



# Full wwPDB X-ray Structure Validation Report ⓘ

Feb 13, 2017 – 11:18 am GMT

PDB ID : 2DPS  
Title : Structure of Leucyl/phenylalanyl-tRNA-protein transferase  
Authors : Suto, K.; Shimizu, Y.; Tomita, K.  
Deposited on : 2006-05-14  
Resolution : 2.40 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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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) : 1.9-1692  
EDS : trunk28620  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : recalc28949

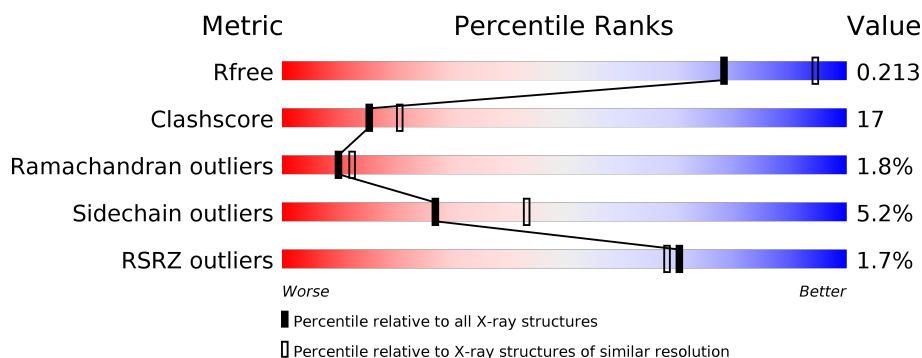
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.40 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))
$R_{free}$	100719	3166 (2.40-2.40)
Clashscore	112137	3674 (2.40-2.40)
Ramachandran outliers	110173	3616 (2.40-2.40)
Sidechain outliers	110143	3617 (2.40-2.40)
RSRZ outliers	101464	3195 (2.40-2.40)

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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. 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	254	<div> <div>2%</div> <div> <div></div> <div>56%</div> <div>30%</div> <div>5%</div> <div>10%</div> </div> </div>
1	B	254	<div> <div>%</div> <div> <div></div> <div>64%</div> <div>23%</div> <div>•</div> <div>9%</div> </div> </div>

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 3730 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 Leucyl/phenylalanyl-tRNA--protein transferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	228	Total	C	N	O	S	0	0	0
			1823	1164	328	318	13			
1	B	231	Total	C	N	O	S	0	0	0
			1837	1172	331	321	13			

There are 40 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	CLONING ARTIFACT	UNP P0A8P1
A	-18	GLY	-	CLONING ARTIFACT	UNP P0A8P1
A	-17	SER	-	CLONING ARTIFACT	UNP P0A8P1
A	-16	SER	-	CLONING ARTIFACT	UNP P0A8P1
A	-15	HIS	-	EXPRESSION TAG	UNP P0A8P1
A	-14	HIS	-	EXPRESSION TAG	UNP P0A8P1
A	-13	HIS	-	EXPRESSION TAG	UNP P0A8P1
A	-12	HIS	-	EXPRESSION TAG	UNP P0A8P1
A	-11	HIS	-	EXPRESSION TAG	UNP P0A8P1
A	-10	HIS	-	EXPRESSION TAG	UNP P0A8P1
A	-9	SER	-	CLONING ARTIFACT	UNP P0A8P1
A	-8	SER	-	CLONING ARTIFACT	UNP P0A8P1
A	-7	GLY	-	CLONING ARTIFACT	UNP P0A8P1
A	-6	LEU	-	CLONING ARTIFACT	UNP P0A8P1
A	-5	VAL	-	CLONING ARTIFACT	UNP P0A8P1
A	-4	PRO	-	CLONING ARTIFACT	UNP P0A8P1
A	-3	ARG	-	CLONING ARTIFACT	UNP P0A8P1
A	-2	GLY	-	CLONING ARTIFACT	UNP P0A8P1
A	-1	SER	-	CLONING ARTIFACT	UNP P0A8P1
A	0	HIS	-	CLONING ARTIFACT	UNP P0A8P1
B	-19	MET	-	CLONING ARTIFACT	UNP P0A8P1
B	-18	GLY	-	CLONING ARTIFACT	UNP P0A8P1
B	-17	SER	-	CLONING ARTIFACT	UNP P0A8P1
B	-16	SER	-	CLONING ARTIFACT	UNP P0A8P1
B	-15	HIS	-	EXPRESSION TAG	UNP P0A8P1

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-14	HIS	-	EXPRESSION TAG	UNP P0A8P1
B	-13	HIS	-	EXPRESSION TAG	UNP P0A8P1
B	-12	HIS	-	EXPRESSION TAG	UNP P0A8P1
B	-11	HIS	-	EXPRESSION TAG	UNP P0A8P1
B	-10	HIS	-	EXPRESSION TAG	UNP P0A8P1
B	-9	SER	-	CLONING ARTIFACT	UNP P0A8P1
B	-8	SER	-	CLONING ARTIFACT	UNP P0A8P1
B	-7	GLY	-	CLONING ARTIFACT	UNP P0A8P1
B	-6	LEU	-	CLONING ARTIFACT	UNP P0A8P1
B	-5	VAL	-	CLONING ARTIFACT	UNP P0A8P1
B	-4	PRO	-	CLONING ARTIFACT	UNP P0A8P1
B	-3	ARG	-	CLONING ARTIFACT	UNP P0A8P1
B	-2	GLY	-	CLONING ARTIFACT	UNP P0A8P1
B	-1	SER	-	CLONING ARTIFACT	UNP P0A8P1
B	0	HIS	-	CLONING ARTIFACT	UNP P0A8P1

- Molecule 2 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	31	Total O 31 31	0	0
2	B	39	Total O 39 39	0	0



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	114.04Å 129.63Å 38.75Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	28.85 – 2.40 42.81 – 2.36	Depositor EDS
% Data completeness (in resolution range)	99.4 (28.85-2.40) 99.2 (42.81-2.36)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.80 (at 2.37Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, $R_{free}$	0.220 , 0.272 0.223 , 0.213	Depositor DCC
$R_{free}$ test set	1187 reflections (5.12%)	DCC
Wilson B-factor (Å <sup>2</sup> )	40.4	Xtriage
Anisotropy	0.614	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 39.2	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	3730	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	43.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.69% of the height of the origin peak. No significant pseudotranslation is detected.*

<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

### 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	0/1877	0.62	0/2545
1	B	0.39	0/1891	0.62	0/2564
All	All	0.39	0/3768	0.62	0/5109

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	1823	0	1774	72	0
1	B	1837	0	1784	53	0
2	A	31	0	0	1	0
2	B	39	0	0	3	0
All	All	3730	0	3558	120	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 17.

All (120) 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:211:LEU:O	1:A:215:ARG:HG3	1.73	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:113:THR:HG22	1:A:116:VAL:HG23	1.58	0.85
1:A:11:ILE:HG23	1:A:37:ARG:HA	1.60	0.83
1:B:110:THR:O	1:B:112:ILE:N	2.12	0.82
1:B:68:TRP:HB3	1:B:70:GLU:OE2	1.83	0.77
1:A:103:ALA:HA	1:A:110:THR:HG21	1.67	0.76
1:A:76:ARG:HH11	1:A:76:ARG:HB2	1.49	0.75
1:A:110:THR:HG23	1:A:112:ILE:H	1.53	0.73
1:A:105:ASP:O	1:A:106:ARG:HB2	1.91	0.69
1:A:210:TYR:HB3	1:A:214:MET:HE1	1.75	0.68
1:A:11:ILE:HD12	1:A:11:ILE:N	2.09	0.68
1:B:211:LEU:O	1:B:215:ARG:HG2	1.95	0.65
1:A:43:GLN:HG2	1:A:215:ARG:HH21	1.62	0.65
1:B:160:SER:HB2	1:B:166:SER:OG	1.97	0.65
1:B:174:CYS:O	1:B:178:ILE:HG13	1.97	0.64
1:B:66:VAL:HG22	1:B:184:LEU:HD22	1.79	0.64
1:B:180:HIS:HD2	1:B:220:PRO:HG2	1.63	0.64
1:A:138:ASP:HB3	1:B:11:ILE:CD1	2.29	0.63
1:A:190:LEU:HD22	1:A:194:THR:CG2	2.29	0.62
1:A:106:ARG:NH2	1:A:110:THR:HA	2.14	0.62
1:A:66:VAL:HG22	1:A:184:LEU:HD22	1.83	0.61
1:B:223:PHE:O	1:B:227:ARG:NH1	2.33	0.61
1:A:225:VAL:O	1:A:227:ARG:HD3	2.01	0.60
1:A:191:ASN:O	1:A:194:THR:HG22	2.01	0.60
1:A:218:ARG:NH2	1:A:221:ASN:HB2	2.17	0.59
1:A:93:TYR:O	1:B:128:HIS:HE1	1.85	0.59
1:A:191:ASN:H	1:A:194:THR:CG2	2.16	0.59
1:B:44:ARG:HG2	1:B:44:ARG:HH11	1.67	0.59
1:A:106:ARG:O	1:A:107:GLU:HB2	2.02	0.59
1:B:52:PRO:HD3	1:B:111:TRP:HA	1.83	0.59
1:B:50:PHE:O	1:B:111:TRP:HB2	2.03	0.59
1:B:152:LEU:HD23	1:B:211:LEU:HD23	1.84	0.59
1:A:106:ARG:HH22	1:A:110:THR:HA	1.69	0.58
1:B:170:LEU:CD2	1:B:197:LEU:HD13	2.34	0.58
1:A:11:ILE:O	1:A:11:ILE:HG22	2.04	0.58
1:B:88:ARG:HD2	2:B:1048:HOH:O	2.03	0.58
1:A:138:ASP:HB3	1:B:11:ILE:HD11	1.86	0.58
1:B:23:PRO:HG2	1:B:26:LEU:HB2	1.86	0.57
1:A:190:LEU:HD11	1:A:195:ALA:HB2	1.87	0.57
1:A:122:ARG:O	1:A:126:LEU:HG	2.05	0.56
1:B:69:PRO:HB2	1:B:178:ILE:HG12	1.87	0.56
1:A:4:VAL:HG11	1:A:14:PRO:HG3	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:218:ARG:HG2	1:A:219:LEU:O	2.06	0.56
1:A:50:PHE:O	1:A:111:TRP:HB2	2.06	0.56
1:A:191:ASN:H	1:A:194:THR:HG22	1.70	0.55
1:A:11:ILE:CG2	1:A:37:ARG:HA	2.33	0.55
1:B:152:LEU:CD2	1:B:211:LEU:HD23	2.37	0.55
1:A:174:CYS:O	1:A:178:ILE:HG13	2.07	0.54
1:A:190:LEU:HD22	1:A:194:THR:HG23	1.90	0.54
1:A:210:TYR:HB3	1:A:214:MET:CE	2.36	0.54
1:A:3:LEU:HD11	1:A:26:LEU:HD13	1.90	0.54
1:B:3:LEU:HD11	1:B:26:LEU:HD13	1.89	0.53
1:B:109:GLY:O	1:B:110:THR:C	2.46	0.53
1:B:52:PRO:HG3	1:B:113:THR:CG2	2.39	0.53
1:A:213:GLN:OE1	1:A:213:GLN:HA	2.08	0.53
1:B:38:LEU:HD13	1:B:123:LEU:HD11	1.89	0.53
1:B:171:LEU:C	1:B:171:LEU:HD23	2.30	0.52
1:A:152:LEU:HD12	1:A:184:LEU:O	2.10	0.52
1:A:137:GLU:OE1	1:A:137:GLU:HA	2.10	0.51
1:A:44:ARG:NH1	1:A:44:ARG:HB3	2.24	0.51
1:B:163:GLU:O	1:B:164:ASN:HB2	2.11	0.51
1:B:132:ILE:N	1:B:132:ILE:HD12	2.26	0.51
1:B:52:PRO:HG3	1:B:113:THR:HG23	1.92	0.50
1:A:138:ASP:HB3	1:B:11:ILE:HD13	1.94	0.49
1:A:230:PHE:CE1	1:A:232:PRO:HD3	2.47	0.49
1:A:218:ARG:HH21	1:A:221:ASN:HB2	1.75	0.49
1:A:204:ARG:NH2	2:A:1038:HOH:O	2.45	0.49
1:A:87:TYR:OH	1:A:162:MET:HB3	2.12	0.49
1:B:204:ARG:NH2	2:B:1054:HOH:O	2.46	0.48
1:A:89:VAL:HG21	1:A:172:VAL:HG21	1.94	0.48
1:B:70:GLU:CD	1:B:70:GLU:H	2.16	0.48
1:A:8:ARG:O	1:A:8:ARG:HD2	2.14	0.48
1:A:66:VAL:HG22	1:A:184:LEU:CD2	2.43	0.48
1:A:5:GLN:HA	1:A:29:LEU:HD23	1.95	0.48
1:A:4:VAL:CG1	1:A:14:PRO:HG3	2.44	0.48
1:B:11:ILE:O	1:B:11:ILE:HG23	2.14	0.48
1:A:219:LEU:HB3	1:A:220:PRO:HD2	1.96	0.48
1:B:66:VAL:HG22	1:B:184:LEU:CD2	2.45	0.47
1:B:8:ARG:O	1:B:8:ARG:HG2	2.15	0.47
1:B:110:THR:O	1:B:110:THR:HG23	2.14	0.47
1:B:65:ALA:HB2	1:B:190:LEU:N	2.30	0.46
1:A:228:CYS:SG	1:A:231:SER:HB2	2.55	0.46
1:A:160:SER:OG	1:A:165:ALA:HB3	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:205:ARG:O	1:A:209:ASN:HB2	2.15	0.46
1:B:103:ALA:HA	1:B:110:THR:CG2	2.46	0.46
1:B:176:GLU:HG3	1:B:229:LEU:HD22	1.98	0.46
1:B:222:ASN:HA	1:B:225:VAL:HG23	1.97	0.46
1:A:149:GLN:HG2	1:A:211:LEU:HD21	1.97	0.45
1:A:46:ILE:HA	1:A:59:TRP:O	2.16	0.45
1:B:188:GLN:OE1	2:B:1019:HOH:O	2.21	0.45
1:A:170:LEU:HD23	1:A:197:LEU:HD13	1.98	0.45
1:B:92:ASN:OD1	1:B:130:HIS:HA	2.16	0.45
1:A:171:LEU:C	1:A:171:LEU:HD23	2.37	0.44
1:A:154:CYS:HA	1:A:186:ASP:HB3	1.99	0.44
1:A:29:LEU:HA	1:A:56:ILE:O	2.18	0.43
1:A:103:ALA:HA	1:A:110:THR:CG2	2.43	0.43
1:B:205:ARG:O	1:B:209:ASN:HB2	2.18	0.43
1:A:137:GLU:HG3	1:B:9:HIS:O	2.18	0.43
1:B:119:ALA:HA	1:B:122:ARG:HH21	1.83	0.43
1:A:177:PHE:CD2	1:A:182:GLY:HA3	2.54	0.43
1:A:76:ARG:HH11	1:A:76:ARG:CB	2.25	0.43
1:B:22:GLU:HA	1:B:23:PRO:C	2.37	0.43
1:A:204:ARG:O	1:A:208:LEU:HG	2.18	0.43
1:A:117:VAL:O	1:A:121:HIS:HB2	2.19	0.43
1:B:110:THR:O	1:B:111:TRP:C	2.57	0.42
1:A:32:ASP:CG	1:A:37:ARG:HE	2.23	0.42
1:A:114:ARG:NH1	1:A:118:GLU:OE1	2.52	0.42
1:A:134:VAL:CG2	1:A:169:ALA:HB2	2.50	0.42
1:B:136:ARG:O	1:B:137:GLU:HB2	2.20	0.42
1:A:91:MET:O	1:A:226:PRO:HA	2.19	0.41
1:B:210:TYR:HB3	1:B:214:MET:CE	2.50	0.41
1:B:46:ILE:HA	1:B:59:TRP:O	2.20	0.41
1:B:50:PHE:CD2	1:B:50:PHE:N	2.88	0.41
1:B:96:GLY:O	1:B:100:GLU:HB2	2.21	0.41
1:A:220:PRO:HG2	1:A:223:PHE:HB2	2.03	0.41
1:A:188:GLN:HB2	1:A:189:VAL:H	1.77	0.41
1:B:44:ARG:HG2	1:B:44:ARG:NH1	2.35	0.41
1:A:191:ASN:OD1	1:A:191:ASN:C	2.59	0.41
1:A:44:ARG:HB3	1:A:44:ARG:HH11	1.86	0.41
1:B:59:TRP:N	1:B:59:TRP:CD1	2.89	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	224/254 (88%)	209 (93%)	11 (5%)	4 (2%)	10	12
1	B	227/254 (89%)	209 (92%)	14 (6%)	4 (2%)	10	12
All	All	451/508 (89%)	418 (93%)	25 (6%)	8 (2%)	10	12

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	9	HIS
1	B	111	TRP
1	A	188	GLN
1	B	106	ARG
1	A	106	ARG
1	B	188	GLN
1	A	112	ILE
1	B	112	ILE

### 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	193/215 (90%)	182 (94%)	11 (6%)	24	38
1	B	193/215 (90%)	184 (95%)	9 (5%)	30	48
All	All	386/430 (90%)	366 (95%)	20 (5%)	27	43

All (20) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	ARG
1	A	26	LEU
1	A	39	LEU
1	A	66	VAL
1	A	76	ARG
1	A	114	ARG
1	A	184	LEU
1	A	194	THR
1	A	211	LEU
1	A	213	GLN
1	A	222	ASN
1	B	3	LEU
1	B	5	GLN
1	B	11	ILE
1	B	26	LEU
1	B	39	LEU
1	B	66	VAL
1	B	88	ARG
1	B	162	MET
1	B	184	LEU

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

Mol	Chain	Res	Type
1	A	97	GLN
1	A	149	GLN
1	A	212	ASN
1	B	128	HIS
1	B	164	ASN
1	B	180	HIS

### 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 [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 [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	228/254 (89%)	-0.14	5 (2%) 62 59	28, 41, 65, 92	0
1	B	231/254 (90%)	-0.14	3 (1%) 77 75	27, 40, 66, 93	0
All	All	459/508 (90%)	-0.14	8 (1%) 70 68	27, 40, 66, 93	0

All (8) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	9	HIS	5.3
1	A	8	ARG	4.3
1	A	107	GLU	3.5
1	B	1	MET	3.2
1	A	11	ILE	3.2
1	B	109	GLY	2.9
1	A	222	ASN	2.3
1	B	212	ASN	2.3

### 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.