



Full wwPDB NMR Structure Validation Report ⓘ

Mar 9, 2026 – 09:51 PM UTC

PDB ID : 2LHL / pdb_00002lhl
BMRB ID : 17857
Title : Chemical Shift Assignments and solution structure of human apo-S100A1 E32Q mutant
Authors : Ruszczynska-Bartnik, K.; Zdanowski, K.; Zhukov, I.; Bierzynski, A.; Ejchart, A.
Deposited on : 2011-08-12

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 ⓘ 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 ⓘ](#)) were used in the production of this report:

MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
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) : 2.49

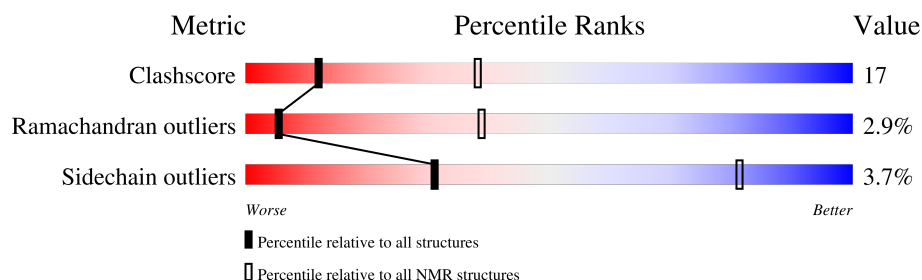
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

SOLUTION NMR

The overall completeness of chemical shifts assignment is 48%.

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	229148	14424
Ramachandran outliers	224038	12848
Sidechain outliers	223484	12823

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 $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	93	
1	B	93	

2 Ensemble composition and analysis

This entry contains 20 models. Model 18 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *lowest energy*.

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

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:1-A:89, B:1-B:89 (178)	0.99	18

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 2 clusters. No single-model clusters were found.

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

3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 2880 atoms, of which 1416 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Protein S100-A1.

Mol	Chain	Residues	Atoms						Trace
1	A	93	Total	C	H	N	O	S	0
			1440	461	708	116	152	3	
1	B	93	Total	C	H	N	O	S	0
			1440	461	708	116	152	3	

There are 2 discrepancies between the modelled and reference sequences:

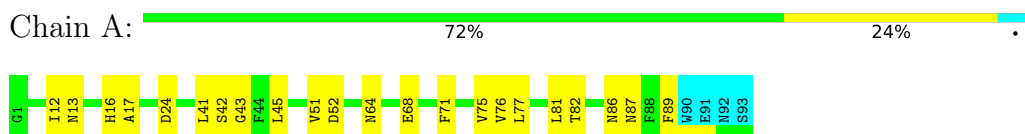
Chain	Residue	Modelled	Actual	Comment	Reference
A	32	GLN	GLU	engineered mutation	UNP P23297
B	32	GLN	GLU	engineered mutation	UNP P23297

4 Residue-property plots [i](#)

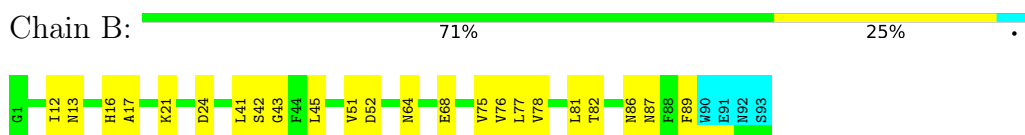
4.1 Average score per residue in the NMR ensemble

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: Protein S100-A1



- Molecule 1: Protein S100-A1

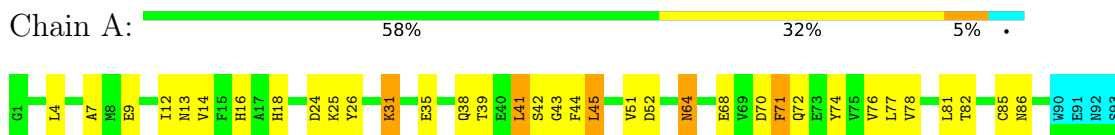


4.2 Scores per residue for each member of the ensemble

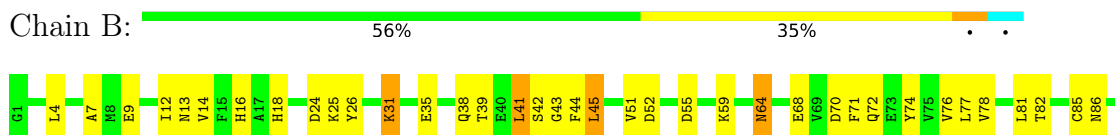
Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

- Molecule 1: Protein S100-A1



- Molecule 1: Protein S100-A1



W90
E91
N92
S93

4.2.2 Score per residue for model 2

- Molecule 1: Protein S100-A1

Chain A:  75% 16% . .

G1 E5 E9 N13 H16 K25 K31 Q38 L41 S42 G43 K56 G67 E68 V69 D70 F71 V76 L81 C85 N86 W90 E91 N92 S93

- Molecule 1: Protein S100-A1

Chain B:  75% 16% . .

G1 E5 E9 N13 H16 K25 K31 Q38 L41 S42 G43 K56 G67 E68 V69 D70 F71 V76 L81 C85 N86 W90 E91 N92 S93

4.2.3 Score per residue for model 3

- Molecule 1: Protein S100-A1

Chain A:  71% 19% 5% .

G1 S2 E5 H16 A17 L28 L41 L45 D46 A47 Q48 K49 D50 V51 K59 D62 E63 N64 G65 D66 G67 E68 V69 Q72 V76 L81 T82 N86 W90 E91 N92 S93

- Molecule 1: Protein S100-A1

Chain B:  69% 22% 5% .

G1 S2 E5 H16 A17 L28 Q32 L33 K34 L41 L45 D46 A47 Q48 K49 D50 V51 K59 D62 E63 N64 G65 D66 G67 E68 V69 V76 L77 V78 L81 T82 N86 W90 E91 N92 S93

4.2.4 Score per residue for model 4

- Molecule 1: Protein S100-A1

Chain A:  70% 24% . .

G1 L4 E9 T12 N13 H16 A17 K21 E22 G23 D24 K27 L41 S42 G43 F44 L45 D52 A53 V54 V57 D62 E73 L81 T82 N86 F89 W90 E91 N92 S93

- Molecule 1: Protein S100-A1

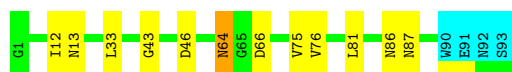
Chain B:  67% 27% . .



4.2.5 Score per residue for model 5

- Molecule 1: Protein S100-A1

Chain A: 83% 12% ..



- Molecule 1: Protein S100-A1

Chain B: 82% 13% ..



4.2.6 Score per residue for model 6

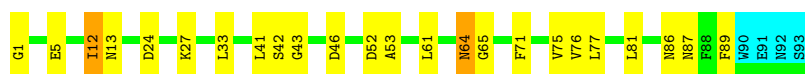
- Molecule 1: Protein S100-A1

Chain A: 68% 26% ..



- Molecule 1: Protein S100-A1

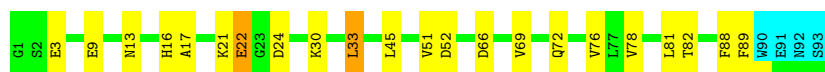
Chain B: 70% 24% ..



4.2.7 Score per residue for model 7

- Molecule 1: Protein S100-A1

Chain A: 72% 22% ..



- Molecule 1: Protein S100-A1

Chain B: 70% 24% ..

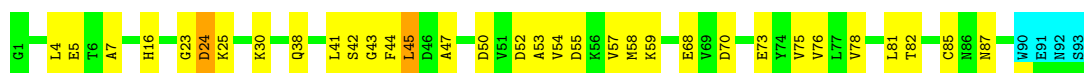


4.2.8 Score per residue for model 8

- Molecule 1: Protein S100-A1

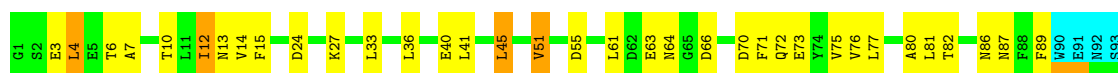


- Molecule 1: Protein S100-A1



4.2.9 Score per residue for model 9

- Molecule 1: Protein S100-A1



- Molecule 1: Protein S100-A1



4.2.10 Score per residue for model 10

- Molecule 1: Protein S100-A1



- Molecule 1: Protein S100-A1





4.2.11 Score per residue for model 11

- Molecule 1: Protein S100-A1

Chain A: 71% 24% ..



- Molecule 1: Protein S100-A1

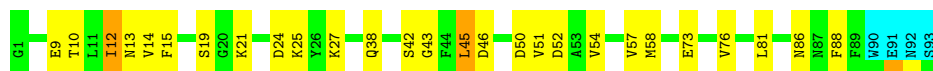
Chain B: 73% 22% ..



4.2.12 Score per residue for model 12

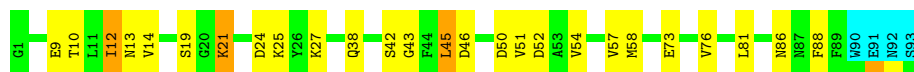
- Molecule 1: Protein S100-A1

Chain A: 67% 27% ..



- Molecule 1: Protein S100-A1

Chain B: 68% 25% ..



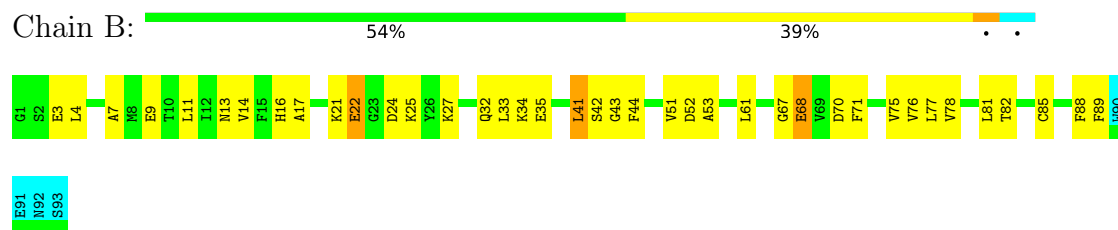
4.2.13 Score per residue for model 13

- Molecule 1: Protein S100-A1

Chain A: 54% 39% ..

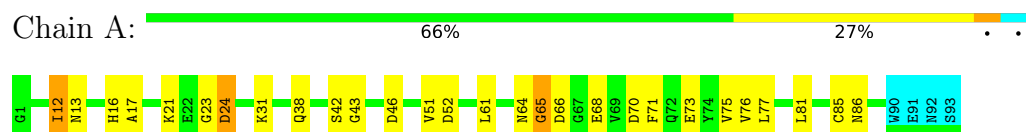


- Molecule 1: Protein S100-A1

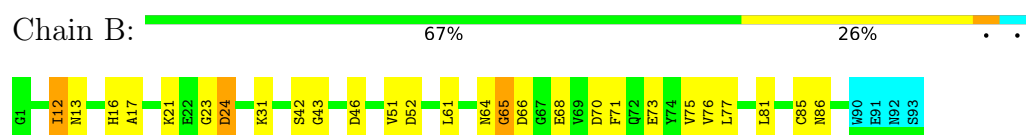


4.2.14 Score per residue for model 14

- Molecule 1: Protein S100-A1

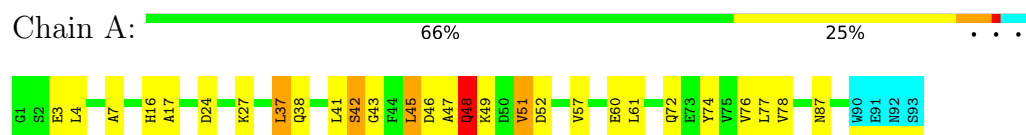


- Molecule 1: Protein S100-A1

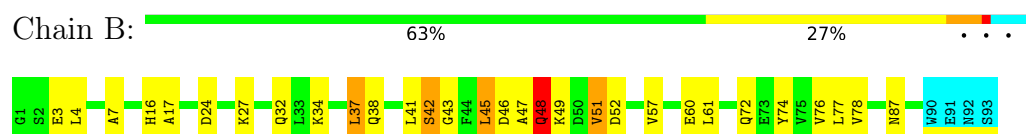


4.2.15 Score per residue for model 15

- Molecule 1: Protein S100-A1

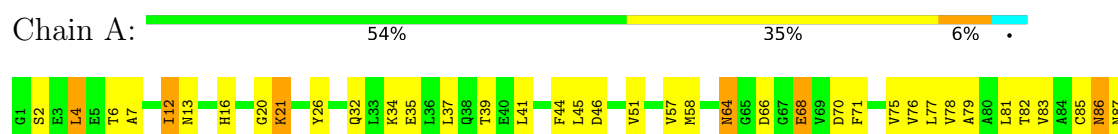


- Molecule 1: Protein S100-A1



4.2.16 Score per residue for model 16

- Molecule 1: Protein S100-A1





- Molecule 1: Protein S100-A1

Chain B: 54% 35% 6% .



4.2.17 Score per residue for model 17

- Molecule 1: Protein S100-A1

Chain A: 74% 16% 5% .



- Molecule 1: Protein S100-A1

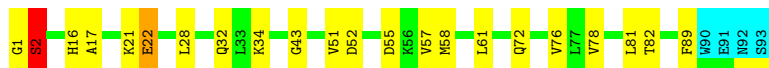
Chain B: 74% 16% 5% .



4.2.18 Score per residue for model 18 (medoid)

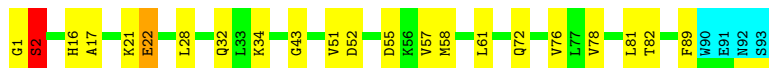
- Molecule 1: Protein S100-A1

Chain A: 72% 22% .. .



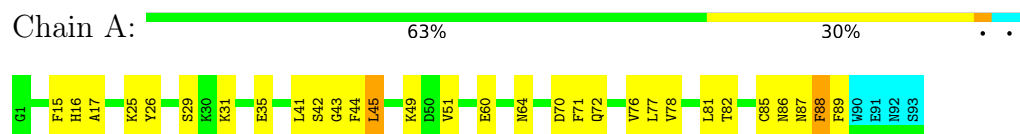
- Molecule 1: Protein S100-A1

Chain B: 72% 22% .. .

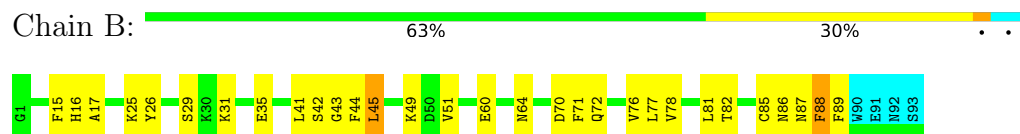


4.2.19 Score per residue for model 19

- Molecule 1: Protein S100-A1

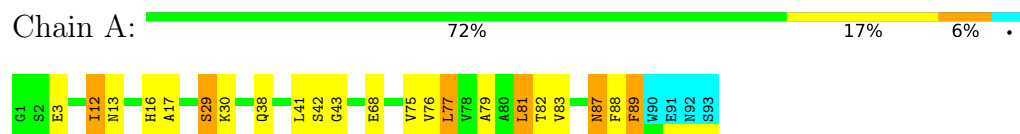


- Molecule 1: Protein S100-A1

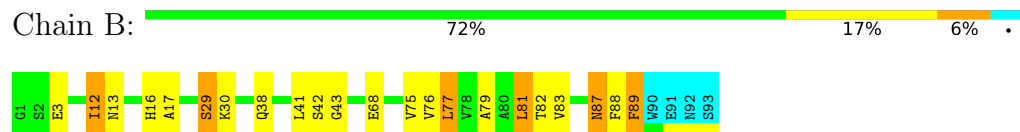


4.2.20 Score per residue for model 20

- Molecule 1: Protein S100-A1



- Molecule 1: Protein S100-A1



5 Refinement protocol and experimental data overview

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

Of the 97 calculated structures, 20 were deposited, based on the following criterion: *structures with the lowest energy*.

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

Software name	Classification	Version
X-PLOR NIH	structure solution	2.26
X-PLOR NIH	refinement	2.26

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	1179
Number of shifts mapped to atoms	1179
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	48%

6 Model quality [i](#)

6.1 Standard geometry [i](#)

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	0.54±0.00	0±0/703 (0.0± 0.0%)	0.98±0.01	0±0/946 (0.0± 0.0%)
1	B	0.55±0.00	0±0/703 (0.0± 0.0%)	0.98±0.01	0±0/946 (0.0± 0.0%)
All	All	0.54	0/28120 (0.0%)	0.98	2/37840 (0.0%)

There are no bond-length outliers.

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	21	LYS	CB-CA-C	-5.70	109.48	117.23	11	1
1	B	21	LYS	CB-CA-C	-5.65	109.55	117.23	11	1

There are no chirality outliers.

There are no planarity outliers.

6.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	694	681	681	24±7
1	B	694	681	681	24±7
All	All	27760	27240	27240	951

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 17.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:4:LEU:C	1:B:4:LEU:HD13	0.75	2.06	8	3
1:A:4:LEU:C	1:A:4:LEU:HD13	0.74	2.06	8	3
1:A:81:LEU:HD23	1:A:82:THR:N	0.72	1.99	20	2
1:B:81:LEU:HD23	1:B:82:THR:N	0.71	1.99	20	2
1:A:81:LEU:HD23	1:A:81:LEU:C	0.69	2.13	10	2
1:B:81:LEU:C	1:B:81:LEU:HD23	0.69	2.13	10	1
1:B:81:LEU:HD23	1:B:81:LEU:C	0.68	2.13	20	1
1:B:16:HIS:ND1	1:B:17:ALA:N	0.67	2.42	13	11
1:A:16:HIS:ND1	1:A:17:ALA:N	0.67	2.42	13	11
1:B:45:LEU:HD12	1:B:45:LEU:C	0.67	2.15	16	4
1:A:45:LEU:C	1:A:45:LEU:HD12	0.66	2.15	16	4
1:A:33:LEU:O	1:A:33:LEU:HD23	0.60	1.96	13	3
1:B:33:LEU:O	1:B:33:LEU:HD23	0.60	1.96	5	3
1:A:4:LEU:O	1:A:4:LEU:HD23	0.59	1.98	4	4
1:A:16:HIS:C	1:A:16:HIS:ND1	0.59	2.61	1	12
1:A:89:PHE:O	1:A:89:PHE:CD2	0.59	2.56	18	2
1:B:4:LEU:HD23	1:B:4:LEU:O	0.59	1.98	4	4
1:A:16:HIS:ND1	1:A:16:HIS:C	0.59	2.61	7	3
1:B:35:GLU:N	1:B:35:GLU:OE1	0.59	2.36	19	1
1:B:16:HIS:ND1	1:B:16:HIS:C	0.59	2.61	11	15
1:A:30:LYS:NZ	1:A:64:ASN:ND2	0.59	2.51	17	1
1:B:30:LYS:NZ	1:B:64:ASN:ND2	0.58	2.51	17	1
1:A:24:ASP:OD1	1:A:27:LYS:N	0.58	2.36	6	1
1:B:68:GLU:N	1:B:68:GLU:CD	0.58	2.61	16	2
1:B:1:GLY:N	1:B:5:GLU:OE1	0.58	2.36	6	1
1:A:68:GLU:N	1:A:68:GLU:CD	0.58	2.61	16	2
1:B:89:PHE:CD2	1:B:89:PHE:O	0.58	2.56	18	2
1:A:1:GLY:N	1:A:5:GLU:OE1	0.58	2.37	6	1
1:B:41:LEU:CD1	1:B:41:LEU:N	0.58	2.67	6	2
1:B:24:ASP:OD1	1:B:27:LYS:N	0.58	2.36	6	1
1:A:35:GLU:OE1	1:A:35:GLU:N	0.58	2.36	19	1
1:B:24:ASP:O	1:B:26:TYR:N	0.58	2.36	1	1
1:A:12:ILE:HD13	1:A:12:ILE:O	0.57	1.99	20	7
1:A:24:ASP:O	1:A:26:TYR:N	0.57	2.36	1	1
1:A:87:ASN:O	1:A:89:PHE:N	0.57	2.37	19	1
1:B:73:GLU:N	1:B:73:GLU:OE1	0.57	2.36	12	2
1:B:87:ASN:O	1:B:89:PHE:N	0.57	2.37	19	1
1:B:5:GLU:N	1:B:5:GLU:OE1	0.57	2.37	3	1
1:B:52:ASP:OD1	1:B:53:ALA:N	0.57	2.36	13	2
1:B:12:ILE:O	1:B:12:ILE:HD13	0.57	1.99	12	7
1:A:73:GLU:OE1	1:A:73:GLU:N	0.57	2.36	12	2
1:A:5:GLU:N	1:A:5:GLU:OE1	0.57	2.37	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:44:PHE:CD1	1:B:85:CYS:SG	0.57	2.93	13	3
1:A:41:LEU:CD1	1:A:41:LEU:N	0.57	2.67	6	2
1:B:70:ASP:O	1:B:72:GLN:N	0.57	2.38	1	1
1:A:52:ASP:OD1	1:A:53:ALA:N	0.56	2.37	13	2
1:A:38:GLN:O	1:A:42:SER:N	0.56	2.39	2	5
1:A:61:LEU:N	1:A:61:LEU:HD12	0.56	2.16	18	3
1:B:61:LEU:HD12	1:B:61:LEU:N	0.56	2.15	18	3
1:A:60:GLU:O	1:A:64:ASN:ND2	0.56	2.39	17	1
1:B:48:GLN:H	1:B:48:GLN:CD	0.56	2.09	15	1
1:B:60:GLU:O	1:B:64:ASN:ND2	0.56	2.39	17	1
1:A:70:ASP:O	1:A:72:GLN:N	0.56	2.38	1	1
1:A:9:GLU:O	1:A:13:ASN:ND2	0.56	2.39	1	3
1:B:38:GLN:O	1:B:42:SER:N	0.56	2.39	2	5
1:B:45:LEU:HD12	1:B:46:ASP:N	0.56	2.16	16	4
1:B:86:ASN:ND2	1:B:88:PHE:CD1	0.56	2.74	12	1
1:B:52:ASP:CG	1:B:53:ALA:N	0.56	2.64	8	2
1:A:48:GLN:H	1:A:48:GLN:CD	0.56	2.09	15	1
1:A:81:LEU:HD23	1:A:81:LEU:N	0.55	2.17	13	17
1:B:9:GLU:O	1:B:13:ASN:ND2	0.55	2.39	1	3
1:A:86:ASN:ND2	1:A:88:PHE:CD1	0.55	2.74	12	1
1:A:52:ASP:CG	1:A:53:ALA:N	0.55	2.65	8	2
1:B:4:LEU:C	1:B:4:LEU:CD1	0.55	2.78	8	3
1:A:60:GLU:OE2	1:A:77:LEU:HD11	0.55	2.01	15	1
1:B:81:LEU:HD23	1:B:81:LEU:N	0.55	2.17	13	17
1:B:60:GLU:OE2	1:B:77:LEU:HD11	0.55	2.01	15	1
1:A:45:LEU:HD12	1:A:46:ASP:N	0.55	2.16	16	4
1:B:81:LEU:C	1:B:81:LEU:CD2	0.55	2.80	20	2
1:B:41:LEU:N	1:B:41:LEU:HD12	0.55	2.17	6	2
1:B:71:PHE:O	1:B:74:TYR:N	0.54	2.39	17	1
1:B:3:GLU:O	1:B:7:ALA:N	0.54	2.39	9	1
1:A:44:PHE:O	1:A:85:CYS:SG	0.54	2.64	1	1
1:A:70:ASP:OD1	1:A:71:PHE:N	0.54	2.40	16	3
1:A:3:GLU:O	1:A:7:ALA:N	0.54	2.40	9	1
1:A:71:PHE:O	1:A:74:TYR:N	0.54	2.39	17	2
1:A:61:LEU:O	1:A:65:GLY:N	0.54	2.41	6	4
1:A:4:LEU:C	1:A:4:LEU:CD1	0.54	2.78	8	3
1:B:60:GLU:O	1:B:64:ASN:N	0.54	2.41	19	1
1:A:38:GLN:HE21	1:A:38:GLN:N	0.54	1.99	12	1
1:B:38:GLN:N	1:B:38:GLN:HE21	0.54	1.99	12	1
1:B:51:VAL:HG13	1:B:52:ASP:N	0.54	2.18	15	6
1:B:1:GLY:O	1:B:2:SER:CB	0.54	2.56	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:51:VAL:HG13	1:A:52:ASP:N	0.54	2.18	15	6
1:B:70:ASP:OD1	1:B:71:PHE:N	0.54	2.40	16	3
1:B:61:LEU:O	1:B:65:GLY:N	0.53	2.41	6	4
1:A:41:LEU:N	1:A:41:LEU:HD12	0.53	2.17	6	3
1:B:24:ASP:OD2	1:B:25:LYS:N	0.53	2.41	8	1
1:A:82:THR:O	1:A:85:CYS:SG	0.53	2.67	13	3
1:A:24:ASP:OD2	1:A:25:LYS:N	0.53	2.41	8	1
1:B:41:LEU:HD12	1:B:41:LEU:N	0.53	2.19	10	1
1:B:86:ASN:ND2	1:B:88:PHE:CE1	0.53	2.77	19	2
1:A:2:SER:HG	1:A:5:GLU:CD	0.53	2.10	3	1
1:B:70:ASP:OD1	1:B:70:ASP:N	0.53	2.41	9	1
1:B:82:THR:O	1:B:85:CYS:SG	0.53	2.67	13	3
1:B:76:VAL:HG13	1:B:77:LEU:N	0.53	2.19	14	7
1:A:47:ALA:O	1:A:85:CYS:SG	0.52	2.67	8	1
1:B:47:ALA:O	1:B:85:CYS:SG	0.52	2.67	8	1
1:B:15:PHE:C	1:B:15:PHE:CD1	0.52	2.87	9	1
1:A:86:ASN:ND2	1:A:88:PHE:CE1	0.52	2.77	19	2
1:B:44:PHE:O	1:B:85:CYS:SG	0.52	2.64	1	2
1:A:30:LYS:NZ	1:A:68:GLU:O	0.52	2.41	8	1
1:A:74:TYR:C	1:A:74:TYR:CD1	0.52	2.87	17	1
1:B:28:LEU:HD11	1:B:32:GLN:OE1	0.52	2.05	18	1
1:A:76:VAL:HG13	1:A:77:LEU:N	0.52	2.19	14	7
1:B:74:TYR:C	1:B:74:TYR:CD1	0.52	2.87	17	1
1:A:28:LEU:HD11	1:A:32:GLN:OE1	0.52	2.05	18	1
1:A:75:VAL:HG23	1:A:76:VAL:N	0.52	2.20	6	9
1:A:15:PHE:CZ	1:A:70:ASP:O	0.52	2.62	19	1
1:A:85:CYS:SG	1:A:86:ASN:N	0.52	2.82	19	1
1:B:41:LEU:O	1:B:42:SER:CB	0.52	2.58	4	4
1:A:45:LEU:C	1:A:45:LEU:CD1	0.52	2.83	16	4
1:A:1:GLY:O	1:A:2:SER:CB	0.52	2.56	18	1
1:B:15:PHE:CZ	1:B:70:ASP:O	0.52	2.62	19	1
1:A:41:LEU:O	1:A:42:SER:CB	0.52	2.58	4	4
1:B:75:VAL:HG23	1:B:76:VAL:N	0.52	2.19	6	9
1:B:45:LEU:C	1:B:45:LEU:CD1	0.52	2.83	11	4
1:A:86:ASN:C	1:A:86:ASN:HD22	0.52	2.13	3	1
1:A:15:PHE:C	1:A:15:PHE:CD1	0.52	2.87	9	1
1:A:49:LYS:NZ	1:A:85:CYS:O	0.51	2.38	19	1
1:B:85:CYS:SG	1:B:86:ASN:N	0.51	2.82	19	1
1:A:47:ALA:O	1:A:48:GLN:C	0.51	2.54	3	1
1:B:2:SER:HG	1:B:5:GLU:CD	0.51	2.12	3	1
1:A:44:PHE:C	1:A:46:ASP:H	0.51	2.14	10	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:52:ASP:N	1:A:52:ASP:OD1	0.51	2.41	12	2
1:B:47:ALA:O	1:B:48:GLN:C	0.51	2.54	3	2
1:A:12:ILE:CG2	1:A:13:ASN:N	0.51	2.74	16	6
1:A:45:LEU:H	1:A:45:LEU:CD2	0.51	2.19	3	8
1:B:86:ASN:HD22	1:B:86:ASN:C	0.51	2.13	3	1
1:B:49:LYS:NZ	1:B:85:CYS:O	0.51	2.38	19	1
1:B:12:ILE:CG2	1:B:13:ASN:N	0.51	2.74	16	7
1:A:14:VAL:O	1:A:18:HIS:CD2	0.50	2.64	1	1
1:B:52:ASP:OD1	1:B:52:ASP:N	0.50	2.41	12	2
1:B:14:VAL:O	1:B:18:HIS:CD2	0.50	2.65	1	1
1:B:45:LEU:HD23	1:B:45:LEU:H	0.50	1.66	3	7
1:B:44:PHE:C	1:B:46:ASP:H	0.50	2.14	10	3
1:A:76:VAL:CG2	1:B:76:VAL:CG2	0.50	2.89	2	3
1:A:32:GLN:NE2	1:A:35:GLU:OE1	0.50	2.45	13	1
1:B:57:VAL:HG23	1:B:77:LEU:HD12	0.50	1.83	15	1
1:A:42:SER:O	1:A:42:SER:OG	0.50	2.30	6	2
1:A:60:GLU:O	1:A:64:ASN:N	0.50	2.41	19	1
1:B:45:LEU:H	1:B:45:LEU:CD2	0.50	2.19	3	6
1:A:57:VAL:HG23	1:A:77:LEU:HD12	0.50	1.83	15	1
1:B:30:LYS:NZ	1:B:68:GLU:O	0.50	2.41	8	1
1:A:44:PHE:CD1	1:A:85:CYS:SG	0.50	2.93	13	3
1:B:64:ASN:O	1:B:64:ASN:ND2	0.49	2.45	1	1
1:A:64:ASN:ND2	1:A:64:ASN:N	0.49	2.58	5	4
1:A:30:LYS:NZ	1:A:69:VAL:CG1	0.49	2.75	7	1
1:B:21:LYS:O	1:B:22:GLU:O	0.49	2.30	7	4
1:B:32:GLN:NE2	1:B:35:GLU:OE1	0.49	2.45	13	1
1:A:89:PHE:CE2	1:B:26:TYR:OH	0.49	2.59	16	1
1:A:45:LEU:H	1:A:45:LEU:HD23	0.49	1.66	3	8
1:B:30:LYS:NZ	1:B:69:VAL:CG1	0.49	2.75	7	1
1:B:4:LEU:O	1:B:7:ALA:HB3	0.49	2.08	8	5
1:B:85:CYS:O	1:B:86:ASN:C	0.49	2.56	11	6
1:B:24:ASP:O	1:B:27:LYS:O	0.49	2.31	12	4
1:A:24:ASP:O	1:A:27:LYS:O	0.49	2.31	15	4
1:A:77:LEU:HD23	1:A:77:LEU:O	0.49	2.08	6	1
1:A:71:PHE:O	1:A:75:VAL:N	0.49	2.46	17	1
1:A:74:TYR:O	1:A:78:VAL:HG23	0.49	2.07	1	2
1:B:9:GLU:O	1:B:13:ASN:CG	0.49	2.56	4	6
1:A:66:ASP:O	1:A:66:ASP:OD1	0.49	2.31	5	3
1:B:3:GLU:H	1:B:3:GLU:CD	0.49	2.16	15	3
1:A:4:LEU:O	1:A:7:ALA:HB3	0.49	2.07	13	5
1:B:74:TYR:O	1:B:78:VAL:HG23	0.49	2.07	1	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:5:GLU:OE2	1:B:41:LEU:O	0.49	2.31	8	3
1:B:66:ASP:OD1	1:B:66:ASP:O	0.49	2.31	7	3
1:A:9:GLU:O	1:A:13:ASN:CG	0.49	2.56	4	6
1:B:86:ASN:OD1	1:B:86:ASN:C	0.49	2.55	10	2
1:A:31:LYS:O	1:A:35:GLU:OE1	0.49	2.31	19	1
1:B:31:LYS:O	1:B:35:GLU:OE1	0.49	2.31	19	1
1:A:23:GLY:O	1:A:24:ASP:O	0.48	2.31	14	2
1:B:70:ASP:OD1	1:B:73:GLU:CD	0.48	2.56	8	1
1:A:85:CYS:O	1:A:86:ASN:C	0.48	2.55	11	6
1:B:64:ASN:ND2	1:B:64:ASN:N	0.48	2.57	16	5
1:B:67:GLY:O	1:B:68:GLU:O	0.48	2.31	13	3
1:A:21:LYS:O	1:A:22:GLU:C	0.48	2.56	7	3
1:B:24:ASP:CB	1:B:27:LYS:O	0.48	2.61	4	1
1:A:42:SER:O	1:A:46:ASP:OD2	0.48	2.31	6	1
1:B:77:LEU:O	1:B:77:LEU:HD23	0.48	2.08	6	1
1:B:86:ASN:O	1:B:87:ASN:OD1	0.48	2.31	6	1
1:B:20:GLY:O	1:B:21:LYS:O	0.48	2.32	16	1
1:B:71:PHE:O	1:B:75:VAL:N	0.48	2.46	17	1
1:A:41:LEU:O	1:B:5:GLU:OE2	0.48	2.31	10	3
1:A:70:ASP:OD1	1:A:73:GLU:CD	0.48	2.57	8	1
1:B:42:SER:O	1:B:46:ASP:OD2	0.48	2.31	6	1
1:A:3:GLU:H	1:A:3:GLU:CD	0.48	2.15	15	4
1:B:38:GLN:O	1:B:42:SER:OG	0.48	2.31	17	3
1:A:70:ASP:OD1	1:A:70:ASP:N	0.48	2.41	9	1
1:A:86:ASN:C	1:A:86:ASN:OD1	0.48	2.56	9	2
1:A:21:LYS:O	1:A:22:GLU:O	0.48	2.30	7	4
1:A:38:GLN:O	1:A:42:SER:OG	0.48	2.31	17	4
1:A:67:GLY:O	1:A:68:GLU:O	0.48	2.31	13	3
1:A:44:PHE:C	1:A:46:ASP:N	0.48	2.71	16	3
1:B:23:GLY:O	1:B:24:ASP:O	0.48	2.31	14	2
1:A:42:SER:C	1:A:46:ASP:OD1	0.48	2.57	14	1
1:B:77:LEU:O	1:B:77:LEU:HD13	0.48	2.08	20	1
1:A:78:VAL:O	1:A:82:THR:OG1	0.48	2.32	11	9
1:B:21:LYS:O	1:B:22:GLU:C	0.48	2.56	7	3
1:A:77:LEU:O	1:A:77:LEU:HD13	0.48	2.08	20	1
1:A:88:PHE:O	1:A:89:PHE:CG	0.48	2.66	20	2
1:A:70:ASP:OD1	1:A:73:GLU:OE1	0.47	2.31	9	1
1:B:88:PHE:O	1:B:89:PHE:CG	0.47	2.66	20	2
1:A:24:ASP:OD2	1:A:68:GLU:CD	0.47	2.57	1	1
1:B:35:GLU:O	1:B:39:THR:OG1	0.47	2.31	16	3
1:A:24:ASP:CB	1:A:27:LYS:O	0.47	2.62	4	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:20:GLY:O	1:A:21:LYS:O	0.47	2.32	16	1
1:A:82:THR:O	1:A:86:ASN:N	0.47	2.48	9	4
1:A:73:GLU:N	1:A:73:GLU:CD	0.47	2.72	4	1
1:A:76:VAL:CG1	1:A:77:LEU:N	0.47	2.77	1	7
1:B:24:ASP:OD2	1:B:68:GLU:CD	0.47	2.58	1	1
1:B:73:GLU:CD	1:B:73:GLU:N	0.47	2.72	4	1
1:B:42:SER:O	1:B:42:SER:OG	0.47	2.31	10	1
1:A:41:LEU:N	1:A:41:LEU:CD1	0.47	2.78	10	1
1:A:64:ASN:C	1:A:66:ASP:H	0.47	2.18	10	1
1:B:44:PHE:C	1:B:46:ASP:N	0.47	2.71	10	3
1:B:64:ASN:O	1:B:66:ASP:N	0.47	2.48	14	1
1:B:29:SER:OG	1:B:30:LYS:N	0.47	2.48	20	1
1:B:78:VAL:O	1:B:82:THR:OG1	0.47	2.31	8	10
1:A:1:GLY:N	1:A:5:GLU:CD	0.47	2.73	6	1
1:A:86:ASN:O	1:A:87:ASN:OD1	0.47	2.31	6	1
1:B:1:GLY:N	1:B:5:GLU:CD	0.47	2.73	6	1
1:B:64:ASN:C	1:B:66:ASP:H	0.47	2.18	10	1
1:B:58:MET:SD	1:B:58:MET:C	0.47	2.98	11	1
1:B:68:GLU:CD	1:B:68:GLU:H	0.47	2.18	16	1
1:A:64:ASN:O	1:A:64:ASN:ND2	0.47	2.45	1	1
1:A:66:ASP:O	1:A:66:ASP:CG	0.47	2.57	5	1
1:B:3:GLU:CD	1:B:3:GLU:H	0.47	2.17	7	1
1:B:70:ASP:OD1	1:B:73:GLU:OE1	0.47	2.31	9	1
1:B:41:LEU:N	1:B:41:LEU:CD1	0.47	2.78	10	1
1:A:26:TYR:OH	1:B:89:PHE:CZ	0.47	2.61	16	1
1:A:35:GLU:O	1:A:39:THR:CB	0.47	2.62	16	1
1:B:45:LEU:H	1:B:45:LEU:HD23	0.47	1.70	9	1
1:B:82:THR:O	1:B:86:ASN:N	0.47	2.48	9	3
1:A:57:VAL:HG13	1:A:58:MET:N	0.47	2.25	18	4
1:B:42:SER:C	1:B:46:ASP:OD1	0.47	2.57	14	1
1:B:89:PHE:O	1:B:89:PHE:CG	0.47	2.68	18	1
1:B:35:GLU:O	1:B:39:THR:CB	0.46	2.62	16	1
1:B:76:VAL:CG1	1:B:77:LEU:N	0.46	2.77	1	8
1:A:89:PHE:O	1:A:89:PHE:CG	0.46	2.68	18	1
1:A:32:GLN:C	1:A:34:LYS:N	0.46	2.73	18	2
1:A:64:ASN:O	1:A:66:ASP:N	0.46	2.48	14	1
1:B:47:ALA:O	1:B:49:LYS:N	0.46	2.48	15	1
1:A:71:PHE:O	1:A:72:GLN:C	0.46	2.59	17	1
1:A:28:LEU:O	1:A:69:VAL:HG22	0.46	2.10	3	1
1:A:19:SER:OG	1:A:25:LYS:O	0.46	2.30	12	1
1:A:29:SER:OG	1:A:30:LYS:N	0.46	2.48	20	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:57:VAL:CG1	1:A:58:MET:N	0.46	2.79	18	4
1:A:64:ASN:C	1:A:66:ASP:N	0.46	2.72	14	2
1:A:58:MET:C	1:A:58:MET:SD	0.46	2.98	11	1
1:B:4:LEU:HD13	1:B:4:LEU:O	0.46	2.11	8	2
1:B:19:SER:C	1:B:21:LYS:N	0.46	2.73	12	1
1:A:68:GLU:CD	1:A:68:GLU:H	0.46	2.18	16	1
1:A:30:LYS:HZ2	1:A:64:ASN:ND2	0.46	2.09	17	1
1:B:57:VAL:CG1	1:B:58:MET:N	0.46	2.79	18	4
1:A:47:ALA:O	1:A:49:LYS:N	0.46	2.48	15	1
1:B:57:VAL:HG13	1:B:58:MET:N	0.46	2.25	18	4
1:A:37:LEU:O	1:A:41:LEU:N	0.46	2.49	11	3
1:B:85:CYS:SG	1:B:85:CYS:O	0.45	2.74	8	1
1:A:2:SER:OG	1:A:5:GLU:OE2	0.45	2.32	3	1
1:B:28:LEU:O	1:B:69:VAL:HG22	0.45	2.10	3	1
1:A:87:ASN:O	1:A:87:ASN:CG	0.45	2.59	8	1
1:A:88:PHE:C	1:A:89:PHE:CG	0.45	2.94	13	1
1:B:66:ASP:O	1:B:66:ASP:CG	0.45	2.57	5	1
1:B:88:PHE:C	1:B:89:PHE:CG	0.45	2.94	13	1
1:B:81:LEU:N	1:B:81:LEU:CD2	0.45	2.79	13	17
1:B:61:LEU:N	1:B:61:LEU:CD1	0.45	2.80	18	2
1:A:86:ASN:O	1:A:87:ASN:C	0.45	2.59	11	2
1:A:79:ALA:O	1:A:83:VAL:HG23	0.45	2.12	20	2
1:A:85:CYS:SG	1:A:85:CYS:O	0.45	2.74	8	1
1:A:19:SER:C	1:A:21:LYS:N	0.45	2.73	12	1
1:B:64:ASN:C	1:B:66:ASP:N	0.45	2.72	14	2
1:A:72:GLN:O	1:A:75:VAL:N	0.45	2.49	17	1
1:A:45:LEU:HD23	1:A:45:LEU:N	0.45	2.27	4	7
1:A:81:LEU:N	1:A:81:LEU:CD2	0.45	2.80	1	17
1:B:19:SER:OG	1:B:25:LYS:O	0.45	2.30	12	1
1:A:34:LYS:NZ	1:A:61:LEU:HD12	0.45	2.27	13	1
1:B:79:ALA:O	1:B:83:VAL:HG23	0.45	2.12	20	2
1:B:2:SER:OG	1:B:5:GLU:CD	0.45	2.60	3	1
1:B:86:ASN:OD1	1:B:87:ASN:N	0.45	2.49	5	1
1:A:77:LEU:CD1	1:A:77:LEU:N	0.45	2.80	19	2
1:B:34:LYS:NZ	1:B:61:LEU:HD12	0.45	2.27	13	1
1:A:61:LEU:N	1:A:61:LEU:CD1	0.45	2.80	18	2
1:A:35:GLU:O	1:A:39:THR:OG1	0.45	2.31	16	2
1:A:4:LEU:HD13	1:A:4:LEU:O	0.45	2.11	8	2
1:B:77:LEU:CD1	1:B:77:LEU:N	0.45	2.79	19	1
1:A:2:SER:OG	1:A:5:GLU:CD	0.44	2.60	3	1
1:A:86:ASN:OD1	1:A:87:ASN:N	0.44	2.49	5	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:87:ASN:CG	1:B:87:ASN:O	0.44	2.59	8	1
1:B:35:GLU:O	1:B:39:THR:N	0.44	2.47	1	1
1:B:55:ASP:O	1:B:59:LYS:N	0.44	2.49	1	2
1:B:70:ASP:OD1	1:B:70:ASP:C	0.44	2.59	1	1
1:B:32:GLN:C	1:B:34:LYS:N	0.44	2.73	18	4
1:B:72:GLN:O	1:B:76:VAL:HG23	0.44	2.12	15	5
1:B:77:LEU:N	1:B:77:LEU:CD1	0.44	2.81	9	1
1:B:71:PHE:O	1:B:72:GLN:C	0.44	2.59	17	1
1:B:72:GLN:O	1:B:75:VAL:N	0.44	2.49	17	1
1:B:45:LEU:HD23	1:B:45:LEU:N	0.44	2.27	4	7
1:A:41:LEU:O	1:A:42:SER:C	0.44	2.59	20	2
1:B:37:LEU:O	1:B:41:LEU:N	0.44	2.49	11	3
1:A:34:LYS:HZ2	1:A:61:LEU:HD12	0.44	1.71	13	1
1:A:49:LYS:NZ	1:A:87:ASN:ND2	0.44	2.66	10	1
1:A:81:LEU:C	1:A:81:LEU:CD2	0.44	2.80	20	1
1:B:41:LEU:O	1:B:42:SER:C	0.44	2.59	20	2
1:A:85:CYS:O	1:A:87:ASN:ND2	0.44	2.51	16	1
1:B:85:CYS:O	1:B:87:ASN:ND2	0.44	2.51	16	1
1:B:2:SER:OG	1:B:5:GLU:OE2	0.44	2.32	3	1
1:A:46:ASP:O	1:A:46:ASP:OD1	0.44	2.36	5	3
1:B:1:GLY:C	1:B:2:SER:OG	0.44	2.60	18	1
1:B:25:LYS:O	1:B:26:TYR:CG	0.44	2.71	19	1
1:B:25:LYS:CD	1:B:25:LYS:H	0.44	2.26	2	1
1:A:59:LYS:O	1:A:62:ASP:N	0.44	2.49	3	1
1:A:72:GLN:O	1:A:76:VAL:HG23	0.44	2.12	15	6
1:A:51:VAL:CG1	1:A:52:ASP:N	0.44	2.81	10	3
1:B:51:VAL:CG1	1:B:52:ASP:N	0.44	2.81	10	3
1:A:50:ASP:O	1:A:54:VAL:HG23	0.44	2.13	8	2
1:A:51:VAL:O	1:A:55:ASP:N	0.44	2.50	9	1
1:A:24:ASP:CG	1:A:25:LYS:N	0.43	2.76	8	1
1:B:59:LYS:O	1:B:62:ASP:N	0.43	2.49	3	1
1:B:46:ASP:O	1:B:46:ASP:OD1	0.43	2.36	12	3
1:B:70:ASP:CG	1:B:71:PHE:N	0.43	2.77	14	1
1:A:1:GLY:C	1:A:2:SER:OG	0.43	2.60	18	1
1:A:43:GLY:O	1:A:46:ASP:CB	0.43	2.67	10	1
1:B:68:GLU:OE1	1:B:68:GLU:N	0.43	2.51	14	1
1:B:38:GLN:O	1:B:39:THR:C	0.43	2.62	1	1
1:B:55:ASP:O	1:B:55:ASP:OD1	0.43	2.36	18	1
1:B:4:LEU:HD23	1:B:4:LEU:C	0.43	2.39	1	3
1:A:13:ASN:O	1:A:16:HIS:NE2	0.43	2.51	10	1
1:A:13:ASN:OD1	1:A:16:HIS:NE2	0.43	2.52	14	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:64:ASN:CG	1:B:65:GLY:H	0.43	2.22	3	1
1:B:86:ASN:O	1:B:87:ASN:C	0.43	2.60	11	2
1:B:43:GLY:O	1:B:46:ASP:CB	0.43	2.66	10	1
1:B:49:LYS:NZ	1:B:87:ASN:ND2	0.43	2.66	10	1
1:A:64:ASN:O	1:A:65:GLY:C	0.43	2.62	14	1
1:A:70:ASP:C	1:A:70:ASP:OD1	0.43	2.59	1	1
1:A:36:LEU:O	1:A:40:GLU:N	0.43	2.51	9	1
1:B:13:ASN:O	1:B:16:HIS:NE2	0.43	2.51	10	1
1:A:70:ASP:CG	1:A:71:PHE:N	0.43	2.76	14	1
1:B:30:LYS:NZ	1:B:64:ASN:O	0.43	2.43	17	1
1:B:81:LEU:CD2	1:B:81:LEU:H	0.43	2.27	13	7
1:A:25:LYS:O	1:A:26:TYR:CG	0.43	2.71	19	1
1:A:13:ASN:O	1:A:16:HIS:CD2	0.43	2.72	20	1
1:A:81:LEU:CD2	1:A:81:LEU:H	0.43	2.27	13	8
1:A:25:LYS:CD	1:A:25:LYS:H	0.43	2.26	2	1
1:A:55:ASP:O	1:A:55:ASP:OD1	0.43	2.36	18	1
1:B:14:VAL:O	1:B:18:HIS:NE2	0.42	2.52	1	1
1:B:24:ASP:CG	1:B:25:LYS:N	0.42	2.76	8	1
1:B:38:GLN:N	1:B:38:GLN:NE2	0.42	2.67	12	1
1:B:70:ASP:CG	1:B:71:PHE:H	0.42	2.22	14	1
1:A:81:LEU:H	1:A:81:LEU:CD2	0.42	2.27	9	1
1:A:4:LEU:HD23	1:A:4:LEU:C	0.42	2.39	1	3
1:A:35:GLU:O	1:A:39:THR:N	0.42	2.47	1	2
1:B:11:LEU:O	1:B:14:VAL:HG22	0.42	2.14	13	1
1:B:64:ASN:O	1:B:65:GLY:C	0.42	2.62	14	1
1:B:33:LEU:N	1:B:33:LEU:CD2	0.42	2.83	6	2
1:B:50:ASP:O	1:B:54:VAL:HG23	0.42	2.13	8	3
1:A:89:PHE:CZ	1:B:26:TYR:OH	0.42	2.63	16	1
1:A:14:VAL:O	1:A:18:HIS:NE2	0.42	2.52	1	1
1:B:52:ASP:CG	1:B:53:ALA:H	0.42	2.20	8	1
1:B:81:LEU:H	1:B:81:LEU:CD2	0.42	2.27	9	1
1:A:41:LEU:O	1:A:42:SER:OG	0.42	2.33	13	1
1:B:13:ASN:O	1:B:16:HIS:CD2	0.42	2.72	20	1
1:A:33:LEU:N	1:A:33:LEU:CD2	0.42	2.83	6	2
1:A:68:GLU:N	1:A:68:GLU:OE1	0.42	2.51	14	1
1:A:16:HIS:C	1:A:16:HIS:HD1	0.42	2.22	18	2
1:B:54:VAL:O	1:B:57:VAL:HG12	0.42	2.15	4	1
1:A:12:ILE:HG23	1:A:13:ASN:N	0.42	2.29	5	1
1:A:87:ASN:O	1:A:87:ASN:OD1	0.42	2.38	8	1
1:B:36:LEU:O	1:B:40:GLU:N	0.42	2.47	10	2
1:B:25:LYS:C	1:B:26:TYR:CG	0.42	2.98	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:38:GLN:O	1:A:39:THR:C	0.42	2.62	1	1
1:A:86:ASN:C	1:A:86:ASN:ND2	0.42	2.78	3	1
1:B:12:ILE:HG23	1:B:13:ASN:N	0.42	2.29	5	1
1:A:55:ASP:O	1:A:59:LYS:N	0.42	2.52	8	1
1:A:77:LEU:O	1:A:80:ALA:N	0.42	2.53	9	1
1:B:24:ASP:OD1	1:B:25:LYS:N	0.42	2.53	13	1
1:A:64:ASN:CG	1:A:65:GLY:H	0.42	2.22	3	1
1:A:50:ASP:O	1:A:54:VAL:CG2	0.42	2.68	12	1
1:A:11:LEU:O	1:A:14:VAL:HG22	0.42	2.14	13	1
1:A:25:LYS:C	1:A:26:TYR:CG	0.42	2.98	19	1
1:A:54:VAL:O	1:A:57:VAL:HG12	0.42	2.15	4	1
1:A:30:LYS:HZ1	1:A:69:VAL:CG1	0.42	2.28	7	1
1:A:24:ASP:OD1	1:A:25:LYS:N	0.42	2.53	13	1
1:A:70:ASP:CG	1:A:71:PHE:H	0.42	2.22	14	1
1:B:13:ASN:OD1	1:B:16:HIS:NE2	0.42	2.52	14	1
1:B:31:LYS:N	1:B:31:LYS:CD	0.41	2.83	2	1
1:B:41:LEU:O	1:B:45:LEU:HD21	0.41	2.15	3	1
1:A:87:ASN:OD1	1:A:87:ASN:C	0.41	2.63	5	1
1:B:87:ASN:O	1:B:87:ASN:OD1	0.41	2.38	8	1
1:A:10:THR:O	1:A:14:VAL:HG23	0.41	2.15	9	1
1:B:77:LEU:O	1:B:80:ALA:N	0.41	2.53	9	1
1:A:38:GLN:N	1:A:38:GLN:NE2	0.41	2.67	12	1
1:B:10:THR:O	1:B:14:VAL:HG22	0.41	2.15	12	1
1:A:31:LYS:N	1:A:31:LYS:CD	0.41	2.83	2	2
1:A:41:LEU:O	1:A:45:LEU:HD21	0.41	2.15	3	2
1:B:88:PHE:C	1:B:89:PHE:CD2	0.41	2.99	13	1
1:A:13:ASN:O	1:A:16:HIS:CE1	0.41	2.73	14	1
1:B:86:ASN:C	1:B:86:ASN:ND2	0.41	2.78	3	1
1:A:62:ASP:OD1	1:A:62:ASP:C	0.41	2.63	4	1
1:A:62:ASP:OD1	1:A:62:ASP:O	0.41	2.38	4	1
1:A:71:PHE:CE2	1:A:75:VAL:HG11	0.41	2.51	6	1
1:B:41:LEU:O	1:B:42:SER:OG	0.41	2.33	13	1
1:A:64:ASN:ND2	1:A:64:ASN:O	0.41	2.53	16	1
1:B:10:THR:O	1:B:14:VAL:HG23	0.41	2.15	9	1
1:B:56:LYS:NZ	1:B:56:LYS:CB	0.41	2.83	2	1
1:B:71:PHE:CE2	1:B:75:VAL:HG11	0.41	2.51	6	1
1:A:64:ASN:N	1:A:64:ASN:ND2	0.41	2.69	14	1
1:A:2:SER:O	1:A:6:THR:HG22	0.41	2.16	16	1
1:B:25:LYS:O	1:B:26:TYR:CD1	0.41	2.74	19	1
1:A:88:PHE:C	1:A:89:PHE:CD2	0.41	2.99	13	1
1:B:16:HIS:C	1:B:16:HIS:HD1	0.41	2.23	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:B:49:LYS:CD	1:B:49:LYS:N	0.41	2.84	3	1
1:B:62:ASP:O	1:B:62:ASP:OD1	0.41	2.38	4	1
1:B:77:LEU:N	1:B:77:LEU:HD12	0.41	2.31	9	1
1:A:15:PHE:CD1	1:A:15:PHE:C	0.41	2.99	12	1
1:B:13:ASN:O	1:B:16:HIS:CE1	0.41	2.73	14	1
1:B:2:SER:O	1:B:6:THR:HG22	0.41	2.16	16	1
1:A:25:LYS:O	1:A:26:TYR:CD1	0.41	2.74	19	1
1:B:50:ASP:O	1:B:54:VAL:CG2	0.41	2.68	12	1
1:A:56:LYS:CB	1:A:56:LYS:NZ	0.40	2.83	2	1
1:B:65:GLY:O	1:B:66:ASP:OD1	0.40	2.39	14	1
1:B:72:GLN:C	1:B:74:TYR:N	0.40	2.79	17	1
1:A:49:LYS:N	1:A:49:LYS:CD	0.40	2.84	3	1
1:A:72:GLN:O	1:A:75:VAL:HG22	0.40	2.17	9	1
1:A:77:LEU:N	1:A:77:LEU:HD12	0.40	2.31	9	1
1:A:10:THR:O	1:A:14:VAL:HG22	0.40	2.15	12	1
1:A:65:GLY:O	1:A:66:ASP:OD1	0.40	2.39	14	1
1:B:31:LYS:CD	1:B:31:LYS:N	0.40	2.84	1	1
1:B:51:VAL:O	1:B:55:ASP:N	0.40	2.50	9	1
1:A:80:ALA:C	1:A:82:THR:N	0.40	2.78	10	1
1:A:12:ILE:HD13	1:A:12:ILE:C	0.40	2.41	16	1
1:A:12:ILE:C	1:A:12:ILE:CD1	0.40	2.95	16	1

6.3 Torsion angles ⓘ

6.3.1 Protein backbone ⓘ

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	88/93 (95%)	74±2 (84±3%)	11±2 (13±3%)	2±1 (3±1%)	6	40
1	B	88/93 (95%)	74±2 (84±3%)	11±2 (13±2%)	3±1 (3±1%)	5	39
All	All	3520/3720 (95%)	2973 (84%)	446 (13%)	101 (3%)	5	39

All 40 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	43	GLY	15
1	B	43	GLY	15
1	A	71	PHE	4
1	B	71	PHE	4
1	A	22	GLU	4
1	B	22	GLU	4
1	A	68	GLU	3
1	A	86	ASN	3
1	B	68	GLU	3
1	B	86	ASN	3
1	A	24	ASP	3
1	B	24	ASP	3
1	B	21	LYS	3
1	A	41	LEU	2
1	B	41	LEU	2
1	A	48	GLN	2
1	B	48	GLN	2
1	A	89	PHE	2
1	B	89	PHE	2
1	A	21	LYS	2
1	A	25	LYS	1
1	B	25	LYS	1
1	A	63	GLU	1
1	A	64	ASN	1
1	A	66	ASP	1
1	B	63	GLU	1
1	B	64	ASN	1
1	B	66	ASP	1
1	A	20	GLY	1
1	B	20	GLY	1
1	A	65	GLY	1
1	B	65	GLY	1
1	A	51	VAL	1
1	B	51	VAL	1
1	A	2	SER	1
1	B	2	SER	1
1	A	29	SER	1
1	A	88	PHE	1
1	B	29	SER	1
1	B	88	PHE	1

6.3.2 Protein sidechains ⓘ

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	76/80 (95%)	73±1 (96±2%)	3±1 (4±2%)	31	81
1	B	76/80 (95%)	73±1 (96±2%)	3±1 (4±2%)	31	81
All	All	3040/3200 (95%)	2928 (96%)	112 (4%)	31	81

All 46 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	45	LEU	10
1	B	45	LEU	10
1	A	12	ILE	8
1	B	12	ILE	8
1	A	51	VAL	8
1	B	51	VAL	8
1	A	64	ASN	5
1	B	64	ASN	5
1	A	31	LYS	3
1	B	31	LYS	3
1	A	4	LEU	2
1	B	4	LEU	2
1	A	29	SER	2
1	A	81	LEU	2
1	B	29	SER	2
1	B	81	LEU	2
1	A	77	LEU	2
1	B	77	LEU	2
1	A	25	LYS	1
1	B	25	LYS	1
1	A	5	GLU	1
1	B	5	GLU	1
1	A	33	LEU	1
1	B	33	LEU	1
1	A	6	THR	1
1	B	6	THR	1
1	A	8	MET	1
1	A	41	LEU	1

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Mol	Chain	Res	Type	Models (Total)
1	B	8	MET	1
1	B	41	LEU	1
1	A	27	LYS	1
1	B	27	LYS	1
1	A	37	LEU	1
1	A	42	SER	1
1	A	48	GLN	1
1	B	37	LEU	1
1	B	42	SER	1
1	B	48	GLN	1
1	A	68	GLU	1
1	B	68	GLU	1
1	A	75	VAL	1
1	B	75	VAL	1
1	A	2	SER	1
1	B	2	SER	1
1	A	87	ASN	1
1	B	87	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 oligosaccharides 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 ⓘ

There are no chain breaks in this entry.

7 Chemical shift validation

The completeness of assignment taking into account all chemical shift lists is 48% for the well-defined parts and 48% 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

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	1179
Number of shifts mapped to atoms	1179
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	3

7.1.2 Chemical shift referencing

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction $\pm$ precision, ppm	Suggested action
$^{13}\text{C}_\alpha$	93	-0.57 ± 0.20	Should be checked
$^{13}\text{C}_\beta$	87	0.03 ± 0.17	None needed (< 0.5 ppm)
$^{13}\text{C}'$	90	-0.32 ± 0.18	None needed (< 0.5 ppm)
^{15}N	91	0.41 ± 0.24	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 48%, i.e. 1130 atoms were assigned a chemical shift out of a possible 2364. 0 out of 40 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^1H	^{13}C	^{15}N
Backbone	445/902 (49%)	182/368 (49%)	176/356 (49%)	87/178 (49%)
Sidechain	612/1294 (47%)	418/836 (50%)	186/424 (44%)	8/34 (24%)

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	Total	¹H	¹³C	¹⁵N
Aromatic	73/168 (43%)	37/82 (45%)	36/78 (46%)	0/8 (0%)
Overall	1130/2364 (48%)	637/1286 (50%)	398/858 (46%)	95/220 (43%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 48%, i.e. 1179 atoms were assigned a chemical shift out of a possible 2468. 0 out of 40 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	¹H	¹³C	¹⁵N
Backbone	464/942 (49%)	190/384 (49%)	183/372 (49%)	91/186 (49%)
Sidechain	630/1334 (47%)	430/860 (50%)	191/438 (44%)	9/36 (25%)
Aromatic	85/192 (44%)	43/94 (46%)	41/88 (47%)	1/10 (10%)
Overall	1179/2468 (48%)	663/1338 (50%)	415/898 (46%)	101/232 (44%)

7.1.4 Statistically unusual chemical shifts [i](#)

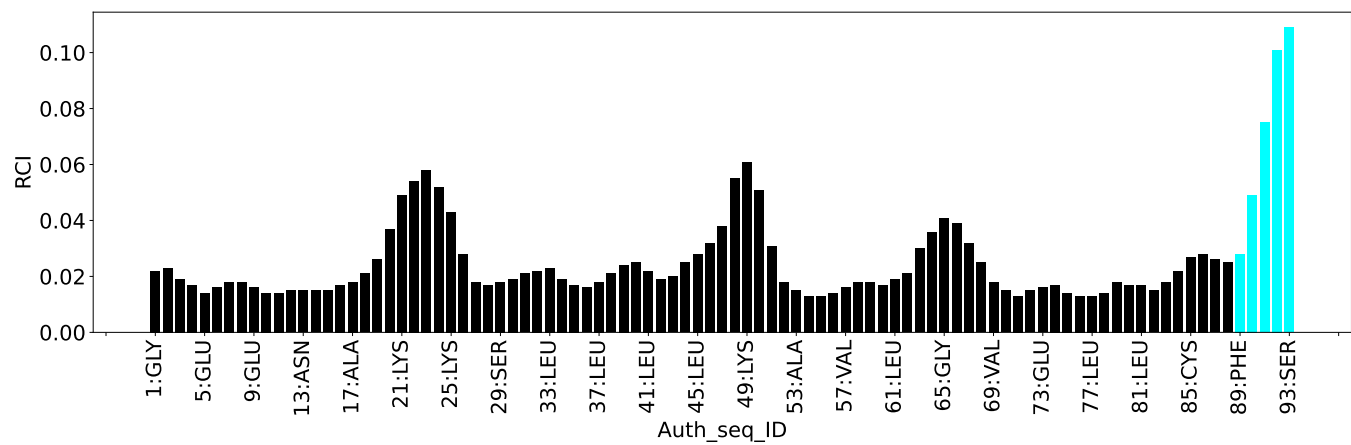
The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

List Id	Chain	Res	Type	Atom	Shift, ppm	Expected range, ppm	Z-score
1	A	5	GLU	HG3	0.46	1.20 – 3.30	-8.5
1	A	49	LYS	HB2	0.45	0.58 – 2.97	-5.6
1	A	49	LYS	HB3	0.37	0.46 – 3.04	-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:



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	3332
Intra-residue ($ i-j =0$)	856
Sequential ($ i-j =1$)	760
Medium range ($ i-j >1$ and $ i-j <5$)	756
Long range ($ i-j \geq 5$)	506
Inter-chain	382
Hydrogen bond restraints	72
Disulfide bond restraints	0
Total dihedral-angle restraints	208
Number of unmapped restraints	0
Number of restraints per residue	19.0
Number of long range restraints per residue ¹	2.7

¹Long 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)	0.9	0.2
0.2-0.5 (Medium)	2.9	0.5
>0.5 (Large)	10.2	4.25

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 ⓘ

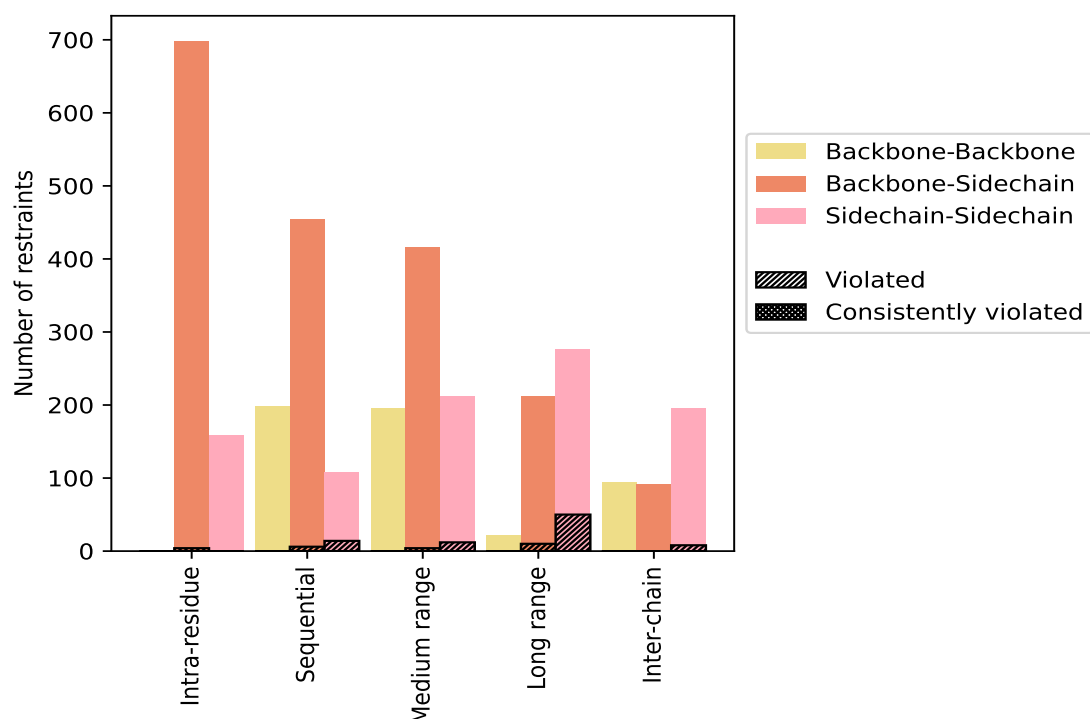
9.1 Summary of distance violations ⓘ

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.

Restrains type	Count	% ¹	Violated ³			Consistently Violated ⁴		
			Count	% ²	% ¹	Count	% ²	% ¹
Intra-residue ($i-j =0$)	856	25.7	4	0.5	0.1	0	0.0	0.0
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	698	20.9	4	0.6	0.1	0	0.0	0.0
Sidechain-Sidechain	158	4.7	0	0.0	0.0	0	0.0	0.0
Sequential ($i-j =1$)	760	22.8	20	2.6	0.6	0	0.0	0.0
Backbone-Backbone	198	5.9	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	454	13.6	6	1.3	0.2	0	0.0	0.0
Sidechain-Sidechain	108	3.2	14	13.0	0.4	0	0.0	0.0
Medium range ($i-j >1$ & $i-j <5$)	756	22.7	16	2.1	0.5	0	0.0	0.0
Backbone-Backbone	196	5.9	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	348	10.4	4	1.1	0.1	0	0.0	0.0
Sidechain-Sidechain	212	6.4	12	5.7	0.4	0	0.0	0.0
Long range ($i-j \geq 5$)	506	15.2	60	11.9	1.8	0	0.0	0.0
Backbone-Backbone	22	0.7	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	208	6.2	10	4.8	0.3	0	0.0	0.0
Sidechain-Sidechain	276	8.3	50	18.1	1.5	0	0.0	0.0
Inter-chain	382	11.5	8	2.1	0.2	0	0.0	0.0
Backbone-Backbone	94	2.8	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	92	2.8	0	0.0	0.0	0	0.0	0.0
Sidechain-Sidechain	196	5.9	8	4.1	0.2	0	0.0	0.0
Hydrogen bond	72	2.2	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	3332	100.0	108	3.2	3.2	0	0.0	0.0
Backbone-Backbone	510	15.3	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	1872	56.2	24	1.3	0.7	0	0.0	0.0
Sidechain-Sidechain	950	28.5	84	8.8	2.5	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	0	0	0	0	0	0	0.0	0.0	0.0	0.0
2	0	8	2	14	0	24	1.29	3.34	0.85	0.92
3	0	0	0	0	2	2	0.2	0.2	0.0	0.2
4	0	0	0	0	0	0	0.0	0.0	0.0	0.0
5	0	0	0	0	0	0	0.0	0.0	0.0	0.0
6	0	0	0	0	0	0	0.0	0.0	0.0	0.0
7	0	0	0	0	2	2	0.64	0.64	0.01	0.64
8	0	0	0	0	0	0	0.0	0.0	0.0	0.0
9	0	8	2	12	0	22	1.08	2.64	0.84	0.68
10	0	8	2	18	0	28	1.11	3.3	0.92	0.64

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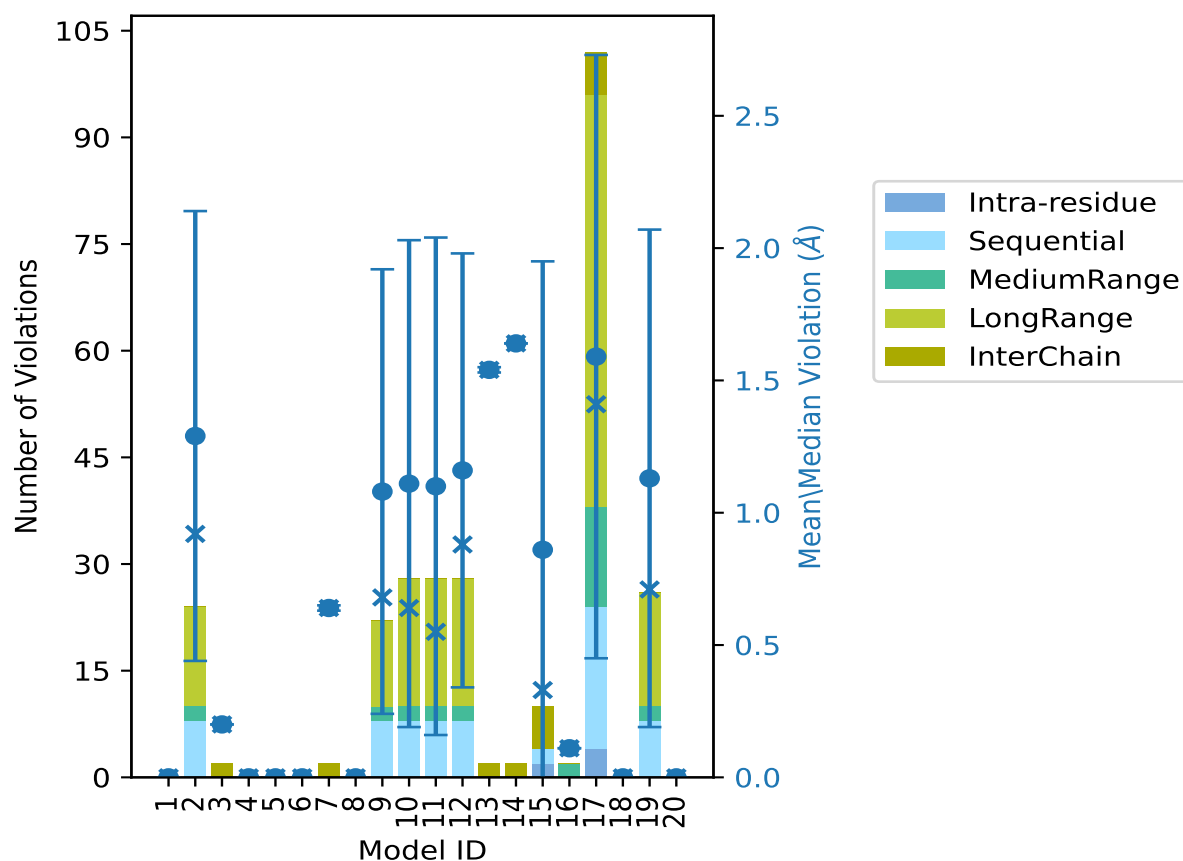
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Model ID	Number of violations						Mean (Å)	Max (Å)	SD ⁶ (Å)	Median (Å)
	IR ¹	SQ ²	MR ³	LR ⁴	IC ⁵	Total				
11	0	8	2	18	0	28	1.1	3.28	0.94	0.55
12	0	8	2	18	0	28	1.16	2.78	0.82	0.88
13	0	0	0	0	2	2	1.54	1.55	0.01	1.54
14	0	0	0	0	2	2	1.64	1.64	0.0	1.64
15	2	2	0	0	6	10	0.86	3.03	1.09	0.33
16	0	0	2	0	0	2	0.11	0.11	0.0	0.11
17	4	20	14	58	6	102	1.59	4.25	1.14	1.41
18	0	0	0	0	0	0	0.0	0.0	0.0	0.0
19	0	8	2	16	0	26	1.13	3.27	0.94	0.71
20	0	0	0	0	0	0	0.0	0.0	0.0	0.0

¹Intra-residue restraints, ²Sequential restraints, ³Medium range restraints, ⁴Long range restraints,

⁵Inter-chain restraints, ⁶Standard 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

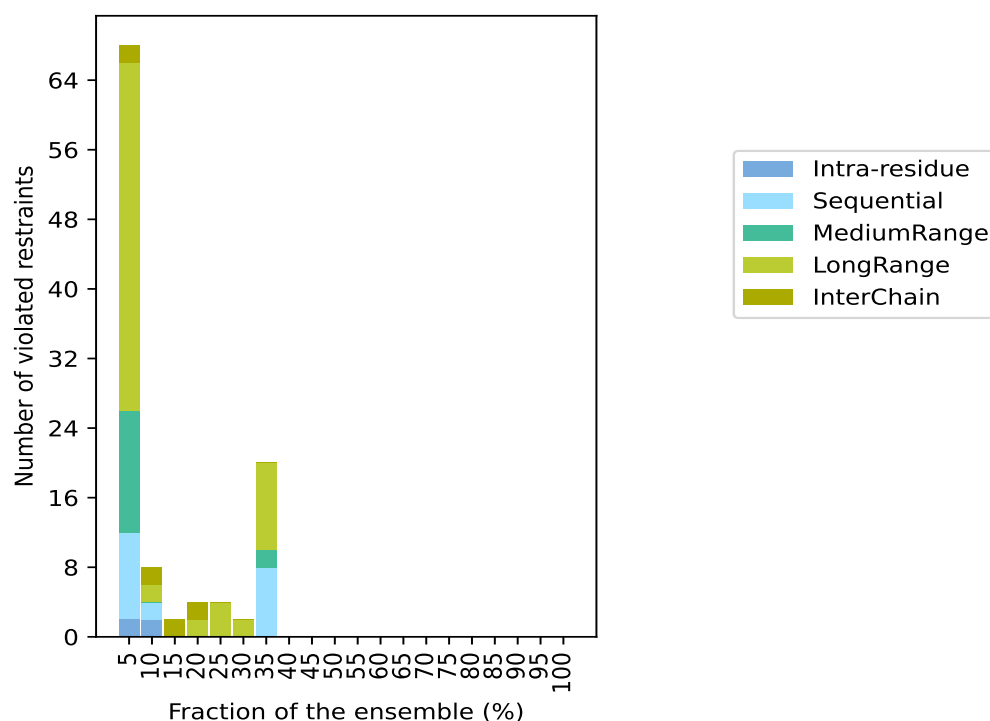
Violation analysis may find that some restraints are violated in few models and some are violated in most of models. The following table provides this information as number of violated restraints for a given fraction of the ensemble. In total, 3152(IR:852, SQ:740, MR:740, LR:446, IC:374) restraints are 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	%
2	10	14	40	2	68	1	5.0
2	2	0	2	2	8	2	10.0
0	0	0	0	2	2	3	15.0
0	0	0	2	2	4	4	20.0
0	0	0	4	0	4	5	25.0
0	0	0	2	0	2	6	30.0
0	8	2	10	0	20	7	35.0
0	0	0	0	0	0	8	40.0
0	0	0	0	0	0	9	45.0
0	0	0	0	0	0	10	50.0
0	0	0	0	0	0	11	55.0
0	0	0	0	0	0	12	60.0
0	0	0	0	0	0	13	65.0
0	0	0	0	0	0	14	70.0
0	0	0	0	0	0	15	75.0
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

¹Intra-residue restraints, ²Sequential restraints, ³Medium range restraints, ⁴Long range restraints,

⁵Inter-chain restraints, ⁶ Number of models with violations

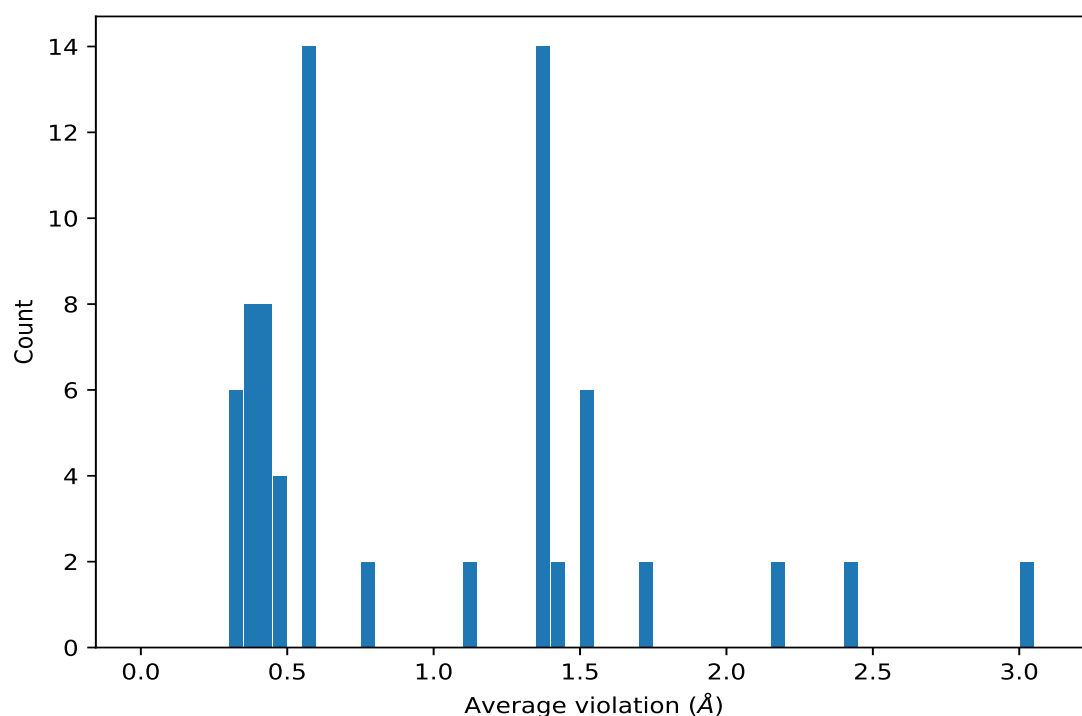
9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



9.4 Most violated distance restraints in the ensemble [i](#)

9.4.1 Histogram : Distribution of mean distance violations [i](#)

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



9.4.2 Table: Most violated distance restraints [i](#)

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

Key	Atom-1	Atom-2	Models ¹	Mean (Å)	SD ¹ (Å)	Median (Å)
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	7	3.03	0.31	3.27
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	7	3.03	0.31	3.27
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	7	2.16	0.84	2.56
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	7	2.16	0.84	2.56
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	7	1.53	0.78	1.78
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	7	1.53	0.78	1.78
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	7	1.53	0.78	1.78
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	7	1.53	0.78	1.78
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	7	1.53	0.78	1.78
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	7	1.53	0.78	1.78
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	7	1.38	0.58	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	7	1.38	0.58	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	7	1.38	0.58	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	7	1.38	0.58	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	7	1.38	0.58	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	7	1.38	0.58	1.46

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Key	Atom-1	Atom-2	Models ¹	Mean (Å)	SD ¹ (Å)	Median (Å)
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	7	1.38	0.58	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	7	1.38	0.58	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	7	1.38	0.58	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	7	1.38	0.58	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	7	1.38	0.58	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	7	1.38	0.58	1.46
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	7	1.37	0.05	1.34
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	7	1.37	0.05	1.34
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	7	1.12	0.74	0.62
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	7	1.12	0.74	0.62
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	7	0.78	0.26	0.71
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	7	0.77	0.26	0.71
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	7	0.56	0.21	0.51
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	7	0.56	0.21	0.51
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	7	0.56	0.21	0.51
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	7	0.56	0.21	0.5
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	7	0.56	0.21	0.5
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	7	0.56	0.21	0.5
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	7	0.46	0.22	0.52
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	7	0.46	0.22	0.52
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	7	0.43	0.11	0.41
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	7	0.43	0.11	0.41
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD21	6	0.57	0.16	0.55
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD22	6	0.57	0.16	0.55
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD23	6	0.57	0.16	0.55
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD21	6	0.57	0.16	0.55
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD22	6	0.57	0.16	0.55
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD23	6	0.57	0.16	0.55
(2,1055)	1:15:A:PHE:HE1	1:70:A:ASP:HA	5	0.57	0.31	0.52
(2,2494)	1:15:B:PHE:HE1	1:70:B:ASP:HA	5	0.57	0.31	0.52
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD11	5	0.42	0.25	0.41
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD12	5	0.42	0.25	0.41
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD13	5	0.42	0.25	0.41
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD11	5	0.42	0.25	0.41
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD12	5	0.42	0.25	0.41
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD13	5	0.42	0.25	0.41
(2,182)	1:26:A:TYR:HE1	1:89:B:PHE:HD2	4	2.42	0.85	2.34
(2,183)	1:89:A:PHE:HD2	1:26:B:TYR:HE1	4	2.42	0.85	2.34
(2,408)	1:15:A:PHE:HE1	1:28:A:LEU:H	4	0.38	0.11	0.34
(2,1847)	1:15:B:PHE:HE1	1:28:B:LEU:H	4	0.38	0.11	0.34
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD11	3	0.36	0.19	0.26
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD12	3	0.36	0.19	0.26

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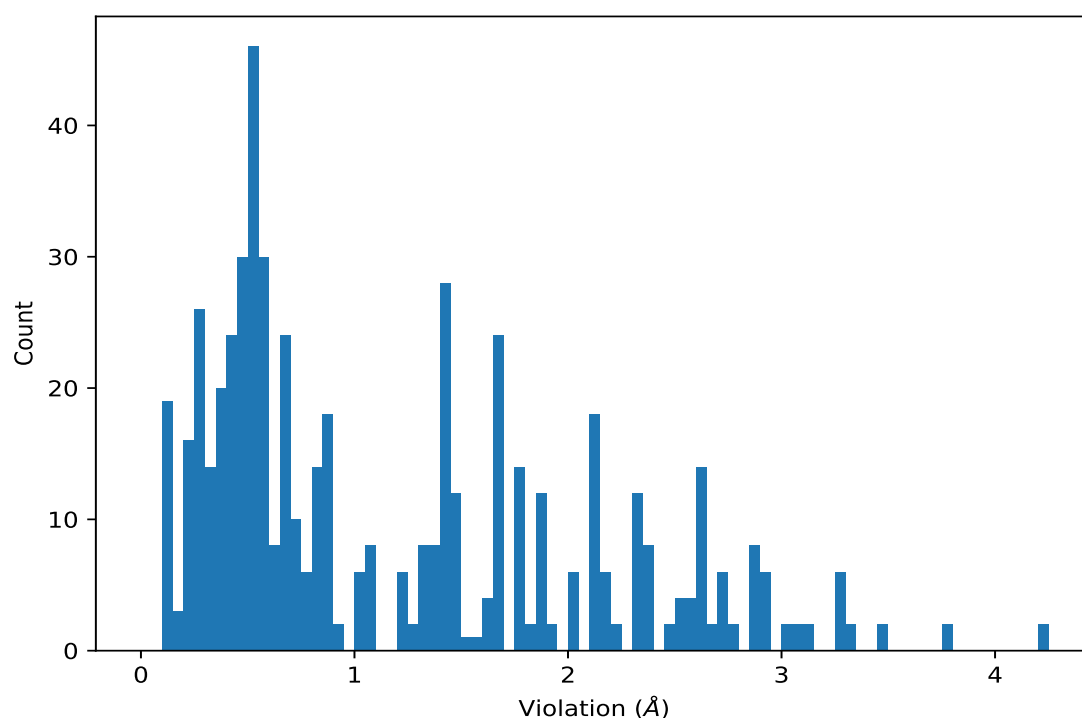
Key	Atom-1	Atom-2	Models ¹	Mean (Å)	SD ¹ (Å)	Median (Å)
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD13	3	0.36	0.19	0.26
(2,135)	1:12:A:ILE:HD11	1:88:B:PHE:HE1	3	0.36	0.2	0.25
(2,135)	1:12:A:ILE:HD12	1:88:B:PHE:HE1	3	0.36	0.2	0.25
(2,135)	1:12:A:ILE:HD13	1:88:B:PHE:HE1	3	0.36	0.2	0.25
(2,1226)	1:25:A:LYS:HE2	1:26:A:TYR:HE2	2	1.72	1.18	1.72
(2,2665)	1:25:B:LYS:HE2	1:26:B:TYR:HE2	2	1.72	1.18	1.72
(2,166)	1:89:A:PHE:HB2	1:26:B:TYR:HE1	2	1.44	1.28	1.44
(2,167)	1:26:A:TYR:HE1	1:89:B:PHE:HB2	2	1.43	1.28	1.43
(2,1245)	1:26:A:TYR:HA	1:26:A:TYR:HE1	2	0.46	0.13	0.46
(2,2684)	1:26:B:TYR:HA	1:26:B:TYR:HE1	2	0.46	0.13	0.46
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD11	2	0.34	0.23	0.34
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD12	2	0.34	0.23	0.34
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD13	2	0.34	0.23	0.34
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD11	2	0.34	0.23	0.34
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD12	2	0.34	0.23	0.34
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD13	2	0.34	0.23	0.34

¹Number of violated models, ²Standard deviation

9.5 All violated distance restraints [i](#)

9.5.1 Histogram : Distribution of distance violations [i](#)

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



9.5.2 Table : All distance violations [i](#)

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

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2628)	1:11:B:LEU:HB2	1:74:B:TYR:HE2	17	4.25
(2,1189)	1:11:A:LEU:HB2	1:74:A:TYR:HE2	17	4.25
(2,2367)	1:11:B:LEU:HG	1:74:B:TYR:HE2	17	3.75
(2,928)	1:11:A:LEU:HG	1:74:A:TYR:HE2	17	3.75
(2,183)	1:89:A:PHE:HD2	1:26:B:TYR:HE1	17	3.49
(2,182)	1:26:A:TYR:HE1	1:89:B:PHE:HD2	17	3.48
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	2	3.34
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	2	3.33
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	10	3.3
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	10	3.3
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	11	3.28
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	11	3.28
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	19	3.27
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	19	3.27
(2,2249)	1:71:B:PHE:HB3	1:74:B:TYR:HD2	17	3.12
(2,810)	1:71:A:PHE:HB3	1:74:A:TYR:HD2	17	3.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2666)	1:25:B:LYS:HE3	1:26:B:TYR:HE2	17	3.07
(2,1227)	1:25:A:LYS:HE3	1:26:A:TYR:HE2	17	3.07
(2,183)	1:89:A:PHE:HD2	1:26:B:TYR:HE1	15	3.03
(2,182)	1:26:A:TYR:HE1	1:89:B:PHE:HD2	15	3.03
(2,2719)	1:11:B:LEU:HB2	1:74:B:TYR:HE2	17	2.93
(2,2719)	1:11:B:LEU:HB3	1:74:B:TYR:HE2	17	2.93
(2,1280)	1:11:A:LEU:HB2	1:74:A:TYR:HE2	17	2.93
(2,1280)	1:11:A:LEU:HB3	1:74:A:TYR:HE2	17	2.93
(2,2128)	1:72:B:GLN:H	1:74:B:TYR:HD2	17	2.91
(2,689)	1:72:A:GLN:H	1:74:A:TYR:HD2	17	2.91
(2,2665)	1:25:B:LYS:HE2	1:26:B:TYR:HE2	17	2.9
(2,1226)	1:25:A:LYS:HE2	1:26:A:TYR:HE2	17	2.9
(2,2576)	1:11:B:LEU:HD11	1:74:B:TYR:HE2	17	2.85
(2,2576)	1:11:B:LEU:HD12	1:74:B:TYR:HE2	17	2.85
(2,2576)	1:11:B:LEU:HD13	1:74:B:TYR:HE2	17	2.85
(2,1137)	1:11:A:LEU:HD11	1:74:A:TYR:HE2	17	2.85
(2,1137)	1:11:A:LEU:HD12	1:74:A:TYR:HE2	17	2.85
(2,1137)	1:11:A:LEU:HD13	1:74:A:TYR:HE2	17	2.85
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	12	2.78
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	12	2.78
(2,2793)	1:25:B:LYS:HE2	1:26:B:TYR:HE2	17	2.74
(2,2793)	1:25:B:LYS:HE3	1:26:B:TYR:HE2	17	2.74
(2,1354)	1:25:A:LYS:HE2	1:26:A:TYR:HE2	17	2.73
(2,1354)	1:25:A:LYS:HE3	1:26:A:TYR:HE2	17	2.73
(2,166)	1:89:A:PHE:HB2	1:26:B:TYR:HE1	17	2.73
(2,167)	1:26:A:TYR:HE1	1:89:B:PHE:HB2	17	2.71
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	11	2.68
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	11	2.68
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	10	2.64
(2,2462)	1:71:B:PHE:HB2	1:74:B:TYR:HD2	17	2.64
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	9	2.64
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	10	2.64
(2,1023)	1:71:A:PHE:HB2	1:74:A:TYR:HD2	17	2.64
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	9	2.64
(2,3106)	1:71:B:PHE:HB2	1:74:B:TYR:HD2	17	2.63
(2,3106)	1:71:B:PHE:HB3	1:74:B:TYR:HD2	17	2.63
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	19	2.63
(2,1667)	1:71:A:PHE:HB2	1:74:A:TYR:HD2	17	2.63
(2,1667)	1:71:A:PHE:HB3	1:74:A:TYR:HD2	17	2.63
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	19	2.63
(2,2427)	1:15:B:PHE:HD2	1:16:B:HIS:HB2	17	2.61
(2,988)	1:15:A:PHE:HD2	1:16:A:HIS:HB2	17	2.61

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2683)	1:11:B:LEU:HA	1:74:B:TYR:HE2	17	2.57
(2,1244)	1:11:A:LEU:HA	1:74:A:TYR:HE2	17	2.57
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	2	2.56
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	2	2.56
(2,2677)	1:11:B:LEU:HB3	1:74:B:TYR:HE2	17	2.55
(2,1238)	1:11:A:LEU:HB3	1:74:A:TYR:HE2	17	2.55
(2,2673)	1:71:B:PHE:HD1	1:74:B:TYR:HD2	17	2.5
(2,1234)	1:71:A:PHE:HD1	1:74:A:TYR:HD2	17	2.5
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	12	2.49
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	12	2.49
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	17	2.38
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	17	2.38
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	17	2.38
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	17	2.38
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	17	2.38
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	17	2.38
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	9	2.35
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	9	2.35
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	12	2.31
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	12	2.31
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	12	2.31
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	12	2.31
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	12	2.31
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	12	2.31
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	12	2.31
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	12	2.31
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	12	2.31
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	12	2.31
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	12	2.31
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	12	2.31
(2,2682)	1:15:B:PHE:HB3	1:74:B:TYR:HE2	17	2.22
(2,1243)	1:15:A:PHE:HB3	1:74:A:TYR:HE2	17	2.22
(2,2534)	1:33:B:LEU:HD21	1:74:B:TYR:HD1	17	2.18
(2,2534)	1:33:B:LEU:HD22	1:74:B:TYR:HD1	17	2.18
(2,2534)	1:33:B:LEU:HD23	1:74:B:TYR:HD1	17	2.18
(2,1095)	1:33:A:LEU:HD21	1:74:A:TYR:HD1	17	2.18
(2,1095)	1:33:A:LEU:HD22	1:74:A:TYR:HD1	17	2.18
(2,1095)	1:33:A:LEU:HD23	1:74:A:TYR:HD1	17	2.18
(2,3125)	1:74:B:TYR:HD2	1:75:B:VAL:HG11	17	2.14
(2,3125)	1:74:B:TYR:HD2	1:75:B:VAL:HG12	17	2.14
(2,3125)	1:74:B:TYR:HD2	1:75:B:VAL:HG13	17	2.14
(2,3125)	1:74:B:TYR:HD2	1:75:B:VAL:HG21	17	2.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,3125)	1:74:B:TYR:HD2	1:75:B:VAL:HG22	17	2.14
(2,3125)	1:74:B:TYR:HD2	1:75:B:VAL:HG23	17	2.14
(2,1686)	1:74:A:TYR:HD2	1:75:A:VAL:HG11	17	2.14
(2,1686)	1:74:A:TYR:HD2	1:75:A:VAL:HG12	17	2.14
(2,1686)	1:74:A:TYR:HD2	1:75:A:VAL:HG13	17	2.14
(2,1686)	1:74:A:TYR:HD2	1:75:A:VAL:HG21	17	2.14
(2,1686)	1:74:A:TYR:HD2	1:75:A:VAL:HG22	17	2.14
(2,1686)	1:74:A:TYR:HD2	1:75:A:VAL:HG23	17	2.14
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	11	2.1
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	11	2.1
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	11	2.1
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	11	2.1
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	11	2.1
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	11	2.1
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	10	2.0
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	10	2.0
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	10	2.0
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	10	2.0
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	10	2.0
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	10	2.0
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	9	1.94
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	9	1.94
(2,3124)	1:74:B:TYR:HE2	1:75:B:VAL:HG11	17	1.87
(2,3124)	1:74:B:TYR:HE2	1:75:B:VAL:HG12	17	1.87
(2,3124)	1:74:B:TYR:HE2	1:75:B:VAL:HG13	17	1.87
(2,3124)	1:74:B:TYR:HE2	1:75:B:VAL:HG21	17	1.87
(2,3124)	1:74:B:TYR:HE2	1:75:B:VAL:HG22	17	1.87
(2,3124)	1:74:B:TYR:HE2	1:75:B:VAL:HG23	17	1.87
(2,1685)	1:74:A:TYR:HE2	1:75:A:VAL:HG11	17	1.87
(2,1685)	1:74:A:TYR:HE2	1:75:A:VAL:HG12	17	1.87
(2,1685)	1:74:A:TYR:HE2	1:75:A:VAL:HG13	17	1.87
(2,1685)	1:74:A:TYR:HE2	1:75:A:VAL:HG21	17	1.87
(2,1685)	1:74:A:TYR:HE2	1:75:A:VAL:HG22	17	1.87
(2,1685)	1:74:A:TYR:HE2	1:75:A:VAL:HG23	17	1.87
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	19	1.81
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	19	1.81
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	19	1.78
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	19	1.78
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	19	1.78
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	19	1.78
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	19	1.78
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	19	1.78

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,168)	1:89:A:PHE:HB3	1:26:B:TYR:HE1	17	1.78
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	2	1.76
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	2	1.76
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	2	1.76
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	2	1.76
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	2	1.76
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	2	1.76
(2,169)	1:26:A:TYR:HE1	1:89:B:PHE:HB3	17	1.76
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	10	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	10	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	10	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	10	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	10	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	10	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	11	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	11	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	11	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	11	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	11	1.66
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	11	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	10	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	10	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	10	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	10	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	10	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	10	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	11	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	11	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	11	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	11	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	11	1.66
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	11	1.66
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	12	1.65
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	12	1.65
(2,183)	1:89:A:PHE:HD2	1:26:B:TYR:HE1	14	1.64
(2,182)	1:26:A:TYR:HE1	1:89:B:PHE:HD2	14	1.64
(2,182)	1:26:A:TYR:HE1	1:89:B:PHE:HD2	13	1.55
(2,183)	1:89:A:PHE:HD2	1:26:B:TYR:HE1	13	1.54
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	17	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	17	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	17	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	17	1.46

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	17	1.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	17	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	17	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	17	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	17	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	17	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	17	1.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	17	1.46
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	2	1.45
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	17	1.45
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	17	1.45
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	2	1.44
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	2	1.44
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	2	1.44
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	2	1.44
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	2	1.44
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	2	1.44
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	2	1.44
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	2	1.44
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	2	1.44
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	2	1.44
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	2	1.44
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	2	1.44
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	2	1.44
(2,2916)	1:37:B:LEU:HD11	1:74:B:TYR:HD1	17	1.41
(2,2916)	1:37:B:LEU:HD12	1:74:B:TYR:HD1	17	1.41
(2,2916)	1:37:B:LEU:HD13	1:74:B:TYR:HD1	17	1.41
(2,2916)	1:37:B:LEU:HD21	1:74:B:TYR:HD1	17	1.41
(2,2916)	1:37:B:LEU:HD22	1:74:B:TYR:HD1	17	1.41
(2,2916)	1:37:B:LEU:HD23	1:74:B:TYR:HD1	17	1.41
(2,1477)	1:37:A:LEU:HD11	1:74:A:TYR:HD1	17	1.41
(2,1477)	1:37:A:LEU:HD12	1:74:A:TYR:HD1	17	1.41
(2,1477)	1:37:A:LEU:HD13	1:74:A:TYR:HD1	17	1.41
(2,1477)	1:37:A:LEU:HD21	1:74:A:TYR:HD1	17	1.41
(2,1477)	1:37:A:LEU:HD22	1:74:A:TYR:HD1	17	1.41
(2,1477)	1:37:A:LEU:HD23	1:74:A:TYR:HD1	17	1.41
(2,2651)	1:36:B:LEU:HD21	1:74:B:TYR:HD1	17	1.39
(2,2651)	1:36:B:LEU:HD22	1:74:B:TYR:HD1	17	1.39
(2,2651)	1:36:B:LEU:HD23	1:74:B:TYR:HD1	17	1.39
(2,1212)	1:36:A:LEU:HD21	1:74:A:TYR:HD1	17	1.39
(2,1212)	1:36:A:LEU:HD22	1:74:A:TYR:HD1	17	1.39
(2,1212)	1:36:A:LEU:HD23	1:74:A:TYR:HD1	17	1.39

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	12	1.37
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	12	1.37
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	11	1.34
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	19	1.34
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	11	1.34
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	19	1.34
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	10	1.33
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	10	1.33
(2,2433)	1:15:B:PHE:HD2	1:16:B:HIS:HA	9	1.31
(2,994)	1:15:A:PHE:HD2	1:16:A:HIS:HA	9	1.31
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	9	1.26
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	9	1.25
(2,2521)	1:36:B:LEU:HD11	1:74:B:TYR:HD1	17	1.22
(2,2521)	1:36:B:LEU:HD12	1:74:B:TYR:HD1	17	1.22
(2,2521)	1:36:B:LEU:HD13	1:74:B:TYR:HD1	17	1.22
(2,1082)	1:36:A:LEU:HD11	1:74:A:TYR:HD1	17	1.22
(2,1082)	1:36:A:LEU:HD12	1:74:A:TYR:HD1	17	1.22
(2,1082)	1:36:A:LEU:HD13	1:74:A:TYR:HD1	17	1.22
(2,2753)	1:15:B:PHE:HB2	1:74:B:TYR:HE2	17	1.08
(2,2753)	1:15:B:PHE:HB3	1:74:B:TYR:HE2	17	1.08
(2,1314)	1:15:A:PHE:HB2	1:74:A:TYR:HE2	17	1.08
(2,1314)	1:15:A:PHE:HB3	1:74:A:TYR:HE2	17	1.08
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	12	1.08
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	12	1.07
(2,2494)	1:15:B:PHE:HE1	1:70:B:ASP:HA	12	1.05
(2,1055)	1:15:A:PHE:HE1	1:70:A:ASP:HA	12	1.05
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	2	1.0
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	2	1.0
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	2	1.0
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	2	1.0
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	2	1.0
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	2	1.0
(2,2459)	1:71:B:PHE:HA	1:74:B:TYR:HD2	17	0.91
(2,1020)	1:71:A:PHE:HA	1:74:A:TYR:HD2	17	0.91
(2,2890)	1:33:B:LEU:HD11	1:74:B:TYR:HD1	17	0.87
(2,2890)	1:33:B:LEU:HD12	1:74:B:TYR:HD1	17	0.87
(2,2890)	1:33:B:LEU:HD13	1:74:B:TYR:HD1	17	0.87
(2,2890)	1:33:B:LEU:HD21	1:74:B:TYR:HD1	17	0.87
(2,2890)	1:33:B:LEU:HD22	1:74:B:TYR:HD1	17	0.87
(2,2890)	1:33:B:LEU:HD23	1:74:B:TYR:HD1	17	0.87
(2,1451)	1:33:A:LEU:HD11	1:74:A:TYR:HD1	17	0.87
(2,1451)	1:33:A:LEU:HD12	1:74:A:TYR:HD1	17	0.87

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,1451)	1:33:A:LEU:HD13	1:74:A:TYR:HD1	17	0.87
(2,1451)	1:33:A:LEU:HD21	1:74:A:TYR:HD1	17	0.87
(2,1451)	1:33:A:LEU:HD22	1:74:A:TYR:HD1	17	0.87
(2,1451)	1:33:A:LEU:HD23	1:74:A:TYR:HD1	17	0.87
(2,2652)	1:36:B:LEU:HD21	1:74:B:TYR:HE1	17	0.86
(2,2652)	1:36:B:LEU:HD22	1:74:B:TYR:HE1	17	0.86
(2,2652)	1:36:B:LEU:HD23	1:74:B:TYR:HE1	17	0.86
(2,1213)	1:36:A:LEU:HD21	1:74:A:TYR:HE1	17	0.86
(2,1213)	1:36:A:LEU:HD22	1:74:A:TYR:HE1	17	0.86
(2,1213)	1:36:A:LEU:HD23	1:74:A:TYR:HE1	17	0.86
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD21	2	0.84
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD22	2	0.84
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD23	2	0.84
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD21	2	0.84
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD22	2	0.84
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD23	2	0.84
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD11	19	0.83
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD12	19	0.83
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD13	19	0.83
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD11	19	0.83
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD12	19	0.83
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD13	19	0.83
(2,2150)	1:74:B:TYR:HD2	1:75:B:VAL:H	17	0.82
(2,711)	1:74:A:TYR:HD2	1:75:A:VAL:H	17	0.82
(2,2522)	1:36:B:LEU:HD11	1:74:B:TYR:HE1	17	0.78
(2,2522)	1:36:B:LEU:HD12	1:74:B:TYR:HE1	17	0.78
(2,2522)	1:36:B:LEU:HD13	1:74:B:TYR:HE1	17	0.78
(2,1083)	1:36:A:LEU:HD11	1:74:A:TYR:HE1	17	0.78
(2,1083)	1:36:A:LEU:HD12	1:74:A:TYR:HE1	17	0.78
(2,1083)	1:36:A:LEU:HD13	1:74:A:TYR:HE1	17	0.78
(2,2494)	1:15:B:PHE:HE1	1:70:B:ASP:HA	2	0.72
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	12	0.72
(2,1055)	1:15:A:PHE:HE1	1:70:A:ASP:HA	2	0.72
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	12	0.72
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	2	0.71
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	19	0.71
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	2	0.71
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	2	0.71
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	19	0.71
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	2	0.71
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	10	0.69
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	10	0.69

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	10	0.69
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	9	0.68
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	9	0.68
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	9	0.68
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	9	0.68
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	9	0.68
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	9	0.68
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	9	0.68
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	9	0.68
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	9	0.68
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	9	0.68
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	9	0.68
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	9	0.68
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	10	0.68
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	10	0.68
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	10	0.68
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD21	10	0.66
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD22	10	0.66
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD23	10	0.66
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD21	10	0.66
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD22	10	0.66
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD23	10	0.66
(2,135)	1:12:A:ILE:HD11	1:88:B:PHE:HE1	7	0.64
(2,135)	1:12:A:ILE:HD12	1:88:B:PHE:HE1	7	0.64
(2,135)	1:12:A:ILE:HD13	1:88:B:PHE:HE1	7	0.64
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD11	7	0.63
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD12	7	0.63
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD13	7	0.63
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	10	0.62
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	10	0.62
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD21	12	0.6
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD22	12	0.6
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD23	12	0.6
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD21	12	0.6
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD22	12	0.6
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD23	12	0.6
(2,2684)	1:26:B:TYR:HA	1:26:B:TYR:HE1	17	0.59
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	11	0.59
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	9	0.59
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	12	0.59
(2,1245)	1:26:A:TYR:HA	1:26:A:TYR:HE1	17	0.59
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	11	0.59

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	9	0.59
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	12	0.59
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	10	0.58
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	10	0.58
(2,1847)	1:15:B:PHE:HE1	1:28:B:LEU:H	11	0.57
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	10	0.57
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	2	0.57
(2,408)	1:15:A:PHE:HE1	1:28:A:LEU:H	11	0.57
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD11	19	0.56
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD12	19	0.56
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD13	19	0.56
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	10	0.56
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	2	0.56
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD11	19	0.56
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD12	19	0.56
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD13	19	0.56
(2,2676)	1:15:B:PHE:HB2	1:74:B:TYR:HE2	17	0.55
(2,1237)	1:15:A:PHE:HB2	1:74:A:TYR:HE2	17	0.55
(2,2891)	1:33:B:LEU:HD11	1:74:B:TYR:HE1	17	0.53
(2,2891)	1:33:B:LEU:HD12	1:74:B:TYR:HE1	17	0.53
(2,2891)	1:33:B:LEU:HD13	1:74:B:TYR:HE1	17	0.53
(2,2891)	1:33:B:LEU:HD21	1:74:B:TYR:HE1	17	0.53
(2,2891)	1:33:B:LEU:HD22	1:74:B:TYR:HE1	17	0.53
(2,2891)	1:33:B:LEU:HD23	1:74:B:TYR:HE1	17	0.53
(2,2665)	1:25:B:LYS:HE2	1:26:B:TYR:HE2	15	0.53
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	11	0.53
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	11	0.53
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	11	0.53
(2,2458)	1:15:B:PHE:HE1	1:71:B:PHE:HA	17	0.53
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	11	0.53
(2,1452)	1:33:A:LEU:HD11	1:74:A:TYR:HE1	17	0.53
(2,1452)	1:33:A:LEU:HD12	1:74:A:TYR:HE1	17	0.53
(2,1452)	1:33:A:LEU:HD13	1:74:A:TYR:HE1	17	0.53
(2,1452)	1:33:A:LEU:HD21	1:74:A:TYR:HE1	17	0.53
(2,1452)	1:33:A:LEU:HD22	1:74:A:TYR:HE1	17	0.53
(2,1452)	1:33:A:LEU:HD23	1:74:A:TYR:HE1	17	0.53
(2,1226)	1:25:A:LYS:HE2	1:26:A:TYR:HE2	15	0.53
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	11	0.53
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	11	0.53
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	11	0.53
(2,1019)	1:15:A:PHE:HE1	1:71:A:PHE:HA	17	0.53
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	11	0.53

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2494)	1:15:B:PHE:HE1	1:70:B:ASP:HA	11	0.52
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	11	0.52
(2,1055)	1:15:A:PHE:HE1	1:70:A:ASP:HA	11	0.52
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	11	0.52
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD11	12	0.51
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD12	12	0.51
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD13	12	0.51
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD11	12	0.51
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD12	12	0.51
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD13	12	0.51
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	12	0.51
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	12	0.51
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	12	0.51
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	12	0.5
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	12	0.5
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	12	0.5
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD21	19	0.5
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD22	19	0.5
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD23	19	0.5
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD21	19	0.5
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD22	19	0.5
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD23	19	0.5
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	17	0.49
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	17	0.49
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	17	0.49
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	17	0.49
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	17	0.49
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	17	0.49
(2,2307)	1:11:B:LEU:HD21	1:74:B:TYR:HE2	17	0.47
(2,2307)	1:11:B:LEU:HD22	1:74:B:TYR:HE2	17	0.47
(2,2307)	1:11:B:LEU:HD23	1:74:B:TYR:HE2	17	0.47
(2,868)	1:11:A:LEU:HD21	1:74:A:TYR:HE2	17	0.47
(2,868)	1:11:A:LEU:HD22	1:74:A:TYR:HE2	17	0.47
(2,868)	1:11:A:LEU:HD23	1:74:A:TYR:HE2	17	0.47
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG11	19	0.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG12	19	0.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG13	19	0.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG21	19	0.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG22	19	0.46
(2,2756)	1:15:B:PHE:HE1	1:69:B:VAL:HG23	19	0.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG11	19	0.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG12	19	0.46

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG13	19	0.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG21	19	0.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG22	19	0.46
(2,1317)	1:15:A:PHE:HE1	1:69:A:VAL:HG23	19	0.46
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD21	11	0.45
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD22	11	0.45
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD23	11	0.45
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD21	11	0.45
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD22	11	0.45
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD23	11	0.45
(2,2494)	1:15:B:PHE:HE1	1:70:B:ASP:HA	10	0.43
(2,1055)	1:15:A:PHE:HE1	1:70:A:ASP:HA	10	0.43
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	12	0.42
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	12	0.42
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	12	0.42
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	17	0.42
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	12	0.42
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	12	0.42
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	12	0.42
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	17	0.42
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD11	10	0.41
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD12	10	0.41
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD13	10	0.41
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	2	0.41
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD11	10	0.41
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD12	10	0.41
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD13	10	0.41
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	2	0.41
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	19	0.4
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	19	0.4
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	19	0.4
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	19	0.4
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	19	0.4
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	19	0.4
(2,2723)	1:11:B:LEU:HD11	1:74:B:TYR:HE2	17	0.38
(2,2723)	1:11:B:LEU:HD12	1:74:B:TYR:HE2	17	0.38
(2,2723)	1:11:B:LEU:HD13	1:74:B:TYR:HE2	17	0.38
(2,2723)	1:11:B:LEU:HD21	1:74:B:TYR:HE2	17	0.38
(2,2723)	1:11:B:LEU:HD22	1:74:B:TYR:HE2	17	0.38
(2,2723)	1:11:B:LEU:HD23	1:74:B:TYR:HE2	17	0.38
(2,1847)	1:15:B:PHE:HE1	1:28:B:LEU:H	9	0.37
(2,1284)	1:11:A:LEU:HD11	1:74:A:TYR:HE2	17	0.37

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,1284)	1:11:A:LEU:HD12	1:74:A:TYR:HE2	17	0.37
(2,1284)	1:11:A:LEU:HD13	1:74:A:TYR:HE2	17	0.37
(2,1284)	1:11:A:LEU:HD21	1:74:A:TYR:HE2	17	0.37
(2,1284)	1:11:A:LEU:HD22	1:74:A:TYR:HE2	17	0.37
(2,1284)	1:11:A:LEU:HD23	1:74:A:TYR:HE2	17	0.37
(2,408)	1:15:A:PHE:HE1	1:28:A:LEU:H	9	0.37
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD21	17	0.36
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD22	17	0.36
(2,2502)	1:15:B:PHE:HE1	1:28:B:LEU:HD23	17	0.36
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD21	17	0.36
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD22	17	0.36
(2,1063)	1:15:A:PHE:HE1	1:28:A:LEU:HD23	17	0.36
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	17	0.35
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	17	0.35
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	19	0.34
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	19	0.34
(2,2684)	1:26:B:TYR:HA	1:26:B:TYR:HE1	15	0.33
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	11	0.33
(2,1245)	1:26:A:TYR:HA	1:26:A:TYR:HE1	15	0.33
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	11	0.33
(2,2124)	1:15:B:PHE:HE1	1:71:B:PHE:H	17	0.32
(2,1804)	1:15:B:PHE:HD2	1:16:B:HIS:H	10	0.32
(2,685)	1:15:A:PHE:HE1	1:71:A:PHE:H	17	0.32
(2,365)	1:15:A:PHE:HD2	1:16:A:HIS:H	10	0.32
(2,1847)	1:15:B:PHE:HE1	1:28:B:LEU:H	17	0.31
(2,408)	1:15:A:PHE:HE1	1:28:A:LEU:H	17	0.31
(2,2658)	1:33:B:LEU:HD11	1:74:B:TYR:HD1	17	0.3
(2,2658)	1:33:B:LEU:HD12	1:74:B:TYR:HD1	17	0.3
(2,2658)	1:33:B:LEU:HD13	1:74:B:TYR:HD1	17	0.3
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD21	9	0.3
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD22	9	0.3
(2,2503)	1:15:B:PHE:HD1	1:28:B:LEU:HD23	9	0.3
(2,1219)	1:33:A:LEU:HD11	1:74:A:TYR:HD1	17	0.3
(2,1219)	1:33:A:LEU:HD12	1:74:A:TYR:HD1	17	0.3
(2,1219)	1:33:A:LEU:HD13	1:74:A:TYR:HD1	17	0.3
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD21	9	0.3
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD22	9	0.3
(2,1064)	1:15:A:PHE:HD1	1:28:A:LEU:HD23	9	0.3
(2,1847)	1:15:B:PHE:HE1	1:28:B:LEU:H	10	0.29
(2,408)	1:15:A:PHE:HE1	1:28:A:LEU:H	10	0.29
(2,2568)	1:12:B:ILE:HD11	1:15:B:PHE:HD2	9	0.26
(2,2568)	1:12:B:ILE:HD12	1:15:B:PHE:HD2	9	0.26

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2568)	1:12:B:ILE:HD13	1:15:B:PHE:HD2	9	0.26
(2,1129)	1:12:A:ILE:HD11	1:15:A:PHE:HD2	9	0.26
(2,1129)	1:12:A:ILE:HD12	1:15:A:PHE:HD2	9	0.26
(2,1129)	1:12:A:ILE:HD13	1:15:A:PHE:HD2	9	0.26
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD11	15	0.26
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD12	15	0.26
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD13	15	0.26
(2,135)	1:12:A:ILE:HD11	1:88:B:PHE:HE1	15	0.25
(2,135)	1:12:A:ILE:HD12	1:88:B:PHE:HE1	15	0.25
(2,135)	1:12:A:ILE:HD13	1:88:B:PHE:HE1	15	0.25
(2,2147)	1:74:B:TYR:H	1:74:B:TYR:HD2	17	0.24
(2,708)	1:74:A:TYR:H	1:74:A:TYR:HD2	17	0.24
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD11	11	0.23
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD12	11	0.23
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD13	11	0.23
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD11	11	0.23
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD12	11	0.23
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD13	11	0.23
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	9	0.2
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	9	0.2
(2,135)	1:12:A:ILE:HD11	1:88:B:PHE:HE1	3	0.2
(2,135)	1:12:A:ILE:HD12	1:88:B:PHE:HE1	3	0.2
(2,135)	1:12:A:ILE:HD13	1:88:B:PHE:HE1	3	0.2
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD11	3	0.2
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD12	3	0.2
(2,134)	1:88:A:PHE:HE1	1:12:B:ILE:HD13	3	0.2
(2,2686)	1:15:B:PHE:HD2	1:16:B:HIS:HD2	17	0.19
(2,1247)	1:15:A:PHE:HD2	1:16:A:HIS:HD2	17	0.19
(2,166)	1:89:A:PHE:HB2	1:26:B:TYR:HE1	15	0.16
(2,167)	1:26:A:TYR:HE1	1:89:B:PHE:HB2	15	0.15
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD11	17	0.12
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD12	17	0.12
(2,2609)	1:15:B:PHE:HD1	1:28:B:LEU:HD13	17	0.12
(2,2494)	1:15:B:PHE:HE1	1:70:B:ASP:HA	17	0.12
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD11	17	0.12
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD12	17	0.12
(2,1170)	1:15:A:PHE:HD1	1:28:A:LEU:HD13	17	0.12
(2,1055)	1:15:A:PHE:HE1	1:70:A:ASP:HA	17	0.12
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD11	12	0.11
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD12	12	0.11
(2,2608)	1:15:B:PHE:HE1	1:28:B:LEU:HD13	12	0.11
(2,2484)	1:36:B:LEU:HB2	1:40:B:GLU:HG2	16	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,2412)	1:15:B:PHE:HE1	1:28:B:LEU:HB3	19	0.11
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD11	12	0.11
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD12	12	0.11
(2,1169)	1:15:A:PHE:HE1	1:28:A:LEU:HD13	12	0.11
(2,1045)	1:36:A:LEU:HB2	1:40:A:GLU:HG2	16	0.11
(2,973)	1:15:A:PHE:HE1	1:28:A:LEU:HB3	19	0.11

10 Dihedral-angle violation analysis [i](#)

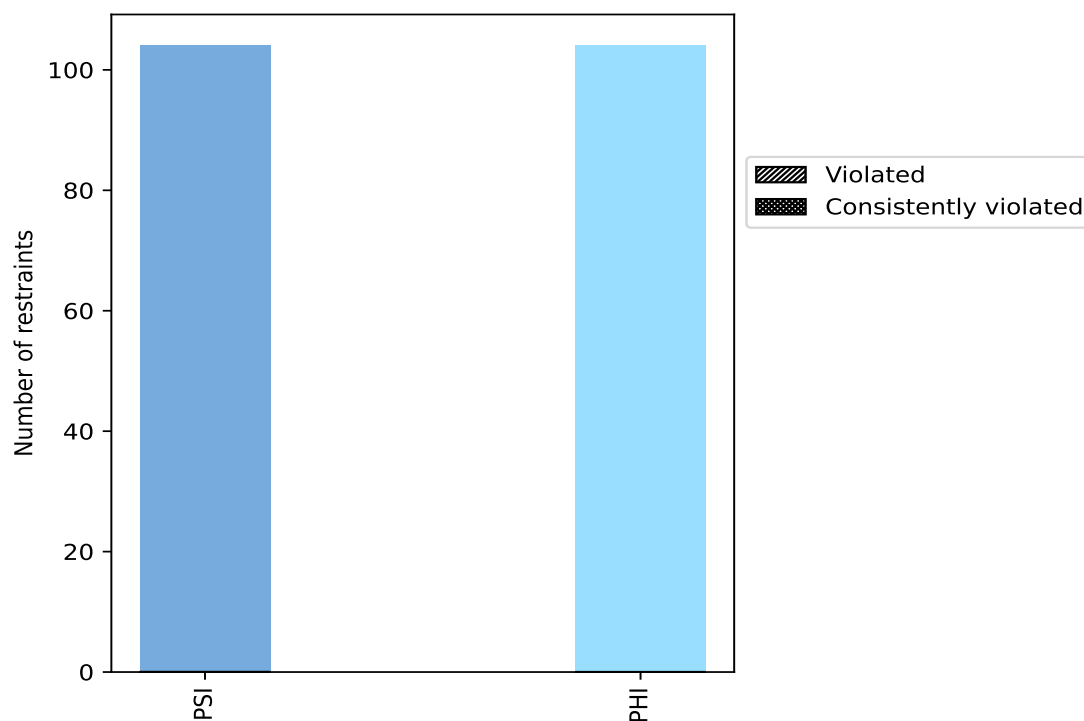
10.1 Summary of dihedral-angle violations [i](#)

The following table provides the summary of dihedral-angle violations in different dihedral-angle types. Violations less than 1° are not included in the calculation.

Angle type	Count	% ¹	Violated ³			Consistently Violated ⁴		
			Count	% ²	% ¹	Count	% ²	% ¹
PSI	104	50.0	0	0.0	0.0	0	0.0	0.0
PHI	104	50.0	0	0.0	0.0	0	0.0	0.0
Total	208	100.0	0	0.0	0.0	0	0.0	0.0

¹ percentage calculated with respect to total number of dihedral-angle restraints, ² percentage calculated with respect to number of restraints in a particular dihedral-angle type, ³ violated in at least one model, ⁴ violated in all the models

10.1.1 Bar chart : Distribution of dihedral-angles and violations [i](#)



Violated and consistently violated restraints are shown using different hatch patterns in their respective categories

10.2 Dihedral-angle violation statistics for each model [i](#)

No violations found

10.3 Dihedral-angle violation statistics for the ensemble [i](#)

No violations found

10.4 Most violated dihedral-angle restraints in the ensemble [i](#)

No violations found

10.5 All violated dihedral-angle restraints [i](#)

No violations found