



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 3, 2024 – 07:21 PM EST

PDB ID : 6NW9  
Title : CRYSTAL STRUCTURE OF A TAILSPIKE PROTEIN 3 (TSP3, ORF212)  
FROM ESCHERICHIA COLI O157:H7 BACTERIOPHAGE CBA120  
Authors : Greenfield, J.Y.; Herzberg, O.  
Deposited on : 2019-02-06  
Resolution : 1.85 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.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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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 : 1.8.5 (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

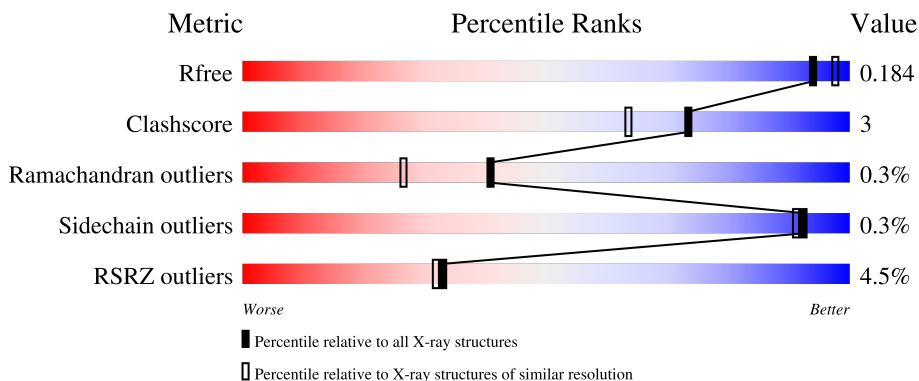
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.85 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	2469 (1.86-1.86)
Clashscore	141614	2625 (1.86-1.86)
Ramachandran outliers	138981	2592 (1.86-1.86)
Sidechain outliers	138945	2592 (1.86-1.86)
RSRZ outliers	127900	2436 (1.86-1.86)

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  $\geq 3$ , 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	633	93%
1	B	633	91%
1	C	633	93%

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
10	PO4	A	732	-	-	X	-
7	EDO	B	721	-	-	X	-
7	EDO	C	729	-	-	X	-
8	PEG	A	728	-	-	X	-

## 2 Entry composition

There are 11 unique types of molecules in this entry. The entry contains 16468 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 Tailspike protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	616	4776	3026	804	932	14	0	15	0
1	B	616	4681	2964	797	907	13	0	4	0
1	C	619	4738	2999	808	917	14	0	6	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	628	HIS	-	expression tag	UNP G3M191
A	629	HIS	-	expression tag	UNP G3M191
A	630	HIS	-	expression tag	UNP G3M191
A	631	HIS	-	expression tag	UNP G3M191
A	632	HIS	-	expression tag	UNP G3M191
A	633	HIS	-	expression tag	UNP G3M191
B	628	HIS	-	expression tag	UNP G3M191
B	629	HIS	-	expression tag	UNP G3M191
B	630	HIS	-	expression tag	UNP G3M191
B	631	HIS	-	expression tag	UNP G3M191
B	632	HIS	-	expression tag	UNP G3M191
B	633	HIS	-	expression tag	UNP G3M191
C	628	HIS	-	expression tag	UNP G3M191
C	629	HIS	-	expression tag	UNP G3M191
C	630	HIS	-	expression tag	UNP G3M191
C	631	HIS	-	expression tag	UNP G3M191
C	632	HIS	-	expression tag	UNP G3M191
C	633	HIS	-	expression tag	UNP G3M191

- Molecule 2 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Cl 1 1	0	0
2	B	3	Total Cl 3 3	0	0
2	C	2	Total Cl 2 2	0	0

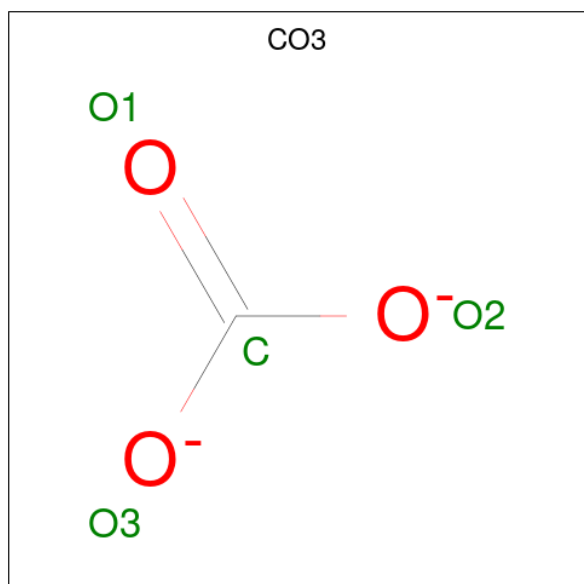
- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	2	Total Na 2 2	0	0
3	B	1	Total Na 1 1	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Mg 1 1	0	0

- Molecule 5 is CARBONATE ION (three-letter code: CO3) (formula: CO<sub>3</sub>).



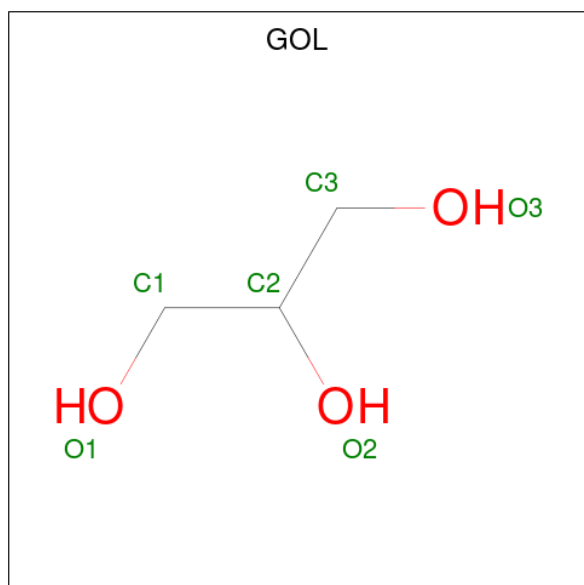
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C O 4 1 3	0	0

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

- Molecule 6 is GLYCEROL (three-letter code: GOL) (formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>).



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

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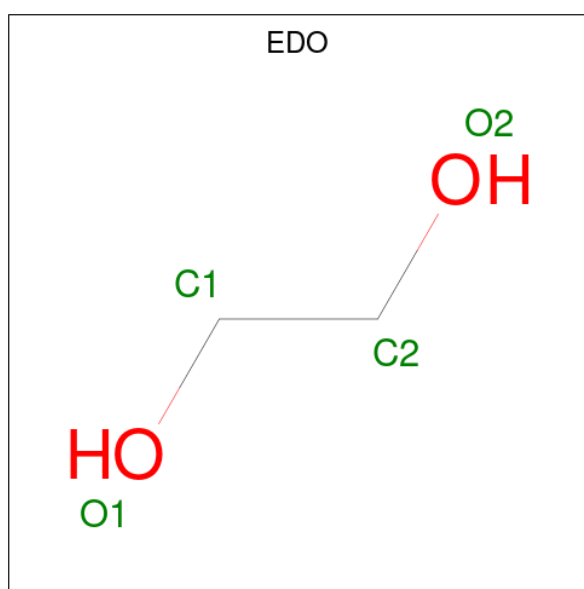
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total 6	C 3	O 3	0	0
6	A	1	Total 6	C 3	O 3	0	0
6	A	1	Total 6	C 3	O 3	0	0
6	A	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0	0
6	B	1	Total 6	C 3	O 3	0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

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

- Molecule 7 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>).



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

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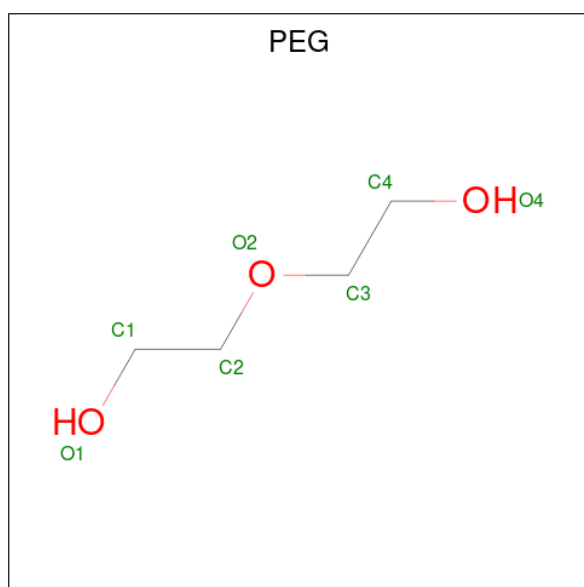
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	A	1	Total 4	C 2	O 2	0	0
7	A	1	Total 4	C 2	O 2	0	0
7	A	1	Total 4	C 2	O 2	0	0
7	A	1	Total 4	C 2	O 2	0	0
7	B	1	Total 4	C 2	O 2	0	0
7	B	1	Total 4	C 2	O 2	0	0
7	B	1	Total 4	C 2	O 2	0	0
7	B	1	Total 4	C 2	O 2	0	0
7	B	1	Total 4	C 2	O 2	0	0
7	B	1	Total 4	C 2	O 2	0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

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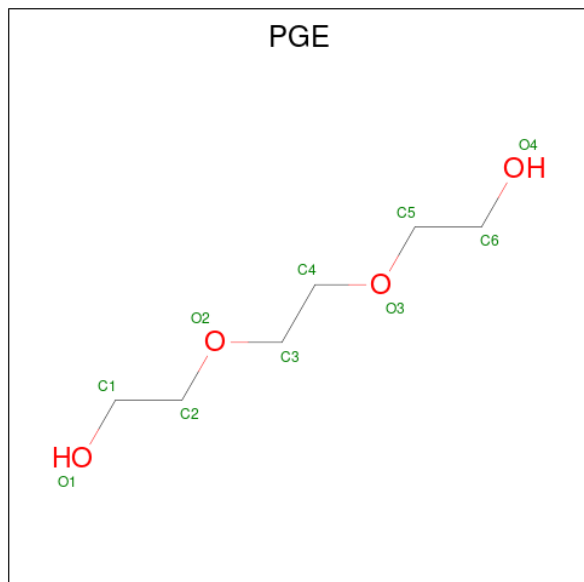
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0
7	C	1	Total C O 4 2 2	0	0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

- Molecule 8 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: C<sub>4</sub>H<sub>10</sub>O<sub>3</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	A	1	Total C O 7 4 3	0	0
8	A	1	Total C O 7 4 3	0	0
8	B	1	Total C O 7 4 3	0	0
8	B	1	Total C O 7 4 3	0	0
8	B	1	Total C O 7 4 3	0	0
8	C	1	Total C O 7 4 3	0	0

- Molecule 9 is TRIETHYLENE GLYCOL (three-letter code: PGE) (formula: C<sub>6</sub>H<sub>14</sub>O<sub>4</sub>).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	A	1	Total C O 10 6 4	0	0

- Molecule 10 is PHOSPHATE ION (three-letter code: PO4) (formula: O<sub>4</sub>P).



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

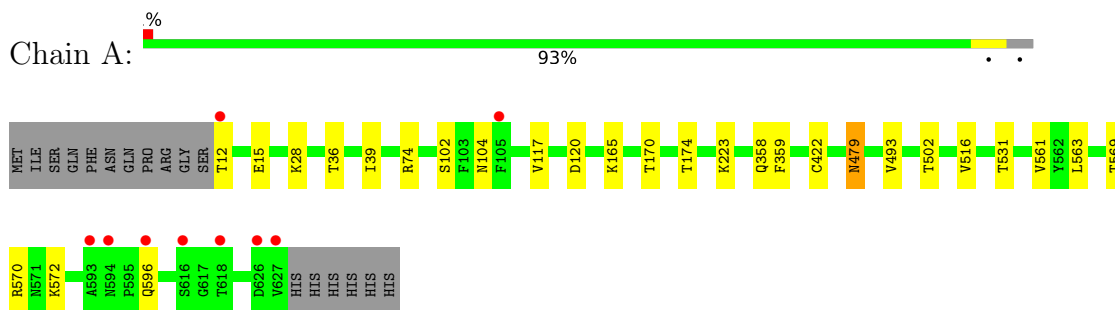
- Molecule 11 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
11	A	659	Total O 659 659	0	0
11	B	605	Total O 605 605	0	0
11	C	564	Total O 565 565	0	1

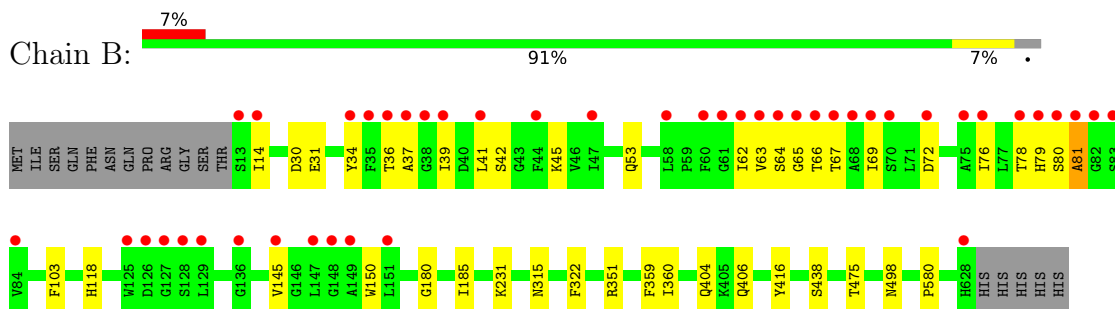
### 3 Residue-property plots [i](#)

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.

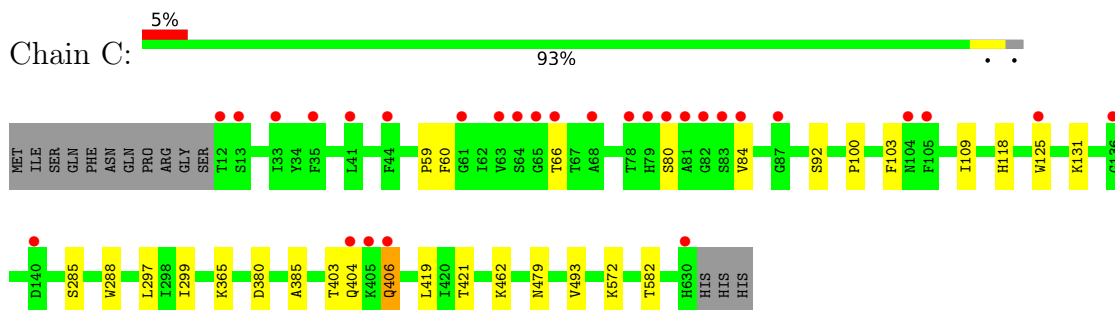
- Molecule 1: Tailspike protein



- Molecule 1: Tailspike protein



- Molecule 1: Tailspike protein



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	99.44Å 66.77Å 161.60Å 90.00° 103.58° 90.00°	Depositor
Resolution (Å)	54.16 – 1.85 54.16 – 1.85	Depositor EDS
% Data completeness (in resolution range)	99.7 (54.16-1.85) 99.7 (54.16-1.85)	Depositor EDS
$R_{merge}$	0.05	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.66 (at 1.86Å)	Xtrriage
Refinement program	PHENIX (1.14_3228:)	Depositor
R, $R_{free}$	0.151 , 0.184 0.150 , 0.184	Depositor DCC
$R_{free}$ test set	8672 reflections (4.94%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	13.8	Xtrriage
Anisotropy	0.125	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 61.0	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	0.96	EDS
Total number of atoms	16468	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	20.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.19% 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 [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: EDO, GOL, PEG, PGE, MG, NA, CL, PO4, CO3

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	0.55	0/4906	0.68	0/6665
1	B	0.56	0/4794	0.68	1/6517 (0.0%)
1	C	0.55	0/4859	0.69	1/6602 (0.0%)
All	All	0.55	0/14559	0.68	2/19784 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	2

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	404	GLN	CB-CA-C	6.96	124.32	110.40
1	C	406	GLN	O-C-N	-6.11	112.93	122.70

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	572[A]	LYS	Mainchain
1	A	572[B]	LYS	Mainchain

## 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	A	4776	0	4664	28	0
1	B	4681	0	4525	33	0
1	C	4738	0	4594	27	0
2	A	1	0	0	0	0
2	B	3	0	0	1	0
2	C	2	0	0	0	0
3	A	2	0	0	0	0
3	B	1	0	0	0	0
4	A	1	0	0	0	0
5	A	8	0	0	0	0
5	B	4	0	0	0	0
6	A	78	0	104	3	0
6	B	60	0	80	0	0
6	C	66	0	88	1	0
7	A	44	0	66	0	0
7	B	48	0	72	7	0
7	C	64	0	96	8	0
8	A	14	0	20	8	0
8	B	21	0	29	2	0
8	C	7	0	10	0	0
9	A	10	0	14	4	0
10	A	10	0	0	2	0
11	A	659	0	0	8	1
11	B	605	0	0	1	0
11	C	565	0	0	4	1
All	All	16468	0	14362	97	1

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 (97) 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:79:HIS:CE1	1:B:81:ALA:HB3	1.85	1.10
1:B:42:SER:HA	1:B:62:ILE:HG13	1.49	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:462:LYS:O	6:C:704:GOL:H12	1.76	0.83
1:A:563:LEU:H	9:A:729:PGE:H42	1.50	0.77
1:B:79:HIS:HE1	1:B:81:ALA:HB3	1.50	0.76
1:B:315:ASN:OD1	8:B:728:PEG:H31	1.90	0.71
1:B:72:ASP:OD2	1:B:76:ILE:HB	1.90	0.71
10:A:732:PO4:O3	11:A:801:HOH:O	2.10	0.70
7:B:721:EDO:H11	7:C:729:EDO:C1	2.25	0.66
1:C:404:GLN:HA	1:C:404:GLN:OE1	1.95	0.66
1:B:69:ILE:CB	1:B:78:THR:O	2.43	0.65
1:C:406:GLN:HA	1:C:406:GLN:OE1	1.96	0.65
1:C:125:TRP:CE2	1:C:131:LYS:HD3	2.34	0.63
1:B:42:SER:CA	1:B:62:ILE:HG13	2.28	0.62
1:C:404:GLN:NE2	11:C:801:HOH:O	2.10	0.61
7:C:729:EDO:H21	11:C:1187:HOH:O	2.01	0.60
1:A:493[B]:VAL:HG23	1:A:516:VAL:HB	1.83	0.58
6:A:731:GOL:H2	11:A:998:HOH:O	2.02	0.58
7:B:721:EDO:H22	7:C:729:EDO:H22	1.86	0.58
1:C:406:GLN:OE1	1:C:406:GLN:CA	2.51	0.58
1:A:165:LYS:HE3	1:A:174:THR:HG21	1.86	0.57
7:B:721:EDO:C2	7:C:729:EDO:H22	2.35	0.57
1:B:41:LEU:HB2	1:B:62:ILE:HD11	1.87	0.57
1:C:297:LEU:HD12	1:C:297:LEU:C	2.25	0.57
7:B:721:EDO:H11	7:C:729:EDO:H22	1.86	0.57
1:B:65:GLY:O	1:B:67:THR:HG23	2.05	0.56
1:A:165:LYS:HD2	1:A:170:THR:OG1	2.05	0.56
1:A:28:LYS:HG2	1:B:53:GLN:NE2	2.21	0.56
1:A:74:ARG:NH2	11:A:809:HOH:O	2.37	0.56
1:B:36:THR:O	1:B:36:THR:HG23	2.06	0.55
6:A:716:GOL:O1	6:A:716:GOL:O3	2.24	0.55
1:C:59:PRO:HG3	1:C:84:VAL:HG11	1.88	0.55
1:C:380:ASP:OD2	1:C:403:THR:HG23	2.06	0.55
1:B:62:ILE:HG23	1:B:62:ILE:O	2.06	0.55
7:B:721:EDO:H11	7:C:729:EDO:O1	2.07	0.54
1:C:404:GLN:CD	1:C:406:GLN:HG2	2.28	0.54
7:B:721:EDO:H11	7:C:729:EDO:C2	2.38	0.54
1:A:104:ASN:HB2	8:A:728:PEG:H11	1.88	0.54
1:B:145:VAL:HG13	1:B:150:TRP:O	2.08	0.54
8:A:728:PEG:O4	1:C:92:SER:OG	2.27	0.54
1:A:561:VAL:O	9:A:729:PGE:H52	2.08	0.53
10:A:732:PO4:O4	11:A:802:HOH:O	2.19	0.53
1:C:404:GLN:C	1:C:406:GLN:H	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:30:ASP:CB	11:B:839:HOH:O	2.59	0.51
1:C:66:THR:HA	1:C:80:SER:HB2	1.92	0.50
1:B:45:LYS:HE2	1:C:100:PRO:HG2	1.92	0.50
1:A:531[B]:THR:HG23	11:A:1161:HOH:O	2.10	0.49
1:B:31:GLU:CD	1:B:45:LYS:HD2	2.33	0.48
9:A:729:PGE:H4	11:A:1124:HOH:O	2.14	0.48
1:A:102:SER:HB2	8:A:728:PEG:H12	1.95	0.47
1:A:479:ASN:OD1	1:A:502:THR:HB	2.13	0.47
1:A:165:LYS:CD	1:A:170:THR:OG1	2.61	0.47
1:A:596:GLN:CG	1:B:580:PRO:HG3	2.44	0.47
1:A:117:VAL:HG12	8:A:728:PEG:H41	1.97	0.47
1:A:563:LEU:O	9:A:729:PGE:H3	2.14	0.47
1:C:297:LEU:CD1	1:C:299:ILE:HG13	2.45	0.47
1:B:180:GLY:HA3	1:B:185:ILE:HD12	1.97	0.47
6:A:710:GOL:H12	1:B:322:PHE:CE2	2.51	0.46
1:C:572:LYS:HG3	1:C:582:THR:HB	1.98	0.46
1:B:66:THR:HA	1:B:80:SER:OG	2.16	0.46
1:A:493[A]:VAL:CG1	1:C:493:VAL:HG11	2.46	0.45
1:A:479:ASN:OD1	1:A:502:THR:CB	2.64	0.45
1:A:74:ARG:NE	11:A:809:HOH:O	2.36	0.45
1:A:104:ASN:HB2	8:A:728:PEG:C1	2.47	0.45
1:B:42:SER:CB	1:B:64:SER:HA	2.47	0.45
1:B:63:VAL:HG12	1:B:66:THR:HG23	1.99	0.44
1:B:351:ARG:HG3	8:B:726:PEG:H41	2.00	0.44
1:A:422:CYS:HB3	1:C:421[B]:THR:HG21	2.00	0.44
1:B:14:ILE:HG23	1:B:34:TYR:CE1	2.52	0.44
7:B:721:EDO:C1	7:C:729:EDO:H22	2.46	0.44
8:A:728:PEG:H41	8:A:728:PEG:H21	1.90	0.43
1:B:79:HIS:CE1	1:B:81:ALA:CB	2.79	0.43
1:C:404:GLN:NE2	1:C:406:GLN:HB2	2.34	0.43
1:B:39:ILE:O	1:B:67:THR:HA	2.19	0.42
1:A:569:THR:O	1:A:570[B]:ARG:HB2	2.20	0.42
1:A:36:THR:O	1:A:39:ILE:HG12	2.19	0.42
1:A:120:ASP:H	8:A:728:PEG:C4	2.33	0.42
1:B:231:LYS:O	2:B:703:CL:CL	2.75	0.42
1:B:360:ILE:HD13	1:B:416:TYR:CZ	2.54	0.42
1:B:360:ILE:HD13	1:B:416:TYR:CE1	2.55	0.42
1:B:475:THR:HA	1:B:498:ASN:O	2.20	0.41
1:C:103:PHE:CD1	1:C:118:HIS:HB2	2.55	0.41
1:C:285:SER:HA	1:C:288:TRP:CD2	2.55	0.41
1:C:109:ILE:HB	1:C:131:LYS:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:358:GLN:HA	1:A:358:GLN:OE1	2.20	0.41
1:B:103:PHE:CD1	1:B:118:HIS:HB2	2.55	0.41
1:C:285:SER:HA	1:C:288:TRP:CE2	2.56	0.41
1:A:28:LYS:HG2	1:B:53:GLN:CD	2.41	0.41
1:C:403:THR:OG1	1:C:404:GLN:N	2.53	0.41
1:C:365:LYS:HE2	11:C:1078:HOH:O	2.21	0.41
1:C:403:THR:HG21	11:C:1290:HOH:O	2.21	0.41
1:A:569:THR:O	1:A:570[A]:ARG:HB2	2.21	0.41
1:B:62:ILE:HD11	1:B:66:THR:OG1	2.20	0.41
1:C:385:ALA:HA	1:C:419:LEU:O	2.21	0.40
1:A:223:LYS:NZ	11:A:834:HOH:O	2.53	0.40
8:A:727:PEG:H12	8:A:727:PEG:H32	1.49	0.40
1:A:12:THR:OG1	1:A:15:GLU:HG3	2.20	0.40

All (1) 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)
11:A:1382:HOH:O	11:C:1250:HOH:O[1_565]	2.04	0.16

## 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	629/633 (99%)	611 (97%)	17 (3%)	1 (0%)	47 33
1	B	618/633 (98%)	588 (95%)	27 (4%)	3 (0%)	29 15
1	C	623/633 (98%)	603 (97%)	19 (3%)	1 (0%)	47 33
All	All	1870/1899 (98%)	1802 (96%)	63 (3%)	5 (0%)	41 26

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	37	ALA
1	B	81	ALA
1	A	479	ASN
1	B	406	GLN
1	C	479	ASN

### 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	515/518 (99%)	514 (100%)	1 (0%)	93	92
1	B	493/518 (95%)	491 (100%)	2 (0%)	91	89
1	C	503/518 (97%)	502 (100%)	1 (0%)	93	92
All	All	1511/1554 (97%)	1507 (100%)	4 (0%)	92	91

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	359	PHE
1	B	359	PHE
1	B	438	SER
1	C	60	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 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](#)

Of 95 ligands modelled in this entry, 10 are monoatomic - leaving 85 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	EDO	C	716	-	3,3,3	0.35	0	2,2,2	0.43	0
7	EDO	C	714	-	3,3,3	0.46	0	2,2,2	0.43	0
7	EDO	B	715	-	3,3,3	0.53	0	2,2,2	0.42	0
6	GOL	B	709	-	5,5,5	0.28	0	5,5,5	0.43	0
6	GOL	A	714	-	5,5,5	0.28	0	5,5,5	0.41	0
7	EDO	A	717	-	3,3,3	0.55	0	2,2,2	0.34	0
6	GOL	A	707	-	5,5,5	0.34	0	5,5,5	0.51	0
6	GOL	C	703	-	5,5,5	0.18	0	5,5,5	0.55	0
7	EDO	C	715	-	3,3,3	0.57	0	2,2,2	0.29	0
7	EDO	B	722	-	3,3,3	0.53	0	2,2,2	0.05	0
6	GOL	C	709	-	5,5,5	0.26	0	5,5,5	0.50	0
6	GOL	B	712	-	5,5,5	0.41	0	5,5,5	0.60	0
7	EDO	C	723	-	3,3,3	0.41	0	2,2,2	0.47	0
7	EDO	B	724	-	3,3,3	0.38	0	2,2,2	0.40	0
7	EDO	A	722	-	3,3,3	0.50	0	2,2,2	0.26	0
6	GOL	B	713	-	5,5,5	0.23	0	5,5,5	0.88	0
7	EDO	A	724	-	3,3,3	0.42	0	2,2,2	0.40	0
6	GOL	A	710	-	5,5,5	0.29	0	5,5,5	0.81	0
7	EDO	A	725	-	3,3,3	0.46	0	2,2,2	0.43	0
6	GOL	C	708	-	5,5,5	0.28	0	5,5,5	0.65	0
6	GOL	B	705	-	5,5,5	0.14	0	5,5,5	0.36	0
8	PEG	A	727	-	6,6,6	0.20	0	5,5,5	0.14	0
7	EDO	B	730	-	3,3,3	0.49	0	2,2,2	0.51	0
10	PO4	A	730	-	4,4,4	0.84	0	6,6,6	0.35	0
5	CO3	B	701	-	2,3,3	1.31	0	2,3,3	0.24	0
7	EDO	C	719	-	3,3,3	0.49	0	2,2,2	0.29	0
7	EDO	C	727	-	3,3,3	0.53	0	2,2,2	0.12	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
6	GOL	A	712	-	5,5,5	0.73	0	5,5,5	0.95	0
6	GOL	A	708	-	5,5,5	0.35	0	5,5,5	0.73	0
5	CO3	A	705	-	2,3,3	1.20	0	2,3,3	0.27	0
7	EDO	C	717	-	3,3,3	0.50	0	2,2,2	0.30	0
6	GOL	C	712	-	5,5,5	0.35	0	5,5,5	0.82	0
6	GOL	B	711	-	5,5,5	0.32	0	5,5,5	0.47	0
7	EDO	B	723	-	3,3,3	0.56	0	2,2,2	0.27	0
7	EDO	A	735	-	3,3,3	0.50	0	2,2,2	0.35	0
6	GOL	A	731	-	5,5,5	0.48	0	5,5,5	0.47	0
7	EDO	C	720	-	3,3,3	0.46	0	2,2,2	0.48	0
7	EDO	B	725	-	3,3,3	0.06	0	2,2,2	0.19	0
7	EDO	B	719	-	3,3,3	0.48	0	2,2,2	0.14	0
7	EDO	C	729	-	3,3,3	0.50	0	2,2,2	0.27	0
6	GOL	B	714	-	5,5,5	0.26	0	5,5,5	0.56	0
6	GOL	C	713	-	5,5,5	0.42	0	5,5,5	0.38	0
7	EDO	C	725	-	3,3,3	0.44	0	2,2,2	0.38	0
7	EDO	B	720	-	3,3,3	0.47	0	2,2,2	0.33	0
6	GOL	B	706	-	5,5,5	0.29	0	5,5,5	0.63	0
7	EDO	B	717	-	3,3,3	0.36	0	2,2,2	0.33	0
6	GOL	A	733	-	5,5,5	0.53	0	5,5,5	0.81	0
7	EDO	A	720	-	3,3,3	0.40	0	2,2,2	0.48	0
6	GOL	B	708	-	5,5,5	0.29	0	5,5,5	0.79	0
6	GOL	C	705	-	5,5,5	0.37	0	5,5,5	0.57	0
7	EDO	B	718	-	3,3,3	0.43	0	2,2,2	0.29	0
7	EDO	A	719	-	3,3,3	0.47	0	2,2,2	0.30	0
8	PEG	B	727	-	6,6,6	0.57	0	5,5,5	0.25	0
6	GOL	A	711	-	5,5,5	0.36	0	5,5,5	0.78	0
6	GOL	C	710	-	5,5,5	0.21	0	5,5,5	0.75	0
7	EDO	C	722	-	3,3,3	0.39	0	2,2,2	0.42	0
6	GOL	A	716	-	5,5,5	0.42	0	5,5,5	0.54	0
6	GOL	A	713	-	5,5,5	0.37	0	5,5,5	0.42	0
6	GOL	A	715	-	5,5,5	0.38	0	5,5,5	0.77	0
6	GOL	C	704	-	5,5,5	0.24	0	5,5,5	0.53	0
6	GOL	C	711	-	5,5,5	0.46	0	5,5,5	0.81	0
7	EDO	A	723	-	3,3,3	0.47	0	2,2,2	0.26	0
5	CO3	A	706	-	2,3,3	0.75	0	2,3,3	0.18	0
7	EDO	B	721	-	3,3,3	0.34	0	2,2,2	0.53	0
7	EDO	A	726	-	3,3,3	0.38	0	2,2,2	0.61	0
6	GOL	C	706	-	5,5,5	0.40	0	5,5,5	0.38	0
7	EDO	C	726	-	3,3,3	0.49	0	2,2,2	0.30	0
7	EDO	C	721	-	3,3,3	0.47	0	2,2,2	0.28	0
6	GOL	A	734	-	5,5,5	0.35	0	5,5,5	0.34	0
8	PEG	B	728	-	6,6,6	0.60	0	5,5,5	0.29	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
10	PO4	A	732	-	4,4,4	0.55	0	6,6,6	0.89	0
6	GOL	B	710	-	5,5,5	0.24	0	5,5,5	0.38	0
6	GOL	C	707	-	5,5,5	0.39	0	5,5,5	0.45	0
7	EDO	C	728	-	3,3,3	0.45	0	2,2,2	0.47	0
7	EDO	C	718	-	3,3,3	0.41	0	2,2,2	0.38	0
8	PEG	B	726	-	6,6,6	0.58	0	5,5,5	0.37	0
6	GOL	A	709	-	5,5,5	0.50	0	5,5,5	0.36	0
9	PGE	A	729	-	9,9,9	0.29	0	8,8,8	0.51	0
8	PEG	A	728	-	6,6,6	0.12	0	5,5,5	0.08	0
8	PEG	C	730	-	6,6,6	0.41	0	5,5,5	0.50	0
7	EDO	A	718	-	3,3,3	0.39	0	2,2,2	0.40	0
7	EDO	A	721	-	3,3,3	0.45	0	2,2,2	0.33	0
7	EDO	B	716	-	3,3,3	0.46	0	2,2,2	0.36	0
7	EDO	C	724	-	3,3,3	0.45	0	2,2,2	0.61	0
6	GOL	B	707	-	5,5,5	0.57	0	5,5,5	0.45	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
7	EDO	C	716	-	-	1/1/1/1	-
7	EDO	C	714	-	-	0/1/1/1	-
7	EDO	B	715	-	-	1/1/1/1	-
6	GOL	B	709	-	-	0/4/4/4	-
6	GOL	A	714	-	-	4/4/4/4	-
7	EDO	A	717	-	-	0/1/1/1	-
6	GOL	A	707	-	-	0/4/4/4	-
6	GOL	C	703	-	-	1/4/4/4	-
7	EDO	C	715	-	-	0/1/1/1	-
7	EDO	B	722	-	-	1/1/1/1	-
6	GOL	C	709	-	-	0/4/4/4	-
6	GOL	B	712	-	-	3/4/4/4	-
7	EDO	C	723	-	-	1/1/1/1	-
7	EDO	B	724	-	-	1/1/1/1	-
7	EDO	A	722	-	-	0/1/1/1	-
6	GOL	B	713	-	-	2/4/4/4	-
7	EDO	A	724	-	-	0/1/1/1	-
6	GOL	A	710	-	-	2/4/4/4	-
7	EDO	A	725	-	-	0/1/1/1	-
6	GOL	C	708	-	-	0/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	GOL	B	705	-	-	4/4/4/4	-
8	PEG	A	727	-	-	2/4/4/4	-
7	EDO	B	730	-	-	0/1/1/1	-
7	EDO	C	719	-	-	0/1/1/1	-
7	EDO	C	727	-	-	0/1/1/1	-
6	GOL	A	712	-	-	2/4/4/4	-
6	GOL	A	708	-	-	0/4/4/4	-
7	EDO	C	717	-	-	0/1/1/1	-
6	GOL	C	712	-	-	2/4/4/4	-
6	GOL	B	711	-	-	0/4/4/4	-
7	EDO	B	723	-	-	0/1/1/1	-
7	EDO	A	735	-	-	0/1/1/1	-
6	GOL	A	731	-	-	0/4/4/4	-
7	EDO	C	720	-	-	1/1/1/1	-
7	EDO	B	725	-	-	1/1/1/1	-
7	EDO	B	719	-	-	1/1/1/1	-
7	EDO	C	729	-	-	0/1/1/1	-
6	GOL	B	714	-	-	0/4/4/4	-
6	GOL	C	713	-	-	4/4/4/4	-
7	EDO	C	725	-	-	1/1/1/1	-
7	EDO	B	720	-	-	0/1/1/1	-
6	GOL	B	706	-	-	2/4/4/4	-
7	EDO	B	717	-	-	0/1/1/1	-
6	GOL	A	733	-	-	2/4/4/4	-
7	EDO	A	720	-	-	0/1/1/1	-
6	GOL	B	708	-	-	2/4/4/4	-
6	GOL	C	705	-	-	2/4/4/4	-
7	EDO	B	718	-	-	0/1/1/1	-
7	EDO	A	719	-	-	1/1/1/1	-
8	PEG	B	727	-	-	0/4/4/4	-
6	GOL	A	711	-	-	2/4/4/4	-
6	GOL	C	710	-	-	2/4/4/4	-
7	EDO	C	722	-	-	0/1/1/1	-
6	GOL	A	716	-	-	3/4/4/4	-
6	GOL	A	713	-	-	2/4/4/4	-
6	GOL	A	715	-	-	2/4/4/4	-
6	GOL	C	704	-	-	4/4/4/4	-
6	GOL	C	711	-	-	1/4/4/4	-
7	EDO	A	723	-	-	0/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	EDO	B	721	-	-	1/1/1/1	-
7	EDO	A	726	-	-	0/1/1/1	-
6	GOL	C	706	-	-	2/4/4/4	-
7	EDO	C	726	-	-	0/1/1/1	-
7	EDO	C	721	-	-	1/1/1/1	-
6	GOL	A	734	-	-	0/4/4/4	-
8	PEG	B	728	-	-	1/4/4/4	-
6	GOL	B	710	-	-	0/4/4/4	-
6	GOL	C	707	-	-	4/4/4/4	-
7	EDO	C	728	-	-	0/1/1/1	-
7	EDO	C	718	-	-	0/1/1/1	-
8	PEG	B	726	-	-	2/4/4/4	-
6	GOL	A	709	-	-	1/4/4/4	-
9	PGE	A	729	-	-	4/7/7/7	-
8	PEG	A	728	-	-	3/4/4/4	-
8	PEG	C	730	-	-	2/4/4/4	-
7	EDO	A	718	-	-	0/1/1/1	-
7	EDO	A	721	-	-	1/1/1/1	-
7	EDO	B	716	-	-	0/1/1/1	-
7	EDO	C	724	-	-	0/1/1/1	-
6	GOL	B	707	-	-	0/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (82) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	710	GOL	O1-C1-C2-C3
6	A	711	GOL	O1-C1-C2-C3
6	A	712	GOL	C1-C2-C3-O3
6	A	714	GOL	C1-C2-C3-O3
6	A	714	GOL	O2-C2-C3-O3
6	A	715	GOL	O1-C1-C2-C3
6	A	716	GOL	C1-C2-C3-O3
6	A	733	GOL	C1-C2-C3-O3
6	B	706	GOL	C1-C2-C3-O3
6	B	706	GOL	O2-C2-C3-O3
6	B	712	GOL	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
6	B	713	GOL	C1-C2-C3-O3
6	C	705	GOL	C1-C2-C3-O3
6	C	707	GOL	O1-C1-C2-O2
6	C	707	GOL	O1-C1-C2-C3
6	C	710	GOL	C1-C2-C3-O3
6	C	712	GOL	O1-C1-C2-C3
8	A	727	PEG	C1-C2-O2-C3
6	A	716	GOL	O2-C2-C3-O3
6	A	733	GOL	O2-C2-C3-O3
6	B	712	GOL	O1-C1-C2-O2
6	B	713	GOL	O2-C2-C3-O3
6	C	705	GOL	O2-C2-C3-O3
6	C	710	GOL	O2-C2-C3-O3
6	C	712	GOL	O1-C1-C2-O2
8	B	726	PEG	O1-C1-C2-O2
8	C	730	PEG	O2-C3-C4-O4
7	C	721	EDO	O1-C1-C2-O2
8	A	728	PEG	C4-C3-O2-C2
6	A	713	GOL	O1-C1-C2-C3
6	A	714	GOL	O1-C1-C2-C3
6	A	716	GOL	O1-C1-C2-C3
6	B	705	GOL	O1-C1-C2-C3
6	B	705	GOL	C1-C2-C3-O3
6	B	708	GOL	O1-C1-C2-C3
6	B	712	GOL	C1-C2-C3-O3
6	C	703	GOL	C1-C2-C3-O3
6	C	704	GOL	O1-C1-C2-C3
6	C	704	GOL	C1-C2-C3-O3
6	C	706	GOL	O1-C1-C2-C3
6	C	707	GOL	C1-C2-C3-O3
6	C	713	GOL	O1-C1-C2-C3
6	C	713	GOL	C1-C2-C3-O3
6	A	711	GOL	O1-C1-C2-O2
6	A	713	GOL	O1-C1-C2-O2
6	C	704	GOL	O1-C1-C2-O2
6	C	704	GOL	O2-C2-C3-O3
7	A	721	EDO	O1-C1-C2-O2
7	B	721	EDO	O1-C1-C2-O2
7	B	722	EDO	O1-C1-C2-O2
7	B	724	EDO	O1-C1-C2-O2
7	B	725	EDO	O1-C1-C2-O2
8	A	728	PEG	O2-C3-C4-O4

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Mol	Chain	Res	Type	Atoms
8	B	726	PEG	O2-C3-C4-O4
8	C	730	PEG	O1-C1-C2-O2
6	A	710	GOL	O1-C1-C2-O2
6	A	712	GOL	O2-C2-C3-O3
6	A	715	GOL	O1-C1-C2-O2
7	C	716	EDO	O1-C1-C2-O2
7	C	723	EDO	O1-C1-C2-O2
6	A	714	GOL	O1-C1-C2-O2
9	A	729	PGE	O3-C5-C6-O4
8	A	727	PEG	C4-C3-O2-C2
6	B	705	GOL	O2-C2-C3-O3
6	B	708	GOL	O1-C1-C2-O2
6	C	706	GOL	O1-C1-C2-O2
6	C	707	GOL	O2-C2-C3-O3
6	C	713	GOL	O2-C2-C3-O3
8	A	728	PEG	C1-C2-O2-C3
9	A	729	PGE	C1-C2-O2-C3
7	C	725	EDO	O1-C1-C2-O2
6	B	705	GOL	O1-C1-C2-O2
8	B	728	PEG	C4-C3-O2-C2
9	A	729	PGE	C6-C5-O3-C4
7	A	719	EDO	O1-C1-C2-O2
7	B	719	EDO	O1-C1-C2-O2
7	C	720	EDO	O1-C1-C2-O2
6	C	711	GOL	O2-C2-C3-O3
6	C	713	GOL	O1-C1-C2-O2
6	A	709	GOL	C1-C2-C3-O3
9	A	729	PGE	O2-C3-C4-O3
7	B	715	EDO	O1-C1-C2-O2

There are no ring outliers.

12 monomers are involved in 28 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	710	GOL	1	0
8	A	727	PEG	1	0
6	A	731	GOL	1	0
7	C	729	EDO	8	0
6	A	716	GOL	1	0
6	C	704	GOL	1	0
7	B	721	EDO	7	0
8	B	728	PEG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
10	A	732	PO4	2	0
8	B	726	PEG	1	0
9	A	729	PGE	4	0
8	A	728	PEG	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

### 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	616/633 (97%)	-0.32	9 (1%) 73 74	5, 15, 34, 52	1 (0%)
1	B	616/633 (97%)	0.04	45 (7%) 15 14	6, 16, 51, 77	0
1	C	619/633 (97%)	-0.05	29 (4%) 31 30	5, 14, 47, 59	0
All	All	1851/1899 (97%)	-0.11	83 (4%) 33 32	5, 15, 45, 77	1 (0%)

All (83) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	61	GLY	11.6
1	B	62	ILE	8.2
1	B	37	ALA	8.0
1	B	82	GLY	7.6
1	B	147	LEU	6.8
1	B	70	SER	6.1
1	B	36	THR	5.4
1	B	63	VAL	5.3
1	B	69	ILE	5.3
1	C	61	GLY	5.2
1	A	593	ALA	4.8
1	B	44	PHE	4.7
1	C	406	GLN	4.7
1	B	81	ALA	4.5
1	B	66	THR	4.2
1	B	78	THR	4.2
1	A	105	PHE	4.2
1	B	60	PHE	4.1
1	C	105	PHE	4.1
1	B	76	ILE	4.1
1	B	65	GLY	4.0
1	C	80	SER	4.0
1	C	68	ALA	4.0

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	B	83	SER	3.9
1	B	41	LEU	3.7
1	B	67	THR	3.6
1	C	12	THR	3.5
1	B	35	PHE	3.4
1	B	84	VAL	3.4
1	B	145	VAL	3.4
1	C	136	GLY	3.3
1	B	14	ILE	3.2
1	C	81	ALA	3.1
1	A	616	SER	3.1
1	C	404	GLN	3.0
1	B	148	GLY	3.0
1	A	596	GLN	3.0
1	C	64	SER	3.0
1	B	628	HIS	3.0
1	A	12	THR	2.9
1	C	65	GLY	2.9
1	C	35	PHE	2.9
1	C	82	GLY	2.8
1	B	125	TRP	2.8
1	B	38	GLY	2.8
1	C	41	LEU	2.8
1	B	79	HIS	2.8
1	B	34	TYR	2.7
1	B	64	SER	2.7
1	C	84	VAL	2.6
1	A	594	ASN	2.6
1	B	68	ALA	2.6
1	B	72	ASP	2.6
1	A	627	VAL	2.5
1	B	149	ALA	2.5
1	B	127	GLY	2.5
1	B	128	SER	2.5
1	C	33	ILE	2.5
1	B	47	ILE	2.4
1	C	405	LYS	2.4
1	C	125	TRP	2.3
1	B	58	LEU	2.3
1	C	78	THR	2.3
1	C	83	SER	2.3
1	C	630	HIS	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	151	LEU	2.3
1	A	618	THR	2.2
1	C	104	ASN	2.2
1	C	44	PHE	2.2
1	B	80	SER	2.2
1	B	126	ASP	2.2
1	C	79	HIS	2.2
1	B	39	ILE	2.2
1	C	66	THR	2.2
1	B	136	GLY	2.2
1	B	75	ALA	2.1
1	C	140	ASP	2.1
1	A	626	ASP	2.1
1	C	87	GLY	2.0
1	B	129	LEU	2.0
1	C	63	VAL	2.0
1	B	13	SER	2.0
1	C	13	SER	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<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
8	PEG	B	727	7/7	0.64	0.28	41,47,49,55	0
7	EDO	C	727	4/4	0.69	0.20	45,50,52,56	0
7	EDO	B	720	4/4	0.73	0.13	48,51,51,51	0
6	GOL	C	710	6/6	0.75	0.18	25,36,38,41	0
6	GOL	C	713	6/6	0.76	0.29	34,40,41,46	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
5	CO3	A	706	4/4	0.77	0.19	21,25,38,41	0
7	EDO	C	729	4/4	0.78	0.28	33,37,41,43	0
7	EDO	A	719	4/4	0.78	0.13	46,47,49,53	0
6	GOL	B	705	6/6	0.79	0.17	39,40,46,56	0
6	GOL	A	716	6/6	0.80	0.17	24,31,35,39	0
7	EDO	B	725	4/4	0.81	0.18	24,31,33,38	0
7	EDO	B	715	4/4	0.81	0.13	41,43,44,47	0
7	EDO	A	724	4/4	0.82	0.10	41,41,42,55	0
8	PEG	A	727	7/7	0.83	0.14	27,34,40,41	7
6	GOL	B	713	6/6	0.83	0.17	22,38,43,43	0
7	EDO	A	725	4/4	0.84	0.14	39,41,45,51	0
9	PGE	A	729	10/10	0.84	0.21	27,35,41,47	0
7	EDO	C	726	4/4	0.85	0.14	33,35,43,48	0
7	EDO	C	725	4/4	0.86	0.13	36,39,46,50	0
2	CL	B	703	1/1	0.86	0.10	43,43,43,43	0
7	EDO	A	717	4/4	0.86	0.11	26,26,28,37	0
3	NA	A	703	1/1	0.86	0.16	26,26,26,26	1
7	EDO	B	722	4/4	0.86	0.13	35,37,42,49	0
8	PEG	B	726	7/7	0.86	0.16	26,40,48,53	0
6	GOL	A	731	6/6	0.86	0.19	25,34,43,43	0
7	EDO	C	717	4/4	0.86	0.27	35,41,43,46	0
8	PEG	A	728	7/7	0.87	0.28	32,33,43,57	0
7	EDO	C	722	4/4	0.88	0.13	38,41,43,52	0
7	EDO	B	719	4/4	0.88	0.30	34,39,41,51	0
7	EDO	B	716	4/4	0.89	0.12	22,28,32,36	0
6	GOL	C	706	6/6	0.89	0.14	26,29,32,37	0
7	EDO	A	722	4/4	0.89	0.24	31,37,40,47	0
6	GOL	B	712	6/6	0.89	0.14	24,29,38,52	0
6	GOL	A	715	6/6	0.89	0.16	23,29,39,46	0
7	EDO	A	726	4/4	0.89	0.13	30,31,32,34	0
7	EDO	C	720	4/4	0.89	0.09	39,39,42,44	0
6	GOL	C	704	6/6	0.89	0.24	23,30,33,46	0
7	EDO	C	723	4/4	0.89	0.14	35,41,48,55	0
6	GOL	A	714	6/6	0.90	0.16	20,34,37,39	0
7	EDO	C	714	4/4	0.90	0.17	38,40,44,46	0
8	PEG	B	728	7/7	0.90	0.14	27,31,36,41	0
6	GOL	A	710	6/6	0.90	0.12	21,25,32,43	0
6	GOL	C	708	6/6	0.91	0.10	23,27,31,37	0
7	EDO	C	728	4/4	0.91	0.14	20,29,30,44	0
5	CO3	A	705	4/4	0.91	0.12	44,47,51,53	0
7	EDO	A	723	4/4	0.91	0.15	39,44,44,45	0
7	EDO	C	721	4/4	0.91	0.17	37,39,42,43	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
6	GOL	B	708	6/6	0.91	0.12	21,27,37,39	0
6	GOL	C	707	6/6	0.91	0.14	22,38,40,44	0
7	EDO	A	718	4/4	0.91	0.15	28,35,38,51	0
7	EDO	B	730	4/4	0.91	0.11	23,31,36,40	0
10	PO4	A	730	5/5	0.91	0.21	33,40,55,60	0
6	GOL	C	705	6/6	0.92	0.20	20,30,37,46	0
6	GOL	B	707	6/6	0.92	0.13	20,28,35,37	0
7	EDO	C	715	4/4	0.92	0.10	24,26,26,27	0
7	EDO	A	735	4/4	0.92	0.16	25,29,32,40	0
6	GOL	C	712	6/6	0.93	0.17	21,33,38,40	0
7	EDO	C	719	4/4	0.93	0.09	24,30,32,40	0
6	GOL	B	711	6/6	0.93	0.14	24,29,36,42	0
6	GOL	A	711	6/6	0.93	0.12	19,23,30,31	0
7	EDO	B	724	4/4	0.93	0.13	21,25,25,32	0
5	CO3	B	701	4/4	0.93	0.17	34,44,49,50	0
6	GOL	C	703	6/6	0.93	0.16	17,28,33,43	0
8	PEG	C	730	7/7	0.93	0.18	28,31,40,41	0
7	EDO	A	721	4/4	0.93	0.08	30,31,45,47	0
6	GOL	B	709	6/6	0.93	0.12	18,28,32,38	0
10	PO4	A	732	5/5	0.93	0.12	25,25,33,35	0
6	GOL	C	709	6/6	0.94	0.10	16,24,31,41	0
6	GOL	A	733	6/6	0.94	0.11	16,22,26,29	0
7	EDO	A	720	4/4	0.94	0.11	23,30,39,44	0
6	GOL	C	711	6/6	0.94	0.12	19,27,37,41	0
6	GOL	A	709	6/6	0.94	0.09	16,28,28,34	0
7	EDO	B	717	4/4	0.94	0.09	24,26,30,33	0
6	GOL	B	710	6/6	0.94	0.14	17,23,26,35	0
7	EDO	C	718	4/4	0.94	0.10	26,28,29,31	0
6	GOL	A	712	6/6	0.94	0.10	14,22,26,28	0
6	GOL	B	714	6/6	0.95	0.10	18,24,36,37	0
7	EDO	B	721	4/4	0.95	0.13	21,31,37,39	0
6	GOL	B	706	6/6	0.95	0.20	23,39,46,51	0
7	EDO	B	723	4/4	0.95	0.12	15,19,32,51	0
7	EDO	B	718	4/4	0.95	0.13	18,27,28,29	0
4	MG	A	704	1/1	0.95	0.16	25,25,25,25	1
6	GOL	A	707	6/6	0.96	0.10	17,26,30,35	0
6	GOL	A	713	6/6	0.96	0.14	19,29,33,45	0
7	EDO	C	724	4/4	0.97	0.06	22,25,30,31	0
7	EDO	C	716	4/4	0.97	0.21	21,29,30,38	0
6	GOL	A	708	6/6	0.97	0.07	12,16,20,32	0
6	GOL	A	734	6/6	0.97	0.21	16,29,37,42	0
3	NA	A	702	1/1	0.97	0.12	26,26,26,26	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
2	CL	A	701	1/1	0.98	0.04	29,29,29,29	0
2	CL	B	729	1/1	0.99	0.06	18,18,18,18	1
3	NA	B	704	1/1	0.99	0.19	24,24,24,24	0
2	CL	C	702	1/1	0.99	0.04	23,23,23,23	0
2	CL	B	702	1/1	0.99	0.04	26,26,26,26	0
2	CL	C	701	1/1	1.00	0.05	18,18,18,18	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.