



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2018 – 06:43 pm GMT

PDB ID : 1PUU  
Title : Mistletoe lectin I in complex with lactose  
Authors : Krauspenhaar, R.; Voelter, W.; Stoeva, S.; Mikhailov, A.; Konareva, N.; Betzel, C.  
Deposited on : 2003-06-25  
Resolution : 2.30 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](mailto: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.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.7.3 (157068), CSD as539be (2018)  
Xtriage (Phenix) : 1.13  
EDS : trunk30967  
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)  
Refmac : 5.8.0158  
CCP4 : 7.0 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk30967

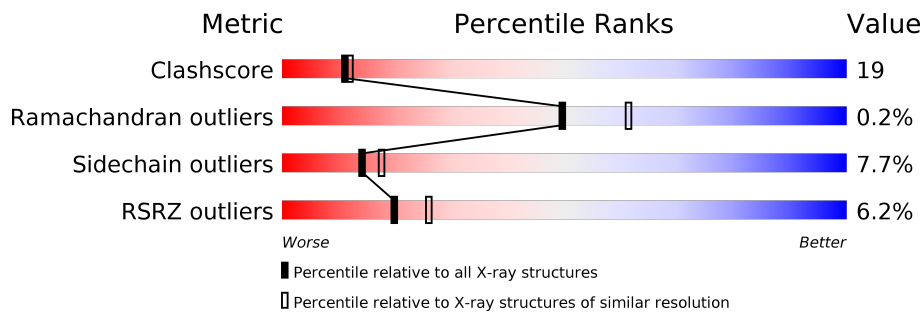
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.30 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))
Clashscore	122126	5072 (2.30-2.30)
Ramachandran outliers	120053	5022 (2.30-2.30)
Sidechain outliers	120020	5021 (2.30-2.30)
RSRZ outliers	108989	4374 (2.30-2.30)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	249	
2	B	263	

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
4	SO4	A	2022	-	-	X	-
6	DIO	A	1830	-	-	-	X

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
7	GOL	A	1021	-	X	-	-
7	GOL	A	1025	-	X	-	X
7	GOL	A	1031	-	X	X	X
7	GOL	A	1067	-	X	-	-
7	GOL	A	1069	-	X	-	-
7	GOL	A	1090	-	X	-	-
7	GOL	A	1096	-	X	-	-
7	GOL	A	1237	-	X	-	-
7	GOL	B	1041	-	X	-	X
7	GOL	B	1068	-	X	-	-
7	GOL	B	1070	-	X	-	-
7	GOL	B	1071	-	X	-	-
7	GOL	B	1088	-	X	-	-
7	GOL	B	1089	-	X	-	-
7	GOL	B	1091	-	X	-	-
7	GOL	B	1095	-	X	-	-

## 2 Entry composition [i](#)

There are 10 unique types of molecules in this entry. The entry contains 4509 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.

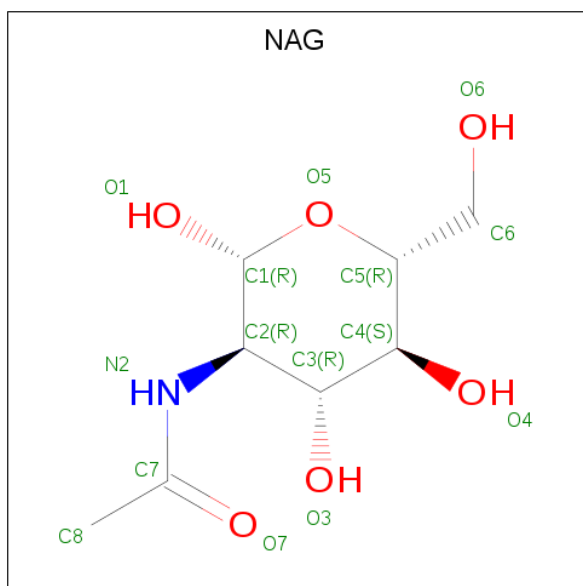
- Molecule 1 is a protein called lectin I A chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	249	Total 1921	C 1218	N 328	O 371	S 4	0	0	0

- Molecule 2 is a protein called lectin I B chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	263	Total 2000	C 1238	N 354	O 396	S 12	0	0	0

- Molecule 3 is N-ACETYL-D-GLUCOSAMINE (three-letter code: NAG) (formula: C<sub>8</sub>H<sub>15</sub>NO<sub>6</sub>).



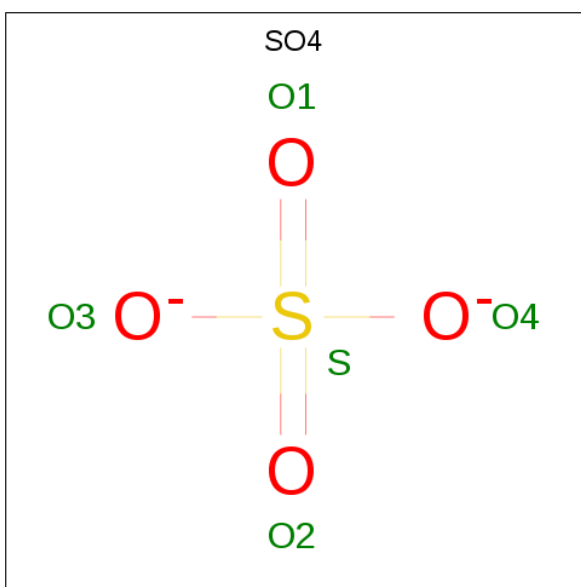
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
3	A	1	Total 14	C 8	N 1	O 5	0	0
3	B	1	Total 14	C 8	N 1	O 5	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	B	1	Total	C	N	O	0	0
			14	8	1	5		
3	B	1	Total	C	N	O	0	0
			14	8	1	5		
3	B	1	Total	C	N	O	0	0
			14	8	1	5		
3	B	1	Total	C	N	O	0	0
			14	8	1	5		

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).

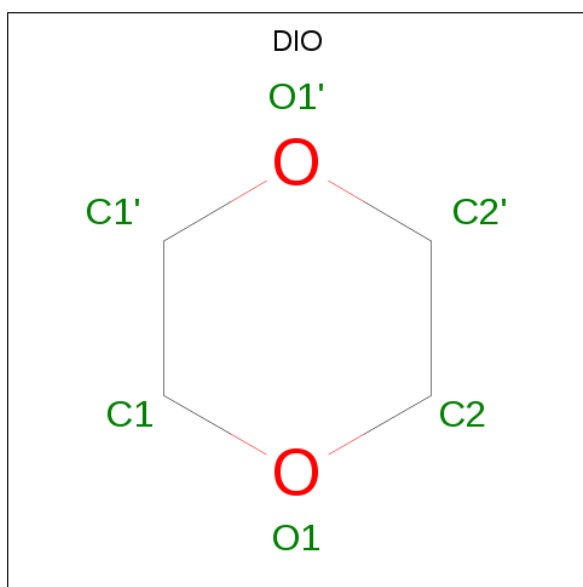


Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	O S	0	0
			5	4 1		
4	A	1	Total	O S	0	0
			5	4 1		
4	A	1	Total	O S	0	0
			5	4 1		

- Molecule 5 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

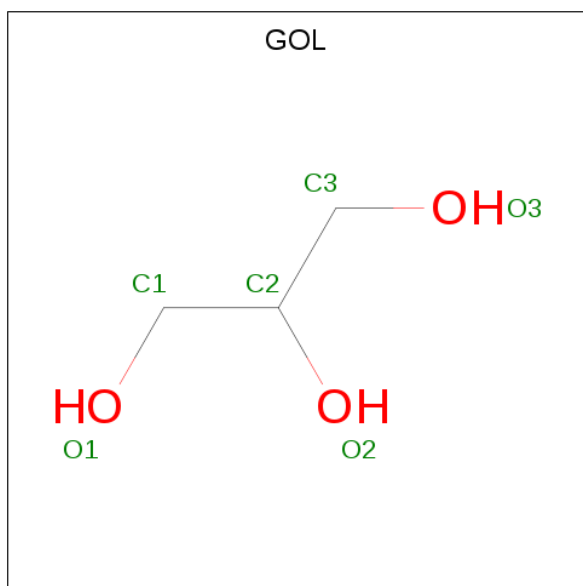
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	3	Total Cl	0	0
			3 3		

- Molecule 6 is 1,4-DIETHYLENE DIOXIDE (three-letter code: DIO) (formula: C<sub>4</sub>H<sub>8</sub>O<sub>2</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
6	A	1	6	4	2	0	0

- Molecule 7 is GLYCEROL (three-letter code: GOL) (formula:  $C_3H_8O_3$ ).



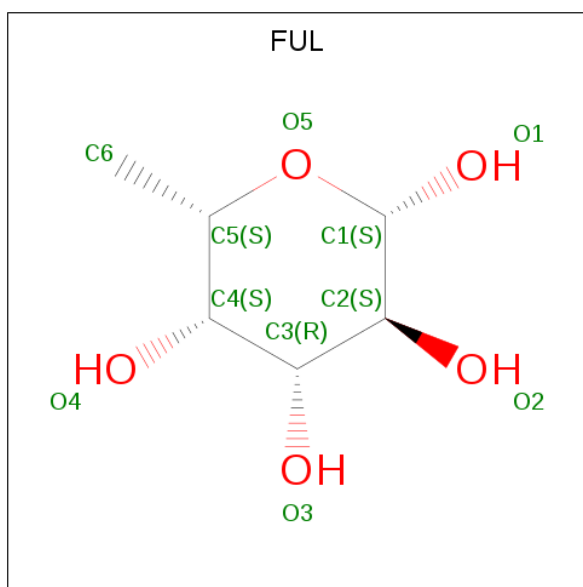
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
7	A	1	6	3	3	0	0
7	A	1	6	3	3	0	0
7	A	1	6	3	3	0	0

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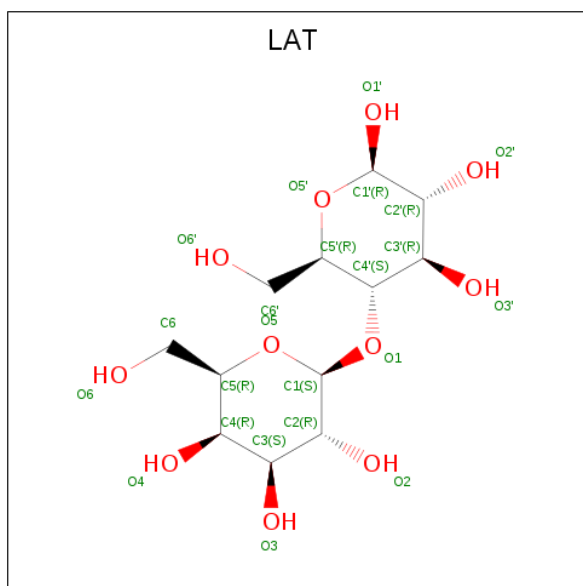
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total 6	C 3	O 3	0	0
7	A	1	Total 6	C 3	O 3	0	0
7	A	1	Total 6	C 3	O 3	0	0
7	A	1	Total 6	C 3	O 3	0	0
7	A	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0
7	B	1	Total 6	C 3	O 3	0	0

- Molecule 8 is BETA-L-FUCOSE (three-letter code: FUL) (formula: C<sub>6</sub>H<sub>12</sub>O<sub>5</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	B	1	Total	C	O	0	0
			10	6	4		

- Molecule 9 is BETA-LACTOSE (three-letter code: LAT) (formula:  $C_{12}H_{22}O_{11}$ ).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
9	B	1	Total	C	O	0	0
			23	12	11		
9	B	1	Total	C	O	0	0
			23	12	11		

- Molecule 10 is water.

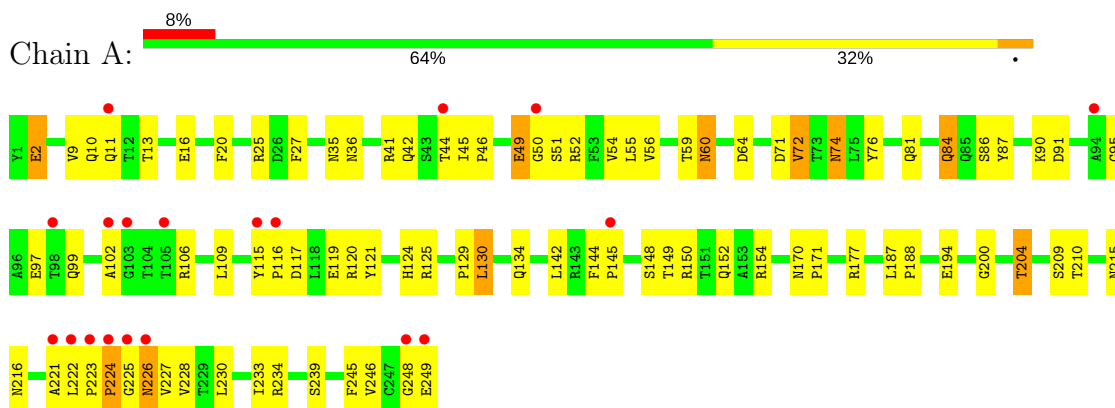


<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>ZeroOcc</b>	<b>AltConf</b>
10	A	127	Total 127	O 127	0	0
10	B	201	Total 201	O 201	0	0

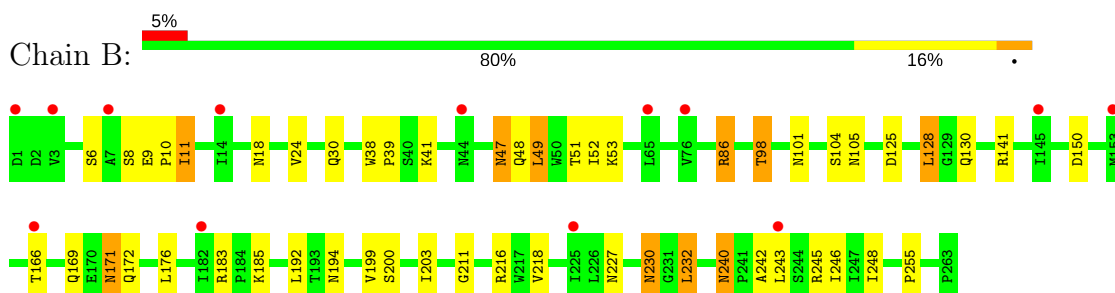
### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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: lectin I A chain



- Molecule 2: lectin I B chain



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 65 2 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	106.28Å 106.28Å 312.33Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	10.00 – 2.30 25.97 – 2.30	Depositor EDS
% Data completeness (in resolution range)	99.8 (10.00-2.30) 99.8 (25.97-2.30)	Depositor EDS
$R_{merge}$	0.04	Depositor
$R_{sym}$	0.05	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.04 (at 2.31Å)	Xtrriage
Refinement program	CNS	Depositor
R, $R_{free}$	0.207 , 0.232 0.211 , (Not available)	Depositor DCC
$R_{free}$ test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	40.3	Xtrriage
Anisotropy	0.297	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.34 , 53.7	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.31$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	4509	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	39.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.07% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<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.

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: GOL, DIO, NAG, CL, SO4, LAT, FUL

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	0.46	0/1960	0.70	0/2670
2	B	0.49	0/2039	0.76	0/2782
All	All	0.47	0/3999	0.73	0/5452

There are no bond length outliers.

There are no bond angle outliers.

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	1921	0	1899	97	0
2	B	2000	0	1931	58	0
3	A	14	0	13	1	0
3	B	70	0	62	6	0
4	A	15	0	0	3	0
5	A	3	0	0	1	0
6	A	6	0	8	1	0
7	A	48	0	32	11	0
7	B	48	0	33	4	0
8	B	10	0	10	2	0
9	B	46	0	44	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	A	127	0	0	2	0
10	B	201	0	0	5	0
All	All	4509	0	4032	158	0

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 19.

All (158) 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:9:VAL:HG23	1:A:11:GLN:H	1.09	1.09
1:A:84:GLN:H	1:A:84:GLN:NE2	1.56	1.04
2:B:41:LYS:H	2:B:48:GLN:HE22	1.15	0.92
2:B:18:ASN:HD22	2:B:183:ARG:HH22	1.18	0.90
1:A:245:PHE:HE1	1:A:248:GLY:H	1.02	0.90
1:A:9:VAL:HG23	1:A:11:GLN:N	1.90	0.87
2:B:98:THR:HG22	2:B:216:ARG:HH22	1.39	0.86
2:B:230:ASN:HD22	2:B:232:LEU:H	1.20	0.85
1:A:224:PRO:HG2	1:A:226:ASN:ND2	1.91	0.84
7:A:1069:GOL:O1	2:B:141:ARG:HG2	1.79	0.83
1:A:115:TYR:HA	1:A:119:GLU:OE1	1.77	0.83
1:A:71:ASP:HB3	1:A:74:ASN:HD21	1.42	0.82
2:B:230:ASN:ND2	2:B:232:LEU:H	1.77	0.82
1:A:102:ALA:HA	1:A:106:ARG:NH1	1.96	0.80
1:A:95:GLY:H	7:A:1237:GOL:H11	1.46	0.79
1:A:84:GLN:NE2	1:A:84:GLN:N	2.32	0.78
1:A:222:LEU:HD21	1:A:228:VAL:HB	1.67	0.77
1:A:84:GLN:H	1:A:84:GLN:HE21	1.32	0.77
1:A:84:GLN:N	1:A:84:GLN:HE21	1.85	0.75
2:B:166:THR:H	2:B:172:GLN:HE22	1.35	0.74
1:A:115:TYR:HB3	6:A:1830:DIO:H1'2	1.71	0.72
1:A:71:ASP:HB3	1:A:74:ASN:ND2	2.05	0.71
2:B:169:GLN:HE21	2:B:171:ASN:HD21	1.35	0.70
2:B:11:ILE:HD11	2:B:49:LEU:HG	1.73	0.69
1:A:200:GLY:O	1:A:204:THR:HG23	1.92	0.68
1:A:52:ARG:HH12	1:A:71:ASP:CG	1.97	0.68
1:A:224:PRO:HG2	1:A:226:ASN:HD21	1.58	0.67
1:A:149:THR:HA	1:A:152:GLN:HE21	1.59	0.66
1:A:115:TYR:HD1	1:A:119:GLU:OE2	1.79	0.65
2:B:128:LEU:HD22	2:B:211:GLY:HA2	1.79	0.65
2:B:11:ILE:HG23	10:B:2098:HOH:O	1.95	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:25:ARG:HH12	1:A:170:ASN:HD21	1.44	0.64
2:B:41:LYS:HZ3	2:B:47:ASN:HD21	1.44	0.64
2:B:227:ASN:HD22	2:B:230:ASN:H	1.46	0.64
1:A:45:ILE:HG23	1:A:49:GLU:HG3	1.80	0.63
1:A:245:PHE:HE1	1:A:248:GLY:N	1.87	0.63
1:A:49:GLU:OE1	1:A:50:GLY:N	2.31	0.63
1:A:215:ASN:HD21	2:B:10:PRO:HD3	1.64	0.62
1:A:204:THR:HG22	1:A:246:VAL:HG21	1.82	0.62
2:B:125:ASP:H	2:B:130:GLN:HE22	1.46	0.62
1:A:222:LEU:HB2	1:A:226:ASN:ND2	2.14	0.62
2:B:240:ASN:HD21	2:B:242:ALA:HB3	1.64	0.61
2:B:194:ASN:HD22	2:B:248:ILE:HD13	1.66	0.60
2:B:245:ARG:HD3	10:B:2198:HOH:O	1.99	0.60
2:B:11:ILE:CD1	2:B:49:LEU:HB3	2.31	0.60
1:A:226:ASN:ND2	1:A:226:ASN:H	2.01	0.59
1:A:20:PHE:HZ	1:A:56:VAL:HG13	1.67	0.58
1:A:46:PRO:O	1:A:49:GLU:HB2	2.04	0.58
1:A:249:GLU:HG3	1:A:249:GLU:OXT	2.05	0.57
1:A:177:ARG:CZ	7:A:1031:GOL:H12	2.34	0.57
1:A:2:GLU:HG3	1:A:27:PHE:CD2	2.40	0.57
2:B:41:LYS:H	2:B:48:GLN:NE2	1.95	0.56
1:A:223:PRO:O	1:A:225:GLY:N	2.37	0.56
2:B:171:ASN:HD22	2:B:171:ASN:C	2.08	0.56
1:A:52:ARG:NH1	1:A:71:ASP:OD1	2.39	0.56
1:A:124:HIS:HD2	4:A:2022:SO4:O3	1.89	0.56
1:A:60:ASN:HD22	1:A:60:ASN:C	2.09	0.56
2:B:240:ASN:ND2	2:B:242:ALA:H	2.04	0.56
2:B:230:ASN:C	2:B:230:ASN:HD22	2.09	0.56
2:B:11:ILE:HD13	2:B:49:LEU:HB3	1.88	0.56
1:A:234:ARG:HG2	7:B:1088:GOL:H11	1.87	0.55
3:B:704:NAG:H3	8:B:711:FUL:O2	2.06	0.55
1:A:60:ASN:HD21	1:A:64:ASP:H	1.54	0.55
1:A:121:TYR:O	1:A:150:ARG:HG3	2.06	0.55
1:A:224:PRO:HG2	1:A:226:ASN:CG	2.27	0.55
1:A:115:TYR:CD1	1:A:119:GLU:OE2	2.58	0.54
1:A:25:ARG:HH22	1:A:170:ASN:ND2	2.05	0.53
1:A:116:PRO:HA	1:A:119:GLU:OE1	2.09	0.53
1:A:177:ARG:HD3	7:A:1031:GOL:H12	1.90	0.53
1:A:226:ASN:H	1:A:226:ASN:HD22	1.56	0.52
1:A:226:ASN:HD22	1:A:226:ASN:N	2.06	0.52
1:A:20:PHE:CZ	1:A:56:VAL:HG13	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:74:ASN:ND2	1:A:76:TYR:H	2.08	0.52
2:B:166:THR:H	2:B:172:GLN:NE2	2.07	0.52
1:A:60:ASN:ND2	1:A:64:ASP:H	2.07	0.51
3:B:704:NAG:H61	3:B:713:NAG:H4	1.92	0.51
7:A:1069:GOL:H11	2:B:176:LEU:HD12	1.92	0.51
1:A:222:LEU:HB2	1:A:226:ASN:HD21	1.75	0.51
1:A:154:ARG:HD3	10:A:2144:HOH:O	2.10	0.51
2:B:11:ILE:CD1	2:B:49:LEU:HG	2.40	0.51
2:B:11:ILE:O	2:B:11:ILE:HG13	2.10	0.50
2:B:125:ASP:H	2:B:130:GLN:NE2	2.07	0.50
1:A:223:PRO:C	1:A:225:GLY:H	2.14	0.50
2:B:169:GLN:HG2	2:B:171:ASN:ND2	2.26	0.50
8:B:711:FUL:H2	3:B:713:NAG:C1	2.41	0.50
2:B:41:LYS:N	2:B:48:GLN:HE22	1.96	0.50
1:A:95:GLY:O	1:A:99:GLN:HG2	2.12	0.49
2:B:18:ASN:ND2	2:B:183:ARG:HH22	1.98	0.49
1:A:35:ASN:O	1:A:36:ASN:HB2	2.12	0.49
2:B:24:VAL:HB	2:B:47:ASN:HB2	1.93	0.49
1:A:227:VAL:HG12	1:A:228:VAL:N	2.27	0.49
1:A:54:VAL:HG23	1:A:72:VAL:HG23	1.93	0.49
2:B:52:ILE:HD12	2:B:52:ILE:N	2.27	0.48
2:B:98:THR:HG22	2:B:216:ARG:NH2	2.18	0.48
1:A:177:ARG:NH1	7:A:1031:GOL:H12	2.29	0.48
1:A:177:ARG:NH1	7:A:1031:GOL:O1	2.46	0.48
2:B:240:ASN:HD21	2:B:242:ALA:CB	2.26	0.48
2:B:230:ASN:ND2	2:B:232:LEU:HB2	2.28	0.48
1:A:54:VAL:CG2	1:A:72:VAL:HG23	2.43	0.47
1:A:148:SER:HB2	4:A:2032:SO4:S	2.55	0.47
1:A:13:THR:OG1	1:A:16:GLU:HG3	2.14	0.47
2:B:240:ASN:C	2:B:240:ASN:HD22	2.19	0.47
2:B:98:THR:CG2	10:B:2029:HOH:O	2.63	0.47
1:A:97:GLU:O	1:A:106:ARG:CZ	2.64	0.46
2:B:240:ASN:ND2	2:B:242:ALA:HB3	2.30	0.46
1:A:216:ASN:OD1	5:A:1042:CL:CL	2.71	0.46
1:A:223:PRO:HG2	1:A:224:PRO:HD3	1.96	0.46
1:A:222:LEU:HB3	1:A:223:PRO:HD2	1.96	0.46
1:A:177:ARG:CD	7:A:1031:GOL:H12	2.46	0.46
2:B:255:PRO:HB2	7:B:1091:GOL:H12	1.97	0.46
1:A:215:ASN:ND2	2:B:8:SER:HB2	2.30	0.46
1:A:170:ASN:N	1:A:171:PRO:CD	2.79	0.45
1:A:90:LYS:O	1:A:91:ASP:HB2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:102:ALA:HA	1:A:106:ARG:HH12	1.79	0.45
1:A:20:PHE:HZ	1:A:56:VAL:CG1	2.29	0.45
2:B:38:TRP:CD1	2:B:39:PRO:HD2	2.52	0.45
1:A:59:THR:HA	1:A:64:ASP:O	2.15	0.45
1:A:223:PRO:HG2	1:A:224:PRO:CD	2.47	0.45
1:A:177:ARG:HH21	7:A:1021:GOL:C2	2.30	0.45
1:A:130:LEU:HD22	1:A:188:PRO:HD3	1.98	0.45
1:A:194:GLU:OE2	1:A:221:ALA:N	2.47	0.45
2:B:232:LEU:HB3	2:B:248:ILE:HB	1.98	0.45
2:B:227:ASN:ND2	2:B:230:ASN:H	2.14	0.45
1:A:222:LEU:N	1:A:222:LEU:HD22	2.33	0.45
3:A:703:NAG:H61	10:A:2117:HOH:O	2.16	0.45
2:B:203:ILE:HD12	2:B:246:ILE:HG22	1.99	0.43
1:A:41:ARG:CZ	1:A:45:ILE:HD11	2.48	0.43
2:B:101:ASN:ND2	2:B:104:SER:H	2.15	0.43
1:A:84:GLN:HG2	1:A:84:GLN:O	2.18	0.43
2:B:199:VAL:O	2:B:200:SER:HB2	2.17	0.43
2:B:51:THR:HG22	2:B:53:LYS:HG2	2.01	0.43
1:A:171:PRO:CD	1:A:239:SER:HB2	2.50	0.42
2:B:49:LEU:HD23	3:B:706:NAG:H82	2.02	0.42
2:B:255:PRO:CB	7:B:1091:GOL:H12	2.50	0.42
3:B:713:NAG:H82	3:B:713:NAG:H3	2.02	0.42
2:B:185:LYS:HZ2	7:B:1095:GOL:C2	2.32	0.42
2:B:98:THR:HG23	10:B:2029:HOH:O	2.19	0.42
1:A:49:GLU:OE1	1:A:51:SER:N	2.53	0.42
1:A:129:PRO:O	1:A:134:GLN:HG2	2.18	0.41
1:A:177:ARG:HD3	7:A:1031:GOL:C2	2.51	0.41
1:A:95:GLY:N	7:A:1237:GOL:H11	2.25	0.41
2:B:243:LEU:HB3	2:B:245:ARG:HG2	2.02	0.41
1:A:42:GLN:C	1:A:44:THR:H	2.24	0.41
1:A:115:TYR:CE1	1:A:125:ARG:HD3	2.55	0.41
1:A:209:SER:O	2:B:6:SER:HB2	2.21	0.41
1:A:45:ILE:HG22	1:A:52:ARG:HD3	2.03	0.41
1:A:222:LEU:HD21	1:A:228:VAL:CB	2.45	0.41
2:B:9:GLU:OE1	2:B:53:LYS:HE3	2.21	0.41
2:B:240:ASN:HD22	2:B:242:ALA:H	1.69	0.41
3:B:706:NAG:H81	10:B:2071:HOH:O	2.21	0.41
1:A:144:PHE:HA	1:A:145:PRO:HD3	1.74	0.40
1:A:74:ASN:C	1:A:74:ASN:HD22	2.24	0.40
1:A:117:ASP:O	1:A:120:ARG:HB2	2.22	0.40
1:A:87:TYR:CD1	1:A:87:TYR:N	2.88	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:124:HIS:CD2	4:A:2022:SO4:O3	2.73	0.40
1:A:41:ARG:NE	1:A:45:ILE:HD11	2.37	0.40
1:A:86:SER:OG	1:A:106:ARG:HG2	2.21	0.40
2:B:86:ARG:HG2	2:B:86:ARG:HH21	1.87	0.40

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	Percentiles	
1	A	247/249 (99%)	239 (97%)	7 (3%)	1 (0%)	36	45
2	B	261/263 (99%)	252 (97%)	9 (3%)	0	100	100
All	All	508/512 (99%)	491 (97%)	16 (3%)	1 (0%)	49	61

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	224	PRO

### 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	209/209 (100%)	191 (91%)	18 (9%)	11	14

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	B	219/219 (100%)	204 (93%)	15 (7%)	17	22
All	All	428/428 (100%)	395 (92%)	33 (8%)	14	17

All (33) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	GLU
1	A	10	GLN
1	A	49	GLU
1	A	55	LEU
1	A	60	ASN
1	A	72	VAL
1	A	74	ASN
1	A	81	GLN
1	A	84	GLN
1	A	109	LEU
1	A	130	LEU
1	A	142	LEU
1	A	187	LEU
1	A	204	THR
1	A	210	THR
1	A	226	ASN
1	A	230	LEU
1	A	233	ILE
2	B	11	ILE
2	B	30	GLN
2	B	47	ASN
2	B	49	LEU
2	B	86	ARG
2	B	98	THR
2	B	105	ASN
2	B	128	LEU
2	B	150	ASP
2	B	171	ASN
2	B	192	LEU
2	B	218	VAL
2	B	230	ASN
2	B	232	LEU
2	B	240	ASN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (28) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	10	GLN
1	A	11	GLN
1	A	60	ASN
1	A	74	ASN
1	A	81	GLN
1	A	84	GLN
1	A	124	HIS
1	A	152	GLN
1	A	161	GLN
1	A	170	ASN
1	A	178	GLN
1	A	215	ASN
1	A	226	ASN
2	B	18	ASN
2	B	30	GLN
2	B	47	ASN
2	B	48	GLN
2	B	101	ASN
2	B	105	ASN
2	B	130	GLN
2	B	156	ASN
2	B	171	ASN
2	B	172	GLN
2	B	215	GLN
2	B	227	ASN
2	B	230	ASN
2	B	238	GLN
2	B	240	ASN

### 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](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

Of 32 ligands modelled in this entry, 3 are monoatomic - leaving 29 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$
7	GOL	A	1021	-	5,5,5	4.81	5 (100%)	5,5,5	5.66	3 (60%)
7	GOL	A	1025	-	5,5,5	4.73	5 (100%)	5,5,5	5.69	3 (60%)
7	GOL	A	1031	-	5,5,5	5.03	5 (100%)	5,5,5	5.76	3 (60%)
7	GOL	A	1067	-	5,5,5	4.85	5 (100%)	5,5,5	5.69	3 (60%)
7	GOL	A	1069	-	5,5,5	4.81	5 (100%)	5,5,5	5.72	3 (60%)
7	GOL	A	1090	-	5,5,5	4.89	5 (100%)	5,5,5	5.69	3 (60%)
7	GOL	A	1096	-	5,5,5	4.75	5 (100%)	5,5,5	5.72	3 (60%)
7	GOL	A	1237	-	5,5,5	4.90	5 (100%)	5,5,5	5.70	3 (60%)
6	DIO	A	1830	-	6,6,6	1.72	1 (16%)	6,6,6	0.33	0
4	SO4	A	2022	-	4,4,4	0.35	0	6,6,6	0.23	0
4	SO4	A	2023	-	4,4,4	0.33	0	6,6,6	0.14	0
4	SO4	A	2032	-	4,4,4	0.37	0	6,6,6	0.15	0
3	NAG	A	703	1	14,14,15	0.71	0	17,19,21	0.94	1 (5%)
7	GOL	B	1041	-	5,5,5	4.72	5 (100%)	5,5,5	5.69	3 (60%)
7	GOL	B	1068	-	5,5,5	4.90	5 (100%)	5,5,5	5.70	3 (60%)
7	GOL	B	1070	-	5,5,5	4.72	5 (100%)	5,5,5	5.69	3 (60%)
7	GOL	B	1071	-	5,5,5	4.57	4 (80%)	5,5,5	5.80	3 (60%)
7	GOL	B	1088	-	5,5,5	4.85	5 (100%)	5,5,5	5.66	3 (60%)
7	GOL	B	1089	-	5,5,5	4.83	5 (100%)	5,5,5	5.64	3 (60%)
7	GOL	B	1091	-	5,5,5	4.82	5 (100%)	5,5,5	5.72	3 (60%)
7	GOL	B	1095	-	5,5,5	4.77	5 (100%)	5,5,5	5.68	3 (60%)
9	LAT	B	1347	-	24,24,24	1.05	0	35,35,35	0.97	1 (2%)
9	LAT	B	1348	-	24,24,24	0.97	1 (4%)	35,35,35	0.98	1 (2%)
3	NAG	B	701	2	14,14,15	0.61	0	17,19,21	0.91	1 (5%)
3	NAG	B	702	3,2	14,14,15	0.37	0	17,19,21	0.89	0
3	NAG	B	704	8,3,2	14,14,15	0.70	0	17,19,21	0.86	0
3	NAG	B	706	3	14,14,15	0.51	0	17,19,21	0.74	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
8	FUL	B	711	3	9,10,11	0.46	0	13,14,16	0.71	0
3	NAG	B	713	3	14,14,15	0.78	0	17,19,21	0.96	2 (11%)

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
7	GOL	A	1021	-	-	0/4/4/4	0/0/0/0
7	GOL	A	1025	-	-	0/4/4/4	0/0/0/0
7	GOL	A	1031	-	-	0/4/4/4	0/0/0/0
7	GOL	A	1067	-	-	0/4/4/4	0/0/0/0
7	GOL	A	1069	-	-	0/4/4/4	0/0/0/0
7	GOL	A	1090	-	-	0/4/4/4	0/0/0/0
7	GOL	A	1096	-	-	0/4/4/4	0/0/0/0
7	GOL	A	1237	-	-	0/4/4/4	0/0/0/0
6	DIO	A	1830	-	-	0/0/6/6	0/1/1/1
4	SO4	A	2022	-	-	0/0/0/0	0/0/0/0
4	SO4	A	2023	-	-	0/0/0/0	0/0/0/0
4	SO4	A	2032	-	-	0/0/0/0	0/0/0/0
3	NAG	A	703	1	-	0/6/23/26	0/1/1/1
7	GOL	B	1041	-	-	0/4/4/4	0/0/0/0
7	GOL	B	1068	-	-	0/4/4/4	0/0/0/0
7	GOL	B	1070	-	-	0/4/4/4	0/0/0/0
7	GOL	B	1071	-	-	0/4/4/4	0/0/0/0
7	GOL	B	1088	-	-	0/4/4/4	0/0/0/0
7	GOL	B	1089	-	-	0/4/4/4	0/0/0/0
7	GOL	B	1091	-	-	0/4/4/4	0/0/0/0
7	GOL	B	1095	-	-	0/4/4/4	0/0/0/0
9	LAT	B	1347	-	-	0/8/48/48	0/2/2/2
9	LAT	B	1348	-	-	0/8/48/48	0/2/2/2
3	NAG	B	701	2	-	0/6/23/26	0/1/1/1
3	NAG	B	702	3,2	-	0/6/23/26	0/1/1/1
3	NAG	B	704	8,3,2	-	0/6/23/26	0/1/1/1
3	NAG	B	706	3	-	0/6/23/26	0/1/1/1
8	FUL	B	711	3	-	0/0/17/20	0/1/1/1
3	NAG	B	713	3	-	0/6/23/26	0/1/1/1

All (81) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	1090	GOL	C3-C2	-8.57	1.19	1.52
7	A	1031	GOL	C3-C2	-8.54	1.19	1.52
7	B	1088	GOL	C3-C2	-8.33	1.20	1.52
7	A	1237	GOL	C3-C2	-8.31	1.20	1.52
7	B	1089	GOL	C3-C2	-8.28	1.20	1.52
7	B	1068	GOL	C3-C2	-8.21	1.20	1.52
7	A	1021	GOL	C3-C2	-8.21	1.20	1.52
7	A	1067	GOL	C3-C2	-8.20	1.20	1.52
7	B	1091	GOL	C3-C2	-8.09	1.21	1.52
7	B	1095	GOL	C3-C2	-8.03	1.21	1.52
7	A	1096	GOL	C3-C2	-7.97	1.21	1.52
7	A	1069	GOL	C3-C2	-7.95	1.21	1.52
7	B	1041	GOL	C3-C2	-7.94	1.21	1.52
7	A	1025	GOL	C3-C2	-7.93	1.21	1.52
7	B	1070	GOL	C3-C2	-7.82	1.22	1.52
7	B	1071	GOL	C3-C2	-7.62	1.22	1.52
7	A	1031	GOL	C1-C2	-3.78	1.37	1.52
7	A	1069	GOL	C1-C2	-3.62	1.38	1.52
7	A	1067	GOL	C1-C2	-3.30	1.39	1.52
7	B	1089	GOL	C1-C2	-3.28	1.39	1.52
7	B	1068	GOL	C1-C2	-3.27	1.39	1.52
7	A	1090	GOL	C1-C2	-3.27	1.39	1.52
7	B	1068	GOL	O2-C2	-3.24	1.33	1.43
7	A	1021	GOL	C1-C2	-3.19	1.39	1.52
7	A	1237	GOL	C1-C2	-3.18	1.39	1.52
7	B	1088	GOL	O2-C2	-3.18	1.34	1.43
7	B	1095	GOL	C1-C2	-3.18	1.39	1.52
7	B	1088	GOL	C1-C2	-3.17	1.39	1.52
7	B	1089	GOL	O2-C2	-3.14	1.34	1.43
7	A	1031	GOL	O2-C2	-3.11	1.34	1.43
7	A	1090	GOL	O2-C2	-3.10	1.34	1.43
7	A	1025	GOL	C1-C2	-3.07	1.40	1.52
7	B	1091	GOL	C1-C2	-3.02	1.40	1.52
7	A	1237	GOL	O2-C2	-3.01	1.34	1.43
7	B	1070	GOL	C1-C2	-2.99	1.40	1.52
7	A	1096	GOL	C1-C2	-2.97	1.40	1.52
7	A	1096	GOL	O2-C2	-2.95	1.34	1.43
7	A	1067	GOL	O2-C2	-2.93	1.34	1.43
7	B	1091	GOL	O2-C2	-2.92	1.34	1.43
7	B	1095	GOL	O2-C2	-2.92	1.34	1.43
7	B	1071	GOL	C1-C2	-2.90	1.40	1.52
7	A	1021	GOL	O2-C2	-2.87	1.35	1.43
7	B	1041	GOL	C1-C2	-2.87	1.41	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	B	1070	GOL	O2-C2	-2.82	1.35	1.43
7	A	1025	GOL	O2-C2	-2.74	1.35	1.43
7	A	1069	GOL	O2-C2	-2.69	1.35	1.43
7	B	1041	GOL	O2-C2	-2.59	1.35	1.43
9	B	1348	LAT	O5-C5	2.27	1.49	1.44
7	A	1090	GOL	O3-C3	2.67	1.53	1.42
7	B	1088	GOL	O3-C3	2.92	1.54	1.42
7	B	1089	GOL	O3-C3	3.03	1.55	1.42
7	A	1021	GOL	O3-C3	3.13	1.55	1.42
7	A	1237	GOL	O3-C3	3.23	1.56	1.42
7	B	1095	GOL	O3-C3	3.27	1.56	1.42
7	A	1067	GOL	O3-C3	3.31	1.56	1.42
7	B	1091	GOL	O3-C3	3.32	1.56	1.42
7	B	1068	GOL	O3-C3	3.34	1.56	1.42
7	A	1031	GOL	O3-C3	3.36	1.56	1.42
7	A	1025	GOL	O3-C3	3.38	1.56	1.42
7	A	1096	GOL	O3-C3	3.41	1.56	1.42
7	B	1041	GOL	O3-C3	3.44	1.56	1.42
7	B	1071	GOL	O3-C3	3.45	1.57	1.42
7	B	1070	GOL	O3-C3	3.54	1.57	1.42
7	A	1069	GOL	O3-C3	3.71	1.58	1.42
6	A	1830	DIO	O1'-C1'	3.78	1.57	1.42
7	A	1031	GOL	O1-C1	4.27	1.60	1.42
7	B	1089	GOL	O1-C1	4.30	1.60	1.42
7	A	1069	GOL	O1-C1	4.31	1.60	1.42
7	A	1090	GOL	O1-C1	4.34	1.60	1.42
7	B	1088	GOL	O1-C1	4.43	1.61	1.42
7	A	1067	GOL	O1-C1	4.47	1.61	1.42
7	B	1095	GOL	O1-C1	4.49	1.61	1.42
7	B	1068	GOL	O1-C1	4.50	1.61	1.42
7	A	1021	GOL	O1-C1	4.50	1.61	1.42
7	A	1096	GOL	O1-C1	4.50	1.61	1.42
7	A	1025	GOL	O1-C1	4.52	1.61	1.42
7	B	1070	GOL	O1-C1	4.54	1.61	1.42
7	A	1237	GOL	O1-C1	4.59	1.61	1.42
7	B	1041	GOL	O1-C1	4.66	1.62	1.42
7	B	1091	GOL	O1-C1	4.68	1.62	1.42
7	B	1071	GOL	O1-C1	4.73	1.62	1.42

All (55) bond angle outliers are listed below:

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	B	1347	LAT	O3'-C3'-C2'	-2.22	105.17	110.34
3	B	706	NAG	C2-N2-C7	-2.21	119.72	122.94
9	B	1348	LAT	O4-C4-C3	-2.12	105.38	110.34
3	A	703	NAG	C2-N2-C7	-2.10	119.87	122.94
3	B	713	NAG	C4-C3-C2	-2.10	107.94	111.02
3	B	701	NAG	C2-N2-C7	-2.06	119.94	122.94
3	B	713	NAG	C1-O5-C5	2.03	114.98	112.19
7	A	1090	GOL	O1-C1-C2	2.85	123.93	110.11
7	B	1071	GOL	O1-C1-C2	3.06	124.96	110.11
7	B	1095	GOL	O1-C1-C2	3.06	124.98	110.11
7	B	1089	GOL	O1-C1-C2	3.12	125.24	110.11
7	A	1069	GOL	O1-C1-C2	3.12	125.25	110.11
7	A	1025	GOL	O1-C1-C2	3.14	125.35	110.11
7	B	1088	GOL	O1-C1-C2	3.16	125.43	110.11
7	A	1067	GOL	O1-C1-C2	3.16	125.43	110.11
7	B	1068	GOL	O1-C1-C2	3.16	125.46	110.11
7	A	1237	GOL	O1-C1-C2	3.18	125.52	110.11
7	A	1021	GOL	O1-C1-C2	3.19	125.57	110.11
7	B	1070	GOL	O1-C1-C2	3.27	125.99	110.11
7	A	1096	GOL	O1-C1-C2	3.27	126.00	110.11
7	B	1041	GOL	O1-C1-C2	3.30	126.10	110.11
7	B	1091	GOL	O1-C1-C2	3.46	126.92	110.11
7	A	1031	GOL	O1-C1-C2	3.49	127.06	110.11
7	B	1071	GOL	O2-C2-C3	6.36	138.04	109.00
7	A	1090	GOL	O2-C2-C3	6.39	138.19	109.00
7	B	1068	GOL	O2-C2-C3	6.46	138.50	109.00
7	A	1096	GOL	O2-C2-C3	6.47	138.53	109.00
7	B	1091	GOL	O2-C2-C3	6.47	138.54	109.00
7	B	1088	GOL	O2-C2-C3	6.48	138.60	109.00
7	A	1237	GOL	O2-C2-C3	6.50	138.68	109.00
7	B	1041	GOL	O2-C2-C3	6.51	138.75	109.00
7	A	1025	GOL	O2-C2-C3	6.52	138.77	109.00
7	B	1095	GOL	O2-C2-C3	6.52	138.79	109.00
7	A	1021	GOL	O2-C2-C3	6.53	138.82	109.00
7	B	1070	GOL	O2-C2-C3	6.56	138.98	109.00
7	A	1067	GOL	O2-C2-C3	6.59	139.08	109.00
7	B	1089	GOL	O2-C2-C3	6.59	139.09	109.00
7	A	1069	GOL	O2-C2-C3	6.75	139.81	109.00
7	A	1031	GOL	O2-C2-C3	6.78	139.98	109.00
7	B	1089	GOL	O3-C3-C2	10.27	159.94	110.11
7	A	1031	GOL	O3-C3-C2	10.30	160.07	110.11

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	A	1021	GOL	O3-C3-C2	10.33	160.25	110.11
7	B	1070	GOL	O3-C3-C2	10.37	160.44	110.11
7	A	1069	GOL	O3-C3-C2	10.38	160.47	110.11
7	B	1088	GOL	O3-C3-C2	10.39	160.50	110.11
7	A	1067	GOL	O3-C3-C2	10.39	160.50	110.11
7	B	1041	GOL	O3-C3-C2	10.39	160.53	110.11
7	B	1091	GOL	O3-C3-C2	10.43	160.74	110.11
7	B	1095	GOL	O3-C3-C2	10.44	160.74	110.11
7	A	1025	GOL	O3-C3-C2	10.45	160.79	110.11
7	A	1237	GOL	O3-C3-C2	10.46	160.88	110.11
7	A	1096	GOL	O3-C3-C2	10.49	161.03	110.11
7	B	1068	GOL	O3-C3-C2	10.51	161.09	110.11
7	A	1090	GOL	O3-C3-C2	10.61	161.61	110.11
7	B	1071	GOL	O3-C3-C2	10.85	162.75	110.11

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

15 monomers are involved in 26 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	1021	GOL	1	0
7	A	1031	GOL	6	0
7	A	1069	GOL	2	0
7	A	1237	GOL	2	0
6	A	1830	DIO	1	0
4	A	2022	SO4	2	0
4	A	2032	SO4	1	0
3	A	703	NAG	1	0
7	B	1088	GOL	1	0
7	B	1091	GOL	2	0
7	B	1095	GOL	1	0
3	B	704	NAG	2	0
3	B	706	NAG	2	0
8	B	711	FUL	2	0
3	B	713	NAG	3	0

## 5.7 Other polymers [i](#)

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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	249/249 (100%)	0.31	19 (7%) <b>14</b> <b>18</b>	25, 38, 62, 70	6 (2%)
2	B	263/263 (100%)	0.04	13 (4%) <b>29</b> <b>37</b>	21, 31, 49, 64	0
All	All	512/512 (100%)	0.17	32 (6%) <b>20</b> <b>26</b>	21, 34, 57, 70	6 (1%)

All (32) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	223	PRO	7.2
1	A	248	GLY	6.1
1	A	115	TYR	5.4
2	B	1	ASP	3.8
1	A	222	LEU	3.6
2	B	3	VAL	3.4
1	A	98	THR	3.3
2	B	182	ILE	3.3
1	A	225	GLY	3.3
1	A	44	THR	3.1
1	A	226	ASN	3.0
1	A	145	PRO	3.0
2	B	7	ALA	3.0
2	B	14	ILE	3.0
1	A	50	GLY	2.9
2	B	166	THR	2.7
2	B	243	LEU	2.7
2	B	44	ASN	2.6
1	A	102	ALA	2.6
2	B	65	LEU	2.5
1	A	103	GLY	2.5
1	A	221	ALA	2.3
1	A	224	PRO	2.3
2	B	76	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	11	GLN	2.1
2	B	153	MET	2.1
2	B	225	ILE	2.1
1	A	94	ALA	2.1
1	A	116	PRO	2.1
1	A	249	GLU	2.0
1	A	105	THR	2.0
2	B	145	ILE	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 carbohydrates 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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
7	GOL	B	1041	6/6	0.43	0.48	84,86,86,86	0
7	GOL	A	1025	6/6	0.52	0.47	85,85,86,86	0
7	GOL	B	1095	6/6	0.59	0.29	76,77,78,79	0
7	GOL	B	1071	6/6	0.67	0.34	38,42,46,46	0
7	GOL	A	1021	6/6	0.71	0.27	87,88,89,89	0
3	NAG	B	713	14/15	0.72	0.31	67,68,70,71	14
9	LAT	B	1348	23/23	0.73	0.37	51,61,75,78	0
7	GOL	A	1031	6/6	0.74	0.53	80,81,81,83	0
3	NAG	B	701	14/15	0.75	0.22	46,52,54,55	0
6	DIO	A	1830	6/6	0.75	0.48	95,95,95,96	0
7	GOL	B	1091	6/6	0.78	0.31	73,74,75,76	0
7	GOL	A	1237	6/6	0.80	0.27	88,89,89,89	0
7	GOL	B	1070	6/6	0.80	0.17	87,87,87,87	0
3	NAG	B	704	14/15	0.81	0.33	58,64,66,67	0
7	GOL	A	1096	6/6	0.82	0.24	60,63,65,67	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
3	NAG	A	703	14/15	0.82	0.36	71,75,76,76	0
4	SO4	A	2032	5/5	0.83	0.27	90,90,90,91	0
7	GOL	B	1068	6/6	0.83	0.29	76,76,77,79	0
8	FUL	B	711	10/11	0.84	0.34	67,67,68,68	10
3	NAG	B	706	14/15	0.85	0.32	54,56,61,62	0
9	LAT	B	1347	23/23	0.85	0.22	31,47,60,64	0
7	GOL	A	1069	6/6	0.86	0.27	58,61,62,65	0
7	GOL	A	1090	6/6	0.88	0.24	42,44,45,48	0
7	GOL	B	1088	6/6	0.90	0.25	50,53,55,55	0
4	SO4	A	2023	5/5	0.91	0.17	99,99,100,100	0
7	GOL	A	1067	6/6	0.91	0.21	85,87,88,89	0
5	CL	A	1027	1/1	0.93	0.24	85,85,85,85	0
7	GOL	B	1089	6/6	0.94	0.20	39,50,52,53	0
3	NAG	B	702	14/15	0.95	0.13	31,38,48,51	0
4	SO4	A	2022	5/5	0.96	0.12	55,56,57,59	0
5	CL	A	1042	1/1	0.97	0.07	59,59,59,59	0
5	CL	A	1024	1/1	0.98	0.37	40,40,40,40	1

## 6.5 Other polymers [i](#)

There are no such residues in this entry.