



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2024 – 03:58 PM EST

PDB ID : 3AQS  
Title : Crystal structure of RolR (NCGL1110) without ligand  
Authors : Li, D.F.; Zhang, N.; Hou, Y.J.; Liu, S.J.; Wang, D.C.  
Deposited on : 2010-11-18  
Resolution : 3.60 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>.

---

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 : 2.36  
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) : 2.36

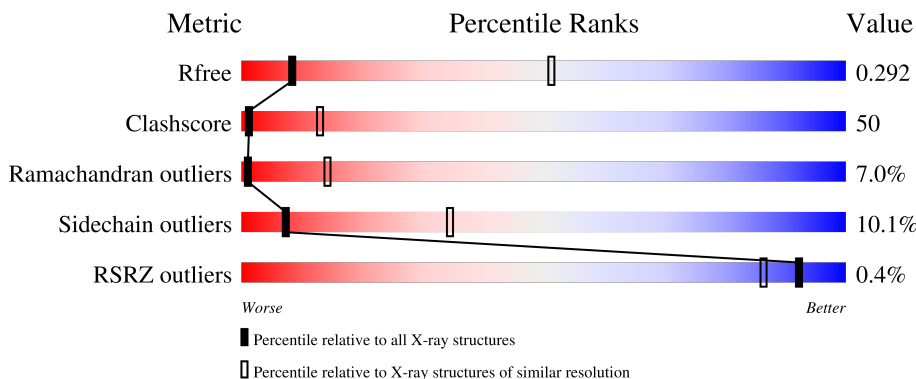
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.60 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	1257 (3.70-3.50)
Clashscore	141614	1353 (3.70-3.50)
Ramachandran outliers	138981	1307 (3.70-3.50)
Sidechain outliers	138945	1307 (3.70-3.50)
RSRZ outliers	127900	1161 (3.70-3.50)

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	245	
1	B	245	
1	C	245	
1	D	245	

## 2 Entry composition i

There is only 1 type of molecule in this entry. The entry contains 5690 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 Bacterial regulatory proteins, tetR family.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	185	1419	894	254	264	7	0	0	0
1	B	186	1426	898	255	266	7	0	0	0
1	C	185	1419	894	254	264	7	0	0	0
1	D	186	1426	898	255	266	7	0	0	0

There are 64 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-15	HIS	-	expression tag	UNP Q8NR95
A	-14	HIS	-	expression tag	UNP Q8NR95
A	-13	HIS	-	expression tag	UNP Q8NR95
A	-12	HIS	-	expression tag	UNP Q8NR95
A	-11	HIS	-	expression tag	UNP Q8NR95
A	-10	HIS	-	expression tag	UNP Q8NR95
A	-9	SER	-	expression tag	UNP Q8NR95
A	-8	SER	-	expression tag	UNP Q8NR95
A	-7	GLY	-	expression tag	UNP Q8NR95
A	-6	LEU	-	expression tag	UNP Q8NR95
A	-5	VAL	-	expression tag	UNP Q8NR95
A	-4	PRO	-	expression tag	UNP Q8NR95
A	-3	ARG	-	expression tag	UNP Q8NR95
A	-2	GLY	-	expression tag	UNP Q8NR95
A	-1	SER	-	expression tag	UNP Q8NR95
A	0	HIS	-	expression tag	UNP Q8NR95
B	-15	HIS	-	expression tag	UNP Q8NR95
B	-14	HIS	-	expression tag	UNP Q8NR95
B	-13	HIS	-	expression tag	UNP Q8NR95
B	-12	HIS	-	expression tag	UNP Q8NR95
B	-11	HIS	-	expression tag	UNP Q8NR95

*Continued on next page...*

*Continued from previous page...*

Chain	Residue	Modelled	Actual	Comment	Reference
B	-10	HIS	-	expression tag	UNP Q8NR95
B	-9	SER	-	expression tag	UNP Q8NR95
B	-8	SER	-	expression tag	UNP Q8NR95
B	-7	GLY	-	expression tag	UNP Q8NR95
B	-6	LEU	-	expression tag	UNP Q8NR95
B	-5	VAL	-	expression tag	UNP Q8NR95
B	-4	PRO	-	expression tag	UNP Q8NR95
B	-3	ARG	-	expression tag	UNP Q8NR95
B	-2	GLY	-	expression tag	UNP Q8NR95
B	-1	SER	-	expression tag	UNP Q8NR95
B	0	HIS	-	expression tag	UNP Q8NR95
C	-15	HIS	-	expression tag	UNP Q8NR95
C	-14	HIS	-	expression tag	UNP Q8NR95
C	-13	HIS	-	expression tag	UNP Q8NR95
C	-12	HIS	-	expression tag	UNP Q8NR95
C	-11	HIS	-	expression tag	UNP Q8NR95
C	-10	HIS	-	expression tag	UNP Q8NR95
C	-9	SER	-	expression tag	UNP Q8NR95
C	-8	SER	-	expression tag	UNP Q8NR95
C	-7	GLY	-	expression tag	UNP Q8NR95
C	-6	LEU	-	expression tag	UNP Q8NR95
C	-5	VAL	-	expression tag	UNP Q8NR95
C	-4	PRO	-	expression tag	UNP Q8NR95
C	-3	ARG	-	expression tag	UNP Q8NR95
C	-2	GLY	-	expression tag	UNP Q8NR95
C	-1	SER	-	expression tag	UNP Q8NR95
C	0	HIS	-	expression tag	UNP Q8NR95
D	-15	HIS	-	expression tag	UNP Q8NR95
D	-14	HIS	-	expression tag	UNP Q8NR95
D	-13	HIS	-	expression tag	UNP Q8NR95
D	-12	HIS	-	expression tag	UNP Q8NR95
D	-11	HIS	-	expression tag	UNP Q8NR95
D	-10	HIS	-	expression tag	UNP Q8NR95
D	-9	SER	-	expression tag	UNP Q8NR95
D	-8	SER	-	expression tag	UNP Q8NR95
D	-7	GLY	-	expression tag	UNP Q8NR95
D	-6	LEU	-	expression tag	UNP Q8NR95
D	-5	VAL	-	expression tag	UNP Q8NR95
D	-4	PRO	-	expression tag	UNP Q8NR95
D	-3	ARG	-	expression tag	UNP Q8NR95
D	-2	GLY	-	expression tag	UNP Q8NR95
D	-1	SER	-	expression tag	UNP Q8NR95

*Continued on next page...*

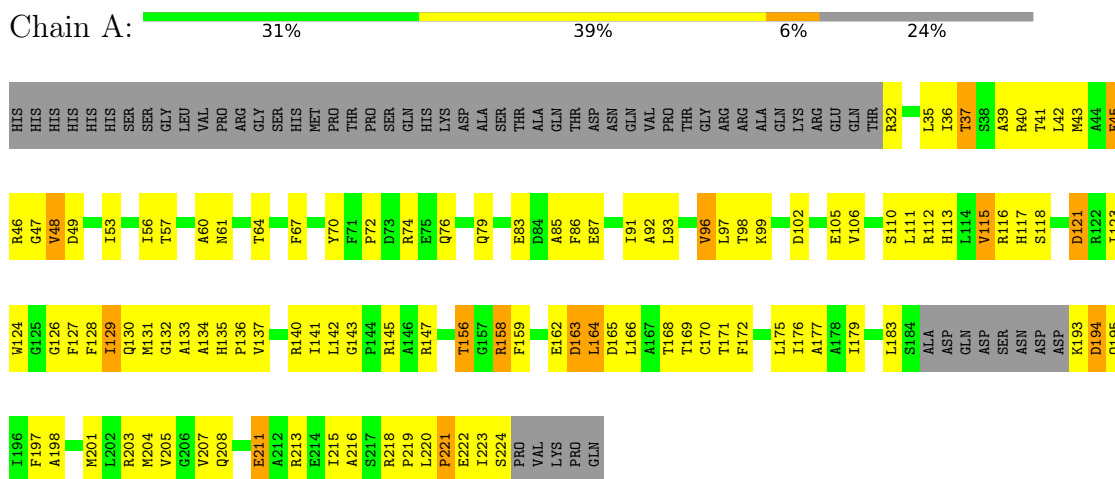
*Continued from previous page...*

Chain	Residue	Modelled	Actual	Comment	Reference
D	0	HIS	-	expression tag	UNP Q8NR95

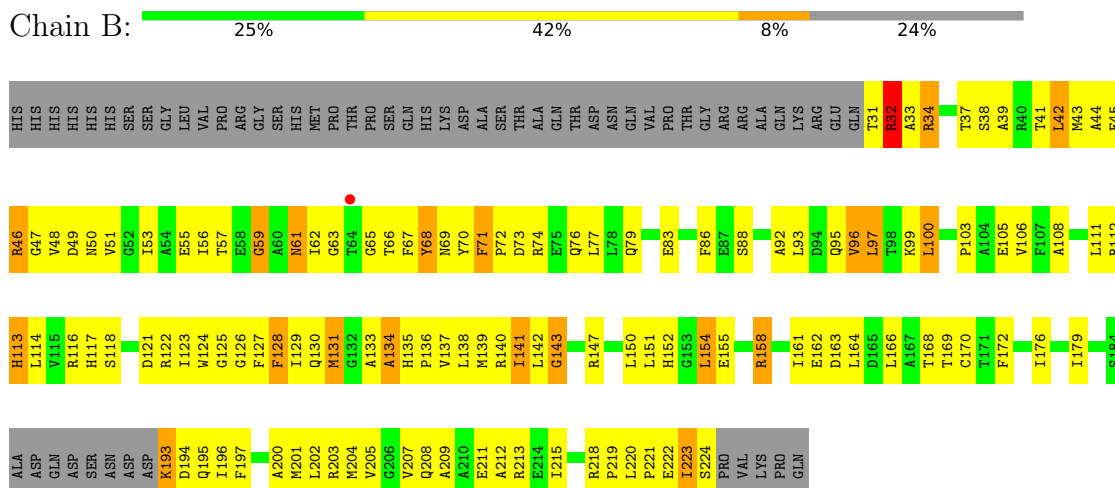
### 3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

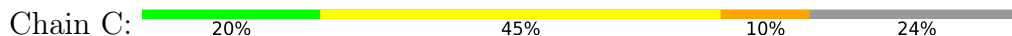
- Molecule 1: Bacterial regulatory proteins, tetR family



- Molecule 1: Bacterial regulatory proteins, tetR family



- Molecule 1: Bacterial regulatory proteins, tetR family





## 4 Data and refinement statistics

Property	Value	Source
Space group	P 41 2 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	152.95Å 152.95Å 117.48Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	93.17 – 3.60 93.17 – 3.50	Depositor EDS
% Data completeness (in resolution range)	97.8 (93.17-3.60) 97.3 (93.17-3.50)	Depositor EDS
$R_{merge}$	0.17	Depositor
$R_{sym}$	0.17	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.23 (at 3.49Å)	Xtrriage
Refinement program	CNS 1.2	Depositor
R, $R_{free}$	0.220 , 0.292 0.220 , 0.292	Depositor DCC
$R_{free}$ test set	1737 reflections (9.83%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	93.5	Xtrriage
Anisotropy	0.412	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 92.4	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.42$ , $\langle L^2 \rangle = 0.25$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.92	EDS
Total number of atoms	5690	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	102.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.37% 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	0.41	0/1440	0.68	0/1946
1	B	0.41	0/1447	0.67	0/1956
1	C	0.37	0/1440	0.66	0/1946
1	D	0.42	0/1447	0.66	0/1956
All	All	0.40	0/5774	0.67	0/7804

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	A	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	A	70	TYR	Sidechain

### 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	1419	0	1428	109	0

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	1426	0	1435	168	0
1	C	1419	0	1428	132	0
1	D	1426	0	1435	182	0
All	All	5690	0	5726	576	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 50.

All (576) 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:32:ARG:HH21	1:B:71:PHE:HA	1.06	1.12
1:D:164:LEU:O	1:D:168:THR:HG22	1.55	1.05
1:D:100:LEU:HD23	1:D:101:ASP:H	1.22	1.01
1:D:97:LEU:HD22	1:D:97:LEU:H	1.22	1.01
1:D:129:ILE:HD11	1:D:183:LEU:HD12	1.43	1.01
1:B:83:GLU:HB3	1:B:141:ILE:HD11	1.43	0.96
1:C:208:GLN:HE21	1:C:210:ALA:H	0.96	0.96
1:B:195:GLN:NE2	1:B:213:ARG:HH21	1.64	0.94
1:B:133:ALA:HB1	1:B:137:VAL:HG23	1.50	0.93
1:B:195:GLN:HE21	1:B:213:ARG:HH21	1.10	0.93
1:C:208:GLN:HE21	1:C:210:ALA:N	1.69	0.90
1:A:159:PHE:HB3	1:A:205:VAL:HG12	1.52	0.89
1:B:32:ARG:NH2	1:B:71:PHE:HA	1.87	0.89
1:D:44:ALA:O	1:D:122:ARG:HD3	1.73	0.87
1:B:32:ARG:HH21	1:B:71:PHE:CA	1.88	0.87
1:A:91:ILE:HD12	1:A:145:ARG:NH2	1.91	0.86
1:A:135:HIS:HB3	1:A:136:PRO:HD3	1.54	0.85
1:D:162:GLU:OE1	1:D:162:GLU:HA	1.73	0.85
1:C:208:GLN:NE2	1:C:210:ALA:H	1.73	0.85
1:D:166:LEU:O	1:D:170:CYS:HB2	1.77	0.84
1:D:87:GLU:O	1:D:91:ILE:HG13	1.77	0.84
1:D:129:ILE:O	1:D:130:GLN:HB2	1.78	0.84
1:B:135:HIS:HB3	1:B:136:PRO:HD3	1.60	0.84
1:C:166:LEU:HD23	1:D:196:ILE:HG22	1.59	0.82
1:D:53:ILE:HG23	1:D:67:PHE:CD1	2.15	0.82
1:A:147:ARG:NH1	1:A:147:ARG:HB3	1.95	0.82
1:B:57:THR:HG21	1:B:67:PHE:HB2	1.59	0.82
1:D:153:GLY:HA3	1:D:159:PHE:CD2	2.15	0.82
1:B:57:THR:HB	1:B:62:ILE:HB	1.63	0.81
1:B:100:LEU:HD13	1:B:105:GLU:HG2	1.60	0.81

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:40:ARG:NH1	1:D:40:ARG:HB2	1.95	0.80
1:A:165:ASP:O	1:A:168:THR:HG22	1.80	0.80
1:C:125:GLY:O	1:C:129:ILE:HG12	1.82	0.80
1:A:126:GLY:O	1:A:130:GLN:HB3	1.82	0.79
1:A:121:ASP:HB2	1:A:124:TRP:HB2	1.63	0.79
1:C:112:ARG:O	1:C:116:ARG:HG2	1.82	0.79
1:C:96:VAL:HG11	1:C:222:GLU:O	1.83	0.78
1:D:97:LEU:H	1:D:97:LEU:CD2	1.97	0.78
1:B:223:ILE:HG13	1:B:224:SER:H	1.50	0.77
1:B:208:GLN:HB3	1:B:211:GLU:HB3	1.64	0.77
1:C:68:TYR:HA	1:C:71:PHE:O	1.86	0.76
1:B:71:PHE:HD1	1:B:72:PRO:HD2	1.51	0.75
1:C:158:ARG:HG3	1:C:158:ARG:HH11	1.51	0.75
1:B:44:ALA:O	1:B:122:ARG:HD3	1.86	0.75
1:C:36:ILE:HD11	1:C:80:ALA:HB1	1.67	0.75
1:B:31:THR:HG22	1:B:34:ARG:HH11	1.52	0.75
1:D:100:LEU:HD23	1:D:101:ASP:N	2.01	0.75
1:D:124:TRP:HA	1:D:127:PHE:HD2	1.51	0.74
1:C:102:ASP:O	1:C:106:VAL:HG23	1.86	0.74
1:D:40:ARG:HB2	1:D:40:ARG:HH11	1.49	0.74
1:B:45:GLU:HB2	1:B:46:ARG:NH2	2.02	0.74
1:B:112:ARG:HH12	1:B:220:LEU:HB2	1.51	0.74
1:D:91:ILE:O	1:D:95:GLN:HG3	1.88	0.74
1:D:71:PHE:CD2	1:D:77:LEU:HB2	2.23	0.74
1:B:62:ILE:HG22	1:B:66:THR:OG1	1.87	0.74
1:D:121:ASP:HB3	1:D:123:ILE:HG23	1.69	0.73
1:D:218:ARG:HB3	1:D:219:PRO:HD2	1.69	0.73
1:D:96:VAL:HB	1:D:97:LEU:HD22	1.70	0.73
1:C:36:ILE:HG23	1:C:81:VAL:HG22	1.71	0.73
1:B:151:LEU:O	1:B:154:LEU:HB3	1.89	0.72
1:D:85:ALA:HB1	1:D:124:TRP:HE1	1.54	0.72
1:D:82:ALA:HA	1:D:127:PHE:CZ	2.25	0.72
1:B:93:LEU:HA	1:B:223:ILE:HD11	1.71	0.72
1:C:161:ILE:HG21	1:C:164:LEU:HD23	1.72	0.72
1:C:203:ARG:HH12	1:D:161:ILE:HA	1.54	0.72
1:B:163:ASP:HB3	1:B:166:LEU:HB3	1.71	0.71
1:A:43:MET:HG2	1:A:48:VAL:HA	1.71	0.71
1:B:127:PHE:O	1:B:131:MET:HB3	1.91	0.71
1:B:158:ARG:HH22	1:B:215:ILE:HD11	1.56	0.71
1:A:87:GLU:HG2	1:A:141:ILE:HG23	1.72	0.70
1:B:139:MET:O	1:B:143:GLY:HA3	1.91	0.70

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:73:ASP:HB3	1:C:76:GLN:H	1.56	0.70
1:D:152:HIS:HA	1:D:155:GLU:HG2	1.74	0.70
1:D:166:LEU:O	1:D:166:LEU:HD12	1.92	0.70
1:D:97:LEU:HD22	1:D:97:LEU:N	2.03	0.69
1:C:43:MET:HG2	1:C:48:VAL:HG22	1.75	0.69
1:B:203:ARG:HG2	1:B:209:ALA:HA	1.74	0.69
1:B:112:ARG:O	1:B:116:ARG:HG2	1.92	0.69
1:B:31:THR:O	1:B:34:ARG:HG3	1.93	0.69
1:C:153:GLY:HA3	1:C:159:PHE:CD2	2.28	0.68
1:C:138:LEU:HD12	1:C:176:ILE:HD11	1.74	0.68
1:C:211:GLU:O	1:C:215:ILE:HG13	1.93	0.68
1:A:91:ILE:HD12	1:A:145:ARG:HH22	1.58	0.68
1:B:195:GLN:HE21	1:B:213:ARG:NH2	1.90	0.68
1:A:124:TRP:HA	1:A:127:PHE:HD2	1.58	0.68
1:B:124:TRP:C	1:B:126:GLY:H	1.98	0.67
1:A:165:ASP:HA	1:A:168:THR:HG22	1.76	0.67
1:A:166:LEU:C	1:A:166:LEU:HD23	2.14	0.67
1:C:66:THR:HB	1:C:69:ASN:ND2	2.09	0.67
1:C:79:GLN:O	1:C:83:GLU:HG3	1.95	0.67
1:D:204:MET:O	1:D:204:MET:HG2	1.95	0.66
1:B:31:THR:HA	1:B:34:ARG:HD2	1.76	0.66
1:B:73:ASP:HB3	1:B:76:GLN:OE1	1.94	0.66
1:B:118:SER:OG	1:B:179:ILE:HD13	1.94	0.66
1:D:151:LEU:HD13	1:D:164:LEU:HD22	1.78	0.66
1:A:147:ARG:HB3	1:A:147:ARG:HH11	1.61	0.65
1:D:55:GLU:O	1:D:57:THR:N	2.29	0.65
1:B:53:ILE:HG13	1:B:74:ARG:HB2	1.78	0.65
1:B:220:LEU:HD12	1:B:221:PRO:HD2	1.79	0.65
1:A:201:MET:O	1:A:205:VAL:HG23	1.97	0.65
1:D:43:MET:HE3	1:D:81:VAL:HG11	1.78	0.65
1:A:72:PRO:HD2	1:A:76:GLN:HG2	1.78	0.65
1:B:72:PRO:HG2	1:B:76:GLN:HG2	1.78	0.64
1:D:145:ARG:O	1:D:148:ARG:HB3	1.97	0.64
1:D:97:LEU:O	1:D:100:LEU:HB2	1.96	0.64
1:D:203:ARG:HG2	1:D:209:ALA:HA	1.78	0.64
1:B:32:ARG:NH2	1:B:70:TYR:O	2.31	0.64
1:C:127:PHE:O	1:C:131:MET:HB3	1.97	0.64
1:D:215:ILE:HG23	1:D:218:ARG:NH2	2.12	0.64
1:A:43:MET:SD	1:A:48:VAL:HG13	2.38	0.64
1:C:158:ARG:HG3	1:C:158:ARG:NH1	2.11	0.64
1:B:117:HIS:HD2	1:B:124:TRP:CE2	2.15	0.64

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:218:ARG:HB3	1:B:219:PRO:HD2	1.79	0.64
1:C:135:HIS:HB3	1:C:136:PRO:HD3	1.80	0.64
1:C:108:ALA:O	1:C:112:ARG:HG3	1.98	0.63
1:C:118:SER:HB2	1:C:179:ILE:HG21	1.79	0.63
1:B:62:ILE:HG22	1:B:66:THR:CB	2.27	0.63
1:D:166:LEU:HA	1:D:169:THR:HG22	1.80	0.63
1:A:91:ILE:HG22	1:A:92:ALA:N	2.13	0.63
1:C:73:ASP:CB	1:C:76:GLN:H	2.12	0.63
1:C:83:GLU:HG2	1:C:137:VAL:HG13	1.79	0.63
1:C:195:GLN:NE2	1:C:217:SER:HA	2.14	0.63
1:D:124:TRP:HA	1:D:127:PHE:CD2	2.33	0.62
1:B:83:GLU:HB3	1:B:141:ILE:CD1	2.25	0.62
1:C:147:ARG:NH1	1:C:164:LEU:HB2	2.14	0.62
1:B:116:ARG:HG3	1:B:116:ARG:HH11	1.65	0.62
1:A:112:ARG:HG2	1:A:194:ASP:O	2.00	0.62
1:B:200:ALA:HA	1:B:203:ARG:NH1	2.15	0.62
1:A:162:GLU:O	1:A:163:ASP:HB2	2.00	0.62
1:B:83:GLU:HA	1:B:141:ILE:HG13	1.81	0.62
1:B:77:LEU:HD23	1:B:77:LEU:C	2.20	0.62
1:D:48:VAL:CG2	1:D:126:GLY:HA3	2.29	0.61
1:A:123:ILE:HG12	1:A:127:PHE:CE2	2.35	0.61
1:B:31:THR:C	1:B:33:ALA:H	2.04	0.61
1:C:196:ILE:HG23	1:D:166:LEU:HD23	1.81	0.61
1:C:118:SER:HB3	1:C:128:PHE:HE2	1.66	0.61
1:D:43:MET:HE1	1:D:81:VAL:HG21	1.82	0.61
1:B:113:HIS:CD2	1:B:220:LEU:HD11	2.36	0.61
1:A:129:ILE:CD1	1:A:183:LEU:HD13	2.31	0.60
1:D:82:ALA:HB2	1:D:127:PHE:CE1	2.36	0.60
1:B:39:ALA:HB2	1:B:56:ILE:HD13	1.83	0.60
1:C:73:ASP:HB3	1:C:75:GLU:H	1.66	0.60
1:C:166:LEU:CD2	1:D:196:ILE:HG22	2.32	0.60
1:B:121:ASP:HB3	1:B:123:ILE:HG22	1.84	0.60
1:C:57:THR:CG2	1:C:67:PHE:HB2	2.32	0.60
1:C:115:VAL:HG11	1:C:194:ASP:HA	1.82	0.59
1:B:43:MET:HG3	1:B:44:ALA:N	2.17	0.59
1:C:48:VAL:HG21	1:C:126:GLY:HA3	1.84	0.59
1:D:63:GLY:O	1:D:64:THR:C	2.40	0.59
1:A:97:LEU:C	1:A:99:LYS:H	2.05	0.59
1:A:113:HIS:O	1:A:117:HIS:HB2	2.03	0.59
1:C:71:PHE:CE2	1:C:77:LEU:HD13	2.37	0.59
1:C:107:PHE:CZ	1:C:150:LEU:HD21	2.38	0.59

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:LEU:HD12	1:A:60:ALA:HB2	1.85	0.59
1:A:220:LEU:HD12	1:A:221:PRO:HD2	1.84	0.59
1:C:147:ARG:NH2	1:C:164:LEU:HD12	2.18	0.59
1:C:176:ILE:O	1:C:180:GLN:HG3	2.03	0.59
1:A:113:HIS:CE1	1:A:223:ILE:HB	2.38	0.59
1:B:59:GLY:C	1:B:61:ASN:H	2.06	0.58
1:C:46:ARG:HB3	1:C:50:ASN:HB2	1.84	0.58
1:D:112:ARG:HH21	1:D:116:ARG:HH21	1.52	0.58
1:C:87:GLU:HG2	1:C:141:ILE:HD12	1.85	0.58
1:C:124:TRP:HA	1:C:127:PHE:CE2	2.38	0.58
1:A:220:LEU:HD12	1:A:221:PRO:CD	2.33	0.58
1:B:116:ARG:HG3	1:B:116:ARG:NH1	2.17	0.58
1:D:220:LEU:HD12	1:D:221:PRO:HD2	1.86	0.58
1:A:83:GLU:HB3	1:A:141:ILE:HD11	1.86	0.58
1:B:133:ALA:O	1:B:134:ALA:C	2.42	0.58
1:D:208:GLN:HE21	1:D:210:ALA:CB	2.16	0.58
1:A:166:LEU:HD23	1:A:166:LEU:O	2.03	0.58
1:C:132:GLY:C	1:C:134:ALA:H	2.07	0.58
1:A:96:VAL:HG11	1:A:222:GLU:O	2.04	0.57
1:D:100:LEU:CD2	1:D:101:ASP:H	2.06	0.57
1:D:208:GLN:HG3	1:D:211:GLU:H	1.69	0.57
1:B:53:ILE:HD12	1:B:68:TYR:CE1	2.38	0.57
1:C:171:THR:HG22	1:C:172:PHE:N	2.20	0.57
1:D:111:LEU:O	1:D:115:VAL:HG23	2.05	0.57
1:B:97:LEU:O	1:B:100:LEU:HB2	2.05	0.57
1:A:158:ARG:HG3	1:A:158:ARG:HH11	1.69	0.57
1:B:61:ASN:O	1:B:62:ILE:HG12	2.05	0.57
1:B:42:LEU:HD22	1:B:55:GLU:OE2	2.05	0.57
1:B:67:PHE:O	1:B:69:ASN:N	2.38	0.57
1:A:93:LEU:HD23	1:A:223:ILE:HD13	1.87	0.57
1:B:45:GLU:CB	1:B:46:ARG:NH2	2.68	0.57
1:B:83:GLU:HG2	1:B:137:VAL:HG13	1.86	0.56
1:B:67:PHE:HE1	1:B:77:LEU:HD12	1.70	0.56
1:D:135:HIS:HB3	1:D:136:PRO:HD3	1.87	0.56
1:D:63:GLY:O	1:D:65:GLY:N	2.39	0.56
1:B:31:THR:O	1:B:33:ALA:N	2.31	0.56
1:C:33:ALA:C	1:C:35:LEU:H	2.09	0.56
1:C:213:ARG:HD2	1:C:213:ARG:O	2.06	0.56
1:D:67:PHE:CD2	1:D:67:PHE:C	2.78	0.56
1:B:92:ALA:O	1:B:223:ILE:HD11	2.05	0.56
1:B:220:LEU:HD12	1:B:221:PRO:CD	2.35	0.56

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:75:GLU:HG3	1:D:76:GLN:N	2.20	0.56
1:B:169:THR:HG23	1:B:170:CYS:N	2.20	0.56
1:C:121:ASP:HB2	1:C:124:TRP:HB2	1.87	0.56
1:C:203:ARG:NH1	1:D:161:ILE:HA	2.18	0.56
1:D:72:PRO:HG2	1:D:76:GLN:HG3	1.88	0.56
1:B:41:THR:O	1:B:45:GLU:HG3	2.06	0.55
1:C:66:THR:HB	1:C:69:ASN:HD22	1.71	0.55
1:B:66:THR:HB	1:B:70:TYR:OH	2.06	0.55
1:C:45:GLU:HG3	1:C:46:ARG:HG2	1.86	0.55
1:D:208:GLN:HB3	1:D:211:GLU:HG2	1.88	0.55
1:B:124:TRP:C	1:B:126:GLY:N	2.60	0.55
1:B:138:LEU:HD13	1:B:172:PHE:HD1	1.72	0.55
1:B:57:THR:CG2	1:B:67:PHE:HB2	2.36	0.55
1:B:67:PHE:CE1	1:B:77:LEU:HD12	2.41	0.55
1:B:71:PHE:CD1	1:B:72:PRO:HD2	2.37	0.55
1:D:72:PRO:CG	1:D:76:GLN:HG3	2.36	0.55
1:D:104:ALA:HB2	1:D:158:ARG:CG	2.37	0.55
1:C:200:ALA:HA	1:C:203:ARG:HE	1.72	0.55
1:A:198:ALA:HB3	1:A:216:ALA:HB1	1.89	0.55
1:B:155:GLU:OE2	1:D:164:LEU:HB3	2.07	0.55
1:B:202:LEU:HD22	1:B:207:VAL:HG21	1.89	0.55
1:D:150:LEU:C	1:D:152:HIS:H	2.10	0.55
1:B:97:LEU:HD22	1:B:97:LEU:H	1.71	0.54
1:D:161:ILE:HG22	1:D:162:GLU:H	1.73	0.54
1:C:166:LEU:HD23	1:D:196:ILE:CG2	2.36	0.54
1:D:66:THR:O	1:D:69:ASN:HB2	2.08	0.54
1:B:72:PRO:CG	1:B:76:GLN:HG2	2.37	0.54
1:C:139:MET:O	1:C:140:ARG:C	2.45	0.54
1:D:86:PHE:C	1:D:88:SER:N	2.62	0.54
1:D:112:ARG:NH1	1:D:216:ALA:O	2.41	0.54
1:B:67:PHE:HA	1:B:70:TYR:CD1	2.43	0.54
1:D:48:VAL:HG21	1:D:126:GLY:HA3	1.90	0.54
1:D:117:HIS:HB3	1:D:124:TRP:CE3	2.43	0.54
1:D:93:LEU:C	1:D:95:GLN:H	2.11	0.54
1:C:103:PRO:HD2	1:C:158:ARG:HD3	1.88	0.53
1:D:43:MET:HG2	1:D:48:VAL:HA	1.91	0.53
1:D:161:ILE:HG22	1:D:162:GLU:N	2.23	0.53
1:D:201:MET:O	1:D:205:VAL:HG23	2.09	0.53
1:C:204:MET:HB2	1:D:204:MET:HG3	1.90	0.53
1:D:129:ILE:O	1:D:130:GLN:CB	2.55	0.53
1:D:42:LEU:HD23	1:D:51:VAL:HA	1.90	0.53

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:40:ARG:HH22	1:A:85:ALA:HB2	1.74	0.53
1:A:124:TRP:HA	1:A:127:PHE:CD2	2.40	0.53
1:A:86:PHE:HB2	1:A:141:ILE:HG21	1.90	0.53
1:B:158:ARG:NH2	1:B:215:ILE:CD1	2.72	0.53
1:D:74:ARG:NH1	1:D:74:ARG:HG2	2.24	0.53
1:D:145:ARG:HA	1:D:148:ARG:NH1	2.23	0.53
1:B:31:THR:HG22	1:B:34:ARG:NH1	2.23	0.53
1:B:57:THR:HG21	1:B:67:PHE:CB	2.35	0.53
1:A:133:ALA:O	1:A:136:PRO:HD2	2.10	0.53
1:C:143:GLY:O	1:C:146:ALA:HB3	2.08	0.53
1:B:124:TRP:O	1:B:126:GLY:N	2.42	0.52
1:C:43:MET:CG	1:C:48:VAL:HA	2.39	0.52
1:C:144:PRO:O	1:C:145:ARG:C	2.47	0.52
1:C:196:ILE:CG2	1:D:166:LEU:HD23	2.39	0.52
1:B:95:GLN:O	1:B:99:LYS:HE2	2.10	0.52
1:D:40:ARG:HD3	1:D:123:ILE:HD12	1.91	0.52
1:A:211:GLU:O	1:A:215:ILE:HG13	2.10	0.52
1:D:158:ARG:HH22	1:D:215:ILE:HD11	1.75	0.52
1:C:128:PHE:CE2	1:C:179:ILE:HD13	2.45	0.52
1:C:47:GLY:O	1:C:49:ASP:N	2.43	0.52
1:D:67:PHE:CE2	1:D:71:PHE:HB2	2.45	0.52
1:A:147:ARG:HH11	1:A:147:ARG:CB	2.23	0.51
1:D:104:ALA:HB2	1:D:158:ARG:HG2	1.92	0.51
1:A:57:THR:CG2	1:A:67:PHE:HB2	2.40	0.51
1:A:127:PHE:O	1:A:131:MET:HB3	2.10	0.51
1:C:111:LEU:HD22	1:C:197:PHE:HE2	1.75	0.51
1:D:139:MET:O	1:D:143:GLY:N	2.39	0.51
1:C:117:HIS:O	1:C:119:LEU:N	2.44	0.51
1:D:203:ARG:HG3	1:D:212:ALA:HB2	1.92	0.51
1:A:111:LEU:HD22	1:A:197:PHE:HE2	1.75	0.51
1:C:32:ARG:O	1:C:35:LEU:HB2	2.10	0.51
1:D:166:LEU:HD11	1:D:170:CYS:SG	2.51	0.51
1:D:46:ARG:HH11	1:D:50:ASN:HB3	1.75	0.51
1:B:154:LEU:HD22	1:B:161:ILE:HB	1.93	0.51
1:C:33:ALA:C	1:C:35:LEU:N	2.64	0.51
1:C:165:ASP:O	1:C:169:THR:HG22	2.11	0.51
1:A:131:MET:CE	1:A:137:VAL:HG21	2.41	0.50
1:B:158:ARG:HH22	1:B:215:ILE:CD1	2.23	0.50
1:C:36:ILE:C	1:C:38:SER:H	2.13	0.50
1:C:130:GLN:O	1:C:131:MET:HB2	2.12	0.50
1:D:108:ALA:O	1:D:112:ARG:HG3	2.11	0.50

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:115:VAL:O	1:D:119:LEU:HG	2.11	0.50
1:A:133:ALA:O	1:A:137:VAL:HG23	2.11	0.50
1:B:39:ALA:O	1:B:43:MET:HG2	2.11	0.50
1:A:158:ARG:HG3	1:A:158:ARG:NH1	2.26	0.50
1:A:165:ASP:CA	1:A:168:THR:HG22	2.41	0.50
1:B:48:VAL:O	1:B:74:ARG:NH2	2.44	0.50
1:B:79:GLN:O	1:B:83:GLU:HG3	2.12	0.50
1:B:222:GLU:CD	1:B:223:ILE:H	2.14	0.50
1:B:147:ARG:HH11	1:B:147:ARG:HG2	1.77	0.50
1:C:151:LEU:HD13	1:C:164:LEU:HD11	1.94	0.50
1:D:207:VAL:O	1:D:208:GLN:C	2.50	0.50
1:A:156:THR:HG22	1:A:158:ARG:HB2	1.93	0.50
1:B:47:GLY:O	1:B:48:VAL:C	2.51	0.50
1:B:128:PHE:C	1:B:130:GLN:H	2.15	0.50
1:B:154:LEU:CD2	1:B:161:ILE:HB	2.42	0.50
1:C:214:GLU:O	1:C:217:SER:N	2.44	0.50
1:D:210:ALA:C	1:D:212:ALA:H	2.14	0.50
1:A:135:HIS:HB3	1:A:136:PRO:CD	2.34	0.50
1:B:67:PHE:C	1:B:69:ASN:N	2.63	0.50
1:D:89:VAL:O	1:D:93:LEU:HG	2.12	0.50
1:A:32:ARG:O	1:A:36:ILE:HG12	2.12	0.49
1:C:144:PRO:O	1:C:147:ARG:HB2	2.11	0.49
1:B:111:LEU:HD13	1:B:197:PHE:CE2	2.46	0.49
1:A:74:ARG:NH1	1:A:74:ARG:HG2	2.27	0.49
1:A:113:HIS:CD2	1:A:220:LEU:HD11	2.47	0.49
1:A:165:ASP:C	1:A:168:THR:HG22	2.32	0.49
1:D:67:PHE:C	1:D:67:PHE:HD2	2.16	0.49
1:D:128:PHE:CD1	1:D:176:ILE:HG12	2.47	0.49
1:D:131:MET:HG2	1:D:133:ALA:HB3	1.95	0.49
1:A:74:ARG:HH11	1:A:74:ARG:CG	2.26	0.49
1:C:33:ALA:O	1:C:35:LEU:N	2.46	0.49
1:D:48:VAL:HG12	1:D:48:VAL:O	2.13	0.49
1:D:31:THR:C	1:D:33:ALA:N	2.62	0.49
1:D:86:PHE:CZ	1:D:138:LEU:HD13	2.48	0.49
1:B:128:PHE:CD1	1:B:128:PHE:N	2.81	0.48
1:D:112:ARG:HD2	1:D:216:ALA:O	2.13	0.48
1:D:166:LEU:HD12	1:D:166:LEU:C	2.33	0.48
1:D:175:LEU:O	1:D:179:ILE:HG13	2.13	0.48
1:A:213:ARG:HG2	1:A:213:ARG:HH11	1.78	0.48
1:B:111:LEU:CD1	1:B:201:MET:HG3	2.43	0.48
1:D:57:THR:CG2	1:D:67:PHE:HB2	2.43	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:79:GLN:O	1:D:82:ALA:HB3	2.13	0.48
1:B:77:LEU:HD23	1:B:77:LEU:O	2.13	0.48
1:D:195:GLN:NE2	1:D:217:SER:HB3	2.27	0.48
1:C:53:ILE:HG13	1:C:67:PHE:CD2	2.48	0.48
1:D:49:ASP:HA	1:D:74:ARG:NH2	2.28	0.48
1:D:86:PHE:C	1:D:88:SER:H	2.16	0.48
1:A:193:LYS:C	1:A:195:GLN:H	2.15	0.48
1:C:117:HIS:C	1:C:119:LEU:N	2.66	0.48
1:C:144:PRO:O	1:C:147:ARG:N	2.46	0.48
1:C:169:THR:HG23	1:C:170:CYS:N	2.28	0.48
1:A:128:PHE:C	1:A:130:GLN:H	2.17	0.48
1:A:156:THR:CG2	1:A:158:ARG:HB2	2.43	0.48
1:B:96:VAL:HG12	1:B:97:LEU:N	2.28	0.48
1:C:161:ILE:CG2	1:C:164:LEU:HD23	2.41	0.48
1:D:89:VAL:HG21	1:D:124:TRP:CH2	2.49	0.48
1:B:151:LEU:HD23	1:D:154:LEU:HD11	1.95	0.48
1:B:111:LEU:O	1:B:114:LEU:N	2.47	0.48
1:A:83:GLU:HA	1:A:141:ILE:HG13	1.96	0.48
1:B:83:GLU:OE2	1:B:140:ARG:NH1	2.46	0.48
1:D:31:THR:O	1:D:32:ARG:C	2.49	0.48
1:B:223:ILE:HG13	1:B:224:SER:N	2.25	0.47
1:C:87:GLU:O	1:C:91:ILE:HG13	2.14	0.47
1:C:121:ASP:O	1:C:122:ARG:C	2.52	0.47
1:B:70:TYR:N	1:B:70:TYR:CD2	2.79	0.47
1:D:42:LEU:HD21	1:D:55:GLU:OE2	2.14	0.47
1:D:89:VAL:HG21	1:D:124:TRP:CZ2	2.49	0.47
1:D:134:ALA:O	1:D:138:LEU:HB2	2.14	0.47
1:D:158:ARG:NH2	1:D:215:ILE:HD11	2.30	0.47
1:A:204:MET:HB2	1:B:204:MET:HB2	1.96	0.47
1:B:62:ILE:HG21	1:B:70:TYR:HE1	1.79	0.47
1:B:116:ARG:NH1	1:B:220:LEU:HD23	2.30	0.47
1:C:141:ILE:HG22	1:C:142:LEU:HG	1.96	0.47
1:C:214:GLU:O	1:C:216:ALA:N	2.48	0.47
1:D:43:MET:CE	1:D:81:VAL:HG21	2.44	0.47
1:D:129:ILE:HD11	1:D:183:LEU:CD1	2.31	0.47
1:C:126:GLY:O	1:C:130:GLN:HB3	2.14	0.47
1:B:65:GLY:O	1:B:69:ASN:ND2	2.48	0.47
1:B:93:LEU:HA	1:B:223:ILE:CD1	2.43	0.47
1:D:35:LEU:HD21	1:D:62:ILE:HD11	1.96	0.47
1:D:97:LEU:O	1:D:100:LEU:CB	2.62	0.47
1:B:66:THR:O	1:B:70:TYR:CE2	2.68	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:43:MET:HG3	1:C:48:VAL:HA	1.96	0.47
1:A:42:LEU:O	1:A:46:ARG:HB2	2.15	0.46
1:A:47:GLY:C	1:A:49:ASP:H	2.18	0.46
1:B:86:PHE:HB2	1:B:141:ILE:HG21	1.97	0.46
1:B:103:PRO:HD2	1:B:158:ARG:HG3	1.97	0.46
1:B:124:TRP:HA	1:B:127:PHE:CD2	2.50	0.46
1:B:169:THR:CG2	1:B:170:CYS:N	2.77	0.46
1:B:222:GLU:CG	1:B:223:ILE:H	2.28	0.46
1:C:151:LEU:O	1:C:154:LEU:HB3	2.16	0.46
1:C:204:MET:HG3	1:D:204:MET:HB2	1.97	0.46
1:D:195:GLN:NE2	1:D:217:SER:CB	2.78	0.46
1:A:37:THR:O	1:A:41:THR:OG1	2.30	0.46
1:B:220:LEU:HA	1:B:221:PRO:HD2	1.80	0.46
1:D:85:ALA:O	1:D:88:SER:HB2	2.15	0.46
1:A:129:ILE:HD11	1:A:183:LEU:HD13	1.97	0.46
1:B:51:VAL:HG12	1:B:56:ILE:HG13	1.97	0.46
1:A:222:GLU:OE1	1:A:222:GLU:HA	2.14	0.46
1:B:152:HIS:C	1:B:154:LEU:N	2.67	0.46
1:D:63:GLY:C	1:D:65:GLY:N	2.69	0.46
1:D:111:LEU:HD23	1:D:201:MET:HG3	1.98	0.46
1:B:154:LEU:HD12	1:B:154:LEU:O	2.15	0.46
1:D:153:GLY:HA3	1:D:159:PHE:CG	2.49	0.46
1:A:117:HIS:HD2	1:A:124:TRP:CE2	2.33	0.46
1:B:45:GLU:HB2	1:B:46:ARG:CZ	2.46	0.46
1:D:87:GLU:N	1:D:141:ILE:HG21	2.31	0.46
1:C:85:ALA:HB1	1:C:124:TRP:HE1	1.79	0.46
1:D:166:LEU:CD1	1:D:170:CYS:SG	3.04	0.46
1:A:93:LEU:HD13	1:A:110:SER:HB3	1.97	0.46
1:B:31:THR:C	1:B:33:ALA:N	2.68	0.46
1:A:48:VAL:HG12	1:A:48:VAL:O	2.16	0.46
1:A:176:ILE:HG22	1:A:177:ALA:N	2.31	0.46
1:D:74:ARG:HG2	1:D:74:ARG:HH11	1.80	0.46
1:D:208:GLN:HG3	1:D:210:ALA:H	1.81	0.46
1:B:151:LEU:HB2	1:B:164:LEU:HD21	1.97	0.45
1:C:97:LEU:HD12	1:C:100:LEU:HD12	1.97	0.45
1:D:208:GLN:HE21	1:D:210:ALA:N	2.14	0.45
1:D:82:ALA:CA	1:D:127:PHE:CZ	2.97	0.45
1:B:97:LEU:O	1:B:106:VAL:HG22	2.17	0.45
1:B:131:MET:SD	1:B:133:ALA:HB3	2.57	0.45
1:C:40:ARG:O	1:C:43:MET:N	2.48	0.45
1:C:118:SER:CB	1:C:128:PHE:HE2	2.29	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:205:VAL:O	1:D:205:VAL:HG12	2.16	0.45
1:A:193:LYS:C	1:A:195:GLN:N	2.69	0.45
1:B:164:LEU:O	1:B:168:THR:HG23	2.16	0.45
1:C:72:PRO:HD2	1:C:76:GLN:HG2	1.99	0.45
1:D:67:PHE:C	1:D:69:ASN:H	2.19	0.45
1:A:98:THR:O	1:A:98:THR:HG22	2.16	0.45
1:D:72:PRO:HG2	1:D:76:GLN:CG	2.47	0.45
1:A:143:GLY:O	1:A:147:ARG:HG3	2.16	0.45
1:C:53:ILE:HD11	1:C:74:ARG:HG3	1.97	0.45
1:C:207:VAL:HG12	1:C:212:ALA:HB2	1.99	0.45
1:A:131:MET:HE3	1:A:134:ALA:HA	1.99	0.45
1:B:158:ARG:NH2	1:B:215:ILE:HD11	2.27	0.45
1:C:220:LEU:HD12	1:C:221:PRO:HD2	1.98	0.45
1:B:92:ALA:C	1:B:223:ILE:HD11	2.37	0.45
1:D:93:LEU:HD23	1:D:223:ILE:HD13	1.98	0.45
1:C:89:VAL:HG21	1:C:124:TRP:CZ2	2.52	0.45
1:D:70:TYR:O	1:D:71:PHE:CD1	2.70	0.45
1:D:153:GLY:C	1:D:159:PHE:HB2	2.38	0.45
1:D:176:ILE:O	1:D:180:GLN:HG3	2.17	0.45
1:B:34:ARG:HG3	1:B:34:ARG:H	1.30	0.45
1:B:223:ILE:O	1:B:224:SER:C	2.56	0.45
1:C:71:PHE:CD2	1:C:77:LEU:HD13	2.52	0.45
1:C:77:LEU:O	1:C:80:ALA:HB3	2.16	0.45
1:D:36:ILE:H	1:D:36:ILE:HG13	1.57	0.45
1:D:63:GLY:O	1:D:66:THR:HG22	2.17	0.45
1:D:94:ASP:HA	1:D:98:THR:HG21	1.99	0.45
1:A:118:SER:OG	1:A:179:ILE:HD13	2.17	0.44
1:B:108:ALA:HB2	1:B:202:LEU:HD11	2.00	0.44
1:D:164:LEU:O	1:D:164:LEU:HD12	2.17	0.44
1:A:45:GLU:N	1:A:45:GLU:OE1	2.51	0.44
1:B:150:LEU:HD22	1:B:161:ILE:HD11	1.97	0.44
1:C:109:GLY:O	1:C:110:SER:C	2.55	0.44
1:C:147:ARG:HH12	1:C:164:LEU:HB2	1.81	0.44
1:B:67:PHE:O	1:B:70:TYR:N	2.51	0.44
1:D:81:VAL:HG12	1:D:127:PHE:CZ	2.52	0.44
1:C:117:HIS:C	1:C:119:LEU:H	2.19	0.44
1:C:57:THR:HG22	1:C:67:PHE:HB2	1.99	0.44
1:C:36:ILE:O	1:C:38:SER:N	2.50	0.44
1:D:98:THR:HG22	1:D:148:ARG:HH21	1.81	0.44
1:D:151:LEU:HD13	1:D:164:LEU:CD2	2.47	0.44
1:D:152:HIS:C	1:D:154:LEU:N	2.69	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:193:LYS:HA	1:B:196:ILE:HD12	1.99	0.44
1:C:32:ARG:NE	1:C:70:TYR:HB3	2.33	0.44
1:C:47:GLY:C	1:C:49:ASP:H	2.21	0.44
1:D:100:LEU:CD2	1:D:101:ASP:N	2.72	0.44
1:B:112:ARG:NH1	1:B:220:LEU:HB2	2.25	0.43
1:C:78:LEU:O	1:C:81:VAL:N	2.51	0.43
1:C:102:ASP:HA	1:C:103:PRO:HD3	1.80	0.43
1:A:165:ASP:HA	1:A:168:THR:CG2	2.45	0.43
1:B:138:LEU:HD12	1:B:176:ILE:HD11	2.00	0.43
1:C:48:VAL:HG12	1:C:48:VAL:O	2.19	0.43
1:D:51:VAL:HG23	1:D:51:VAL:O	2.18	0.43
1:A:203:ARG:HG2	1:B:203:ARG:O	2.19	0.43
1:A:171:THR:O	1:A:171:THR:HG22	2.19	0.43
1:B:57:THR:OG1	1:B:63:GLY:O	2.35	0.43
1:B:133:ALA:HB1	1:B:137:VAL:CG2	2.35	0.43
1:B:150:LEU:HD12	1:B:168:THR:HG22	2.00	0.43
1:D:118:SER:HA	1:D:124:TRP:HB3	1.99	0.43
1:D:135:HIS:O	1:D:139:MET:HB2	2.18	0.43
1:A:213:ARG:HA	1:A:213:ARG:HD2	1.80	0.43
1:B:42:LEU:CD1	1:B:56:ILE:HA	2.49	0.43
1:B:202:LEU:C	1:B:204:MET:N	2.71	0.43
1:D:137:VAL:HA	1:D:140:ARG:NH1	2.34	0.43
1:B:161:ILE:HG22	1:B:162:GLU:N	2.34	0.43
1:C:104:ALA:HB2	1:C:159:PHE:HE1	1.82	0.43
1:D:97:LEU:O	1:D:100:LEU:N	2.51	0.43
1:D:137:VAL:C	1:D:139:MET:N	2.72	0.43
1:B:142:LEU:HB2	1:B:172:PHE:CZ	2.53	0.43
1:C:146:ALA:HB3	1:C:168:THR:HG23	2.01	0.43
1:C:215:ILE:HG13	1:C:215:ILE:H	1.68	0.43
1:D:42:LEU:HB3	1:D:51:VAL:HG12	2.01	0.43
1:D:113:HIS:NE2	1:D:220:LEU:HD11	2.34	0.43
1:A:203:ARG:HD2	1:B:204:MET:O	2.19	0.43
1:C:66:THR:CB	1:C:69:ASN:ND2	2.80	0.43
1:B:38:SER:OG	1:B:59:GLY:HA3	2.19	0.42
1:D:77:LEU:O	1:D:80:ALA:HB3	2.19	0.42
1:D:93:LEU:C	1:D:95:GLN:N	2.72	0.42
1:D:131:MET:O	1:D:134:ALA:HB2	2.19	0.42
1:A:115:VAL:HG12	1:A:116:ARG:N	2.34	0.42
1:B:222:GLU:CG	1:B:223:ILE:N	2.81	0.42
1:D:63:GLY:O	1:D:66:THR:N	2.51	0.42
1:D:182:ALA:HA	1:D:193:LYS:HE2	2.01	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:145:ARG:O	1:C:148:ARG:HB3	2.18	0.42
1:C:196:ILE:HG22	1:C:197:PHE:N	2.35	0.42
1:A:102:ASP:O	1:A:106:VAL:HG23	2.20	0.42
1:B:158:ARG:NH2	1:B:215:ILE:HD13	2.33	0.42
1:C:208:GLN:O	1:C:212:ALA:HB2	2.18	0.42
1:A:39:ALA:HB2	1:A:56:ILE:HD13	2.01	0.42
1:A:87:GLU:N	1:A:141:ILE:HG21	2.35	0.42
1:A:142:LEU:HB2	1:A:172:PHE:CZ	2.54	0.42
1:A:207:VAL:HG12	1:A:208:GLN:N	2.34	0.42
1:B:59:GLY:C	1:B:61:ASN:N	2.70	0.42
1:C:65:GLY:C	1:C:67:PHE:H	2.22	0.42
1:D:46:ARG:NH1	1:D:50:ASN:HB3	2.34	0.42
1:A:166:LEU:C	1:A:166:LEU:CD2	2.85	0.42
1:B:201:MET:HA	1:B:201:MET:CE	2.50	0.42
1:C:36:ILE:CD1	1:C:80:ALA:HB1	2.42	0.42
1:C:42:LEU:HD11	1:C:55:GLU:HB3	2.01	0.42
1:C:196:ILE:CG2	1:D:166:LEU:CD2	2.96	0.42
1:D:48:VAL:HG23	1:D:126:GLY:HA3	2.01	0.42
1:B:76:GLN:OE1	1:B:76:GLN:N	2.52	0.42
1:C:43:MET:C	1:C:45:GLU:H	2.23	0.42
1:D:104:ALA:HB2	1:D:158:ARG:HG3	2.01	0.42
1:D:128:PHE:CE2	1:D:179:ILE:HD13	2.54	0.42
1:D:195:GLN:HE21	1:D:217:SER:HB3	1.84	0.42
1:A:222:GLU:OE2	1:A:223:ILE:HG22	2.20	0.42
1:B:67:PHE:C	1:B:69:ASN:H	2.23	0.42
1:B:128:PHE:N	1:B:128:PHE:HD1	2.17	0.42
1:C:87:GLU:OE2	1:C:145:ARG:NH2	2.52	0.42
1:C:112:ARG:NH1	1:C:216:ALA:O	2.53	0.42
1:D:40:ARG:HD3	1:D:123:ILE:CD1	2.50	0.42
1:D:118:SER:HG	1:D:128:PHE:HE2	1.57	0.42
1:A:129:ILE:HD13	1:A:183:LEU:HD13	2.02	0.42
1:A:220:LEU:HA	1:A:221:PRO:HD2	1.83	0.42
1:B:61:ASN:O	1:B:62:ILE:CG1	2.66	0.42
1:B:128:PHE:O	1:B:130:GLN:N	2.53	0.42
1:B:152:HIS:C	1:B:154:LEU:H	2.23	0.42
1:D:175:LEU:HA	1:D:197:PHE:CZ	2.55	0.42
1:D:218:ARG:HB3	1:D:219:PRO:CD	2.42	0.42
1:A:131:MET:HE3	1:A:137:VAL:HG21	2.02	0.42
1:A:169:THR:HG23	1:A:170:CYS:N	2.35	0.42
1:D:36:ILE:O	1:D:39:ALA:HB3	2.20	0.42
1:D:116:ARG:CZ	1:D:220:LEU:HD23	2.49	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:53:ILE:N	1:A:53:ILE:HD12	2.35	0.41
1:A:53:ILE:HG23	1:A:57:THR:HG23	2.01	0.41
1:B:138:LEU:HD23	1:B:138:LEU:HA	1.82	0.41
1:C:66:THR:HA	1:C:69:ASN:ND2	2.35	0.41
1:C:132:GLY:C	1:C:134:ALA:N	2.72	0.41
1:A:83:GLU:OE1	1:A:140:ARG:NH1	2.53	0.41
1:A:97:LEU:C	1:A:99:LYS:N	2.71	0.41
1:B:93:LEU:CA	1:B:223:ILE:HD11	2.47	0.41
1:B:112:ARG:HB3	1:B:194:ASP:OD2	2.20	0.41
1:B:121:ASP:HB3	1:B:123:ILE:CG2	2.48	0.41
1:C:96:VAL:HG21	1:C:223:ILE:HA	2.02	0.41
1:C:125:GLY:C	1:C:129:ILE:HG12	2.37	0.41
1:D:75:GLU:O	1:D:78:LEU:N	2.53	0.41
1:D:161:ILE:HG12	1:D:205:VAL:HG13	2.03	0.41
1:A:45:GLU:O	1:A:45:GLU:HG2	2.21	0.41
1:D:206:GLY:O	1:D:207:VAL:O	2.38	0.41
1:C:165:ASP:C	1:C:167:ALA:H	2.22	0.41
1:B:32:ARG:NH1	1:B:32:ARG:HG2	2.34	0.41
1:B:128:PHE:HD1	1:B:128:PHE:H	1.69	0.41
1:B:139:MET:HE3	1:B:139:MET:HB2	1.83	0.41
1:A:132:GLY:C	1:A:134:ALA:H	2.24	0.41
1:B:117:HIS:CD2	1:B:124:TRP:CE2	3.03	0.41
1:B:138:LEU:HD13	1:B:172:PHE:CD1	2.53	0.41
1:C:35:LEU:HD23	1:C:35:LEU:HA	1.84	0.41
1:D:62:ILE:HD12	1:D:66:THR:HG23	2.02	0.41
1:D:86:PHE:O	1:D:88:SER:N	2.53	0.41
1:A:113:HIS:NE2	1:A:220:LEU:HD11	2.36	0.41
1:A:147:ARG:HB3	1:A:147:ARG:CZ	2.49	0.41
1:A:218:ARG:HB3	1:A:219:PRO:HD2	2.02	0.41
1:B:202:LEU:HA	1:B:205:VAL:HG22	2.03	0.41
1:A:102:ASP:OD2	1:A:102:ASP:C	2.59	0.41
1:A:156:THR:HG22	1:A:158:ARG:N	2.36	0.41
1:A:175:LEU:HA	1:A:197:PHE:CZ	2.56	0.41
1:B:215:ILE:HG22	1:B:215:ILE:O	2.21	0.41
1:D:71:PHE:CE2	1:D:77:LEU:HD13	2.56	0.41
1:D:94:ASP:HA	1:D:98:THR:CG2	2.51	0.41
1:D:158:ARG:NH2	1:D:215:ILE:CD1	2.84	0.41
1:D:179:ILE:O	1:D:183:LEU:HG	2.20	0.41
1:A:156:THR:HG22	1:A:158:ARG:H	1.86	0.41
1:A:57:THR:HG22	1:A:67:PHE:HB2	2.03	0.40
1:B:203:ARG:HG3	1:B:212:ALA:CB	2.52	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:99:LYS:O	1:C:100:LEU:C	2.59	0.40
1:D:48:VAL:CG1	1:D:78:LEU:HD21	2.52	0.40
1:A:147:ARG:NH2	1:A:164:LEU:HB3	2.36	0.40
1:C:128:PHE:HE1	1:C:138:LEU:HD11	1.86	0.40
1:C:195:GLN:NE2	1:C:217:SER:CA	2.84	0.40
1:D:67:PHE:O	1:D:69:ASN:N	2.53	0.40
1:D:208:GLN:C	1:D:210:ALA:H	2.24	0.40
1:B:67:PHE:O	1:B:68:TYR:C	2.59	0.40
1:C:121:ASP:O	1:C:123:ILE:N	2.54	0.40
1:A:93:LEU:N	1:A:223:ILE:HD11	2.36	0.40
1:A:131:MET:CE	1:A:134:ALA:HA	2.52	0.40
1:B:112:ARG:HE	1:B:195:GLN:HG2	1.86	0.40
1:D:142:LEU:O	1:D:143:GLY:C	2.58	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	181/245 (74%)	140 (77%)	32 (18%)	9 (5%)	2	21
1	B	182/245 (74%)	135 (74%)	34 (19%)	13 (7%)	1	14
1	C	181/245 (74%)	130 (72%)	34 (19%)	17 (9%)	0	8
1	D	182/245 (74%)	126 (69%)	44 (24%)	12 (7%)	1	16
All	All	726/980 (74%)	531 (73%)	144 (20%)	51 (7%)	1	14

All (51) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	163	ASP
1	B	61	ASN

Continued on next page...



*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	C	131	MET
1	D	46	ARG
1	D	56	ILE
1	D	130	GLN
1	A	61	ASN
1	A	64	THR
1	A	129	ILE
1	B	32	ARG
1	B	68	TYR
1	B	129	ILE
1	C	37	THR
1	C	48	VAL
1	C	129	ILE
1	C	130	GLN
1	C	161	ILE
1	C	207	VAL
1	D	68	TYR
1	D	207	VAL
1	D	208	GLN
1	A	37	THR
1	B	97	LEU
1	B	134	ALA
1	C	100	LEU
1	C	118	SER
1	C	133	ALA
1	D	55	GLU
1	D	74	ARG
1	D	100	LEU
1	A	211	GLU
1	B	125	GLY
1	B	141	ILE
1	C	34	ARG
1	C	44	ALA
1	C	66	THR
1	C	215	ILE
1	D	64	THR
1	D	85	ALA
1	D	151	LEU
1	A	96	VAL
1	B	42	LEU
1	B	223	ILE
1	A	48	VAL

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	C	122	ARG
1	C	200	ALA
1	A	221	PRO
1	B	96	VAL
1	C	72	PRO
1	B	143	GLY
1	B	59	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	145/198 (73%)	135 (93%)	10 (7%)	15	49
1	B	146/198 (74%)	131 (90%)	15 (10%)	7	34
1	C	145/198 (73%)	127 (88%)	18 (12%)	4	26
1	D	146/198 (74%)	130 (89%)	16 (11%)	6	31
All	All	582/792 (74%)	523 (90%)	59 (10%)	7	34

All (59) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	45	GLU
1	A	79	GLN
1	A	105	GLU
1	A	115	VAL
1	A	121	ASP
1	A	156	THR
1	A	158	ARG
1	A	164	LEU
1	A	194	ASP
1	A	224	SER
1	B	32	ARG
1	B	34	ARG
1	B	37	THR
1	B	46	ARG

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	49	ASP
1	B	50	ASN
1	B	71	PHE
1	B	88	SER
1	B	100	LEU
1	B	113	HIS
1	B	128	PHE
1	B	131	MET
1	B	154	LEU
1	B	158	ARG
1	B	193	LYS
1	C	40	ARG
1	C	43	MET
1	C	45	GLU
1	C	58	GLU
1	C	61	ASN
1	C	73	ASP
1	C	78	LEU
1	C	87	GLU
1	C	101	ASP
1	C	121	ASP
1	C	123	ILE
1	C	158	ARG
1	C	160	THR
1	C	171	THR
1	C	176	ILE
1	C	193	LYS
1	C	196	ILE
1	C	218	ARG
1	D	40	ARG
1	D	58	GLU
1	D	64	THR
1	D	67	PHE
1	D	69	ASN
1	D	75	GLU
1	D	77	LEU
1	D	78	LEU
1	D	97	LEU
1	D	117	HIS
1	D	123	ILE
1	D	127	PHE
1	D	129	ILE

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	D	166	LEU
1	D	168	THR
1	D	170	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	113	HIS
1	A	117	HIS
1	A	152	HIS
1	A	180	GLN
1	A	208	GLN
1	B	50	ASN
1	B	69	ASN
1	B	117	HIS
1	B	180	GLN
1	B	195	GLN
1	C	50	ASN
1	C	69	ASN
1	C	180	GLN
1	C	195	GLN
1	C	208	GLN
1	D	50	ASN
1	D	195	GLN
1	D	208	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 monosaccharides 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	185/245 (75%)	0.04	0 <b>100</b>   <b>100</b>	54, 93, 135, 163	0
1	B	186/245 (75%)	0.14	1 (0%) <b>91</b>   <b>83</b>	62, 97, 149, 187	0
1	C	185/245 (75%)	0.02	1 (0%) <b>91</b>   <b>83</b>	64, 104, 152, 176	0
1	D	186/245 (75%)	0.21	1 (0%) <b>91</b>   <b>83</b>	64, 99, 139, 161	0
All	All	742/980 (75%)	0.10	3 (0%) <b>92</b>   <b>86</b>	54, 98, 146, 187	0

All (3) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	64	THR	6.8
1	D	118	SER	2.8
1	C	64	THR	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.