Full wwPDB NMR Structure Validation Report (i)

Apr 20, 2024 – 09:25 AM EDT

PDB ID	:	1YR1
Title	:	Structure of the major extracytoplasmic domain of the trans isomer of the bacterial cell division protein divib from geobacillus stearothermophilus
Authors	:	Robson, S.A.; King, G.F.
Deposited on	:	2005-02-02

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:

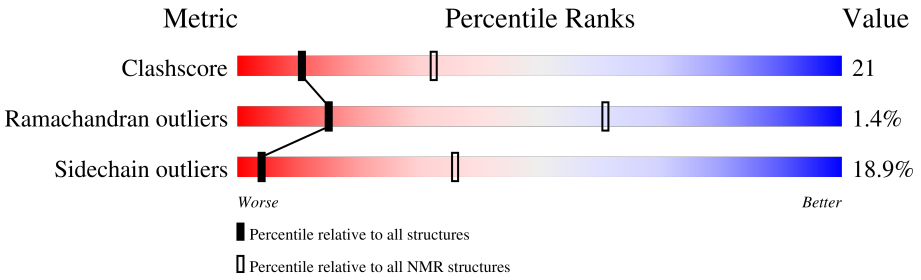
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson 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	119	58% 29% • 9%

2 Ensemble composition and analysis (i)

This entry contains 25 models. Model 21 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:118-A:225 (108)	0.20	21

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 4 clusters and 2 single-model clusters were found.

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

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 1869 atoms, of which 927 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called cell-division initiation protein.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	119	1869	598	927	162	179	3	0

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: cell-division initiation protein

Chain A: 58% 29% • 9%

G115 S116 E117 W118 I121 A122 Y123 V124 Y125 D126 R127 Q128 T129 F130 F131 P132 L133 L134 R138 L139 T145 K146 T147 L155 V156 G157 W158 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 M201 V207 S208 A209 T210 I211 R212

Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

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: cell-division initiation protein

Chain A: 52% 33% 5% • 9%

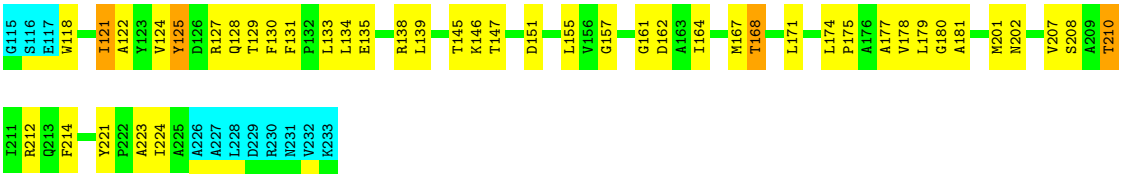
G115 S116 E117 W118 R119 R120 I121 A122 Y123 V124 Y125 Q128 T129 F130 F131 P132 L133 L134 R138 L139 L140 T145 K146 T147 A152 P153 V154 L155 V156 G157 W158 K159 D160 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 Y187 M201

V207 S208 A209 T210 F214 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.2 Score per residue for model 2

• Molecule 1: cell-division initiation protein

Chain A: 54% 34% • 9%



4.2.3 Score per residue for model 3

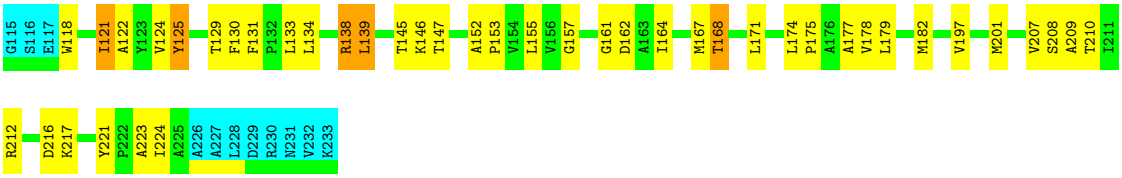
- Molecule 1: cell-division initiation protein

Chain A:

4.2.4 Score per residue for model 4

- Molecule 1: cell-division initiation protein

Chain A:



4.2.5 Score per residue for model 5

- Molecule 1: cell-division initiation protein

Chain A:

4.2.6 Score per residue for model 6

- Molecule 1: cell-division initiation protein

Chain A: 50% 35% 5% 9%

G115 S116 E117 W118 R119 R120 I121 A122 Y123 V124 Y125 Q128 T129 F130 F131 P132 L133 L134 R138 L139 L140 T145 K146 T147 D151 L155 V156 G157 W158 K159 D160 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 Y187 E194 M201

V207 S208 A209 T210 I211 R212 Q213 F214 L218 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.7 Score per residue for model 7

- Molecule 1: cell-division initiation protein

Chain A: 46% 40% • • 9%

G115 S116 E117 W118 R119 R120 I121 A122 Y123 V124 Y125 D126 R127 Q128 T129 F130 F131 P132 L133 L134 E135 R138 L139 L140 T145 K146 T147 D151 L155 V156 G157 W158 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 M182 S183 R191 E192

Y193 E194 D195 R196 V197 M201 A209 T210 I211 R212 K217 L218 S219 H220 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.8 Score per residue for model 8

- Molecule 1: cell-division initiation protein

Chain A: 50% 35% 5% 9%

G115 S116 E117 W118 R119 R120 I121 A122 Y123 V124 Y125 T129 F130 F131 P132 L133 L134 E135 R138 L139 T145 K146 T147 A152 P153 Y154 L155 V156 G157 W158 K159 D160 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 M182 M201 N202 V207

S208 A209 T210 I211 R212 Q213 F214 L218 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.9 Score per residue for model 9

- Molecule 1: cell-division initiation protein

Chain A: 52% 34% 5% 9%

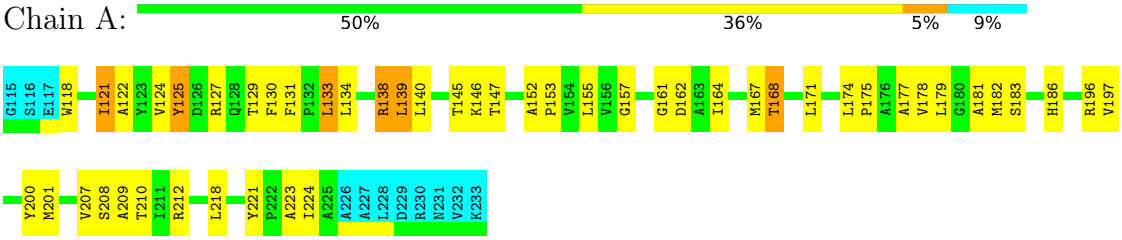
G115 S116 E117 W118 I121 A122 Y123 V124 Y125 D126 R127 Q128 T129 F130 F131 P132 L133 L134 R138 L139 T145 K146 T147 A148 P149 A152 L155 V156 G157 W158 K159 D160 G161 D162 A163 I164 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 M182 S183 E184 Y187

R196 M201 T210 F214 L218 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.10 Score per residue for model 10

- Molecule 1: cell-division initiation protein

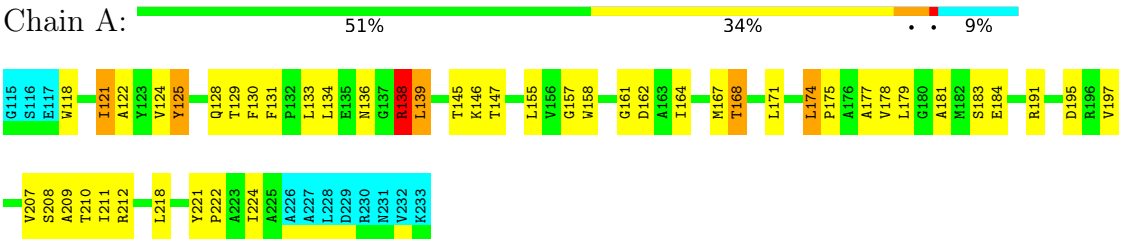
Chain A:



4.2.11 Score per residue for model 11

- Molecule 1: cell-division initiation protein

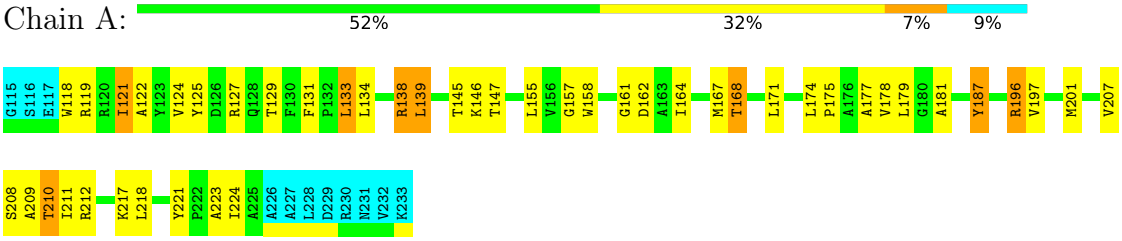
Chain A:



4.2.12 Score per residue for model 12

- Molecule 1: cell-division initiation protein

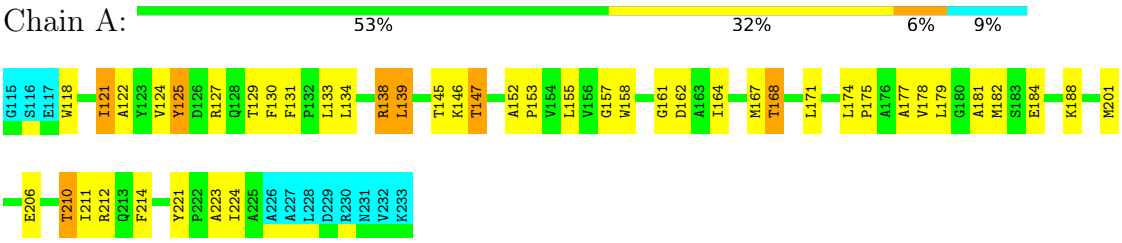
Chain A:



4.2.13 Score per residue for model 13

- Molecule 1: cell-division initiation protein

Chain A:



4.2.14 Score per residue for model 14

- Molecule 1: cell-division initiation protein

Chain A: 49% 37% 5% 9%

G115 S116 E117 W118 R119 R120 I121 A122 Y123 V124 Y125 D126 R127 Q128 T129 F130 F131 P132 L133 L134 R138 L139 L140 T145 K146 T147 A148 P149 A152 L155 V156 G157 W158 K159 D160 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 R191 V197 I198

V207 S208 A209 T210 I211 R212 K217 H220 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.15 Score per residue for model 15

- Molecule 1: cell-division initiation protein

Chain A: 55% 32% • 9%

G115 S116 E117 W118 R119 R120 I121 A122 Y123 V124 Y125 D126 R127 Q128 T129 F130 F131 P132 L133 L134 E135 N136 G137 R138 L139 T145 K146 T147 L155 V156 G157 W158 K159 D160 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 R191 M201 T210

I211 R212 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.16 Score per residue for model 16

- Molecule 1: cell-division initiation protein

Chain A: 53% 34% • 9%

G115 S116 E117 W118 R119 R120 I121 A122 Y123 V124 Y125 T129 F130 F131 P132 L133 L134 R138 L139 T145 K146 T147 L155 V156 G157 W158 K159 D160 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 M182 S183 E184 E194 M201 E206 V207

S208 I211 R212 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.17 Score per residue for model 17

- Molecule 1: cell-division initiation protein

Chain A: 57% 29% 5% 9%

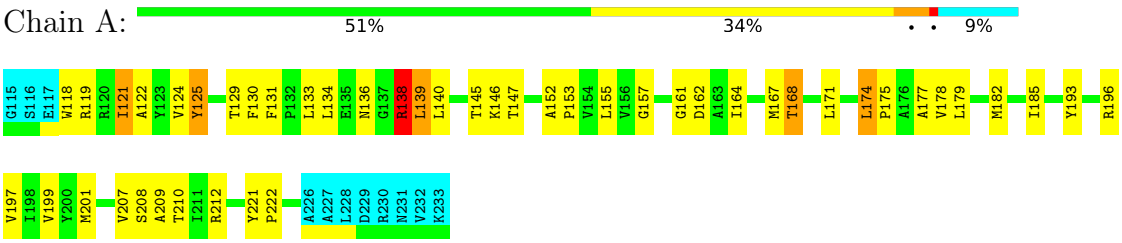
G115 S116 E117 W118 I121 A122 Y123 V124 Y125 T129 F130 F131 P132 L133 L134 E135 N136 G137 R138 L139 T145 K146 T147 L155 V156 G157 G161 D162 A163 I164 M167 T168 L171 L174 P175 A176 A177 V178 L179 G180 A181 E192 N202 T210 I211 R212 Q213 F214

H220 Y221 P222 A223 I224 A225 A226 A227 L228 D229 R230 N231 V232 K233

4.2.18 Score per residue for model 18

- Molecule 1: cell-division initiation protein

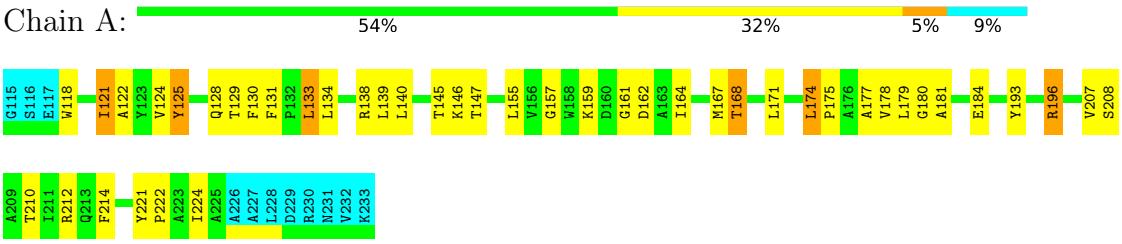
Chain A:



4.2.19 Score per residue for model 19

- Molecule 1: cell-division initiation protein

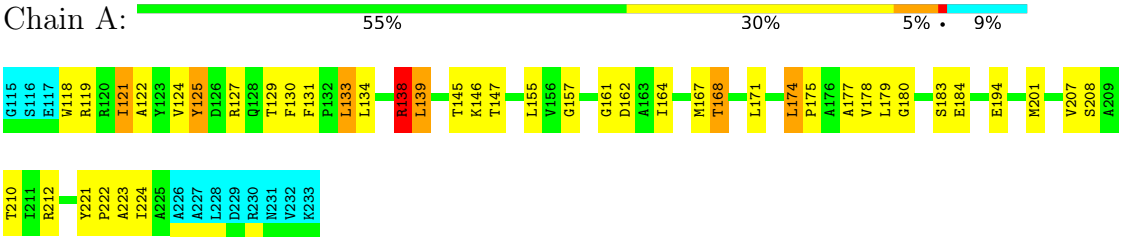
Chain A:



4.2.20 Score per residue for model 20

- Molecule 1: cell-division initiation protein

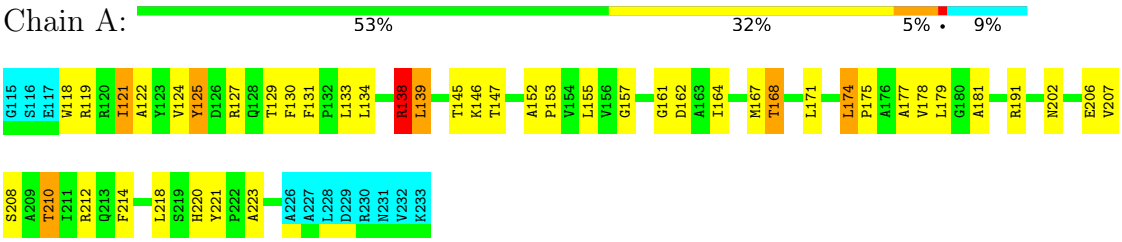
Chain A:



4.2.21 Score per residue for model 21 (medoid)

- Molecule 1: cell-division initiation protein

Chain A:



4.2.22 Score per residue for model 22

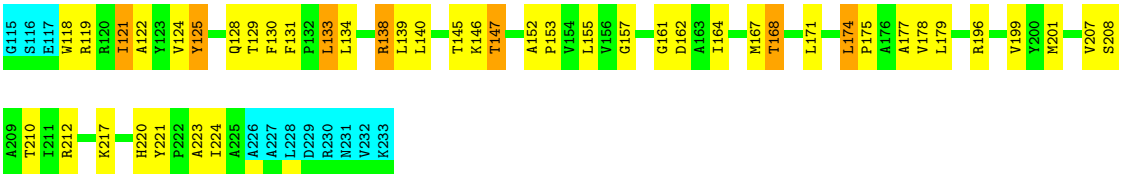
- Molecule 1: cell-division initiation protein

Chain A: 50% 34% 5% • 9%

4.2.23 Score per residue for model 23

- Molecule 1: cell-division initiation protein

Chain A: 53% 32% 6% 9%



4.2.24 Score per residue for model 24

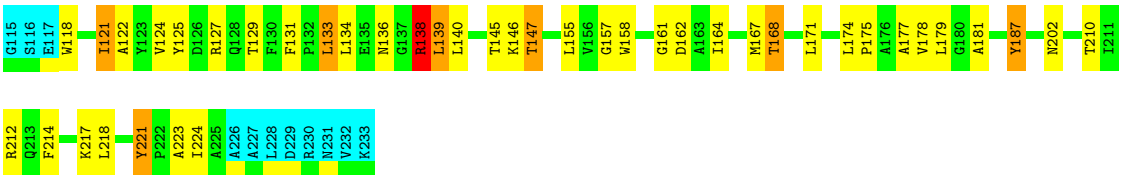
- Molecule 1: cell-division initiation protein

Chain A: 54% 33% • 9%

4.2.25 Score per residue for model 25

- Molecule 1: cell-division initiation protein

Chain A: 55% 29% 6% • 9%



5 Refinement protocol and experimental data overview (i)

The models were refined using the following method: *torsion angle dynamics (CANDID/CYANA) followed by simulated annealing (XPLOR).*

Of the 60 calculated structures, 25 were deposited, based on the following criterion: *lowest energy.*

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

Software name	Classification	Version
CANDID	structure solution	1.1
CYANA	structure solution	1.1
XPLOR	refinement	3.1

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	861	845	845	36±3
All	All	21525	21125	21125	893

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 21.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:121:ILE:HD11	1:A:168:THR:HG22	0.97	1.34	8	25
1:A:133:LEU:HD11	1:A:164:ILE:HG23	0.88	1.46	9	25
1:A:121:ILE:CD1	1:A:168:THR:HG22	0.82	2.05	12	25
1:A:133:LEU:HD11	1:A:164:ILE:CG2	0.81	2.06	4	25
1:A:161:GLY:HA2	1:A:164:ILE:HD12	0.75	1.59	14	25
1:A:181:ALA:HB3	1:A:224:ILE:HG23	0.72	1.59	7	18
1:A:174:LEU:CD2	1:A:179:LEU:HD23	0.68	2.18	23	10
1:A:196:ARG:NH2	1:A:210:THR:HG23	0.67	2.03	24	1
1:A:174:LEU:HD11	1:A:179:LEU:HB3	0.65	1.66	25	15
1:A:178:VAL:HA	1:A:224:ILE:HG22	0.65	1.68	7	23
1:A:122:ALA:HB3	1:A:168:THR:HG23	0.64	1.69	12	25
1:A:118:TRP:HB2	1:A:134:LEU:HD13	0.63	1.69	7	25
1:A:129:THR:HG23	1:A:145:THR:O	0.62	1.94	1	25
1:A:196:ARG:NH1	1:A:210:THR:HG23	0.62	2.09	12	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:171:LEU:HD11	1:A:214:PHE:CE1	0.60	2.31	17	2
1:A:171:LEU:HA	1:A:174:LEU:HD22	0.60	1.74	23	10
1:A:131:PHE:HB2	1:A:139:LEU:HD21	0.59	1.73	22	25
1:A:174:LEU:HD12	1:A:175:PRO:O	0.59	1.97	1	15
1:A:122:ALA:HB2	1:A:171:LEU:HD23	0.59	1.75	9	1
1:A:129:THR:HG23	1:A:145:THR:C	0.57	2.19	8	25
1:A:121:ILE:HD11	1:A:168:THR:CG2	0.57	2.23	5	25
1:A:124:VAL:HG21	1:A:139:LEU:HG	0.56	1.77	7	25
1:A:122:ALA:HB2	1:A:171:LEU:CD2	0.56	2.31	9	25
1:A:133:LEU:CD1	1:A:155:LEU:HD12	0.55	2.31	16	25
1:A:174:LEU:HD21	1:A:179:LEU:HB3	0.55	1.78	23	10
1:A:134:LEU:HD12	1:A:138:ARG:CB	0.55	2.32	7	14
1:A:131:PHE:CB	1:A:139:LEU:HD21	0.54	2.33	2	25
1:A:218:LEU:HD12	1:A:224:ILE:CD1	0.54	2.33	7	10
1:A:124:VAL:HG21	1:A:139:LEU:CD1	0.53	2.32	22	25
1:A:124:VAL:HG21	1:A:139:LEU:CG	0.53	2.33	5	25
1:A:181:ALA:HB1	1:A:202:ASN:ND2	0.52	2.18	25	4
1:A:179:LEU:HD12	1:A:180:GLY:N	0.52	2.19	20	7
1:A:125:TYR:CE2	1:A:130:PHE:CE2	0.51	2.99	9	22
1:A:158:TRP:CZ3	1:A:187:TYR:CE2	0.50	2.99	22	5
1:A:181:ALA:CB	1:A:224:ILE:HG23	0.50	2.35	2	3
1:A:197:VAL:HG22	1:A:209:ALA:O	0.50	2.06	18	7
1:A:201:MET:SD	1:A:224:ILE:HD11	0.50	2.47	5	1
1:A:123:TYR:CE1	1:A:152:ALA:HB3	0.49	2.42	9	2
1:A:171:LEU:HB3	1:A:179:LEU:HD22	0.49	1.85	1	12
1:A:139:LEU:HD23	1:A:140:LEU:N	0.49	2.22	6	3
1:A:158:TRP:CE3	1:A:187:TYR:CE2	0.49	3.01	22	2
1:A:134:LEU:HD12	1:A:138:ARG:HB3	0.49	1.84	14	14
1:A:174:LEU:HD23	1:A:174:LEU:O	0.49	2.08	15	10
1:A:122:ALA:HB3	1:A:168:THR:CG2	0.48	2.38	12	14
1:A:179:LEU:HD12	1:A:179:LEU:C	0.48	2.28	1	22
1:A:175:PRO:HB2	1:A:178:VAL:HG23	0.48	1.84	22	13
1:A:158:TRP:CH2	1:A:211:ILE:HD11	0.47	2.44	7	12
1:A:124:VAL:HG21	1:A:139:LEU:HD11	0.47	1.86	22	9
1:A:140:LEU:N	1:A:140:LEU:HD22	0.46	2.25	24	8
1:A:174:LEU:HD11	1:A:179:LEU:CB	0.46	2.40	25	1
1:A:218:LEU:HD12	1:A:224:ILE:HD13	0.46	1.86	3	4
1:A:174:LEU:HD23	1:A:174:LEU:C	0.46	2.31	23	10
1:A:118:TRP:CG	1:A:136:ASN:ND2	0.46	2.83	25	3
1:A:124:VAL:HG11	1:A:139:LEU:HD11	0.46	1.87	9	6
1:A:133:LEU:HD22	1:A:168:THR:HG21	0.45	1.88	10	6

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:152:ALA:HB1	1:A:153:PRO:HD2	0.45	1.89	18	9
1:A:193:TYR:CD2	1:A:196:ARG:NH1	0.45	2.85	19	2
1:A:158:TRP:CE3	1:A:187:TYR:CD2	0.45	3.05	6	1
1:A:123:TYR:HE1	1:A:152:ALA:HB3	0.45	1.72	9	2
1:A:118:TRP:CE2	1:A:136:ASN:ND2	0.45	2.85	17	3
1:A:119:ARG:NH2	1:A:121:ILE:HG21	0.44	2.27	7	1
1:A:123:TYR:CD1	1:A:149:PRO:CG	0.44	3.00	9	2
1:A:131:PHE:CB	1:A:139:LEU:CD2	0.44	2.95	7	20
1:A:171:LEU:CD1	1:A:214:PHE:CE1	0.44	3.01	17	1
1:A:158:TRP:CD2	1:A:187:TYR:CD2	0.44	3.06	6	1
1:A:121:ILE:HD12	1:A:135:GLU:HA	0.43	1.91	2	4
1:A:186:HIS:CD2	1:A:200:TYR:CE1	0.43	3.07	10	1
1:A:207:VAL:HG12	1:A:208:SER:N	0.42	2.30	18	18
1:A:145:THR:OG1	1:A:147:THR:HG22	0.42	2.14	6	3
1:A:139:LEU:HD12	1:A:164:ILE:HD13	0.42	1.90	9	6
1:A:155:LEU:HD22	1:A:158:TRP:CZ2	0.42	2.48	9	1
1:A:186:HIS:CG	1:A:200:TYR:CE1	0.42	3.08	10	1
1:A:198:ILE:HD12	1:A:208:SER:HB3	0.42	1.92	14	1
1:A:129:THR:CG2	1:A:145:THR:N	0.42	2.83	18	23
1:A:140:LEU:N	1:A:140:LEU:CD2	0.42	2.83	18	7
1:A:217:LYS:O	1:A:220:HIS:CE1	0.42	2.73	22	2
1:A:199:VAL:HG22	1:A:207:VAL:HB	0.42	1.91	23	1
1:A:221:TYR:CB	1:A:224:ILE:HD12	0.42	2.45	14	2
1:A:181:ALA:HB1	1:A:202:ASN:OD1	0.42	2.15	17	1
1:A:158:TRP:CZ3	1:A:211:ILE:HD11	0.41	2.50	7	2
1:A:181:ALA:HB3	1:A:224:ILE:CG2	0.41	2.39	7	1
1:A:210:THR:O	1:A:214:PHE:N	0.41	2.54	1	11
1:A:201:MET:HE3	1:A:207:VAL:HG21	0.41	1.93	18	2
1:A:201:MET:HE1	1:A:224:ILE:CD1	0.41	2.46	20	1
1:A:187:TYR:CE2	1:A:189:PRO:CG	0.41	3.04	24	1
1:A:145:THR:OG1	1:A:147:THR:HG23	0.41	2.16	25	1
1:A:123:TYR:CD1	1:A:149:PRO:HG3	0.40	2.51	9	1
1:A:185:ILE:HG12	1:A:199:VAL:HG12	0.40	1.93	18	1
1:A:203:ASP:CB	1:A:205:TYR:CE2	0.40	3.05	5	1
1:A:192:GLU:O	1:A:193:TYR:CD1	0.40	2.74	7	1
1:A:218:LEU:HD22	1:A:218:LEU:N	0.40	2.32	25	2

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	108/119 (91%)	104±1 (96±1%)	3±1 (3±1%)	1±0 (1±0%)	15 61
All	All	2700/2975 (91%)	2594 (96%)	69 (3%)	37 (1%)	15 61

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	157	GLY	25
1	A	138	ARG	12

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	88/96 (92%)	71±2 (81±2%)	17±2 (19±2%)	4 36
All	All	2200/2400 (92%)	1784 (81%)	416 (19%)	4 36

All 36 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	121	ILE	25
1	A	125	TYR	25
1	A	146	LYS	25
1	A	147	THR	25
1	A	162	ASP	25
1	A	168	THR	25
1	A	221	TYR	25
1	A	167	MET	24

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Mol	Chain	Res	Type	Models (Total)
1	A	212	ARG	22
1	A	139	LEU	19
1	A	138	ARG	17
1	A	210	THR	17
1	A	201	MET	16
1	A	127	ARG	13
1	A	119	ARG	11
1	A	133	LEU	11
1	A	174	LEU	10
1	A	159	LYS	9
1	A	128	GLN	7
1	A	191	ARG	7
1	A	187	TYR	6
1	A	182	MET	6
1	A	183	SER	6
1	A	196	ARG	6
1	A	184	GLU	6
1	A	217	LYS	5
1	A	194	GLU	5
1	A	206	GLU	4
1	A	220	HIS	4
1	A	151	ASP	3
1	A	160	ASP	2
1	A	216	ASP	1
1	A	203	ASP	1
1	A	195	ASP	1
1	A	188	LYS	1
1	A	192	GLU	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