Full wwPDB NMR Structure Validation Report (i)

Feb 8, 2022 – 06:18 PM EST

PDB ID	:	1CLD
Title	:	DNA-binding protein
Authors	:	Gardner, K.H.; Coleman, J.E.
Deposited on	:	1995-06-06

This is a Full wwPDB NMR 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/NMRValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The following versions of software and data (see references (i)) were used in the production of this report:

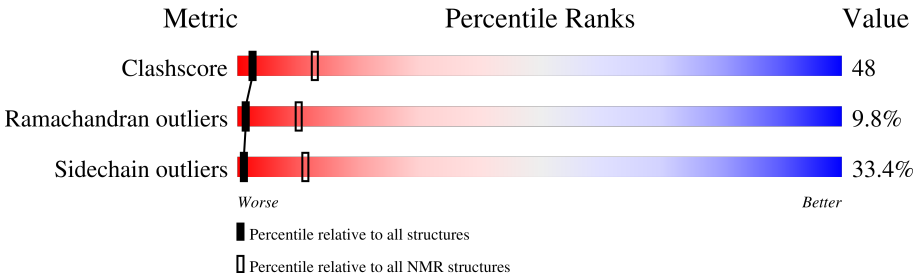
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	2.26
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.26

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
SOLUTION NMR

The overall completeness of chemical shifts assignment was not calculated.

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)	NMR archive (#Entries)
Clashscore	158937	12864
Ramachandran outliers	154571	11451
Sidechain outliers	154315	11428

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and 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 <=5%

Mol	Chain	Length	Quality of chain
1	A	61	8% 31% 8% • • 46%

2 Ensemble composition and analysis (i)

This entry contains 29 models. Model 18 is the overall representative, medoid model (most similar to other models).

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	**Residue range (total)**	**Backbone RMSD (Å)**	**Medoid model**
1	A:94-A:124 (31)	0.16	18

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 5 clusters and 2 single-model clusters were found.

Cluster number	Models
1	3, 7, 9, 10, 12, 19, 20, 22, 23, 25, 26, 28, 29
2	2, 5, 16, 18, 21, 24, 27
3	11, 14, 15
4	1, 8
5	6, 13
Single-model clusters	4; 17

3 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 521 atoms, of which 259 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called CD2-LAC9.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	33	519	161	259	46	47	6	0

- Molecule 2 is CADMIUM ION (three-letter code: CD) (formula: Cd).

Mol	Chain	Residues	Atoms	
			Total	Cd
2	A	2	2	2

4 Residue-property plots (i)

4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-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. Stretches of 2 or more consecutive residues without any outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

• Molecule 1: CD2-LAC9

Chain A: 8% 31% 8% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN

ARG

4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: CD2-LAC9

Chain A: 10% 30% 11% • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.2 Score per residue for model 2

• Molecule 1: CD2-LAC9

Chain A: 18% 23% 7% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 N114 C115 L116 K117 Y118 N119 C122 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.3 Score per residue for model 3

- Molecule 1: CD2-LAC9

Chain A: 13% 25% 13% • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.4 Score per residue for model 4

- Molecule 1: CD2-LAC9

Chain A: 10% 25% 16% • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.5 Score per residue for model 5

- Molecule 1: CD2-LAC9

Chain A: 13% 21% 11% 5% • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.6 Score per residue for model 6

- Molecule 1: CD2-LAC9

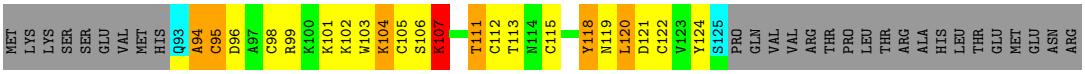
Chain A: 15% 20% 13% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.7 Score per residue for model 7

- Molecule 1: CD2-LAC9

Chain A: 15% 25% 10% • • 46%



4.2.8 Score per residue for model 8

- Molecule 1: CD2-LAC9

Chain A:

4.2.9 Score per residue for model 9

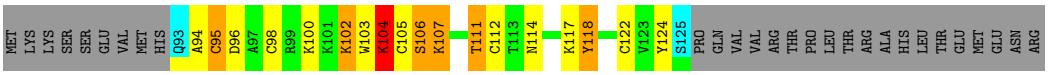
- Molecule 1: CD2-LAC9

Chain A:

4.2.10 Score per residue for model 10

- Molecule 1: CD2-LAC9

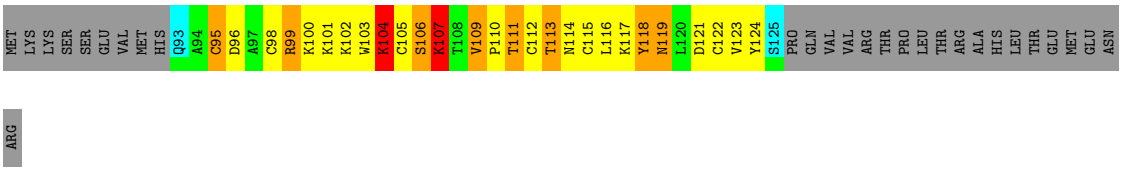
Chain A:



4.2.11 Score per residue for model 11

- Molecule 1: CD2-LAC9

Chain A:



4.2.12 Score per residue for model 12

- Molecule 1: CD2-LAC9

Chain A: 18% 20% 13% • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 Y118 N119 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.13 Score per residue for model 13

- Molecule 1: CD2-LAC9

Chain A: 20% 20% 8% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.14 Score per residue for model 14

- Molecule 1: CD2-LAC9

Chain A: 10% 31% 7% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.15 Score per residue for model 15

- Molecule 1: CD2-LAC9

Chain A: 10% 28% 10% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.16 Score per residue for model 16

- Molecule 1: CD2-LAC9

Chain A: 13% 21% 15% • • 46%

MET LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.17 Score per residue for model 17

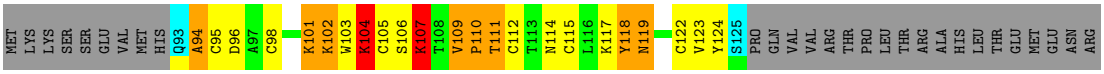
- Molecule 1: CD2-LAC9

Chain A: 18% 21% 10% • • 46%

4.2.18 Score per residue for model 18 (medoid)

- Molecule 1: CD2-LAC9

Chain A: 13% 21% 13% • • 46%



4.2.19 Score per residue for model 19

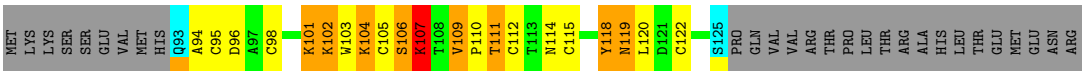
- Molecule 1: CD2-LAC9

Chain A: 16% 25% 10% • 46%

4.2.20 Score per residue for model 20

- Molecule 1: CD2-LAC9

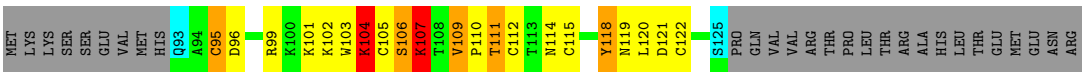
Chain A: 16% 20% 13% • • 46%



4.2.21 Score per residue for model 21

- Molecule 1: CD2-LAC9

Chain A: 16% 23% 8% • • 46%



4.2.22 Score per residue for model 22

- Molecule 1: CD2-LAC9

Chain A: 16% 16% 16% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.23 Score per residue for model 23

- Molecule 1: CD2-LAC9

Chain A: 13% 23% 11% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 C98 R99 K100 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.24 Score per residue for model 24

- Molecule 1: CD2-LAC9

Chain A: 20% 21% 8% • • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 R99 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.25 Score per residue for model 25

- Molecule 1: CD2-LAC9

Chain A: 15% 21% 10% 5% • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 D96 A97 C98 K101 K102 W103 K104 C105 S106 K107 T108 V109 P110 T111 C112 T113 N114 C115 L116 K117 Y118 N119 L120 D121 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.26 Score per residue for model 26

- Molecule 1: CD2-LAC9

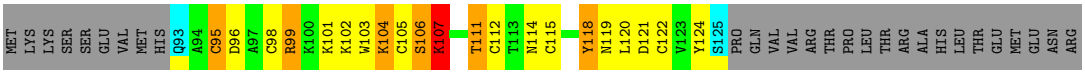
Chain A: 23% 13% 10% 5% • 46%

MET LYS LYS SER SER GLU VAL MET HIS Q93 A94 C95 K101 K102 W103 K104 C105 S106 K107 T111 C112 T113 N114 C115 L116 K117 Y118 N119 C122 V123 Y124 S125 PRO GLN VAL VAL ARG THR PRO LEU THR ARG ALA HIS LEU THR GLU MET GLU ASN ARG

4.2.27 Score per residue for model 27

- Molecule 1: CD2-LAC9

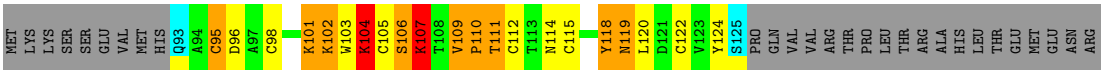
Chain A: 16% 23% 10% • • 46%



4.2.28 Score per residue for model 28

- Molecule 1: CD2-LAC9

Chain A: 16% 16% 15% • • 46%



4.2.29 Score per residue for model 29

- Molecule 1: CD2-LAC9

Chain A: 13% 21% 13% • • 46%

5 Refinement protocol and experimental data overview (i)

Of the ? calculated structures, 29 were deposited, based on the following criterion: *?*.

The following table shows the software used for structure solution, optimisation and refinement.

Software name	Classification	Version
X-PLOR	refinement	3.1

No chemical shift data was provided.

6 Model quality (i)

6.1 Standard geometry (i)

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

There are no covalent bond-length or bond-angle outliers.

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no planarity outliers.

6.2 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 each 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 averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	245	246	246	24±4
All	All	7163	7134	7134	690

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 48.

All unique clashes are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:111:THR:HG22	1:A:122:CYS:CB	0.81	2.06	27	25
1:A:118:TYR:HB2	1:A:120:LEU:HD13	0.80	1.54	15	2
1:A:111:THR:HG22	1:A:122:CYS:HB3	0.78	1.54	28	26
1:A:120:LEU:HD23	1:A:120:LEU:N	0.74	1.98	4	1
1:A:116:LEU:HD12	1:A:116:LEU:C	0.70	2.06	14	8
1:A:119:ASN:O	1:A:120:LEU:HD23	0.70	1.87	3	7
1:A:118:TYR:CD2	1:A:120:LEU:HD11	0.66	2.25	13	1
1:A:94:ALA:HB1	1:A:98:CYS:HB2	0.65	1.68	8	6
1:A:118:TYR:N	1:A:118:TYR:CD1	0.65	2.65	4	16
1:A:118:TYR:HB2	1:A:120:LEU:HD22	0.62	1.71	4	1
1:A:118:TYR:CD1	1:A:118:TYR:N	0.62	2.66	2	13
1:A:119:ASN:O	1:A:120:LEU:HD12	0.61	1.95	16	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:115:CYS:HA	1:A:120:LEU:HD21	0.61	1.72	7	4
1:A:115:CYS:SG	1:A:120:LEU:HD11	0.60	2.37	25	3
1:A:114:ASN:OD1	1:A:118:TYR:CE2	0.60	2.55	4	2
1:A:95:CYS:CB	1:A:124:TYR:CE1	0.59	2.85	7	20
1:A:114:ASN:O	1:A:118:TYR:CD2	0.58	2.57	29	16
1:A:114:ASN:O	1:A:118:TYR:CE2	0.58	2.57	20	18
1:A:111:THR:HG22	1:A:122:CYS:HB2	0.57	1.74	6	14
1:A:106:SER:O	1:A:107:LYS:CB	0.56	2.53	24	29
1:A:116:LEU:HD12	1:A:117:LYS:N	0.56	2.15	3	4
1:A:101:LYS:CB	1:A:103:TRP:CE2	0.56	2.88	17	6
1:A:122:CYS:SG	1:A:124:TYR:CE2	0.56	2.98	17	4
1:A:114:ASN:OD1	1:A:115:CYS:N	0.55	2.40	15	5
1:A:111:THR:OG1	1:A:116:LEU:HD21	0.55	2.02	15	1
1:A:114:ASN:OD1	1:A:118:TYR:CZ	0.54	2.59	4	1
1:A:95:CYS:HB2	1:A:124:TYR:CE1	0.54	2.38	1	22
1:A:95:CYS:HB2	1:A:124:TYR:CZ	0.54	2.37	7	9
1:A:105:CYS:SG	1:A:112:CYS:CB	0.53	2.96	7	9
1:A:101:LYS:O	1:A:102:LYS:CB	0.53	2.56	21	13
1:A:111:THR:OG1	1:A:122:CYS:CB	0.53	2.57	4	1
1:A:115:CYS:SG	1:A:120:LEU:CD1	0.53	2.97	5	3
1:A:98:CYS:SG	1:A:114:ASN:ND2	0.53	2.82	15	5
1:A:103:TRP:CZ3	1:A:118:TYR:CE2	0.52	2.97	17	5
1:A:103:TRP:O	1:A:104:LYS:O	0.52	2.27	8	29
1:A:101:LYS:HB3	1:A:103:TRP:CE2	0.52	2.40	3	12
1:A:115:CYS:O	1:A:119:ASN:N	0.51	2.42	2	20
1:A:101:LYS:CD	1:A:103:TRP:CZ2	0.51	2.93	4	2
1:A:106:SER:C	1:A:107:LYS:CG	0.50	2.80	14	25
1:A:119:ASN:C	1:A:120:LEU:HD23	0.50	2.26	4	1
1:A:95:CYS:HA	1:A:124:TYR:CE1	0.50	2.41	24	2
1:A:109:VAL:CB	1:A:110:PRO:HA	0.50	2.36	5	10
1:A:114:ASN:OD1	1:A:114:ASN:C	0.50	2.49	8	7
1:A:118:TYR:C	1:A:120:LEU:HD23	0.49	2.28	4	1
1:A:116:LEU:HD12	1:A:116:LEU:O	0.49	2.07	1	3
1:A:95:CYS:CB	1:A:124:TYR:CZ	0.49	2.96	7	2
1:A:113:THR:HA	1:A:116:LEU:HD23	0.49	1.85	26	2
1:A:117:LYS:HD3	1:A:118:TYR:CE1	0.49	2.43	10	1
1:A:101:LYS:HG3	1:A:103:TRP:CZ2	0.48	2.43	17	1
1:A:112:CYS:SG	1:A:114:ASN:OD1	0.48	2.72	8	5
1:A:111:THR:OG1	1:A:122:CYS:HB2	0.48	2.08	4	1
1:A:111:THR:CG2	1:A:122:CYS:HB3	0.48	2.37	24	14
1:A:116:LEU:C	1:A:116:LEU:CD1	0.47	2.80	8	7

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:114:ASN:OD1	1:A:118:TYR:OH	0.47	2.33	26	8
1:A:103:TRP:O	1:A:104:LYS:C	0.47	2.53	21	26
1:A:113:THR:HA	1:A:116:LEU:HD21	0.47	1.87	3	1
1:A:101:LYS:HB3	1:A:103:TRP:NE1	0.46	2.26	21	6
1:A:118:TYR:HB2	1:A:120:LEU:HD11	0.46	1.88	23	3
1:A:117:LYS:HG2	1:A:118:TYR:CD1	0.46	2.46	4	1
1:A:99:ARG:NH1	1:A:99:ARG:CG	0.46	2.78	8	4
1:A:115:CYS:HA	1:A:120:LEU:CD1	0.46	2.41	13	1
1:A:105:CYS:SG	1:A:112:CYS:HB3	0.45	2.52	4	15
1:A:123:VAL:HG12	1:A:124:TYR:N	0.45	2.26	18	3
1:A:101:LYS:HD2	1:A:101:LYS:N	0.45	2.26	2	1
1:A:118:TYR:HB2	1:A:120:LEU:CD2	0.45	2.41	4	2
1:A:99:ARG:NH1	1:A:99:ARG:HG2	0.45	2.25	21	1
1:A:118:TYR:O	1:A:120:LEU:CD1	0.45	2.64	15	1
1:A:101:LYS:HD2	1:A:103:TRP:CZ2	0.45	2.46	23	2
1:A:120:LEU:O	1:A:122:CYS:N	0.45	2.49	19	4
1:A:113:THR:HA	1:A:116:LEU:CD2	0.45	2.42	24	8
1:A:111:THR:CG2	1:A:116:LEU:HG	0.45	2.41	4	1
1:A:117:LYS:HD3	1:A:118:TYR:CD1	0.45	2.47	10	1
1:A:101:LYS:HG2	1:A:103:TRP:CZ2	0.45	2.47	1	2
1:A:105:CYS:SG	1:A:112:CYS:HB2	0.44	2.52	8	7
1:A:106:SER:O	1:A:107:LYS:HB2	0.44	2.11	10	20
1:A:118:TYR:O	1:A:119:ASN:C	0.44	2.56	28	12
1:A:95:CYS:O	1:A:99:ARG:HG3	0.44	2.12	5	2
1:A:98:CYS:O	1:A:102:LYS:HA	0.44	2.12	5	21
1:A:106:SER:O	1:A:107:LYS:CG	0.44	2.65	2	11
1:A:101:LYS:HE2	1:A:103:TRP:CH2	0.44	2.48	18	1
1:A:95:CYS:O	1:A:99:ARG:CB	0.44	2.65	11	3
1:A:95:CYS:O	1:A:99:ARG:CG	0.44	2.64	5	1
1:A:115:CYS:HA	1:A:120:LEU:CD2	0.44	2.43	25	3
1:A:103:TRP:CZ3	1:A:118:TYR:OH	0.44	2.70	4	1
1:A:114:ASN:CG	1:A:118:TYR:OH	0.43	2.56	3	8
1:A:118:TYR:HB2	1:A:120:LEU:CD1	0.43	2.43	17	1
1:A:117:LYS:HG2	1:A:118:TYR:CE1	0.43	2.48	4	1
1:A:118:TYR:C	1:A:119:ASN:OD1	0.43	2.57	17	1
1:A:101:LYS:O	1:A:102:LYS:HB3	0.43	2.14	19	2
1:A:95:CYS:SG	1:A:97:ALA:HB3	0.43	2.54	1	1
1:A:98:CYS:O	1:A:102:LYS:CA	0.43	2.67	28	5
1:A:101:LYS:O	1:A:102:LYS:HB2	0.42	2.14	25	3
1:A:95:CYS:O	1:A:99:ARG:HB2	0.42	2.13	21	5
1:A:106:SER:C	1:A:107:LYS:HG2	0.42	2.35	14	18

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:109:VAL:HB	1:A:110:PRO:HA	0.42	1.92	16	4
1:A:111:THR:O	1:A:112:CYS:C	0.42	2.57	9	4
1:A:118:TYR:C	1:A:120:LEU:CD2	0.42	2.88	4	1
1:A:118:TYR:O	1:A:119:ASN:CG	0.42	2.58	17	1
1:A:113:THR:HA	1:A:116:LEU:HD12	0.41	1.92	9	1
1:A:100:LYS:HG3	1:A:101:LYS:N	0.41	2.29	23	1
1:A:115:CYS:O	1:A:119:ASN:CA	0.41	2.67	29	2
1:A:101:LYS:CD	1:A:103:TRP:CH2	0.41	3.04	4	1
1:A:97:ALA:HB2	1:A:120:LEU:HD11	0.41	1.91	22	1
1:A:106:SER:C	1:A:107:LYS:HG3	0.41	2.35	13	1
1:A:109:VAL:HA	1:A:110:PRO:C	0.41	2.36	19	4
1:A:119:ASN:C	1:A:120:LEU:HD12	0.41	2.36	16	1
1:A:119:ASN:O	1:A:119:ASN:CG	0.41	2.59	14	1
1:A:114:ASN:O	1:A:117:LYS:HB3	0.41	2.15	4	1
1:A:118:TYR:C	1:A:119:ASN:CG	0.40	2.80	17	1
1:A:115:CYS:SG	1:A:120:LEU:HG	0.40	2.57	25	1

6.3 Torsion angles (i)

6.3.1 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 PDB entries followed by that with respect to all NMR entries. 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	31/61 (51%)	24±1 (79±4%)	3±1 (11±3%)	3±1 (10±2%)	1	10
All	All	899/1769 (51%)	710 (79%)	101 (11%)	88 (10%)	1	10

All 7 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	104	LYS	29
1	A	107	LYS	27
1	A	119	ASN	15
1	A	94	ALA	7
1	A	121	ASP	5
1	A	110	PRO	3

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Mol	Chain	Res	Type	Models (Total)
1	A	102	LYS	2

6.3.2 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 PDB entries followed by that with respect to all NMR entries. 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	29/58 (50%)	19±2 (67±7%)	10±2 (33±7%)	1 11
All	All	841/1682 (50%)	560 (67%)	281 (33%)	1 11

All 19 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	95	CYS	29
1	A	111	THR	29
1	A	118	TYR	29
1	A	96	ASP	23
1	A	107	LYS	22
1	A	109	VAL	20
1	A	102	LYS	17
1	A	104	LYS	15
1	A	100	LYS	14
1	A	101	LYS	14
1	A	99	ARG	13
1	A	106	SER	13
1	A	117	LYS	10
1	A	113	THR	8
1	A	120	LEU	7
1	A	119	ASN	6
1	A	121	ASP	6
1	A	114	ASN	5
1	A	115	CYS	1

6.3.3 RNA (i)

There are no RNA molecules in this entry.

6.4 Non-standard residues in protein, DNA, RNA chains (i)

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

6.5 Carbohydrates (i)

There are no monosaccharides in this entry.

6.6 Ligand geometry (i)

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

6.7 Other polymers (i)

There are no such molecules in this entry.

6.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

7 Chemical shift validation (i)

No chemical shift data were provided