Full wwPDB NMR Structure Validation Report (i)

Feb 24, 2022 – 10:23 AM EST

PDB ID	:	1ZXF
Title	:	Solution structure of a self-sacrificing resistance protein, CalC from Micromonospora echinospora
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Deposited on	:	2005-06-08

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:

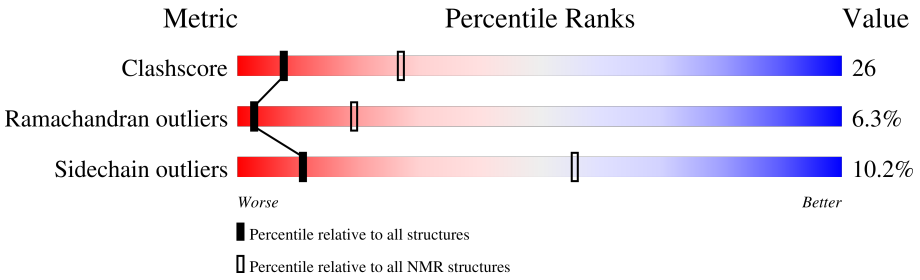
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	2.26
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.26

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	155	48% 47% 5%

2 Ensemble composition and analysis (i)

This entry contains 20 models. Model 14 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:1-A:155 (155)	0.61	14

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

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 2497 atoms, of which 1230 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called CalC.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	155	2497	802	1230	228	235	2	0

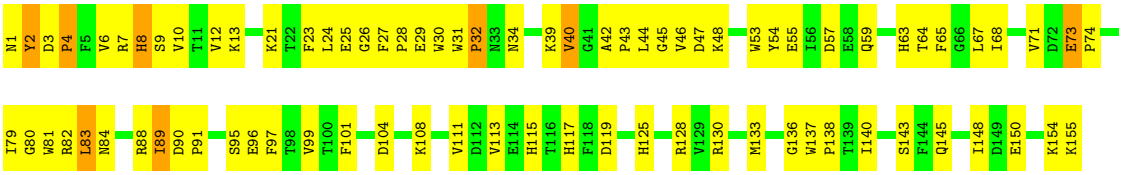
4 Residue-property plots

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: CalC

Chain A: 



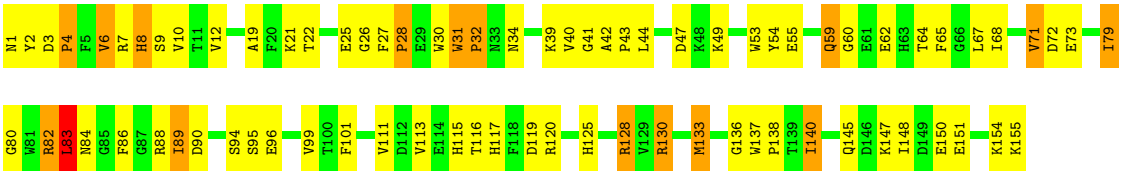
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: CalC

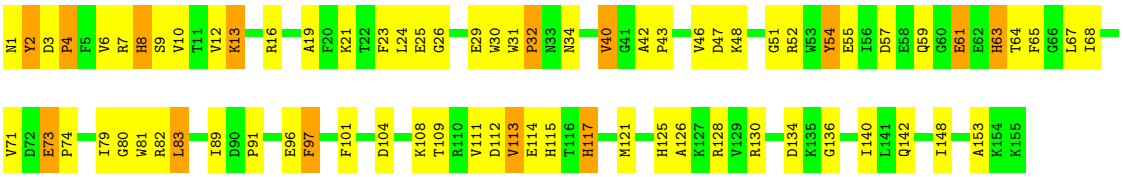
Chain A: 



4.2.2 Score per residue for model 2

• Molecule 1: CalC

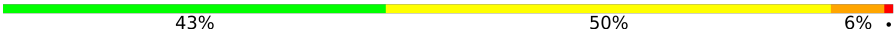
Chain A: 

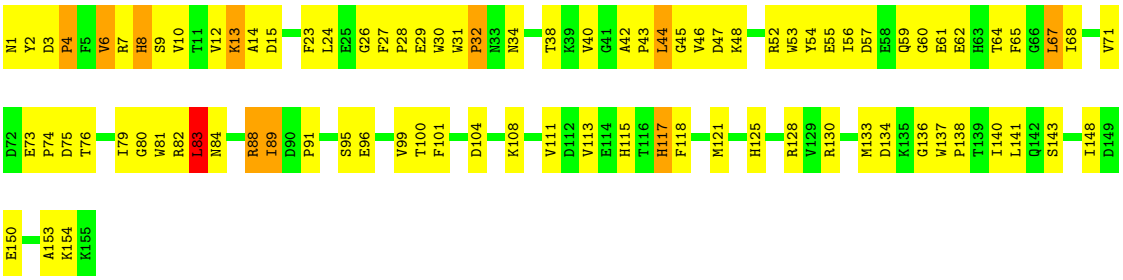


4.2.3 Score per residue for model 3

• Molecule 1: CalC

Chain A:

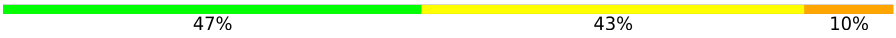




4.2.4 Score per residue for model 4

• Molecule 1: CalC

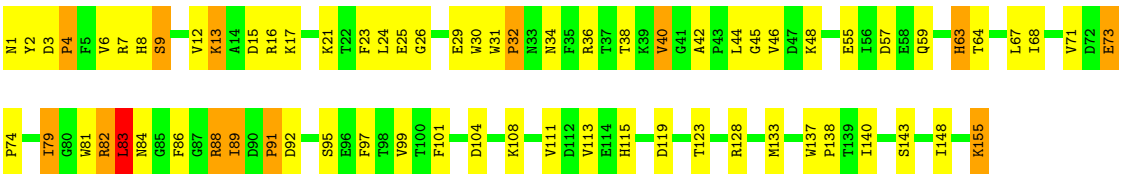
Chain A:



4.2.5 Score per residue for model 5

• Molecule 1: CalC

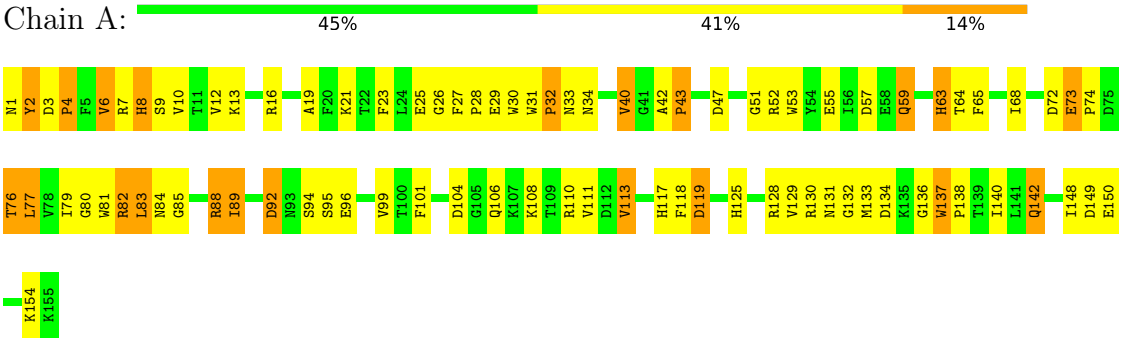
Chain A:



4.2.6 Score per residue for model 6

• Molecule 1: CalC

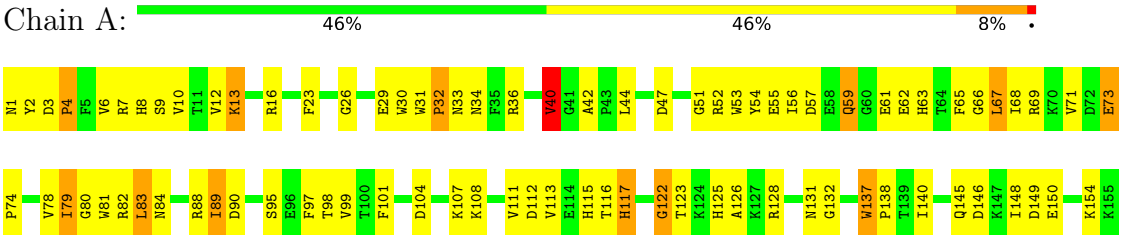
Chain A:



4.2.7 Score per residue for model 7

• Molecule 1: CalC

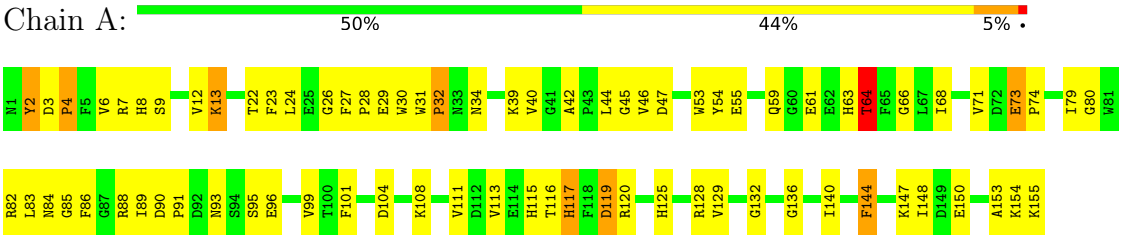
Chain A:



4.2.8 Score per residue for model 8

• Molecule 1: CalC

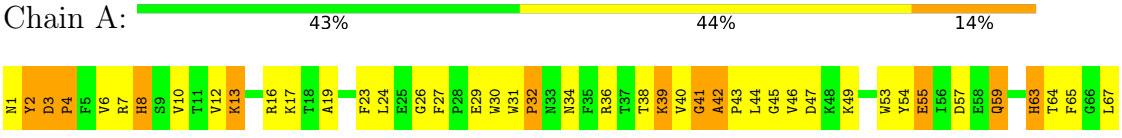
Chain A:

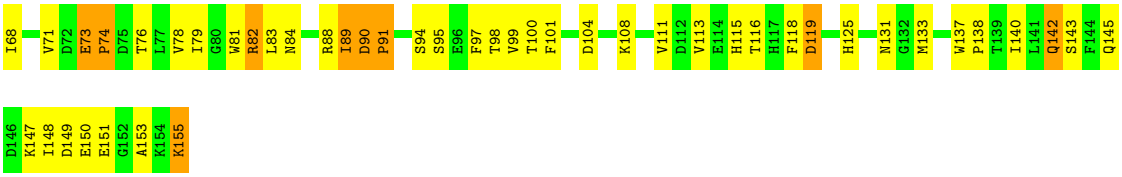


4.2.9 Score per residue for model 9

• Molecule 1: CalC

Chain A:

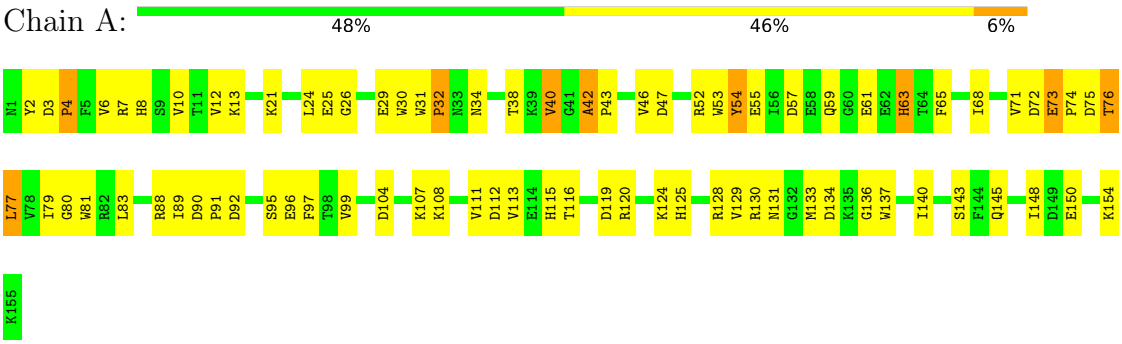




4.2.10 Score per residue for model 10

• Molecule 1: CalC

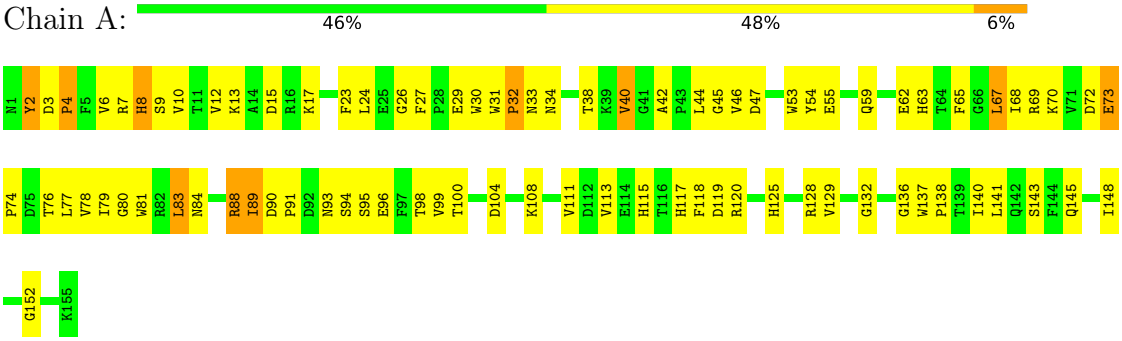
Chain A:



4.2.11 Score per residue for model 11

• Molecule 1: CalC

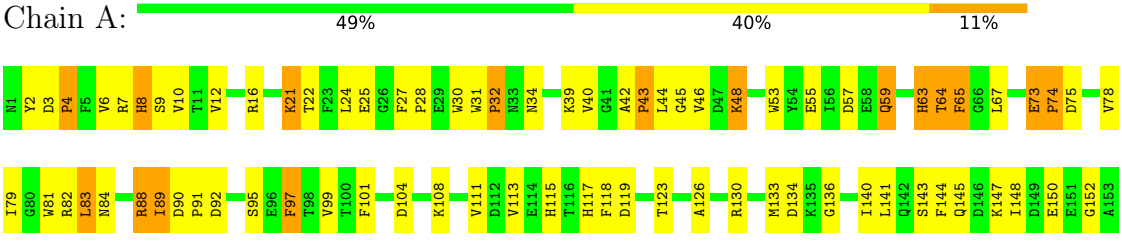
Chain A:



4.2.12 Score per residue for model 12

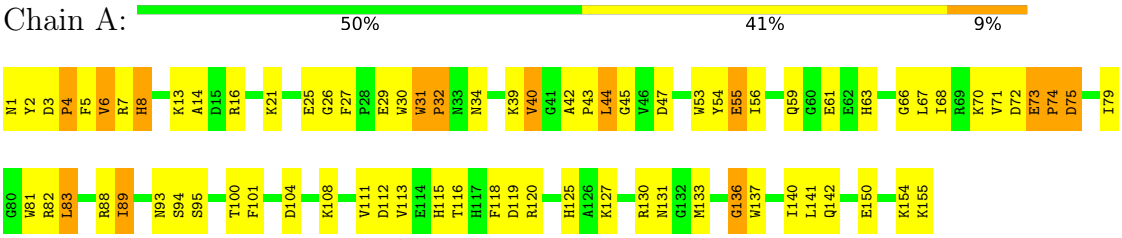
• Molecule 1: CalC

Chain A:



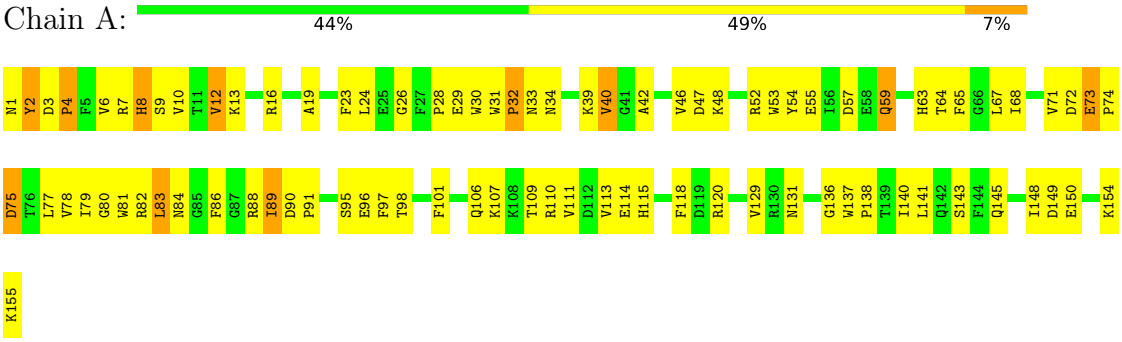
4.2.13 Score per residue for model 13

• Molecule 1: CalC



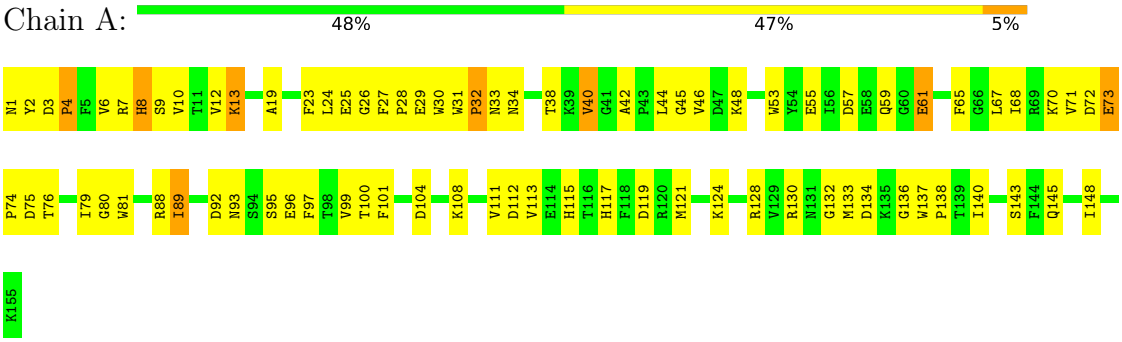
4.2.14 Score per residue for model 14 (medoid)

• Molecule 1: CalC



4.2.15 Score per residue for model 15

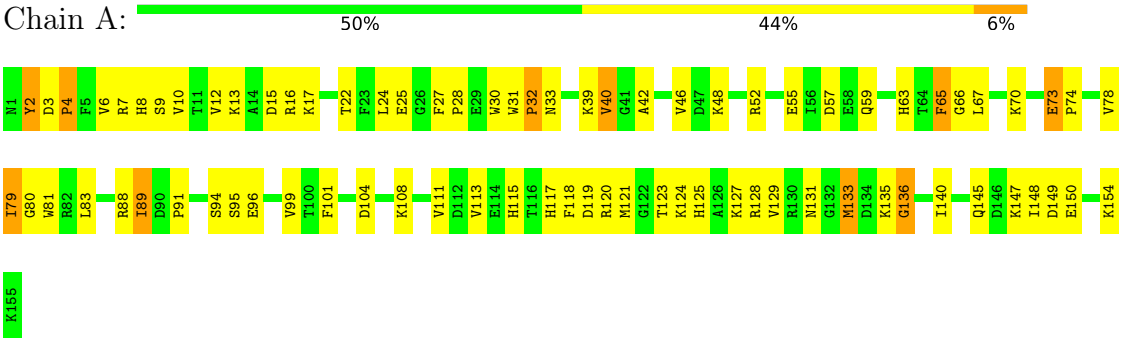
• Molecule 1: CalC



4.2.16 Score per residue for model 16

• Molecule 1: CalC

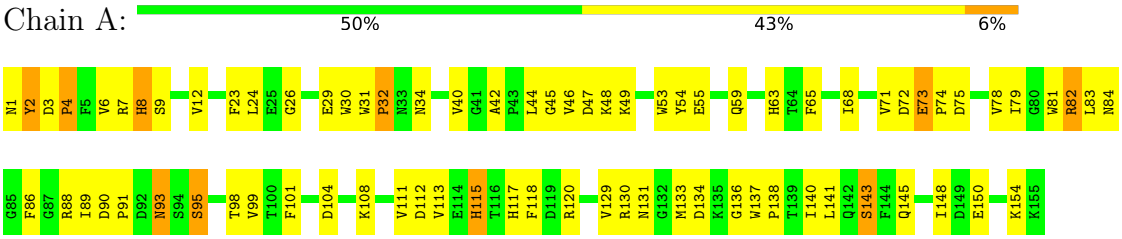
Chain A:



4.2.17 Score per residue for model 17

• Molecule 1: CalC

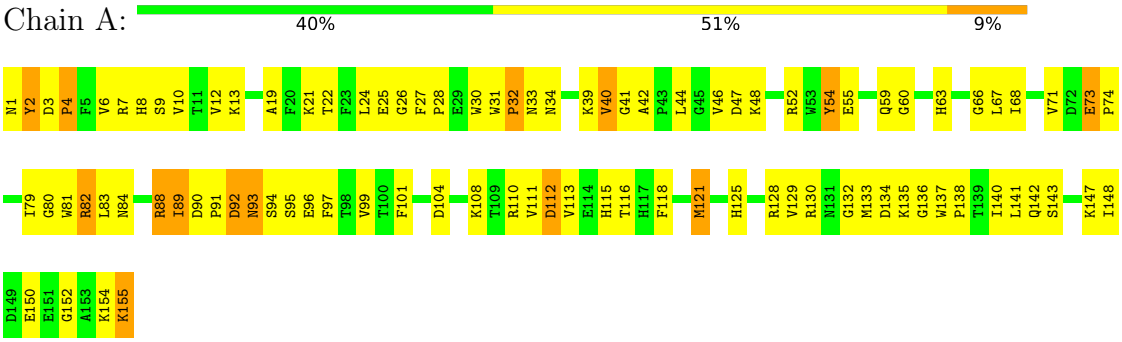
Chain A:



4.2.18 Score per residue for model 18

• Molecule 1: CalC

Chain A:



4.2.19 Score per residue for model 19

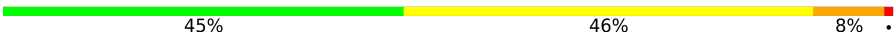
• Molecule 1: CalC

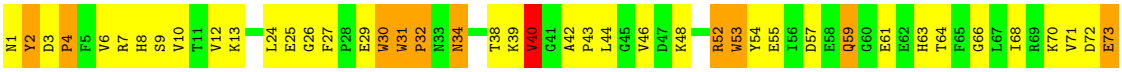
Chain A:

4.2.20 Score per residue for model 20

• Molecule 1: CalC

Chain A:





5 Refinement protocol and experimental data overview

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

Of the 100 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
CNS	structure solution	1.1
ARIA	structure solution	1.2
ARIA	refinement	1.2

No chemical shift data was provided.

6 Model quality

6.1 Standard geometry

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	0.39±0.04	0±1/1301 (0.0± 0.1%)	0.48±0.02	0±0/1753 (0.0± 0.0%)
All	All	0.39	8/26020 (0.0%)	0.48	0/35060 (0.0%)

All unique bond 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(Å)	Ideal(Å)	Models	
								Worst	Total
1	A	54	TYR	CE2-CZ	8.00	1.49	1.38	10	3
1	A	54	TYR	CE1-CZ	-7.98	1.28	1.38	10	3
1	A	2	TYR	CE2-CZ	-7.20	1.29	1.38	19	1
1	A	2	TYR	CE1-CZ	6.63	1.47	1.38	19	1

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	1267	1230	1225	64±8
All	All	25340	24600	24500	1274

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 26.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:83:LEU:HD22	1:A:88:ARG:HB2	0.99	1.30	12	1
1:A:34:ASN:HA	1:A:39:LYS:HD3	0.98	1.31	9	1
1:A:8:HIS:HB3	1:A:113:VAL:HB	0.96	1.34	10	11
1:A:32:PRO:HD3	1:A:143:SER:HB2	0.92	1.41	17	3
1:A:95:SER:HA	1:A:117:HIS:HB3	0.92	1.42	8	1
1:A:42:ALA:HB3	1:A:55:GLU:HB3	0.90	1.43	8	19
1:A:81:TRP:HB2	1:A:95:SER:HB3	0.90	1.40	9	3
1:A:6:VAL:HB	1:A:115:HIS:HB3	0.89	1.44	17	7
1:A:130:ARG:HG2	1:A:134:ASP:HB2	0.87	1.44	12	2
1:A:83:LEU:HD21	1:A:88:ARG:HB2	0.87	1.46	16	5
1:A:16:ARG:HE	1:A:103:ALA:HB2	0.86	1.30	19	1
1:A:38:THR:H	1:A:42:ALA:HA	0.85	1.32	9	1
1:A:97:PHE:HB3	1:A:115:HIS:HB3	0.84	1.48	15	1
1:A:81:TRP:HB2	1:A:95:SER:HB2	0.84	1.48	18	1
1:A:34:ASN:HA	1:A:40:VAL:HG23	0.84	1.49	12	10
1:A:3:ASP:HB3	1:A:4:PRO:HD3	0.82	1.49	8	19
1:A:130:ARG:HA	1:A:133:MET:HG2	0.82	1.50	10	1
1:A:10:VAL:HG22	1:A:111:VAL:HG12	0.81	1.53	14	5
1:A:68:ILE:HG21	1:A:71:VAL:HG13	0.81	1.53	2	3
1:A:32:PRO:HB2	1:A:140:ILE:HD12	0.81	1.50	1	1
1:A:81:TRP:HB3	1:A:95:SER:HB3	0.80	1.50	6	6
1:A:3:ASP:HB2	1:A:4:PRO:HD3	0.80	1.53	9	1
1:A:44:LEU:HD21	1:A:56:ILE:HG12	0.80	1.53	13	1
1:A:80:GLY:HA2	1:A:96:GLU:HA	0.79	1.53	14	12
1:A:47:ASP:HB2	1:A:54:TYR:HE2	0.79	1.36	8	13
1:A:1:ASN:HB2	1:A:6:VAL:HA	0.78	1.55	1	7
1:A:1:ASN:HD22	1:A:6:VAL:HB	0.78	1.38	13	1
1:A:25:GLU:HA	1:A:48:LYS:HE2	0.78	1.53	15	2
1:A:150:GLU:HA	1:A:154:LYS:HB3	0.77	1.54	4	7
1:A:6:VAL:HG22	1:A:115:HIS:HB3	0.77	1.55	13	1
1:A:44:LEU:HG	1:A:55:GLU:HA	0.77	1.56	13	1
1:A:6:VAL:HB	1:A:115:HIS:CB	0.76	2.10	2	6
1:A:46:VAL:HG22	1:A:53:TRP:HB3	0.76	1.57	20	1
1:A:13:LYS:HD3	1:A:149:ASP:HB2	0.76	1.58	19	2
1:A:34:ASN:HA	1:A:40:VAL:HB	0.75	1.57	4	2
1:A:23:PHE:HA	1:A:30:TRP:HZ2	0.75	1.41	9	10
1:A:12:VAL:HG13	1:A:148:ILE:HG21	0.75	1.59	15	17
1:A:149:ASP:HB3	1:A:154:LYS:HE2	0.75	1.58	16	2
1:A:13:LYS:HE3	1:A:149:ASP:HB2	0.74	1.56	14	1
1:A:24:LEU:HD11	1:A:46:VAL:HG11	0.74	1.60	14	8
1:A:88:ARG:NH1	1:A:90:ASP:HB3	0.73	1.98	4	1
1:A:8:HIS:HB3	1:A:113:VAL:CB	0.73	2.14	20	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:32:PRO:HB3	1:A:140:ILE:HA	0.73	1.60	4	1
1:A:30:TRP:HB3	1:A:32:PRO:HD2	0.72	1.61	3	9
1:A:7:ARG:HA	1:A:113:VAL:O	0.72	1.84	15	19
1:A:81:TRP:HB3	1:A:95:SER:HB2	0.72	1.58	14	5
1:A:83:LEU:HG	1:A:132:GLY:HA3	0.71	1.60	18	1
1:A:83:LEU:HD13	1:A:88:ARG:CD	0.70	2.16	12	1
1:A:12:VAL:HG21	1:A:19:ALA:HB2	0.70	1.62	15	6
1:A:68:ILE:HG21	1:A:71:VAL:HG23	0.70	1.61	4	4
1:A:155:LYS:HA	1:A:155:LYS:HE3	0.70	1.64	18	1
1:A:9:SER:HA	1:A:111:VAL:O	0.69	1.86	6	16
1:A:23:PHE:HA	1:A:30:TRP:CZ2	0.69	2.22	9	11
1:A:21:LYS:HD2	1:A:25:GLU:HB2	0.69	1.64	1	6
1:A:65:PHE:HA	1:A:83:LEU:O	0.69	1.86	19	4
1:A:27:PHE:HB3	1:A:28:PRO:HD3	0.69	1.63	18	8
1:A:83:LEU:HD11	1:A:88:ARG:HB2	0.69	1.65	20	3
1:A:150:GLU:HA	1:A:154:LYS:CB	0.68	2.18	4	5
1:A:44:LEU:HG	1:A:45:GLY:N	0.68	2.04	3	2
1:A:30:TRP:CE3	1:A:147:LYS:HG2	0.68	2.24	4	4
1:A:88:ARG:HG2	1:A:89:ILE:H	0.68	1.49	13	2
1:A:39:LYS:HD2	1:A:40:VAL:H	0.68	1.48	9	1
1:A:38:THR:N	1:A:42:ALA:HA	0.67	2.03	9	1
1:A:130:ARG:HB3	1:A:134:ASP:HB2	0.67	1.66	17	1
1:A:125:HIS:O	1:A:128:ARG:HG2	0.67	1.90	6	12
1:A:39:LYS:HG3	1:A:86:PHE:HB2	0.67	1.64	1	2
1:A:94:SER:HB2	1:A:118:PHE:CD2	0.67	2.25	9	1
1:A:44:LEU:HB2	1:A:55:GLU:HG2	0.67	1.66	3	1
1:A:47:ASP:HB3	1:A:52:ARG:HG2	0.66	1.67	6	2
1:A:83:LEU:HD13	1:A:88:ARG:HD2	0.66	1.67	12	1
1:A:26:GLY:O	1:A:29:GLU:HG2	0.66	1.90	11	15
1:A:43:PRO:HG2	1:A:56:ILE:HB	0.66	1.67	3	1
1:A:83:LEU:HD11	1:A:88:ARG:HB3	0.66	1.68	13	3
1:A:106:GLN:HE21	1:A:106:GLN:HA	0.66	1.51	19	1
1:A:88:ARG:HD2	1:A:131:ASN:ND2	0.66	2.04	17	1
1:A:135:LYS:HA	1:A:135:LYS:HE2	0.66	1.65	16	1
1:A:94:SER:HB3	1:A:118:PHE:CD2	0.66	2.25	18	1
1:A:30:TRP:CZ3	1:A:147:LYS:HG2	0.65	2.25	16	1
1:A:42:ALA:HB1	1:A:43:PRO:HD2	0.65	1.66	6	6
1:A:21:LYS:HD3	1:A:25:GLU:HB2	0.65	1.67	18	2
1:A:81:TRP:CZ2	1:A:83:LEU:HA	0.65	2.26	16	2
1:A:16:ARG:HD2	1:A:75:ASP:HA	0.65	1.69	14	2
1:A:89:ILE:HD12	1:A:128:ARG:HB2	0.65	1.67	16	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:32:PRO:CB	1:A:140:ILE:HA	0.65	2.21	15	17
1:A:82:ARG:O	1:A:83:LEU:HG	0.65	1.91	12	1
1:A:64:THR:HG22	1:A:82:ARG:HG3	0.64	1.67	4	2
1:A:81:TRP:HB3	1:A:95:SER:CB	0.64	2.23	6	6
1:A:15:ASP:HB2	1:A:107:LYS:HA	0.64	1.70	4	1
1:A:44:LEU:HB3	1:A:55:GLU:HA	0.64	1.69	9	2
1:A:10:VAL:HG22	1:A:111:VAL:CG1	0.64	2.23	1	6
1:A:8:HIS:O	1:A:112:ASP:HA	0.64	1.92	7	4
1:A:38:THR:HA	1:A:42:ALA:HB2	0.63	1.69	5	1
1:A:8:HIS:CD2	1:A:113:VAL:HB	0.63	2.27	14	2
1:A:10:VAL:HG13	1:A:145:GLN:HG2	0.63	1.69	9	5
1:A:150:GLU:HG2	1:A:154:LYS:HD2	0.63	1.69	17	5
1:A:53:TRP:O	1:A:65:PHE:HA	0.63	1.93	7	10
1:A:13:LYS:HE3	1:A:145:GLN:HB3	0.63	1.70	19	2
1:A:47:ASP:HB2	1:A:54:TYR:CE2	0.63	2.25	8	6
1:A:27:PHE:HD2	1:A:45:GLY:HA2	0.63	1.54	9	1
1:A:99:VAL:HA	1:A:113:VAL:HG22	0.63	1.70	5	15
1:A:30:TRP:HB2	1:A:34:ASN:HD21	0.63	1.54	10	1
1:A:82:ARG:O	1:A:83:LEU:HD12	0.62	1.94	3	1
1:A:95:SER:CA	1:A:117:HIS:HB3	0.62	2.21	8	1
1:A:118:PHE:HE2	1:A:129:VAL:HG21	0.62	1.53	17	2
1:A:22:THR:HA	1:A:30:TRP:CZ2	0.62	2.30	8	3
1:A:73:GLU:HB2	1:A:74:PRO:CD	0.62	2.24	10	18
1:A:88:ARG:HD2	1:A:131:ASN:HB2	0.62	1.71	13	3
1:A:42:ALA:CB	1:A:55:GLU:HB3	0.62	2.24	10	4
1:A:130:ARG:HA	1:A:133:MET:HB3	0.62	1.71	17	2
1:A:2:TYR:HB2	1:A:119:ASP:HB2	0.61	1.70	6	1
1:A:124:LYS:HG2	1:A:128:ARG:HH21	0.61	1.55	10	1
1:A:83:LEU:HD23	1:A:90:ASP:HB2	0.61	1.72	14	3
1:A:116:THR:HG23	1:A:120:ARG:HD2	0.61	1.71	1	1
1:A:30:TRP:HB2	1:A:32:PRO:HD2	0.61	1.71	10	2
1:A:25:GLU:HG2	1:A:48:LYS:HD2	0.61	1.72	20	3
1:A:104:ASP:HB3	1:A:108:LYS:HB3	0.61	1.72	20	15
1:A:67:LEU:HG	1:A:80:GLY:HA3	0.61	1.72	3	2
1:A:129:VAL:HA	1:A:133:MET:SD	0.61	2.35	6	1
1:A:30:TRP:HE3	1:A:147:LYS:HG3	0.61	1.55	18	1
1:A:44:LEU:HG	1:A:45:GLY:H	0.61	1.56	12	1
1:A:101:PHE:CD1	1:A:111:VAL:HB	0.61	2.30	7	14
1:A:57:ASP:HB2	1:A:63:HIS:CD2	0.61	2.31	2	4
1:A:6:VAL:HB	1:A:115:HIS:CG	0.60	2.31	9	2
1:A:24:LEU:HG	1:A:46:VAL:HG11	0.60	1.71	12	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:6:VAL:HB	1:A:115:HIS:O	0.60	1.96	11	4
1:A:83:LEU:HD23	1:A:89:ILE:O	0.60	1.95	5	2
1:A:53:TRP:CE2	1:A:66:GLY:HA3	0.60	2.31	20	1
1:A:40:VAL:HA	1:A:55:GLU:OE1	0.60	1.96	14	3
1:A:6:VAL:HB	1:A:115:HIS:CE1	0.60	2.32	15	1
1:A:118:PHE:CE2	1:A:129:VAL:HG21	0.60	2.31	17	2
1:A:39:LYS:HD3	1:A:40:VAL:HG23	0.60	1.72	4	1
1:A:16:ARG:HG3	1:A:101:PHE:HB3	0.60	1.74	14	8
1:A:15:ASP:OD1	1:A:17:LYS:HG2	0.59	1.97	11	2
1:A:31:TRP:N	1:A:32:PRO:HD2	0.59	2.12	15	12
1:A:88:ARG:HD2	1:A:131:ASN:HB3	0.59	1.73	17	3
1:A:64:THR:HB	1:A:82:ARG:HG3	0.59	1.72	20	2
1:A:97:PHE:CB	1:A:115:HIS:HB3	0.59	2.25	15	1
1:A:30:TRP:HB2	1:A:34:ASN:ND2	0.59	2.12	10	1
1:A:97:PHE:HB3	1:A:115:HIS:HB2	0.59	1.73	14	2
1:A:12:VAL:HG21	1:A:19:ALA:CB	0.59	2.28	15	3
1:A:81:TRP:HZ2	1:A:133:MET:HB3	0.59	1.58	3	1
1:A:1:ASN:HB3	1:A:6:VAL:HA	0.59	1.75	9	1
1:A:57:ASP:HB3	1:A:59:GLN:HE22	0.59	1.56	14	2
1:A:83:LEU:HB2	1:A:90:ASP:HB3	0.58	1.75	11	2
1:A:38:THR:CG2	1:A:57:ASP:HA	0.58	2.28	20	2
1:A:30:TRP:CB	1:A:32:PRO:HD2	0.58	2.27	10	10
1:A:154:LYS:O	1:A:155:LYS:HG3	0.58	1.98	12	1
1:A:88:ARG:NH1	1:A:129:VAL:HA	0.58	2.12	14	1
1:A:1:ASN:HB2	1:A:5:PHE:O	0.58	1.97	19	1
1:A:88:ARG:HD2	1:A:131:ASN:HD22	0.58	1.58	17	1
1:A:30:TRP:CE3	1:A:147:LYS:HG3	0.58	2.33	18	1
1:A:61:GLU:HA	1:A:63:HIS:NE2	0.58	2.13	2	1
1:A:42:ALA:HB1	1:A:43:PRO:CD	0.58	2.29	10	3
1:A:83:LEU:HD21	1:A:88:ARG:HB3	0.58	1.76	17	2
1:A:83:LEU:HD13	1:A:84:ASN:N	0.58	2.14	14	6
1:A:48:LYS:N	1:A:48:LYS:HE3	0.58	2.13	12	1
1:A:88:ARG:HB3	1:A:131:ASN:ND2	0.58	2.14	20	1
1:A:24:LEU:CD1	1:A:46:VAL:HG11	0.57	2.29	14	11
1:A:53:TRP:O	1:A:65:PHE:HB2	0.57	1.97	12	1
1:A:44:LEU:CD2	1:A:56:ILE:HG12	0.57	2.26	13	1
1:A:45:GLY:HA2	1:A:55:GLU:HG3	0.57	1.76	5	4
1:A:104:ASP:HB2	1:A:108:LYS:HB3	0.57	1.76	6	2
1:A:97:PHE:HB3	1:A:115:HIS:HD2	0.57	1.58	9	1
1:A:88:ARG:HG3	1:A:132:GLY:HA3	0.57	1.77	15	1
1:A:54:TYR:HD1	1:A:63:HIS:CE1	0.57	2.16	10	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:30:TRP:HB2	1:A:32:PRO:CD	0.57	2.29	20	3
1:A:81:TRP:CD1	1:A:91:PRO:HD2	0.57	2.34	18	1
1:A:81:TRP:H	1:A:95:SER:HB2	0.57	1.58	4	1
1:A:142:GLN:N	1:A:142:GLN:HE21	0.57	1.98	6	2
1:A:24:LEU:HD23	1:A:48:LYS:HE3	0.57	1.77	19	1
1:A:32:PRO:HD3	1:A:143:SER:CB	0.57	2.30	15	8
1:A:100:THR:O	1:A:111:VAL:HA	0.57	2.00	13	2
1:A:8:HIS:CB	1:A:113:VAL:HB	0.57	2.24	18	3
1:A:44:LEU:N	1:A:44:LEU:HD23	0.57	2.15	13	1
1:A:38:THR:HA	1:A:41:GLY:O	0.56	1.99	9	1
1:A:89:ILE:HG21	1:A:128:ARG:HE	0.56	1.60	3	1
1:A:41:GLY:C	1:A:55:GLU:HB2	0.56	2.20	9	1
1:A:5:PHE:CB	1:A:116:THR:HB	0.56	2.30	13	1
1:A:42:ALA:HB3	1:A:55:GLU:CB	0.56	2.30	18	3
1:A:27:PHE:CD2	1:A:45:GLY:HA3	0.56	2.35	11	4
1:A:83:LEU:HD21	1:A:88:ARG:CB	0.56	2.27	9	1
1:A:83:LEU:HG	1:A:88:ARG:HB3	0.56	1.78	5	1
1:A:6:VAL:HG22	1:A:115:HIS:CG	0.56	2.34	10	1
1:A:27:PHE:CD2	1:A:45:GLY:HA2	0.55	2.36	9	1
1:A:57:ASP:OD2	1:A:59:GLN:HG3	0.55	2.02	7	1
1:A:40:VAL:HA	1:A:44:LEU:HD13	0.55	1.79	3	1
1:A:59:GLN:NE2	1:A:59:GLN:H	0.55	1.98	9	3
1:A:64:THR:OG1	1:A:82:ARG:HG2	0.55	2.01	1	3
1:A:40:VAL:HA	1:A:55:GLU:OE2	0.55	2.00	15	1
1:A:117:HIS:O	1:A:121:MET:HG3	0.55	2.01	2	2
1:A:81:TRP:CH2	1:A:133:MET:HB3	0.55	2.36	9	2
1:A:57:ASP:HB2	1:A:63:HIS:HD2	0.55	1.61	9	5
1:A:76:THR:HG22	1:A:100:THR:HA	0.55	1.77	19	4
1:A:31:TRP:N	1:A:32:PRO:CD	0.55	2.70	15	20
1:A:124:LYS:HA	1:A:127:LYS:HB2	0.55	1.78	4	1
1:A:128:ARG:HA	1:A:131:ASN:OD1	0.55	2.02	6	1
1:A:10:VAL:HB	1:A:111:VAL:HG12	0.55	1.79	20	3
1:A:53:TRP:HE1	1:A:79:ILE:HG13	0.54	1.61	20	1
1:A:73:GLU:HB2	1:A:74:PRO:HD2	0.54	1.80	12	15
1:A:52:ARG:HA	1:A:66:GLY:O	0.54	2.01	7	2
1:A:83:LEU:HD11	1:A:88:ARG:CB	0.54	2.31	17	3
1:A:53:TRP:HB2	1:A:66:GLY:HA3	0.54	1.80	13	2
1:A:83:LEU:HD21	1:A:88:ARG:HG2	0.54	1.80	1	1
1:A:12:VAL:HG11	1:A:19:ALA:HB2	0.54	1.78	9	1
1:A:2:TYR:O	1:A:120:ARG:HA	0.54	2.02	14	4
1:A:33:ASN:ND2	1:A:84:ASN:HD22	0.54	2.00	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:64:THR:HG23	1:A:86:PHE:HD1	0.54	1.63	8	1
1:A:118:PHE:CE1	1:A:125:HIS:HB3	0.54	2.37	11	1
1:A:155:LYS:NZ	1:A:155:LYS:HB2	0.54	2.18	14	1
1:A:23:PHE:HA	1:A:144:PHE:HZ	0.54	1.63	8	1
1:A:136:GLY:O	1:A:140:ILE:HG13	0.53	2.03	8	16
1:A:34:ASN:HA	1:A:40:VAL:HG13	0.53	1.80	15	3
1:A:91:PRO:HG3	1:A:129:VAL:HG22	0.53	1.80	18	2
1:A:88:ARG:HD2	1:A:131:ASN:CB	0.53	2.33	7	4
1:A:28:PRO:HB3	1:A:41:GLY:HA2	0.53	1.81	1	2
1:A:31:TRP:N	1:A:32:PRO:HD3	0.53	2.18	4	4
1:A:64:THR:HG23	1:A:86:PHE:CD1	0.53	2.38	8	1
1:A:84:ASN:ND2	1:A:136:GLY:HA3	0.53	2.19	1	2
1:A:97:PHE:HB3	1:A:115:HIS:CD2	0.53	2.39	20	4
1:A:83:LEU:CG	1:A:88:ARG:HB3	0.53	2.34	5	1
1:A:136:GLY:O	1:A:140:ILE:HD13	0.53	2.03	1	1
1:A:40:VAL:HA	1:A:44:LEU:CD1	0.53	2.33	3	1
1:A:94:SER:HB3	1:A:118:PHE:CG	0.53	2.39	18	1
1:A:88:ARG:HG2	1:A:89:ILE:N	0.53	2.19	13	2
1:A:64:THR:HB	1:A:82:ARG:HG2	0.53	1.81	5	1
1:A:147:LYS:O	1:A:151:GLU:HG2	0.52	2.03	9	2
1:A:89:ILE:HD13	1:A:128:ARG:HE	0.52	1.63	5	1
1:A:118:PHE:O	1:A:125:HIS:HB3	0.52	2.04	13	2
1:A:52:ARG:HB2	1:A:65:PHE:HB2	0.52	1.82	7	1
1:A:150:GLU:HA	1:A:154:LYS:O	0.52	2.04	18	2
1:A:32:PRO:HD3	1:A:143:SER:HB3	0.52	1.81	5	4
1:A:42:ALA:N	1:A:55:GLU:HB2	0.52	2.18	9	1
1:A:117:HIS:O	1:A:121:MET:HG2	0.52	2.04	4	3
1:A:88:ARG:NE	1:A:88:ARG:HA	0.52	2.19	5	2
1:A:127:LYS:O	1:A:130:ARG:HG2	0.52	2.04	13	1
1:A:133:MET:HG3	1:A:137:TRP:HB2	0.52	1.81	15	1
1:A:97:PHE:HA	1:A:114:GLU:O	0.52	2.05	14	2
1:A:95:SER:OG	1:A:118:PHE:HB3	0.52	2.05	3	1
1:A:83:LEU:HD21	1:A:89:ILE:O	0.52	2.03	12	2
1:A:40:VAL:HG11	1:A:84:ASN:OD1	0.52	2.04	7	1
1:A:8:HIS:CD2	1:A:141:LEU:HD13	0.52	2.40	11	4
1:A:48:LYS:HD2	1:A:48:LYS:H	0.52	1.65	15	1
1:A:39:LYS:O	1:A:40:VAL:HG13	0.52	2.04	20	2
1:A:57:ASP:HB3	1:A:59:GLN:NE2	0.52	2.20	16	2
1:A:13:LYS:H	1:A:13:LYS:HD2	0.51	1.65	2	6
1:A:79:ILE:HG23	1:A:97:PHE:CE2	0.51	2.41	7	2
1:A:76:THR:O	1:A:77:LEU:HD13	0.51	2.04	10	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:33:ASN:ND2	1:A:84:ASN:HD21	0.51	2.03	18	1
1:A:80:GLY:HA2	1:A:95:SER:O	0.51	2.05	7	1
1:A:2:TYR:HA	1:A:6:VAL:CG2	0.51	2.35	20	3
1:A:23:PHE:HA	1:A:144:PHE:CZ	0.51	2.41	8	1
1:A:44:LEU:CG	1:A:55:GLU:HA	0.51	2.32	13	1
1:A:70:LYS:HB3	1:A:78:VAL:HB	0.51	1.81	20	2
1:A:90:ASP:OD2	1:A:92:ASP:HB3	0.51	2.05	18	1
1:A:89:ILE:HD13	1:A:89:ILE:C	0.51	2.26	1	5
1:A:10:VAL:HB	1:A:111:VAL:CG1	0.51	2.35	4	9
1:A:150:GLU:HA	1:A:154:LYS:HB2	0.51	1.82	8	1
1:A:81:TRP:CZ2	1:A:133:MET:HB3	0.51	2.40	16	2
1:A:83:LEU:HD22	1:A:88:ARG:HB3	0.51	1.83	4	1
1:A:66:GLY:HA2	1:A:82:ARG:HB2	0.51	1.83	8	3
1:A:41:GLY:HA2	1:A:63:HIS:CG	0.51	2.40	9	1
1:A:82:ARG:HD3	1:A:83:LEU:HB2	0.51	1.82	12	1
1:A:51:GLY:O	1:A:68:ILE:HB	0.51	2.06	6	1
1:A:81:TRP:CZ2	1:A:133:MET:HG2	0.51	2.41	15	1
1:A:106:GLN:HG2	1:A:106:GLN:O	0.50	2.06	14	1
1:A:3:ASP:CB	1:A:4:PRO:HD3	0.50	2.33	9	3
1:A:116:THR:OG1	1:A:120:ARG:HD3	0.50	2.07	13	1
1:A:64:THR:HG23	1:A:82:ARG:HD3	0.50	1.82	1	1
1:A:31:TRP:H	1:A:32:PRO:HD3	0.50	1.66	13	1
1:A:33:ASN:ND2	1:A:40:VAL:HG21	0.50	2.21	4	3
1:A:69:ARG:HD3	1:A:96:GLU:OE2	0.50	2.07	11	1
1:A:81:TRP:CE2	1:A:83:LEU:HA	0.50	2.40	16	1
1:A:31:TRP:HB2	1:A:143:SER:HB3	0.50	1.82	12	1
1:A:6:VAL:HG13	1:A:115:HIS:O	0.50	2.07	3	2
1:A:116:THR:OG1	1:A:120:ARG:HD2	0.50	2.07	8	1
1:A:81:TRP:HH2	1:A:133:MET:HB3	0.50	1.67	9	1
1:A:97:PHE:HB3	1:A:115:HIS:CB	0.50	2.30	15	1
1:A:81:TRP:HD1	1:A:91:PRO:HD2	0.50	1.67	18	1
1:A:22:THR:HG23	1:A:30:TRP:CE2	0.49	2.42	8	5
1:A:56:ILE:HG23	1:A:61:GLU:HG2	0.49	1.83	13	2
1:A:88:ARG:HD2	1:A:88:ARG:O	0.49	2.08	12	1
1:A:3:ASP:HB2	1:A:4:PRO:CD	0.49	2.34	9	1
1:A:27:PHE:CD2	1:A:44:LEU:HD11	0.49	2.43	3	1
1:A:133:MET:HB2	1:A:137:TRP:HB2	0.49	1.83	13	1
1:A:124:LYS:O	1:A:128:ARG:HG2	0.49	2.07	15	1
1:A:91:PRO:CG	1:A:129:VAL:HG22	0.49	2.37	18	1
1:A:83:LEU:HD13	1:A:84:ASN:H	0.49	1.68	5	2
1:A:154:LYS:HG2	1:A:155:LYS:N	0.49	2.23	13	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:130:ARG:HA	1:A:133:MET:HG3	0.49	1.84	1	1
1:A:83:LEU:HD22	1:A:88:ARG:NE	0.49	2.23	4	1
1:A:89:ILE:HG23	1:A:128:ARG:HB2	0.49	1.85	7	2
1:A:119:ASP:HB3	1:A:129:VAL:HG21	0.49	1.84	8	1
1:A:81:TRP:CB	1:A:95:SER:HB3	0.49	2.28	9	1
1:A:55:GLU:O	1:A:63:HIS:CD2	0.49	2.66	10	2
1:A:70:LYS:HG2	1:A:72:ASP:OD2	0.49	2.06	13	2
1:A:13:LYS:HG3	1:A:149:ASP:OD1	0.49	2.08	16	2
1:A:57:ASP:HB3	1:A:59:GLN:HE21	0.49	1.68	20	1
1:A:79:ILE:HG12	1:A:80:GLY:N	0.48	2.22	1	1
1:A:28:PRO:HB3	1:A:44:LEU:HD23	0.48	1.84	3	1
1:A:28:PRO:CB	1:A:41:GLY:HA2	0.48	2.38	1	1
1:A:64:THR:O	1:A:82:ARG:HD2	0.48	2.09	3	2
1:A:137:TRP:O	1:A:140:ILE:HB	0.48	2.08	7	3
1:A:140:ILE:O	1:A:144:PHE:HB2	0.48	2.08	8	1
1:A:81:TRP:CB	1:A:95:SER:HB2	0.48	2.38	11	2
1:A:39:LYS:HD3	1:A:40:VAL:HG22	0.48	1.84	13	2
1:A:83:LEU:HD11	1:A:89:ILE:C	0.48	2.29	12	1
1:A:33:ASN:HD22	1:A:40:VAL:HG11	0.48	1.68	15	1
1:A:83:LEU:CD1	1:A:84:ASN:H	0.48	2.21	5	1
1:A:149:ASP:OD2	1:A:154:LYS:HB2	0.48	2.09	16	1
1:A:95:SER:HA	1:A:115:HIS:NE2	0.48	2.23	7	1
1:A:38:THR:HA	1:A:41:GLY:C	0.48	2.29	9	1
1:A:138:PRO:O	1:A:142:GLN:HG2	0.48	2.09	18	1
1:A:76:THR:C	1:A:77:LEU:HD13	0.48	2.29	6	2
1:A:27:PHE:HZ	1:A:65:PHE:CE1	0.48	2.26	4	1
1:A:78:VAL:HG22	1:A:98:THR:HG23	0.48	1.84	9	6
1:A:128:ARG:O	1:A:131:ASN:HB2	0.48	2.08	6	1
1:A:12:VAL:HB	1:A:148:ILE:HG21	0.48	1.85	4	1
1:A:30:TRP:HZ3	1:A:140:ILE:HG23	0.48	1.67	11	1
1:A:16:ARG:HG3	1:A:101:PHE:CB	0.48	2.39	14	1
1:A:81:TRP:HB3	1:A:91:PRO:HG2	0.47	1.86	3	2
1:A:91:PRO:HG2	1:A:118:PHE:CZ	0.47	2.44	14	1
1:A:64:THR:HB	1:A:82:ARG:CG	0.47	2.40	8	3
1:A:149:ASP:OD2	1:A:154:LYS:HA	0.47	2.09	7	1
1:A:90:ASP:OD1	1:A:92:ASP:HB2	0.47	2.08	12	1
1:A:32:PRO:CG	1:A:140:ILE:HA	0.47	2.39	19	5
1:A:57:ASP:HB3	1:A:59:GLN:OE1	0.47	2.08	6	1
1:A:81:TRP:HB2	1:A:95:SER:CB	0.47	2.36	7	1
1:A:70:LYS:HD2	1:A:78:VAL:HG23	0.47	1.86	20	2
1:A:116:THR:HG21	1:A:118:PHE:HD2	0.47	1.68	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:95:SER:O	1:A:96:GLU:HB3	0.47	2.09	8	1
1:A:1:ASN:O	1:A:2:TYR:HB2	0.47	2.09	13	1
1:A:88:ARG:CZ	1:A:90:ASP:HB3	0.47	2.39	4	1
1:A:88:ARG:HD3	1:A:131:ASN:CB	0.47	2.39	9	1
1:A:8:HIS:CD2	1:A:10:VAL:HG13	0.47	2.45	1	3
1:A:91:PRO:HB2	1:A:95:SER:OG	0.47	2.10	5	1
1:A:64:THR:HB	1:A:82:ARG:O	0.47	2.10	6	1
1:A:97:PHE:HB2	1:A:113:VAL:HG13	0.47	1.86	20	3
1:A:89:ILE:CG2	1:A:128:ARG:HB2	0.47	2.40	15	1
1:A:137:TRP:N	1:A:138:PRO:HD2	0.47	2.25	5	11
1:A:88:ARG:HD2	1:A:88:ARG:C	0.47	2.29	3	1
1:A:59:GLN:NE2	1:A:62:GLU:HB3	0.47	2.25	4	1
1:A:15:ASP:OD1	1:A:17:LYS:HG3	0.47	2.10	16	1
1:A:130:ARG:HG3	1:A:134:ASP:HB3	0.47	1.87	18	1
1:A:81:TRP:HE1	1:A:88:ARG:HD2	0.47	1.68	4	1
1:A:38:THR:H	1:A:42:ALA:HB2	0.47	1.70	11	1
1:A:91:PRO:HG3	1:A:118:PHE:CE2	0.47	2.45	12	1
1:A:1:ASN:O	1:A:6:VAL:HG22	0.47	2.10	15	3
1:A:122:GLY:HA2	1:A:125:HIS:HB3	0.47	1.86	7	1
1:A:83:LEU:CD2	1:A:88:ARG:HG2	0.46	2.40	1	1
1:A:57:ASP:OD1	1:A:62:GLU:N	0.46	2.45	3	1
1:A:155:LYS:HD3	1:A:155:LYS:H	0.46	1.69	9	2
1:A:10:VAL:HG13	1:A:145:GLN:CG	0.46	2.39	7	2
1:A:107:LYS:NZ	1:A:107:LYS:HB2	0.46	2.24	10	1
1:A:19:ALA:HA	1:A:148:ILE:HD13	0.46	1.86	14	1
1:A:16:ARG:NE	1:A:103:ALA:HB2	0.46	2.13	19	1
1:A:97:PHE:HB2	1:A:113:VAL:CG1	0.46	2.40	10	1
1:A:6:VAL:HG22	1:A:115:HIS:CB	0.46	2.35	13	1
1:A:1:ASN:HB2	1:A:6:VAL:HB	0.46	1.87	3	1
1:A:22:THR:HA	1:A:30:TRP:NE1	0.46	2.25	4	1
1:A:89:ILE:HG21	1:A:128:ARG:HB2	0.46	1.86	5	1
1:A:97:PHE:HA	1:A:115:HIS:HB2	0.46	1.87	7	1
1:A:39:LYS:HD3	1:A:85:GLY:HA3	0.46	1.87	8	1
1:A:82:ARG:HA	1:A:90:ASP:OD1	0.46	2.11	9	1
1:A:28:PRO:HB3	1:A:42:ALA:O	0.46	2.09	14	2
1:A:98:THR:O	1:A:113:VAL:HA	0.46	2.11	14	1
1:A:141:LEU:O	1:A:145:GLN:HG3	0.46	2.10	17	2
1:A:68:ILE:HG21	1:A:71:VAL:HG22	0.46	1.88	10	4
1:A:89:ILE:HD12	1:A:90:ASP:N	0.46	2.25	4	1
1:A:124:LYS:HA	1:A:127:LYS:HB3	0.46	1.88	16	1
1:A:32:PRO:HB3	1:A:143:SER:HB3	0.46	1.87	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:53:TRP:HZ2	1:A:79:ILE:HD11	0.46	1.70	20	1
1:A:27:PHE:HD2	1:A:45:GLY:HA3	0.46	1.70	8	3
1:A:133:MET:HG2	1:A:137:TRP:HB2	0.46	1.88	9	1
1:A:57:ASP:OD1	1:A:61:GLU:HA	0.46	2.10	3	1
1:A:64:THR:C	1:A:82:ARG:HD2	0.46	2.31	14	1
1:A:88:ARG:CD	1:A:131:ASN:HB2	0.46	2.40	16	1
1:A:32:PRO:HG2	1:A:34:ASN:OD1	0.46	2.11	20	1
1:A:44:LEU:CB	1:A:55:GLU:HG2	0.46	2.39	3	1
1:A:120:ARG:O	1:A:120:ARG:HD2	0.46	2.11	20	1
1:A:35:PHE:HD1	1:A:36:ARG:HG2	0.45	1.72	4	1
1:A:41:GLY:O	1:A:42:ALA:HB2	0.45	2.11	9	1
1:A:94:SER:HB2	1:A:118:PHE:CG	0.45	2.46	9	1
1:A:90:ASP:OD2	1:A:91:PRO:HD2	0.45	2.11	11	1
1:A:137:TRP:O	1:A:141:LEU:HD13	0.45	2.12	18	1
1:A:33:ASN:OD1	1:A:39:LYS:HE3	0.45	2.11	4	1
1:A:39:LYS:HE2	1:A:55:GLU:OE1	0.45	2.11	9	1
1:A:130:ARG:O	1:A:134:ASP:HB3	0.45	2.11	2	1
1:A:150:GLU:HG2	1:A:154:LYS:HG2	0.45	1.88	4	1
1:A:53:TRP:CD1	1:A:68:ILE:HD11	0.45	2.46	10	3
1:A:32:PRO:HB3	1:A:143:SER:HB2	0.45	1.89	12	1
1:A:95:SER:HB3	1:A:115:HIS:HE1	0.45	1.71	1	1
1:A:108:LYS:HG2	1:A:109:THR:N	0.45	2.27	2	1
1:A:7:ARG:HD3	1:A:112:ASP:OD2	0.45	2.11	10	2
1:A:137:TRP:O	1:A:141:LEU:HG	0.45	2.11	20	2
1:A:7:ARG:HD2	1:A:112:ASP:OD2	0.45	2.10	2	2
1:A:130:ARG:HA	1:A:133:MET:CG	0.45	2.33	10	1
1:A:5:PHE:HB3	1:A:116:THR:HB	0.45	1.87	13	1
1:A:41:GLY:HA2	1:A:63:HIS:ND1	0.45	2.26	9	1
1:A:44:LEU:CG	1:A:45:GLY:N	0.45	2.73	3	1
1:A:88:ARG:HG3	1:A:89:ILE:H	0.45	1.72	5	1
1:A:84:ASN:HB2	1:A:133:MET:HE3	0.45	1.89	19	1
1:A:1:ASN:O	1:A:2:TYR:HB3	0.45	2.10	9	3
1:A:30:TRP:HB2	1:A:34:ASN:HB2	0.45	1.89	19	1
1:A:81:TRP:CZ2	1:A:84:ASN:HB2	0.45	2.47	17	2
1:A:81:TRP:CH2	1:A:84:ASN:HB2	0.45	2.47	17	2
1:A:147:LYS:O	1:A:147:LYS:HD3	0.45	2.12	12	1
1:A:6:VAL:HG13	1:A:119:ASP:OD1	0.45	2.12	13	1
1:A:5:PHE:HA	1:A:116:THR:OG1	0.45	2.12	19	1
1:A:88:ARG:HG3	1:A:89:ILE:N	0.44	2.26	1	1
1:A:70:LYS:HB3	1:A:78:VAL:CG1	0.44	2.41	4	1
1:A:32:PRO:HD2	1:A:34:ASN:HD21	0.44	1.72	4	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1:ASN:HB2	1:A:6:VAL:CA	0.44	2.41	3	2
1:A:76:THR:HA	1:A:99:VAL:O	0.44	2.13	6	3
1:A:83:LEU:HD13	1:A:88:ARG:CG	0.44	2.43	3	1
1:A:141:LEU:O	1:A:144:PHE:HB3	0.44	2.13	12	1
1:A:115:HIS:CE1	1:A:119:ASP:OD2	0.44	2.70	9	1
1:A:30:TRP:HB2	1:A:32:PRO:HD3	0.44	1.89	4	3
1:A:25:GLU:HA	1:A:48:LYS:CE	0.44	2.43	2	2
1:A:51:GLY:O	1:A:52:ARG:HD2	0.44	2.12	2	1
1:A:97:PHE:N	1:A:97:PHE:CD1	0.44	2.86	12	1
1:A:21:LYS:HG3	1:A:22:THR:N	0.44	2.28	19	1
1:A:117:HIS:O	1:A:121:MET:HB2	0.44	2.13	20	1
1:A:32:PRO:HB2	1:A:140:ILE:HG12	0.44	1.88	3	1
1:A:39:LYS:CD	1:A:40:VAL:HG23	0.44	2.40	4	1
1:A:89:ILE:HD13	1:A:91:PRO:HD3	0.44	1.90	9	1
1:A:83:LEU:CD2	1:A:88:ARG:HB2	0.44	2.21	12	1
1:A:130:ARG:CG	1:A:134:ASP:HB2	0.44	2.43	15	1
1:A:40:VAL:HA	1:A:55:GLU:HG2	0.44	1.89	5	1
1:A:72:ASP:O	1:A:73:GLU:HG2	0.44	2.13	15	1
1:A:89:ILE:C	1:A:89:ILE:HD13	0.44	2.33	12	1
1:A:125:HIS:O	1:A:129:VAL:HG23	0.43	2.13	8	3
1:A:68:ILE:HG21	1:A:71:VAL:CG2	0.43	2.43	19	6
1:A:30:TRP:CZ3	1:A:140:ILE:HG23	0.43	2.47	11	1
1:A:8:HIS:ND1	1:A:113:VAL:HG21	0.43	2.28	12	1
1:A:82:ARG:O	1:A:83:LEU:HB2	0.43	2.12	14	1
1:A:83:LEU:HD23	1:A:84:ASN:N	0.43	2.28	18	1
1:A:14:ALA:O	1:A:15:ASP:HB3	0.43	2.14	3	1
1:A:53:TRP:CZ2	1:A:79:ILE:HD11	0.43	2.48	20	1
1:A:13:LYS:HD2	1:A:13:LYS:N	0.43	2.28	8	2
1:A:39:LYS:HD2	1:A:40:VAL:N	0.43	2.25	9	1
1:A:27:PHE:O	1:A:34:ASN:HB3	0.43	2.14	8	1
1:A:48:LYS:HD2	1:A:48:LYS:N	0.43	2.28	15	1
1:A:84:ASN:HB3	1:A:133:MET:SD	0.43	2.54	20	1
1:A:8:HIS:HD1	1:A:113:VAL:HG21	0.43	1.73	19	2
1:A:82:ARG:HG2	1:A:82:ARG:O	0.43	2.13	17	2
1:A:10:VAL:HB	1:A:111:VAL:HG13	0.43	1.89	7	1
1:A:73:GLU:CB	1:A:74:PRO:CD	0.43	2.97	10	1
1:A:81:TRP:CH2	1:A:133:MET:HG2	0.43	2.48	15	1
1:A:125:HIS:O	1:A:129:VAL:HG12	0.43	2.13	20	1
1:A:130:ARG:HA	1:A:134:ASP:HB2	0.43	1.91	6	1
1:A:17:LYS:HA	1:A:74:PRO:HB3	0.43	1.91	9	1
1:A:83:LEU:HD11	1:A:90:ASP:N	0.43	2.28	12	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:129:VAL:HG12	1:A:133:MET:SD	0.43	2.53	4	2
1:A:54:TYR:CD1	1:A:63:HIS:CE1	0.43	3.03	10	1
1:A:121:MET:HA	1:A:121:MET:CE	0.43	2.42	16	1
1:A:84:ASN:O	1:A:88:ARG:HG2	0.43	2.13	3	1
1:A:39:LYS:O	1:A:40:VAL:HG22	0.43	2.14	18	1
1:A:47:ASP:HB3	1:A:52:ARG:CG	0.43	2.41	3	1
1:A:30:TRP:HZ3	1:A:140:ILE:CG2	0.43	2.27	11	1
1:A:88:ARG:HG2	1:A:131:ASN:HB3	0.43	1.90	14	1
1:A:95:SER:HA	1:A:115:HIS:CE1	0.42	2.49	7	1
1:A:12:VAL:O	1:A:108:LYS:HA	0.42	2.14	8	1
1:A:155:LYS:HD3	1:A:155:LYS:N	0.42	2.29	9	1
1:A:31:TRP:H	1:A:32:PRO:CD	0.42	2.26	11	1
1:A:89:ILE:O	1:A:128:ARG:HB2	0.42	2.14	7	1
1:A:36:ARG:HB2	1:A:39:LYS:HB3	0.42	1.91	9	1
1:A:126:ALA:O	1:A:130:ARG:HB2	0.42	2.14	12	1
1:A:66:GLY:HA3	1:A:79:ILE:HD11	0.42	1.91	16	1
1:A:144:PHE:O	1:A:148:ILE:HG13	0.42	2.13	8	1
1:A:41:GLY:HA2	1:A:63:HIS:CE1	0.42	2.49	9	1
1:A:81:TRP:CG	1:A:82:ARG:N	0.42	2.87	14	1
1:A:32:PRO:HB2	1:A:140:ILE:HA	0.42	1.90	18	1
1:A:67:LEU:H	1:A:67:LEU:HD23	0.42	1.74	7	1
1:A:24:LEU:CG	1:A:46:VAL:HG11	0.42	2.43	12	2
1:A:48:LYS:N	1:A:48:LYS:HD2	0.42	2.30	16	1
1:A:88:ARG:HD3	1:A:89:ILE:H	0.42	1.74	18	1
1:A:59:GLN:OE1	1:A:62:GLU:HB3	0.42	2.15	1	1
1:A:94:SER:O	1:A:96:GLU:N	0.42	2.53	4	1
1:A:101:PHE:CE1	1:A:111:VAL:HB	0.42	2.50	4	1
1:A:10:VAL:O	1:A:110:ARG:HA	0.42	2.14	6	1
1:A:33:ASN:ND2	1:A:40:VAL:HG11	0.42	2.29	14	1
1:A:38:THR:CG2	1:A:57:ASP:HB3	0.42	2.44	3	1
1:A:40:VAL:HG22	1:A:85:GLY:HA2	0.42	1.90	6	1
1:A:88:ARG:HD3	1:A:131:ASN:HB3	0.42	1.91	19	1
1:A:26:GLY:O	1:A:30:TRP:NE1	0.42	2.52	18	2
1:A:72:ASP:HB3	1:A:76:THR:O	0.42	2.14	10	2
1:A:54:TYR:HD1	1:A:61:GLU:O	0.42	1.97	8	1
1:A:153:ALA:HB1	1:A:155:LYS:HE3	0.42	1.91	8	1
1:A:83:LEU:CD1	1:A:88:ARG:HB3	0.42	2.44	17	1
1:A:17:LYS:O	1:A:21:LYS:HB3	0.42	2.15	19	1
1:A:147:LYS:O	1:A:150:GLU:HB2	0.42	2.14	1	1
1:A:2:TYR:O	1:A:120:ARG:HG2	0.42	2.14	16	1
1:A:121:MET:O	1:A:121:MET:HG2	0.42	2.14	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:1:ASN:O	1:A:6:VAL:HB	0.42	2.15	6	1
1:A:47:ASP:OD1	1:A:49:LYS:HG2	0.42	2.15	9	1
1:A:78:VAL:HA	1:A:97:PHE:O	0.42	2.14	12	1
1:A:67:LEU:HD12	1:A:67:LEU:N	0.41	2.29	1	1
1:A:150:GLU:O	1:A:155:LYS:HE2	0.41	2.14	9	1
1:A:63:HIS:ND1	1:A:65:PHE:HE1	0.41	2.13	12	1
1:A:1:ASN:CB	1:A:6:VAL:HA	0.41	2.44	13	1
1:A:38:THR:HG22	1:A:57:ASP:HA	0.41	1.92	15	1
1:A:3:ASP:HB3	1:A:4:PRO:CD	0.41	2.33	8	1
1:A:34:ASN:OD1	1:A:34:ASN:N	0.41	2.52	9	1
1:A:57:ASP:H	1:A:61:GLU:HA	0.41	1.74	15	1
1:A:23:PHE:HB2	1:A:144:PHE:CZ	0.41	2.50	19	1
1:A:92:ASP:HB2	1:A:128:ARG:HH21	0.41	1.75	4	1
1:A:106:GLN:O	1:A:107:LYS:HB2	0.41	2.14	14	1
1:A:20:PHE:CB	1:A:74:PRO:HA	0.41	2.44	19	1
1:A:95:SER:HA	1:A:118:PHE:CD2	0.41	2.51	6	1
1:A:66:GLY:N	1:A:82:ARG:HG3	0.41	2.30	7	1
1:A:116:THR:O	1:A:117:HIS:HB2	0.41	2.16	7	1
1:A:90:ASP:HB2	1:A:92:ASP:OD2	0.41	2.14	10	1
1:A:48:LYS:HE3	1:A:48:LYS:H	0.41	1.75	12	1
1:A:93:ASN:HD22	1:A:93:ASN:N	0.41	2.13	17	1
1:A:150:GLU:CG	1:A:154:LYS:HE3	0.41	2.45	18	1
1:A:83:LEU:HG	1:A:84:ASN:N	0.41	2.30	19	1
1:A:88:ARG:CG	1:A:131:ASN:HB3	0.41	2.45	14	1
1:A:28:PRO:HA	1:A:34:ASN:O	0.41	2.15	18	1
1:A:40:VAL:HG12	1:A:82:ARG:NH2	0.41	2.29	18	1
1:A:81:TRP:O	1:A:91:PRO:HD2	0.41	2.15	2	1
1:A:30:TRP:CB	1:A:32:PRO:HD3	0.41	2.46	13	1
1:A:81:TRP:HE1	1:A:88:ARG:CD	0.41	2.29	4	1
1:A:22:THR:HA	1:A:30:TRP:HZ2	0.41	1.68	8	1
1:A:47:ASP:CB	1:A:54:TYR:HE2	0.41	2.17	8	1
1:A:65:PHE:CD1	1:A:84:ASN:HA	0.41	2.51	19	1
1:A:6:VAL:CB	1:A:115:HIS:HB3	0.41	2.33	20	1
1:A:38:THR:HG21	1:A:57:ASP:HA	0.41	1.93	20	1
1:A:142:GLN:HE21	1:A:142:GLN:CA	0.41	2.27	6	1
1:A:8:HIS:CD2	1:A:141:LEU:HD21	0.41	2.51	18	1
1:A:64:THR:HB	1:A:82:ARG:HD2	0.41	1.92	6	1
1:A:122:GLY:CA	1:A:126:ALA:H	0.41	2.29	7	1
1:A:91:PRO:C	1:A:93:ASN:H	0.41	2.19	8	1
1:A:3:ASP:O	1:A:120:ARG:HG3	0.41	2.16	10	1
1:A:57:ASP:OD2	1:A:61:GLU:HA	0.41	2.15	10	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:81:TRP:HD1	1:A:91:PRO:HG2	0.41	1.76	17	1
1:A:37:THR:C	1:A:39:LYS:H	0.41	2.19	19	1
1:A:83:LEU:CD1	1:A:88:ARG:HB2	0.41	2.42	20	1
1:A:88:ARG:HE	1:A:88:ARG:C	0.41	2.20	4	1
1:A:99:VAL:HG22	1:A:113:VAL:CG2	0.41	2.46	6	1
1:A:150:GLU:CG	1:A:154:LYS:HD2	0.41	2.46	12	1
1:A:2:TYR:HB2	1:A:126:ALA:CB	0.40	2.46	2	1
1:A:65:PHE:O	1:A:82:ARG:HG3	0.40	2.16	6	1
1:A:8:HIS:HB3	1:A:113:VAL:CG2	0.40	2.46	18	1
1:A:67:LEU:HD23	1:A:67:LEU:N	0.40	2.30	11	1
1:A:70:LYS:O	1:A:77:LEU:HA	0.40	2.17	11	1
1:A:12:VAL:HG12	1:A:109:THR:HB	0.40	1.92	14	1
1:A:10:VAL:HB	1:A:145:GLN:CD	0.40	2.36	1	1
1:A:44:LEU:HB3	1:A:55:GLU:CA	0.40	2.45	9	1
1:A:89:ILE:O	1:A:89:ILE:HG13	0.40	2.16	13	1
1:A:95:SER:HB3	1:A:115:HIS:CE1	0.40	2.49	1	1
1:A:30:TRP:CD1	1:A:30:TRP:N	0.40	2.89	11	1
1:A:8:HIS:HB2	1:A:137:TRP:CH2	0.40	2.52	10	1
1:A:1:ASN:ND2	1:A:7:ARG:H	0.40	2.14	20	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	153/155 (99%)	118±3 (77±2%)	25±3 (16±2%)	10±2 (6±1%)	3	19
All	All	3060/3100 (99%)	2362 (77%)	504 (16%)	194 (6%)	3	19

All 39 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	4	PRO	20
1	A	32	PRO	20
1	A	73	GLU	20

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Mol	Chain	Res	Type	Models (Total)
1	A	2	TYR	16
1	A	40	VAL	12
1	A	117	HIS	11
1	A	44	LEU	10
1	A	75	ASP	8
1	A	83	LEU	7
1	A	94	SER	6
1	A	74	PRO	5
1	A	132	GLY	5
1	A	43	PRO	4
1	A	123	THR	4
1	A	31	TRP	3
1	A	60	GLY	3
1	A	153	ALA	3
1	A	92	ASP	3
1	A	152	GLY	3
1	A	82	ARG	2
1	A	95	SER	2
1	A	86	PHE	2
1	A	64	THR	2
1	A	42	ALA	2
1	A	84	ASN	2
1	A	91	PRO	2
1	A	116	THR	2
1	A	65	PHE	2
1	A	136	GLY	2
1	A	93	ASN	2
1	A	28	PRO	1
1	A	96	GLU	1
1	A	106	GLN	1
1	A	51	GLY	1
1	A	122	GLY	1
1	A	41	GLY	1
1	A	14	ALA	1
1	A	121	MET	1
1	A	61	GLU	1

6.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all NMR entries. The Analysed column shows the number of residues for which the sidechain conformation was analysed and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	134/134 (100%)	120±2 (90±2%)	14±2 (10±2%)	11	56
All	All	2680/2680 (100%)	2407 (90%)	273 (10%)	11	56

All 69 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	79	ILE	20
1	A	59	GLN	19
1	A	89	ILE	19
1	A	8	HIS	16
1	A	63	HIS	16
1	A	13	LYS	15
1	A	119	ASP	13
1	A	67	LEU	13
1	A	83	LEU	8
1	A	88	ARG	7
1	A	72	ASP	6
1	A	82	ARG	6
1	A	6	VAL	5
1	A	155	LYS	5
1	A	142	GLN	5
1	A	52	ARG	5
1	A	48	LYS	4
1	A	77	LEU	4
1	A	93	ASN	4
1	A	145	GLN	4
1	A	133	MET	3
1	A	21	LYS	3
1	A	54	TYR	3
1	A	92	ASP	3
1	A	40	VAL	3
1	A	90	ASP	3
1	A	110	ARG	3
1	A	49	LYS	2
1	A	61	GLU	2
1	A	97	PHE	2
1	A	113	VAL	2
1	A	44	LEU	2
1	A	64	THR	2
1	A	135	LYS	2
1	A	36	ARG	2
1	A	76	THR	2

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Mol	Chain	Res	Type	Models (Total)
1	A	137	TRP	2
1	A	33	ASN	2
1	A	34	ASN	2
1	A	62	GLU	2
1	A	107	LYS	2
1	A	55	GLU	2
1	A	2	TYR	2
1	A	71	VAL	1
1	A	128	ARG	1
1	A	130	ARG	1
1	A	140	ILE	1
1	A	35	PHE	1
1	A	9	SER	1
1	A	91	PRO	1
1	A	69	ARG	1
1	A	146	ASP	1
1	A	84	ASN	1
1	A	144	PHE	1
1	A	3	ASP	1
1	A	39	LYS	1
1	A	125	HIS	1
1	A	134	ASP	1
1	A	117	HIS	1
1	A	12	VAL	1
1	A	10	VAL	1
1	A	118	PHE	1
1	A	115	HIS	1
1	A	143	SER	1
1	A	112	ASP	1
1	A	106	GLN	1
1	A	27	PHE	1
1	A	30	TRP	1
1	A	53	TRP	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

There are no monosaccharides in this entry.

6.6 Ligand geometry

There are no ligands in this entry.

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