Full wwPDB NMR Structure Validation Report (i)

Jun 22, 2024 – 06:51 PM EDT

PDB ID	:	6HKA
BMRB ID	:	27167
Title	:	The solution structure of the micelle-associated FATC domain of the human protein kinase ataxia telangiectasia mutated (ATM)
Authors	:	Abd Rahim, M.S.; Dames, S.A.
Deposited on	:	2018-09-06

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 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:

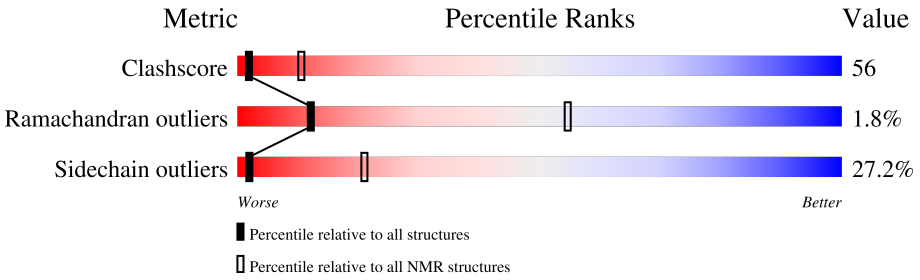
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

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 is 89%.

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	100	• 8% • 22% 67%

2 Ensemble composition and analysis (i)

This entry contains 20 models. Model 8 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:72-A:82 (11)	0.38	8

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. No single-model clusters were found.

Cluster number	Models
1	1, 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
2	3, 5, 20

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 530 atoms, of which 271 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Immunoglobulin G-binding protein G,Serine-protein kinase ATM.

Mol	Chain	Residues	Atoms					Trace
			Total	C	H	N	O	
1	A	33	530	170	271	45	44	0

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP P19909
A	2	GLN	-	expression tag	UNP P19909
A	6	ALA	ILE	conflict	UNP P19909
A	57	LEU	-	linker	UNP P19909
A	58	VAL	-	linker	UNP P19909
A	59	PRO	-	linker	UNP P19909
A	60	ARG	-	linker	UNP P19909
A	61	GLY	-	linker	UNP P19909
A	62	SER	-	linker	UNP P19909
A	63	ASP	-	linker	UNP P19909
A	64	ASP	-	linker	UNP P19909
A	65	ASP	-	linker	UNP P19909
A	66	ASP	-	linker	UNP P19909
A	67	LYS	-	linker	UNP P19909

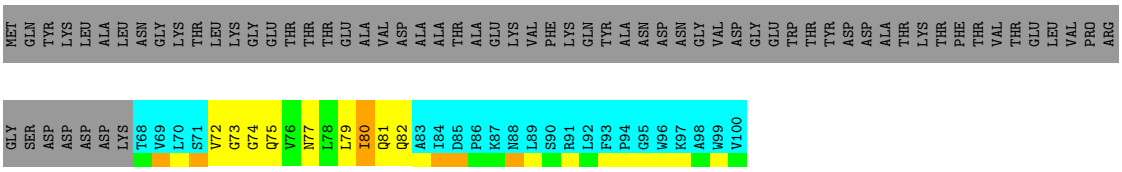
4 Residue-property plots (i)

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: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

Chain A: 8% 22% 67%



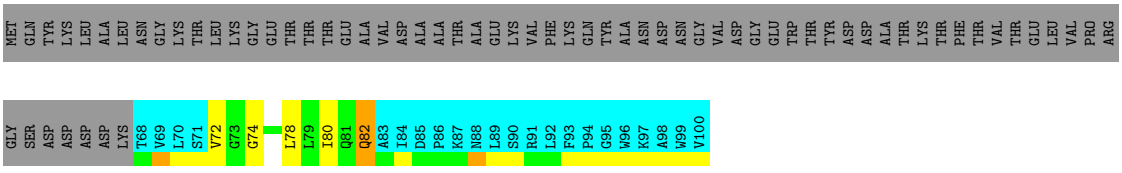
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

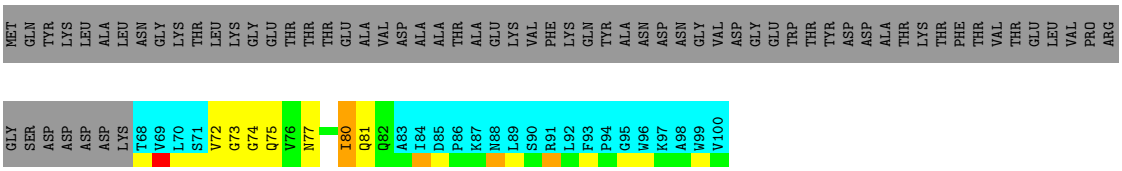
Chain A: 6% 22% 67%



4.2.2 Score per residue for model 2

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

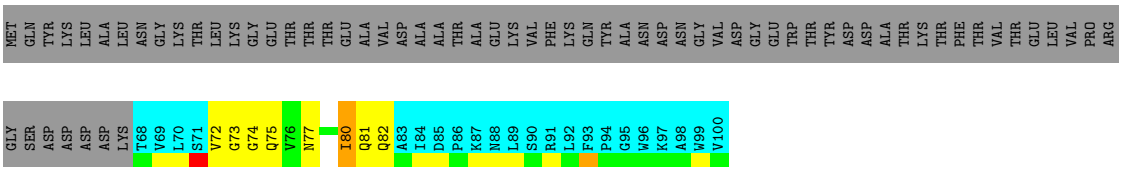
Chain A: 6% 22% 67%



4.2.3 Score per residue for model 3

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

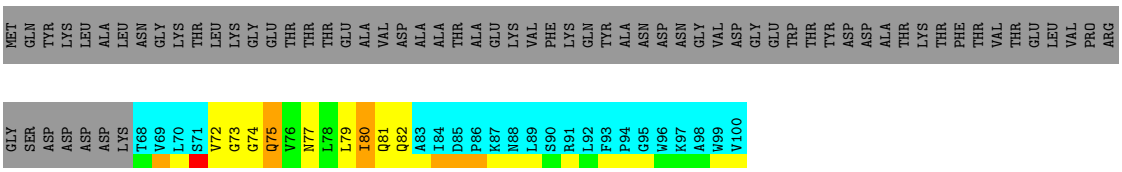
Chain A: 7% 22% 67%



4.2.4 Score per residue for model 4

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

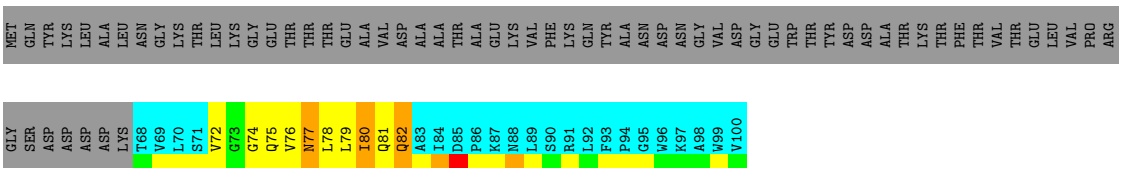
Chain A: 7% 22% 67%



4.2.5 Score per residue for model 5

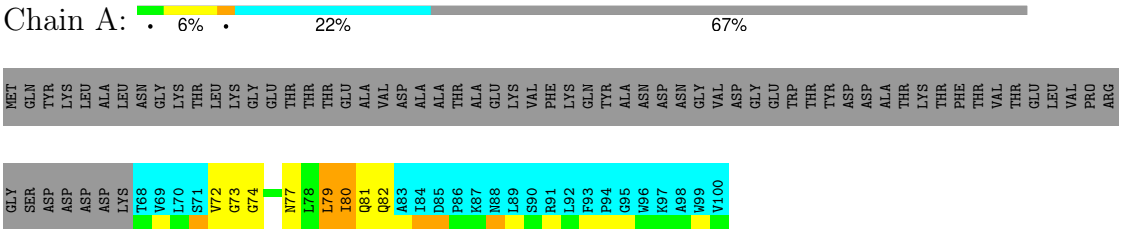
• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

Chain A: 7% 22% 67%



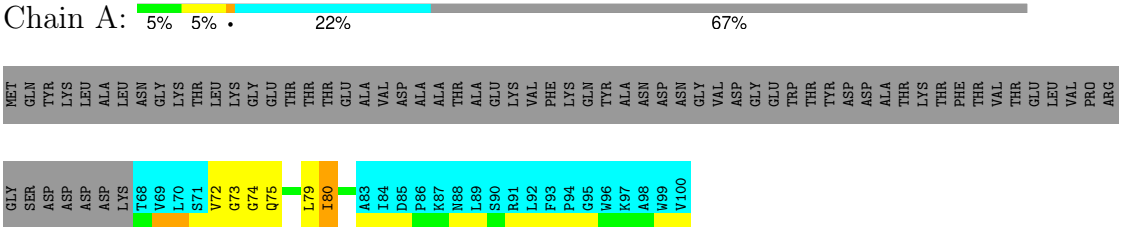
4.2.6 Score per residue for model 6

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM



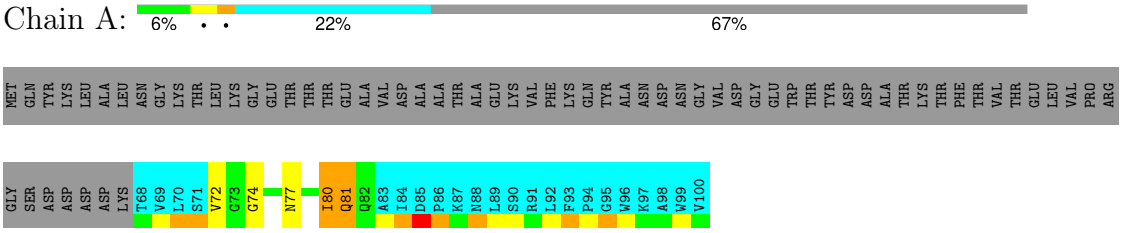
4.2.7 Score per residue for model 7

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM



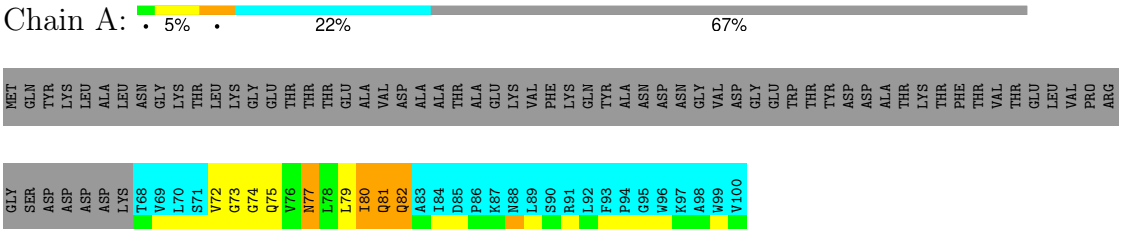
4.2.8 Score per residue for model 8 (medoid)

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM



4.2.9 Score per residue for model 9

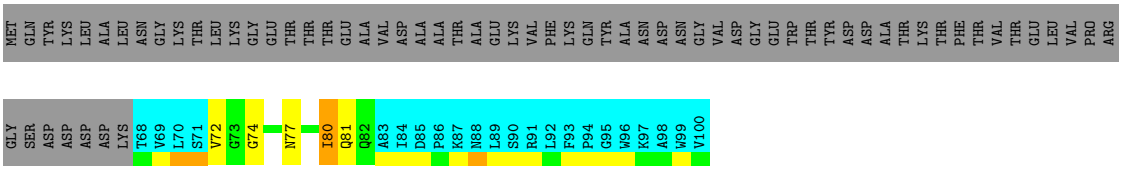
• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM



4.2.10 Score per residue for model 10

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

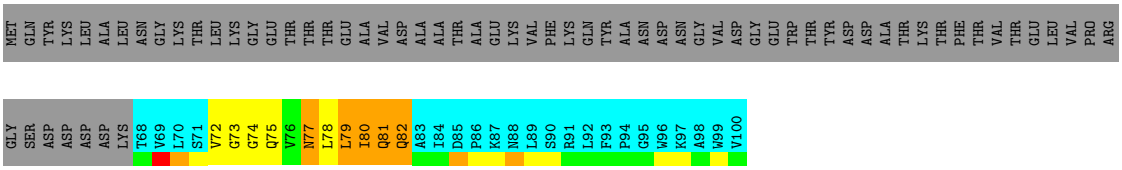
Chain A: 6% 22% 67%



4.2.11 Score per residue for model 11

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

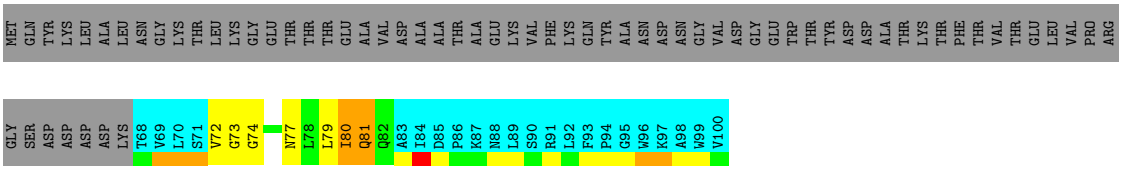
Chain A: 5% 5% 22% 67%



4.2.12 Score per residue for model 12

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

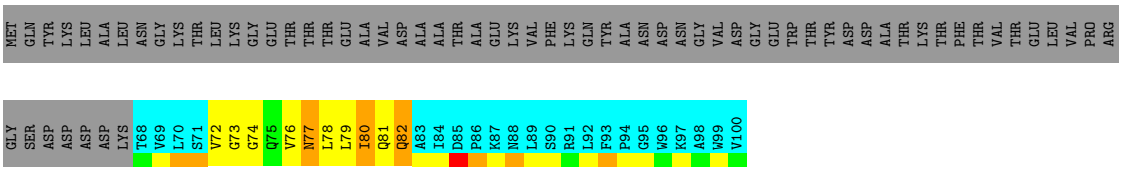
Chain A: 5% 22% 67%



4.2.13 Score per residue for model 13

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

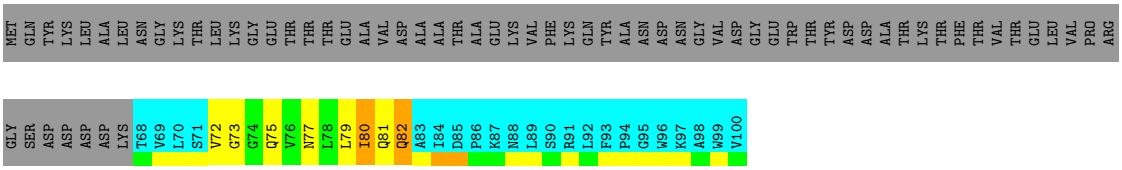
Chain A: 7% 22% 67%



4.2.14 Score per residue for model 14

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

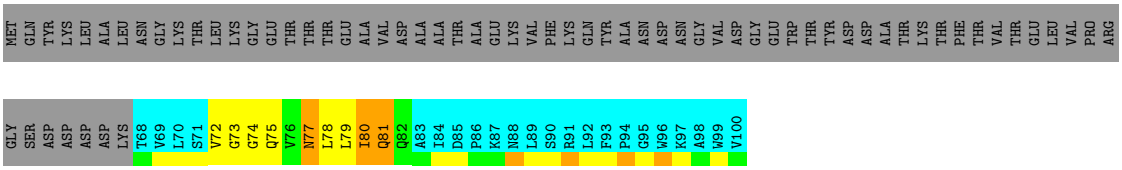
Chain A: 6% 22% 67%



4.2.15 Score per residue for model 15

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

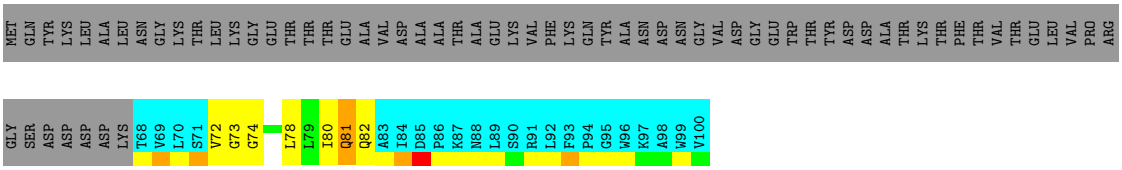
Chain A: 6% 22% 67%



4.2.16 Score per residue for model 16

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

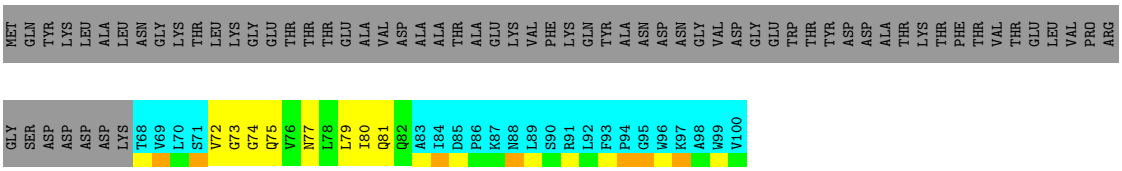
Chain A: 6% 22% 67%



4.2.17 Score per residue for model 17

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

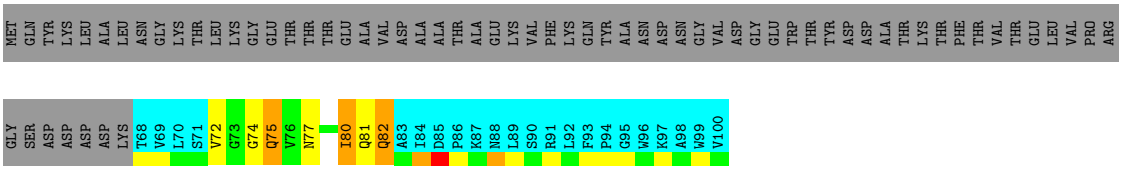
Chain A: 8% 22% 67%



4.2.18 Score per residue for model 18

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

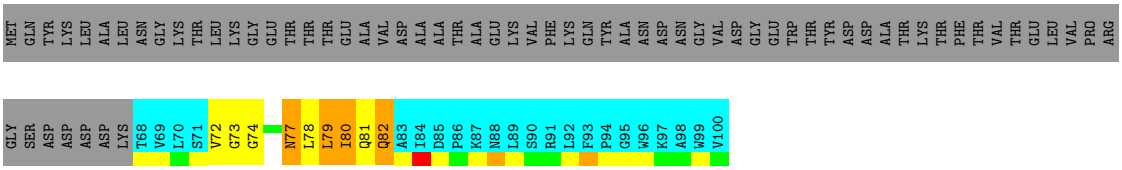
Chain A: 22% 67%



4.2.19 Score per residue for model 19

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

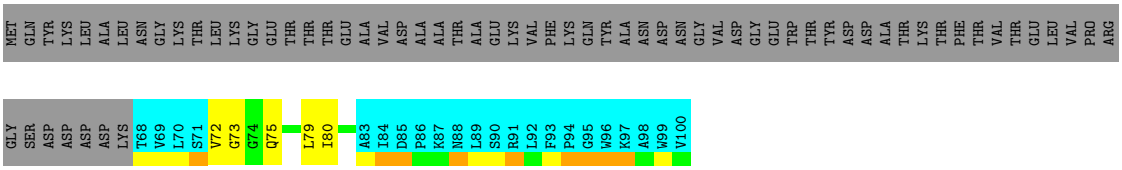
Chain A: 5% 22% 67%



4.2.20 Score per residue for model 20

• Molecule 1: Immunoglobulin G-binding protein G,Serine-protein kinase ATM

Chain A: 6% 5% 22% 67%



5 Refinement protocol and experimental data overview

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

Of the 200 calculated structures, 20 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
Xplor-NIH	structure calculation	

The following table shows chemical shift validation statistics as aggregates over all chemical shift files. Detailed validation can be found in section 7 of this report.

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	1103
Number of shifts mapped to atoms	406
Number of unparsed shifts	0
Number of shifts with mapping errors	697
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	89%

6 Model quality

6.1 Standard geometry

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

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	81	87	87	9±4
All	All	1620	1740	1740	188

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 56.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:80:ILE:O	1:A:80:ILE:HD12	0.71	1.86	7	3
1:A:82:GLN:NE2	1:A:82:GLN:H	0.70	1.84	1	1
1:A:82:GLN:H	1:A:82:GLN:HE21	0.68	1.27	1	2
1:A:82:GLN:NE2	1:A:82:GLN:N	0.64	2.46	1	2
1:A:81:GLN:NE2	1:A:82:GLN:N	0.64	2.45	16	2
1:A:77:ASN:HD22	1:A:81:GLN:HE22	0.63	1.34	6	2
1:A:77:ASN:ND2	1:A:81:GLN:NE2	0.63	2.47	14	6
1:A:77:ASN:ND2	1:A:78:LEU:N	0.62	2.47	13	4
1:A:77:ASN:ND2	1:A:81:GLN:HE22	0.61	1.93	6	2
1:A:81:GLN:N	1:A:81:GLN:HE21	0.60	1.94	9	2
1:A:75:GLN:NE2	1:A:75:GLN:H	0.59	1.95	9	3
1:A:77:ASN:HD22	1:A:78:LEU:N	0.59	1.94	13	2
1:A:78:LEU:O	1:A:82:GLN:NE2	0.58	2.37	1	2
1:A:82:GLN:H	1:A:82:GLN:NE2	0.58	1.95	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:72:VAL:HG23	1:A:73:GLY:N	0.57	2.14	7	10
1:A:78:LEU:O	1:A:81:GLN:NE2	0.57	2.37	16	1
1:A:75:GLN:NE2	1:A:75:GLN:N	0.57	2.53	2	6
1:A:72:VAL:O	1:A:74:GLY:N	0.56	2.39	12	17
1:A:77:ASN:O	1:A:81:GLN:NE2	0.56	2.39	18	10
1:A:74:GLY:O	1:A:77:ASN:ND2	0.55	2.40	5	2
1:A:75:GLN:O	1:A:79:LEU:HD23	0.54	2.03	11	2
1:A:78:LEU:O	1:A:80:ILE:N	0.53	2.42	13	2
1:A:80:ILE:HD13	1:A:80:ILE:O	0.52	2.05	18	8
1:A:80:ILE:CG2	1:A:81:GLN:NE2	0.51	2.73	8	2
1:A:82:GLN:HE21	1:A:82:GLN:C	0.51	2.09	18	2
1:A:82:GLN:O	1:A:82:GLN:NE2	0.51	2.44	11	1
1:A:79:LEU:C	1:A:82:GLN:HE22	0.51	2.09	19	1
1:A:82:GLN:HE21	1:A:82:GLN:N	0.50	2.01	1	2
1:A:82:GLN:NE2	1:A:82:GLN:C	0.50	2.65	14	3
1:A:80:ILE:O	1:A:80:ILE:HD13	0.49	2.07	14	2
1:A:77:ASN:ND2	1:A:81:GLN:HE21	0.49	2.02	19	1
1:A:80:ILE:CG2	1:A:81:GLN:N	0.49	2.75	5	5
1:A:77:ASN:ND2	1:A:77:ASN:C	0.49	2.66	11	5
1:A:77:ASN:CG	1:A:81:GLN:NE2	0.49	2.66	18	4
1:A:77:ASN:HD22	1:A:81:GLN:NE2	0.48	2.04	6	1
1:A:77:ASN:C	1:A:81:GLN:HE21	0.48	2.11	10	2
1:A:75:GLN:N	1:A:75:GLN:OE1	0.48	2.46	15	1
1:A:81:GLN:N	1:A:81:GLN:NE2	0.48	2.60	9	2
1:A:72:VAL:C	1:A:74:GLY:N	0.48	2.67	1	15
1:A:72:VAL:HG23	1:A:73:GLY:H	0.48	1.68	14	1
1:A:81:GLN:NE2	1:A:82:GLN:CB	0.47	2.76	5	1
1:A:77:ASN:C	1:A:81:GLN:NE2	0.47	2.68	19	1
1:A:77:ASN:OD1	1:A:81:GLN:NE2	0.47	2.47	2	2
1:A:80:ILE:HD12	1:A:80:ILE:C	0.47	2.30	7	2
1:A:72:VAL:CG2	1:A:73:GLY:N	0.47	2.77	7	7
1:A:79:LEU:HD13	1:A:79:LEU:O	0.46	2.10	6	1
1:A:80:ILE:HG23	1:A:81:GLN:NE2	0.46	2.25	11	2
1:A:73:GLY:O	1:A:77:ASN:OD1	0.46	2.34	11	3
1:A:77:ASN:CG	1:A:78:LEU:N	0.46	2.68	15	1
1:A:75:GLN:O	1:A:79:LEU:HD13	0.45	2.12	7	5
1:A:80:ILE:C	1:A:82:GLN:N	0.45	2.70	5	1
1:A:75:GLN:N	1:A:75:GLN:CD	0.44	2.71	2	2
1:A:80:ILE:HD13	1:A:80:ILE:C	0.44	2.32	18	1
1:A:72:VAL:O	1:A:75:GLN:N	0.44	2.51	20	2
1:A:78:LEU:C	1:A:80:ILE:N	0.44	2.71	13	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:72:VAL:O	1:A:76:VAL:HG23	0.44	2.12	13	1
1:A:77:ASN:O	1:A:80:ILE:N	0.44	2.48	15	1
1:A:77:ASN:HD22	1:A:78:LEU:H	0.43	1.53	13	1
1:A:72:VAL:C	1:A:74:GLY:H	0.42	2.17	4	5
1:A:80:ILE:HG23	1:A:81:GLN:N	0.42	2.29	5	1
1:A:77:ASN:O	1:A:77:ASN:OD1	0.42	2.38	8	1
1:A:80:ILE:CG2	1:A:81:GLN:HE22	0.41	2.27	18	1
1:A:80:ILE:HG23	1:A:81:GLN:HE22	0.40	1.77	11	1
1:A:76:VAL:C	1:A:78:LEU:N	0.40	2.74	5	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	11/100 (11%)	9±1 (86±9%)	1±1 (12±8%)	0±0 (2±4%)	12	54
All	All	220/2000 (11%)	189 (86%)	27 (12%)	4 (2%)	12	54

All 2 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	73	GLY	3
1	A	79	LEU	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	9/83 (11%)	7±1 (73±13%)	2±1 (27±13%)	2	21

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	180/1660 (11%)	131 (73%)	49 (27%)	2 21

All 6 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	80	ILE	20
1	A	82	GLN	10
1	A	77	ASN	6
1	A	81	GLN	6
1	A	79	LEU	5
1	A	75	GLN	2

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

The completeness of assignment taking into account all chemical shift lists is 89% for the well-defined parts and 87% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *output*

7.1.1 Bookkeeping

The following table shows the results of parsing the chemical shift list and reports the number of nuclei with statistically unusual chemical shifts.

Total number of shifts	1103
Number of shifts mapped to atoms	406
Number of unparsed shifts	0
Number of shifts with mapping errors	697
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	3

The following assigned chemical shifts were not mapped to the molecules present in the coordinate file.

- No matching atom found in the structure. All 697 occurrences are reported below.

List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	1	MET	CA	54.777	.	1
1	A	1	MET	HA	4.231	.	1
1	A	1	MET	CB	32.772	.	1
1	A	1	MET	HB2	2.141	.	2
1	A	1	MET	HB3	2.276	.	2
1	A	1	MET	CG	30.795	.	1
1	A	1	MET	HG2	2.219	.	2
1	A	1	MET	HG3	2.47	.	2
1	A	1	MET	CE	16.413	.	1
1	A	1	MET	HE1	2.173	.	1
1	A	1	MET	HE2	2.173	.	1
1	A	1	MET	HE3	2.173	.	1
1	A	2	GLN	N	123.863	.	1
1	A	2	GLN	H	8.391	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	2	GLN	CA	56.041	.	1
1	A	2	GLN	HA	5.02	.	1
1	A	2	GLN	CB	30.522	.	1
1	A	2	GLN	HB2	2.022	.	2
1	A	2	GLN	HB3	2.075	.	2
1	A	2	GLN	CG	35.226	.	1
1	A	2	GLN	HG2	2.147	.	2
1	A	2	GLN	HG3	2.42	.	2
1	A	2	GLN	NE2	112.632	.	1
1	A	2	GLN	HE21	7.88	.	2
1	A	2	GLN	HE22	6.954	.	2
1	A	3	TYR	N	124.692	.	1
1	A	3	TYR	H	9.126	.	1
1	A	3	TYR	CA	57.366	.	1
1	A	3	TYR	HA	5.399	.	1
1	A	3	TYR	CB	43.59	.	1
1	A	3	TYR	HB2	2.775	.	2
1	A	3	TYR	HB3	3.465	.	2
1	A	3	TYR	CD1	133.674	.	2
1	A	3	TYR	HD1	7.183	.	2
1	A	3	TYR	CE1	118.145	.	2
1	A	3	TYR	HE1	6.946	.	2
1	A	4	LYS	N	121.737	.	1
1	A	4	LYS	H	9.218	.	1
1	A	4	LYS	CA	55.342	.	1
1	A	4	LYS	HA	5.294	.	1
1	A	4	LYS	CB	36.065	.	1
1	A	4	LYS	HB2	2.004	.	2
1	A	4	LYS	HB3	2.004	.	2
1	A	4	LYS	CG	25.577	.	1
1	A	4	LYS	HG2	1.367	.	2
1	A	4	LYS	HG3	1.503	.	2
1	A	4	LYS	CD	29.236	.	1
1	A	4	LYS	HD2	1.662	.	2
1	A	4	LYS	HD3	1.662	.	2
1	A	4	LYS	CE	42.133	.	1
1	A	4	LYS	HE2	2.938	.	2
1	A	4	LYS	HE3	2.938	.	2
1	A	5	LEU	N	125.83	.	1
1	A	5	LEU	H	8.582	.	1
1	A	5	LEU	CA	52.825	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	5	LEU	HA	4.983	.	1
1	A	5	LEU	CB	42.565	.	1
1	A	5	LEU	HB2	-1.055	.	2
1	A	5	LEU	HB3	0.865	.	2
1	A	5	LEU	CG	27.228	.	1
1	A	5	LEU	HG	0.913	.	1
1	A	5	LEU	CD1	26.048	.	2
1	A	5	LEU	HD11	0.608	.	4
1	A	5	LEU	HD12	0.608	.	4
1	A	5	LEU	HD13	0.608	.	4
1	A	5	LEU	CD2	24.419	.	2
1	A	5	LEU	HD21	0.535	.	4
1	A	5	LEU	HD22	0.535	.	4
1	A	5	LEU	HD23	0.535	.	4
1	A	6	ALA	N	130.084	.	1
1	A	6	ALA	H	9.312	.	1
1	A	6	ALA	CA	50.685	.	1
1	A	6	ALA	HA	4.852	.	1
1	A	6	ALA	CB	19.959	.	1
1	A	6	ALA	HB1	1.339	.	1
1	A	6	ALA	HB2	1.339	.	1
1	A	6	ALA	HB3	1.339	.	1
1	A	7	LEU	N	122.407	.	1
1	A	7	LEU	H	8.595	.	1
1	A	7	LEU	CA	54.451	.	1
1	A	7	LEU	HA	4.544	.	1
1	A	7	LEU	CB	42.746	.	1
1	A	7	LEU	HB2	1.471	.	2
1	A	7	LEU	HB3	1.471	.	2
1	A	7	LEU	CG	27.449	.	1
1	A	7	LEU	HG	1.384	.	1
1	A	7	LEU	CD1	25.9	.	2
1	A	7	LEU	HD11	0.813	.	4
1	A	7	LEU	HD12	0.813	.	4
1	A	7	LEU	HD13	0.813	.	4
1	A	7	LEU	CD2	25.453	.	2
1	A	7	LEU	HD21	0.765	.	4
1	A	7	LEU	HD22	0.765	.	4
1	A	7	LEU	HD23	0.765	.	4
1	A	8	ASN	N	125.342	.	1
1	A	8	ASN	H	8.845	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	8	ASN	CA	51.735	.	1
1	A	8	ASN	HA	5.221	.	1
1	A	8	ASN	CB	38.79	.	1
1	A	8	ASN	HB2	2.656	.	2
1	A	8	ASN	HB3	2.951	.	2
1	A	8	ASN	ND2	111.803	.	1
1	A	8	ASN	HD21	7.172	.	2
1	A	8	ASN	HD22	6.901	.	2
1	A	9	GLY	N	110.527	.	1
1	A	9	GLY	H	8.043	.	1
1	A	9	GLY	CA	44.825	.	1
1	A	9	GLY	HA2	4.07	.	2
1	A	9	GLY	HA3	4.481	.	2
1	A	10	LYS	N	121.262	.	1
1	A	10	LYS	H	9.119	.	1
1	A	10	LYS	CA	59.03	.	1
1	A	10	LYS	HA	4.118	.	1
1	A	10	LYS	CB	32.762	.	1
1	A	10	LYS	HB2	1.877	.	2
1	A	10	LYS	HB3	1.877	.	2
1	A	10	LYS	CG	25.059	.	1
1	A	10	LYS	HG3	1.498	.	2
1	A	10	LYS	CD	29.301	.	1
1	A	10	LYS	HD2	1.701	.	2
1	A	10	LYS	HD3	1.701	.	2
1	A	10	LYS	CE	42.183	.	1
1	A	10	LYS	HE3	3.044	.	2
1	A	11	THR	N	109.687	.	1
1	A	11	THR	H	8.815	.	1
1	A	11	THR	CA	62.184	.	1
1	A	11	THR	HA	4.408	.	1
1	A	11	THR	CB	69.764	.	1
1	A	11	THR	HB	4.27	.	1
1	A	11	THR	CG2	22.012	.	1
1	A	11	THR	HG21	1.207	.	1
1	A	11	THR	HG22	1.207	.	1
1	A	11	THR	HG23	1.207	.	1
1	A	12	LEU	N	124.735	.	1
1	A	12	LEU	H	7.449	.	1
1	A	12	LEU	CA	55.157	.	1
1	A	12	LEU	HA	4.454	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	12	LEU	CB	43.716	.	1
1	A	12	LEU	HB2	1.499	.	2
1	A	12	LEU	HB3	1.559	.	2
1	A	12	LEU	CG	27.3	.	1
1	A	12	LEU	HG	1.47	.	1
1	A	12	LEU	CD1	25.12	.	2
1	A	12	LEU	HD11	0.848	.	4
1	A	12	LEU	HD12	0.848	.	4
1	A	12	LEU	HD13	0.848	.	4
1	A	12	LEU	CD2	24.262	.	2
1	A	12	LEU	HD21	0.922	.	4
1	A	12	LEU	HD22	0.922	.	4
1	A	12	LEU	HD23	0.922	.	4
1	A	13	LYS	N	123.828	.	1
1	A	13	LYS	H	8.202	.	1
1	A	13	LYS	CA	54.378	.	1
1	A	13	LYS	HA	5.055	.	1
1	A	13	LYS	CB	35.137	.	1
1	A	13	LYS	HB2	1.792	.	2
1	A	13	LYS	HB3	1.913	.	2
1	A	13	LYS	CG	25.11	.	1
1	A	13	LYS	HG3	1.498	.	2
1	A	13	LYS	CD	29.373	.	1
1	A	13	LYS	HD3	1.767	.	2
1	A	13	LYS	CE	42.622	.	1
1	A	13	LYS	HE2	3.013	.	2
1	A	13	LYS	HE3	3.036	.	2
1	A	14	GLY	N	109.873	.	1
1	A	14	GLY	H	8.429	.	1
1	A	14	GLY	CA	45.222	.	1
1	A	14	GLY	HA3	4.251	.	2
1	A	15	GLU	N	119.542	.	1
1	A	15	GLU	H	8.492	.	1
1	A	15	GLU	CA	54.835	.	1
1	A	15	GLU	HA	5.638	.	1
1	A	15	GLU	CB	33.686	.	1
1	A	15	GLU	HB2	1.985	.	2
1	A	15	GLU	HB3	2.044	.	2
1	A	15	GLU	CG	36.115	.	1
1	A	15	GLU	HG3	2.209	.	2
1	A	16	THR	N	116.085	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	16	THR	H	8.667	.	1
1	A	16	THR	CA	60.544	.	1
1	A	16	THR	HA	4.779	.	1
1	A	16	THR	CB	69.787	.	1
1	A	16	THR	HB	4.012	.	1
1	A	16	THR	CG2	19.531	.	1
1	A	16	THR	HG21	0.613	.	1
1	A	16	THR	HG22	0.613	.	1
1	A	16	THR	HG23	0.613	.	1
1	A	17	THR	N	112.314	.	1
1	A	17	THR	H	8.175	.	1
1	A	17	THR	CA	60.063	.	1
1	A	17	THR	HA	5.87	.	1
1	A	17	THR	CB	73.266	.	1
1	A	17	THR	HB	4.333	.	1
1	A	17	THR	CG2	21.571	.	1
1	A	17	THR	HG21	1.227	.	1
1	A	17	THR	HG22	1.227	.	1
1	A	17	THR	HG23	1.227	.	1
1	A	18	THR	N	115.158	.	1
1	A	18	THR	H	9.043	.	1
1	A	18	THR	CA	62.428	.	1
1	A	18	THR	HA	4.724	.	1
1	A	18	THR	CB	70.241	.	1
1	A	18	THR	HB	3.899	.	1
1	A	18	THR	CG2	19.189	.	1
1	A	18	THR	HG21	0.55	.	1
1	A	18	THR	HG22	0.55	.	1
1	A	18	THR	HG23	0.55	.	1
1	A	19	GLU	N	126.278	.	1
1	A	19	GLU	H	7.999	.	1
1	A	19	GLU	CA	54.53	.	1
1	A	19	GLU	HA	5.221	.	1
1	A	19	GLU	CB	30.44	.	1
1	A	19	GLU	HB2	1.988	.	2
1	A	19	GLU	HB3	2.003	.	2
1	A	19	GLU	CG	35.646	.	1
1	A	19	GLU	HG2	2.116	.	2
1	A	19	GLU	HG3	2.346	.	2
1	A	20	ALA	N	127.705	.	1
1	A	20	ALA	H	9.383	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	20	ALA	CA	50.95	.	1
1	A	20	ALA	HA	4.985	.	1
1	A	20	ALA	CB	23.753	.	1
1	A	20	ALA	HB1	1.397	.	1
1	A	20	ALA	HB2	1.397	.	1
1	A	20	ALA	HB3	1.397	.	1
1	A	21	VAL	N	116.082	.	1
1	A	21	VAL	H	8.545	.	1
1	A	21	VAL	CA	63.695	.	1
1	A	21	VAL	HA	4.161	.	1
1	A	21	VAL	CB	32.083	.	1
1	A	21	VAL	HB	2.243	.	1
1	A	21	VAL	CG2	21.009	.	2
1	A	21	VAL	HG21	1.056	.	4
1	A	21	VAL	HG22	1.056	.	4
1	A	21	VAL	HG23	1.056	.	4
1	A	21	VAL	CG1	20.118	.	2
1	A	21	VAL	HG11	1.048	.	4
1	A	21	VAL	HG12	1.048	.	4
1	A	21	VAL	HG13	1.048	.	4
1	A	22	ASP	N	115.392	.	1
1	A	22	ASP	H	7.378	.	1
1	A	22	ASP	CA	52.539	.	1
1	A	22	ASP	HA	4.827	.	1
1	A	22	ASP	CB	42.22	.	1
1	A	22	ASP	HB2	3.034	.	2
1	A	22	ASP	HB3	3.09	.	2
1	A	23	ALA	N	121.755	.	1
1	A	23	ALA	H	8.332	.	1
1	A	23	ALA	CA	54.667	.	1
1	A	23	ALA	HA	3.318	.	1
1	A	23	ALA	CB	17.557	.	1
1	A	23	ALA	HB1	1.228	.	1
1	A	23	ALA	HB2	1.228	.	1
1	A	23	ALA	HB3	1.228	.	1
1	A	24	ALA	N	120.731	.	1
1	A	24	ALA	H	8.108	.	1
1	A	24	ALA	CA	54.869	.	1
1	A	24	ALA	HA	4.014	.	1
1	A	24	ALA	CB	17.965	.	1
1	A	24	ALA	HB1	1.346	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	24	ALA	HB2	1.346	.	1
1	A	24	ALA	HB3	1.346	.	1
1	A	25	THR	N	116.624	.	1
1	A	25	THR	H	8.325	.	1
1	A	25	THR	CA	66.974	.	1
1	A	25	THR	HA	3.747	.	1
1	A	25	THR	CB	67.992	.	1
1	A	25	THR	HB	4.074	.	1
1	A	25	THR	CG2	21.155	.	1
1	A	25	THR	HG21	1.279	.	1
1	A	25	THR	HG22	1.279	.	1
1	A	25	THR	HG23	1.279	.	1
1	A	26	ALA	N	123.943	.	1
1	A	26	ALA	H	7.224	.	1
1	A	26	ALA	CA	54.947	.	1
1	A	26	ALA	HA	3.159	.	1
1	A	26	ALA	CB	17.671	.	1
1	A	26	ALA	HB1	0.624	.	1
1	A	26	ALA	HB2	0.624	.	1
1	A	26	ALA	HB3	0.624	.	1
1	A	27	GLU	N	116.893	.	1
1	A	27	GLU	H	8.379	.	1
1	A	27	GLU	CA	59.704	.	1
1	A	27	GLU	HA	2.697	.	1
1	A	27	GLU	CB	29.08	.	1
1	A	27	GLU	HB2	1.714	.	2
1	A	27	GLU	HB3	1.986	.	2
1	A	27	GLU	CG	35.489	.	1
1	A	27	GLU	HG3	1.692	.	2
1	A	28	LYS	N	116.775	.	1
1	A	28	LYS	H	6.995	.	1
1	A	28	LYS	CA	59.826	.	1
1	A	28	LYS	HA	3.774	.	1
1	A	28	LYS	CB	32.361	.	1
1	A	28	LYS	HB3	1.887	.	2
1	A	28	LYS	CG	25.111	.	1
1	A	28	LYS	HG2	1.374	.	2
1	A	28	LYS	HG3	1.595	.	2
1	A	28	LYS	CD	29.256	.	1
1	A	28	LYS	HD3	1.662	.	2
1	A	28	LYS	HE3	2.937	.	2

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	29	VAL	N	120.895	.	1
1	A	29	VAL	H	7.372	.	1
1	A	29	VAL	CA	66.134	.	1
1	A	29	VAL	HA	3.658	.	1
1	A	29	VAL	CB	31.803	.	1
1	A	29	VAL	HB	1.798	.	1
1	A	29	VAL	CG2	21.79	.	2
1	A	29	VAL	HG21	0.95	.	4
1	A	29	VAL	HG22	0.95	.	4
1	A	29	VAL	HG23	0.95	.	4
1	A	29	VAL	CG1	20.45	.	2
1	A	29	VAL	HG11	0.825	.	4
1	A	29	VAL	HG12	0.825	.	4
1	A	29	VAL	HG13	0.825	.	4
1	A	30	PHE	N	120.757	.	1
1	A	30	PHE	H	8.534	.	1
1	A	30	PHE	CA	56.854	.	1
1	A	30	PHE	HA	4.84	.	1
1	A	30	PHE	CB	37.57	.	1
1	A	30	PHE	HB2	2.909	.	2
1	A	30	PHE	HB3	3.398	.	2
1	A	30	PHE	CD1	130.035	.	2
1	A	30	PHE	HD1	6.625	.	2
1	A	30	PHE	CE1	130.443	.	2
1	A	30	PHE	HE1	7.136	.	2
1	A	30	PHE	CZ	132.303	.	1
1	A	30	PHE	HZ	7.83	.	1
1	A	31	LYS	N	122.973	.	1
1	A	31	LYS	H	9.151	.	1
1	A	31	LYS	CA	59.881	.	1
1	A	31	LYS	HA	4.192	.	1
1	A	31	LYS	CB	31.727	.	1
1	A	31	LYS	HB2	1.604	.	2
1	A	31	LYS	HB3	1.73	.	2
1	A	31	LYS	CG	25.794	.	1
1	A	31	LYS	HG2	0.546	.	2
1	A	31	LYS	HG3	0.903	.	2
1	A	31	LYS	CD	28.944	.	1
1	A	31	LYS	HD2	1.088	.	2
1	A	31	LYS	HD3	1.168	.	2
1	A	31	LYS	CE	41.461	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	31	LYS	HE2	1.716	.	2
1	A	31	LYS	HE3	1.968	.	2
1	A	32	GLN	N	120.03	.	1
1	A	32	GLN	H	7.523	.	1
1	A	32	GLN	CA	58.787	.	1
1	A	32	GLN	HA	4.102	.	1
1	A	32	GLN	CB	28.225	.	1
1	A	32	GLN	HB2	2.25	.	2
1	A	32	GLN	HB3	2.294	.	2
1	A	32	GLN	CG	33.543	.	1
1	A	32	GLN	HG2	2.469	.	2
1	A	32	GLN	HG3	2.495	.	2
1	A	32	GLN	NE2	115.48	.	1
1	A	32	GLN	HE21	6.933	.	2
1	A	32	GLN	HE22	7.976	.	2
1	A	33	TYR	N	120.647	.	1
1	A	33	TYR	H	8.249	.	1
1	A	33	TYR	CA	61.764	.	1
1	A	33	TYR	HA	4.352	.	1
1	A	33	TYR	CB	38.568	.	1
1	A	33	TYR	HB3	3.369	.	2
1	A	33	TYR	CD1	132.881	.	2
1	A	33	TYR	HD1	7.03	.	2
1	A	33	TYR	CE1	118.332	.	2
1	A	33	TYR	HE1	6.773	.	2
1	A	34	ALA	N	122.922	.	1
1	A	34	ALA	H	9.215	.	1
1	A	34	ALA	CA	56.267	.	1
1	A	34	ALA	HA	3.862	.	1
1	A	34	ALA	CB	17.929	.	1
1	A	34	ALA	HB1	1.893	.	1
1	A	34	ALA	HB2	1.893	.	1
1	A	34	ALA	HB3	1.893	.	1
1	A	35	ASN	N	117.921	.	1
1	A	35	ASN	H	8.338	.	1
1	A	35	ASN	CA	56.975	.	1
1	A	35	ASN	HA	4.504	.	1
1	A	35	ASN	CB	38.923	.	1
1	A	35	ASN	HB3	2.987	.	2
1	A	35	ASN	ND2	112.526	.	1
1	A	35	ASN	HD21	7.662	.	2

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	35	ASN	HD22	7.011	.	2
1	A	36	ASP	N	121.417	.	1
1	A	36	ASP	H	8.934	.	1
1	A	36	ASP	CA	56.985	.	1
1	A	36	ASP	HA	4.426	.	1
1	A	36	ASP	CB	40.114	.	1
1	A	36	ASP	HB2	2.632	.	2
1	A	36	ASP	HB3	2.79	.	2
1	A	37	ASN	N	115.465	.	1
1	A	37	ASN	H	7.46	.	1
1	A	37	ASN	CA	53.835	.	1
1	A	37	ASN	HA	4.684	.	1
1	A	37	ASN	CB	40.206	.	1
1	A	37	ASN	HB2	2.15	.	2
1	A	37	ASN	HB3	2.744	.	2
1	A	37	ASN	ND2	115.452	.	1
1	A	37	ASN	HD21	6.732	.	2
1	A	37	ASN	HD22	6.434	.	2
1	A	38	GLY	N	108.595	.	1
1	A	38	GLY	H	7.841	.	1
1	A	38	GLY	CA	47.057	.	1
1	A	38	GLY	HA3	3.986	.	2
1	A	39	VAL	N	120.582	.	1
1	A	39	VAL	H	8.193	.	1
1	A	39	VAL	CA	61.918	.	1
1	A	39	VAL	HA	4.229	.	1
1	A	39	VAL	CB	33.39	.	1
1	A	39	VAL	HB	1.85	.	1
1	A	39	VAL	CG2	21.414	.	2
1	A	39	VAL	HG21	0.727	.	4
1	A	39	VAL	HG22	0.727	.	4
1	A	39	VAL	HG23	0.727	.	4
1	A	39	VAL	CG1	21.36	.	2
1	A	39	VAL	HG11	0.86	.	4
1	A	39	VAL	HG12	0.86	.	4
1	A	39	VAL	HG13	0.86	.	4
1	A	40	ASP	N	127.235	.	1
1	A	40	ASP	H	8.537	.	1
1	A	40	ASP	CA	52.566	.	1
1	A	40	ASP	HA	4.959	.	1
1	A	40	ASP	CB	43.37	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	40	ASP	HB2	2.669	.	2
1	A	40	ASP	HB3	2.772	.	2
1	A	41	GLY	N	107.889	.	1
1	A	41	GLY	H	8.136	.	1
1	A	41	GLY	CA	45.632	.	1
1	A	41	GLY	HA2	3.89	.	2
1	A	41	GLY	HA3	4.216	.	2
1	A	42	GLU	N	121.131	.	1
1	A	42	GLU	H	8.343	.	1
1	A	42	GLU	CA	55.549	.	1
1	A	42	GLU	HA	4.779	.	1
1	A	42	GLU	CB	31.403	.	1
1	A	42	GLU	HB2	2.03	.	2
1	A	42	GLU	HB3	2.105	.	2
1	A	42	GLU	CG	36.194	.	1
1	A	42	GLU	HG2	2.292	.	2
1	A	42	GLU	HG3	2.39	.	2
1	A	43	TRP	N	128.502	.	1
1	A	43	TRP	H	9.362	.	1
1	A	43	TRP	CA	57.894	.	1
1	A	43	TRP	HA	5.393	.	1
1	A	43	TRP	CB	30.454	.	1
1	A	43	TRP	HB2	3.224	.	2
1	A	43	TRP	HB3	3.394	.	2
1	A	43	TRP	CD1	127.166	.	2
1	A	43	TRP	HD1	7.61	.	1
1	A	43	TRP	NE1	130.794	.	1
1	A	43	TRP	HE1	10.541	.	2
1	A	43	TRP	CZ2	114.436	.	2
1	A	43	TRP	HZ2	7.349	.	2
1	A	43	TRP	CH2	123.145	.	1
1	A	43	TRP	HH2	6.781	.	1
1	A	43	TRP	CZ3	121.369	.	2
1	A	43	TRP	HZ3	7.038	.	2
1	A	43	TRP	CE3	121.136	.	2
1	A	43	TRP	HE3	7.637	.	2
1	A	44	THR	N	115.104	.	1
1	A	44	THR	H	9.278	.	1
1	A	44	THR	CA	60.711	.	1
1	A	44	THR	HA	4.859	.	1
1	A	44	THR	CB	72.36	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	44	THR	HB	4.282	.	1
1	A	44	THR	CG2	22.053	.	1
1	A	44	THR	HG21	1.254	.	1
1	A	44	THR	HG22	1.254	.	1
1	A	44	THR	HG23	1.254	.	1
1	A	45	TYR	N	121.325	.	1
1	A	45	TYR	H	8.66	.	1
1	A	45	TYR	CA	57.024	.	1
1	A	45	TYR	HA	5.045	.	1
1	A	45	TYR	CB	41.646	.	1
1	A	45	TYR	HB2	2.565	.	2
1	A	45	TYR	HB3	2.936	.	2
1	A	45	TYR	CD1	132.112	.	2
1	A	45	TYR	HD1	7.222	.	2
1	A	45	TYR	CE1	117.475	.	2
1	A	45	TYR	HE1	6.388	.	2
1	A	46	ASP	N	128.475	.	1
1	A	46	ASP	H	7.508	.	1
1	A	46	ASP	CA	51.866	.	1
1	A	46	ASP	HA	4.648	.	1
1	A	46	ASP	CB	43.215	.	1
1	A	46	ASP	HB2	2.325	.	2
1	A	46	ASP	HB3	2.668	.	2
1	A	47	ASP	N	125.145	.	1
1	A	47	ASP	H	8.648	.	1
1	A	47	ASP	CA	56.368	.	1
1	A	47	ASP	HA	4.213	.	1
1	A	47	ASP	CB	42.221	.	1
1	A	47	ASP	HB2	2.889	.	2
1	A	47	ASP	HB3	2.588	.	2
1	A	48	ALA	N	120.179	.	1
1	A	48	ALA	H	8.4	.	1
1	A	48	ALA	CA	55.147	.	1
1	A	48	ALA	HA	4.176	.	1
1	A	48	ALA	CB	18.36	.	1
1	A	48	ALA	HB1	1.556	.	1
1	A	48	ALA	HB2	1.556	.	1
1	A	48	ALA	HB3	1.556	.	1
1	A	49	THR	N	103.662	.	1
1	A	49	THR	H	7.064	.	1
1	A	49	THR	CA	60.53	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	49	THR	HA	4.434	.	1
1	A	49	THR	CB	70.277	.	1
1	A	49	THR	HB	4.444	.	1
1	A	49	THR	CG2	21.292	.	1
1	A	49	THR	HG21	1.128	.	1
1	A	49	THR	HG22	1.128	.	1
1	A	49	THR	HG23	1.128	.	1
1	A	50	LYS	N	123.189	.	1
1	A	50	LYS	H	7.908	.	1
1	A	50	LYS	CA	56.508	.	1
1	A	50	LYS	HA	4.246	.	1
1	A	50	LYS	CB	29.455	.	1
1	A	50	LYS	HB3	2.132	.	2
1	A	50	LYS	CG	24.566	.	1
1	A	50	LYS	HG2	1.284	.	2
1	A	50	LYS	HG3	1.456	.	2
1	A	50	LYS	CD	28.478	.	1
1	A	50	LYS	HD2	1.474	.	2
1	A	50	LYS	HD3	1.767	.	2
1	A	50	LYS	CE	43.05	.	1
1	A	50	LYS	HE3	3.023	.	2
1	A	51	THR	N	111.09	.	1
1	A	51	THR	H	7.4	.	1
1	A	51	THR	CA	62.225	.	1
1	A	51	THR	HA	5.515	.	1
1	A	51	THR	CB	72.143	.	1
1	A	51	THR	HB	3.801	.	1
1	A	51	THR	CG2	20.369	.	1
1	A	51	THR	HG21	0.979	.	1
1	A	51	THR	HG22	0.979	.	1
1	A	51	THR	HG23	0.979	.	1
1	A	52	PHE	N	131.285	.	1
1	A	52	PHE	H	10.312	.	1
1	A	52	PHE	CA	57.414	.	1
1	A	52	PHE	HA	5.648	.	1
1	A	52	PHE	CB	42.108	.	1
1	A	52	PHE	HB2	3.209	.	2
1	A	52	PHE	HB3	3.331	.	2
1	A	52	PHE	CD1	132.643	.	2
1	A	52	PHE	HD1	7.83	.	2
1	A	52	PHE	CE1	132.566	.	2

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	52	PHE	HE1	7.193	.	2
1	A	52	PHE	CZ	128.717	.	1
1	A	52	PHE	HZ	6.982	.	1
1	A	53	THR	N	118.766	.	1
1	A	53	THR	H	9.234	.	1
1	A	53	THR	CA	61.651	.	1
1	A	53	THR	HA	5.276	.	1
1	A	53	THR	CB	70.665	.	1
1	A	53	THR	HB	3.88	.	1
1	A	53	THR	CG2	20.99	.	1
1	A	53	THR	HG21	1.04	.	1
1	A	53	THR	HG22	1.04	.	1
1	A	53	THR	HG23	1.04	.	1
1	A	54	VAL	N	124.27	.	1
1	A	54	VAL	H	8.175	.	1
1	A	54	VAL	CA	58.647	.	1
1	A	54	VAL	HA	4.52	.	1
1	A	54	VAL	CB	32.433	.	1
1	A	54	VAL	HB	0.216	.	1
1	A	54	VAL	CG2	20.32	.	2
1	A	54	VAL	HG21	-0.435	.	4
1	A	54	VAL	HG22	-0.435	.	4
1	A	54	VAL	HG23	-0.435	.	4
1	A	54	VAL	CG1	19.934	.	2
1	A	54	VAL	HG11	0.326	.	4
1	A	54	VAL	HG12	0.326	.	4
1	A	54	VAL	HG13	0.326	.	4
1	A	55	THR	N	123.648	.	1
1	A	55	THR	H	8.482	.	1
1	A	55	THR	CA	60.871	.	1
1	A	55	THR	HA	4.745	.	1
1	A	55	THR	CB	70.537	.	1
1	A	55	THR	HB	3.967	.	1
1	A	55	THR	CG2	21.473	.	1
1	A	55	THR	HG21	1.227	.	1
1	A	55	THR	HG22	1.227	.	1
1	A	55	THR	HG23	1.227	.	1
1	A	56	GLU	N	127.224	.	1
1	A	56	GLU	H	8.171	.	1
1	A	56	GLU	CA	56.573	.	1
1	A	56	GLU	HA	4.466	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	56	GLU	CB	31.289	.	1
1	A	56	GLU	HB2	2.063	.	2
1	A	56	GLU	HB3	2.16	.	2
1	A	56	GLU	CG	36.458	.	1
1	A	56	GLU	HG2	2.363	.	2
1	A	56	GLU	HG3	2.441	.	2
1	A	57	LEU	N	125.852	.	1
1	A	57	LEU	H	8.644	.	1
1	A	57	LEU	CA	55.157	.	1
1	A	57	LEU	HA	4.48	.	1
1	A	57	LEU	CB	42.485	.	1
1	A	57	LEU	HB2	1.688	.	2
1	A	57	LEU	HB3	1.575	.	2
1	A	57	LEU	CG	27.171	.	1
1	A	57	LEU	HG	1.642	.	1
1	A	57	LEU	CD1	25.04	.	2
1	A	57	LEU	HD11	0.946	.	4
1	A	57	LEU	HD12	0.946	.	4
1	A	57	LEU	HD13	0.946	.	4
1	A	57	LEU	CD2	23.599	.	2
1	A	57	LEU	HD21	0.896	.	4
1	A	57	LEU	HD22	0.896	.	4
1	A	57	LEU	HD23	0.896	.	4
1	A	58	VAL	N	123.305	.	1
1	A	58	VAL	H	8.291	.	1
1	A	58	VAL	CA	59.666	.	1
1	A	58	VAL	HA	4.496	.	1
1	A	58	VAL	CB	32.905	.	1
1	A	58	VAL	HB	2.116	.	1
1	A	58	VAL	CG2	20.901	.	2
1	A	58	VAL	HG21	1.005	.	4
1	A	58	VAL	HG22	1.005	.	4
1	A	58	VAL	HG23	1.005	.	4
1	A	58	VAL	CG1	20.386	.	2
1	A	58	VAL	HG11	0.965	.	4
1	A	58	VAL	HG12	0.965	.	4
1	A	58	VAL	HG13	0.965	.	4
1	A	59	PRO	CA	63.087	.	1
1	A	59	PRO	HA	4.479	.	1
1	A	59	PRO	CB	32.171	.	1
1	A	59	PRO	HB2	1.942	.	2

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	59	PRO	HB3	2.347	.	2
1	A	59	PRO	CG	27.468	.	1
1	A	59	PRO	HG2	2.02	.	2
1	A	59	PRO	HG3	2.106	.	2
1	A	59	PRO	CD	51.103	.	1
1	A	59	PRO	HD2	3.738	.	2
1	A	59	PRO	HD3	3.9	.	2
1	A	60	ARG	N	122.358	.	1
1	A	60	ARG	H	8.553	.	1
1	A	60	ARG	CA	56.391	.	1
1	A	60	ARG	HA	4.381	.	1
1	A	60	ARG	CB	31.074	.	1
1	A	60	ARG	HB2	1.841	.	2
1	A	60	ARG	HB3	1.916	.	2
1	A	60	ARG	CG	27.13	.	1
1	A	60	ARG	HG3	1.756	.	2
1	A	60	ARG	CD	43.433	.	1
1	A	60	ARG	HD3	3.271	.	2
1	A	61	GLY	N	110.998	.	1
1	A	61	GLY	H	8.606	.	1
1	A	61	GLY	CA	45.219	.	1
1	A	61	GLY	HA2	4.113	.	2
1	A	61	GLY	HA3	4.012	.	2
1	A	62	SER	N	115.855	.	1
1	A	62	SER	H	8.366	.	1
1	A	62	SER	CA	58.475	.	1
1	A	62	SER	HA	4.527	.	1
1	A	62	SER	CB	64.103	.	1
1	A	62	SER	HB2	3.893	.	2
1	A	62	SER	HB3	3.954	.	2
1	A	63	ASP	N	122.358	.	1
1	A	63	ASP	H	8.565	.	1
1	A	63	ASP	CA	54.672	.	1
1	A	63	ASP	HA	4.679	.	1
1	A	63	ASP	CB	41.064	.	1
1	A	63	ASP	HB2	2.68	.	2
1	A	63	ASP	HB3	2.765	.	2
1	A	64	ASP	N	120.092	.	1
1	A	64	ASP	H	8.248	.	1
1	A	64	ASP	CA	54.693	.	1
1	A	64	ASP	HA	4.611	.	1

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List ID	Chain	Res	Type	Atom	Shift Data		
					Value	Uncertainty	Ambiguity
1	A	64	ASP	CB	41.069	.	1
1	A	64	ASP	HB2	2.683	.	2
1	A	64	ASP	HB3	2.723	.	2
1	A	65	ASP	N	120.092	.	1
1	A	65	ASP	H	8.24	.	1
1	A	65	ASP	CA	54.693	.	1
1	A	65	ASP	HA	4.639	.	1
1	A	65	ASP	CB	41.045	.	1
1	A	65	ASP	HB3	2.768	.	2
1	A	66	ASP	N	120.514	.	1
1	A	66	ASP	H	8.313	.	1
1	A	66	ASP	CA	54.691	.	1
1	A	66	ASP	HA	4.605	.	1
1	A	66	ASP	CB	40.747	.	1
1	A	66	ASP	HB3	2.734	.	2
1	A	67	LYS	N	121.478	.	1
1	A	67	LYS	H	8.266	.	1
1	A	67	LYS	CA	56.504	.	1
1	A	67	LYS	HA	4.381	.	1
1	A	67	LYS	CB	32.638	.	1
1	A	67	LYS	HB3	1.853	.	2
1	A	67	LYS	CG	24.758	.	1
1	A	67	LYS	HG3	1.499	.	2
1	A	67	LYS	CD	29.081	.	1
1	A	67	LYS	HD3	1.884	.	2
1	A	67	LYS	CE	41.794	.	1
1	A	67	LYS	HE3	3.063	.	2

7.1.2 Chemical shift referencing (i)

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction ± precision, *ppm*	Suggested action
$^{13}C_{\alpha}$	100	-0.53 ± 0.34	None needed (imprecise)
$^{13}C_{\beta}$	92	0.02 ± 0.27	None needed (< 0.5 ppm)
$^{13}C'$	0	—	None (insufficient data)
^{15}N	96	1.20 ± 0.60	Should be applied

7.1.3 Completeness of resonance assignments

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 89%, i.e. 136 atoms were assigned a chemical shift out of a possible 153. 0 out of 4 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	44/57 (77%)	22/24 (92%)	11/22 (50%)	11/11 (100%)
Sidechain	92/96 (96%)	63/63 (100%)	25/29 (86%)	4/4 (100%)
Overall	136/153 (89%)	85/87 (98%)	36/51 (71%)	15/15 (100%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 87%, i.e. 406 atoms were assigned a chemical shift out of a possible 468. 0 out of 9 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	129/164 (79%)	65/67 (97%)	33/66 (50%)	31/31 (100%)
Sidechain	249/270 (92%)	169/178 (95%)	75/82 (91%)	5/10 (50%)
Aromatic	28/34 (82%)	14/17 (82%)	12/15 (80%)	2/2 (100%)
Overall	406/468 (87%)	248/262 (95%)	120/163 (74%)	38/43 (88%)

7.1.4 Statistically unusual chemical shifts

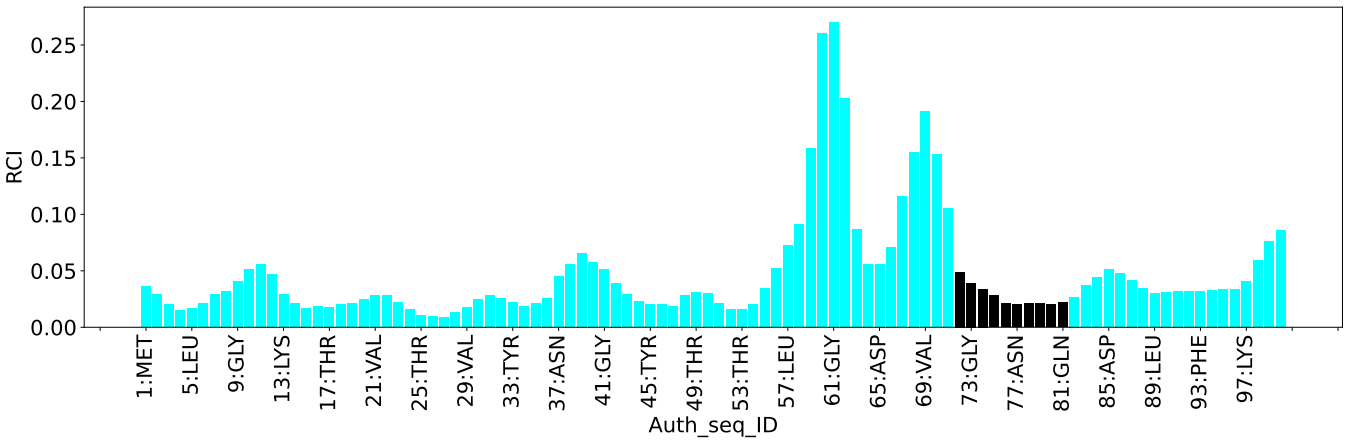
The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

List Id	Chain	Res	Type	Atom	Shift, *ppm*	Expected range, *ppm*	Z-score
1	A	5	LEU	HB2	-1.05	-0.07 – 3.30	-7.9
1	A	31	LYS	HE2	1.72	1.95 – 3.88	-6.2
1	A	54	VAL	HB	0.22	0.43 – 3.54	-5.7

7.1.5 Random Coil Index (RCI) plots

The image below reports *random coil index* values for the protein chains in the structure. The height of each bar gives a probability of a given residue to be disordered, as predicted from the available chemical shifts and the amino acid sequence. A value above 0.2 is an indication of significant predicted disorder. The colour of the bar shows whether the residue is in the well-defined core (black) or in the ill-defined residue ranges (cyan), as described in section 2 on ensemble composition.If well-defined core and ill-defined regions are not identified then it is shown as gray bars.

Random coil index (RCI) for chain A:


RCI
0.25
0.20
0.15
0.10
0.05
0.00
1:MET
5:LEU
9:GLY
13:LYS
17:THR
21:VAL
25:THR
29:VAL
33:TYR
37:ASN
41:GLY
45:TYR
49:THR
53:THR
57:LEU
61:GLY
65:ASP
69:VAL
73:GLY
77:ASN
81:GLN
85:ASP
89:LEU
93:PHE
97:LYS
Auth_seq_ID