



Full wwPDB X-ray Structure Validation Report ⓘ

May 14, 2020 – 10:01 am BST

PDB ID : 3OV2
Title : Curcumin synthase 1 from Curcuma longa
Authors : Katsuyama, Y.; Miyazono, K.; Tanokura, M.; Ohnishi, Y.; Horinouchi, S.
Deposited on : 2010-09-15
Resolution : 2.32 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 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 : 2.11
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) : 2.11

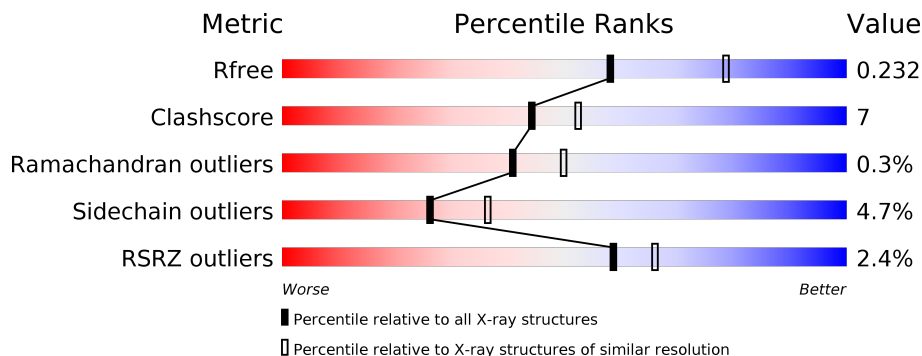
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.32 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	5974 (2.34-2.30)
Clashscore	141614	6604 (2.34-2.30)
Ramachandran outliers	138981	6523 (2.34-2.30)
Sidechain outliers	138945	6523 (2.34-2.30)
RSRZ outliers	127900	5855 (2.34-2.30)

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 on 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	393	 2% 83% 14% ..
1	B	393	 2% 86% 12% ..
1	C	393	 4% 85% 12% .
1	D	393	 2% 86% 11% ..

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 crite-

ria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	MLI	A	396	-	-	X	-
2	MLI	A	398	-	-	X	-
2	MLI	B	397	-	-	X	-
2	MLI	D	394	-	-	X	-
3	EDO	B	412	-	-	X	-

2 Entry composition i

There are 4 unique types of molecules in this entry. The entry contains 13043 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.

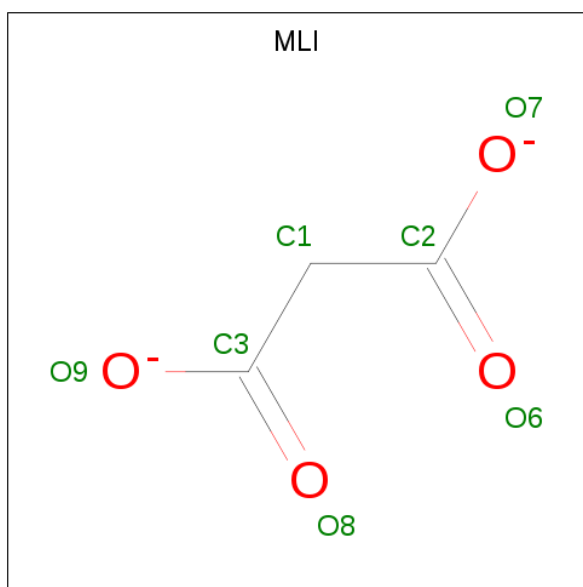
- Molecule 1 is a protein called Curcumin synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	389	3032	1924	535	557	16	0	0	0
1	B	389	3032	1924	535	557	16	0	0	0
1	C	392	3057	1939	542	560	16	0	0	0
1	D	389	3032	1924	535	557	16	0	0	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	390	HIS	-	EXPRESSION TAG	UNP C0SVZ6
A	391	HIS	-	EXPRESSION TAG	UNP C0SVZ6
A	392	HIS	-	EXPRESSION TAG	UNP C0SVZ6
A	393	HIS	-	EXPRESSION TAG	UNP C0SVZ6
B	390	HIS	-	EXPRESSION TAG	UNP C0SVZ6
B	391	HIS	-	EXPRESSION TAG	UNP C0SVZ6
B	392	HIS	-	EXPRESSION TAG	UNP C0SVZ6
B	393	HIS	-	EXPRESSION TAG	UNP C0SVZ6
C	390	HIS	-	EXPRESSION TAG	UNP C0SVZ6
C	391	HIS	-	EXPRESSION TAG	UNP C0SVZ6
C	392	HIS	-	EXPRESSION TAG	UNP C0SVZ6
C	393	HIS	-	EXPRESSION TAG	UNP C0SVZ6
D	390	HIS	-	EXPRESSION TAG	UNP C0SVZ6
D	391	HIS	-	EXPRESSION TAG	UNP C0SVZ6
D	392	HIS	-	EXPRESSION TAG	UNP C0SVZ6
D	393	HIS	-	EXPRESSION TAG	UNP C0SVZ6

- Molecule 2 is MALONATE ION (three-letter code: MLI) (formula: C₃H₂O₄).



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

- 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 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	A	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0

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

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

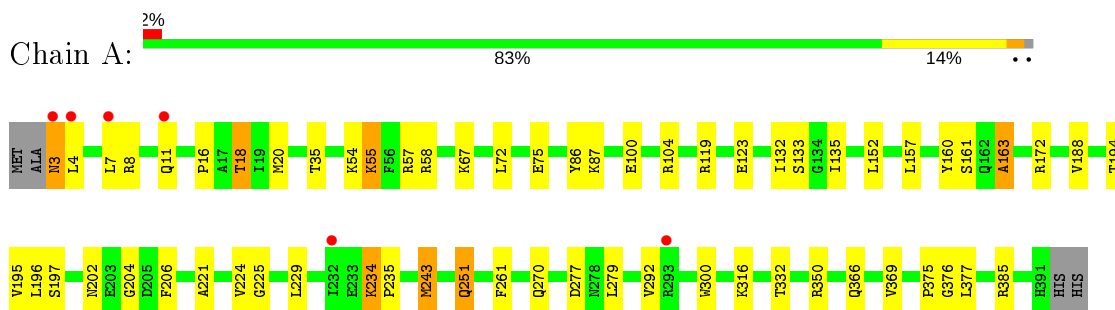
- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	141	Total O 141 141	0	0
4	B	124	Total O 124 124	0	0
4	C	149	Total O 149 149	0	0
4	D	126	Total O 126 126	0	0

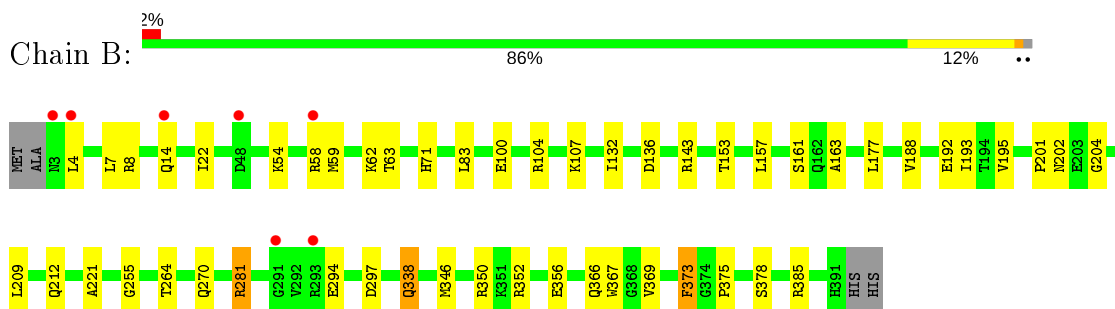
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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.

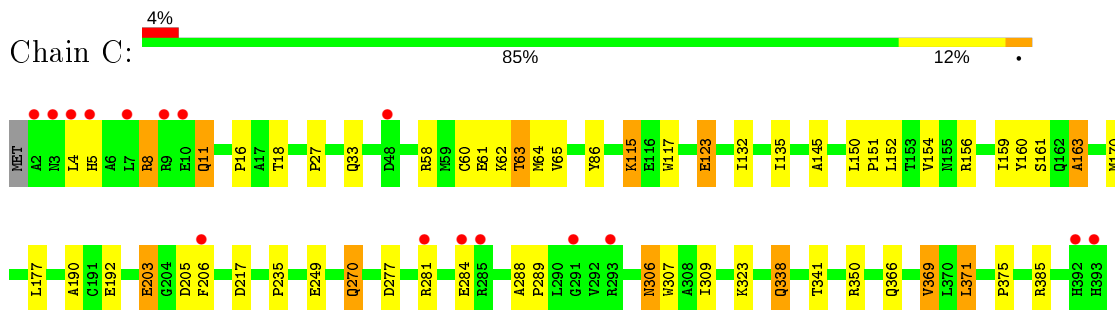
- Molecule 1: Curcumin synthase



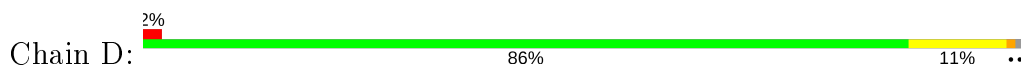
- Molecule 1: Curcumin synthase

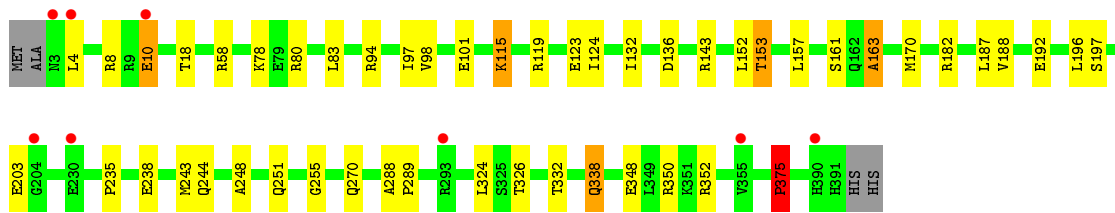


- Molecule 1: Curcumin synthase



- Molecule 1: Curcumin synthase





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	77.18Å 115.81Å 221.24Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.82 – 2.32 19.83 – 2.32	Depositor EDS
% Data completeness (in resolution range)	100.0 (19.82-2.32) 100.0 (19.83-2.32)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.65 (at 2.33Å)	Xtrriage
Refinement program	REFMAC 5.5.0109	Depositor
R, R_{free}	0.183 , 0.235 0.183 , 0.232	Depositor DCC
R_{free} test set	4333 reflections (5.01%)	wwPDB-VP
Wilson B-factor (Å ²)	27.6	Xtrriage
Anisotropy	0.084	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.38 , 47.2	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	13043	wwPDB-VP
Average B, all atoms (Å ²)	28.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.52% 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: MLI, 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	0.58	0/3096	0.64	0/4189
1	B	0.54	0/3096	0.63	0/4189
1	C	0.56	0/3123	0.62	0/4226
1	D	0.54	0/3096	0.63	0/4189
All	All	0.55	0/12411	0.63	0/16793

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	3032	0	3033	51	0
1	B	3032	0	3033	32	0
1	C	3057	0	3052	52	0
1	D	3032	0	3033	40	0
2	A	35	0	10	8	0
2	B	28	0	8	3	0
2	C	7	0	2	0	0
2	D	28	0	8	5	0
3	A	76	0	114	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	68	0	102	9	0
3	C	52	0	78	8	0
3	D	56	0	84	3	0
4	A	141	0	0	2	0
4	B	124	0	0	2	0
4	C	149	0	0	1	0
4	D	126	0	0	2	0
All	All	13043	0	12557	166	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 7.

All (166) 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:234:LYS:O	1:A:234:LYS:HD2	1.36	1.24
1:A:194:THR:HA	2:A:398:MLI:H11	1.49	0.93
1:C:63:THR:HG23	1:C:65:VAL:H	1.38	0.87
1:A:234:LYS:CD	1:A:234:LYS:O	2.25	0.85
1:A:251:GLN:HE21	1:A:251:GLN:H	1.19	0.85
1:A:172:ARG:HH12	3:B:412:EDO:H22	1.45	0.81
1:C:156:ARG:H	1:D:244:GLN:HE22	1.29	0.79
1:C:156:ARG:H	1:D:244:GLN:NE2	1.79	0.79
1:A:4:LEU:HD22	1:B:385:ARG:HH12	1.49	0.77
1:A:172:ARG:NH1	3:B:412:EDO:H22	1.98	0.76
1:A:119:ARG:NH1	1:A:123:GLU:OE2	2.23	0.71
1:D:152:LEU:HA	2:D:395:MLI:H11	1.71	0.71
1:D:115:LYS:C	1:D:115:LYS:HD2	2.11	0.70
1:A:67:LYS:HE2	4:A:554:HOH:O	1.91	0.70
1:B:22:ILE:HG12	1:B:346:MET:CE	2.22	0.69
1:C:61:GLU:CG	3:C:399:EDO:H22	2.23	0.68
1:C:63:THR:CG2	1:C:65:VAL:H	2.07	0.67
1:D:153:THR:HG22	4:D:517:HOH:O	1.95	0.67
1:B:22:ILE:HG12	1:B:346:MET:HE3	1.80	0.63
1:A:18:THR:HG22	1:A:20:MET:HG3	1.78	0.63
1:A:86:TYR:CZ	1:A:87:LYS:HD2	2.34	0.63
1:B:212:GLN:HA	3:B:404:EDO:H11	1.79	0.63
1:C:60:CYS:O	1:C:63:THR:HG22	1.99	0.62
1:C:61:GLU:HG2	3:C:399:EDO:H22	1.81	0.62
1:A:202:ASN:ND2	1:A:204:GLY:H	1.98	0.62
1:D:326:THR:HG23	3:D:399:EDO:H21	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:157:LEU:HA	2:A:396:MLI:O8	2.00	0.62
1:A:163:ALA:CB	1:A:375:PRO:HD2	2.31	0.61
1:C:33:GLN:HE21	1:C:63:THR:HG21	1.64	0.60
1:B:71:HIS:ND1	2:B:395:MLI:H12	2.18	0.58
1:C:306:ASN:HD22	1:C:306:ASN:C	2.06	0.58
1:B:157:LEU:HB2	3:B:412:EDO:H21	1.85	0.58
1:C:61:GLU:HG3	3:C:399:EDO:H22	1.86	0.58
1:D:197:SER:HB2	3:D:408:EDO:H21	1.85	0.58
1:C:270:GLN:HE21	1:C:270:GLN:H	1.52	0.57
1:D:196:LEU:HB2	2:D:394:MLI:C2	2.35	0.56
1:A:196:LEU:HB2	2:A:398:MLI:O9	2.06	0.56
1:A:194:THR:HA	2:A:398:MLI:C1	2.30	0.56
1:D:119:ARG:NH2	1:D:123:GLU:HG3	2.19	0.56
1:A:87:LYS:HG2	1:A:261:PHE:CD2	2.41	0.56
1:B:163:ALA:HB1	4:B:428:HOH:O	2.06	0.55
1:D:192:GLU:HG3	1:D:338:GLN:HB2	1.89	0.55
1:A:55:LYS:HG2	1:A:206:PHE:CE1	2.41	0.55
1:C:170:MET:HE1	1:C:190:ALA:HB2	1.88	0.54
1:D:251:GLN:H	1:D:251:GLN:CD	2.09	0.54
1:C:369:VAL:CG2	1:C:371:LEU:HD13	2.37	0.54
1:A:100:GLU:HG3	1:A:104:ARG:NH2	2.23	0.54
1:B:202:ASN:ND2	1:B:204:GLY:H	2.05	0.54
1:C:11:GLN:HA	1:C:11:GLN:NE2	2.23	0.53
1:D:196:LEU:HB2	2:D:394:MLI:O7	2.08	0.53
1:A:57:ARG:HE	3:A:404:EDO:C1	2.21	0.53
1:A:72:LEU:HG	1:A:195:VAL:HG22	1.91	0.53
1:D:348:GLU:OE2	1:D:352:ARG:HD2	2.09	0.52
1:A:119:ARG:CZ	1:A:123:GLU:OE2	2.58	0.52
1:D:338:GLN:NE2	2:D:394:MLI:O8	2.42	0.52
1:A:104:ARG:HG2	4:A:476:HOH:O	2.09	0.52
1:A:163:ALA:HB3	1:A:375:PRO:HD2	1.92	0.51
1:D:18:THR:HB	1:D:235:PRO:HB3	1.92	0.51
1:A:197:SER:O	3:A:407:EDO:H11	2.10	0.51
1:C:163:ALA:CB	1:C:375:PRO:HD2	2.41	0.51
1:C:306:ASN:ND2	1:C:309:ILE:H	2.09	0.51
1:A:16:PRO:HG3	1:B:4:LEU:HD23	1.93	0.51
1:C:4:LEU:HD12	1:D:238:GLU:OE1	2.11	0.50
1:D:163:ALA:HB1	1:D:375:PRO:HD2	1.93	0.50
1:A:376:GLY:N	1:A:377:LEU:HA	2.26	0.50
1:A:157:LEU:HD12	2:A:396:MLI:O8	2.12	0.50
1:C:117:TRP:HH2	1:C:123:GLU:HB3	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:307:TRP:HE1	3:C:397:EDO:H21	1.76	0.50
1:C:159:ILE:HD13	1:D:157:LEU:HD11	1.94	0.50
1:A:18:THR:HB	1:A:225:GLY:O	2.12	0.50
1:A:152:LEU:HA	2:A:397:MLI:H11	1.94	0.49
1:A:132:ILE:HA	1:A:161:SER:HA	1.95	0.49
1:B:177:LEU:CD1	3:B:412:EDO:H11	2.42	0.49
1:C:366:GLN:HE21	1:C:385:ARG:HD2	1.78	0.49
1:A:366:GLN:HE21	1:A:385:ARG:HD2	1.78	0.48
1:D:115:LYS:O	1:D:115:LYS:HD2	2.12	0.48
1:C:8:ARG:HG3	1:C:8:ARG:HH11	1.79	0.48
1:B:373:PHE:HA	1:B:378:SER:O	2.13	0.48
1:A:57:ARG:HE	3:A:404:EDO:H11	1.77	0.48
1:C:369:VAL:HG22	1:C:371:LEU:HD13	1.95	0.48
1:B:264:THR:OG1	3:B:414:EDO:H11	2.12	0.47
1:B:366:GLN:H	3:B:403:EDO:H21	1.78	0.47
1:D:203:GLU:H	1:D:203:GLU:CD	2.17	0.47
1:B:132:ILE:HA	1:B:161:SER:HA	1.97	0.47
1:B:192:GLU:HG3	1:B:338:GLN:HB2	1.96	0.47
1:C:145:ALA:HA	1:C:150:LEU:HD12	1.96	0.47
1:C:163:ALA:HB3	1:C:375:PRO:HD2	1.97	0.47
1:A:277:ASP:HA	1:A:316:LYS:HE2	1.97	0.47
1:C:18:THR:HB	1:C:235:PRO:HB3	1.96	0.47
1:D:101:GLU:CG	3:D:405:EDO:H21	2.45	0.47
1:A:196:LEU:HB2	2:A:398:MLI:C3	2.45	0.47
1:B:136:ASP:OD2	1:B:143:ARG:NH2	2.47	0.47
1:B:202:ASN:HD22	1:B:204:GLY:H	1.62	0.47
1:B:22:ILE:HD13	1:B:346:MET:HE2	1.97	0.47
1:C:192:GLU:HG3	1:C:338:GLN:HB2	1.96	0.47
1:A:18:THR:HG23	1:A:235:PRO:HB3	1.97	0.47
1:C:86:TYR:OH	1:C:205:ASP:OD1	2.26	0.46
1:C:8:ARG:NH1	1:C:8:ARG:HG3	2.29	0.46
1:B:201:PRO:HB3	1:B:209:LEU:HD13	1.97	0.46
1:A:18:THR:O	1:A:224:VAL:HA	2.15	0.46
1:B:367:TRP:H	3:B:403:EDO:H21	1.80	0.46
1:B:22:ILE:CD1	1:B:346:MET:HE2	2.46	0.46
1:B:356:GLU:O	3:B:405:EDO:H11	2.16	0.45
1:C:58:ARG:HG3	1:C:62:LYS:HE2	1.98	0.45
1:C:270:GLN:N	1:C:270:GLN:HE21	2.14	0.45
1:D:94:ARG:O	1:D:98:VAL:HG22	2.17	0.45
1:C:288:ALA:HB3	1:C:289:PRO:HD3	1.98	0.45
1:D:255:GLY:HA2	1:D:375:PRO:HG3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:54:LYS:HA	3:A:404:EDO:H21	1.98	0.44
1:B:255:GLY:HA2	1:B:375:PRO:HG3	1.98	0.44
1:D:132:ILE:HA	1:D:161:SER:HA	2.00	0.44
1:C:135:ILE:HG13	3:C:405:EDO:H12	2.00	0.44
1:D:163:ALA:HB2	1:D:375:PRO:HG2	2.00	0.44
1:A:58:ARG:HD2	1:A:58:ARG:HA	1.84	0.43
1:D:170:MET:HE3	1:D:188:VAL:HG13	2.00	0.43
1:A:35:THR:OG1	3:A:411:EDO:H11	2.18	0.43
1:D:136:ASP:OD2	1:D:143:ARG:NH2	2.51	0.43
1:C:163:ALA:HB2	1:C:375:PRO:HG2	2.00	0.43
1:A:133:SER:HB3	1:A:196:LEU:HD12	2.00	0.43
1:C:135:ILE:HG12	1:C:160:TYR:CG	2.54	0.43
1:C:151:PRO:HG2	1:C:154:VAL:HG23	2.00	0.43
1:C:152:LEU:HD11	1:D:248:ALA:HB2	2.00	0.43
1:C:11:GLN:HA	1:C:11:GLN:HE21	1.81	0.43
1:C:135:ILE:HG12	1:C:160:TYR:CD2	2.54	0.43
1:C:16:PRO:HG3	1:D:4:LEU:HD23	2.01	0.42
1:D:115:LYS:C	1:D:115:LYS:CD	2.86	0.42
1:D:163:ALA:CB	1:D:375:PRO:HD2	2.50	0.42
1:A:7:LEU:O	1:A:11:GLN:HG2	2.20	0.42
1:A:202:ASN:HD22	1:A:204:GLY:H	1.63	0.42
1:A:243:MET:HB2	2:B:397:MLI:H11	2.00	0.42
1:C:177:LEU:HD11	3:C:403:EDO:H12	2.02	0.42
1:B:294:GLU:O	1:B:297:ASP:HB2	2.19	0.42
1:C:323:LYS:HA	1:C:323:LYS:HD3	1.81	0.42
1:D:197:SER:N	2:D:394:MLI:O6	2.53	0.42
1:A:194:THR:CA	2:A:398:MLI:H11	2.36	0.42
1:C:27:PRO:HG2	1:C:217:ASP:HB2	2.01	0.42
1:A:188:VAL:O	1:A:221:ALA:HA	2.19	0.42
1:A:3:ASN:HD22	1:A:4:LEU:N	2.18	0.42
1:B:188:VAL:O	1:B:221:ALA:HA	2.20	0.42
1:C:307:TRP:HE1	3:C:397:EDO:C2	2.33	0.42
1:D:170:MET:HE3	1:D:188:VAL:CG1	2.50	0.42
1:B:100:GLU:O	1:B:104:ARG:HG3	2.20	0.41
1:B:193:ILE:HG22	1:B:195:VAL:HG23	2.01	0.41
1:C:63:THR:O	1:C:64:MET:HB2	2.20	0.41
1:A:4:LEU:H	1:A:4:LEU:HD23	1.85	0.41
3:A:410:EDO:H21	1:B:157:LEU:HD12	2.02	0.41
1:C:132:ILE:HA	1:C:161:SER:HA	2.03	0.41
1:C:203:GLU:HG2	1:C:203:GLU:H	1.50	0.41
1:C:115:LYS:NZ	4:C:492:HOH:O	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:78:LYS:HA	1:D:78:LYS:HD3	1.67	0.41
1:D:78:LYS:NZ	4:D:503:HOH:O	2.54	0.41
1:A:300:TRP:CZ3	1:A:369:VAL:HG21	2.56	0.41
1:B:22:ILE:CD1	1:B:346:MET:CE	2.99	0.41
1:D:288:ALA:N	1:D:289:PRO:HD2	2.36	0.41
1:B:59:MET:O	1:B:63:THR:HG23	2.21	0.41
1:C:249:GLU:O	3:C:406:EDO:H12	2.21	0.41
1:A:75:GLU:HG2	1:C:277:ASP:CG	2.41	0.41
1:D:10:GLU:HG2	1:D:10:GLU:H	1.67	0.41
1:B:281:ARG:NH1	4:B:470:HOH:O	2.54	0.41
1:B:153:THR:O	2:B:397:MLI:O9	2.39	0.40
1:C:60:CYS:O	1:C:63:THR:CG2	2.68	0.40
1:D:94:ARG:HD3	1:D:196:LEU:HA	2.02	0.40
1:D:80:ARG:HD2	1:D:97:ILE:HD11	2.03	0.40
1:D:124:ILE:HD12	1:D:187:LEU:HB2	2.03	0.40
1:A:135:ILE:HA	1:A:160:TYR:CZ	2.57	0.40
1:C:117:TRP:CH2	1:C:123:GLU:HB3	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	387/393 (98%)	374 (97%)	12 (3%)	1 (0%)	41 50
1	B	387/393 (98%)	373 (96%)	14 (4%)	0	100 100
1	C	390/393 (99%)	379 (97%)	10 (3%)	1 (0%)	41 50
1	D	387/393 (98%)	374 (97%)	11 (3%)	2 (0%)	29 35
All	All	1551/1572 (99%)	1500 (97%)	47 (3%)	4 (0%)	41 50

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	163	ALA
1	D	163	ALA
1	A	163	ALA
1	D	375	PRO

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	315/318 (99%)	302 (96%)	13 (4%)	30	43
1	B	315/318 (99%)	300 (95%)	15 (5%)	25	35
1	C	317/318 (100%)	300 (95%)	17 (5%)	22	30
1	D	315/318 (99%)	301 (96%)	14 (4%)	28	39
All	All	1262/1272 (99%)	1203 (95%)	59 (5%)	26	36

All (59) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ASN
1	A	8	ARG
1	A	18	THR
1	A	55	LYS
1	A	229	LEU
1	A	234	LYS
1	A	243	MET
1	A	251	GLN
1	A	270	GLN
1	A	279	LEU
1	A	292	VAL
1	A	332	THR
1	A	350	ARG
1	B	7	LEU
1	B	8	ARG
1	B	14	GLN
1	B	54	LYS
1	B	58	ARG

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Mol	Chain	Res	Type
1	B	62	LYS
1	B	83	LEU
1	B	107	LYS
1	B	270	GLN
1	B	281	ARG
1	B	338	GLN
1	B	350	ARG
1	B	352	ARG
1	B	369	VAL
1	B	373	PHE
1	C	5	HIS
1	C	8	ARG
1	C	11	GLN
1	C	63	THR
1	C	115	LYS
1	C	123	GLU
1	C	203	GLU
1	C	206	PHE
1	C	270	GLN
1	C	281	ARG
1	C	284	GLU
1	C	306	ASN
1	C	338	GLN
1	C	341	THR
1	C	350	ARG
1	C	369	VAL
1	C	371	LEU
1	D	8	ARG
1	D	10	GLU
1	D	58	ARG
1	D	83	LEU
1	D	115	LYS
1	D	153	THR
1	D	182	ARG
1	D	243	MET
1	D	270	GLN
1	D	324	LEU
1	D	332	THR
1	D	338	GLN
1	D	350	ARG
1	D	375	PRO

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (15) such

sidechains are listed below:

Mol	Chain	Res	Type
1	A	3	ASN
1	A	202	ASN
1	A	251	GLN
1	A	366	GLN
1	B	202	ASN
1	C	11	GLN
1	C	45	ASN
1	C	202	ASN
1	C	270	GLN
1	C	306	ASN
1	C	366	GLN
1	D	244	GLN
1	D	251	GLN
1	D	303	HIS
1	D	338	GLN

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 carbohydrates in this entry.

5.6 Ligand geometry [i](#)

77 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	411	-	3,3,3	0.56	0	2,2,2	0.21	0
3	EDO	A	403	-	3,3,3	0.48	0	2,2,2	0.39	0
3	EDO	B	399	-	3,3,3	0.52	0	2,2,2	0.45	0
3	EDO	A	399	-	3,3,3	0.39	0	2,2,2	0.58	0
3	EDO	B	398	-	3,3,3	0.48	0	2,2,2	0.28	0
3	EDO	B	401	-	3,3,3	0.44	0	2,2,2	0.58	0
3	EDO	D	398	-	3,3,3	0.47	0	2,2,2	0.49	0
2	MLI	A	395	-	0,6,6	0.00	-	0,7,7	0.00	-
2	MLI	B	397	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	A	400	-	3,3,3	0.49	0	2,2,2	0.34	0
3	EDO	B	404	-	3,3,3	0.53	0	2,2,2	0.46	0
3	EDO	B	408	-	3,3,3	0.52	0	2,2,2	0.25	0
2	MLI	D	396	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	C	405	-	3,3,3	0.61	0	2,2,2	0.30	0
3	EDO	D	399	-	3,3,3	0.47	0	2,2,2	0.32	0
3	EDO	C	399	-	3,3,3	0.45	0	2,2,2	0.31	0
3	EDO	A	402	-	3,3,3	0.51	0	2,2,2	0.30	0
3	EDO	D	409	-	3,3,3	0.41	0	2,2,2	0.49	0
3	EDO	A	415	-	3,3,3	0.40	0	2,2,2	0.54	0
3	EDO	D	405	-	3,3,3	0.51	0	2,2,2	0.38	0
3	EDO	A	414	-	3,3,3	0.51	0	2,2,2	0.17	0
3	EDO	C	403	-	3,3,3	0.53	0	2,2,2	0.04	0
2	MLI	A	396	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	D	404	-	3,3,3	0.58	0	2,2,2	0.06	0
3	EDO	A	404	-	3,3,3	0.34	0	2,2,2	0.55	0
3	EDO	C	401	-	3,3,3	0.55	0	2,2,2	0.18	0
2	MLI	A	398	-	0,6,6	0.00	-	0,7,7	0.00	-
2	MLI	D	395	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	A	412	-	3,3,3	0.47	0	2,2,2	0.38	0
3	EDO	B	414	-	3,3,3	0.41	0	2,2,2	0.70	0
3	EDO	D	410	-	3,3,3	0.61	0	2,2,2	0.23	0
3	EDO	A	416	-	3,3,3	0.45	0	2,2,2	0.44	0
3	EDO	C	402	-	3,3,3	0.61	0	2,2,2	0.11	0
3	EDO	D	402	-	3,3,3	0.48	0	2,2,2	0.27	0
3	EDO	A	409	-	3,3,3	0.51	0	2,2,2	0.25	0
3	EDO	A	410	-	3,3,3	0.58	0	2,2,2	0.19	0
3	EDO	B	410	-	3,3,3	0.48	0	2,2,2	0.33	0
3	EDO	B	409	-	3,3,3	0.56	0	2,2,2	0.01	0
3	EDO	B	412	-	3,3,3	0.45	0	2,2,2	0.18	0
3	EDO	C	397	-	3,3,3	0.61	0	2,2,2	0.06	0
3	EDO	B	413	-	3,3,3	0.51	0	2,2,2	0.14	0
3	EDO	C	406	-	3,3,3	0.60	0	2,2,2	0.11	0
3	EDO	A	413	-	3,3,3	0.52	0	2,2,2	0.49	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	EDO	C	400	-	3,3,3	0.46	0	2,2,2	0.41	0
3	EDO	D	407	-	3,3,3	0.39	0	2,2,2	0.64	0
3	EDO	B	402	-	3,3,3	0.46	0	2,2,2	0.34	0
2	MLI	B	396	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	B	400	-	3,3,3	0.63	0	2,2,2	0.15	0
3	EDO	D	400	-	3,3,3	0.47	0	2,2,2	0.41	0
3	EDO	B	405	-	3,3,3	0.54	0	2,2,2	0.22	0
2	MLI	B	394	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	A	406	-	3,3,3	0.48	0	2,2,2	0.14	0
3	EDO	B	403	-	3,3,3	0.54	0	2,2,2	0.39	0
3	EDO	C	398	-	3,3,3	0.51	0	2,2,2	0.30	0
3	EDO	B	407	-	3,3,3	0.46	0	2,2,2	0.29	0
3	EDO	C	396	-	3,3,3	0.46	0	2,2,2	0.44	0
3	EDO	D	408	-	3,3,3	0.43	0	2,2,2	0.72	0
3	EDO	A	411	-	3,3,3	0.50	0	2,2,2	0.17	0
2	MLI	C	394	-	0,6,6	0.00	-	0,7,7	0.00	-
2	MLI	A	394	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	B	406	-	3,3,3	0.41	0	2,2,2	0.52	0
3	EDO	A	407	-	3,3,3	0.45	0	2,2,2	0.22	0
3	EDO	D	401	-	3,3,3	0.46	0	2,2,2	0.37	0
2	MLI	D	397	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	C	407	-	3,3,3	0.46	0	2,2,2	0.37	0
3	EDO	D	411	-	3,3,3	0.57	0	2,2,2	0.28	0
3	EDO	A	417	-	3,3,3	0.42	0	2,2,2	0.49	0
3	EDO	C	395	-	3,3,3	0.49	0	2,2,2	0.12	0
2	MLI	A	397	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	A	408	-	3,3,3	0.60	0	2,2,2	0.10	0
3	EDO	C	404	-	3,3,3	0.63	0	2,2,2	0.13	0
3	EDO	A	401	-	3,3,3	0.74	0	2,2,2	0.30	0
2	MLI	B	395	-	0,6,6	0.00	-	0,7,7	0.00	-
3	EDO	D	406	-	3,3,3	0.44	0	2,2,2	0.52	0
3	EDO	D	403	-	3,3,3	0.48	0	2,2,2	0.29	0
3	EDO	A	405	-	3,3,3	0.39	0	2,2,2	0.51	0
2	MLI	D	394	-	0,6,6	0.00	-	0,7,7	0.00	-

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	411	-	-	0/1/1/1	-
3	EDO	A	403	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	EDO	B	399	-	-	1/1/1/1	-
3	EDO	A	399	-	-	1/1/1/1	-
3	EDO	B	398	-	-	0/1/1/1	-
3	EDO	B	401	-	-	1/1/1/1	-
3	EDO	D	398	-	-	0/1/1/1	-
2	MLI	A	395	-	-	0/0/4/4	-
2	MLI	B	397	-	-	0/0/4/4	-
3	EDO	A	400	-	-	1/1/1/1	-
3	EDO	B	404	-	-	1/1/1/1	-
3	EDO	B	408	-	-	1/1/1/1	-
2	MLI	D	396	-	-	0/0/4/4	-
3	EDO	C	405	-	-	0/1/1/1	-
3	EDO	D	399	-	-	0/1/1/1	-
3	EDO	C	399	-	-	1/1/1/1	-
3	EDO	A	402	-	-	1/1/1/1	-
3	EDO	D	409	-	-	0/1/1/1	-
3	EDO	A	415	-	-	1/1/1/1	-
3	EDO	D	405	-	-	1/1/1/1	-
3	EDO	A	414	-	-	0/1/1/1	-
3	EDO	C	403	-	-	1/1/1/1	-
2	MLI	A	396	-	-	0/0/4/4	-
3	EDO	D	404	-	-	0/1/1/1	-
3	EDO	A	404	-	-	1/1/1/1	-
3	EDO	C	401	-	-	1/1/1/1	-
2	MLI	A	398	-	-	0/0/4/4	-
2	MLI	D	395	-	-	0/0/4/4	-
3	EDO	A	412	-	-	1/1/1/1	-
3	EDO	B	414	-	-	1/1/1/1	-
3	EDO	D	410	-	-	1/1/1/1	-
3	EDO	A	416	-	-	1/1/1/1	-
3	EDO	C	402	-	-	0/1/1/1	-
3	EDO	D	402	-	-	1/1/1/1	-
3	EDO	A	409	-	-	1/1/1/1	-
3	EDO	A	410	-	-	1/1/1/1	-
3	EDO	B	410	-	-	0/1/1/1	-
3	EDO	B	409	-	-	1/1/1/1	-
3	EDO	B	412	-	-	0/1/1/1	-
3	EDO	C	397	-	-	1/1/1/1	-
3	EDO	B	413	-	-	1/1/1/1	-
3	EDO	C	406	-	-	1/1/1/1	-
3	EDO	A	413	-	-	0/1/1/1	-
3	EDO	C	400	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	EDO	D	407	-	-	1/1/1/1	-
3	EDO	B	402	-	-	1/1/1/1	-
2	MLI	B	396	-	-	0/0/4/4	-
3	EDO	B	400	-	-	0/1/1/1	-
3	EDO	D	400	-	-	0/1/1/1	-
3	EDO	B	405	-	-	1/1/1/1	-
2	MLI	B	394	-	-	0/0/4/4	-
3	EDO	A	406	-	-	1/1/1/1	-
3	EDO	B	403	-	-	1/1/1/1	-
3	EDO	C	398	-	-	1/1/1/1	-
3	EDO	B	407	-	-	1/1/1/1	-
3	EDO	C	396	-	-	0/1/1/1	-
3	EDO	D	408	-	-	1/1/1/1	-
3	EDO	A	411	-	-	0/1/1/1	-
2	MLI	C	394	-	-	0/0/4/4	-
2	MLI	A	394	-	-	0/0/4/4	-
3	EDO	B	406	-	-	1/1/1/1	-
3	EDO	A	407	-	-	1/1/1/1	-
3	EDO	D	401	-	-	1/1/1/1	-
2	MLI	D	397	-	-	0/0/4/4	-
3	EDO	C	407	-	-	1/1/1/1	-
3	EDO	D	411	-	-	0/1/1/1	-
3	EDO	A	417	-	-	0/1/1/1	-
3	EDO	C	395	-	-	0/1/1/1	-
2	MLI	A	397	-	-	0/0/4/4	-
3	EDO	A	408	-	-	1/1/1/1	-
3	EDO	C	404	-	-	0/1/1/1	-
3	EDO	A	401	-	-	0/1/1/1	-
2	MLI	B	395	-	-	0/0/4/4	-
3	EDO	D	406	-	-	0/1/1/1	-
3	EDO	D	403	-	-	0/1/1/1	-
3	EDO	A	405	-	-	1/1/1/1	-
2	MLI	D	394	-	-	0/0/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (40) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	399	EDO	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
3	D	410	EDO	O1-C1-C2-O2
3	A	409	EDO	O1-C1-C2-O2
3	A	403	EDO	O1-C1-C2-O2
3	B	401	EDO	O1-C1-C2-O2
3	C	399	EDO	O1-C1-C2-O2
3	A	415	EDO	O1-C1-C2-O2
3	C	403	EDO	O1-C1-C2-O2
3	A	404	EDO	O1-C1-C2-O2
3	A	412	EDO	O1-C1-C2-O2
3	B	414	EDO	O1-C1-C2-O2
3	D	407	EDO	O1-C1-C2-O2
3	B	402	EDO	O1-C1-C2-O2
3	B	407	EDO	O1-C1-C2-O2
3	A	405	EDO	O1-C1-C2-O2
3	A	400	EDO	O1-C1-C2-O2
3	B	404	EDO	O1-C1-C2-O2
3	D	405	EDO	O1-C1-C2-O2
3	B	403	EDO	O1-C1-C2-O2
3	A	406	EDO	O1-C1-C2-O2
3	B	406	EDO	O1-C1-C2-O2
3	D	401	EDO	O1-C1-C2-O2
3	B	413	EDO	O1-C1-C2-O2
3	C	406	EDO	O1-C1-C2-O2
3	A	408	EDO	O1-C1-C2-O2
3	B	408	EDO	O1-C1-C2-O2
3	C	401	EDO	O1-C1-C2-O2
3	A	410	EDO	O1-C1-C2-O2
3	C	398	EDO	O1-C1-C2-O2
3	C	400	EDO	O1-C1-C2-O2
3	A	402	EDO	O1-C1-C2-O2
3	D	402	EDO	O1-C1-C2-O2
3	A	399	EDO	O1-C1-C2-O2
3	C	397	EDO	O1-C1-C2-O2
3	A	416	EDO	O1-C1-C2-O2
3	B	409	EDO	O1-C1-C2-O2
3	B	405	EDO	O1-C1-C2-O2
3	D	408	EDO	O1-C1-C2-O2
3	C	407	EDO	O1-C1-C2-O2
3	A	407	EDO	O1-C1-C2-O2

There are no ring outliers.

24 monomers are involved in 42 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	397	MLI	2	0
3	B	404	EDO	1	0
3	C	405	EDO	1	0
3	D	399	EDO	1	0
3	C	399	EDO	3	0
3	D	405	EDO	1	0
3	C	403	EDO	1	0
2	A	396	MLI	2	0
3	A	404	EDO	3	0
2	A	398	MLI	5	0
2	D	395	MLI	1	0
3	B	414	EDO	1	0
3	A	410	EDO	1	0
3	B	412	EDO	4	0
3	C	397	EDO	2	0
3	C	406	EDO	1	0
3	B	405	EDO	1	0
3	B	403	EDO	2	0
3	D	408	EDO	1	0
3	A	411	EDO	1	0
3	A	407	EDO	1	0
2	A	397	MLI	1	0
2	B	395	MLI	1	0
2	D	394	MLI	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

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	389/393 (98%)	-0.42	6 (1%) 73 79	14, 23, 41, 64	0
1	B	389/393 (98%)	-0.29	7 (1%) 68 75	14, 27, 50, 63	0
1	C	392/393 (99%)	-0.30	16 (4%) 37 44	16, 25, 50, 66	0
1	D	389/393 (98%)	-0.29	8 (2%) 63 70	15, 26, 46, 61	0
All	All	1559/1572 (99%)	-0.32	37 (2%) 59 66	14, 25, 48, 66	0

All (37) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	393	HIS	6.8
1	C	2	ALA	5.3
1	C	281	ARG	4.4
1	C	285	ARG	4.2
1	B	3	ASN	4.1
1	C	392	HIS	3.9
1	D	293	ARG	3.7
1	C	4	LEU	3.4
1	B	291	GLY	3.3
1	C	3	ASN	3.3
1	B	4	LEU	3.2
1	C	291	GLY	3.1
1	B	293	ARG	3.1
1	A	3	ASN	3.0
1	D	3	ASN	3.0
1	B	48	ASP	3.0
1	A	4	LEU	2.9
1	C	206	PHE	2.7
1	C	293	ARG	2.6
1	B	58	ARG	2.5
1	D	230	GLU	2.5

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Mol	Chain	Res	Type	RSRZ
1	A	7	LEU	2.5
1	A	232	ILE	2.5
1	A	293	ARG	2.4
1	D	390	HIS	2.4
1	D	204	GLY	2.3
1	C	9	ARG	2.3
1	C	7	LEU	2.3
1	A	11	GLN	2.2
1	D	10	GLU	2.2
1	C	10	GLU	2.1
1	C	284	GLU	2.1
1	B	14	GLN	2.0
1	C	5	HIS	2.0
1	D	4	LEU	2.0
1	D	355	VAL	2.0
1	C	48	ASP	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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

6.3 Carbohydrates [i](#)

There are no carbohydrates 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	B	405	4/4	0.66	0.30	50,52,52,53	0
2	MLI	D	397	7/7	0.68	0.28	99,99,99,99	0
2	MLI	D	396	7/7	0.69	0.26	56,58,60,61	0
3	EDO	B	406	4/4	0.69	0.30	56,57,57,58	0
2	MLI	B	396	7/7	0.70	0.22	57,59,60,61	0
3	EDO	C	396	4/4	0.71	0.26	51,51,53,55	0
3	EDO	C	406	4/4	0.72	0.29	49,49,49,50	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
2	MLI	B	395	7/7	0.72	0.29	59,59,60,60	0
3	EDO	A	408	4/4	0.74	0.20	50,51,51,51	0
3	EDO	C	400	4/4	0.77	0.36	54,56,58,60	0
3	EDO	A	412	4/4	0.78	0.25	56,56,57,57	0
3	EDO	B	410	4/4	0.79	0.24	48,50,51,51	0
3	EDO	C	404	4/4	0.80	0.32	45,45,47,47	0
3	EDO	A	403	4/4	0.81	0.22	53,53,54,54	0
2	MLI	B	397	7/7	0.81	0.27	33,39,43,45	0
3	EDO	D	401	4/4	0.81	0.30	61,61,62,62	0
3	EDO	D	405	4/4	0.82	0.19	49,49,49,50	0
3	EDO	A	416	4/4	0.82	0.25	55,55,55,55	0
3	EDO	D	399	4/4	0.82	0.30	61,62,62,62	0
3	EDO	D	403	4/4	0.83	0.19	50,50,51,52	0
3	EDO	A	404	4/4	0.84	0.19	47,48,49,49	0
2	MLI	C	394	7/7	0.84	0.22	58,59,62,63	0
3	EDO	A	413	4/4	0.85	0.25	31,33,34,34	0
2	MLI	A	397	7/7	0.85	0.22	58,58,58,59	0
2	MLI	D	395	7/7	0.85	0.23	43,44,45,45	0
3	EDO	B	407	4/4	0.85	0.32	49,50,51,52	0
3	EDO	A	415	4/4	0.86	0.18	36,38,40,41	0
2	MLI	A	395	7/7	0.86	0.28	41,45,48,48	0
3	EDO	D	407	4/4	0.86	0.16	39,40,40,40	0
3	EDO	C	407	4/4	0.86	0.27	48,49,50,50	0
3	EDO	B	403	4/4	0.87	0.19	32,37,37,42	0
2	MLI	B	394	7/7	0.87	0.20	64,65,65,66	0
3	EDO	C	397	4/4	0.87	0.22	38,39,40,40	0
3	EDO	A	414	4/4	0.87	0.21	45,47,49,50	0
3	EDO	D	400	4/4	0.88	0.20	52,53,54,54	0
3	EDO	D	409	4/4	0.88	0.22	50,52,53,53	0
3	EDO	C	398	4/4	0.89	0.29	54,55,55,55	0
3	EDO	D	408	4/4	0.89	0.20	39,40,41,41	0
2	MLI	A	396	7/7	0.89	0.27	61,61,62,64	0
3	EDO	D	411	4/4	0.89	0.18	29,32,34,34	0
3	EDO	C	402	4/4	0.90	0.15	40,41,41,41	0
3	EDO	A	411	4/4	0.90	0.14	23,25,27,29	0
3	EDO	A	409	4/4	0.90	0.12	39,39,40,41	0
3	EDO	D	406	4/4	0.90	0.12	50,51,52,53	0
2	MLI	A	394	7/7	0.90	0.16	54,55,55,56	0
3	EDO	D	402	4/4	0.91	0.21	52,52,52,53	0
3	EDO	C	401	4/4	0.91	0.14	34,36,38,39	0
3	EDO	A	401	4/4	0.91	0.10	21,22,23,25	0
3	EDO	B	399	4/4	0.92	0.14	33,33,34,35	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(\AA^2)	Q<0.9
3	EDO	B	398	4/4	0.92	0.15	20,22,24,28	0
3	EDO	B	404	4/4	0.92	0.20	37,39,40,40	0
3	EDO	B	402	4/4	0.92	0.22	46,46,47,48	0
2	MLI	A	398	7/7	0.92	0.17	33,35,39,42	0
3	EDO	D	398	4/4	0.92	0.15	34,39,40,42	0
2	MLI	D	394	7/7	0.92	0.19	41,47,49,50	0
3	EDO	A	399	4/4	0.93	0.13	29,31,32,36	0
3	EDO	A	417	4/4	0.93	0.12	43,44,44,45	0
3	EDO	B	414	4/4	0.93	0.14	34,34,35,35	0
3	EDO	B	413	4/4	0.94	0.18	41,41,42,43	0
3	EDO	C	399	4/4	0.94	0.28	39,40,40,42	0
3	EDO	B	400	4/4	0.94	0.15	26,29,31,32	0
3	EDO	A	410	4/4	0.94	0.16	33,34,35,35	0
3	EDO	A	402	4/4	0.94	0.11	35,35,37,37	0
3	EDO	A	400	4/4	0.94	0.20	40,42,43,43	0
3	EDO	A	405	4/4	0.95	0.12	36,36,36,36	0
3	EDO	D	410	4/4	0.95	0.13	27,28,28,29	0
3	EDO	C	403	4/4	0.96	0.14	30,32,32,33	0
3	EDO	B	412	4/4	0.96	0.12	25,26,27,28	0
3	EDO	B	401	4/4	0.96	0.10	29,32,32,35	0
3	EDO	B	408	4/4	0.97	0.09	17,17,20,20	0
3	EDO	B	409	4/4	0.97	0.08	26,27,28,28	0
3	EDO	A	407	4/4	0.97	0.10	33,35,36,37	0
3	EDO	C	395	4/4	0.98	0.08	28,28,28,29	0
3	EDO	C	405	4/4	0.98	0.10	22,23,23,23	0
3	EDO	D	404	4/4	0.98	0.10	20,22,22,23	0
3	EDO	B	411	4/4	0.99	0.06	17,17,18,19	0
3	EDO	A	406	4/4	0.99	0.06	13,14,15,16	0

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

There are no such residues in this entry.