Full wwPDB NMR Structure Validation Report (i)

Jun 3, 2023 – 06:00 PM EDT

PDB ID	:	2MVI
BMRB ID	:	25269
Title	:	Structure of the S-glycosylated bacteriocin ASM1
Authors	:	Goroncy, A.K.; Loo, T.S.; Koolard, A.; Patchett, M.L.; Norris, G.E.
Deposited on	:	2014-10-06

This is a Full wwPDB NMR Structure Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/NMRValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

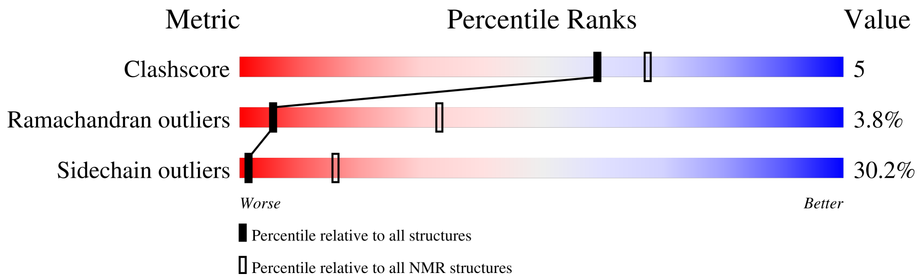
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
BMRB Restraints Analysis	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.33

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
SOLUTION NMR

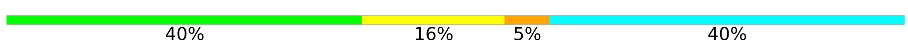
The overall completeness of chemical shifts assignment is 88%.

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	43	 40% 16% 5% 40%

2 Ensemble composition and analysis (i)

This entry contains 20 models. Model 8 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *fewest violations*.

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:5-A:30 (26)	0.11	8

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 4 clusters and 1 single-model cluster was found.

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

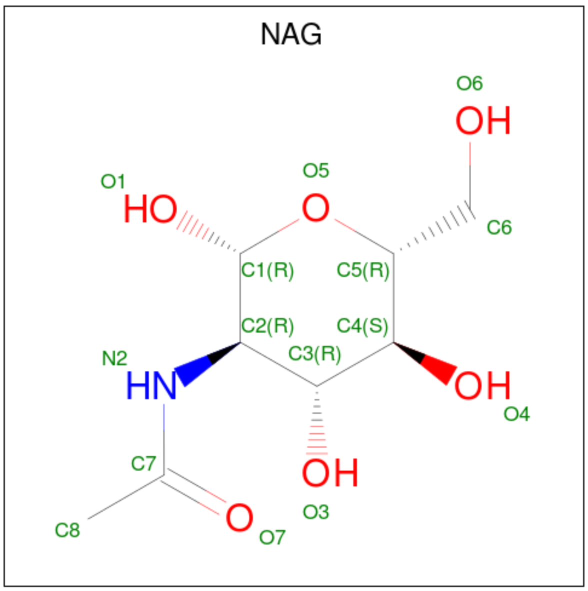
3 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 649 atoms, of which 299 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Bacteriocin plantarican ASM1.

Mol	Chain	Residues	Atoms						Trace
1	A	43	Total 593	C 203	H 271	N 53	O 59	S 7	0

- Molecule 2 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



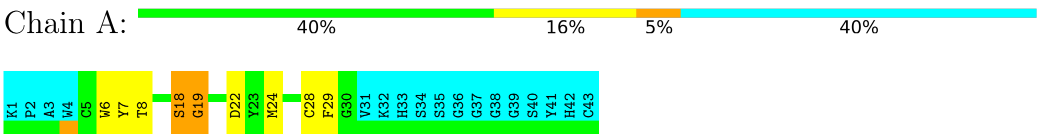
Mol	Chain	Residues	Atoms				
2	A	1	Total 28	C 8	H 14	N 1	O 5
2	A	1	Total 28	C 8	H 14	N 1	O 5

4 Residue-property plots (i)

4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outliers are shown as green connectors. Residues which are classified as ill-defined in the NMR ensemble, are shown in cyan with an underline colour-coded according to the previous scheme. Residues which were present in the experimental sample, but not modelled in the final structure are shown in grey.

- Molecule 1: Bacteriocin plantarican ASM1

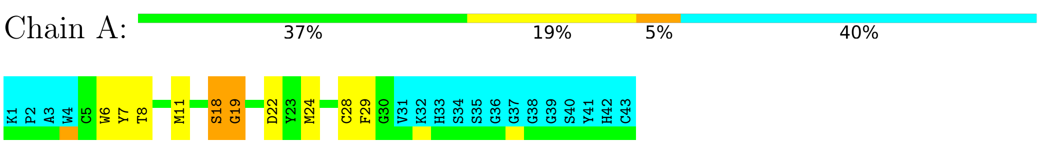


4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

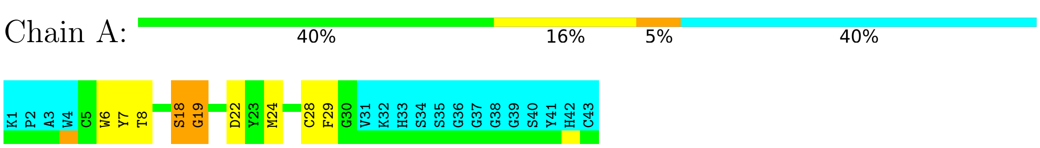
4.2.1 Score per residue for model 1

- Molecule 1: Bacteriocin plantarican ASM1



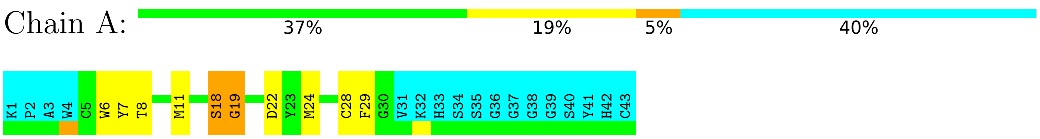
4.2.2 Score per residue for model 2

- Molecule 1: Bacteriocin plantarican ASM1



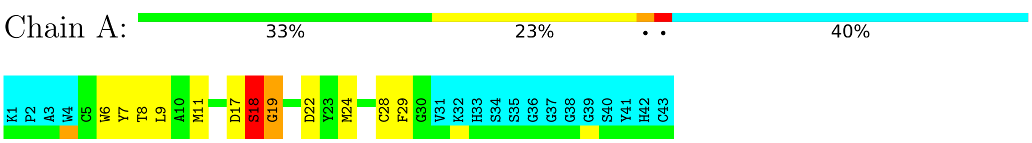
4.2.3 Score per residue for model 3

- Molecule 1: Bacteriocin plantarican ASM1



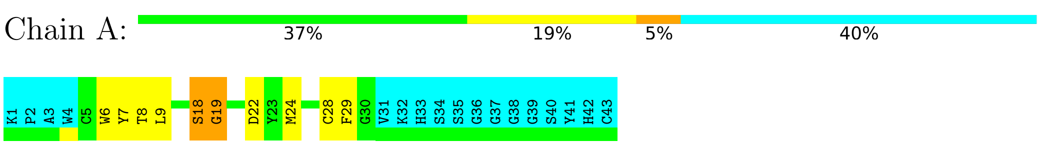
4.2.4 Score per residue for model 4

- Molecule 1: Bacteriocin plantarican ASM1



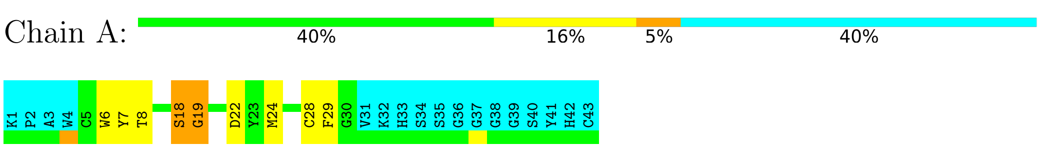
4.2.5 Score per residue for model 5

- Molecule 1: Bacteriocin plantarican ASM1



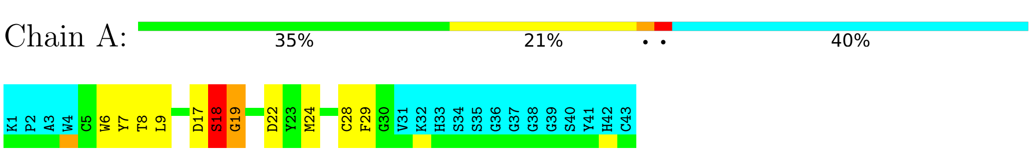
4.2.6 Score per residue for model 6

- Molecule 1: Bacteriocin plantarican ASM1



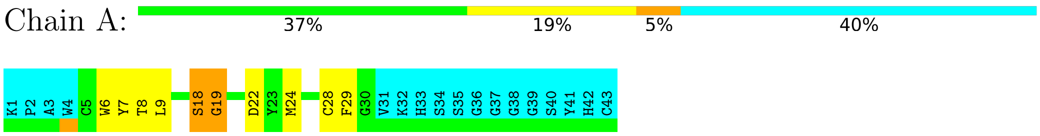
4.2.7 Score per residue for model 7

- Molecule 1: Bacteriocin plantarican ASM1



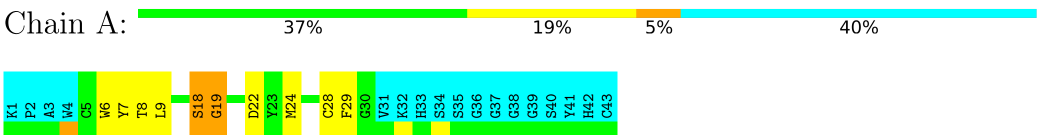
4.2.8 Score per residue for model 8 (medoid)

• Molecule 1: Bacteriocin plantarican ASM1



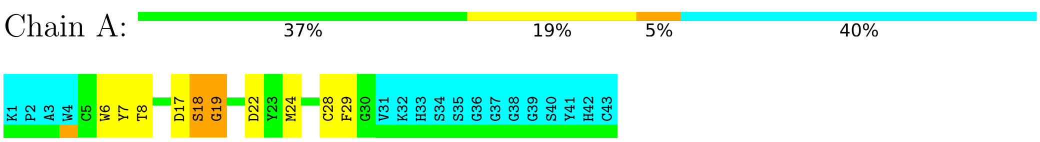
4.2.9 Score per residue for model 9

• Molecule 1: Bacteriocin plantarican ASM1



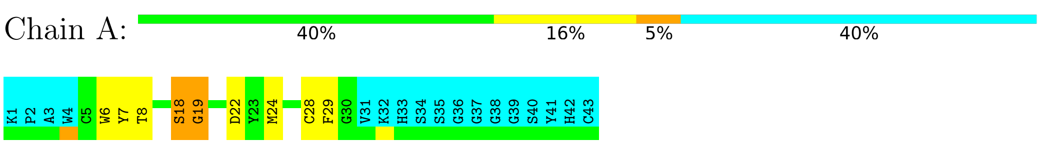
4.2.10 Score per residue for model 10

• Molecule 1: Bacteriocin plantarican ASM1



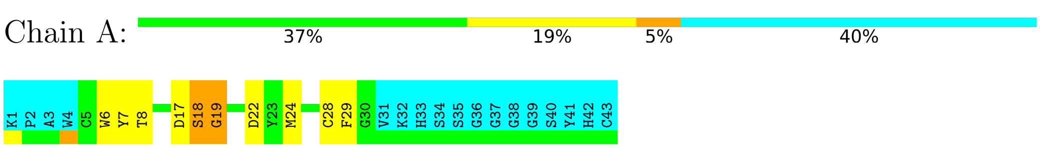
4.2.11 Score per residue for model 11

• Molecule 1: Bacteriocin plantarican ASM1



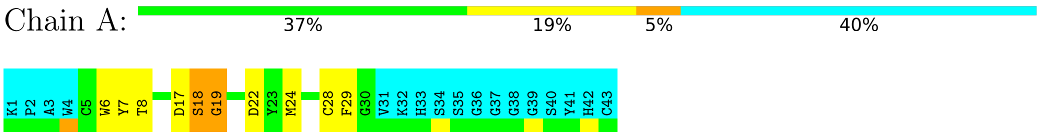
4.2.12 Score per residue for model 12

• Molecule 1: Bacteriocin plantarican ASM1



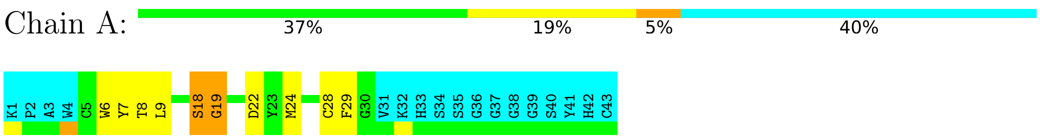
4.2.13 Score per residue for model 13

• Molecule 1: Bacteriocin plantarican ASM1



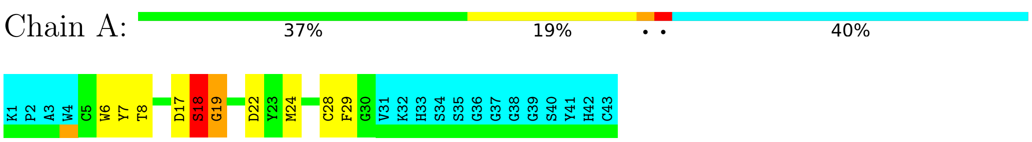
4.2.14 Score per residue for model 14

• Molecule 1: Bacteriocin plantarican ASM1



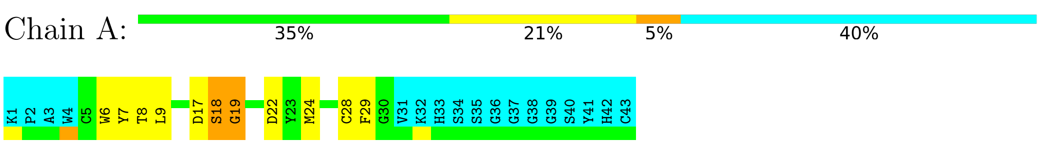
4.2.15 Score per residue for model 15

• Molecule 1: Bacteriocin plantarican ASM1



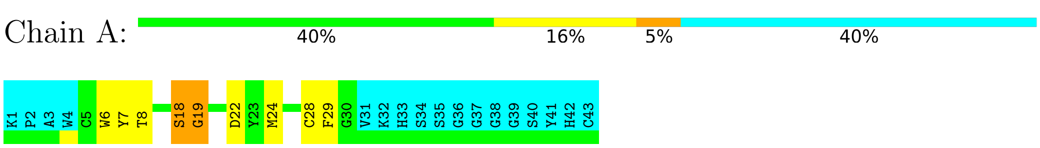
4.2.16 Score per residue for model 16

• Molecule 1: Bacteriocin plantarican ASM1



4.2.17 Score per residue for model 17

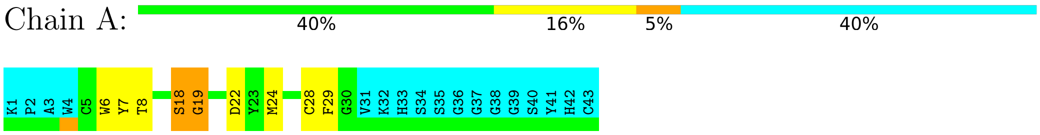
• Molecule 1: Bacteriocin plantarican ASM1



4.2.18 Score per residue for model 18

- Molecule 1: Bacteriocin plantarican ASM1

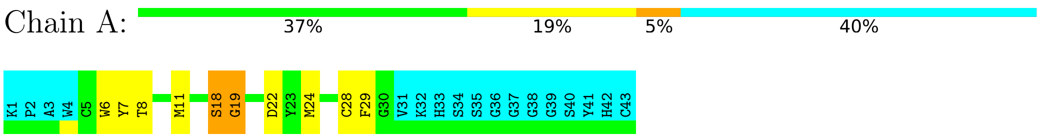
Chain A:



4.2.19 Score per residue for model 19

- Molecule 1: Bacteriocin plantarican ASM1

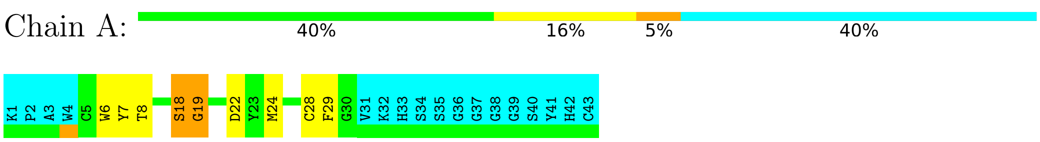
Chain A:



4.2.20 Score per residue for model 20

- Molecule 1: Bacteriocin plantarican ASM1

Chain A:



5 Refinement protocol and experimental data overview (i)

The models were refined using the following method: *torsion angle dynamics, simulated annealing*.

Of the 100 calculated structures, 20 were deposited, based on the following criterion: *target function*.

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

Software name	Classification	Version
CYANA	refinement	3.0
CYANA	structure solution	3.0

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

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	471
Number of shifts mapped to atoms	471
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	88%

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: NAG

There are no covalent bond-length or bond-angle outliers.

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	Chirality	Planarity
1	A	0.0±0.0	2.0±0.0
All	All	0	40

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

All unique planar outliers are listed below.

Mol	Chain	Res	Type	Group	Models (Total)
1	A	18	SER	Mainchain,Peptide	20

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	199	160	160	2±0
All	All	4540	3760	3720	40

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 5.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:18:SER:O	1:A:19:GLY:C	0.61	2.38	18	20
1:A:8:THR:HG23	1:A:29:PHE:O	0.54	2.02	11	20

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	26/43 (60%)	18±0 (71±2%)	7±0 (25±2%)	1±0 (4±0%)	5	33
All	All	520/860 (60%)	369 (71%)	131 (25%)	20 (4%)	5	33

All 1 unique Ramachandran outliers are listed below.

Mol	Chain	Res	Type	Models (Total)
1	A	19	GLY	20

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	20/32 (62%)	14±1 (70±5%)	6±1 (30±5%)	1	16
All	All	400/640 (62%)	279 (70%)	121 (30%)	1	16

All 9 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	6	TRP	20
1	A	7	TYR	20
1	A	22	ASP	20
1	A	24	MET	20

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Mol	Chain	Res	Type	Models (Total)
1	A	28	CYS	20
1	A	9	LEU	7
1	A	17	ASP	7
1	A	11	MET	4
1	A	18	SER	3

6.3.3 RNA (i)

There are no RNA molecules in this entry.

6.4 Non-standard residues in protein, DNA, RNA chains (i)

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

6.5 Carbohydrates (i)

There are no monosaccharides in this entry.

6.6 Ligand geometry (i)

2 ligands are 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	NAG	A	101	1	14,14,15	0.41±0.01	0±0 (0±0%)
2	NAG	A	102	1	14,14,15	0.41±0.00	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	NAG	A	101	1	17,19,21	1.39±0.00	2±0 (14±2%)
2	NAG	A	102	1	17,19,21	1.39±0.00	2±0 (14±2%)

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	NAG	A	101	1	-	0±0,6,23,26	0±0,1,1,1
2	NAG	A	102	1	-	0±0,6,23,26	0±0,1,1,1

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(^{o})	Ideal(^{o})	Models	
								Worst	Total
2	A	102	NAG	C1-O5-C5	3.41	107.57	112.19	20	20
2	A	101	NAG	C1-O5-C5	3.41	107.57	112.19	8	20
2	A	102	NAG	C8-C7-N2	2.38	120.12	116.10	19	20
2	A	101	NAG	C8-C7-N2	2.37	120.11	116.10	17	20
2	A	102	NAG	C2-N2-C7	2.02	120.03	122.90	1	9
2	A	101	NAG	C2-N2-C7	2.02	120.03	122.90	4	8

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 88% for the well-defined parts and 87% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *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	471
Number of shifts mapped to atoms	471
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	0

7.1.2 Chemical shift referencing (i)

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction ± precision, *ppm*	Suggested action
$^{13}C_{\alpha}$	43	2.64 ± 0.10	Should be checked
$^{13}C_{\beta}$	35	3.20 ± 0.16	Should be checked
$^{13}C'$	0	—	None (insufficient data)
^{15}N	41	0.78 ± 0.25	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 88%, i.e. 264 atoms were assigned a chemical shift out of a possible 299. 0 out of 1 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	108/134 (81%)	56/56 (100%)	26/52 (50%)	26/26 (100%)
Sidechain	98/100 (98%)	67/67 (100%)	31/33 (94%)	0/0 (—%)

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	Total	^{1}H	^{13}C	^{15}N
Aromatic	58/65 (89%)	29/31 (94%)	28/32 (88%)	1/2 (50%)
Overall	264/299 (88%)	152/154 (99%)	85/117 (73%)	27/28 (96%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 87%, i.e. 431 atoms were assigned a chemical shift out of a possible 494. 0 out of 2 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	176/221 (80%)	92/93 (99%)	43/86 (50%)	41/42 (98%)
Sidechain	169/173 (98%)	115/115 (100%)	54/56 (96%)	0/2 (0%)
Aromatic	86/100 (86%)	43/49 (88%)	41/46 (89%)	2/5 (40%)
Overall	431/494 (87%)	250/257 (97%)	138/188 (73%)	43/49 (88%)

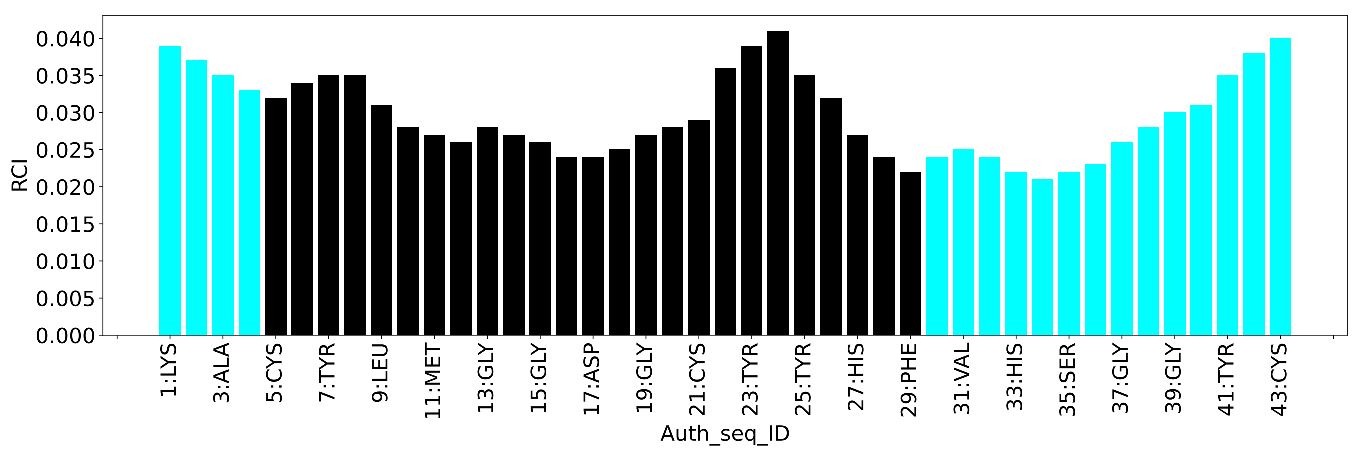
7.1.4 Statistically unusual chemical shifts (i)

There are no statistically unusual chemical shifts.

7.1.5 Random Coil Index (RCI) plots (i)

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

Random coil index (RCI) for chain A:



8 NMR restraints analysis (i)

8.1 Conformationally restricting restraints (i)

The following table provides the summary of experimentally observed NMR restraints in different categories. Restraints are classified into different categories based on the sequence separation of the atoms involved.

Description	Value
Total distance restraints	557
Intra-residue (|i-j|=0)	123
Sequential (|i-j|=1)	180
Medium range (|i-j|>1 and |i-j|<5)	133
Long range (|i-j|≥5)	113
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	8
Total dihedral-angle restraints	0
Number of unmapped restraints	1
Number of restraints per residue	13.0
Number of long range restraints per residue[1]	2.8

[1]Long range hydrogen bonds and disulfide bonds are counted as long range restraints while calculating the number of long range restraints per residue

8.2 Residual restraint violations (i)

This section provides the overview of the restraint violations analysis. The violations are binned as small, medium and large violations based on its absolute value. Average number of violations per model is calculated by dividing the total number of violations in each bin by the size of the ensemble.

8.2.1 Average number of distance violations per model (i)

Distance violations less than 0.1 Å are not included in the calculation.

Bins (Å)	Average number of violations per model	Max (Å)
0.1-0.2 (Small)	3.5	0.2
0.2-0.5 (Medium)	4.3	0.5
>0.5 (Large)	7.1	2.98

8.2.2 Average number of dihedral-angle violations per model (i)

Dihedral-angle violations less than 1° are not included in the calculation.There are no dihedral-angle violations

9 Distance violation analysis (i)

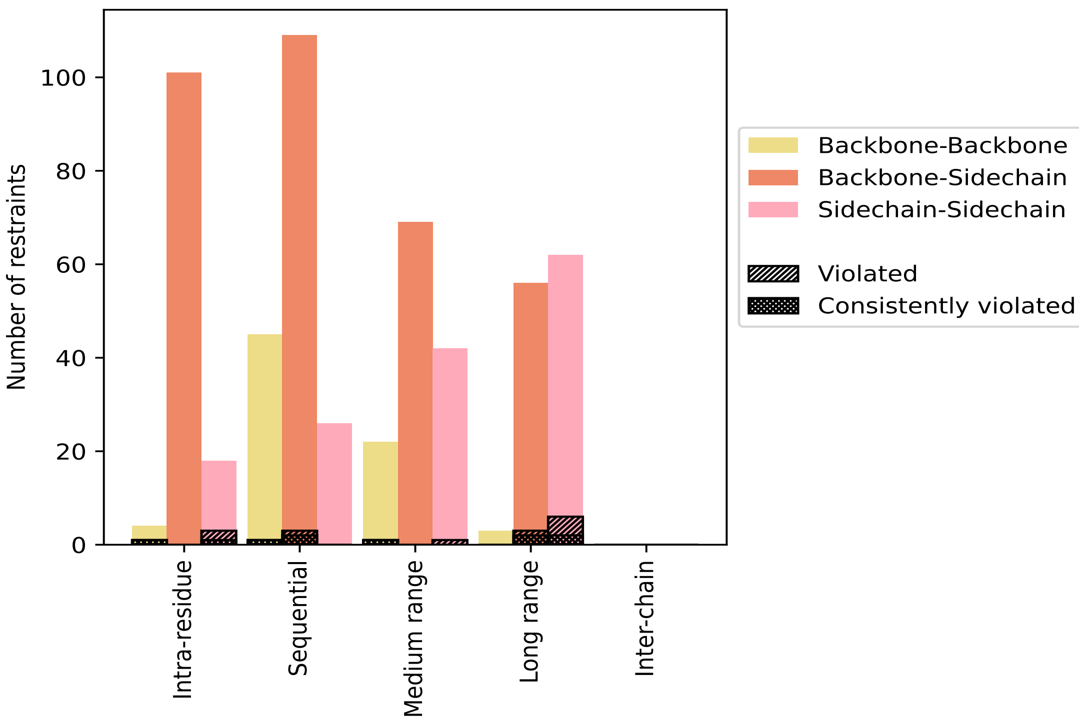
9.1 Summary of distance violations (i)

The following table shows the summary of distance violations in different restraint categories based on the sequence separation of the atoms involved. Each category is further sub-divided into three sub-categories based on the atoms involved. Violations less than 0.1 Å are not included in the statistics.

Restraints type	Count	%[1]	Violated[3]			Consistently Violated[4]		
			Count	%[2]	%[1]	Count	%[2]	%[1]
Intra-residue (|i-j|=0)	123	22.1	4	3.3	0.7	2	1.6	0.4
Backbone-Backbone	4	0.7	1	25.0	0.2	1	25.0	0.2
Backbone-Sidechain	101	18.1	0	0.0	0.0	0	0.0	0.0
Sidechain-Sidechain	18	3.2	3	16.7	0.5	1	5.6	0.2
Sequential (|i-j|=1)	180	32.3	4	2.2	0.7	3	1.7	0.5
Backbone-Backbone	45	8.1	1	2.2	0.2	1	2.2	0.2
Backbone-Sidechain	109	19.6	3	2.8	0.5	2	1.8	0.4
Sidechain-Sidechain	26	4.7	0	0.0	0.0	0	0.0	0.0
Medium range (|i-j|>1 & |i-j|<5)	133	23.9	2	1.5	0.4	1	0.8	0.2
Backbone-Backbone	22	3.9	1	4.5	0.2	1	4.5	0.2
Backbone-Sidechain	69	12.4	0	0.0	0.0	0	0.0	0.0
Sidechain-Sidechain	42	7.5	1	2.4	0.2	0	0.0	0.0
Long range (|i-j|≥5)	113	20.3	4	3.5	0.7	2	1.8	0.4
Backbone-Backbone	3	0.5	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	56	10.1	3	5.4	0.5	2	3.6	0.4
Sidechain-Sidechain	54	9.7	1	1.9	0.2	0	0.0	0.0
Inter-chain	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
Sidechain-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
Hydrogen bond	0	0.0	0	0.0	0.0	0	0.0	0.0
Disulfide bond	8	1.4	5	62.5	0.9	2	25.0	0.4
Total	557	100.0	19	3.4	3.4	10	1.8	1.8
Backbone-Backbone	74	13.3	3	4.1	0.5	3	4.1	0.5
Backbone-Sidechain	335	60.1	6	1.8	1.1	4	1.2	0.7
Sidechain-Sidechain	148	26.6	10	6.8	1.8	3	2.0	0.5

[1] percentage calculated with respect to the total number of distance restraints, [2] percentage calculated with respect to the number of restraints in a particular restraint category, [3] violated in at least one model, [4] violated in all the models

9.1.1 Bar chart : Distribution of distance restraints and violations (i)



Violated and consistently violated restraints are shown using different hatch patterns in their respective categories. The hydrogen bonds and disulfied bonds are counted in their appropriate category on the x-axis

9.2 Distance violation statistics for each model (i)

The following table provides the distance violation statistics for each model in the ensemble. Violations less than 0.1 Å are not included in the statistics.

Model ID	Number of violations						Mean (Å)	Max (Å)	SD[6] (Å)	Median (Å)
	IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total				
1	4	4	2	6	0	16	0.7	2.89	0.69	0.51
2	2	4	1	6	0	13	0.53	1.76	0.45	0.45
3	4	4	2	6	0	16	0.66	2.95	0.7	0.51
4	4	4	2	5	0	15	0.68	2.98	0.71	0.53
5	2	4	1	5	0	12	0.55	1.61	0.39	0.48
6	4	3	2	7	0	16	0.7	2.57	0.66	0.48
7	4	4	2	5	0	15	0.71	2.94	0.73	0.51
8	2	4	1	5	0	12	0.49	1.14	0.35	0.39
9	4	3	2	6	0	15	0.75	2.59	0.67	0.5
10	4	3	2	7	0	16	0.7	2.39	0.65	0.48
11	4	4	2	6	0	16	0.69	2.97	0.72	0.5

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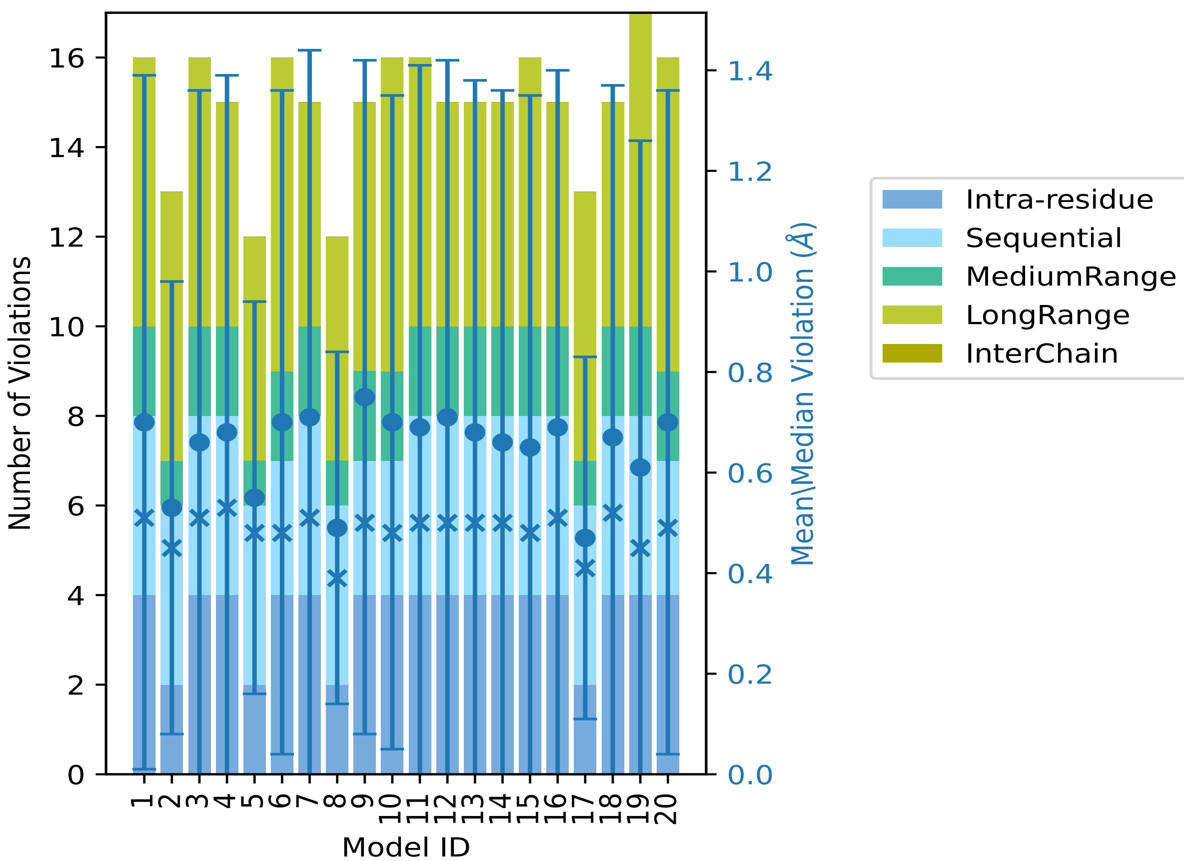
Model ID	Number of violations						Mean (Å)	Max (Å)	SD[6] (Å)	Median (Å)
	IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total				
12	4	4	2	5	0	15	0.71	2.96	0.71	0.5
13	4	4	2	5	0	15	0.68	2.94	0.7	0.5
14	4	4	2	5	0	15	0.66	2.94	0.7	0.5
15	4	4	2	6	0	16	0.65	2.9	0.7	0.48
16	4	4	2	5	0	15	0.69	2.93	0.71	0.51
17	2	4	1	6	0	13	0.47	1.34	0.36	0.41
18	4	4	2	5	0	15	0.67	2.95	0.7	0.52
19	4	4	2	7	0	17	0.61	2.79	0.65	0.45
20	4	3	2	7	0	16	0.7	2.38	0.66	0.49

[1]Intra-residue restraints, [2]Sequential restraints, [3]Medium range restraints, [4]Long range restraints, [5]Inter-chain restraints, [6]Standard deviation

9.2.1 Bar graph : Distance Violation statistics for each model (i)



The mean(dot),median(x) and the standard deviation are shown in blue with respect to the y axis on the right

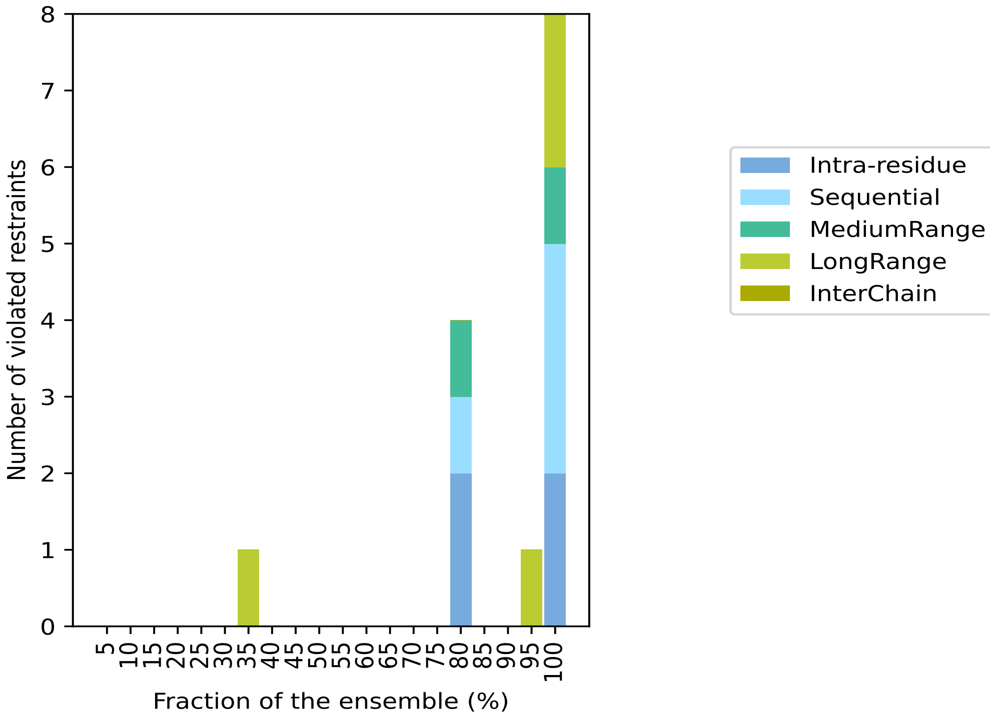
9.3 Distance violation statistics for the ensemble (i)

Violation analysis may find that some restraints are violated in few models and some are violated in most of models. The following table provides this information as number of violated restraints for a given fraction of the ensemble. In total, 535(IR:119, SQ:176, MR:131, LR:109, IC:0) restraints are not violated in the ensemble.

Number of violated restraints						Fraction of the ensemble	
IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total	Count[6]	%
0	0	0	0	0	0	1	5.0
0	0	0	0	0	0	2	10.0
0	0	0	0	0	0	3	15.0
0	0	0	0	0	0	4	20.0
0	0	0	0	0	0	5	25.0
0	0	0	0	0	0	6	30.0
0	0	0	1	0	1	7	35.0
0	0	0	0	0	0	8	40.0
0	0	0	0	0	0	9	45.0
0	0	0	0	0	0	10	50.0
0	0	0	0	0	0	11	55.0
0	0	0	0	0	0	12	60.0
0	0	0	0	0	0	13	65.0
0	0	0	0	0	0	14	70.0
0	0	0	0	0	0	15	75.0
2	1	1	0	0	4	16	80.0
0	0	0	0	0	0	17	85.0
0	0	0	0	0	0	18	90.0
0	0	0	1	0	1	19	95.0
2	3	1	2	0	8	20	100.0

[1]Intra-residue restraints, [2]Sequential restraints, [3]Medium range restraints, [4]Long range restraints, [5]Inter-chain restraints, [6] Number of models with violations

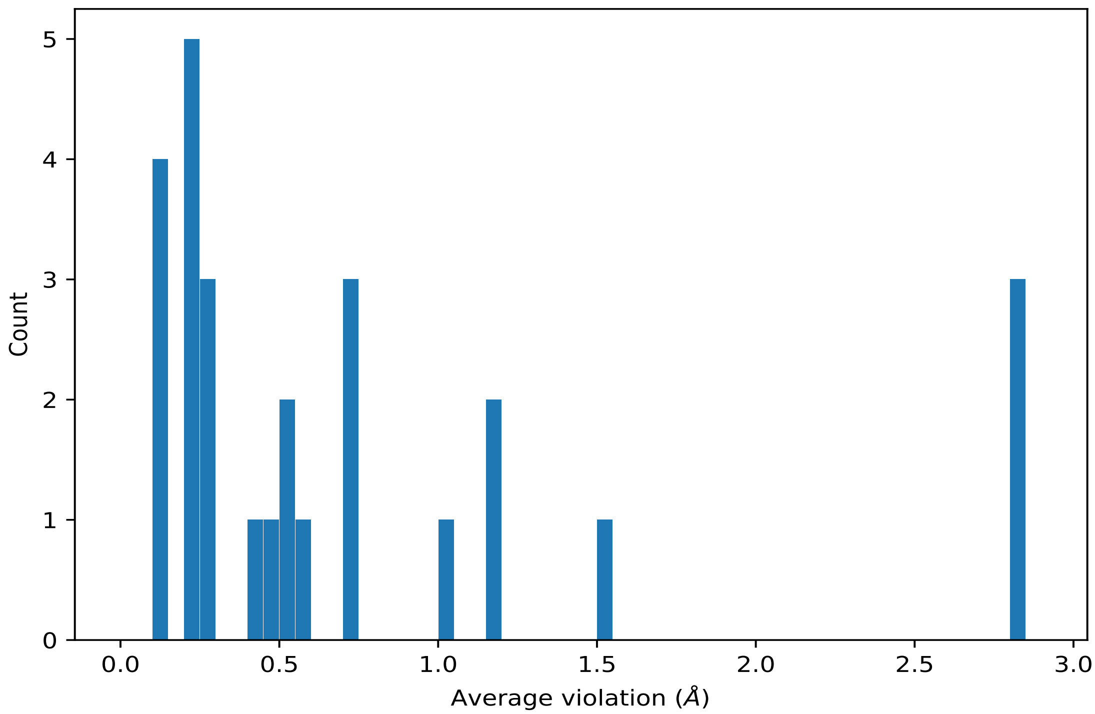
9.3.1 Bar graph : Distance violation statistics for the ensemble (i)



9.4 Most violated distance restraints in the ensemble (i)

9.4.1 Histogram : Distribution of mean distance violations (i)

The following histogram shows the distribution of the average value of the violation. The average is calculated for each restraint that is violated in more than one model over all the violated models in the ensemble



9.4.2 Table: Most violated distance restraints (i)

The following table provides the mean and the standard deviation of the violation for each restraint sorted by number of violated models and the mean value. The Key (restraint list ID, restraint ID) is the unique identifier for a given restraint. Rows with same key represent combinatorial or ambiguous restraints and are counted as a single restraint.

Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	20	1.52	0.16	1.56
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	20	1.01	0.22	0.98
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	20	0.74	0.01	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	20	0.74	0.01	0.74
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	20	0.73	0.04	0.74
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	20	0.51	0.02	0.5
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	20	0.45	0.0	0.45
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	20	0.25	0.05	0.24
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	20	0.25	0.05	0.24
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	20	0.25	0.05	0.24
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	20	0.21	0.01	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	20	0.21	0.01	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	20	0.21	0.01	0.21
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	20	0.13	0.0	0.13
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	20	0.12	0.0	0.12
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	19	0.41	0.1	0.4

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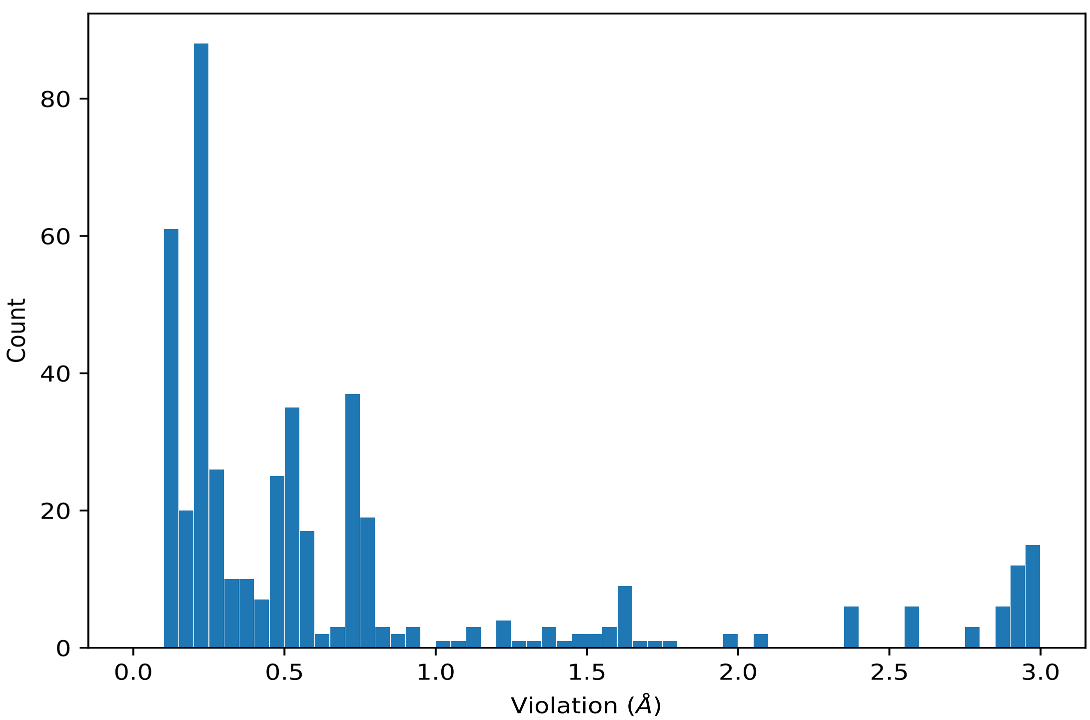
Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	16	2.82	0.2	2.94
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	16	2.82	0.2	2.94
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	16	2.82	0.2	2.94
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	16	0.56	0.02	0.56
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	16	0.5	0.05	0.52
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	16	0.22	0.09	0.2
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	16	0.22	0.09	0.2
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	7	1.15	0.79	1.61
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	7	1.15	0.79	1.61
(1,2)	1:A:5:CYS:SG	1:A:28:CYS:SG	6	0.11	0.0	0.11
(2,4)	1:A:5:CYS:CB	1:A:28:CYS:SG	2	0.11	0.0	0.11

[1]Number of violated models, [2]Standard deviation

9.5 All violated distance restraints (i)

9.5.1 Histogram : Distribution of distance violations (i)

The following histogram shows the distribution of the absolute value of the violation for all violated restraints in the ensemble.



9.5.2 Table : All distance violations (i)

The following table lists the absolute value of the violation for each restraint in the ensemble sorted by its value. The Key (restraint list ID, restraint ID) is the unique identifier for a given restraint. Rows with same key represent combinatorial or ambiguous restraints and are counted as a single restraint.

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	4	2.98
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	4	2.98
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	4	2.98
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	11	2.97
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	11	2.97
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	11	2.97
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	12	2.96
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	12	2.96
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	12	2.96
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	3	2.95
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	3	2.95
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	3	2.95
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	18	2.95
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	18	2.95
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	18	2.95
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	7	2.94
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	7	2.94
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	7	2.94
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	13	2.94
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	13	2.94
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	13	2.94
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	14	2.94
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	14	2.94
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	14	2.94
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	16	2.93
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	16	2.93
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	16	2.93
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	15	2.9
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	15	2.9
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	15	2.9
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	1	2.89
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	1	2.89
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	1	2.89
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	19	2.79
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	19	2.79
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	19	2.79
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	9	2.59

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	9	2.59
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	9	2.59
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	6	2.57
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	6	2.57
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	6	2.57
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	10	2.39
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	10	2.39
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	10	2.39
(2,221)	1:A:14:ALA:HB1	1:A:16:TYR:HE2	20	2.38
(2,221)	1:A:14:ALA:HB2	1:A:16:TYR:HE2	20	2.38
(2,221)	1:A:14:ALA:HB3	1:A:16:TYR:HE2	20	2.38
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	20	2.09
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	20	2.09
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	10	1.96
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	10	1.96
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	2	1.76
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	9	1.73
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	1	1.69
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	3	1.65
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	6	1.63
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	6	1.62
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	6	1.62
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	9	1.61
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	9	1.61
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	5	1.61
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	15	1.61
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	7	1.6
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	18	1.58
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	11	1.57
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	4	1.55
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	12	1.54
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	19	1.5
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	13	1.49
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	10	1.48
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	20	1.45
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	11	1.39
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	7	1.38
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	16	1.37
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	17	1.34
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	16	1.29
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	12	1.23
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	14	1.23

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	1	1.22
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	14	1.21
(2,457)	1:A:19:GLY:H	2:A:101:NAG:H81	8	1.14
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	8	1.11
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	15	1.1
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	19	1.07
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	2	1.02
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	17	0.93
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	4	0.91
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	9	0.9
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	13	0.89
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	3	0.86
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	6	0.85
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	10	0.81
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	5	0.8
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	2	0.77
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	3	0.77
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	5	0.77
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	11	0.77
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	16	0.77
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	18	0.77
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	1	0.76
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	7	0.76
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	12	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	6	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	6	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	13	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	13	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	18	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	18	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	19	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	19	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	20	0.75
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	20	0.75
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	8	0.74
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	13	0.74
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	14	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	2	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	2	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	3	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	3	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	4	0.74

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	4	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	5	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	5	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	8	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	8	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	9	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	9	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	10	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	10	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	14	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	14	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	17	0.74
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	17	0.74
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	20	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	1	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	1	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	7	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	7	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	11	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	11	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	12	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	12	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	15	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	15	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H81	16	0.73
(2,456)	2:A:101:NAG:H2	2:A:101:NAG:H83	16	0.73
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	4	0.72
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	10	0.72
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	15	0.71
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	18	0.7
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	17	0.7
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	19	0.7
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	6	0.64
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	1	0.61
(2,75)	1:A:17:ASP:H	2:A:101:NAG:H81	20	0.6
(2,49)	1:A:13:GLY:H	1:A:15:GLY:HA3	9	0.6
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	10	0.59
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	20	0.59
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	6	0.58
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	9	0.58
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	1	0.56
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	7	0.56

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	15	0.56
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	16	0.56
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	3	0.55
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	11	0.55
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	12	0.55
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	13	0.55
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	14	0.55
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	18	0.55
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	19	0.55
(2,226)	1:A:16:TYR:HB3	1:A:16:TYR:HE1	4	0.54
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	4	0.54
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	5	0.53
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	11	0.53
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	4	0.53
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	7	0.53
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	11	0.53
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	15	0.53
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	16	0.53
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	18	0.53
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	20	0.53
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	3	0.52
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	12	0.52
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	13	0.52
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	14	0.52
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	18	0.52
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	19	0.52
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	2	0.51
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	3	0.51
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	1	0.51
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	7	0.51
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	15	0.51
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	16	0.51
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	1	0.51
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	3	0.51
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	5	0.51
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	2	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	6	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	8	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	9	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	10	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	12	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	13	0.5

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	14	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	17	0.5
(2,139)	1:A:30:GLY:H	1:A:30:GLY:HA3	19	0.48
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	11	0.47
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	12	0.47
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	9	0.47
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	6	0.46
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	1	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	2	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	3	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	4	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	5	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	6	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	7	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	8	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	9	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	10	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	11	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	12	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	13	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	14	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	15	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	16	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	17	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	18	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	19	0.45
(2,84)	1:A:19:GLY:HA3	1:A:20:THR:H	20	0.45
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	9	0.44
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	10	0.42
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	13	0.42
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	17	0.41
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	17	0.41
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	16	0.4
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	18	0.4
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	20	0.39
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	10	0.39
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	7	0.38
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	15	0.38
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	17	0.38
(2,223)	1:A:16:TYR:HB2	1:A:16:TYR:HE2	20	0.38
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	1	0.37
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	1	0.37

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	2	0.36
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	2	0.36
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	4	0.35
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	5	0.35
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	5	0.35
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	5	0.35
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	6	0.34
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	5	0.33
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	5	0.33
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	8	0.33
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	8	0.33
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	19	0.31
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	1	0.3
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	1	0.3
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	1	0.3
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	19	0.3
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	19	0.3
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	19	0.3
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	6	0.29
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	6	0.29
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	6	0.29
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	20	0.29
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	20	0.29
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	20	0.29
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	18	0.28
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	18	0.28
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	18	0.28
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	12	0.27
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	12	0.27
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	12	0.27
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	13	0.27
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	13	0.27
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	13	0.27
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	8	0.26
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	8	0.26
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	8	0.26
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	4	0.25
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	4	0.25
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	9	0.24
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	9	0.24
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	9	0.24
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	11	0.24

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	11	0.24
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	11	0.24
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	11	0.24
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	11	0.24
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	19	0.23
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	19	0.23
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	3	0.23
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	3	0.23
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	3	0.23
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	15	0.23
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	15	0.23
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	15	0.23
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	4	0.22
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	4	0.22
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	4	0.22
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	14	0.22
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	14	0.22
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	14	0.22
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	5	0.22
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	5	0.22
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	5	0.22
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	10	0.22
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	10	0.22
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	10	0.22
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	11	0.22
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	11	0.22
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	11	0.22
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	18	0.22
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	18	0.22
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	18	0.22
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	20	0.22
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	20	0.22
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	20	0.22
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	7	0.21
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	7	0.21
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	7	0.21
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	10	0.21
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	10	0.21
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	10	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	1	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	1	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	1	0.21

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	2	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	2	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	2	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	3	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	3	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	3	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	6	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	6	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	6	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	7	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	7	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	7	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	9	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	9	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	9	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	13	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	13	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	13	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	16	0.21
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	16	0.21
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	16	0.21
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	4	0.2
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	4	0.2
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	4	0.2
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	8	0.2
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	8	0.2
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	8	0.2
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	12	0.2
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	12	0.2
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	12	0.2
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	14	0.2
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	14	0.2
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	14	0.2
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	19	0.2
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	19	0.2
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	19	0.2
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	3	0.2
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	3	0.2
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	12	0.2
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	12	0.2
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	14	0.2
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	14	0.2

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	15	0.19
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	15	0.19
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	15	0.19
(2,367)	1:A:14:ALA:HB1	1:A:15:GLY:HA2	17	0.19
(2,367)	1:A:14:ALA:HB2	1:A:15:GLY:HA2	17	0.19
(2,367)	1:A:14:ALA:HB3	1:A:15:GLY:HA2	17	0.19
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	2	0.17
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	2	0.17
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	2	0.17
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	16	0.17
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	16	0.17
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	16	0.17
(2,505)	1:A:11:MET:HG2	1:A:16:TYR:HE1	3	0.16
(2,505)	1:A:11:MET:HG3	1:A:16:TYR:HE1	3	0.16
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	13	0.16
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	13	0.16
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	18	0.16
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	18	0.16
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	19	0.16
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	19	0.16
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG11	17	0.15
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG12	17	0.15
(2,470)	1:A:30:GLY:HA2	1:A:31:VAL:HG13	17	0.15
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	1	0.15
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	1	0.15
(2,87)	1:A:18:SER:HA	2:A:101:NAG:H2	14	0.13
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	7	0.13
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	7	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	1	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	2	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	3	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	4	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	5	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	6	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	7	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	8	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	11	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	12	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	13	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	16	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	17	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	18	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	19	0.13
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	20	0.13
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	1	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	2	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	3	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	4	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	5	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	6	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	7	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	8	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	9	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	10	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	11	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	12	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	13	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	14	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	15	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	16	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	17	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	18	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	19	0.12
(2,6)	1:A:43:CYS:SG	2:A:102:NAG:O5	20	0.12
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	15	0.12
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	15	0.12
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD1	16	0.12
(2,177)	1:A:15:GLY:HA2	1:A:16:TYR:HD2	16	0.12
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	9	0.12
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	10	0.12
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	14	0.12
(2,1)	1:A:12:CYS:SG	1:A:21:CYS:CB	15	0.12
(1,2)	1:A:5:CYS:SG	1:A:28:CYS:SG	19	0.12
(2,4)	1:A:5:CYS:CB	1:A:28:CYS:SG	6	0.11
(2,4)	1:A:5:CYS:CB	1:A:28:CYS:SG	17	0.11
(2,2)	1:A:12:CYS:CB	1:A:21:CYS:SG	20	0.11
(1,2)	1:A:5:CYS:SG	1:A:28:CYS:SG	2	0.11
(1,2)	1:A:5:CYS:SG	1:A:28:CYS:SG	8	0.11
(1,2)	1:A:5:CYS:SG	1:A:28:CYS:SG	10	0.11
(1,2)	1:A:5:CYS:SG	1:A:28:CYS:SG	11	0.11
(1,2)	1:A:5:CYS:SG	1:A:28:CYS:SG	15	0.11

10 Dihedral-angle violation analysis (i)

Dihedral angle analysis failed due to data error in the dihedral angle restraints, possibly missing target value