wwPDB X-ray Structure Validation Summary Report (i)

Jun 16, 2024 – 09:47 AM EDT

PDB ID	:	1ZKP
Title	:	1.5A Resolution Crystal Structure of a Metallo Beta Lactamase Family Protein, the ELAC Homolgue of Bacillus anthracis, a Putative Ribonuclease
Authors	:	Brunzelle, J.S.; Minasov, G.; Shuvalova, L.; Collart, F.R.; Anderson, W.F.; Midwest Center for Structural Genomics (MCSG)
Deposited on	:	2005-05-03
Resolution	:	1.50 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 (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

The following versions of software and data (see references (1)) were used in the production of this report:

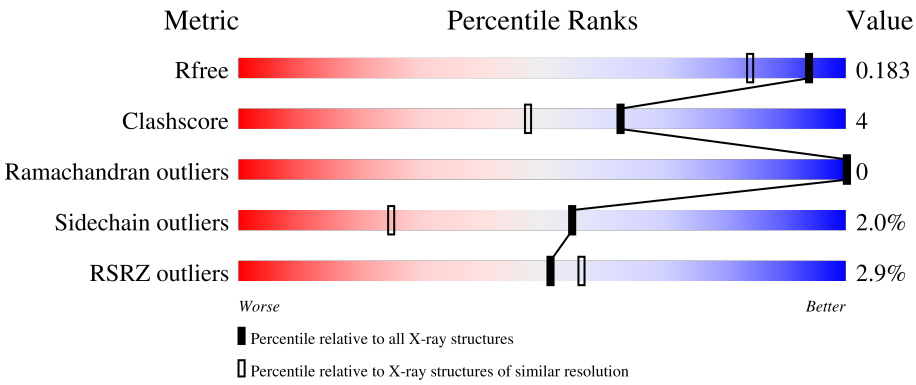
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.50 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	2936 (1.50-1.50)
Clashscore	141614	3144 (1.50-1.50)
Ramachandran outliers	138981	3066 (1.50-1.50)
Sidechain outliers	138945	3064 (1.50-1.50)
RSRZ outliers	127900	2884 (1.50-1.50)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	268	% 85% 8% • 6%
1	B	268	3% 86% 7% • 6%
1	C	268	% 83% 8% 9%
1	D	268	5% 84% 9% • 6%

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 9487 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 hypothetical protein BA1088.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	S	Se			
1	A	251	2003	1281	331	382	4	5	0	7	0
1	B	251	2030	1296	334	391	4	5	0	10	0
1	C	245	1964	1252	324	379	4	5	0	9	0
1	D	251	2023	1292	334	388	4	5	0	9	0

There are 116 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-23	MSE	-	CLONING ARTIFACT	UNP Q81U06
A	-22	HIS	-	EXPRESSION TAG	UNP Q81U06
A	-21	HIS	-	EXPRESSION TAG	UNP Q81U06
A	-20	HIS	-	EXPRESSION TAG	UNP Q81U06
A	-19	HIS	-	EXPRESSION TAG	UNP Q81U06
A	-18	HIS	-	EXPRESSION TAG	UNP Q81U06
A	-17	HIS	-	EXPRESSION TAG	UNP Q81U06
A	-16	SER	-	cloning artifact	UNP Q81U06
A	-15	SER	-	cloning artifact	UNP Q81U06
A	-14	GLY	-	cloning artifact	UNP Q81U06
A	-13	VAL	-	cloning artifact	UNP Q81U06
A	-12	ASP	-	cloning artifact	UNP Q81U06
A	-11	LEU	-	cloning artifact	UNP Q81U06
A	-10	GLY	-	cloning artifact	UNP Q81U06
A	-9	THR	-	cloning artifact	UNP Q81U06
A	-8	GLU	-	cloning artifact	UNP Q81U06
A	-7	ASN	-	cloning artifact	UNP Q81U06
A	-6	LEU	-	cloning artifact	UNP Q81U06
A	-5	TYR	-	cloning artifact	UNP Q81U06
A	-4	PHE	-	cloning artifact	UNP Q81U06
A	-3	GLN	-	cloning artifact	UNP Q81U06

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	SER	-	cloning artifact	UNP Q81U06
A	-1	ASN	-	cloning artifact	UNP Q81U06
A	0	ALA	-	cloning artifact	UNP Q81U06
A	1	MSE	MET	modified residue	UNP Q81U06
A	3	MSE	MET	modified residue	UNP Q81U06
A	141	MSE	MET	modified residue	UNP Q81U06
A	178	MSE	MET	modified residue	UNP Q81U06
A	190	MSE	MET	modified residue	UNP Q81U06
B	-23	MSE	-	cloning artifact	UNP Q81U06
B	-22	HIS	-	EXPRESSION TAG	UNP Q81U06
B	-21	HIS	-	EXPRESSION TAG	UNP Q81U06
B	-20	HIS	-	EXPRESSION TAG	UNP Q81U06
B	-19	HIS	-	EXPRESSION TAG	UNP Q81U06
B	-18	HIS	-	EXPRESSION TAG	UNP Q81U06
B	-17	HIS	-	EXPRESSION TAG	UNP Q81U06
B	-16	SER	-	cloning artifact	UNP Q81U06
B	-15	SER	-	cloning artifact	UNP Q81U06
B	-14	GLY	-	cloning artifact	UNP Q81U06
B	-13	VAL	-	cloning artifact	UNP Q81U06
B	-12	ASP	-	cloning artifact	UNP Q81U06
B	-11	LEU	-	cloning artifact	UNP Q81U06
B	-10	GLY	-	cloning artifact	UNP Q81U06
B	-9	THR	-	cloning artifact	UNP Q81U06
B	-8	GLU	-	cloning artifact	UNP Q81U06
B	-7	ASN	-	cloning artifact	UNP Q81U06
B	-6	LEU	-	cloning artifact	UNP Q81U06
B	-5	TYR	-	cloning artifact	UNP Q81U06
B	-4	PHE	-	cloning artifact	UNP Q81U06
B	-3	GLN	-	cloning artifact	UNP Q81U06
B	-2	SER	-	cloning artifact	UNP Q81U06
B	-1	ASN	-	cloning artifact	UNP Q81U06
B	0	ALA	-	cloning artifact	UNP Q81U06
B	1	MSE	MET	modified residue	UNP Q81U06
B	3	MSE	MET	modified residue	UNP Q81U06
B	141	MSE	MET	modified residue	UNP Q81U06
B	178	MSE	MET	modified residue	UNP Q81U06
B	190	MSE	MET	modified residue	UNP Q81U06
C	-23	MSE	-	cloning artifact	UNP Q81U06
C	-22	HIS	-	EXPRESSION TAG	UNP Q81U06
C	-21	HIS	-	EXPRESSION TAG	UNP Q81U06
C	-20	HIS	-	EXPRESSION TAG	UNP Q81U06
C	-19	HIS	-	EXPRESSION TAG	UNP Q81U06

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
C	-18	HIS	-	EXPRESSION TAG	UNP Q81U06
C	-17	HIS	-	EXPRESSION TAG	UNP Q81U06
C	-16	SER	-	cloning artifact	UNP Q81U06
C	-15	SER	-	cloning artifact	UNP Q81U06
C	-14	GLY	-	cloning artifact	UNP Q81U06
C	-13	VAL	-	cloning artifact	UNP Q81U06
C	-12	ASP	-	cloning artifact	UNP Q81U06
C	-11	LEU	-	cloning artifact	UNP Q81U06
C	-10	GLY	-	cloning artifact	UNP Q81U06
C	-9	THR	-	cloning artifact	UNP Q81U06
C	-8	GLU	-	cloning artifact	UNP Q81U06
C	-7	ASN	-	cloning artifact	UNP Q81U06
C	-6	LEU	-	cloning artifact	UNP Q81U06
C	-5	TYR	-	cloning artifact	UNP Q81U06
C	-4	PHE	-	cloning artifact	UNP Q81U06
C	-3	GLN	-	cloning artifact	UNP Q81U06
C	-2	SER	-	cloning artifact	UNP Q81U06
C	-1	ASN	-	cloning artifact	UNP Q81U06
C	0	ALA	-	cloning artifact	UNP Q81U06
C	1	MSE	MET	modified residue	UNP Q81U06
C	3	MSE	MET	modified residue	UNP Q81U06
C	141	MSE	MET	modified residue	UNP Q81U06
C	178	MSE	MET	modified residue	UNP Q81U06
C	190	MSE	MET	modified residue	UNP Q81U06
D	-23	MSE	-	cloning artifact	UNP Q81U06
D	-22	HIS	-	EXPRESSION TAG	UNP Q81U06
D	-21	HIS	-	EXPRESSION TAG	UNP Q81U06
D	-20	HIS	-	EXPRESSION TAG	UNP Q81U06
D	-19	HIS	-	EXPRESSION TAG	UNP Q81U06
D	-18	HIS	-	EXPRESSION TAG	UNP Q81U06
D	-17	HIS	-	EXPRESSION TAG	UNP Q81U06
D	-16	SER	-	cloning artifact	UNP Q81U06
D	-15	SER	-	cloning artifact	UNP Q81U06
D	-14	GLY	-	cloning artifact	UNP Q81U06
D	-13	VAL	-	cloning artifact	UNP Q81U06
D	-12	ASP	-	cloning artifact	UNP Q81U06
D	-11	LEU	-	cloning artifact	UNP Q81U06
D	-10	GLY	-	cloning artifact	UNP Q81U06
D	-9	THR	-	cloning artifact	UNP Q81U06
D	-8	GLU	-	cloning artifact	UNP Q81U06
D	-7	ASN	-	cloning artifact	UNP Q81U06
D	-6	LEU	-	cloning artifact	UNP Q81U06

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
D	-5	TYR	-	cloning artifact	UNP Q81U06
D	-4	PHE	-	cloning artifact	UNP Q81U06
D	-3	GLN	-	cloning artifact	UNP Q81U06
D	-2	SER	-	cloning artifact	UNP Q81U06
D	-1	ASN	-	cloning artifact	UNP Q81U06
D	0	ALA	-	cloning artifact	UNP Q81U06
D	1	MSE	MET	modified residue	UNP Q81U06
D	3	MSE	MET	modified residue	UNP Q81U06
D	141	MSE	MET	modified residue	UNP Q81U06
D	178	MSE	MET	modified residue	UNP Q81U06
D	190	MSE	MET	modified residue	UNP Q81U06

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

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

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Na		
3	A	1	1	1	0	0
3	B	2	2	2	0	0
3	C	1	1	1	0	0

- Molecule 4 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Cl		
4	B	1	1	1	0	0

- Molecule 5 is water.

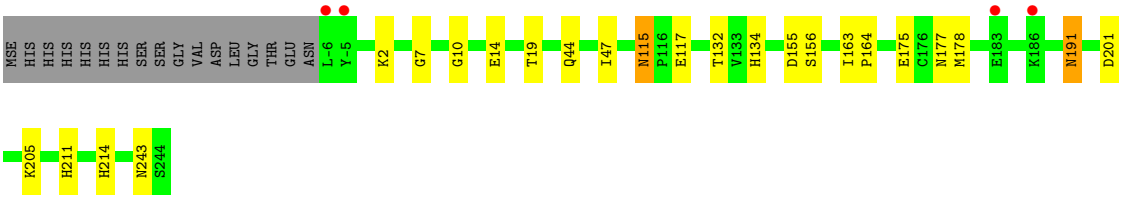
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
5	A	353	371	371	0	35
			Total	O		
5	B	377	406	406	0	34
			Total	O		
5	C	331	348	348	0	23
			Total	O		
5	D	314	329	329	0	33

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.

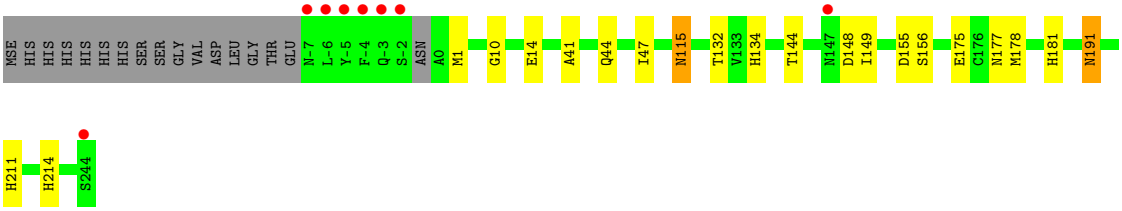
• Molecule 1: hypothetical protein BA1088

Chain A:



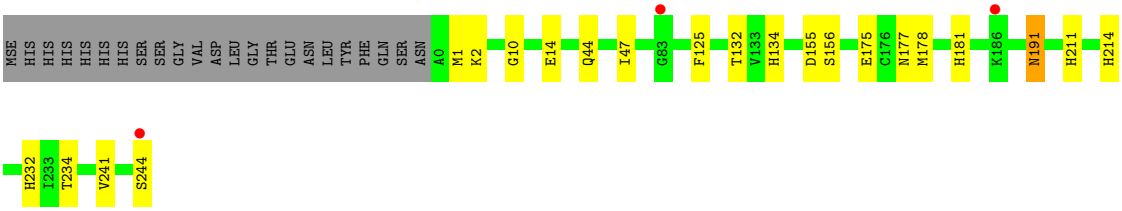
• Molecule 1: hypothetical protein BA1088

Chain B:



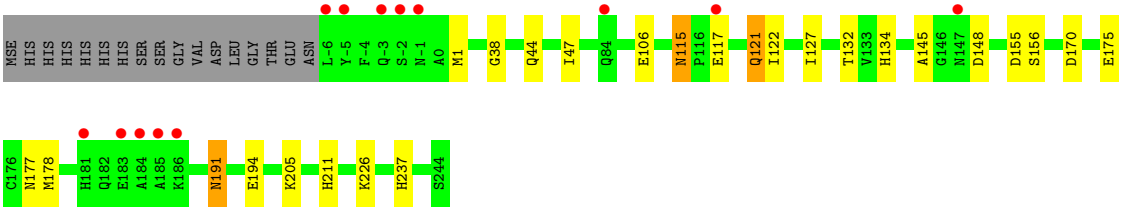
• Molecule 1: hypothetical protein BA1088

Chain C:



• Molecule 1: hypothetical protein BA1088

Chain D:


MSE
HIS
HIS
HIS
HIS
HIS
HIS
SER
SER
GLY
VAL
ASP
LEU
GLY
THR
GLU
ASN
L-6
Y-5
F-4
Q-3
S-2
N-1
A0
M1
G38
Q44
I47
Q84
E106
N115
P116
E117
Q121
I122
I127
T132
V133
H134
A145
G146
N147
D148
D155
S156
D170
E175
C176
N177
M178
H181
Q182
E183
A184
A185
K186
N191
E194
K205
H211
K226
H237
S244

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	73.38Å 91.19Å 78.47Å 90.00° 115.31° 90.00°	Depositor
Resolution (Å)	25.00 – 1.50 24.32 – 1.50	Depositor EDS
% Data completeness (in resolution range)	95.8 (25.00-1.50) 95.7 (24.32-1.50)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.30 (at 1.50Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.147 , 0.180 0.152 , 0.183	Depositor DCC
R_{free} test set	7103 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	11.3	Xtriage
Anisotropy	0.225	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 51.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	0.021 for h,-k,-h-l	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	9487	wwPDB-VP
Average B, all atoms (Å^2)	19.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.56% of the height of the origin peak. No significant pseudotranslation is detected.*

[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: CL, NA, 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	0.47	0/2056	0.60	0/2793
1	B	0.49	0/2081	0.62	0/2821
1	C	0.49	0/2014	0.62	0/2733
1	D	0.45	0/2076	0.59	0/2822
All	All	0.47	0/8227	0.61	0/11169

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	2003	0	1908	17	0
1	B	2030	0	1931	13	0
1	C	1964	0	1870	17	0
1	D	2023	0	1921	20	0
2	A	2	0	0	0	0
2	B	2	0	0	0	0
2	C	2	0	0	0	0
2	D	2	0	0	0	0
3	A	1	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	2	0	0	0	0
3	C	1	0	0	0	0
4	B	1	0	0	0	0
5	A	371	0	0	1	0
5	B	406	0	0	1	0
5	C	348	0	0	2	0
5	D	329	0	0	8	0
All	All	9487	0	7630	67	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

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:14[A]:GLU:OE2	1:C:214:HIS:HD2	1.66	0.79
1:B:14[A]:GLU:OE1	1:B:214:HIS:HD2	1.73	0.72
1:A:14[A]:GLU:OE2	1:A:214:HIS:HD2	1.77	0.67
1:C:2:LYS:HE3	1:C:241:VAL:HG11	1.77	0.66
1:B:1:MSE:HE3	1:B:148:ASP:HB2	1.76	0.66

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	256/268 (96%)	248 (97%)	8 (3%)	0	100	100
1	B	257/268 (96%)	249 (97%)	8 (3%)	0	100	100
1	C	252/268 (94%)	243 (96%)	9 (4%)	0	100	100
1	D	258/268 (96%)	250 (97%)	8 (3%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	1023/1072 (95%)	990 (97%)	33 (3%)	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	217/219 (99%)	213 (98%)	4 (2%)	59	30
1	B	220/219 (100%)	216 (98%)	4 (2%)	59	30
1	C	213/219 (97%)	209 (98%)	4 (2%)	57	27
1	D	219/219 (100%)	213 (97%)	6 (3%)	44	15
All	All	869/876 (99%)	851 (98%)	18 (2%)	55	23

5 of 18 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	121[B]	GLN
1	D	191	ASN
1	D	178	MSE
1	C	175	GLU
1	D	121[A]	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 28 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	214	HIS
1	D	237	HIS
1	C	98	ASN
1	D	115	ASN
1	C	84	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 13 ligands modelled in this entry, 13 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, 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	246/268 (91%)	-0.07	4 (1%)	72	77	10, 16, 26, 41	0
1	B	246/268 (91%)	-0.08	8 (3%)	46	51	10, 14, 26, 40	0
1	C	240/268 (89%)	-0.11	3 (1%)	77	81	9, 14, 27, 37	0
1	D	246/268 (91%)	0.13	13 (5%)	26	29	10, 17, 31, 42	0
All	All	978/1072 (91%)	-0.03	28 (2%)	51	56	9, 15, 29, 42	0

The worst 5 of 28 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	-6	LEU	9.8
1	B	-4	PHE	7.1
1	A	-6	LEU	5.8
1	B	-6	LEU	4.2
1	B	-2	SER	4.1

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	NA	B	248	1/1	0.97	0.09	25,25,25,25	0
3	NA	C	247	1/1	0.98	0.09	21,21,21,21	0
3	NA	B	249	1/1	0.99	0.17	22,22,22,22	0
3	NA	A	247	1/1	0.99	0.21	26,26,26,26	0
4	CL	B	247	1/1	0.99	0.03	18,18,18,18	0
2	ZN	C	246	1/1	1.00	0.04	11,11,11,11	0
2	ZN	D	245	1/1	1.00	0.03	14,14,14,14	0
2	ZN	D	246	1/1	1.00	0.04	13,13,13,13	0
2	ZN	A	245	1/1	1.00	0.04	13,13,13,13	0
2	ZN	A	246	1/1	1.00	0.04	12,12,12,12	0
2	ZN	B	245	1/1	1.00	0.03	13,13,13,13	0
2	ZN	B	246	1/1	1.00	0.05	12,12,12,12	0
2	ZN	C	245	1/1	1.00	0.03	12,12,12,12	0

6.5 Other polymers (i)

There are no such residues in this entry.