Full wwPDB X-ray Structure Validation Report ⓘ

Nov 9, 2024 – 12:12 pm GMT

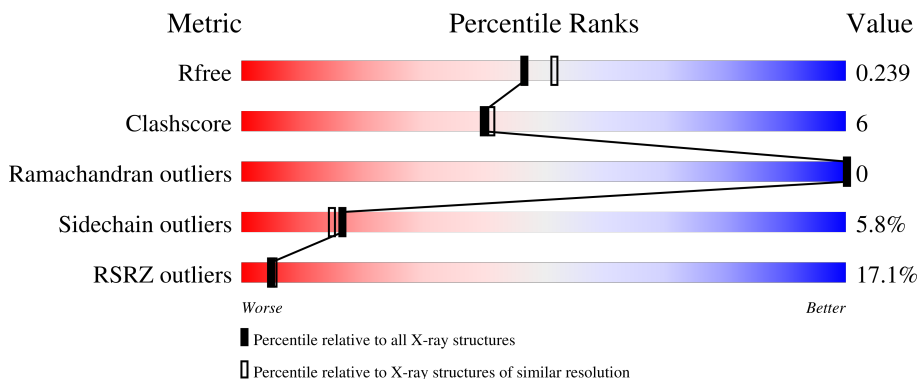|		
PDB ID	:	1UN1
Title	:	Xyloglucan endotransglycosylase native structure.
Authors	:	Johansson, P.; Brumer, H.; Kallas, A.; Henriksson, H.; Denman, S.; Teeri, T.T.; Jones, T.A.
Deposited on	:	2003-09-03
Resolution	:	2.10 Å(reported)

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 2.10 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	Percentile Ranks	Value
Rfree		0.239
Clashscore		6
Ramachandran outliers		0
Sidechain outliers		5.8%
RSRZ outliers		17.1%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	6234 (2.10-2.10)
Clashscore	180529	6893 (2.10-2.10)
Ramachandran outliers	177936	6839 (2.10-2.10)
Sidechain outliers	177891	6840 (2.10-2.10)
RSRZ outliers	164620	6234 (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 of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	278	20% / 83% / 12% · ·
1	B	278	13% / 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 criteria:

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

2 Entry composition (i)

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 2220	C 1432	N 373	O 404	S 11	27	0	0
1	B	264	Total 2206	C 1426	N 371	O 398	S 11	12	1	0

- 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 39	C 22	N 2	O 15	0	0	0
2	D	3	Total 39	C 22	N 2	O 15	0	0	0

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

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

- Molecule 4 is water.

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

3 Residue-property plots ⓘ

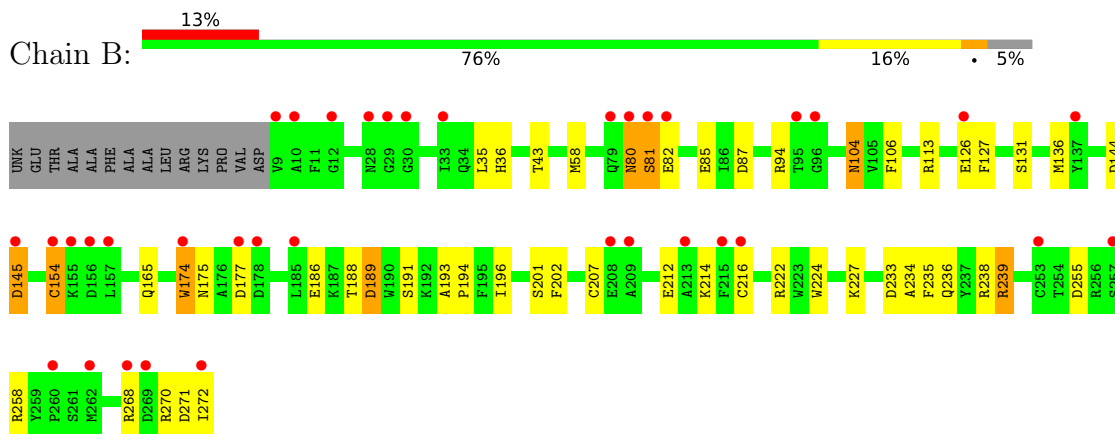These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: XYLOGLUCAN ENDOTRANSGLYCOSYLASE
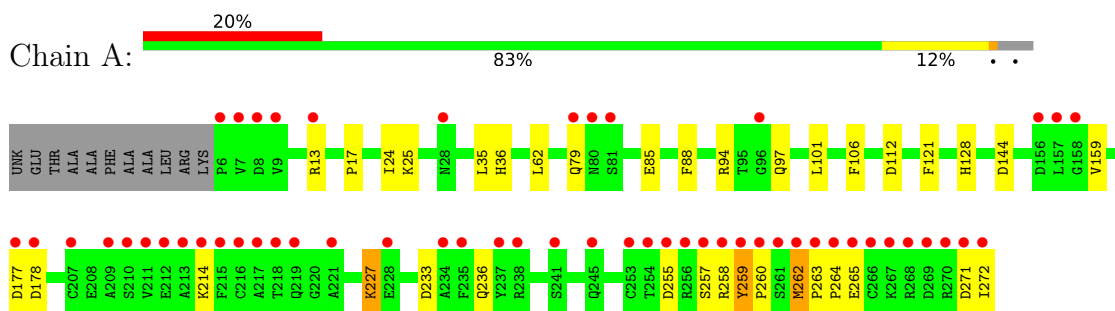
Chain A:

• 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
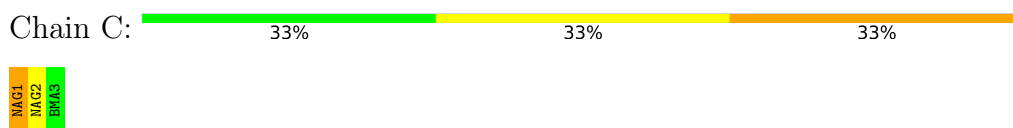
4 Data and refinement statistics ⓘ

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 24.77 – 2.10	Depositor EDS
% Data completeness (in resolution range)	99.9 (24.77-2.10) 99.8 (24.77-2.10)	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 , 0.239	Depositor DCC
R_{free} test set	2798 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 , 46.6	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.*

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[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 (i)

5.1 Standard geometry (i)

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:H	1:B:80:ASN:HD22	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:25:LYS:HZ2	1:A:36:HIS:CE1	2.17	0.63
1:A:121:PHE:CD1	1:A:128:HIS:CD2	2.86	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:62:LEU:HD12	4:A:2048:HOH:O	2.06	0.55
1:A:262:MET:C	1:A:262:MET:CE	2.74	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:O	1:A:262:MET:CE	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:HD22	1:B:80:ASN:N	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:24:ILE:HG12	1:A:35:LEU:HD22	2.00	0.43
1:A:159:VAL:HG21	1:A:264:PRO:HB2	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:A:262:MET:HE1	1:A:264:PRO:HA	2.03	0.41
1:B:85:GLU:HB3	1:B:106:PHE:HB2	2.02	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%)	20	19
1	B	233/241 (97%)	217 (93%)	16 (7%)	13	10
All	All	468/482 (97%)	440 (94%)	28 (6%)	17	14

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

Sometimes 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	2,1	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	2,1	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	2,1	-	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	2,1	-	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(°)	Ideal(°)
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
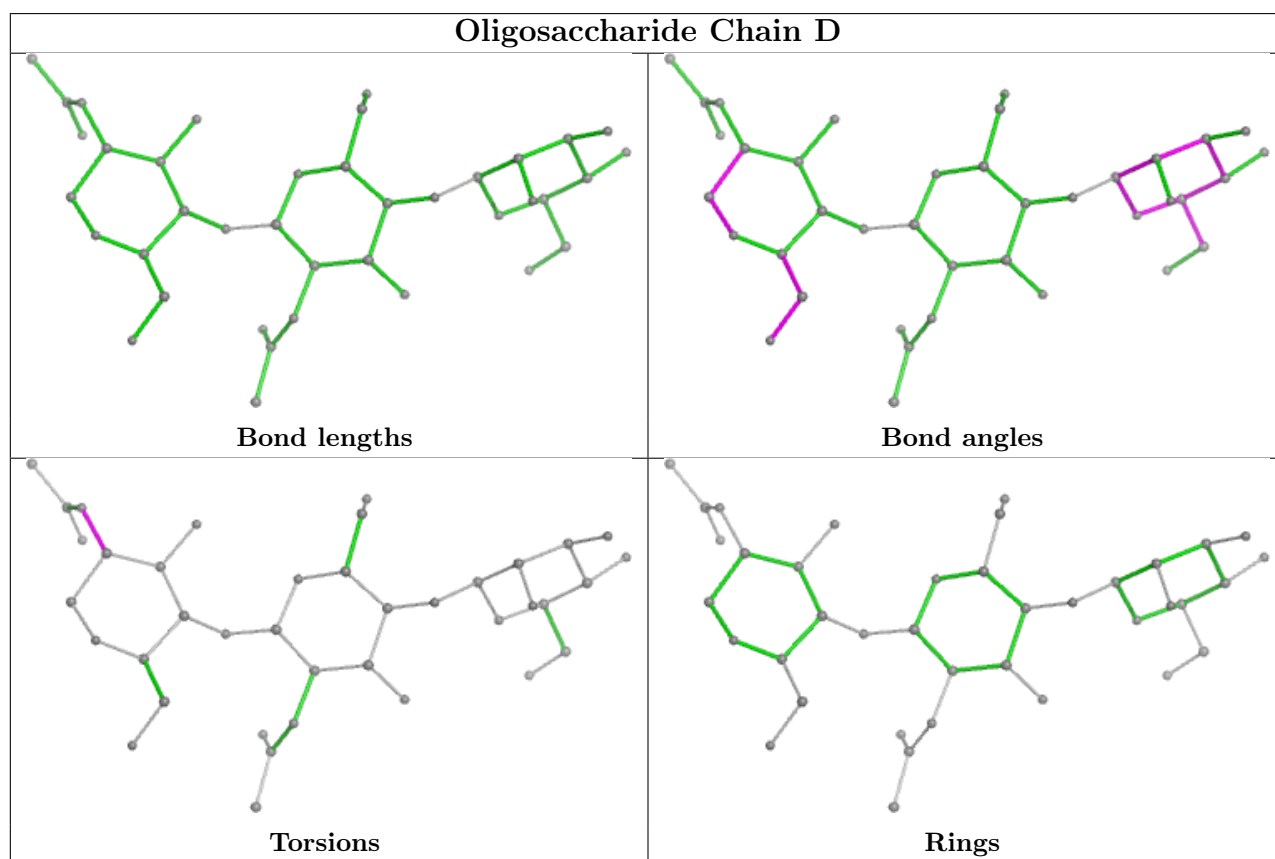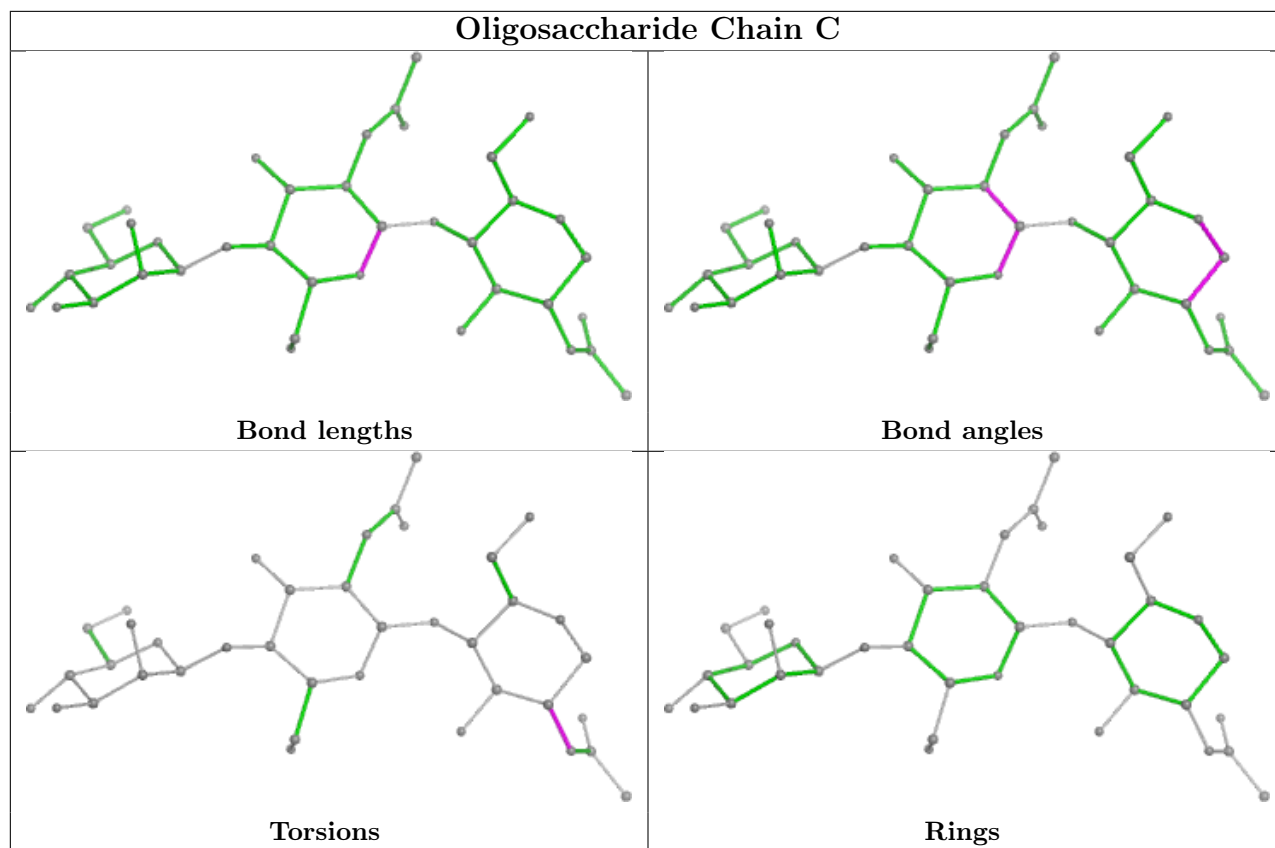
5.6 Ligand geometry ⓘ

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, 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(Å²)	Q<0.9
1	A	267/278 (96%)	1.06	55 (20%)	3	3	23, 38, 72, 86	7 (2%)
1	B	264/278 (94%)	0.72	36 (13%)	8	9	22, 37, 54, 63	4 (1%)
All	All	531/556 (95%)	0.89	91 (17%)	5	5	22, 38, 60, 86	11 (2%)

All (91) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	272	ILE	11.4
1	B	154	CYS	8.7
1	A	211	VAL	8.0
1	A	259	TYR	7.5
1	A	213	ALA	6.1
1	B	174[A]	TRP	5.8
1	A	253	CYS	5.7
1	A	266	CYS	5.7
1	A	269	ASP	5.6
1	A	156	ASP	5.5
1	A	264	PRO	5.3
1	A	262	MET	5.2
1	A	263	PRO	5.1
1	A	268	ARG	4.9
1	B	9	VAL	4.9
1	A	260	PRO	4.8
1	B	156	ASP	4.8
1	A	210	SER	4.6
1	A	209	ALA	4.6
1	A	271	ASP	4.6
1	A	267	LYS	4.5
1	B	272	ILE	4.3
1	A	6	PRO	4.3
1	A	7	VAL	4.1

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Mol	Chain	Res	Type	RSRZ
1	A	8	ASP	4.0
1	A	217	ALA	3.7
1	A	228	GLU	3.7
1	A	235	PHE	3.7
1	B	81	SER	3.7
1	A	157	LEU	3.6
1	A	254	THR	3.5
1	A	258	ARG	3.5
1	A	215	PHE	3.4
1	A	80	ASN	3.4
1	A	265	GLU	3.4
1	B	215	PHE	3.4
1	A	178	ASP	3.4
1	B	82	GLU	3.3
1	B	28	ASN	3.3
1	B	257	SER	3.3
1	B	10	ALA	3.2
1	A	245	GLN	3.1
1	A	255	ASP	3.1
1	B	262	MET	3.1
1	A	261	SER	3.0
1	B	216	CYS	2.9
1	A	241	SER	2.9
1	A	207	CYS	2.9
1	B	178	ASP	2.9
1	A	270	ARG	2.9
1	B	157	LEU	2.8
1	A	221	ALA	2.7
1	B	80	ASN	2.7
1	B	209	ALA	2.7
1	A	81	SER	2.6
1	B	268	ARG	2.6
1	A	256	ARG	2.6
1	A	219	GLN	2.6
1	A	238	ARG	2.5
1	A	96	GLY	2.5
1	A	9	VAL	2.5
1	A	158	GLY	2.5
1	B	177	ASP	2.5
1	A	234	ALA	2.5
1	A	214	LYS	2.5
1	A	212	GLU	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	269	ASP	2.4
1	B	253	CYS	2.4
1	A	28	ASN	2.4
1	A	79	GLN	2.4
1	B	12	GLY	2.4
1	B	96	GLY	2.4
1	B	145	ASP	2.4
1	B	155	LYS	2.3
1	A	13	ARG	2.3
1	B	126	GLU	2.3
1	A	218	THR	2.3
1	B	213	ALA	2.3
1	A	237	TYR	2.3
1	B	185	LEU	2.3
1	A	177	ASP	2.3
1	B	137	TYR	2.2
1	A	257	SER	2.2
1	B	33	ILE	2.1
1	B	95	THR	2.1
1	A	216	CYS	2.1
1	B	260	PRO	2.1
1	B	208	GLU	2.1
1	B	29	GLY	2.0
1	B	79	GLN	2.1
1	B	30	GLY	2.0

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

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

6.3 Carbohydrates ⓘ

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.
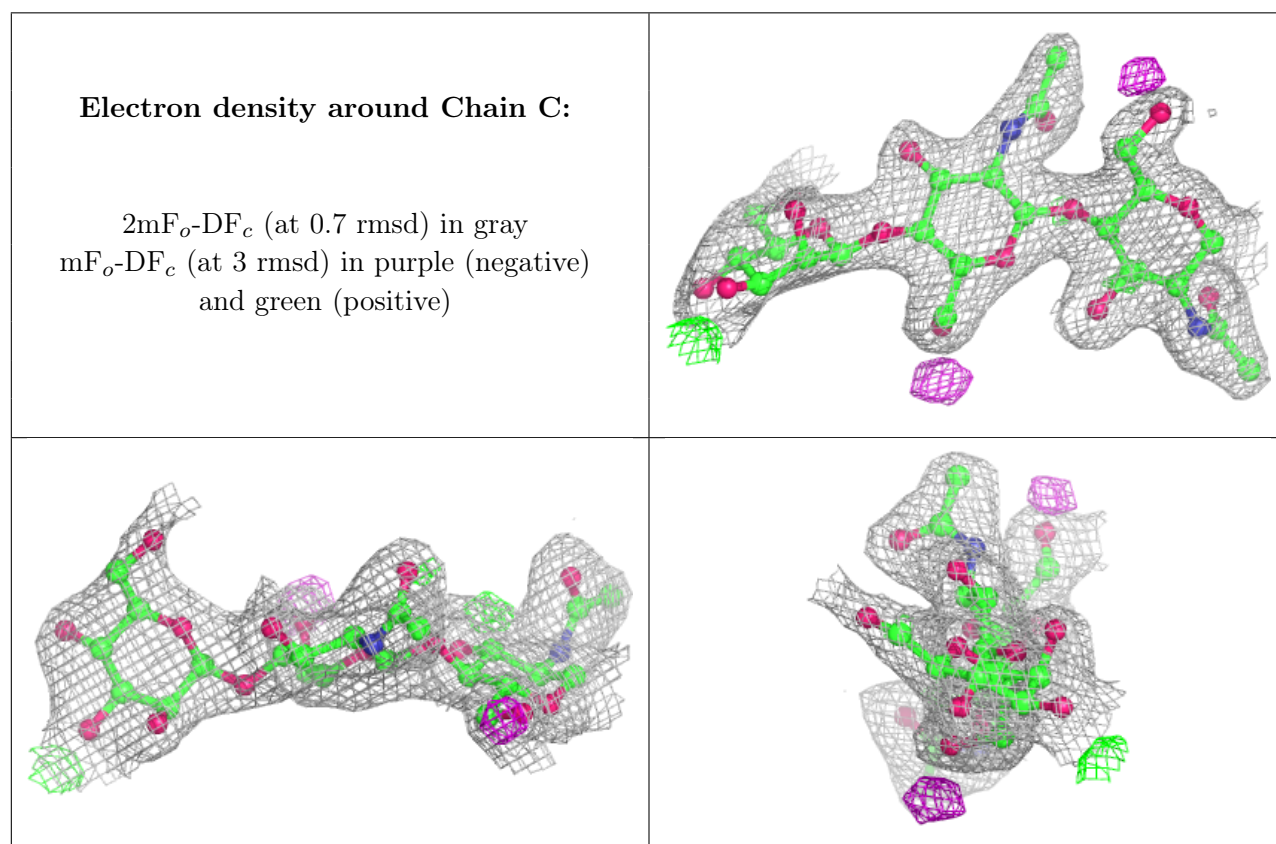
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
2	BMA	C	3	11/12	0.81	0.14	60,62,64,65	0
2	NAG	C	2	14/15	0.86	0.13	44,47,51,56	0
2	BMA	D	3	11/12	0.89	0.10	49,53,57,57	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å²)	Q<0.9
2	NAG	D	2	14/15	0.92	0.11	38,41,44,46	0
2	NAG	C	1	14/15	0.92	0.10	36,39,43,43	0
2	NAG	D	1	14/15	0.93	0.10	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.
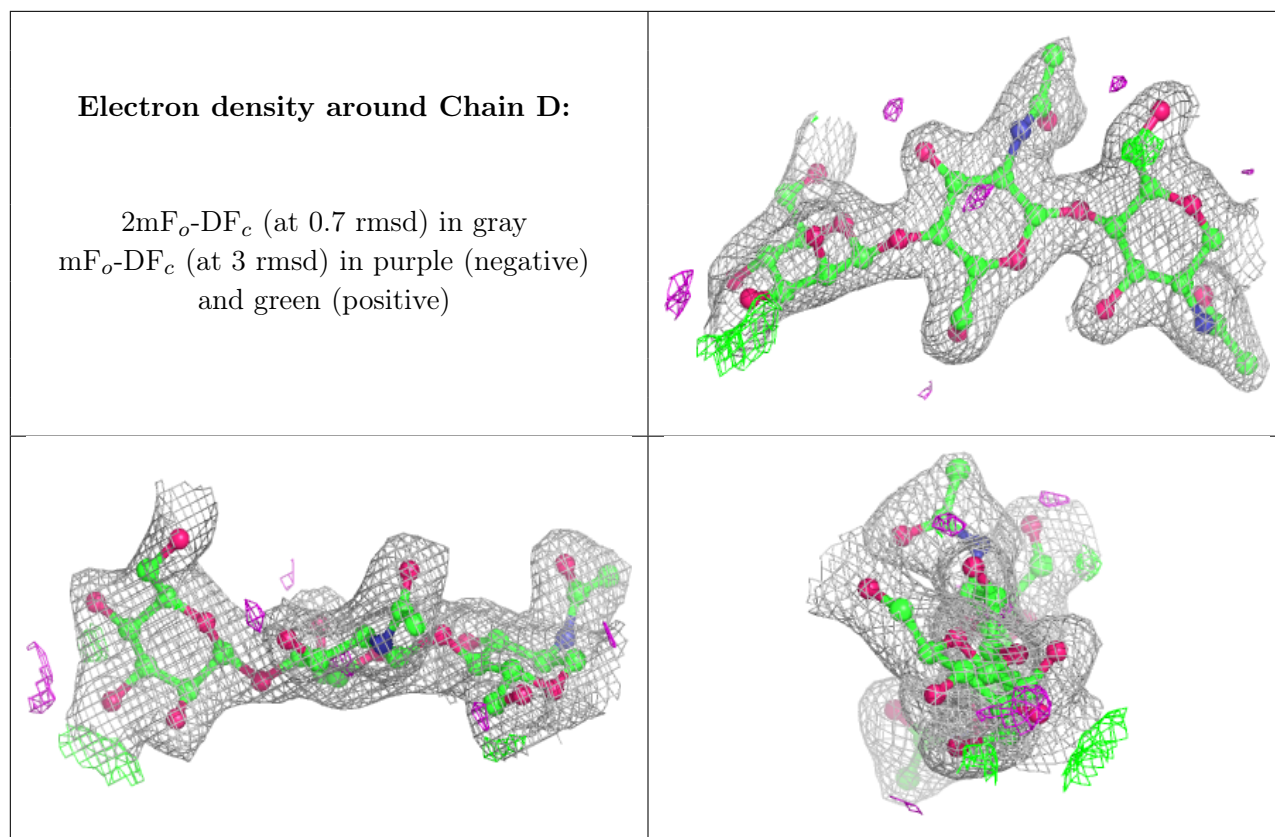
Electron density around Chain C:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (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, 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	AU	B	1276	1/1	0.86	0.43	84,84,84,84	0

6.5 Other polymers ⓘ

There are no such residues in this entry.