Full wwPDB X-ray Structure Validation Report ⓘ

Aug 9, 2020 – 09:17 AM BST

PDB ID	:	1UN1
Title	:	Xyloglucan endotransglycosylase native structure.
Authors	:	Johansson, P.; Brumer, H.; Kallas, A.; Henriksson, H.; Denman, S.; Teeri, T.T.; Jones, T.A.
Deposited on	:	2003-09-03
Resolution	:	2.10 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 following versions of software and data (see references ①) were used in the production of this report:

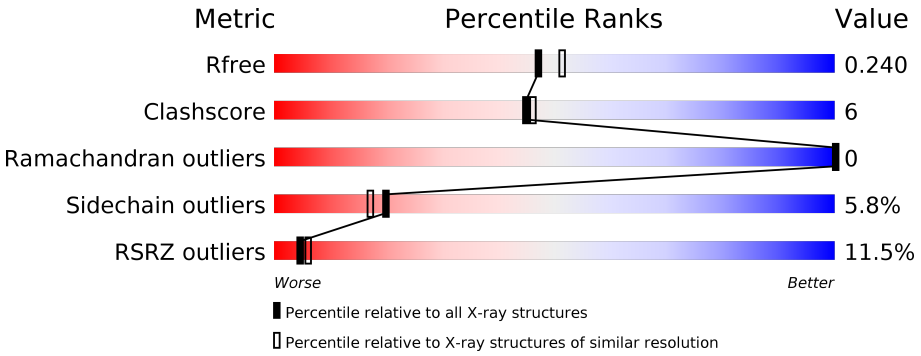
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.13.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.10 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	5197 (2.10-2.10)
Clashscore	141614	5710 (2.10-2.10)
Ramachandran outliers	138981	5647 (2.10-2.10)
Sidechain outliers	138945	5648 (2.10-2.10)
RSRZ outliers	127900	5083 (2.10-2.10)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	278	14% 83% 12%
1	B	278	8% 76% 16% 5%
2	C	3	33% 33% 33%
2	D	3	33% 67%

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 crite-

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	AU	B	1276	-	-	X	-

2 Entry composition

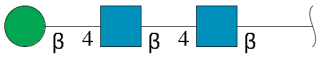
There are 4 unique types of molecules in this entry. The entry contains 4695 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 XYLOGLUCAN ENDOTRANSGLYCOSYLASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	267	Total	C	N	O	S	27	0	0
			2220	1432	373	404	11			
1	B	264	Total	C	N	O	S	12	1	0
			2206	1426	371	398	11			

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



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

- Molecule 3 is GOLD ION (three-letter code: AU) (formula: Au).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	1	Total	Au	0	0
			1	1		

- Molecule 4 is water.

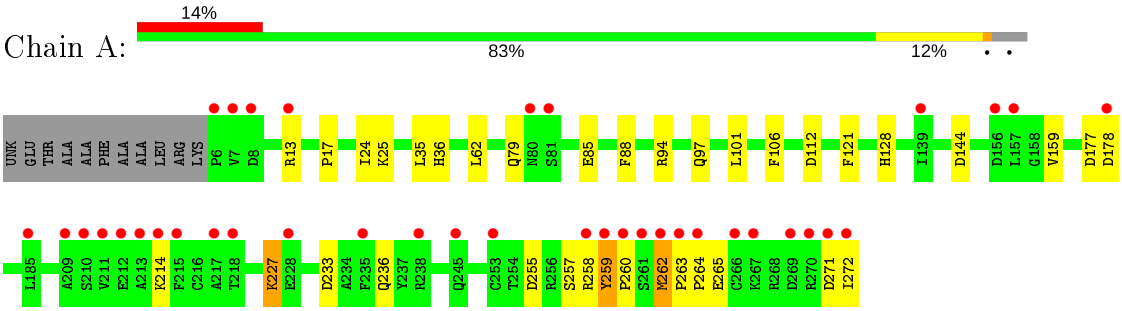
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	87	Total	O	0	0
			87	87		
4	B	103	Total	O	0	0
			103	103		

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.

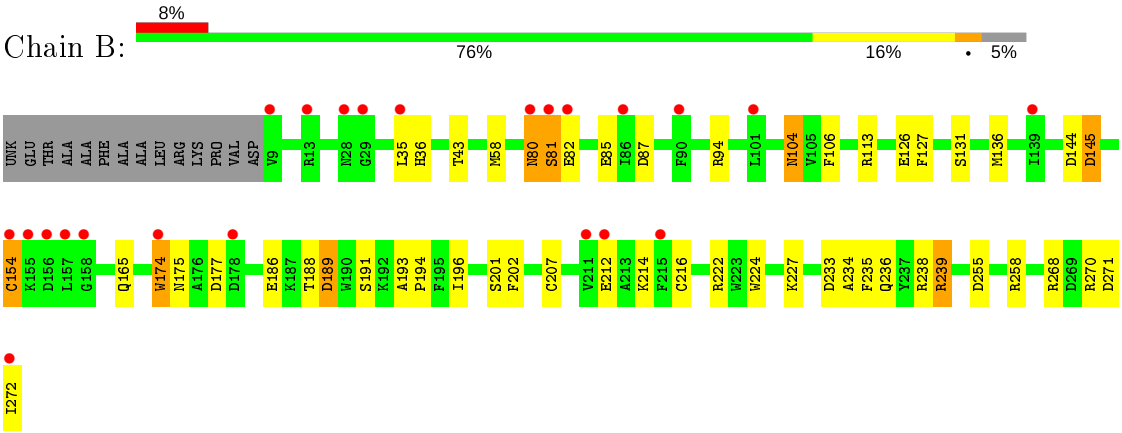
• Molecule 1: XYLOGLUCAN ENDOTRANSGLYCOSYLASE

Chain A:



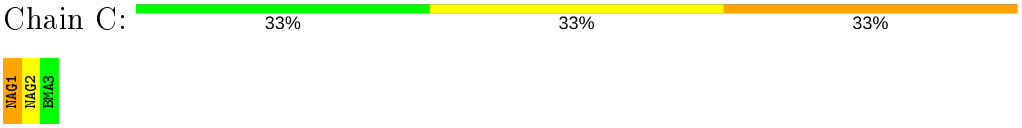
• Molecule 1: XYLOGLUCAN ENDOTRANSGLYCOSYLASE

Chain B:



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

Chain C:



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

Chain D:


NAG1
NAG2
BMA3

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 63	Depositor
Cell constants a, b, c, α, β, γ	188.76Å 188.76Å 45.97Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	24.77 – 2.10 24.93 – 2.10	Depositor EDS
% Data completeness (in resolution range)	99.9 (24.77-2.10) 99.9 (24.93-2.10)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.16 (at 2.10Å)	Xtriage
Refinement program	REFMAC 5.1.19	Depositor
R, R_{free}	0.206 , 0.232 0.215 , 0.240	Depositor DCC
R_{free} test set	2799 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å^2)	30.3	Xtriage
Anisotropy	0.343	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.40 , 59.5	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	0.021 for h,-h-k,-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	4695	wwPDB-VP
Average B, all atoms (Å^2)	40.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.91% 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: BMA, AU, 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	0.65	0/2293	0.85	8/3104 (0.3%)
1	B	0.67	0/2285	0.86	9/3095 (0.3%)
All	All	0.66	0/4578	0.86	17/6199 (0.3%)

There are no bond length outliers.

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	239	ARG	NE-CZ-NH1	7.08	123.84	120.30
1	A	94	ARG	NE-CZ-NH2	-6.86	116.87	120.30
1	B	145	ASP	CB-CG-OD1	6.71	124.34	118.30
1	A	144	ASP	CB-CG-OD2	5.96	123.66	118.30
1	B	189	ASP	CB-CG-OD1	5.78	123.50	118.30
1	B	144	ASP	CB-CG-OD2	5.72	123.45	118.30
1	A	227	LYS	N-CA-CB	-5.71	100.33	110.60
1	B	258	ARG	NE-CZ-NH2	-5.56	117.52	120.30
1	A	112	ASP	CB-CG-OD2	5.40	123.16	118.30
1	B	271	ASP	CB-CG-OD2	5.39	123.15	118.30
1	A	227	LYS	CB-CA-C	5.32	121.05	110.40
1	B	258	ARG	NE-CZ-NH1	5.17	122.88	120.30
1	A	271	ASP	CB-CG-OD2	5.14	122.93	118.30
1	A	94	ARG	NE-CZ-NH1	5.10	122.85	120.30
1	A	255	ASP	CB-CG-OD2	5.07	122.86	118.30
1	B	255	ASP	CB-CG-OD2	5.06	122.85	118.30
1	B	239	ARG	NE-CZ-NH2	-5.00	117.80	120.30

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	2220	0	2085	29	0
1	B	2206	0	2070	27	0
2	C	39	0	34	2	0
2	D	39	0	34	0	0
3	B	1	0	0	2	0
4	A	87	0	0	2	1
4	B	103	0	0	1	1
All	All	4695	0	4223	56	1

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 6.

All (56) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:154:CYS:SG	3:B:1276:AU:AU	1.62	1.25
1:B:154:CYS:SG	1:B:268:ARG:NH1	2.14	1.19
1:A:260:PRO:O	4:A:2083:HOH:O	1.67	1.09
1:B:154:CYS:SG	1:B:268:ARG:HD2	2.05	0.97
1:B:207:CYS:HG	1:B:216:CYS:HG	0.92	0.92
1:A:262:MET:HE3	1:A:263:PRO:C	1.99	0.81
1:A:121:PHE:CE1	1:A:128:HIS:CD2	2.71	0.79
1:A:262:MET:HE3	1:A:262:MET:C	2.03	0.79
1:B:104:ASN:HD21	1:B:113:ARG:H	1.40	0.70
1:A:262:MET:HG2	1:A:263:PRO:HD2	1.74	0.69
1:B:80:ASN:HD22	1:B:80:ASN:H	1.41	0.67
1:A:25:LYS:NZ	1:A:36:HIS:CE1	2.66	0.64
1:A:262:MET:HE3	1:A:262:MET:O	1.98	0.63
1:A:121:PHE:CD1	1:A:128:HIS:CD2	2.86	0.63
1:A:25:LYS:HZ2	1:A:36:HIS:CE1	2.17	0.63
1:B:36:HIS:CD2	1:B:196:ILE:HG12	2.35	0.61
1:A:17:PRO:HB3	1:A:24:ILE:HD12	1.86	0.58
1:A:262:MET:CE	1:A:263:PRO:O	2.51	0.58
1:A:262:MET:HE3	1:A:263:PRO:O	2.05	0.56
1:B:233:ASP:H	1:B:236:GLN:HE21	1.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:262:MET:CE	1:A:262:MET:C	2.74	0.55
1:A:62:LEU:HD12	4:A:2048:HOH:O	2.06	0.55
1:A:97:GLN:NE2	2:C:1:NAG:O6	2.41	0.54
1:A:97:GLN:HE21	2:C:1:NAG:C6	2.21	0.54
1:A:262:MET:HG2	1:A:263:PRO:CD	2.37	0.54
1:A:262:MET:CE	1:A:262:MET:O	2.55	0.54
1:A:262:MET:CE	1:A:263:PRO:C	2.74	0.53
1:B:174[A]:TRP:HD1	4:B:2068:HOH:O	1.91	0.53
1:B:35:LEU:HG	1:B:43:THR:HG23	1.91	0.52
1:B:81:SER:O	1:B:82:GLU:HB2	2.11	0.51
1:B:154:CYS:HG	3:B:1276:AU:AU	0.45	0.50
1:A:259:TYR:CE1	1:A:263:PRO:HG3	2.46	0.50
1:B:222:ARG:HG3	1:B:224:TRP:CZ2	2.47	0.50
1:B:234:ALA:O	1:B:238:ARG:HG3	2.12	0.49
1:B:207:CYS:CB	1:B:216:CYS:HG	2.26	0.48
1:A:88:PHE:HD2	1:A:101:LEU:HD11	1.79	0.48
1:A:262:MET:HE3	1:A:263:PRO:N	2.27	0.48
1:B:80:ASN:ND2	1:B:165:GLN:OE1	2.41	0.48
1:B:126:GLU:HG3	1:B:127:PHE:N	2.29	0.48
1:B:189:ASP:OD1	1:B:191:SER:OG	2.32	0.47
1:B:235:PHE:O	1:B:239:ARG:HD2	2.14	0.47
1:B:80:ASN:N	1:B:80:ASN:HD22	2.11	0.46
1:A:121:PHE:CD1	1:A:128:HIS:NE2	2.85	0.44
1:B:233:ASP:H	1:B:236:GLN:NE2	2.15	0.44
1:A:233:ASP:H	1:A:236:GLN:HE21	1.66	0.44
1:B:175:ASN:ND2	1:B:188:THR:OG1	2.51	0.43
1:B:94:ARG:HD2	1:B:186:GLU:OE1	2.19	0.43
1:A:159:VAL:HG21	1:A:264:PRO:HB2	2.00	0.43
1:A:24:ILE:HG12	1:A:35:LEU:HD22	2.00	0.43
1:A:85:GLU:HB3	1:A:106:PHE:HB2	2.00	0.42
1:B:201:SER:O	1:B:202:PHE:C	2.59	0.41
1:B:193:ALA:HB1	1:B:194:PRO:HA	2.03	0.41
1:A:259:TYR:CZ	1:A:263:PRO:HG3	2.56	0.41
1:B:85:GLU:HB3	1:B:106:PHE:HB2	2.02	0.41
1:A:262:MET:HE1	1:A:264:PRO:HA	2.03	0.41
1:B:85:GLU:OE2	1:B:87:ASP:OD1	2.39	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:2014:HOH:O	4:B:2096:HOH:O[6_655]	1.93	0.27

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	265/278 (95%)	251 (95%)	14 (5%)	0	100	100
1	B	263/278 (95%)	252 (96%)	11 (4%)	0	100	100
All	All	528/556 (95%)	503 (95%)	25 (5%)	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	235/241 (98%)	223 (95%)	12 (5%)	24	22
1	B	233/241 (97%)	217 (93%)	16 (7%)	15	12
All	All	468/482 (97%)	440 (94%)	28 (6%)	20	16

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	ARG
1	A	79	GLN
1	A	177	ASP

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Mol	Chain	Res	Type
1	A	178	ASP
1	A	214	LYS
1	A	227	LYS
1	A	257	SER
1	A	258	ARG
1	A	259	TYR
1	A	262	MET
1	A	265	GLU
1	A	272	ILE
1	B	58	MET
1	B	80	ASN
1	B	81	SER
1	B	104	ASN
1	B	131	SER
1	B	136	MET
1	B	145	ASP
1	B	154	CYS
1	B	174[A]	TRP
1	B	174[B]	TRP
1	B	177	ASP
1	B	212	GLU
1	B	214	LYS
1	B	227	LYS
1	B	270	ARG
1	B	272	ILE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	36	HIS
1	A	46	GLN
1	A	97	GLN
1	A	128	HIS
1	A	175	ASN
1	A	236	GLN
1	B	36	HIS
1	B	79	GLN
1	B	97	GLN
1	B	104	ASN
1	B	175	ASN
1	B	219	GLN
1	B	236	GLN

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Mol	Chain	Res	Type
1	B	245	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

6 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	C	1	1,2	14,14,15	0.64	0	17,19,21	1.41	1 (5%)
2	NAG	C	2	2	14,14,15	0.81	1 (7%)	17,19,21	1.31	1 (5%)
2	BMA	C	3	2	11,11,12	0.59	0	15,15,17	0.94	0
2	NAG	D	1	1,2	14,14,15	0.51	0	17,19,21	1.22	2 (11%)
2	NAG	D	2	2	14,14,15	0.73	0	17,19,21	0.75	0
2	BMA	D	3	2	11,11,12	0.73	0	15,15,17	1.34	4 (26%)

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	C	1	1,2	-	2/6/23/26	0/1/1/1
2	NAG	C	2	2	-	0/6/23/26	0/1/1/1
2	BMA	C	3	2	-	0/2/19/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	D	1	1,2	-	1/6/23/26	0/1/1/1
2	NAG	D	2	2	-	0/6/23/26	0/1/1/1
2	BMA	D	3	2	-	0/2/19/22	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	2	NAG	O5-C1	-2.11	1.40	1.43

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	C	2	NAG	O5-C1-C2	-3.82	105.26	111.29
2	C	1	NAG	O5-C1-C2	-3.80	105.28	111.29
2	D	1	NAG	O5-C1-C2	-2.81	106.85	111.29
2	D	3	BMA	C1-O5-C5	2.40	115.44	112.19
2	D	3	BMA	C3-C4-C5	2.33	114.40	110.24
2	D	3	BMA	C6-C5-C4	-2.24	107.76	113.00
2	D	3	BMA	C1-C2-C3	2.08	112.22	109.67
2	D	1	NAG	O6-C6-C5	-2.04	104.28	111.29

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	1	NAG	C1-C2-N2-C7
2	C	1	NAG	C3-C2-N2-C7
2	D	1	NAG	C3-C2-N2-C7

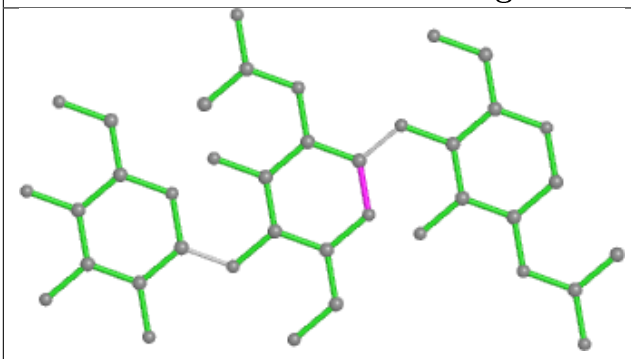
There are no ring outliers.

1 monomer is involved in 2 short contacts:

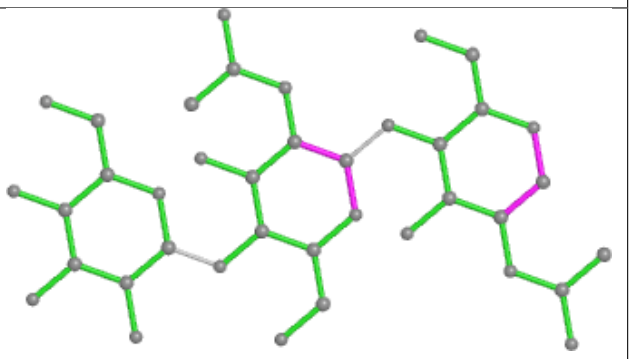
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	1	NAG	2	0

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

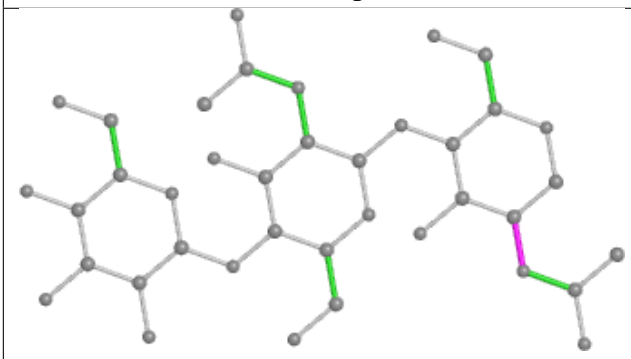
Oligosaccharide Chain C



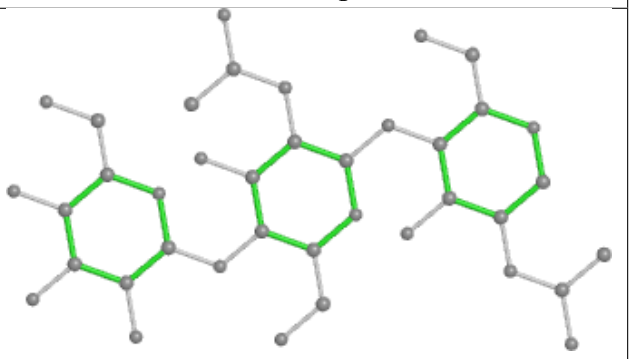
Bond lengths



Bond angles

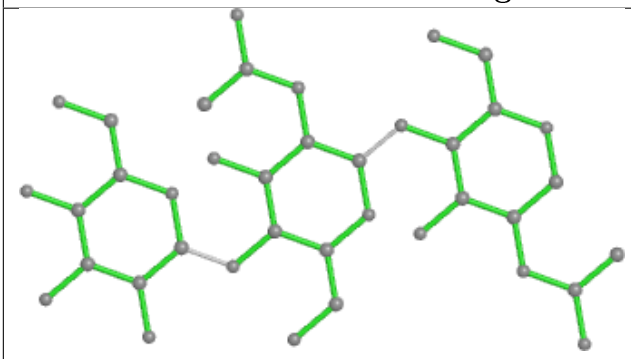


Torsions

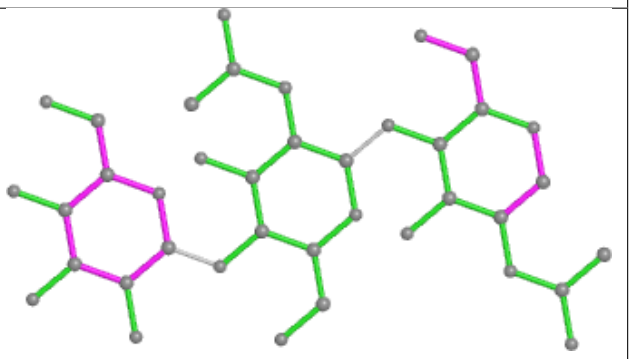


Rings

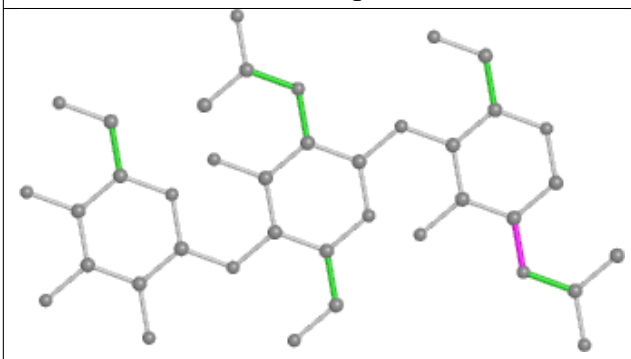
Oligosaccharide Chain D



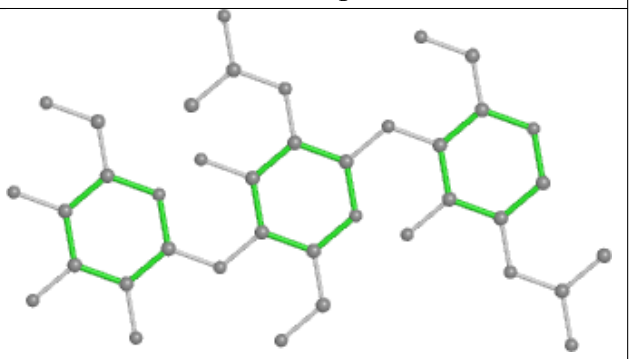
Bond lengths



Bond angles



Torsions



Rings

5.6 Ligand geometry

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

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, 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	267/278 (96%)	0.62	38 (14%) 2 3	23, 38, 77, 86	7 (2%)
1	B	264/278 (94%)	0.33	23 (8%) 10 13	23, 38, 54, 63	3 (1%)
All	All	531/556 (95%)	0.48	61 (11%) 4 6	23, 38, 63, 86	10 (1%)

All (61) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	272	ILE	10.8
1	A	211	VAL	9.6
1	B	9	VAL	7.6
1	B	154	CYS	7.3
1	A	262	MET	6.2
1	A	259	TYR	6.1
1	A	212	GLU	5.9
1	A	215	PHE	5.8
1	A	210	SER	5.6
1	B	156	ASP	5.1
1	A	7	VAL	4.8
1	B	174[A]	TRP	4.8
1	A	6	PRO	4.6
1	A	213	ALA	4.5
1	A	261	SER	4.5
1	A	214	LYS	4.4
1	A	8	ASP	4.3
1	A	156	ASP	4.2
1	A	266	CYS	3.9
1	A	217	ALA	3.9
1	A	80	ASN	3.8
1	A	81	SER	3.7
1	A	271	ASP	3.7
1	A	270	ARG	3.7

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Mol	Chain	Res	Type	RSRZ
1	B	157	LEU	3.6
1	A	235	PHE	3.5
1	A	253	CYS	3.5
1	B	272	ILE	3.5
1	B	13	ARG	3.3
1	B	28	ASN	3.2
1	B	81	SER	3.1
1	B	80	ASN	3.1
1	A	260	PRO	3.0
1	A	263	PRO	2.9
1	A	157	LEU	2.8
1	A	269	ASP	2.8
1	B	158	GLY	2.8
1	B	155	LYS	2.8
1	A	245	GLN	2.7
1	A	264	PRO	2.7
1	B	211	VAL	2.7
1	A	139	ILE	2.5
1	B	101	LEU	2.5
1	A	13	ARG	2.5
1	A	238	ARG	2.5
1	A	178	ASP	2.5
1	A	267	LYS	2.4
1	B	178	ASP	2.4
1	A	228	GLU	2.4
1	B	215	PHE	2.3
1	A	185	LEU	2.3
1	B	139	ILE	2.2
1	B	29	GLY	2.2
1	A	218	THR	2.2
1	B	86	ILE	2.2
1	B	82	GLU	2.2
1	B	90	PHE	2.2
1	B	212	GLU	2.2
1	B	35	LEU	2.1
1	A	209	ALA	2.1
1	A	258	ARG	2.1

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)

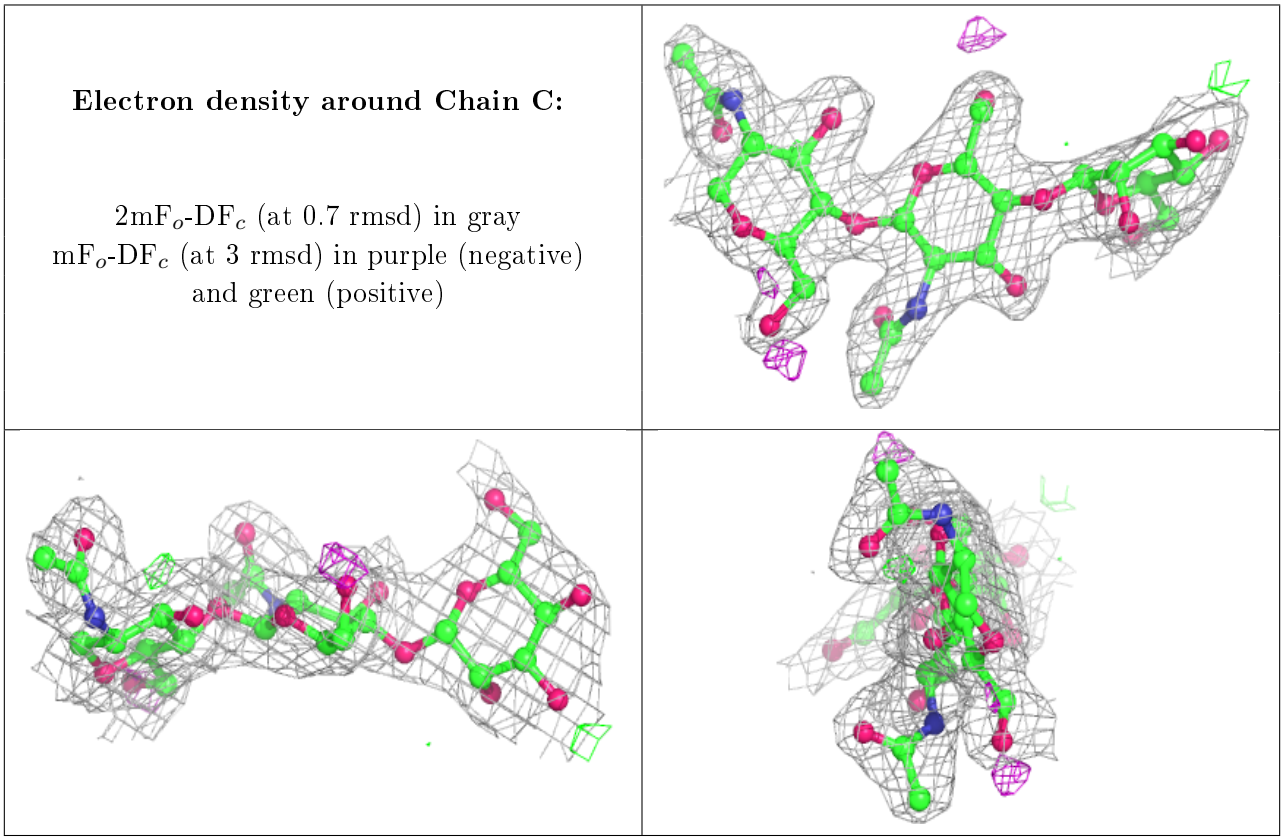
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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	BMA	D	3	11/12	0.86	0.21	49,53,57,57	0
2	BMA	C	3	11/12	0.87	0.26	60,62,64,65	0
2	NAG	D	2	14/15	0.88	0.17	38,41,44,46	0
2	NAG	C	1	14/15	0.90	0.11	36,39,43,43	0
2	NAG	C	2	14/15	0.91	0.15	44,47,51,56	0
2	NAG	D	1	14/15	0.95	0.09	31,33,39,40	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.

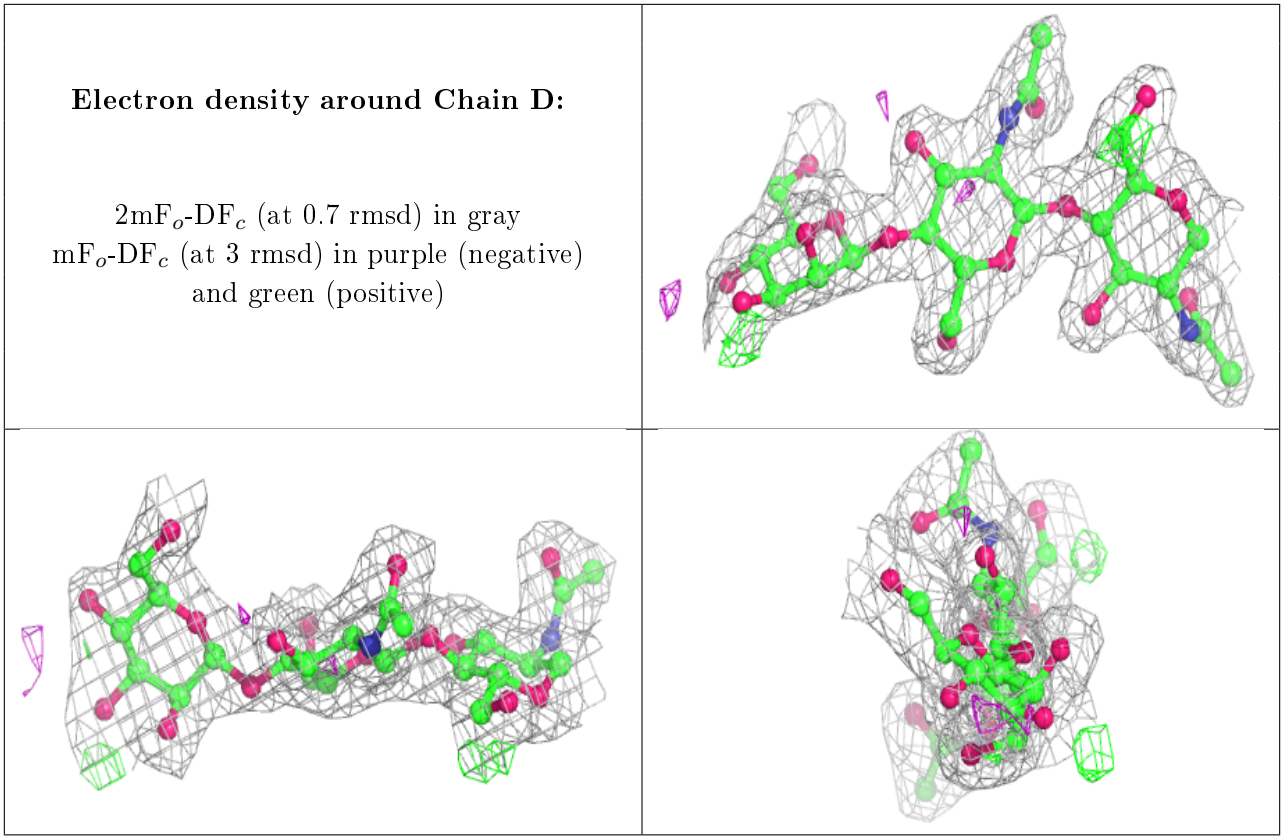
Electron density around Chain C:

$2mF_o$-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 D:

$2mF_o$-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
3	AU	B	1276	1/1	0.84	0.39	84,84,84,84	0

6.5 Other polymers

There are no such residues in this entry.