Full wwPDB NMR Structure Validation Report (i)

Nov 2, 2021 – 04:05 PM EDT

PDB ID	:	2K9C
Title	:	Paramagnetic shifts in solid-state NMR of Proteins to elicit structural information
Authors	:	Balayssac, S.; Bertini, I.; Bhaumik, A.; Lelli, M.; Luchinat, C.
Deposited on	:	2008-10-08

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:

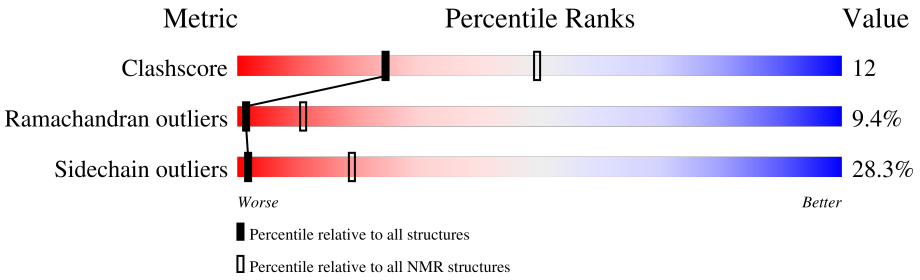
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	2.23.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

1 Overall quality at a glance

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	152	38% 43% · 18%

2 Ensemble composition and analysis

This entry contains 20 models. Model 6 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative.

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:114-A:152, A:157-A:174, A:181-A:187, A:195-A:228, A:233-A:258 (124)	1.73	6

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 3 clusters and 7 single-model clusters were found.

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

3 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 2299 atoms, of which 1113 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Macrophage metalloelastase.

Mol	Chain	Residues	Atoms						Trace
1	A	152	Total	C	H	N	O	S	0
			2298	754	1113	205	223	3	

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	171	ASP	PHE	engineered mutation	UNP P39900

- Molecule 2 is COBALT (II) ION (three-letter code: CO) (formula: Co).

Mol	Chain	Residues	Atoms	
2	A	1	Total	Co
			1	1

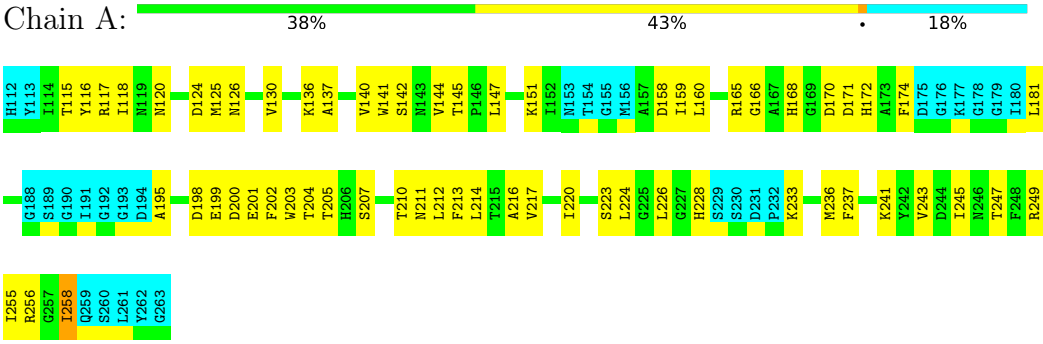
4 Residue-property plots

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: Macrophage metalloelastase

Chain A:



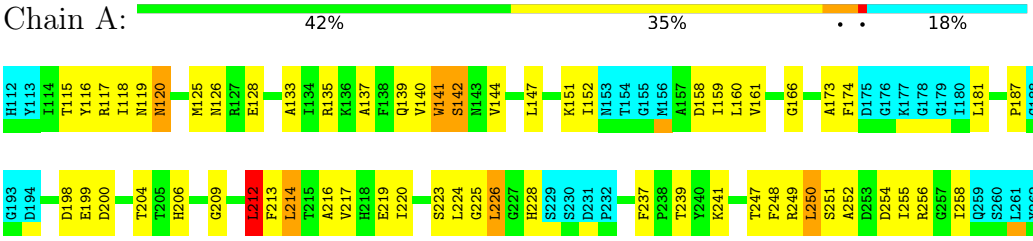
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

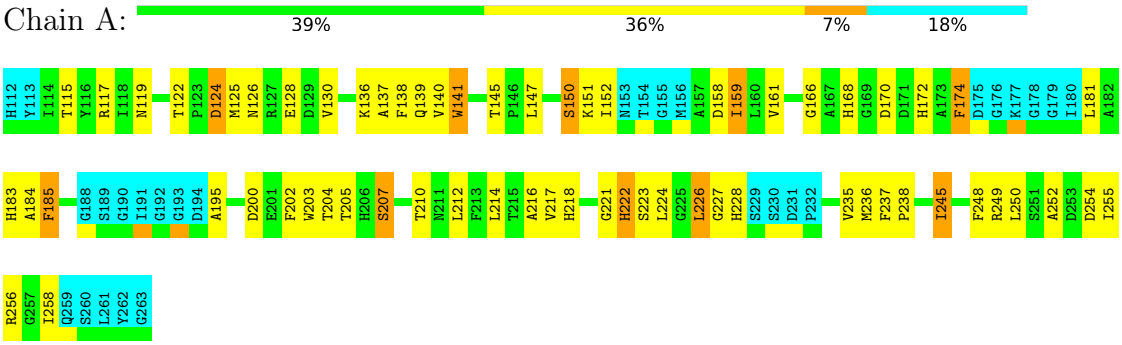
• Molecule 1: Macrophage metalloelastase

Chain A:



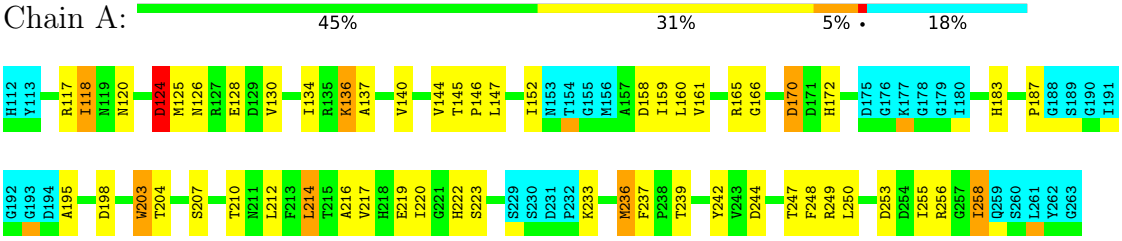
4.2.2 Score per residue for model 2

• Molecule 1: Macrophage metalloelastase



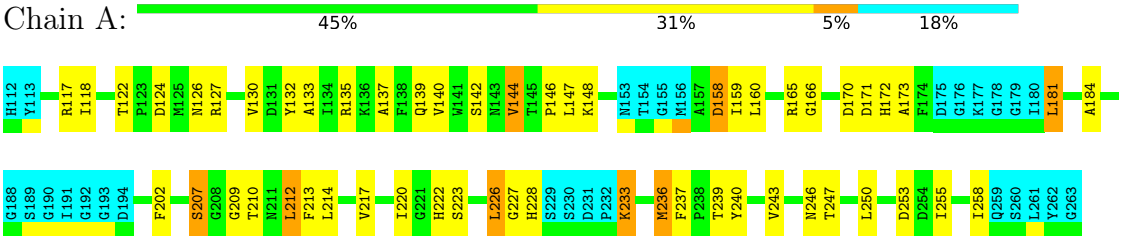
4.2.3 Score per residue for model 3

• Molecule 1: Macrophage metalloelastase



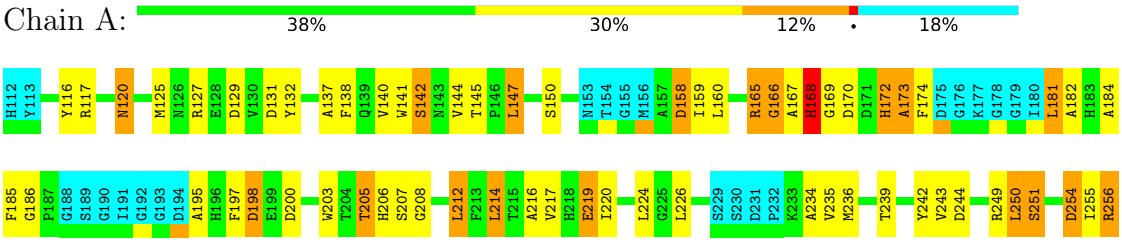
4.2.4 Score per residue for model 4

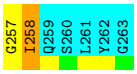
• Molecule 1: Macrophage metalloelastase



4.2.5 Score per residue for model 5

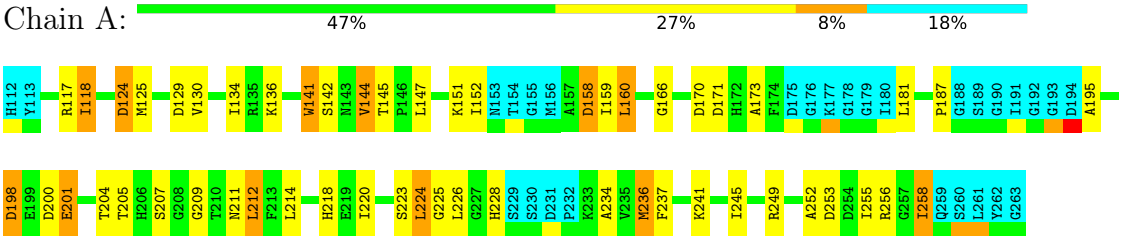
• Molecule 1: Macrophage metalloelastase





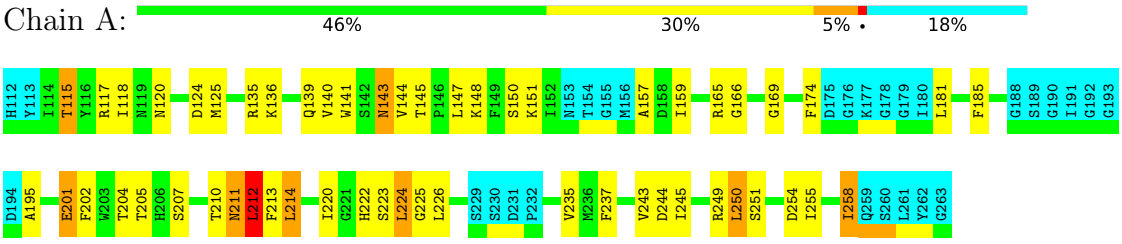
4.2.6 Score per residue for model 6 (medoid)

• Molecule 1: Macrophage metalloelastase



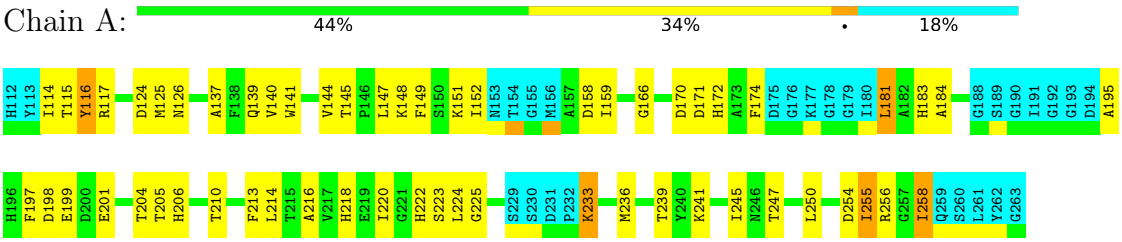
4.2.7 Score per residue for model 7

• Molecule 1: Macrophage metalloelastase



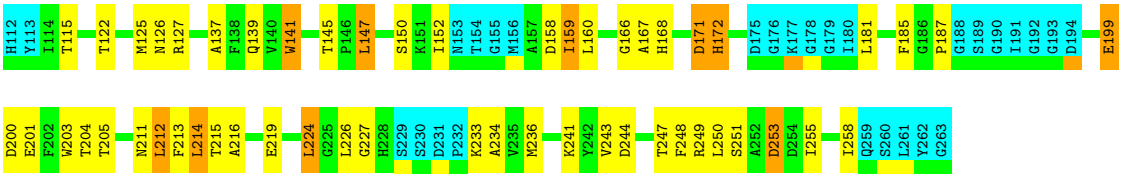
4.2.8 Score per residue for model 8

• Molecule 1: Macrophage metalloelastase



4.2.9 Score per residue for model 9

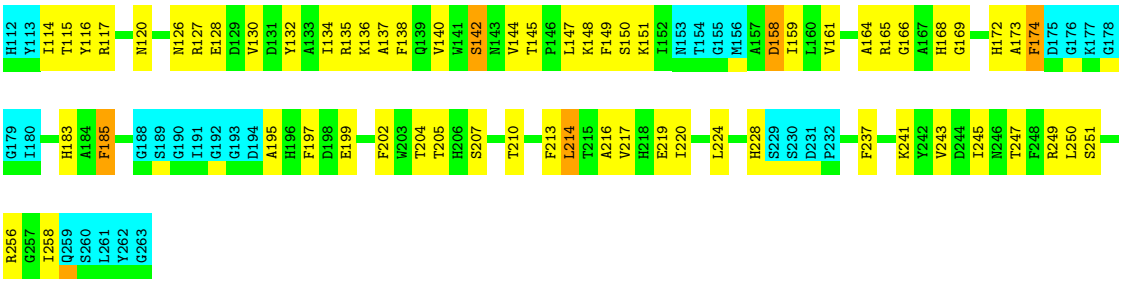
• Molecule 1: Macrophage metalloelastase



4.2.10 Score per residue for model 10

• Molecule 1: Macrophage metalloelastase

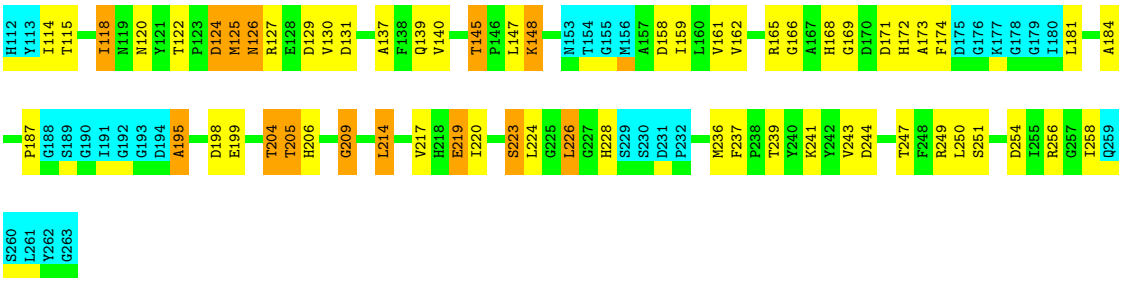
Chain A: 40% 38% • 18%



4.2.11 Score per residue for model 11

• Molecule 1: Macrophage metalloelastase

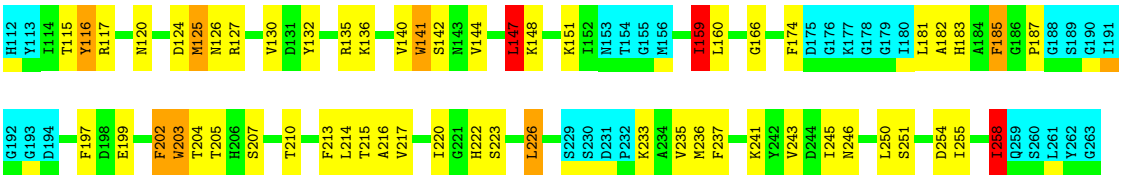
Chain A: 41% 31% 9% 18%



4.2.12 Score per residue for model 12

• Molecule 1: Macrophage metalloelastase

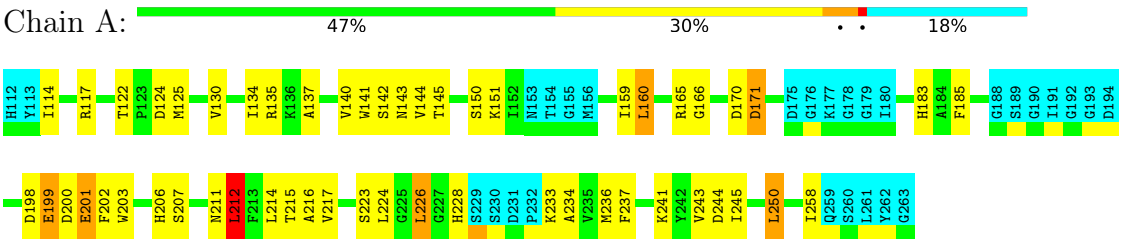
Chain A: 43% 32% 5% • 18%



4.2.13 Score per residue for model 13

• Molecule 1: Macrophage metalloelastase

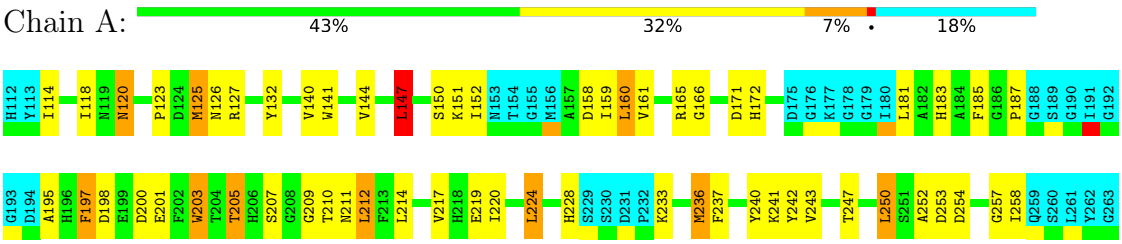
Chain A:



4.2.14 Score per residue for model 14

• Molecule 1: Macrophage metalloelastase

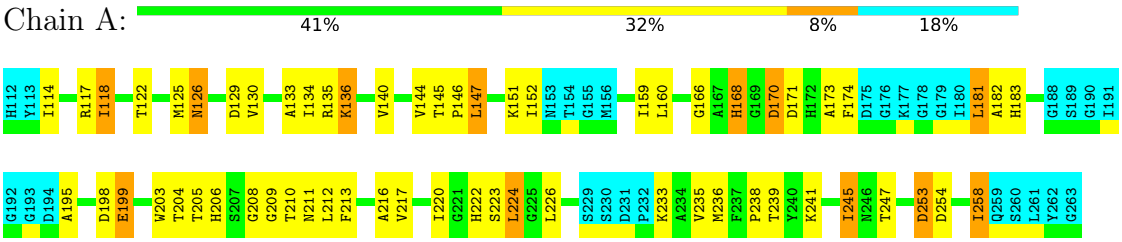
Chain A:



4.2.15 Score per residue for model 15

• Molecule 1: Macrophage metalloelastase

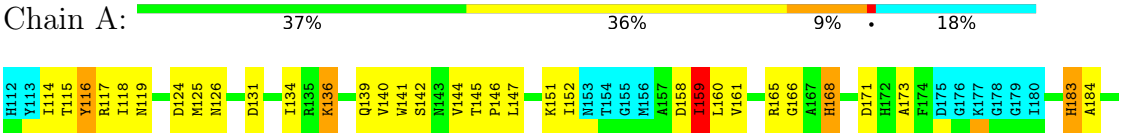
Chain A:

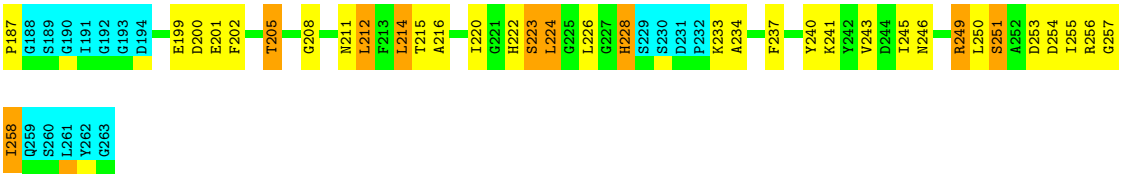


4.2.16 Score per residue for model 16

• Molecule 1: Macrophage metalloelastase

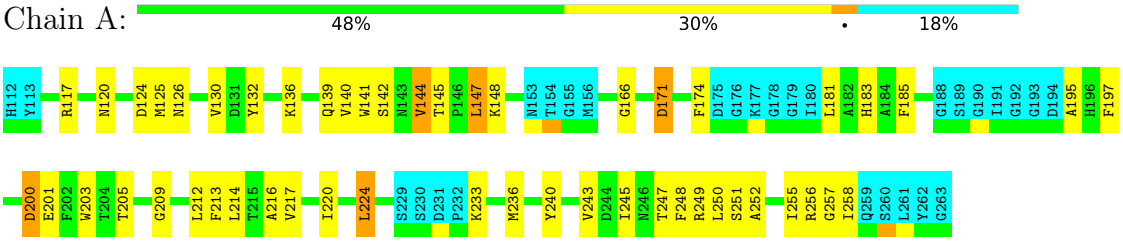
Chain A:





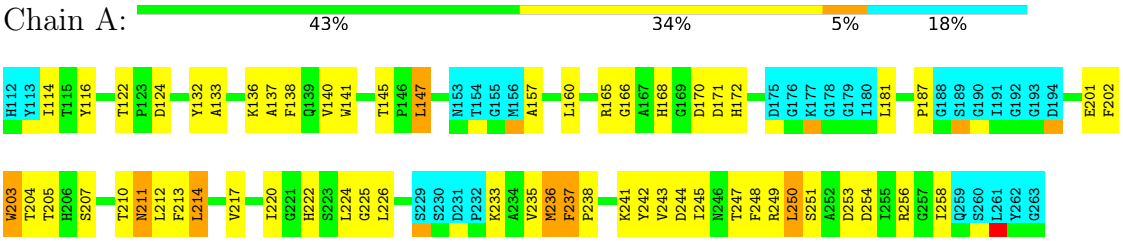
4.2.17 Score per residue for model 17

• Molecule 1: Macrophage metalloelastase



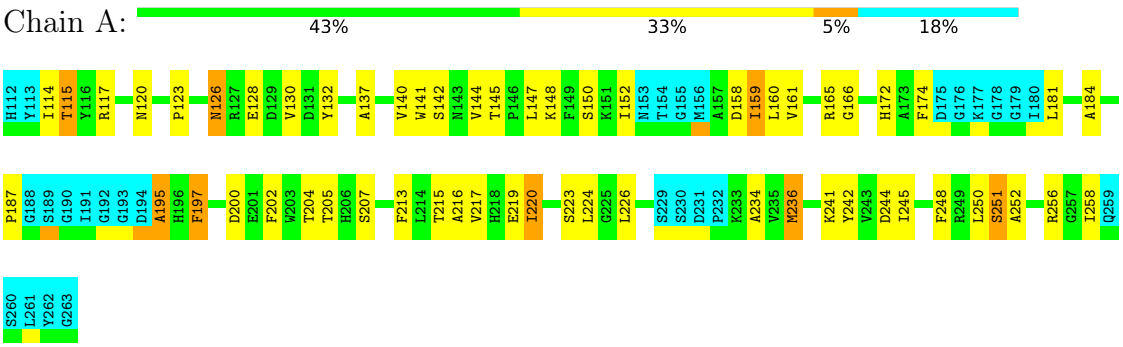
4.2.18 Score per residue for model 18

• Molecule 1: Macrophage metalloelastase



4.2.19 Score per residue for model 19

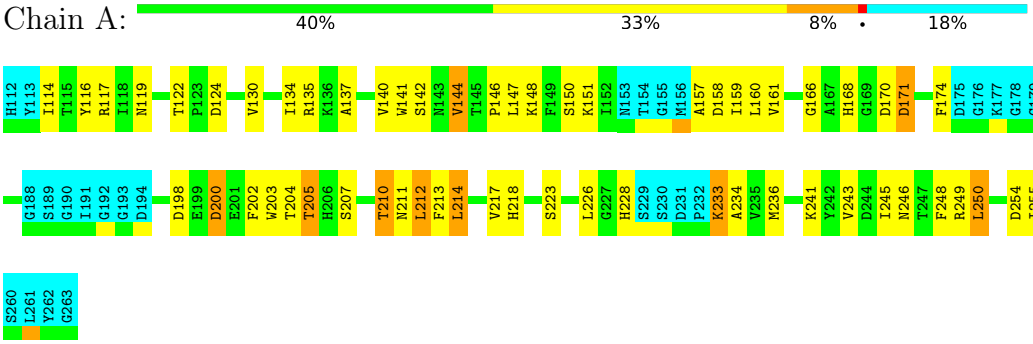
• Molecule 1: Macrophage metalloelastase



4.2.20 Score per residue for model 20

• Molecule 1: Macrophage metalloelastase

Chain A:



5 Refinement protocol and experimental data overview

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

Of the 2000 calculated structures, 20 were deposited, based on the following criterion: *target function*.

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

Software name	Classification	Version
CYANA	structure solution	ParamagneticCyana
CYANA	refinement	ParamagneticCyana

No chemical shift data was provided.

6 Model quality

6.1 Standard geometry

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

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	995	946	946	23±6
All	All	19920	18920	18920	460

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 12.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:214:LEU:HD11	1:A:243:VAL:HG12	0.97	1.35	7	1
1:A:137:ALA:HB2	1:A:216:ALA:HB1	0.93	1.40	3	2
1:A:212:LEU:HD11	1:A:214:LEU:HD12	0.93	1.39	6	1
1:A:144:VAL:HG13	1:A:145:THR:HG23	0.87	1.46	10	1
1:A:144:VAL:HG11	1:A:258:ILE:HG23	0.84	1.47	13	1
1:A:140:VAL:HG11	1:A:217:VAL:HG13	0.80	1.51	14	6
1:A:214:LEU:HD22	1:A:243:VAL:HG22	0.78	1.55	17	1
1:A:214:LEU:HD21	1:A:243:VAL:HG22	0.74	1.57	5	2
1:A:144:VAL:HG11	1:A:258:ILE:HG22	0.73	1.60	12	1
1:A:140:VAL:HG13	1:A:250:LEU:HD13	0.72	1.61	12	1
1:A:140:VAL:HG21	1:A:217:VAL:HG13	0.72	1.60	10	1
1:A:118:ILE:HG22	1:A:161:VAL:HG21	0.72	1.59	11	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:140:VAL:HG13	1:A:250:LEU:HD22	0.70	1.62	16	1
1:A:250:LEU:HD22	1:A:250:LEU:C	0.70	2.07	20	2
1:A:145:THR:HG22	1:A:147:LEU:HD23	0.70	1.63	15	1
1:A:250:LEU:C	1:A:250:LEU:HD22	0.69	2.07	13	1
1:A:212:LEU:HD13	1:A:245:ILE:HG22	0.69	1.65	6	1
1:A:140:VAL:HG21	1:A:217:VAL:HG22	0.67	1.65	14	4
1:A:213:PHE:CD1	1:A:245:ILE:HD13	0.67	2.24	19	1
1:A:141:TRP:CZ3	1:A:258:ILE:HD13	0.67	2.24	20	1
1:A:250:LEU:HD13	1:A:255:ILE:HD11	0.67	1.67	7	1
1:A:235:VAL:HG12	1:A:243:VAL:HG12	0.66	1.66	12	1
1:A:140:VAL:HG22	1:A:258:ILE:HG22	0.66	1.65	17	1
1:A:250:LEU:HD13	1:A:250:LEU:N	0.66	2.06	5	1
1:A:235:VAL:HG13	1:A:241:LYS:HB2	0.65	1.68	15	1
1:A:205:THR:HG21	1:A:212:LEU:HD23	0.65	1.68	20	1
1:A:137:ALA:O	1:A:140:VAL:HG12	0.64	1.92	13	7
1:A:130:VAL:HG13	1:A:213:PHE:CE1	0.64	2.28	17	1
1:A:126:ASN:O	1:A:130:VAL:HG23	0.64	1.91	12	7
1:A:164:ALA:HB1	1:A:169:GLY:CA	0.64	2.23	10	1
1:A:114:ILE:HG21	1:A:148:LYS:HE2	0.64	1.68	11	1
1:A:140:VAL:HG23	1:A:255:ILE:HG12	0.64	1.67	7	1
1:A:249:ARG:O	1:A:250:LEU:HD23	0.64	1.93	16	1
1:A:226:LEU:CA	1:A:258:ILE:HD13	0.63	2.24	15	1
1:A:203:TRP:CB	1:A:210:THR:HG22	0.63	2.23	20	1
1:A:217:VAL:HG11	1:A:235:VAL:HG21	0.63	1.71	18	1
1:A:205:THR:HG22	1:A:209:GLY:CA	0.62	2.24	15	1
1:A:224:LEU:HD23	1:A:258:ILE:HD11	0.62	1.72	13	1
1:A:205:THR:O	1:A:212:LEU:HD22	0.62	1.94	16	2
1:A:133:ALA:HB1	1:A:213:PHE:CG	0.62	2.30	4	1
1:A:141:TRP:O	1:A:145:THR:HG23	0.62	1.95	13	3
1:A:197:PHE:CE1	1:A:215:THR:HG21	0.62	2.29	12	1
1:A:225:GLY:HA3	1:A:258:ILE:HG23	0.61	1.71	7	1
1:A:186:GLY:HA2	1:A:224:LEU:HD23	0.61	1.72	5	1
1:A:122:THR:HG21	1:A:203:TRP:NE1	0.61	2.11	18	1
1:A:115:THR:CG2	1:A:152:ILE:HD13	0.61	2.25	1	1
1:A:144:VAL:HG12	1:A:255:ILE:O	0.61	1.96	7	1
1:A:122:THR:HG21	1:A:203:TRP:CE2	0.61	2.30	18	1
1:A:224:LEU:HD22	1:A:258:ILE:CG2	0.60	2.26	5	1
1:A:136:LYS:O	1:A:140:VAL:HG23	0.60	1.96	3	4
1:A:144:VAL:HG22	1:A:255:ILE:O	0.60	1.96	4	2
1:A:181:LEU:HD22	1:A:212:LEU:HD12	0.60	1.72	5	1
1:A:144:VAL:HG23	1:A:145:THR:HG23	0.60	1.73	3	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:211:ASN:ND2	1:A:215:THR:HG21	0.60	2.11	16	1
1:A:114:ILE:HG21	1:A:148:LYS:CE	0.59	2.26	11	1
1:A:252:ALA:O	1:A:255:ILE:HG22	0.59	1.96	6	1
1:A:164:ALA:HB1	1:A:169:GLY:HA2	0.59	1.71	10	1
1:A:214:LEU:CD2	1:A:243:VAL:HG22	0.59	2.27	17	2
1:A:203:TRP:HB2	1:A:210:THR:HG22	0.59	1.73	20	1
1:A:146:PRO:O	1:A:147:LEU:HD22	0.59	1.97	20	1
1:A:181:LEU:HD21	1:A:240:TYR:CZ	0.59	2.32	17	1
1:A:140:VAL:O	1:A:144:VAL:HG23	0.59	1.96	8	3
1:A:224:LEU:HB3	1:A:258:ILE:HD11	0.59	1.75	11	1
1:A:140:VAL:HG11	1:A:217:VAL:CG1	0.59	2.26	14	2
1:A:195:ALA:HB2	1:A:220:ILE:HA	0.59	1.74	7	1
1:A:144:VAL:HG22	1:A:255:ILE:HA	0.59	1.74	8	1
1:A:114:ILE:HD13	1:A:159:ILE:HD13	0.59	1.74	15	1
1:A:250:LEU:CB	1:A:255:ILE:HD11	0.59	2.28	9	1
1:A:144:VAL:HG21	1:A:258:ILE:HD13	0.58	1.74	14	1
1:A:161:VAL:HG23	1:A:195:ALA:CB	0.58	2.28	14	1
1:A:216:ALA:O	1:A:220:ILE:HG22	0.58	1.98	12	7
1:A:214:LEU:HD22	1:A:242:TYR:HA	0.58	1.74	5	1
1:A:144:VAL:CG1	1:A:258:ILE:HG22	0.58	2.27	12	1
1:A:224:LEU:HB3	1:A:258:ILE:HD12	0.58	1.75	18	1
1:A:116:TYR:HB2	1:A:159:ILE:HG23	0.58	1.74	10	1
1:A:115:THR:HB	1:A:152:ILE:HG21	0.58	1.76	1	1
1:A:214:LEU:HD13	1:A:243:VAL:CG2	0.58	2.28	14	1
1:A:214:LEU:HD22	1:A:243:VAL:HG13	0.58	1.75	14	1
1:A:145:THR:CG2	1:A:147:LEU:HD23	0.58	2.28	15	1
1:A:133:ALA:HB1	1:A:213:PHE:CE1	0.58	2.34	1	1
1:A:137:ALA:O	1:A:140:VAL:HG22	0.58	1.99	10	1
1:A:214:LEU:HB2	1:A:245:ILE:HG22	0.57	1.76	2	1
1:A:144:VAL:HG21	1:A:258:ILE:HG13	0.57	1.74	3	1
1:A:151:LYS:O	1:A:152:ILE:HD13	0.57	1.99	6	3
1:A:197:PHE:CZ	1:A:215:THR:HG21	0.57	2.33	12	2
1:A:130:VAL:O	1:A:134:ILE:HG22	0.57	1.99	13	1
1:A:213:PHE:O	1:A:217:VAL:HG23	0.57	1.99	20	1
1:A:250:LEU:HD13	1:A:258:ILE:HG13	0.57	1.76	2	1
1:A:144:VAL:HG12	1:A:255:ILE:HD13	0.57	1.75	3	1
1:A:116:TYR:CB	1:A:159:ILE:HG23	0.57	2.29	10	1
1:A:140:VAL:HG21	1:A:217:VAL:CG2	0.57	2.28	14	1
1:A:161:VAL:HG23	1:A:195:ALA:HB3	0.57	1.75	14	1
1:A:217:VAL:HG21	1:A:248:PHE:CE1	0.57	2.34	20	1
1:A:217:VAL:HG12	1:A:250:LEU:HD21	0.57	1.75	2	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:116:TYR:HA	1:A:159:ILE:HD11	0.57	1.76	1	2
1:A:137:ALA:CB	1:A:216:ALA:HB1	0.57	2.28	2	2
1:A:220:ILE:HG12	1:A:224:LEU:HD12	0.57	1.75	7	2
1:A:144:VAL:CG1	1:A:258:ILE:HG23	0.57	2.26	13	1
1:A:159:ILE:HG12	1:A:224:LEU:HD23	0.57	1.76	9	1
1:A:136:LYS:HD2	1:A:245:ILE:HD12	0.57	1.76	10	1
1:A:226:LEU:HD13	1:A:228:HIS:CE1	0.57	2.35	11	1
1:A:214:LEU:HD13	1:A:243:VAL:HG21	0.57	1.77	14	1
1:A:214:LEU:HD22	1:A:240:TYR:CB	0.57	2.30	16	1
1:A:116:TYR:CZ	1:A:157:ALA:HB3	0.57	2.35	20	1
1:A:224:LEU:HD12	1:A:258:ILE:CG2	0.57	2.30	14	3
1:A:140:VAL:HG22	1:A:258:ILE:CG2	0.57	2.29	17	2
1:A:161:VAL:HG23	1:A:195:ALA:HB1	0.56	1.77	19	1
1:A:118:ILE:CG2	1:A:161:VAL:HG21	0.56	2.30	11	1
1:A:223:SER:HB2	1:A:224:LEU:HD22	0.56	1.75	15	1
1:A:115:THR:HG22	1:A:150:SER:HB3	0.56	1.75	2	2
1:A:181:LEU:HD22	1:A:212:LEU:CD1	0.56	2.30	5	1
1:A:116:TYR:CE1	1:A:157:ALA:HB3	0.56	2.34	20	1
1:A:142:SER:HA	1:A:147:LEU:HD11	0.56	1.76	1	1
1:A:120:ASN:O	1:A:161:VAL:HG21	0.56	2.00	3	1
1:A:250:LEU:O	1:A:255:ILE:HD11	0.56	2.01	3	1
1:A:145:THR:HG22	1:A:147:LEU:CD1	0.56	2.30	9	1
1:A:115:THR:O	1:A:152:ILE:HG22	0.56	2.00	19	1
1:A:250:LEU:HD13	1:A:255:ILE:CD1	0.56	2.30	7	1
1:A:217:VAL:CG1	1:A:235:VAL:HG21	0.56	2.31	18	1
1:A:141:TRP:CE3	1:A:258:ILE:HD13	0.56	2.36	8	1
1:A:181:LEU:HD22	1:A:238:PRO:HB2	0.55	1.78	18	1
1:A:212:LEU:HD23	1:A:213:PHE:CE1	0.55	2.36	1	1
1:A:115:THR:CG2	1:A:152:ILE:HG21	0.55	2.31	16	1
1:A:212:LEU:CD1	1:A:245:ILE:HG22	0.55	2.31	6	1
1:A:212:LEU:HD12	1:A:213:PHE:CD2	0.55	2.36	7	1
1:A:137:ALA:HB2	1:A:213:PHE:O	0.55	2.01	10	1
1:A:213:PHE:CE1	1:A:245:ILE:HD13	0.55	2.36	19	1
1:A:254:ASP:OD2	1:A:255:ILE:HG23	0.55	2.01	2	1
1:A:124:ASP:OD2	1:A:204:THR:HG23	0.55	2.01	6	1
1:A:213:PHE:HB2	1:A:245:ILE:HG23	0.55	1.77	20	1
1:A:162:VAL:HG13	1:A:172:HIS:CB	0.55	2.32	11	1
1:A:182:ALA:HB1	1:A:222:HIS:CG	0.55	2.37	12	1
1:A:116:TYR:CB	1:A:152:ILE:HD13	0.54	2.32	8	1
1:A:114:ILE:HD13	1:A:159:ILE:CD1	0.54	2.32	15	1
1:A:141:TRP:HB3	1:A:224:LEU:HD13	0.54	1.77	7	2

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:141:TRP:CD1	1:A:224:LEU:HD13	0.54	2.38	1	1
1:A:184:ALA:HB3	1:A:223:SER:HA	0.54	1.79	11	2
1:A:211:ASN:O	1:A:212:LEU:HD23	0.54	2.02	7	1
1:A:241:LYS:O	1:A:243:VAL:HG13	0.54	2.03	9	1
1:A:184:ALA:CB	1:A:226:LEU:HD21	0.54	2.32	2	1
1:A:212:LEU:HD21	1:A:240:TYR:CD2	0.53	2.38	4	1
1:A:124:ASP:O	1:A:130:VAL:HG21	0.53	2.04	6	1
1:A:243:VAL:O	1:A:245:ILE:HG23	0.53	2.03	12	2
1:A:205:THR:HG23	1:A:208:GLY:O	0.53	2.04	16	1
1:A:182:ALA:HB2	1:A:219:GLU:OE1	0.53	2.04	5	1
1:A:160:LEU:O	1:A:195:ALA:HB2	0.53	2.04	6	1
1:A:141:TRP:CB	1:A:224:LEU:HD13	0.53	2.33	7	1
1:A:136:LYS:CD	1:A:245:ILE:HD12	0.53	2.32	10	1
1:A:234:ALA:HB3	1:A:251:SER:HB2	0.53	1.80	16	1
1:A:165:ARG:O	1:A:166:GLY:C	0.53	2.44	5	1
1:A:140:VAL:HG23	1:A:255:ILE:CG1	0.53	2.34	7	1
1:A:214:LEU:HD11	1:A:242:TYR:CB	0.53	2.33	3	1
1:A:221:GLY:HA3	1:A:235:VAL:HG21	0.53	1.80	2	1
1:A:144:VAL:HG13	1:A:145:THR:CG2	0.53	2.29	10	1
1:A:212:LEU:HD23	1:A:213:PHE:CD1	0.53	2.38	1	1
1:A:220:ILE:HG13	1:A:224:LEU:HD12	0.53	1.81	19	1
1:A:140:VAL:CG1	1:A:250:LEU:HD22	0.52	2.34	16	1
1:A:214:LEU:CG	1:A:243:VAL:HG12	0.52	2.34	18	1
1:A:140:VAL:HA	1:A:250:LEU:HD23	0.52	1.80	18	1
1:A:137:ALA:HB1	1:A:220:ILE:HD12	0.52	1.80	4	1
1:A:243:VAL:HG21	1:A:249:ARG:HG3	0.52	1.80	10	1
1:A:133:ALA:HB1	1:A:213:PHE:CD2	0.52	2.39	18	1
1:A:141:TRP:CH2	1:A:258:ILE:HD13	0.52	2.39	20	1
1:A:137:ALA:HB1	1:A:220:ILE:HG13	0.52	1.82	3	1
1:A:195:ALA:HB1	1:A:219:GLU:CG	0.52	2.35	3	1
1:A:114:ILE:HG23	1:A:158:ASP:HB2	0.52	1.82	14	1
1:A:118:ILE:HG21	1:A:134:ILE:CG2	0.52	2.35	15	1
1:A:140:VAL:O	1:A:258:ILE:HG23	0.52	2.05	17	1
1:A:140:VAL:HG22	1:A:250:LEU:HD11	0.52	1.80	11	1
1:A:160:LEU:HD12	1:A:160:LEU:O	0.52	2.05	16	1
1:A:138:PHE:CE1	1:A:184:ALA:HB2	0.52	2.40	5	1
1:A:137:ALA:CB	1:A:216:ALA:HB3	0.52	2.35	10	2
1:A:138:PHE:CD1	1:A:220:ILE:HG21	0.52	2.40	5	1
1:A:140:VAL:HG23	1:A:250:LEU:HG	0.52	1.81	5	1
1:A:195:ALA:HB1	1:A:197:PHE:CE1	0.52	2.40	17	1
1:A:217:VAL:CG1	1:A:250:LEU:HD21	0.51	2.36	2	2

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:213:PHE:CE1	1:A:245:ILE:HG21	0.51	2.40	8	1
1:A:118:ILE:HG23	1:A:161:VAL:HB	0.51	1.80	14	1
1:A:212:LEU:HD22	1:A:242:TYR:HA	0.51	1.82	14	1
1:A:227:GLY:HA2	1:A:255:ILE:HG21	0.51	1.81	2	1
1:A:124:ASP:OD1	1:A:212:LEU:HD21	0.51	2.06	3	1
1:A:141:TRP:O	1:A:145:THR:HG22	0.51	2.06	5	5
1:A:116:TYR:OH	1:A:224:LEU:HD21	0.51	2.05	16	1
1:A:184:ALA:HB1	1:A:226:LEU:HD21	0.51	1.83	2	1
1:A:214:LEU:HD11	1:A:243:VAL:HG22	0.51	1.82	10	1
1:A:182:ALA:HB1	1:A:222:HIS:NE2	0.51	2.21	15	1
1:A:115:THR:HG23	1:A:224:LEU:HD21	0.51	1.83	19	1
1:A:214:LEU:CD2	1:A:243:VAL:HG12	0.50	2.36	18	1
1:A:234:ALA:HB2	1:A:251:SER:HB3	0.50	1.83	5	1
1:A:217:VAL:HG11	1:A:250:LEU:HD11	0.50	1.83	3	1
1:A:224:LEU:HB3	1:A:258:ILE:HG23	0.50	1.82	5	2
1:A:215:THR:HG22	1:A:219:GLU:HG3	0.50	1.82	19	1
1:A:141:TRP:CE2	1:A:220:ILE:HG21	0.50	2.40	12	1
1:A:140:VAL:HG22	1:A:250:LEU:HB3	0.50	1.84	14	1
1:A:250:LEU:HD23	1:A:255:ILE:HD13	0.50	1.82	5	1
1:A:118:ILE:HG21	1:A:134:ILE:HG21	0.50	1.83	3	3
1:A:235:VAL:HG22	1:A:251:SER:HB3	0.50	1.84	7	1
1:A:214:LEU:CG	1:A:243:VAL:HG22	0.50	2.37	11	1
1:A:130:VAL:HG22	1:A:207:SER:O	0.50	2.06	4	1
1:A:255:ILE:HG23	1:A:256:ARG:HG3	0.50	1.83	20	1
1:A:250:LEU:HD22	1:A:258:ILE:HD11	0.49	1.82	2	1
1:A:250:LEU:C	1:A:250:LEU:CD2	0.49	2.80	13	3
1:A:227:GLY:CA	1:A:255:ILE:HG21	0.49	2.37	2	1
1:A:214:LEU:HD11	1:A:248:PHE:CD1	0.49	2.42	1	1
1:A:250:LEU:HB3	1:A:255:ILE:HD11	0.49	1.85	9	1
1:A:144:VAL:HG11	1:A:255:ILE:HB	0.49	1.82	16	1
1:A:158:ASP:HB3	1:A:159:ILE:HD12	0.49	1.84	6	1
1:A:140:VAL:CG1	1:A:250:LEU:HD13	0.49	2.35	12	1
1:A:250:LEU:HD13	1:A:255:ILE:HB	0.49	1.84	8	1
1:A:187:PRO:HG3	1:A:224:LEU:HD22	0.49	1.85	9	1
1:A:162:VAL:HG13	1:A:172:HIS:HB2	0.49	1.83	11	1
1:A:141:TRP:CZ2	1:A:220:ILE:HG21	0.49	2.42	12	1
1:A:144:VAL:HG21	1:A:258:ILE:HA	0.49	1.84	19	1
1:A:225:GLY:HA3	1:A:258:ILE:HD12	0.49	1.83	1	1
1:A:138:PHE:CE2	1:A:159:ILE:HG21	0.49	2.42	2	1
1:A:250:LEU:HD12	1:A:250:LEU:O	0.48	2.08	8	1
1:A:224:LEU:HD23	1:A:258:ILE:CD1	0.48	2.36	13	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:144:VAL:HG22	1:A:257:GLY:C	0.48	2.28	17	1
1:A:115:THR:CG2	1:A:224:LEU:HD21	0.48	2.38	19	1
1:A:141:TRP:CD1	1:A:224:LEU:HD22	0.48	2.43	19	1
1:A:212:LEU:O	1:A:216:ALA:HB2	0.48	2.07	13	2
1:A:182:ALA:HB3	1:A:238:PRO:HA	0.48	1.84	15	1
1:A:235:VAL:HG13	1:A:251:SER:HB2	0.48	1.84	7	1
1:A:167:ALA:O	1:A:168:HIS:C	0.48	2.51	9	2
1:A:195:ALA:HB1	1:A:219:GLU:OE1	0.48	2.08	11	1
1:A:214:LEU:HD21	1:A:243:VAL:C	0.48	2.29	13	1
1:A:197:PHE:CG	1:A:210:THR:HG21	0.48	2.44	14	1
1:A:205:THR:HG21	1:A:211:ASN:O	0.48	2.08	14	1
1:A:224:LEU:CB	1:A:258:ILE:HD11	0.48	2.39	11	1
1:A:115:THR:HG21	1:A:152:ILE:HD13	0.48	1.85	1	1
1:A:115:THR:HG22	1:A:150:SER:CB	0.48	2.39	2	1
1:A:226:LEU:HD13	1:A:228:HIS:NE2	0.48	2.24	11	1
1:A:204:THR:HG21	1:A:209:GLY:H	0.47	1.69	11	1
1:A:144:VAL:HG21	1:A:254:ASP:CB	0.47	2.38	15	1
1:A:141:TRP:CZ3	1:A:258:ILE:HG21	0.47	2.43	8	1
1:A:205:THR:CG2	1:A:212:LEU:HD23	0.47	2.38	20	1
1:A:250:LEU:HD21	1:A:255:ILE:HB	0.47	1.85	20	1
1:A:133:ALA:HB1	1:A:213:PHE:CZ	0.47	2.45	1	1
1:A:218:HIS:HA	1:A:235:VAL:HG23	0.47	1.84	2	1
1:A:217:VAL:HG11	1:A:250:LEU:HD21	0.47	1.86	17	1
1:A:250:LEU:HD22	1:A:258:ILE:HB	0.47	1.85	17	1
1:A:214:LEU:HD21	1:A:243:VAL:HG12	0.47	1.86	18	1
1:A:226:LEU:HD12	1:A:236:MET:HA	0.47	1.87	2	1
1:A:226:LEU:HA	1:A:258:ILE:HD13	0.47	1.87	15	1
1:A:214:LEU:HD12	1:A:243:VAL:CG1	0.47	2.40	20	1
1:A:252:ALA:HB3	1:A:255:ILE:HB	0.47	1.85	17	1
1:A:222:HIS:HA	1:A:226:LEU:HD22	0.47	1.87	2	1
1:A:195:ALA:HB1	1:A:219:GLU:HG2	0.47	1.87	3	1
1:A:184:ALA:HB1	1:A:224:LEU:HG	0.47	1.87	5	1
1:A:205:THR:HG22	1:A:207:SER:H	0.47	1.69	19	1
1:A:184:ALA:HB3	1:A:222:HIS:CG	0.46	2.45	4	1
1:A:195:ALA:HB1	1:A:219:GLU:CD	0.46	2.31	11	1
1:A:220:ILE:HG22	1:A:224:LEU:HD12	0.46	1.86	11	1
1:A:214:LEU:HG	1:A:243:VAL:HG12	0.46	1.86	18	1
1:A:224:LEU:HD22	1:A:258:ILE:HG22	0.46	1.85	5	1
1:A:250:LEU:N	1:A:250:LEU:CD1	0.46	2.77	5	1
1:A:250:LEU:CD2	1:A:258:ILE:HD12	0.46	2.41	17	1
1:A:114:ILE:HG21	1:A:158:ASP:CB	0.46	2.41	20	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:122:THR:HG21	1:A:209:GLY:CA	0.46	2.40	4	1
1:A:124:ASP:HB2	1:A:130:VAL:HG21	0.46	1.85	20	1
1:A:214:LEU:HD13	1:A:243:VAL:HG13	0.46	1.88	4	1
1:A:169:GLY:HA2	1:A:173:ALA:HB2	0.46	1.88	5	1
1:A:212:LEU:HD11	1:A:214:LEU:CD1	0.46	2.27	6	1
1:A:212:LEU:HD13	1:A:245:ILE:CG2	0.46	2.40	6	1
1:A:214:LEU:HD22	1:A:240:TYR:HB3	0.46	1.88	16	1
1:A:140:VAL:HG21	1:A:250:LEU:HD13	0.46	1.86	1	1
1:A:159:ILE:HG23	1:A:159:ILE:O	0.46	2.11	7	1
1:A:181:LEU:HD22	1:A:238:PRO:O	0.46	2.11	2	1
1:A:217:VAL:CG1	1:A:250:LEU:HD11	0.45	2.42	3	1
1:A:235:VAL:HG22	1:A:241:LYS:HB3	0.45	1.88	15	1
1:A:214:LEU:HD13	1:A:243:VAL:CG1	0.45	2.42	4	1
1:A:213:PHE:O	1:A:216:ALA:HB3	0.45	2.12	9	1
1:A:116:TYR:CB	1:A:157:ALA:HB3	0.45	2.42	18	1
1:A:144:VAL:HG12	1:A:255:ILE:HG23	0.45	1.88	1	1
1:A:141:TRP:CE2	1:A:258:ILE:HD12	0.45	2.45	9	1
1:A:146:PRO:C	1:A:147:LEU:HD12	0.45	2.32	16	1
1:A:210:THR:O	1:A:211:ASN:C	0.45	2.55	18	1
1:A:140:VAL:HG23	1:A:250:LEU:CG	0.45	2.41	5	1
1:A:234:ALA:HB2	1:A:251:SER:H	0.45	1.71	19	1
1:A:158:ASP:HB3	1:A:220:ILE:HD13	0.45	1.87	10	1
1:A:119:ASN:C	1:A:161:VAL:HG21	0.45	2.31	16	1
1:A:243:VAL:HG21	1:A:249:ARG:CG	0.45	2.41	10	1
1:A:250:LEU:HD22	1:A:250:LEU:O	0.44	2.11	13	2
1:A:168:HIS:C	1:A:173:ALA:HB2	0.44	2.32	15	1
1:A:223:SER:C	1:A:224:LEU:HD13	0.44	2.32	15	1
1:A:249:ARG:C	1:A:250:LEU:HD23	0.44	2.31	16	1
1:A:138:PHE:CE1	1:A:220:ILE:HG21	0.44	2.47	5	1
1:A:141:TRP:CZ3	1:A:224:LEU:HD22	0.44	2.47	17	1
1:A:258:ILE:O	1:A:258:ILE:HG22	0.44	2.12	18	1
1:A:142:SER:HB2	1:A:147:LEU:HD21	0.44	1.89	10	1
1:A:251:SER:O	1:A:252:ALA:HB3	0.44	2.13	17	1
1:A:116:TYR:HB3	1:A:157:ALA:HB3	0.44	1.88	18	1
1:A:211:ASN:C	1:A:212:LEU:HD23	0.44	2.32	7	1
1:A:159:ILE:HD13	1:A:224:LEU:HD11	0.44	1.88	13	1
1:A:158:ASP:O	1:A:159:ILE:HG23	0.44	2.12	16	1
1:A:214:LEU:HD12	1:A:243:VAL:HG12	0.44	1.89	20	1
1:A:250:LEU:HD13	1:A:258:ILE:CD1	0.44	2.43	2	1
1:A:144:VAL:HG12	1:A:255:ILE:CD1	0.44	2.41	3	1
1:A:116:TYR:HB2	1:A:152:ILE:HD13	0.44	1.89	8	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:187:PRO:HG3	1:A:224:LEU:HD13	0.44	1.88	16	1
1:A:205:THR:C	1:A:212:LEU:HD13	0.44	2.33	18	1
1:A:214:LEU:HD21	1:A:244:ASP:N	0.43	2.28	13	1
1:A:187:PRO:HD3	1:A:220:ILE:HD12	0.43	1.90	14	1
1:A:119:ASN:OD1	1:A:195:ALA:HB3	0.43	2.13	2	1
1:A:181:LEU:HD11	1:A:198:ASP:HB2	0.43	1.88	15	1
1:A:145:THR:HG21	1:A:224:LEU:HD13	0.43	1.90	2	1
1:A:141:TRP:CH2	1:A:147:LEU:HD22	0.43	2.49	14	1
1:A:214:LEU:CD2	1:A:243:VAL:HG13	0.43	2.42	14	1
1:A:115:THR:HG22	1:A:149:PHE:C	0.43	2.33	8	1
1:A:118:ILE:H	1:A:118:ILE:HD13	0.43	1.73	11	1
1:A:205:THR:HG23	1:A:207:SER:H	0.43	1.73	2	1
1:A:145:THR:HG23	1:A:148:LYS:HE3	0.43	1.90	11	1
1:A:133:ALA:HB1	1:A:213:PHE:CD1	0.43	2.49	1	2
1:A:145:THR:O	1:A:147:LEU:HD23	0.43	2.13	5	1
1:A:204:THR:CG2	1:A:212:LEU:HD13	0.43	2.43	9	1
1:A:250:LEU:O	1:A:250:LEU:HD22	0.43	2.14	5	1
1:A:215:THR:HG22	1:A:219:GLU:CG	0.43	2.43	19	2
1:A:142:SER:HA	1:A:147:LEU:HD22	0.42	1.89	5	1
1:A:205:THR:HG21	1:A:212:LEU:HB3	0.42	1.89	6	1
1:A:214:LEU:HD21	1:A:241:LYS:O	0.42	2.14	9	1
1:A:140:VAL:HG13	1:A:250:LEU:CD2	0.42	2.39	16	1
1:A:187:PRO:HD2	1:A:224:LEU:HD23	0.42	1.91	19	1
1:A:120:ASN:HB2	1:A:161:VAL:HG23	0.42	1.90	10	1
1:A:116:TYR:HA	1:A:159:ILE:HG23	0.42	1.91	12	1
1:A:257:GLY:C	1:A:258:ILE:HD12	0.42	2.35	14	2
1:A:216:ALA:O	1:A:220:ILE:HD12	0.42	2.15	8	1
1:A:235:VAL:HG13	1:A:241:LYS:CB	0.42	2.42	15	1
1:A:147:LEU:HD21	1:A:187:PRO:HB2	0.42	1.91	16	1
1:A:181:LEU:HD21	1:A:198:ASP:HB2	0.42	1.92	15	1
1:A:250:LEU:HD22	1:A:258:ILE:HD12	0.42	1.91	17	1
1:A:220:ILE:HD13	1:A:224:LEU:HD12	0.42	1.91	1	1
1:A:234:ALA:HB1	1:A:236:MET:SD	0.42	2.54	6	1
1:A:134:ILE:HD12	1:A:158:ASP:OD1	0.42	2.14	10	1
1:A:212:LEU:HD13	1:A:242:TYR:HB3	0.42	1.91	14	1
1:A:181:LEU:HD11	1:A:198:ASP:CG	0.42	2.35	15	1
1:A:250:LEU:HD13	1:A:258:ILE:CG1	0.42	2.44	2	1
1:A:205:THR:HG22	1:A:206:HIS:CD2	0.42	2.50	11	1
1:A:168:HIS:O	1:A:173:ALA:HB2	0.42	2.15	15	1
1:A:214:LEU:HD21	1:A:243:VAL:HB	0.42	1.90	16	1
1:A:137:ALA:HA	1:A:217:VAL:HG22	0.42	1.91	1	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:214:LEU:HD21	1:A:242:TYR:CA	0.42	2.45	3	1
1:A:140:VAL:HG22	1:A:258:ILE:HG23	0.42	1.90	19	1
1:A:202:PHE:O	1:A:203:TRP:C	0.41	2.57	2	1
1:A:144:VAL:HG11	1:A:258:ILE:HA	0.41	1.90	19	1
1:A:160:LEU:HD12	1:A:161:VAL:H	0.41	1.74	20	1
1:A:198:ASP:CB	1:A:210:THR:HG23	0.41	2.45	8	1
1:A:258:ILE:HG23	1:A:258:ILE:O	0.41	2.15	20	1
1:A:130:VAL:HG13	1:A:212:LEU:HD23	0.41	1.93	3	1
1:A:235:VAL:HG11	1:A:254:ASP:OD2	0.41	2.14	5	1
1:A:181:LEU:HD21	1:A:240:TYR:CE1	0.41	2.50	17	1
1:A:145:THR:HG21	1:A:224:LEU:CD1	0.41	2.45	18	1
1:A:158:ASP:CB	1:A:159:ILE:HD13	0.41	2.45	19	1
1:A:223:SER:O	1:A:224:LEU:HD13	0.41	2.16	15	1
1:A:214:LEU:HD11	1:A:243:VAL:HB	0.41	1.92	16	1
1:A:250:LEU:HD13	1:A:255:ILE:HG21	0.41	1.92	16	1
1:A:158:ASP:C	1:A:159:ILE:HD12	0.41	2.36	9	1
1:A:205:THR:HG22	1:A:209:GLY:N	0.41	2.31	15	1
1:A:137:ALA:HB2	1:A:216:ALA:CB	0.41	2.46	9	1
1:A:142:SER:CB	1:A:147:LEU:HD21	0.41	2.46	10	1
1:A:118:ILE:HG22	1:A:161:VAL:CG2	0.41	2.39	11	1
1:A:130:VAL:HG13	1:A:212:LEU:CD2	0.41	2.45	3	1
1:A:165:ARG:CD	1:A:173:ALA:HB1	0.41	2.46	5	1
1:A:165:ARG:HD2	1:A:173:ALA:HB1	0.41	1.92	5	1
1:A:214:LEU:HD12	1:A:245:ILE:CG2	0.41	2.46	8	1
1:A:122:THR:HG23	1:A:124:ASP:OD2	0.41	2.16	11	1
1:A:137:ALA:HB1	1:A:217:VAL:HG23	0.41	1.93	13	1
1:A:133:ALA:HB1	1:A:213:PHE:HB3	0.41	1.92	15	1
1:A:118:ILE:CG2	1:A:134:ILE:HD11	0.41	2.45	16	1
1:A:217:VAL:HG21	1:A:248:PHE:CE2	0.41	2.51	19	1
1:A:118:ILE:HA	1:A:161:VAL:HG21	0.41	1.91	1	1
1:A:206:HIS:NE2	1:A:212:LEU:HD13	0.41	2.31	1	1
1:A:222:HIS:CE1	1:A:226:LEU:HD13	0.41	2.51	2	1
1:A:217:VAL:HG21	1:A:250:LEU:CD1	0.41	2.45	4	1
1:A:141:TRP:CH2	1:A:145:THR:HG23	0.41	2.51	17	1
1:A:250:LEU:N	1:A:250:LEU:HD22	0.41	2.31	19	1
1:A:115:THR:CG2	1:A:157:ALA:HB1	0.40	2.45	7	1
1:A:115:THR:HG21	1:A:152:ILE:HB	0.40	1.93	9	1
1:A:224:LEU:O	1:A:258:ILE:HD11	0.40	2.16	11	1
1:A:159:ILE:HD13	1:A:159:ILE:N	0.40	2.31	12	1
1:A:250:LEU:HD13	1:A:255:ILE:CG2	0.40	2.46	16	1
1:A:140:VAL:C	1:A:258:ILE:HG23	0.40	2.36	17	1

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:144:VAL:HG13	1:A:255:ILE:O	0.40	2.16	6	1
1:A:206:HIS:HB2	1:A:214:LEU:HD13	0.40	1.92	8	1
1:A:142:SER:HB2	1:A:147:LEU:HD11	0.40	1.92	10	1
1:A:181:LEU:HD11	1:A:240:TYR:CE1	0.40	2.51	17	1
1:A:214:LEU:HG	1:A:243:VAL:HG22	0.40	1.93	11	1
1:A:145:THR:OG1	1:A:147:LEU:HD13	0.40	2.17	16	1
1:A:245:ILE:HD12	1:A:245:ILE:O	0.40	2.16	18	1
1:A:119:ASN:O	1:A:161:VAL:HG13	0.40	2.17	2	1
1:A:181:LEU:HD11	1:A:197:PHE:CZ	0.40	2.51	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	124/152 (82%)	87±4 (70±3%)	26±3 (21±3%)	12±3 (9±2%)	1	11
All	All	2480/3040 (82%)	1733 (70%)	514 (21%)	233 (9%)	1	11

All 50 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	166	GLY	20
1	A	258	ILE	11
1	A	236	MET	10
1	A	171	ASP	8
1	A	233	LYS	8
1	A	173	ALA	7
1	A	124	ASP	7
1	A	168	HIS	7
1	A	147	LEU	7
1	A	120	ASN	6
1	A	174	PHE	6
1	A	226	LEU	6
1	A	185	PHE	6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Models (Total)
1	A	198	ASP	6
1	A	203	TRP	6
1	A	172	HIS	6
1	A	195	ALA	6
1	A	201	GLU	6
1	A	199	GLU	6
1	A	181	LEU	5
1	A	209	GLY	5
1	A	212	LEU	5
1	A	200	ASP	5
1	A	211	ASN	5
1	A	252	ALA	4
1	A	158	ASP	4
1	A	159	ILE	4
1	A	228	HIS	4
1	A	170	ASP	4
1	A	248	PHE	3
1	A	144	VAL	3
1	A	234	ALA	3
1	A	125	MET	3
1	A	202	PHE	3
1	A	245	ILE	3
1	A	146	PRO	2
1	A	210	THR	2
1	A	227	GLY	2
1	A	208	GLY	2
1	A	257	GLY	2
1	A	169	GLY	2
1	A	225	GLY	2
1	A	253	ASP	2
1	A	123	PRO	2
1	A	237	PHE	2
1	A	150	SER	1
1	A	205	THR	1
1	A	184	ALA	1
1	A	183	HIS	1
1	A	242	TYR	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	103/122 (84%)	74±4 (72±4%)	29±4 (28±4%)	2 19
All	All	2060/2440 (84%)	1476 (72%)	584 (28%)	2 19

All 87 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	117	ARG	16
1	A	125	MET	15
1	A	223	SER	13
1	A	204	THR	12
1	A	226	LEU	12
1	A	237	PHE	12
1	A	241	LYS	12
1	A	256	ARG	12
1	A	207	SER	12
1	A	142	SER	11
1	A	212	LEU	11
1	A	214	LEU	11
1	A	249	ARG	11
1	A	147	LEU	11
1	A	165	ARG	11
1	A	181	LEU	11
1	A	205	THR	11
1	A	126	ASN	10
1	A	247	THR	10
1	A	254	ASP	10
1	A	160	LEU	10
1	A	236	MET	10
1	A	139	GLN	9
1	A	151	LYS	9
1	A	251	SER	9
1	A	183	HIS	9
1	A	148	LYS	9
1	A	135	ARG	8
1	A	200	ASP	8
1	A	250	LEU	8
1	A	170	ASP	8
1	A	174	PHE	8
1	A	136	LYS	8

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Models (Total)
1	A	253	ASP	8
1	A	132	TYR	8
1	A	171	ASP	8
1	A	224	LEU	8
1	A	158	ASP	7
1	A	239	THR	7
1	A	124	ASP	7
1	A	150	SER	7
1	A	185	PHE	7
1	A	233	LYS	7
1	A	244	ASP	7
1	A	127	ARG	7
1	A	202	PHE	7
1	A	199	GLU	6
1	A	228	HIS	6
1	A	172	HIS	6
1	A	210	THR	6
1	A	222	HIS	6
1	A	118	ILE	6
1	A	203	TRP	6
1	A	201	GLU	6
1	A	128	GLU	5
1	A	141	TRP	5
1	A	219	GLU	5
1	A	122	THR	5
1	A	115	THR	5
1	A	120	ASN	4
1	A	198	ASP	4
1	A	245	ILE	4
1	A	246	ASN	4
1	A	129	ASP	4
1	A	159	ILE	4
1	A	197	PHE	4
1	A	131	ASP	3
1	A	168	HIS	3
1	A	206	HIS	3
1	A	218	HIS	3
1	A	116	TYR	3
1	A	114	ILE	3
1	A	119	ASN	2
1	A	248	PHE	2
1	A	258	ILE	2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Models (Total)
1	A	143	ASN	2
1	A	145	THR	2
1	A	255	ILE	2
1	A	138	PHE	2
1	A	211	ASN	2
1	A	144	VAL	1
1	A	149	PHE	1
1	A	213	PHE	1
1	A	215	THR	1
1	A	220	ILE	1
1	A	242	TYR	1
1	A	134	ILE	1

6.3.3 RNA

There are no RNA molecules in this entry.

6.4 Non-standard residues in protein, DNA, RNA chains

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

6.5 Carbohydrates

There are no monosaccharides in this entry.

6.6 Ligand geometry

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

6.7 Other polymers

There are no such molecules in this entry.

6.8 Polymer linkage issues

There are no chain breaks in this entry.

7 Chemical shift validation

No chemical shift data were provided