



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 22, 2024 – 08:03 AM EDT

PDB ID : 4KY3  
Title : Three-dimensional Structure of the orthorhombic crystal of computationally designed insertion domain , Northeast Structural Genomics Consortium (NESG) Target OR327  
Authors : Kuzin, A.; Su, M.; Seetharaman, J.; Maglaqui, M.; Xiao, R.; Lee, D.; Gleixner, J.; Baker, D.; Everett, J.K.; Acton, T.B.; Montelione, G.T.; Tong, L.; Hunt, J.F.; Northeast Structural Genomics Consortium (NESG)  
Deposited on : 2013-05-28  
Resolution : 2.96 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

<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>.

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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  
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)

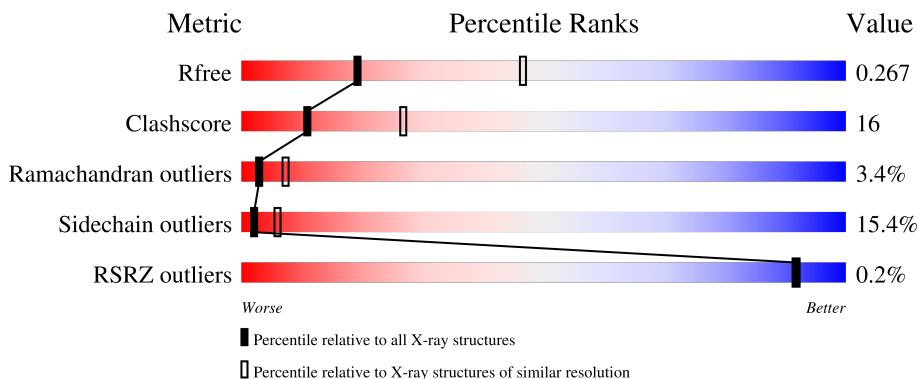
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.96 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	1044 (2.98-2.94)
Clashscore	180529	1097 (2.98-2.94)
Ramachandran outliers	177936	1049 (2.98-2.94)
Sidechain outliers	177891	1049 (2.98-2.94)
RSRZ outliers	164620	1044 (2.98-2.94)

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  $\geq 3$ , 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	172	
1	B	172	
1	C	172	

## 2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 3839 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 designed protein OR327.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	Se			
1	A	160	Total 1281	C 809	N 219	O 250	Se 3	0	0	0
1	B	160	Total 1277	C 807	N 219	O 248	Se 3	0	0	0
1	C	160	Total 1281	C 809	N 219	O 250	Se 3	0	0	0



Q161
L162
GLY
SER
LEU
GLU
HIS
HIS
HIS
HIS
HIS
HIS

## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	61.21Å 71.85Å 118.01Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	28.16 – 2.96 28.16 – 2.96	Depositor EDS
% Data completeness (in resolution range)	98.1 (28.16-2.96) 97.9 (28.16-2.96)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.93 (at 2.95Å)	Xtrriage
Refinement program	PHENIX dev_1269	Depositor
R, $R_{free}$	0.187 , 0.271 0.189 , 0.267	Depositor DCC
$R_{free}$ test set	555 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	75.8	Xtrriage
Anisotropy	0.489	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.26 , 55.9	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.45$ , $\langle L^2 \rangle = 0.27$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	3839	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	94.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.21% 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 [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	0.50	0/1290	0.72	0/1731
1	B	0.50	0/1286	0.75	0/1725
1	C	0.41	0/1290	0.62	0/1731
All	All	0.47	0/3866	0.70	0/5187

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	152	ILE	Peptide

### 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	1281	0	1317	50	0
1	B	1277	0	1316	40	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	1281	0	1317	44	0
All	All	3839	0	3950	127	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 16.

All (127) 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:99:LEU:HB2	1:A:122:LEU:HD21	1.56	0.86
1:A:140:GLU:OE2	1:A:143:ARG:NH1	2.09	0.86
1:A:18:ASP:HB2	1:C:18:ASP:HB2	1.61	0.81
1:B:106:ALA:HA	1:B:137:LEU:HD21	1.69	0.75
1:B:25:THR:OG1	1:B:26:GLU:N	2.19	0.73
1:B:15:LYS:HB3	1:C:115:TYR:CZ	2.26	0.70
1:A:47:ARG:HD3	1:A:161:GLN:HG2	1.72	0.70
1:B:144:LEU:HD23	1:B:148:PHE:HE2	1.56	0.70
1:C:95:LEU:HD11	1:C:120:ASN:HA	1.74	0.70
1:A:89:GLY:O	1:A:120:ASN:HB2	1.92	0.69
1:A:49:ARG:HG3	1:A:159:GLU:HB3	1.75	0.69
1:B:99:LEU:HB2	1:B:122:LEU:HD21	1.75	0.67
1:C:76:TYR:HA	1:C:162:LEU:HD12	1.77	0.67
1:B:102:MSE:HE1	1:B:141:ALA:HB2	1.78	0.66
1:C:102:MSE:HA	1:C:102:MSE:HE2	1.76	0.65
1:B:67:LEU:HD13	1:B:158:VAL:HG12	1.79	0.65
1:A:80:ASN:HB3	1:A:159:GLU:HG2	1.77	0.65
1:C:90:ASP:OD2	1:C:120:ASN:ND2	2.31	0.63
1:A:130:PRO:HG2	1:A:133:VAL:HG23	1.81	0.61
1:C:5:GLN:HE21	1:C:20:THR:HG22	1.65	0.61
1:A:102:MSE:HA	1:A:102:MSE:HE2	1.80	0.61
1:C:30:GLN:O	1:C:34:ASN:ND2	2.26	0.60
1:C:140:GLU:OE2	1:C:143:ARG:NH1	2.36	0.59
1:C:12:ASP:OD1	1:C:46:LYS:N	2.34	0.58
1:C:143:ARG:HA	1:C:146:LYS:HB3	1.84	0.58
1:C:72:ALA:O	1:C:75:GLY:N	2.28	0.57
1:B:142:GLU:HA	1:B:152:ILE:HD12	1.87	0.57
1:A:92:LEU:HA	1:A:95:LEU:HD12	1.87	0.57
1:B:99:LEU:HA	1:B:102:MSE:HB3	1.88	0.56
1:C:99:LEU:O	1:C:103:ILE:HG12	2.07	0.55
1:C:117:LEU:HB2	1:C:122:LEU:HD13	1.89	0.55
1:C:86:ARG:HB2	1:C:153:THR:HB	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:131:ARG:NH1	1:C:135:GLU:OE2	2.40	0.54
1:C:90:ASP:HA	1:C:120:ASN:HB3	1.89	0.54
1:B:109:PHE:O	1:B:111:GLY:N	2.32	0.54
1:A:82:LYS:HB3	1:A:157:THR:HB	1.88	0.54
1:B:55:ARG:HH21	1:B:153:THR:HG22	1.72	0.54
1:A:38:ASP:O	1:A:42:LYS:HG3	2.08	0.54
1:B:49:ARG:HG3	1:B:159:GLU:HB2	1.90	0.54
1:B:6:VAL:HG22	1:B:52:ILE:HG12	1.90	0.53
1:C:143:ARG:O	1:C:147:GLU:N	2.41	0.53
1:B:144:LEU:HD23	1:B:148:PHE:CE2	2.39	0.53
1:B:117:LEU:HD12	1:B:121:ASP:O	2.10	0.52
1:C:62:LYS:O	1:C:66:ILE:HG13	2.09	0.52
1:C:7:GLN:HG3	1:C:20:THR:HG23	1.92	0.52
1:A:26:GLU:OE2	1:A:62:LYS:NZ	2.25	0.52
1:A:54:ALA:HB1	1:A:59:GLU:HB3	1.92	0.52
1:B:98:ALA:HA	1:B:144:LEU:HD22	1.91	0.51
1:C:83:MSE:HE1	1:C:137:LEU:HB2	1.92	0.51
1:B:46:LYS:O	1:B:161:GLN:HG2	2.10	0.51
1:A:119:GLY:O	1:A:121:ASP:N	2.43	0.51
1:A:127:THR:HG22	1:A:128:GLY:N	2.26	0.51
1:B:81:ARG:HG2	1:B:158:VAL:HG23	1.91	0.51
1:A:117:LEU:HB2	1:A:122:LEU:HD13	1.93	0.51
1:A:131:ARG:O	1:A:135:GLU:HG3	2.11	0.51
1:A:65:ALA:HB2	1:A:131:ARG:HH21	1.74	0.51
1:C:130:PRO:HG2	1:C:133:VAL:HG23	1.92	0.51
1:B:39:TYR:CD2	1:B:43:GLN:HG3	2.46	0.50
1:C:88:ARG:HB2	1:C:151:THR:HB	1.93	0.50
1:C:108:LYS:HB3	1:C:109:PHE:CE2	2.47	0.50
1:C:69:LYS:NZ	1:C:73:GLU:OE2	2.45	0.49
1:A:3:ASP:HB3	1:A:4:ILE:HD12	1.92	0.49
1:A:25:THR:OG1	1:A:28:GLU:HG3	2.13	0.49
1:B:85:VAL:HG13	1:B:154:ILE:HG12	1.95	0.48
1:A:102:MSE:HG2	1:A:144:LEU:HD23	1.95	0.48
1:B:82:LYS:HG3	1:B:127:THR:HG23	1.95	0.48
1:C:28:GLU:O	1:C:32:VAL:HG13	2.13	0.48
1:A:127:THR:HG22	1:A:128:GLY:H	1.78	0.48
1:B:84:THR:HA	1:B:124:ILE:O	2.15	0.47
1:B:140:GLU:O	1:B:144:LEU:HD12	2.14	0.47
1:B:95:LEU:HD23	1:B:95:LEU:HA	1.63	0.47
1:A:40:ILE:HG23	1:A:45:ALA:H	1.80	0.47
1:A:126:ILE:HD13	1:A:137:LEU:HD13	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:18:ASP:HB2	1:C:18:ASP:CB	2.38	0.46
1:B:47:ARG:HE	1:B:47:ARG:HB3	1.57	0.46
1:C:78:ASP:HB3	1:C:161:GLN:O	2.16	0.46
1:A:102:MSE:HG2	1:A:144:LEU:CD2	2.46	0.45
1:C:5:GLN:HB3	1:C:53:THR:HB	1.98	0.45
1:A:74:LEU:HB3	1:A:76:TYR:CD1	2.51	0.45
1:A:103:ILE:HD12	1:A:107:ARG:HH12	1.83	0.44
1:C:95:LEU:HD22	1:C:122:LEU:HB2	1.99	0.44
1:A:14:GLY:HA2	1:C:22:THR:HB	2.00	0.44
1:A:162:LEU:HD23	1:A:162:LEU:HA	1.85	0.44
1:B:88:ARG:O	1:B:150:ILE:HG22	2.18	0.44
1:C:25:THR:C	1:C:27:SER:H	2.22	0.44
1:A:66:ILE:O	1:A:70:VAL:HG23	2.18	0.43
1:B:57:SER:OG	1:B:139:LYS:HD2	2.18	0.43
1:A:92:LEU:HD11	1:B:107:ARG:NE	2.33	0.43
1:C:92:LEU:HA	1:C:95:LEU:HD12	2.01	0.43
1:C:102:MSE:HE1	1:C:140:GLU:HB3	2.01	0.43
1:B:113:VAL:HA	1:B:125:THR:O	2.18	0.43
1:A:6:VAL:HB	1:A:21:TYR:HB2	2.01	0.43
1:A:36:LEU:O	1:A:39:TYR:HB3	2.18	0.43
1:A:107:ARG:NH2	1:B:96:GLU:OE1	2.51	0.43
1:B:142:GLU:O	1:B:146:LYS:HG2	2.18	0.43
1:A:49:ARG:HA	1:A:159:GLU:HA	2.01	0.42
1:A:96:GLU:O	1:A:99:LEU:N	2.52	0.42
1:C:72:ALA:O	1:C:74:LEU:N	2.52	0.42
1:A:67:LEU:HD23	1:A:67:LEU:HA	1.84	0.42
1:A:34:ASN:HA	1:A:37:MSE:HE3	2.02	0.42
1:B:27:SER:O	1:B:31:LYS:HB3	2.19	0.42
1:B:63:PHE:O	1:B:67:LEU:HG	2.19	0.42
1:C:91:ASP:OD1	1:C:93:GLU:HB2	2.19	0.42
1:A:143:ARG:NH2	1:A:147:GLU:OE1	2.45	0.42
1:C:26:GLU:O	1:C:29:LEU:HB3	2.20	0.42
1:C:87:PHE:HA	1:C:151:THR:O	2.19	0.42
1:A:118:ASP:HA	1:B:114:THR:HG22	2.02	0.42
1:C:40:ILE:HG23	1:C:45:ALA:N	2.35	0.41
1:A:62:LYS:HG2	1:A:66:ILE:HD11	2.03	0.41
1:A:62:LYS:O	1:A:65:ALA:HB3	2.20	0.41
1:A:64:LEU:HA	1:A:67:LEU:HB2	2.02	0.41
1:B:12:ASP:O	1:B:13:ASN:HB2	2.20	0.41
1:B:66:ILE:O	1:B:70:VAL:HG23	2.21	0.41
1:A:23:VAL:HG21	1:A:29:LEU:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:56:SER:HB2	1:A:59:GLU:HB2	2.03	0.41
1:B:83:MSE:HE2	1:B:83:MSE:HB3	1.88	0.41
1:A:15:LYS:HB2	1:A:15:LYS:HE2	1.81	0.41
1:B:74:LEU:HD12	1:B:74:LEU:HA	1.90	0.41
1:C:11:ASP:OD1	1:C:16:ASN:HA	2.21	0.41
1:C:34:ASN:HA	1:C:37:MSE:HG3	2.03	0.41
1:A:23:VAL:HB	1:A:28:GLU:HB2	2.03	0.41
1:B:134:LEU:HD12	1:B:134:LEU:HA	1.90	0.41
1:C:106:ALA:O	1:C:111:GLY:HA3	2.20	0.41
1:C:109:PHE:C	1:C:111:GLY:H	2.24	0.40
1:C:13:ASN:N	1:C:13:ASN:OD1	2.54	0.40
1:B:71:PHE:CD2	1:B:79:ILE:HD11	2.56	0.40
1:A:28:GLU:O	1:A:31:LYS:N	2.53	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	158/172 (92%)	137 (87%)	14 (9%)	7 (4%)	2	4
1	B	158/172 (92%)	139 (88%)	15 (10%)	4 (2%)	4	13
1	C	158/172 (92%)	131 (83%)	22 (14%)	5 (3%)	3	8
All	All	474/516 (92%)	407 (86%)	51 (11%)	16 (3%)	3	7

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	120	ASN
1	C	81	ARG
1	C	120	ASN
1	A	119	GLY

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Mol	Chain	Res	Type
1	A	42	LYS
1	A	158	VAL
1	B	110	ALA
1	B	130	PRO
1	C	80	ASN
1	C	111	GLY
1	A	13	ASN
1	A	82	LYS
1	B	13	ASN
1	B	98	ALA
1	C	73	GLU
1	A	44	GLY

### 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	139/145 (96%)	117 (84%)	22 (16%)	2	5
1	B	138/145 (95%)	117 (85%)	21 (15%)	2	6
1	C	139/145 (96%)	118 (85%)	21 (15%)	2	6
All	All	416/435 (96%)	352 (85%)	64 (15%)	2	6

All (64) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ASP
1	A	7	GLN
1	A	13	ASN
1	A	15	LYS
1	A	18	ASP
1	A	24	THR
1	A	26	GLU
1	A	47	ARG
1	A	58	LYS
1	A	64	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	74	LEU
1	A	83	MSE
1	A	92	LEU
1	A	102	MSE
1	A	125	THR
1	A	129	VAL
1	A	134	LEU
1	A	143	ARG
1	A	144	LEU
1	A	153	THR
1	A	158	VAL
1	A	159	GLU
1	B	9	ASN
1	B	16	ASN
1	B	18	ASP
1	B	19	TYR
1	B	25	THR
1	B	28	GLU
1	B	31	LYS
1	B	35	GLU
1	B	47	ARG
1	B	55	ARG
1	B	74	LEU
1	B	79	ILE
1	B	121	ASP
1	B	127	THR
1	B	129	VAL
1	B	134	LEU
1	B	137	LEU
1	B	143	ARG
1	B	150	ILE
1	B	152	ILE
1	B	156	VAL
1	C	3	ASP
1	C	13	ASN
1	C	16	ASN
1	C	26	GLU
1	C	31	LYS
1	C	32	VAL
1	C	53	THR
1	C	90	ASP
1	C	92	LEU

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Mol	Chain	Res	Type
1	C	96	GLU
1	C	113	VAL
1	C	114	THR
1	C	117	LEU
1	C	123	GLU
1	C	127	THR
1	C	129	VAL
1	C	134	LEU
1	C	143	ARG
1	C	149	ASN
1	C	151	THR
1	C	158	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	5	GLN
1	C	120	ASN

### 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 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

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	157/172 (91%)	-0.78	0 <a href="#">100</a>   <a href="#">100</a>	44, 83, 118, 180	0
1	B	157/172 (91%)	-0.76	1 (0%) <a href="#">85</a>   <a href="#">85</a>	46, 79, 118, 194	0
1	C	157/172 (91%)	-0.45	0 <a href="#">100</a>   <a href="#">100</a>	61, 107, 172, 222	0
All	All	471/516 (91%)	-0.66	1 (0%) <a href="#">92</a>   <a href="#">92</a>	44, 88, 145, 222	0

All (1) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	163	GLY	2.8

### 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.