



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 08:50 AM UTC

PDB ID : 8T8S / pdb_00008t8s
Title : Sortilin-PGRN peptide complex
Authors : Srivastava, D.B.; Srivastava, A.; Cherf, G.M.; Low, L.Y.; Kannan, G.
Deposited on : 2023-06-23
Resolution : 2.99 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:

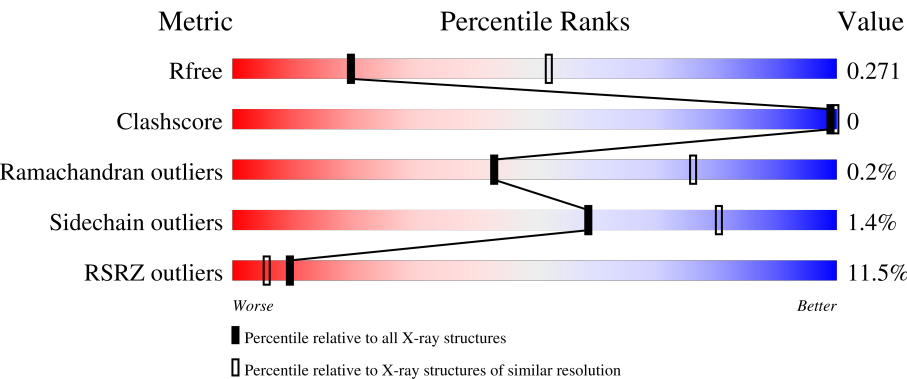
MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry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

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.99 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	2672 (3.00-3.00)
Clashscore	190562	2977 (3.00-3.00)
Ramachandran outliers	187476	2877 (3.00-3.00)
Sidechain outliers	187428	2880 (3.00-3.00)
RSRZ outliers	180081	2671 (3.00-3.00)

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	678	10% 91% 6%
1	B	678	10% 96% 6%
2	C	16	44% 94% 6%
2	D	16	44% 94% 6%
3	E	3	100%

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Mol	Chain	Length	Quality of chain
3	F	3	 100%
3	G	3	 100%
3	H	3	 33% 67%

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 10691 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.

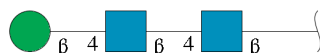
- Molecule 1 is a protein called Sortilin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	636	Total	C	N	O	S	99	0	0
			4995	3162	835	970	28			
1	B	664	Total	C	N	O	S	153	1	0
			5235	3307	879	1020	29			

- Molecule 2 is a protein called Paragranulin peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	C	16	Total	C	N	O	0	0	0
			135	87	27	21			
2	D	16	Total	C	N	O	8	0	0
			135	87	27	21			

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



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

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: C₈H₁₅NO₆).



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

- Molecule 5 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total	Cl	0	0
			1	1		
5	B	1	Total	Cl	0	0
			1	1		
5	C	1	Total	Cl	0	0
			1	1		

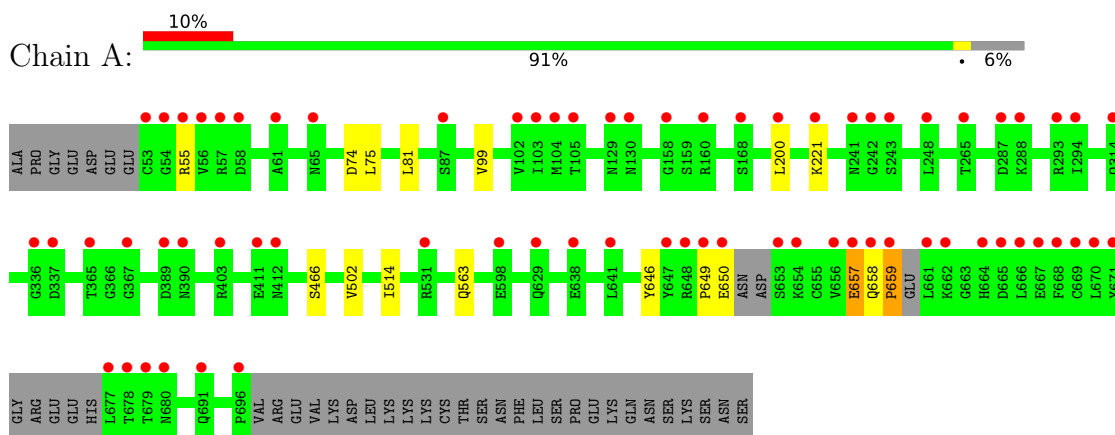
- Molecule 6 is water.

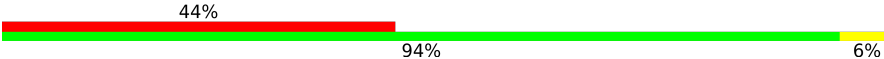
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	11	Total	O	0	0
			11	11		
6	B	4	Total	O	0	0
			4	4		
6	C	2	Total	O	0	0
			2	2		
6	D	1	Total	O	0	0
			1	1		

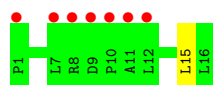
3 Residue-property plots [i](#)

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.

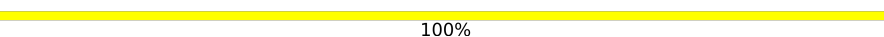
- Molecule 1: Sortilin



Chain D: 

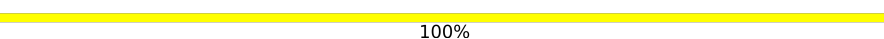


- Molecule 3: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain E: 

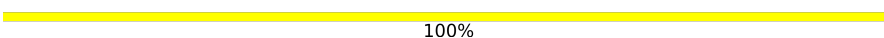


- Molecule 3: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain F: 



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

Chain G: 



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

Chain H: 



4 Data and refinement statistics

Property	Value	Source
Space group	P 31 2 1	Depositor
Cell constants a, b, c, α , β , γ	237.03Å 237.03Å 89.43Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	205.27 – 2.99 205.27 – 2.99	Depositor EDS
% Data completeness (in resolution range)	99.4 (205.27-2.99) 99.4 (205.27-2.99)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.30 (at 3.01Å)	Xtriage
Refinement program	REFMAC 5.8.0155	Depositor
R, R_{free}	0.234 , 0.275 0.237 , 0.271	Depositor DCC
R_{free} test set	504 reflections (0.86%)	wwPDB-VP
Wilson B-factor (Å ²)	65.0	Xtriage
Anisotropy	0.283	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.33 , 41.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.35$	Xtriage
Estimated twinning fraction	0.000 for -h,-k,l	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	10691	wwPDB-VP
Average B, all atoms (Å ²)	71.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.15% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.73	0/5113	0.90	3/6929 (0.0%)
1	B	0.74	0/5359	0.90	2/7261 (0.0%)
2	C	0.71	0/139	0.77	0/189
2	D	0.67	0/139	0.78	0/189
All	All	0.73	0/10750	0.90	5/14568 (0.0%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	55	ARG	N-CA-C	7.77	120.73	111.33
1	A	75	LEU	N-CA-C	5.73	120.01	113.19
1	B	597	TYR	N-CA-CB	-5.46	101.33	110.39
1	A	221	LYS	N-CA-C	5.22	119.55	112.04
1	B	75	LEU	N-CA-C	-5.04	101.54	109.25

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4995	0	4784	4	0
1	B	5235	0	5020	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	C	135	0	142	0	0
2	D	135	0	142	0	0
3	E	39	0	34	0	0
3	F	39	0	34	0	0
3	G	39	0	34	0	0
3	H	39	0	34	0	0
4	A	14	0	13	0	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0
5	C	1	0	0	0	0
6	A	11	0	0	0	0
6	B	4	0	0	0	0
6	C	2	0	0	0	0
6	D	1	0	0	0	0
All	All	10691	0	10237	7	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 0.

All (7) 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:A:658:GLN:O	1:A:659:PRO:C	2.51	0.53
1:A:646:TYR:CE2	1:A:657:GLU:HG2	2.45	0.52
1:B:377:LEU:HD11	1:B:589:ALA:HB1	1.95	0.48
1:A:502:VAL:HG13	1:A:514:ILE:HD11	1.99	0.45
1:B:502:VAL:HG13	1:B:514:ILE:HD11	1.99	0.44
1:B:150:VAL:HG11	1:B:187:MET:CE	2.51	0.41
1:A:74:ASP:HA	1:A:563:GLN:HA	2.03	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	628/678 (93%)	593 (94%)	34 (5%)	1 (0%)	43	76
1	B	663/678 (98%)	631 (95%)	31 (5%)	1 (0%)	43	76
2	C	14/16 (88%)	14 (100%)	0	0	100	100
2	D	14/16 (88%)	13 (93%)	1 (7%)	0	100	100
All	All	1319/1388 (95%)	1251 (95%)	66 (5%)	2 (0%)	43	76

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	366	GLY
1	A	649	PRO

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	553/592 (93%)	546 (99%)	7 (1%)	61	81
1	B	581/592 (98%)	574 (99%)	7 (1%)	63	82
2	C	14/14 (100%)	13 (93%)	1 (7%)	13	43
2	D	14/14 (100%)	13 (93%)	1 (7%)	13	43
All	All	1162/1212 (96%)	1146 (99%)	16 (1%)	59	80

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	81	LEU
1	A	99	VAL
1	A	200	LEU
1	A	466	SER
1	A	650	GLU
1	A	657	GLU

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Mol	Chain	Res	Type
1	A	659	PRO
1	B	81	LEU
1	B	99	VAL
1	B	198	LEU
1	B	200	LEU
1	B	392	ILE
1	B	593	ASP
1	B	596	ASP
2	C	12	LEU
2	D	15	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	192	GLN
1	A	232	ASN
1	A	437	GLN
1	B	130	ASN
1	B	295	HIS
1	B	658	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

12 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	NAG	E	1	1,3	14,14,15	0.48	0	17,19,21	1.06	1 (5%)
3	NAG	E	2	3	14,14,15	0.47	0	17,19,21	1.71	1 (5%)
3	BMA	E	3	3	11,11,12	0.45	0	15,15,17	0.87	1 (6%)
3	NAG	F	1	1,3	14,14,15	0.36	0	17,19,21	1.02	1 (5%)
3	NAG	F	2	3	14,14,15	0.57	0	17,19,21	1.59	3 (17%)
3	BMA	F	3	3	11,11,12	0.42	0	15,15,17	0.90	1 (6%)
3	NAG	G	1	1,3	14,14,15	0.51	0	17,19,21	1.30	2 (11%)
3	NAG	G	2	3	14,14,15	0.42	0	17,19,21	1.33	2 (11%)
3	BMA	G	3	3	11,11,12	0.71	0	15,15,17	1.15	2 (13%)
3	NAG	H	1	1,3	14,14,15	0.32	0	17,19,21	1.08	1 (5%)
3	NAG	H	2	3	14,14,15	0.41	0	17,19,21	1.03	2 (11%)
3	BMA	H	3	3	11,11,12	0.43	0	15,15,17	0.93	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
3	NAG	E	1	1,3	-	1/6/23/26	0/1/1/1
3	NAG	E	2	3	-	2/6/23/26	0/1/1/1
3	BMA	E	3	3	-	0/2/19/22	0/1/1/1
3	NAG	F	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	F	2	3	-	2/6/23/26	0/1/1/1
3	BMA	F	3	3	-	0/2/19/22	0/1/1/1
3	NAG	G	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	G	2	3	-	0/6/23/26	0/1/1/1
3	BMA	G	3	3	-	0/2/19/22	0/1/1/1
3	NAG	H	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	H	2	3	-	1/6/23/26	0/1/1/1
3	BMA	H	3	3	-	0/2/19/22	0/1/1/1

There are no bond length outliers.

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	E	2	NAG	C1-O5-C5	5.12	119.05	112.19
3	F	2	NAG	C4-C3-C2	3.85	116.66	111.02
3	G	1	NAG	C1-O5-C5	3.37	116.70	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	G	2	NAG	O5-C1-C2	-3.31	106.16	111.29
3	H	1	NAG	C1-O5-C5	2.93	116.12	112.19
3	E	3	BMA	C1-O5-C5	2.63	115.71	112.19
3	F	1	NAG	C1-O5-C5	2.57	115.63	112.19
3	G	3	BMA	C1-C2-C3	2.32	113.02	109.64
3	F	2	NAG	C2-N2-C7	2.30	125.98	122.90
3	G	3	BMA	C1-O5-C5	2.29	115.25	112.19
3	F	3	BMA	C1-O5-C5	2.27	115.22	112.19
3	G	2	NAG	C1-C2-N2	2.24	113.97	110.43
3	H	2	NAG	C1-O5-C5	2.22	115.16	112.19
3	E	1	NAG	C1-O5-C5	2.21	115.15	112.19
3	F	2	NAG	C1-O5-C5	2.19	115.13	112.19
3	H	2	NAG	O3-C3-C2	-2.09	105.06	109.40
3	G	1	NAG	O5-C1-C2	-2.04	108.13	111.29

There are no chirality outliers.

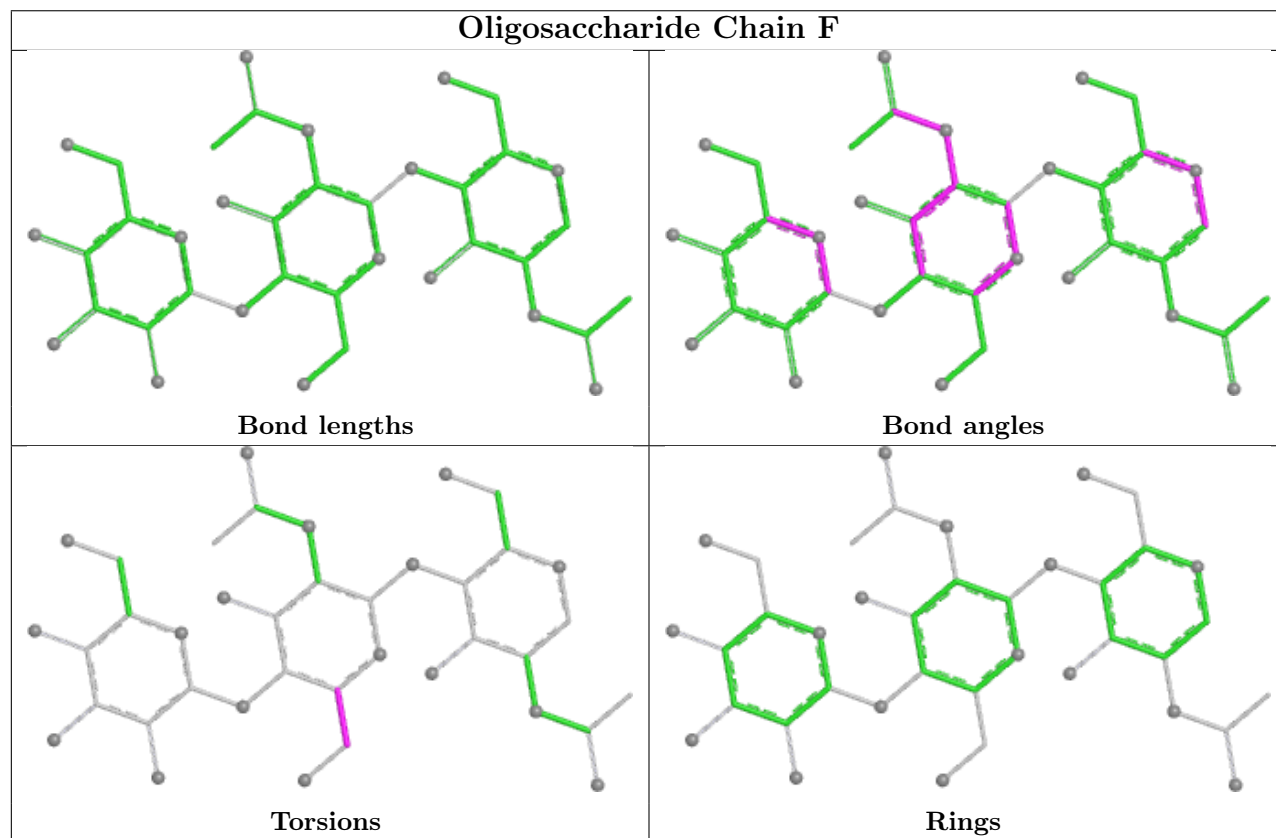
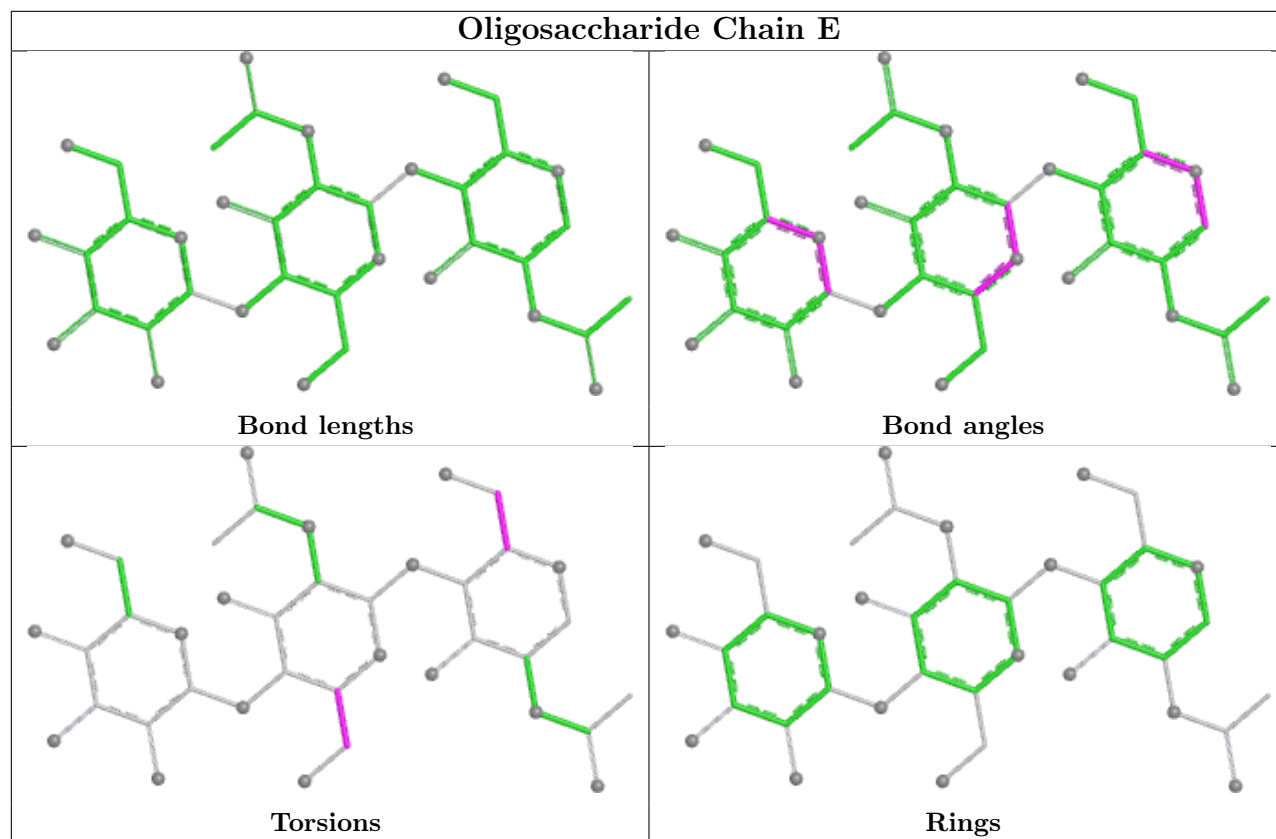
All (6) torsion outliers are listed below:

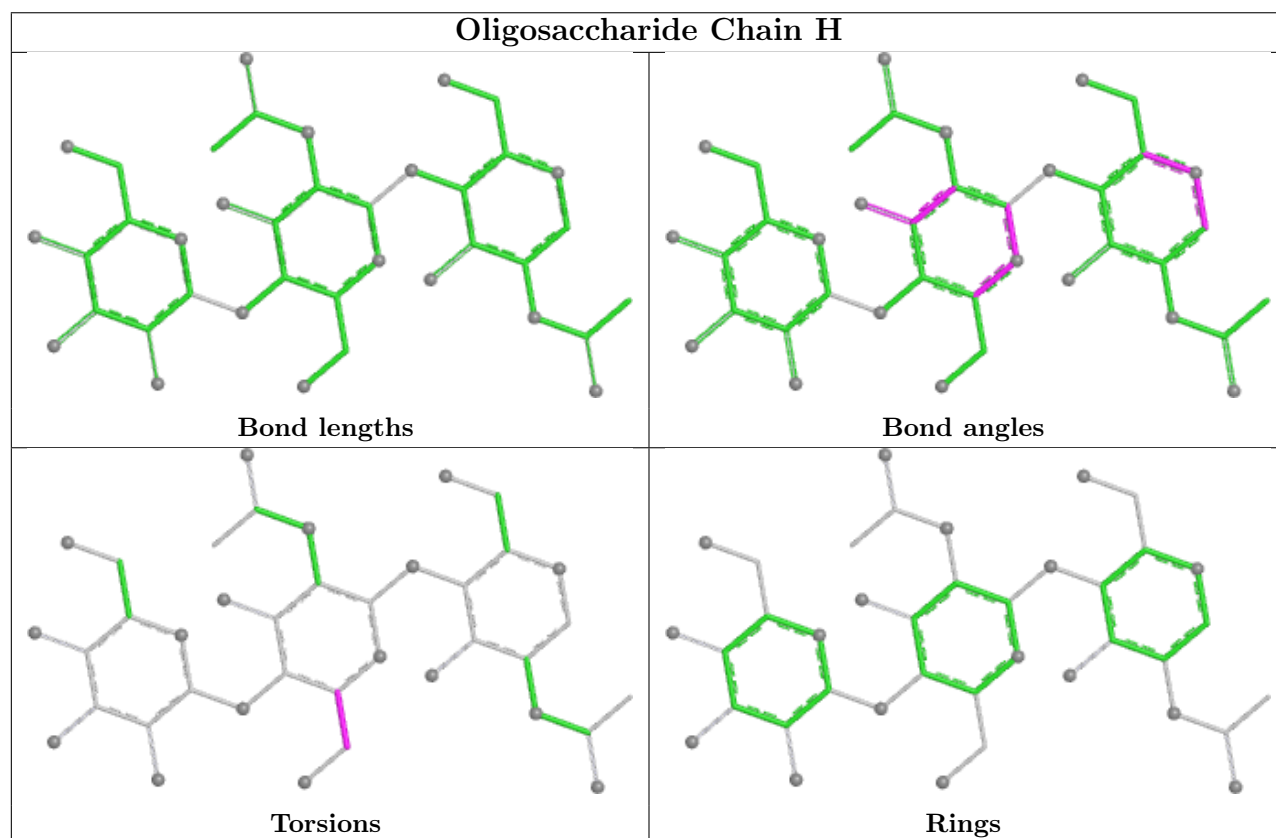
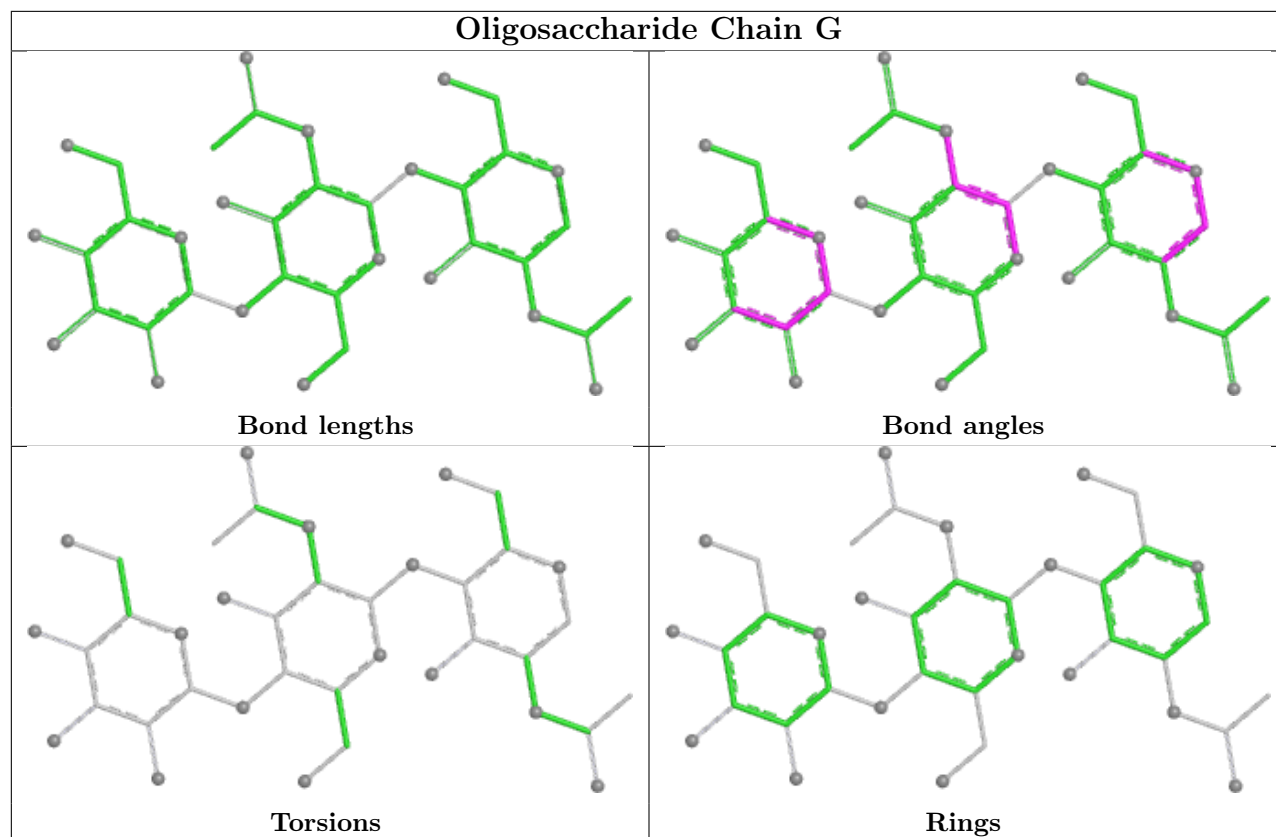
Mol	Chain	Res	Type	Atoms
3	F	2	NAG	O5-C5-C6-O6
3	F	2	NAG	C4-C5-C6-O6
3	E	2	NAG	C4-C5-C6-O6
3	E	2	NAG	O5-C5-C6-O6
3	E	1	NAG	O5-C5-C6-O6
3	H	2	NAG	C4-C5-C6-O6

There are no ring outliers.

No monomer is involved in short contacts.

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





5.6 Ligand geometry

Of 4 ligands modelled in this entry, 3 are monoatomic - leaving 1 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	$\# Z > 2$
4	NAG	A	801	1	14,14,15	0.50	0	17,19,21	1.61	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
4	NAG	A	801	1	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	801	NAG	O5-C1-C2	-4.70	104.01	111.29
4	A	801	NAG	C1-O5-C5	2.66	115.75	112.19

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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	636/678 (93%)	0.77	70 (11%) 10 6	32, 64, 113, 165	30 (4%)
1	B	664/678 (97%)	0.87	69 (10%) 11 6	22, 65, 103, 166	46 (6%)
2	C	16/16 (100%)	1.67	7 (43%) 0 1	51, 72, 128, 135	0
2	D	16/16 (100%)	1.71	7 (43%) 0 1	39, 82, 127, 128	2 (12%)
All	All	1332/1388 (95%)	0.84	153 (11%) 9 6	22, 65, 109, 166	78 (5%)

All (153) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	669	CYS	6.1
1	A	671	TYR	5.5
1	B	598[A]	GLU	5.5
1	A	56	VAL	5.3
1	B	697	VAL	5.0
1	B	103	ILE	4.9
2	C	7	LEU	4.9
1	A	677	LEU	4.6
1	A	653	SER	4.5
1	A	668	PHE	4.5
1	B	367	GLY	4.4
1	A	664	HIS	4.4
1	A	104	MET	4.3
1	A	679	THR	4.0
1	A	367	GLY	3.9
1	A	680	ASN	3.9
1	A	58	ASP	3.9
1	A	130	ASN	3.9
1	A	53	CYS	3.8
1	B	716	LYS	3.8
1	B	55	ARG	3.7

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Mol	Chain	Res	Type	RSRZ
1	A	696	PRO	3.7
1	B	97	PHE	3.7
1	A	411	GLU	3.6
1	B	241	ASN	3.6
2	C	10	PRO	3.6
1	A	658	GLN	3.6
1	B	364	THR	3.6
1	A	55	ARG	3.6
1	A	656	VAL	3.6
1	A	248	LEU	3.6
1	B	423	ASN	3.6
1	B	192	GLN	3.5
1	A	678	THR	3.5
1	B	242	GLY	3.4
1	A	661	LEU	3.4
1	B	596	ASP	3.4
1	A	129	ASN	3.4
1	B	56	VAL	3.4
1	B	100	PRO	3.4
2	C	12	LEU	3.3
1	B	412	ASN	3.3
1	A	389	ASP	3.3
1	B	77	GLY	3.3
2	C	11	ALA	3.2
2	D	11	ALA	3.2
1	B	262	SER	3.2
1	A	287	ASP	3.2
1	B	160	ARG	3.2
1	B	580	GLU	3.2
1	B	649	PRO	3.2
1	B	102	VAL	3.1
1	B	365	THR	3.1
1	B	54	GLY	3.1
1	A	160	ARG	3.0
1	A	666	LEU	3.0
1	B	699	GLU	3.0
1	B	363	THR	3.0
1	B	597	TYR	3.0
1	A	670	LEU	3.0
2	D	1	PRO	3.0
1	A	242	GLY	3.0
1	B	604	GLY	3.0

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Mol	Chain	Res	Type	RSRZ
1	B	311	SER	3.0
2	D	9	ASP	2.9
1	A	314	GLN	2.9
1	A	657	GLU	2.9
1	B	653	SER	2.9
1	A	598	GLU	2.9
1	A	662	LYS	2.9
1	A	265	THR	2.9
1	A	365	THR	2.8
1	A	293	ARG	2.8
1	B	269	LYS	2.8
1	A	241	ASN	2.8
1	A	641	LEU	2.8
1	A	659	PRO	2.7
1	A	57	ARG	2.7
1	A	667	GLU	2.7
1	B	424	GLU	2.7
1	A	243	SER	2.7
1	A	650	GLU	2.7
1	A	221	LYS	2.7
1	A	691	GLN	2.7
1	A	654	LYS	2.6
2	D	8	ARG	2.6
1	B	135	THR	2.6
1	B	634	LEU	2.6
1	A	288	LYS	2.6
1	A	390	ASN	2.6
1	B	362	TYR	2.6
1	B	691	GLN	2.6
1	B	413	SER	2.5
1	A	102	VAL	2.5
2	C	8	ARG	2.5
1	B	219	ILE	2.5
1	A	647	TYR	2.5
1	B	196	TYR	2.5
1	A	629	GLN	2.5
1	B	575	LEU	2.4
1	A	87	SER	2.4
1	A	61	ALA	2.4
1	B	333	ASP	2.4
2	C	6	PRO	2.4
1	B	366	GLY	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	403	ARG	2.4
1	B	546	ARG	2.4
1	B	562	SER	2.4
1	B	155	VAL	2.4
1	A	665	ASP	2.4
2	C	9	ASP	2.4
1	A	412	ASN	2.3
1	A	336	GLY	2.3
1	B	589	ALA	2.3
1	B	275	LEU	2.3
2	D	7	LEU	2.3
2	D	12	LEU	2.3
1	B	98	HIS	2.3
1	B	99	VAL	2.3
1	B	208	VAL	2.3
1	B	232	ASN	2.3
1	A	337	ASP	2.3
1	A	105	THR	2.3
1	A	54	GLY	2.3
1	B	525	GLN	2.2
1	A	103	ILE	2.2
1	A	294	ILE	2.2
1	A	531	ARG	2.2
1	A	168	SER	2.2
1	A	649	PRO	2.2
1	B	221	LYS	2.2
1	A	65	ASN	2.2
1	A	158	GLY	2.2
1	A	638	GLU	2.2
1	B	650	GLU	2.2
1	B	65	ASN	2.2
1	B	325	ASP	2.2
1	B	101	LEU	2.1
1	B	286	ALA	2.1
2	D	10	PRO	2.1
1	B	701	LYS	2.1
1	A	200	LEU	2.1
1	B	53	CYS	2.1
1	B	265	THR	2.1
1	B	411	GLU	2.1
1	B	487	GLU	2.1
1	B	638	GLU	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	259	LEU	2.1
1	B	158	GLY	2.1
1	A	648	ARG	2.1
1	B	674	GLU	2.1
1	B	187	MET	2.0
1	B	104	MET	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](#)

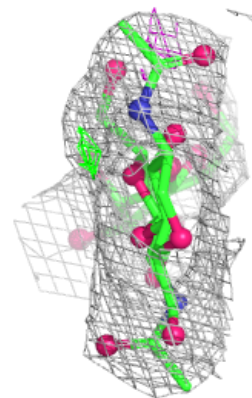
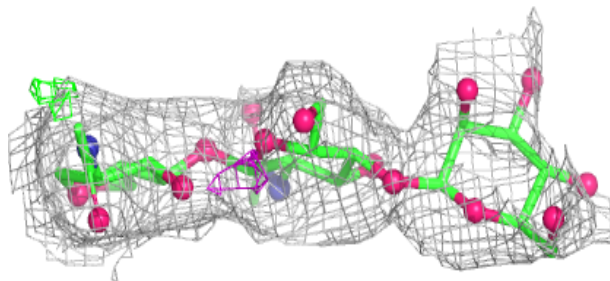
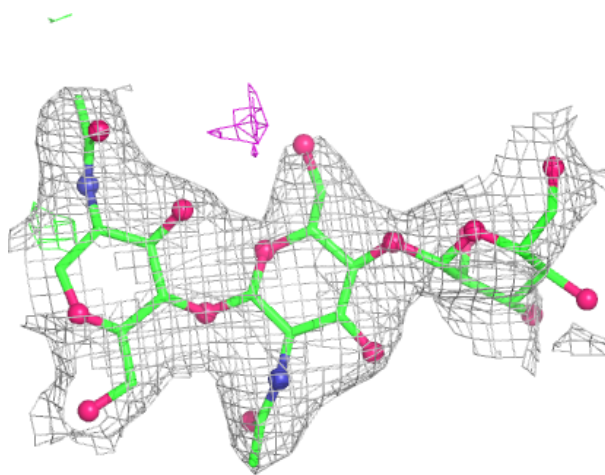
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q<0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	BMA	F	3	11/12	0.36	0.19	122,141,149,149	0
3	BMA	E	3	11/12	0.40	0.18	120,134,151,152	0
3	BMA	G	3	11/12	0.42	0.17	130,134,147,148	0
3	BMA	H	3	11/12	0.44	0.19	120,129,146,149	0
3	NAG	G	2	14/15	0.83	0.15	78,88,102,124	0
3	NAG	E	2	14/15	0.84	0.14	69,84,107,124	0
3	NAG	H	2	14/15	0.85	0.15	69,80,93,114	0
3	NAG	F	2	14/15	0.85	0.16	71,85,102,122	0
3	NAG	G	1	14/15	0.91	0.10	55,71,79,84	0
3	NAG	E	1	14/15	0.94	0.09	56,64,67,67	0
3	NAG	F	1	14/15	0.97	0.07	35,39,46,56	0
3	NAG	H	1	14/15	0.97	0.09	48,56,62,63	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.

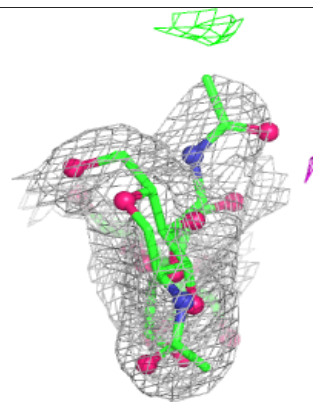
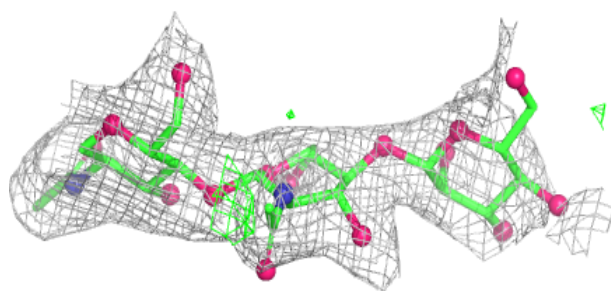
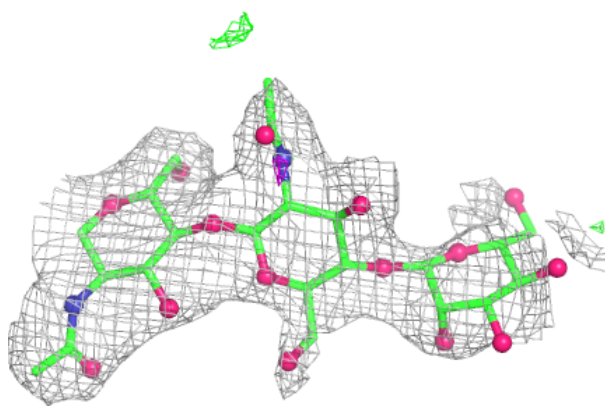
Electron density around Chain E:

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

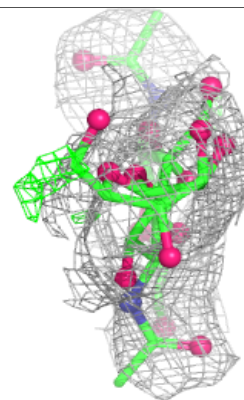
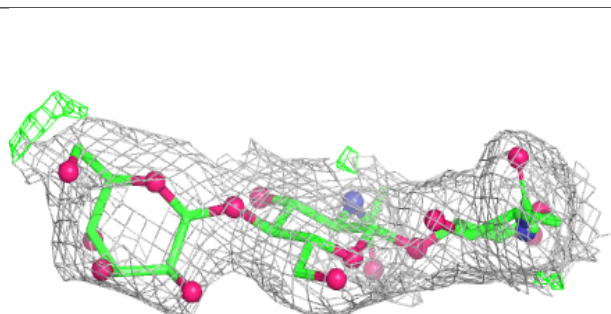
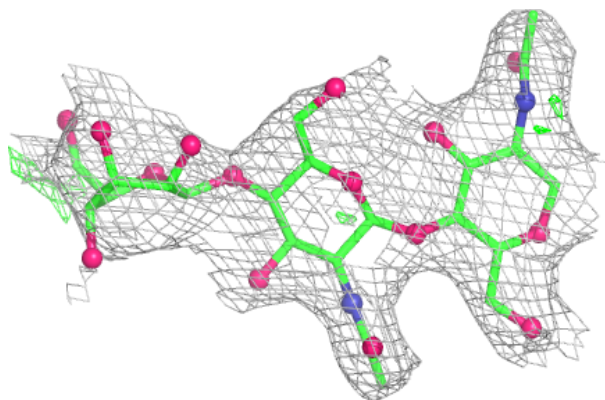


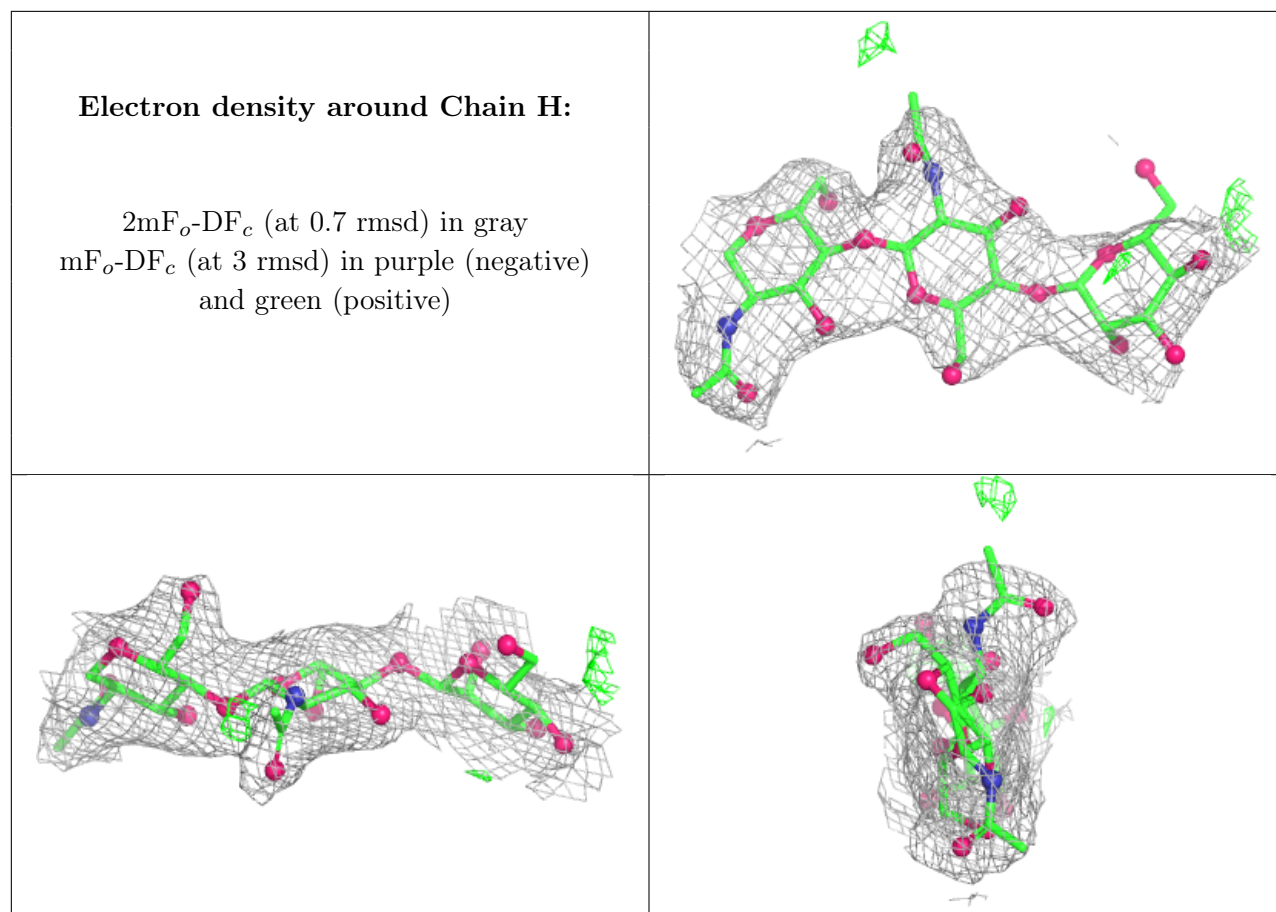
Electron density around Chain F:

$2mF_o-DF_c$ (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)





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
4	NAG	A	801	14/15	0.69	0.23	79,118,140,142	0
5	CL	A	802	1/1	0.93	0.10	74,74,74,74	0
5	CL	B	801	1/1	0.94	0.10	63,63,63,63	0
5	CL	C	101	1/1	0.98	0.07	60,60,60,60	0

6.5 Other polymers [i](#)

There are no such residues in this entry.