



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 01:09 PM UTC

PDB ID : 5WHU / pdb_00005whu
Title : Crystal structure of 3'SL bound ArtB
Authors : Gao, X.; Galan, J.E.
Deposited on : 2017-07-18
Resolution : 2.20 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 ⓘ 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
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
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

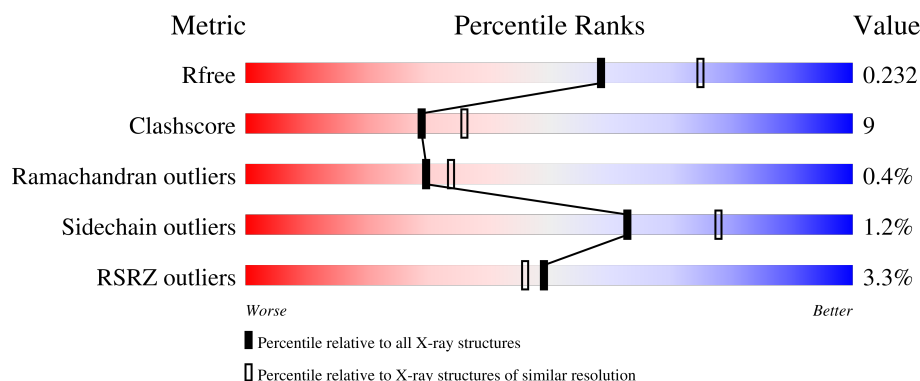
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.20 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	6164 (2.20-2.20)
Clashscore	190562	6851 (2.20-2.20)
Ramachandran outliers	187476	6768 (2.20-2.20)
Sidechain outliers	187428	6769 (2.20-2.20)
RSRZ outliers	180081	6166 (2.20-2.20)

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	149	3% 65% 15% 19%
1	B	149	5% 66% 13% 20%
1	C	149	2% 69% 9% 21%
1	D	149	2% 73% 6% 21%
1	E	149	0% 70% 9% 20%

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Mol	Chain	Length	Quality of chain
1	F	149	
1	G	149	
1	H	149	
1	I	149	
1	J	149	
2	K	2	
2	N	2	
2	Q	2	
3	L	3	
3	M	3	
3	O	3	
3	P	3	
3	R	3	
3	S	3	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	PEG	B	202	-	-	X	-
5	PEG	F	203	-	-	X	-
5	PEG	H	208	-	-	X	-
5	PEG	H	209	-	-	X	-

2 Entry composition

There are 10 unique types of molecules in this entry. The entry contains 10677 atoms, of which 85 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 ArtB protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	120	Total	C	N	O	S	0	0	0
			951	598	160	186	7			
1	B	119	Total	C	N	O	S	0	1	0
			952	597	161	187	7			
1	C	118	Total	C	N	O	S	0	0	0
			939	590	158	184	7			
1	D	118	Total	C	N	O	S	0	0	0
			939	590	158	184	7			
1	E	119	Total	C	N	O	S	0	0	0
			946	595	159	185	7			
1	F	118	Total	C	N	O	S	0	0	0
			939	590	158	184	7			
1	G	118	Total	C	N	O	S	0	1	0
			947	594	160	186	7			
1	H	124	Total	C	N	O	S	0	0	0
			988	621	168	192	7			
1	I	118	Total	C	N	O	S	0	0	0
			939	590	158	184	7			
1	J	123	Total	C	N	O	S	0	2	0
			998	625	170	196	7			

There are 80 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	142	LEU	-	expression tag	UNP Q404H3
A	143	GLU	-	expression tag	UNP Q404H3
A	144	HIS	-	expression tag	UNP Q404H3
A	145	HIS	-	expression tag	UNP Q404H3
A	146	HIS	-	expression tag	UNP Q404H3
A	147	HIS	-	expression tag	UNP Q404H3
A	148	HIS	-	expression tag	UNP Q404H3
A	149	HIS	-	expression tag	UNP Q404H3
B	142	LEU	-	expression tag	UNP Q404H3

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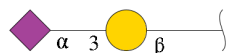
Chain	Residue	Modelled	Actual	Comment	Reference
B	143	GLU	-	expression tag	UNP Q404H3
B	144	HIS	-	expression tag	UNP Q404H3
B	145	HIS	-	expression tag	UNP Q404H3
B	146	HIS	-	expression tag	UNP Q404H3
B	147	HIS	-	expression tag	UNP Q404H3
B	148	HIS	-	expression tag	UNP Q404H3
B	149	HIS	-	expression tag	UNP Q404H3
C	142	LEU	-	expression tag	UNP Q404H3
C	143	GLU	-	expression tag	UNP Q404H3
C	144	HIS	-	expression tag	UNP Q404H3
C	145	HIS	-	expression tag	UNP Q404H3
C	146	HIS	-	expression tag	UNP Q404H3
C	147	HIS	-	expression tag	UNP Q404H3
C	148	HIS	-	expression tag	UNP Q404H3
C	149	HIS	-	expression tag	UNP Q404H3
D	142	LEU	-	expression tag	UNP Q404H3
D	143	GLU	-	expression tag	UNP Q404H3
D	144	HIS	-	expression tag	UNP Q404H3
D	145	HIS	-	expression tag	UNP Q404H3
D	146	HIS	-	expression tag	UNP Q404H3
D	147	HIS	-	expression tag	UNP Q404H3
D	148	HIS	-	expression tag	UNP Q404H3
D	149	HIS	-	expression tag	UNP Q404H3
E	142	LEU	-	expression tag	UNP Q404H3
E	143	GLU	-	expression tag	UNP Q404H3
E	144	HIS	-	expression tag	UNP Q404H3
E	145	HIS	-	expression tag	UNP Q404H3
E	146	HIS	-	expression tag	UNP Q404H3
E	147	HIS	-	expression tag	UNP Q404H3
E	148	HIS	-	expression tag	UNP Q404H3
E	149	HIS	-	expression tag	UNP Q404H3
F	142	LEU	-	expression tag	UNP Q404H3
F	143	GLU	-	expression tag	UNP Q404H3
F	144	HIS	-	expression tag	UNP Q404H3
F	145	HIS	-	expression tag	UNP Q404H3
F	146	HIS	-	expression tag	UNP Q404H3
F	147	HIS	-	expression tag	UNP Q404H3
F	148	HIS	-	expression tag	UNP Q404H3
F	149	HIS	-	expression tag	UNP Q404H3
G	142	LEU	-	expression tag	UNP Q404H3
G	143	GLU	-	expression tag	UNP Q404H3
G	144	HIS	-	expression tag	UNP Q404H3

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Chain	Residue	Modelled	Actual	Comment	Reference
G	145	HIS	-	expression tag	UNP Q404H3
G	146	HIS	-	expression tag	UNP Q404H3
G	147	HIS	-	expression tag	UNP Q404H3
G	148	HIS	-	expression tag	UNP Q404H3
G	149	HIS	-	expression tag	UNP Q404H3
H	142	LEU	-	expression tag	UNP Q404H3
H	143	GLU	-	expression tag	UNP Q404H3
H	144	HIS	-	expression tag	UNP Q404H3
H	145	HIS	-	expression tag	UNP Q404H3
H	146	HIS	-	expression tag	UNP Q404H3
H	147	HIS	-	expression tag	UNP Q404H3
H	148	HIS	-	expression tag	UNP Q404H3
H	149	HIS	-	expression tag	UNP Q404H3
I	142	LEU	-	expression tag	UNP Q404H3
I	143	GLU	-	expression tag	UNP Q404H3
I	144	HIS	-	expression tag	UNP Q404H3
I	145	HIS	-	expression tag	UNP Q404H3
I	146	HIS	-	expression tag	UNP Q404H3
I	147	HIS	-	expression tag	UNP Q404H3
I	148	HIS	-	expression tag	UNP Q404H3
I	149	HIS	-	expression tag	UNP Q404H3
J	142	LEU	-	expression tag	UNP Q404H3
J	143	GLU	-	expression tag	UNP Q404H3
J	144	HIS	-	expression tag	UNP Q404H3
J	145	HIS	-	expression tag	UNP Q404H3
J	146	HIS	-	expression tag	UNP Q404H3
J	147	HIS	-	expression tag	UNP Q404H3
J	148	HIS	-	expression tag	UNP Q404H3
J	149	HIS	-	expression tag	UNP Q404H3

- Molecule 2 is an oligosaccharide called N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose.



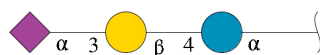
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	K	2	Total	C	N	O	0	0	0
			32	17	1	14			
2	N	2	Total	C	N	O	0	0	0
			32	17	1	14			

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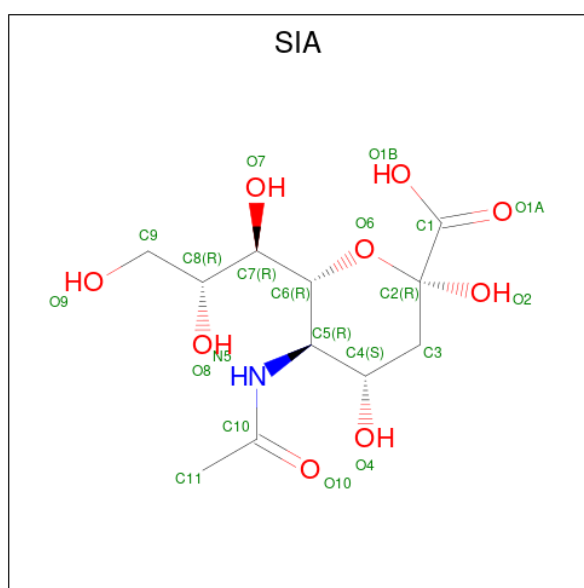
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	Q	2	Total	C	N	O	0	0	0
			32	17	1	14			

- Molecule 3 is an oligosaccharide called N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose-(1-4)-alpha-D-glucopyranose.



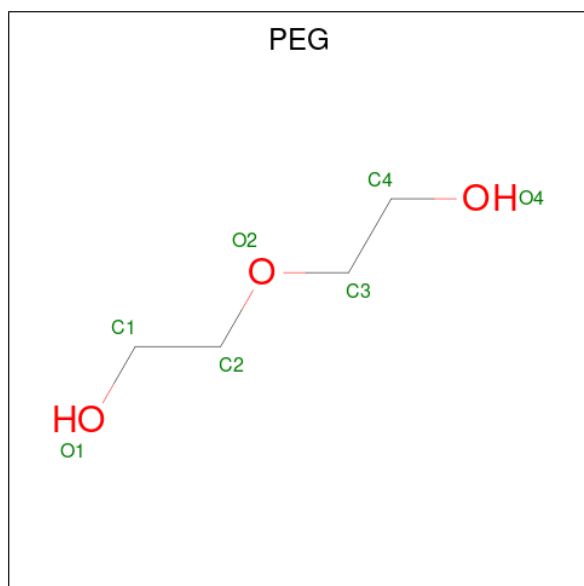
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	L	3	Total	C	H	N	O	0	0	0
			55	23	12	1	19			
3	M	3	Total	C	N	O		0	0	0
			43	23	1	19				
3	O	3	Total	C	N	O		0	0	0
			43	23	1	19				
3	P	3	Total	C	N	O		0	0	0
			43	23	1	19				
3	R	3	Total	C	N	O		0	0	0
			43	23	1	19				
3	S	3	Total	C	N	O		0	0	0
			43	23	1	19				

- Molecule 4 is N-acetyl-alpha-neuraminic acid (CCD ID: SIA) (formula: C₁₁H₁₉NO₉).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	N	O	0	0
			21	11	1	9		

- Molecule 5 is DI(HYDROXYETHYL)ETHER (CCD ID: PEG) (formula: C₄H₁₀O₃).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	H	O	0	0
			17	4	10	3		
5	B	1	Total	C	O		0	0
			7	4	3			
5	E	1	Total	C	O		0	0
			7	4	3			
5	F	1	Total	C	O		0	0
			7	4	3			
5	F	1	Total	C	O		0	0
			7	4	3			
5	F	1	Total	C	H	O	0	0
			17	4	10	3		
5	G	1	Total	C	O		0	0
			7	4	3			
5	G	1	Total	C	H	O	0	0
			17	4	10	3		
5	H	1	Total	C	H	O	0	0
			17	4	10	3		
5	H	1	Total	C	O		0	0
			7	4	3			
5	H	1	Total	C	H	O	0	0
			17	4	10	3		

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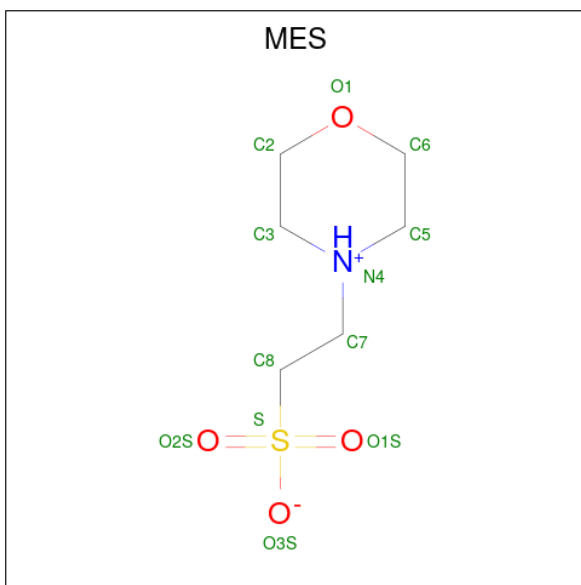
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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	J	1	Total	C	H	O	0	0
			17	4	10	3		

- Molecule 6 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

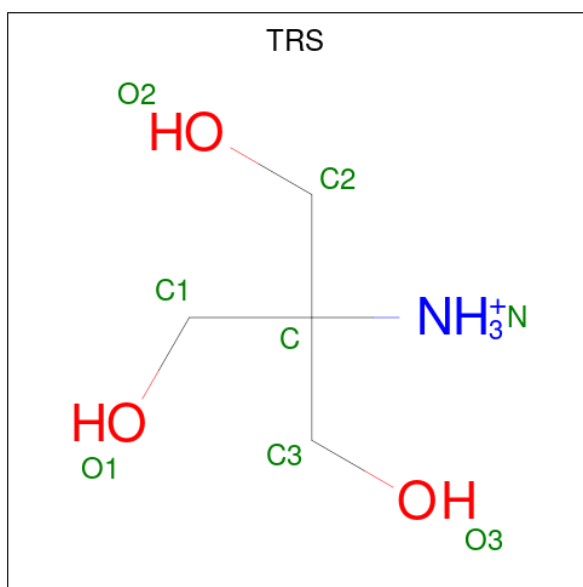
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	4	Total	Cl	0	0
			4	4		
6	B	3	Total	Cl	0	0
			3	3		
6	C	1	Total	Cl	0	0
			1	1		
6	D	1	Total	Cl	0	0
			1	1		
6	E	1	Total	Cl	0	0
			1	1		
6	F	3	Total	Cl	0	0
			3	3		
6	G	2	Total	Cl	0	0
			2	2		
6	H	2	Total	Cl	0	0
			2	2		
6	I	4	Total	Cl	0	0
			4	4		
6	J	2	Total	Cl	0	0
			2	2		

- Molecule 7 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (CCD ID: MES) (formula: C₆H₁₃NO₄S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
7	B	1	Total	C	H	N	O	S	
			25	6	13	1	4	1	0
7	C	1	Total	C	N	O	S		
			12	6	1	4	1		0
7	D	1	Total	C	N	O	S		
			12	6	1	4	1		0
7	G	1	Total	C	N	O	S		
			12	6	1	4	1		0
7	H	1	Total	C	N	O	S		
			12	6	1	4	1		0
7	J	1	Total	C	N	O	S		
			12	6	1	4	1		0

- Molecule 8 is 2-AMINO-2-HYDROXYMETHYL-PROPANE-1,3-DIOL (CCD ID: TRS) (formula: C₄H₁₂NO₃).



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

- Molecule 9 is CALCIUM ION (CCD ID: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	E	1	Total	Ca	0	0
			1	1		
9	F	1	Total	Ca	0	0
			1	1		
9	G	1	Total	Ca	0	0
			1	1		
9	H	2	Total	Ca	0	0
			2	2		
9	I	1	Total	Ca	0	0
			1	1		
9	J	1	Total	Ca	0	0
			1	1		

- Molecule 10 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
10	A	47	Total	O	0	0
			47	47		

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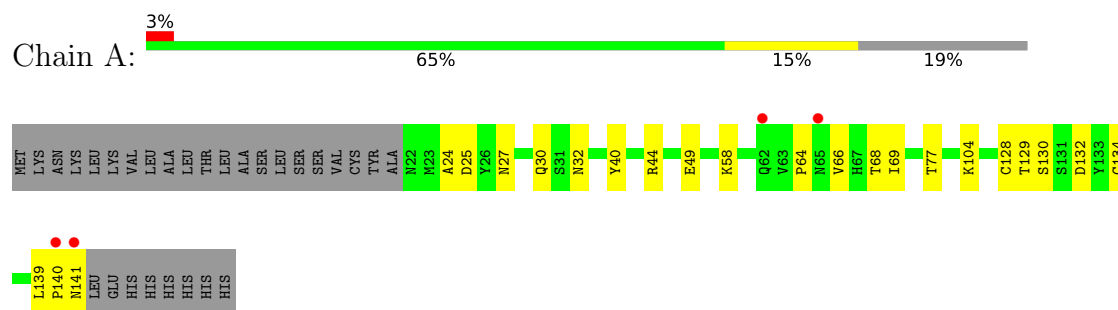
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
10	B	43	Total 43	O 43	0	0
10	C	46	Total 46	O 46	0	0
10	D	48	Total 48	O 48	0	0
10	E	43	Total 43	O 43	0	0
10	F	50	Total 50	O 50	0	0
10	G	46	Total 46	O 46	0	0
10	H	54	Total 54	O 54	0	0
10	I	49	Total 49	O 49	0	0
10	J	51	Total 51	O 51	0	0

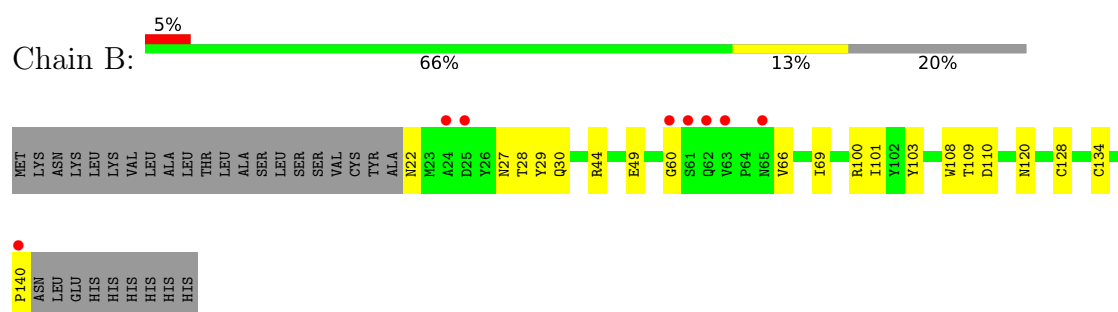
3 Residue-property plots [i](#)

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.

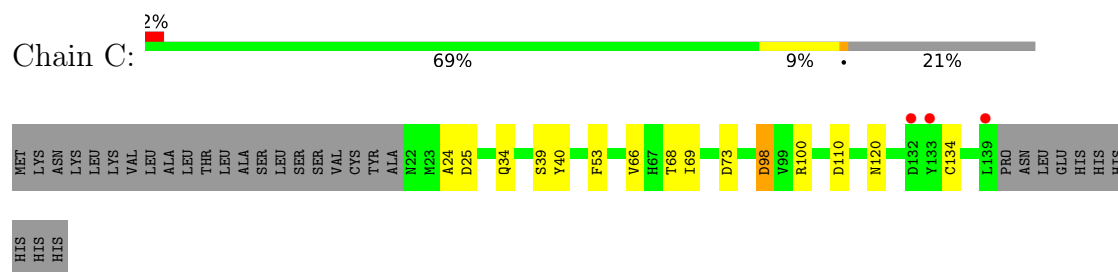
- Molecule 1: ArtB protein



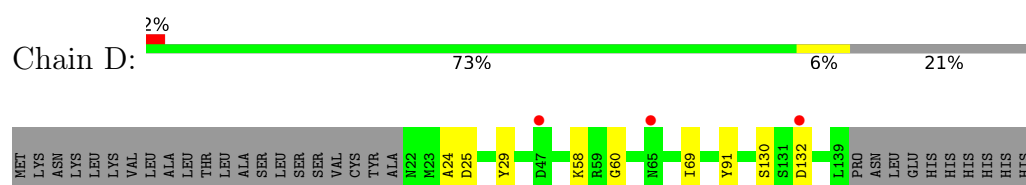
- Molecule 1: ArtB protein



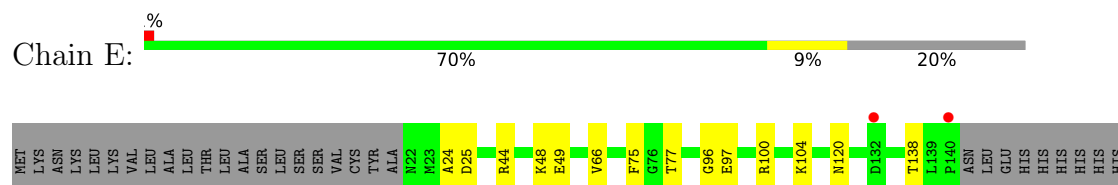
- Molecule 1: ArtB protein



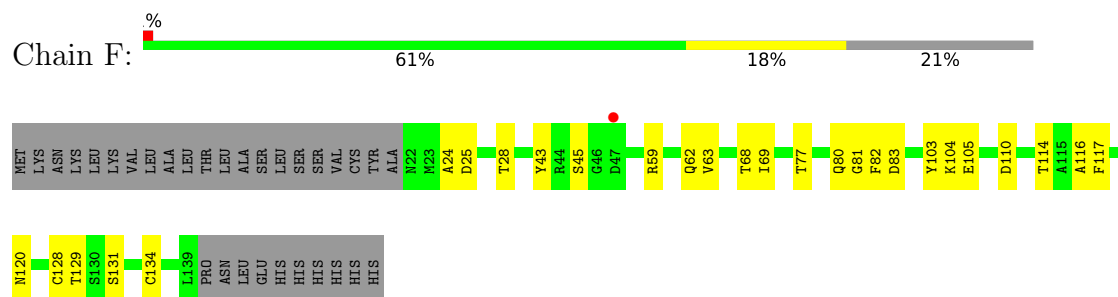
- Molecule 1: ArtB protein



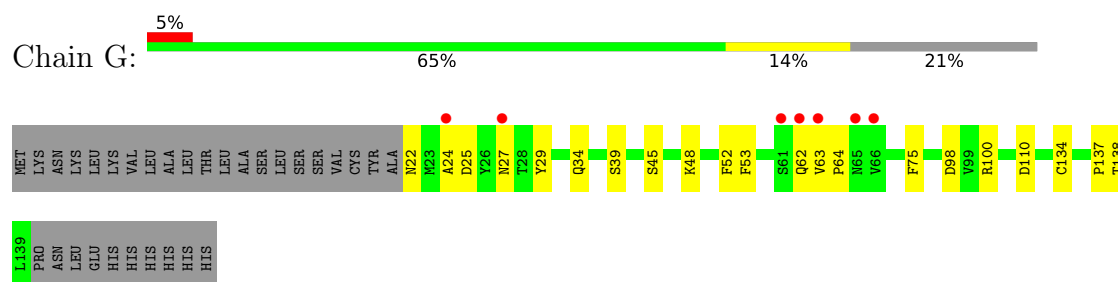
- Molecule 1: ArtB protein



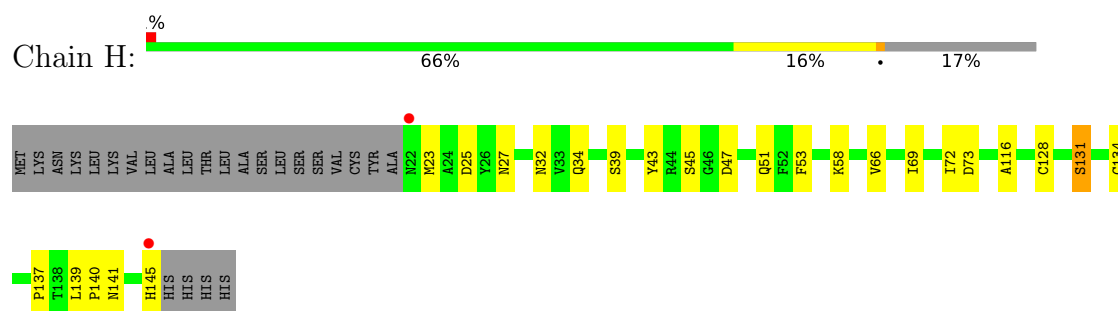
- Molecule 1: ArtB protein



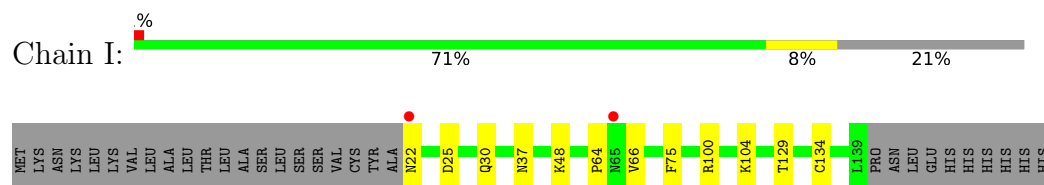
- Molecule 1: ArtB protein



- Molecule 1: ArtB protein



- Molecule 1: ArtB protein



- Molecule 1: ArtB protein





- Molecule 2: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose

Chain K: 50%



- Molecule 2: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose

Chain N: 50%



- Molecule 2: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose

Chain Q: 50%



- Molecule 3: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose-(1-4)-alpha-D-glucopyranose

Chain L: 67%



- Molecule 3: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose-(1-4)-alpha-D-glucopyranose

Chain M: 33%



- Molecule 3: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose-(1-4)-alpha-D-glucopyranose

Chain O: 67%



- Molecule 3: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose-(1-4)-alpha-D-glucopyranose

Chain P:  33% 67%

GLC1
GAL2
SIA3

- Molecule 3: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose-(1-4)-alpha-D-glucopyranose

Chain R:  33% 67%

GLC1
GAL2
SIA3

- Molecule 3: N-acetyl-alpha-neuraminic acid-(2-3)-beta-D-galactopyranose-(1-4)-alpha-D-glucopyranose

Chain S:  67% 33%

GLC1
GAL2
SIA3

4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	137.91Å 94.21Å 123.96Å 90.00° 102.60° 90.00°	Depositor
Resolution (Å)	50.00 – 2.20 50.00 – 2.20	Depositor EDS
% Data completeness (in resolution range)	97.7 (50.00-2.20) 97.7 (50.00-2.20)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.86 (at 2.20Å)	Xtriage
Refinement program	PHENIX 1.8.1_1168	Depositor
R, R_{free}	0.174 , 0.230 0.176 , 0.232	Depositor DCC
R_{free} test set	3860 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å ²)	20.7	Xtriage
Anisotropy	0.981	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 46.1	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	10677	wwPDB-VP
Average B, all atoms (Å ²)	27.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.16% 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

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SIA, PEG, CL, CA, GAL, TRS, MES, GLC

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	0.46	0/973	0.76	0/1320
1	B	0.43	0/973	0.77	1/1319 (0.1%)
1	C	0.44	0/960	0.77	1/1301 (0.1%)
1	D	0.46	0/960	0.77	0/1301
1	E	0.45	0/968	0.75	0/1313
1	F	0.48	1/960 (0.1%)	0.75	0/1301
1	G	0.43	0/968	0.76	0/1312
1	H	0.46	0/1012	0.80	0/1373
1	I	0.49	0/960	0.79	0/1301
1	J	0.45	0/1021	0.79	0/1385
All	All	0.46	1/9755 (0.0%)	0.77	2/13226 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	F	117	PHE	CA-C	5.26	1.54	1.52

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	140	PRO	N-CA-CB	6.55	110.21	103.00
1	C	73	ASP	N-CA-C	5.09	117.22	111.11

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	951	0	887	15	0
1	B	952	0	884	25	0
1	C	939	0	878	9	0
1	D	939	0	878	5	0
1	E	946	0	885	9	0
1	F	939	0	878	26	0
1	G	947	0	883	18	0
1	H	988	0	918	21	0
1	I	939	0	878	11	0
1	J	998	0	927	19	0
2	K	32	0	28	2	0
2	N	32	0	28	0	0
2	Q	32	0	28	3	0
3	L	43	12	37	0	0
3	M	43	0	37	1	0
3	O	43	0	37	0	0
3	P	43	0	37	2	0
3	R	43	0	37	0	0
3	S	43	0	37	0	0
4	A	21	0	18	0	0
5	A	7	10	10	0	0
5	B	7	0	10	9	0
5	E	7	0	10	2	0
5	F	21	10	30	13	0
5	G	14	10	20	2	0
5	H	21	20	30	11	0
5	J	7	10	10	1	0
6	A	4	0	0	1	0
6	B	3	0	0	1	0
6	C	1	0	0	1	0
6	D	1	0	0	0	0
6	E	1	0	0	1	0
6	F	3	0	0	0	0
6	G	2	0	0	1	0
6	H	2	0	0	0	0
6	I	4	0	0	0	0
6	J	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	B	12	13	12	1	0
7	C	12	0	12	0	0
7	D	12	0	12	2	0
7	G	12	0	12	2	0
7	H	12	0	12	0	0
7	J	12	0	12	2	0
8	D	8	0	12	2	0
8	H	8	0	12	1	0
9	E	1	0	0	0	0
9	F	1	0	0	0	0
9	G	1	0	0	0	0
9	H	2	0	0	0	0
9	I	1	0	0	0	0
9	J	1	0	0	0	0
10	A	47	0	0	1	0
10	B	43	0	0	2	0
10	C	46	0	0	1	0
10	D	48	0	0	2	0
10	E	43	0	0	2	0
10	F	50	0	0	1	0
10	G	46	0	0	0	0
10	H	54	0	0	1	0
10	I	49	0	0	2	0
10	J	51	0	0	0	0
All	All	10592	85	9436	170	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 9.

All (170) 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:F:82:PHE:H	5:F:203:PEG:H42	1.18	1.03
1:H:141:ASN:HA	5:H:208:PEG:H32	1.45	0.97
1:G:22:ASN:HA	5:H:209:PEG:H42	1.47	0.94
1:F:83:ASP:HB2	5:F:203:PEG:H21	1.50	0.92
1:G:24:ALA:O	1:G:25:ASP:HB2	1.83	0.79
1:B:27[B]:ASN:ND2	10:B:302:HOH:O	2.16	0.78
1:F:43:TYR:CE2	1:F:45:SER:HB2	2.18	0.77
1:F:82:PHE:N	5:F:203:PEG:H42	1.99	0.76
1:B:22:ASN:ND2	1:B:27[B]:ASN:HD21	1.84	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:205:CL:CL	10:C:328:HOH:O	2.41	0.75
1:A:24:ALA:O	1:A:25:ASP:HB2	1.87	0.75
1:F:83:ASP:CB	5:F:203:PEG:H21	2.17	0.74
1:B:109:THR:H	5:B:202:PEG:H32	1.53	0.74
1:G:22:ASN:HA	5:H:209:PEG:C4	2.18	0.74
1:H:141:ASN:HD22	5:H:208:PEG:H31	1.51	0.73
1:A:27:ASN:HB2	6:A:206:CL:CL	2.26	0.73
1:B:110:ASP:CB	5:B:202:PEG:H12	2.21	0.70
1:C:24:ALA:O	1:C:25:ASP:HB2	1.90	0.70
1:G:137:PRO:HA	5:H:209:PEG:H12	1.74	0.69
1:B:108:TRP:HA	5:B:202:PEG:H31	1.74	0.69
1:J:143:GLU:O	1:J:144:HIS:HB3	1.91	0.69
5:B:202:PEG:O1	10:B:301:HOH:O	2.09	0.68
1:F:63:VAL:HG21	5:F:202:PEG:H32	1.74	0.68
8:H:212:TRS:O1	10:H:301:HOH:O	2.10	0.67
1:A:30:GLN:NE2	1:A:66:VAL:O	2.27	0.67
1:H:141:ASN:HD22	5:H:208:PEG:C3	2.07	0.66
1:A:27:ASN:HB3	1:A:139:LEU:HD21	1.78	0.66
1:B:110:ASP:H	5:B:202:PEG:H12	1.61	0.66
1:B:128:CYS:O	6:B:204:CL:CL	2.50	0.66
1:J:66:VAL:HG13	1:J:120:ASN:ND2	2.11	0.66
1:J:133:TYR:C	1:J:133:TYR:CD1	2.75	0.64
1:I:30:GLN:NE2	1:I:66:VAL:HB	2.12	0.64
1:I:48:LYS:HE3	1:I:75:PHE:CE1	2.33	0.64
1:A:77:THR:HG21	1:A:104:LYS:HE2	1.80	0.64
1:F:116:ALA:HB1	1:H:137:PRO:HD3	1.82	0.61
1:H:34:GLN:OE1	1:H:58:LYS:NZ	2.27	0.61
2:Q:1:GAL:H4	2:Q:2:SIA:C1	2.30	0.61
1:G:29:TYR:O	7:G:201:MES:H31	2.01	0.61
1:J:66:VAL:HG21	1:J:103:TYR:CE2	2.36	0.60
1:A:130:SER:C	1:A:132:ASP:H	2.08	0.60
1:I:30:GLN:HE22	1:I:66:VAL:HB	1.67	0.60
1:A:32:ASN:ND2	10:A:301:HOH:O	2.11	0.59
1:J:66:VAL:HG21	1:J:103:TYR:CZ	2.38	0.59
5:E:207:PEG:H32	10:E:331:HOH:O	2.02	0.59
1:G:138:THR:H	5:H:209:PEG:H12	1.68	0.59
2:K:2:SIA:O10	2:K:2:SIA:O7	2.20	0.59
1:A:77:THR:HG21	1:A:104:LYS:CE	2.33	0.58
1:E:24:ALA:O	1:E:25:ASP:HB2	2.03	0.58
1:D:29:TYR:O	7:D:201:MES:H52	2.02	0.58
1:B:69:ILE:HD13	1:B:103:TYR:HB3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:24:ALA:O	1:F:25:ASP:HB2	2.05	0.57
1:B:110:ASP:HB2	5:B:202:PEG:H12	1.87	0.57
1:E:97:GLU:HA	5:E:207:PEG:H32	1.87	0.56
1:H:66:VAL:HG12	1:H:69:ILE:HD11	1.88	0.56
1:B:28:THR:HG22	1:B:103:TYR:CZ	2.41	0.56
5:F:203:PEG:H32	10:F:316:HOH:O	2.05	0.56
1:G:22:ASN:HD22	1:G:27[A]:ASN:ND2	2.04	0.55
1:E:44:ARG:HD2	1:E:49:GLU:OE2	2.06	0.55
1:C:69:ILE:N	1:C:69:ILE:HD12	2.21	0.55
1:G:110:ASP:H	5:G:203:PEG:H12	1.72	0.55
1:I:22:ASN:N	1:J:112:ASN:OD1	2.41	0.54
1:B:29:TYR:H	7:B:201:MES:H22	1.73	0.54
7:D:201:MES:O3S	7:D:201:MES:H51	2.07	0.54
1:F:43:TYR:HE2	1:F:45:SER:HB2	1.69	0.54
1:B:22:ASN:HD22	1:B:27[B]:ASN:HD21	1.56	0.54
1:H:141:ASN:ND2	5:H:208:PEG:H31	2.23	0.54
1:I:30:GLN:OE1	1:I:64:PRO:HB2	2.08	0.53
1:F:81:GLY:C	5:F:203:PEG:H12	2.33	0.53
1:H:128:CYS:HA	1:H:134:CYS:HA	1.91	0.53
1:E:77:THR:HG21	1:E:104:LYS:HE3	1.90	0.53
1:J:143:GLU:O	1:J:144:HIS:CB	2.57	0.53
1:A:58:LYS:HA	1:A:64:PRO:HD3	1.92	0.52
1:F:83:ASP:H	5:F:203:PEG:C2	2.22	0.52
1:I:25:ASP:OD1	1:I:25:ASP:N	2.38	0.52
1:A:128:CYS:HA	1:A:134:CYS:HA	1.92	0.52
1:H:116:ALA:HB2	5:H:209:PEG:H31	1.91	0.52
1:B:100:ARG:CZ	1:B:134:CYS:HB2	2.40	0.52
1:J:133:TYR:CD1	1:J:133:TYR:O	2.62	0.52
2:K:1:GAL:H4	2:K:2:SIA:C1	2.40	0.52
1:J:77:THR:HG21	1:J:104:LYS:HE2	1.92	0.52
1:B:22:ASN:ND2	1:B:27[B]:ASN:ND2	2.54	0.51
1:D:24:ALA:O	1:D:25:ASP:HB2	2.10	0.51
1:F:81:GLY:CA	5:F:203:PEG:H12	2.41	0.51
1:G:22:ASN:HD22	1:G:27[A]:ASN:HD21	1.57	0.50
1:G:27[B]:ASN:ND2	1:G:27[B]:ASN:H	2.10	0.50
1:I:48:LYS:HE3	1:I:75:PHE:CZ	2.47	0.50
1:B:110:ASP:HB3	5:B:202:PEG:H12	1.93	0.49
1:E:48:LYS:HD3	1:E:75:PHE:CE1	2.47	0.49
1:C:39:SER:O	1:C:53:PHE:HA	2.12	0.49
1:F:82:PHE:H	5:F:203:PEG:C4	2.08	0.49
1:H:141:ASN:HA	5:H:208:PEG:C3	2.31	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:43:TYR:CD2	1:H:23:MET:CE	2.95	0.49
1:H:51:GLN:HG3	1:H:73:ASP:OD2	2.13	0.49
1:F:128:CYS:HA	1:F:134:CYS:HA	1.95	0.48
1:C:100:ARG:CZ	1:C:134:CYS:HB2	2.44	0.48
1:F:105:GLU:HG2	1:F:120:ASN:OD1	2.13	0.48
1:D:58:LYS:HD2	1:D:60:GLY:O	2.13	0.48
1:E:48:LYS:HD3	1:E:75:PHE:CZ	2.48	0.48
1:F:83:ASP:H	5:F:203:PEG:H21	1.77	0.48
1:G:39:SER:O	1:G:53:PHE:HB2	2.13	0.48
1:J:144:HIS:ND1	5:J:206:PEG:H21	2.28	0.48
1:I:100:ARG:CZ	1:I:134:CYS:HB2	2.43	0.48
1:A:44:ARG:HD2	1:A:49:GLU:OE2	2.12	0.48
1:E:66:VAL:CG1	1:E:120:ASN:ND2	2.77	0.48
1:B:110:ASP:H	5:B:202:PEG:C1	2.26	0.48
1:A:130:SER:C	1:A:132:ASP:N	2.71	0.47
1:A:68:THR:C	1:A:69:ILE:HD13	2.39	0.47
1:J:68:THR:C	1:J:69:ILE:HD12	2.39	0.47
1:J:69:ILE:HG22	1:J:122:LEU:HB2	1.96	0.47
1:B:22:ASN:HD22	1:B:27[B]:ASN:ND2	2.11	0.47
1:F:63:VAL:HG21	5:F:202:PEG:C3	2.44	0.47
1:I:48:LYS:CE	1:I:75:PHE:CE1	2.98	0.47
6:E:208:CL:CL	10:E:336:HOH:O	2.58	0.47
1:F:80:GLN:HA	5:F:203:PEG:H41	1.97	0.47
1:J:28:THR:HG22	1:J:103:TYR:CE2	2.50	0.47
1:B:66:VAL:HG13	1:B:120:ASN:ND2	2.29	0.46
1:F:77:THR:HG21	1:F:104:LYS:NZ	2.30	0.46
1:G:34:GLN:NE2	1:G:98:ASP:OD1	2.45	0.46
1:J:129:THR:OG1	1:J:133:TYR:CD1	2.68	0.46
8:D:206:TRS:O2	10:D:301:HOH:O	2.21	0.46
1:F:43:TYR:CD2	1:H:23:MET:HE3	2.50	0.46
1:J:24:ALA:O	1:J:25:ASP:HB2	2.15	0.46
8:D:206:TRS:C2	10:D:301:HOH:O	2.63	0.46
1:C:110:ASP:OD1	1:C:110:ASP:C	2.58	0.46
1:C:34:GLN:NE2	1:C:98:ASP:OD1	2.49	0.46
1:D:130:SER:C	1:D:132:ASP:H	2.24	0.46
1:H:39:SER:O	1:H:53:PHE:HA	2.16	0.46
1:J:69:ILE:HD12	1:J:69:ILE:N	2.31	0.46
1:G:48:LYS:HD2	1:G:75:PHE:CZ	2.51	0.45
1:G:45:SER:OG	1:G:110:ASP:OD2	2.35	0.45
1:G:100:ARG:CZ	1:G:134:CYS:HB2	2.47	0.45
1:H:43:TYR:CE2	1:H:45:SER:HB2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:68:THR:C	1:C:69:ILE:HD12	2.42	0.45
1:J:28:THR:HG22	1:J:103:TYR:CZ	2.51	0.45
1:J:30:GLN:HA	7:J:201:MES:O2S	2.17	0.44
1:B:69:ILE:HD12	1:B:101:ILE:HG21	1.99	0.44
1:B:100:ARG:NH2	1:B:134:CYS:HB2	2.33	0.44
1:I:25:ASP:HB3	1:I:104:LYS:NZ	2.33	0.44
1:F:129:THR:HG23	1:I:37:ASN:HD21	1.83	0.44
5:G:203:PEG:H32	6:G:206:CL:CL	2.55	0.43
1:G:24:ALA:O	1:G:25:ASP:CB	2.60	0.43
1:E:100:ARG:NH1	1:E:138:THR:HG22	2.34	0.43
1:A:140:PRO:HA	1:A:141:ASN:HA	1.62	0.43
1:B:66:VAL:HG21	1:B:103:TYR:CZ	2.53	0.43
7:J:201:MES:H82	7:J:201:MES:H51	1.28	0.43
1:B:66:VAL:CG1	1:B:120:ASN:ND2	2.83	0.42
1:C:40:TYR:CD2	1:C:40:TYR:C	2.97	0.42
1:B:109:THR:H	5:B:202:PEG:C3	2.27	0.42
1:C:66:VAL:HG13	1:C:120:ASN:ND2	2.34	0.42
1:B:44:ARG:NE	1:B:49:GLU:OE2	2.51	0.42
10:I:302:HOH:O	2:Q:2:SIA:H113	2.19	0.42
1:E:96:GLY:HA3	1:F:59:ARG:CZ	2.50	0.41
1:F:68:THR:O	1:F:69:ILE:HD13	2.20	0.41
1:G:52:PHE:CD1	1:G:52:PHE:C	2.98	0.41
7:G:201:MES:H81	7:G:201:MES:H51	1.78	0.41
1:F:28:THR:HB	1:F:103:TYR:O	2.20	0.41
1:H:66:VAL:HG12	1:H:69:ILE:CD1	2.50	0.41
3:P:2:GAL:H3	3:P:3:SIA:O1A	2.20	0.41
1:A:40:TYR:CD2	1:A:40:TYR:C	2.97	0.41
1:H:141:ASN:CA	5:H:208:PEG:H32	2.32	0.41
1:H:27:ASN:HB2	1:H:139:LEU:HD13	2.01	0.41
1:H:32:ASN:ND2	1:H:131:SER:HA	2.35	0.41
1:J:142:LEU:HD23	1:J:142:LEU:HA	1.82	0.41
10:I:302:HOH:O	2:Q:2:SIA:C10	2.69	0.41
1:G:62:GLN:HG2	1:G:63:VAL:N	2.37	0.40
1:B:69:ILE:HD13	1:B:103:TYR:CB	2.51	0.40
1:D:91:TYR:OH	1:F:62:GLN:OE1	2.32	0.40
1:H:72:ILE:HD12	3:P:3:SIA:H112	2.04	0.40
1:H:139:LEU:N	1:H:140:PRO:CD	2.85	0.40
3:M:2:GAL:H4	3:M:3:SIA:C1	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	118/149 (79%)	115 (98%)	3 (2%)	0	100	100
1	B	118/149 (79%)	113 (96%)	4 (3%)	1 (1%)	16	16
1	C	116/149 (78%)	112 (97%)	4 (3%)	0	100	100
1	D	116/149 (78%)	113 (97%)	3 (3%)	0	100	100
1	E	117/149 (78%)	114 (97%)	3 (3%)	0	100	100
1	F	116/149 (78%)	113 (97%)	2 (2%)	1 (1%)	14	14
1	G	117/149 (78%)	113 (97%)	3 (3%)	1 (1%)	14	14
1	H	122/149 (82%)	120 (98%)	2 (2%)	0	100	100
1	I	116/149 (78%)	114 (98%)	2 (2%)	0	100	100
1	J	123/149 (83%)	118 (96%)	3 (2%)	2 (2%)	7	6
All	All	1179/1490 (79%)	1145 (97%)	29 (2%)	5 (0%)	30	34

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	J	141	ASN
1	G	64	PRO
1	J	65	ASN
1	F	110	ASP
1	B	60	GLY

5.3.2 Protein sidechains

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	103/130 (79%)	102 (99%)	1 (1%)	68	81
1	B	103/130 (79%)	102 (99%)	1 (1%)	68	81
1	C	102/130 (78%)	101 (99%)	1 (1%)	68	81
1	D	102/130 (78%)	101 (99%)	1 (1%)	68	81
1	E	103/130 (79%)	103 (100%)	0	100	100
1	F	102/130 (78%)	100 (98%)	2 (2%)	48	64
1	G	103/130 (79%)	103 (100%)	0	100	100
1	H	107/130 (82%)	103 (96%)	4 (4%)	30	41
1	I	102/130 (78%)	101 (99%)	1 (1%)	68	81
1	J	109/130 (84%)	108 (99%)	1 (1%)	70	84
All	All	1036/1300 (80%)	1024 (99%)	12 (1%)	63	78

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	129	THR
1	B	30	GLN
1	C	98	ASP
1	D	69	ILE
1	F	114	THR
1	F	131	SER
1	H	25	ASP
1	H	47	ASP
1	H	131	SER
1	H	145	HIS
1	I	129	THR
1	J	98	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	27	ASN
1	B	22	ASN
1	C	32	ASN
1	C	67	HIS
1	D	32	ASN
1	D	84	ASN
1	E	112	ASN

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Mol	Chain	Res	Type
1	E	120	ASN
1	F	22	ASN
1	F	30	GLN
1	F	51	GLN
1	F	65	ASN
1	G	22	ASN
1	G	30	GLN
1	G	51	GLN
1	H	32	ASN
1	H	84	ASN
1	H	141	ASN
1	H	145	HIS
1	J	67	HIS
1	J	84	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 ⓘ

24 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	GAL	K	1	2	12,12,12	0.56	0	17,17,17	0.65	0
2	SIA	K	2	2	20,20,21	2.14	5 (25%)	21,28,31	1.44	5 (23%)
3	GLC	L	1	3	12,12,12	0.58	0	17,17,17	0.67	0
3	GAL	L	2	3	11,11,12	0.31	0	15,15,17	0.78	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	SIA	L	3	3	20,20,21	1.86	6 (30%)	21,28,31	1.36	3 (14%)
3	GLC	M	1	3	12,12,12	0.49	0	17,17,17	0.78	0
3	GAL	M	2	3	11,11,12	0.37	0	15,15,17	0.90	0
3	SIA	M	3	3	20,20,21	1.80	6 (30%)	21,28,31	1.46	4 (19%)
2	GAL	N	1	2	12,12,12	0.55	0	17,17,17	0.79	0
2	SIA	N	2	2	20,20,21	2.12	7 (35%)	21,28,31	1.16	1 (4%)
3	GLC	O	1	3	12,12,12	0.51	0	17,17,17	0.83	0
3	GAL	O	2	3	11,11,12	0.51	0	15,15,17	0.74	0
3	SIA	O	3	3	20,20,21	1.93	6 (30%)	21,28,31	1.18	1 (4%)
3	GLC	P	1	3	12,12,12	0.52	0	17,17,17	0.60	0
3	GAL	P	2	3	11,11,12	0.31	0	15,15,17	0.90	1 (6%)
3	SIA	P	3	3	20,20,21	1.78	6 (30%)	21,28,31	1.35	3 (14%)
2	GAL	Q	1	2	12,12,12	0.60	0	17,17,17	0.77	0
2	SIA	Q	2	2	20,20,21	2.12	7 (35%)	21,28,31	1.46	5 (23%)
3	GLC	R	1	3	12,12,12	0.57	0	17,17,17	1.16	1 (5%)
3	GAL	R	2	3	11,11,12	0.42	0	15,15,17	0.84	0
3	SIA	R	3	3	20,20,21	1.90	7 (35%)	21,28,31	1.41	4 (19%)
3	GLC	S	1	3	12,12,12	0.53	0	17,17,17	0.65	0
3	GAL	S	2	3	11,11,12	0.24	0	15,15,17	0.78	0
3	SIA	S	3	3	20,20,21	1.70	5 (25%)	21,28,31	1.25	3 (14%)

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	GAL	K	1	2	-	0/2/22/22	0/1/1/1
2	SIA	K	2	2	-	6/18/34/38	0/1/1/1
3	GLC	L	1	3	-	1/2/22/22	0/1/1/1
3	GAL	L	2	3	-	1/2/19/22	0/1/1/1
3	SIA	L	3	3	-	0/18/34/38	0/1/1/1
3	GLC	M	1	3	-	2/2/22/22	0/1/1/1
3	GAL	M	2	3	-	0/2/19/22	0/1/1/1
3	SIA	M	3	3	-	0/18/34/38	0/1/1/1
2	GAL	N	1	2	-	0/2/22/22	0/1/1/1
2	SIA	N	2	2	-	0/18/34/38	0/1/1/1
3	GLC	O	1	3	-	2/2/22/22	0/1/1/1
3	GAL	O	2	3	-	2/2/19/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	SIA	O	3	3	-	2/18/34/38	0/1/1/1
3	GLC	P	1	3	-	0/2/22/22	0/1/1/1
3	GAL	P	2	3	-	0/2/19/22	0/1/1/1
3	SIA	P	3	3	-	1/18/34/38	0/1/1/1
2	GAL	Q	1	2	-	0/2/22/22	0/1/1/1
2	SIA	Q	2	2	-	2/18/34/38	0/1/1/1
3	GLC	R	1	3	-	1/2/22/22	0/1/1/1
3	GAL	R	2	3	-	0/2/19/22	0/1/1/1
3	SIA	R	3	3	-	2/18/34/38	0/1/1/1
3	GLC	S	1	3	-	1/2/22/22	0/1/1/1
3	GAL	S	2	3	-	0/2/19/22	0/1/1/1
3	SIA	S	3	3	-	0/18/34/38	0/1/1/1

All (55) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	K	2	SIA	C4-C5	-6.17	1.47	1.53
2	Q	2	SIA	C4-C5	-6.13	1.47	1.53
2	N	2	SIA	C4-C5	-5.95	1.47	1.53
3	O	3	SIA	C4-C5	-4.39	1.49	1.53
3	R	3	SIA	C4-C5	-4.28	1.49	1.53
3	L	3	SIA	C4-C5	-3.99	1.49	1.53
3	M	3	SIA	C4-C5	-3.58	1.50	1.53
3	O	3	SIA	C10-N5	3.50	1.45	1.34
3	P	3	SIA	C4-C5	-3.48	1.50	1.53
3	S	3	SIA	C4-C5	-3.45	1.50	1.53
2	N	2	SIA	C10-N5	3.44	1.45	1.34
3	P	3	SIA	C10-N5	3.32	1.45	1.34
3	L	3	SIA	C10-N5	3.27	1.44	1.34
2	K	2	SIA	C10-N5	3.25	1.44	1.34
3	S	3	SIA	C10-N5	3.22	1.44	1.34
3	M	3	SIA	C10-N5	3.20	1.44	1.34
3	R	3	SIA	C10-N5	3.15	1.44	1.34
2	Q	2	SIA	C10-N5	3.03	1.44	1.34
3	M	3	SIA	C6-C5	-3.01	1.48	1.53
2	K	2	SIA	C6-C5	-2.85	1.48	1.53
3	L	3	SIA	C6-C5	-2.65	1.48	1.53
3	R	3	SIA	O6-C6	-2.64	1.39	1.44
3	L	3	SIA	O8-C8	-2.63	1.37	1.43
2	N	2	SIA	C6-C5	-2.60	1.48	1.53
3	S	3	SIA	O6-C6	-2.57	1.40	1.44
2	K	2	SIA	C8-C7	-2.55	1.49	1.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	N	2	SIA	O8-C8	-2.54	1.38	1.43
3	O	3	SIA	O8-C8	-2.51	1.38	1.43
3	O	3	SIA	C6-C5	-2.50	1.49	1.53
2	Q	2	SIA	C6-C5	-2.48	1.49	1.53
3	L	3	SIA	C8-C7	-2.45	1.49	1.53
3	P	3	SIA	C6-C5	-2.45	1.49	1.53
3	M	3	SIA	O8-C8	-2.45	1.38	1.43
2	Q	2	SIA	O6-C6	-2.43	1.40	1.44
2	K	2	SIA	O8-C8	-2.41	1.38	1.43
3	O	3	SIA	C8-C7	-2.40	1.49	1.53
2	N	2	SIA	C8-C7	-2.39	1.49	1.53
3	R	3	SIA	C8-C7	-2.38	1.49	1.53
3	M	3	SIA	O6-C6	-2.36	1.40	1.44
3	O	3	SIA	O6-C6	-2.36	1.40	1.44
3	P	3	SIA	O6-C6	-2.35	1.40	1.44
3	R	3	SIA	C6-C5	-2.31	1.49	1.53
3	R	3	SIA	O8-C8	-2.28	1.38	1.43
2	N	2	SIA	O6-C6	-2.28	1.40	1.44
2	Q	2	SIA	O8-C8	-2.26	1.38	1.43
3	M	3	SIA	C8-C7	-2.23	1.49	1.53
2	Q	2	SIA	C8-C7	-2.21	1.49	1.53
2	Q	2	SIA	O4-C4	-2.19	1.38	1.43
2	N	2	SIA	O4-C4	-2.18	1.38	1.43
3	P	3	SIA	C8-C7	-2.18	1.49	1.53
3	S	3	SIA	C6-C5	-2.15	1.49	1.53
3	L	3	SIA	O6-C6	-2.14	1.40	1.44
3	S	3	SIA	O8-C8	-2.11	1.38	1.43
3	P	3	SIA	O8-C8	-2.06	1.39	1.43
3	R	3	SIA	O4-C4	-2.04	1.39	1.43

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	P	3	SIA	O1B-C1-C2	3.32	121.34	112.71
2	K	2	SIA	C4-C5-N5	-3.21	104.11	110.44
2	Q	2	SIA	C4-C5-N5	-3.20	104.13	110.44
3	R	1	GLC	C3-C4-C5	3.05	115.77	110.23
2	Q	2	SIA	O1B-C1-C2	3.00	120.51	112.71
3	M	3	SIA	O6-C2-C1	2.96	113.31	107.72
3	S	3	SIA	O6-C2-C3	2.89	114.45	110.56
3	R	3	SIA	O1B-C1-C2	2.79	119.96	112.71
3	M	3	SIA	O1B-C1-C2	2.72	119.78	112.71

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L	3	SIA	O1B-C1-C2	2.70	119.74	112.71
2	K	2	SIA	O1B-C1-C2	2.66	119.64	112.71
2	N	2	SIA	O1B-C1-C2	2.60	119.47	112.71
3	L	3	SIA	O6-C2-C1	2.51	112.45	107.72
2	Q	2	SIA	C8-C7-C6	-2.49	108.38	113.05
3	O	3	SIA	O1B-C1-C2	2.48	119.15	112.71
3	M	3	SIA	O6-C2-C3	2.47	113.88	110.56
3	P	2	GAL	C1-C2-C3	2.43	113.18	109.64
3	S	3	SIA	O1B-C1-C2	2.42	119.02	112.71
3	P	3	SIA	C11-C10-N5	2.41	120.11	116.12
3	R	3	SIA	O6-C2-C3	2.40	113.78	110.56
3	R	3	SIA	C11-C10-N5	2.35	120.02	116.12
2	Q	2	SIA	C11-C10-N5	2.28	119.90	116.12
3	L	3	SIA	C4-C5-N5	-2.25	106.00	110.44
3	R	3	SIA	O6-C2-C1	2.18	111.84	107.72
2	Q	2	SIA	O1A-C1-C2	-2.17	118.17	122.85
2	K	2	SIA	C6-C5-N5	2.13	114.31	110.91
2	K	2	SIA	C8-C7-C6	-2.11	109.10	113.05
3	S	3	SIA	C11-C10-N5	2.06	119.53	116.12
2	K	2	SIA	C11-C10-N5	2.04	119.50	116.12
3	P	3	SIA	O1A-C1-C2	-2.03	118.47	122.85
3	M	3	SIA	C8-C7-C6	-2.00	109.30	113.05

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	K	2	SIA	O6-C6-C7-C8
2	K	2	SIA	O6-C6-C7-O7
3	R	3	SIA	C7-C8-C9-O9
3	R	3	SIA	O8-C8-C9-O9
2	K	2	SIA	O8-C8-C9-O9
3	O	2	GAL	O5-C5-C6-O6
3	O	2	GAL	C4-C5-C6-O6
3	O	1	GLC	O5-C5-C6-O6
3	O	1	GLC	C4-C5-C6-O6
2	K	2	SIA	C7-C8-C9-O9
3	M	1	GLC	O5-C5-C6-O6
2	Q	2	SIA	O8-C8-C9-O9
3	O	3	SIA	O8-C8-C9-O9
3	R	1	GLC	O5-C5-C6-O6
3	S	1	GLC	O5-C5-C6-O6

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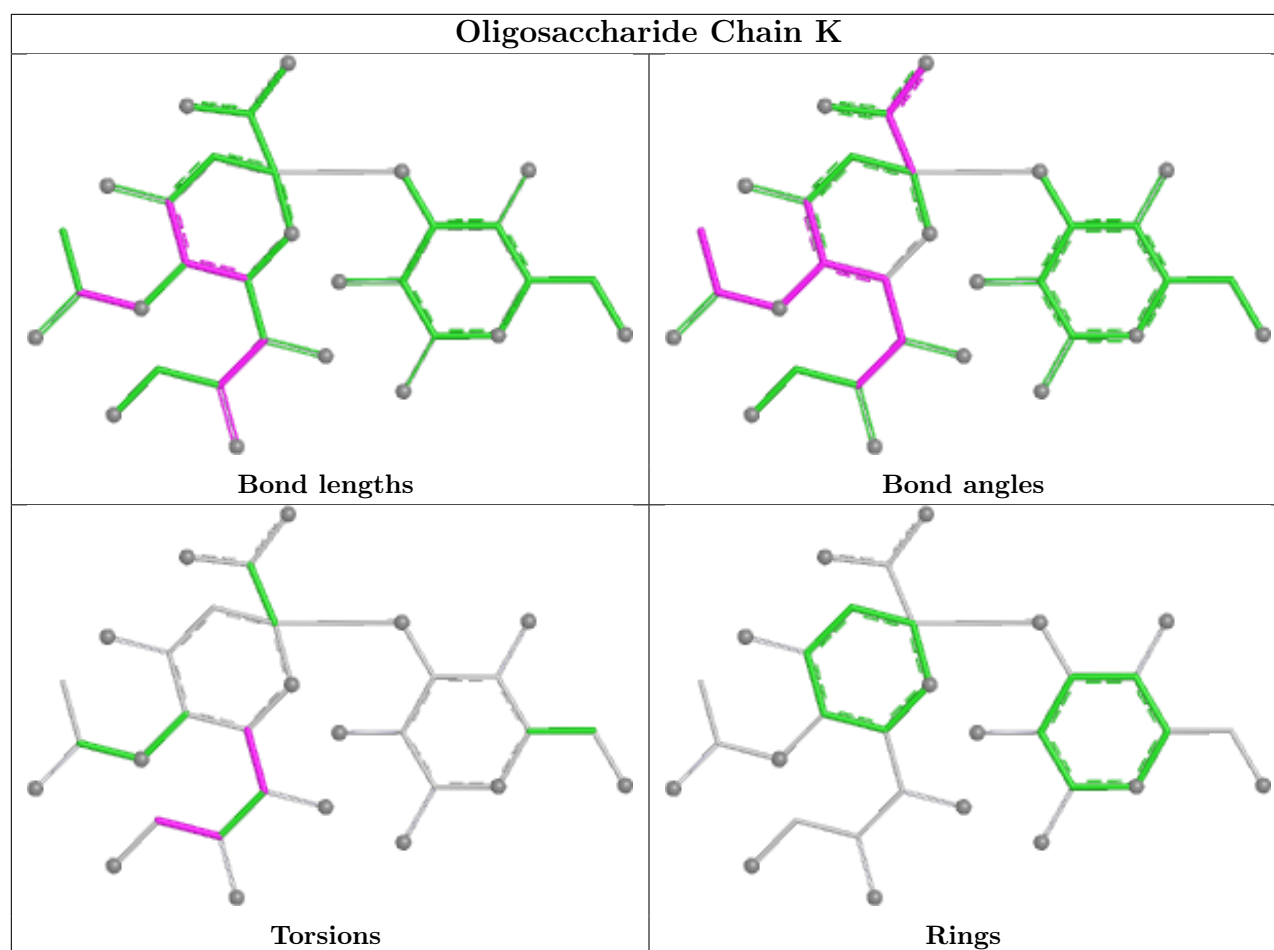
Mol	Chain	Res	Type	Atoms
3	L	1	GLC	O5-C5-C6-O6
3	L	2	GAL	C4-C5-C6-O6
2	K	2	SIA	C5-C6-C7-O7
2	Q	2	SIA	C7-C8-C9-O9
2	K	2	SIA	C5-C6-C7-C8
3	P	3	SIA	O1A-C1-C2-O6
3	M	1	GLC	C4-C5-C6-O6
3	O	3	SIA	C7-C8-C9-O9

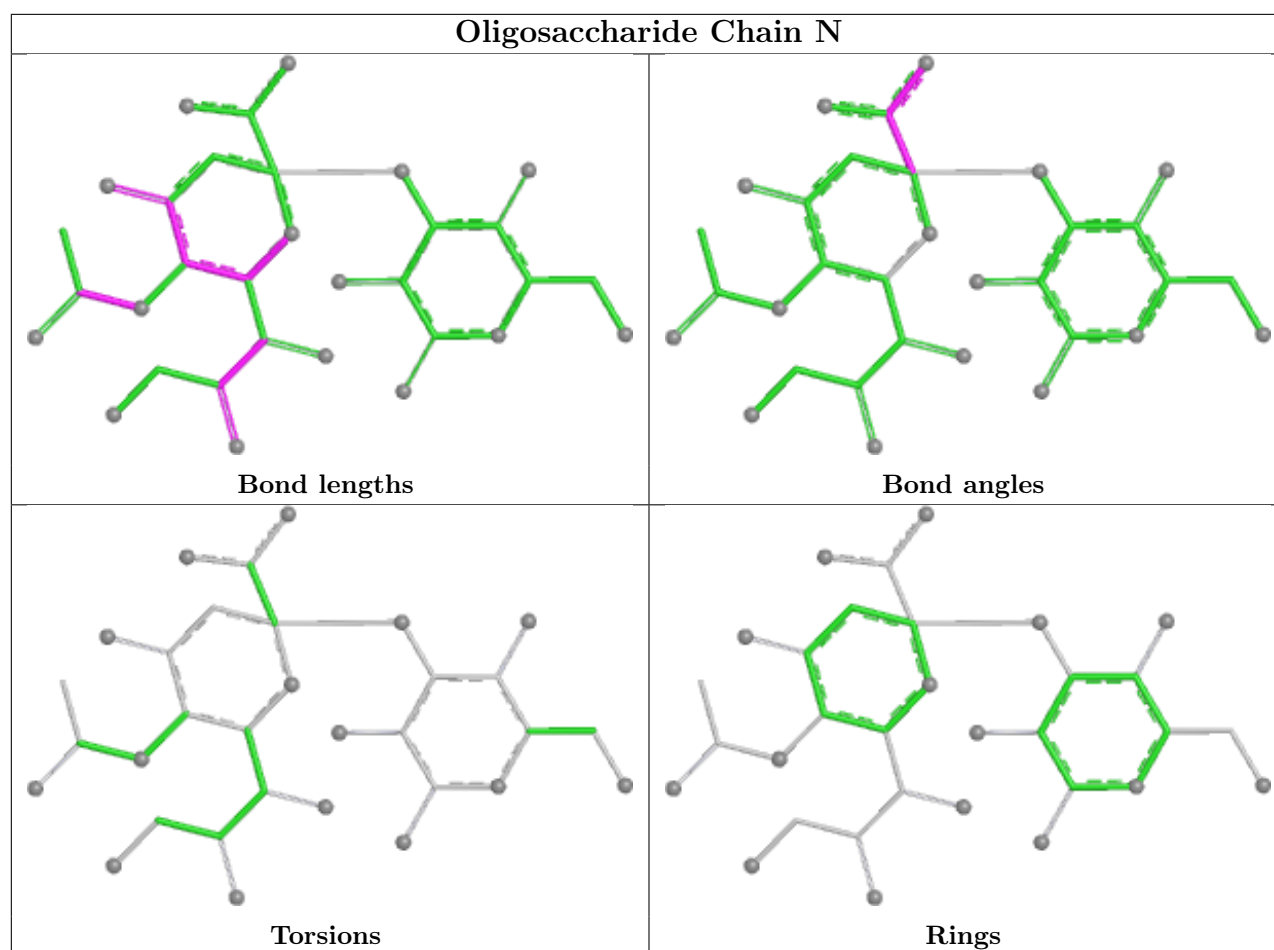
There are no ring outliers.

8 monomers are involved in 8 short contacts:

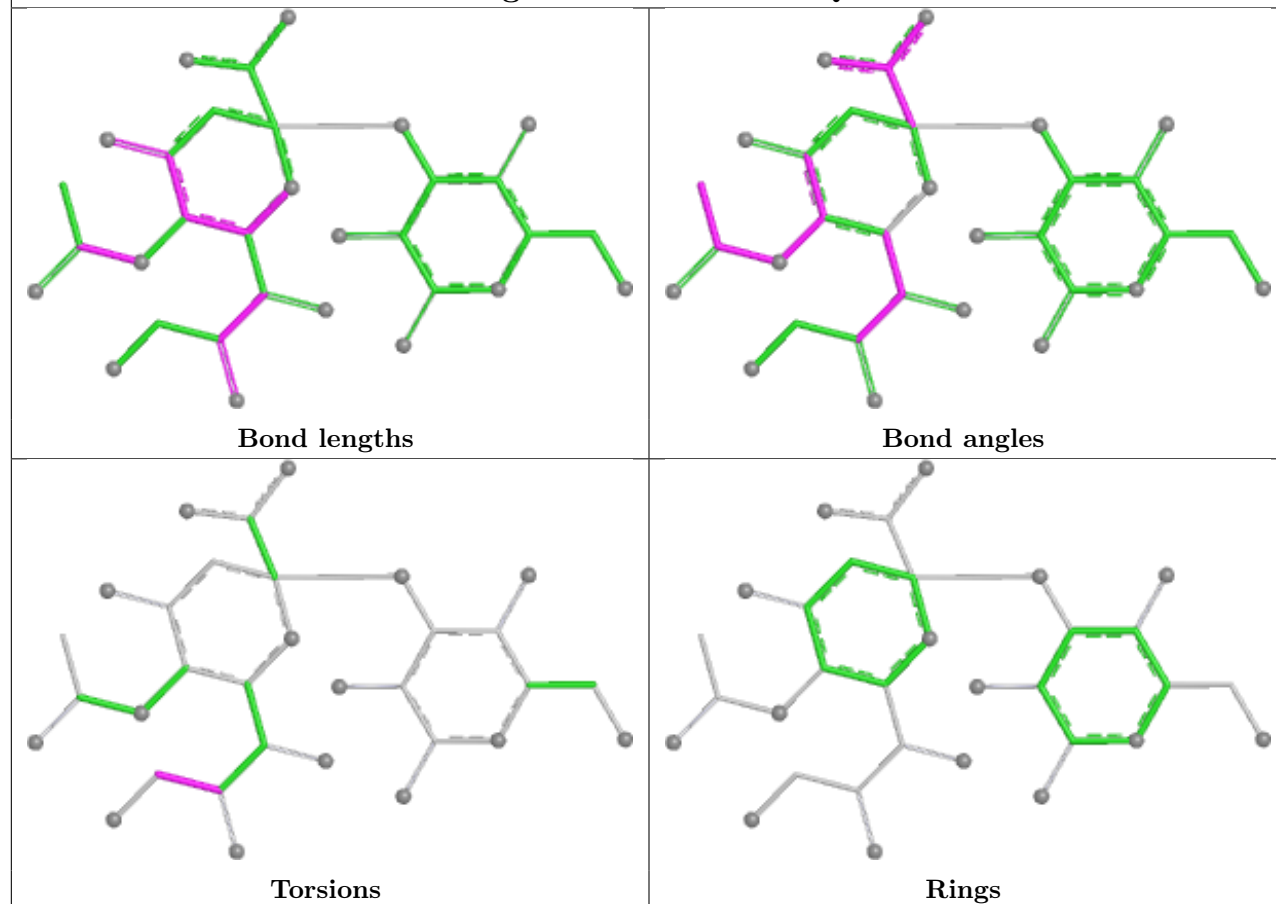
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	K	2	SIA	2	0
2	K	1	GAL	1	0
2	Q	1	GAL	1	0
3	P	3	SIA	2	0
3	P	2	GAL	1	0
3	M	3	SIA	1	0
3	M	2	GAL	1	0
2	Q	2	SIA	3	0

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

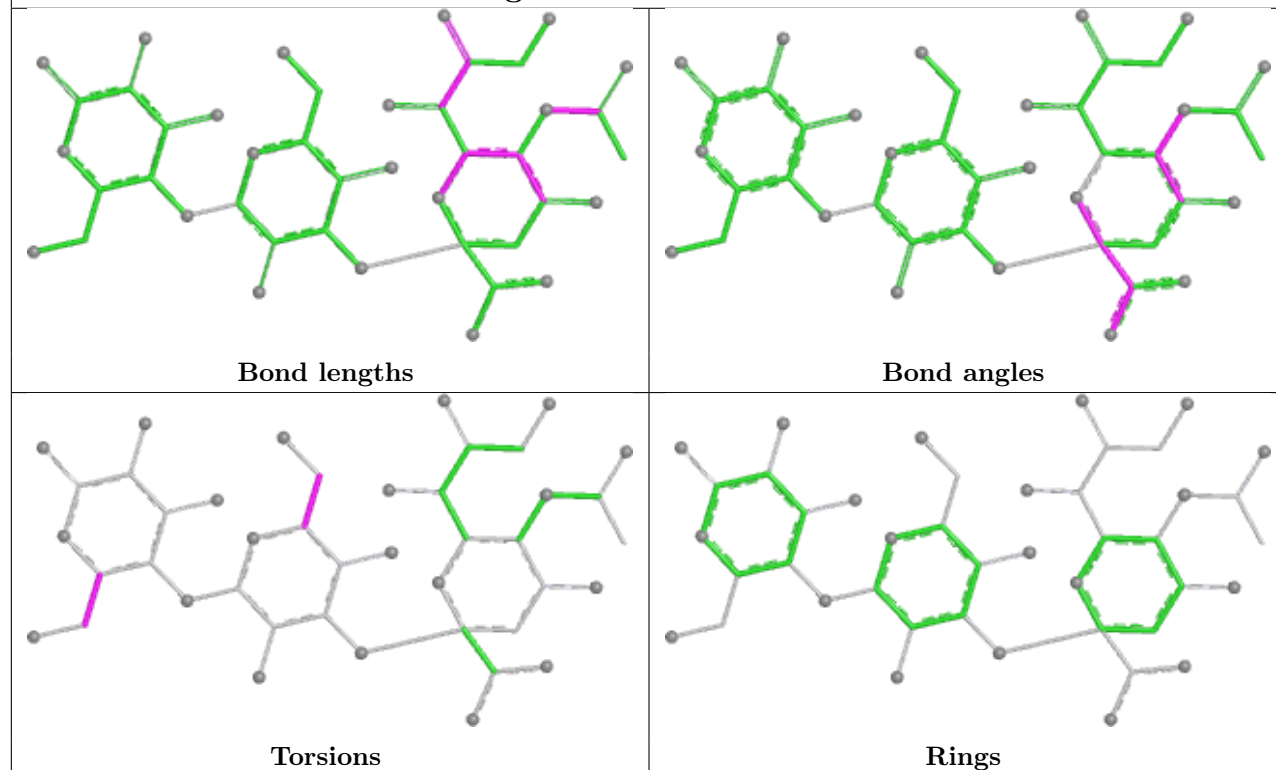


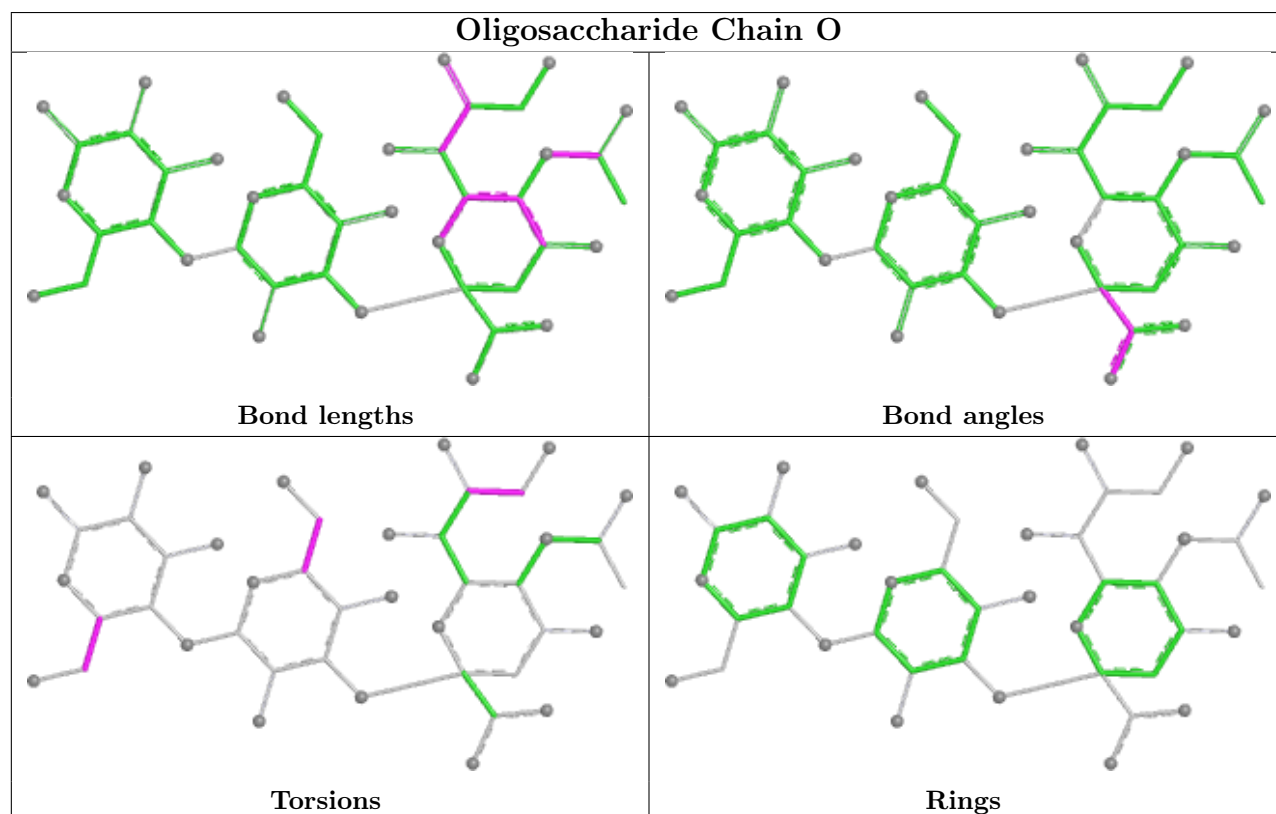
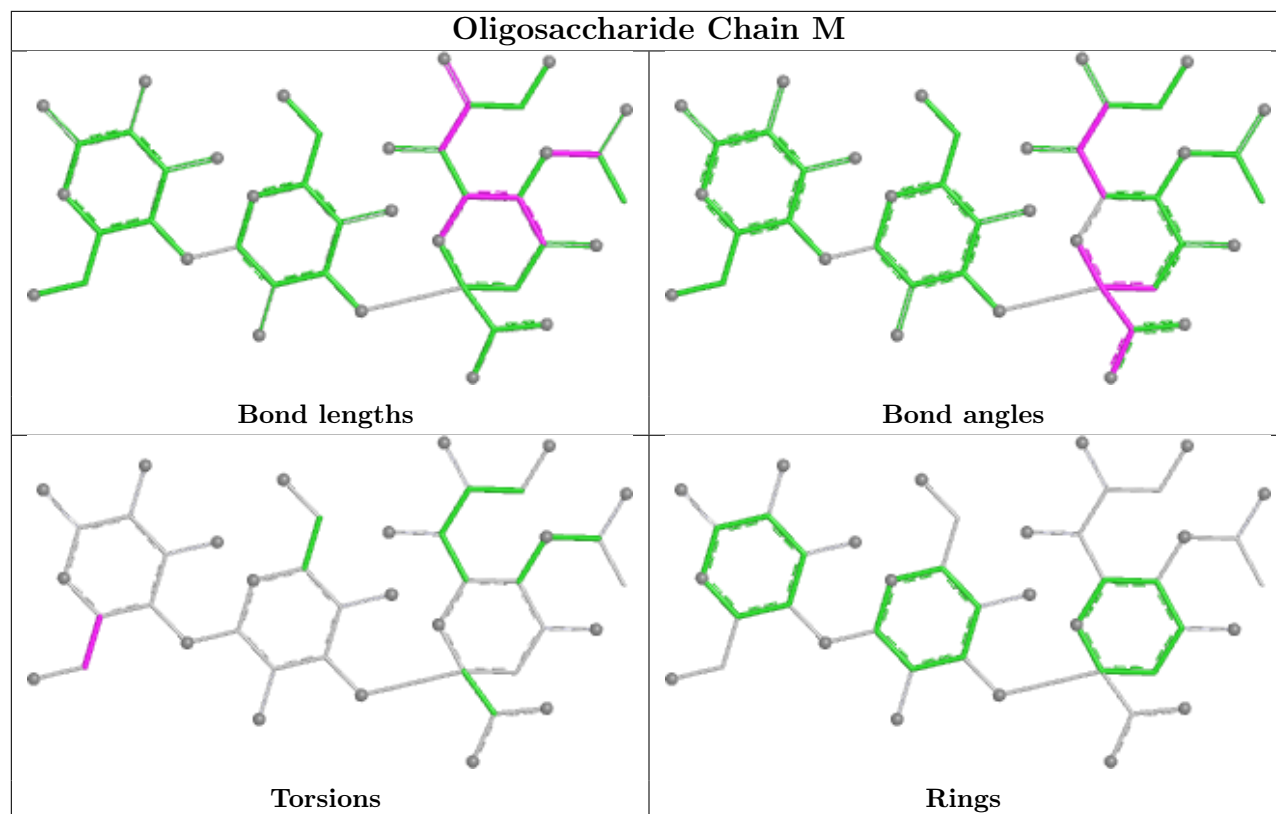


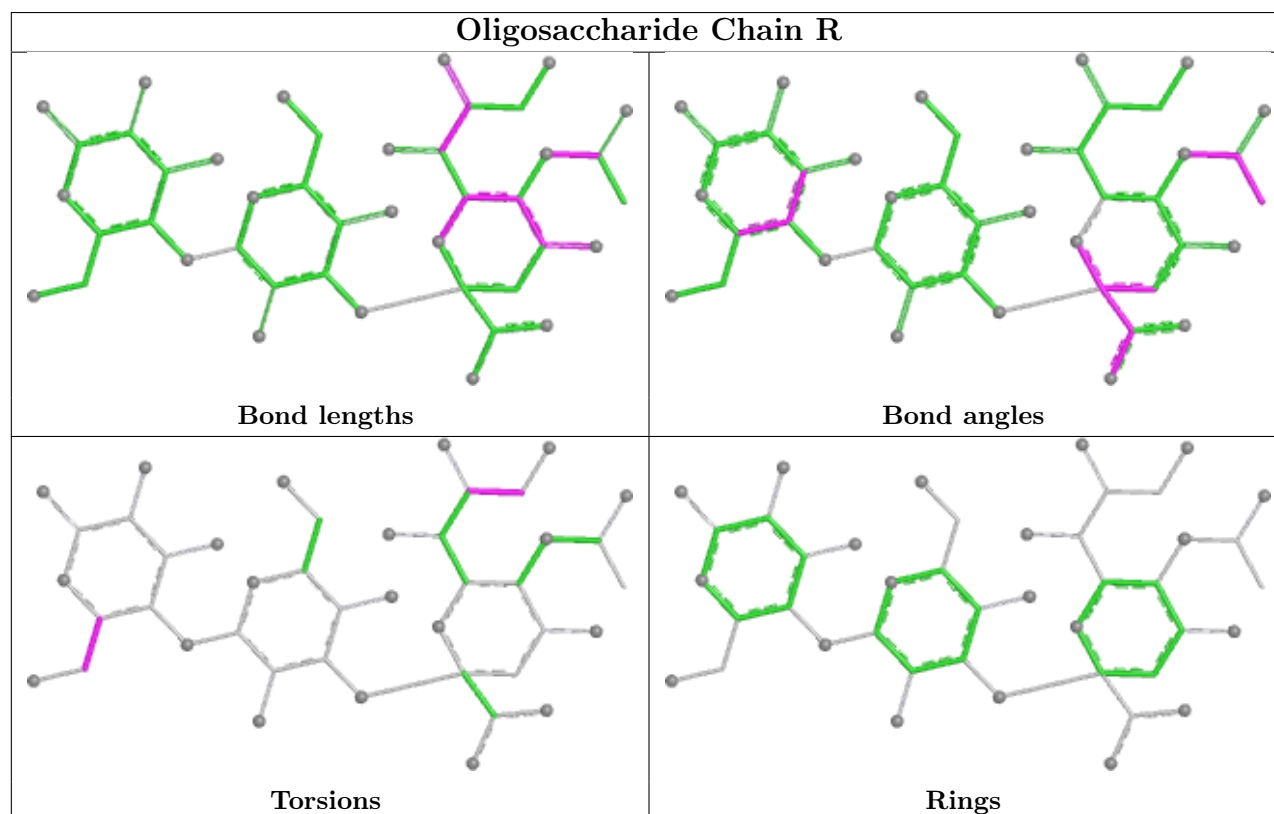
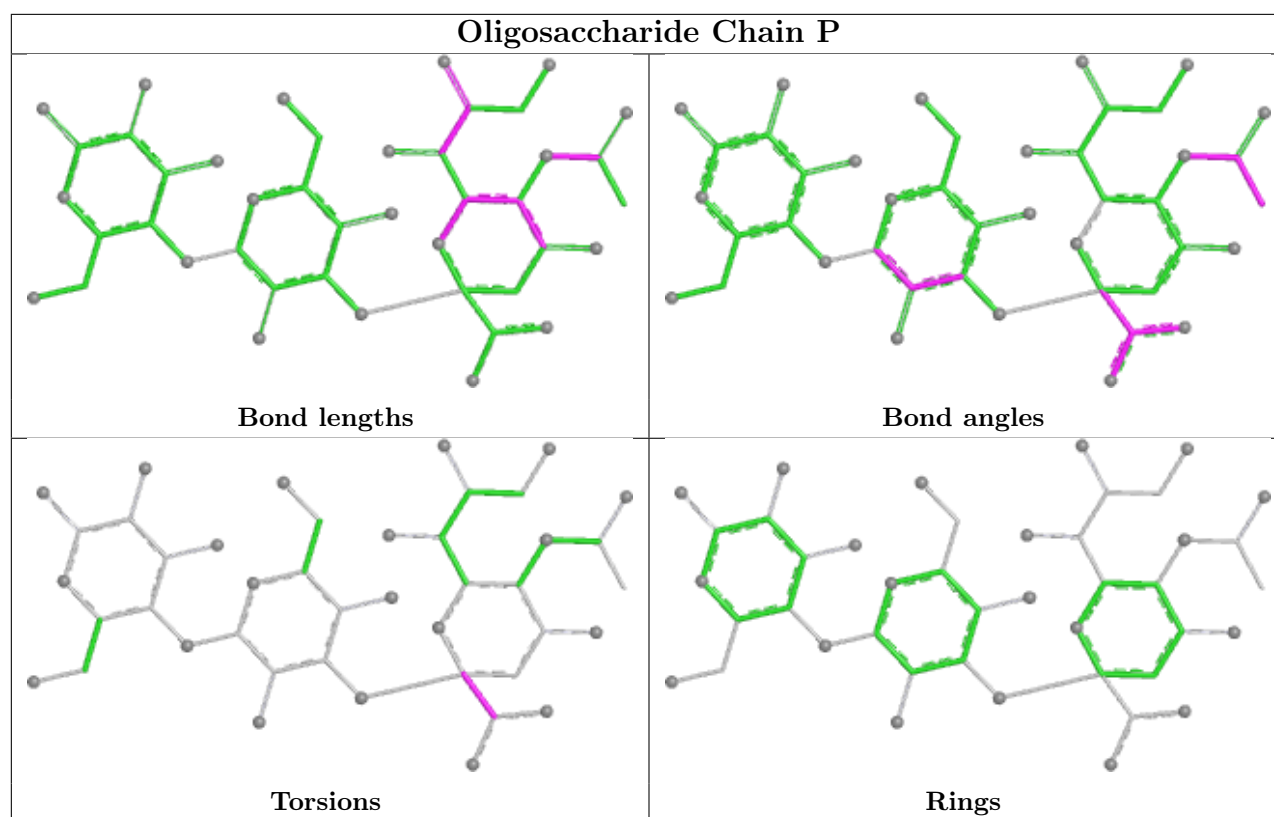
Oligosaccharide Chain Q

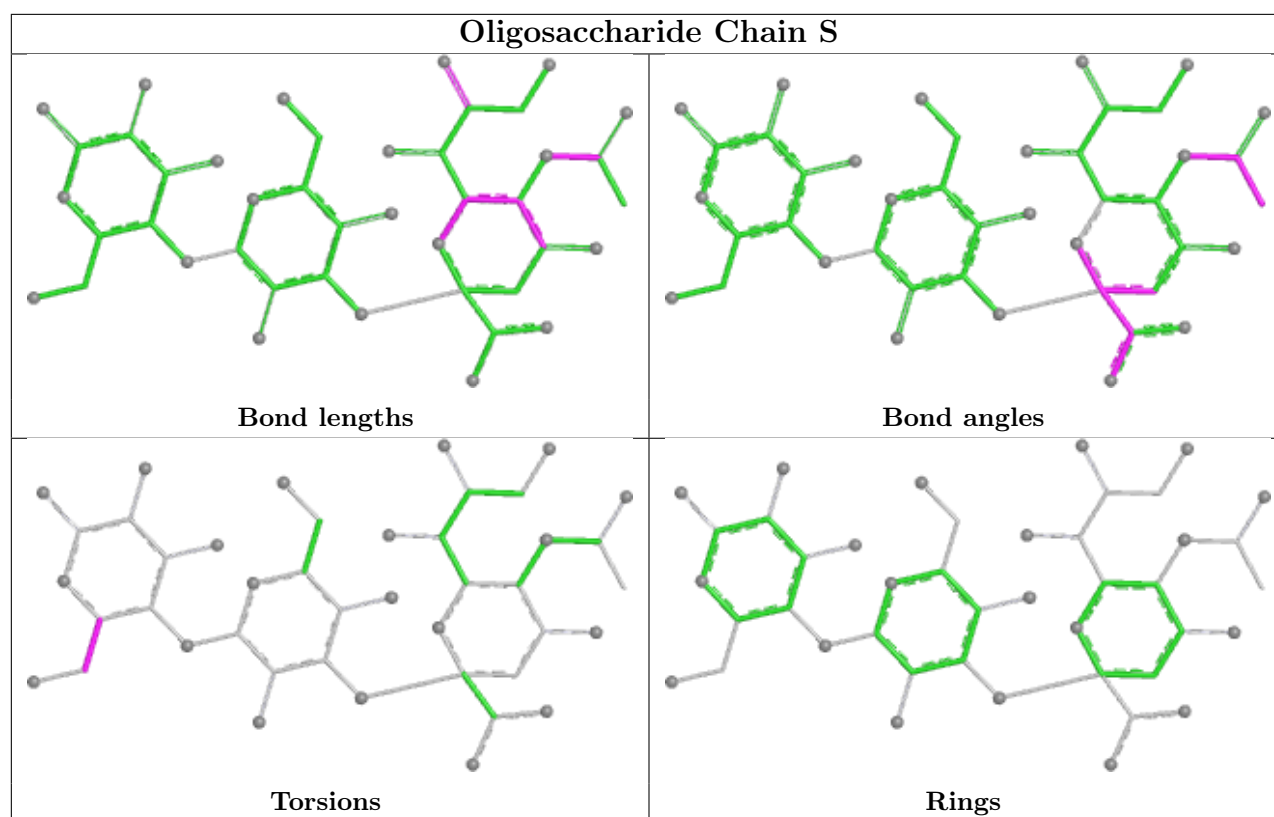


Oligosaccharide Chain L









5.6 Ligand geometry [i](#)

Of 51 ligands modelled in this entry, 30 are monoatomic - leaving 21 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
5	PEG	A	204	-	6,6,6	0.49	0	5,5,5	0.20	0
5	PEG	E	207	-	6,6,6	0.54	0	5,5,5	0.24	0
5	PEG	G	204	-	6,6,6	0.48	0	5,5,5	0.16	0
5	PEG	G	203	-	6,6,6	0.51	0	5,5,5	0.32	0
5	PEG	J	206	-	6,6,6	0.50	0	5,5,5	0.29	0
4	SIA	A	203	-	21,21,21	1.87	5 (23%)	24,31,31	1.37	4 (16%)
7	MES	G	201	-	12,12,12	2.31	1 (8%)	15,16,16	2.34	6 (40%)
5	PEG	F	203	-	6,6,6	0.57	0	5,5,5	0.24	0
7	MES	C	201	-	12,12,12	2.39	1 (8%)	15,16,16	2.02	4 (26%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
8	TRS	H	212	-	7,7,7	0.30	0	9,9,9	0.30	0
7	MES	B	201	-	12,12,12	2.48	1 (8%)	15,16,16	1.86	4 (26%)
5	PEG	F	204	-	6,6,6	0.48	0	5,5,5	0.29	0
5	PEG	F	202	-	6,6,6	0.51	0	5,5,5	0.27	0
5	PEG	H	208	-	6,6,6	0.48	0	5,5,5	0.29	0
5	PEG	H	207	-	6,6,6	0.48	0	5,5,5	0.19	0
5	PEG	B	202	-	6,6,6	0.48	0	5,5,5	0.26	0
7	MES	J	201	-	12,12,12	2.20	1 (8%)	15,16,16	1.99	6 (40%)
7	MES	H	201	-	12,12,12	2.40	1 (8%)	15,16,16	2.45	6 (40%)
5	PEG	H	209	-	6,6,6	0.47	0	5,5,5	0.41	0
8	TRS	D	206	-	7,7,7	0.31	0	9,9,9	0.40	0
7	MES	D	201	-	12,12,12	2.19	1 (8%)	15,16,16	1.95	6 (40%)

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	PEG	A	204	-	-	2/4/4/4	-
5	PEG	E	207	-	-	1/4/4/4	-
5	PEG	G	204	-	-	2/4/4/4	-
5	PEG	G	203	-	-	1/4/4/4	-
5	PEG	J	206	-	-	2/4/4/4	-
4	SIA	A	203	-	-	2/20/38/38	0/1/1/1
7	MES	G	201	-	-	1/6/14/14	0/1/1/1
5	PEG	F	203	-	-	4/4/4/4	-
7	MES	C	201	-	-	6/6/14/14	0/1/1/1
8	TRS	H	212	-	-	6/9/9/9	-
7	MES	B	201	-	-	3/6/14/14	0/1/1/1
5	PEG	F	204	-	-	0/4/4/4	-
5	PEG	F	202	-	-	2/4/4/4	-
5	PEG	H	208	-	-	2/4/4/4	-
5	PEG	H	207	-	-	1/4/4/4	-
5	PEG	B	202	-	-	1/4/4/4	-
7	MES	J	201	-	-	2/6/14/14	0/1/1/1
7	MES	H	201	-	-	4/6/14/14	0/1/1/1
5	PEG	H	209	-	-	2/4/4/4	-
8	TRS	D	206	-	-	3/9/9/9	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	MES	D	201	-	-	5/6/14/14	0/1/1/1

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	B	201	MES	C8-S	-8.27	1.66	1.77
7	H	201	MES	C8-S	-8.04	1.66	1.77
7	C	201	MES	C8-S	-7.99	1.66	1.77
7	G	201	MES	C8-S	-7.67	1.66	1.77
7	J	201	MES	C8-S	-7.35	1.67	1.77
7	D	201	MES	C8-S	-7.24	1.67	1.77
4	A	203	SIA	C4-C5	-4.41	1.49	1.53
4	A	203	SIA	C10-N5	3.29	1.45	1.34
4	A	203	SIA	C8-C7	-2.45	1.49	1.53
4	A	203	SIA	O8-C8	-2.37	1.38	1.43
4	A	203	SIA	C6-C5	-2.29	1.49	1.53

All (36) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	H	201	MES	C5-N4-C3	5.66	121.02	108.84
7	C	201	MES	C5-N4-C3	5.55	120.80	108.84
7	G	201	MES	C5-N4-C3	5.48	120.65	108.84
7	D	201	MES	C5-N4-C3	4.41	118.34	108.84
7	J	201	MES	C5-N4-C3	4.40	118.33	108.84
7	B	201	MES	C5-N4-C3	4.01	117.47	108.84
7	G	201	MES	C6-C5-N4	-3.93	104.14	110.12
7	H	201	MES	C2-C3-N4	-3.66	104.56	110.12
7	B	201	MES	C6-C5-N4	-3.15	105.34	110.12
7	H	201	MES	C7-N4-C5	3.14	119.60	111.24
4	A	203	SIA	C3-C2-C1	-3.10	107.08	112.84
7	H	201	MES	C7-N4-C3	3.04	119.35	111.24
4	A	203	SIA	O1A-C1-C2	-2.86	119.08	123.85
7	G	201	MES	C7-N4-C5	2.75	118.57	111.24
7	H	201	MES	O1S-S-C8	2.72	110.83	106.73
7	D	201	MES	C7-N4-C5	2.67	118.35	111.24
7	J	201	MES	C6-C5-N4	-2.63	106.12	110.12
7	G	201	MES	C7-N4-C3	2.61	118.19	111.24
7	D	201	MES	C6-C5-N4	-2.57	106.21	110.12
4	A	203	SIA	O6-C6-C5	2.54	112.17	109.84
7	D	201	MES	O1S-S-C8	2.45	110.44	106.73
7	C	201	MES	C7-N4-C5	2.40	117.64	111.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	J	201	MES	O1S-S-C8	2.40	110.36	106.73
7	G	201	MES	C8-C7-N4	-2.38	103.36	112.36
7	J	201	MES	C7-N4-C3	2.32	117.43	111.24
7	J	201	MES	C8-C7-N4	-2.29	103.68	112.36
7	G	201	MES	O1S-S-C8	2.29	110.19	106.73
7	C	201	MES	C8-C7-N4	-2.26	103.80	112.36
7	D	201	MES	O3S-S-C8	2.22	110.34	106.00
7	C	201	MES	C7-N4-C3	2.21	117.13	111.24
7	B	201	MES	O1S-S-C8	2.15	109.98	106.73
4	A	203	SIA	C8-C7-C6	-2.14	109.04	113.05
7	H	201	MES	C8-C7-N4	-2.13	104.30	112.36
7	D	201	MES	C7-N4-C3	2.04	116.67	111.24
7	J	201	MES	C7-N4-C5	2.01	116.59	111.24
7	B	201	MES	C2-C3-N4	2.00	113.16	110.12

There are no chirality outliers.

All (52) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	C	201	MES	C7-C8-S-O1S
7	C	201	MES	C7-C8-S-O3S
7	D	201	MES	N4-C7-C8-S
7	D	201	MES	C7-C8-S-O2S
7	D	201	MES	C7-C8-S-O3S
7	J	201	MES	C8-C7-N4-C5
7	J	201	MES	N4-C7-C8-S
8	H	212	TRS	N-C-C2-O2
8	H	212	TRS	C1-C-C3-O3
8	H	212	TRS	C2-C-C3-O3
5	H	208	PEG	O2-C3-C4-O4
7	H	201	MES	C7-C8-S-O3S
5	A	204	PEG	O2-C3-C4-O4
8	H	212	TRS	C3-C-C2-O2
5	F	203	PEG	C1-C2-O2-C3
5	E	207	PEG	O1-C1-C2-O2
5	F	202	PEG	O1-C1-C2-O2
5	F	203	PEG	O1-C1-C2-O2
5	H	209	PEG	O2-C3-C4-O4
5	J	206	PEG	O1-C1-C2-O2
7	C	201	MES	C8-C7-N4-C3
7	D	201	MES	C8-C7-N4-C3
7	G	201	MES	C8-C7-N4-C3

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Mol	Chain	Res	Type	Atoms
7	H	201	MES	C8-C7-N4-C3
7	B	201	MES	C7-C8-S-O3S
8	D	206	TRS	C1-C-C3-O3
8	D	206	TRS	C2-C-C3-O3
8	H	212	TRS	N-C-C3-O3
7	B	201	MES	C7-C8-S-O1S
7	B	201	MES	C7-C8-S-O2S
7	C	201	MES	C7-C8-S-O2S
7	D	201	MES	C7-C8-S-O1S
7	H	201	MES	C7-C8-S-O1S
7	H	201	MES	C7-C8-S-O2S
5	H	208	PEG	C4-C3-O2-C2
5	A	204	PEG	C1-C2-O2-C3
5	G	204	PEG	C1-C2-O2-C3
5	F	203	PEG	O2-C3-C4-O4
7	C	201	MES	N4-C7-C8-S
5	F	203	PEG	C4-C3-O2-C2
5	F	202	PEG	C1-C2-O2-C3
5	J	206	PEG	C1-C2-O2-C3
5	B	202	PEG	C4-C3-O2-C2
5	G	203	PEG	O1-C1-C2-O2
4	A	203	SIA	O1A-C1-C2-O2
4	A	203	SIA	O1A-C1-C2-O6
5	G	204	PEG	O2-C3-C4-O4
7	C	201	MES	C8-C7-N4-C5
8	D	206	TRS	N-C-C3-O3
5	H	207	PEG	C1-C2-O2-C3
8	H	212	TRS	C1-C-C2-O2
5	H	209	PEG	C1-C2-O2-C3

There are no ring outliers.

14 monomers are involved in 48 short contacts:

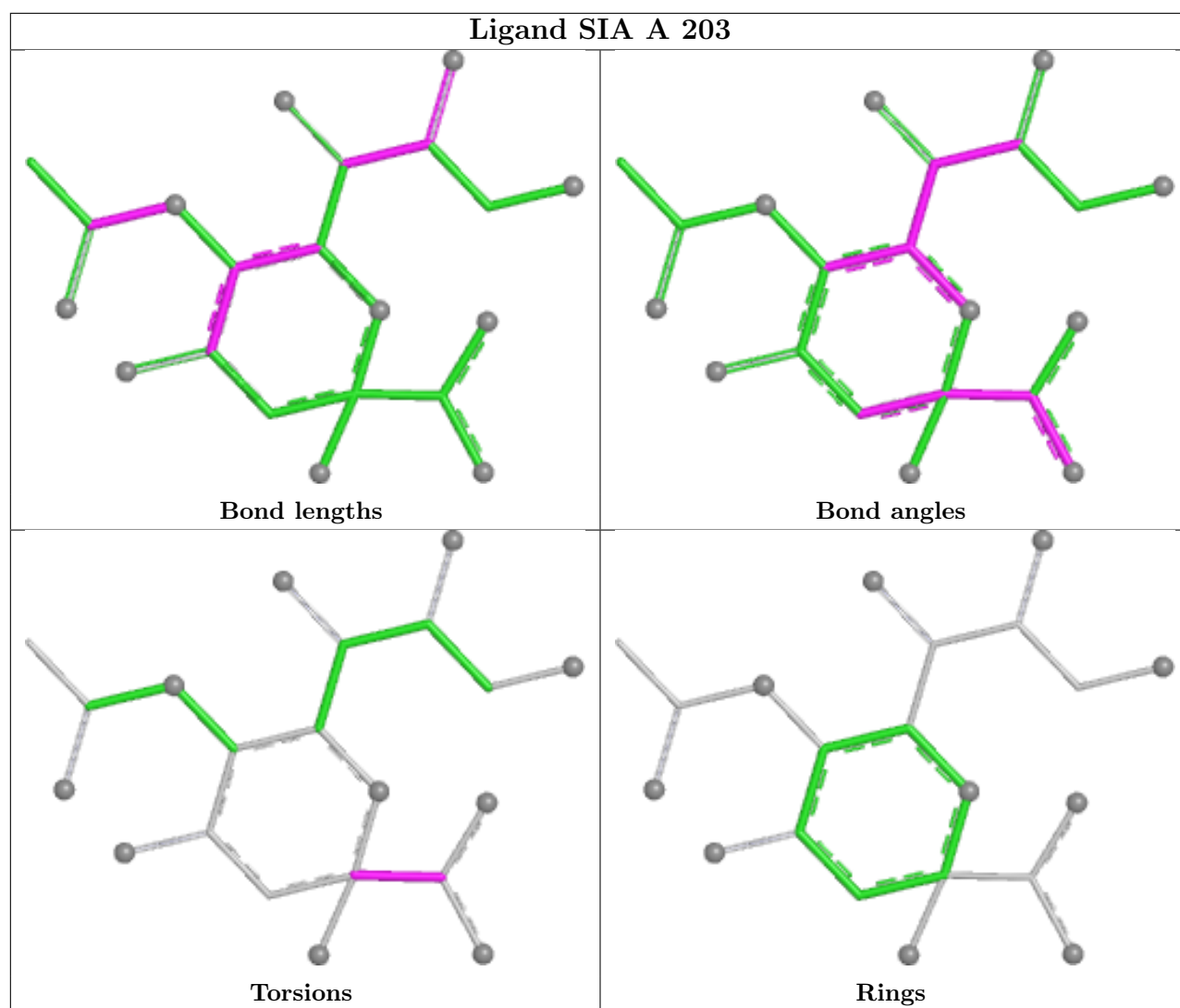
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	E	207	PEG	2	0
5	G	203	PEG	2	0
5	J	206	PEG	1	0
7	G	201	MES	2	0
5	F	203	PEG	11	0
8	H	212	TRS	1	0
7	B	201	MES	1	0
5	F	202	PEG	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	H	208	PEG	6	0
5	B	202	PEG	9	0
7	J	201	MES	2	0
5	H	209	PEG	5	0
8	D	206	TRS	2	0
7	D	201	MES	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



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, 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	120/149 (80%)	-0.25	4 (3%)	49	46	12, 23, 41, 75	0
1	B	119/149 (79%)	-0.03	8 (6%)	24	21	13, 25, 55, 68	1 (0%)
1	C	118/149 (79%)	-0.19	3 (2%)	58	55	12, 24, 51, 90	0
1	D	118/149 (79%)	-0.28	3 (2%)	58	55	14, 24, 49, 68	0
1	E	119/149 (79%)	-0.22	2 (1%)	69	66	13, 25, 50, 83	0
1	F	118/149 (79%)	-0.19	1 (0%)	82	80	12, 24, 49, 64	0
1	G	118/149 (79%)	-0.19	7 (5%)	28	25	12, 22, 52, 75	1 (0%)
1	H	124/149 (83%)	-0.22	2 (1%)	70	67	13, 22, 46, 63	0
1	I	118/149 (79%)	-0.31	2 (1%)	69	66	13, 21, 42, 67	0
1	J	123/149 (82%)	-0.14	7 (5%)	29	26	13, 21, 56, 101	2 (1%)
All	All	1195/1490 (80%)	-0.20	39 (3%)	49	46	12, 23, 51, 101	4 (0%)

All (39) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	140	PRO	5.6
1	J	142	LEU	5.0
1	J	144	HIS	4.8
1	J	133	TYR	4.2
1	A	141	ASN	3.4
1	B	65	ASN	3.2
1	J	141	ASN	3.2
1	H	22	ASN	3.0
1	H	145	HIS	3.0
1	G	63	VAL	3.0
1	C	132	ASP	3.0
1	B	140	PRO	3.0
1	G	66	VAL	2.9

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Mol	Chain	Res	Type	RSRZ
1	E	132	ASP	2.9
1	G	61	SER	2.8
1	B	24	ALA	2.7
1	E	140	PRO	2.7
1	G	65	ASN	2.6
1	J	63	VAL	2.6
1	I	22	ASN	2.5
1	D	65	ASN	2.5
1	B	63	VAL	2.4
1	B	62	GLN	2.4
1	B	61	SER	2.4
1	C	133	TYR	2.3
1	A	65	ASN	2.3
1	I	65	ASN	2.3
1	J	65	ASN	2.2
1	G	62	GLN	2.2
1	J	143	GLU	2.2
1	G	27[A]	ASN	2.2
1	D	47	ASP	2.2
1	A	62	GLN	2.2
1	C	139	LEU	2.1
1	B	25	ASP	2.1
1	B	60	GLY	2.1
1	D	132	ASP	2.1
1	F	47	ASP	2.1
1	G	24	ALA	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, 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
2	GAL	N	1	12/12	0.59	0.18	65,73,75,77	0
2	GAL	Q	1	12/12	0.62	0.17	61,70,72,74	0

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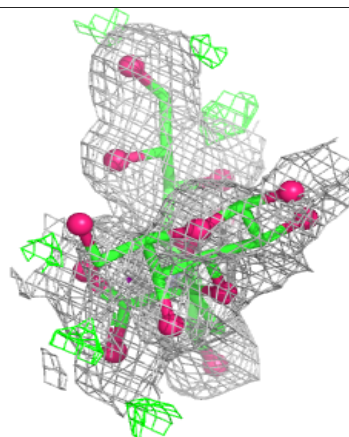
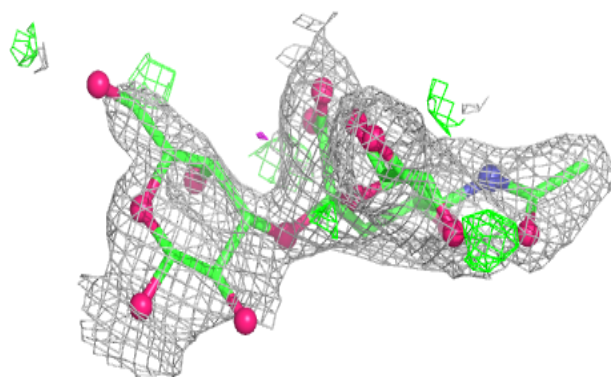
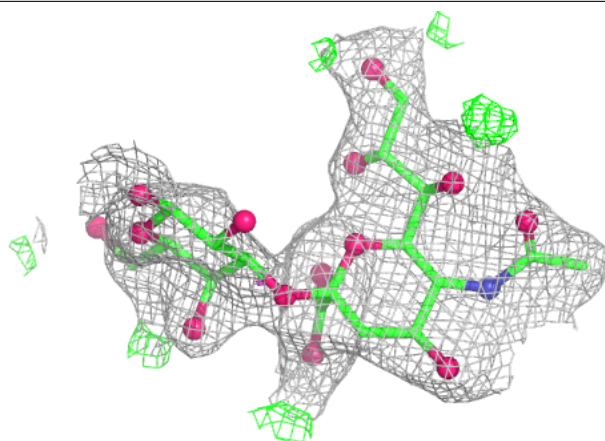
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	GAL	O	2	11/12	0.69	0.15	45,54,61,63	0
2	GAL	K	1	12/12	0.72	0.16	55,67,70,71	0
3	GLC	O	1	12/12	0.75	0.17	47,61,68,77	0
3	GLC	L	1	12/12	0.80	0.13	55,72,83,88	0
3	GLC	P	1	12/12	0.80	0.14	36,51,60,64	0
2	SIA	Q	2	20/21	0.84	0.14	42,51,59,59	0
3	GLC	M	1	12/12	0.85	0.13	32,50,61,65	0
3	GLC	S	1	12/12	0.86	0.10	35,49,54,56	0
3	GLC	R	1	12/12	0.87	0.12	32,54,58,60	0
2	SIA	N	2	20/21	0.88	0.11	36,50,56,57	0
3	SIA	L	3	20/21	0.88	0.11	21,37,47,52	0
3	SIA	O	3	20/21	0.89	0.09	32,40,44,45	0
2	SIA	K	2	20/21	0.89	0.10	24,41,47,49	0
3	GAL	L	2	11/12	0.90	0.10	32,43,46,49	0
3	SIA	S	3	20/21	0.90	0.09	21,32,39,40	0
3	GAL	R	2	11/12	0.91	0.09	28,32,41,46	0
3	GAL	S	2	11/12	0.92	0.08	31,34,40,44	0
3	GAL	P	2	11/12	0.92	0.09	33,35,42,42	0
3	SIA	R	3	20/21	0.93	0.09	18,29,35,36	0
3	SIA	P	3	20/21	0.93	0.07	17,29,38,41	0
3	GAL	M	2	11/12	0.94	0.08	24,26,38,42	0
3	SIA	M	3	20/21	0.94	0.07	17,26,29,30	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.

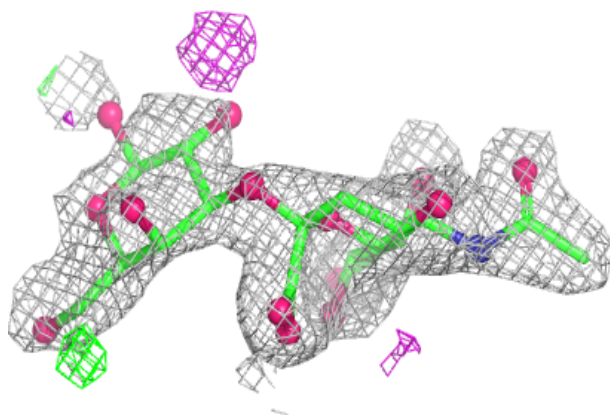
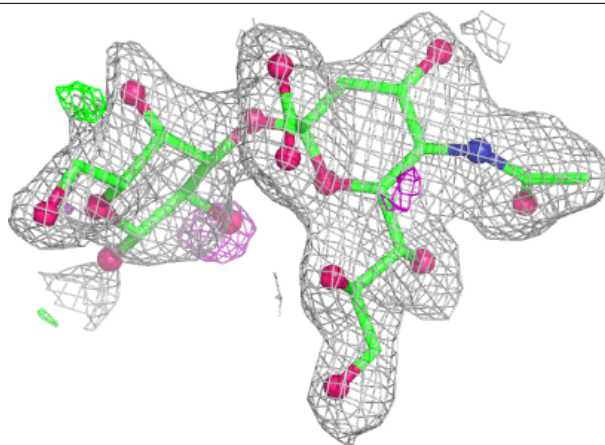
Electron density around Chain K:

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



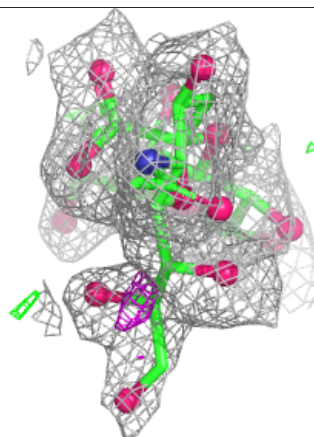
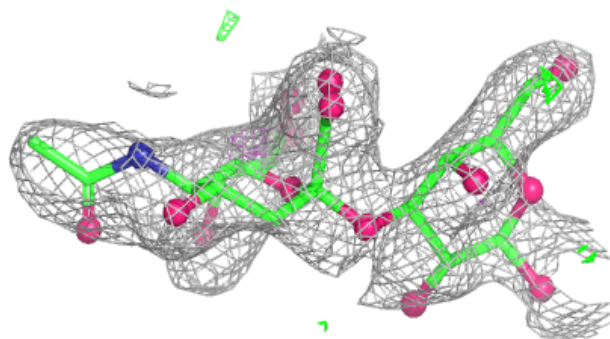
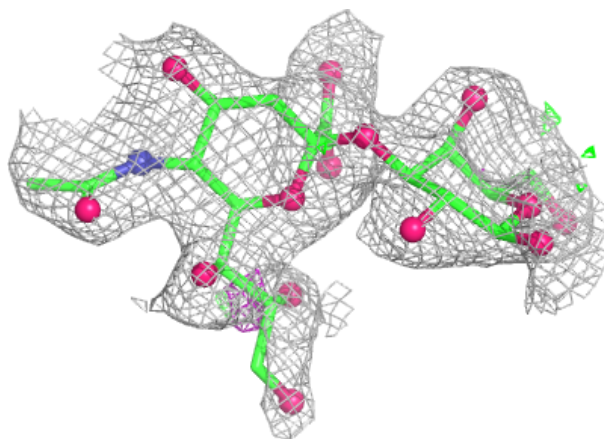
Electron density around Chain N:

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

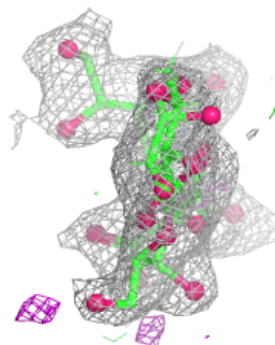
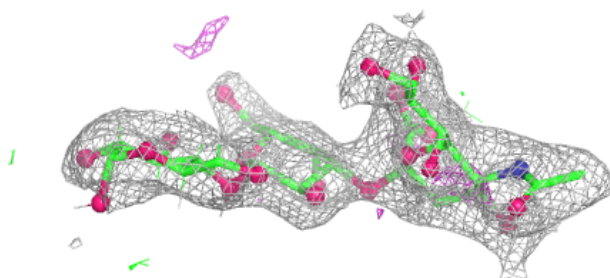
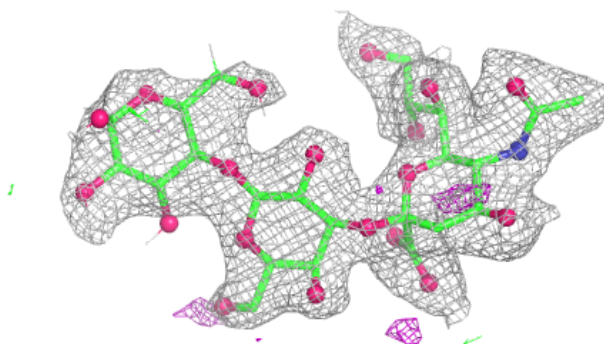


Electron density around Chain Q:

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

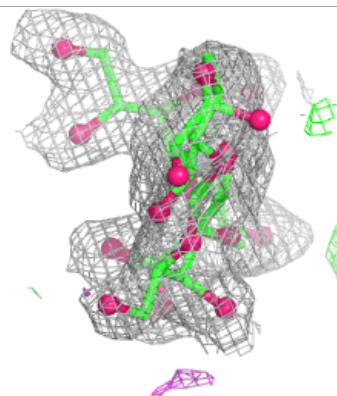
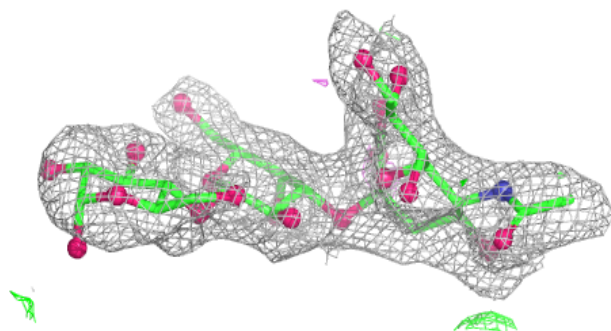
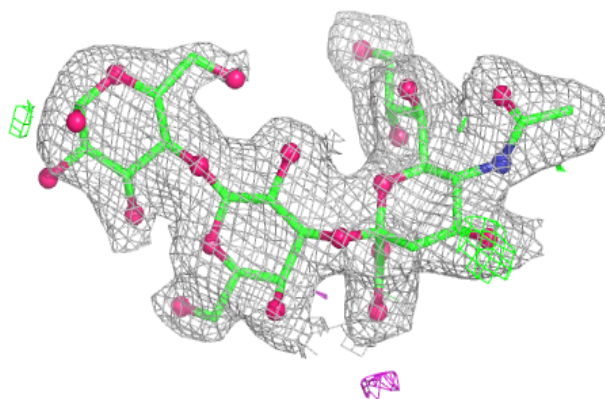
**Electron density around Chain L:**

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

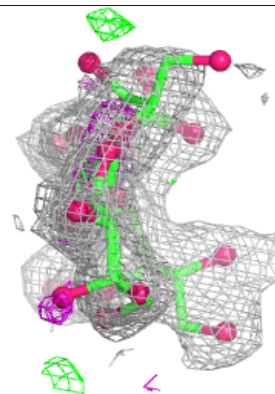
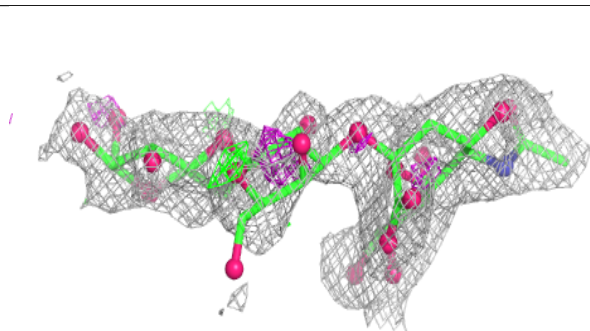
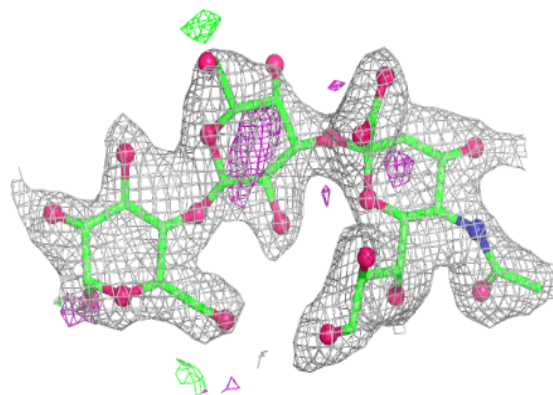


Electron density around Chain M:

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

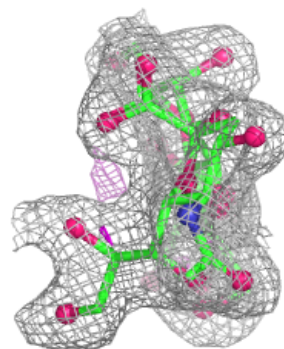
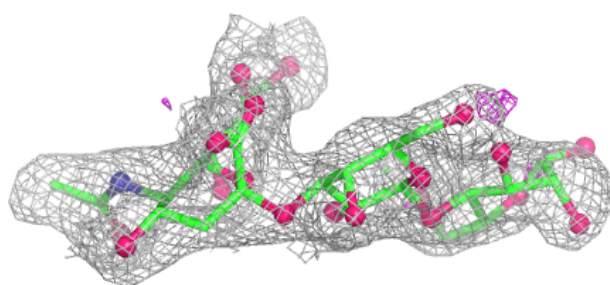
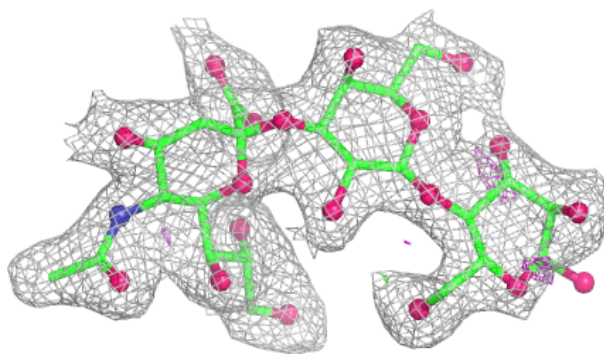
**Electron density around Chain O:**

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

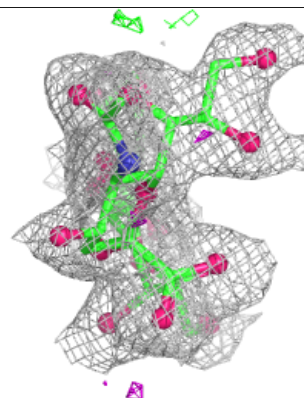
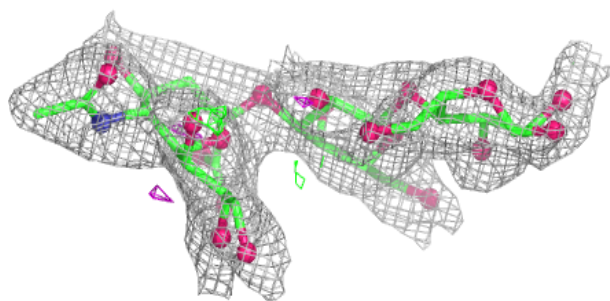
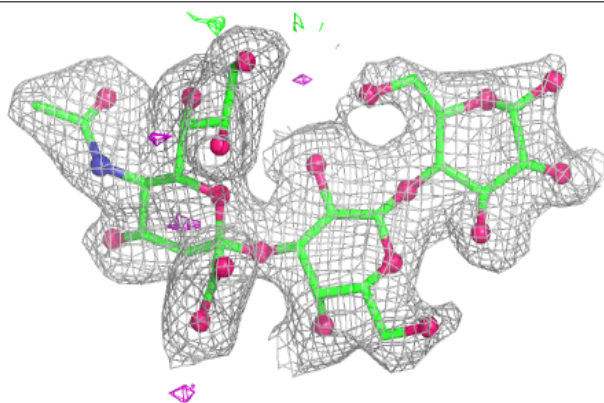


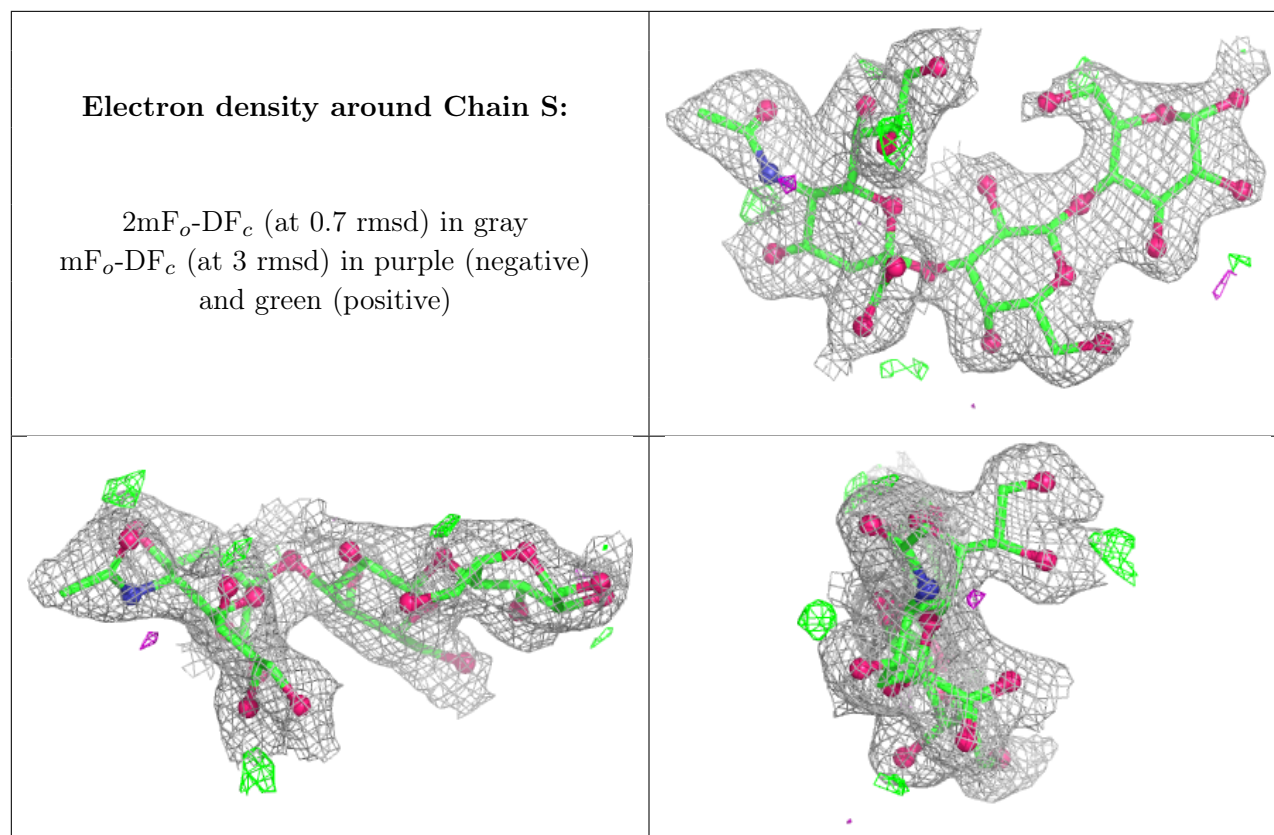
Electron density around Chain P:

$2mF_o-DF_c$ (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)





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($\text{\AA}^2$)	Q<0.9
7	MES	C	201	12/12	0.68	0.23	50,55,87,93	0
7	MES	G	201	12/12	0.69	0.23	53,59,82,82	0
7	MES	D	201	12/12	0.70	0.23	60,64,93,95	0
8	TRS	D	206	8/8	0.71	0.19	60,64,71,71	0
5	PEG	A	204	7/7	0.72	0.21	60,72,80,80	0
8	TRS	H	212	8/8	0.72	0.20	63,66,68,68	0
7	MES	B	201	12/12	0.75	0.16	42,54,69,79	0
5	PEG	E	207	7/7	0.78	0.19	47,52,60,60	0
5	PEG	G	203	7/7	0.79	0.14	33,39,41,44	0
5	PEG	H	207	7/7	0.80	0.19	40,52,65,65	0
6	CL	F	207	1/1	0.80	0.18	58,58,58,58	0
6	CL	G	206	1/1	0.81	0.18	68,68,68,68	0
5	PEG	G	204	7/7	0.82	0.16	51,62,74,74	0
7	MES	J	201	12/12	0.82	0.20	42,53,105,106	0

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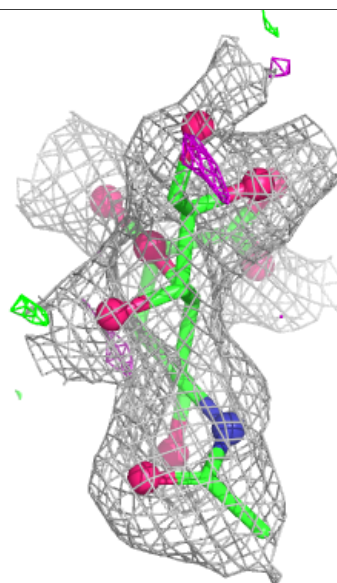
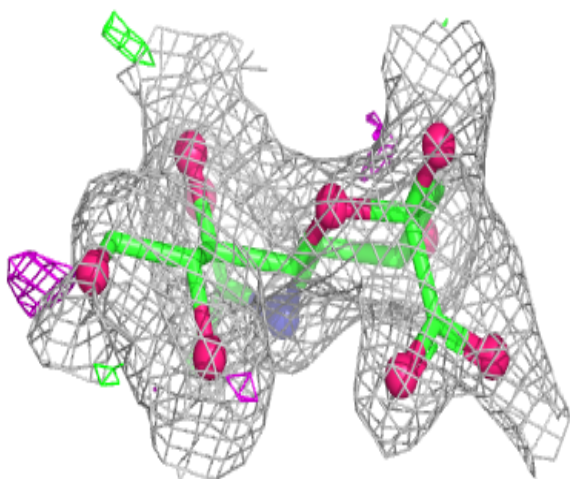
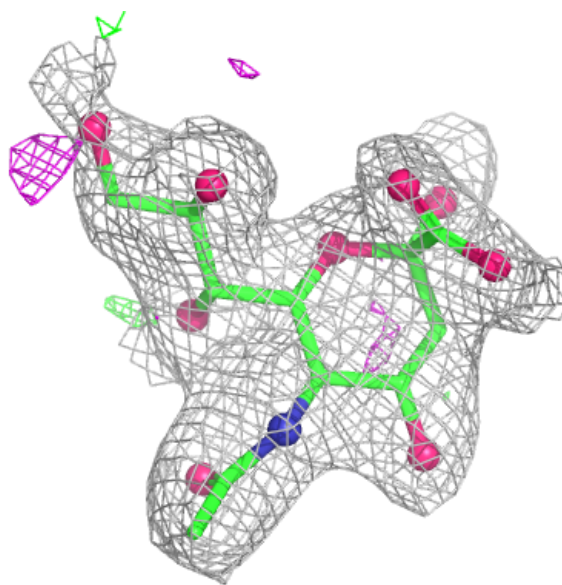
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
5	PEG	J	206	7/7	0.83	0.16	47,57,63,63	0
5	PEG	F	204	7/7	0.84	0.15	49,58,66,66	0
4	SIA	A	203	21/21	0.84	0.14	35,45,56,56	0
5	PEG	B	202	7/7	0.86	0.14	34,37,43,47	0
5	PEG	H	209	7/7	0.86	0.18	36,50,63,67	0
6	CL	J	207	1/1	0.87	0.11	62,62,62,62	0
6	CL	B	205	1/1	0.87	0.14	64,64,64,64	0
6	CL	A	208	1/1	0.87	0.20	53,53,53,53	0
6	CL	B	204	1/1	0.87	0.10	49,49,49,49	0
5	PEG	H	208	7/7	0.90	0.13	42,45,49,50	0
5	PEG	F	203	7/7	0.90	0.15	28,35,38,41	0
6	CL	A	206	1/1	0.91	0.11	58,58,58,58	0
5	PEG	F	202	7/7	0.91	0.11	22,36,36,39	0
7	MES	H	201	12/12	0.92	0.10	20,33,56,59	0
6	CL	A	205	1/1	0.92	0.10	57,57,57,57	0
6	CL	B	203	1/1	0.93	0.11	43,43,43,43	0
6	CL	D	205	1/1	0.93	0.16	46,46,46,46	0
6	CL	I	210	1/1	0.93	0.09	44,44,44,44	0
6	CL	F	205	1/1	0.93	0.09	50,50,50,50	0
6	CL	H	211	1/1	0.94	0.07	60,60,60,60	0
6	CL	I	207	1/1	0.94	0.16	53,53,53,53	0
6	CL	G	205	1/1	0.94	0.13	44,44,44,44	0
6	CL	J	208	1/1	0.95	0.12	47,47,47,47	0
6	CL	F	206	1/1	0.95	0.12	55,55,55,55	0
6	CL	I	209	1/1	0.95	0.10	47,47,47,47	0
9	CA	J	205	1/1	0.95	0.06	39,39,39,39	0
6	CL	H	210	1/1	0.96	0.08	48,48,48,48	0
9	CA	H	206	1/1	0.96	0.03	25,25,25,25	0
6	CL	C	205	1/1	0.96	0.05	40,40,40,40	0
9	CA	G	202	1/1	0.97	0.05	32,32,32,32	0
6	CL	A	207	1/1	0.97	0.05	39,39,39,39	0
9	CA	I	206	1/1	0.97	0.04	39,39,39,39	0
9	CA	E	206	1/1	0.97	0.05	44,44,44,44	0
6	CL	I	208	1/1	0.98	0.04	37,37,37,37	0
9	CA	F	201	1/1	0.98	0.04	32,32,32,32	0
9	CA	H	205	1/1	0.99	0.01	18,18,18,18	0
6	CL	E	208	1/1	0.99	0.04	34,34,34,34	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around SIA A 203:

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



6.5 Other polymers [i](#)

There are no such residues in this entry.