



Full wwPDB X-ray Structure Validation Report ⓘ

May 26, 2020 – 11:13 am BST

PDB ID : 5ZYO
Title : Crystal Structure of domain-swapped Circular-Permuted YbeA (CP74) from Escherichia coli
Authors : Ko, K.T.; Huang, K.F.; Lyu, P.C.; Hsu, S.T.D.
Deposited on : 2018-05-26
Resolution : 1.75 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
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

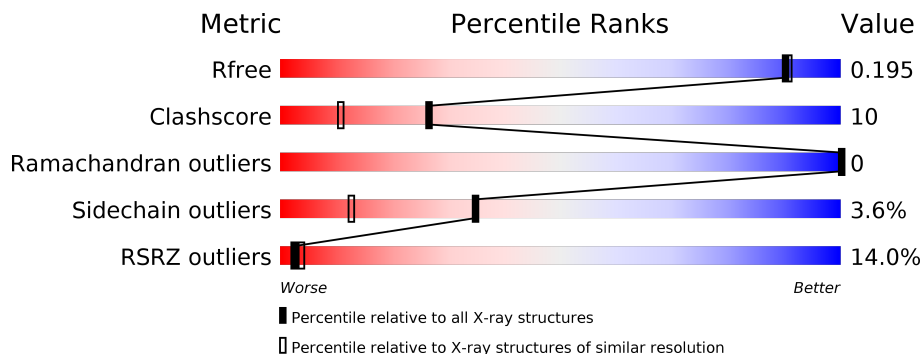
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.75 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	2340 (1.76-1.76)
Clashscore	141614	2466 (1.76-1.76)
Ramachandran outliers	138981	2437 (1.76-1.76)
Sidechain outliers	138945	2437 (1.76-1.76)
RSRZ outliers	127900	2298 (1.76-1.76)

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	158	<div style="display: flex; align-items: center;"> <div style="width: 16%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 83%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 16px;">16% 83% 12% . .</p>
1	B	158	<div style="display: flex; align-items: center;"> <div style="width: 16%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 73%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 15%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 11%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 16px;">16% 73% 15% . 11%</p>
1	C	158	<div style="display: flex; align-items: center;"> <div style="width: 4%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 84%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 12%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 4px;">4% 84% 12% . .</p>
1	D	158	<div style="display: flex; align-items: center;"> <div style="width: 16%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 78%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 16%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: grey;"></div> </div> <p style="margin-left: 16px;">16% 78% 16% . .</p>

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 5079 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 Ribosomal RNA large subunit methyltransferase H.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	154	1213	774	214	220	5	0	0	0
1	B	140	1097	703	189	200	5	0	0	0
1	C	152	1213	773	213	222	5	0	2	0
1	D	152	1205	769	212	219	5	0	1	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1	MET	-	initiating methionine	UNP P0A8I8
B	84	GLY	-	linker	UNP P0A8I8
B	85	SER	-	linker	UNP P0A8I8
C	1	MET	-	initiating methionine	UNP P0A8I8
C	84	GLY	-	linker	UNP P0A8I8
C	85	SER	-	linker	UNP P0A8I8
A	1	MET	-	initiating methionine	UNP P0A8I8
A	84	GLY	-	linker	UNP P0A8I8
A	85	SER	-	linker	UNP P0A8I8
D	1	MET	-	initiating methionine	UNP P0A8I8
D	84	GLY	-	linker	UNP P0A8I8
D	85	SER	-	linker	UNP P0A8I8

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	81	Total	O	0	0
			81	81		
2	B	70	Total	O	0	0
			70	70		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	C	139	Total 139	O 139	0	0
2	D	61	Total 61	O 61	0	0

4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	47.46Å 88.05Å 81.18Å 90.00° 101.47° 90.00°	Depositor
Resolution (Å)	29.52 – 1.75 29.52 – 1.75	Depositor EDS
% Data completeness (in resolution range)	99.2 (29.52-1.75) 99.3 (29.52-1.75)	Depositor EDS
R_{merge}	0.03	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.85 (at 1.75Å)	Xtrriage
Refinement program	REFMAC 5.8.0238	Depositor
R, R_{free}	0.169 , 0.195 0.169 , 0.195	Depositor DCC
R_{free} test set	3326 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å ²)	28.5	Xtrriage
Anisotropy	0.234	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 53.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	5079	wwPDB-VP
Average B, all atoms (Å ²)	43.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.71% 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

5.1 Standard geometry

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	0.39	0/1242	0.70	0/1683
1	B	0.38	0/1119	0.66	0/1513
1	C	0.44	0/1241	0.71	0/1682
1	D	0.36	0/1233	0.64	0/1671
All	All	0.39	0/4835	0.68	0/6549

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	1213	0	1233	25	0
1	B	1097	0	1122	52	0
1	C	1213	0	1226	24	0
1	D	1205	0	1223	54	0
2	A	81	0	0	3	0
2	B	70	0	0	0	0
2	C	139	0	0	2	0
2	D	61	0	0	0	0
All	All	5079	0	4804	98	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 10.

All (98) 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:157:LEU:HD11	1:D:28[B]:LEU:CG	1.79	1.12
1:B:157:LEU:CD2	1:D:7:TRP:HZ2	1.62	1.10
1:B:157:LEU:CD2	1:D:7:TRP:CZ2	2.46	0.96
1:A:102:GLN:OE1	1:A:103:THR:N	2.02	0.93
1:B:133:ASP:HB3	1:B:136:ARG:HD3	1.50	0.91
1:B:157:LEU:HD11	1:D:28[B]:LEU:HG	1.52	0.90
1:A:11:GLN:H	1:A:11:GLN:HE21	1.16	0.90
1:B:157:LEU:HD23	1:D:7:TRP:HZ2	1.37	0.89
1:B:17:GLU:O	1:B:21:LEU:HD13	1.77	0.85
1:B:157:LEU:HD11	1:D:28[B]:LEU:CD2	2.06	0.84
1:B:88:LEU:HD11	1:D:28[A]:LEU:HD13	1.58	0.83
1:B:157:LEU:HD11	1:D:28[B]:LEU:CD1	2.09	0.82
1:B:157:LEU:CD1	1:D:28[B]:LEU:HG	2.11	0.79
1:B:157:LEU:CD1	1:D:28[B]:LEU:HD11	2.16	0.76
1:B:157:LEU:HD11	1:D:28[B]:LEU:HD21	1.66	0.76
1:A:7:TRP:CH2	1:C:157:LEU:HD13	2.23	0.74
1:B:157:LEU:CD1	1:D:28[B]:LEU:CG	2.63	0.73
1:B:157:LEU:HD11	1:D:28[B]:LEU:HD11	1.70	0.73
1:A:7:TRP:HH2	1:C:157:LEU:HD13	1.53	0.72
1:A:11:GLN:N	1:A:11:GLN:HE21	1.88	0.72
1:B:24:ARG:NH1	1:D:153:ARG:HG2	2.04	0.72
1:A:102:GLN:CD	1:A:103:THR:H	1.94	0.71
1:B:157:LEU:HD21	1:D:7:TRP:CZ2	2.25	0.70
1:B:69:TYR:HD1	1:B:116:MET:HE3	1.55	0.70
1:B:69:TYR:CD1	1:B:116:MET:HE3	2.27	0.69
1:B:157:LEU:CD1	1:D:28[B]:LEU:CD1	2.72	0.68
1:A:8:ASP:HB3	1:A:11:GLN:NE2	2.09	0.67
1:B:157:LEU:CG	1:D:28[B]:LEU:HD11	2.25	0.65
1:C:68:LEU:HD22	1:C:88[B]:LEU:HD21	1.79	0.64
1:B:34:GLU:HG2	1:D:134:ILE:HD11	1.81	0.63
1:B:157:LEU:HG	1:D:28[B]:LEU:HD11	1.80	0.63
1:B:72:TRP:CD1	1:B:116:MET:HE2	2.35	0.62
1:A:28:LEU:HD13	1:C:88[B]:LEU:HD11	1.82	0.61
1:B:88:LEU:HD11	1:D:28[A]:LEU:CD1	2.29	0.61
1:B:50:LEU:HD12	1:D:158:ASP:O	2.01	0.61
1:B:133:ASP:HB3	1:B:136:ARG:HH11	1.66	0.60
1:A:9:THR:HB	1:A:10:PRO:HD3	1.84	0.60
1:A:72:TRP:CE3	1:A:116:MET:HE2	2.39	0.58
1:D:76:THR:HA	1:D:81:HIS:CD2	2.43	0.54
1:B:157:LEU:HD23	1:D:7:TRP:CZ2	2.29	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:89:GLN:NE2	1:C:121:ILE:CD1	2.73	0.52
2:A:203:HOH:O	1:C:153:ARG:HD3	2.09	0.52
1:B:16:LEU:HD21	1:D:88:LEU:HD11	1.92	0.51
1:A:101:VAL:HG22	1:C:100:TRP:HZ3	1.76	0.51
1:C:8:ASP:OD1	1:C:11:GLN:HB2	2.10	0.51
1:B:33:PRO:HD3	1:D:95:THR:HG21	1.92	0.51
1:B:16:LEU:CD2	1:D:88:LEU:HD11	2.40	0.51
1:D:126:GLY:HA3	1:D:137:ILE:HD12	1.93	0.50
1:B:50:LEU:HB2	1:D:158:ASP:O	2.13	0.49
1:B:50:LEU:CD2	1:D:157:LEU:HG	2.43	0.49
1:B:157:LEU:HD22	1:D:7:TRP:CZ2	2.45	0.49
2:A:203:HOH:O	1:C:153:ARG:CD	2.61	0.49
1:B:34:GLU:OE2	1:D:128:ARG:NH2	2.38	0.49
1:A:128:ARG:NH2	1:C:34:GLU:OE2	2.46	0.48
1:A:79:PRO:HD2	1:C:20:LYS:HD2	1.96	0.48
1:C:96:LYS:HD3	2:C:315:HOH:O	2.13	0.48
1:A:50:LEU:HB2	1:C:158:ASP:OXT	2.14	0.48
1:B:20:LYS:NZ	1:D:75:THR:HG21	2.30	0.47
1:B:43:ALA:HB1	1:D:154:ILE:HD12	1.96	0.47
1:D:74:ILE:CG2	1:D:74:ILE:O	2.63	0.47
1:C:68:LEU:HD22	1:C:88[B]:LEU:CD2	2.45	0.46
1:D:68:LEU:HD13	1:D:118:PHE:HE2	1.79	0.46
1:B:157:LEU:HD21	1:D:7:TRP:CH2	2.49	0.46
1:C:89:GLN:NE2	1:C:121:ILE:HD12	2.31	0.46
1:B:34:GLU:CD	1:D:128:ARG:HE	2.19	0.46
1:D:89:GLN:NE2	1:D:121:ILE:CD1	2.79	0.46
1:B:7:TRP:HH2	1:D:157:LEU:CD1	2.30	0.45
1:A:86:MET:HG2	1:C:20:LYS:HA	1.97	0.45
1:A:101:VAL:CG2	1:C:100:TRP:HZ3	2.29	0.45
1:A:157:LEU:HD11	1:C:28:LEU:HD23	1.98	0.45
1:D:74:ILE:HG23	1:D:74:ILE:O	2.16	0.45
1:B:133:ASP:O	1:B:136:ARG:HG2	2.17	0.44
1:D:68:LEU:HD13	1:D:118:PHE:CE2	2.52	0.44
1:B:24:ARG:HH11	1:D:153:ARG:HG2	1.78	0.44
1:A:151:LYS:HD3	2:A:265:HOH:O	2.17	0.44
1:C:149:ALA:HB1	1:C:154:ILE:HD11	2.00	0.44
1:B:156:THR:HG23	1:D:44:ALA:HB2	2.01	0.43
1:C:75:THR:HB	2:C:266:HOH:O	2.18	0.43
1:A:5:LYS:C	1:A:7:TRP:H	2.22	0.43
1:B:89:GLN:NE2	1:B:121:ILE:CD1	2.81	0.43
1:A:86:MET:HG3	1:A:86:MET:O	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:76:THR:O	1:D:81:HIS:CE1	2.72	0.42
1:B:7:TRP:HH2	1:D:157:LEU:HD13	1.84	0.42
1:B:72:TRP:CZ3	1:D:20:LYS:HE2	2.55	0.42
1:B:50:LEU:HD21	1:D:157:LEU:HG	2.02	0.42
1:B:95:THR:HG21	1:D:33:PRO:HD3	2.02	0.42
1:A:79:PRO:HG3	1:C:21:LEU:CD2	2.50	0.42
1:B:34:GLU:HB3	1:D:134:ILE:HD11	2.02	0.41
1:A:20:LYS:HG3	1:C:86:MET:HE1	2.03	0.41
1:B:50:LEU:CG	1:D:158:ASP:O	2.69	0.41
1:B:46:GLN:HB2	1:D:155:VAL:HG22	2.02	0.41
1:C:86:MET:HE3	1:C:88[A]:LEU:HD21	2.03	0.41
1:D:88:LEU:O	1:D:118:PHE:HA	2.20	0.40
1:A:69:TYR:HD1	1:A:116:MET:HE3	1.86	0.40
1:D:89:GLN:NE2	1:D:121:ILE:HD12	2.37	0.40
1:A:69:TYR:HD1	1:A:116:MET:CE	2.34	0.40
1:A:27:SER:HB2	1:C:154:ILE:HD13	2.03	0.40
1:B:50:LEU:CD1	1:D:158:ASP:O	2.69	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	152/158 (96%)	148 (97%)	4 (3%)	0	100	100
1	B	134/158 (85%)	133 (99%)	1 (1%)	0	100	100
1	C	152/158 (96%)	151 (99%)	1 (1%)	0	100	100
1	D	151/158 (96%)	150 (99%)	1 (1%)	0	100	100
All	All	589/632 (93%)	582 (99%)	7 (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	128/131 (98%)	122 (95%)	6 (5%)	26 7
1	B	116/131 (88%)	112 (97%)	4 (3%)	37 14
1	C	128/131 (98%)	126 (98%)	2 (2%)	62 45
1	D	127/131 (97%)	121 (95%)	6 (5%)	26 7
All	All	499/524 (95%)	481 (96%)	18 (4%)	35 13

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	LYS
1	A	11	GLN
1	A	86	MET
1	A	102	GLN
1	A	130	LYS
1	A	138	LEU
1	B	7	TRP
1	B	49	SER
1	B	115	ASP
1	B	138	LEU
1	C	7	TRP
1	C	20	LYS
1	D	8	ASP
1	D	74	ILE
1	D	127	LYS
1	D	131	ASN
1	D	138	LEU
1	D	158	ASP

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	11	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](#)

There are no ligands in this entry.

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	154/158 (97%)	1.08	26 (16%) 1 2	18, 38, 100, 134	0
1	B	140/158 (88%)	0.92	25 (17%) 1 2	21, 38, 80, 104	0
1	C	152/158 (96%)	0.43	7 (4%) 32 38	18, 32, 58, 105	0
1	D	152/158 (96%)	0.98	26 (17%) 1 2	20, 40, 77, 119	0
All	All	598/632 (94%)	0.85	84 (14%) 2 4	18, 37, 83, 134	0

All (84) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	129	GLY	14.1
1	A	132	ALA	12.8
1	B	21	LEU	11.8
1	D	129	GLY	11.0
1	B	129	GLY	10.6
1	A	131	ASN	10.0
1	A	130	LYS	9.4
1	D	132	ALA	9.1
1	D	130	LYS	8.6
1	A	134	ILE	8.2
1	B	128	ARG	8.1
1	A	80	TYR	7.9
1	A	128	ARG	7.6
1	A	78	HIS	7.4
1	D	131	ASN	6.8
1	B	7	TRP	6.5
1	A	82	ARG	6.2
1	D	83	GLU	6.1
1	B	127	LYS	5.9
1	D	134	ILE	5.9
1	D	85	SER	5.7

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Mol	Chain	Res	Type	RSRZ
1	A	7	TRP	5.7
1	A	137	ILE	5.5
1	B	134	ILE	5.3
1	B	20	LYS	5.3
1	A	133	ASP	5.2
1	B	133	ASP	5.0
1	D	137	ILE	4.9
1	A	77	ASN	4.7
1	D	79	PRO	4.5
1	D	128	ARG	4.5
1	A	79	PRO	4.4
1	A	127	LYS	4.2
1	A	74	ILE	4.0
1	A	76	THR	4.0
1	C	8	ASP	4.0
1	A	136	ARG	4.0
1	B	72	TRP	3.9
1	C	7	TRP	3.7
1	D	133	ASP	3.7
1	B	137	ILE	3.7
1	D	84	GLY	3.6
1	A	126	GLY	3.5
1	D	127	LYS	3.5
1	C	11	GLN	3.3
1	D	136	ARG	3.3
1	B	126	GLY	3.3
1	D	7	TRP	3.3
1	C	10	PRO	3.3
1	B	13	ALA	3.2
1	D	82	ARG	3.2
1	B	14	ALA	3.1
1	C	80	TYR	2.9
1	D	8	ASP	2.9
1	B	136	ARG	2.9
1	D	135	LYS	2.8
1	D	42	ALA	2.8
1	D	43	ALA	2.8
1	A	72	TRP	2.8
1	B	18	ARG	2.7
1	C	9	THR	2.7
1	A	70	ARG	2.6
1	B	85	SER	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	83	GLU	2.5
1	B	115	ASP	2.5
1	A	5	LYS	2.5
1	D	126	GLY	2.4
1	B	22	ASP	2.4
1	D	100	TRP	2.4
1	B	74	ILE	2.3
1	B	154	ILE	2.3
1	A	135	LYS	2.3
1	A	81	HIS	2.3
1	B	23	GLY	2.2
1	A	44	ALA	2.2
1	B	54	THR	2.1
1	D	75	THR	2.1
1	D	44	ALA	2.1
1	D	39	ALA	2.1
1	B	10	PRO	2.1
1	B	24	ARG	2.0
1	B	125	ALA	2.0
1	C	40	CYS	2.0
1	D	74	ILE	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](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.