



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 07:23 AM UTC

PDB ID : 3SK3 / pdb_00003sk3
Title : Crystal structure of Salmonella typhimurium acetate kinase (AckA) with citrate bound at the dimeric interface
Authors : Chittori, S.; Savithri, H.S.; Murthy, M.R.N.
Deposited on : 2011-06-22
Resolution : 1.90 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 : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

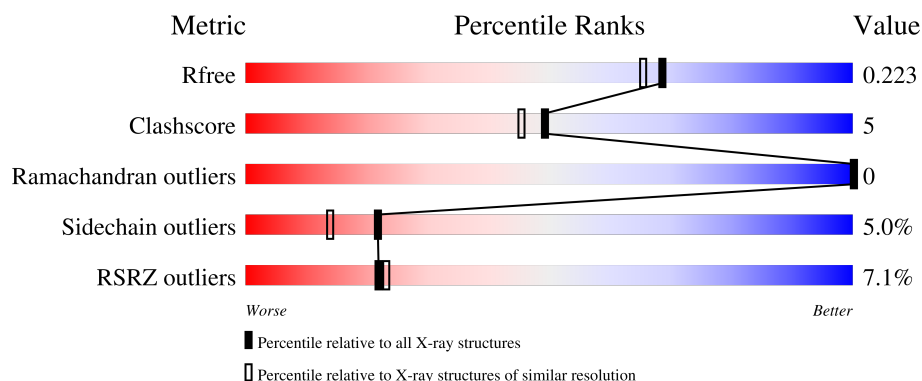
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

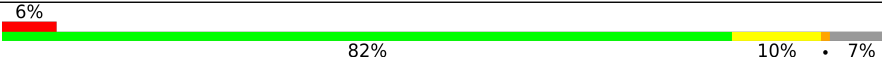
The reported resolution of this entry is 1.90 Å.

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}	180053	7789 (1.90-1.90)
Clashscore	190562	8410 (1.90-1.90)
Ramachandran outliers	187476	8333 (1.90-1.90)
Sidechain outliers	187428	8333 (1.90-1.90)
RSRZ outliers	180081	7790 (1.90-1.90)

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	415	 7% 82% 9% • 7%
1	B	415	 6% 82% 10% • 7%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 6309 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 Acetate kinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	385	Total	C	N	O	S	0	4	0
			2903	1831	496	560	16			
1	B	387	Total	C	N	O	S	0	3	0
			2935	1853	502	564	16			

There are 30 discrepancies between the modelled and reference sequences:

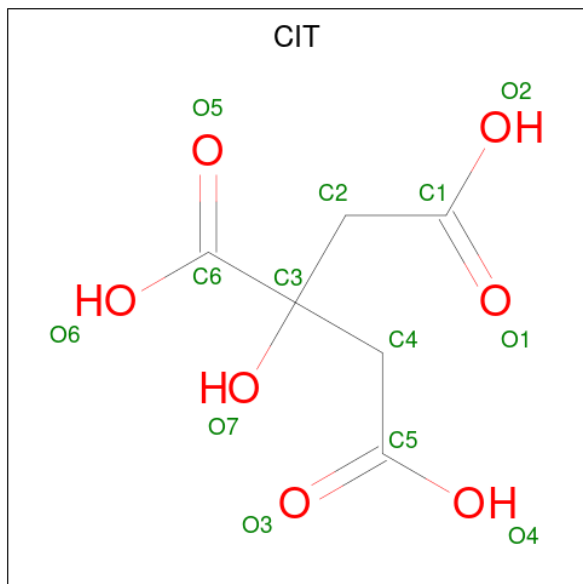
Chain	Residue	Modelled	Actual	Comment	Reference
A	-14	MET	-	expression tag	UNP P63411
A	-13	ARG	-	expression tag	UNP P63411
A	-12	GLY	-	expression tag	UNP P63411
A	-11	SER	-	expression tag	UNP P63411
A	-10	HIS	-	expression tag	UNP P63411
A	-9	HIS	-	expression tag	UNP P63411
A	-8	HIS	-	expression tag	UNP P63411
A	-7	HIS	-	expression tag	UNP P63411
A	-6	HIS	-	expression tag	UNP P63411
A	-5	HIS	-	expression tag	UNP P63411
A	-4	GLY	-	expression tag	UNP P63411
A	-3	MET	-	expression tag	UNP P63411
A	-2	ALA	-	expression tag	UNP P63411
A	-1	SER	-	expression tag	UNP P63411
A	0	HIS	-	expression tag	UNP P63411
B	-14	MET	-	expression tag	UNP P63411
B	-13	ARG	-	expression tag	UNP P63411
B	-12	GLY	-	expression tag	UNP P63411
B	-11	SER	-	expression tag	UNP P63411
B	-10	HIS	-	expression tag	UNP P63411
B	-9	HIS	-	expression tag	UNP P63411
B	-8	HIS	-	expression tag	UNP P63411
B	-7	HIS	-	expression tag	UNP P63411
B	-6	HIS	-	expression tag	UNP P63411
B	-5	HIS	-	expression tag	UNP P63411

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-4	GLY	-	expression tag	UNP P63411
B	-3	MET	-	expression tag	UNP P63411
B	-2	ALA	-	expression tag	UNP P63411
B	-1	SER	-	expression tag	UNP P63411
B	0	HIS	-	expression tag	UNP P63411

- Molecule 2 is CITRIC ACID (CCD ID: CIT) (formula: $C_6H_8O_7$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	C	O	0	0
			13	6	7		

- Molecule 3 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $C_2H_6O_2$).



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

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	218	Total	O	0	0
			218	218		
4	B	224	Total	O	0	0
			224	224		

i

- Molecule 1: Acetate kinase



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	151.01Å 78.50Å 97.48Å 90.00° 116.37° 90.00°	Depositor
Resolution (Å)	50.00 – 1.90 50.00 – 1.90	Depositor EDS
% Data completeness (in resolution range)	98.4 (50.00-1.90) 98.4 (50.00-1.90)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.10 (at 1.90Å)	Xtriage
Refinement program	REFMAC 5.5.0072	Depositor
R, R_{free}	0.190 , 0.225 0.193 , 0.223	Depositor DCC
R_{free} test set	3977 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å ²)	32.8	Xtriage
Anisotropy	0.110	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.37 , 38.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	6309	wwPDB-VP
Average B, all atoms (Å ²)	36.0	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.*

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](#)

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

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	0.79	0/2966	0.88	2/4014 (0.0%)
1	B	0.77	0/2997	0.89	1/4056 (0.0%)
All	All	0.78	0/5963	0.89	3/8070 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	49	ASP	N-CA-C	8.61	123.24	111.54
1	B	180	GLY	N-CA-C	6.26	120.05	112.48
1	A	49	ASP	CB-CA-C	-5.02	104.48	111.80

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	2903	0	2828	33	0
1	B	2935	0	2889	28	0
2	A	13	0	5	2	0
3	A	8	0	12	0	0
3	B	8	0	12	1	0
4	A	218	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	224	0	0	1	0
All	All	6309	0	5746	63	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 5.

All (63) 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:230[A]:MET:HE1	1:B:236:GLU:HG2	1.44	1.00
1:B:162:TYR:O	1:B:178:ARG:HG2	1.71	0.90
1:B:230[A]:MET:HE1	1:B:236:GLU:CG	2.01	0.90
1:A:343:GLU:HG3	1:A:361:ASN:ND2	1.90	0.86
1:A:140:GLN:H	1:A:140:GLN:HE21	1.24	0.85
1:A:48:MET:HE1	1:A:81:LEU:HD12	1.61	0.82
1:B:10:ASN:CG	1:B:91:ARG:HG2	2.14	0.73
1:A:256:HIS:HA	1:A:266:ILE:HD11	1.72	0.72
1:A:48:MET:CE	1:A:81:LEU:HD12	2.23	0.69
1:A:343:GLU:HG3	1:A:361:ASN:HD22	1.58	0.68
1:A:48:MET:CE	1:A:81:LEU:CD1	2.73	0.66
1:A:303:MET:HE3	1:A:344:LEU:HD12	1.79	0.65
1:B:230[A]:MET:CE	1:B:236:GLU:HB3	2.27	0.65
1:B:230[A]:MET:HE1	1:B:236:GLU:CB	2.28	0.63
1:A:39:LEU:HD13	1:A:287:ARG:HD3	1.80	0.63
1:A:196:MET:HE1	1:A:381:VAL:HG13	1.84	0.59
1:A:49:ASP:OD2	1:A:78:LYS:NZ	2.35	0.58
1:A:94:HIS:CD2	1:A:96:GLY:H	2.24	0.56
1:B:230[A]:MET:HE1	1:B:236:GLU:HB3	1.86	0.56
1:A:257:ASP:O	2:A:501:CIT:O1	2.24	0.55
1:A:196:MET:HE1	1:A:381:VAL:CG1	2.38	0.54
1:A:17:LYS:HG3	1:A:33:LEU:HD13	1.88	0.54
1:A:256:HIS:CA	1:A:266:ILE:HD11	2.38	0.52
1:A:140:GLN:HE21	1:A:140:GLN:N	2.00	0.52
1:B:67:LEU:HD13	1:B:133:GLU:HB2	1.92	0.51
1:B:261:MET:HE2	1:B:337:ASN:HB2	1.92	0.51
3:B:603:EDO:H21	4:B:415:HOH:O	2.11	0.50
1:B:71:VAL:HG21	1:B:137:SER:HB3	1.94	0.49
1:B:336:GLU:CD	1:B:384:PRO:HA	2.38	0.49
1:B:339:ALA:HB2	1:B:365:ARG:HD3	1.94	0.48
1:A:196:MET:SD	1:A:381:VAL:HG11	2.53	0.48
2:A:501:CIT:O5	2:A:501:CIT:C1	2.58	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:48:MET:CE	1:A:81:LEU:HD11	2.43	0.47
1:B:300:LYS:HE3	1:B:304:ASP:OD2	2.16	0.46
1:B:303:MET:HE2	1:B:344:LEU:HD12	1.96	0.46
1:A:48:MET:HE1	1:A:81:LEU:CD1	2.34	0.46
1:B:119:PHE:O	1:B:120:ALA:C	2.59	0.45
1:A:49:ASP:OD2	1:A:78:LYS:CE	2.64	0.45
1:B:194:ALA:HB2	1:B:204:LEU:HD22	1.99	0.45
1:B:136:LYS:O	1:B:139:PRO:HD3	2.17	0.44
1:A:171:TYR:CD1	1:A:177:ARG:HG3	2.52	0.44
1:A:336:GLU:CD	1:A:384:PRO:HA	2.43	0.44
1:B:202:GLU:H	1:B:202:GLU:CD	2.26	0.44
1:A:94:HIS:HE1	1:A:179:TYR:CD2	2.36	0.44
1:B:230[A]:MET:HE3	1:B:233:THR:OG1	2.17	0.43
1:A:49:ASP:OD2	1:A:78:LYS:HE3	2.18	0.43
1:B:230[A]:MET:HE2	1:B:236:GLU:HB3	1.97	0.43
1:B:162:TYR:C	1:B:178:ARG:HG2	2.43	0.43
1:A:49:ASP:N	1:A:50:GLY:HA2	2.33	0.42
1:A:196:MET:CE	1:A:381:VAL:CG1	2.97	0.42
1:B:91:ARG:O	1:B:91:ARG:HG3	2.19	0.42
1:A:210:HIS:O	1:A:215:GLY:HA3	2.19	0.42
1:A:256:HIS:HA	1:A:266:ILE:CD1	2.47	0.42
1:A:67:LEU:HD23	1:A:70:ILE:HD12	2.01	0.42
1:B:67:LEU:HD13	1:B:133:GLU:CB	2.48	0.42
1:B:279:LEU:HA	1:B:282:VAL:HG12	2.02	0.41
1:B:331:THR:OG1	1:B:385:THR:HB	2.19	0.41
1:A:213:ASN:CB	4:A:418:HOH:O	2.68	0.41
1:A:343:GLU:CG	1:A:361:ASN:HD22	2.31	0.41
1:B:174:HIS:ND1	1:B:174:HIS:N	2.69	0.41
1:A:184:THR:HG23	1:A:390:VAL:HG11	2.03	0.40
1:B:3:SER:HB2	1:B:22:ASP:OD2	2.21	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	383/415 (92%)	376 (98%)	7 (2%)	0	100	100
1	B	386/415 (93%)	380 (98%)	6 (2%)	0	100	100
All	All	769/830 (93%)	756 (98%)	13 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	300/336 (89%)	285 (95%)	15 (5%)	22	14
1	B	307/336 (91%)	292 (95%)	15 (5%)	22	14
All	All	607/672 (90%)	577 (95%)	30 (5%)	22	14

All (30) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	5	LEU
1	A	122	LEU
1	A	140	GLN
1	A	160	GLU
1	A	170	LEU
1	A	177	ARG
1	A	197	LEU
1	A	236	GLU
1	A	256	HIS
1	A	269	MET
1	A	287	ARG
1	A	291	ASP
1	A	295	THR
1	A	351	VAL
1	A	375	GLU

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Mol	Chain	Res	Type
1	B	5	LEU
1	B	67	LEU
1	B	77	GLN
1	B	80	GLU
1	B	91	ARG
1	B	118	SER
1	B	170	LEU
1	B	174	HIS
1	B	177	ARG
1	B	202	GLU
1	B	220	ILE
1	B	239	VAL
1	B	255	LEU
1	B	264	ASP
1	B	277	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	72	ASN
1	A	84	GLN
1	A	94	HIS
1	A	140	GLN
1	B	124	ASN
1	B	145	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry

5 ligands are modelled in this entry.

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
3	EDO	B	603	-	3,3,3	0.47	0	2,2,2	0.49	0
3	EDO	A	604	-	3,3,3	0.50	0	2,2,2	0.23	0
3	EDO	A	601	-	3,3,3	0.43	0	2,2,2	0.42	0
2	CIT	A	501	-	12,12,12	1.18	1 (8%)	17,17,17	2.35	7 (41%)
3	EDO	B	602	-	3,3,3	0.43	0	2,2,2	0.42	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
3	EDO	B	603	-	-	0/1/1/1	-
3	EDO	A	604	-	-	0/1/1/1	-
3	EDO	A	601	-	-	0/1/1/1	-
2	CIT	A	501	-	-	5/16/16/16	-
3	EDO	B	602	-	-	1/1/1/1	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	501	CIT	C2-C3	-2.20	1.51	1.54

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	CIT	C3-C2-C1	-5.19	99.73	113.92
2	A	501	CIT	O6-C6-C3	3.69	120.21	113.14
2	A	501	CIT	C4-C3-C2	3.65	118.68	109.31
2	A	501	CIT	O7-C3-C2	-2.79	103.01	109.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	501	CIT	O2-C1-C2	2.40	121.95	114.35
2	A	501	CIT	O7-C3-C6	2.39	112.35	108.96
2	A	501	CIT	O1-C1-C2	-2.05	117.16	122.95

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	501	CIT	C2-C3-C6-O5
2	A	501	CIT	C2-C3-C6-O6
2	A	501	CIT	O7-C3-C6-O5
2	A	501	CIT	O7-C3-C6-O6
3	B	602	EDO	O1-C1-C2-O2
2	A	501	CIT	O2-C1-C2-C3

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	603	EDO	1	0
2	A	501	CIT	2	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, 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	385/415 (92%)	0.35	30 (7%)	19 20	20, 32, 60, 76	5 (1%)
1	B	387/415 (93%)	0.40	25 (6%)	25 26	20, 35, 53, 66	4 (1%)
All	All	772/830 (93%)	0.38	55 (7%)	22 23	20, 34, 55, 76	9 (1%)

All (55) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	277	LEU	6.1
1	A	284	SER	5.1
1	B	277	LEU	4.8
1	A	283	THR	4.3
1	A	293	TYR	4.2
1	A	50	GLY	3.7
1	A	289	VAL	3.6
1	B	263	VAL	3.6
1	B	120	ALA	3.5
1	A	245	GLY	3.5
1	A	288	TYR	3.4
1	B	264	ASP	3.3
1	A	282	VAL	3.3
1	A	278	GLY	3.3
1	B	174	HIS	3.2
1	A	235	LEU	3.2
1	A	285[A]	ASP	3.2
1	A	292	ASN	3.2
1	B	96	GLY	3.2
1	A	246	ASP	3.1
1	A	295	THR	3.1
1	A	279	LEU	3.1
1	B	135	LEU	3.0
1	B	173	GLU	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	51	SER	2.9
1	B	124	ASN	2.9
1	A	286	CYS	2.8
1	A	237	GLY	2.8
1	B	95	GLY	2.7
1	A	122	LEU	2.7
1	B	73	THR	2.7
1	A	280	THR	2.6
1	B	67	LEU	2.6
1	B	71	VAL	2.6
1	B	400	ALA	2.5
1	A	266	ILE	2.5
1	A	270	LEU	2.4
1	A	234	PRO	2.4
1	A	247	ILE	2.4
1	B	279	LEU	2.3
1	B	398	LEU	2.3
1	B	138	PHE	2.3
1	B	119	PHE	2.3
1	B	76	ALA	2.3
1	B	118	SER	2.2
1	B	278	GLY	2.2
1	B	98	LYS	2.2
1	B	262	SER	2.2
1	A	400	ALA	2.2
1	A	291	ASP	2.1
1	A	287	ARG	2.1
1	B	170	LEU	2.1
1	A	76	ALA	2.0
1	A	268	LYS	2.0
1	B	51	SER	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 oligosaccharides in this entry.

6.4 Ligands

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	EDO	A	604	4/4	0.81	0.15	63,64,64,64	0
3	EDO	A	601	4/4	0.83	0.20	53,53,53,54	0
3	EDO	B	602	4/4	0.84	0.23	61,62,64,64	0
3	EDO	B	603	4/4	0.84	0.17	40,45,45,46	0
2	CIT	A	501	13/13	0.85	0.12	28,33,36,37	13

6.5 Other polymers

There are no such residues in this entry.