



# Full wwPDB NMR Structure Validation Report ⓘ

Apr 27, 2016 – 12:38 AM BST

PDB ID : 2L85  
Title : Solution NMR structures of CBP bromodomain with small molecule of HBS  
Authors : Borah, J.C.; Mujtaba, S.; Karakikes, I.; Zeng, L.; Muller, M.; Patel, J.; Moshkina, N.; Morohashi, K.; Zhang, W.; Gerona-Navarro, G.; Hajjar, R.J.; Zhou, M.  
Deposited on : 2011-01-04

This is a Full wwPDB NMR Structure Validation Report for a publicly released PDB entry.  
We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/NMRValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

---

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

Cyrange : Kirchner and Güntert (2011)  
NmrClust : Kelley et al. (1996)  
MolProbity : 4.02b-467  
Mogul : 1.7.1 (RC1), CSD as537be (2016)  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
RCI : v\_1n\_11\_5\_13\_A (Berjanski et al., 2005)  
PANAV : Wang et al. (2010)  
ShiftChecker : rb-20027457  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : rb-20027457

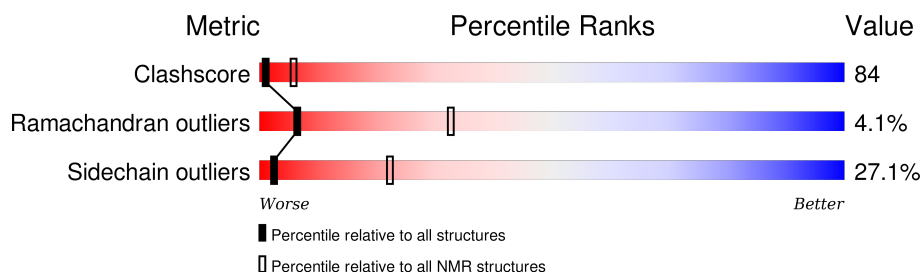
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment is 85%.

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	114402	11133
Ramachandran outliers	111179	9975
Sidechain outliers	111093	9958

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  $\geq 3$ , 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  $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	A	121	

## 2 Ensemble composition and analysis

This entry contains 20 models. Model 11 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:1087-A:1168, A:1172-A:1195 (106)	0.18	11

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 1 single-model cluster was found.

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

### 3 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 2051 atoms, of which 1017 are hydrogens and 0 are deuteriums.

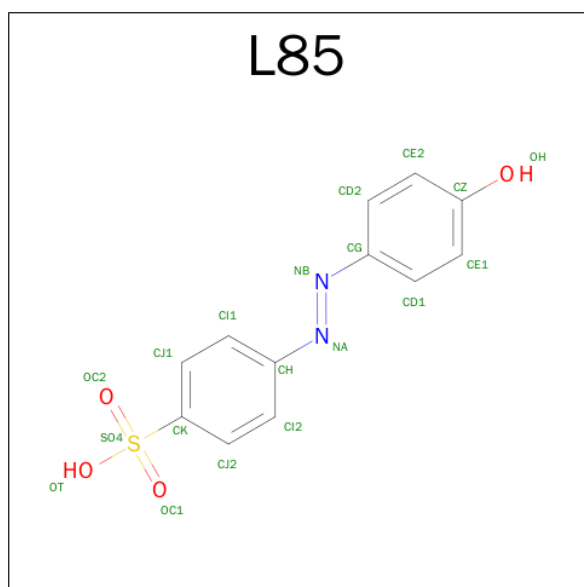
- Molecule 1 is a protein called CREB-binding protein.

Mol	Chain	Residues	Atoms						Trace
1	A	121	Total	C	H	N	O	S	0
			2022	655	1007	169	185	6	

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1077	GLY	-	EXPRESSION TAG	UNP Q92793
A	1078	SER	-	EXPRESSION TAG	UNP Q92793
A	1079	HIS	-	EXPRESSION TAG	UNP Q92793
A	1080	MET	-	EXPRESSION TAG	UNP Q92793

- Molecule 2 is 4-[(E)-(4-HYDROXYPHENYL)DIAZENYL]BENZENESULFONIC ACID (three-letter code: L85) (formula: C<sub>12</sub>H<sub>10</sub>N<sub>2</sub>O<sub>4</sub>S).



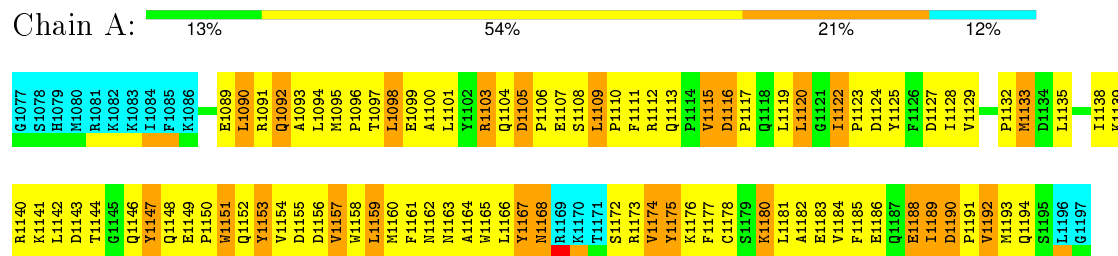
Mol	Chain	Residues	Atoms					
2	A	1	Total	C	H	N	O	S
			29	12	10	2	4	1

## 4 Residue-property plots

### 4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA and DNA 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: CREB-binding protein

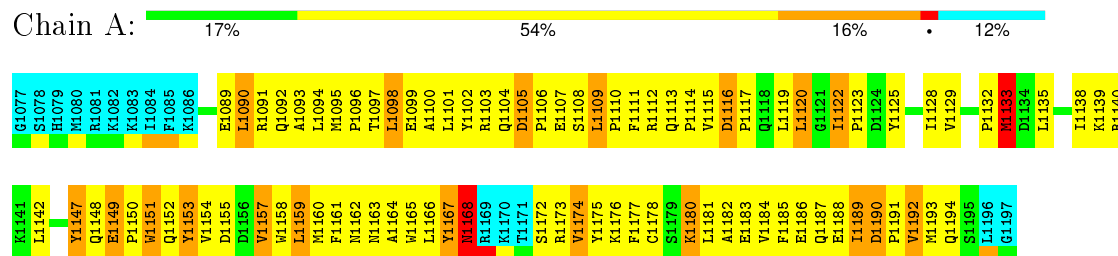


### 4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

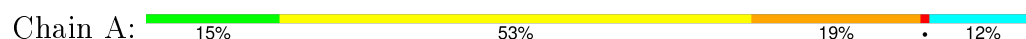
#### 4.2.1 Score per residue for model 1

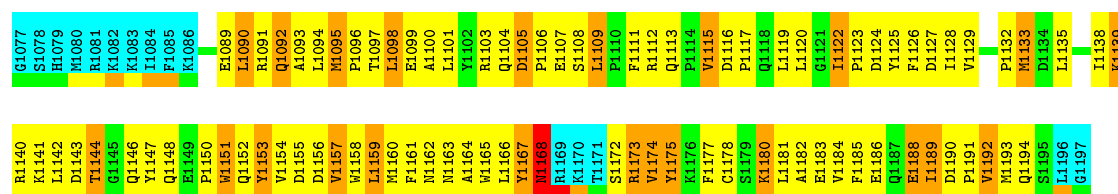
- Molecule 1: CREB-binding protein



#### 4.2.2 Score per residue for model 2

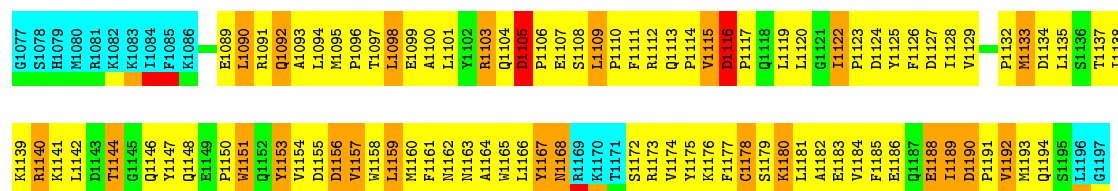
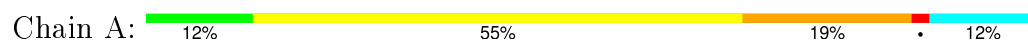
- Molecule 1: CREB-binding protein





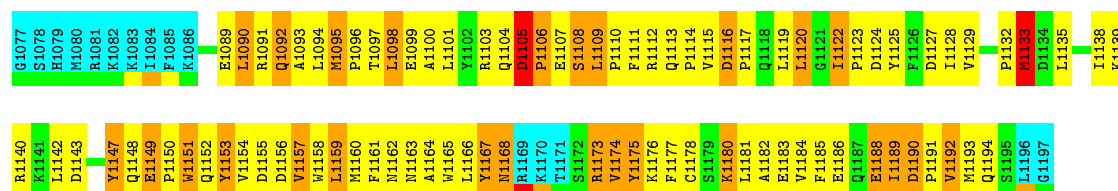
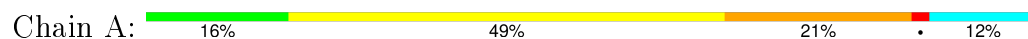
#### 4.2.3 Score per residue for model 3

- Molecule 1: CREB-binding protein



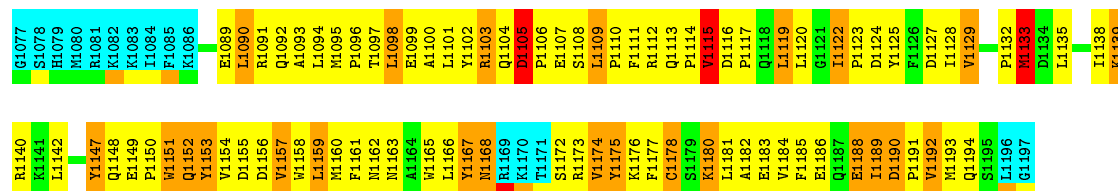
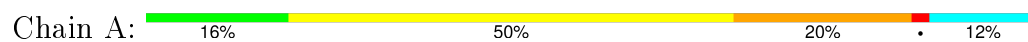
#### 4.2.4 Score per residue for model 4

- Molecule 1: CREB-binding protein



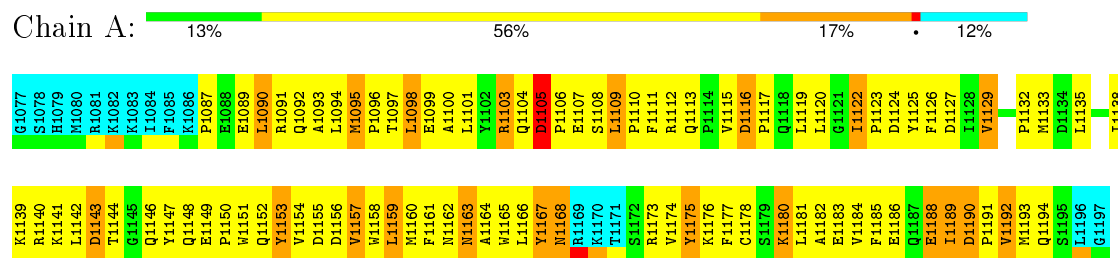
#### 4.2.5 Score per residue for model 5

- Molecule 1: CREB-binding protein



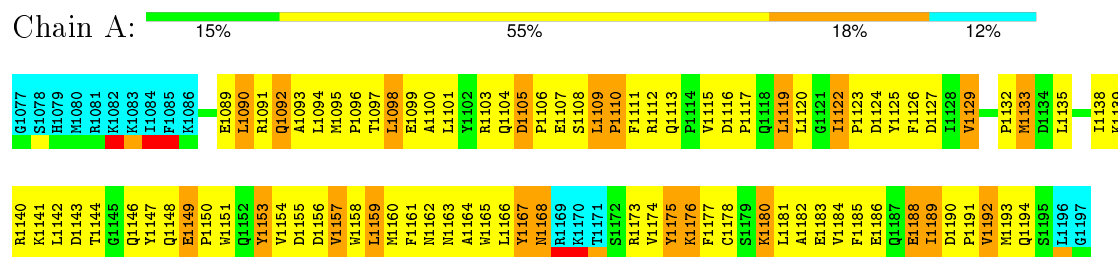
### 4.2.6 Score per residue for model 6

- Molecule 1: CREB-binding protein



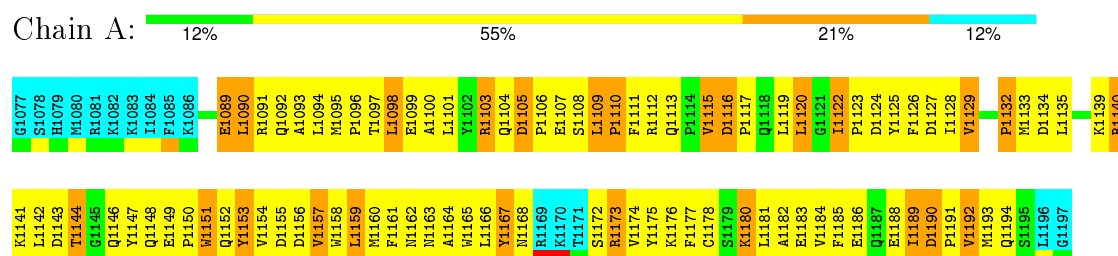
### 4.2.7 Score per residue for model 7

- Molecule 1: CREB-binding protein



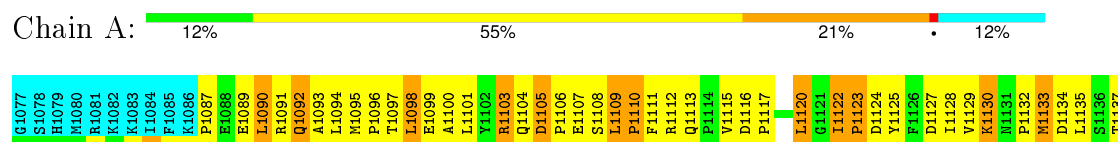
### 4.2.8 Score per residue for model 8

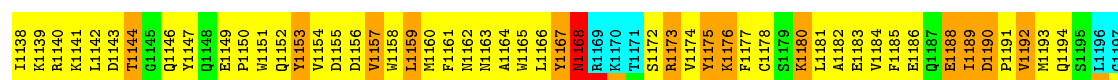
- Molecule 1: CREB-binding protein



### 4.2.9 Score per residue for model 9

- Molecule 1: CREB-binding protein





#### 4.2.10 Score per residue for model 10

- Molecule 1: CREB-binding protein

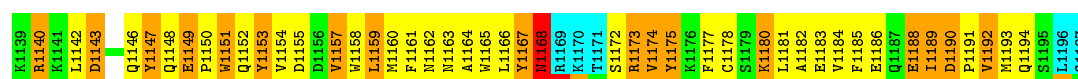
Chain A: 17% 48% 22% 12%



#### 4.2.11 Score per residue for model 11 (medoid)

- Molecule 1: CREB-binding protein

Chain A: 16% 48% 21% 12%



#### 4.2.12 Score per residue for model 12

- Molecule 1: CREB-binding protein

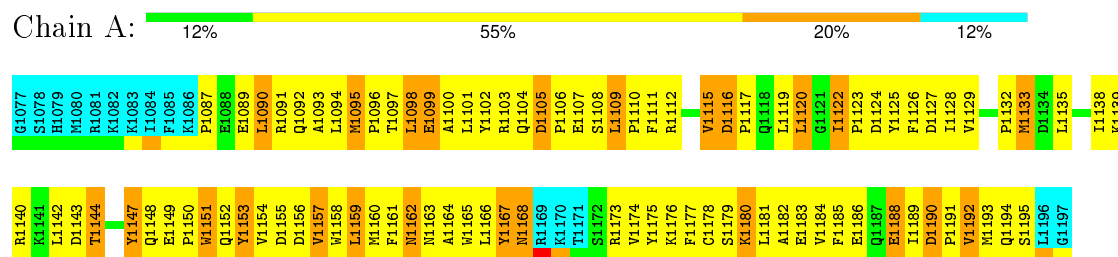
Chain A: 12% 53% 21% 12%



#### 4.2.13 Score per residue for model 13

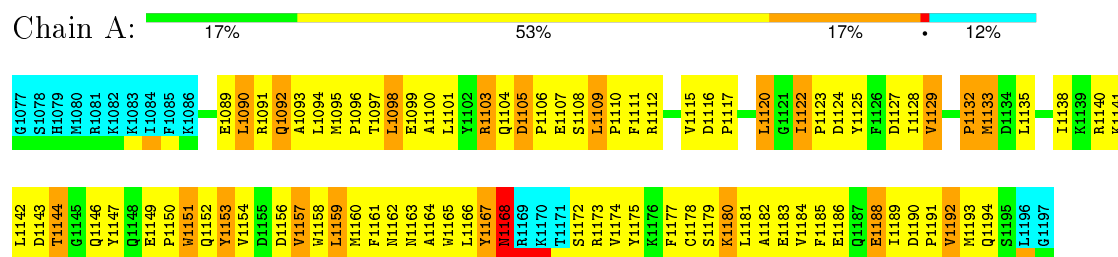
- Molecule 1: CREB-binding protein





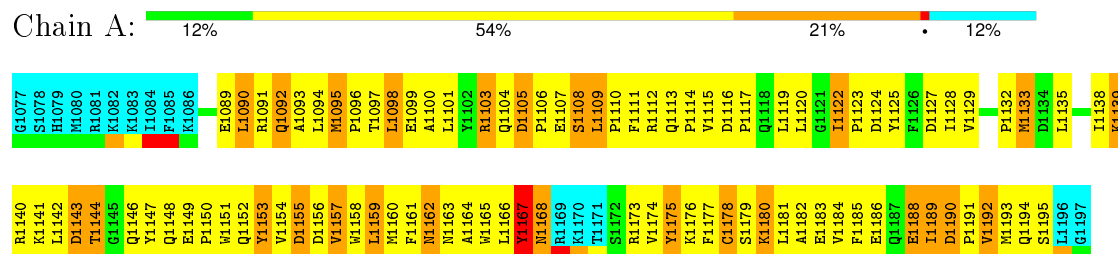
#### 4.2.14 Score per residue for model 14

- Molecule 1: CREB-binding protein



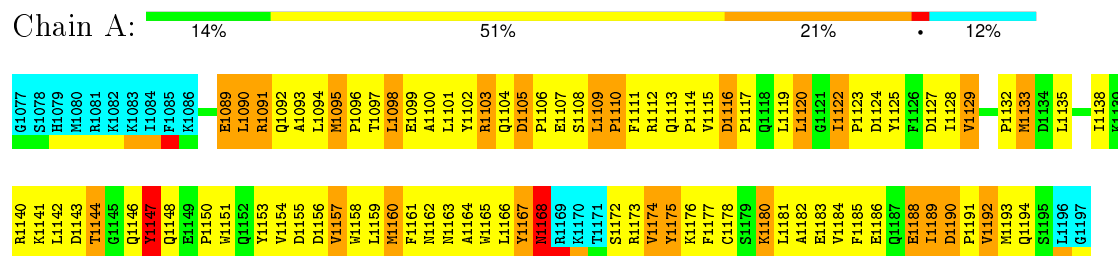
#### 4.2.15 Score per residue for model 15

- Molecule 1: CREB-binding protein



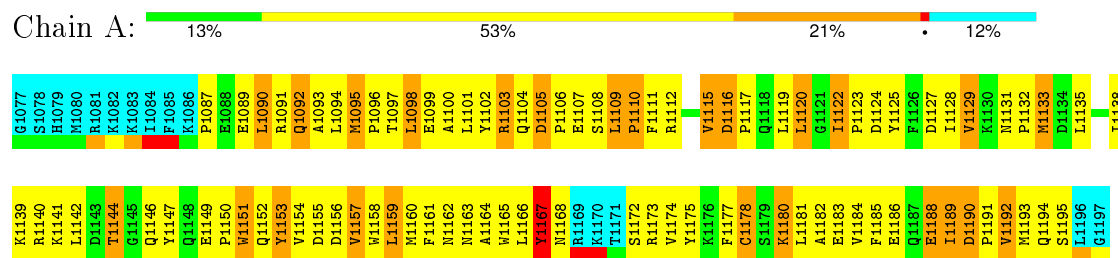
#### 4.2.16 Score per residue for model 16

- Molecule 1: CREB-binding protein



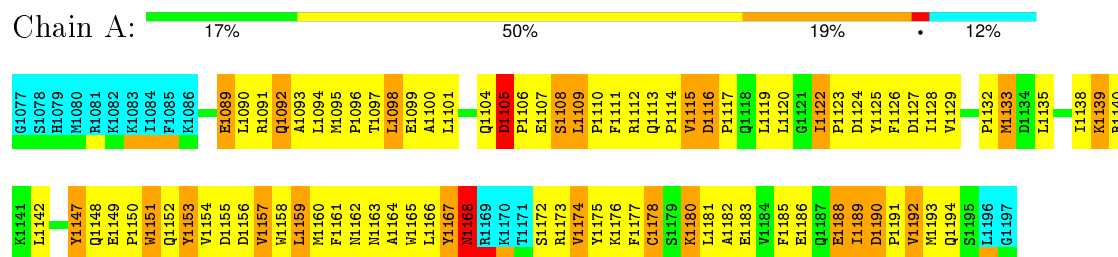
## 4.2.17 Score per residue for model 17

- Molecule 1: CREB-binding protein



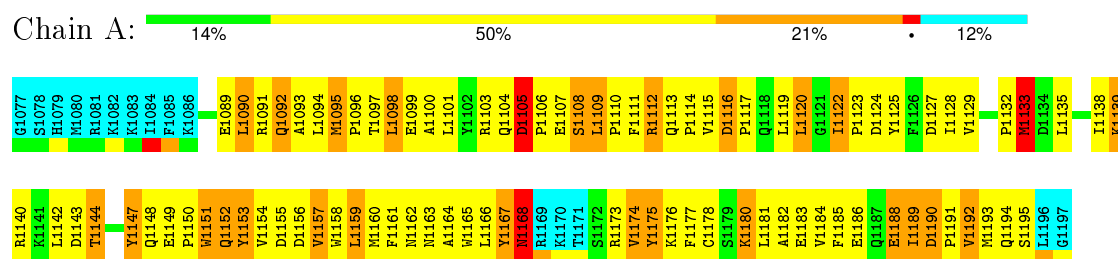
## 4.2.18 Score per residue for model 18

- Molecule 1: CREB-binding protein



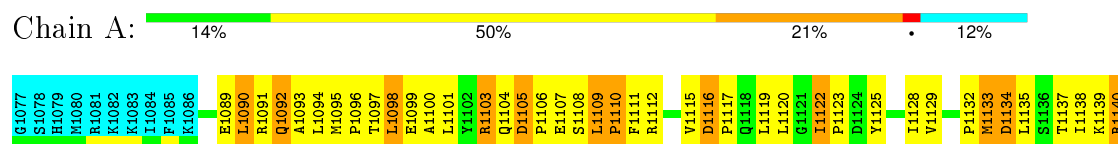
## 4.2.19 Score per residue for model 19

- Molecule 1: CREB-binding protein



## 4.2.20 Score per residue for model 20

- Molecule 1: CREB-binding protein



K1141	L1142	D1143	T1144	G1145	Q1146	Y1147	Q1148	E1149	P1150	W1151	Q1152	Y1153	V1154	D1155	D1156	V1157	W1158	L1159	M1160	F1161	N1162	N1163	A1164	W1165	L1166	Y1167	M1168	R1169	K1170	T1171	S1172	R1173	V1174	Y1175	K1176	F1177	C1178	S1179	K1180	L1181	A1182	E1183	V1184	F1185	E1186	Q1187	E1188	I1189	D1190	P1191	V1192	M1193	Q1194	S1195	L1196	G1197
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

## 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
ARIA	refinement	2.2
CNS	structure solution	1.2

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)	2l85_cs.str
Number of chemical shift lists	1
Total number of shifts	1378
Number of shifts mapped to atoms	1378
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	85%

No validations of the models with respect to experimental NMR restraints is performed at this time.

## 6 Model quality [i](#)

### 6.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: L85

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the (average) root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#Z>5	RMSZ	#Z>5
1	A	0.47±0.01	0±0/917 (0.0±0.0%)	0.65±0.01	0±0/1250 (0.0±0.0%)
All	All	0.47	0/18340 (0.0%)	0.65	4/25000 (0.0%)

There are no bond-length outliers.

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	1167	TYR	CB-CG-CD2	-5.41	117.76	121.00	15	3
1	A	1147	TYR	CB-CG-CD2	-5.09	117.95	121.00	16	1

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	890	861	861	150±7
2	A	19	10	9	3±1
All	All	18180	17420	17386	2997

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 84.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1093:ALA:HB1	1:A:1192:VAL:HG22	1.11	1.22	20	20
1:A:1101:LEU:HD13	1:A:1135:LEU:CD2	0.96	1.90	17	20
1:A:1094:LEU:HD12	1:A:1147:TYR:CE2	0.91	2.01	16	1
1:A:1094:LEU:HD11	1:A:1150:PRO:HA	0.84	1.48	3	20
1:A:1093:ALA:CB	1:A:1192:VAL:HG22	0.83	2.03	9	20
1:A:1186:GLU:HA	1:A:1189:ILE:HG22	0.81	1.52	9	20
1:A:1142:LEU:HD23	1:A:1147:TYR:CE2	0.81	2.11	12	9
1:A:1185:PHE:CE2	1:A:1189:ILE:HG21	0.79	2.11	1	20
1:A:1091:ARG:HG3	1:A:1142:LEU:HD22	0.79	1.51	16	10
1:A:1094:LEU:HB2	1:A:1142:LEU:HD21	0.79	1.53	19	9
1:A:1109:LEU:HD22	1:A:1112:ARG:NH1	0.78	1.92	8	1
1:A:1112:ARG:HA	1:A:1135:LEU:HB2	0.78	1.55	14	20
1:A:1189:ILE:HG12	1:A:1192:VAL:HG11	0.77	1.56	9	17
1:A:1166:LEU:HD12	1:A:1167:TYR:N	0.77	1.93	4	20
1:A:1115:VAL:HG21	1:A:1125:TYR:CD1	0.76	2.15	20	2
1:A:1154:VAL:HG12	1:A:1158:TRP:CD1	0.76	2.16	13	20
1:A:1111:PHE:HB3	1:A:1160:MET:SD	0.75	2.22	10	4
1:A:1120:LEU:HD13	2:A:201:L85:NB	0.74	1.96	4	19
1:A:1115:VAL:HG13	1:A:1120:LEU:HD12	0.74	1.59	5	1
1:A:1101:LEU:HD13	1:A:1135:LEU:HD21	0.74	1.59	8	6
1:A:1135:LEU:HD21	1:A:1160:MET:HE1	0.74	1.58	10	1
1:A:1189:ILE:HG13	1:A:1192:VAL:HG11	0.73	1.59	13	3
1:A:1122:ILE:HG21	1:A:1125:TYR:HD1	0.73	1.42	1	1
1:A:1101:LEU:HD13	1:A:1135:LEU:HD22	0.72	1.62	5	17
1:A:1094:LEU:HD22	1:A:1189:ILE:HD11	0.72	1.61	16	20
1:A:1177:PHE:O	1:A:1181:LEU:HG	0.72	1.85	11	20
1:A:1157:VAL:O	1:A:1160:MET:HG3	0.71	1.85	16	2
1:A:1120:LEU:HD12	1:A:1122:ILE:HD11	0.71	1.60	15	7
1:A:1094:LEU:HD11	1:A:1150:PRO:HB3	0.71	1.62	16	1
1:A:1135:LEU:HG	1:A:1160:MET:SD	0.71	2.25	17	4
1:A:1117:PRO:HB3	1:A:1122:ILE:O	0.71	1.85	5	20
1:A:1097:THR:HG21	1:A:1189:ILE:HG12	0.70	1.63	5	17
1:A:1135:LEU:HD23	1:A:1138:ILE:HD12	0.70	1.62	16	17
1:A:1094:LEU:HD11	1:A:1150:PRO:CA	0.69	2.17	16	9
1:A:1090:LEU:N	1:A:1090:LEU:HD23	0.69	2.02	2	8
1:A:1100:ALA:HB3	1:A:1188:GLU:OE2	0.69	1.88	19	3
1:A:1094:LEU:HD11	1:A:1150:PRO:CB	0.69	2.17	16	1
1:A:1189:ILE:O	1:A:1193:MET:HG3	0.68	1.88	19	20
1:A:1147:TYR:CE1	1:A:1153:TYR:HB2	0.68	2.23	16	1
1:A:1108:SER:HA	1:A:1181:LEU:HD11	0.68	1.66	4	20
1:A:1090:LEU:HD23	1:A:1090:LEU:N	0.68	2.02	14	12

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1173:ARG:HG3	1:A:1174:VAL:N	0.67	2.03	4	18
1:A:1173:ARG:HG3	1:A:1174:VAL:H	0.67	1.50	18	15
1:A:1106:PRO:HA	1:A:1109:LEU:HB2	0.66	1.66	17	20
1:A:1165:TRP:HA	1:A:1175:TYR:CE2	0.66	2.25	14	4
1:A:1090:LEU:HD12	1:A:1147:TYR:CE1	0.66	2.25	1	9
1:A:1112:ARG:HB2	1:A:1112:ARG:NH1	0.66	2.06	8	1
1:A:1125:TYR:CE1	1:A:1129:VAL:HG11	0.66	2.25	20	2
1:A:1101:LEU:HD11	1:A:1157:VAL:HG21	0.66	1.68	16	20
1:A:1154:VAL:HG22	1:A:1189:ILE:HD12	0.66	1.68	3	17
1:A:1097:THR:HG21	1:A:1189:ILE:HG13	0.66	1.66	13	3
1:A:1117:PRO:HA	1:A:1122:ILE:HG13	0.65	1.67	20	19
1:A:1112:ARG:N	1:A:1135:LEU:HD12	0.65	2.06	14	3
1:A:1098:LEU:HD11	1:A:1135:LEU:HB3	0.65	1.69	15	20
1:A:1133:MET:HG3	1:A:1159:LEU:HB3	0.65	1.68	7	4
1:A:1142:LEU:HA	1:A:1147:TYR:CE2	0.65	2.26	19	9
1:A:1163:ASN:O	1:A:1167:TYR:HB2	0.65	1.92	7	2
1:A:1135:LEU:HD21	1:A:1160:MET:HE3	0.64	1.69	2	15
1:A:1192:VAL:CG1	1:A:1193:MET:N	0.64	2.60	10	20
1:A:1095:MET:HB3	1:A:1096:PRO:HD3	0.64	1.70	9	20
1:A:1125:TYR:O	1:A:1129:VAL:HG13	0.64	1.93	15	16
1:A:1089:GLU:HA	1:A:1092:GLN:HG3	0.64	1.70	12	1
1:A:1154:VAL:HG12	1:A:1158:TRP:HD1	0.64	1.51	20	20
1:A:1129:VAL:HB	1:A:1166:LEU:HD11	0.64	1.69	6	5
1:A:1178:CYS:O	1:A:1181:LEU:N	0.64	2.31	17	20
1:A:1165:TRP:NE1	1:A:1178:CYS:SG	0.63	2.71	15	19
1:A:1190:ASP:O	1:A:1194:GLN:HG3	0.63	1.94	14	19
1:A:1094:LEU:HD13	1:A:1153:TYR:CG	0.63	2.29	19	19
1:A:1125:TYR:CE2	1:A:1129:VAL:HG11	0.63	2.28	1	1
1:A:1115:VAL:HG23	1:A:1117:PRO:HD3	0.62	1.71	20	9
1:A:1192:VAL:HG12	1:A:1193:MET:N	0.62	2.08	13	20
1:A:1097:THR:CG2	1:A:1192:VAL:HG21	0.62	2.24	9	20
1:A:1163:ASN:O	1:A:1167:TYR:CB	0.62	2.47	6	2
1:A:1189:ILE:HA	1:A:1192:VAL:HB	0.62	1.70	14	19
1:A:1122:ILE:HD13	1:A:1125:TYR:CD2	0.62	2.30	15	2
1:A:1135:LEU:HD21	1:A:1160:MET:CE	0.61	2.24	6	16
1:A:1091:ARG:CG	1:A:1142:LEU:HD22	0.61	2.26	12	10
1:A:1128:ILE:HD13	1:A:1167:TYR:CE2	0.61	2.31	1	18
1:A:1185:PHE:HA	1:A:1188:GLU:OE2	0.61	1.96	19	3
1:A:1111:PHE:CB	1:A:1160:MET:SD	0.61	2.89	10	1
1:A:1190:ASP:HB2	1:A:1191:PRO:HD3	0.60	1.73	16	18
1:A:1128:ILE:HD13	1:A:1167:TYR:CZ	0.60	2.31	18	17

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1122:ILE:HG21	1:A:1167:TYR:CZ	0.60	2.31	6	2
1:A:1105:ASP:HB2	1:A:1106:PRO:HD3	0.59	1.74	4	8
1:A:1132:PRO:HA	1:A:1163:ASN:HB3	0.59	1.73	17	12
1:A:1089:GLU:O	1:A:1092:GLN:HB3	0.59	1.98	18	19
1:A:1094:LEU:HB3	1:A:1147:TYR:OH	0.59	1.97	16	1
1:A:1098:LEU:HD23	1:A:1153:TYR:CE2	0.59	2.33	2	11
1:A:1094:LEU:CB	1:A:1147:TYR:OH	0.59	2.51	16	1
1:A:1101:LEU:CD2	1:A:1181:LEU:HB3	0.59	2.28	15	20
1:A:1180:LYS:O	1:A:1183:GLU:HB3	0.58	1.98	5	20
1:A:1105:ASP:CB	1:A:1106:PRO:HD3	0.58	2.28	1	2
1:A:1133:MET:SD	1:A:1138:ILE:HG13	0.58	2.37	14	9
1:A:1100:ALA:HA	1:A:1103:ARG:HG2	0.58	1.75	10	15
1:A:1129:VAL:HG21	1:A:1132:PRO:HB3	0.58	1.76	3	13
1:A:1101:LEU:O	1:A:1108:SER:HB3	0.58	1.99	6	16
1:A:1142:LEU:CD2	1:A:1147:TYR:CZ	0.58	2.86	16	1
1:A:1190:ASP:HB3	1:A:1191:PRO:HD3	0.58	1.76	2	2
1:A:1097:THR:HG23	1:A:1192:VAL:HG21	0.58	1.76	12	17
1:A:1164:ALA:O	1:A:1168:ASN:HB2	0.58	1.99	10	16
1:A:1158:TRP:HE1	1:A:1186:GLU:HG3	0.58	1.57	8	17
1:A:1122:ILE:HG21	1:A:1167:TYR:CE1	0.58	2.33	6	2
1:A:1104:GLN:HB3	1:A:1107:GLU:HB2	0.58	1.76	8	19
1:A:1120:LEU:HD22	2:A:201:L85:CI1	0.57	2.29	15	8
1:A:1168:ASN:OD1	1:A:1174:VAL:HG22	0.57	1.99	5	4
1:A:1111:PHE:O	1:A:1112:ARG:C	0.57	2.41	10	17
1:A:1094:LEU:CD1	1:A:1150:PRO:HA	0.57	2.29	16	4
1:A:1153:TYR:HE1	1:A:1189:ILE:HD12	0.57	1.58	14	3
1:A:1116:ASP:HB3	1:A:1119:LEU:HD12	0.57	1.75	7	2
1:A:1142:LEU:HA	1:A:1147:TYR:HE2	0.57	1.60	13	9
1:A:1122:ILE:HG21	1:A:1167:TYR:OH	0.57	2.00	6	2
1:A:1147:TYR:CD1	1:A:1148:GLN:N	0.57	2.73	10	9
1:A:1168:ASN:HB3	1:A:1172:SER:HB3	0.57	1.75	5	5
1:A:1189:ILE:O	1:A:1192:VAL:HG12	0.57	1.99	7	7
1:A:1168:ASN:OD1	1:A:1174:VAL:HG13	0.56	2.00	15	4
1:A:1109:LEU:HD23	1:A:1112:ARG:NE	0.56	2.15	17	4
1:A:1168:ASN:HB3	1:A:1172:SER:HB2	0.56	1.77	17	8
1:A:1138:ILE:CD1	1:A:1160:MET:SD	0.56	2.93	14	1
1:A:1101:LEU:HD11	1:A:1157:VAL:CG2	0.56	2.30	10	18
1:A:1107:GLU:O	1:A:1177:PHE:HB3	0.56	1.99	18	20
1:A:1151:TRP:HA	1:A:1193:MET:HE1	0.56	1.77	11	8
1:A:1098:LEU:HD11	1:A:1135:LEU:HD22	0.56	1.77	19	5
1:A:1147:TYR:HD1	1:A:1148:GLN:N	0.56	1.98	13	9

*Continued on next page...*



*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1132:PRO:O	1:A:1133:MET:C	0.56	2.43	10	12
1:A:1190:ASP:CB	1:A:1191:PRO:HD3	0.56	2.31	15	19
1:A:1192:VAL:O	1:A:1195:SER:N	0.56	2.38	12	7
1:A:1125:TYR:CE2	2:A:201:L85:HE1	0.56	2.36	20	2
1:A:1125:TYR:HE2	2:A:201:L85:HE1	0.56	1.58	20	2
1:A:1115:VAL:HG21	1:A:1125:TYR:CD2	0.56	2.35	1	1
1:A:1104:GLN:NE2	1:A:1184:VAL:HG11	0.56	2.16	10	1
1:A:1158:TRP:HA	1:A:1161:PHE:CD2	0.56	2.36	2	20
1:A:1105:ASP:CB	1:A:1106:PRO:CD	0.55	2.85	10	19
1:A:1106:PRO:O	1:A:1110:PRO:HD3	0.55	2.02	19	8
1:A:1116:ASP:H	1:A:1120:LEU:HG	0.55	1.61	6	3
1:A:1120:LEU:HB2	1:A:1122:ILE:HG13	0.55	1.77	2	5
1:A:1150:PRO:O	1:A:1153:TYR:HB3	0.55	2.02	16	18
1:A:1142:LEU:HD23	1:A:1147:TYR:HE2	0.55	1.60	19	9
1:A:1135:LEU:HA	1:A:1138:ILE:HD12	0.55	1.79	13	14
1:A:1115:VAL:O	1:A:1120:LEU:HD11	0.55	2.01	14	7
1:A:1093:ALA:HB1	1:A:1192:VAL:CG2	0.55	2.17	13	9
1:A:1154:VAL:HG22	1:A:1189:ILE:HD13	0.55	1.78	12	3
1:A:1133:MET:SD	1:A:1159:LEU:HD13	0.55	2.42	9	4
1:A:1115:VAL:O	1:A:1116:ASP:HB2	0.55	2.01	15	5
1:A:1161:PHE:HB3	1:A:1178:CYS:SG	0.54	2.43	3	8
1:A:1122:ILE:HD12	1:A:1125:TYR:CD1	0.54	2.37	1	1
1:A:1156:ASP:HA	1:A:1159:LEU:HB2	0.54	1.79	20	10
1:A:1154:VAL:HG22	1:A:1189:ILE:CD1	0.54	2.33	14	20
1:A:1115:VAL:HG11	1:A:1125:TYR:CZ	0.54	2.38	15	2
1:A:1135:LEU:HD21	1:A:1160:MET:HE2	0.54	1.78	16	1
1:A:1101:LEU:HD23	1:A:1181:LEU:HB3	0.54	1.80	8	20
1:A:1155:ASP:O	1:A:1159:LEU:HB2	0.54	2.03	17	18
1:A:1115:VAL:O	1:A:1116:ASP:C	0.54	2.46	18	2
1:A:1106:PRO:O	1:A:1109:LEU:HB2	0.53	2.04	8	15
1:A:1160:MET:O	1:A:1163:ASN:ND2	0.53	2.42	17	6
1:A:1189:ILE:CG1	1:A:1192:VAL:HG11	0.53	2.32	12	3
1:A:1105:ASP:HB2	1:A:1106:PRO:CD	0.53	2.33	6	6
1:A:1098:LEU:HD12	1:A:1139:LYS:HD2	0.53	1.80	17	3
1:A:1133:MET:O	1:A:1160:MET:HB2	0.53	2.03	5	7
1:A:1189:ILE:CG1	1:A:1192:VAL:CG1	0.53	2.86	12	3
1:A:1095:MET:O	1:A:1099:GLU:HG3	0.53	2.04	6	11
1:A:1189:ILE:HD13	1:A:1189:ILE:O	0.53	2.04	16	8
1:A:1189:ILE:O	1:A:1193:MET:CG	0.53	2.56	19	18
1:A:1109:LEU:HD12	2:A:201:L85:OC2	0.53	2.04	10	6
1:A:1147:TYR:HB2	1:A:1152:GLN:HB2	0.53	1.80	19	7

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1090:LEU:CD2	1:A:1090:LEU:N	0.53	2.71	14	7
1:A:1164:ALA:HB1	1:A:1178:CYS:SG	0.53	2.44	14	12
1:A:1120:LEU:CB	1:A:1122:ILE:HD11	0.53	2.34	6	1
1:A:1115:VAL:HG21	1:A:1125:TYR:CE1	0.53	2.37	20	1
1:A:1106:PRO:O	1:A:1110:PRO:HD2	0.53	2.04	8	11
1:A:1189:ILE:O	1:A:1189:ILE:HD13	0.53	2.04	3	8
1:A:1098:LEU:HG	1:A:1139:LYS:HD2	0.53	1.81	13	11
1:A:1175:TYR:O	1:A:1178:CYS:SG	0.53	2.67	19	12
1:A:1105:ASP:O	1:A:1109:LEU:HD12	0.53	2.03	19	1
1:A:1158:TRP:CH2	1:A:1182:ALA:HB1	0.53	2.39	5	20
1:A:1125:TYR:HE1	2:A:201:L85:HE1	0.52	1.64	1	1
1:A:1109:LEU:HD23	1:A:1112:ARG:CZ	0.52	2.34	15	6
1:A:1165:TRP:HA	1:A:1175:TYR:CD2	0.52	2.40	8	3
1:A:1142:LEU:HD23	1:A:1147:TYR:CZ	0.52	2.39	11	9
1:A:1140:ARG:O	1:A:1144:THR:HG23	0.52	2.04	6	10
1:A:1124:ASP:HB3	1:A:1127:ASP:HB3	0.52	1.82	17	15
1:A:1094:LEU:CB	1:A:1142:LEU:HD21	0.52	2.34	13	9
1:A:1151:TRP:CA	1:A:1193:MET:HE1	0.52	2.35	11	9
1:A:1133:MET:HG2	1:A:1156:ASP:HB3	0.52	1.82	15	10
1:A:1168:ASN:OD1	1:A:1174:VAL:N	0.52	2.42	6	3
1:A:1133:MET:HB2	1:A:1160:MET:HB3	0.51	1.80	20	1
1:A:1128:ILE:HG21	1:A:1167:TYR:CG	0.51	2.41	18	17
1:A:1160:MET:SD	1:A:1161:PHE:CD1	0.51	3.03	16	10
1:A:1161:PHE:O	1:A:1164:ALA:HB3	0.51	2.05	16	15
1:A:1094:LEU:HD21	1:A:1150:PRO:HB3	0.51	1.82	12	4
1:A:1160:MET:HA	1:A:1163:ASN:ND2	0.51	2.20	10	3
1:A:1141:LYS:HA	1:A:1146:GLN:HG3	0.51	1.82	16	1
1:A:1168:ASN:HB3	1:A:1175:TYR:HB2	0.51	1.82	14	2
1:A:1124:ASP:HB3	1:A:1127:ASP:HB2	0.51	1.81	18	3
1:A:1111:PHE:CE1	1:A:1164:ALA:HB2	0.51	2.40	6	6
1:A:1168:ASN:CG	1:A:1174:VAL:HG22	0.51	2.26	17	7
1:A:1104:GLN:NE2	1:A:1184:VAL:HG21	0.51	2.20	15	7
1:A:1098:LEU:HD23	1:A:1153:TYR:HE2	0.51	1.64	16	6
1:A:1101:LEU:HD22	1:A:1181:LEU:HD13	0.51	1.83	3	17
1:A:1140:ARG:C	1:A:1142:LEU:N	0.51	2.63	13	20
1:A:1163:ASN:HA	1:A:1166:LEU:HD21	0.51	1.82	14	9
1:A:1140:ARG:O	1:A:1143:ASP:N	0.51	2.43	13	11
1:A:1160:MET:SD	1:A:1161:PHE:N	0.51	2.83	9	14
1:A:1111:PHE:HB3	1:A:1160:MET:HG3	0.51	1.83	19	13
1:A:1093:ALA:O	1:A:1096:PRO:HD2	0.51	2.06	4	14
1:A:1090:LEU:HD12	1:A:1147:TYR:CD1	0.51	2.40	4	3

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1100:ALA:CB	1:A:1188:GLU:HG3	0.50	2.36	13	17
1:A:1138:ILE:HD13	1:A:1157:VAL:HA	0.50	1.83	11	14
1:A:1115:VAL:HG11	1:A:1125:TYR:CE1	0.50	2.41	15	1
1:A:1117:PRO:HG3	1:A:1125:TYR:HB3	0.50	1.83	15	2
1:A:1101:LEU:HG	1:A:1185:PHE:CD1	0.50	2.42	7	20
1:A:1090:LEU:N	1:A:1090:LEU:CD2	0.50	2.75	13	5
1:A:1157:VAL:O	1:A:1160:MET:CG	0.50	2.59	16	1
1:A:1163:ASN:HA	1:A:1166:LEU:CG	0.50	2.37	11	20
1:A:1122:ILE:HD12	1:A:1167:TYR:OH	0.50	2.06	7	1
1:A:1097:THR:HG21	1:A:1189:ILE:HA	0.50	1.82	16	16
1:A:1093:ALA:CA	1:A:1192:VAL:HG22	0.50	2.36	12	9
1:A:1132:PRO:O	1:A:1160:MET:HA	0.50	2.07	18	4
1:A:1180:LYS:O	1:A:1184:VAL:HG12	0.49	2.07	20	16
1:A:1120:LEU:HB2	1:A:1122:ILE:CG1	0.49	2.36	9	15
1:A:1135:LEU:HD23	1:A:1138:ILE:CD1	0.49	2.35	16	9
1:A:1162:ASN:O	1:A:1165:TRP:N	0.49	2.46	17	6
1:A:1094:LEU:HD12	1:A:1142:LEU:HD21	0.49	1.84	3	4
1:A:1115:VAL:O	1:A:1115:VAL:HG23	0.49	2.07	3	2
1:A:1115:VAL:CG2	1:A:1116:ASP:N	0.49	2.75	7	6
1:A:1138:ILE:HD12	1:A:1160:MET:SD	0.49	2.48	14	1
1:A:1151:TRP:HB3	1:A:1193:MET:HE1	0.49	1.85	1	2
1:A:1114:PRO:O	1:A:1115:VAL:C	0.49	2.51	5	6
1:A:1093:ALA:O	1:A:1097:THR:HG23	0.49	2.08	13	8
1:A:1141:LYS:HB3	1:A:1146:GLN:HB2	0.49	1.85	9	10
1:A:1132:PRO:HA	1:A:1163:ASN:ND2	0.48	2.22	10	2
1:A:1189:ILE:HG13	1:A:1192:VAL:CG1	0.48	2.34	13	3
1:A:1147:TYR:O	1:A:1148:GLN:HB2	0.48	2.08	16	2
1:A:1090:LEU:O	1:A:1094:LEU:HG	0.48	2.07	3	5
1:A:1103:ARG:C	1:A:1105:ASP:H	0.48	2.12	13	1
1:A:1094:LEU:HD13	1:A:1153:TYR:CD1	0.48	2.44	16	1
1:A:1132:PRO:O	1:A:1163:ASN:ND2	0.48	2.47	9	3
1:A:1189:ILE:O	1:A:1189:ILE:HG12	0.48	2.09	13	2
1:A:1116:ASP:HB3	1:A:1119:LEU:HB2	0.48	1.85	8	9
1:A:1167:TYR:CD1	2:A:201:L85:OH	0.48	2.67	16	5
1:A:1090:LEU:HD11	1:A:1148:GLN:O	0.48	2.08	8	1
1:A:1098:LEU:HB3	1:A:1139:LYS:HD2	0.48	1.85	15	2
1:A:1098:LEU:CD1	1:A:1135:LEU:HD22	0.48	2.39	16	3
1:A:1098:LEU:O	1:A:1101:LEU:HB2	0.48	2.09	20	9
1:A:1132:PRO:O	1:A:1133:MET:O	0.48	2.32	20	6
1:A:1124:ASP:O	1:A:1128:ILE:HD12	0.48	2.08	9	9
1:A:1098:LEU:HD21	1:A:1138:ILE:HB	0.48	1.85	12	4

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1135:LEU:CD2	1:A:1160:MET:SD	0.48	3.02	10	1
1:A:1168:ASN:HD22	1:A:1168:ASN:N	0.48	2.06	14	3
1:A:1153:TYR:O	1:A:1157:VAL:HG12	0.47	2.09	14	17
1:A:1138:ILE:CD1	1:A:1160:MET:HE1	0.47	2.39	17	1
1:A:1091:ARG:HD3	1:A:1143:ASP:HA	0.47	1.84	19	2
1:A:1125:TYR:CD2	1:A:1167:TYR:CE2	0.47	3.02	15	2
1:A:1159:LEU:O	1:A:1162:ASN:HB2	0.47	2.08	7	2
1:A:1149:GLU:HG2	1:A:1151:TRP:NE1	0.47	2.24	8	1
1:A:1117:PRO:HA	1:A:1122:ILE:CG1	0.47	2.39	15	2
1:A:1185:PHE:O	1:A:1188:GLU:OE1	0.47	2.33	18	3
1:A:1154:VAL:HA	1:A:1157:VAL:HG13	0.47	1.86	14	11
1:A:1191:PRO:HA	1:A:1194:GLN:HE21	0.47	1.69	18	3
1:A:1153:TYR:CE1	1:A:1189:ILE:HD12	0.47	2.44	14	2
1:A:1122:ILE:CD1	1:A:1125:TYR:CD2	0.47	2.98	20	1
1:A:1188:GLU:OE1	1:A:1189:ILE:N	0.47	2.48	7	3
1:A:1109:LEU:C	1:A:1111:PHE:H	0.47	2.13	16	13
1:A:1180:LYS:HD2	1:A:1180:LYS:O	0.47	2.09	5	9
1:A:1192:VAL:C	1:A:1194:GLN:N	0.47	2.67	12	6
1:A:1167:TYR:CE1	2:A:201:L85:OH	0.47	2.67	10	4
1:A:1154:VAL:HG21	1:A:1193:MET:SD	0.47	2.50	16	6
1:A:1095:MET:HB3	1:A:1096:PRO:CD	0.47	2.39	10	8
1:A:1138:ILE:HD13	1:A:1157:VAL:HB	0.47	1.86	17	4
1:A:1141:LYS:O	1:A:1146:GLN:N	0.47	2.47	16	1
1:A:1116:ASP:CB	1:A:1119:LEU:HD12	0.47	2.40	4	6
1:A:1189:ILE:HG12	1:A:1192:VAL:HG12	0.47	1.87	14	2
1:A:1117:PRO:HB3	1:A:1122:ILE:HB	0.47	1.85	9	5
1:A:1162:ASN:OD1	1:A:1166:LEU:HD23	0.47	2.09	11	3
1:A:1107:GLU:HA	1:A:1177:PHE:CD2	0.47	2.45	2	2
1:A:1090:LEU:H	1:A:1090:LEU:HD23	0.47	1.67	2	1
1:A:1125:TYR:OH	1:A:1132:PRO:CB	0.47	2.63	16	9
1:A:1163:ASN:HA	1:A:1166:LEU:CD2	0.47	2.39	14	9
1:A:1175:TYR:HA	1:A:1178:CYS:SG	0.46	2.50	2	2
1:A:1104:GLN:HE21	1:A:1180:LYS:HE3	0.46	1.69	10	1
1:A:1160:MET:HG3	1:A:1161:PHE:N	0.46	2.26	16	1
1:A:1162:ASN:O	1:A:1166:LEU:HG	0.46	2.10	14	16
1:A:1147:TYR:C	1:A:1149:GLU:H	0.46	2.14	12	5
1:A:1093:ALA:O	1:A:1192:VAL:HG21	0.46	2.10	19	4
1:A:1189:ILE:HG12	1:A:1189:ILE:O	0.46	2.09	12	1
1:A:1180:LYS:O	1:A:1180:LYS:HD2	0.46	2.09	2	9
1:A:1115:VAL:O	1:A:1120:LEU:HG	0.46	2.10	5	2
1:A:1168:ASN:CB	1:A:1172:SER:HB2	0.46	2.39	10	5

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1125:TYR:OH	1:A:1132:PRO:HB3	0.46	2.11	14	2
1:A:1168:ASN:HD21	2:A:201:L85:CZ	0.46	2.24	17	1
1:A:1154:VAL:HA	1:A:1157:VAL:CG1	0.46	2.40	8	15
1:A:1163:ASN:HA	1:A:1166:LEU:HG	0.46	1.88	1	11
1:A:1147:TYR:CD2	1:A:1153:TYR:HB2	0.46	2.45	3	8
1:A:1112:ARG:HB2	1:A:1112:ARG:HH11	0.46	1.69	8	1
1:A:1135:LEU:CD2	1:A:1160:MET:HE2	0.46	2.40	16	1
1:A:1167:TYR:CD2	2:A:201:L85:HE1	0.46	2.45	7	2
1:A:1173:ARG:O	1:A:1177:PHE:CD1	0.46	2.69	7	7
1:A:1091:ARG:O	1:A:1092:GLN:C	0.46	2.54	10	17
1:A:1087:PRO:HB2	1:A:1091:ARG:NH2	0.46	2.26	17	1
1:A:1094:LEU:HD13	1:A:1153:TYR:CB	0.46	2.41	17	12
1:A:1174:VAL:HA	1:A:1177:PHE:CD1	0.46	2.46	5	8
1:A:1142:LEU:HG	1:A:1147:TYR:CZ	0.46	2.46	16	1
1:A:1125:TYR:CD1	1:A:1167:TYR:CZ	0.46	3.03	6	2
1:A:1090:LEU:HD23	1:A:1090:LEU:H	0.45	1.67	14	4
1:A:1159:LEU:O	1:A:1162:ASN:HB3	0.45	2.11	10	8
1:A:1094:LEU:HD12	1:A:1147:TYR:CZ	0.45	2.42	16	1
1:A:1125:TYR:CZ	1:A:1129:VAL:HG11	0.45	2.45	20	1
1:A:1185:PHE:CE2	1:A:1189:ILE:CG2	0.45	2.96	10	8
1:A:1125:TYR:CD2	1:A:1167:TYR:CD2	0.45	3.05	20	2
1:A:1180:LYS:HZ1	1:A:1184:VAL:HG11	0.45	1.70	3	4
1:A:1162:ASN:C	1:A:1164:ALA:N	0.45	2.69	6	10
1:A:1140:ARG:O	1:A:1142:LEU:N	0.45	2.49	16	3
1:A:1132:PRO:HA	1:A:1163:ASN:HD22	0.45	1.69	15	2
1:A:1109:LEU:O	1:A:1111:PHE:N	0.45	2.49	20	9
1:A:1185:PHE:O	1:A:1188:GLU:CD	0.45	2.54	18	3
1:A:1160:MET:HA	1:A:1163:ASN:OD1	0.45	2.12	6	2
1:A:1163:ASN:O	1:A:1167:TYR:HB3	0.45	2.12	6	1
1:A:1133:MET:CG	1:A:1159:LEU:HB3	0.45	2.41	7	4
1:A:1164:ALA:CB	1:A:1178:CYS:SG	0.45	3.04	14	5
1:A:1106:PRO:CA	1:A:1109:LEU:HB2	0.45	2.41	8	4
1:A:1142:LEU:HD11	1:A:1153:TYR:CE2	0.45	2.46	9	7
1:A:1147:TYR:HB3	1:A:1152:GLN:HB2	0.45	1.89	8	8
1:A:1125:TYR:HD1	1:A:1167:TYR:CZ	0.45	2.30	6	1
1:A:1186:GLU:C	1:A:1188:GLU:N	0.45	2.70	10	16
1:A:1160:MET:HA	1:A:1163:ASN:HD21	0.45	1.72	10	1
1:A:1160:MET:HG3	1:A:1161:PHE:H	0.45	1.72	16	1
1:A:1191:PRO:HA	1:A:1194:GLN:NE2	0.45	2.27	19	1
1:A:1184:VAL:O	1:A:1188:GLU:HG2	0.45	2.12	14	2
1:A:1101:LEU:HD13	1:A:1135:LEU:HD23	0.45	1.83	17	1

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1094:LEU:HD13	1:A:1153:TYR:HB3	0.44	1.88	17	6
1:A:1115:VAL:HG21	1:A:1125:TYR:CE2	0.44	2.47	1	1
1:A:1125:TYR:CE1	2:A:201:L85:HE1	0.44	2.47	1	1
1:A:1144:THR:OG1	1:A:1146:GLN:HG3	0.44	2.11	6	3
1:A:1120:LEU:HB3	2:A:201:L85:NA	0.44	2.26	15	1
1:A:1111:PHE:CZ	1:A:1178:CYS:HB3	0.44	2.47	8	5
1:A:1141:LYS:CB	1:A:1146:GLN:HB2	0.44	2.43	3	6
1:A:1091:ARG:NE	1:A:1142:LEU:O	0.44	2.51	17	1
1:A:1115:VAL:HG12	1:A:1117:PRO:HD3	0.44	1.89	5	1
1:A:1161:PHE:CE1	1:A:1181:LEU:HB2	0.44	2.48	14	2
1:A:1129:VAL:CB	1:A:1166:LEU:HD11	0.44	2.41	7	1
1:A:1181:LEU:O	1:A:1182:ALA:C	0.44	2.54	3	19
1:A:1151:TRP:N	1:A:1151:TRP:CD1	0.44	2.86	17	11
1:A:1149:GLU:HB2	1:A:1151:TRP:CD1	0.44	2.48	12	4
1:A:1139:LYS:O	1:A:1142:LEU:HB2	0.44	2.12	13	7
1:A:1099:GLU:O	1:A:1103:ARG:HG3	0.44	2.13	13	1
1:A:1126:PHE:CE1	1:A:1132:PRO:HG3	0.44	2.48	18	3
1:A:1112:ARG:H	1:A:1135:LEU:HD12	0.44	1.73	8	2
1:A:1098:LEU:HD13	1:A:1098:LEU:O	0.44	2.12	14	2
1:A:1168:ASN:O	1:A:1175:TYR:HB2	0.44	2.13	17	2
1:A:1092:GLN:HG2	1:A:1093:ALA:N	0.44	2.26	15	1
1:A:1147:TYR:CZ	1:A:1153:TYR:HA	0.44	2.48	14	4
1:A:1133:MET:O	1:A:1160:MET:HG2	0.44	2.13	14	1
1:A:1098:LEU:HD22	1:A:1101:LEU:HD12	0.44	1.90	17	1
1:A:1132:PRO:HA	1:A:1163:ASN:CB	0.44	2.43	7	1
1:A:1167:TYR:C	1:A:1167:TYR:CD1	0.44	2.90	20	1
1:A:1122:ILE:HG21	1:A:1125:TYR:CD1	0.44	2.35	1	1
1:A:1128:ILE:HG21	1:A:1167:TYR:CD2	0.44	2.48	1	4
1:A:1135:LEU:O	1:A:1139:LYS:HB2	0.44	2.13	8	1
1:A:1163:ASN:OD1	1:A:1164:ALA:N	0.44	2.50	3	1
1:A:1122:ILE:HD13	1:A:1167:TYR:CZ	0.44	2.48	6	1
1:A:1161:PHE:CB	1:A:1178:CYS:SG	0.43	3.06	20	7
1:A:1103:ARG:HE	1:A:1104:GLN:HE22	0.43	1.55	5	1
1:A:1109:LEU:HD23	1:A:1112:ARG:NH2	0.43	2.28	10	4
1:A:1160:MET:CG	1:A:1161:PHE:N	0.43	2.80	16	1
1:A:1152:GLN:HE21	1:A:1152:GLN:HA	0.43	1.73	19	1
1:A:1101:LEU:HG	1:A:1185:PHE:HB2	0.43	1.89	14	11
1:A:1151:TRP:CD1	1:A:1151:TRP:N	0.43	2.86	8	8
1:A:1133:MET:SD	1:A:1138:ILE:CG1	0.43	3.06	12	3
1:A:1091:ARG:HG2	1:A:1142:LEU:HD22	0.43	1.90	5	1
1:A:1111:PHE:CZ	1:A:1178:CYS:HB2	0.43	2.47	17	2

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1115:VAL:HG23	1:A:1116:ASP:N	0.43	2.28	4	4
1:A:1109:LEU:C	1:A:1111:PHE:N	0.43	2.71	10	6
1:A:1182:ALA:O	1:A:1186:GLU:HB2	0.43	2.14	13	2
1:A:1093:ALA:HB1	1:A:1192:VAL:HG13	0.43	1.89	14	1
1:A:1122:ILE:HG21	1:A:1125:TYR:HD2	0.43	1.71	15	1
1:A:1140:ARG:NH1	1:A:1146:GLN:HE22	0.43	2.11	11	1
1:A:1102:TYR:HE1	1:A:1135:LEU:HB3	0.43	1.74	10	1
1:A:1147:TYR:CZ	1:A:1153:TYR:HB2	0.43	2.48	16	1
1:A:1115:VAL:HG11	1:A:1125:TYR:CE2	0.43	2.49	1	1
1:A:1102:TYR:CD2	1:A:1112:ARG:HD2	0.43	2.49	16	6
1:A:1141:LYS:HB2	1:A:1147:TYR:CE2	0.43	2.49	8	3
1:A:1098:LEU:HB3	1:A:1139:LYS:HE2	0.43	1.91	17	1
1:A:1097:THR:O	1:A:1188:GLU:OE2	0.43	2.37	18	2
1:A:1112:ARG:CA	1:A:1135:LEU:HB2	0.43	2.38	19	1
1:A:1168:ASN:CB	1:A:1175:TYR:HB2	0.43	2.44	20	2
1:A:1162:ASN:ND2	1:A:1166:LEU:HD23	0.43	2.29	13	1
1:A:1142:LEU:HD23	1:A:1147:TYR:OH	0.43	2.14	11	1
1:A:1148:GLN:C	1:A:1149:GLU:HG2	0.43	2.34	1	4
1:A:1097:THR:HB	1:A:1189:ILE:HB	0.43	1.91	13	2
1:A:1185:PHE:CZ	1:A:1189:ILE:HD12	0.43	2.48	12	2
1:A:1109:LEU:HA	1:A:1112:ARG:HG2	0.43	1.89	17	1
1:A:1177:PHE:N	1:A:1177:PHE:CD1	0.43	2.87	2	1
1:A:1115:VAL:HB	1:A:1120:LEU:HD12	0.42	1.90	20	3
1:A:1150:PRO:O	1:A:1153:TYR:N	0.42	2.51	8	1
1:A:1138:ILE:CD1	1:A:1157:VAL:HA	0.42	2.44	2	7
1:A:1120:LEU:N	1:A:1120:LEU:HD23	0.42	2.29	11	4
1:A:1100:ALA:O	1:A:1103:ARG:HG2	0.42	2.13	12	1
1:A:1111:PHE:O	1:A:1113:GLN:N	0.42	2.53	10	1
1:A:1120:LEU:HD23	1:A:1120:LEU:N	0.42	2.30	10	1
1:A:1117:PRO:HG2	1:A:1125:TYR:CD2	0.42	2.50	6	1
1:A:1168:ASN:N	1:A:1168:ASN:HD22	0.42	2.12	20	2
1:A:1111:PHE:CG	1:A:1160:MET:SD	0.42	3.12	11	6
1:A:1110:PRO:CG	1:A:1174:VAL:HB	0.42	2.44	19	3
1:A:1114:PRO:C	1:A:1116:ASP:H	0.42	2.18	18	2
1:A:1122:ILE:CG2	1:A:1125:TYR:HB2	0.42	2.44	15	2
1:A:1116:ASP:O	1:A:1119:LEU:N	0.42	2.53	8	1
1:A:1122:ILE:HG23	1:A:1167:TYR:OH	0.42	2.14	10	1
1:A:1133:MET:O	1:A:1160:MET:HB3	0.42	2.15	16	1
1:A:1116:ASP:N	1:A:1120:LEU:HG	0.42	2.28	6	1
1:A:1087:PRO:O	1:A:1091:ARG:HB2	0.42	2.15	13	4
1:A:1138:ILE:HD11	1:A:1160:MET:HG3	0.42	1.90	14	1

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1160:MET:C	1:A:1162:ASN:N	0.42	2.72	4	7
1:A:1181:LEU:O	1:A:1184:VAL:N	0.42	2.52	14	1
1:A:1177:PHE:CD1	1:A:1177:PHE:N	0.42	2.88	10	1
1:A:1134:ASP:O	1:A:1137:THR:N	0.42	2.53	3	3
1:A:1104:GLN:O	1:A:1106:PRO:N	0.42	2.52	4	1
1:A:1152:GLN:HA	1:A:1152:GLN:HE21	0.42	1.75	5	1
1:A:1120:LEU:CB	1:A:1122:ILE:HG13	0.42	2.44	7	2
1:A:1108:SER:O	1:A:1111:PHE:HB2	0.42	2.14	10	1
1:A:1173:ARG:CZ	1:A:1177:PHE:CZ	0.42	3.02	2	1
1:A:1157:VAL:O	1:A:1160:MET:HB2	0.41	2.15	14	1
1:A:1189:ILE:HG12	1:A:1192:VAL:CG1	0.41	2.43	14	1
1:A:1168:ASN:CB	1:A:1172:SER:HB3	0.41	2.45	16	3
1:A:1158:TRP:NE1	1:A:1186:GLU:HG3	0.41	2.29	8	1
1:A:1097:THR:HB	1:A:1185:PHE:CE1	0.41	2.50	14	2
1:A:1102:TYR:CZ	1:A:1112:ARG:HB2	0.41	2.49	17	1
1:A:1184:VAL:HG13	1:A:1185:PHE:H	0.41	1.75	11	4
1:A:1105:ASP:O	1:A:1112:ARG:NH2	0.41	2.53	2	3
1:A:1115:VAL:HG21	1:A:1167:TYR:HE2	0.41	1.76	6	1
1:A:1133:MET:CG	1:A:1159:LEU:HD13	0.41	2.44	7	1
1:A:1157:VAL:O	1:A:1160:MET:HB3	0.41	2.14	8	2
1:A:1106:PRO:O	1:A:1177:PHE:HD2	0.41	1.98	2	3
1:A:1153:TYR:CE1	1:A:1185:PHE:HZ	0.41	2.32	16	2
1:A:1138:ILE:HG22	1:A:1153:TYR:CE2	0.41	2.49	14	2
1:A:1178:CYS:SG	1:A:1179:SER:N	0.41	2.92	14	1
1:A:1106:PRO:O	1:A:1109:LEU:N	0.41	2.53	10	2
1:A:1190:ASP:N	1:A:1191:PRO:CD	0.41	2.83	14	1
1:A:1115:VAL:HB	1:A:1125:TYR:CZ	0.41	2.50	5	1
1:A:1091:ARG:C	1:A:1093:ALA:N	0.41	2.71	17	1
1:A:1173:ARG:NH2	2:A:201:L85:CI2	0.41	2.83	15	1
1:A:1135:LEU:HD21	1:A:1160:MET:SD	0.41	2.56	10	1
1:A:1109:LEU:HD23	1:A:1113:GLN:HE22	0.41	1.76	19	1
1:A:1117:PRO:O	1:A:1122:ILE:N	0.41	2.54	1	1
1:A:1149:GLU:CG	1:A:1151:TRP:CD1	0.41	3.03	8	1
1:A:1130:LYS:HD2	1:A:1130:LYS:N	0.41	2.30	9	1
1:A:1173:ARG:O	1:A:1177:PHE:HD1	0.41	1.98	7	2
1:A:1174:VAL:HA	1:A:1177:PHE:CG	0.41	2.50	5	2
1:A:1184:VAL:O	1:A:1185:PHE:C	0.41	2.59	15	8
1:A:1101:LEU:HD21	1:A:1161:PHE:CZ	0.41	2.50	17	1
1:A:1142:LEU:HG	1:A:1147:TYR:CE1	0.41	2.50	16	1
1:A:1133:MET:HG3	1:A:1138:ILE:HD11	0.41	1.91	14	1
1:A:1181:LEU:O	1:A:1185:PHE:N	0.41	2.53	17	1

*Continued on next page...*



Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1162:ASN:O	1:A:1166:LEU:N	0.41	2.54	20	1
1:A:1122:ILE:CD1	1:A:1125:TYR:CD1	0.41	3.03	1	1
1:A:1153:TYR:O	1:A:1156:ASP:HB2	0.41	2.16	4	3
1:A:1103:ARG:C	1:A:1105:ASP:N	0.41	2.74	13	1
1:A:1098:LEU:O	1:A:1098:LEU:HD13	0.41	2.16	17	1
1:A:1188:GLU:O	1:A:1191:PRO:HD2	0.41	2.16	12	1
1:A:1167:TYR:CD1	1:A:1167:TYR:C	0.41	2.93	15	2
1:A:1115:VAL:HG12	1:A:1116:ASP:N	0.41	2.31	5	1
1:A:1191:PRO:HA	1:A:1194:GLN:HG3	0.41	1.93	19	1
1:A:1173:ARG:O	1:A:1176:LYS:HG3	0.41	2.16	7	1
1:A:1097:THR:HG21	1:A:1189:ILE:CG1	0.41	2.42	8	2
1:A:1142:LEU:HD21	1:A:1147:TYR:CZ	0.41	2.49	16	1
1:A:1115:VAL:CG2	1:A:1117:PRO:HD3	0.41	2.46	2	1
1:A:1112:ARG:CB	1:A:1112:ARG:CZ	0.40	2.99	8	1
1:A:1135:LEU:CG	1:A:1160:MET:HE2	0.40	2.46	16	1
1:A:1140:ARG:O	1:A:1141:LYS:C	0.40	2.58	16	1
1:A:1105:ASP:C	1:A:1109:LEU:HD12	0.40	2.37	19	1
1:A:1141:LYS:HD3	1:A:1147:TYR:HH	0.40	1.77	7	1
1:A:1104:GLN:O	1:A:1106:PRO:HD2	0.40	2.16	4	1
1:A:1090:LEU:HD13	1:A:1150:PRO:HD3	0.40	1.92	8	1
1:A:1178:CYS:O	1:A:1179:SER:C	0.40	2.59	10	4
1:A:1098:LEU:HD13	1:A:1101:LEU:HD12	0.40	1.92	9	1
1:A:1175:TYR:CD2	1:A:1176:LYS:HE3	0.40	2.52	9	1
1:A:1122:ILE:HG21	1:A:1125:TYR:CD2	0.40	2.51	15	1
1:A:1103:ARG:HE	1:A:1104:GLN:NE2	0.40	2.13	5	1
1:A:1094:LEU:HB2	1:A:1142:LEU:CD2	0.40	2.44	18	1
1:A:1140:ARG:HA	1:A:1143:ASP:HB2	0.40	1.91	11	1
1:A:1174:VAL:HG11	2:A:201:L85:CG	0.40	2.47	5	1
1:A:1094:LEU:HA	1:A:1097:THR:OG1	0.40	2.16	2	1
1:A:1115:VAL:O	1:A:1120:LEU:CG	0.40	2.70	15	1
1:A:1138:ILE:HD13	1:A:1157:VAL:CA	0.40	2.47	11	1
1:A:1159:LEU:HA	1:A:1159:LEU:HD23	0.40	1.79	6	1

## 6.3 Torsion angles ⓘ

### 6.3.1 Protein backbone ⓘ

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	106/121 (88%)	75±3 (71±3%)	27±3 (25±3%)	4±1 (4±1%)	6	33
All	All	2120/2420 (88%)	1501 (71%)	532 (25%)	87 (4%)	6	33

All 10 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	1123	PRO	20
1	A	1105	ASP	20
1	A	1133	MET	18
1	A	1168	ASN	12
1	A	1110	PRO	6
1	A	1115	VAL	4
1	A	1112	ARG	2
1	A	1116	ASP	2
1	A	1132	PRO	2
1	A	1173	ARG	1

### 6.3.2 Protein sidechains ⓘ

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	100/113 (88%)	73±3 (73±3%)	27±3 (27±3%)	2	22
All	All	2000/2260 (88%)	1459 (73%)	541 (27%)	2	22

All 56 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	1159	LEU	20
1	A	1180	LYS	20
1	A	1167	TYR	20
1	A	1157	VAL	20
1	A	1109	LEU	20
1	A	1122	ILE	20
1	A	1098	LEU	20
1	A	1192	VAL	20

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Models (Total)
1	A	1153	TYR	19
1	A	1090	LEU	18
1	A	1190	ASP	17
1	A	1168	ASN	17
1	A	1188	GLU	17
1	A	1189	ILE	17
1	A	1175	TYR	16
1	A	1176	LYS	15
1	A	1151	TRP	15
1	A	1103	ARG	14
1	A	1113	GLN	14
1	A	1149	GLU	14
1	A	1116	ASP	13
1	A	1144	THR	12
1	A	1092	GLN	12
1	A	1120	LEU	12
1	A	1174	VAL	10
1	A	1147	TYR	10
1	A	1095	MET	9
1	A	1099	GLU	9
1	A	1115	VAL	8
1	A	1129	VAL	8
1	A	1139	LYS	7
1	A	1105	ASP	7
1	A	1133	MET	5
1	A	1143	ASP	5
1	A	1173	ARG	5
1	A	1140	ARG	5
1	A	1178	CYS	5
1	A	1126	PHE	5
1	A	1152	GLN	4
1	A	1108	SER	4
1	A	1148	GLN	3
1	A	1089	GLU	3
1	A	1134	ASP	3
1	A	1119	LEU	3
1	A	1162	ASN	2
1	A	1091	ARG	2
1	A	1156	ASP	2
1	A	1130	LYS	2
1	A	1160	MET	2
1	A	1123	PRO	2

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Models (Total)
1	A	1163	ASN	2
1	A	1172	SER	2
1	A	1155	ASP	2
1	A	1131	ASN	1
1	A	1187	GLN	1
1	A	1106	PRO	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 carbohydrates in this entry.

## 6.6 Ligand geometry ⓘ

1 ligand is modelled in this entry.

In the following table, the Counts columns list the number of bonds for which Mogul statistics could be retrieved, the number of bonds that are observed in the model and the number of bonds that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length is the number of standard deviations the observed value is removed from the expected value. A bond length with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond lengths.

Mol	Type	Chain	Res	Link	Bond lengths		
					Counts	RMSZ	#Z>2
2	L85	A	201	-	20,20,20	1.05±0.02	0±0 (0±0%)

In the following table, the Counts columns list the number of angles for which Mogul statistics could be retrieved, the number of angles that are observed in the model and the number of angles that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond angle is the number of standard deviations the observed value is removed from the expected value. A bond angle with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of

the bond angles.

Mol	Type	Chain	Res	Link	Bond angles		
					Counts	RMSZ	#Z>2
2	L85	A	201	-	28,28,28	0.62±0.01	0±0 (0±0%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	L85	A	201	-	-	0±0,11,11,11	0±0,2,2,2

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

## 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](#)

The completeness of assignment taking into account all chemical shift lists is 85% for the well-defined parts and 83% for the entire structure.

### 7.1 Chemical shift list 1

File name: 2l85\_cs.str

Chemical shift list name: *assigned\_chem\_shift\_list\_1*

#### 7.1.1 Bookkeeping [i](#)

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	1378
Number of shifts mapped to atoms	1378
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	8

#### 7.1.2 Chemical shift referencing [i](#)

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction $\pm$ precision, ppm	Suggested action
$^{13}\text{C}_\alpha$	117	$-0.43 \pm 0.15$	None needed ( $< 0.5$ ppm)
$^{13}\text{C}_\beta$	114	$0.34 \pm 0.16$	None needed ( $< 0.5$ ppm)
$^{13}\text{C}'$	0	—	—
$^{15}\text{N}$	107	$0.57 \pm 0.17$	Should be applied

#### 7.1.3 Completeness of resonance assignments [i](#)

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 85%, i.e. 1190 atoms were assigned a chemical shift out of a possible 1392. 0 out of 19 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	$^1\text{H}$	$^{13}\text{C}$	$^{15}\text{N}$
Backbone	403/510 (79%)	202/202 (100%)	105/212 (50%)	96/96 (100%)
Sidechain	662/753 (88%)	415/446 (93%)	235/274 (86%)	12/33 (36%)

*Continued on next page...*

Continued from previous page...

	<b>Total</b>	<b><sup>1</sup>H</b>	<b><sup>13</sup>C</b>	<b><sup>15</sup>N</b>
Aromatic	125/129 (97%)	65/67 (97%)	57/59 (97%)	3/3 (100%)
Overall	1190/1392 (85%)	682/715 (95%)	397/545 (73%)	111/132 (84%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 83%, i.e. 1336 atoms were assigned a chemical shift out of a possible 1611. 0 out of 20 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	<b>Total</b>	<b><sup>1</sup>H</b>	<b><sup>13</sup>C</b>	<b><sup>15</sup>N</b>
Backbone	449/585 (77%)	225/232 (97%)	117/242 (48%)	107/111 (96%)
Sidechain	754/880 (86%)	474/523 (91%)	268/314 (85%)	12/43 (28%)
Aromatic	133/146 (91%)	70/76 (92%)	60/65 (92%)	3/5 (60%)
Overall	1336/1611 (83%)	769/831 (93%)	445/621 (72%)	122/159 (77%)

#### 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.

Mol	Chain	Res	Type	Atom	Shift, ppm	Expected range, ppm	Z-score
1	A	1103	ARG	NE	123.77	92.63 – 76.73	24.6
1	A	1091	ARG	NE	123.61	92.63 – 76.73	24.5
1	A	1112	ARG	NE	121.92	92.63 – 76.73	23.4
1	A	1151	TRP	NE1	110.67	139.19 – 119.59	-9.6
1	A	1157	VAL	HG21	-1.51	2.20 – -0.60	-8.3
1	A	1157	VAL	HG22	-1.51	2.20 – -0.60	-8.3
1	A	1157	VAL	HG23	-1.51	2.20 – -0.60	-8.3
1	A	1165	TRP	HD1	5.02	8.95 – 5.35	-5.9

#### 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.

Random coil index (RCI) for chain A:

