Full wwPDB NMR Structure Validation Report (i)

Apr 21, 2024 – 03:35 PM EDT

PDB ID	:	2DOS
Title	:	Structural basis for the recognition of Lys48-linked polyubiquitin chain by the Josephin domain of ataxin-3, a putative deubiquitinating enzyme
Authors	:	Sumiyoshi, A.
Deposited on	:	2006-05-03

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 types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

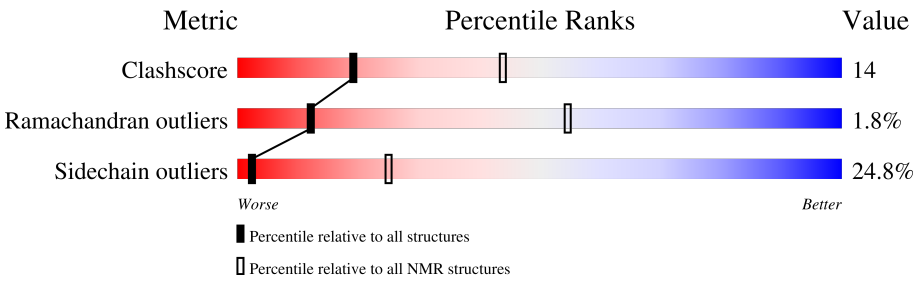
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36.2

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	176	38% 29% . 29% .

2 Ensemble composition and analysis (i)

This entry contains 10 models. Model 7 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *lowest energy*.

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:13-A:37, A:75-A:169 (120)	0.62	7

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 2 clusters and 2 single-model clusters were found.

Cluster number	Models
1	1, 3, 4, 5, 8, 9
2	2, 7
Single-model clusters	6; 10

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 2511 atoms, of which 1121 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Ataxin-3.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	171	2511	887	1121	230	266	7	0

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	GLY	-	cloning artifact	UNP P54252
A	-3	PRO	-	cloning artifact	UNP P54252
A	-2	LEU	-	cloning artifact	UNP P54252
A	-1	GLY	-	cloning artifact	UNP P54252
A	0	SER	-	cloning artifact	UNP P54252

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: Ataxin-3

Chain A: 38% 29% • 29% •

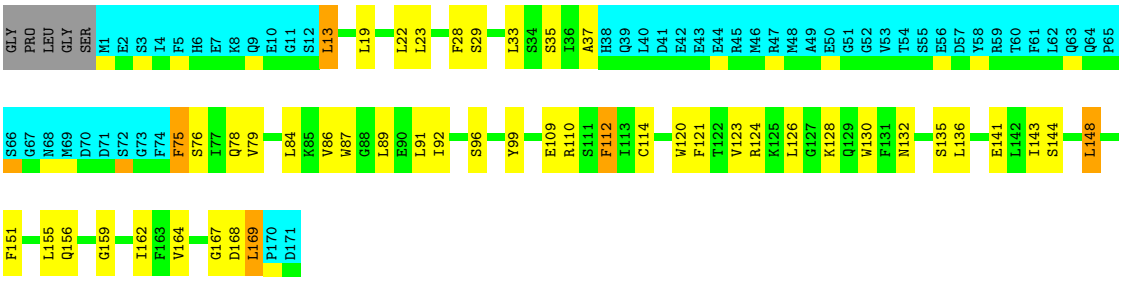
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: Ataxin-3

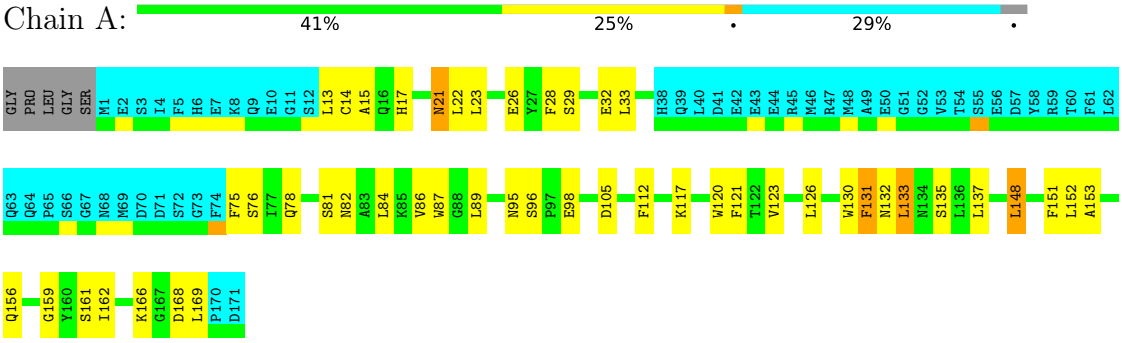
Chain A: 41% 24% • 29% •



4.2.2 Score per residue for model 2

- Molecule 1: Ataxin-3

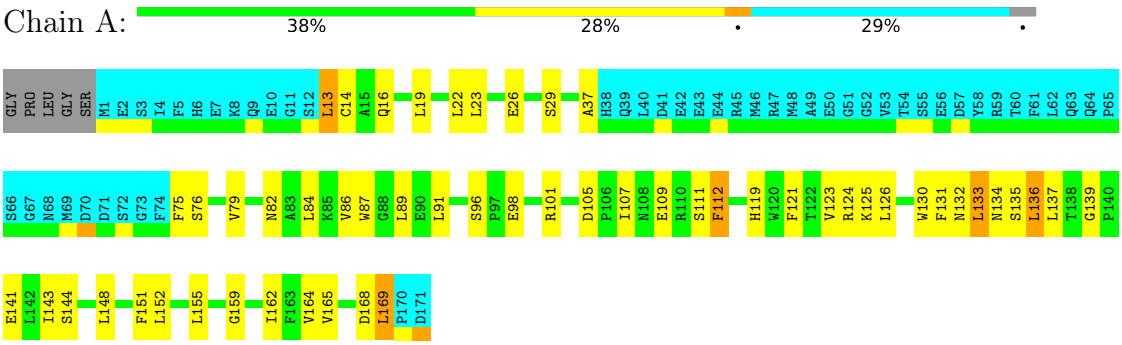
Chain A:



4.2.3 Score per residue for model 3

- Molecule 1: Ataxin-3

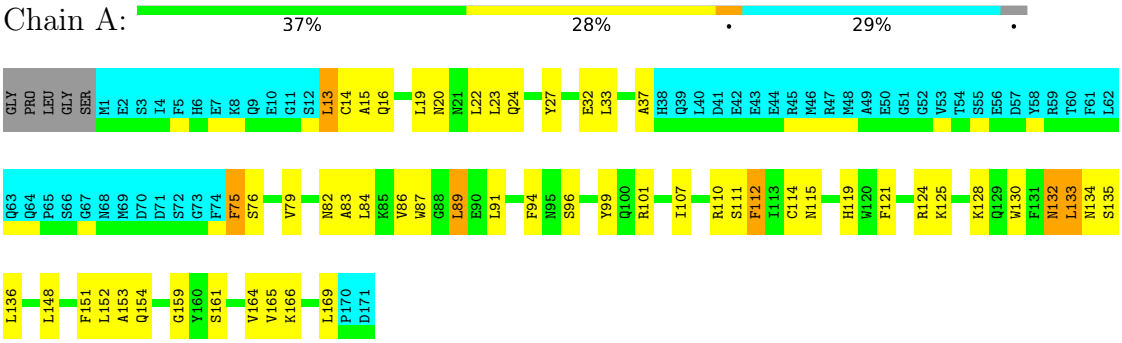
Chain A:



4.2.4 Score per residue for model 4

- Molecule 1: Ataxin-3

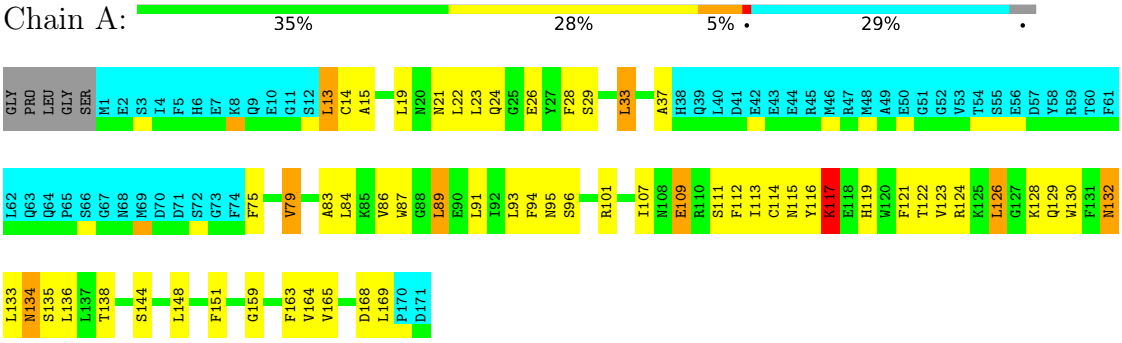
Chain A:



4.2.5 Score per residue for model 5

- Molecule 1: Ataxin-3

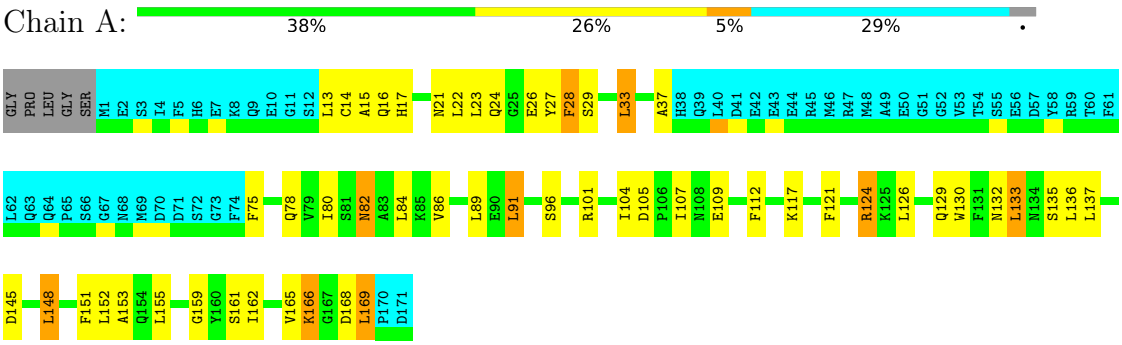
Chain A:



4.2.6 Score per residue for model 6

- Molecule 1: Ataxin-3

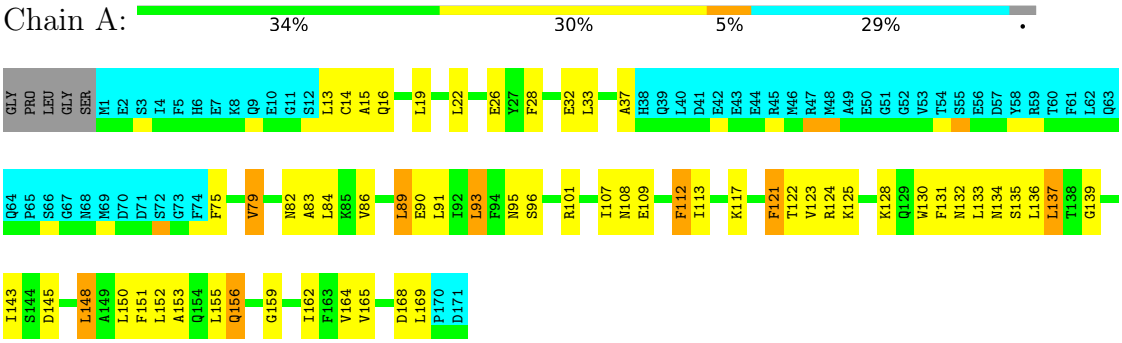
Chain A:



4.2.7 Score per residue for model 7 (medoid)

- Molecule 1: Ataxin-3

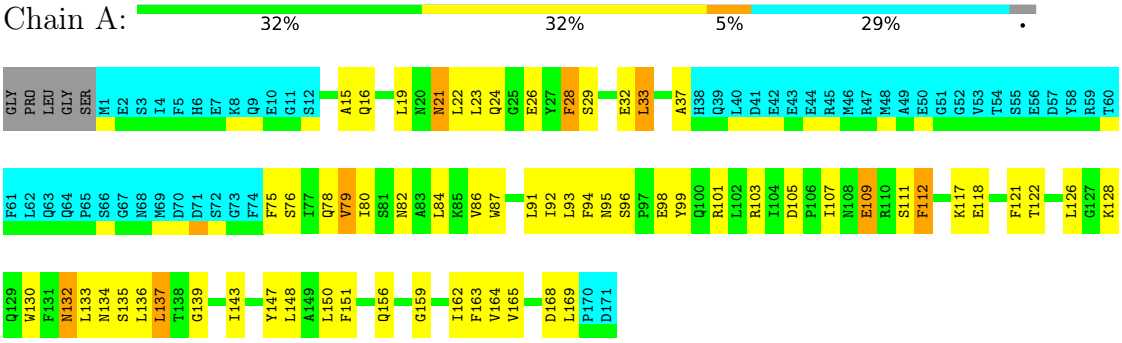
Chain A:



4.2.8 Score per residue for model 8

- Molecule 1: Ataxin-3

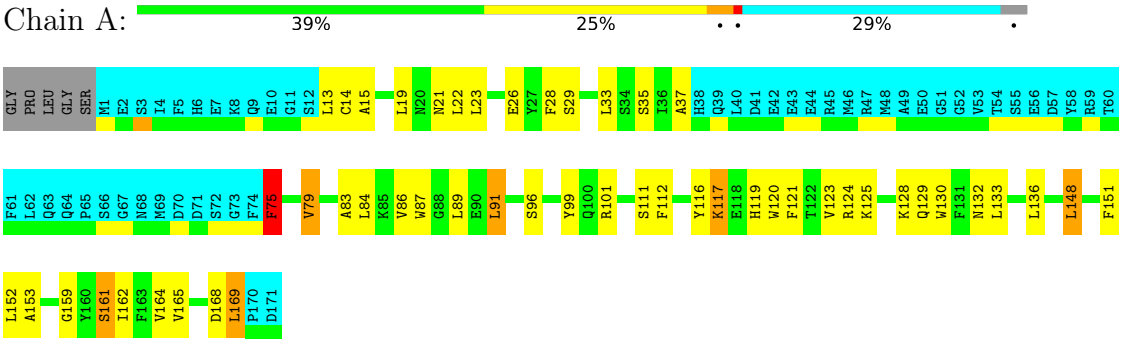
Chain A:



4.2.9 Score per residue for model 9

- Molecule 1: Ataxin-3

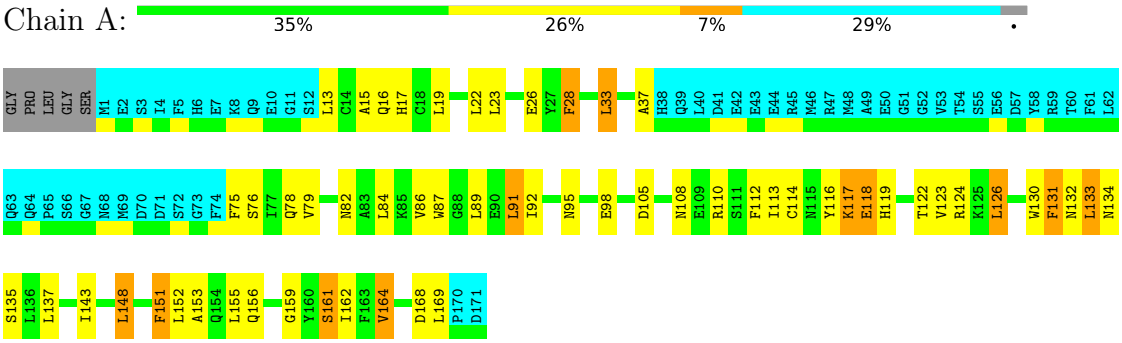
Chain A:



4.2.10 Score per residue for model 10

- Molecule 1: Ataxin-3

Chain A:



5 Refinement protocol and experimental data overview (i)

The models were refined using the following method: *distance geometry, simulated annealing.*

Of the 100 calculated structures, 10 were deposited, based on the following criterion: *structures with the lowest energy.*

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

Software name	Classification	Version
CYANA	structure solution	2.1
CYANA	refinement	2.1

No chemical shift data was provided.

6 Model quality (i)

6.1 Standard geometry (i)

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	981	833	980	28±4
All	All	9810	8330	9800	278

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 14.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:84:LEU:HD13	1:A:91:LEU:HD21	0.97	1.35	4	1
1:A:84:LEU:HD12	1:A:91:LEU:HD11	0.90	1.44	7	4
1:A:91:LEU:HD22	1:A:165:VAL:HG22	0.87	1.45	4	1
1:A:89:LEU:HD11	1:A:169:LEU:HD23	0.85	1.47	4	4
1:A:91:LEU:HD23	1:A:165:VAL:HG22	0.72	1.60	9	3
1:A:19:LEU:HD12	1:A:87:TRP:CH2	0.72	2.20	8	2
1:A:130:TRP:CD1	1:A:148:LEU:HD22	0.69	2.23	5	9
1:A:37:ALA:HB2	1:A:79:VAL:HG21	0.69	1.63	9	6
1:A:23:LEU:HD23	1:A:169:LEU:HD23	0.68	1.65	6	2
1:A:23:LEU:HD23	1:A:169:LEU:HD22	0.67	1.66	8	2
1:A:15:ALA:HB2	1:A:75:PHE:HB2	0.64	1.70	2	3
1:A:15:ALA:HB2	1:A:75:PHE:CB	0.64	2.23	6	6
1:A:130:TRP:NE1	1:A:148:LEU:HD22	0.63	2.09	1	8
1:A:82:ASN:O	1:A:86:VAL:HG23	0.63	1.93	3	6

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:15:ALA:HB2	1:A:75:PHE:HB3	0.63	1.68	8	4
1:A:137:LEU:HD13	1:A:139:GLY:O	0.62	1.94	3	1
1:A:116:TYR:O	1:A:117:LYS:C	0.62	2.37	10	3
1:A:91:LEU:HD12	1:A:165:VAL:HG22	0.62	1.72	8	1
1:A:15:ALA:HB1	1:A:33:LEU:HD12	0.61	1.71	8	1
1:A:113:ILE:HD11	1:A:124:ARG:NH2	0.60	2.12	5	2
1:A:112:PHE:CE1	1:A:164:VAL:HG22	0.60	2.31	1	5
1:A:19:LEU:HD22	1:A:87:TRP:CH2	0.60	2.32	10	1
1:A:15:ALA:HB2	1:A:75:PHE:CG	0.60	2.31	10	1
1:A:23:LEU:HD11	1:A:87:TRP:CH2	0.60	2.31	1	7
1:A:92:ILE:HB	1:A:164:VAL:HG13	0.60	1.72	10	1
1:A:136:LEU:O	1:A:136:LEU:HD13	0.59	1.98	7	2
1:A:19:LEU:HD21	1:A:83:ALA:CB	0.59	2.27	9	3
1:A:99:TYR:CD1	1:A:164:VAL:HG21	0.59	2.31	4	3
1:A:156:GLN:HB3	1:A:162:ILE:HD13	0.58	1.74	7	4
1:A:91:LEU:HG	1:A:165:VAL:HG22	0.58	1.73	5	2
1:A:89:LEU:HD11	1:A:169:LEU:HG	0.58	1.76	6	2
1:A:19:LEU:HD12	1:A:87:TRP:CZ3	0.57	2.34	3	2
1:A:84:LEU:CD1	1:A:91:LEU:HD11	0.57	2.27	3	3
1:A:37:ALA:HB1	1:A:75:PHE:HA	0.57	1.74	5	4
1:A:155:LEU:HB2	1:A:162:ILE:HD11	0.57	1.75	3	4
1:A:137:LEU:HD12	1:A:139:GLY:O	0.57	2.00	7	1
1:A:134:ASN:HB3	1:A:137:LEU:HD23	0.57	1.76	10	1
1:A:91:LEU:O	1:A:92:ILE:HD13	0.57	1.99	1	1
1:A:143:ILE:HG23	1:A:147:TYR:CD2	0.57	2.34	8	1
1:A:132:ASN:C	1:A:133:LEU:HD23	0.56	2.21	4	1
1:A:19:LEU:HD22	1:A:33:LEU:HD21	0.56	1.77	5	1
1:A:131:PHE:CZ	1:A:133:LEU:HD12	0.55	2.37	2	1
1:A:126:LEU:HD22	1:A:131:PHE:CD2	0.55	2.37	10	1
1:A:13:LEU:HD23	1:A:120:TRP:CD1	0.55	2.37	2	1
1:A:123:VAL:HG22	1:A:132:ASN:CG	0.55	2.22	9	5
1:A:15:ALA:HB2	1:A:75:PHE:CD2	0.55	2.36	10	1
1:A:81:SER:HA	1:A:84:LEU:HD12	0.55	1.78	2	1
1:A:23:LEU:HD13	1:A:27:TYR:HB2	0.54	1.78	4	2
1:A:13:LEU:O	1:A:13:LEU:HD13	0.54	2.03	1	1
1:A:133:LEU:HA	1:A:137:LEU:HD21	0.54	1.79	3	1
1:A:19:LEU:HD22	1:A:33:LEU:HD11	0.54	1.80	1	2
1:A:22:LEU:HD12	1:A:22:LEU:O	0.54	2.03	1	9
1:A:126:LEU:HD22	1:A:131:PHE:CE2	0.54	2.37	10	1
1:A:28:PHE:CD1	1:A:33:LEU:HD12	0.53	2.38	10	1
1:A:130:TRP:CG	1:A:148:LEU:HD13	0.53	2.37	6	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:21:ASN:CB	1:A:133:LEU:HD22	0.53	2.33	8	2
1:A:19:LEU:HD23	1:A:28:PHE:CE2	0.53	2.38	9	1
1:A:13:LEU:HD21	1:A:119:HIS:CA	0.53	2.33	4	2
1:A:161:SER:O	1:A:162:ILE:HD13	0.53	2.04	9	2
1:A:91:LEU:HD23	1:A:165:VAL:CG2	0.52	2.34	9	2
1:A:117:LYS:O	1:A:118:GLU:CG	0.52	2.57	10	1
1:A:21:ASN:OD1	1:A:133:LEU:HD13	0.52	2.04	2	1
1:A:121:PHE:CZ	1:A:137:LEU:HD21	0.52	2.40	7	1
1:A:28:PHE:HB3	1:A:33:LEU:HD12	0.51	1.81	5	1
1:A:21:ASN:OD1	1:A:122:THR:HG21	0.51	2.04	8	1
1:A:123:VAL:HG22	1:A:132:ASN:OD1	0.51	2.06	3	3
1:A:86:VAL:HG23	1:A:87:TRP:CD1	0.50	2.42	5	3
1:A:91:LEU:C	1:A:92:ILE:HD13	0.50	2.27	1	1
1:A:21:ASN:CG	1:A:133:LEU:HD22	0.50	2.26	6	2
1:A:13:LEU:HD11	1:A:119:HIS:HA	0.50	1.83	10	2
1:A:28:PHE:CD1	1:A:33:LEU:HD23	0.50	2.42	6	2
1:A:92:ILE:HD13	1:A:98:GLU:HG2	0.50	1.82	8	1
1:A:15:ALA:HB1	1:A:33:LEU:CD1	0.50	2.37	8	1
1:A:15:ALA:HB2	1:A:75:PHE:CD1	0.50	2.42	9	1
1:A:136:LEU:HD23	1:A:136:LEU:O	0.50	2.06	5	3
1:A:23:LEU:HD11	1:A:87:TRP:CZ3	0.49	2.42	10	2
1:A:124:ARG:NH2	1:A:169:LEU:HD13	0.49	2.22	3	2
1:A:13:LEU:HD12	1:A:75:PHE:CE1	0.49	2.41	5	1
1:A:137:LEU:HD22	1:A:139:GLY:O	0.49	2.07	8	1
1:A:117:LYS:O	1:A:118:GLU:CB	0.49	2.59	10	1
1:A:13:LEU:HD23	1:A:120:TRP:CB	0.49	2.37	1	1
1:A:19:LEU:HD21	1:A:83:ALA:HB3	0.49	1.83	4	1
1:A:15:ALA:O	1:A:19:LEU:HD23	0.49	2.07	8	1
1:A:109:GLU:HG3	1:A:164:VAL:HG13	0.48	1.83	1	1
1:A:13:LEU:HD21	1:A:119:HIS:HA	0.48	1.85	3	2
1:A:21:ASN:OD1	1:A:133:LEU:HD22	0.48	2.09	2	1
1:A:133:LEU:HD23	1:A:134:ASN:N	0.48	2.23	5	2
1:A:132:ASN:HD21	1:A:137:LEU:HD11	0.48	1.68	8	1
1:A:13:LEU:HD22	1:A:119:HIS:HA	0.48	1.83	5	1
1:A:22:LEU:HD21	1:A:84:LEU:HD21	0.48	1.86	8	2
1:A:132:ASN:OD1	1:A:143:ILE:HD12	0.48	2.08	7	4
1:A:91:LEU:CD2	1:A:165:VAL:HG13	0.48	2.39	4	1
1:A:22:LEU:HD11	1:A:169:LEU:HD21	0.48	1.86	5	1
1:A:19:LEU:HD22	1:A:87:TRP:CZ3	0.47	2.43	10	1
1:A:19:LEU:HD12	1:A:33:LEU:HD21	0.47	1.85	10	1
1:A:93:LEU:HD12	1:A:163:PHE:CE2	0.47	2.44	5	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:113:ILE:CD1	1:A:122:THR:HG23	0.47	2.39	10	1
1:A:24:GLN:OE1	1:A:126:LEU:HD11	0.47	2.10	8	1
1:A:80:ILE:O	1:A:84:LEU:HD12	0.47	2.10	8	2
1:A:24:GLN:CD	1:A:126:LEU:HD21	0.47	2.30	6	1
1:A:82:ASN:O	1:A:86:VAL:HG22	0.47	2.08	8	1
1:A:84:LEU:CD1	1:A:91:LEU:HD21	0.47	2.40	9	1
1:A:89:LEU:HD13	1:A:167:GLY:HA3	0.46	1.86	1	1
1:A:93:LEU:HD12	1:A:95:ASN:OD1	0.46	2.10	7	1
1:A:152:LEU:HD12	1:A:153:ALA:N	0.46	2.24	10	6
1:A:130:TRP:CB	1:A:148:LEU:HD13	0.46	2.41	5	1
1:A:99:TYR:CE1	1:A:164:VAL:HG21	0.46	2.46	4	2
1:A:133:LEU:HD12	1:A:134:ASN:H	0.46	1.70	7	1
1:A:21:ASN:ND2	1:A:133:LEU:HD13	0.46	2.25	5	1
1:A:91:LEU:CD2	1:A:165:VAL:HG22	0.45	2.41	3	2
1:A:109:GLU:HG2	1:A:164:VAL:HG13	0.45	1.88	8	2
1:A:15:ALA:CB	1:A:33:LEU:HD12	0.45	2.41	8	1
1:A:109:GLU:CG	1:A:164:VAL:HG13	0.45	2.41	1	1
1:A:123:VAL:HG22	1:A:132:ASN:HA	0.45	1.88	5	1
1:A:89:LEU:CD1	1:A:169:LEU:HD23	0.45	2.34	4	1
1:A:22:LEU:HD12	1:A:124:ARG:CG	0.45	2.41	6	1
1:A:24:GLN:CG	1:A:126:LEU:HD21	0.45	2.41	6	1
1:A:91:LEU:HD22	1:A:165:VAL:CG2	0.45	2.31	4	1
1:A:24:GLN:HG3	1:A:126:LEU:HD21	0.45	1.87	6	1
1:A:116:TYR:O	1:A:119:HIS:N	0.45	2.49	10	1
1:A:13:LEU:HD21	1:A:119:HIS:N	0.45	2.27	4	1
1:A:28:PHE:C	1:A:28:PHE:CD1	0.45	2.90	9	1
1:A:93:LEU:HD12	1:A:163:PHE:CZ	0.44	2.47	8	1
1:A:37:ALA:HB2	1:A:75:PHE:CE1	0.44	2.47	1	1
1:A:24:GLN:OE1	1:A:126:LEU:HD21	0.44	2.13	5	1
1:A:124:ARG:CZ	1:A:169:LEU:HD13	0.44	2.42	1	1
1:A:89:LEU:HD11	1:A:169:LEU:CD2	0.43	2.43	5	2
1:A:21:ASN:ND2	1:A:133:LEU:HD11	0.43	2.29	9	1
1:A:22:LEU:CD2	1:A:84:LEU:HD21	0.43	2.44	8	2
1:A:131:PHE:CE1	1:A:133:LEU:HD12	0.43	2.48	2	1
1:A:148:LEU:HG	1:A:152:LEU:HD23	0.43	1.91	3	1
1:A:112:PHE:CZ	1:A:164:VAL:HG22	0.43	2.49	4	1
1:A:75:PHE:CZ	1:A:79:VAL:HG11	0.42	2.49	1	1
1:A:134:ASN:HB3	1:A:137:LEU:HD12	0.42	1.91	8	1
1:A:133:LEU:HD13	1:A:134:ASN:H	0.42	1.74	10	1
1:A:22:LEU:HD21	1:A:84:LEU:CD2	0.42	2.44	8	1
1:A:151:PHE:CE1	1:A:155:LEU:HD11	0.42	2.50	10	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:13:LEU:HD13	1:A:120:TRP:HB2	0.42	1.92	9	1
1:A:21:ASN:N	1:A:21:ASN:HD22	0.42	2.13	2	1
1:A:133:LEU:HD13	1:A:134:ASN:N	0.42	2.29	10	1
1:A:113:ILE:HD13	1:A:122:THR:HG23	0.42	1.91	10	1
1:A:37:ALA:CB	1:A:79:VAL:HG21	0.42	2.44	7	2
1:A:21:ASN:HB3	1:A:133:LEU:HD13	0.41	1.91	6	1
1:A:22:LEU:HD11	1:A:169:LEU:HD11	0.41	1.92	7	1
1:A:113:ILE:HD11	1:A:124:ARG:HH22	0.41	1.75	7	1
1:A:13:LEU:HD23	1:A:120:TRP:HB2	0.41	1.92	1	1
1:A:13:LEU:HD22	1:A:13:LEU:C	0.41	2.35	1	1
1:A:113:ILE:HD13	1:A:122:THR:HA	0.41	1.92	5	1
1:A:122:THR:HG23	1:A:124:ARG:NH2	0.41	2.30	7	1
1:A:91:LEU:CG	1:A:165:VAL:HG22	0.40	2.44	5	1
1:A:119:HIS:CE1	1:A:136:LEU:HD23	0.40	2.51	9	1
1:A:104:ILE:HD13	1:A:166:LYS:HE3	0.40	1.93	6	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	120/176 (68%)	111±2 (92±2%)	7±2 (6±2%)	2±1 (2±0%)	12	54
All	All	1200/1760 (68%)	1107 (92%)	71 (6%)	22 (2%)	12	54

All 5 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	159	GLY	10
1	A	117	LYS	6
1	A	75	PHE	3
1	A	13	LEU	2
1	A	26	GLU	1

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	109/157 (69%)	82±3 (75±3%)	27±3 (25±3%)	2 25
All	All	1090/1570 (69%)	820 (75%)	270 (25%)	2 25

All 67 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	112	PHE	10
1	A	151	PHE	10
1	A	96	SER	9
1	A	121	PHE	9
1	A	135	SER	9
1	A	168	ASP	9
1	A	29	SER	7
1	A	14	CYS	7
1	A	26	GLU	7
1	A	33	LEU	7
1	A	101	ARG	7
1	A	28	PHE	6
1	A	76	SER	6
1	A	128	LYS	6
1	A	148	LEU	6
1	A	16	GLN	6
1	A	107	ILE	6
1	A	126	LEU	5
1	A	105	ASP	5
1	A	133	LEU	5
1	A	161	SER	5
1	A	109	GLU	5
1	A	111	SER	5
1	A	79	VAL	5
1	A	78	GLN	4
1	A	114	CYS	4
1	A	169	LEU	4
1	A	32	GLU	4
1	A	95	ASN	4

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Mol	Chain	Res	Type	Models (Total)
1	A	131	PHE	4
1	A	137	LEU	4
1	A	13	LEU	4
1	A	125	LYS	4
1	A	89	LEU	4
1	A	132	ASN	4
1	A	110	ARG	3
1	A	144	SER	3
1	A	17	HIS	3
1	A	98	GLU	3
1	A	166	LYS	3
1	A	134	ASN	3
1	A	94	PHE	3
1	A	124	ARG	3
1	A	129	GLN	3
1	A	91	LEU	3
1	A	35	SER	2
1	A	75	PHE	2
1	A	141	GLU	2
1	A	21	ASN	2
1	A	136	LEU	2
1	A	115	ASN	2
1	A	117	LYS	2
1	A	145	ASP	2
1	A	108	ASN	2
1	A	150	LEU	2
1	A	156	GLN	2
1	A	118	GLU	2
1	A	20	ASN	1
1	A	24	GLN	1
1	A	154	GLN	1
1	A	138	THR	1
1	A	82	ASN	1
1	A	90	GLU	1
1	A	93	LEU	1
1	A	103	ARG	1
1	A	123	VAL	1
1	A	164	VAL	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)

There are no ligands in this entry.

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