Full wwPDB NMR Structure Validation Report (i)

Jun 6, 2023 – 08:09 pm BST

PDB ID	:	3ZEH
BMRB ID	:	18878
Title	:	Solution structure of the Hs. PSIP1 PWWP domain
Authors	:	van Ingen, H.; van Nuland, R.; Timmers, H.T.M.; Boelens, R.
Deposited on	:	2012-12-05

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

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

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

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

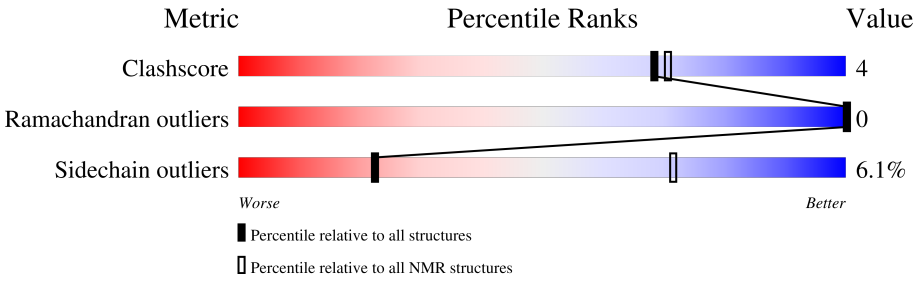
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
BMRB Restraints Analysis	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal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

1 Overall quality at a glance

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

The overall completeness of chemical shifts assignment is 90%.

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	105	68% • • 18% 11%

2 Ensemble composition and analysis

This entry contains 20 models. Model 11 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative.

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:27, A:39-A:89 (74)	0.56	11

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

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

The models can be grouped into 4 clusters and 3 single-model clusters were found.

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

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 1506 atoms, of which 748 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called PC4 AND SFRS1-INTERACTING PROTEIN.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	93	1506	498	748	127	131	2	0

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	GLY	-	expression tag	UNP O75475
A	-3	SER	-	expression tag	UNP O75475
A	-2	HIS	-	expression tag	UNP O75475
A	-1	MET	-	expression tag	UNP O75475
A	0	ALA	-	expression tag	UNP O75475
A	1	MET	-	expression tag	UNP O75475
A	2	ALA	-	expression tag	UNP O75475

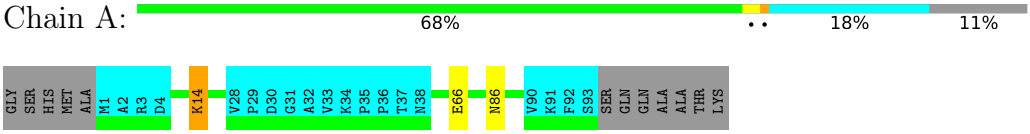
4 Residue-property plots

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: PC4 AND SFRS1-INTERACTING PROTEIN

Chain A:



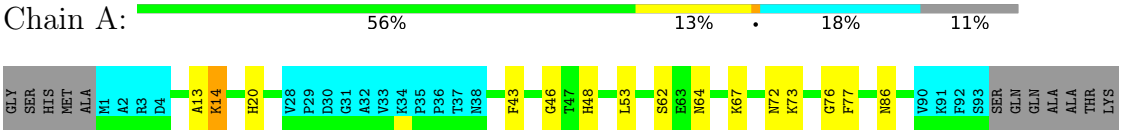
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

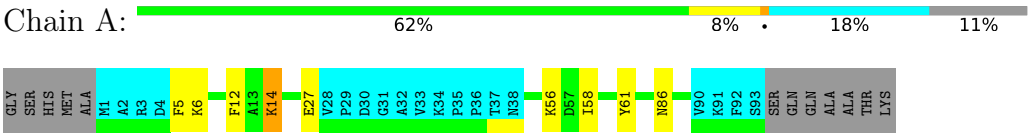
Chain A:



4.2.2 Score per residue for model 2

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

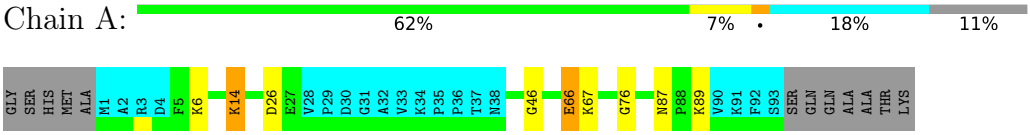
Chain A:



4.2.3 Score per residue for model 3

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

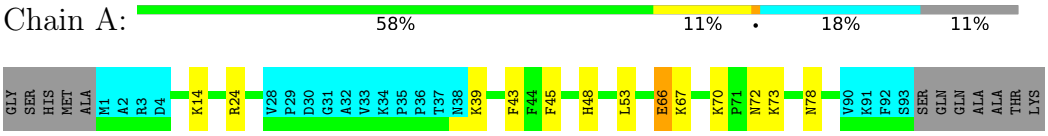
Chain A:



4.2.4 Score per residue for model 4

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

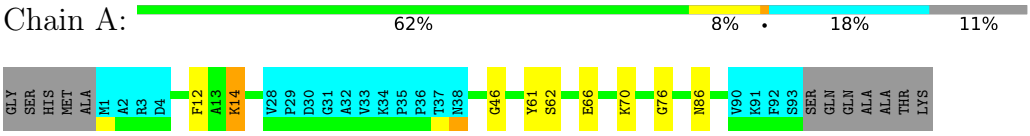
Chain A:



4.2.5 Score per residue for model 5

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

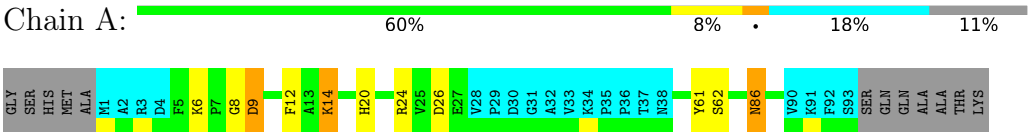
Chain A:



4.2.6 Score per residue for model 6

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

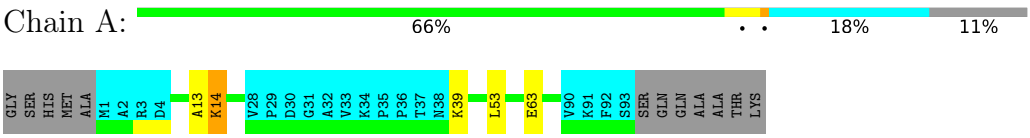
Chain A:



4.2.7 Score per residue for model 7

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

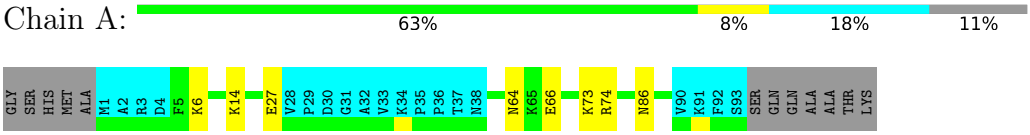
Chain A:



4.2.8 Score per residue for model 8

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

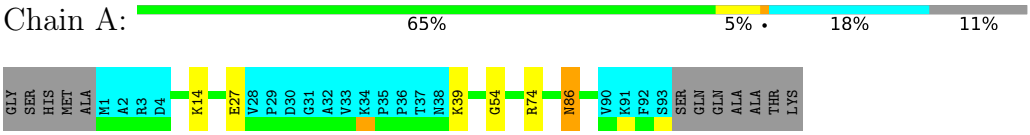
Chain A:



4.2.9 Score per residue for model 9

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

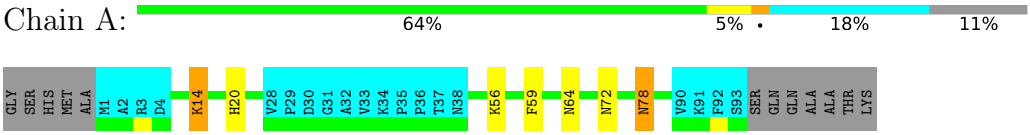
Chain A:



4.2.10 Score per residue for model 10

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

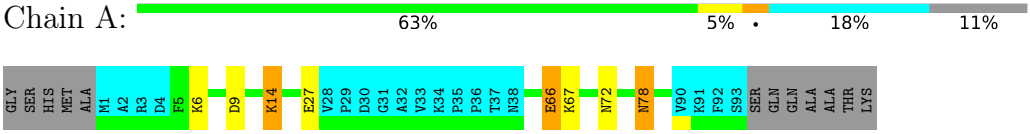
Chain A:



4.2.11 Score per residue for model 11 (medoid)

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

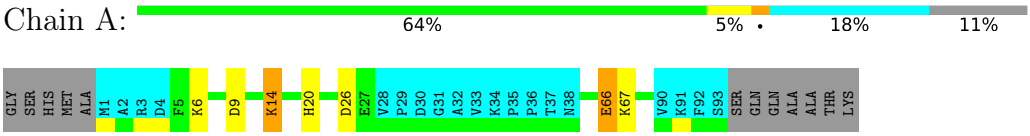
Chain A:



4.2.12 Score per residue for model 12

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

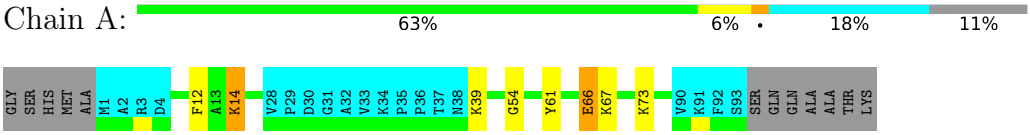
Chain A:



4.2.13 Score per residue for model 13

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

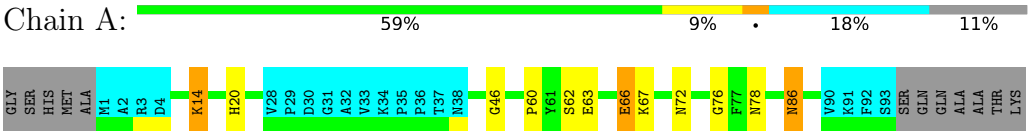
Chain A:



4.2.14 Score per residue for model 14

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

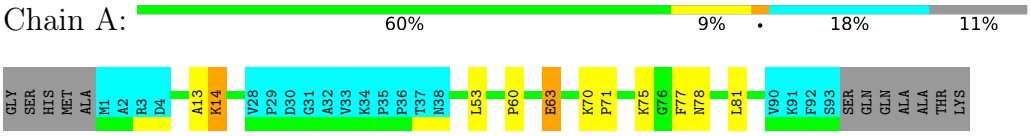
Chain A:



4.2.15 Score per residue for model 15

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

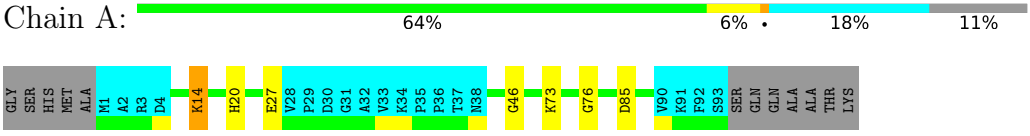
Chain A:



4.2.16 Score per residue for model 16

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

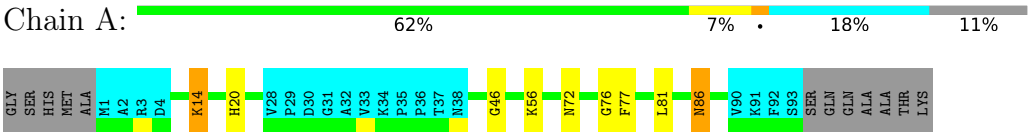
Chain A:



4.2.17 Score per residue for model 17

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

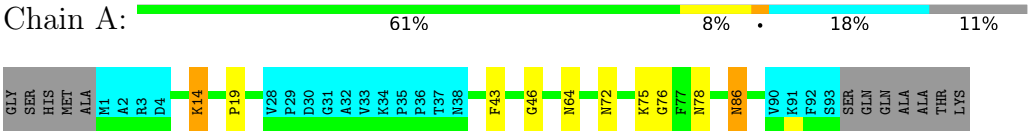
Chain A:



4.2.18 Score per residue for model 18

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

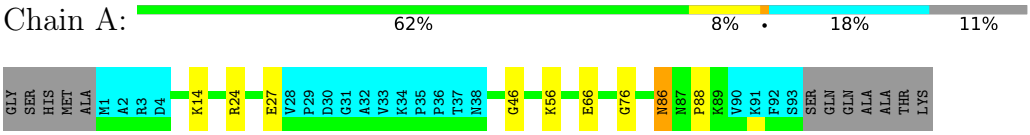
Chain A:



4.2.19 Score per residue for model 19

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

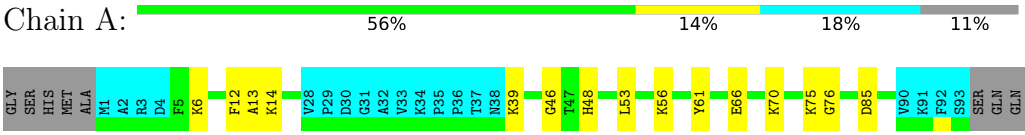
Chain A:



4.2.20 Score per residue for model 20

• Molecule 1: PC4 AND SFRS1-INTERACTING PROTEIN

Chain A:



5 Refinement protocol and experimental data overview

The models were refined using the following method: *CYANA AND WATER-REFINEMENT IN CNS*.

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

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

Software name	Classification	Version
CNS	refinement	
Sparky	structure solution	
CYANA	structure solution	
CNS	structure solution	

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	1155
Number of shifts mapped to atoms	1155
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	90%

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	0.83±0.03	0±0/642 (0.0± 0.0%)	0.65±0.03	0±0/866 (0.0± 0.0%)
All	All	0.83	0/12840 (0.0%)	0.65	1/17320 (0.0%)

There are no bond-length outliers.

All unique angle outliers are listed below.

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models	
								Worst	Total
1	A	63	GLU	CB-CA-C	-5.17	100.07	110.40	7	1

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	617	602	601	5±1
All	All	12340	12040	12020	92

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 4.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:66:GLU:OE1	1:A:67:LYS:HG3	0.61	1.95	3	6

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:14:LYS:HD2	1:A:14:LYS:C	0.55	2.22	11	16
1:A:73:LYS:N	1:A:73:LYS:HD2	0.53	2.18	1	4
1:A:14:LYS:HB2	1:A:20:HIS:CD2	0.53	2.39	6	7
1:A:6:LYS:HG2	1:A:9:ASP:OD2	0.52	2.04	12	2
1:A:12:PHE:CE2	1:A:61:TYR:HA	0.50	2.42	6	5
1:A:24:ARG:HD3	1:A:88:PRO:O	0.49	2.07	19	1
1:A:39:LYS:HE3	1:A:53:LEU:HA	0.48	1.84	7	3
1:A:8:GLY:HA2	1:A:24:ARG:NH1	0.47	2.25	6	1
1:A:66:GLU:H	1:A:66:GLU:CD	0.47	2.13	8	3
1:A:86:ASN:N	1:A:86:ASN:HD22	0.47	2.08	9	5
1:A:56:LYS:NZ	1:A:56:LYS:HB2	0.46	2.26	20	1
1:A:43:PHE:CE1	1:A:48:HIS:HA	0.45	2.46	1	2
1:A:46:GLY:HA3	1:A:76:GLY:O	0.45	2.10	5	9
1:A:72:ASN:HB2	1:A:77:PHE:CD1	0.45	2.46	1	2
1:A:5:PHE:CE2	1:A:58:ILE:HG13	0.45	2.46	2	1
1:A:39:LYS:HE2	1:A:54:GLY:N	0.45	2.26	13	1
1:A:13:ALA:HB1	1:A:53:LEU:HD12	0.45	1.89	15	4
1:A:24:ARG:HB3	1:A:45:PHE:CE2	0.44	2.47	4	1
1:A:60:PRO:HB2	1:A:63:GLU:OE1	0.44	2.12	14	1
1:A:77:PHE:O	1:A:81:LEU:HG	0.44	2.12	15	2
1:A:78:ASN:HD22	1:A:78:ASN:N	0.44	2.10	11	2
1:A:14:LYS:C	1:A:14:LYS:HD3	0.44	2.33	4	4
1:A:60:PRO:HG2	1:A:63:GLU:OE2	0.43	2.13	15	1
1:A:59:PHE:HB3	1:A:64:ASN:ND2	0.42	2.29	10	1
1:A:6:LYS:O	1:A:9:ASP:HB2	0.42	2.14	6	1
1:A:6:LYS:HD2	1:A:6:LYS:N	0.42	2.30	8	1
1:A:87:ASN:OD1	1:A:89:LYS:HG2	0.42	2.14	3	1
1:A:66:GLU:HA	1:A:70:LYS:NZ	0.41	2.30	5	1
1:A:86:ASN:HD22	1:A:86:ASN:N	0.40	2.15	14	1
1:A:71:PRO:HB3	1:A:78:ASN:OD1	0.40	2.16	15	1
1:A:39:LYS:HD3	1:A:54:GLY:N	0.40	2.31	9	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	74/105 (70%)	72±1 (97±1%)	2±1 (3±1%)	0±0 (0±0%)	100	100
All	All	1480/2100 (70%)	1441 (97%)	39 (3%)	0 (0%)	100	100

There are no Ramachandran outliers.

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	64/88 (73%)	60±1 (94±2%)	4±1 (6±2%)	22	71
All	All	1280/1760 (73%)	1202 (94%)	78 (6%)	22	71

All 20 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	14	LYS	15
1	A	86	ASN	10
1	A	27	GLU	6
1	A	66	GLU	6
1	A	72	ASN	5
1	A	78	ASN	5
1	A	62	SER	4
1	A	56	LYS	4
1	A	64	ASN	3
1	A	6	LYS	3
1	A	70	LYS	3
1	A	75	LYS	3
1	A	26	ASP	2
1	A	74	ARG	2
1	A	85	ASP	2
1	A	67	LYS	1
1	A	9	ASP	1
1	A	73	LYS	1
1	A	63	GLU	1
1	A	19	PRO	1

6.3.3 RNA

There are no RNA molecules in this entry.

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

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

6.5 Carbohydrates

There are no 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

The completeness of assignment taking into account all chemical shift lists is 90% for the well-defined parts and 89% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *PWWP-1-93-3L.str.csh*

7.1.1 Bookkeeping

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	1155
Number of shifts mapped to atoms	1155
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	4

7.1.2 Chemical shift referencing

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction ± precision, *ppm*	Suggested action
$^{13}C_{\alpha}$	93	0.02 ± 0.13	None needed (< 0.5 ppm)
$^{13}C_{\beta}$	85	-0.05 ± 0.14	None needed (< 0.5 ppm)
$^{13}C'$	82	0.07 ± 0.16	None needed (< 0.5 ppm)
^{15}N	82	-0.37 ± 0.53	None needed (< 0.5 ppm)

7.1.3 Completeness of resonance assignments

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 90%, i.e. 941 atoms were assigned a chemical shift out of a possible 1047. 0 out of 5 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	353/361 (98%)	147/147 (100%)	140/148 (95%)	66/66 (100%)
Sidechain	482/540 (89%)	323/345 (94%)	154/173 (89%)	5/22 (23%)

Continued on next page...

Continued from previous page...

	Total	^{1}H	^{13}C	^{15}N
Aromatic	106/146 (73%)	66/72 (92%)	38/69 (55%)	2/5 (40%)
Overall	941/1047 (90%)	536/564 (95%)	332/390 (85%)	73/93 (78%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 89%, i.e. 1154 atoms were assigned a chemical shift out of a possible 1293. 0 out of 8 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	439/451 (97%)	182/183 (99%)	175/186 (94%)	82/82 (100%)
Sidechain	606/686 (88%)	406/440 (92%)	194/218 (89%)	6/28 (21%)
Aromatic	109/156 (70%)	68/77 (88%)	39/74 (53%)	2/5 (40%)
Overall	1154/1293 (89%)	656/700 (94%)	408/478 (85%)	90/115 (78%)

7.1.4 Statistically unusual chemical shifts (i)

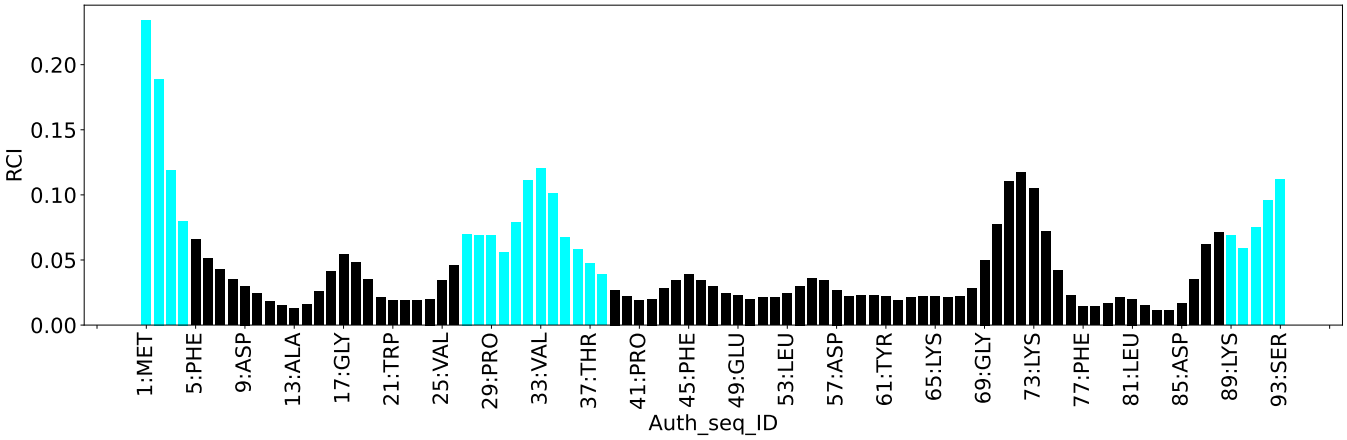
The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

List Id	Chain	Res	Type	Atom	Shift, *ppm*	Expected range, *ppm*	Z-score
1	A	14	LYS	HD3	0.03	0.54 – 2.65	-7.5
1	A	86	ASN	HB3	0.43	1.12 – 4.38	-7.1
1	A	68	TYR	HB3	0.54	0.93 – 4.76	-6.0
1	A	72	ASN	HD22	4.50	4.69 – 9.61	-5.4

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:


RCI
0.20
0.15
0.10
0.05
0.00
1:MET
5:PHE
9:ASP
13:ALA
17:GLY
21:TRP
25:VAL
29:PRO
33:VAL
37:THR
41:PRO
45:PHE
49:GLU
53:LEU
57:ASP
61:TYR
65:LYS
69:GLY
73:LYS
77:PHE
81:LEU
85:ASP
89:LYS
93:SER
Auth_seq_ID

8 NMR restraints analysis

8.1 Conformationally restricting restraints

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	1988
Intra-residue (|i-j|=0)	451
Sequential (|i-j|=1)	612
Medium range (|i-j|>1 and |i-j|<5)	316
Long range (|i-j|≥5)	609
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	0
Total dihedral-angle restraints	0
Number of unmapped restraints	7
Number of restraints per residue	18.9
Number of long range restraints per residue[1]	5.8

[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

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

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)	10.7	0.2
0.2-0.5 (Medium)	0.8	0.38
>0.5 (Large)	None	None

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)

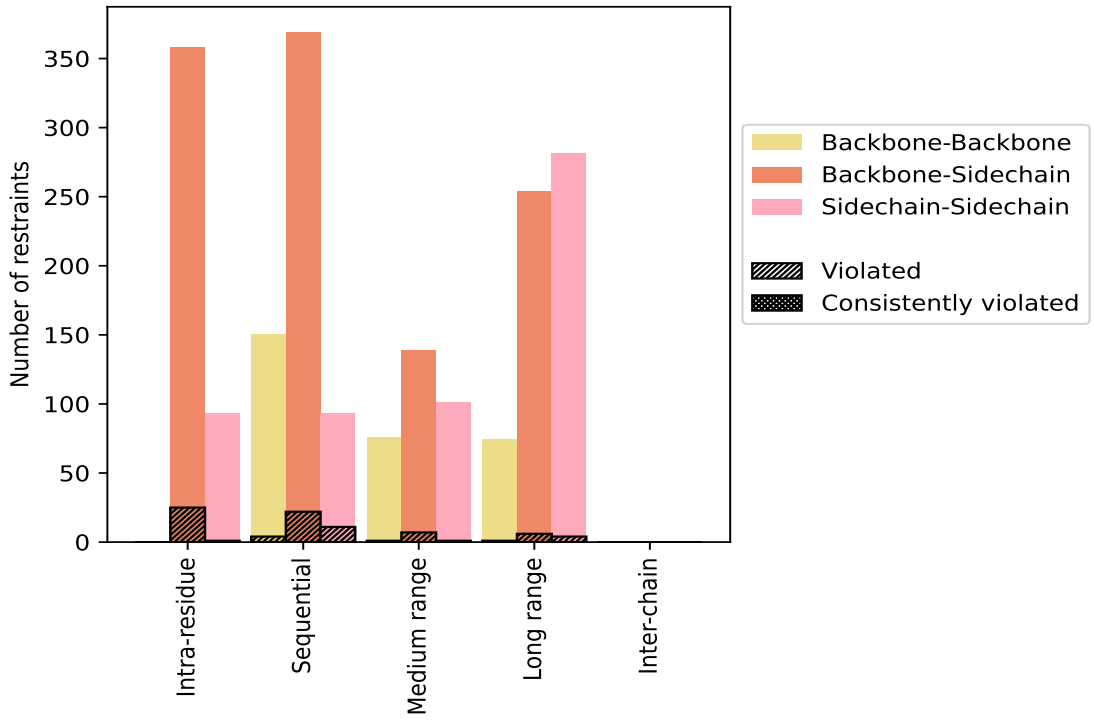
9.1 Summary of distance violations (i)

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)	451	22.7	26	5.8	1.3	0	0.0	0.0
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	358	18.0	25	7.0	1.3	0	0.0	0.0
Sidechain-Sidechain	93	4.7	1	1.1	0.1	0	0.0	0.0
Sequential (|i-j|=1)	612	30.8	37	6.0	1.9	0	0.0	0.0
Backbone-Backbone	150	7.5	4	2.7	0.2	0	0.0	0.0
Backbone-Sidechain	369	18.6	22	6.0	1.1	0	0.0	0.0
Sidechain-Sidechain	93	4.7	11	11.8	0.6	0	0.0	0.0
Medium range (|i-j|>1 & |i-j|<5)	316	15.9	9	2.8	0.5	0	0.0	0.0
Backbone-Backbone	76	3.8	1	1.3	0.1	0	0.0	0.0
Backbone-Sidechain	139	7.0	7	5.0	0.4	0	0.0	0.0
Sidechain-Sidechain	101	5.1	1	1.0	0.1	0	0.0	0.0
Long range (|i-j|≥5)	609	30.6	11	1.8	0.6	0	0.0	0.0
Backbone-Backbone	74	3.7	1	1.4	0.1	0	0.0	0.0
Backbone-Sidechain	254	12.8	6	2.4	0.3	0	0.0	0.0
Sidechain-Sidechain	281	14.1	4	1.4	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	0	0.0	0	0.0	0.0	0	0.0	0.0
Total	1988	100.0	83	4.2	4.2	0	0.0	0.0
Backbone-Backbone	300	15.1	6	2.0	0.3	0	0.0	0.0
Backbone-Sidechain	1120	56.3	60	5.4	3.0	0	0.0	0.0
Sidechain-Sidechain	568	28.6	17	3.0	0.9	0	0.0	0.0

[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



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

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	3	3	1	4	0	11	0.13	0.19	0.02	0.13
2	3	6	0	5	0	14	0.12	0.15	0.02	0.11
3	1	6	3	2	0	12	0.15	0.23	0.04	0.14
4	5	4	3	1	0	13	0.15	0.24	0.04	0.14
5	1	4	0	3	0	8	0.14	0.19	0.03	0.15
6	1	5	2	3	0	11	0.13	0.18	0.02	0.12
7	1	6	0	5	0	12	0.14	0.22	0.03	0.13
8	3	3	1	1	0	8	0.16	0.24	0.05	0.15
9	4	3	1	2	0	10	0.14	0.18	0.03	0.13
10	1	2	1	2	0	6	0.15	0.21	0.03	0.15
11	4	3	3	3	0	13	0.15	0.2	0.03	0.14

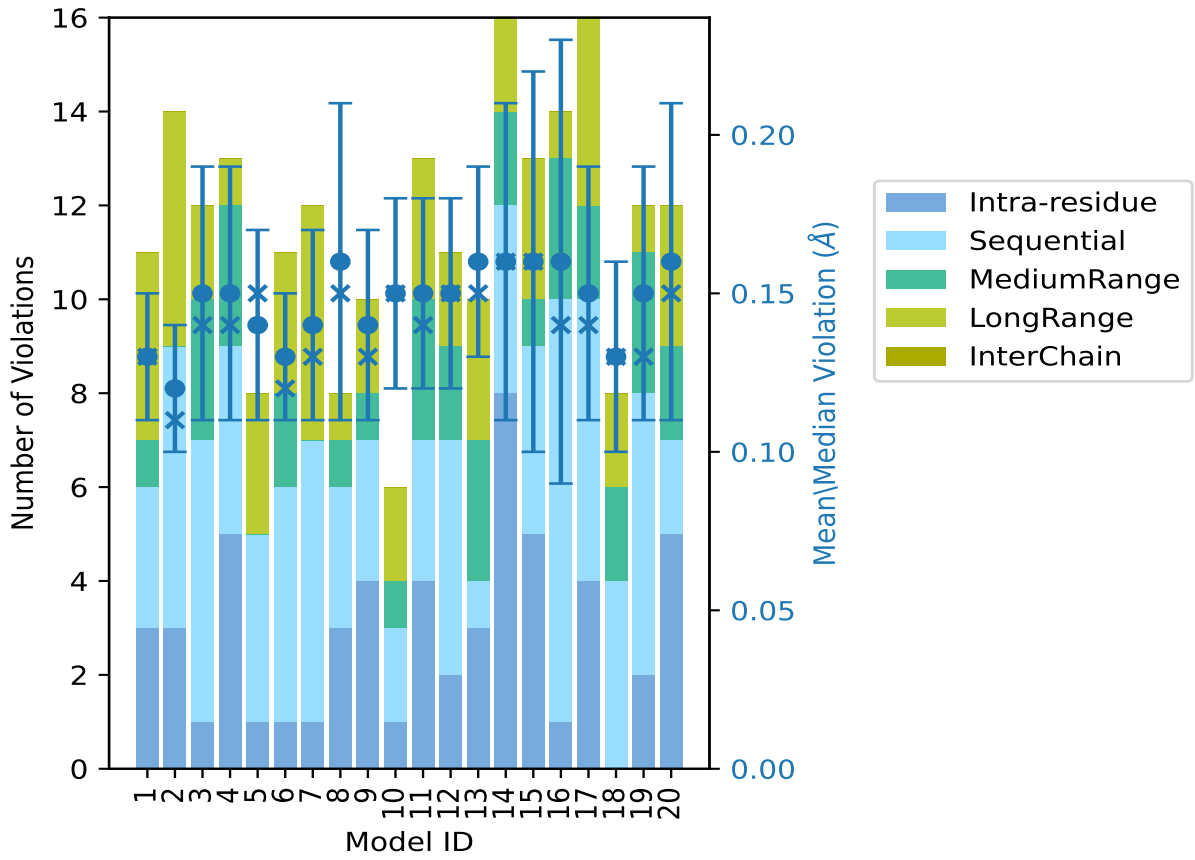
Continued on next page...

Continued from previous page...

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	2	5	2	2	0	11	0.15	0.19	0.03	0.15
13	3	1	3	3	0	10	0.16	0.21	0.03	0.15
14	8	4	2	2	0	16	0.16	0.3	0.05	0.16
15	5	4	1	3	0	13	0.16	0.3	0.06	0.16
16	1	9	3	1	0	14	0.16	0.38	0.07	0.14
17	4	6	2	4	0	16	0.15	0.22	0.04	0.14
18	0	4	2	2	0	8	0.13	0.19	0.03	0.13
19	2	6	3	1	0	12	0.15	0.26	0.04	0.13
20	5	2	2	3	0	12	0.16	0.26	0.05	0.15

[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



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

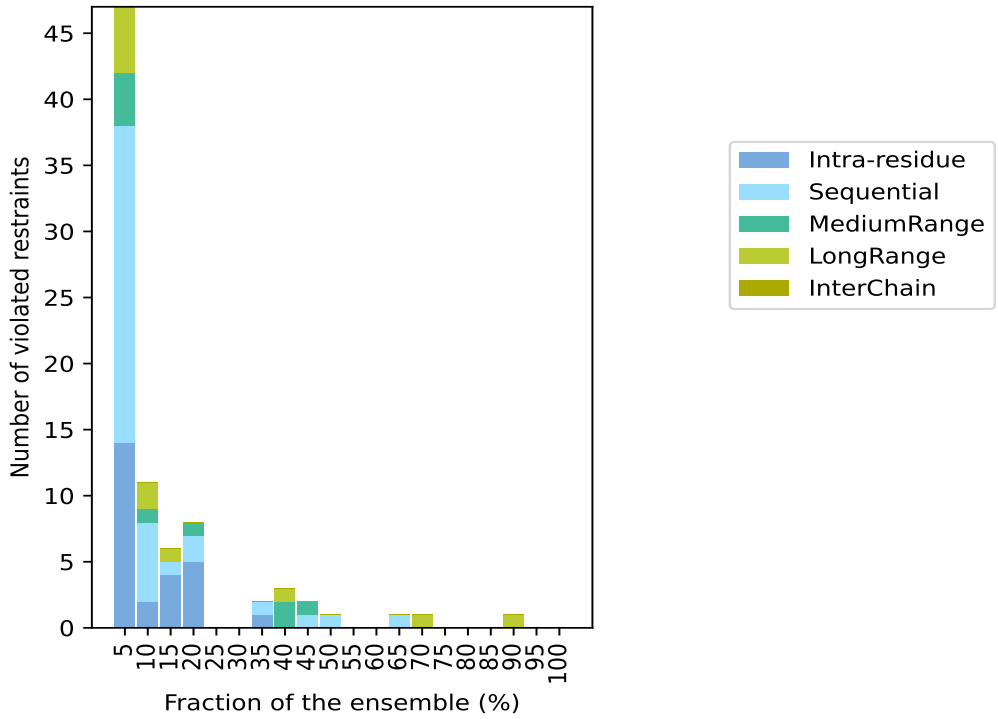
9.3 Distance violation statistics for the ensemble (i)

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, 1905(IR:425, SQ:575, MR:307, LR:598, 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]	%
14	24	4	5	0	47	1	5.0
2	6	1	2	0	11	2	10.0
4	1	0	1	0	6	3	15.0
5	2	1	0	0	8	4	20.0
0	0	0	0	0	0	5	25.0
0	0	0	0	0	0	6	30.0
1	1	0	0	0	2	7	35.0
0	0	2	1	0	3	8	40.0
0	1	1	0	0	2	9	45.0
0	1	0	0	0	1	10	50.0
0	0	0	0	0	0	11	55.0
0	0	0	0	0	0	12	60.0
0	1	0	0	0	1	13	65.0
0	0	0	1	0	1	14	70.0
0	0	0	0	0	0	15	75.0
0	0	0	0	0	0	16	80.0
0	0	0	0	0	0	17	85.0
0	0	0	1	0	1	18	90.0
0	0	0	0	0	0	19	95.0
0	0	0	0	0	0	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

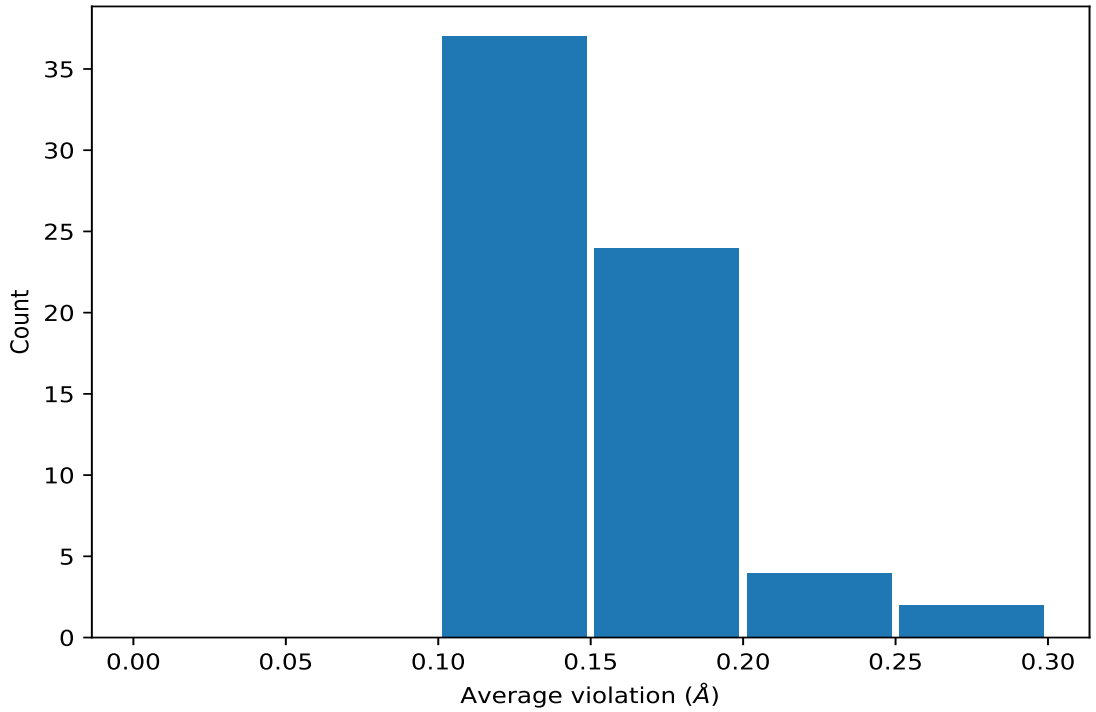
9.3.1 Bar graph : Distance violation statistics for the ensemble



9.4 Most violated distance restraints in the ensemble

9.4.1 Histogram : Distribution of mean distance violations

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

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)
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	18	0.16	0.03	0.16
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	18	0.16	0.03	0.16
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	18	0.16	0.03	0.16
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	14	0.14	0.02	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	14	0.14	0.02	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	14	0.14	0.02	0.14
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	13	0.15	0.01	0.15
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	13	0.15	0.01	0.15
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	13	0.15	0.01	0.15
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	10	0.16	0.04	0.16
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	10	0.16	0.04	0.16
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	9	0.14	0.02	0.13
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	9	0.11	0.0	0.11
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	8	0.17	0.03	0.18
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	8	0.14	0.02	0.14
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	8	0.13	0.02	0.12

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	8	0.13	0.02	0.12
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	8	0.13	0.02	0.12
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	7	0.19	0.0	0.19
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	7	0.13	0.02	0.13
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	7	0.13	0.02	0.13
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD2	4	0.21	0.04	0.22
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD3	4	0.21	0.04	0.22
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE2	4	0.17	0.0	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE3	4	0.17	0.0	0.17
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB2	4	0.17	0.08	0.13
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB3	4	0.17	0.08	0.13
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG2	4	0.16	0.03	0.17
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG3	4	0.16	0.03	0.17
(1,349)	1:A:60:PRO:HA	1:A:64:ASN:H	4	0.15	0.02	0.15
(1,1472)	1:A:39:LYS:HE2	1:A:40:LEU:H	4	0.13	0.03	0.11
(1,1472)	1:A:39:LYS:HE3	1:A:40:LEU:H	4	0.13	0.03	0.11
(1,1091)	1:A:66:GLU:HG2	1:A:67:LYS:HG2	4	0.12	0.01	0.12
(1,1091)	1:A:66:GLU:HG3	1:A:67:LYS:HG2	4	0.12	0.01	0.12
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD21	4	0.11	0.0	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD22	4	0.11	0.0	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD23	4	0.11	0.0	0.11
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE2	3	0.25	0.01	0.25
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE3	3	0.25	0.01	0.25
(1,26)	1:A:4:ASP:H	1:A:4:ASP:HB2	3	0.16	0.0	0.16
(1,152)	1:A:14:LYS:HA	1:A:14:LYS:HD3	3	0.16	0.01	0.16
(1,988)	1:A:56:LYS:H	1:A:56:LYS:HG3	3	0.12	0.01	0.12
(1,706)	1:A:86:ASN:HD22	1:A:87:ASN:H	3	0.11	0.0	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG21	3	0.11	0.0	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG22	3	0.11	0.0	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG23	3	0.11	0.0	0.11
(1,1451)	1:A:4:ASP:HA	1:A:5:PHE:H	2	0.24	0.14	0.24
(1,1617)	1:A:3:ARG:HA	1:A:4:ASP:H	2	0.2	0.02	0.2
(1,1633)	1:A:3:ARG:HB2	1:A:4:ASP:H	2	0.18	0.06	0.18
(1,1633)	1:A:3:ARG:HB3	1:A:4:ASP:H	2	0.18	0.06	0.18
(1,644)	1:A:74:ARG:H	1:A:74:ARG:HG2	2	0.16	0.02	0.16
(1,1178)	1:A:3:ARG:HG2	1:A:4:ASP:HB2	2	0.16	0.05	0.16
(1,1178)	1:A:3:ARG:HG3	1:A:4:ASP:HB2	2	0.16	0.05	0.16
(1,1596)	1:A:71:PRO:HB2	1:A:78:ASN:HD21	2	0.12	0.02	0.12
(1,1596)	1:A:71:PRO:HB3	1:A:78:ASN:HD21	2	0.12	0.02	0.12
(1,1696)	1:A:16:LYS:HA	1:A:16:LYS:HD2	2	0.12	0.0	0.12
(1,1696)	1:A:16:LYS:HA	1:A:16:LYS:HD3	2	0.12	0.0	0.12
(1,1745)	1:A:29:PRO:HB3	1:A:32:ALA:H	2	0.12	0.01	0.12

Continued on next page...

Continued from previous page...

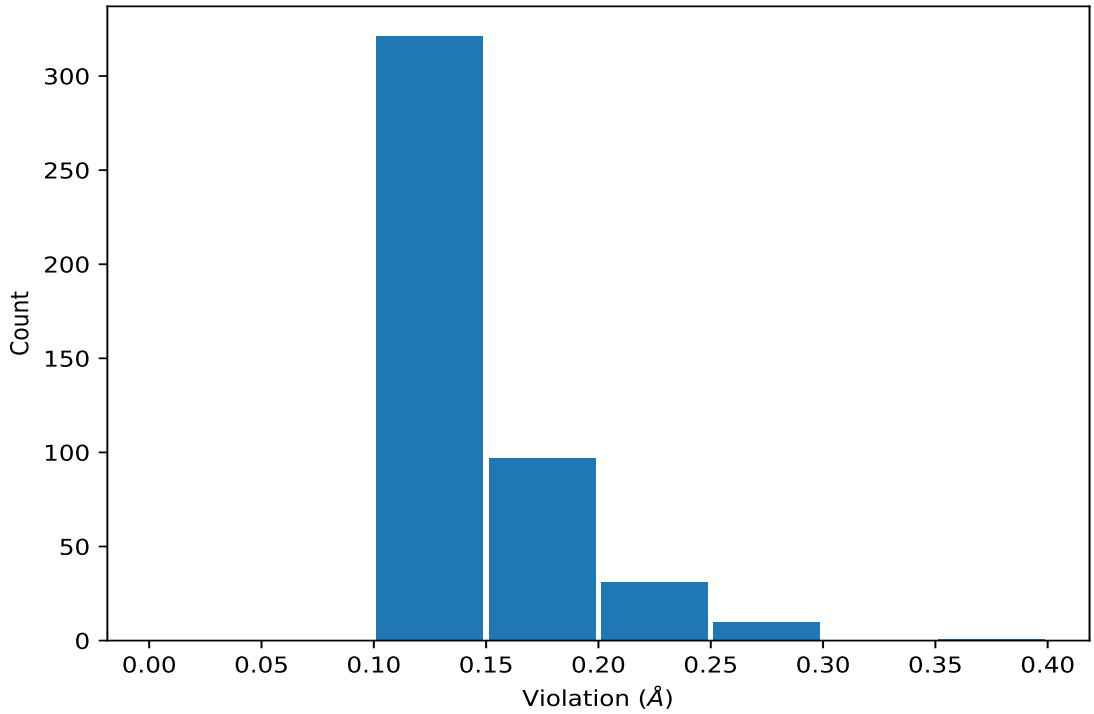
Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(1,645)	1:A:66:GLU:HG2	1:A:67:LYS:H	2	0.12	0.0	0.12
(1,645)	1:A:66:GLU:HG3	1:A:67:LYS:H	2	0.12	0.0	0.12
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB1	2	0.12	0.0	0.12
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB2	2	0.12	0.0	0.12
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB3	2	0.12	0.0	0.12
(1,613)	1:A:63:GLU:HG2	1:A:64:ASN:HD21	2	0.11	0.0	0.11
(1,613)	1:A:63:GLU:HG2	1:A:64:ASN:HD22	2	0.11	0.0	0.11
(1,613)	1:A:63:GLU:HG3	1:A:64:ASN:HD21	2	0.11	0.0	0.11
(1,613)	1:A:63:GLU:HG3	1:A:64:ASN:HD22	2	0.11	0.0	0.11

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

9.5 All violated distance restraints

9.5.1 Histogram : Distribution of distance violations

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

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)
(1,1451)	1:A:4:ASP:HA	1:A:5:PHE:H	16	0.38
(1,199)	1:A:63:GLU:HA	1:A:63:GLU:HG3	14	0.3
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB2	15	0.3
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB3	15	0.3
(1,193)	1:A:63:GLU:HA	1:A:63:GLU:HG2	15	0.28
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE2	19	0.26
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE3	19	0.26
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD2	20	0.26
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD3	20	0.26
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE2	20	0.25
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE3	20	0.25
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE2	4	0.24
(1,47)	1:A:67:LYS:HB2	1:A:67:LYS:HE3	4	0.24
(1,1875)	1:A:90:VAL:HA	1:A:91:LYS:HG2	8	0.24
(1,1875)	1:A:90:VAL:HA	1:A:91:LYS:HG3	8	0.24
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	8	0.24
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	8	0.24
(1,624)	1:A:72:ASN:HB3	1:A:74:ARG:H	3	0.23
(1,1633)	1:A:3:ARG:HB2	1:A:4:ASP:H	3	0.23
(1,1633)	1:A:3:ARG:HB3	1:A:4:ASP:H	3	0.23
(1,1617)	1:A:3:ARG:HA	1:A:4:ASP:H	7	0.22
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD2	17	0.22
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD3	17	0.22
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	13	0.21
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	4	0.21
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	4	0.21
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	4	0.21
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD2	10	0.21
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD3	10	0.21
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG2	13	0.2
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG3	13	0.2
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	11	0.2
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	17	0.2
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	17	0.2
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	11	0.2
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	11	0.2
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	11	0.2
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	20	0.2
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	20	0.2
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	20	0.2
(1,1178)	1:A:3:ARG:HG2	1:A:4:ASP:HB2	17	0.2

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1178)	1:A:3:ARG:HG3	1:A:4:ASP:HB2	17	0.2
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	1	0.19
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	3	0.19
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	4	0.19
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	12	0.19
(1,1617)	1:A:3:ARG:HA	1:A:4:ASP:H	14	0.19
(1,1609)	1:A:4:ASP:H	1:A:5:PHE:HA	16	0.19
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	5	0.19
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	5	0.19
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	18	0.19
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	18	0.19
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	18	0.19
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	19	0.19
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	19	0.19
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	19	0.19
(1,1472)	1:A:39:LYS:HE2	1:A:40:LEU:H	17	0.19
(1,1472)	1:A:39:LYS:HE3	1:A:40:LEU:H	17	0.19
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	14	0.19
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG2	14	0.18
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG3	14	0.18
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	12	0.18
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	14	0.18
(1,644)	1:A:74:ARG:H	1:A:74:ARG:HG2	8	0.18
(1,321)	1:A:6:LYS:HA	1:A:6:LYS:HD2	9	0.18
(1,321)	1:A:6:LYS:HA	1:A:6:LYS:HD3	9	0.18
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	11	0.18
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	13	0.18
(1,1931)	1:A:66:GLU:HA	1:A:66:GLU:HG2	14	0.18
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	6	0.18
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	6	0.18
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	6	0.18
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	7	0.17
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	15	0.17
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	3	0.17
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	5	0.17
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	5	0.17
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	5	0.17
(1,606)	1:A:63:GLU:HG2	1:A:64:ASN:H	19	0.17
(1,606)	1:A:63:GLU:HG3	1:A:64:ASN:H	19	0.17
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	15	0.17
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	15	0.17
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	15	0.17

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	19	0.17
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	19	0.17
(1,26)	1:A:4:ASP:H	1:A:4:ASP:HB2	16	0.17
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	9	0.17
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	9	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	9	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	9	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	9	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	14	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	14	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	14	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	16	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	16	0.17
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	16	0.17
(1,152)	1:A:14:LYS:HA	1:A:14:LYS:HD3	15	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE2	11	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE3	11	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE2	12	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE3	12	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE2	13	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE3	13	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE2	14	0.17
(1,1441)	1:A:67:LYS:HA	1:A:67:LYS:HE3	14	0.17
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG2	20	0.16
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG3	20	0.16
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	7	0.16
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	7	0.16
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	7	0.16
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	20	0.16
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	20	0.16
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	20	0.16
(1,592)	1:A:63:GLU:HB2	1:A:64:ASN:HD21	15	0.16
(1,592)	1:A:63:GLU:HB2	1:A:64:ASN:HD22	15	0.16
(1,592)	1:A:63:GLU:HB3	1:A:64:ASN:HD21	15	0.16
(1,592)	1:A:63:GLU:HB3	1:A:64:ASN:HD22	15	0.16
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	13	0.16
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	13	0.16
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	13	0.16
(1,349)	1:A:60:PRO:HA	1:A:64:ASN:H	4	0.16
(1,349)	1:A:60:PRO:HA	1:A:64:ASN:H	12	0.16
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	10	0.16
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	10	0.16

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,26)	1:A:4:ASP:H	1:A:4:ASP:HB2	14	0.16
(1,26)	1:A:4:ASP:H	1:A:4:ASP:HB2	15	0.16
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	1	0.16
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	1	0.16
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	10	0.16
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	10	0.16
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	10	0.16
(1,152)	1:A:14:LYS:HA	1:A:14:LYS:HD3	5	0.16
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	7	0.16
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	7	0.16
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	7	0.16
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	19	0.16
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	19	0.16
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	19	0.16
(1,961)	1:A:74:ARG:H	1:A:74:ARG:HD3	14	0.15
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	8	0.15
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	4	0.15
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	20	0.15
(1,644)	1:A:74:ARG:H	1:A:74:ARG:HG2	9	0.15
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	11	0.15
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	11	0.15
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	11	0.15
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	17	0.15
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	17	0.15
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	17	0.15
(1,338)	1:A:6:LYS:H	1:A:6:LYS:HG2	2	0.15
(1,338)	1:A:6:LYS:H	1:A:6:LYS:HG3	2	0.15
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	17	0.15
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	17	0.15
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	2	0.15
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	2	0.15
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	15	0.15
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	15	0.15
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	7	0.15
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	7	0.15
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	7	0.15
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	12	0.15
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	12	0.15
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	12	0.15
(1,152)	1:A:14:LYS:HA	1:A:14:LYS:HD3	8	0.15
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	5	0.15
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	5	0.15

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	5	0.15
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	6	0.15
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	6	0.15
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	6	0.15
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	11	0.15
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	11	0.15
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	11	0.15
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	12	0.15
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	12	0.15
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	12	0.15
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	18	0.15
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	18	0.15
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	18	0.15
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	20	0.15
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	20	0.15
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	20	0.15
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	16	0.15
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	1	0.14
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	5	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	6	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	6	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	6	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	10	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	10	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	10	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	12	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	12	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	12	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	14	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	14	0.14
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	14	0.14
(1,354)	1:A:69:GLY:H	1:A:70:LYS:HG2	4	0.14
(1,354)	1:A:69:GLY:H	1:A:70:LYS:HG3	4	0.14
(1,349)	1:A:60:PRO:HA	1:A:64:ASN:H	11	0.14
(1,226)	1:A:66:GLU:HG3	1:A:67:LYS:H	16	0.14
(1,1792)	1:A:33:VAL:H	1:A:33:VAL:HB	17	0.14
(1,1599)	1:A:49:GLU:HG2	1:A:50:THR:H	2	0.14
(1,1599)	1:A:49:GLU:HG3	1:A:50:THR:H	2	0.14
(1,1596)	1:A:71:PRO:HB2	1:A:78:ASN:HD21	17	0.14
(1,1596)	1:A:71:PRO:HB3	1:A:78:ASN:HD21	17	0.14
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	12	0.14
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	12	0.14

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	2	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	2	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	2	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	3	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	3	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	3	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	13	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	13	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	13	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	17	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	17	0.14
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	17	0.14
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	3	0.14
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	3	0.14
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	3	0.14
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	4	0.14
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	4	0.14
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	4	0.14
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	13	0.14
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	13	0.14
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	13	0.14
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	16	0.14
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	16	0.14
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	16	0.14
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	13	0.14
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	18	0.14
(1,1253)	1:A:39:LYS:H	1:A:39:LYS:HG3	1	0.14
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD2	11	0.14
(1,1012)	1:A:34:LYS:H	1:A:34:LYS:HD3	11	0.14
(1,988)	1:A:56:LYS:H	1:A:56:LYS:HG3	7	0.13
(1,92)	1:A:16:LYS:HG2	1:A:17:GLY:H	16	0.13
(1,844)	1:A:64:ASN:H	1:A:67:LYS:HG3	19	0.13
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	18	0.13
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	18	0.13
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	18	0.13
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	3	0.13
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	3	0.13
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	3	0.13
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	16	0.13
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	16	0.13
(1,190)	1:A:25:VAL:HA	1:A:26:ASP:HB3	9	0.13
(1,1745)	1:A:29:PRO:HB3	1:A:32:ALA:H	19	0.13

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,170)	1:A:37:THR:HG21	1:A:38:ASN:HB2	18	0.13
(1,170)	1:A:37:THR:HG21	1:A:38:ASN:HB3	18	0.13
(1,170)	1:A:37:THR:HG22	1:A:38:ASN:HB2	18	0.13
(1,170)	1:A:37:THR:HG22	1:A:38:ASN:HB3	18	0.13
(1,170)	1:A:37:THR:HG23	1:A:38:ASN:HB2	18	0.13
(1,170)	1:A:37:THR:HG23	1:A:38:ASN:HB3	18	0.13
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	7	0.13
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	7	0.13
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	1	0.13
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	1	0.13
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	1	0.13
(1,1503)	1:A:24:ARG:HB2	1:A:45:PHE:HD1	9	0.13
(1,1503)	1:A:24:ARG:HB2	1:A:45:PHE:HD2	9	0.13
(1,148)	1:A:28:VAL:HG21	1:A:29:PRO:HA	1	0.13
(1,148)	1:A:28:VAL:HG22	1:A:29:PRO:HA	1	0.13
(1,148)	1:A:28:VAL:HG23	1:A:29:PRO:HA	1	0.13
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	10	0.13
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	11	0.13
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	19	0.13
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB2	4	0.13
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB3	4	0.13
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB2	17	0.13
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB3	17	0.13
(1,1091)	1:A:66:GLU:HG2	1:A:67:LYS:HG2	7	0.13
(1,1091)	1:A:66:GLU:HG3	1:A:67:LYS:HG2	7	0.13
(1,1091)	1:A:66:GLU:HG2	1:A:67:LYS:HG2	16	0.13
(1,1091)	1:A:66:GLU:HG3	1:A:67:LYS:HG2	16	0.13
(1,988)	1:A:56:LYS:H	1:A:56:LYS:HG3	9	0.12
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	2	0.12
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	11	0.12
(1,899)	1:A:14:LYS:HD3	1:A:20:HIS:HA	13	0.12
(1,868)	1:A:67:LYS:HG2	1:A:68:TYR:H	3	0.12
(1,706)	1:A:86:ASN:HD22	1:A:87:ASN:H	6	0.12
(1,684)	1:A:75:LYS:HA	1:A:75:LYS:HD2	15	0.12
(1,684)	1:A:75:LYS:HA	1:A:75:LYS:HD3	15	0.12
(1,645)	1:A:66:GLU:HG2	1:A:67:LYS:H	6	0.12
(1,645)	1:A:66:GLU:HG3	1:A:67:LYS:H	6	0.12
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	2	0.12
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	2	0.12
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	2	0.12
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	15	0.12
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	15	0.12

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	15	0.12
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	8	0.12
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	8	0.12
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	8	0.12
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	17	0.12
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	17	0.12
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	17	0.12
(1,391)	1:A:64:ASN:H	1:A:65:LYS:HA	3	0.12
(1,349)	1:A:60:PRO:HA	1:A:64:ASN:H	20	0.12
(1,1696)	1:A:16:LYS:HA	1:A:16:LYS:HD2	6	0.12
(1,1696)	1:A:16:LYS:HA	1:A:16:LYS:HD3	6	0.12
(1,1696)	1:A:16:LYS:HA	1:A:16:LYS:HD2	11	0.12
(1,1696)	1:A:16:LYS:HA	1:A:16:LYS:HD3	11	0.12
(1,1633)	1:A:3:ARG:HB2	1:A:4:ASP:H	14	0.12
(1,1633)	1:A:3:ARG:HB3	1:A:4:ASP:H	14	0.12
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	4	0.12
(1,140)	1:A:63:GLU:H	1:A:63:GLU:HG2	19	0.12
(1,140)	1:A:63:GLU:H	1:A:63:GLU:HG3	19	0.12
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	7	0.12
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	11	0.12
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	16	0.12
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	19	0.12
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB1	1	0.12
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB2	1	0.12
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB3	1	0.12
(1,1091)	1:A:66:GLU:HG2	1:A:67:LYS:HG2	15	0.12
(1,1091)	1:A:66:GLU:HG3	1:A:67:LYS:HG2	15	0.12
(1,988)	1:A:56:LYS:H	1:A:56:LYS:HG3	4	0.11
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG2	4	0.11
(1,983)	1:A:27:GLU:H	1:A:27:GLU:HG3	4	0.11
(1,927)	1:A:34:LYS:HA	1:A:34:LYS:HD2	20	0.11
(1,927)	1:A:34:LYS:HA	1:A:34:LYS:HD3	20	0.11
(1,89)	1:A:72:ASN:HB2	1:A:73:LYS:HB2	2	0.11
(1,89)	1:A:72:ASN:HB3	1:A:73:LYS:HB2	2	0.11
(1,817)	1:A:84:ILE:HD11	1:A:88:PRO:HA	9	0.11
(1,817)	1:A:84:ILE:HD12	1:A:88:PRO:HA	9	0.11
(1,817)	1:A:84:ILE:HD13	1:A:88:PRO:HA	9	0.11
(1,735)	1:A:34:LYS:H	1:A:34:LYS:HG2	2	0.11
(1,706)	1:A:86:ASN:HD22	1:A:87:ASN:H	7	0.11
(1,706)	1:A:86:ASN:HD22	1:A:87:ASN:H	9	0.11
(1,661)	1:A:32:ALA:HA	1:A:33:VAL:HG11	2	0.11
(1,661)	1:A:32:ALA:HA	1:A:33:VAL:HG12	2	0.11

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,661)	1:A:32:ALA:HA	1:A:33:VAL:HG13	2	0.11
(1,645)	1:A:66:GLU:HG2	1:A:67:LYS:H	17	0.11
(1,645)	1:A:66:GLU:HG3	1:A:67:LYS:H	17	0.11
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	1	0.11
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	1	0.11
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	1	0.11
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG21	13	0.11
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG22	13	0.11
(1,623)	1:A:23:ALA:H	1:A:42:ILE:HG23	13	0.11
(1,613)	1:A:63:GLU:HG2	1:A:64:ASN:HD21	4	0.11
(1,613)	1:A:63:GLU:HG2	1:A:64:ASN:HD22	4	0.11
(1,613)	1:A:63:GLU:HG3	1:A:64:ASN:HD21	4	0.11
(1,613)	1:A:63:GLU:HG3	1:A:64:ASN:HD22	4	0.11
(1,613)	1:A:63:GLU:HG2	1:A:64:ASN:HD21	12	0.11
(1,613)	1:A:63:GLU:HG2	1:A:64:ASN:HD22	12	0.11
(1,613)	1:A:63:GLU:HG3	1:A:64:ASN:HD21	12	0.11
(1,613)	1:A:63:GLU:HG3	1:A:64:ASN:HD22	12	0.11
(1,586)	1:A:63:GLU:HB2	1:A:64:ASN:H	14	0.11
(1,586)	1:A:63:GLU:HB3	1:A:64:ASN:H	14	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	6	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	6	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	6	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	16	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	16	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	16	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD11	18	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD12	18	0.11
(1,57)	1:A:56:LYS:HA	1:A:58:ILE:HD13	18	0.11
(1,558)	1:A:3:ARG:HA	1:A:3:ARG:HD2	14	0.11
(1,558)	1:A:3:ARG:HA	1:A:3:ARG:HD3	14	0.11
(1,466)	1:A:33:VAL:H	1:A:33:VAL:HG21	17	0.11
(1,466)	1:A:33:VAL:H	1:A:33:VAL:HG22	17	0.11
(1,466)	1:A:33:VAL:H	1:A:33:VAL:HG23	17	0.11
(1,395)	1:A:92:PHE:HB2	1:A:93:SER:H	19	0.11
(1,395)	1:A:92:PHE:HB3	1:A:93:SER:H	19	0.11
(1,369)	1:A:5:PHE:H	1:A:40:LEU:HD21	2	0.11
(1,369)	1:A:5:PHE:H	1:A:40:LEU:HD22	2	0.11
(1,369)	1:A:5:PHE:H	1:A:40:LEU:HD23	2	0.11
(1,337)	1:A:65:LYS:HG2	1:A:66:GLU:H	3	0.11
(1,337)	1:A:65:LYS:HG3	1:A:66:GLU:H	3	0.11
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	11	0.11
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	11	0.11

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	12	0.11
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	12	0.11
(1,336)	1:A:56:LYS:HB2	1:A:57:ASP:H	14	0.11
(1,336)	1:A:56:LYS:HB3	1:A:57:ASP:H	14	0.11
(1,220)	1:A:44:PHE:H	1:A:51:ALA:H	6	0.11
(1,217)	1:A:61:TYR:HD1	1:A:62:SER:H	8	0.11
(1,217)	1:A:61:TYR:HD2	1:A:62:SER:H	8	0.11
(1,1901)	1:A:67:LYS:HG2	1:A:68:TYR:HD1	5	0.11
(1,1901)	1:A:67:LYS:HG2	1:A:68:TYR:HD2	5	0.11
(1,1850)	1:A:4:ASP:HB2	1:A:5:PHE:HD1	15	0.11
(1,1850)	1:A:4:ASP:HB2	1:A:5:PHE:HD2	15	0.11
(1,1850)	1:A:4:ASP:HB3	1:A:5:PHE:HD1	15	0.11
(1,1850)	1:A:4:ASP:HB3	1:A:5:PHE:HD2	15	0.11
(1,1835)	1:A:3:ARG:HA	1:A:4:ASP:HB2	3	0.11
(1,1835)	1:A:3:ARG:HA	1:A:4:ASP:HB3	3	0.11
(1,1745)	1:A:29:PRO:HB3	1:A:32:ALA:H	6	0.11
(1,1596)	1:A:71:PRO:HB2	1:A:78:ASN:HD21	15	0.11
(1,1596)	1:A:71:PRO:HB3	1:A:78:ASN:HD21	15	0.11
(1,1588)	1:A:71:PRO:HB2	1:A:72:ASN:HD21	20	0.11
(1,1588)	1:A:71:PRO:HB3	1:A:72:ASN:HD21	20	0.11
(1,1565)	1:A:61:TYR:HE1	1:A:65:LYS:HD2	16	0.11
(1,1565)	1:A:61:TYR:HE1	1:A:65:LYS:HD3	16	0.11
(1,1565)	1:A:61:TYR:HE2	1:A:65:LYS:HD2	16	0.11
(1,1565)	1:A:61:TYR:HE2	1:A:65:LYS:HD3	16	0.11
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD21	5	0.11
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD22	5	0.11
(1,1561)	1:A:14:LYS:HD2	1:A:53:LEU:HD23	5	0.11
(1,1472)	1:A:39:LYS:HE2	1:A:40:LEU:H	6	0.11
(1,1472)	1:A:39:LYS:HE3	1:A:40:LEU:H	6	0.11
(1,1472)	1:A:39:LYS:HE2	1:A:40:LEU:H	12	0.11
(1,1472)	1:A:39:LYS:HE3	1:A:40:LEU:H	12	0.11
(1,1472)	1:A:39:LYS:HE2	1:A:40:LEU:H	18	0.11
(1,1472)	1:A:39:LYS:HE3	1:A:40:LEU:H	18	0.11
(1,1466)	1:A:72:ASN:HD21	1:A:74:ARG:H	17	0.11
(1,1451)	1:A:4:ASP:HA	1:A:5:PHE:H	2	0.11
(1,145)	1:A:63:GLU:HA	1:A:63:GLU:HG2	14	0.11
(1,145)	1:A:63:GLU:HA	1:A:63:GLU:HG3	14	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG21	2	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG22	2	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG23	2	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG21	3	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG22	3	0.11

Continued on next page...

Continued from previous page...

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG23	3	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG21	17	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG22	17	0.11
(1,1400)	1:A:5:PHE:HZ	1:A:58:ILE:HG23	17	0.11
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB2	1	0.11
(1,1341)	1:A:3:ARG:H	1:A:3:ARG:HB3	1	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD21	2	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD22	2	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD23	2	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD21	8	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD22	8	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD23	8	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD21	9	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD22	9	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD23	9	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD21	20	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD22	20	0.11
(1,1288)	1:A:81:LEU:H	1:A:81:LEU:HD23	20	0.11
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	1	0.11
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	2	0.11
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	6	0.11
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	10	0.11
(1,1261)	1:A:50:THR:HB	1:A:51:ALA:H	18	0.11
(1,1235)	1:A:39:LYS:HD2	1:A:52:PHE:HA	7	0.11
(1,1235)	1:A:39:LYS:HD3	1:A:52:PHE:HA	7	0.11
(1,1230)	1:A:9:ASP:HB2	1:A:10:LEU:HB2	17	0.11
(1,1230)	1:A:9:ASP:HB3	1:A:10:LEU:HB2	17	0.11
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB1	7	0.11
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB2	7	0.11
(1,1218)	1:A:43:PHE:H	1:A:51:ALA:HB3	7	0.11
(1,1204)	1:A:44:PHE:H	1:A:49:GLU:HB3	20	0.11
(1,1178)	1:A:3:ARG:HG2	1:A:4:ASP:HB2	19	0.11
(1,1178)	1:A:3:ARG:HG3	1:A:4:ASP:HB2	19	0.11
(1,1176)	1:A:52:PHE:HB2	1:A:53:LEU:HD21	16	0.11
(1,1176)	1:A:52:PHE:HB2	1:A:53:LEU:HD22	16	0.11
(1,1176)	1:A:52:PHE:HB2	1:A:53:LEU:HD23	16	0.11
(1,1149)	1:A:30:ASP:HB2	1:A:31:GLY:H	4	0.11
(1,1149)	1:A:30:ASP:HB3	1:A:31:GLY:H	4	0.11
(1,1095)	1:A:83:GLU:HG2	1:A:87:ASN:H	1	0.11
(1,1091)	1:A:66:GLU:HG2	1:A:67:LYS:HG2	5	0.11
(1,1091)	1:A:66:GLU:HG3	1:A:67:LYS:HG2	5	0.11

10 Dihedral-angle violation analysis (i)

No dihedral-angle restraints found