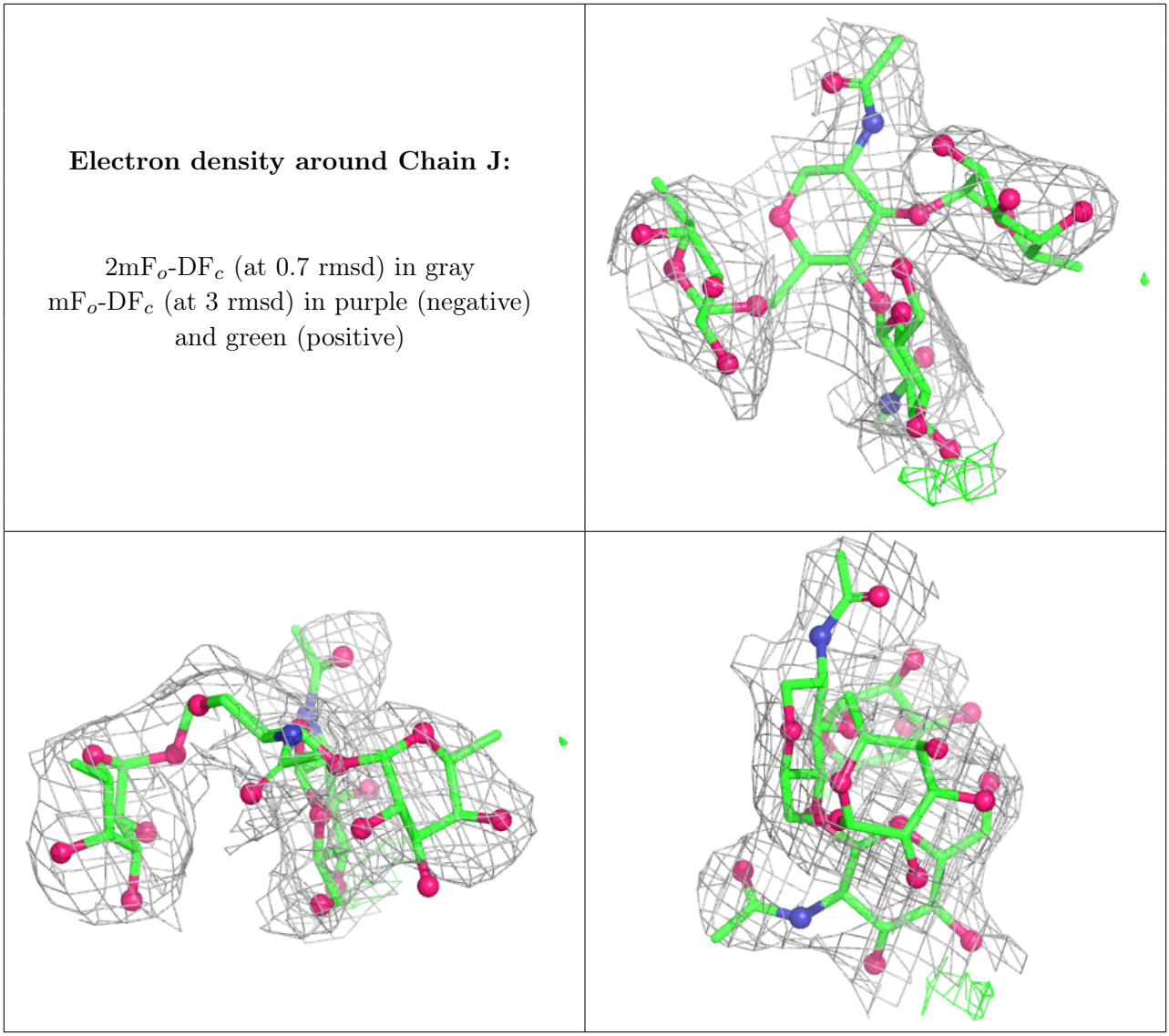






Electron density around Chain J:

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



6.4 Ligands

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, 95^{th} 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
6	NAG	A	801	14/15	0.34	0.23	105,109,111,112	0
6	NAG	A	803	14/15	0.65	0.21	89,92,94,95	0
6	NAG	B	803	14/15	0.70	0.15	88,90,94,94	0
6	NAG	D	802	14/15	0.77	0.31	93,94,97,97	0
6	NAG	C	802	14/15	0.80	0.23	72,79,84,84	0
6	NAG	A	802	14/15	0.81	0.21	71,73,75,77	0
6	NAG	B	801	14/15	0.82	0.23	75,80,83,84	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
8	MLI	D	804	7/7	0.82	0.17	61,62,67,68	0
6	NAG	B	802	14/15	0.86	0.15	78,80,81,81	0
6	NAG	C	803	14/15	0.87	0.14	67,69,70,71	0
7	ACT	A	804	4/4	0.88	0.21	65,66,68,69	0
6	NAG	D	801	14/15	0.91	0.23	81,88,95,95	0
7	ACT	B	805	4/4	0.91	0.33	73,75,76,77	0
6	NAG	C	801	14/15	0.91	0.15	55,59,62,62	0
7	ACT	D	803	4/4	0.92	0.20	79,80,81,82	0
8	MLI	C	804	7/7	0.93	0.17	49,50,54,55	0
8	MLI	A	805	7/7	0.94	0.14	60,61,65,65	0
8	MLI	B	804	7/7	0.95	0.12	57,57,59,60	0
7	ACT	C	805	4/4	0.97	0.21	52,54,55,56	0

6.5 Other polymers (i)

There are no such residues in this entry.