



Full wwPDB X-ray Structure Validation Report ⓘ

Nov 2, 2024 – 08:23 PM EDT

PDB ID : 2Z07
Title : Crystal structure of uncharacterized conserved protein from *Thermus thermophilus* HB8
Authors : Iino, H.; Yokoyama, S.; Kuramitsu, S.; RIKEN Structural Genomics/Proteomics Initiative (RSGI)
Deposited on : 2007-05-07
Resolution : 2.10 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 types of validation reports are described at

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

The following versions of software and data (see [references ⓘ](#)) 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 : 3.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4 : 9.0.003 (Gargrove)
Density-Fitness : 1.0.11
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

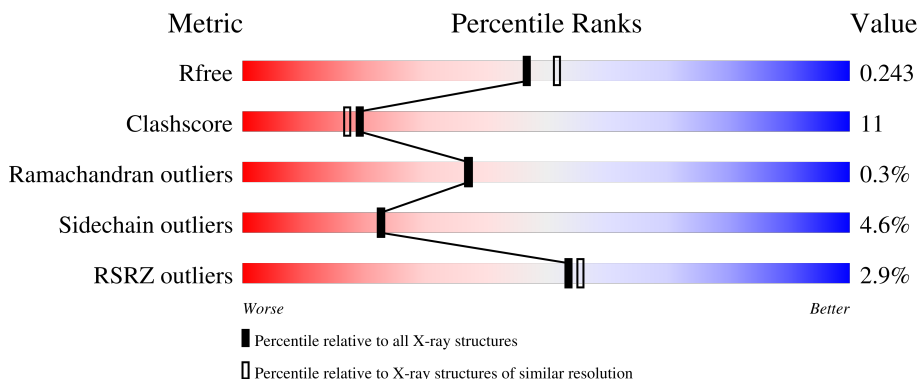
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.10 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}	164625	6234 (2.10-2.10)
Clashscore	180529	6893 (2.10-2.10)
Ramachandran outliers	177936	6839 (2.10-2.10)
Sidechain outliers	177891	6840 (2.10-2.10)
RSRZ outliers	164620	6234 (2.10-2.10)

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 $\leq 5\%$. 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	420	 3% 70% 20% • 7%
1	B	420	 3% 72% 22% • •

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 6748 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 Putative uncharacterized protein TTHA0978.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	S	Se			
1	A	389	3133	2040	539	549	1	4	0	0	0
1	B	403	3278	2132	564	577	1	4	0	0	0

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	157	Total 157	O 157	0	0
2	B	180	Total 180	O 180	0	0

4 Data and refinement statistics

Property	Value	Source
Space group	H 3	Depositor
Cell constants a, b, c, α , β , γ	93.44Å 93.44Å 254.92Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	19.98 – 2.10 19.98 – 2.10	Depositor EDS
% Data completeness (in resolution range)	99.6 (19.98-2.10) 99.6 (19.98-2.10)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	4.29 (at 2.10Å)	Xtrriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.189 , 0.233 0.207 , 0.243	Depositor DCC
R_{free} test set	4869 reflections (10.09%)	wwPDB-VP
Wilson B-factor (Å ²)	22.3	Xtrriage
Anisotropy	0.018	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 61.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	0.026 for -h-k,k,-l	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	6748	wwPDB-VP
Average B, all atoms (Å ²)	26.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.82% 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](#)

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	0.38	0/3235	0.57	1/4409 (0.0%)
1	B	0.39	0/3386	0.60	1/4612 (0.0%)
All	All	0.39	0/6621	0.59	2/9021 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	334	LEU	CA-CB-CG	-5.50	102.66	115.30
1	A	334	LEU	CA-CB-CG	-5.06	103.65	115.30

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	3133	0	2964	74	0
1	B	3278	0	3106	69	0
2	A	157	0	0	4	0
2	B	180	0	0	5	0
All	All	6748	0	6070	143	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 11.

All (143) 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:71:HIS:HB2	1:A:103:GLN:HG3	1.49	0.94
1:A:414:LEU:O	1:A:418:TRP:HB2	1.70	0.91
1:B:172:LYS:HE2	1:B:176:ARG:HH21	1.40	0.83
1:A:71:HIS:CB	1:A:103:GLN:HG3	2.14	0.77
1:A:5:ARG:HH11	1:A:5:ARG:HB3	1.52	0.74
1:B:401:GLN:NE2	1:B:403:ARG:HH11	1.87	0.73
1:A:75:HIS:CD2	1:A:79:ARG:HE	2.06	0.73
1:A:219:TYR:HA	1:A:224:ILE:HD11	1.69	0.72
1:A:337:VAL:HG12	1:A:352:GLY:HA2	1.71	0.71
1:A:348:ARG:HD3	1:A:351:ARG:HD3	1.72	0.71
1:B:414:LEU:O	1:B:418:TRP:HB2	1.91	0.70
1:A:242:GLN:HA	1:A:242:GLN:HE21	1.58	0.67
1:B:194:ASN:HD22	1:B:195:PRO:HD2	1.62	0.64
1:A:75:HIS:HD2	1:A:79:ARG:HE	1.44	0.64
1:B:217:LEU:HD12	1:B:224:ILE:HD13	1.79	0.64
1:A:213:LEU:HD23	1:A:216:ARG:HH21	1.63	0.64
1:B:176:ARG:HD2	2:B:452:HOH:O	1.97	0.63
1:A:331:ARG:HG2	1:A:331:ARG:HH11	1.64	0.62
1:B:172:LYS:HE2	1:B:176:ARG:NH2	2.13	0.61
1:B:220:ASP:O	1:B:224:ILE:HG12	2.01	0.61
1:A:139:HIS:HD2	1:A:245:ASN:OD1	1.85	0.60
1:B:140:ARG:HD3	1:B:261:GLU:OE1	2.02	0.59
1:A:345:GLU:OE1	1:A:348:ARG:HD2	2.02	0.59
1:B:75:HIS:CD2	1:B:79:ARG:HE	2.21	0.58
1:A:33:LEU:HD12	1:A:58:LEU:HD21	1.86	0.58
1:B:401:GLN:NE2	1:B:403:ARG:NH1	2.52	0.58
1:A:113:TYR:CE1	1:A:117:LYS:HG3	2.39	0.58
1:B:337:VAL:HG22	1:B:352:GLY:HA2	1.86	0.57
1:B:5:ARG:NH2	1:B:420:ARG:HA	2.19	0.57
1:A:213:LEU:HD23	1:A:216:ARG:NH2	2.19	0.57
1:A:331:ARG:HD3	1:A:332:TYR:CE1	2.40	0.56
1:B:5:ARG:HH21	1:B:420:ARG:HA	1.70	0.56
1:B:194:ASN:HD21	1:B:196:GLU:HG2	1.69	0.56
1:B:333:LEU:HD12	1:B:334:LEU:H	1.70	0.56
1:B:35:ASP:HA	1:B:410:TRP:HD1	1.71	0.56
1:A:103:GLN:HB3	1:A:104:PRO:HD2	1.88	0.55
1:B:174:LEU:O	1:B:206:ARG:HD3	2.06	0.55
1:B:172:LYS:HB3	1:B:173:PRO:HD3	1.90	0.54
1:B:194:ASN:ND2	1:B:196:GLU:H	2.05	0.54
1:B:75:HIS:HD2	1:B:79:ARG:HE	1.55	0.53
1:B:357:ASN:HD22	1:B:357:ASN:H	1.57	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:310:THR:N	1:B:311:PRO:HD2	2.23	0.53
1:A:176:ARG:O	1:A:178:PRO:HD3	2.08	0.53
1:B:284:TYR:OH	1:B:311:PRO:HB3	2.09	0.53
1:B:177:VAL:O	1:B:206:ARG:NH1	2.41	0.53
1:A:9:VAL:O	1:A:13:GLN:HG3	2.09	0.52
1:B:187:ARG:HH21	1:B:199:PRO:HA	1.73	0.52
1:B:331:ARG:NH1	1:B:377:ARG:HH12	2.08	0.52
1:B:194:ASN:HD22	1:B:195:PRO:CD	2.22	0.52
1:B:357:ASN:HD22	1:B:357:ASN:N	2.08	0.52
1:B:355:TRP:HE3	1:B:410:TRP:HH2	1.57	0.52
1:B:346:PRO:HB2	1:B:396:ASP:OD2	2.10	0.51
1:A:357:ASN:N	1:A:357:ASN:HD22	2.08	0.51
1:B:33:LEU:HD13	1:B:69:LEU:HD23	1.91	0.51
1:A:68:MSE:HB2	1:A:141:TRP:CE2	2.46	0.51
1:A:313:GLN:NE2	1:A:313:GLN:HA	2.26	0.51
1:B:139:HIS:HD2	1:B:245:ASN:OD1	1.94	0.51
1:B:334:LEU:N	1:B:335:PRO:HD3	2.26	0.50
1:B:389:GLU:HG3	1:B:400:GLY:O	2.11	0.50
1:B:242:GLN:HE21	1:B:242:GLN:HA	1.76	0.50
1:A:333:LEU:HD22	1:A:377:ARG:HG2	1.93	0.49
1:A:103:GLN:HB3	1:A:104:PRO:CD	2.41	0.49
1:B:345:GLU:CD	1:B:348:ARG:HE	2.15	0.48
1:B:6:THR:O	1:B:10:GLU:HG3	2.12	0.48
1:A:231:LYS:HZ3	1:A:231:LYS:HB3	1.79	0.48
1:B:223:GLU:OE1	1:B:227:GLN:NE2	2.44	0.48
1:B:182:LEU:N	1:B:183:PRO:HD3	2.29	0.47
1:A:165:ASP:HB2	1:A:349:TYR:HE2	1.80	0.47
1:A:71:HIS:HB2	1:A:103:GLN:CG	2.34	0.47
1:A:317:SER:O	1:A:321:GLN:HG3	2.14	0.47
1:A:357:ASN:HD22	1:A:357:ASN:H	1.62	0.47
1:A:334:LEU:HD12	1:A:334:LEU:HA	1.49	0.47
1:A:139:HIS:HE1	2:A:429:HOH:O	1.98	0.47
1:B:334:LEU:HA	1:B:334:LEU:HD12	1.44	0.47
1:A:32:TRP:CZ2	1:A:191:LYS:HD3	2.51	0.46
1:A:118:ASP:HB3	1:A:124:ALA:HB2	1.97	0.46
1:B:243:ARG:HB2	1:B:308:ALA:HA	1.97	0.46
1:A:310:THR:N	1:A:311:PRO:HD2	2.30	0.46
1:A:75:HIS:HD2	1:A:79:ARG:NE	2.12	0.46
1:A:49:GLU:O	1:A:53:GLN:HG2	2.16	0.46
1:A:313:GLN:HA	1:A:313:GLN:HE21	1.81	0.46
1:B:113:TYR:CE1	1:B:117:LYS:HG3	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:393:GLU:HB3	1:A:394:TYR:CD1	2.50	0.45
1:A:352:GLY:N	1:A:353:PRO:CD	2.79	0.45
1:A:213:LEU:HD13	1:A:213:LEU:C	2.37	0.45
1:A:164:MSE:HE3	2:A:443:HOH:O	2.17	0.45
1:A:312:HIS:CD2	1:A:315:ARG:H	2.34	0.45
1:B:174:LEU:HD11	1:B:207:TYR:CE1	2.52	0.45
1:B:312:HIS:HD2	1:B:314:GLY:H	1.65	0.45
1:B:312:HIS:HD2	1:B:314:GLY:N	2.15	0.44
1:A:355:TRP:HE3	1:A:410:TRP:HH2	1.64	0.44
1:A:393:GLU:HG3	1:A:408:PHE:CE1	2.53	0.44
1:B:410:TRP:HA	1:B:413:ALA:HB3	2.00	0.44
1:A:321:GLN:NE2	2:A:494:HOH:O	2.48	0.44
1:B:367:ARG:C	1:B:367:ARG:HD2	2.38	0.44
1:A:35:ASP:O	1:A:39:ILE:HG13	2.17	0.43
1:B:82:PHE:HB2	2:B:498:HOH:O	2.17	0.43
1:A:242:GLN:HA	1:A:242:GLN:NE2	2.30	0.43
1:A:312:HIS:HD2	1:A:314:GLY:N	2.15	0.43
1:B:141:TRP:CZ3	1:B:142:LEU:HD23	2.54	0.43
1:A:367:ARG:HD2	1:A:367:ARG:C	2.38	0.43
1:B:168:PRO:HG2	1:B:337:VAL:HG11	2.00	0.43
1:A:231:LYS:NZ	1:A:231:LYS:CB	2.81	0.43
1:B:164:MSE:HG2	1:B:350:TRP:CZ3	2.54	0.43
1:A:243:ARG:HB2	1:A:308:ALA:HA	2.00	0.42
1:B:139:HIS:HE1	2:B:421:HOH:O	2.01	0.42
1:B:34:TRP:NE1	1:B:104:PRO:HB2	2.34	0.42
1:A:284:TYR:OH	1:A:311:PRO:HB3	2.19	0.42
1:A:108:ALA:HB3	1:A:244:ALA:HB1	2.02	0.42
1:A:177:VAL:O	1:A:206:ARG:NH1	2.53	0.42
1:A:63:GLN:HE22	1:A:134:LYS:HB3	1.84	0.42
1:A:172:LYS:O	1:A:175:SER:HB2	2.19	0.42
1:A:32:TRP:CZ2	1:A:191:LYS:HB2	2.55	0.42
1:A:216:ARG:HH11	1:A:216:ARG:HB2	1.84	0.42
1:A:313:GLN:NE2	1:A:369:TYR:HD2	2.17	0.42
1:B:63:GLN:HE22	1:B:134:LYS:HB3	1.85	0.42
1:B:190:VAL:O	1:B:190:VAL:CG1	2.68	0.42
1:A:337:VAL:HG12	1:A:352:GLY:CA	2.45	0.42
1:A:346:PRO:HB2	1:A:396:ASP:OD2	2.19	0.42
1:A:408:PHE:HE2	1:A:410:TRP:CE2	2.39	0.41
1:B:189:ASP:CG	1:B:192:HIS:HD1	2.24	0.41
1:B:190:VAL:O	1:B:190:VAL:HG12	2.20	0.41
1:B:324:GLU:O	1:B:328:GLU:HG3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:ASP:HA	1:A:410:TRP:HD1	1.84	0.41
1:A:103:GLN:NE2	1:A:163:GLY:HA2	2.36	0.41
1:A:313:GLN:HE21	1:A:313:GLN:CA	2.32	0.41
1:B:3:PRO:HB2	2:B:537:HOH:O	2.21	0.41
1:B:334:LEU:HB3	1:B:359:ASN:ND2	2.36	0.41
1:B:130:TYR:CZ	1:B:134:LYS:HE3	2.56	0.41
1:B:176:ARG:O	1:B:178:PRO:HD3	2.21	0.41
1:A:194:ASN:HA	1:A:195:PRO:HD2	1.93	0.41
1:A:331:ARG:HG2	1:A:331:ARG:NH1	2.33	0.41
1:B:353:PRO:HA	1:B:397:PRO:HD3	2.03	0.41
1:A:164:MSE:HG2	1:A:350:TRP:CZ3	2.56	0.40
1:B:70:PRO:HG3	1:B:98:THR:HB	2.03	0.40
1:A:15:ASN:HB3	1:A:22:VAL:HG22	2.02	0.40
1:A:132:PHE:HB3	1:A:133:PRO:CD	2.51	0.40
1:A:353:PRO:HA	1:A:397:PRO:HD3	2.04	0.40
1:B:190:VAL:HG12	2:B:542:HOH:O	2.20	0.40
1:B:312:HIS:CD2	1:B:315:ARG:H	2.39	0.40
1:B:414:LEU:HD12	1:B:414:LEU:HA	1.93	0.40
1:A:293:GLU:HG3	2:A:480:HOH:O	2.21	0.40
1:B:23:PRO:HG2	1:B:32:TRP:CD1	2.56	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	381/420 (91%)	365 (96%)	15 (4%)	1 (0%)	37 37
1	B	393/420 (94%)	377 (96%)	15 (4%)	1 (0%)	37 37
All	All	774/840 (92%)	742 (96%)	30 (4%)	2 (0%)	37 37

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	200	ARG
1	A	165	ASP

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	307/344 (89%)	292 (95%)	15 (5%)	21	20
1	B	325/344 (94%)	311 (96%)	14 (4%)	25	25
All	All	632/688 (92%)	603 (95%)	29 (5%)	23	23

All (29) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	ARG
1	A	136	LEU
1	A	174	LEU
1	A	203	ASP
1	A	242	GLN
1	A	319	LEU
1	A	324	GLU
1	A	349	TYR
1	A	357	ASN
1	A	359	ASN
1	A	377	ARG
1	A	387	GLU
1	A	410	TRP
1	A	414	LEU
1	A	418	TRP
1	B	103	GLN
1	B	136	LEU
1	B	204	TYR
1	B	222	ARG
1	B	242	GLN
1	B	251	LEU
1	B	259	PRO

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Mol	Chain	Res	Type
1	B	319	LEU
1	B	349	TYR
1	B	357	ASN
1	B	359	ASN
1	B	410	TRP
1	B	414	LEU
1	B	418	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	15	ASN
1	A	63	GLN
1	A	75	HIS
1	A	139	HIS
1	A	242	GLN
1	A	312	HIS
1	A	313	GLN
1	A	321	GLN
1	A	357	ASN
1	A	359	ASN
1	B	15	ASN
1	B	63	GLN
1	B	75	HIS
1	B	103	GLN
1	B	139	HIS
1	B	194	ASN
1	B	242	GLN
1	B	312	HIS
1	B	313	GLN
1	B	321	GLN
1	B	357	ASN
1	B	359	ASN
1	B	401	GLN

5.3.3 RNA

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 oligosaccharides 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	385/420 (91%)	0.07	11 (2%) 54 55	15, 27, 44, 56	0
1	B	399/420 (95%)	-0.11	12 (3%) 52 54	9, 21, 44, 61	0
All	All	784/840 (93%)	-0.02	23 (2%) 54 55	9, 24, 44, 61	0

All (23) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	94	ALA	4.2
1	A	333	LEU	4.2
1	A	410	TRP	4.0
1	B	334	LEU	3.8
1	A	334	LEU	3.6
1	A	418	TRP	3.6
1	B	199	PRO	3.3
1	B	418	TRP	3.0
1	A	195	PRO	2.9
1	A	179	VAL	2.8
1	B	333	LEU	2.8
1	B	175	SER	2.7
1	A	175	SER	2.6
1	B	208	LEU	2.6
1	B	182	LEU	2.5
1	B	410	TRP	2.5
1	A	337	VAL	2.5
1	B	83	PRO	2.4
1	B	2	ALA	2.4
1	B	180	GLU	2.3
1	B	219	TYR	2.2
1	A	203	ASP	2.1
1	A	208	LEU	2.1

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](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.