Full wwPDB NMR Structure Validation Report (i)

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PDB ID	:	2HDL
BMRB ID	:	7229
Title	:	Solution structure of Brak/CXCL14
Authors	:	Peterson, F.C.; Thorpe, J.A.; Harder, A.G.; Volkman, B.F.; Schwarze, S.R.
Deposited on	:	2006-06-20

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 (1)) were used in the production of this report:

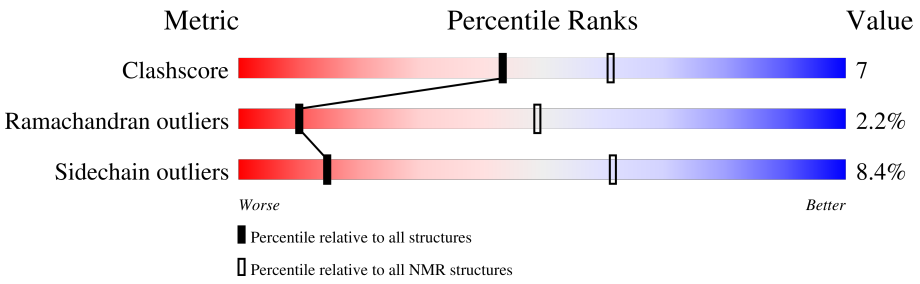
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
BMRB Restraints Analysis	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal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

1 Overall quality at a glance (i)

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

The overall completeness of chemical shifts assignment is 85%.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	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	78	64% 14% • 19% •

2 Ensemble composition and analysis (i)

This entry contains 20 models. Model 3 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *lowest energy*.

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	**Residue range (total)**	**Backbone RMSD (Å)**	**Medoid model**
1	A:12-A:73 (62)	0.88	3

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 3 clusters and 1 single-model cluster was found.

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

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 1342 atoms, of which 682 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Small inducible cytokine B14.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	77	1342	418	682	124	112	6	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	GLY	-	cloning artifact	UNP O95715

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: Small inducible cytokine B14

Chain A: 64% 14% • 19% •

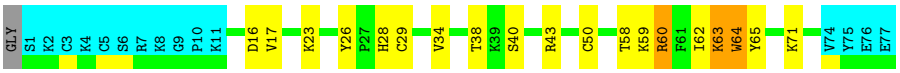
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: Small inducible cytokine B14

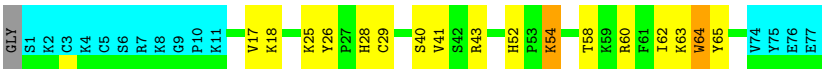
Chain A: 55% 21% • 19% •



4.2.2 Score per residue for model 2

• Molecule 1: Small inducible cytokine B14

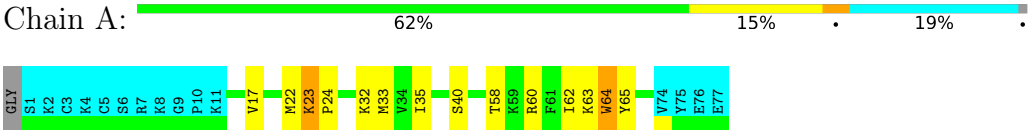
Chain A: 58% 19% • 19% •



4.2.3 Score per residue for model 3 (medoid)

- Molecule 1: Small inducible cytokine B14

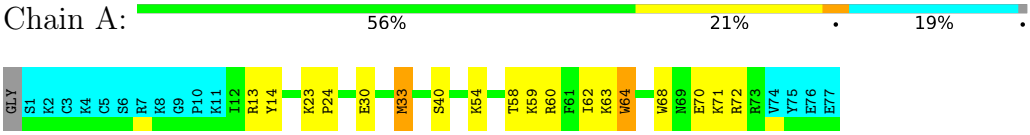
Chain A:



4.2.4 Score per residue for model 4

- Molecule 1: Small inducible cytokine B14

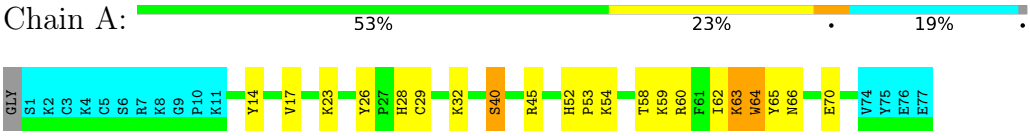
Chain A:



4.2.5 Score per residue for model 5

- Molecule 1: Small inducible cytokine B14

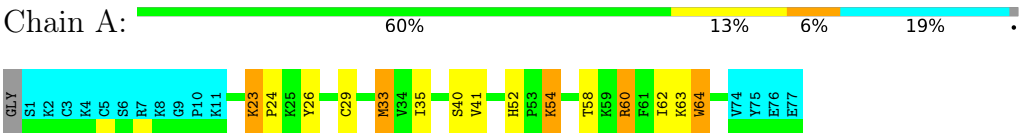
Chain A:



4.2.6 Score per residue for model 6

- Molecule 1: Small inducible cytokine B14

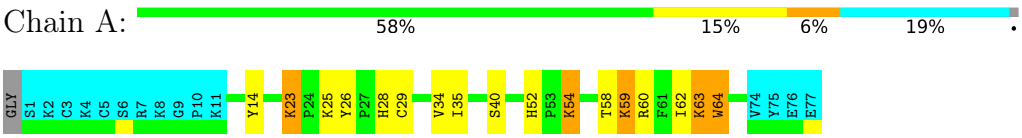
Chain A:



4.2.7 Score per residue for model 7

- Molecule 1: Small inducible cytokine B14

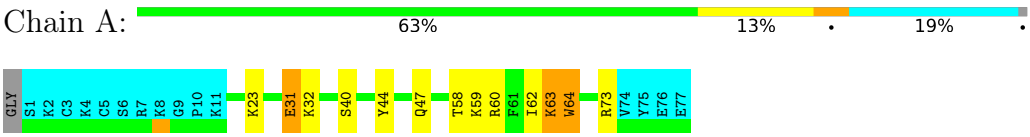
Chain A:



4.2.8 Score per residue for model 8

- Molecule 1: Small inducible cytokine B14

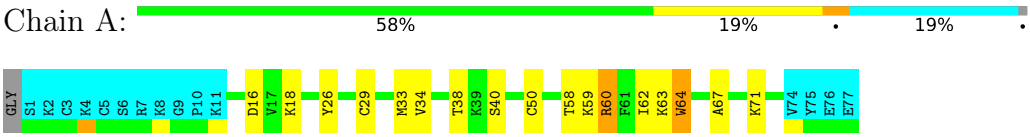
Chain A:



4.2.9 Score per residue for model 9

- Molecule 1: Small inducible cytokine B14

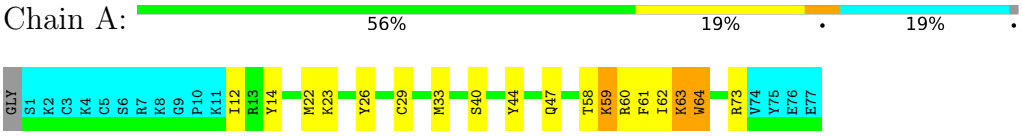
Chain A:



4.2.10 Score per residue for model 10

- Molecule 1: Small inducible cytokine B14

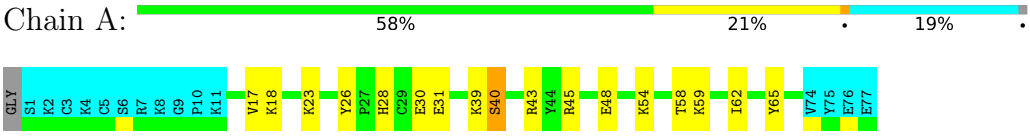
Chain A:



4.2.11 Score per residue for model 11

- Molecule 1: Small inducible cytokine B14

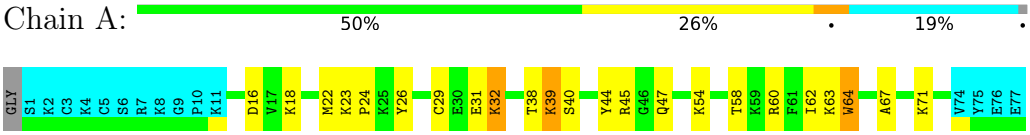
Chain A:



4.2.12 Score per residue for model 12

- Molecule 1: Small inducible cytokine B14

Chain A:



4.2.13 Score per residue for model 13

- Molecule 1: Small inducible cytokine B14

Chain A: 59% 18% • 19% •

GLY S1 K2 C3 K4 C5 S6 R7 K8 G9 P10 K11 I12 D16 V17 K23 V34 T35 I36 T37 T38 K39 S40 H49 R60 K63 W64 Y65 N69 R73 V74 Y75 E76 E77

4.2.14 Score per residue for model 14

- Molecule 1: Small inducible cytokine B14

Chain A: 60% 15% • 19% •

GLY S1 K2 C3 K4 C5 S6 R7 K8 G9 P10 K11 Y14 M22 K23 P24 K25 Y26 C29 K32 M33 S40 Y44 Q47 T58 K59 R60 F61 I62 K63 W64 V74 Y75 E76 E77

4.2.15 Score per residue for model 15

- Molecule 1: Small inducible cytokine B14

Chain A: 55% 21% • 19% •

GLY S1 K2 C3 K4 C5 S6 R7 K8 G9 P10 K11 V17 M22 K23 P24 K25 Y26 C29 E30 E31 K32 M33 T38 K39 S40 V41 S42 T58 K59 R60 F61 I62 K63 W64 Y65 V74 Y75 E76 E77

4.2.16 Score per residue for model 16

- Molecule 1: Small inducible cytokine B14

Chain A: 54% 23% • 19% •

GLY S1 K2 C3 K4 C5 S6 R7 K8 G9 P10 K11 V17 K18 M22 K23 C29 K32 M33 V34 T38 T58 K59 R60 F61 I62 K63 W64 Y65 N66 A67 W68 N69 E70 K71 R72 R73 V74 Y75 E76 E77

4.2.17 Score per residue for model 17

- Molecule 1: Small inducible cytokine B14

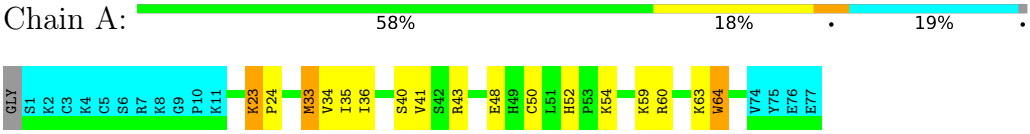
Chain A: 62% 15% • 19% •

GLY S1 K2 C3 K4 C5 S6 R7 K8 G9 P10 K11 K18 K19 K23 P24 K25 Y26 T37 T38 K39 S40 R45 T58 K59 R60 F61 I62 K63 W64 V74 Y75 E76 E77

4.2.18 Score per residue for model 18

- Molecule 1: Small inducible cytokine B14

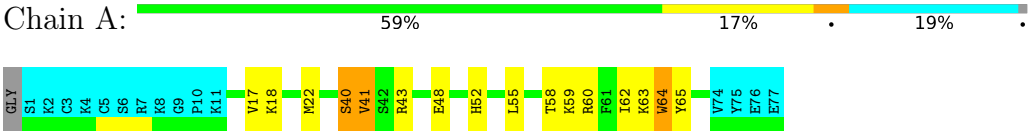
Chain A:



4.2.19 Score per residue for model 19

- Molecule 1: Small inducible cytokine B14

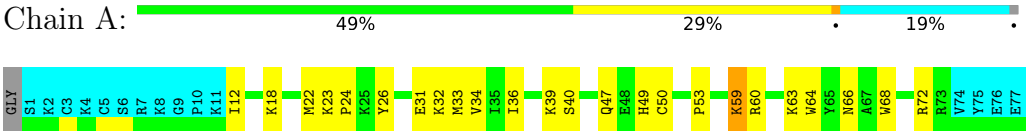
Chain A:



4.2.20 Score per residue for model 20

- Molecule 1: Small inducible cytokine B14

Chain A:



5 Refinement protocol and experimental data overview (i)

The models were refined using the following method: *AUTOMATED METHODS WERE USED FOR BACKBONE CHEMICAL SHIFT ASSIGNMENT AND ITERATIVE NOE REFINEMENT. FINAL STRUCTURES WERE OBTAINED BY MOLECULAR DYNAMICS IN EXPLICIT SOLVEN.*

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	structure solution	2.1
XPLOR-NIH	refinement	2.9.3

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	914
Number of shifts mapped to atoms	914
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	85%

6 Model quality (i)

6.1 Standard geometry (i)

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

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no planarity outliers.

6.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in each chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	540	559	556	8±2
All	All	10800	11180	11120	153

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 7.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:24:PRO:HA	1:A:33:MET:SD	0.63	2.33	4	4
1:A:26:TYR:HB2	1:A:29:CYS:SG	0.61	2.36	9	10
1:A:59:LYS:O	1:A:63:LYS:HD3	0.61	1.96	20	2
1:A:58:THR:O	1:A:62:ILE:HG12	0.58	1.99	19	17
1:A:60:ARG:O	1:A:64:TRP:HB2	0.56	1.99	3	19
1:A:40:SER:O	1:A:45:ARG:HA	0.53	2.04	5	2
1:A:66:ASN:O	1:A:70:GLU:HG2	0.53	2.03	16	1
1:A:59:LYS:O	1:A:63:LYS:HG2	0.52	2.03	18	1
1:A:52:HIS:CE1	1:A:54:LYS:HB2	0.52	2.39	2	2
1:A:52:HIS:NE2	1:A:54:LYS:HB2	0.52	2.19	7	2
1:A:14:TYR:CE1	1:A:64:TRP:HB3	0.50	2.42	10	5
1:A:17:VAL:HG13	1:A:36:ILE:HG23	0.50	1.82	13	1
1:A:17:VAL:HB	1:A:65:TYR:CE1	0.50	2.41	11	9
1:A:18:LYS:CD	1:A:39:LYS:HA	0.50	2.37	12	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:18:LYS:HB2	1:A:39:LYS:HA	0.49	1.84	11	3
1:A:44:TYR:HB3	1:A:47:GLN:HB2	0.49	1.84	10	3
1:A:26:TYR:HB3	1:A:28:HIS:CD2	0.49	2.43	7	5
1:A:12:ILE:HB	1:A:61:PHE:CZ	0.49	2.43	10	1
1:A:34:VAL:O	1:A:50:CYS:HA	0.48	2.08	1	4
1:A:24:PRO:HB2	1:A:26:TYR:O	0.48	2.08	20	2
1:A:38:THR:HB	1:A:42:SER:OG	0.48	2.09	15	1
1:A:44:TYR:CD2	1:A:47:GLN:HB2	0.48	2.43	14	1
1:A:19:LYS:CG	1:A:37:THR:HB	0.48	2.39	17	1
1:A:52:HIS:CE1	1:A:54:LYS:HB3	0.47	2.45	18	1
1:A:34:VAL:HG11	1:A:62:ILE:HD11	0.47	1.87	7	1
1:A:16:ASP:O	1:A:38:THR:HA	0.47	2.10	1	4
1:A:52:HIS:CE1	1:A:54:LYS:HG3	0.47	2.45	5	1
1:A:31:GLU:HG3	1:A:32:LYS:H	0.47	1.70	20	1
1:A:25:LYS:HD3	1:A:25:LYS:O	0.46	2.10	2	1
1:A:59:LYS:O	1:A:63:LYS:HE3	0.46	2.09	15	2
1:A:67:ALA:O	1:A:71:LYS:HG2	0.46	2.09	9	1
1:A:24:PRO:HB3	1:A:31:GLU:O	0.46	2.09	12	1
1:A:53:PRO:HA	1:A:58:THR:HG21	0.46	1.88	5	1
1:A:69:ASN:O	1:A:73:ARG:HG2	0.46	2.10	13	1
1:A:12:ILE:HD11	1:A:49:HIS:CD2	0.45	2.45	20	1
1:A:34:VAL:HG11	1:A:62:ILE:CD1	0.45	2.41	1	2
1:A:71:LYS:HA	1:A:71:LYS:HE2	0.45	1.89	4	1
1:A:18:LYS:HE2	1:A:38:THR:O	0.45	2.11	16	1
1:A:59:LYS:O	1:A:63:LYS:HD2	0.44	2.12	7	3
1:A:54:LYS:N	1:A:54:LYS:HD2	0.44	2.27	2	1
1:A:24:PRO:HD3	1:A:32:LYS:CD	0.44	2.42	3	2
1:A:68:TRP:NE1	1:A:72:ARG:HD2	0.44	2.27	20	1
1:A:31:GLU:HB3	1:A:54:LYS:NZ	0.44	2.28	11	1
1:A:23:LYS:CE	1:A:35:ILE:HG13	0.44	2.42	7	2
1:A:25:LYS:HD2	1:A:26:TYR:CE2	0.43	2.47	7	1
1:A:12:ILE:HG12	1:A:49:HIS:CE1	0.43	2.48	13	1
1:A:36:ILE:O	1:A:48:GLU:HA	0.43	2.13	18	1
1:A:12:ILE:HD12	1:A:36:ILE:HG21	0.43	1.90	20	1
1:A:73:ARG:HD2	1:A:73:ARG:O	0.43	2.14	8	1
1:A:22:MET:HA	1:A:33:MET:O	0.43	2.13	14	3
1:A:67:ALA:O	1:A:71:LYS:HG3	0.43	2.13	12	1
1:A:22:MET:HG2	1:A:32:LYS:HB2	0.42	1.91	15	1
1:A:68:TRP:O	1:A:72:ARG:HG2	0.42	2.15	4	1
1:A:55:LEU:O	1:A:59:LYS:HG3	0.42	2.15	19	1
1:A:18:LYS:O	1:A:18:LYS:HD2	0.42	2.14	20	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:63:LYS:HE2	1:A:63:LYS:HA	0.42	1.92	3	2
1:A:22:MET:HG2	1:A:32:LYS:HB3	0.41	1.92	12	1
1:A:32:LYS:O	1:A:53:PRO:HG3	0.41	2.15	20	1
1:A:23:LYS:HE2	1:A:35:ILE:HG13	0.41	1.93	18	2
1:A:47:GLN:HA	1:A:47:GLN:OE1	0.41	2.16	10	1
1:A:68:TRP:O	1:A:72:ARG:HD2	0.41	2.15	16	1
1:A:66:ASN:O	1:A:70:GLU:HG3	0.41	2.15	5	1
1:A:39:LYS:O	1:A:40:SER:HB2	0.41	2.16	13	1
1:A:43:ARG:HA	1:A:43:ARG:NE	0.41	2.31	19	1
1:A:40:SER:O	1:A:41:VAL:HG22	0.40	2.16	19	1
1:A:59:LYS:O	1:A:63:LYS:HB2	0.40	2.17	1	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	62/78 (79%)	57±1 (93±2%)	3±1 (5±2%)	1±1 (2±1%)	10	49
All	All	1240/1560 (79%)	1149 (93%)	64 (5%)	27 (2%)	10	49

All 4 unique Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	40	SER	19
1	A	41	VAL	4
1	A	31	GLU	2
1	A	45	ARG	2

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	60/74 (81%)	55±1 (92±2%)	5±1 (8±2%)	14 61
All	All	1200/1480 (81%)	1099 (92%)	101 (8%)	14 61

All 23 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	23	LYS	17
1	A	64	TRP	17
1	A	63	LYS	14
1	A	33	MET	8
1	A	59	LYS	6
1	A	60	ARG	5
1	A	54	LYS	5
1	A	43	ARG	4
1	A	22	MET	4
1	A	32	LYS	4
1	A	18	LYS	3
1	A	30	GLU	2
1	A	48	GLU	2
1	A	71	LYS	1
1	A	13	ARG	1
1	A	31	GLU	1
1	A	73	ARG	1
1	A	39	LYS	1
1	A	34	VAL	1
1	A	29	CYS	1
1	A	72	ARG	1
1	A	47	GLN	1
1	A	66	ASN	1

6.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

6.5 Carbohydrates (i)

There are no monosaccharides in this entry.

6.6 Ligand geometry (i)

There are no ligands in this entry.

6.7 Other polymers (i)

There are no such molecules in this entry.

6.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

7 Chemical shift validation (i)

The completeness of assignment taking into account all chemical shift lists is 85% for the well-defined parts and 80% 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	914
Number of shifts mapped to atoms	914
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
$^{13}C_{\alpha}$	68	-0.35 ± 0.16	None needed (< 0.5 ppm)
$^{13}C_{\beta}$	66	-0.29 ± 0.18	None needed (< 0.5 ppm)
$^{13}C'$	71	-0.29 ± 0.20	None needed (< 0.5 ppm)
^{15}N	65	-0.17 ± 0.28	None needed (< 0.5 ppm)

7.1.3 Completeness of resonance assignments (i)

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 85%, i.e. 805 atoms were assigned a chemical shift out of a possible 948. 0 out of 6 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	289/305 (95%)	115/122 (94%)	119/124 (96%)	55/59 (93%)
Sidechain	452/549 (82%)	306/351 (87%)	142/166 (86%)	4/32 (12%)

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	Total	^{1}H	^{13}C	^{15}N
Aromatic	64/94 (68%)	37/45 (82%)	25/41 (61%)	2/8 (25%)
Overall	805/948 (85%)	458/518 (88%)	286/331 (86%)	61/99 (62%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 80%, i.e. 914 atoms were assigned a chemical shift out of a possible 1149. 0 out of 7 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	339/379 (89%)	135/152 (89%)	139/154 (90%)	65/73 (89%)
Sidechain	505/667 (76%)	342/425 (80%)	159/203 (78%)	4/39 (10%)
Aromatic	70/103 (68%)	41/49 (84%)	27/46 (59%)	2/8 (25%)
Overall	914/1149 (80%)	518/626 (83%)	325/403 (81%)	71/120 (59%)

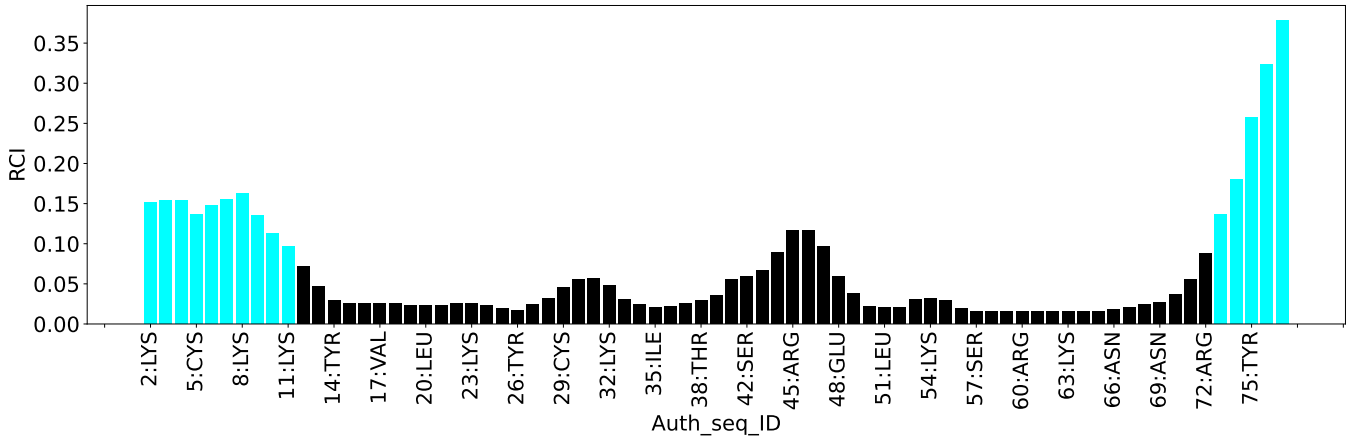
7.1.4 Statistically unusual chemical shifts (i)

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	740
Intra-residue (|i-j|=0)	275
Sequential (|i-j|=1)	166
Medium range (|i-j|>1 and |i-j|<5)	110
Long range (|i-j|≥5)	183
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	6
Total dihedral-angle restraints	0
Number of unmapped restraints	0
Number of restraints per residue	9.5
Number of long range restraints per residue[1]	2.4

[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)	10.4	0.2
0.2-0.5 (Medium)	0.6	0.3
>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)

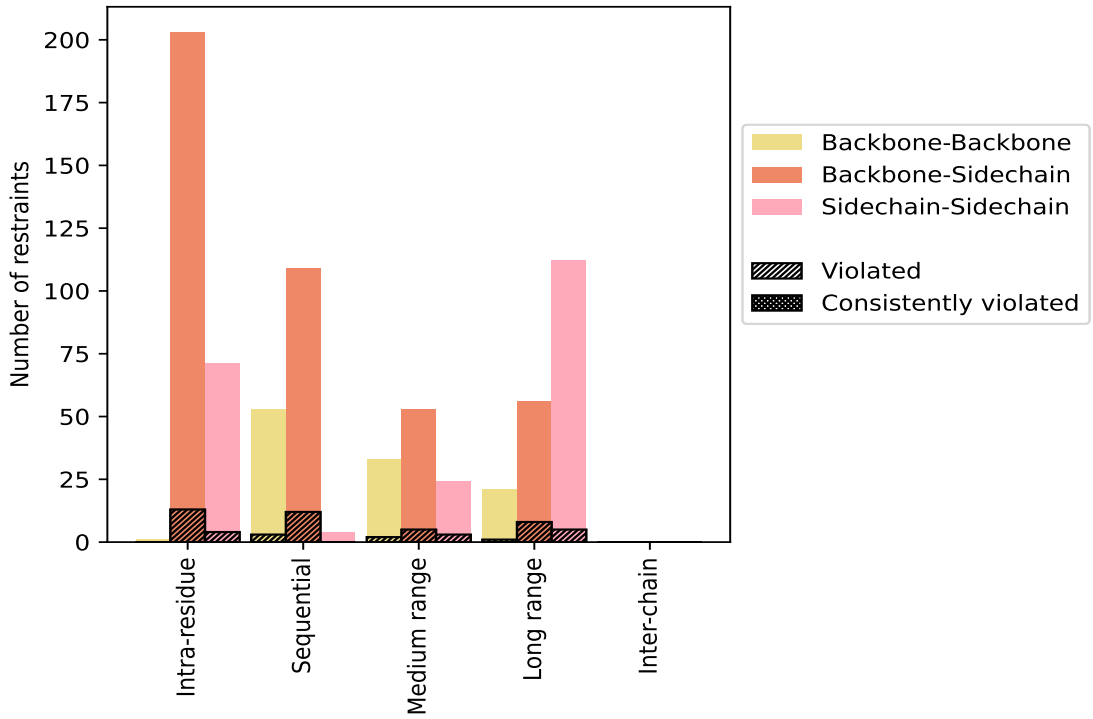
9.1 Summary of distance violations (i)

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)	275	37.2	17	6.2	2.3	0	0.0	0.0
Backbone-Backbone	1	0.1	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	203	27.4	13	6.4	1.8	0	0.0	0.0
Sidechain-Sidechain	71	9.6	4	5.6	0.5	0	0.0	0.0
Sequential (|i-j|=1)	166	22.4	15	9.0	2.0	0	0.0	0.0
Backbone-Backbone	53	7.2	3	5.7	0.4	0	0.0	0.0
Backbone-Sidechain	109	14.7	12	11.0	1.6	0	0.0	0.0
Sidechain-Sidechain	4	0.5	0	0.0	0.0	0	0.0	0.0
Medium range (|i-j|>1 & |i-j|<5)	110	14.9	10	9.1	1.4	0	0.0	0.0
Backbone-Backbone	33	4.5	2	6.1	0.3	0	0.0	0.0
Backbone-Sidechain	53	7.2	5	9.4	0.7	0	0.0	0.0
Sidechain-Sidechain	24	3.2	3	12.5	0.4	0	0.0	0.0
Long range (|i-j|≥5)	183	24.7	14	7.7	1.9	0	0.0	0.0
Backbone-Backbone	21	2.8	1	4.8	0.1	0	0.0	0.0
Backbone-Sidechain	56	7.6	8	14.3	1.1	0	0.0	0.0
Sidechain-Sidechain	106	14.3	5	4.7	0.7	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	6	0.8	0	0.0	0.0	0	0.0	0.0
Total	740	100.0	56	7.6	7.6	0	0.0	0.0
Backbone-Backbone	108	14.6	6	5.6	0.8	0	0.0	0.0
Backbone-Sidechain	421	56.9	38	9.0	5.1	0	0.0	0.0
Sidechain-Sidechain	211	28.5	12	5.7	1.6	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 (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	3	3	1	2	0	9	0.15	0.21	0.03	0.15
2	2	0	4	3	0	9	0.14	0.2	0.03	0.13
3	4	4	2	3	0	13	0.16	0.3	0.05	0.13
4	1	2	3	3	0	9	0.14	0.24	0.04	0.13
5	2	2	3	3	0	10	0.14	0.19	0.02	0.14
6	2	2	1	2	0	7	0.15	0.17	0.02	0.15
7	1	2	2	3	0	8	0.15	0.19	0.03	0.14
8	2	6	2	6	0	16	0.15	0.18	0.02	0.14
9	4	3	2	4	0	13	0.15	0.2	0.03	0.16
10	3	3	3	3	0	12	0.15	0.2	0.03	0.15
11	4	3	3	3	0	13	0.15	0.2	0.03	0.16

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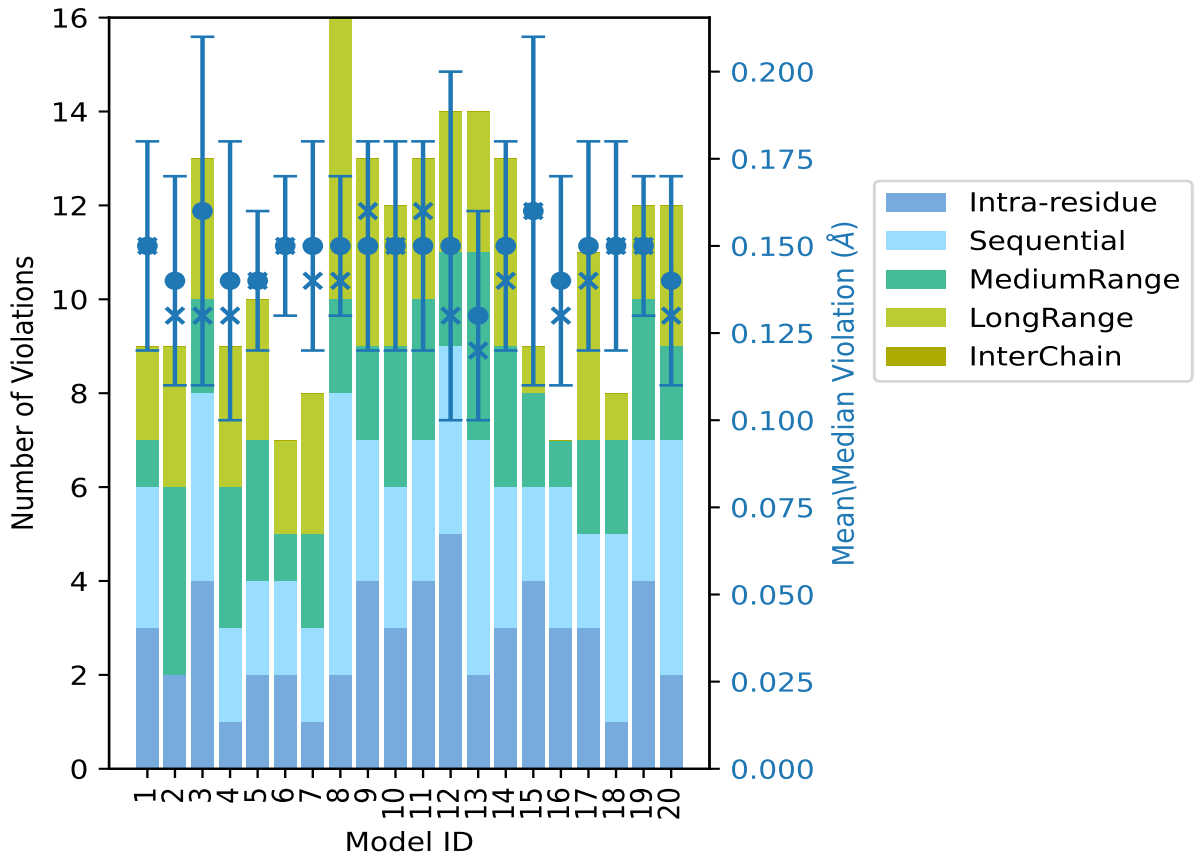
Model ID	Number of violations						Mean (Å)	Max (Å)	SD[6] (Å)	Median (Å)
	IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total				
12	5	4	2	3	0	14	0.15	0.3	0.05	0.13
13	2	5	4	3	0	14	0.13	0.19	0.03	0.12
14	3	3	3	4	0	13	0.15	0.23	0.03	0.14
15	4	2	2	1	0	9	0.16	0.29	0.05	0.16
16	3	3	1	0	0	7	0.14	0.21	0.03	0.13
17	3	2	2	4	0	11	0.15	0.23	0.03	0.14
18	1	4	2	1	0	8	0.15	0.21	0.03	0.15
19	4	3	3	2	0	12	0.15	0.18	0.02	0.15
20	2	5	2	3	0	12	0.14	0.22	0.03	0.13

[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

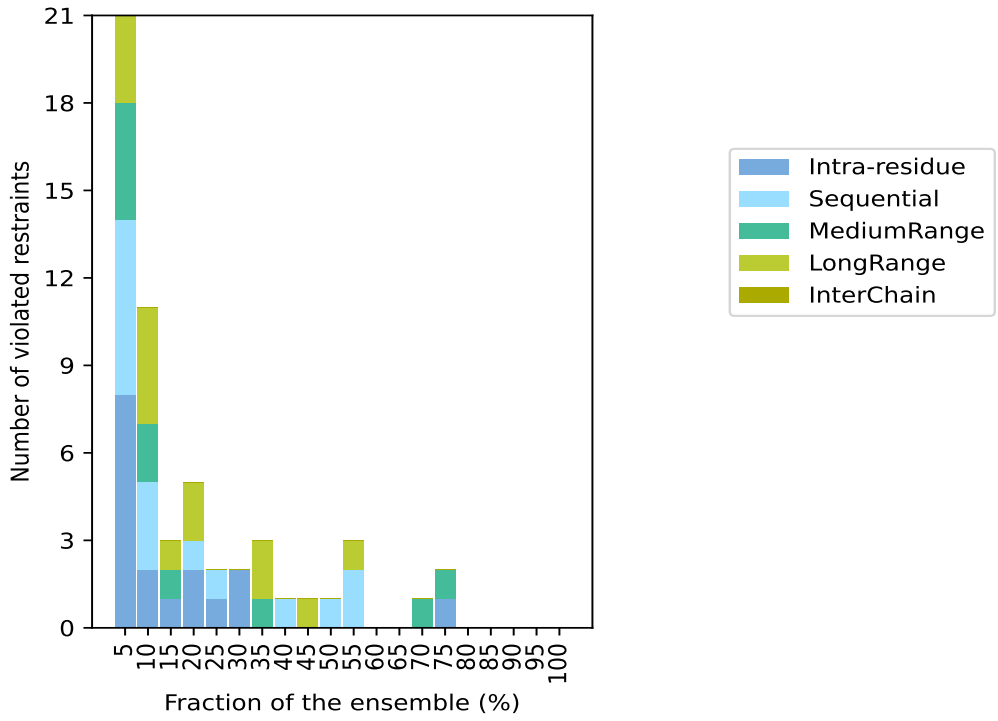
9.3 Distance violation statistics for the ensemble (i)

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, 678(IR:258, SQ:151, MR:100, LR:169, 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]	%
8	6	4	3	0	21	1	5.0
2	3	2	4	0	11	2	10.0
1	0	1	1	0	3	3	15.0
2	1	0	2	0	5	4	20.0
1	1	0	0	0	2	5	25.0
2	0	0	0	0	2	6	30.0
0	0	1	2	0	3	7	35.0
0	1	0	0	0	1	8	40.0
0	0	0	1	0	1	9	45.0
0	1	0	0	0	1	10	50.0
0	2	0	1	0	3	11	55.0
0	0	0	0	0	0	12	60.0
0	0	0	0	0	0	13	65.0
0	0	1	0	0	1	14	70.0
1	0	1	0	0	2	15	75.0
0	0	0	0	0	0	16	80.0
0	0	0	0	0	0	17	85.0
0	0	0	0	0	0	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

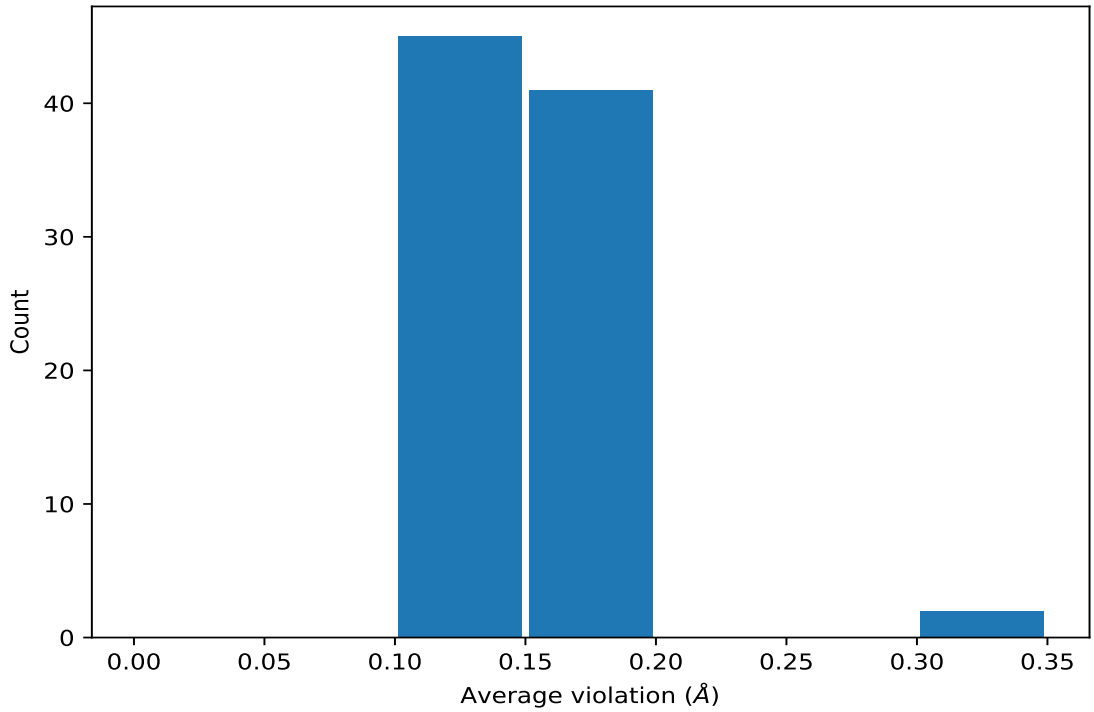
9.3.1 Bar graph : Distance violation statistics for the ensemble (i)



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)
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	15	0.15	0.03	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	15	0.15	0.03	0.16
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	15	0.12	0.01	0.12
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	15	0.12	0.01	0.12
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	14	0.15	0.02	0.13
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	14	0.15	0.02	0.13
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	11	0.16	0.01	0.17
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	11	0.16	0.01	0.17
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	11	0.16	0.01	0.17
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	11	0.15	0.02	0.15
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	11	0.15	0.02	0.15
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	11	0.15	0.04	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	11	0.15	0.04	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	11	0.15	0.04	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	11	0.15	0.04	0.12
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	10	0.15	0.02	0.15

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Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	9	0.15	0.03	0.15
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	8	0.16	0.04	0.16
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	7	0.15	0.03	0.14
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	7	0.15	0.03	0.14
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	7	0.14	0.03	0.13
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	7	0.14	0.03	0.13
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	7	0.13	0.01	0.13
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	7	0.13	0.01	0.13
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	7	0.13	0.01	0.13
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD1	6	0.18	0.03	0.18
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD2	6	0.18	0.03	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD2	6	0.17	0.02	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD3	6	0.17	0.02	0.18
(1,313)	1:A:33:MET:H	1:A:33:MET:HE1	5	0.18	0.03	0.19
(1,313)	1:A:33:MET:H	1:A:33:MET:HE2	5	0.18	0.03	0.19
(1,313)	1:A:33:MET:H	1:A:33:MET:HE3	5	0.18	0.03	0.19
(1,307)	1:A:32:LYS:HD2	1:A:33:MET:H	5	0.14	0.01	0.14
(1,307)	1:A:32:LYS:HD3	1:A:33:MET:H	5	0.14	0.01	0.14
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE1	4	0.16	0.02	0.17
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE2	4	0.16	0.02	0.17
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE3	4	0.16	0.02	0.17
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE2	4	0.16	0.01	0.16
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE3	4	0.16	0.01	0.16
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG2	4	0.13	0.03	0.12
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG3	4	0.13	0.03	0.12
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG12	4	0.13	0.01	0.13
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG13	4	0.13	0.01	0.13
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE1	4	0.12	0.01	0.12
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE2	4	0.12	0.01	0.12
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD2	3	0.17	0.04	0.19
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD3	3	0.17	0.04	0.19
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD2	3	0.14	0.01	0.14
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD3	3	0.14	0.01	0.14
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD1	3	0.13	0.01	0.13
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD2	3	0.13	0.01	0.13
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD1	3	0.13	0.01	0.13
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD2	3	0.13	0.01	0.13
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD1	3	0.13	0.01	0.13
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD2	3	0.13	0.01	0.13
(1,695)	1:A:71:LYS:HA	1:A:71:LYS:HD2	2	0.3	0.0	0.3
(1,695)	1:A:71:LYS:HA	1:A:71:LYS:HD3	2	0.3	0.0	0.3
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG21	2	0.17	0.0	0.17

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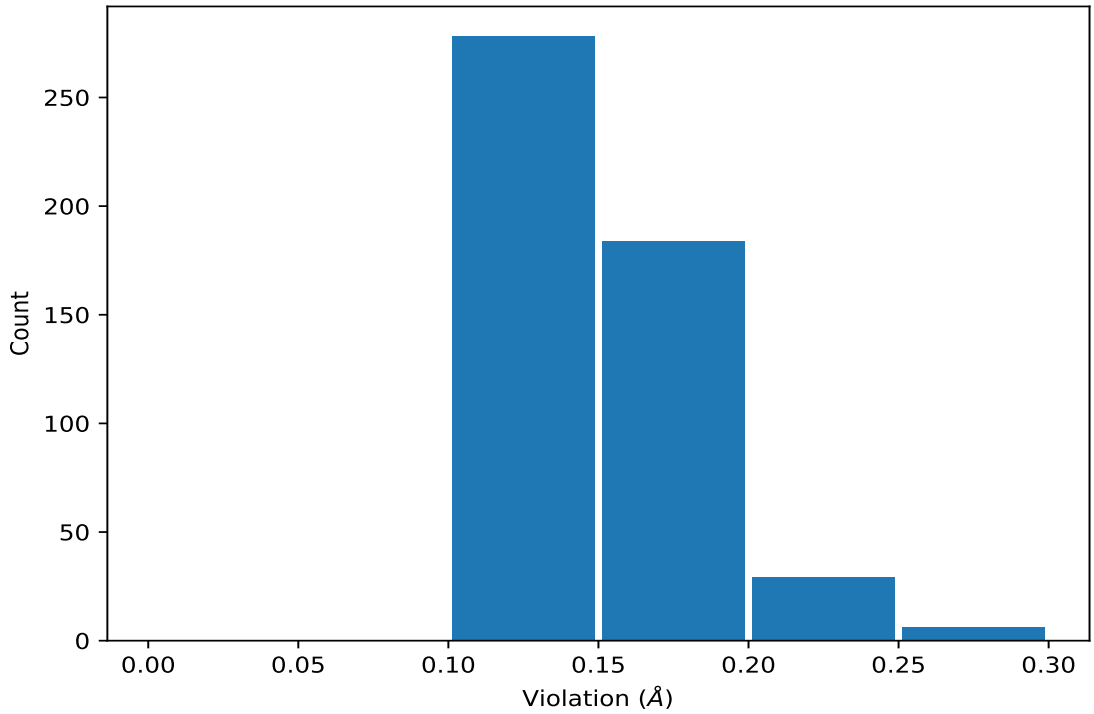
Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG22	2	0.17	0.0	0.17
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG23	2	0.17	0.0	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG21	2	0.17	0.0	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG22	2	0.17	0.0	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG23	2	0.17	0.0	0.17
(1,617)	1:A:63:LYS:HA	1:A:63:LYS:HE2	2	0.16	0.01	0.16
(1,617)	1:A:63:LYS:HA	1:A:63:LYS:HE3	2	0.16	0.01	0.16
(1,731)	1:A:76:GLU:HA	1:A:77:GLU:H	2	0.16	0.01	0.16
(1,135)	1:A:18:LYS:HB2	1:A:19:LYS:H	2	0.14	0.03	0.14
(1,574)	1:A:60:ARG:HB2	1:A:64:TRP:HD1	2	0.14	0.01	0.14
(1,574)	1:A:60:ARG:HB3	1:A:64:TRP:HD1	2	0.14	0.01	0.14
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD11	2	0.13	0.0	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD12	2	0.13	0.0	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD13	2	0.13	0.0	0.13
(1,556)	1:A:59:LYS:HA	1:A:63:LYS:H	2	0.13	0.02	0.13
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG21	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG22	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG23	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG21	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG22	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG23	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG21	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG22	2	0.12	0.02	0.12
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG23	2	0.12	0.02	0.12
(1,700)	1:A:71:LYS:HG2	1:A:72:ARG:H	2	0.12	0.02	0.12
(1,700)	1:A:71:LYS:HG3	1:A:72:ARG:H	2	0.12	0.02	0.12
(1,82)	1:A:14:TYR:HD1	1:A:61:PHE:HD1	2	0.12	0.0	0.12
(1,82)	1:A:14:TYR:HD1	1:A:61:PHE:HD2	2	0.12	0.0	0.12
(1,82)	1:A:14:TYR:HD2	1:A:61:PHE:HD1	2	0.12	0.0	0.12
(1,82)	1:A:14:TYR:HD2	1:A:61:PHE:HD2	2	0.12	0.0	0.12

[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)
(1,695)	1:A:71:LYS:HA	1:A:71:LYS:HD2	3	0.3
(1,695)	1:A:71:LYS:HA	1:A:71:LYS:HD3	3	0.3
(1,695)	1:A:71:LYS:HA	1:A:71:LYS:HD2	12	0.3
(1,695)	1:A:71:LYS:HA	1:A:71:LYS:HD3	12	0.3
(1,726)	1:A:75:TYR:HA	1:A:75:TYR:HD1	15	0.29
(1,726)	1:A:75:TYR:HA	1:A:75:TYR:HD2	15	0.29
(1,721)	1:A:74:VAL:HA	1:A:75:TYR:H	12	0.24
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	4	0.24
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	4	0.24
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	4	0.24
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	4	0.24
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	14	0.23
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	14	0.23
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	14	0.23
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	14	0.23
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD1	17	0.23

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD2	17	0.23
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	20	0.22
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	1	0.21
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	16	0.21
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD2	18	0.21
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD3	18	0.21
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	9	0.2
(1,313)	1:A:33:MET:H	1:A:33:MET:HE1	10	0.2
(1,313)	1:A:33:MET:H	1:A:33:MET:HE2	10	0.2
(1,313)	1:A:33:MET:H	1:A:33:MET:HE3	10	0.2
(1,313)	1:A:33:MET:H	1:A:33:MET:HE1	11	0.2
(1,313)	1:A:33:MET:H	1:A:33:MET:HE2	11	0.2
(1,313)	1:A:33:MET:H	1:A:33:MET:HE3	11	0.2
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD2	11	0.2
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD3	11	0.2
(1,134)	1:A:18:LYS:HB2	1:A:18:LYS:HE2	3	0.2
(1,134)	1:A:18:LYS:HB2	1:A:18:LYS:HE3	3	0.2
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	2	0.2
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	2	0.2
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	7	0.19
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	7	0.19
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	13	0.19
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	13	0.19
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD2	5	0.19
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD3	5	0.19
(1,313)	1:A:33:MET:H	1:A:33:MET:HE1	13	0.19
(1,313)	1:A:33:MET:H	1:A:33:MET:HE2	13	0.19
(1,313)	1:A:33:MET:H	1:A:33:MET:HE3	13	0.19
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	3	0.19
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	3	0.19
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	7	0.19
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	7	0.19
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	11	0.18
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE2	1	0.18
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE3	1	0.18
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	19	0.18
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	19	0.18
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG2	10	0.18
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG3	10	0.18
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD1	1	0.18
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD2	1	0.18
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD1	19	0.18

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD2	19	0.18
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	9	0.18
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	9	0.18
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	9	0.18
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE1	9	0.18
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE2	9	0.18
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE3	9	0.18
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	8	0.18
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	8	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD2	8	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD3	8	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD2	9	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD3	9	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD2	15	0.18
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD3	15	0.18
(1,135)	1:A:18:LYS:HB2	1:A:19:LYS:H	4	0.18
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	8	0.18
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	8	0.18
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	3	0.17
(1,7)	1:A:8:LYS:HA	1:A:8:LYS:HE2	12	0.17
(1,7)	1:A:8:LYS:HA	1:A:8:LYS:HE3	12	0.17
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	14	0.17
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	14	0.17
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD1	15	0.17
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD2	15	0.17
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	6	0.17
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	6	0.17
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	6	0.17
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	16	0.17
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	16	0.17
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	16	0.17
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	18	0.17
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	18	0.17
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	18	0.17
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	19	0.17
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	19	0.17
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	19	0.17
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	20	0.17
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	20	0.17
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	20	0.17
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE1	6	0.17
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE2	6	0.17

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE3	6	0.17
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE1	12	0.17
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE2	12	0.17
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE3	12	0.17
(1,313)	1:A:33:MET:H	1:A:33:MET:HE1	19	0.17
(1,313)	1:A:33:MET:H	1:A:33:MET:HE2	19	0.17
(1,313)	1:A:33:MET:H	1:A:33:MET:HE3	19	0.17
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	19	0.17
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	19	0.17
(1,307)	1:A:32:LYS:HD2	1:A:33:MET:H	8	0.17
(1,307)	1:A:32:LYS:HD3	1:A:33:MET:H	8	0.17
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	11	0.17
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	11	0.17
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	2	0.17
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	2	0.17
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	11	0.17
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	11	0.17
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG21	8	0.17
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG22	8	0.17
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG23	8	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG21	8	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG22	8	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG23	8	0.17
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG21	17	0.17
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG22	17	0.17
(1,164)	1:A:19:LYS:HB2	1:A:37:THR:HG23	17	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG21	17	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG22	17	0.17
(1,164)	1:A:19:LYS:HB3	1:A:37:THR:HG23	17	0.17
(1,731)	1:A:76:GLU:HA	1:A:77:GLU:H	10	0.16
(1,617)	1:A:63:LYS:HA	1:A:63:LYS:HE2	14	0.16
(1,617)	1:A:63:LYS:HA	1:A:63:LYS:HE3	14	0.16
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE2	11	0.16
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE3	11	0.16
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE2	20	0.16
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE3	20	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	9	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	9	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	10	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	10	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	11	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	11	0.16

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	17	0.16
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	17	0.16
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	17	0.16
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD1	14	0.16
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD2	14	0.16
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	3	0.16
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	3	0.16
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	3	0.16
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	13	0.16
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	13	0.16
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	13	0.16
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	15	0.16
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	15	0.16
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	15	0.16
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	9	0.16
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	9	0.16
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	15	0.16
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	15	0.16
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	18	0.16
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	18	0.16
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	9	0.16
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	9	0.16
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	20	0.16
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	20	0.16
(1,737)	1:A:76:GLU:HB2	1:A:77:GLU:H	1	0.15
(1,737)	1:A:76:GLU:HB3	1:A:77:GLU:H	1	0.15
(1,731)	1:A:76:GLU:HA	1:A:77:GLU:H	12	0.15
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	5	0.15
(1,710)	1:A:73:ARG:H	1:A:74:VAL:H	8	0.15
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	9	0.15
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	9	0.15
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	9	0.15
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	9	0.15
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	19	0.15
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	19	0.15
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	19	0.15
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	19	0.15
(1,617)	1:A:63:LYS:HA	1:A:63:LYS:HE2	11	0.15
(1,617)	1:A:63:LYS:HA	1:A:63:LYS:HE3	11	0.15
(1,612)	1:A:63:LYS:H	1:A:63:LYS:HG2	1	0.15
(1,612)	1:A:63:LYS:H	1:A:63:LYS:HG3	1	0.15
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	14	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	14	0.15
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	14	0.15
(1,556)	1:A:59:LYS:HA	1:A:63:LYS:H	18	0.15
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	10	0.15
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	18	0.15
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	20	0.15
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	8	0.15
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	8	0.15
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	8	0.15
(1,314)	1:A:33:MET:H	1:A:33:MET:HG2	17	0.15
(1,314)	1:A:33:MET:H	1:A:33:MET:HG3	17	0.15
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	6	0.15
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	6	0.15
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	10	0.15
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	10	0.15
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	14	0.15
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	14	0.15
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	4	0.15
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	6	0.15
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	9	0.15
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	10	0.15
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	5	0.15
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	5	0.15
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD2	5	0.15
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD3	5	0.15
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD2	6	0.15
(1,255)	1:A:25:LYS:HA	1:A:25:LYS:HD3	6	0.15
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD2	19	0.15
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD3	19	0.15
(1,140)	1:A:18:LYS:HB2	1:A:18:LYS:HE2	3	0.15
(1,140)	1:A:18:LYS:HB2	1:A:18:LYS:HE3	3	0.15
(1,140)	1:A:18:LYS:HB3	1:A:18:LYS:HE2	3	0.15
(1,140)	1:A:18:LYS:HB3	1:A:18:LYS:HE3	3	0.15
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	6	0.15
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	6	0.15
(1,700)	1:A:71:LYS:HG2	1:A:72:ARG:H	14	0.14
(1,700)	1:A:71:LYS:HG3	1:A:72:ARG:H	14	0.14
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE2	14	0.14
(1,591)	1:A:62:ILE:H	1:A:63:LYS:HE3	14	0.14
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	7	0.14
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	7	0.14
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	8	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	8	0.14
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	19	0.14
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	19	0.14
(1,574)	1:A:60:ARG:HB2	1:A:64:TRP:HD1	19	0.14
(1,574)	1:A:60:ARG:HB3	1:A:64:TRP:HD1	19	0.14
(1,509)	1:A:54:LYS:HB2	1:A:54:LYS:HD2	18	0.14
(1,509)	1:A:54:LYS:HB2	1:A:54:LYS:HD3	18	0.14
(1,509)	1:A:54:LYS:HB3	1:A:54:LYS:HD2	18	0.14
(1,509)	1:A:54:LYS:HB3	1:A:54:LYS:HD3	18	0.14
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	8	0.14
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	8	0.14
(1,469)	1:A:51:LEU:HD11	1:A:58:THR:HA	1	0.14
(1,469)	1:A:51:LEU:HD12	1:A:58:THR:HA	1	0.14
(1,469)	1:A:51:LEU:HD13	1:A:58:THR:HA	1	0.14
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	8	0.14
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	19	0.14
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD1	7	0.14
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD2	7	0.14
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD1	7	0.14
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD2	7	0.14
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD1	7	0.14
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD2	7	0.14
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG21	17	0.14
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG22	17	0.14
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG23	17	0.14
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG21	17	0.14
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG22	17	0.14
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG23	17	0.14
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG21	17	0.14
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG22	17	0.14
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG23	17	0.14
(1,321)	1:A:33:MET:HB2	1:A:34:VAL:H	17	0.14
(1,321)	1:A:33:MET:HB3	1:A:34:VAL:H	17	0.14
(1,307)	1:A:32:LYS:HD2	1:A:33:MET:H	4	0.14
(1,307)	1:A:32:LYS:HD3	1:A:33:MET:H	4	0.14
(1,307)	1:A:32:LYS:HD2	1:A:33:MET:H	5	0.14
(1,307)	1:A:32:LYS:HD3	1:A:33:MET:H	5	0.14
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	14	0.14
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD2	9	0.14
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD3	9	0.14
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG12	11	0.14
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG13	11	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,138)	1:A:18:LYS:HB3	1:A:19:LYS:H	13	0.14
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	7	0.14
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	7	0.14
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	20	0.13
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	20	0.13
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	20	0.13
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	20	0.13
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	2	0.13
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	2	0.13
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	2	0.13
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	11	0.13
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	11	0.13
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	11	0.13
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	20	0.13
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	20	0.13
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	20	0.13
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	10	0.13
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	10	0.13
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	13	0.13
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	13	0.13
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	15	0.13
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	15	0.13
(1,574)	1:A:60:ARG:HB2	1:A:64:TRP:HD1	4	0.13
(1,574)	1:A:60:ARG:HB3	1:A:64:TRP:HD1	4	0.13
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	3	0.13
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	3	0.13
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	12	0.13
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	12	0.13
(1,483)	1:A:52:HIS:HE1	1:A:54:LYS:H	8	0.13
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	11	0.13
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD1	16	0.13
(1,426)	1:A:44:TYR:H	1:A:44:TYR:HD2	16	0.13
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD1	18	0.13
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD2	18	0.13
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD1	18	0.13
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD2	18	0.13
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD1	18	0.13
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD2	18	0.13
(1,390)	1:A:36:ILE:HD11	1:A:37:THR:H	12	0.13
(1,390)	1:A:36:ILE:HD12	1:A:37:THR:H	12	0.13
(1,390)	1:A:36:ILE:HD13	1:A:37:THR:H	12	0.13
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE1	16	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE2	16	0.13
(1,315)	1:A:33:MET:HA	1:A:33:MET:HE3	16	0.13
(1,313)	1:A:33:MET:H	1:A:33:MET:HE1	5	0.13
(1,313)	1:A:33:MET:H	1:A:33:MET:HE2	5	0.13
(1,313)	1:A:33:MET:H	1:A:33:MET:HE3	5	0.13
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	7	0.13
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	7	0.13
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	20	0.13
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	20	0.13
(1,307)	1:A:32:LYS:HD2	1:A:33:MET:H	12	0.13
(1,307)	1:A:32:LYS:HD3	1:A:33:MET:H	12	0.13
(1,307)	1:A:32:LYS:HD2	1:A:33:MET:H	16	0.13
(1,307)	1:A:32:LYS:HD3	1:A:33:MET:H	16	0.13
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	3	0.13
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	2	0.13
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	2	0.13
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	14	0.13
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	14	0.13
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	1	0.13
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	1	0.13
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	4	0.13
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	4	0.13
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	9	0.13
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	9	0.13
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	14	0.13
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	14	0.13
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	15	0.13
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	15	0.13
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	19	0.13
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	19	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD11	7	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD12	7	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD13	7	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD11	12	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD12	12	0.13
(1,258)	1:A:25:LYS:HA	1:A:35:ILE:HD13	12	0.13
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD2	2	0.13
(1,217)	1:A:23:LYS:H	1:A:23:LYS:HD3	2	0.13
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG12	10	0.13
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG13	10	0.13
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG12	17	0.13
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG13	17	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE1	3	0.13
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE2	3	0.13
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	14	0.13
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	14	0.13
(1,82)	1:A:14:TYR:HD1	1:A:61:PHE:HD1	3	0.12
(1,82)	1:A:14:TYR:HD1	1:A:61:PHE:HD2	3	0.12
(1,82)	1:A:14:TYR:HD2	1:A:61:PHE:HD1	3	0.12
(1,82)	1:A:14:TYR:HD2	1:A:61:PHE:HD2	3	0.12
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	13	0.12
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	20	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	5	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	5	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	5	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	5	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	8	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	8	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	8	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	8	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	10	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	10	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	10	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	10	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	13	0.12
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	13	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	13	0.12
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	13	0.12
(1,666)	1:A:68:TRP:HA	1:A:71:LYS:H	16	0.12
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	13	0.12
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	13	0.12
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	13	0.12
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	17	0.12
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	17	0.12
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	17	0.12
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	2	0.12
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	2	0.12
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	5	0.12
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	5	0.12
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	17	0.12
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	17	0.12
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	1	0.12
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	1	0.12
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	20	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	20	0.12
(1,495)	1:A:53:PRO:HB2	1:A:54:LYS:H	8	0.12
(1,495)	1:A:53:PRO:HB3	1:A:54:LYS:H	8	0.12
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	3	0.12
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG2	2	0.12
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG3	2	0.12
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG2	20	0.12
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG3	20	0.12
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD1	13	0.12
(1,415)	1:A:38:THR:HG21	1:A:44:TYR:HD2	13	0.12
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD1	13	0.12
(1,415)	1:A:38:THR:HG22	1:A:44:TYR:HD2	13	0.12
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD1	13	0.12
(1,415)	1:A:38:THR:HG23	1:A:44:TYR:HD2	13	0.12
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	3	0.12
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	3	0.12
(1,309)	1:A:32:LYS:HG2	1:A:33:MET:H	13	0.12
(1,309)	1:A:32:LYS:HG3	1:A:33:MET:H	13	0.12
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	5	0.12
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	12	0.12
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	12	0.12
(1,162)	1:A:19:LYS:HB2	1:A:37:THR:H	8	0.12
(1,162)	1:A:19:LYS:HB3	1:A:37:THR:H	8	0.12
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE1	2	0.12
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE2	2	0.12
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE1	8	0.12
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE2	8	0.12
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	15	0.12
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	15	0.12
(1,95)	1:A:15:SER:HB2	1:A:17:VAL:H	2	0.11
(1,95)	1:A:15:SER:HB3	1:A:17:VAL:H	2	0.11
(1,82)	1:A:14:TYR:HD1	1:A:61:PHE:HD1	13	0.11
(1,82)	1:A:14:TYR:HD1	1:A:61:PHE:HD2	13	0.11
(1,82)	1:A:14:TYR:HD2	1:A:61:PHE:HD1	13	0.11
(1,82)	1:A:14:TYR:HD2	1:A:61:PHE:HD2	13	0.11
(1,722)	1:A:74:VAL:HB	1:A:75:TYR:H	7	0.11
(1,700)	1:A:71:LYS:HG2	1:A:72:ARG:H	18	0.11
(1,700)	1:A:71:LYS:HG3	1:A:72:ARG:H	18	0.11
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	1	0.11
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	1	0.11
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	1	0.11
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	1	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE1	12	0.11
(1,69)	1:A:13:ARG:HB2	1:A:61:PHE:HE2	12	0.11
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE1	12	0.11
(1,69)	1:A:13:ARG:HB3	1:A:61:PHE:HE2	12	0.11
(1,63)	1:A:13:ARG:HB3	1:A:13:ARG:HD2	4	0.11
(1,63)	1:A:13:ARG:HB3	1:A:13:ARG:HD3	4	0.11
(1,601)	1:A:62:ILE:HD11	1:A:65:TYR:H	10	0.11
(1,601)	1:A:62:ILE:HD12	1:A:65:TYR:H	10	0.11
(1,601)	1:A:62:ILE:HD13	1:A:65:TYR:H	10	0.11
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	3	0.11
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	3	0.11
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	4	0.11
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	4	0.11
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	6	0.11
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	6	0.11
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	9	0.11
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	9	0.11
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	12	0.11
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	12	0.11
(1,583)	1:A:61:PHE:HB2	1:A:63:LYS:H	14	0.11
(1,583)	1:A:61:PHE:HB3	1:A:63:LYS:H	14	0.11
(1,556)	1:A:59:LYS:HA	1:A:63:LYS:H	11	0.11
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	15	0.11
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	15	0.11
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE2	16	0.11
(1,507)	1:A:54:LYS:HA	1:A:54:LYS:HE3	16	0.11
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD2	13	0.11
(1,487)	1:A:52:HIS:HE1	1:A:54:LYS:HD3	13	0.11
(1,467)	1:A:51:LEU:HG	1:A:52:HIS:H	13	0.11
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG2	12	0.11
(1,434)	1:A:45:ARG:H	1:A:45:ARG:HG3	12	0.11
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG21	11	0.11
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG22	11	0.11
(1,39)	1:A:12:ILE:HD11	1:A:38:THR:HG23	11	0.11
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG21	11	0.11
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG22	11	0.11
(1,39)	1:A:12:ILE:HD12	1:A:38:THR:HG23	11	0.11
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG21	11	0.11
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG22	11	0.11
(1,39)	1:A:12:ILE:HD13	1:A:38:THR:HG23	11	0.11
(1,29)	1:A:12:ILE:HA	1:A:61:PHE:HZ	12	0.11
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	4	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	4	0.11
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE2	5	0.11
(1,283)	1:A:30:GLU:H	1:A:54:LYS:HE3	5	0.11
(1,274)	1:A:26:TYR:HD1	1:A:28:HIS:HD2	13	0.11
(1,274)	1:A:26:TYR:HD2	1:A:28:HIS:HD2	13	0.11
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG12	20	0.11
(1,199)	1:A:21:GLU:H	1:A:35:ILE:HG13	20	0.11
(1,192)	1:A:20:LEU:HD11	1:A:65:TYR:HA	9	0.11
(1,192)	1:A:20:LEU:HD12	1:A:65:TYR:HA	9	0.11
(1,192)	1:A:20:LEU:HD13	1:A:65:TYR:HA	9	0.11
(1,192)	1:A:20:LEU:HD21	1:A:65:TYR:HA	9	0.11
(1,192)	1:A:20:LEU:HD22	1:A:65:TYR:HA	9	0.11
(1,192)	1:A:20:LEU:HD23	1:A:65:TYR:HA	9	0.11
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE1	17	0.11
(1,151)	1:A:19:LYS:H	1:A:65:TYR:HE2	17	0.11
(1,135)	1:A:18:LYS:HB2	1:A:19:LYS:H	8	0.11
(1,111)	1:A:17:VAL:HB	1:A:19:LYS:H	10	0.11
(1,11)	1:A:9:GLY:HA2	1:A:50:CYS:H	19	0.11
(1,11)	1:A:9:GLY:HA3	1:A:50:CYS:H	19	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