Full wwPDB X-ray Structure Validation Report ⓘ

Nov 24, 2022 – 12:30 am GMT

PDB ID	:	8BBP
Title	:	Crystal structure of feruloyl esterase wtsFae1B
Authors	:	Wilkens, C.
Deposited on	:	2022-10-14
Resolution	:	1.07 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	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.31.3
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0267
CCP4	:	7.1.010 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

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 1.07 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.
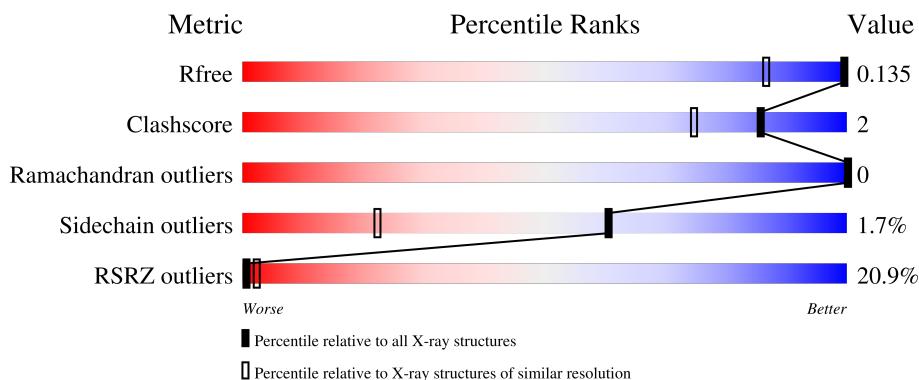
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1386 (1.12-1.04)
Clashscore	141614	1021 (1.10-1.06)
Ramachandran outliers	138981	1381 (1.12-1.04)
Sidechain outliers	138945	1379 (1.12-1.04)
RSRZ outliers	127900	1359 (1.12-1.04)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	388	
2	B	388	
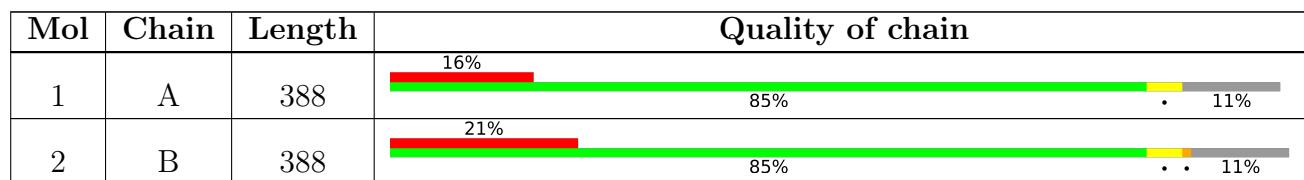
The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	EDO	A	407[A]	-	-	-	X
3	EDO	A	407[B]	-	-	-	X

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 12679 atoms, of which 5653 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 Ferulic acid esterase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	344	Total 5664	C 1850	H 2766	N 492	O 541	S 15	0	22	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	387	LEU	-	expression tag	UNP A0A5S8WFA0
A	388	LEU	-	expression tag	UNP A0A5S8WFA0

- Molecule 2 is a protein called Ferulic acid esterase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
2	B	346	Total 5602	C 1844	H 2731	N 478	O 534	S 15	0	21	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	307	GLY	ALA	conflict	UNP A0A5S8WFA0
B	387	LEU	-	expression tag	UNP A0A5S8WFA0
B	388	LEU	-	expression tag	UNP A0A5S8WFA0

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).

EDO
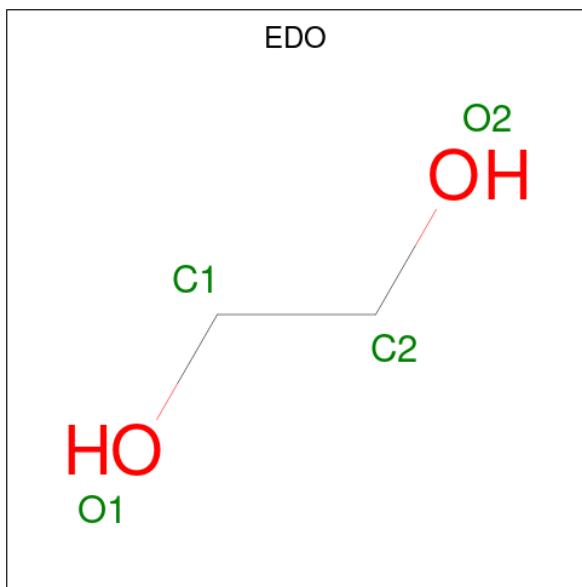
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 20	C 4	H 12	O 4	0	1
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 20	C 4	H 12	O 4	0	1
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	A	1	Total 10	C 2	H 6	O 2	0	0
3	B	1	Total 10	C 2	H 6	O 2	0	0
3	B	1	Total 10	C 2	H 6	O 2	0	0

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Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	B	1	Total 10	C 2	H 6	O 2	0	0
3	B	1	Total 10	C 2	H 6	O 2	0	0
3	B	1	Total 20	C 4	H 12	O 4	0	1
3	B	1	Total 10	C 2	H 6	O 2	0	0
3	B	1	Total 10	C 2	H 6	O 2	0	0
3	B	1	Total 20	C 4	H 12	O 4	0	1
3	B	1	Total 10	C 2	H 6	O 2	0	0
3	B	1	Total 10	C 2	H 6	O 2	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	580	Total 580	O 580	0	0
4	B	573	Total 573	O 573	0	0

# 3 Residue-property plots ⓘ

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: Ferulic acid esterase

- Molecule 2: Ferulic acid esterase
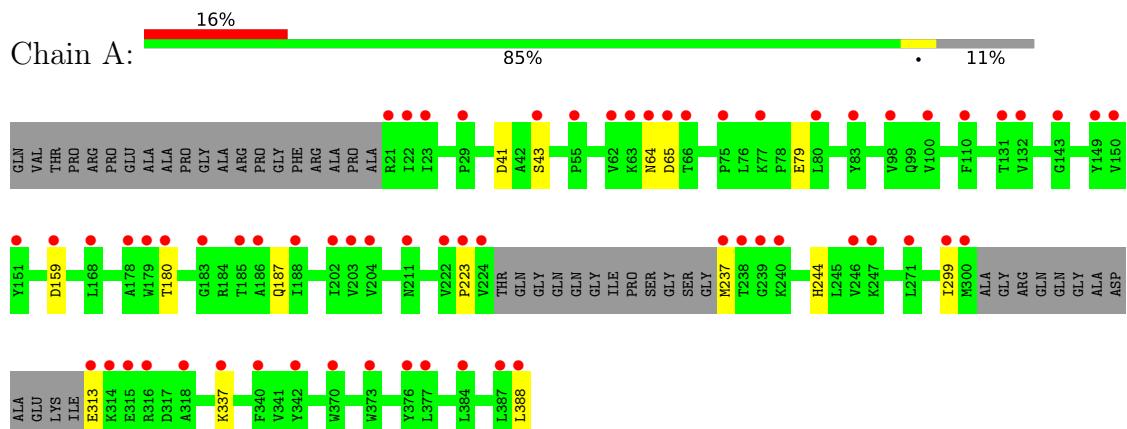
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	65.32Å 132.51Å 98.83Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	33.13 – 1.07 46.52 – 1.07	Depositor EDS
% Data completeness (in resolution range)	99.7 (33.13-1.07) 99.7 (46.52-1.07)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.98 (at 1.07Å)	Xtriage
Refinement program	PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.122 , 0.136 0.122 , 0.135	Depositor DCC
R_{free} test set	3961 reflections (1.05%)	wwPDB-VP
Wilson B-factor (Å^2)	12.5	Xtriage
Anisotropy	0.283	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	(Not available) , (Not available)	EDS
L-test for twinning[2]	$< |L| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.99	EDS
Total number of atoms	12679	wwPDB-VP
Average B, all atoms (Å^2)	18.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.29% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 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	0.36	0/2981	0.65	0/4030
2	B	0.35	0/2979	0.63	0/4034
All	All	0.36	0/5960	0.64	0/8064

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	2898	2766	2837	8	1
2	B	2871	2731	2816	17	0
3	A	56	84	84	0	0
3	B	48	72	72	3	0
4	A	580	0	0	6	2
4	B	573	0	0	15	1
All	All	7026	5653	5809	26	2

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 2.

All (26) 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)
2:B:108[B]:GLN:OE1	4:B:501:HOH:O	1.79	1.00
1:A:43[B]:SER:OG	4:A:501:HOH:O	1.79	0.98
3:B:410:EDO:O2	4:B:502:HOH:O	1.83	0.96
2:B:211:ASN:OD1	4:B:504:HOH:O	1.91	0.87
1:A:41[A]:ASP:O	4:A:502:HOH:O	1.91	0.87
2:B:222:VAL:O	4:B:505:HOH:O	1.93	0.86
2:B:180[B]:THR:HG23	4:B:570:HOH:O	1.77	0.85
2:B:163[B]:TYR:OH	4:B:503:HOH:O	1.84	0.84
1:A:313:GLU:N	4:A:503:HOH:O	2.14	0.80
2:B:313[A]:GLU:OE2	4:B:506:HOH:O	2.07	0.73
2:B:240:LYS:NZ	4:B:510:HOH:O	2.25	0.70
2:B:342[A]:TYR:OH	4:B:507:HOH:O	2.10	0.66
2:B:347:THR:O	2:B:351[B]:THR:HG23	2.03	0.59
1:A:223:PRO:HD3	4:B:794:HOH:O	2.03	0.57
2:B:339:ASP:HA	3:B:409:EDO:H22	1.87	0.57
1:A:159[A]:ASP:OD2	4:A:504:HOH:O	2.17	0.56
2:B:351[B]:THR:HG21	4:B:754:HOH:O	2.06	0.55
2:B:386:LYS:O	4:B:509:HOH:O	2.18	0.54
1:A:180[B]:THR:HG21	3:B:403:EDO:H12	1.94	0.50
1:A:64[A]:ASN:ND2	4:A:511:HOH:O	2.45	0.50
2:B:87[B]:VAL:O	2:B:87[B]:VAL:HG23	2.14	0.47
2:B:238:THR:HG23	4:B:682:HOH:O	2.16	0.46
2:B:337:LYS:HA	2:B:342[A]:TYR:CD1	2.53	0.43
1:A:187:GLN:NE2	4:A:512:HOH:O	2.47	0.43
2:B:337:LYS:HE3	4:B:849:HOH:O	2.19	0.42
2:B:159:ASP:HB3	4:B:503:HOH:O	2.19	0.42

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:549:HOH:O	4:B:713:HOH:O[2_555]	1.96	0.24
1:A:65[A]:ASP:OD1	4:A:848:HOH:O[1_655]	2.05	0.15

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	362/388 (93%)	358 (99%)	4 (1%)	0	100	100
2	B	359/388 (92%)	355 (99%)	4 (1%)	0	100	100
All	All	721/776 (93%)	713 (99%)	8 (1%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

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	313/317 (99%)	306 (98%)	7 (2%)	52	14
2	B	309/317 (98%)	304 (98%)	5 (2%)	62	24
All	All	622/634 (98%)	610 (98%)	12 (2%)	60	18

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	79	GLU
1	A	237	MET
1	A	244	HIS
1	A	299	ILE
1	A	337[A]	LYS
1	A	337[B]	LYS
1	A	388	LEU
2	B	79	GLU

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Mol	Chain	Res	Type
2	B	238	THR
2	B	244	HIS
2	B	313[A]	GLU
2	B	313[B]	GLU

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

5.3.3   RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5   Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6   Ligand geometry ⓘ

26 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	$\#|Z| > 2$
3	EDO	A	411	-	3,3,3	0.39	0	2,2,2	0.81	0
3	EDO	B	405[A]	-	3,3,3	0.40	0	2,2,2	0.46	0
3	EDO	A	406	-	3,3,3	0.33	0	2,2,2	0.49	0
3	EDO	A	408	-	3,3,3	0.45	0	2,2,2	0.36	0
3	EDO	B	404	-	3,3,3	0.43	0	2,2,2	0.43	0
3	EDO	A	402	-	3,3,3	0.42	0	2,2,2	0.53	0
3	EDO	A	410	-	3,3,3	0.38	0	2,2,2	0.08	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
3	EDO	A	412	-	3,3,3	0.32	0	2,2,2	0.39	0
3	EDO	B	402	-	3,3,3	0.42	0	2,2,2	0.23	0
3	EDO	A	401	-	3,3,3	0.44	0	2,2,2	0.35	0
3	EDO	B	401	-	3,3,3	0.37	0	2,2,2	0.92	0
3	EDO	B	406	-	3,3,3	0.35	0	2,2,2	0.62	0
3	EDO	B	403	-	3,3,3	0.31	0	2,2,2	0.18	0
3	EDO	B	409	-	3,3,3	0.25	0	2,2,2	0.73	0
3	EDO	B	408[B]	-	3,3,3	0.53	0	2,2,2	0.36	0
3	EDO	A	409[B]	-	3,3,3	0.44	0	2,2,2	0.27	0
3	EDO	B	408[A]	-	3,3,3	0.46	0	2,2,2	0.34	0
3	EDO	A	405	-	3,3,3	0.43	0	2,2,2	0.10	0
3	EDO	A	409[A]	-	3,3,3	0.35	0	2,2,2	0.48	0
3	EDO	A	403	-	3,3,3	0.36	0	2,2,2	0.41	0
3	EDO	A	404	-	3,3,3	0.27	0	2,2,2	0.70	0
3	EDO	B	410	-	3,3,3	0.53	0	2,2,2	0.07	0
3	EDO	B	407	-	3,3,3	0.42	0	2,2,2	0.40	0
3	EDO	A	407[B]	-	3,3,3	0.45	0	2,2,2	0.28	0
3	EDO	B	405[B]	-	3,3,3	0.47	0	2,2,2	0.27	0
3	EDO	A	407[A]	-	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
3	EDO	A	411	-	-	0/1/1/1	-
3	EDO	B	405[A]	-	-	0/1/1/1	-
3	EDO	A	406	-	-	1/1/1/1	-
3	EDO	A	408	-	-	1/1/1/1	-
3	EDO	B	404	-	-	0/1/1/1	-
3	EDO	A	402	-	-	0/1/1/1	-
3	EDO	A	410	-	-	0/1/1/1	-
3	EDO	A	412	-	-	0/1/1/1	-
3	EDO	B	402	-	-	0/1/1/1	-
3	EDO	A	401	-	-	0/1/1/1	-
3	EDO	B	401	-	-	0/1/1/1	-
3	EDO	B	406	-	-	0/1/1/1	-
3	EDO	B	403	-	-	0/1/1/1	-
3	EDO	B	409	-	-	1/1/1/1	-
3	EDO	B	408[B]	-	-	0/1/1/1	-
3	EDO	A	409[B]	-	-	1/1/1/1	-
3	EDO	B	408[A]	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	EDO	A	405	-	-	1/1/1/1	-
3	EDO	A	409[A]	-	-	1/1/1/1	-
3	EDO	A	403	-	-	0/1/1/1	-
3	EDO	A	404	-	-	1/1/1/1	-
3	EDO	B	410	-	-	0/1/1/1	-
3	EDO	B	407	-	-	0/1/1/1	-
3	EDO	A	407[B]	-	-	1/1/1/1	-
3	EDO	B	405[B]	-	-	0/1/1/1	-
3	EDO	A	407[A]	-	-	1/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	404	EDO	O1-C1-C2-O2
3	A	408	EDO	O1-C1-C2-O2
3	A	409[A]	EDO	O1-C1-C2-O2
3	A	409[B]	EDO	O1-C1-C2-O2
3	B	408[A]	EDO	O1-C1-C2-O2
3	B	409	EDO	O1-C1-C2-O2
3	A	407[A]	EDO	O1-C1-C2-O2
3	A	406	EDO	O1-C1-C2-O2
3	A	407[B]	EDO	O1-C1-C2-O2
3	A	405	EDO	O1-C1-C2-O2

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	403	EDO	1	0
3	B	409	EDO	1	0
3	B	410	EDO	1	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	344/388 (88%)	1.60	64 (18%)	1	3	9, 13, 26, 52	0
2	B	346/388 (89%)	1.69	80 (23%)	0	2	9, 14, 32, 54	0
All	All	690/776 (88%)	1.65	144 (20%)	1	2	9, 13, 30, 54	0

All (144) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	388	LEU	25.0
1	A	224	VAL	14.5
2	B	21	ARG	13.9
2	B	312	ILE	13.1
1	A	238	THR	11.4
2	B	301	ALA	11.3
1	A	237	MET	10.3
2	B	54	GLY	9.8
2	B	238	THR	9.6
2	B	20	ALA	9.2
2	B	223	PRO	8.8
2	B	53	THR	8.6
1	A	223	PRO	8.2
2	B	307	GLY	8.1
1	A	314	LYS	7.7
1	A	387	LEU	7.7
2	B	66	THR	7.0
1	A	21	ARG	6.8
1	A	300	MET	6.7
1	A	315	GLU	6.2
1	A	66	THR	6.0
2	B	308	ASP	6.0
2	B	222	VAL	5.8
2	B	314	LYS	5.8

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Mol	Chain	Res	Type	RSRZ
2	B	311	LYS	5.6
1	A	340	PHE	5.4
2	B	340[A]	PHE	5.4
1	A	313	GLU	4.7
2	B	65[A]	ASP	4.5
1	A	299	ILE	4.4
2	B	22	ILE	4.4
2	B	159	ASP	4.4
2	B	160	THR	4.3
2	B	315	GLU	4.3
1	A	65[A]	ASP	4.3
1	A	222	VAL	4.1
1	A	132	VAL	4.0
2	B	240	LYS	3.9
2	B	313[A]	GLU	3.8
2	B	309	ALA	3.8
2	B	158	GLY	3.8
2	B	38	TYR	3.7
2	B	23	ILE	3.7
2	B	299	ILE	3.6
1	A	211	ASN	3.4
1	A	22	ILE	3.3
2	B	337	LYS	3.3
2	B	69	PHE	3.3
1	A	180[A]	THR	3.3
2	B	73	VAL	3.3
2	B	44	LYS	3.2
1	A	318	ALA	3.1
2	B	29	PRO	3.1
1	A	203	VAL	3.1
2	B	126	ASN	3.1
2	B	150	VAL	3.1
1	A	63[A]	LYS	3.0
2	B	28[A]	MET	3.0
2	B	203	VAL	2.9
2	B	179	TRP	2.9
2	B	180[A]	THR	2.9
2	B	257	PHE	2.9
1	A	204	VAL	2.7
2	B	58	VAL	2.7
1	A	55[A]	PRO	2.7
1	A	342	TYR	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	179	TRP	2.7
1	A	188	ILE	2.7
2	B	169[A]	LEU	2.6
1	A	370	TRP	2.6
1	A	149	TYR	2.6
1	A	23	ILE	2.6
1	A	159[A]	ASP	2.6
2	B	202	ILE	2.6
2	B	326	SER	2.6
1	A	178	ALA	2.6
2	B	316	ARG	2.5
2	B	133	THR	2.5
2	B	37	VAL	2.5
2	B	204	VAL	2.5
2	B	76	LEU	2.5
2	B	346	LEU	2.5
2	B	300[A]	MET	2.5
2	B	149	TYR	2.5
2	B	51	TRP	2.5
1	A	271	LEU	2.5
2	B	342[A]	TYR	2.5
1	A	98	VAL	2.5
2	B	328	TYR	2.5
2	B	135	VAL	2.4
2	B	281	ILE	2.4
1	A	168	LEU	2.4
2	B	161	GLN	2.4
2	B	100	VAL	2.4
1	A	384	LEU	2.4
1	A	373	TRP	2.4
1	A	185	THR	2.4
1	A	316	ARG	2.4
1	A	80	LEU	2.4
1	A	151	TYR	2.4
2	B	107	TYR	2.4
2	B	163[A]	TYR	2.4
2	B	325	LYS	2.4
2	B	60	GLU	2.3
2	B	211	ASN	2.3
1	A	100	VAL	2.3
1	A	150	VAL	2.3
1	A	240	LYS	2.3

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Mol	Chain	Res	Type	RSRZ
2	B	178	ALA	2.3
1	A	246[A]	VAL	2.3
2	B	310	GLU	2.3
1	A	110	PHE	2.3
1	A	186	ALA	2.2
2	B	219	VAL	2.2
1	A	43[A]	SER	2.2
1	A	62	VAL	2.2
2	B	358	LYS	2.2
1	A	143	GLY	2.2
2	B	215	ALA	2.2
1	A	29	PRO	2.2
1	A	131	THR	2.2
2	B	98	VAL	2.2
2	B	132	VAL	2.2
2	B	136	TRP	2.2
1	A	247	LYS	2.1
1	A	337[A]	LYS	2.1
2	B	162	ARG	2.1
1	A	64[A]	ASN	2.1
2	B	292	ILE	2.1
1	A	83	TYR	2.1
1	A	376	TYR	2.1
2	B	43	SER	2.1
1	A	239	GLY	2.1
1	A	377	LEU	2.1
2	B	57	GLY	2.1
2	B	168	LEU	2.1
1	A	75	PRO	2.1
2	B	221	PRO	2.1
1	A	202	ILE	2.1
1	A	183	GLY	2.1
2	B	151	TYR	2.1
1	A	77	LYS	2.0
2	B	213	ALA	2.0
2	B	166	PHE	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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
3	EDO	A	408	4/4	0.41	0.36	50,60,60,60	0
3	EDO	A	407[B]	4/4	0.59	0.46	21,25,27,28	10
3	EDO	A	407[A]	4/4	0.59	0.46	40,48,49,50	10
3	EDO	A	405	4/4	0.68	0.37	44,53,55,57	0
3	EDO	A	403	4/4	0.73	0.14	37,45,45,46	0
3	EDO	A	409[A]	4/4	0.75	0.32	21,28,33,34	10
3	EDO	A	409[B]	4/4	0.75	0.32	31,37,38,38	10
3	EDO	A	406	4/4	0.81	0.34	39,47,47,47	0
3	EDO	B	405[A]	4/4	0.81	0.21	24,29,31,31	10
3	EDO	B	405[B]	4/4	0.81	0.21	11,14,16,17	10
3	EDO	A	404	4/4	0.83	0.21	25,30,32,32	0
3	EDO	B	407	4/4	0.83	0.27	22,28,32,34	0
3	EDO	B	408[A]	4/4	0.83	0.25	18,22,23,24	10
3	EDO	B	408[B]	4/4	0.83	0.25	16,19,22,22	10
3	EDO	A	402	4/4	0.87	0.27	25,30,33,33	0
3	EDO	B	409	4/4	0.87	0.18	25,30,33,33	0
3	EDO	B	401	4/4	0.88	0.16	16,20,21,21	0
3	EDO	B	406	4/4	0.89	0.12	19,23,25,25	0
3	EDO	B	403	4/4	0.90	0.15	19,23,24,26	0
3	EDO	A	401	4/4	0.91	0.16	26,31,35,36	0
3	EDO	B	410	4/4	0.92	0.24	19,23,24,24	0
3	EDO	B	404	4/4	0.94	0.13	18,21,22,23	0
3	EDO	A	412	4/4	0.96	0.09	19,23,23,24	0
3	EDO	A	411	4/4	0.96	0.12	16,19,21,21	0
3	EDO	A	410	4/4	0.98	0.11	10,13,14,14	0
3	EDO	B	402	4/4	0.99	0.14	11,13,15,15	0

6.5 Other polymers (i)

There are no such residues in this entry.