



# Full wwPDB X-ray Structure Validation Report ⓘ

May 15, 2020 – 09:58 am BST

PDB ID : 6QFK  
Title : EngBF DARPin Fusion 4b G10  
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Deposited on : 2019-01-10  
Resolution : 2.00 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](mailto: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.

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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

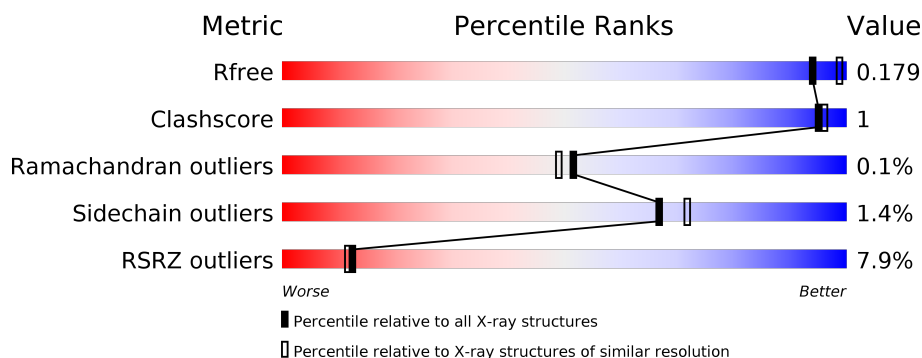
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.00 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  $\geq 3$ , 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	1357	<div> <div>8%</div> <div>95%</div> <div>••</div> </div>
2	B	15	<div> <div>40%</div> <div>87%</div> <div>13%</div> </div>

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	1709	-	-	-	X
6	MES	A	1711	-	-	-	X

## 2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 12243 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 PEGA domain-containing protein,PEGA domain-containing protein,EngBF DARPin fusion G10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1347	Total	C	N	O	S	0	10	0
			10412	6480	1781	2121	30			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	334	GLY	-	expression tag	UNP A0A414FD23
A	335	PRO	-	expression tag	UNP A0A414FD23
A	336	LEU	-	expression tag	UNP A0A414FD23
A	337	GLY	-	expression tag	UNP A0A414FD23
A	338	SER	-	expression tag	UNP A0A414FD23
A	339	MET	-	expression tag	UNP A0A414FD23
A	342	CYS	SER	conflict	UNP A0A414FD23
A	1309	ARG	GLN	conflict	UNP A0A414FD23

- Molecule 2 is a protein called V3-IF.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	B	15	Total	C	N	O	0	0	0
			113	75	20	18			

- Molecule 3 is MANGANESE (II) ION (three-letter code: MN) (formula: Mn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	4	Total	Mn	0	0
			4	4		

- Molecule 4 is (4S)-2-METHYL-2,4-PENTANEDIOL (three-letter code: MPD) (formula: C<sub>6</sub>H<sub>14</sub>O<sub>2</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			8	6	2		

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



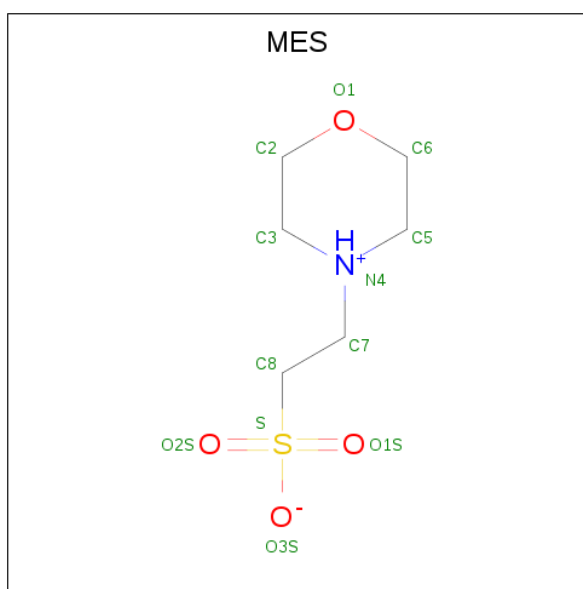
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			4	2	2		
5	A	1	Total	C	O	0	0
			4	2	2		
5	A	1	Total	C	O	0	0
			4	2	2		

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

- Molecule 6 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (three-letter code: MES) (formula: C<sub>6</sub>H<sub>13</sub>NO<sub>4</sub>S).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
6	A	1	Total	C	N	O	S	0	0
			12	6	1	4	1		
6	A	1	Total	C	N	O	S	0	0
			12	6	1	4	1		

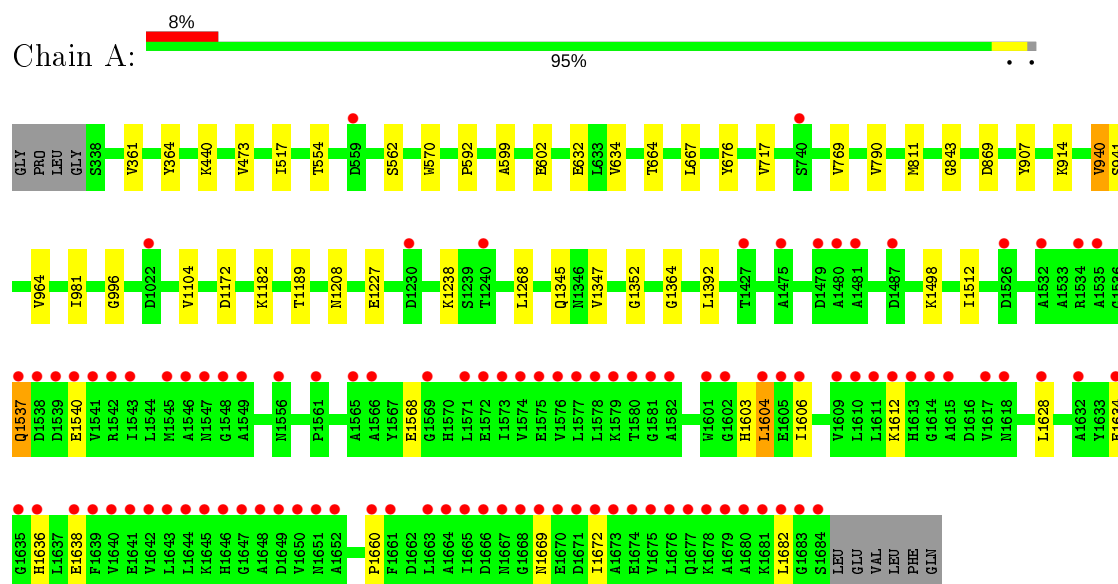
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	1637	Total 1637	O 1637	0	0
7	B	1	Total 1	O 1	0	0

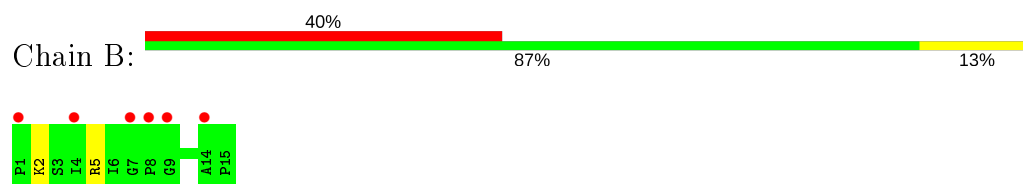
### 3 Residue-property plots

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: PEGA domain-containing protein, PEGA domain-containing protein, EngBF DARPin fusion G10



- Molecule 2: V3-IF





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 65	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	192.89Å 192.89Å 122.92Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	29.25 – 2.00 49.50 – 2.00	Depositor EDS
% Data completeness (in resolution range)	100.0 (29.25-2.00) 100.0 (49.50-2.00)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.38 (at 2.00Å)	Xtriage
Refinement program	BUSTER 2.10.3	Depositor
R, $R_{free}$	0.154 , 0.176 0.158 , 0.179	Depositor DCC
$R_{free}$ test set	8747 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	35.1	Xtriage
Anisotropy	0.118	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.30 , 51.1	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	0.026 for h,-h-k,-l	Xtriage
$F_o, F_c$ correlation	0.97	EDS
Total number of atoms	12243	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.19% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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 ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MPD, MN, DPR, MES, 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	0.52	0/10612	0.67	0/14393
2	B	0.42	0/109	0.68	0/145
All	All	0.51	0/10721	0.67	0/14538

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	10412	0	9955	25	0
2	B	113	0	116	0	0
3	A	4	0	0	0	0
4	A	8	0	14	0	0
5	A	44	0	66	1	0
6	A	24	0	26	0	0
7	A	1637	0	0	2	0
7	B	1	0	0	0	0
All	All	12243	0	10177	25	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 1.

All (25) 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:964[B]:VAL:HG12	1:A:981:ILE:HG12	1.77	0.65
1:A:570:TRP:CD2	1:A:592:PRO:HB3	2.38	0.59
1:A:1604:LEU:HD11	1:A:1638:GLU:HG3	1.85	0.58
1:A:940:VAL:HG21	7:A:2110:HOH:O	2.08	0.53
1:A:1364:GLY:HA2	1:A:1392:LEU:HD13	1.93	0.51
1:A:1669:ASN:HB3	1:A:1672:ILE:HD13	1.93	0.50
1:A:1189:THR:HB	1:A:1345:GLN:HB3	1.93	0.50
1:A:1603:HIS:HB3	1:A:1606:ILE:HD12	1.94	0.50
1:A:1352:GLY:HA2	1:A:1512:ILE:HG13	1.94	0.50
1:A:1628:LEU:HD23	1:A:1660:PRO:HG2	1.95	0.49
1:A:1208:ASN:HB2	5:A:1707:EDO:H11	1.95	0.49
1:A:473:VAL:HG13	1:A:517:ILE:HD12	1.97	0.47
1:A:769[A]:VAL:HG23	1:A:811:MET:HB2	1.96	0.47
1:A:1498:LYS:HD3	7:A:2682:HOH:O	2.15	0.46
1:A:1172:ASP:H	1:A:1238:LYS:HE3	1.81	0.45
1:A:1537:GLN:HB3	1:A:1540:GLU:HB3	1.99	0.44
1:A:554:THR:HA	1:A:562:SER:O	2.18	0.44
1:A:634:VAL:HG11	1:A:667:LEU:HD13	1.99	0.44
1:A:869:ASP:O	1:A:996:GLY:HA3	2.19	0.43
1:A:676:TYR:CD1	1:A:717:VAL:HB	2.55	0.42
1:A:634:VAL:HA	1:A:914:LYS:HG3	2.02	0.42
1:A:664:THR:HA	1:A:907:TYR:OH	2.20	0.41
1:A:1268:LEU:HD22	1:A:1347:VAL:HG23	2.02	0.41
1:A:599:ALA:HB1	1:A:602:GLU:HG2	2.03	0.41
1:A:361:VAL:HG11	1:A:364:TYR:CE1	2.57	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1355/1357 (100%)	1304 (96%)	49 (4%)	2 (0%)	51	49
2	B	13/15 (87%)	12 (92%)	1 (8%)	0	100	100
All	All	1368/1372 (100%)	1316 (96%)	50 (4%)	2 (0%)	51	49

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	790	VAL
1	A	843	GLY

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1108/1106 (100%)	1094 (99%)	14 (1%)	69	74
2	B	10/10 (100%)	8 (80%)	2 (20%)	1	0
All	All	1118/1116 (100%)	1102 (99%)	16 (1%)	67	72

All (16) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	440	LYS
1	A	632	GLU
1	A	940	VAL
1	A	941	SER
1	A	1104	VAL
1	A	1182	LYS
1	A	1227	GLU
1	A	1537	GLN
1	A	1568	GLU
1	A	1604	LEU
1	A	1612	LYS
1	A	1634	GLU
1	A	1636	HIS
1	A	1682	LEU

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Mol	Chain	Res	Type
2	B	2	LYS
2	B	5	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1055	GLN
1	A	1065	GLN
1	A	1244	HIS
1	A	1277	ASN
1	A	1280	GLN
1	A	1443	ASN
1	A	1547	ASN
1	A	1646	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

## 5.6 Ligand geometry ⓘ

Of 18 ligands modelled in this entry, 4 are monoatomic - leaving 14 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	$\# Z  > 2$
6	MES	A	1708	-	12,12,12	0.78	0	14,16,16	0.43	0
5	EDO	A	1718	-	3,3,3	0.60	0	2,2,2	0.22	0
5	EDO	A	1714	-	3,3,3	0.61	0	2,2,2	0.30	0
5	EDO	A	1707	-	3,3,3	0.61	0	2,2,2	0.12	0
5	EDO	A	1715	-	3,3,3	0.54	0	2,2,2	0.29	0
5	EDO	A	1710	-	3,3,3	0.58	0	2,2,2	0.24	0
4	MPD	A	1705	-	7,7,7	0.64	0	9,10,10	0.35	0
6	MES	A	1711	-	12,12,12	0.77	0	14,16,16	0.44	0
5	EDO	A	1706	-	3,3,3	0.77	0	2,2,2	0.11	0
5	EDO	A	1709	-	3,3,3	0.61	0	2,2,2	0.24	0
5	EDO	A	1716	-	3,3,3	0.50	0	2,2,2	0.42	0
5	EDO	A	1717	-	3,3,3	0.65	0	2,2,2	0.17	0
5	EDO	A	1712	-	3,3,3	0.55	0	2,2,2	0.32	0
5	EDO	A	1713	-	3,3,3	0.59	0	2,2,2	0.32	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	MES	A	1708	-	-	0/6/14/14	0/1/1/1
5	EDO	A	1718	-	-	0/1/1/1	-
5	EDO	A	1714	-	-	0/1/1/1	-
5	EDO	A	1707	-	-	0/1/1/1	-
5	EDO	A	1715	-	-	0/1/1/1	-
5	EDO	A	1710	-	-	0/1/1/1	-
4	MPD	A	1705	-	-	2/5/5/5	-
6	MES	A	1711	-	-	1/6/14/14	0/1/1/1
5	EDO	A	1706	-	-	1/1/1/1	-
5	EDO	A	1709	-	-	0/1/1/1	-
5	EDO	A	1716	-	-	0/1/1/1	-
5	EDO	A	1717	-	-	0/1/1/1	-
5	EDO	A	1712	-	-	0/1/1/1	-
5	EDO	A	1713	-	-	0/1/1/1	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	1706	EDO	O1-C1-C2-O2
4	A	1705	MPD	C1-C2-C3-C4
4	A	1705	MPD	O2-C2-C3-C4
6	A	1711	MES	N4-C7-C8-S

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1707	EDO	1	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	1347/1357 (99%)	-0.00	102 (7%)	13 13	25, 37, 90, 178	0
2	B	14/15 (93%)	2.21	6 (42%)	0 0	74, 82, 110, 120	0
All	All	1361/1372 (99%)	0.02	108 (7%)	12 11	25, 38, 92, 178	0

All (108) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	1684	SER	9.8
1	A	1668	GLY	9.3
1	A	1682	LEU	8.9
1	A	1683	GLY	7.1
2	B	1	PRO	7.0
1	A	1676	LEU	6.8
1	A	1580	THR	6.8
1	A	1644	LEU	6.7
1	A	1576	VAL	6.5
1	A	1671	ASP	5.9
1	A	1665	ILE	5.9
1	A	1680	ALA	5.9
1	A	1611	LEU	5.7
1	A	1681	LYS	5.5
1	A	1672	ILE	5.5
1	A	1539	ASP	5.5
1	A	1639	PHE	5.4
1	A	1674	GLU	5.4
1	A	1664	ALA	5.4
1	A	1579	LYS	5.3
1	A	1613	HIS	5.2
1	A	1661	PHE	5.1
1	A	1612	LYS	4.9
1	A	1646	HIS	4.8

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Mol	Chain	Res	Type	RSRZ
1	A	1543	ILE	4.7
1	A	1670	GLU	4.5
1	A	1648	ALA	4.5
1	A	1604	LEU	4.5
1	A	1677	GLN	4.4
1	A	1667	ASN	4.4
1	A	1546	ALA	4.2
1	A	1535	ALA	4.2
1	A	1545	MET	4.1
1	A	1650	VAL	4.1
1	A	1675	VAL	4.1
1	A	1606	ILE	4.1
1	A	1575	GLU	4.0
1	A	1572	GLU	4.0
1	A	1679	ALA	4.0
1	A	1574	VAL	3.9
1	A	1643	LEU	3.9
1	A	1647	GLY	3.9
1	A	1638	GLU	3.9
1	A	1614	GLY	3.9
1	A	1541	VAL	3.8
1	A	1240	THR	3.7
1	A	1565	ALA	3.7
1	A	1634	GLU	3.7
1	A	1578	LEU	3.6
1	A	1475	ALA	3.6
1	A	1542	ARG	3.6
1	A	1635	GLY	3.5
1	A	1479	ASP	3.4
1	A	1678	LYS	3.4
1	A	1645	LYS	3.4
1	A	1571	LEU	3.4
1	A	1649	ASP	3.4
1	A	1663	LEU	3.4
1	A	1573	ILE	3.3
1	A	1642	VAL	3.3
1	A	1537	GLN	3.2
1	A	1566	ALA	3.2
2	B	4	ILE	3.2
1	A	1480	ALA	3.2
1	A	1556	ASN	3.2
1	A	1632	ALA	3.2

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Mol	Chain	Res	Type	RSRZ
2	B	14	ALA	3.2
1	A	1601	TRP	3.1
1	A	1548	GLY	3.1
1	A	1582	ALA	3.1
1	A	1618	ASN	3.0
1	A	1636	HIS	2.9
1	A	1605	GLU	2.9
1	A	1547	ASN	2.9
1	A	1673	ALA	2.9
2	B	7	GLY	2.9
1	A	1617	VAL	2.8
1	A	1666	ASP	2.7
1	A	1569	GLY	2.7
1	A	1230	ASP	2.5
1	A	1609	VAL	2.5
2	B	8	PRO	2.5
1	A	1549	ALA	2.5
1	A	1526	ASP	2.5
1	A	1660	PRO	2.4
1	A	1534	ARG	2.4
1	A	1532	ALA	2.4
1	A	1652	ALA	2.4
1	A	1540	GLU	2.4
1	A	559	ASP	2.3
1	A	1640	VAL	2.3
1	A	1628	LEU	2.3
1	A	1581	GLY	2.3
1	A	1615	ALA	2.2
1	A	1538	ASP	2.2
1	A	740	SER	2.2
1	A	1641	GLU	2.2
1	A	1669	ASN	2.2
1	A	1487	ASP	2.2
1	A	1427	THR	2.2
1	A	1481	ALA	2.2
1	A	1022	ASP	2.1
1	A	1561	PRO	2.1
1	A	1610	LEU	2.1
1	A	1602	GLY	2.1
2	B	9	GLY	2.1
1	A	1651	ASN	2.0
1	A	1577	LEU	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains [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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
2	DPR	B	15	7/8	0.65	0.29	99,101,107,107	0

## 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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
6	MES	A	1711	12/12	0.61	0.41	144,145,148,149	0
4	MPD	A	1705	8/8	0.74	0.26	101,104,105,105	0
5	EDO	A	1709	4/4	0.75	0.48	76,78,79,79	0
5	EDO	A	1710	4/4	0.76	0.18	81,82,82,82	0
5	EDO	A	1718	4/4	0.79	0.27	85,86,87,88	0
5	EDO	A	1717	4/4	0.79	0.30	79,80,80,80	0
5	EDO	A	1706	4/4	0.80	0.23	55,61,63,65	0
5	EDO	A	1707	4/4	0.81	0.26	81,81,82,83	0
5	EDO	A	1713	4/4	0.81	0.13	88,88,88,88	0
5	EDO	A	1714	4/4	0.84	0.17	76,78,80,80	0
5	EDO	A	1716	4/4	0.87	0.22	87,88,89,90	0
5	EDO	A	1712	4/4	0.88	0.21	79,80,80,81	0
5	EDO	A	1715	4/4	0.90	0.21	65,66,68,69	0
6	MES	A	1708	12/12	0.97	0.14	40,59,74,74	0
3	MN	A	1704	1/1	0.99	0.03	43,43,43,43	0
3	MN	A	1701	1/1	1.00	0.03	39,39,39,39	0
3	MN	A	1703	1/1	1.00	0.04	42,42,42,42	0
3	MN	A	1702	1/1	1.00	0.05	42,42,42,42	0

## 6.5 Other polymers

There are no such residues in this entry.