



wwPDB X-ray Structure Validation Summary Report ⓘ

Aug 20, 2020 – 03:57 PM BST

PDB ID : 6S9M
Title : Designed Armadillo Repeat protein Lock2 fused to target peptide KRKRKAK-ITW
Authors : Ernst, P.; Zosel, F.; Reichen, C.; Schuler, B.; Pluckthun, A.
Deposited on : 2019-07-15
Resolution : 2.00 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 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 : 2.13.1
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) : 2.13.1

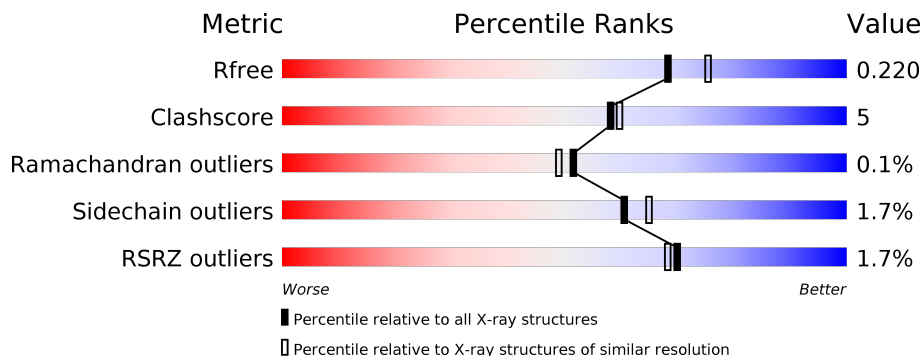
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 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	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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	302	 2% 91% 8% ..
1	B	302	 90% 9% ..
1	C	302	 5% 91% 6% ..
1	D	302	 88% 8% ..
1	E	302	 89% 9% .
1	F	302	 3% 86% 10% ...

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	B	407	-	-	-	X
3	EDO	D	405	-	-	-	X

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 14653 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 Lock2_KRKRKAKITW.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	300	Total 2251	C 1400	N 395	O 454	S 2	0	4	0
1	B	299	Total 2238	C 1393	N 394	O 449	S 2	0	3	0
1	C	300	Total 2215	C 1378	N 389	O 446	S 2	0	1	0
1	D	298	Total 2244	C 1394	N 392	O 456	S 2	0	5	0
1	E	301	Total 2256	C 1401	N 399	O 454	S 2	0	5	0
1	F	298	Total 2238	C 1390	N 394	O 452	S 2	0	7	0

- Molecule 2 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	6	Total 6	Ca 6	0	0
2	A	6	Total 6	Ca 6	0	0
2	D	3	Total 3	Ca 3	0	0
2	F	3	Total 3	Ca 3	0	0

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



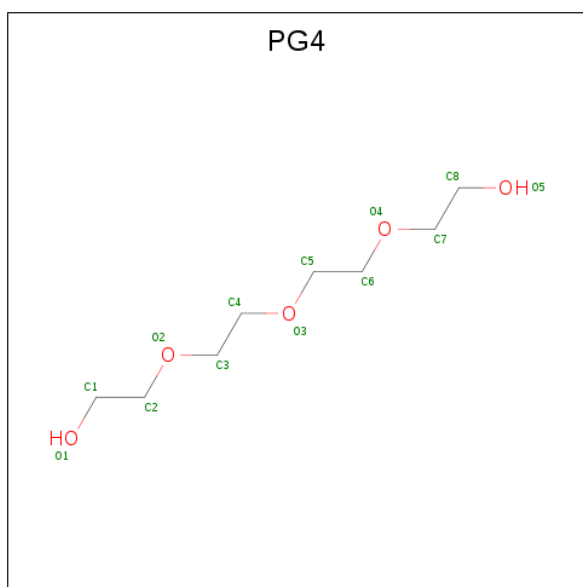
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	A	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	B	1	Total C O 4 2 2	0	0
3	D	1	Total C O 4 2 2	0	0
3	D	1	Total C O 4 2 2	0	0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

- Molecule 4 is TRIETHYLENE GLYCOL (three-letter code: PGE) (formula: C₆H₁₄O₄).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	C	1	Total	C	O	0	0
			10	6	4		
4	D	1	Total	C	O	0	0
			10	6	4		
4	E	1	Total	C	O	0	0
			10	6	4		

- Molecule 5 is TETRAETHYLENE GLYCOL (three-letter code: PG4) (formula: $C_8H_{18}O_5$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	D	1	Total	C	O	0	0
			13	8	5		

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	E	1	Total	C	O	0	0
			13	8	5		
5	E	1	Total	C	O	0	0
			13	8	5		

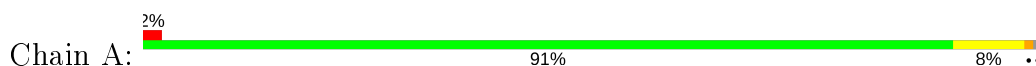
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	203	Total	O	0	0
			203	203		
6	B	198	Total	O	0	0
			198	198		
6	C	123	Total	O	0	0
			123	123		
6	D	204	Total	O	0	0
			204	204		
6	E	185	Total	O	0	0
			185	185		
6	F	159	Total	O	0	0
			159	159		

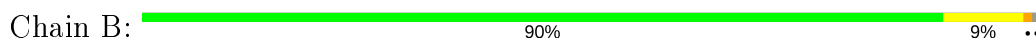
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

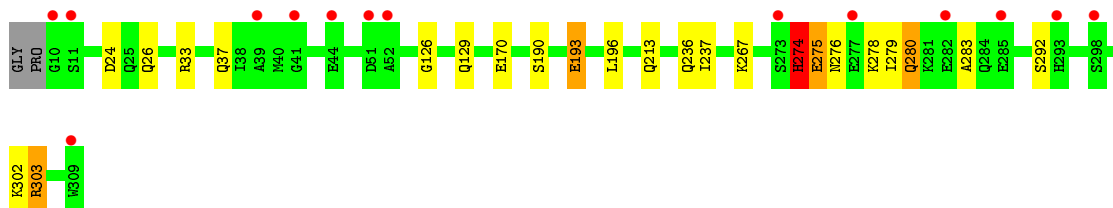
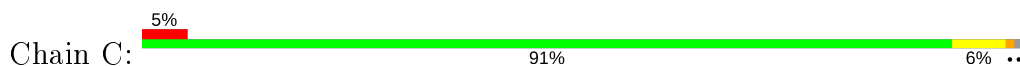
- Molecule 1: Lock2_KRKRKAKITW



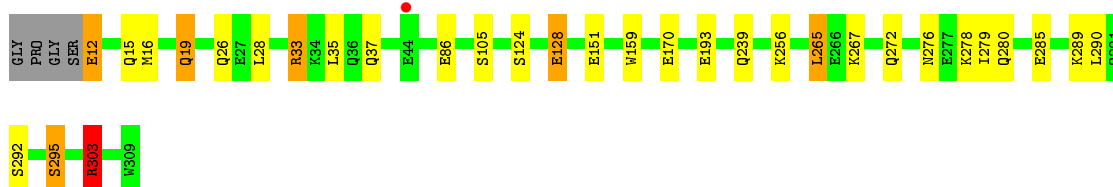
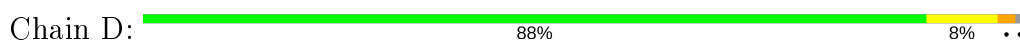
- Molecule 1: Lock2_KRKRKAKITW



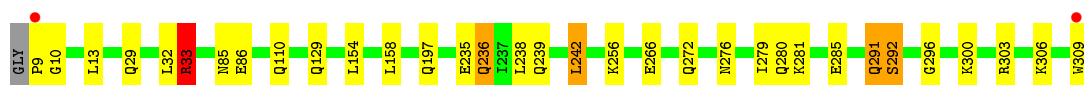
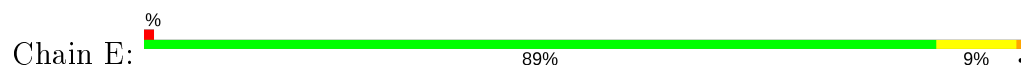
- Molecule 1: Lock2_KRKRKAKITW



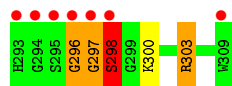
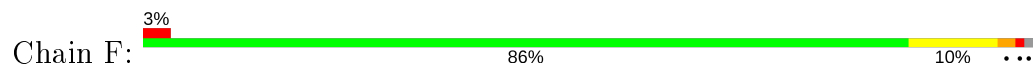
- Molecule 1: Lock2_KRKRKAKITW



- Molecule 1: Lock2_KRKRKAKITW



• Molecule 1: Lock2_KRKRKAKITW



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	54.85Å 85.47Å 193.97Å 90.00° 96.32° 90.00°	Depositor
Resolution (Å)	48.20 – 2.00 48.20 – 2.00	Depositor EDS
% Data completeness (in resolution range)	98.0 (48.20-2.00) 98.0 (48.20-2.00)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.37 (at 2.00Å)	Xtrriage
Refinement program	REFMAC 5.8.0189	Depositor
R, R_{free}	0.177 , 0.213 0.188 , 0.220	Depositor DCC
R_{free} test set	5904 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	28.6	Xtrriage
Anisotropy	0.365	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 43.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	0.002 for h,-k,-h-l	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	14653	wwPDB-VP
Average B, all atoms (Å ²)	34.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 12.58% 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: CA, PGE, PG4, 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	1.05	5/2273 (0.2%)	0.94	7/3081 (0.2%)
1	B	1.03	6/2260 (0.3%)	0.93	10/3064 (0.3%)
1	C	0.94	4/2237 (0.2%)	0.94	12/3035 (0.4%)
1	D	1.07	10/2266 (0.4%)	0.92	10/3074 (0.3%)
1	E	1.04	3/2279 (0.1%)	1.01	13/3091 (0.4%)
1	F	1.08	8/2260 (0.4%)	0.99	9/3065 (0.3%)
All	All	1.04	36/13575 (0.3%)	0.96	61/18410 (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	F	0	1

The worst 5 of 36 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	170	GLU	CG-CD	9.58	1.66	1.51
1	B	212	GLU	CG-CD	9.45	1.66	1.51
1	D	86	GLU	CG-CD	8.26	1.64	1.51
1	B	151	GLU	CD-OE1	-7.75	1.17	1.25
1	A	212	GLU	CG-CD	7.61	1.63	1.51

The worst 5 of 61 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	303[A]	ARG	NE-CZ-NH2	-13.09	113.75	120.30
1	E	303[B]	ARG	NE-CZ-NH2	-13.09	113.75	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	33	ARG	NE-CZ-NH2	11.43	126.02	120.30
1	F	33	ARG	NE-CZ-NH1	8.87	124.73	120.30
1	C	24	ASP	CB-CG-OD2	8.78	126.20	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	F	297[A]	GLY	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	2251	0	2287	28	0
1	B	2238	0	2281	22	0
1	C	2215	0	2252	15	0
1	D	2244	0	2268	24	1
1	E	2256	0	2288	30	0
1	F	2238	0	2268	26	1
2	A	6	0	0	0	0
2	B	6	0	0	0	0
2	D	3	0	0	1	0
2	F	3	0	0	0	0
3	A	16	0	24	1	0
3	B	16	0	24	0	0
3	D	8	0	12	2	0
3	E	8	0	12	0	0
3	F	4	0	6	0	0
4	C	10	0	14	1	0
4	D	10	0	14	0	0
4	E	10	0	14	5	0
5	D	13	0	18	4	0
5	E	26	0	36	2	0
6	A	203	0	0	7	1
6	B	198	0	0	10	0
6	C	123	0	0	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	D	204	0	0	4	4
6	E	185	0	0	5	3
6	F	159	0	0	5	6
All	All	14653	0	13818	132	8

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 5.

The worst 5 of 132 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:152:GLN:OE1	6:B:501:HOH:O	1.64	1.14
1:A:152:GLN:OE1	6:A:501:HOH:O	1.73	1.06
2:D:401:CA:CA	6:D:501:HOH:O	1.35	1.04
1:F:72:SER:HB3	6:F:516:HOH:O	1.80	0.81
1:C:274:HIS:O	1:C:275:GLU:HG3	1.85	0.77

The worst 5 of 8 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)
6:E:648:HOH:O	6:F:629:HOH:O[2_656]	1.85	0.35
6:A:651:HOH:O	6:D:674:HOH:O[1_465]	1.92	0.28
6:E:682:HOH:O	6:F:659:HOH:O[2_656]	1.95	0.25
6:D:644:HOH:O	6:F:554:HOH:O[2_646]	2.01	0.19
6:E:677:HOH:O	6:F:597:HOH:O[2_656]	2.01	0.19

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	303/302 (100%)	303 (100%)	0	0	100	100
1	B	301/302 (100%)	301 (100%)	0	0	100	100
1	C	299/302 (99%)	296 (99%)	1 (0%)	2 (1%)	22	16
1	D	302/302 (100%)	302 (100%)	0	0	100	100
1	E	304/302 (101%)	304 (100%)	0	0	100	100
1	F	303/302 (100%)	301 (99%)	2 (1%)	0	100	100
All	All	1812/1812 (100%)	1807 (100%)	3 (0%)	2 (0%)	51	49

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	274	HIS
1	C	275	GLU

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	235/231 (102%)	232 (99%)	3 (1%)	69	74
1	B	234/231 (101%)	233 (100%)	1 (0%)	91	93
1	C	231/231 (100%)	224 (97%)	7 (3%)	41	41
1	D	235/231 (102%)	230 (98%)	5 (2%)	53	57
1	E	236/231 (102%)	229 (97%)	7 (3%)	41	41
1	F	233/231 (101%)	228 (98%)	5 (2%)	53	57
All	All	1404/1386 (101%)	1376 (98%)	28 (2%)	60	58

5 of 28 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	267	LYS
1	D	303[B]	ARG
1	F	292	SER

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Mol	Chain	Res	Type
1	D	292	SER
1	D	303[A]	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 17 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	239	GLN
1	B	280	GLN
1	C	284	GLN
1	B	110	GLN
1	D	37	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 37 ligands modelled in this entry, 18 are monoatomic - leaving 19 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	$\# Z > 2$
3	EDO	B	406	-	3,3,3	0.38	0	2,2,2	0.87	0
3	EDO	E	402	-	3,3,3	0.62	0	2,2,2	0.19	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	PGE	D	407	-	9,9,9	0.57	0	8,8,8	0.48	0
3	EDO	A	405	-	3,3,3	0.61	0	2,2,2	0.37	0
5	PG4	E	403	-	12,12,12	0.60	0	11,11,11	0.50	0
5	PG4	E	404	-	12,12,12	0.70	0	11,11,11	0.47	0
3	EDO	D	404	-	3,3,3	0.65	0	2,2,2	0.47	0
3	EDO	B	407	-	3,3,3	0.59	0	2,2,2	0.40	0
3	EDO	F	404	-	3,3,3	0.53	0	2,2,2	0.15	0
4	PGE	C	401	-	9,9,9	0.58	0	8,8,8	0.95	1 (12%)
5	PG4	D	406	-	12,12,12	0.58	0	11,11,11	0.65	0
4	PGE	E	405	-	9,9,9	0.67	0	8,8,8	1.33	1 (12%)
3	EDO	A	408	-	3,3,3	0.62	0	2,2,2	0.19	0
3	EDO	B	408	-	3,3,3	0.49	0	2,2,2	0.42	0
3	EDO	D	405	-	3,3,3	0.57	0	2,2,2	0.12	0
3	EDO	B	409	-	3,3,3	0.53	0	2,2,2	0.39	0
3	EDO	A	407	-	3,3,3	0.41	0	2,2,2	0.46	0
3	EDO	E	401	-	3,3,3	0.38	0	2,2,2	0.47	0
3	EDO	A	406	-	3,3,3	0.50	0	2,2,2	0.25	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	406	-	-	1/1/1/1	-
3	EDO	E	402	-	-	1/1/1/1	-
4	PGE	D	407	-	-	5/7/7/7	-
3	EDO	A	405	-	-	1/1/1/1	-
5	PG4	E	403	-	-	8/10/10/10	-
5	PG4	E	404	-	-	7/10/10/10	-
3	EDO	D	404	-	-	1/1/1/1	-
3	EDO	B	407	-	-	0/1/1/1	-
3	EDO	F	404	-	-	1/1/1/1	-
4	PGE	C	401	-	-	3/7/7/7	-
5	PG4	D	406	-	-	6/10/10/10	-
4	PGE	E	405	-	-	5/7/7/7	-
3	EDO	A	408	-	-	1/1/1/1	-
3	EDO	B	408	-	-	0/1/1/1	-
3	EDO	D	405	-	-	1/1/1/1	-
3	EDO	B	409	-	-	0/1/1/1	-
3	EDO	A	407	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	EDO	E	401	-	-	1/1/1/1	-
3	EDO	A	406	-	-	1/1/1/1	-

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	E	405	PGE	O2-C2-C1	3.01	123.30	110.07
4	C	401	PGE	O3-C5-C6	2.21	119.77	110.07

There are no chirality outliers.

5 of 44 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	D	406	PG4	O4-C7-C8-O5
4	E	405	PGE	O2-C3-C4-O3
5	E	404	PG4	O4-C7-C8-O5
5	E	403	PG4	O1-C1-C2-O2
4	C	401	PGE	O3-C5-C6-O4

There are no ring outliers.

6 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	E	403	PG4	2	0
3	D	404	EDO	2	0
4	C	401	PGE	1	0
5	D	406	PG4	4	0
4	E	405	PGE	5	0
3	A	406	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 [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	300/302 (99%)	-0.29	5 (1%) 70 68	17, 25, 49, 87	0
1	B	299/302 (99%)	-0.32	1 (0%) 94 93	18, 27, 47, 78	0
1	C	300/302 (99%)	0.06	14 (4%) 31 30	23, 38, 78, 103	0
1	D	298/302 (98%)	-0.40	1 (0%) 94 93	17, 26, 54, 74	0
1	E	301/302 (99%)	-0.34	2 (0%) 87 87	18, 29, 52, 83	0
1	F	298/302 (98%)	-0.13	8 (2%) 54 53	18, 28, 63, 91	0
All	All	1796/1812 (99%)	-0.24	31 (1%) 70 68	17, 28, 59, 103	0

The worst 5 of 31 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	309	TRP	6.4
1	E	309	TRP	6.3
1	C	10	GLY	6.0
1	C	41	GLY	5.3
1	B	293	HIS	5.2

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(Å ²)	Q<0.9
3	EDO	D	405	4/4	0.08	0.49	78,82,85,87	0
3	EDO	A	405	4/4	0.32	0.37	60,66,73,78	0
3	EDO	B	407	4/4	0.52	0.47	56,66,72,77	0
4	PGE	E	405	10/10	0.61	0.36	64,80,88,89	0
5	PG4	E	404	13/13	0.61	0.35	39,75,89,90	0
4	PGE	D	407	10/10	0.66	0.24	77,84,88,90	0
3	EDO	A	408	4/4	0.67	0.26	55,57,58,61	0
3	EDO	F	404	4/4	0.68	0.29	57,65,67,69	0
5	PG4	E	403	13/13	0.69	0.31	62,70,76,78	0
3	EDO	E	402	4/4	0.72	0.29	57,63,68,72	0
3	EDO	E	401	4/4	0.72	0.17	63,64,65,67	0
3	EDO	B	409	4/4	0.81	0.22	46,47,49,53	0
3	EDO	D	404	4/4	0.86	0.43	57,65,68,68	0
3	EDO	A	407	4/4	0.86	0.18	55,56,58,65	0
4	PGE	C	401	10/10	0.87	0.32	52,59,67,69	0
5	PG4	D	406	13/13	0.87	0.47	56,68,77,77	0
2	CA	F	403	1/1	0.91	0.06	50,50,50,50	0
3	EDO	B	408	4/4	0.91	0.18	57,57,59,65	0
3	EDO	A	406	4/4	0.91	0.18	50,53,54,59	0
3	EDO	B	406	4/4	0.94	0.17	46,46,48,58	0
2	CA	F	402	1/1	0.95	0.07	48,48,48,48	0
2	CA	B	410	1/1	0.96	0.04	50,50,50,50	0
2	CA	A	401	1/1	0.98	0.06	25,25,25,25	0
2	CA	D	402	1/1	0.98	0.09	22,22,22,22	0
2	CA	A	404	1/1	0.98	0.04	35,35,35,35	0
2	CA	A	402	1/1	0.98	0.06	25,25,25,25	0
2	CA	D	401	1/1	0.98	0.06	41,41,41,41	0
2	CA	B	404	1/1	0.98	0.06	36,36,36,36	0
2	CA	A	403	1/1	0.99	0.05	28,28,28,28	0
2	CA	B	403	1/1	0.99	0.04	30,30,30,30	0
2	CA	A	410	1/1	0.99	0.08	28,28,28,28	0
2	CA	D	403	1/1	0.99	0.05	28,28,28,28	0
2	CA	B	405	1/1	0.99	0.04	36,36,36,36	0
2	CA	B	401	1/1	0.99	0.09	25,25,25,25	0
2	CA	A	409	1/1	0.99	0.09	23,23,23,23	0
2	CA	F	401	1/1	0.99	0.05	24,24,24,24	0
2	CA	B	402	1/1	1.00	0.06	25,25,25,25	0

6.5 Other polymers

There are no such residues in this entry.