Full wwPDB X-ray Structure Validation Report ⓘ

Oct 26, 2021 – 05:05 pm BST

PDB ID	:	7P07
Title	:	Structure of the maltase BaAG2 from Blastobotrys adeninivorans in complex with glucose
Authors	:	Ernits, K.; Visnapuu, T.; Persson, K.
Deposited on	:	2021-06-29
Resolution	:	2.13 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 ⓘ) were used in the production of this report:

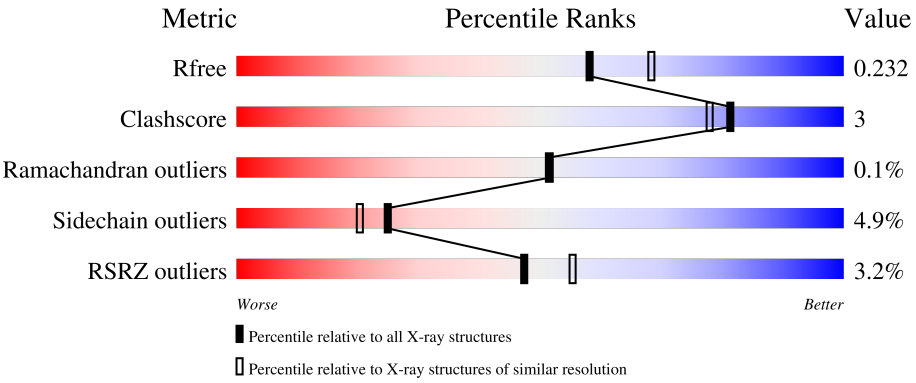
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.23.2
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

1 Overall quality at a glance (i)

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

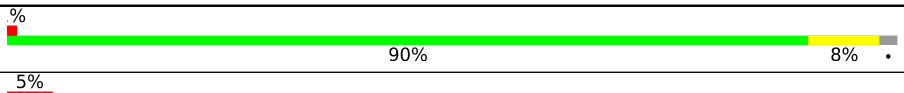
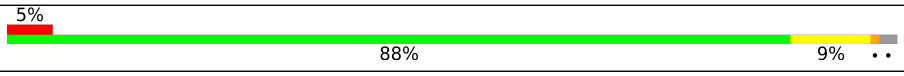
The reported resolution of this entry is 2.13 Å.

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	2523 (2.16-2.12)
Clashscore	141614	2653 (2.16-2.12)
Ramachandran outliers	138981	2618 (2.16-2.12)
Sidechain outliers	138945	2617 (2.16-2.12)
RSRZ outliers	127900	2485 (2.16-2.12)

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	585	
1	B	585	

2 Entry composition

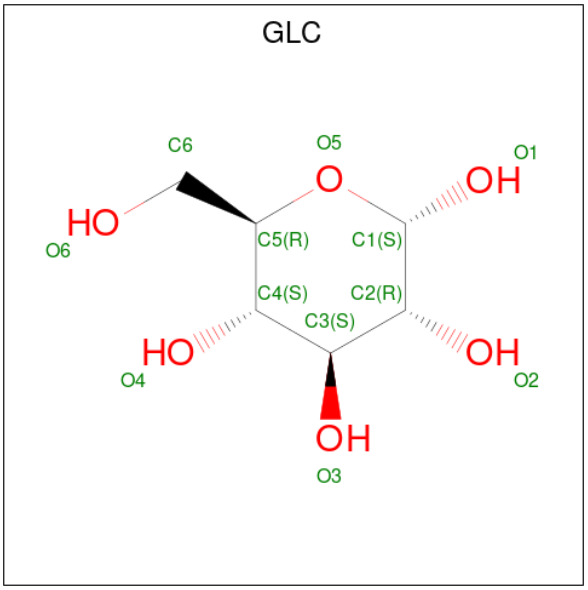
There are 5 unique types of molecules in this entry. The entry contains 18749 atoms, of which 8979 are hydrogens and 0 are deuteriums.

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 BaAG2.

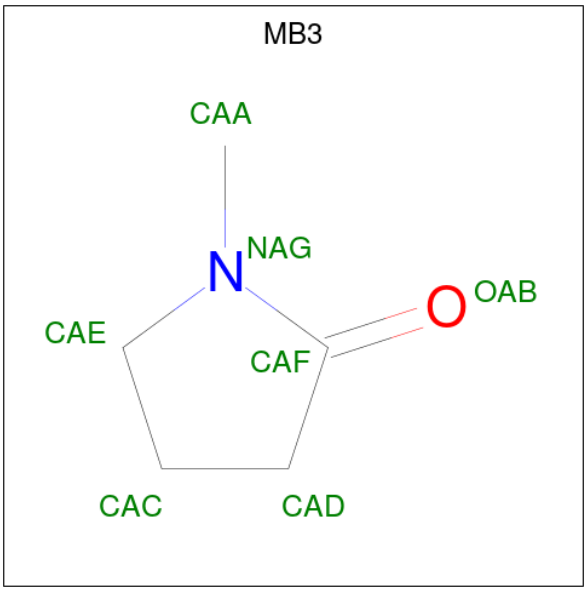
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	572	Total	C	H	N	O	S	0	1	0
			9143	2978	4466	792	895	12			
1	B	572	Total	C	H	N	O	S	0	0	0
			9149	2979	4471	793	894	12			

- Molecule 2 is alpha-D-glucopyranose (three-letter code: GLC) (formula: $C_6H_{12}O_6$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	H	O	0	0
			24	6	12	6		
2	B	1	Total	C	H	O	0	0
			24	6	12	6		

- Molecule 3 is 1-methylpyrrolidin-2-one (three-letter code: MB3) (formula: C_5H_9NO).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C H N O 16 5 9 1 1	0	0
3	B	1	Total C H N O 16 5 9 1 1	0	0

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Ca 1 1	0	0
4	B	1	Total Ca 1 1	0	0

- Molecule 5 is water.

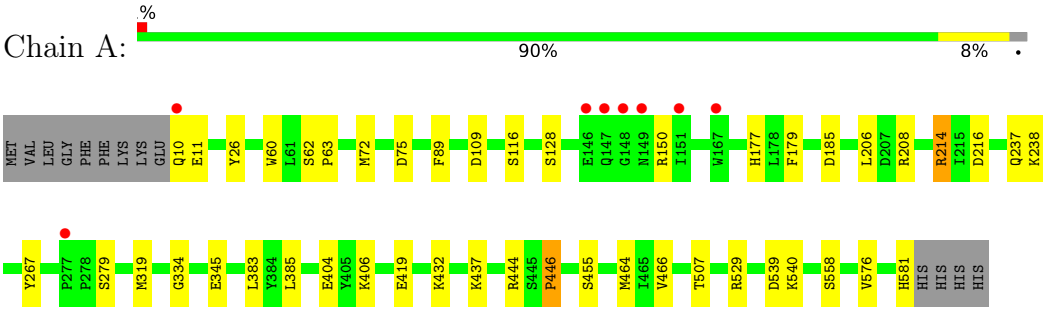
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	237	Total O 237 237	0	0
5	B	138	Total O 138 138	0	0

3 Residue-property plots (i)

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

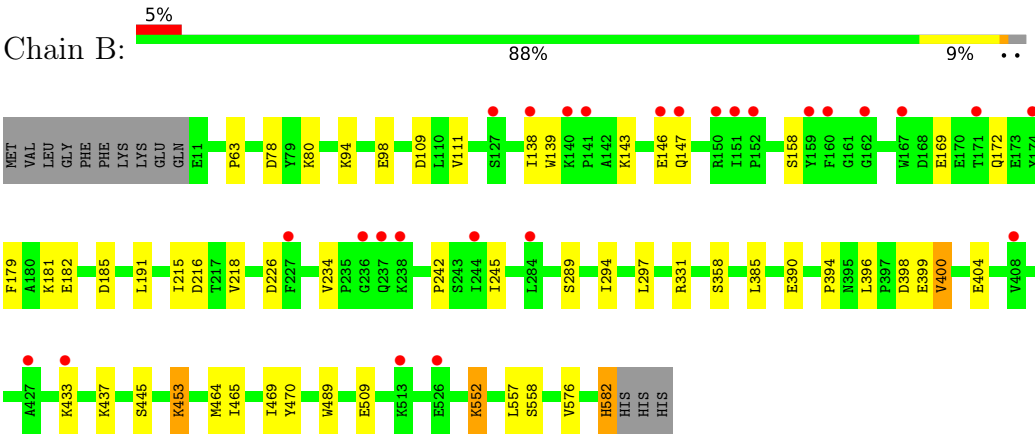
• Molecule 1: BaAG2

Chain A:



• Molecule 1: BaAG2

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	66.88Å 77.73Å 121.11Å 90.00° 92.90° 90.00°	Depositor
Resolution (Å)	47.73 – 2.13 47.73 – 2.13	Depositor EDS
% Data completeness (in resolution range)	98.7 (47.73-2.13) 99.9 (47.73-2.13)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.10	Depositor
$< I/\sigma(I) >$ [1]	2.08 (at 2.14Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660, PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.215 , 0.232 0.215 , 0.232	Depositor DCC
R_{free} test set	2016 reflections (2.90%)	wwPDB-VP
Wilson B-factor (Å^2)	41.9	Xtriage
Anisotropy	0.053	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	(Not available) , (Not available)	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.004 for h,-k,-l	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	18749	wwPDB-VP
Average B, all atoms (Å^2)	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.05% 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: CA, GLC, MB3

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	0.82	2/4812 (0.0%)	0.85	2/6529 (0.0%)
1	B	0.80	3/4809 (0.1%)	0.85	1/6525 (0.0%)
All	All	0.81	5/9621 (0.1%)	0.85	3/13054 (0.0%)

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	400	VAL	C-N	9.91	1.53	1.34
1	B	396	LEU	C-N	9.88	1.53	1.34
1	A	345	GLU	CD-OE1	-5.79	1.19	1.25
1	A	345	GLU	CD-OE2	-5.48	1.19	1.25
1	B	390	GLU	CD-OE2	-5.14	1.20	1.25

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	179	PHE	CB-CA-C	6.39	123.17	110.40
1	A	179	PHE	CB-CA-C	5.85	122.09	110.40
1	A	237	GLN	CB-CA-C	5.56	121.52	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	4677	4466	4465	21	2
1	B	4678	4471	4469	26	2
2	A	12	12	12	0	0
2	B	12	12	12	0	0
3	A	7	9	9	0	0
3	B	7	9	9	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	237	0	0	1	0
5	B	138	0	0	0	0
All	All	9770	8979	8976	47	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 (47) 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:139:TRP:CZ3	1:B:175:TYR:HB3	2.17	0.79
1:A:261:ARG:O	1:A:261:ARG:HD2	1.85	0.77
1:A:319:MET:HA	1:A:319:MET:HE2	1.73	0.70
1:B:182:GLU:N	1:B:182:GLU:OE1	2.28	0.66
1:B:331:ARG:HG2	1:B:331:ARG:O	1.96	0.63
1:B:404:GLU:HA	1:B:404:GLU:OE1	1.97	0.63
1:B:509:GLU:OE2	1:B:509:GLU:HA	1.99	0.61
1:B:139:TRP:CE3	1:B:175:TYR:HB3	2.36	0.61
1:A:60:TRP:CZ2	1:A:214:ARG:HG3	2.38	0.59
1:B:234:VAL:HG12	1:B:234:VAL:O	2.03	0.57
1:B:385:LEU:HD21	1:B:489:TRP:CH2	2.40	0.57
1:B:215:ILE:HG21	1:B:218:VAL:HG23	1.87	0.56
1:A:383:LEU:HD21	1:A:385:LEU:HD21	1.90	0.54
1:A:116:SER:OG	5:A:702:HOH:O	2.19	0.53
1:A:150:ARG:HG2	1:A:150:ARG:HH11	1.76	0.50
1:B:557:LEU:C	1:B:557:LEU:HD23	2.33	0.49
1:B:98:GLU:HA	1:B:98:GLU:OE1	2.13	0.47
1:A:252:LEU:HD13	1:A:252:LEU:C	2.35	0.47
1:B:191:LEU:N	1:B:191:LEU:CD1	2.77	0.47
1:B:385:LEU:HD21	1:B:489:TRP:CZ2	2.50	0.47
1:A:446:PRO:HB2	1:A:466:VAL:HG22	1.96	0.47
1:B:169:GLU:OE1	1:B:172:GLN:OE1	2.33	0.46
1:A:558:SER:HB2	1:A:576:VAL:HG12	1.97	0.46
1:A:404:GLU:OE1	1:A:404:GLU:HA	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:216:ASP:N	1:A:216:ASP:OD1	2.49	0.46
1:A:60:TRP:CE2	1:A:214:ARG:HG3	2.51	0.45
1:B:177:HIS:O	1:B:177:HIS:CG	2.69	0.45
1:B:138:ILE:O	1:B:138:ILE:HG22	2.15	0.45
1:B:558:SER:HB2	1:B:576:VAL:HG12	1.99	0.45
1:B:109:ASP:OD1	1:B:216:ASP:OD1	2.34	0.45
1:B:191:LEU:N	1:B:191:LEU:HD12	2.31	0.45
1:A:206:LEU:HD13	1:A:267:TYR:CD1	2.52	0.45
1:A:75:ASP:OD1	1:A:75:ASP:N	2.45	0.44
1:A:60:TRP:C	1:A:60:TRP:CD1	2.91	0.44
1:A:177:HIS:O	1:A:177:HIS:CG	2.70	0.44
1:A:150:ARG:HG2	1:A:150:ARG:NH1	2.33	0.44
1:A:89:PHE:CD1	1:A:89:PHE:C	2.92	0.44
1:B:215:ILE:CG2	1:B:218:VAL:HG23	2.47	0.43
1:B:582:HIS:ND1	1:B:582:HIS:C	2.73	0.42
1:B:552:LYS:HD3	1:B:552:LYS:HA	1.83	0.41
1:B:294:ILE:HD11	1:B:297:LEU:HD21	2.02	0.41
1:B:465:ILE:HD12	1:B:465:ILE:HA	1.88	0.41
1:A:26:TYR:CE2	1:A:444:ARG:HG2	2.56	0.41
1:A:72:MET:HE3	1:A:72:MET:HB3	2.01	0.41
1:A:334:GLY:HA3	1:A:507:THR:HG22	2.02	0.41
1:B:453:LYS:HB3	1:B:453:LYS:HE2	1.87	0.41
1:B:437:LYS:HD2	1:B:437:LYS:HA	1.75	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)
1:A:150:ARG:NH2	1:B:147:GLN:O[2_454]	2.14	0.06
1:A:150:ARG:HH22	1:B:147:GLN:O[2_454]	1.59	0.01

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	571/585 (98%)	548 (96%)	23 (4%)	0	100	100
1	B	570/585 (97%)	548 (96%)	21 (4%)	1 (0%)	47	45
All	All	1141/1170 (98%)	1096 (96%)	44 (4%)	1 (0%)	51	51

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	78	ASP

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	508/520 (98%)	486 (96%)	22 (4%)	29	25
1	B	508/520 (98%)	480 (94%)	28 (6%)	21	16
All	All	1016/1040 (98%)	966 (95%)	50 (5%)	25	20

All (50) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	10	GLN
1	A	11	GLU
1	A	62	SER
1	A	63	PRO
1	A	109	ASP
1	A	128	SER
1	A	185	ASP
1	A	208	ARG
1	A	214	ARG
1	A	238	LYS
1	A	279	SER
1	A	406	LYS
1	A	419	GLU

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Mol	Chain	Res	Type
1	A	432	LYS
1	A	437	LYS
1	A	446	PRO
1	A	455	SER
1	A	464	MET
1	A	529	ARG
1	A	539	ASP
1	A	540	LYS
1	A	581	HIS
1	B	63	PRO
1	B	80	LYS
1	B	94	LYS
1	B	111	VAL
1	B	143	LYS
1	B	146	GLU
1	B	158	SER
1	B	181	LYS
1	B	185	ASP
1	B	226	ASP
1	B	242	PRO
1	B	245	ILE
1	B	289	SER
1	B	358	SER
1	B	394	PRO
1	B	398	ASP
1	B	399	GLU
1	B	400	VAL
1	B	420	ASP
1	B	421	THR
1	B	433	LYS
1	B	445	SER
1	B	453	LYS
1	B	464	MET
1	B	469	ILE
1	B	470	TYR
1	B	552	LYS
1	B	582	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	83	HIS

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Mol	Chain	Res	Type
1	B	237	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

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 6 ligands modelled in this entry, 2 are monoatomic - leaving 4 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	$\#\|Z\| > 2$
2	GLC	A	601	-	12,12,12	1.14	0	17,17,17	1.82	4 (23%)
3	MB3	A	602	-	7,7,7	2.39	4 (57%)	9,9,9	0.90	0
2	GLC	B	601	-	12,12,12	0.93	0	17,17,17	0.97	0
3	MB3	B	602	-	7,7,7	2.37	4 (57%)	9,9,9	1.93	3 (33%)

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	GLC	A	601	-	-	0/2/22/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	MB3	A	602	-	-	-	0/1/1/1
2	GLC	B	601	-	-	2/2/22/22	0/1/1/1
3	MB3	B	602	-	-	-	0/1/1/1

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	602	MB3	CAC-CAE	3.56	1.64	1.51
3	B	602	MB3	OAB-CAF	-3.49	1.15	1.23
3	A	602	MB3	OAB-CAF	-3.33	1.15	1.23
3	A	602	MB3	CAF-NAG	3.11	1.50	1.31
3	B	602	MB3	CAF-NAG	2.88	1.48	1.31
3	B	602	MB3	CAD-CAF	-2.85	1.42	1.51
3	B	602	MB3	CAC-CAE	2.83	1.61	1.51
3	A	602	MB3	CAD-CAF	-2.25	1.44	1.51

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	601	GLC	C1-O5-C5	4.82	122.76	113.66
2	A	601	GLC	O5-C1-C2	3.49	116.51	110.28
3	B	602	MB3	CAC-CAD-CAF	-3.34	94.85	104.48
3	B	602	MB3	CAC-CAE-NAG	-3.24	91.28	103.07
3	B	602	MB3	CAE-CAC-CAD	-2.75	97.35	105.97
2	A	601	GLC	O2-C2-C1	2.47	114.88	109.16
2	A	601	GLC	O3-C3-C2	-2.08	105.54	110.35

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	601	GLC	O5-C5-C6-O6
2	B	601	GLC	C4-C5-C6-O6

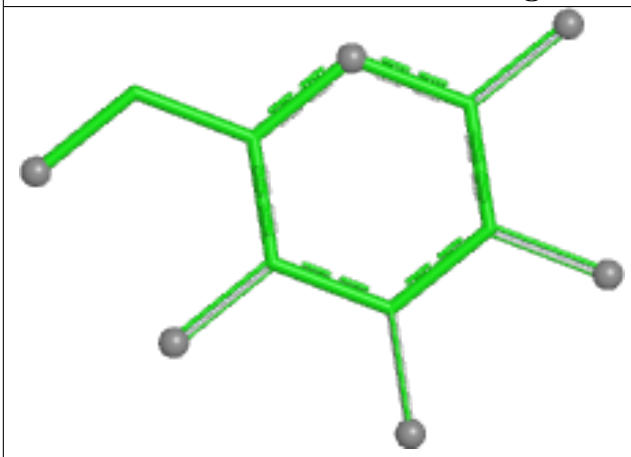
There are no ring outliers.

No monomer is involved in short contacts.

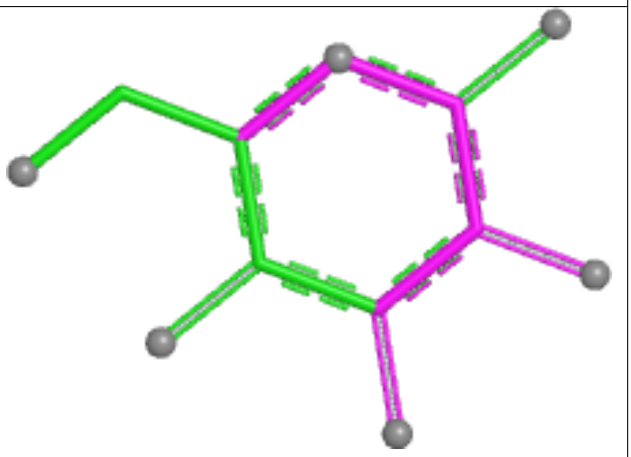
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is

within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

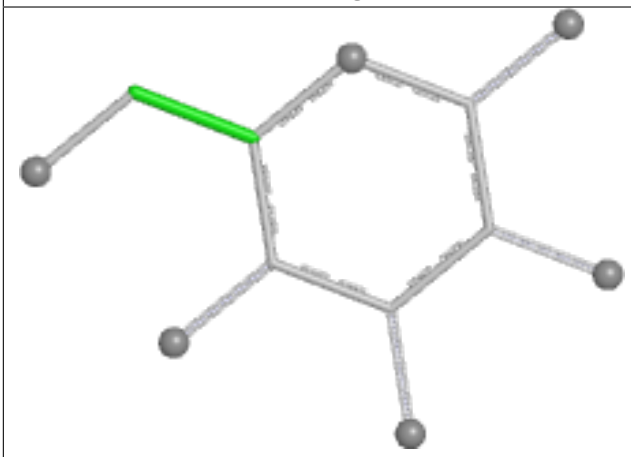
Ligand GLC A 601



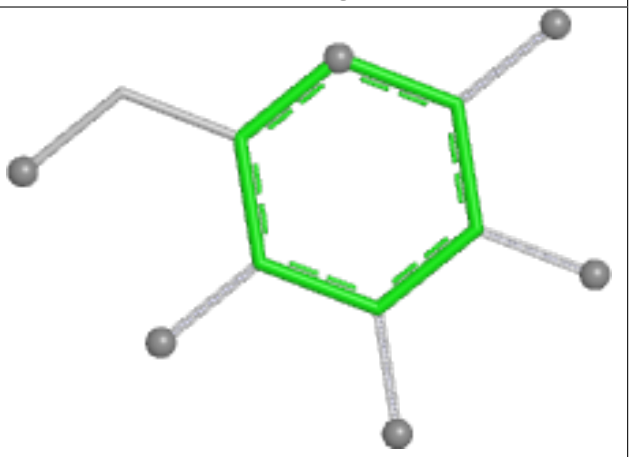
Bond lengths



Bond angles

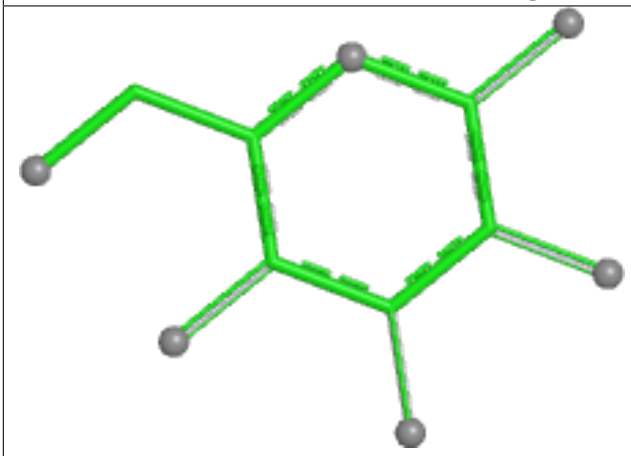


Torsions

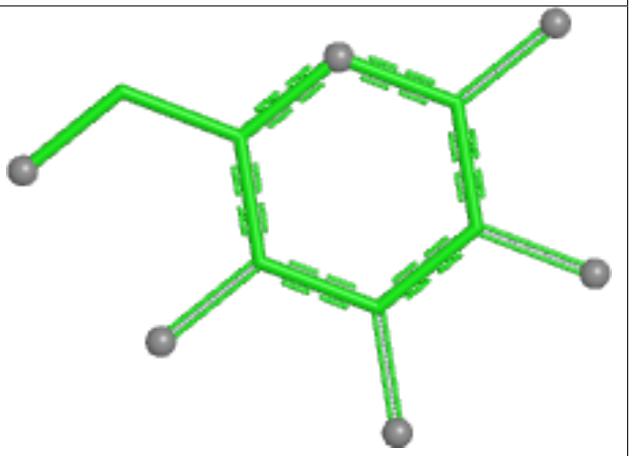


Rings

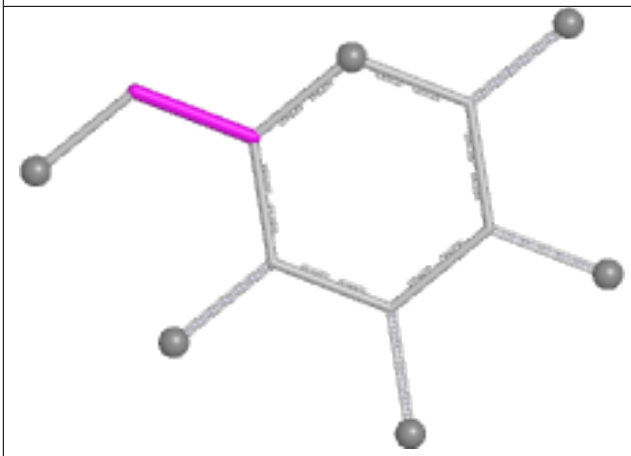
Ligand GLC B 601



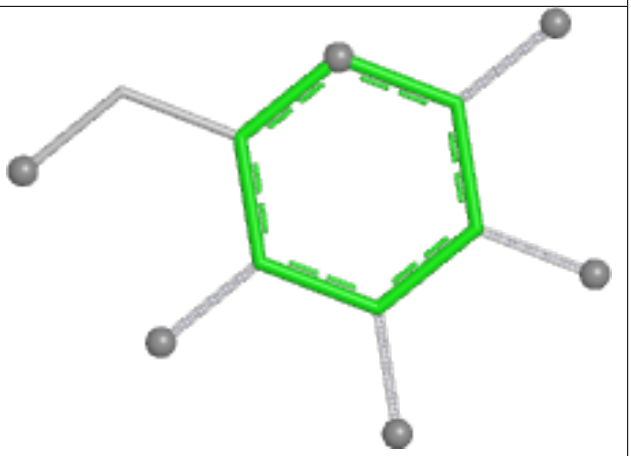
Bond lengths



Bond angles



Torsions



Rings

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	572/585 (97%)	0.22	8 (1%) 75 80	34, 48, 65, 85	0
1	B	572/585 (97%)	0.51	29 (5%) 28 34	38, 54, 75, 96	0
All	All	1144/1170 (97%)	0.37	37 (3%) 47 55	34, 50, 72, 96	0

All (37) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	175	TYR	4.7
1	B	174	TYR	4.2
1	B	160	PHE	4.0
1	B	167	TRP	3.7
1	B	151	ILE	3.4
1	B	159	TYR	3.4
1	A	148	GLY	3.2
1	B	141	PRO	3.2
1	B	147	GLN	3.1
1	B	152	PRO	3.1
1	B	162	GLY	3.0
1	B	244	ILE	3.0
1	A	167	TRP	2.9
1	A	10	GLN	2.9
1	B	146	GLU	2.9
1	B	236	GLY	2.9
1	A	146	GLU	2.8
1	B	419	GLU	2.8
1	B	526	GLU	2.8
1	B	422	LYS	2.7
1	A	149	ASN	2.6
1	B	127	SER	2.6
1	B	238	LYS	2.6
1	B	284	LEU	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	147	GLN	2.4
1	B	138	ILE	2.4
1	B	427	ALA	2.3
1	B	513	LYS	2.3
1	B	150	ARG	2.2
1	A	277	PRO	2.2
1	A	151	ILE	2.2
1	B	433	LYS	2.1
1	B	237	GLN	2.1
1	B	227	PHE	2.0
1	B	171	THR	2.0
1	B	140	LYS	2.0
1	B	408	VAL	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)

There are no monosaccharides in this entry.

6.4 Ligands (i)

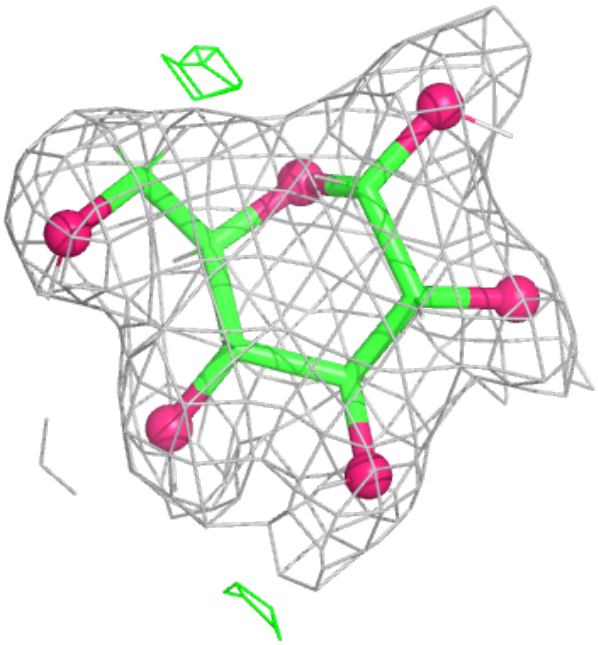
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

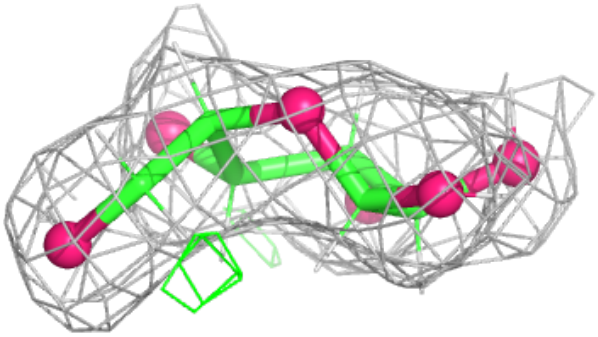
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	MB3	A	602	7/7	0.69	0.28	20,20,66,66	0
3	MB3	B	602	7/7	0.84	0.27	20,20,56,57	0
4	CA	A	603	1/1	0.84	0.14	59,59,59,59	0
2	GLC	B	601	12/12	0.86	0.16	45,52,67,68	0
4	CA	B	603	1/1	0.92	0.12	55,55,55,55	0
2	GLC	A	601	12/12	0.96	0.13	43,50,67,68	0

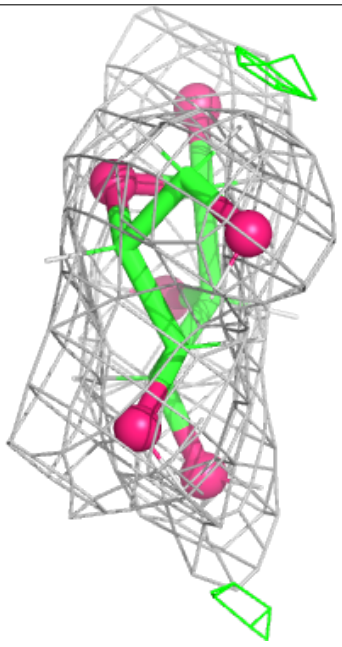
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around GLC B 601:

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

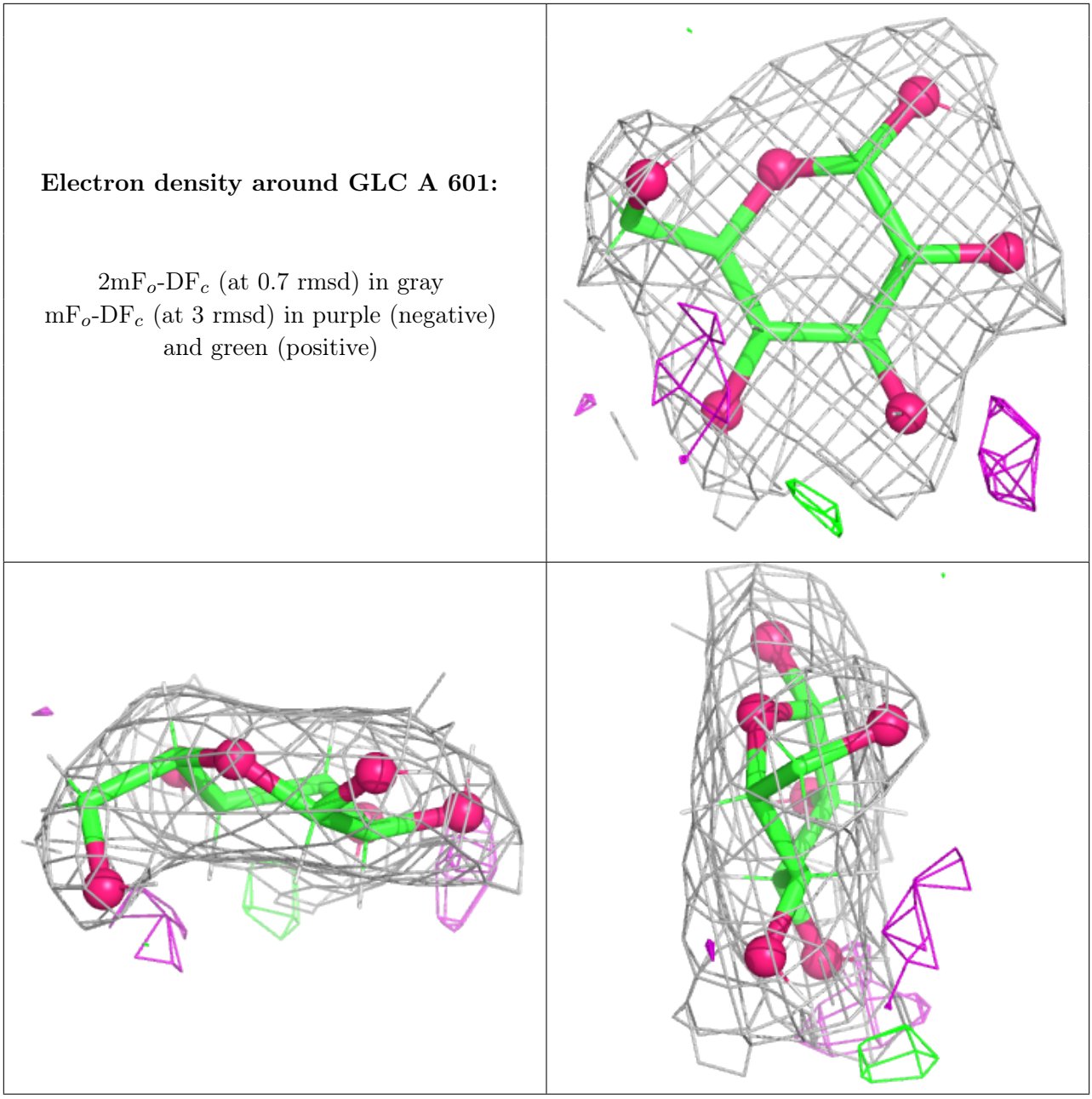






Electron density around GLC A 601:

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



6.5 Other polymers (i)

There are no such residues in this entry.