



# wwPDB X-ray Structure Validation Summary Report ⓘ

Dec 17, 2023 – 03:15 AM EST

PDB ID : 3F0D  
Title : High resolution crystal structure of 2C-methyl-D-erythritol 2,4-cyclodiphosphate synthase from Burkholderia pseudomallei  
Authors : Seattle Structural Genomics Center for Infectious Disease (SSGCID)  
Deposited on : 2008-10-24  
Resolution : 1.20 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](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.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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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  
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

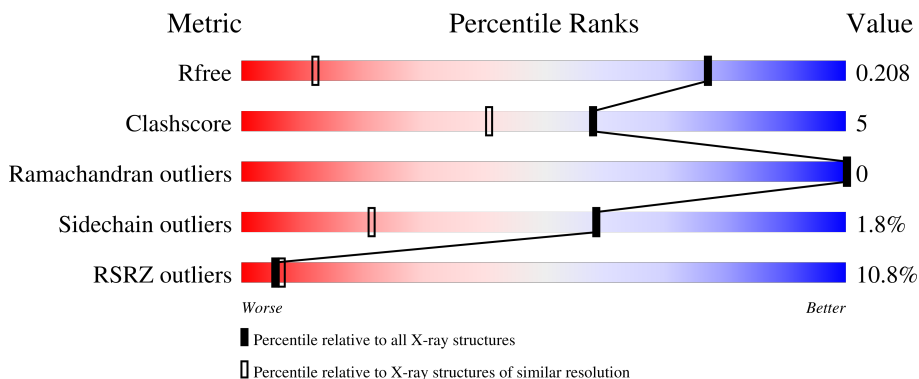
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.20 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	1223 (1.22-1.18)
Clashscore	141614	1286 (1.22-1.18)
Ramachandran outliers	138981	1240 (1.22-1.18)
Sidechain outliers	138945	1239 (1.22-1.18)
RSRZ outliers	127900	1200 (1.22-1.18)

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  $\geq 3$ , 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	183	
1	B	183	
1	C	183	
1	D	183	
1	E	183	

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Mol	Chain	Length	Quality of chain
1	F	183	 A horizontal bar chart showing the quality of chain. The bar is divided into four segments: a red segment on the left labeled '8%', a large green segment labeled '77%', a small yellow segment, and a grey segment on the right labeled '19%'. There are two small black dots on the grey segment.

## 2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 7315 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 2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	155	1184	752	215	214	3	0	5	0
1	B	144	1089	692	196	198	3	0	4	0
1	C	148	1118	706	207	202	3	0	2	0
1	D	157	1201	761	220	217	3	0	5	0
1	E	145	1095	694	199	199	3	0	4	0
1	F	148	1118	706	207	202	3	5	2	0

There are 126 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-20	MET	-	expression tag	UNP Q63T71
A	-19	ALA	-	expression tag	UNP Q63T71
A	-18	HIS	-	expression tag	UNP Q63T71
A	-17	HIS	-	expression tag	UNP Q63T71
A	-16	HIS	-	expression tag	UNP Q63T71
A	-15	HIS	-	expression tag	UNP Q63T71
A	-14	HIS	-	expression tag	UNP Q63T71
A	-13	HIS	-	expression tag	UNP Q63T71
A	-12	MET	-	expression tag	UNP Q63T71
A	-11	GLY	-	expression tag	UNP Q63T71
A	-10	THR	-	expression tag	UNP Q63T71
A	-9	LEU	-	expression tag	UNP Q63T71
A	-8	GLU	-	expression tag	UNP Q63T71
A	-7	ALA	-	expression tag	UNP Q63T71
A	-6	GLN	-	expression tag	UNP Q63T71
A	-5	THR	-	expression tag	UNP Q63T71
A	-4	GLN	-	expression tag	UNP Q63T71

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-3	GLY	-	expression tag	UNP Q63T71
A	-2	PRO	-	expression tag	UNP Q63T71
A	-1	GLY	-	expression tag	UNP Q63T71
A	0	SER	-	expression tag	UNP Q63T71
B	-20	MET	-	expression tag	UNP Q63T71
B	-19	ALA	-	expression tag	UNP Q63T71
B	-18	HIS	-	expression tag	UNP Q63T71
B	-17	HIS	-	expression tag	UNP Q63T71
B	-16	HIS	-	expression tag	UNP Q63T71
B	-15	HIS	-	expression tag	UNP Q63T71
B	-14	HIS	-	expression tag	UNP Q63T71
B	-13	HIS	-	expression tag	UNP Q63T71
B	-12	MET	-	expression tag	UNP Q63T71
B	-11	GLY	-	expression tag	UNP Q63T71
B	-10	THR	-	expression tag	UNP Q63T71
B	-9	LEU	-	expression tag	UNP Q63T71
B	-8	GLU	-	expression tag	UNP Q63T71
B	-7	ALA	-	expression tag	UNP Q63T71
B	-6	GLN	-	expression tag	UNP Q63T71
B	-5	THR	-	expression tag	UNP Q63T71
B	-4	GLN	-	expression tag	UNP Q63T71
B	-3	GLY	-	expression tag	UNP Q63T71
B	-2	PRO	-	expression tag	UNP Q63T71
B	-1	GLY	-	expression tag	UNP Q63T71
B	0	SER	-	expression tag	UNP Q63T71
C	-20	MET	-	expression tag	UNP Q63T71
C	-19	ALA	-	expression tag	UNP Q63T71
C	-18	HIS	-	expression tag	UNP Q63T71
C	-17	HIS	-	expression tag	UNP Q63T71
C	-16	HIS	-	expression tag	UNP Q63T71
C	-15	HIS	-	expression tag	UNP Q63T71
C	-14	HIS	-	expression tag	UNP Q63T71
C	-13	HIS	-	expression tag	UNP Q63T71
C	-12	MET	-	expression tag	UNP Q63T71
C	-11	GLY	-	expression tag	UNP Q63T71
C	-10	THR	-	expression tag	UNP Q63T71
C	-9	LEU	-	expression tag	UNP Q63T71
C	-8	GLU	-	expression tag	UNP Q63T71
C	-7	ALA	-	expression tag	UNP Q63T71
C	-6	GLN	-	expression tag	UNP Q63T71
C	-5	THR	-	expression tag	UNP Q63T71
C	-4	GLN	-	expression tag	UNP Q63T71

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-3	GLY	-	expression tag	UNP Q63T71
C	-2	PRO	-	expression tag	UNP Q63T71
C	-1	GLY	-	expression tag	UNP Q63T71
C	0	SER	-	expression tag	UNP Q63T71
D	-20	MET	-	expression tag	UNP Q63T71
D	-19	ALA	-	expression tag	UNP Q63T71
D	-18	HIS	-	expression tag	UNP Q63T71
D	-17	HIS	-	expression tag	UNP Q63T71
D	-16	HIS	-	expression tag	UNP Q63T71
D	-15	HIS	-	expression tag	UNP Q63T71
D	-14	HIS	-	expression tag	UNP Q63T71
D	-13	HIS	-	expression tag	UNP Q63T71
D	-12	MET	-	expression tag	UNP Q63T71
D	-11	GLY	-	expression tag	UNP Q63T71
D	-10	THR	-	expression tag	UNP Q63T71
D	-9	LEU	-	expression tag	UNP Q63T71
D	-8	GLU	-	expression tag	UNP Q63T71
D	-7	ALA	-	expression tag	UNP Q63T71
D	-6	GLN	-	expression tag	UNP Q63T71
D	-5	THR	-	expression tag	UNP Q63T71
D	-4	GLN	-	expression tag	UNP Q63T71
D	-3	GLY	-	expression tag	UNP Q63T71
D	-2	PRO	-	expression tag	UNP Q63T71
D	-1	GLY	-	expression tag	UNP Q63T71
D	0	SER	-	expression tag	UNP Q63T71
E	-20	MET	-	expression tag	UNP Q63T71
E	-19	ALA	-	expression tag	UNP Q63T71
E	-18	HIS	-	expression tag	UNP Q63T71
E	-17	HIS	-	expression tag	UNP Q63T71
E	-16	HIS	-	expression tag	UNP Q63T71
E	-15	HIS	-	expression tag	UNP Q63T71
E	-14	HIS	-	expression tag	UNP Q63T71
E	-13	HIS	-	expression tag	UNP Q63T71
E	-12	MET	-	expression tag	UNP Q63T71
E	-11	GLY	-	expression tag	UNP Q63T71
E	-10	THR	-	expression tag	UNP Q63T71
E	-9	LEU	-	expression tag	UNP Q63T71
E	-8	GLU	-	expression tag	UNP Q63T71
E	-7	ALA	-	expression tag	UNP Q63T71
E	-6	GLN	-	expression tag	UNP Q63T71
E	-5	THR	-	expression tag	UNP Q63T71
E	-4	GLN	-	expression tag	UNP Q63T71

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-3	GLY	-	expression tag	UNP Q63T71
E	-2	PRO	-	expression tag	UNP Q63T71
E	-1	GLY	-	expression tag	UNP Q63T71
E	0	SER	-	expression tag	UNP Q63T71
F	-20	MET	-	expression tag	UNP Q63T71
F	-19	ALA	-	expression tag	UNP Q63T71
F	-18	HIS	-	expression tag	UNP Q63T71
F	-17	HIS	-	expression tag	UNP Q63T71
F	-16	HIS	-	expression tag	UNP Q63T71
F	-15	HIS	-	expression tag	UNP Q63T71
F	-14	HIS	-	expression tag	UNP Q63T71
F	-13	HIS	-	expression tag	UNP Q63T71
F	-12	MET	-	expression tag	UNP Q63T71
F	-11	GLY	-	expression tag	UNP Q63T71
F	-10	THR	-	expression tag	UNP Q63T71
F	-9	LEU	-	expression tag	UNP Q63T71
F	-8	GLU	-	expression tag	UNP Q63T71
F	-7	ALA	-	expression tag	UNP Q63T71
F	-6	GLN	-	expression tag	UNP Q63T71
F	-5	THR	-	expression tag	UNP Q63T71
F	-4	GLN	-	expression tag	UNP Q63T71
F	-3	GLY	-	expression tag	UNP Q63T71
F	-2	PRO	-	expression tag	UNP Q63T71
F	-1	GLY	-	expression tag	UNP Q63T71
F	0	SER	-	expression tag	UNP Q63T71

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

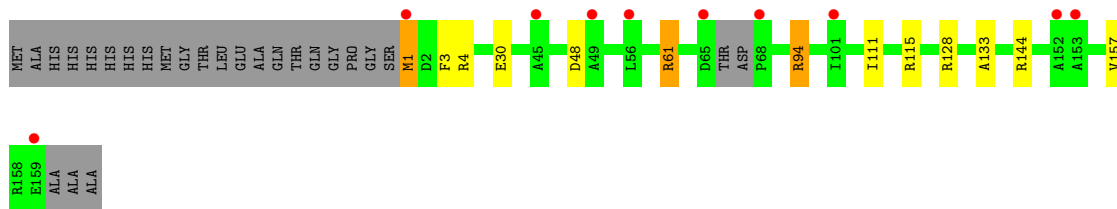
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	1	Total Zn 1 1	0	0
2	B	1	Total Zn 1 1	0	0
2	C	1	Total Zn 1 1	0	0
2	D	1	Total Zn 1 1	0	0
2	E	1	Total Zn 1 1	0	0
2	F	1	Total Zn 1 1	0	0

- Molecule 3 is water.

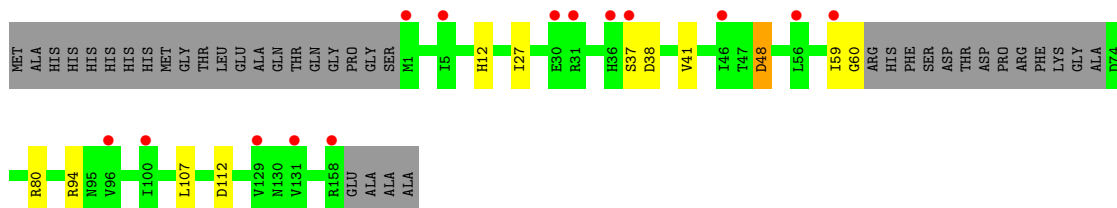
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	128	Total 128	O 128	0	0
3	B	62	Total 62	O 62	0	0
3	C	65	Total 65	O 65	0	0
3	D	110	Total 110	O 110	0	0
3	E	81	Total 81	O 81	0	0
3	F	58	Total 58	O 58	0	0



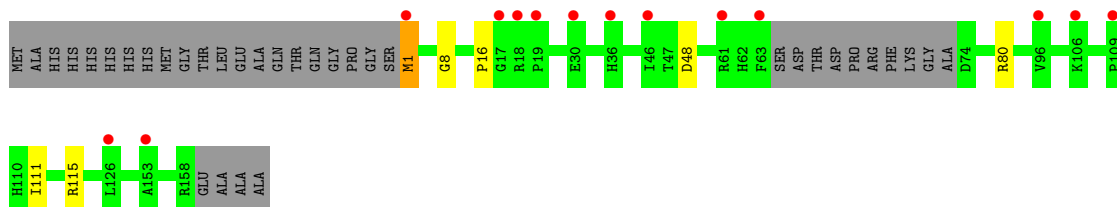
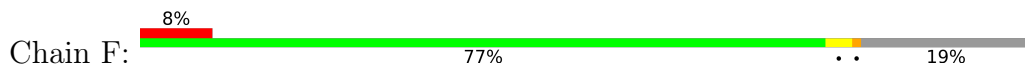




• Molecule 1: 2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase



• Molecule 1: 2-C-methyl-D-erythritol 2,4-cyclodiphosphate synthase



## 4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	157.89Å 69.04Å 116.58Å 90.00° 130.15° 90.00°	Depositor
Resolution (Å)	50.00 – 1.20 42.94 – 1.20	Depositor EDS
% Data completeness (in resolution range)	91.2 (50.00-1.20) 91.2 (42.94-1.20)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.67 (at 1.20Å)	Xtrriage
Refinement program	REFMAC 5.5.0035	Depositor
R, $R_{free}$	0.185 , 0.209 0.186 , 0.208	Depositor DCC
$R_{free}$ test set	13745 reflections (5.06%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	14.7	Xtrriage
Anisotropy	0.503	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.44 , 53.5	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.000 for h,-k,-h-l	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	7315	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	20.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 39.32 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.2291e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<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 [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section:  
ZN

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	0.86	1/1216 (0.1%)	0.96	4/1645 (0.2%)
1	B	0.80	0/1110	0.87	3/1495 (0.2%)
1	C	0.82	0/1140	0.94	6/1543 (0.4%)
1	D	0.94	0/1234	0.95	7/1668 (0.4%)
1	E	0.78	0/1121	0.91	4/1519 (0.3%)
1	F	0.83	1/1140 (0.1%)	0.94	3/1543 (0.2%)
All	All	0.84	2/6961 (0.0%)	0.93	27/9413 (0.3%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1
1	F	0	1
All	All	0	2

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	31	ARG	CZ-NH2	-5.35	1.26	1.33
1	F	8	GLY	C-O	-5.26	1.15	1.23

The worst 5 of 27 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	80	ARG	NE-CZ-NH1	11.53	126.07	120.30
1	F	48	ASP	CB-CG-OD1	8.85	126.26	118.30
1	F	80	ARG	NE-CZ-NH2	-8.16	116.22	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	80	ARG	NE-CZ-NH1	7.67	124.13	120.30
1	D	61	ARG	NE-CZ-NH1	7.48	124.04	120.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	16	PRO	Peptide
1	F	16	PRO	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	1184	0	1227	13	0
1	B	1089	0	1134	19	0
1	C	1118	0	1151	14	0
1	D	1201	0	1244	18	1
1	E	1095	0	1142	4	1
1	F	1118	0	1151	9	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	E	1	0	0	0	0
2	F	1	0	0	0	0
3	A	128	0	0	3	1
3	B	62	0	0	1	0
3	C	65	0	0	4	0
3	D	110	0	0	2	1
3	E	81	0	0	0	0
3	F	58	0	0	1	0
All	All	7315	0	7049	67	2

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 67 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:C:59:ILE:HG22	3:C:367:HOH:O	1.11	1.24
1:A:12:HIS:HD2	1:A:41[A]:VAL:HG12	1.03	1.11
1:A:33:LEU:HD13	1:A:41[B]:VAL:HG23	1.33	1.07
1:B:47:THR:HG21	1:B:59[A]:ILE:HD13	1.35	1.07
1:D:1:MET:SD	1:D:1:MET:N	2.29	1.06

All (2) 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)
3:A:433:HOH:O	3:D:327:HOH:O[4_444]	1.68	0.52
1:D:61:ARG:CD	1:E:112:ASP:OD2[2_555]	1.88	0.32

## 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	156/183 (85%)	153 (98%)	3 (2%)	0	100	100
1	B	138/183 (75%)	137 (99%)	1 (1%)	0	100	100
1	C	146/183 (80%)	143 (98%)	3 (2%)	0	100	100
1	D	158/183 (86%)	156 (99%)	2 (1%)	0	100	100
1	E	145/183 (79%)	144 (99%)	1 (1%)	0	100	100
1	F	146/183 (80%)	144 (99%)	2 (1%)	0	100	100
All	All	889/1098 (81%)	877 (99%)	12 (1%)	0	100	100

There are no Ramachandran outliers to report.

### 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	120/135 (89%)	117 (98%)	3 (2%)	47	10
1	B	110/135 (82%)	105 (96%)	5 (4%)	27	3
1	C	112/135 (83%)	109 (97%)	3 (3%)	44	9
1	D	122/135 (90%)	121 (99%)	1 (1%)	81	55
1	E	111/135 (82%)	110 (99%)	1 (1%)	78	50
1	F	112/135 (83%)	111 (99%)	1 (1%)	78	50
All	All	687/810 (85%)	673 (98%)	14 (2%)	59	17

5 of 14 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	95	ASN
1	C	41[A]	VAL
1	F	1	MET
1	D	1	MET
1	E	48	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 15 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	7	GLN
1	E	110	HIS
1	D	36	HIS
1	F	7	GLN
1	E	7	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 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

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.

## 5.7 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, 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	155/183 (84%)	0.63	16 (10%) 6 7	12, 16, 25, 36	0
1	B	144/183 (78%)	1.08	27 (18%) 1 1	13, 19, 32, 41	0
1	C	148/183 (80%)	0.77	16 (10%) 5 6	13, 19, 32, 41	0
1	D	157/183 (85%)	0.53	10 (6%) 19 18	11, 17, 26, 34	0
1	E	145/183 (79%)	0.81	14 (9%) 7 8	14, 19, 29, 34	0
1	F	148/183 (80%)	0.74	14 (9%) 8 9	14, 21, 31, 38	0
All	All	897/1098 (81%)	0.75	97 (10%) 5 6	11, 18, 31, 41	0

The worst 5 of 97 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	34	LEU	9.0
1	F	17	GLY	6.9
1	E	59	ILE	6.8
1	B	65	ASP	6.2
1	B	15	VAL	6.0

### 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 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, 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	ZN	C	163	1/1	0.99	0.15	27,27,27,27	0
2	ZN	B	163	1/1	1.00	0.18	28,28,28,28	0
2	ZN	A	163	1/1	1.00	0.06	17,17,17,17	0
2	ZN	D	163	1/1	1.00	0.05	17,17,17,17	0
2	ZN	E	163	1/1	1.00	0.13	26,26,26,26	0
2	ZN	F	163	1/1	1.00	0.05	23,23,23,23	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.