

# wwPDB X-ray Structure Validation Summary Report (i)

#### Oct 27, 2023 – 02:20 AM EDT

PDB ID	:	3L01
Title	:	Crystal structure of monomeric glycogen synthase from Pyrococcus abyssi
Authors	:	Diaz, A.; Martinez-Pons, C.; Fita, I.; Ferrer, J.C.; Guinovart, J.J.
Deposited on		
Resolution	:	2.60  Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 (i) 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 (1)) were used in the production of this report:

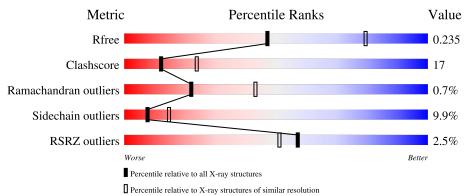
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
$\mathrm{EDS}$	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

# 1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:  $X\text{-}RAY \, DIFFRACTION$ 

The reported resolution of this entry is 2.60 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	$\begin{array}{c} \textbf{Whole archive} \\ \textbf{(\#Entries)} \end{array}$	${f Similar\ resolution}\ (\#{ m Entries,\ resolution\ range}({ m \AA}))$
$R_{free}$	130704	3163 (2.60-2.60)
Clashscore	141614	3518 (2.60-2.60)
Ramachandran outliers	138981	3455 (2.60-2.60)
Sidechain outliers	138945	3455 (2.60-2.60)
RSRZ outliers	127900	3104 (2.60-2.60)

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	А	428	2% 71%	23%	5%			
1	В	428	3% 75%	19%	7%			
2	С	4	25% 75%					
2	D	4	100%					

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard



Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	GOL	А	6500	-	-	Х	-
5	GOL	А	6502	-	-	Х	-
5	GOL	В	6501	-	-	Х	-
5	GOL	В	6503	-	-	Х	-

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:



# 2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 7011 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 GlgA glycogen synthase.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
1	А	428	Total 3394	C 2198	1,	O 615	S 10	0	0	0
1	В	428	Total 3394	C 2198		-	S 10	0	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
А	-1	ARG	-	expression tag	UNP Q9V2J8
А	0	HIS	-	expression tag	UNP Q9V2J8
А	426	ALA	THR	engineered mutation	UNP Q9V2J8
В	-1	ARG	-	expression tag	UNP Q9V2J8
В	0	HIS	-	expression tag	UNP Q9V2J8
В	426	ALA	THR	engineered mutation	UNP Q9V2J8

• Molecule 2 is an oligosaccharide called alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose.



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
2	С	4	Total         C         O           45         24         21	0	0	0
2	D	4	Total         C         O           45         24         21	0	0	0

• Molecule 3 is POTASSIUM ION (three-letter code: K) (formula: K).

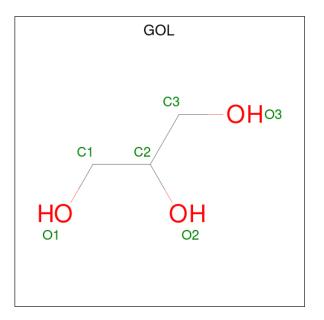


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	А	3	Total K 3 3	0	0
3	В	3	Total K 3 3	0	0

• Molecule 4 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	А	3	Total Cl 3 3	0	0
4	В	3	Total Cl 3 3	0	0

• Molecule 5 is GLYCEROL (three-letter code: GOL) (formula:  $C_3H_8O_3$ ).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	А	1	$\begin{array}{ccc} \text{Total} & \text{C} & \text{O} \\ 6 & 3 & 3 \end{array}$	0	0
5	А	1	$\begin{array}{ccc} \text{Total}  \text{C}  \text{O} \\ 6  3  3 \end{array}$	0	0
5	В	1	$\begin{array}{ccc} \text{Total}  \text{C}  \text{O} \\ 6  3  3 \end{array}$	0	0
5	В	1	$\begin{array}{ccc} \text{Total}  \text{C}  \text{O} \\ 6  3  3 \end{array}$	0	0

• Molecule 6 is water.

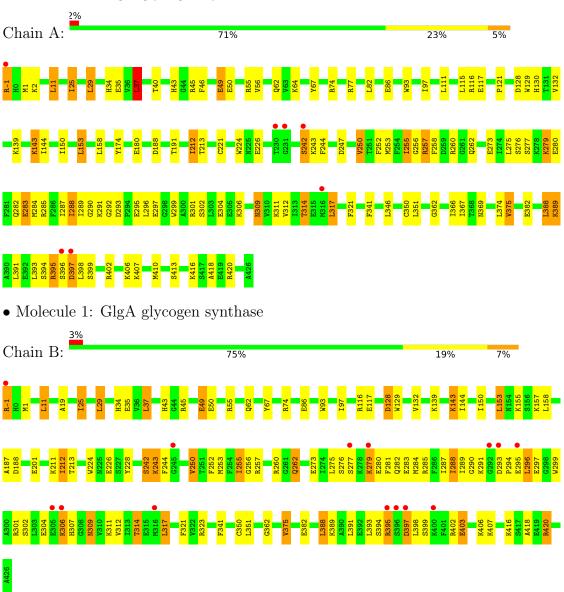


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	А	48	Total         O           48         48	0	0
6	В	49	Total O 49 49	0	0



# 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: GlgA glycogen synthase

• Molecule 2: alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose



GLC1 GLC2 GLC3 GLC4

Chain C:	25%	75%
GLC1 GLC2 GLC3 GLC4		
	2: alpha-D-glu D-glucopyranos	copyranose-(1-4)-alpha-D-glucopyranose-(1-4)-alpha-D-glucopyranose-(
Chain D:		100%

R L D W I D E PDB TEIN DATA BANK

PROT

# 4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants	103.60Å 119.02Å 141.10Å	Depositor
a, b, c, $\alpha$ , $\beta$ , $\gamma$	90.00° 90.00° 90.00°	Depositor
Resolution (Å)	24.91 - 2.60	Depositor
Resolution (A)	24.76 - 2.60	EDS
% Data completeness	83.7 (24.91-2.60)	Depositor
(in resolution range)	82.5 (24.76-2.60)	EDS
R <sub>merge</sub>	0.06	Depositor
$R_{sym}$	0.10	Depositor
$< I/\sigma(I) > 1$	$2.77 (at 2.60 \text{\AA})$	Xtriage
Refinement program	REFMAC 5.5.0066	Depositor
B B.	0.198 , $0.228$	Depositor
$R, R_{free}$	0.210 , $0.235$	DCC
$R_{free}$ test set	2023 reflections $(4.52%)$	wwPDB-VP
Wilson B-factor $(Å^2)$	33.7	Xtriage
Anisotropy	0.124	Xtriage
Bulk solvent $k_{sol}(e/Å^3), B_{sol}(Å^2)$	0.38, $54.4$	EDS
L-test for twinning <sup>2</sup>	$ < L >=0.49, < L^2>=0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.92	EDS
Total number of atoms	7011	wwPDB-VP
Average B, all atoms $(Å^2)$	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: The largest off-origin peak in the Patterson function is 3.82% of the height of the origin peak. No significant pseudotranslation is detected.

<sup>&</sup>lt;sup>2</sup>Theoretical 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.



<sup>&</sup>lt;sup>1</sup>Intensities estimated from amplitudes.

# 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: GLC, GOL, CL, K

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	
	Unain	RMSZ	# Z  > 5	RMSZ	# Z  > 5
1	А	0.74	0/3473	0.74	1/4683~(0.0%)
1	В	0.72	0/3473	0.73	1/4683~(0.0%)
All	All	0.73	0/6946	0.73	2/9366~(0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$\mathbf{Observed}(^{o})$	$Ideal(^{o})$
1	В	128	ASP	CB-CG-OD1	5.46	123.22	118.30
1	А	37	LEU	CA-CB-CG	5.11	127.06	115.30

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	А	3394	0	3405	111	0
1	В	3394	0	3403	109	0
2	С	45	0	39	4	0
2	D	45	0	39	5	0
3	А	3	0	0	0	0
3	В	3	0	0	0	0
4	А	3	0	0	0	0



	Chain	-	1 0	H(added)	Clashes	Symm-Clashes
4	В	3	0	0	0	0
5	А	12	0	16	8	0
5	В	12	0	16	6	0
6	А	48	0	0	1	0
6	В	49	0	0	2	0
All	All	7011	0	6918	235	0

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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 17.

The worst 5 of 235 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:279:LYS:HD3	1:B:279:LYS:H	1.08	1.18
1:A:279:LYS:H	1:A:279:LYS:HD3	1.13	1.13
5:A:6500:GOL:H11	5:A:6502:GOL:H31	1.24	1.10
1:B:395:ARG:NE	1:B:395:ARG:HA	1.71	1.04
5:A:6500:GOL:C1	5:A:6502:GOL:H31	1.86	1.04

There are no symmetry-related clashes.

#### 5.3 Torsion angles (i)

#### 5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Perce	entiles
1	А	426/428~(100%)	403~(95%)	20~(5%)	3~(1%)	22	43
1	В	426/428~(100%)	404 (95%)	19 (4%)	3~(1%)	22	43
All	All	852/856~(100%)	807 (95%)	39~(5%)	6 (1%)	22	43

5 of 6 Ramachandran outliers are listed below:



Mol	Chain	Res	Type
1	А	394	SER
1	В	394	SER
1	А	396	SER
1	А	276	SER
1	В	276	SER

#### 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	А	357/357~(100%)	321~(90%)	36 (10%)	7 14
1	В	357/357~(100%)	322~(90%)	35 (10%)	8 15
All	All	714/714~(100%)	643~(90%)	71 (10%)	8 15

 $5~{\rm of}~71$  residues with a non-rotameric side chain are listed below:

Mol	Chain	$\mathbf{Res}$	Type
1	В	306	LYS
1	В	314	THR
1	В	395	ARG
1	А	314	THR
1	А	309	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 12 such sidechains are listed below:

Mol	Chain	Res	Type
1	В	217	ASN
1	В	262	GLN
1	В	404	ASN
1	В	307	HIS
1	А	307	HIS

#### 5.3.3 RNA (i)

There are no RNA molecules in this entry.



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

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

### 5.5 Carbohydrates (i)

8 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	Turne	Chain	Res	Link	Bo	ond leng	ths	В	ond ang	les
N101	Type	Ullaili	nes		Counts	RMSZ	# Z >2	Counts	RMSZ	# Z >2
2	GLC	С	1	2	12,12,12	0.77	0	$17,\!17,\!17$	1.51	5 (29%)
2	GLC	С	2	2	11,11,12	0.82	0	$15,\!15,\!17$	2.11	5 (33%)
2	GLC	С	3	2	11,11,12	0.53	0	$15,\!15,\!17$	1.13	2 (13%)
2	GLC	С	4	2	11,11,12	0.49	0	$15,\!15,\!17$	1.46	3 (20%)
2	GLC	D	1	2	12,12,12	0.77	0	$17,\!17,\!17$	1.45	4 (23%)
2	GLC	D	2	2	11,11,12	0.57	0	$15,\!15,\!17$	2.57	8 (53%)
2	GLC	D	3	2	11,11,12	0.30	0	$15,\!15,\!17$	1.63	4 (26%)
2	GLC	D	4	2	11,11,12	0.53	0	$15,\!15,\!17$	1.25	2 (13%)

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	С	1	2	-	2/2/22/22	0/1/1/1
2	GLC	С	2	2	-	2/2/19/22	0/1/1/1
2	GLC	С	3	2	-	1/2/19/22	0/1/1/1
2	GLC	С	4	2	-	2/2/19/22	0/1/1/1
2	GLC	D	1	2	-	2/2/22/22	0/1/1/1
2	GLC	D	2	2	-	2/2/19/22	0/1/1/1
2	GLC	D	3	2	-	1/2/19/22	0/1/1/1
2	GLC	D	4	2	-	0/2/19/22	0/1/1/1



There are no bond length outliers.

The worst 5 of 33 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	$Observed(^{o})$	$Ideal(^{o})$
2	D	2	GLC	C1-C2-C3	4.43	115.11	109.67
2	D	2	GLC	O5-C5-C6	4.16	113.73	107.20
2	С	2	GLC	C1-C2-C3	4.08	114.69	109.67
2	D	3	GLC	C1-O5-C5	3.94	117.53	112.19
2	D	2	GLC	C1-O5-C5	3.68	117.17	112.19

There are no chirality outliers.

5 of 12 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	С	2	GLC	C4-C5-C6-O6
2	С	4	GLC	O5-C5-C6-O6
2	D	1	GLC	O5-C5-C6-O6
2	D	2	GLC	O5-C5-C6-O6
2	С	4	GLC	C4-C5-C6-O6

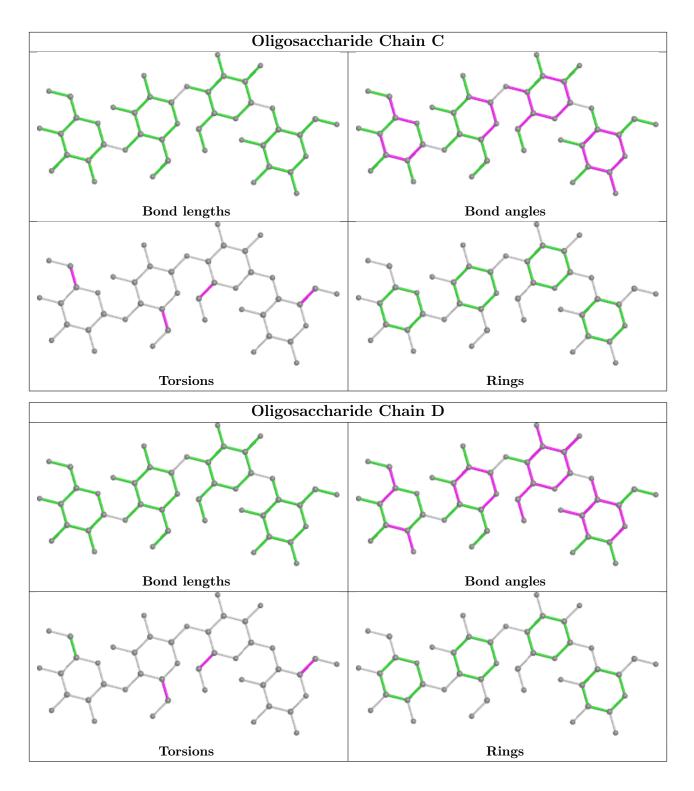
There are no ring outliers.

7 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	2	GLC	1	0
2	С	3	GLC	3	0
2	С	1	GLC	1	0
2	D	1	GLC	1	0
2	D	4	GLC	3	0
2	С	4	GLC	3	0
2	D	3	GLC	4	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.





## 5.6 Ligand geometry (i)

Of 16 ligands modelled in this entry, 12 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	Mol Type Chain Res Link		B	Bond lengths			Bond angles			
	туре	Chain	nes		Counts	RMSZ	# Z >2	Counts	RMSZ	# Z  > 2
5	GOL	В	6501	-	$5,\!5,\!5$	0.26	0	$5,\!5,\!5$	0.52	0
5	GOL	В	6503	-	$5,\!5,\!5$	0.49	0	$5,\!5,\!5$	0.50	0
5	GOL	А	6500	-	$5,\!5,\!5$	0.42	0	$5,\!5,\!5$	0.55	0
5	GOL	А	6502	-	$5,\!5,\!5$	0.57	0	$5,\!5,\!5$	0.53	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	GOL	В	6501	-	-	4/4/4/4	-
5	GOL	В	6503	-	-	2/4/4/4	-
5	GOL	А	6500	-	-	4/4/4/4	-
5	GOL	А	6502	-	-	0/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 10 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	А	6500	GOL	C1-C2-C3-O3
5	В	6501	GOL	O1-C1-C2-O2
5	В	6501	GOL	O1-C1-C2-C3
5	В	6501	GOL	C1-C2-C3-O3
5	А	6500	GOL	O1-C1-C2-O2

There are no ring outliers.

4 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	В	6501	GOL	6	0
5	В	6503	GOL	5	0
5	А	6500	GOL	5	0



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Mol	Chain	$\mathbf{Res}$	Type	Clashes	Symm-Clashes
5	А	6502	GOL	7	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,  $95^{th}$  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	$\langle RSRZ \rangle$	#RSRZ>2	$OWAB(Å^2)$	Q<0.9
1	А	428/428 (100%)	-0.20	7 (1%) 72 68	20, 32, 67, 80	0
1	В	428/428 (100%)	-0.14	14 (3%) 46 39	21, 33, 74, 90	0
All	All	856/856~(100%)	-0.17	21 (2%) 57 51	20, 32, 70, 90	0

The worst 5 of 21 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	А	-1	ARG	3.6
1	В	316	MET	3.4
1	В	-1	ARG	3.4
1	В	397	ASP	3.1
1	А	316	MET	2.9

## 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.

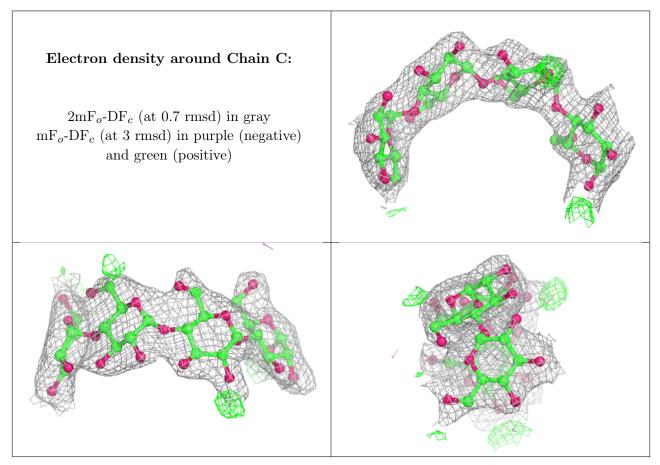
Mol	Type	Chain	Res	Atoms	RSCC	RSR	$\mathbf{B} ext{-factors}(\mathrm{\AA}^2)$	Q<0.9
2	GLC	D	1	12/12	0.87	0.32	44,57,84,122	0
2	GLC	С	1	12/12	0.89	0.30	42,55,93,120	0
2	GLC	С	2	11/12	0.94	0.21	31,45,54,54	0
2	GLC	D	2	11/12	0.95	0.20	33,42,55,55	0
2	GLC	С	4	11/12	0.96	0.12	15,28,53,60	0



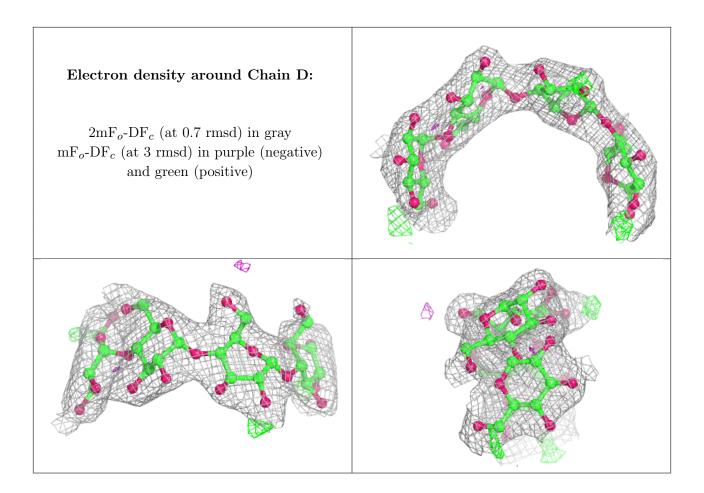
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Mol	Type	Chain	Res	Atoms	RSCC	RSR	$B-factors(Å^2)$	Q<0.9
2	GLC	D	3	11/12	0.97	0.20	$25,\!37,\!45,\!46$	0
2	GLC	D	4	11/12	0.97	0.13	18,29,40,55	0
2	GLC	С	3	11/12	0.98	0.16	15,24,38,48	0

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.







### 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	Κ	В	5606	1/1	0.94	0.09	58, 58, 58, 58	0
5	GOL	А	6502	6/6	0.94	0.25	33,38,48,50	0
5	GOL	А	6500	6/6	0.95	0.14	27,39,41,44	0
4	CL	А	5700	1/1	0.95	0.20	31,31,31,31	0
5	GOL	В	6501	6/6	0.95	0.14	$32,\!37,\!57,\!59$	0
4	CL	В	5705	1/1	0.96	0.15	32,32,32,32	0
4	CL	В	5701	1/1	0.96	0.15	36,36,36,36	0
3	Κ	В	5605	1/1	0.97	0.06	46,46,46,46	0
4	CL	А	5703	1/1	0.97	0.13	45,45,45,45	0
3	Κ	А	5607	1/1	0.97	0.09	63,63,63,63	0
4	CL	В	5702	1/1	0.97	0.16	54,54,54,54	0
5	GOL	В	6503	6/6	0.97	0.20	17,35,53,56	0
3	K	В	5601	1/1	0.98	0.23	38,38,38,38	0



Mol	Type	Chain	Res	Atoms	RSCC	RSR	$\mathbf{B} ext{-factors}(\mathrm{\AA}^2)$	Q<0.9
4	CL	А	5704	1/1	0.98	0.24	$25,\!25,\!25,\!25$	0
3	Κ	А	5602	1/1	0.98	0.06	24,24,24,24	0
3	Κ	А	5600	1/1	0.99	0.25	40,40,40,40	0

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## 6.5 Other polymers (i)

There are no such residues in this entry.

