



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 11:51 AM UTC

PDB ID : 6JXG / pdb_00006jxg
Title : Crystall Structure of Beta-glucosidase D2-BGL from Chaetomella Raphigera
Authors : Wang, A.H.-J.; Lee, C.C.; Kao, M.R.; Ho, T.H.D.
Deposited on : 2019-04-23
Resolution : 1.90 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

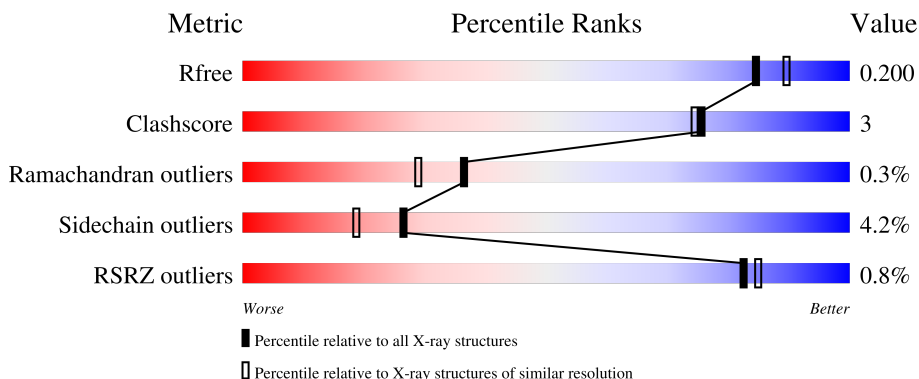
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.90 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	7789 (1.90-1.90)
Clashscore	190562	8410 (1.90-1.90)
Ramachandran outliers	187476	8333 (1.90-1.90)
Sidechain outliers	187428	8333 (1.90-1.90)
RSRZ outliers	180081	7790 (1.90-1.90)

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	722	

2 Entry composition [i](#)

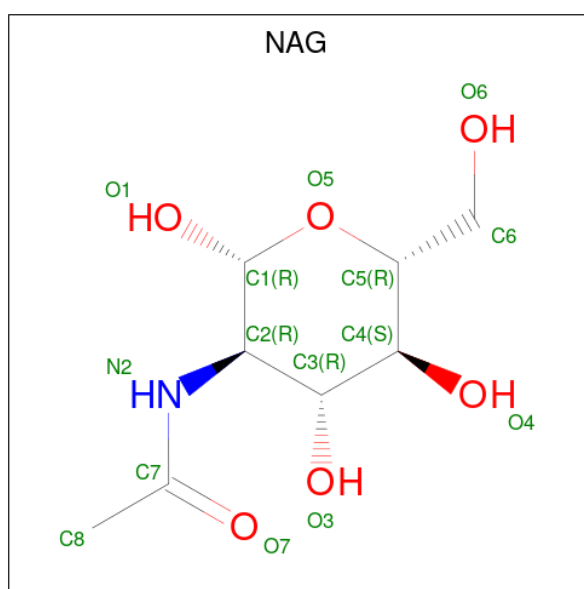
There are 4 unique types of molecules in this entry. The entry contains 5856 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Beta-glucosidase.

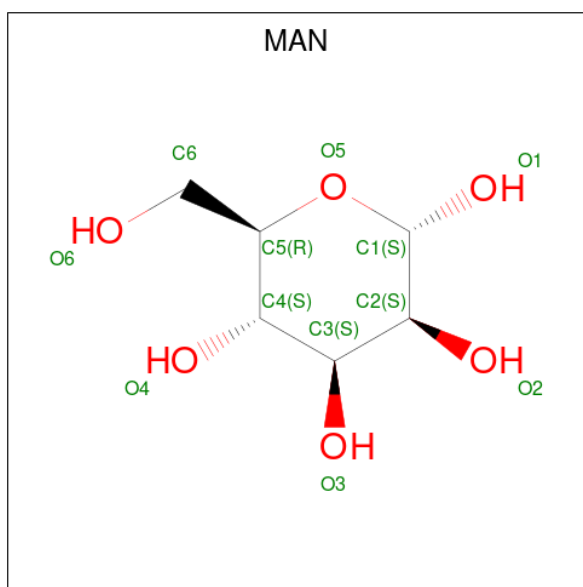
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	713	5277	3332	890	1040	15	0	0	0

- Molecule 2 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



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

- Molecule 3 is alpha-D-mannopyranose (CCD ID: MAN) (formula: $C_6H_{12}O_6$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			11	6	5		

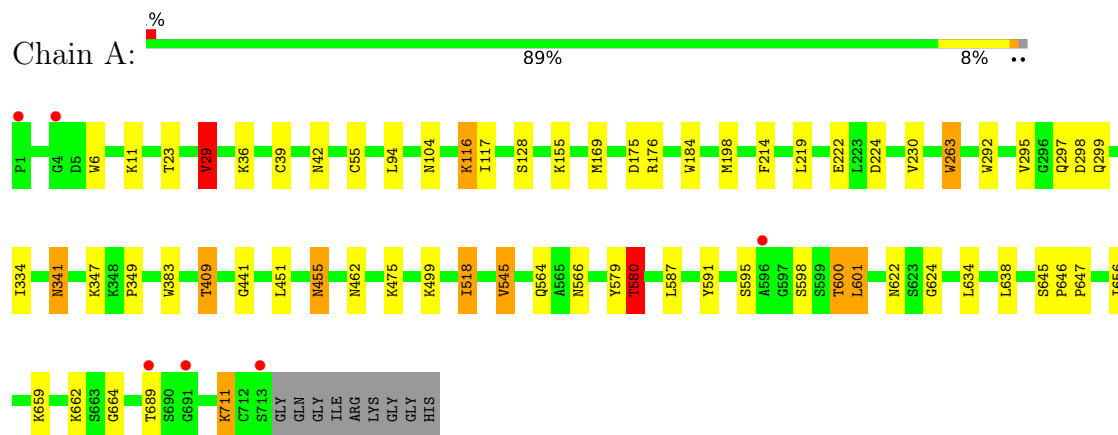
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	526	Total	O	0	0
			526	526		

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: Beta-glucosidase



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	67.77Å 77.66Å 123.48Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	24.19 – 1.90 24.19 – 1.90	Depositor EDS
% Data completeness (in resolution range)	93.6 (24.19-1.90) 93.7 (24.19-1.90)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.73 (at 1.89Å)	Xtriage
Refinement program	REFMAC 5.7.0032	Depositor
R, R_{free}	0.145 , 0.195 0.157 , 0.200	Depositor DCC
R_{free} test set	2505 reflections (4.78%)	wwPDB-VP
Wilson B-factor (Å ²)	16.1	Xtriage
Anisotropy	0.569	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.40 , 40.6	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	0.96	EDS
Total number of atoms	5856	wwPDB-VP
Average B, all atoms (Å ²)	17.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.17% 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: MAN, 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	1.28	5/5395 (0.1%)	1.14	15/7360 (0.2%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	263	TRP	CA-C	7.05	1.57	1.53
1	A	176	ARG	C-O	-5.79	1.17	1.24
1	A	11	LYS	C-O	-5.56	1.17	1.24
1	A	222	GLU	C-O	-5.51	1.17	1.24
1	A	184	TRP	CA-C	5.05	1.58	1.52

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	169	MET	CG-SD-CE	-12.37	73.69	100.90
1	A	580	THR	CB-CA-C	-9.13	93.54	112.44
1	A	29	VAL	N-CA-CB	-7.88	100.09	112.07
1	A	545	VAL	N-CA-CB	-7.43	100.80	111.21
1	A	645	SER	CA-C-N	-6.62	114.82	119.66
1	A	645	SER	C-N-CA	-6.62	114.82	119.66
1	A	29	VAL	CG1-CB-CG2	6.35	124.78	110.80
1	A	646	PRO	O-C-N	5.61	123.89	121.31
1	A	580	THR	OG1-CB-CG2	5.35	120.00	109.30
1	A	579	TYR	N-CA-C	-5.30	106.81	113.28
1	A	6	TRP	N-CA-CB	-5.27	102.87	110.56
1	A	545	VAL	CG1-CB-CG2	5.24	122.32	110.80
1	A	155	LYS	CA-C-N	5.22	131.10	121.70
1	A	155	LYS	C-N-CA	5.22	131.10	121.70
1	A	545	VAL	CA-CB-CG1	5.20	119.24	110.40

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	5277	0	5141	30	0
2	A	42	0	39	2	0
3	A	11	0	10	0	0
4	A	526	0	0	7	2
All	All	5856	0	5190	31	2

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 3.

All (31) 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:566:ASN:O	4:A:901:HOH:O	1.84	0.93
1:A:580:THR:HG21	1:A:622:ASN:OD1	1.82	0.80
1:A:580:THR:HG22	1:A:624:GLY:HA3	1.66	0.77
1:A:334:ILE:HD12	1:A:518:ILE:HD13	1.73	0.70
1:A:595:SER:OG	4:A:902:HOH:O	1.92	0.70
1:A:55:CYS:H	1:A:104:ASN:HD22	1.39	0.68
1:A:39:CYS:H	1:A:42:ASN:HD21	1.38	0.68
1:A:598:SER:OG	1:A:600:THR:HG23	1.95	0.67
1:A:409:THR:HG21	4:A:1073:HOH:O	1.94	0.66
1:A:455:ASN:C	1:A:455:ASN:HD22	2.08	0.62
1:A:175:ASP:OD2	2:A:803:NAG:O3	2.06	0.61
1:A:711:LYS:CD	1:A:711:LYS:H	2.16	0.58
1:A:349:PRO:O	1:A:409:THR:HB	2.05	0.57
1:A:295:VAL:HG23	1:A:297:GLN:HG3	1.87	0.57
1:A:711:LYS:H	1:A:711:LYS:HD3	1.70	0.56
1:A:29:VAL:HG13	1:A:263:TRP:CE3	2.42	0.55
1:A:462:ASN:ND2	4:A:907:HOH:O	2.39	0.54
1:A:116:LYS:HE3	1:A:117:ILE:HG13	1.90	0.53
2:A:801:NAG:C6	4:A:973:HOH:O	2.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:409:THR:CG2	4:A:1073:HOH:O	2.56	0.50
1:A:224:ASP:HB2	1:A:601:LEU:HD12	1.97	0.47
1:A:383:TRP:CD1	1:A:441:GLY:HA3	2.51	0.45
1:A:564:GLN:HE21	1:A:647:PRO:HD3	1.81	0.44
1:A:475:LYS:O	1:A:499:LYS:HE2	2.17	0.44
1:A:580:THR:HG22	1:A:624:GLY:CA	2.43	0.43
1:A:659:LYS:HB2	1:A:662:LYS:HG3	2.00	0.43
1:A:656:ILE:HD11	1:A:664:GLY:HA3	2.01	0.43
1:A:23:THR:HG23	4:A:1287:HOH:O	2.19	0.42
1:A:198:MET:HA	1:A:230:VAL:O	2.20	0.41
1:A:455:ASN:C	1:A:455:ASN:ND2	2.77	0.41
1:A:292:TRP:CZ2	1:A:298:ASP:HA	2.56	0.40

All (2) 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:1329:HOH:O	4:A:1363:HOH:O[3_644]	1.91	0.29
4:A:1326:HOH:O	4:A:1339:HOH:O[3_554]	2.12	0.08

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	711/722 (98%)	684 (96%)	25 (4%)	2 (0%)	36 29

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	341	ASN
1	A	128	SER

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	550/555 (99%)	527 (96%)	23 (4%)	26	19

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	29	VAL
1	A	36	LYS
1	A	94	LEU
1	A	116	LYS
1	A	214	PHE
1	A	219	LEU
1	A	299	GLN
1	A	341	ASN
1	A	347	LYS
1	A	409	THR
1	A	451	LEU
1	A	455	ASN
1	A	518	ILE
1	A	545	VAL
1	A	580	THR
1	A	587	LEU
1	A	591	TYR
1	A	600	THR
1	A	601	LEU
1	A	634	LEU
1	A	638	LEU
1	A	689	THR
1	A	711	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	42	ASN
1	A	104	ASN

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Mol	Chain	Res	Type
1	A	151	GLN
1	A	299	GLN
1	A	317	ASN
1	A	341	ASN
1	A	455	ASN
1	A	462	ASN
1	A	536	GLN
1	A	564	GLN
1	A	586	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

4 non-standard protein/DNA/RNA residues 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	A	802	1	14,14,15	0.95	1 (7%)	17,19,21	1.22	2 (11%)
2	NAG	A	803	1	14,14,15	0.85	1 (7%)	17,19,21	3.30	10 (58%)
3	MAN	A	804	1	11,11,12	1.06	1 (9%)	15,15,17	1.88	5 (33%)
2	NAG	A	801	1	14,14,15	0.55	0	17,19,21	1.47	5 (29%)

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	A	802	1	-	1/6/23/26	0/1/1/1
2	NAG	A	803	1	-	3/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	MAN	A	804	1	-	0/2/19/22	0/1/1/1
2	NAG	A	801	1	-	0/6/23/26	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	802	NAG	C1-C2	2.67	1.56	1.52
3	A	804	MAN	O2-C2	-2.13	1.38	1.43
2	A	803	NAG	O4-C4	-2.01	1.38	1.43

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	803	NAG	C1-C2-N2	6.53	120.72	110.43
2	A	803	NAG	C3-C4-C5	-5.23	100.75	110.23
2	A	803	NAG	O5-C5-C4	-4.75	99.27	110.83
2	A	803	NAG	C8-C7-N2	4.67	123.86	116.12
2	A	803	NAG	O7-C7-C8	-4.40	114.22	122.05
3	A	804	MAN	C1-C2-C3	4.13	115.66	109.64
2	A	803	NAG	O4-C4-C5	3.64	118.30	109.32
3	A	804	MAN	C1-O5-C5	3.39	116.74	112.19
2	A	803	NAG	O6-C6-C5	-2.99	101.16	111.33
3	A	804	MAN	C3-C4-C5	-2.91	104.96	110.23
2	A	801	NAG	C3-C4-C5	-2.88	105.02	110.23
2	A	803	NAG	C4-C3-C2	-2.86	106.83	111.02
2	A	803	NAG	C2-N2-C7	2.81	126.66	122.90
2	A	803	NAG	O5-C5-C6	2.78	113.08	107.66
2	A	802	NAG	O4-C4-C3	-2.77	103.86	110.38
2	A	802	NAG	C1-C2-N2	2.58	114.51	110.43
2	A	801	NAG	O6-C6-C5	-2.36	103.31	111.33
2	A	801	NAG	O5-C1-C2	-2.28	107.77	111.29
3	A	804	MAN	O2-C2-C1	-2.23	104.12	109.22
2	A	801	NAG	C4-C3-C2	-2.23	107.76	111.02
3	A	804	MAN	O3-C3-C2	-2.19	105.58	110.05
2	A	801	NAG	O5-C5-C4	-2.04	105.85	110.83

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	803	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
2	A	803	NAG	O7-C7-N2-C2
2	A	802	NAG	C1-C2-N2-C7
2	A	803	NAG	O5-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	803	NAG	1	0
2	A	801	NAG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
2	NAG	A	802	1	14,14,15	0.95	1 (7%)	17,19,21	1.22	2 (11%)
2	NAG	A	803	1	14,14,15	0.85	1 (7%)	17,19,21	3.30	10 (58%)
3	MAN	A	804	1	11,11,12	1.06	1 (9%)	15,15,17	1.88	5 (33%)
2	NAG	A	801	1	14,14,15	0.55	0	17,19,21	1.47	5 (29%)

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	A	802	1	-	1/6/23/26	0/1/1/1
2	NAG	A	803	1	-	3/6/23/26	0/1/1/1
3	MAN	A	804	1	-	0/2/19/22	0/1/1/1
2	NAG	A	801	1	-	0/6/23/26	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	802	NAG	C1-C2	2.67	1.56	1.52
3	A	804	MAN	O2-C2	-2.13	1.38	1.43
2	A	803	NAG	O4-C4	-2.01	1.38	1.43

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	803	NAG	C1-C2-N2	6.53	120.72	110.43
2	A	803	NAG	C3-C4-C5	-5.23	100.75	110.23
2	A	803	NAG	O5-C5-C4	-4.75	99.27	110.83
2	A	803	NAG	C8-C7-N2	4.67	123.86	116.12
2	A	803	NAG	O7-C7-C8	-4.40	114.22	122.05
3	A	804	MAN	C1-C2-C3	4.13	115.66	109.64
2	A	803	NAG	O4-C4-C5	3.64	118.30	109.32
3	A	804	MAN	C1-O5-C5	3.39	116.74	112.19
2	A	803	NAG	O6-C6-C5	-2.99	101.16	111.33
3	A	804	MAN	C3-C4-C5	-2.91	104.96	110.23
2	A	801	NAG	C3-C4-C5	-2.88	105.02	110.23
2	A	803	NAG	C4-C3-C2	-2.86	106.83	111.02
2	A	803	NAG	C2-N2-C7	2.81	126.66	122.90
2	A	803	NAG	O5-C5-C6	2.78	113.08	107.66
2	A	802	NAG	O4-C4-C3	-2.77	103.86	110.38
2	A	802	NAG	C1-C2-N2	2.58	114.51	110.43
2	A	801	NAG	O6-C6-C5	-2.36	103.31	111.33
2	A	801	NAG	O5-C1-C2	-2.28	107.77	111.29
3	A	804	MAN	O2-C2-C1	-2.23	104.12	109.22
2	A	801	NAG	C4-C3-C2	-2.23	107.76	111.02
3	A	804	MAN	O3-C3-C2	-2.19	105.58	110.05
2	A	801	NAG	O5-C5-C4	-2.04	105.85	110.83

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	803	NAG	C8-C7-N2-C2
2	A	803	NAG	O7-C7-N2-C2
2	A	802	NAG	C1-C2-N2-C7
2	A	803	NAG	O5-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	803	NAG	1	0
2	A	801	NAG	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	713/722 (98%)	-0.46	6 (0%) 82 85	9, 15, 30, 62	0

All (6) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	596	ALA	3.7
1	A	713	SER	2.9
1	A	689	THR	2.5
1	A	1	PRO	2.3
1	A	4	GLY	2.2
1	A	691	GLY	2.1

6.2 Non-standard residues in protein, DNA, RNA chains [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	NAG	A	801	14/15	0.88	0.09	27,35,40,43	0
2	NAG	A	803	14/15	0.90	0.09	25,33,40,44	0
3	MAN	A	804	11/12	0.92	0.07	23,28,34,34	0
2	NAG	A	802	14/15	0.95	0.06	19,22,26,26	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

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(Å ²)	Q<0.9
2	NAG	A	801	14/15	0.88	0.09	27,35,40,43	0
2	NAG	A	803	14/15	0.90	0.09	25,33,40,44	0
3	MAN	A	804	11/12	0.92	0.07	23,28,34,34	0
2	NAG	A	802	14/15	0.95	0.06	19,22,26,26	0

6.5 Other polymers [i](#)

There are no such residues in this entry.