



wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 9, 2024 – 09:42 PM EST

PDB ID : 3WI3
Title : Crystal Structure of the Sld3/Treslin domain from yeast Sld3
Authors : Itou, H.; Araki, H.; Shirakihara, Y.
Deposited on : 2013-09-05
Resolution : 2.40 Å(reported)

This is a wwPDB X-ray Structure Validation Summary Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ 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

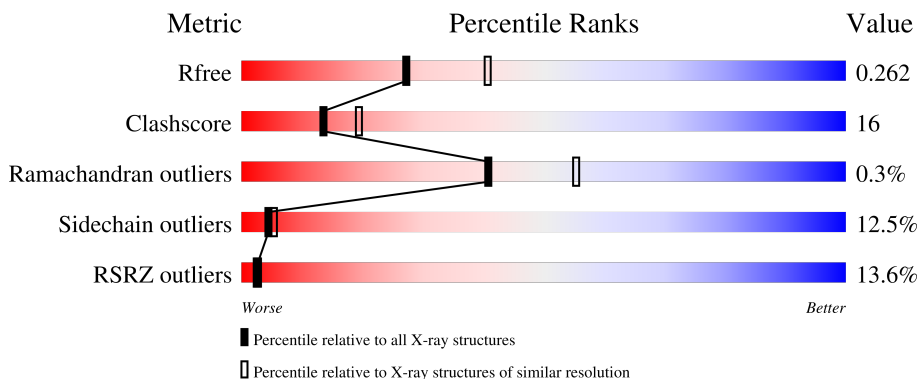
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 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	3907 (2.40-2.40)
Clashscore	141614	4398 (2.40-2.40)
Ramachandran outliers	138981	4318 (2.40-2.40)
Sidechain outliers	138945	4319 (2.40-2.40)
RSRZ outliers	127900	3811 (2.40-2.40)

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	292	
1	B	292	
1	C	292	

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	502	-	-	X	-
3	EDO	A	503	-	-	X	-
3	EDO	A	504	-	-	X	-
3	EDO	A	505	-	-	X	-
3	EDO	A	506	-	-	X	-
3	EDO	A	507	-	-	X	-
3	EDO	A	508	-	-	X	-
3	EDO	A	514	-	-	X	-
3	EDO	A	515	-	X	-	-
3	EDO	A	516	-	-	X	-
3	EDO	A	517	-	-	X	-
3	EDO	B	502	-	-	X	-
3	EDO	B	503	-	-	X	-
3	EDO	B	504	-	-	X	-
3	EDO	B	505	-	-	X	-
3	EDO	B	506	-	-	X	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 5473 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 DNA replication regulator SLD3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	215	Total 1766	C 1145	N 289	O 326	S 6	0	0	0
1	B	212	Total 1741	C 1127	N 287	O 321	S 6	0	0	0
1	C	205	Total 1686	C 1095	N 276	O 309	S 6	0	0	0

There are 27 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	147	MET	-	expression tag	UNP P53135
A	431	LEU	-	expression tag	UNP P53135
A	432	GLU	-	expression tag	UNP P53135
A	433	HIS	-	expression tag	UNP P53135
A	434	HIS	-	expression tag	UNP P53135
A	435	HIS	-	expression tag	UNP P53135
A	436	HIS	-	expression tag	UNP P53135
A	437	HIS	-	expression tag	UNP P53135
A	438	HIS	-	expression tag	UNP P53135
B	147	MET	-	expression tag	UNP P53135
B	431	LEU	-	expression tag	UNP P53135
B	432	GLU	-	expression tag	UNP P53135
B	433	HIS	-	expression tag	UNP P53135
B	434	HIS	-	expression tag	UNP P53135
B	435	HIS	-	expression tag	UNP P53135
B	436	HIS	-	expression tag	UNP P53135
B	437	HIS	-	expression tag	UNP P53135
B	438	HIS	-	expression tag	UNP P53135
C	147	MET	-	expression tag	UNP P53135
C	431	LEU	-	expression tag	UNP P53135
C	432	GLU	-	expression tag	UNP P53135
C	433	HIS	-	expression tag	UNP P53135
C	434	HIS	-	expression tag	UNP P53135

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Chain	Residue	Modelled	Actual	Comment	Reference
C	435	HIS	-	expression tag	UNP P53135
C	436	HIS	-	expression tag	UNP P53135
C	437	HIS	-	expression tag	UNP P53135
C	438	HIS	-	expression tag	UNP P53135

- Molecule 2 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



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

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: C₂H₆O₂).



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

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

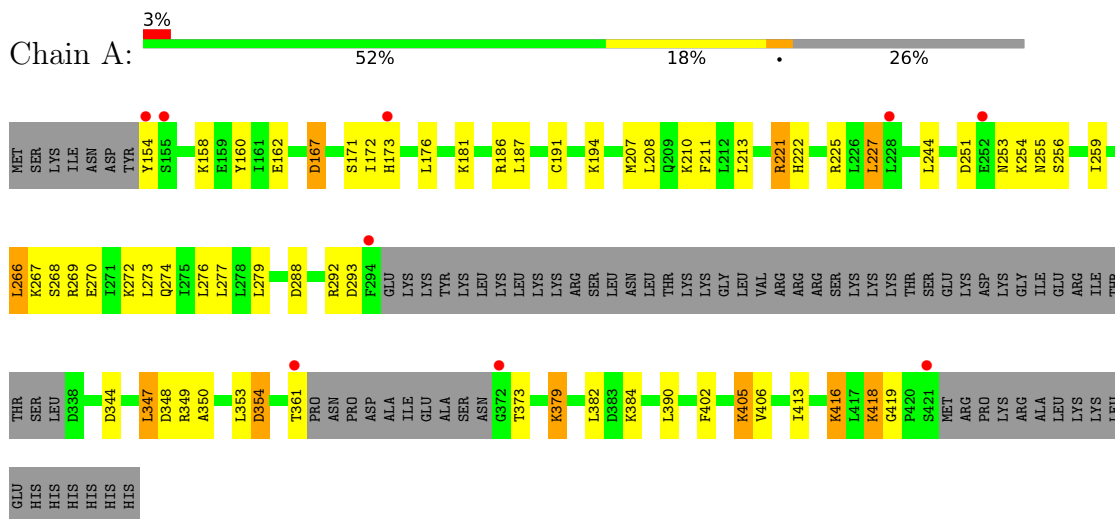
- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	68	Total O 68 68	0	0
4	B	82	Total O 82 82	0	0
4	C	19	Total O 19 19	0	0

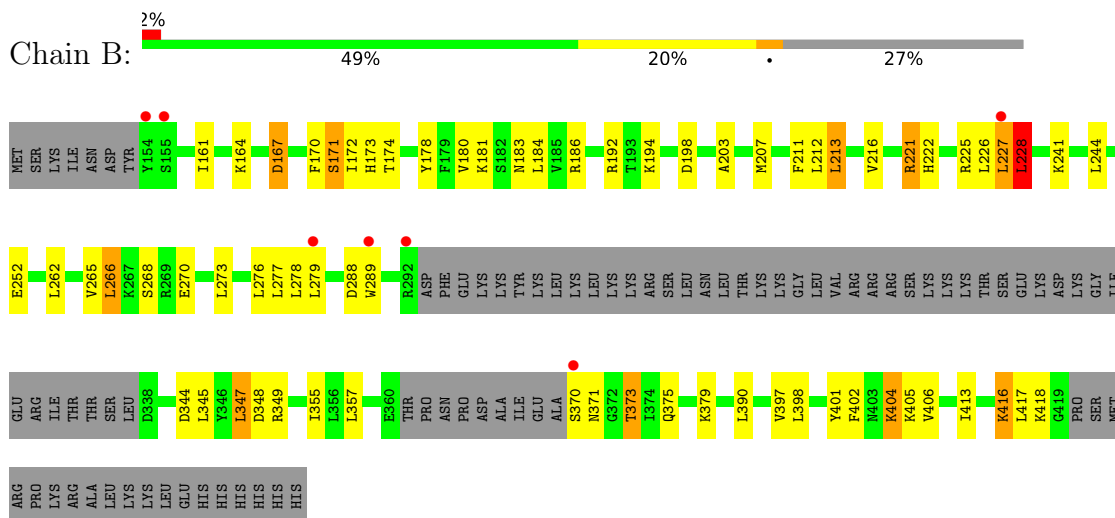
3 Residue-property plots

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: DNA replication regulator SLD3

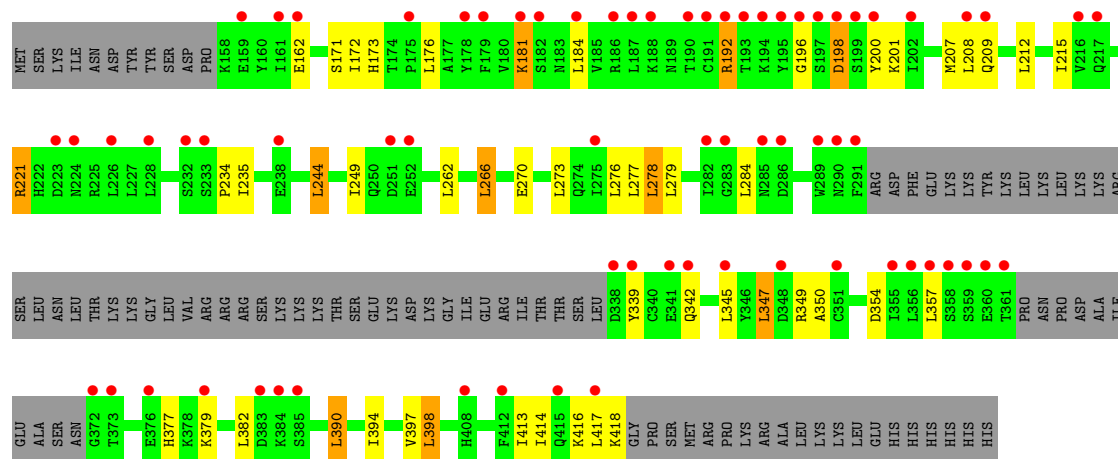


• Molecule 1: DNA replication regulator SLD3



• Molecule 1: DNA replication regulator SLD3





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	65.26Å 92.82Å 160.87Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.64 – 2.40 19.64 – 2.40	Depositor EDS
% Data completeness (in resolution range)	(Not available) (19.64-2.40) 88.1 (19.64-2.40)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	8.06 (at 2.41Å)	Xtrriage
Refinement program	REFMAC 5.7.0029	Depositor
R, R_{free}	0.217 , 0.262 0.218 , 0.262	Depositor DCC
R_{free} test set	1714 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	34.4	Xtrriage
Anisotropy	0.124	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 58.0	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	0.93	EDS
Total number of atoms	5473	wwPDB-VP
Average B, all atoms (Å ²)	49.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.89% 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 [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, 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	0.98	0/1799	1.08	6/2424 (0.2%)
1	B	0.94	1/1772 (0.1%)	1.08	11/2386 (0.5%)
1	C	0.62	0/1715	0.88	3/2309 (0.1%)
All	All	0.87	1/5286 (0.0%)	1.02	20/7119 (0.3%)

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	C	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	172	ILE	N-CA	7.57	1.61	1.46

The worst 5 of 20 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	221	ARG	NE-CZ-NH2	-14.82	112.89	120.30
1	A	221	ARG	NE-CZ-NH1	12.14	126.37	120.30
1	B	221	ARG	NE-CZ-NH2	-11.35	114.62	120.30
1	B	221	ARG	NE-CZ-NH1	10.31	125.46	120.30
1	C	221	ARG	NE-CZ-NH1	9.58	125.09	120.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	171	SER	Peptide

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	1766	0	1804	72	0
1	B	1741	0	1783	71	0
1	C	1686	0	1738	23	0
2	A	5	0	0	1	0
2	B	5	0	0	0	0
2	C	5	0	0	0	0
3	A	64	0	96	57	0
3	B	32	0	48	45	0
4	A	68	0	0	4	0
4	B	82	0	0	5	0
4	C	19	0	0	3	0
All	All	5473	0	5469	172	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 16.

The worst 5 of 172 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:256:SER:O	3:A:502:EDO:H21	1.04	1.22
1:B:222:HIS:CD2	3:B:506:EDO:H22	1.78	1.19
1:A:256:SER:O	3:A:502:EDO:C2	1.93	1.17
1:B:222:HIS:HD2	3:B:506:EDO:C2	1.74	1.00
1:B:222:HIS:CD2	3:B:506:EDO:C2	2.45	0.99

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	209/292 (72%)	205 (98%)	4 (2%)	0	100	100
1	B	206/292 (70%)	201 (98%)	4 (2%)	1 (0%)	29	41
1	C	199/292 (68%)	192 (96%)	6 (3%)	1 (0%)	29	41
All	All	614/876 (70%)	598 (97%)	14 (2%)	2 (0%)	41	55

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	198	ASP
1	B	198	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	201/273 (74%)	181 (90%)	20 (10%)	7	11
1	B	198/273 (72%)	169 (85%)	29 (15%)	3	3
1	C	192/273 (70%)	167 (87%)	25 (13%)	4	4
All	All	591/819 (72%)	517 (88%)	74 (12%)	4	5

5 of 74 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	208	LEU

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Mol	Chain	Res	Type
1	C	397	VAL
1	C	266	LEU
1	C	345	LEU
1	B	213	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 25 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	380	ASN
1	C	183	ASN
1	C	415	GLN
1	B	415	GLN
1	C	189	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](#)

27 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	B	509	-	3,3,3	0.72	0	2,2,2	0.15	0
3	EDO	B	507	-	3,3,3	0.58	0	2,2,2	0.27	0
3	EDO	B	502	-	3,3,3	0.70	0	2,2,2	0.06	0
3	EDO	B	505	-	3,3,3	1.31	0	2,2,2	1.17	0
3	EDO	A	502	-	3,3,3	1.09	0	2,2,2	0.67	0
3	EDO	A	514	-	3,3,3	0.61	0	2,2,2	0.54	0
3	EDO	A	517	-	3,3,3	0.72	0	2,2,2	0.44	0
3	EDO	B	504	-	3,3,3	0.55	0	2,2,2	0.25	0
3	EDO	A	513	-	3,3,3	0.35	0	2,2,2	1.20	0
3	EDO	A	505	-	3,3,3	1.00	0	2,2,2	1.21	0
3	EDO	A	509	-	3,3,3	0.85	0	2,2,2	0.53	0
3	EDO	A	510	-	3,3,3	0.82	0	2,2,2	0.02	0
3	EDO	A	506	-	3,3,3	0.75	0	2,2,2	0.66	0
3	EDO	A	511	-	3,3,3	0.43	0	2,2,2	0.67	0
3	EDO	A	515	-	3,3,3	2.32	2 (66%)	2,2,2	1.56	1 (50%)
3	EDO	A	503	-	3,3,3	0.97	0	2,2,2	0.76	0
3	EDO	A	512	-	3,3,3	0.80	0	2,2,2	0.82	0
3	EDO	B	508	-	3,3,3	0.94	0	2,2,2	0.39	0
3	EDO	B	506	-	3,3,3	0.67	0	2,2,2	0.29	0
2	SO4	A	501	-	4,4,4	1.31	0	6,6,6	0.52	0
2	SO4	C	501	-	4,4,4	1.13	0	6,6,6	0.30	0
3	EDO	A	508	-	3,3,3	1.53	1 (33%)	2,2,2	0.28	0
3	EDO	B	503	-	3,3,3	1.27	0	2,2,2	1.53	1 (50%)
3	EDO	A	516	-	3,3,3	0.37	0	2,2,2	0.26	0
3	EDO	A	507	-	3,3,3	0.52	0	2,2,2	0.58	0
2	SO4	B	501	-	4,4,4	0.96	0	6,6,6	1.15	0
3	EDO	A	504	-	3,3,3	0.84	0	2,2,2	0.68	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	B	509	-	-	1/1/1/1	-
3	EDO	B	507	-	-	1/1/1/1	-
3	EDO	B	502	-	-	0/1/1/1	-
3	EDO	B	505	-	-	1/1/1/1	-
3	EDO	A	502	-	-	0/1/1/1	-
3	EDO	A	514	-	-	1/1/1/1	-
3	EDO	A	517	-	-	0/1/1/1	-
3	EDO	B	504	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	EDO	A	513	-	-	0/1/1/1	-
3	EDO	A	505	-	-	1/1/1/1	-
3	EDO	A	509	-	-	0/1/1/1	-
3	EDO	A	510	-	-	1/1/1/1	-
3	EDO	A	506	-	-	1/1/1/1	-
3	EDO	A	511	-	-	1/1/1/1	-
3	EDO	A	515	-	-	1/1/1/1	-
3	EDO	A	503	-	-	1/1/1/1	-
3	EDO	A	512	-	-	1/1/1/1	-
3	EDO	B	508	-	-	0/1/1/1	-
3	EDO	B	506	-	-	0/1/1/1	-
3	EDO	A	508	-	-	1/1/1/1	-
3	EDO	B	503	-	-	1/1/1/1	-
3	EDO	A	516	-	-	0/1/1/1	-
3	EDO	A	507	-	-	1/1/1/1	-
3	EDO	A	504	-	-	0/1/1/1	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	515	EDO	O1-C1	3.10	1.58	1.42
3	A	515	EDO	C2-C1	2.22	1.63	1.48
3	A	508	EDO	O1-C1	2.06	1.52	1.42

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	515	EDO	O2-C2-C1	2.17	127.56	111.91
3	B	503	EDO	O2-C2-C1	2.13	127.22	111.91

There are no chirality outliers.

5 of 15 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	505	EDO	O1-C1-C2-O2
3	A	506	EDO	O1-C1-C2-O2
3	A	508	EDO	O1-C1-C2-O2
3	A	514	EDO	O1-C1-C2-O2
3	B	503	EDO	O1-C1-C2-O2

There are no ring outliers.

23 monomers are involved in 103 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	509	EDO	1	0
3	B	507	EDO	1	0
3	B	502	EDO	8	0
3	B	505	EDO	5	0
3	A	502	EDO	11	0
3	A	514	EDO	5	0
3	A	517	EDO	4	0
3	B	504	EDO	7	0
3	A	513	EDO	2	0
3	A	505	EDO	7	0
3	A	509	EDO	1	0
3	A	510	EDO	2	0
3	A	506	EDO	4	0
3	A	515	EDO	3	0
3	A	503	EDO	5	0
3	B	508	EDO	1	0
3	B	506	EDO	8	0
2	A	501	SO4	1	0
3	A	508	EDO	4	0
3	B	503	EDO	16	0
3	A	516	EDO	8	0
3	A	507	EDO	4	0
3	A	504	EDO	4	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	215/292 (73%)	0.01	9 (4%) 36 35	14, 31, 59, 86	0
1	B	212/292 (72%)	-0.07	7 (3%) 46 45	13, 33, 68, 84	0
1	C	205/292 (70%)	1.75	70 (34%) 0 0	44, 75, 128, 170	0
All	All	632/876 (72%)	0.55	86 (13%) 3 2	13, 42, 104, 170	0

The worst 5 of 86 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	199	SER	8.9
1	C	178	TYR	8.3
1	C	193	THR	7.8
1	C	195	TYR	7.6
1	C	289	TRP	7.5

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(\AA^2)	Q<0.9
2	SO4	C	501	5/5	0.62	0.39	118,121,128,130	0
3	EDO	A	510	4/4	0.67	0.24	51,51,54,58	0
3	EDO	B	508	4/4	0.75	0.30	62,62,70,77	0
3	EDO	A	513	4/4	0.79	0.22	52,54,57,62	0
3	EDO	A	509	4/4	0.79	0.21	57,60,64,64	0
2	SO4	A	501	5/5	0.83	0.21	66,72,92,105	0
3	EDO	A	512	4/4	0.83	0.29	38,40,45,47	0
3	EDO	A	517	4/4	0.86	0.32	44,49,51,52	0
3	EDO	B	505	4/4	0.87	0.24	26,30,32,44	0
3	EDO	B	509	4/4	0.88	0.26	39,44,44,54	0
3	EDO	A	508	4/4	0.89	0.23	34,43,45,54	0
3	EDO	A	503	4/4	0.90	0.21	28,35,40,47	0
3	EDO	A	506	4/4	0.90	0.31	28,31,32,34	0
3	EDO	B	503	4/4	0.90	0.33	21,28,28,28	0
3	EDO	A	507	4/4	0.91	0.16	35,39,44,48	0
3	EDO	B	506	4/4	0.91	0.25	28,33,35,36	0
3	EDO	A	515	4/4	0.92	0.18	25,28,29,32	0
3	EDO	B	504	4/4	0.92	0.22	32,33,42,45	0
3	EDO	A	505	4/4	0.93	0.20	29,31,32,34	0
3	EDO	A	511	4/4	0.93	0.23	39,46,49,54	0
3	EDO	A	516	4/4	0.94	0.12	35,36,36,38	0
3	EDO	A	514	4/4	0.94	0.36	30,32,35,36	0
3	EDO	A	504	4/4	0.96	0.20	20,21,24,25	0
3	EDO	A	502	4/4	0.96	0.18	31,35,37,37	0
3	EDO	B	502	4/4	0.96	0.16	21,22,23,24	0
3	EDO	B	507	4/4	0.97	0.14	29,34,36,37	0
2	SO4	B	501	5/5	1.00	0.12	19,19,22,23	0

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

There are no such residues in this entry.