



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 25, 2023 – 06:16 AM EDT

PDB ID : 3CQ0
Title : Crystal Structure of TAL2_YEAST
Authors : Huang, H.; Niu, L.; Teng, M.
Deposited on : 2008-04-01
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 : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
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

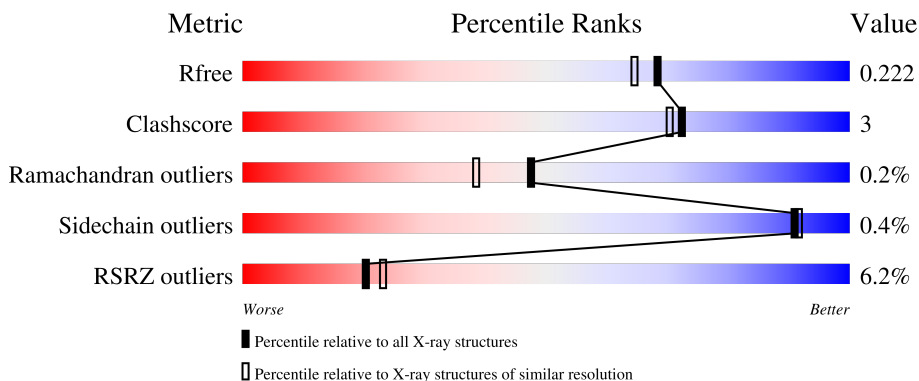
1 Overall quality at a glance

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}	130704	6207 (1.90-1.90)
Clashscore	141614	6847 (1.90-1.90)
Ramachandran outliers	138981	6760 (1.90-1.90)
Sidechain outliers	138945	6760 (1.90-1.90)
RSRZ outliers	127900	6082 (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	339	
1	B	339	

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	GOL	A	356	-	-	-	X

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 5866 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 Putative transaldolase YGR043C.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	325	Total	C	N	O	S	0	0	0
			2569	1633	432	495	9			
1	B	323	Total	C	N	O	S	0	0	0
			2553	1623	430	491	9			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	334	LEU	-	expression tag	UNP P53228
A	335	GLU	-	expression tag	UNP P53228
A	336	HIS	-	expression tag	UNP P53228
A	337	HIS	-	expression tag	UNP P53228
A	338	HIS	-	expression tag	UNP P53228
A	339	HIS	-	expression tag	UNP P53228
B	334	LEU	-	expression tag	UNP P53228
B	335	GLU	-	expression tag	UNP P53228
B	336	HIS	-	expression tag	UNP P53228
B	337	HIS	-	expression tag	UNP P53228
B	338	HIS	-	expression tag	UNP P53228
B	339	HIS	-	expression tag	UNP P53228

- Molecule 2 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C₂H₆O₂).



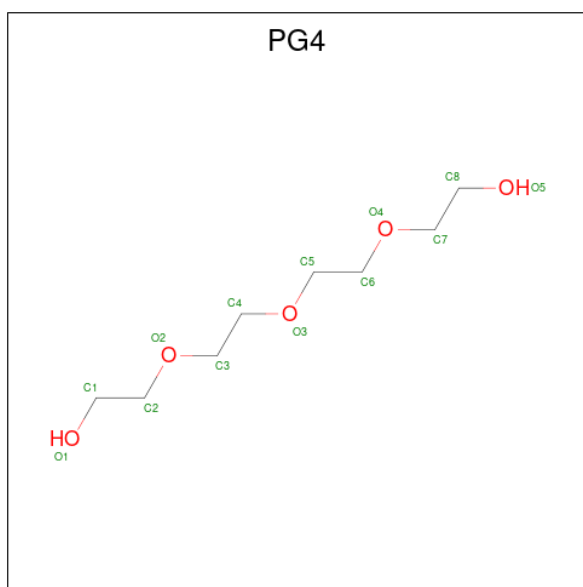
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0
2	A	1	Total C O 4 2 2	0	0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

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

- Molecule 3 is TETRAETHYLENE GLYCOL (three-letter code: PG4) (formula: C₈H₁₈O₅).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			13	8	5		
3	B	1	Total	C	O	0	0
			13	8	5		

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



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

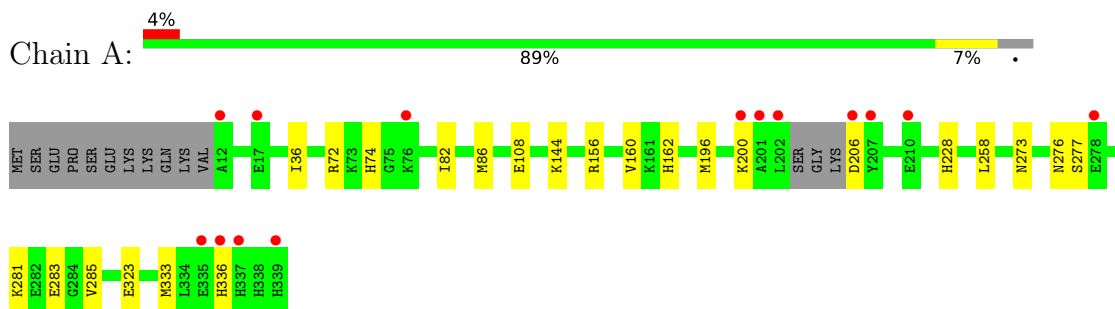
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	308	Total 308	O 308	0	0
5	B	258	Total 258	O 258	0	0

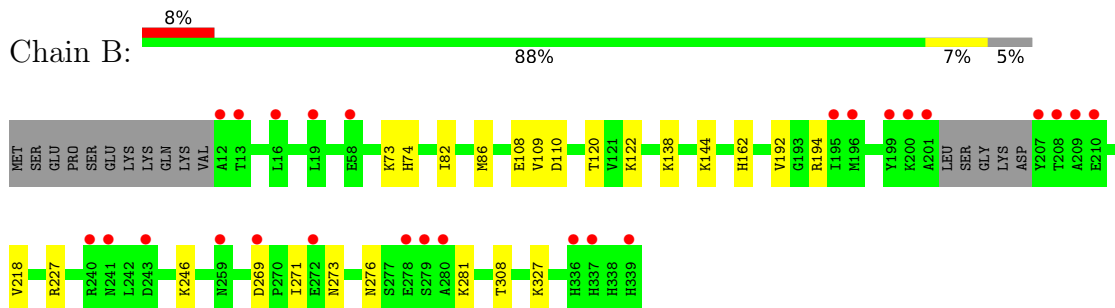
3 Residue-property plots [i](#)

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: Putative transaldolase YGR043C



- Molecule 1: Putative transaldolase YGR043C



4 Data and refinement statistics

Property	Value	Source
Space group	I 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	85.03Å 113.46Å 158.92Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	10.00 – 1.90 15.08 – 1.90	Depositor EDS
% Data completeness (in resolution range)	99.8 (10.00-1.90) 99.6 (15.08-1.90)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.26 (at 1.90Å)	Xtrriage
Refinement program	REFMAC 5.2.0019	Depositor
R, R_{free}	0.180 , 0.215 0.182 , 0.222	Depositor DCC
R_{free} test set	3062 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å ²)	17.9	Xtrriage
Anisotropy	0.611	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.48 , 73.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	5866	wwPDB-VP
Average B, all atoms (Å ²)	20.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.58% 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: PG4, GOL, EDO

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	0.43	0/2615	0.50	0/3526
1	B	0.41	0/2599	0.49	0/3504
All	All	0.42	0/5214	0.50	0/7030

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	2569	0	2578	17	0
1	B	2553	0	2563	15	0
2	A	36	0	54	1	0
2	B	32	0	48	1	0
3	A	13	0	18	3	0
3	B	13	0	18	0	0
4	A	42	0	56	2	0
4	B	42	0	56	4	0
5	A	308	0	0	4	0
5	B	258	0	0	3	0
All	All	5866	0	5391	36	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 3.

All (36) 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:122:LYS:HD2	2:B:342:EDO:H22	1.71	0.73
1:B:82:ILE:O	1:B:86:MET:HG3	1.90	0.71
1:A:283:GLU:HG2	4:A:355:GOL:H2	1.74	0.69
1:B:273:ASN:HD21	1:B:276:ASN:HD22	1.40	0.69
1:A:196:MET:SD	1:A:200:LYS:HE3	2.33	0.69
1:B:162:HIS:HE1	5:B:429:HOH:O	1.76	0.68
1:B:138:LYS:HD3	4:B:355:GOL:H2	1.80	0.62
1:A:273:ASN:HD21	1:A:276:ASN:HD22	1.46	0.62
1:A:82:ILE:O	1:A:86:MET:HG3	2.00	0.61
1:A:336:HIS:HD2	5:A:516:HOH:O	1.85	0.59
1:A:72:ARG:CG	1:A:333:MET:SD	2.96	0.54
1:A:323:GLU:HG3	4:A:356:GOL:O2	2.08	0.54
1:A:72:ARG:HG3	1:A:333:MET:SD	2.49	0.52
1:B:192:VAL:HG22	1:B:218:VAL:HG21	1.91	0.52
1:A:74:HIS:HE1	5:A:403:HOH:O	1.95	0.49
1:A:72:ARG:HG2	1:A:333:MET:SD	2.53	0.48
3:A:346:PG4:H31	5:A:366:HOH:O	2.13	0.48
1:B:108:GLU:HA	1:B:144:LYS:HB3	1.97	0.47
1:A:108:GLU:HA	1:A:144:LYS:HB3	1.97	0.46
1:A:228:HIS:HE1	1:A:285:VAL:O	1.97	0.46
1:B:227:ARG:HA	1:B:281:LYS:HG2	1.98	0.46
1:A:162:HIS:HE1	2:A:340:EDO:O2	1.99	0.45
1:B:73:LYS:HE3	1:B:74:HIS:CE1	2.52	0.44
1:B:194:ARG:HH21	4:B:349:GOL:H31	1.83	0.44
4:B:351:GOL:H2	5:B:579:HOH:O	2.16	0.44
1:B:246:LYS:HG2	1:B:271:ILE:HG12	1.99	0.43
3:A:346:PG4:H41	1:B:308:THR:HG23	2.00	0.43
1:A:273:ASN:ND2	1:A:276:ASN:HD22	2.13	0.43
1:B:273:ASN:ND2	1:B:276:ASN:HD22	2.10	0.42
1:B:327:LYS:HA	1:B:327:LYS:HD3	1.84	0.42
1:A:36:ILE:HG22	1:A:258:LEU:HD21	2.01	0.41
1:A:277:SER:O	1:A:281:LYS:HG3	2.20	0.41
1:A:156:ARG:O	1:A:160:VAL:HG12	2.21	0.41
3:A:346:PG4:H52	5:A:366:HOH:O	2.21	0.40
1:B:109:VAL:HG11	1:B:120:THR:HG23	2.02	0.40
4:B:355:GOL:H31	5:B:389:HOH:O	2.21	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	321/339 (95%)	318 (99%)	3 (1%)	0	100	100
1	B	319/339 (94%)	314 (98%)	4 (1%)	1 (0%)	41	31
All	All	640/678 (94%)	632 (99%)	7 (1%)	1 (0%)	47	38

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	110	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	278/291 (96%)	277 (100%)	1 (0%)	91	91
1	B	276/291 (95%)	275 (100%)	1 (0%)	91	91
All	All	554/582 (95%)	552 (100%)	2 (0%)	91	91

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	206	ASP
1	B	269	ASP

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	74	HIS
1	A	162	HIS
1	A	165	HIS
1	A	228	HIS
1	A	273	ASN
1	A	302	ASN
1	A	336	HIS
1	B	162	HIS
1	B	228	HIS
1	B	273	ASN
1	B	302	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

33 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	$\# Z > 2$
4	GOL	B	349	-	5,5,5	0.39	0	5,5,5	0.13	0
2	EDO	A	347	-	3,3,3	0.44	0	2,2,2	0.36	0
3	PG4	B	346	-	12,12,12	0.48	0	11,11,11	0.28	0
4	GOL	A	351	-	5,5,5	0.31	0	5,5,5	0.41	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	EDO	A	341	-	3,3,3	0.47	0	2,2,2	0.25	0
2	EDO	B	342	-	3,3,3	0.44	0	2,2,2	0.34	0
4	GOL	B	350	-	5,5,5	0.37	0	5,5,5	0.49	0
4	GOL	A	355	-	5,5,5	0.33	0	5,5,5	0.26	0
4	GOL	B	351	-	5,5,5	0.34	0	5,5,5	0.30	0
2	EDO	B	347	-	3,3,3	0.49	0	2,2,2	0.23	0
4	GOL	B	352	-	5,5,5	0.33	0	5,5,5	0.18	0
2	EDO	A	340	-	3,3,3	0.43	0	2,2,2	0.35	0
4	GOL	A	356	-	5,5,5	0.32	0	5,5,5	0.32	0
2	EDO	B	348	-	3,3,3	0.47	0	2,2,2	0.46	0
4	GOL	B	354	-	5,5,5	0.33	0	5,5,5	0.26	0
3	PG4	A	346	-	12,12,12	0.84	0	11,11,11	0.71	0
2	EDO	A	344	-	3,3,3	0.42	0	2,2,2	0.39	0
4	GOL	B	353	-	5,5,5	0.31	0	5,5,5	0.23	0
2	EDO	A	348	-	3,3,3	0.47	0	2,2,2	0.26	0
2	EDO	B	341	-	3,3,3	0.44	0	2,2,2	0.36	0
2	EDO	A	349	-	3,3,3	0.46	0	2,2,2	0.33	0
2	EDO	A	343	-	3,3,3	0.43	0	2,2,2	0.33	0
4	GOL	A	352	-	5,5,5	0.36	0	5,5,5	0.23	0
4	GOL	B	355	-	5,5,5	0.37	0	5,5,5	0.23	0
2	EDO	B	344	-	3,3,3	0.46	0	2,2,2	0.36	0
2	EDO	B	340	-	3,3,3	0.48	0	2,2,2	0.27	0
2	EDO	A	345	-	3,3,3	0.44	0	2,2,2	0.30	0
4	GOL	A	353	-	5,5,5	0.35	0	5,5,5	0.40	0
4	GOL	A	354	-	5,5,5	0.33	0	5,5,5	0.68	0
2	EDO	B	343	-	3,3,3	0.45	0	2,2,2	0.32	0
4	GOL	A	350	-	5,5,5	0.40	0	5,5,5	0.24	0
2	EDO	B	345	-	3,3,3	0.41	0	2,2,2	0.45	0
2	EDO	A	342	-	3,3,3	0.46	0	2,2,2	0.32	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
4	GOL	B	349	-	-	0/4/4/4	-
2	EDO	A	347	-	-	1/1/1/1	-
3	PG4	B	346	-	-	7/10/10/10	-
4	GOL	A	351	-	-	2/4/4/4	-
2	EDO	A	341	-	-	1/1/1/1	-
2	EDO	B	342	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	GOL	B	350	-	-	3/4/4/4	-
4	GOL	A	355	-	-	1/4/4/4	-
4	GOL	B	351	-	-	0/4/4/4	-
2	EDO	B	347	-	-	1/1/1/1	-
4	GOL	B	352	-	-	3/4/4/4	-
2	EDO	A	340	-	-	1/1/1/1	-
4	GOL	A	356	-	-	2/4/4/4	-
2	EDO	B	348	-	-	0/1/1/1	-
4	GOL	B	354	-	-	2/4/4/4	-
3	PG4	A	346	-	-	6/10/10/10	-
2	EDO	A	344	-	-	1/1/1/1	-
4	GOL	B	353	-	-	1/4/4/4	-
2	EDO	A	348	-	-	0/1/1/1	-
2	EDO	B	341	-	-	1/1/1/1	-
2	EDO	A	349	-	-	1/1/1/1	-
2	EDO	A	343	-	-	0/1/1/1	-
4	GOL	A	352	-	-	1/4/4/4	-
4	GOL	B	355	-	-	2/4/4/4	-
2	EDO	B	344	-	-	1/1/1/1	-
2	EDO	B	340	-	-	0/1/1/1	-
2	EDO	A	345	-	-	1/1/1/1	-
4	GOL	A	353	-	-	4/4/4/4	-
4	GOL	A	354	-	-	4/4/4/4	-
2	EDO	B	343	-	-	0/1/1/1	-
4	GOL	A	350	-	-	2/4/4/4	-
2	EDO	B	345	-	-	1/1/1/1	-
2	EDO	A	342	-	-	1/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (52) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	350	GOL	O1-C1-C2-C3
4	A	351	GOL	O1-C1-C2-C3
4	A	353	GOL	O1-C1-C2-C3
4	A	354	GOL	C1-C2-C3-O3
4	B	355	GOL	C1-C2-C3-O3

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Mol	Chain	Res	Type	Atoms
3	A	346	PG4	O3-C5-C6-O4
4	A	353	GOL	O2-C2-C3-O3
4	A	354	GOL	O2-C2-C3-O3
3	B	346	PG4	O1-C1-C2-O2
4	A	352	GOL	C1-C2-C3-O3
4	A	353	GOL	C1-C2-C3-O3
4	A	354	GOL	O1-C1-C2-C3
4	A	356	GOL	O1-C1-C2-C3
4	B	350	GOL	O1-C1-C2-C3
4	B	350	GOL	C1-C2-C3-O3
4	B	352	GOL	C1-C2-C3-O3
4	B	353	GOL	O1-C1-C2-C3
4	B	354	GOL	C1-C2-C3-O3
4	A	353	GOL	O1-C1-C2-O2
2	A	344	EDO	O1-C1-C2-O2
2	B	341	EDO	O1-C1-C2-O2
2	B	344	EDO	O1-C1-C2-O2
2	B	345	EDO	O1-C1-C2-O2
3	A	346	PG4	O2-C3-C4-O3
4	A	350	GOL	O1-C1-C2-O2
4	A	356	GOL	O1-C1-C2-O2
4	B	350	GOL	O1-C1-C2-O2
4	B	355	GOL	O2-C2-C3-O3
3	B	346	PG4	O3-C5-C6-O4
2	A	340	EDO	O1-C1-C2-O2
2	B	342	EDO	O1-C1-C2-O2
4	B	352	GOL	O2-C2-C3-O3
4	B	354	GOL	O2-C2-C3-O3
2	A	345	EDO	O1-C1-C2-O2
2	A	349	EDO	O1-C1-C2-O2
3	A	346	PG4	C5-C6-O4-C7
3	A	346	PG4	C1-C2-O2-C3
3	B	346	PG4	C3-C4-O3-C5
3	B	346	PG4	C5-C6-O4-C7
3	A	346	PG4	C4-C3-O2-C2
4	A	351	GOL	O1-C1-C2-O2
3	B	346	PG4	O2-C3-C4-O3
3	A	346	PG4	C3-C4-O3-C5
2	A	342	EDO	O1-C1-C2-O2
2	A	347	EDO	O1-C1-C2-O2
2	B	347	EDO	O1-C1-C2-O2
3	B	346	PG4	C8-C7-O4-C6

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Mol	Chain	Res	Type	Atoms
2	A	341	EDO	O1-C1-C2-O2
4	A	354	GOL	O1-C1-C2-O2
3	B	346	PG4	C4-C3-O2-C2
4	A	355	GOL	C1-C2-C3-O3
4	B	352	GOL	O1-C1-C2-C3

There are no ring outliers.

8 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	349	GOL	1	0
2	B	342	EDO	1	0
4	A	355	GOL	1	0
4	B	351	GOL	1	0
2	A	340	EDO	1	0
4	A	356	GOL	1	0
3	A	346	PG4	3	0
4	B	355	GOL	2	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

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	325/339 (95%)	-0.02	14 (4%) 35 38	9, 15, 30, 41	0
1	B	323/339 (95%)	0.23	26 (8%) 12 13	8, 18, 35, 49	0
All	All	648/678 (95%)	0.11	40 (6%) 20 23	8, 16, 34, 49	0

All (40) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	202	LEU	7.3
1	B	201	ALA	6.7
1	B	207	TYR	6.6
1	A	339	HIS	5.5
1	B	12	ALA	5.1
1	A	201	ALA	4.9
1	A	206	ASP	4.6
1	B	200	LYS	4.5
1	B	339	HIS	4.5
1	A	210	GLU	4.1
1	B	240	ARG	3.9
1	B	199	TYR	3.9
1	A	200	LYS	3.8
1	B	210	GLU	3.4
1	B	58	GLU	3.1
1	B	208	THR	3.0
1	B	337	HIS	3.0
1	A	12	ALA	3.0
1	B	280	ALA	3.0
1	A	336	HIS	3.0
1	A	207	TYR	2.9
1	B	259	ASN	2.7
1	A	337	HIS	2.6
1	B	272	GLU	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	17	GLU	2.5
1	B	269	ASP	2.5
1	B	196	MET	2.3
1	B	209	ALA	2.3
1	B	195	ILE	2.3
1	B	279	SER	2.3
1	B	336	HIS	2.3
1	A	76	LYS	2.2
1	B	241	ASN	2.2
1	A	278	GLU	2.2
1	B	278	GLU	2.1
1	B	13	THR	2.1
1	B	19	LEU	2.1
1	B	16	LEU	2.1
1	A	335	GLU	2.0
1	B	243	ASP	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, 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
4	GOL	B	349	6/6	0.30	0.24	56,56,56,56	0
4	GOL	A	356	6/6	0.34	0.45	53,53,54,54	0
4	GOL	A	355	6/6	0.58	0.23	59,59,59,60	0
4	GOL	B	354	6/6	0.66	0.31	45,45,46,46	0
4	GOL	A	353	6/6	0.69	0.34	62,62,62,62	0
2	EDO	B	344	4/4	0.70	0.16	52,52,52,52	0
4	GOL	B	352	6/6	0.70	0.24	30,36,37,38	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	EDO	B	340	4/4	0.70	0.15	53,53,53,53	0
2	EDO	A	342	4/4	0.71	0.24	38,40,41,43	0
2	EDO	B	348	4/4	0.74	0.29	34,35,36,36	0
4	GOL	B	351	6/6	0.75	0.22	43,44,44,44	0
4	GOL	A	352	6/6	0.76	0.22	48,48,49,49	0
2	EDO	B	347	4/4	0.77	0.17	46,47,47,48	0
4	GOL	B	353	6/6	0.79	0.18	40,42,43,43	0
2	EDO	A	348	4/4	0.81	0.23	38,40,40,41	0
2	EDO	B	343	4/4	0.81	0.17	37,37,37,39	0
2	EDO	B	341	4/4	0.82	0.16	52,52,52,53	0
2	EDO	A	341	4/4	0.82	0.14	50,50,50,50	0
4	GOL	B	355	6/6	0.82	0.29	43,44,45,45	0
3	PG4	A	346	13/13	0.83	0.20	14,22,26,28	0
2	EDO	B	342	4/4	0.84	0.45	41,42,42,44	0
2	EDO	A	349	4/4	0.84	0.17	48,48,48,48	0
3	PG4	B	346	13/13	0.85	0.16	27,28,29,29	13
4	GOL	A	351	6/6	0.85	0.17	29,29,30,30	0
2	EDO	A	345	4/4	0.85	0.23	35,35,36,37	0
2	EDO	A	340	4/4	0.86	0.27	29,32,32,33	0
2	EDO	B	345	4/4	0.87	0.33	34,35,36,37	0
2	EDO	A	344	4/4	0.88	0.35	36,36,36,37	0
4	GOL	A	354	6/6	0.88	0.16	24,28,29,29	0
2	EDO	A	343	4/4	0.89	0.13	53,53,53,54	0
4	GOL	A	350	6/6	0.90	0.21	31,32,33,33	0
2	EDO	A	347	4/4	0.91	0.09	48,48,48,49	0
4	GOL	B	350	6/6	0.93	0.12	28,28,30,30	0

6.5 Other polymers [\(i\)](#)

There are no such residues in this entry.