Full wwPDB X-ray Structure Validation Report (i)

Nov 7, 2023 – 03:42 am GMT

PDB ID	:	5FYC
Title	:	Crystal structure of human JMJD2A in complex with succinate
Authors	:	Nowak, R.; Kopec, J.; Johansson, C.; Szykowska, A.; von Delft, F.; Arrowsmith, C.H.; Bountra, C.; Edwards, A.; Oppermann, U.
Deposited on	:	2016-03-07
Resolution	:	2.26 Å(reported)

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

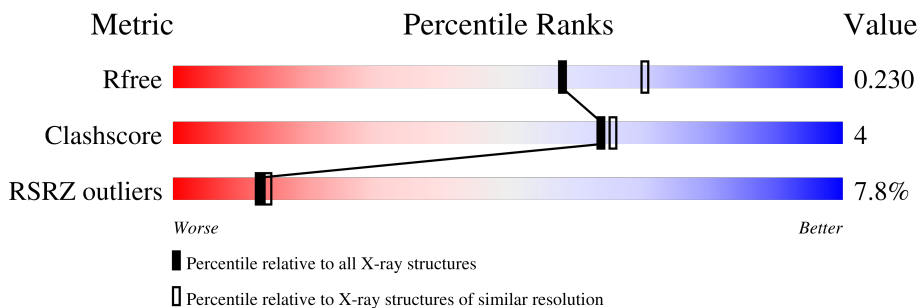|		
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	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 2.26 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	Percentile Ranks	Value
Rfree		0.230
Clashscore		4
RSRZ outliers		7.8%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1377 (2.26-2.26)
Clashscore	141614	1487 (2.26-2.26)
RSRZ outliers	127900	1356 (2.26-2.26)

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	381	6% / 82% / 8% / 9%
1	B	381	8% / 84% / 7% / 9%

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
5	EDO	A	1358	-	-	X	-

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 5946 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 LYSINE-SPECIFIC DEMETHYLASE 4A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	346	Total	C	N	O	S	0	5	1
			2797	1814	462	506	15			
1	B	347	Total	C	N	O	S	0	0	0
			2782	1804	460	503	15			

There are 44 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-21	MET	-	expression tag	UNP O75164
A	-20	HIS	-	expression tag	UNP O75164
A	-19	HIS	-	expression tag	UNP O75164
A	-18	HIS	-	expression tag	UNP O75164
A	-17	HIS	-	expression tag	UNP O75164
A	-16	HIS	-	expression tag	UNP O75164
A	-15	HIS	-	expression tag	UNP O75164
A	-14	SER	-	expression tag	UNP O75164
A	-13	SER	-	expression tag	UNP O75164
A	-12	GLY	-	expression tag	UNP O75164
A	-11	VAL	-	expression tag	UNP O75164
A	-10	ASP	-	expression tag	UNP O75164
A	-9	LEU	-	expression tag	UNP O75164
A	-8	GLY	-	expression tag	UNP O75164
A	-7	THR	-	expression tag	UNP O75164
A	-6	GLU	-	expression tag	UNP O75164
A	-5	ASN	-	expression tag	UNP O75164
A	-4	LEU	-	expression tag	UNP O75164
A	-3	TYR	-	expression tag	UNP O75164
A	-2	PHE	-	expression tag	UNP O75164
A	-1	GLN	-	expression tag	UNP O75164
A	0	SER	-	expression tag	UNP O75164
B	-21	MET	-	expression tag	UNP O75164
B	-20	HIS	-	expression tag	UNP O75164
B	-19	HIS	-	expression tag	UNP O75164

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	-18	HIS	-	expression tag	UNP O75164
B	-17	HIS	-	expression tag	UNP O75164
B	-16	HIS	-	expression tag	UNP O75164
B	-15	HIS	-	expression tag	UNP O75164
B	-14	SER	-	expression tag	UNP O75164
B	-13	SER	-	expression tag	UNP O75164
B	-12	GLY	-	expression tag	UNP O75164
B	-11	VAL	-	expression tag	UNP O75164
B	-10	ASP	-	expression tag	UNP O75164
B	-9	LEU	-	expression tag	UNP O75164
B	-8	GLY	-	expression tag	UNP O75164
B	-7	THR	-	expression tag	UNP O75164
B	-6	GLU	-	expression tag	UNP O75164
B	-5	ASN	-	expression tag	UNP O75164
B	-4	LEU	-	expression tag	UNP O75164
B	-3	TYR	-	expression tag	UNP O75164
B	-2	PHE	-	expression tag	UNP O75164
B	-1	GLN	-	expression tag	UNP O75164
B	0	SER	-	expression tag	UNP O75164

- Molecule 2 is NICKEL (II) ION (three-letter code: NI) (formula: Ni).

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

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

- Molecule 4 is FUMARIC ACID (three-letter code: FUM) (formula: $C_4H_4O_4$).

FUM

O7
O

OH O8
C6

C4

C5

OXT HO
C

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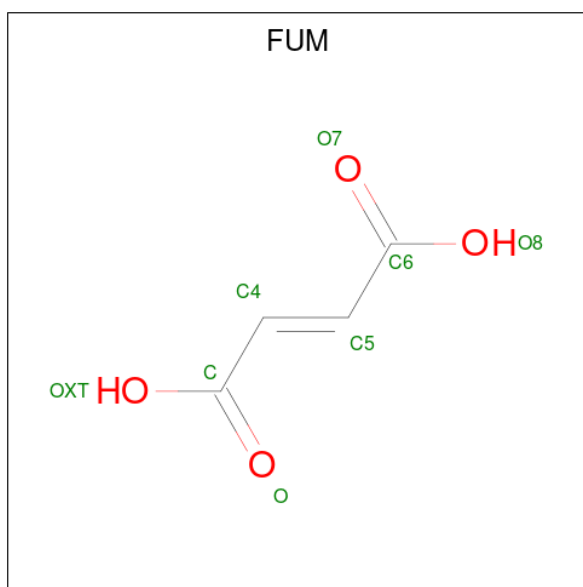
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 8	C 4	O 4	0	0
4	B	1	Total 8	C 4	O 4	0	0

- Molecule 5 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).

EDO

O2
OH

C1

C2

HO

O1

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

Continued on next page...

Continued from previous page...

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

- Molecule 6 is SULFATE ION (three-letter code: SO4) (formula: O_4S).
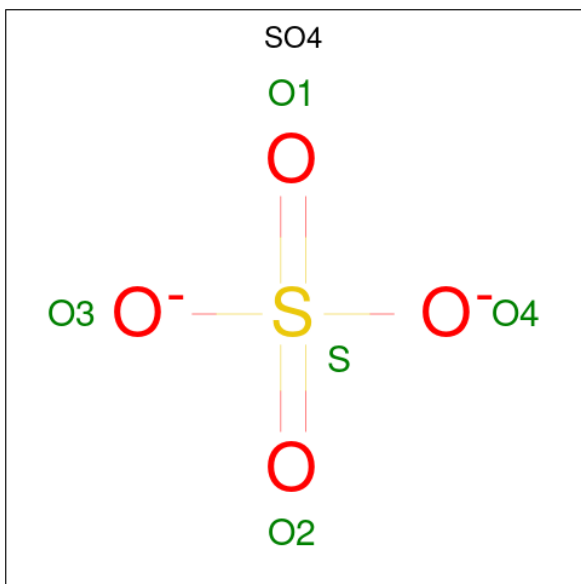
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	A	1	Total 5	O 4	S 1	0	0
6	B	1	Total 5	O 4	S 1	0	0

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	153	Total 153	O 153	0	0

Continued from previous page...

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	B	152	Total O 152 152		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: LYSINE-SPECIFIC DEMETHYLASE 4A
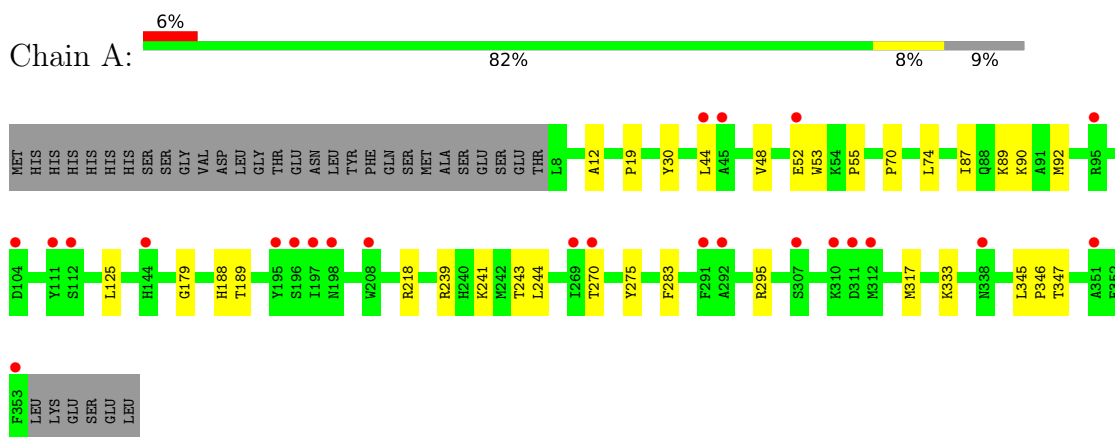
• Molecule 1: LYSINE-SPECIFIC DEMETHYLASE 4A
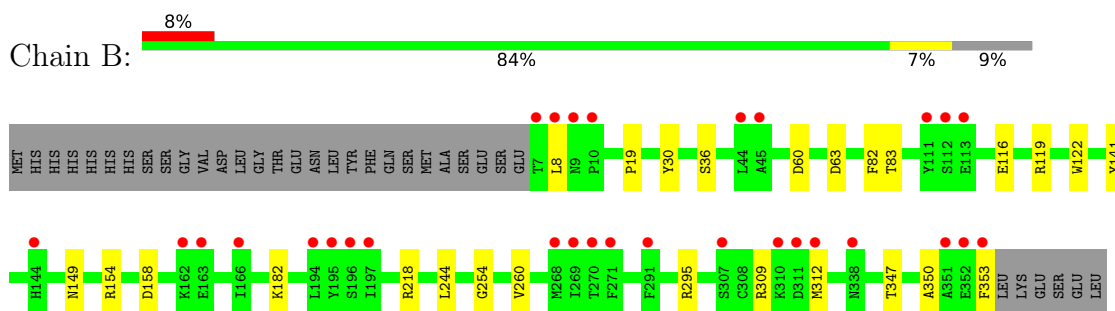
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	101.65Å 149.44Å 57.28Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	30.10 – 2.26 30.10 – 2.26	Depositor EDS
% Data completeness (in resolution range)	99.2 (30.10-2.26) 95.0 (30.10-2.26)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.15 (at 2.26Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.187 , 0.229 0.189 , 0.230	Depositor DCC
R_{free} test set	1979 reflections (4.79%)	wwPDB-VP
Wilson B-factor (Å^2)	42.2	Xtriage
Anisotropy	0.250	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 34.6	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	5946	wwPDB-VP
Average B, all atoms (Å^2)	45.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.15% of the height of the origin peak. No significant pseudotranslation is detected.*

---

[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: EDO, ZN, FUM, NI, SO4

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	0.41	0/2893	0.55	0/3930
1	B	0.43	0/2862	0.54	0/3892
All	All	0.42	0/5755	0.55	0/7822

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 (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	2797	0	2643	27	0
1	B	2782	0	2625	18	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	8	0	1	0	0
4	B	8	0	1	0	0
5	A	20	0	30	14	0
5	B	12	0	18	3	0
6	A	5	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	B	5	0	0	0	0
7	A	153	0	0	4	0
7	B	152	0	0	4	0
All	All	5946	0	5318	46	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 4.

All (46) 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:317:MET:H	5:A:1356:EDO:H21	1.34	0.92
1:A:239:ARG:HG2	5:A:1358:EDO:H12	1.60	0.82
5:A:1355:EDO:O2	7:A:2107:HOH:O	2.05	0.73
1:A:90:LYS:H	5:A:1357:EDO:H12	1.55	0.71
1:B:122:TRP:CH2	5:B:1355:EDO:H21	2.34	0.62
1:A:19:PRO:HB3	1:A:30:TYR:CZ	2.36	0.61
1:A:317:MET:N	5:A:1356:EDO:H21	2.10	0.59
1:B:122:TRP:HH2	5:B:1355:EDO:H21	1.66	0.59
1:A:70:PRO:HG2	1:A:92:MET:HE3	1.85	0.57
1:A:89:LYS:HE3	5:A:1357:EDO:H11	1.87	0.57
1:B:83:THR:HG23	5:B:1356:EDO:H12	1.86	0.57
5:A:1359:EDO:H21	1:B:260:VAL:HG23	1.87	0.57
1:A:275:TYR:CE1	5:A:1358:EDO:H21	2.41	0.56
1:A:188:HIS:CD2	1:A:241[B]:LYS:HE2	2.41	0.55
1:A:74:LEU:HD13	1:A:87:ILE:HD12	1.90	0.54
1:B:82:PHE:HB2	1:B:244:LEU:HB2	1.93	0.50
1:B:116:GLU:HG3	1:B:119:ARG:HH12	1.75	0.50
1:A:19:PRO:HD2	1:A:48:VAL:O	2.13	0.49
1:B:63:ASP:OD1	7:B:2028:HOH:O	2.19	0.49
1:A:189:THR:H	5:A:1358:EDO:H11	1.78	0.49
1:B:19:PRO:HB3	1:B:30:TYR:CZ	2.48	0.48
1:A:12:ALA:O	7:A:2002:HOH:O	2.19	0.48
1:B:218:ARG:NH2	1:B:254:GLY:O	2.44	0.48
1:A:239:ARG:HG2	5:A:1358:EDO:C1	2.35	0.48
1:B:141:TYR:CE2	1:B:149:ASN:HA	2.49	0.48
1:A:189:THR:OG1	5:A:1358:EDO:H11	2.14	0.47
1:A:52:GLU:OE1	1:A:52:GLU:N	2.31	0.47
1:A:275:TYR:CZ	5:A:1358:EDO:H21	2.51	0.46
1:A:44:LEU:HD13	1:A:270:THR:HG22	1.99	0.45
1:B:309:ARG:HB2	1:B:312:MET:HG2	1.99	0.45

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:333:LYS:NZ	7:A:2136:HOH:O	2.36	0.45
1:A:295:ARG:HB2	1:A:347:THR:HA	1.99	0.44
1:B:36:SER:HB3	1:B:350:ALA:HB1	1.99	0.44
1:B:353:PHE:O	7:B:2150:HOH:O	2.21	0.44
1:A:218[B]:ARG:NH2	5:A:1359:EDO:H11	2.33	0.43
1:B:295:ARG:HB2	1:B:347:THR:HA	2.00	0.42
1:A:179:GLY:O	1:A:283:PHE:HA	2.19	0.42
1:A:218[B]:ARG:NH2	7:A:2099:HOH:O	2.52	0.41
1:A:345:LEU:HA	1:A:346:PRO:HD3	1.91	0.41
1:B:8:LEU:HD22	1:B:36:SER:O	2.20	0.41
1:B:182:LYS:HG2	7:B:2072:HOH:O	2.20	0.41
1:B:154:ARG:HA	1:B:158:ASP:OD2	2.21	0.41
1:A:53:TRP:CZ3	1:A:55:PRO:HD3	2.56	0.41
1:A:243:THR:OG1	5:A:1355:EDO:H12	2.20	0.41
1:B:60:ASP:O	7:B:2029:HOH:O	2.21	0.40
1:A:125:LEU:HD21	1:A:244:LEU:HD13	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains ⓘ

There are no protein residues with a non-rotameric sidechain to report in this entry.

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 ⓘ

Of 16 ligands modelled in this entry, 4 are monoatomic - leaving 12 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
5	EDO	B	1355	-	3,3,3	0.39	0	2,2,2	0.39	0
4	FUM	B	1354	2	7,7,7	2.64	1 (14%)	8,8,8	1.82	2 (25%)
5	EDO	A	1358	-	3,3,3	0.53	0	2,2,2	0.45	0
5	EDO	A	1359	-	3,3,3	0.40	0	2,2,2	0.43	0
5	EDO	A	1357	-	3,3,3	0.44	0	2,2,2	0.30	0
6	SO4	A	1360	-	4,4,4	0.14	0	6,6,6	0.20	0
5	EDO	A	1355	-	3,3,3	0.44	0	2,2,2	0.39	0
5	EDO	B	1357	-	3,3,3	0.44	0	2,2,2	0.56	0
5	EDO	A	1356	-	3,3,3	0.50	0	2,2,2	0.15	0
6	SO4	B	1358	-	4,4,4	0.15	0	6,6,6	0.09	0
5	EDO	B	1356	-	3,3,3	0.54	0	2,2,2	0.39	0
4	FUM	A	1354	2	7,7,7	2.46	1 (14%)	8,8,8	1.81	2 (25%)

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
5	EDO	B	1355	-	-	1/1/1/1	-
4	FUM	B	1354	2	-	4/5/5/5	-
5	EDO	A	1358	-	-	0/1/1/1	-
5	EDO	A	1359	-	-	1/1/1/1	-
5	EDO	A	1357	-	-	1/1/1/1	-
5	EDO	A	1355	-	-	1/1/1/1	-
5	EDO	B	1357	-	-	1/1/1/1	-

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	EDO	A	1356	-	-	0/1/1/1	-
5	EDO	B	1356	-	-	0/1/1/1	-
4	FUM	A	1354	2	-	4/5/5/5	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1354	FUM	C5-C4	6.11	1.51	1.33
4	A	1354	FUM	C5-C4	5.60	1.50	1.33

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	1354	FUM	C5-C4-C	-3.85	107.48	127.26
4	A	1354	FUM	C4-C5-C6	-3.62	108.66	127.26
4	A	1354	FUM	C5-C4-C	-3.36	109.97	127.26
4	B	1354	FUM	C4-C5-C6	-2.92	112.25	127.26

There are no chirality outliers.

All (13) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	1354	FUM	OXT-C-C4-C5
4	A	1354	FUM	O-C-C4-C5
4	B	1354	FUM	O-C-C4-C5
4	A	1354	FUM	OXT-C-C4-C5
4	A	1354	FUM	C4-C5-C6-O7
4	A	1354	FUM	C4-C5-C6-O8
4	B	1354	FUM	C4-C5-C6-O7
4	B	1354	FUM	C4-C5-C6-O8
5	B	1355	EDO	O1-C1-C2-O2
5	A	1355	EDO	O1-C1-C2-O2
5	A	1359	EDO	O1-C1-C2-O2
5	A	1357	EDO	O1-C1-C2-O2
5	B	1357	EDO	O1-C1-C2-O2

There are no ring outliers.

7 monomers are involved in 17 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	1355	EDO	2	0
5	A	1358	EDO	6	0
5	A	1359	EDO	2	0
5	A	1357	EDO	2	0
5	A	1355	EDO	2	0
5	A	1356	EDO	2	0
5	B	1356	EDO	1	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	346/381 (90%)	0.20	24 (6%)	16	18	28, 44, 68, 83	0
1	B	347/381 (91%)	0.36	30 (8%)	10	11	27, 43, 69, 99	0
All	All	693/762 (90%)	0.28	54 (7%)	13	14	27, 44, 69, 99	0

All (54) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	311	ASP	7.6
1	B	8	LEU	5.8
1	A	351	ALA	5.5
1	B	10	PRO	5.4
1	A	311	ASP	5.1
1	B	166	ILE	4.3
1	B	312	MET	4.2
1	B	351	ALA	4.0
1	B	269	ILE	4.0
1	B	162	LYS	4.0
1	A	353	PHE	3.8
1	A	269	ILE	3.7
1	A	307	SER	3.4
1	B	310	LYS	3.4
1	B	112	SER	3.4
1	A	270	THR	3.2
1	B	163	GLU	3.2
1	A	197	ILE	3.1
1	B	9	ASN	3.0
1	B	7	THR	3.0
1	A	312	MET	2.9
1	A	196	SER	2.9
1	B	270	THR	2.9
1	A	144	HIS	2.9

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	195	TYR	2.9
1	B	194	LEU	2.8
1	B	307	SER	2.7
1	A	310	LYS	2.7
1	A	291	PHE	2.7
1	B	338	ASN	2.6
1	A	111	TYR	2.6
1	B	196	SER	2.6
1	A	112	SER	2.6
1	B	271	PHE	2.5
1	A	52	GLU	2.5
1	A	44	LEU	2.5
1	B	197	ILE	2.4
1	B	44	LEU	2.4
1	B	268	MET	2.4
1	B	352	GLU	2.3
1	A	195	TYR	2.3
1	B	111	TYR	2.3
1	A	104	ASP	2.3
1	B	291	PHE	2.3
1	B	144	HIS	2.2
1	A	292	ALA	2.2
1	B	353	PHE	2.2
1	B	45	ALA	2.2
1	A	95	ARG	2.2
1	B	113	GLU	2.2
1	A	338	ASN	2.1
1	A	45	ALA	2.1
1	A	208	TRP	2.1
1	A	198	ASN	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 ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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
5	EDO	B	1356	4/4	0.85	0.28	44,45,48,58	0
5	EDO	A	1356	4/4	0.88	0.17	44,52,56,58	0
5	EDO	A	1357	4/4	0.90	0.24	56,58,60,75	0
5	EDO	A	1359	4/4	0.91	0.24	38,40,40,50	0
5	EDO	A	1358	4/4	0.91	0.32	36,38,40,47	0
5	EDO	A	1355	4/4	0.92	0.32	47,49,51,56	0
4	FUM	A	1354	8/8	0.92	0.20	34,44,47,48	0
5	EDO	B	1355	4/4	0.94	0.19	32,34,39,43	0
6	SO4	A	1360	5/5	0.95	0.31	55,56,66,70	0
5	EDO	B	1357	4/4	0.96	0.08	53,54,61,66	0
4	FUM	B	1354	8/8	0.96	0.24	29,34,38,39	0
6	SO4	B	1358	5/5	0.96	0.27	62,65,78,80	0
3	ZN	A	502	1/1	0.98	0.04	47,47,47,47	0
3	ZN	B	502	1/1	0.98	0.05	50,50,50,50	0
2	NI	B	501	1/1	0.99	0.15	36,36,36,36	0
2	NI	A	501	1/1	1.00	0.12	36,36,36,36	0

6.5 Other polymers ⓘ

There are no such residues in this entry.