



# Full wwPDB NMR Structure Validation Report ⓘ

Jun 3, 2023 – 08:59 PM EDT

PDB ID : 2MZ7  
BMRB ID : 25475  
Title : Structure of Tau(267-312) bound to Microtubules  
Authors : Kadavath, H.; Jaremko, M.; Jaremko, L.; Zweckstetter, M.  
Deposited on : 2015-02-06

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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The following versions of software and data (see [references ⓘ](#)) 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

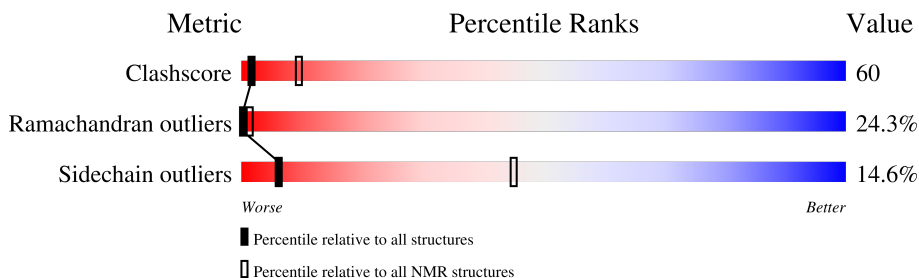
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment is 7%.

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  $\geq 3$ , 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	46	

## 2 Ensemble composition and analysis

This entry contains 20 models.

Cyrange was unable to find well-defined residues.

Error message: The number of core atoms ( 5) was below the domain threshold value ( 8).

The models can be grouped into 2 clusters. No single-model clusters were found.

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

### 3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 708 atoms, of which 365 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Microtubule-associated protein tau.

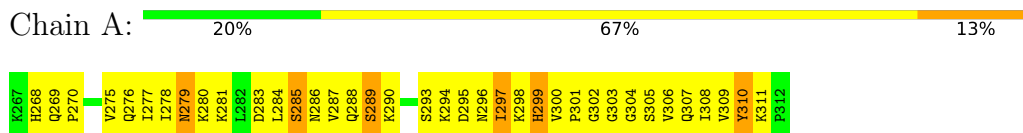
Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	46	708	214	365	65	63	1	0

## 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: Microtubule-associated protein tau

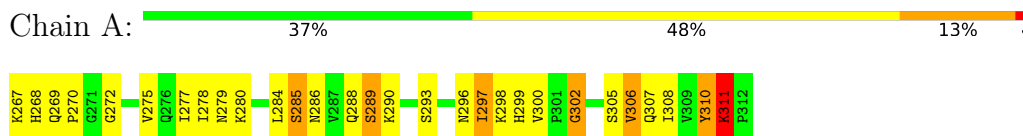


### 4.2 Scores per residue for each member of the ensemble

Colouring as in section [4.1](#) above.

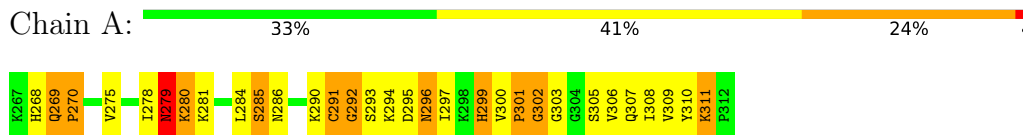
#### 4.2.1 Score per residue for model 1

- Molecule 1: Microtubule-associated protein tau



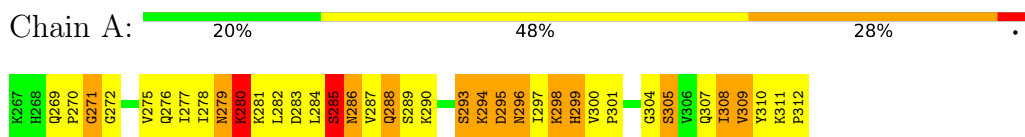
#### 4.2.2 Score per residue for model 2

- Molecule 1: Microtubule-associated protein tau



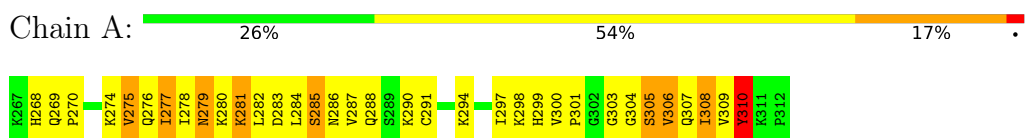
### 4.2.3 Score per residue for model 3

- Molecule 1: Microtubule-associated protein tau



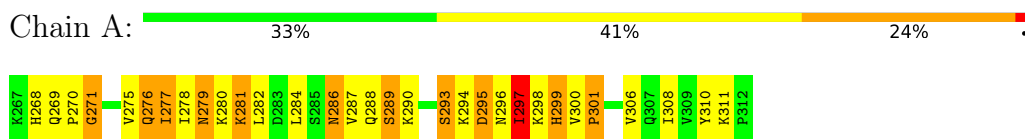
### 4.2.4 Score per residue for model 4

- Molecule 1: Microtubule-associated protein tau



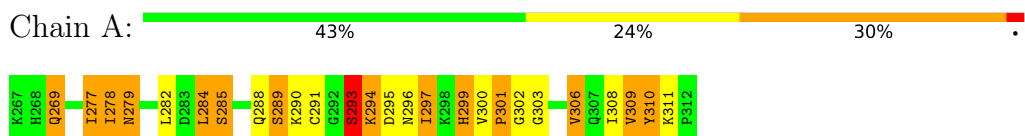
### 4.2.5 Score per residue for model 5

- Molecule 1: Microtubule-associated protein tau



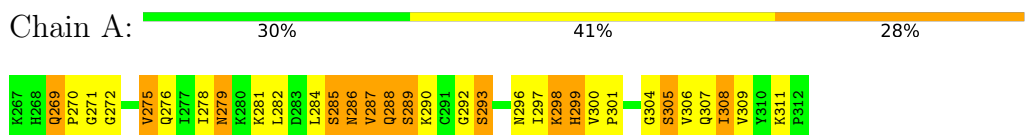
### 4.2.6 Score per residue for model 6

- Molecule 1: Microtubule-associated protein tau



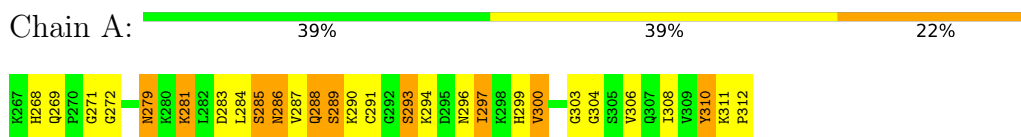
### 4.2.7 Score per residue for model 7

- Molecule 1: Microtubule-associated protein tau



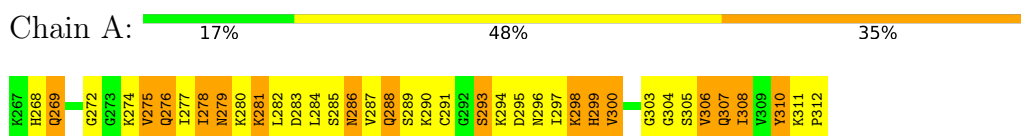
#### 4.2.8 Score per residue for model 8

- Molecule 1: Microtubule-associated protein tau



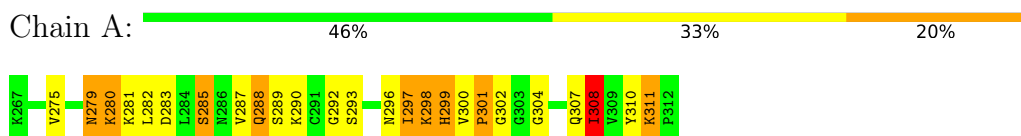
#### 4.2.9 Score per residue for model 9

- Molecule 1: Microtubule-associated protein tau



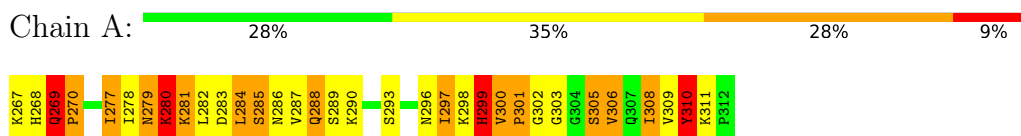
#### 4.2.10 Score per residue for model 10

- Molecule 1: Microtubule-associated protein tau



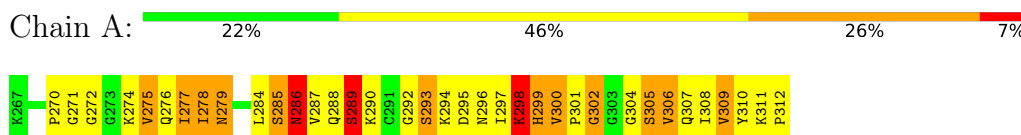
#### 4.2.11 Score per residue for model 11

- Molecule 1: Microtubule-associated protein tau



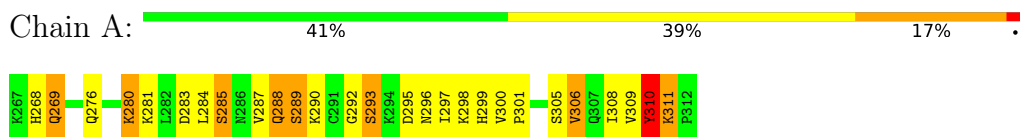
#### 4.2.12 Score per residue for model 12

- Molecule 1: Microtubule-associated protein tau



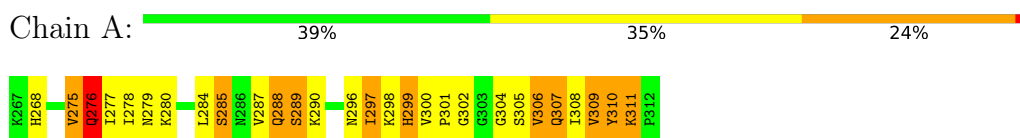
#### 4.2.13 Score per residue for model 13

- Molecule 1: Microtubule-associated protein tau



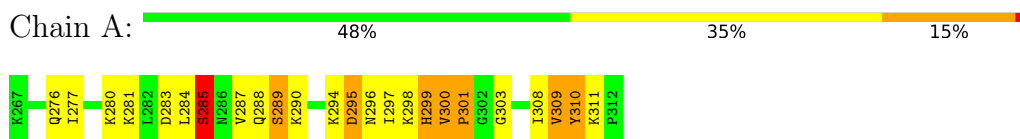
#### 4.2.14 Score per residue for model 14

- Molecule 1: Microtubule-associated protein tau



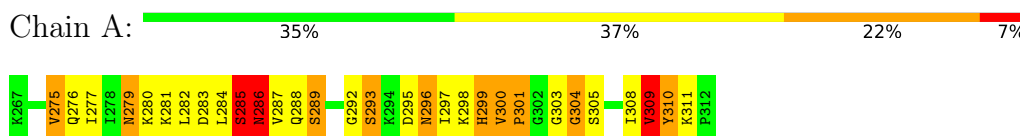
#### 4.2.15 Score per residue for model 15

- Molecule 1: Microtubule-associated protein tau



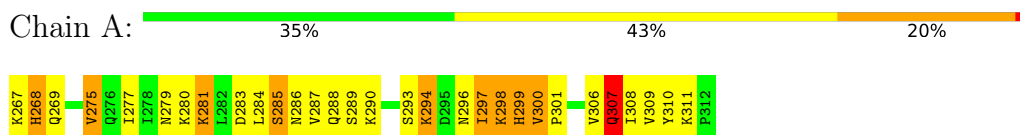
#### 4.2.16 Score per residue for model 16

- Molecule 1: Microtubule-associated protein tau



#### 4.2.17 Score per residue for model 17

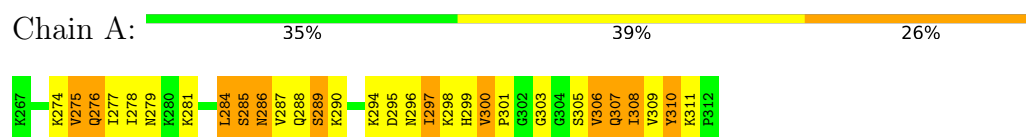
- Molecule 1: Microtubule-associated protein tau





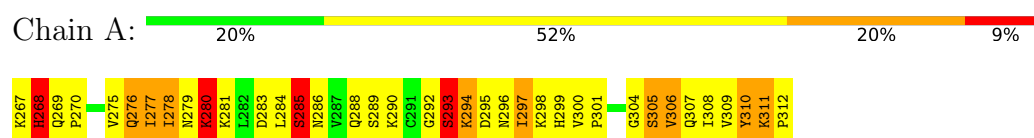
#### 4.2.18 Score per residue for model 18

- Molecule 1: Microtubule-associated protein tau



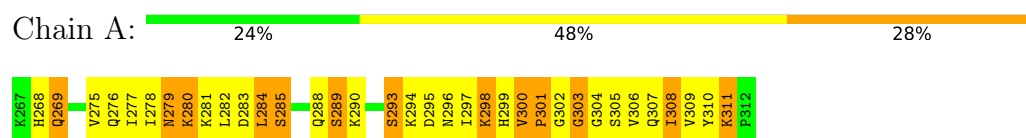
#### 4.2.19 Score per residue for model 19

- Molecule 1: Microtubule-associated protein tau



#### 4.2.20 Score per residue for model 20

- Molecule 1: Microtubule-associated protein tau



## 5 Refinement protocol and experimental data overview

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

Of the 200 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	refinement	2.33
CYANA	structure solution	3.0

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

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	43
Number of shifts mapped to atoms	43
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	7%

## 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	343	365	362	42±8
All	All	6860	7300	7240	840

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 60.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:308:ILE:HD12	1:A:309:VAL:N	0.95	1.76	14	5
1:A:284:LEU:H	1:A:284:LEU:HD22	0.93	1.23	11	3
1:A:308:ILE:HD12	1:A:308:ILE:O	0.88	1.67	19	2
1:A:299:HIS:O	1:A:300:VAL:HG13	0.82	1.73	4	1
1:A:308:ILE:O	1:A:308:ILE:HD13	0.82	1.75	7	1
1:A:284:LEU:HD13	1:A:284:LEU:N	0.81	1.90	11	1
1:A:284:LEU:HD22	1:A:284:LEU:N	0.80	1.90	18	3
1:A:294:LYS:O	1:A:297:ILE:HG23	0.78	1.79	17	1
1:A:284:LEU:N	1:A:284:LEU:HD12	0.76	1.93	4	2
1:A:296:ASN:O	1:A:297:ILE:HG22	0.74	1.82	10	1
1:A:275:VAL:HG22	1:A:276:GLN:N	0.74	1.96	7	1
1:A:300:VAL:H	1:A:301:PRO:CD	0.72	1.97	17	1
1:A:278:ILE:HD12	1:A:278:ILE:N	0.71	2.00	7	1
1:A:279:ASN:N	1:A:279:ASN:ND2	0.70	2.39	8	5

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:308:ILE:C	1:A:308:ILE:HD12	0.70	2.07	6	3
1:A:297:ILE:HD12	1:A:297:ILE:N	0.70	2.02	20	1
1:A:297:ILE:HG23	1:A:297:ILE:O	0.70	1.84	10	1
1:A:297:ILE:C	1:A:297:ILE:HD12	0.69	2.07	15	1
1:A:297:ILE:O	1:A:297:ILE:HG22	0.69	1.86	2	2
1:A:288:GLN:O	1:A:290:LYS:N	0.68	2.26	5	16
1:A:300:VAL:N	1:A:301:PRO:CD	0.68	2.55	5	9
1:A:299:HIS:O	1:A:300:VAL:HG23	0.68	1.89	12	1
1:A:305:SER:H	1:A:307:GLN:HE22	0.68	1.28	9	1
1:A:308:ILE:HD13	1:A:310:TYR:O	0.68	1.87	5	1
1:A:283:ASP:C	1:A:284:LEU:HD13	0.68	2.08	11	1
1:A:297:ILE:O	1:A:299:HIS:N	0.68	2.27	12	9
1:A:300:VAL:HG13	1:A:305:SER:O	0.68	1.87	3	1
1:A:297:ILE:HD13	1:A:297:ILE:O	0.67	1.89	6	2
1:A:278:ILE:HD12	1:A:278:ILE:H	0.67	1.48	7	1
1:A:299:HIS:NE2	1:A:302:GLY:N	0.66	2.41	12	1
1:A:297:ILE:HD12	1:A:297:ILE:H	0.66	1.49	20	1
1:A:299:HIS:CD2	1:A:300:VAL:H	0.66	2.07	12	1
1:A:279:ASN:H	1:A:279:ASN:HD22	0.66	1.33	11	1
1:A:269:GLN:NE2	1:A:286:ASN:ND2	0.65	2.44	5	1
1:A:299:HIS:C	1:A:308:ILE:HD11	0.65	2.11	1	1
1:A:306:VAL:O	1:A:306:VAL:HG22	0.65	1.89	6	3
1:A:279:ASN:O	1:A:281:LYS:N	0.65	2.29	3	5
1:A:281:LYS:H	1:A:281:LYS:CD	0.65	2.04	8	4
1:A:299:HIS:N	1:A:299:HIS:ND1	0.65	2.44	11	1
1:A:279:ASN:HD22	1:A:279:ASN:N	0.65	1.87	6	4
1:A:286:ASN:HD22	1:A:286:ASN:N	0.65	1.90	5	2
1:A:300:VAL:O	1:A:304:GLY:N	0.64	2.29	16	8
1:A:296:ASN:O	1:A:299:HIS:CG	0.64	2.50	6	4
1:A:308:ILE:O	1:A:310:TYR:N	0.64	2.31	14	2
1:A:306:VAL:N	1:A:307:GLN:NE2	0.64	2.46	18	2
1:A:284:LEU:N	1:A:288:GLN:HE21	0.64	1.90	15	1
1:A:296:ASN:O	1:A:299:HIS:ND1	0.64	2.31	6	1
1:A:308:ILE:C	1:A:308:ILE:HD13	0.64	2.13	10	1
1:A:284:LEU:H	1:A:288:GLN:HE21	0.63	1.36	15	1
1:A:267:LYS:N	1:A:280:LYS:CD	0.63	2.61	1	1
1:A:310:TYR:O	1:A:310:TYR:CG	0.63	2.50	1	5
1:A:275:VAL:HG13	1:A:276:GLN:H	0.63	1.53	7	1
1:A:308:ILE:H	1:A:308:ILE:HD13	0.63	1.53	18	2
1:A:299:HIS:CD2	1:A:299:HIS:H	0.63	2.10	17	2
1:A:299:HIS:HD1	1:A:299:HIS:C	0.63	1.97	16	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:300:VAL:O	1:A:300:VAL:HG22	0.63	1.93	20	3
1:A:286:ASN:ND2	1:A:287:VAL:H	0.62	1.92	9	2
1:A:279:ASN:N	1:A:279:ASN:HD22	0.62	1.92	8	1
1:A:268:HIS:O	1:A:270:PRO:N	0.62	2.32	11	2
1:A:299:HIS:ND1	1:A:299:HIS:C	0.62	2.52	8	5
1:A:296:ASN:O	1:A:299:HIS:CD2	0.62	2.53	20	3
1:A:308:ILE:N	1:A:308:ILE:HD13	0.62	2.10	3	2
1:A:287:VAL:O	1:A:289:SER:N	0.62	2.33	3	5
1:A:311:LYS:N	1:A:312:PRO:CD	0.62	2.63	3	1
1:A:308:ILE:HD13	1:A:308:ILE:O	0.62	1.94	10	1
1:A:305:SER:O	1:A:307:GLN:N	0.62	2.33	2	2
1:A:310:TYR:CD1	1:A:310:TYR:N	0.62	2.67	8	4
1:A:296:ASN:O	1:A:297:ILE:CG2	0.62	2.47	10	2
1:A:300:VAL:O	1:A:302:GLY:N	0.62	2.33	20	5
1:A:308:ILE:HD12	1:A:309:VAL:H	0.62	1.54	11	2
1:A:310:TYR:O	1:A:310:TYR:CD2	0.61	2.53	3	2
1:A:310:TYR:CD1	1:A:310:TYR:O	0.61	2.54	12	4
1:A:276:GLN:NE2	1:A:277:ILE:O	0.61	2.33	15	2
1:A:284:LEU:N	1:A:284:LEU:CD2	0.61	2.63	18	2
1:A:305:SER:N	1:A:307:GLN:HE22	0.61	1.94	14	2
1:A:275:VAL:HG12	1:A:275:VAL:O	0.61	1.95	17	1
1:A:295:ASP:OD1	1:A:296:ASN:N	0.61	2.33	6	1
1:A:285:SER:O	1:A:289:SER:N	0.61	2.33	9	1
1:A:294:LYS:O	1:A:296:ASN:N	0.61	2.33	9	5
1:A:284:LEU:O	1:A:286:ASN:N	0.61	2.34	16	4
1:A:286:ASN:ND2	1:A:287:VAL:N	0.61	2.47	9	3
1:A:277:ILE:O	1:A:279:ASN:N	0.61	2.33	11	5
1:A:284:LEU:H	1:A:288:GLN:NE2	0.61	1.93	15	1
1:A:284:LEU:N	1:A:284:LEU:CD1	0.61	2.60	11	3
1:A:275:VAL:O	1:A:277:ILE:N	0.61	2.33	19	2
1:A:285:SER:O	1:A:287:VAL:N	0.60	2.34	11	10
1:A:299:HIS:CD2	1:A:299:HIS:O	0.60	2.54	10	2
1:A:296:ASN:O	1:A:299:HIS:CE1	0.60	2.55	6	1
1:A:300:VAL:O	1:A:300:VAL:HG12	0.60	1.96	17	1
1:A:270:PRO:O	1:A:272:GLY:N	0.60	2.35	3	3
1:A:280:LYS:O	1:A:282:LEU:N	0.60	2.35	10	1
1:A:295:ASP:O	1:A:297:ILE:N	0.60	2.35	16	1
1:A:268:HIS:ND1	1:A:269:GLN:OE1	0.60	2.35	13	1
1:A:297:ILE:O	1:A:299:HIS:CG	0.60	2.54	13	1
1:A:298:LYS:O	1:A:307:GLN:NE2	0.59	2.35	18	2
1:A:277:ILE:HG22	1:A:277:ILE:O	0.59	1.97	1	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:295:ASP:O	1:A:296:ASN:ND2	0.59	2.36	13	1
1:A:306:VAL:H	1:A:307:GLN:NE2	0.59	1.95	14	2
1:A:283:ASP:O	1:A:286:ASN:ND2	0.59	2.36	9	1
1:A:300:VAL:O	1:A:300:VAL:HG13	0.59	1.97	11	1
1:A:299:HIS:ND1	1:A:299:HIS:O	0.59	2.36	6	3
1:A:286:ASN:ND2	1:A:286:ASN:C	0.59	2.55	16	1
1:A:268:HIS:O	1:A:268:HIS:CD2	0.59	2.56	5	4
1:A:299:HIS:ND1	1:A:300:VAL:N	0.59	2.50	20	4
1:A:290:LYS:O	1:A:292:GLY:N	0.59	2.36	2	2
1:A:299:HIS:C	1:A:299:HIS:ND1	0.59	2.56	16	1
1:A:293:SER:OG	1:A:294:LYS:N	0.58	2.36	20	1
1:A:284:LEU:O	1:A:285:SER:CB	0.58	2.51	1	7
1:A:276:GLN:O	1:A:278:ILE:N	0.58	2.36	12	4
1:A:286:ASN:HD22	1:A:287:VAL:H	0.58	1.41	9	1
1:A:279:ASN:ND2	1:A:280:LYS:O	0.58	2.36	10	1
1:A:296:ASN:O	1:A:298:LYS:N	0.58	2.36	5	4
1:A:305:SER:OG	1:A:306:VAL:N	0.58	2.35	11	2
1:A:306:VAL:N	1:A:307:GLN:HE22	0.58	1.96	18	2
1:A:309:VAL:O	1:A:311:LYS:N	0.58	2.37	18	3
1:A:278:ILE:O	1:A:279:ASN:CB	0.58	2.51	12	1
1:A:282:LEU:HD22	1:A:282:LEU:N	0.58	2.12	16	1
1:A:310:TYR:O	1:A:310:TYR:CD1	0.58	2.56	1	2
1:A:280:LYS:O	1:A:283:ASP:N	0.58	2.36	3	3
1:A:284:LEU:H	1:A:284:LEU:CD2	0.58	2.06	6	2
1:A:269:GLN:OE1	1:A:286:ASN:ND2	0.58	2.37	9	1
1:A:300:VAL:O	1:A:303:GLY:N	0.58	2.36	20	1
1:A:291:CYS:CB	1:A:296:ASN:HD22	0.58	2.12	9	1
1:A:308:ILE:H	1:A:308:ILE:CD1	0.58	2.12	18	1
1:A:283:ASP:OD1	1:A:288:GLN:NE2	0.58	2.36	19	1
1:A:297:ILE:O	1:A:299:HIS:CD2	0.58	2.56	13	1
1:A:308:ILE:CD1	1:A:309:VAL:N	0.57	2.63	14	2
1:A:282:LEU:N	1:A:282:LEU:CD2	0.57	2.67	16	1
1:A:293:SER:O	1:A:295:ASP:N	0.57	2.38	2	3
1:A:288:GLN:O	1:A:291:CYS:N	0.57	2.38	6	2
1:A:299:HIS:O	1:A:300:VAL:CG2	0.57	2.51	12	1
1:A:308:ILE:O	1:A:310:TYR:CD1	0.57	2.57	17	1
1:A:297:ILE:HG23	1:A:299:HIS:NE2	0.57	2.15	2	1
1:A:274:LYS:O	1:A:275:VAL:HG23	0.57	1.99	18	2
1:A:280:LYS:C	1:A:282:LEU:H	0.57	2.03	10	1
1:A:306:VAL:H	1:A:307:GLN:HE22	0.57	1.43	14	1
1:A:308:ILE:C	1:A:309:VAL:HG12	0.57	2.20	16	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:278:ILE:C	1:A:280:LYS:H	0.56	2.04	3	3
1:A:309:VAL:HG12	1:A:309:VAL:O	0.56	1.99	11	2
1:A:292:GLY:O	1:A:293:SER:CB	0.56	2.53	13	3
1:A:268:HIS:O	1:A:269:GLN:CB	0.56	2.53	9	2
1:A:290:LYS:NZ	1:A:310:TYR:OH	0.56	2.39	2	1
1:A:307:GLN:N	1:A:307:GLN:CD	0.56	2.59	18	2
1:A:293:SER:O	1:A:294:LYS:CB	0.56	2.53	6	1
1:A:297:ILE:H	1:A:297:ILE:CD1	0.56	2.13	20	1
1:A:294:LYS:C	1:A:296:ASN:N	0.56	2.59	19	3
1:A:284:LEU:O	1:A:288:GLN:NE2	0.56	2.37	9	1
1:A:294:LYS:O	1:A:297:ILE:N	0.56	2.38	18	1
1:A:300:VAL:CG2	1:A:307:GLN:N	0.56	2.69	7	2
1:A:297:ILE:O	1:A:307:GLN:NE2	0.56	2.39	10	1
1:A:305:SER:O	1:A:306:VAL:HG13	0.56	2.00	11	2
1:A:307:GLN:O	1:A:307:GLN:CG	0.56	2.53	17	1
1:A:299:HIS:CE1	1:A:301:PRO:O	0.56	2.59	18	2
1:A:299:HIS:N	1:A:303:GLY:O	0.56	2.39	6	1
1:A:276:GLN:C	1:A:278:ILE:H	0.56	2.05	12	2
1:A:299:HIS:CE1	1:A:308:ILE:HD11	0.56	2.36	11	2
1:A:279:ASN:ND2	1:A:282:LEU:H	0.55	2.00	7	1
1:A:275:VAL:C	1:A:277:ILE:H	0.55	2.05	5	5
1:A:288:GLN:C	1:A:290:LYS:N	0.55	2.60	10	10
1:A:291:CYS:O	1:A:296:ASN:N	0.55	2.40	8	1
1:A:299:HIS:O	1:A:300:VAL:CB	0.55	2.54	12	1
1:A:296:ASN:O	1:A:297:ILE:CB	0.55	2.55	10	1
1:A:290:LYS:NZ	1:A:295:ASP:OD2	0.55	2.36	13	1
1:A:275:VAL:HG13	1:A:276:GLN:NE2	0.55	2.17	14	1
1:A:293:SER:H	1:A:299:HIS:CD2	0.54	2.20	7	1
1:A:301:PRO:C	1:A:303:GLY:N	0.54	2.58	11	2
1:A:296:ASN:C	1:A:298:LYS:H	0.54	2.05	5	3
1:A:297:ILE:O	1:A:297:ILE:CG2	0.54	2.56	10	2
1:A:276:GLN:NE2	1:A:277:ILE:C	0.54	2.61	15	2
1:A:297:ILE:O	1:A:298:LYS:C	0.54	2.45	10	6
1:A:278:ILE:H	1:A:278:ILE:CD1	0.54	2.15	7	1
1:A:278:ILE:O	1:A:280:LYS:N	0.54	2.41	3	2
1:A:282:LEU:HD12	1:A:282:LEU:N	0.54	2.17	20	4
1:A:269:GLN:NE2	1:A:286:ASN:CG	0.54	2.61	5	1
1:A:301:PRO:O	1:A:303:GLY:N	0.54	2.40	11	1
1:A:293:SER:H	1:A:297:ILE:CG1	0.54	2.15	1	1
1:A:293:SER:C	1:A:295:ASP:H	0.54	2.06	12	3
1:A:275:VAL:HG22	1:A:275:VAL:O	0.54	2.02	2	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:278:ILE:O	1:A:279:ASN:C	0.54	2.46	2	1
1:A:297:ILE:C	1:A:299:HIS:N	0.54	2.60	4	6
1:A:285:SER:C	1:A:287:VAL:N	0.54	2.61	17	8
1:A:285:SER:C	1:A:287:VAL:H	0.54	2.05	16	10
1:A:269:GLN:CD	1:A:269:GLN:N	0.54	2.61	6	1
1:A:284:LEU:O	1:A:287:VAL:HG22	0.54	2.03	18	2
1:A:269:GLN:N	1:A:270:PRO:CD	0.53	2.71	1	5
1:A:308:ILE:CG2	1:A:311:LYS:H	0.53	2.16	2	1
1:A:287:VAL:C	1:A:289:SER:N	0.53	2.61	7	5
1:A:285:SER:OG	1:A:286:ASN:N	0.53	2.38	3	2
1:A:309:VAL:C	1:A:311:LYS:H	0.53	2.05	13	4
1:A:306:VAL:HG12	1:A:306:VAL:O	0.53	2.03	9	1
1:A:300:VAL:O	1:A:308:ILE:CG1	0.53	2.56	1	1
1:A:306:VAL:O	1:A:306:VAL:CG2	0.53	2.56	6	2
1:A:278:ILE:O	1:A:278:ILE:HG22	0.53	2.01	9	1
1:A:279:ASN:H	1:A:279:ASN:ND2	0.53	2.01	11	1
1:A:279:ASN:C	1:A:281:LYS:H	0.53	2.06	19	3
1:A:293:SER:O	1:A:294:LYS:C	0.53	2.47	3	1
1:A:308:ILE:C	1:A:309:VAL:HG23	0.53	2.23	17	2
1:A:310:TYR:O	1:A:311:LYS:C	0.53	2.47	1	9
1:A:293:SER:C	1:A:295:ASP:N	0.53	2.60	2	3
1:A:297:ILE:N	1:A:297:ILE:CD1	0.53	2.72	20	1
1:A:268:HIS:O	1:A:271:GLY:N	0.53	2.40	8	1
1:A:309:VAL:HG13	1:A:309:VAL:O	0.53	2.03	4	2
1:A:305:SER:N	1:A:307:GLN:NE2	0.53	2.56	9	1
1:A:286:ASN:HD22	1:A:286:ASN:C	0.53	2.08	18	1
1:A:310:TYR:O	1:A:311:LYS:O	0.53	2.28	10	4
1:A:296:ASN:C	1:A:298:LYS:N	0.52	2.62	1	4
1:A:308:ILE:CD1	1:A:310:TYR:O	0.52	2.57	12	1
1:A:295:ASP:C	1:A:297:ILE:N	0.52	2.62	16	1
1:A:310:TYR:CD1	1:A:310:TYR:C	0.52	2.82	1	3
1:A:305:SER:C	1:A:306:VAL:HG23	0.52	2.24	12	3
1:A:288:GLN:O	1:A:289:SER:C	0.52	2.47	6	8
1:A:299:HIS:ND1	1:A:301:PRO:CD	0.52	2.73	16	2
1:A:297:ILE:O	1:A:299:HIS:CE1	0.52	2.62	11	1
1:A:277:ILE:C	1:A:279:ASN:N	0.52	2.61	12	1
1:A:268:HIS:CE1	1:A:269:GLN:OE1	0.52	2.63	13	1
1:A:286:ASN:C	1:A:286:ASN:HD22	0.52	2.07	16	1
1:A:284:LEU:O	1:A:285:SER:O	0.52	2.28	15	6
1:A:276:GLN:NE2	1:A:276:GLN:C	0.52	2.64	3	2
1:A:272:GLY:O	1:A:275:VAL:O	0.52	2.28	1	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:305:SER:C	1:A:307:GLN:N	0.52	2.63	2	2
1:A:300:VAL:O	1:A:301:PRO:C	0.52	2.49	11	2
1:A:286:ASN:C	1:A:286:ASN:ND2	0.52	2.63	18	1
1:A:275:VAL:C	1:A:277:ILE:N	0.51	2.63	19	2
1:A:279:ASN:ND2	1:A:279:ASN:H	0.51	2.03	8	1
1:A:296:ASN:O	1:A:297:ILE:C	0.51	2.48	17	2
1:A:277:ILE:HG22	1:A:278:ILE:N	0.51	2.20	6	1
1:A:288:GLN:C	1:A:290:LYS:H	0.51	2.08	18	6
1:A:300:VAL:O	1:A:300:VAL:CG1	0.51	2.57	17	1
1:A:306:VAL:HG12	1:A:309:VAL:HG22	0.51	1.82	20	1
1:A:278:ILE:C	1:A:280:LYS:N	0.51	2.63	3	3
1:A:279:ASN:C	1:A:279:ASN:HD22	0.51	2.08	10	3
1:A:280:LYS:O	1:A:283:ASP:O	0.51	2.29	15	4
1:A:279:ASN:C	1:A:281:LYS:N	0.51	2.64	2	5
1:A:308:ILE:N	1:A:308:ILE:CD1	0.51	2.73	20	2
1:A:298:LYS:C	1:A:299:HIS:CG	0.51	2.83	15	1
1:A:308:ILE:CD1	1:A:308:ILE:H	0.51	2.19	3	2
1:A:308:ILE:C	1:A:310:TYR:N	0.51	2.64	14	1
1:A:308:ILE:HD13	1:A:308:ILE:N	0.51	2.21	18	1
1:A:300:VAL:N	1:A:301:PRO:HD2	0.51	2.21	10	6
1:A:276:GLN:C	1:A:278:ILE:N	0.51	2.63	19	4
1:A:306:VAL:O	1:A:307:GLN:O	0.51	2.29	17	1
1:A:305:SER:H	1:A:307:GLN:NE2	0.51	2.02	9	1
1:A:300:VAL:C	1:A:302:GLY:N	0.50	2.65	10	4
1:A:276:GLN:NE2	1:A:276:GLN:O	0.50	2.43	3	2
1:A:290:LYS:C	1:A:291:CYS:SG	0.50	2.89	4	1
1:A:277:ILE:C	1:A:279:ASN:H	0.50	2.10	12	5
1:A:309:VAL:C	1:A:311:LYS:N	0.50	2.65	13	3
1:A:304:GLY:O	1:A:305:SER:O	0.50	2.29	19	2
1:A:287:VAL:O	1:A:288:GLN:O	0.50	2.28	8	1
1:A:292:GLY:O	1:A:293:SER:O	0.50	2.30	7	1
1:A:293:SER:OG	1:A:293:SER:O	0.50	2.28	8	1
1:A:280:LYS:CD	1:A:280:LYS:H	0.50	2.19	13	1
1:A:299:HIS:NE2	1:A:308:ILE:HD12	0.50	2.22	20	1
1:A:275:VAL:O	1:A:276:GLN:O	0.50	2.30	14	2
1:A:280:LYS:O	1:A:284:LEU:N	0.50	2.44	9	1
1:A:276:GLN:OE1	1:A:277:ILE:O	0.50	2.30	3	2
1:A:269:GLN:O	1:A:283:ASP:OD2	0.50	2.29	8	2
1:A:269:GLN:NE2	1:A:288:GLN:HE22	0.50	2.05	9	1
1:A:270:PRO:C	1:A:272:GLY:N	0.50	2.63	3	1
1:A:286:ASN:C	1:A:288:GLN:N	0.50	2.64	7	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:299:HIS:O	1:A:303:GLY:O	0.49	2.31	6	2
1:A:288:GLN:O	1:A:295:ASP:OD2	0.49	2.29	12	1
1:A:309:VAL:CG2	1:A:309:VAL:O	0.49	2.60	16	1
1:A:286:ASN:O	1:A:288:GLN:N	0.49	2.46	7	2
1:A:298:LYS:O	1:A:299:HIS:O	0.49	2.30	11	1
1:A:281:LYS:CD	1:A:281:LYS:N	0.49	2.76	8	3
1:A:308:ILE:O	1:A:308:ILE:CD1	0.49	2.54	7	1
1:A:269:GLN:O	1:A:283:ASP:O	0.49	2.30	11	1
1:A:294:LYS:C	1:A:296:ASN:H	0.49	2.11	19	3
1:A:299:HIS:CD2	1:A:308:ILE:HD12	0.49	2.42	20	3
1:A:308:ILE:C	1:A:308:ILE:CD1	0.49	2.80	5	3
1:A:267:LYS:O	1:A:268:HIS:O	0.49	2.31	19	2
1:A:287:VAL:C	1:A:289:SER:H	0.49	2.11	13	5
1:A:299:HIS:HB2	1:A:308:ILE:HD11	0.49	1.84	6	1
1:A:282:LEU:O	1:A:283:ASP:OD1	0.49	2.31	11	1
1:A:283:ASP:O	1:A:283:ASP:OD1	0.49	2.31	16	1
1:A:288:GLN:OE1	1:A:296:ASN:OD1	0.48	2.31	5	1
1:A:276:GLN:HE22	1:A:277:ILE:C	0.48	2.12	3	2
1:A:311:LYS:O	1:A:312:PRO:OXT	0.48	2.31	19	3
1:A:268:HIS:C	1:A:270:PRO:CD	0.48	2.81	11	1
1:A:295:ASP:OD1	1:A:295:ASP:O	0.48	2.31	15	1
1:A:302:GLY:O	1:A:306:VAL:N	0.48	2.45	1	1
1:A:297:ILE:C	1:A:299:HIS:H	0.48	2.10	4	4
1:A:301:PRO:O	1:A:302:GLY:O	0.48	2.32	12	1
1:A:268:HIS:CD2	1:A:268:HIS:H	0.48	2.19	19	1
1:A:289:SER:O	1:A:293:SER:OG	0.48	2.29	8	1
1:A:293:SER:O	1:A:294:LYS:O	0.48	2.31	3	1
1:A:290:LYS:O	1:A:295:ASP:OD2	0.48	2.31	12	1
1:A:269:GLN:CD	1:A:269:GLN:H	0.48	2.10	13	2
1:A:287:VAL:O	1:A:287:VAL:HG12	0.48	2.06	3	1
1:A:297:ILE:HD12	1:A:297:ILE:O	0.48	2.09	15	1
1:A:280:LYS:O	1:A:283:ASP:OD1	0.48	2.31	16	1
1:A:285:SER:OG	1:A:285:SER:O	0.48	2.30	14	1
1:A:309:VAL:HG22	1:A:309:VAL:O	0.47	2.10	7	3
1:A:288:GLN:O	1:A:290:LYS:O	0.47	2.32	12	1
1:A:292:GLY:O	1:A:293:SER:OG	0.47	2.30	13	2
1:A:284:LEU:O	1:A:285:SER:OG	0.47	2.30	14	4
1:A:269:GLN:OE1	1:A:284:LEU:O	0.47	2.32	9	1
1:A:279:ASN:ND2	1:A:279:ASN:C	0.47	2.67	10	1
1:A:299:HIS:ND1	1:A:310:TYR:OH	0.47	2.46	10	1
1:A:269:GLN:NE2	1:A:283:ASP:OD2	0.47	2.48	13	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:290:LYS:O	1:A:291:CYS:C	0.47	2.53	2	3
1:A:293:SER:OG	1:A:309:VAL:HG23	0.47	2.08	2	1
1:A:308:ILE:O	1:A:309:VAL:C	0.47	2.52	3	2
1:A:286:ASN:ND2	1:A:286:ASN:N	0.47	2.60	5	2
1:A:269:GLN:N	1:A:269:GLN:CD	0.47	2.67	1	1
1:A:279:ASN:HD22	1:A:282:LEU:H	0.47	1.52	7	1
1:A:292:GLY:O	1:A:293:SER:C	0.47	2.53	7	1
1:A:293:SER:O	1:A:297:ILE:CG1	0.47	2.63	11	1
1:A:295:ASP:O	1:A:296:ASN:OD1	0.47	2.33	19	1
1:A:276:GLN:CD	1:A:276:GLN:H	0.47	2.10	9	1
1:A:291:CYS:SG	1:A:296:ASN:ND2	0.47	2.88	9	1
1:A:297:ILE:O	1:A:299:HIS:O	0.47	2.33	20	1
1:A:299:HIS:O	1:A:300:VAL:C	0.46	2.54	6	2
1:A:300:VAL:C	1:A:302:GLY:H	0.46	2.13	2	3
1:A:305:SER:C	1:A:307:GLN:H	0.46	2.14	2	1
1:A:286:ASN:C	1:A:288:GLN:H	0.46	2.12	7	2
1:A:299:HIS:CD2	1:A:308:ILE:CD1	0.46	2.99	4	2
1:A:280:LYS:C	1:A:282:LEU:N	0.46	2.68	10	1
1:A:295:ASP:O	1:A:296:ASN:CG	0.46	2.53	3	1
1:A:279:ASN:ND2	1:A:282:LEU:N	0.46	2.62	7	1
1:A:301:PRO:C	1:A:303:GLY:H	0.46	2.13	20	2
1:A:299:HIS:CD2	1:A:300:VAL:N	0.46	2.82	12	1
1:A:308:ILE:C	1:A:310:TYR:H	0.46	2.14	12	2
1:A:308:ILE:CD1	1:A:308:ILE:N	0.46	2.78	18	1
1:A:274:LYS:C	1:A:275:VAL:HG23	0.46	2.30	12	1
1:A:304:GLY:C	1:A:306:VAL:H	0.46	2.13	4	1
1:A:275:VAL:HG13	1:A:276:GLN:N	0.46	2.24	7	2
1:A:287:VAL:O	1:A:288:GLN:C	0.46	2.54	11	1
1:A:298:LYS:O	1:A:308:ILE:HD13	0.46	2.10	1	1
1:A:274:LYS:O	1:A:275:VAL:CG2	0.46	2.63	18	2
1:A:268:HIS:O	1:A:269:GLN:C	0.46	2.54	11	4
1:A:270:PRO:O	1:A:271:GLY:C	0.46	2.54	5	2
1:A:283:ASP:OD1	1:A:283:ASP:C	0.46	2.55	15	3
1:A:276:GLN:CA	1:A:276:GLN:HE21	0.46	2.24	14	1
1:A:299:HIS:O	1:A:300:VAL:CG1	0.45	2.55	4	1
1:A:300:VAL:CG1	1:A:305:SER:O	0.45	2.62	3	1
1:A:284:LEU:HD12	1:A:284:LEU:H	0.45	1.65	14	2
1:A:305:SER:O	1:A:306:VAL:CG1	0.45	2.65	19	3
1:A:300:VAL:N	1:A:301:PRO:HD3	0.45	2.26	5	1
1:A:296:ASN:OD1	1:A:299:HIS:CD2	0.45	2.70	6	1
1:A:269:GLN:CD	1:A:283:ASP:OD2	0.45	2.55	13	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:300:VAL:O	1:A:300:VAL:CG2	0.45	2.63	20	1
1:A:286:ASN:HD22	1:A:286:ASN:H	0.45	1.51	5	1
1:A:300:VAL:HG11	1:A:307:GLN:H	0.45	1.70	12	1
1:A:298:LYS:O	1:A:299:HIS:CB	0.45	2.64	15	1
1:A:280:LYS:CG	1:A:281:LYS:N	0.45	2.79	17	1
1:A:299:HIS:O	1:A:303:GLY:C	0.45	2.55	2	2
1:A:288:GLN:OE1	1:A:296:ASN:CG	0.45	2.54	5	1
1:A:281:LYS:NZ	1:A:282:LEU:HD21	0.45	2.27	5	1
1:A:275:VAL:HG13	1:A:276:GLN:HE21	0.45	1.72	7	1
1:A:287:VAL:CG1	1:A:295:ASP:OD2	0.44	2.65	3	1
1:A:277:ILE:O	1:A:280:LYS:CB	0.44	2.66	4	1
1:A:309:VAL:O	1:A:310:TYR:CB	0.44	2.64	4	1
1:A:293:SER:O	1:A:294:LYS:CG	0.44	2.65	9	1
1:A:284:LEU:CD1	1:A:284:LEU:H	0.44	2.24	14	1
1:A:294:LYS:O	1:A:295:ASP:C	0.44	2.55	18	1
1:A:285:SER:O	1:A:286:ASN:CG	0.44	2.55	16	1
1:A:279:ASN:O	1:A:280:LYS:C	0.44	2.56	10	3
1:A:296:ASN:OD1	1:A:296:ASN:C	0.44	2.55	20	2
1:A:311:LYS:O	1:A:312:PRO:C	0.44	2.55	9	1
1:A:288:GLN:CG	1:A:289:SER:N	0.44	2.80	18	1
1:A:296:ASN:O	1:A:297:ILE:HG23	0.44	2.12	19	1
1:A:290:LYS:C	1:A:292:GLY:N	0.44	2.71	2	1
1:A:293:SER:O	1:A:297:ILE:N	0.44	2.46	2	1
1:A:278:ILE:N	1:A:278:ILE:CD1	0.44	2.71	7	1
1:A:287:VAL:O	1:A:287:VAL:HG22	0.44	2.12	7	1
1:A:293:SER:OG	1:A:299:HIS:O	0.44	2.35	7	1
1:A:289:SER:O	1:A:293:SER:CB	0.44	2.66	8	1
1:A:287:VAL:O	1:A:287:VAL:CG1	0.43	2.66	3	1
1:A:275:VAL:O	1:A:276:GLN:C	0.43	2.55	7	1
1:A:286:ASN:ND2	1:A:286:ASN:O	0.43	2.51	12	1
1:A:275:VAL:CG2	1:A:276:GLN:N	0.43	2.67	7	1
1:A:268:HIS:CD2	1:A:268:HIS:C	0.43	2.90	8	1
1:A:295:ASP:C	1:A:297:ILE:H	0.43	2.15	5	1
1:A:286:ASN:HD22	1:A:287:VAL:N	0.43	2.07	9	1
1:A:309:VAL:O	1:A:309:VAL:HG22	0.43	2.12	16	1
1:A:305:SER:OG	1:A:307:GLN:CG	0.43	2.66	20	1
1:A:284:LEU:C	1:A:285:SER:O	0.43	2.56	17	2
1:A:297:ILE:C	1:A:297:ILE:CD1	0.43	2.79	15	1
1:A:299:HIS:ND1	1:A:301:PRO:CG	0.43	2.81	5	1
1:A:300:VAL:HG21	1:A:307:GLN:HB2	0.43	1.90	12	1
1:A:275:VAL:CG1	1:A:276:GLN:N	0.43	2.81	16	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:300:VAL:HG21	1:A:307:GLN:HE21	0.43	1.73	1	1
1:A:280:LYS:CD	1:A:280:LYS:N	0.43	2.81	13	1
1:A:299:HIS:N	1:A:304:GLY:HA3	0.43	2.29	10	1
1:A:276:GLN:CD	1:A:277:ILE:O	0.43	2.57	3	2
1:A:283:ASP:O	1:A:286:ASN:CG	0.43	2.56	9	1
1:A:308:ILE:O	1:A:310:TYR:CE1	0.43	2.72	17	1
1:A:296:ASN:C	1:A:297:ILE:HG23	0.43	2.34	19	1
1:A:279:ASN:O	1:A:282:LEU:N	0.43	2.45	9	1
1:A:305:SER:O	1:A:308:ILE:O	0.43	2.37	16	1
1:A:293:SER:O	1:A:293:SER:OG	0.43	2.32	6	1
1:A:308:ILE:HD12	1:A:308:ILE:C	0.43	2.33	16	1
1:A:307:GLN:O	1:A:309:VAL:HG23	0.43	2.14	20	1
1:A:290:LYS:NZ	1:A:297:ILE:CG1	0.42	2.82	4	1
1:A:308:ILE:O	1:A:309:VAL:CB	0.42	2.67	16	1
1:A:300:VAL:HG13	1:A:304:GLY:N	0.42	2.28	9	1
1:A:283:ASP:OD1	1:A:284:LEU:N	0.42	2.52	17	1
1:A:277:ILE:O	1:A:277:ILE:CG2	0.42	2.66	1	1
1:A:301:PRO:O	1:A:302:GLY:C	0.42	2.57	11	1
1:A:299:HIS:ND1	1:A:301:PRO:HD3	0.42	2.29	16	2
1:A:269:GLN:HE22	1:A:288:GLN:HE22	0.42	1.57	9	1
1:A:268:HIS:ND1	1:A:288:GLN:NE2	0.42	2.68	14	1
1:A:269:GLN:CB	1:A:270:PRO:CD	0.42	2.97	19	1
1:A:274:LYS:C	1:A:276:GLN:H	0.42	2.18	4	1
1:A:279:ASN:O	1:A:279:ASN:OD1	0.42	2.38	3	1
1:A:268:HIS:C	1:A:270:PRO:N	0.42	2.73	11	1
1:A:299:HIS:N	1:A:299:HIS:CD2	0.42	2.86	12	2
1:A:298:LYS:CE	1:A:307:GLN:NE2	0.42	2.83	17	1
1:A:305:SER:O	1:A:305:SER:OG	0.42	2.38	4	1
1:A:294:LYS:N	1:A:297:ILE:HG23	0.42	2.30	9	1
1:A:279:ASN:C	1:A:279:ASN:ND2	0.41	2.73	5	1
1:A:308:ILE:HD12	1:A:308:ILE:N	0.41	2.30	11	1
1:A:300:VAL:HG22	1:A:306:VAL:HA	0.41	1.92	13	1
1:A:293:SER:HB2	1:A:297:ILE:HG22	0.41	1.92	17	1
1:A:303:GLY:O	1:A:304:GLY:O	0.41	2.38	16	1
1:A:308:ILE:C	1:A:309:VAL:CG1	0.41	2.89	16	1
1:A:294:LYS:N	1:A:298:LYS:HB2	0.41	2.30	19	1
1:A:269:GLN:OE1	1:A:287:VAL:CG2	0.41	2.68	9	1
1:A:298:LYS:O	1:A:304:GLY:CA	0.41	2.69	14	1
1:A:308:ILE:N	1:A:308:ILE:HD12	0.41	2.31	2	1
1:A:281:LYS:N	1:A:281:LYS:CD	0.41	2.84	4	1
1:A:282:LEU:HD12	1:A:282:LEU:H	0.41	1.75	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:282:LEU:N	1:A:282:LEU:CD1	0.41	2.83	6	2
1:A:284:LEU:N	1:A:284:LEU:HD13	0.41	2.30	18	1
1:A:267:LYS:O	1:A:270:PRO:CD	0.41	2.69	11	1
1:A:299:HIS:O	1:A:299:HIS:ND1	0.41	2.53	18	1
1:A:274:LYS:C	1:A:276:GLN:N	0.40	2.74	4	1
1:A:299:HIS:CE1	1:A:301:PRO:HD3	0.40	2.52	11	1
1:A:284:LEU:N	1:A:288:GLN:OE1	0.40	2.53	16	1
1:A:299:HIS:CE1	1:A:301:PRO:CD	0.40	3.04	16	1
1:A:281:LYS:CB	1:A:281:LYS:NZ	0.40	2.84	9	1
1:A:310:TYR:O	1:A:311:LYS:CB	0.40	2.69	14	1
1:A:269:GLN:NE2	1:A:269:GLN:H	0.40	2.14	6	1
1:A:297:ILE:O	1:A:297:ILE:HD13	0.40	2.17	11	1
1:A:305:SER:O	1:A:306:VAL:CB	0.40	2.69	14	1
1:A:275:VAL:O	1:A:275:VAL:CG1	0.40	2.66	17	1
1:A:276:GLN:CD	1:A:276:GLN:N	0.40	2.73	20	1
1:A:280:LYS:O	1:A:281:LYS:C	0.40	2.59	3	1
1:A:281:LYS:CD	1:A:281:LYS:H	0.40	2.29	18	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	44/46 (96%)	26±2 (58±6%)	8±2 (17±5%)	11±3 (24±7%)	0	1
All	All	880/920 (96%)	513 (58%)	153 (17%)	214 (24%)	0	1

All 38 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	285	SER	18
1	A	289	SER	15
1	A	306	VAL	13
1	A	293	SER	11
1	A	275	VAL	9

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Mol	Chain	Res	Type	Models (Total)
1	A	278	ILE	8
1	A	311	LYS	8
1	A	294	LYS	8
1	A	298	LYS	8
1	A	305	SER	7
1	A	301	PRO	7
1	A	286	ASN	7
1	A	288	GLN	7
1	A	297	ILE	6
1	A	280	LYS	6
1	A	309	VAL	6
1	A	277	ILE	6
1	A	300	VAL	6
1	A	279	ASN	5
1	A	296	ASN	5
1	A	295	ASP	5
1	A	310	TYR	5
1	A	271	GLY	4
1	A	303	GLY	4
1	A	276	GLN	4
1	A	269	GLN	4
1	A	302	GLY	3
1	A	292	GLY	3
1	A	299	HIS	3
1	A	270	PRO	2
1	A	307	GLN	2
1	A	272	GLY	2
1	A	268	HIS	2
1	A	291	CYS	1
1	A	287	VAL	1
1	A	281	LYS	1
1	A	308	ILE	1
1	A	304	GLY	1

### 6.3.2 Protein sidechains [i](#)

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	39/39 (100%)	33±2 (85±6%)	6±2 (15±6%)	6	45
All	All	780/780 (100%)	666 (85%)	114 (15%)	6	45

All 25 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	299	HIS	12
1	A	310	TYR	10
1	A	279	ASN	9
1	A	281	LYS	9
1	A	308	ILE	8
1	A	269	GLN	7
1	A	286	ASN	7
1	A	280	LYS	6
1	A	284	LEU	5
1	A	297	ILE	5
1	A	311	LYS	4
1	A	285	SER	4
1	A	293	SER	4
1	A	307	GLN	4
1	A	276	GLN	3
1	A	298	LYS	3
1	A	289	SER	3
1	A	300	VAL	3
1	A	301	PRO	2
1	A	305	SER	1
1	A	288	GLN	1
1	A	309	VAL	1
1	A	268	HIS	1
1	A	275	VAL	1
1	A	277	ILE	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 7% for the well-defined parts and 7% 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	43
Number of shifts mapped to atoms	43
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](#)

No chemical shift referencing corrections were calculated (not enough data).

#### 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 7%, i.e. 42 atoms were assigned a chemical shift out of a possible 608. 0 out of 7 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	<sup>1</sup> H	<sup>13</sup> C	<sup>15</sup> N
Backbone	42/231 (18%)	42/96 (44%)	0/92 (0%)	0/43 (0%)
Sidechain	0/352 (0%)	0/227 (0%)	0/110 (0%)	0/15 (0%)
Aromatic	0/25 (0%)	0/12 (0%)	0/9 (0%)	0/4 (0%)
Overall	42/608 (7%)	42/335 (13%)	0/211 (0%)	0/62 (0%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 7%, i.e. 42 atoms were assigned a chemical shift out of a possible 608. 0 out of 7 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	<sup>1</sup> H	<sup>13</sup> C	<sup>15</sup> N
Backbone	42/231 (18%)	42/96 (44%)	0/92 (0%)	0/43 (0%)
Sidechain	0/352 (0%)	0/227 (0%)	0/110 (0%)	0/15 (0%)
Aromatic	0/25 (0%)	0/12 (0%)	0/9 (0%)	0/4 (0%)
Overall	42/608 (7%)	42/335 (13%)	0/211 (0%)	0/62 (0%)

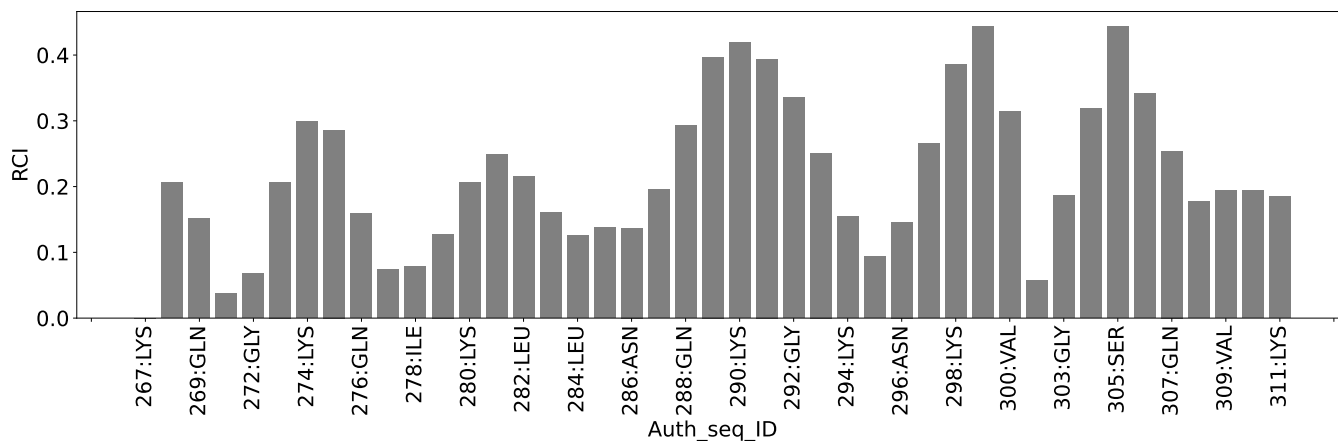
#### 7.1.4 Statistically unusual chemical shifts [i](#)

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

### 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	196
Intra-residue ( $ i-j =0$ )	0
Sequential ( $ i-j =1$ )	0
Medium range ( $ i-j >1$ and $ i-j <5$ )	147
Long range ( $ i-j \geq 5$ )	49
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	0
Total dihedral-angle restraints	0
Number of unmapped restraints	1
Number of restraints per residue	4.3
Number of long range restraints per residue <sup>1</sup>	1.1

<sup>1</sup>Long range hydrogen bonds and disulfide bonds are counted as long range restraints while calculating the number of long range restraints per residue

### 8.2 Residual restraint violations

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

#### 8.2.1 Average number of distance violations per model

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

Bins (Å)	Average number of violations per model	Max (Å)
0.1-0.2 (Small)	8.0	0.2
0.2-0.5 (Medium)	4.7	0.5
>0.5 (Large)	4.3	3.82

### 8.2.2 Average number of dihedral-angle violations per model

Dihedral-angle violations less than  $1^\circ$  are not included in the calculation. There are no dihedral-angle violations

## 9 Distance violation analysis [i](#)

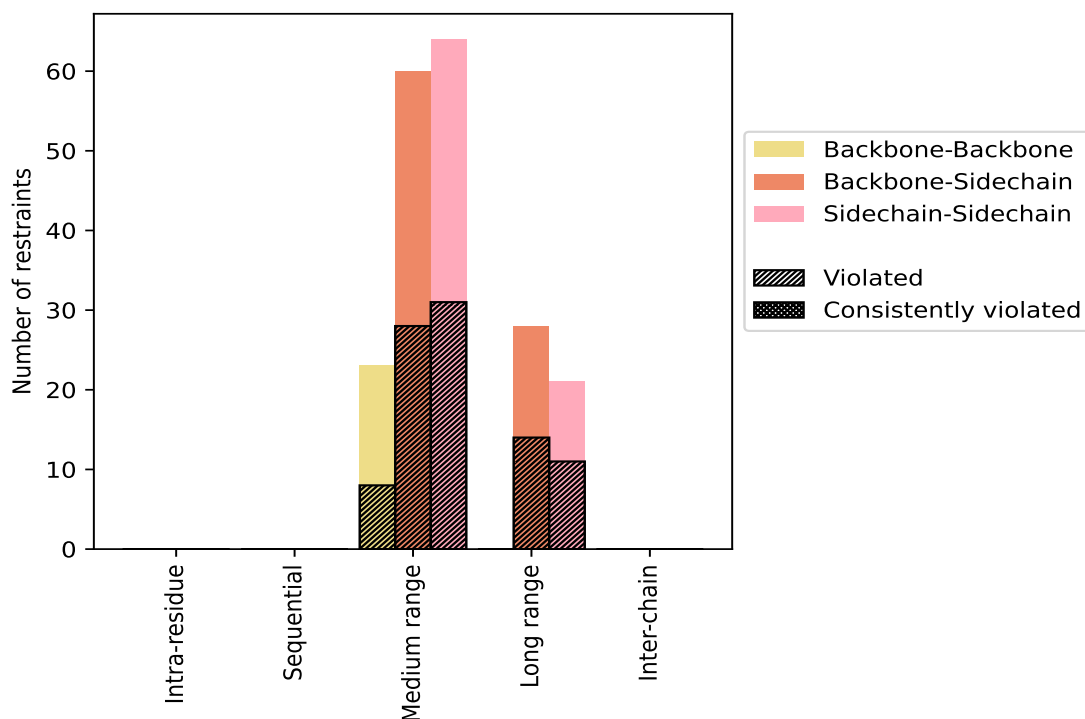
### 9.1 Summary of distance violations [i](#)

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.

Restrains type	Count	% <sup>1</sup>	Violated <sup>3</sup>			Consistently Violated <sup>4</sup>		
			Count	% <sup>2</sup>	% <sup>1</sup>	Count	% <sup>2</sup>	% <sup>1</sup>
<b>Intra-residue (<math> i-j =0</math>)</b>	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
<b>Sequential (<math> i-j =1</math>)</b>	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
<b>Medium range (<math> i-j &gt;1</math> &amp; <math> i-j &lt;5</math>)</b>	147	75.0	67	45.6	34.2	0	0.0	0.0
Backbone-Backbone	23	11.7	8	34.8	4.1	0	0.0	0.0
Backbone-Sidechain	60	30.6	28	46.7	14.3	0	0.0	0.0
Sidechain-Sidechain	64	32.7	31	48.4	15.8	0	0.0	0.0
<b>Long range (<math> i-j \geq 5</math>)</b>	49	25.0	25	51.0	12.8	0	0.0	0.0
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	28	14.3	14	50.0	7.1	0	0.0	0.0
Sidechain-Sidechain	21	10.7	11	52.4	5.6	0	0.0	0.0
<b>Inter-chain</b>	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
<b>Hydrogen bond</b>	0	0.0	0	0.0	0.0	0	0.0	0.0
<b>Disulfide bond</b>	0	0.0	0	0.0	0.0	0	0.0	0.0
<b>Total</b>	196	100.0	92	46.9	46.9	0	0.0	0.0
Backbone-Backbone	23	11.7	8	34.8	4.1	0	0.0	0.0
Backbone-Sidechain	88	44.9	42	47.7	21.4	0	0.0	0.0
Sidechain-Sidechain	85	43.4	42	49.4	21.4	0	0.0	0.0

<sup>1</sup> percentage calculated with respect to the total number of distance restraints, <sup>2</sup> percentage calculated with respect to the number of restraints in a particular restraint category, <sup>3</sup> violated in at least one model, <sup>4</sup> 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 disulfid 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 <sup>6</sup> (Å)	Median (Å)
	IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total				
1	0	0	9	6	0	15	0.16	0.3	0.05	0.15
2	0	0	10	7	0	17	0.19	0.37	0.07	0.16
3	0	0	5	3	0	8	0.22	0.38	0.08	0.19
4	0	0	14	9	0	23	0.67	3.01	0.82	0.19
5	0	0	3	6	0	9	0.17	0.35	0.07	0.14
6	0	0	19	8	0	27	0.75	3.26	0.96	0.3
7	0	0	8	2	0	10	0.14	0.2	0.03	0.14
8	0	0	14	8	0	22	0.69	2.94	0.94	0.2
9	0	0	13	6	0	19	0.8	2.94	0.97	0.25
10	0	0	7	3	0	10	0.2	0.52	0.11	0.17
11	0	0	7	7	0	14	0.17	0.24	0.04	0.17

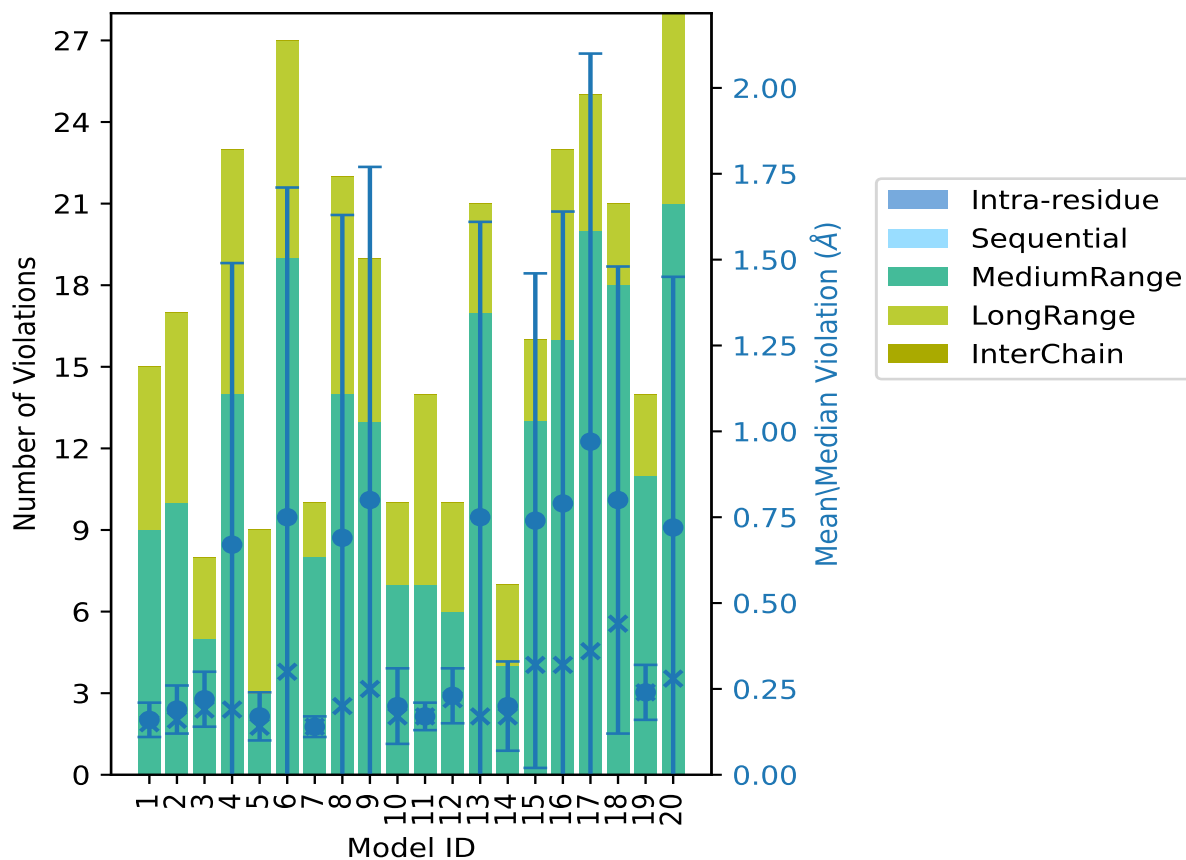
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Model ID	Number of violations					Total	Mean (Å)	Max (Å)	SD <sup>6</sup> (Å)	Median (Å)
	IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>					
12	0	0	6	4	0	10	0.23	0.39	0.08	0.22
13	0	0	17	4	0	21	0.75	3.38	0.86	0.17
14	0	0	4	3	0	7	0.2	0.51	0.13	0.17
15	0	0	13	3	0	16	0.74	2.63	0.72	0.32
16	0	0	16	7	0	23	0.79	2.68	0.85	0.32
17	0	0	20	5	0	25	0.97	3.82	1.13	0.36
18	0	0	18	3	0	21	0.8	2.11	0.68	0.44
19	0	0	11	3	0	14	0.24	0.46	0.08	0.24
20	0	0	21	7	0	28	0.72	2.28	0.73	0.28

<sup>1</sup>Intra-residue restraints, <sup>2</sup>Sequential restraints, <sup>3</sup>Medium range restraints, <sup>4</sup>Long range restraints, <sup>5</sup>Inter-chain restraints, <sup>6</sup>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



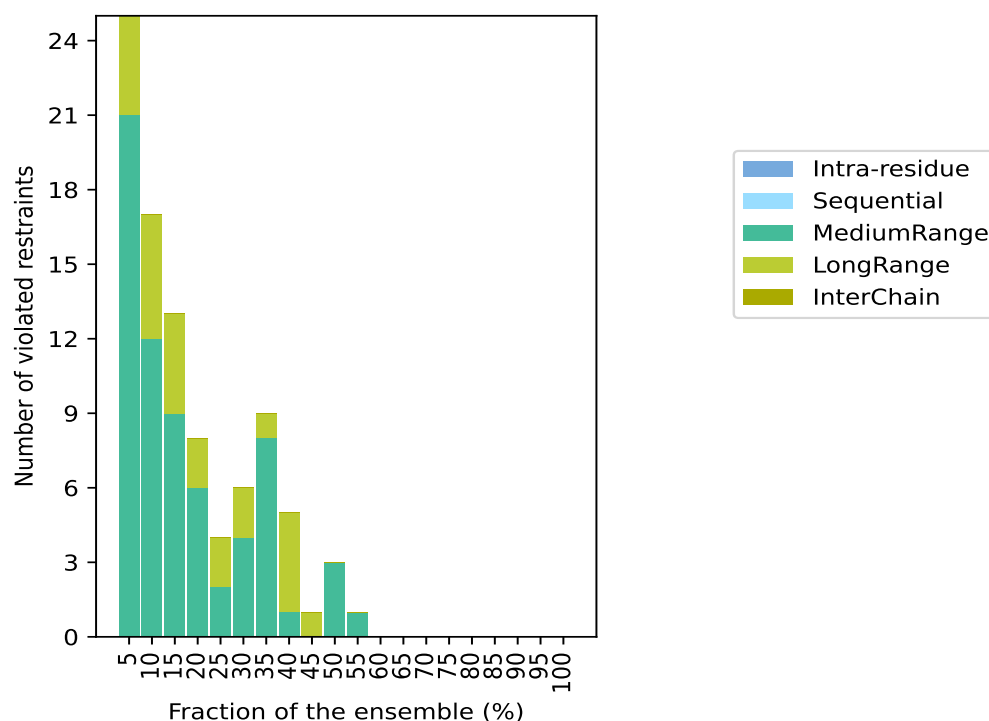
### 9.3 Distance violation statistics for the ensemble

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, 104(IR:0, SQ:0, MR:80, LR:24, IC:0) restraints are not violated in the ensemble.

Number of violated restraints						Fraction of the ensemble	
IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total	Count <sup>6</sup>	%
0	0	21	4	0	25	1	5.0
0	0	12	5	0	17	2	10.0
0	0	9	4	0	13	3	15.0
0	0	6	2	0	8	4	20.0
0	0	2	2	0	4	5	25.0
0	0	4	2	0	6	6	30.0
0	0	8	1	0	9	7	35.0
0	0	1	4	0	5	8	40.0
0	0	0	1	0	1	9	45.0
0	0	3	0	0	3	10	50.0
0	0	1	0	0	1	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

<sup>1</sup>Intra-residue restraints, <sup>2</sup>Sequential restraints, <sup>3</sup>Medium range restraints, <sup>4</sup>Long range restraints, <sup>5</sup>Inter-chain restraints, <sup>6</sup> Number of models with violations

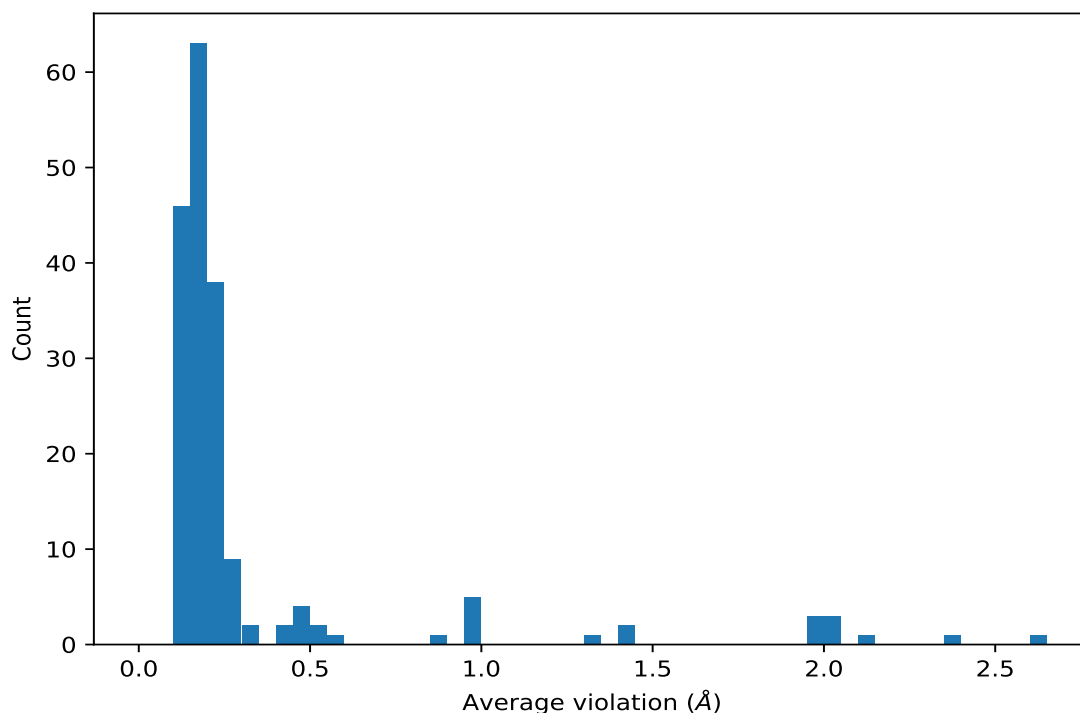
### 9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



## 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 <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	11	2.37	0.95	2.63
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	10	1.95	0.78	2.04
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	10	1.42	0.44	1.29
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	10	0.85	0.48	0.78
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	9	0.23	0.09	0.21
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	9	0.23	0.09	0.21
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	8	0.29	0.12	0.28
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	8	0.29	0.12	0.28
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	8	0.28	0.17	0.24
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	8	0.24	0.08	0.22
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	8	0.24	0.08	0.22
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	8	0.24	0.08	0.22
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	8	0.24	0.08	0.22
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	8	0.24	0.08	0.22
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	8	0.24	0.08	0.22
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	8	0.2	0.13	0.15

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	8	0.2	0.13	0.15
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	8	0.18	0.06	0.16
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	8	0.18	0.06	0.16
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	8	0.18	0.06	0.16
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	8	0.18	0.06	0.16
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	7	1.97	0.8	2.35
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	7	1.97	0.8	2.35
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	7	1.42	1.07	1.61
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	7	0.96	0.42	0.84
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	7	0.96	0.42	0.84
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	7	0.45	0.27	0.46
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	7	0.45	0.27	0.46
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	7	0.21	0.08	0.18
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	7	0.21	0.07	0.21
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	7	0.18	0.06	0.15
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	7	0.17	0.05	0.16
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	7	0.17	0.05	0.16
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	7	0.16	0.05	0.14
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	7	0.16	0.05	0.14
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	7	0.16	0.05	0.14
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	7	0.16	0.05	0.14
(1,12)	1:A:310:TYR:HE1	1:A:312:PRO:HA	6	2.6	0.51	2.7
(1,29)	1:A:308:ILE:HG12	1:A:310:TYR:HE1	6	1.3	0.62	1.38
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG2	6	0.22	0.09	0.22
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG3	6	0.22	0.09	0.22
(1,187)	1:A:299:HIS:HB2	1:A:311:LYS:H	6	0.18	0.06	0.18
(1,187)	1:A:299:HIS:HB3	1:A:311:LYS:H	6	0.18	0.06	0.18
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB2	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB3	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB2	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB3	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB2	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB3	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB2	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB3	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB2	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB3	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB2	6	0.14	0.03	0.14
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB3	6	0.14	0.03	0.14
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG12	6	0.14	0.03	0.12
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG13	6	0.14	0.03	0.12
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG12	6	0.14	0.03	0.12

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG13	6	0.14	0.03	0.12
(1,175)	1:A:301:PRO:HG2	1:A:310:TYR:HA	5	0.31	0.11	0.29
(1,175)	1:A:301:PRO:HG3	1:A:310:TYR:HA	5	0.31	0.11	0.29
(1,40)	1:A:299:HIS:HE1	1:A:301:PRO:HA	5	0.23	0.07	0.27
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG11	5	0.2	0.1	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG12	5	0.2	0.1	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG13	5	0.2	0.1	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG21	5	0.2	0.1	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG22	5	0.2	0.1	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG23	5	0.2	0.1	0.19
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB2	5	0.18	0.05	0.19
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB3	5	0.18	0.05	0.19
(1,19)	1:A:308:ILE:HB	1:A:310:TYR:HE1	4	2.12	0.56	1.96
(1,11)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	4	0.59	0.28	0.65
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG21	4	0.29	0.11	0.26
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG22	4	0.29	0.11	0.26
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG23	4	0.29	0.11	0.26
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG21	4	0.29	0.11	0.26
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG22	4	0.29	0.11	0.26
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG23	4	0.29	0.11	0.26
(1,63)	1:A:280:LYS:HE2	1:A:282:LEU:H	4	0.23	0.07	0.22
(1,63)	1:A:280:LYS:HE3	1:A:282:LEU:H	4	0.23	0.07	0.22
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB2	4	0.2	0.06	0.2
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB3	4	0.2	0.06	0.2
(1,110)	1:A:295:ASP:HA	1:A:298:LYS:H	4	0.19	0.02	0.2
(1,43)	1:A:277:ILE:HG21	1:A:279:ASN:HA	4	0.14	0.05	0.12
(1,43)	1:A:277:ILE:HG22	1:A:279:ASN:HA	4	0.14	0.05	0.12
(1,43)	1:A:277:ILE:HG23	1:A:279:ASN:HA	4	0.14	0.05	0.12
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD2	4	0.14	0.03	0.14
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD3	4	0.14	0.03	0.14
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD2	4	0.14	0.03	0.14
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD3	4	0.14	0.03	0.14
(1,20)	1:A:308:ILE:HD11	1:A:310:TYR:HE1	3	2.0	0.1	2.01
(1,20)	1:A:308:ILE:HD12	1:A:310:TYR:HE1	3	2.0	0.1	2.01
(1,20)	1:A:308:ILE:HD13	1:A:310:TYR:HE1	3	2.0	0.1	2.01
(1,18)	1:A:308:ILE:HD11	1:A:310:TYR:HD1	3	0.96	0.29	1.15
(1,18)	1:A:308:ILE:HD12	1:A:310:TYR:HD1	3	0.96	0.29	1.15
(1,18)	1:A:308:ILE:HD13	1:A:310:TYR:HD1	3	0.96	0.29	1.15
(1,90)	1:A:308:ILE:HG12	1:A:310:TYR:HD1	3	0.5	0.27	0.33
(1,90)	1:A:308:ILE:HG13	1:A:310:TYR:HD1	3	0.5	0.27	0.33
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG2	3	0.47	0.26	0.3
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG3	3	0.47	0.26	0.3

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	3	0.4	0.13	0.47
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	3	0.4	0.13	0.47
(1,160)	1:A:300:VAL:HG11	1:A:307:GLN:H	3	0.24	0.09	0.22
(1,160)	1:A:300:VAL:HG12	1:A:307:GLN:H	3	0.24	0.09	0.22
(1,160)	1:A:300:VAL:HG13	1:A:307:GLN:H	3	0.24	0.09	0.22
(1,160)	1:A:300:VAL:HG21	1:A:307:GLN:H	3	0.24	0.09	0.22
(1,160)	1:A:300:VAL:HG22	1:A:307:GLN:H	3	0.24	0.09	0.22
(1,160)	1:A:300:VAL:HG23	1:A:307:GLN:H	3	0.24	0.09	0.22
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB2	3	0.23	0.08	0.24
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB3	3	0.23	0.08	0.24
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD11	3	0.19	0.04	0.19
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD12	3	0.19	0.04	0.19
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD13	3	0.19	0.04	0.19
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG12	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG13	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG12	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG13	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG12	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG13	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG12	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG13	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG12	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG13	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG12	3	0.18	0.04	0.16
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG13	3	0.18	0.04	0.16
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG12	3	0.18	0.02	0.18
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG13	3	0.18	0.02	0.18
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG12	3	0.18	0.02	0.18
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG13	3	0.18	0.02	0.18
(1,150)	1:A:270:PRO:HD2	1:A:275:VAL:H	3	0.16	0.03	0.17
(1,150)	1:A:270:PRO:HD3	1:A:275:VAL:H	3	0.16	0.03	0.17
(1,31)	1:A:299:HIS:HD2	1:A:301:PRO:HG2	3	0.14	0.0	0.14
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD21	3	0.14	0.02	0.14
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD22	3	0.14	0.02	0.14
(1,174)	1:A:301:PRO:HB2	1:A:310:TYR:H	2	0.24	0.05	0.24
(1,174)	1:A:301:PRO:HB3	1:A:310:TYR:H	2	0.24	0.05	0.24
(1,77)	1:A:296:ASN:H	1:A:298:LYS:HG2	2	0.24	0.01	0.24
(1,77)	1:A:296:ASN:H	1:A:298:LYS:HG3	2	0.24	0.01	0.24
(1,25)	1:A:309:VAL:HB	1:A:311:LYS:H	2	0.22	0.04	0.22
(1,27)	1:A:299:HIS:HD2	1:A:301:PRO:HD3	2	0.18	0.05	0.18
(1,41)	1:A:297:ILE:HB	1:A:299:HIS:HE1	2	0.18	0.04	0.18
(1,173)	1:A:298:LYS:HD2	1:A:307:GLN:HB2	2	0.18	0.0	0.18

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Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,173)	1:A:298:LYS:HD2	1:A:307:GLN:HB3	2	0.18	0.0	0.18
(1,173)	1:A:298:LYS:HD3	1:A:307:GLN:HB2	2	0.18	0.0	0.18
(1,173)	1:A:298:LYS:HD3	1:A:307:GLN:HB3	2	0.18	0.0	0.18
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG21	2	0.16	0.06	0.16
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG22	2	0.16	0.06	0.16
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG23	2	0.16	0.06	0.16
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG21	2	0.16	0.06	0.16
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG22	2	0.16	0.06	0.16
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG23	2	0.16	0.06	0.16
(1,9)	1:A:308:ILE:HD11	1:A:310:TYR:HA	2	0.16	0.01	0.16
(1,9)	1:A:308:ILE:HD12	1:A:310:TYR:HA	2	0.16	0.01	0.16
(1,9)	1:A:308:ILE:HD13	1:A:310:TYR:HA	2	0.16	0.01	0.16
(1,28)	1:A:268:HIS:HD2	1:A:270:PRO:HA	2	0.16	0.01	0.16
(1,79)	1:A:297:ILE:HD11	1:A:299:HIS:HB2	2	0.16	0.02	0.16
(1,79)	1:A:297:ILE:HD11	1:A:299:HIS:HB3	2	0.16	0.02	0.16
(1,79)	1:A:297:ILE:HD12	1:A:299:HIS:HB2	2	0.16	0.02	0.16
(1,79)	1:A:297:ILE:HD12	1:A:299:HIS:HB3	2	0.16	0.02	0.16
(1,79)	1:A:297:ILE:HD13	1:A:299:HIS:HB2	2	0.16	0.02	0.16
(1,79)	1:A:297:ILE:HD13	1:A:299:HIS:HB3	2	0.16	0.02	0.16
(1,106)	1:A:285:SER:HB3	1:A:288:GLN:H	2	0.16	0.01	0.16
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD11	2	0.16	0.05	0.16
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD12	2	0.16	0.05	0.16
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD13	2	0.16	0.05	0.16
(1,143)	1:A:293:SER:HB2	1:A:297:ILE:H	2	0.14	0.03	0.14
(1,143)	1:A:293:SER:HB3	1:A:297:ILE:H	2	0.14	0.03	0.14
(1,54)	1:A:276:GLN:HG2	1:A:278:ILE:HG12	2	0.13	0.02	0.13
(1,54)	1:A:276:GLN:HG2	1:A:278:ILE:HG13	2	0.13	0.02	0.13
(1,54)	1:A:276:GLN:HG3	1:A:278:ILE:HG12	2	0.13	0.02	0.13
(1,54)	1:A:276:GLN:HG3	1:A:278:ILE:HG13	2	0.13	0.02	0.13
(1,152)	1:A:289:SER:HB2	1:A:294:LYS:HD2	2	0.13	0.02	0.13
(1,152)	1:A:289:SER:HB2	1:A:294:LYS:HD3	2	0.13	0.02	0.13
(1,152)	1:A:289:SER:HB3	1:A:294:LYS:HD2	2	0.13	0.02	0.13
(1,152)	1:A:289:SER:HB3	1:A:294:LYS:HD3	2	0.13	0.02	0.13
(1,51)	1:A:274:LYS:HG2	1:A:276:GLN:HG2	2	0.12	0.01	0.12
(1,51)	1:A:274:LYS:HG2	1:A:276:GLN:HG3	2	0.12	0.01	0.12
(1,51)	1:A:274:LYS:HG3	1:A:276:GLN:HG2	2	0.12	0.01	0.12
(1,51)	1:A:274:LYS:HG3	1:A:276:GLN:HG3	2	0.12	0.01	0.12
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG21	2	0.11	0.0	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG22	2	0.11	0.0	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG23	2	0.11	0.0	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG21	2	0.11	0.0	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG22	2	0.11	0.0	0.11

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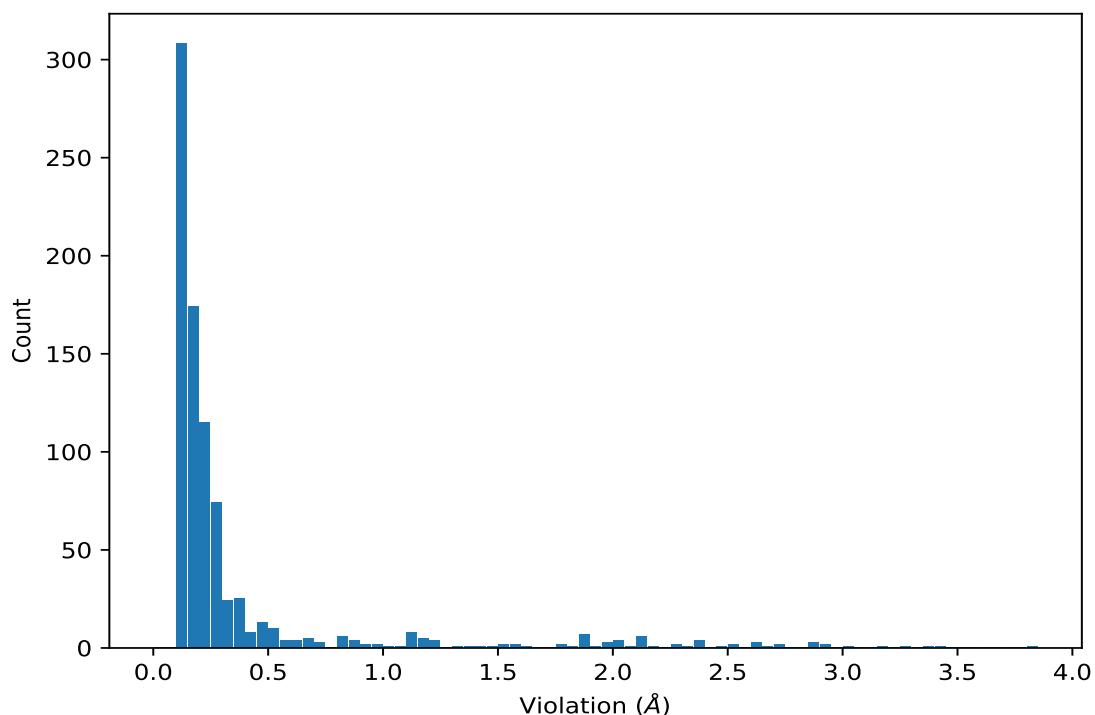
Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG23	2	0.11	0.0	0.11

<sup>1</sup>Number of violated models, <sup>2</sup>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)
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	17	3.82
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	17	3.41
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	13	3.38

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	6	3.26
(1,12)	1:A:310:TYR:HE1	1:A:312:PRO:HA	17	3.16
(1,19)	1:A:308:ILE:HB	1:A:310:TYR:HE1	4	3.01
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	8	2.94
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	9	2.94
(1,12)	1:A:310:TYR:HE1	1:A:312:PRO:HA	6	2.89
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	17	2.86
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	17	2.86
(1,12)	1:A:310:TYR:HE1	1:A:312:PRO:HA	8	2.72
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	6	2.71
(1,12)	1:A:310:TYR:HE1	1:A:312:PRO:HA	16	2.68
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	16	2.65
(1,12)	1:A:310:TYR:HE1	1:A:312:PRO:HA	9	2.64
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	15	2.63
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	6	2.52
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	6	2.52
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	8	2.45
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	9	2.36
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	9	2.36
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	8	2.35
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	8	2.35
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	9	2.34
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	20	2.28
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	16	2.25
(1,19)	1:A:308:ILE:HB	1:A:310:TYR:HE1	20	2.17
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	16	2.11
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	16	2.11
(1,20)	1:A:308:ILE:HD11	1:A:310:TYR:HE1	18	2.11
(1,20)	1:A:308:ILE:HD12	1:A:310:TYR:HE1	18	2.11
(1,20)	1:A:308:ILE:HD13	1:A:310:TYR:HE1	18	2.11
(1,29)	1:A:308:ILE:HG12	1:A:310:TYR:HE1	13	2.1
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	17	2.07
(1,20)	1:A:308:ILE:HD11	1:A:310:TYR:HE1	4	2.01
(1,20)	1:A:308:ILE:HD12	1:A:310:TYR:HE1	4	2.01
(1,20)	1:A:308:ILE:HD13	1:A:310:TYR:HE1	4	2.01
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	20	2.0
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	18	1.99
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	6	1.98
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	4	1.97
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	20	1.92
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	16	1.9
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	16	1.9

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,29)	1:A:308:ILE:HG12	1:A:310:TYR:HE1	4	1.89
(1,20)	1:A:308:ILE:HD11	1:A:310:TYR:HE1	20	1.87
(1,20)	1:A:308:ILE:HD12	1:A:310:TYR:HE1	20	1.87
(1,20)	1:A:308:ILE:HD13	1:A:310:TYR:HE1	20	1.87
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	13	1.86
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	15	1.84
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	20	1.78
(1,19)	1:A:308:ILE:HB	1:A:310:TYR:HE1	18	1.76
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	18	1.61
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	4	1.57
(1,19)	1:A:308:ILE:HB	1:A:310:TYR:HE1	13	1.55
(1,12)	1:A:310:TYR:HE1	1:A:312:PRO:HA	15	1.53
(1,29)	1:A:308:ILE:HG12	1:A:310:TYR:HE1	18	1.51
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	9	1.48
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	17	1.44
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	18	1.36
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	18	1.31
(1,29)	1:A:308:ILE:HG12	1:A:310:TYR:HE1	20	1.24
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	15	1.22
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	13	1.21
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	20	1.21
(1,18)	1:A:308:ILE:HD11	1:A:310:TYR:HD1	4	1.18
(1,18)	1:A:308:ILE:HD12	1:A:310:TYR:HD1	4	1.18
(1,18)	1:A:308:ILE:HD13	1:A:310:TYR:HD1	4	1.18
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	6	1.16
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	8	1.16
(1,18)	1:A:308:ILE:HD11	1:A:310:TYR:HD1	18	1.15
(1,18)	1:A:308:ILE:HD12	1:A:310:TYR:HD1	18	1.15
(1,18)	1:A:308:ILE:HD13	1:A:310:TYR:HD1	18	1.15
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	13	1.14
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	15	1.12
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	15	1.12
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	17	1.1
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	17	1.1
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	16	1.08
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	13	1.02
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	17	0.96
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	17	0.96
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	13	0.92
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	13	0.92
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	15	0.89
(1,90)	1:A:308:ILE:HG12	1:A:310:TYR:HD1	13	0.88

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,90)	1:A:308:ILE:HG13	1:A:310:TYR:HD1	13	0.88
(1,11)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	20	0.88
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG2	17	0.84
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG3	17	0.84
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	18	0.84
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	18	0.84
(1,37)	1:A:310:TYR:HD1	1:A:312:PRO:HB3	4	0.81
(1,11)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	17	0.81
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	16	0.72
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	15	0.71
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	15	0.71
(1,29)	1:A:308:ILE:HG12	1:A:310:TYR:HE1	16	0.7
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	9	0.67
(1,38)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	4	0.66
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	6	0.65
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	6	0.65
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	6	0.63
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	6	0.63
(1,176)	1:A:301:PRO:HG2	1:A:310:TYR:HD1	20	0.62
(1,176)	1:A:301:PRO:HG3	1:A:310:TYR:HD1	20	0.62
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	18	0.58
(1,18)	1:A:308:ILE:HD11	1:A:310:TYR:HD1	20	0.56
(1,18)	1:A:308:ILE:HD12	1:A:310:TYR:HD1	20	0.56
(1,18)	1:A:308:ILE:HD13	1:A:310:TYR:HD1	20	0.56
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	8	0.54
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	9	0.52
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	9	0.52
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	10	0.52
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	10	0.52
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	14	0.51
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	14	0.51
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	20	0.5
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	20	0.5
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	16	0.5
(1,175)	1:A:301:PRO:HG2	1:A:310:TYR:HA	16	0.49
(1,175)	1:A:301:PRO:HG3	1:A:310:TYR:HA	16	0.49
(1,11)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	6	0.49
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	17	0.47
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	17	0.47
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	8	0.46
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	8	0.46
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG21	19	0.46

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG22	19	0.46
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG23	19	0.46
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG21	19	0.46
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG22	19	0.46
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG23	19	0.46
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB2	18	0.44
(1,96)	1:A:310:TYR:HE1	1:A:312:PRO:HB3	18	0.44
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	6	0.44
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	6	0.44
(1,82)	1:A:299:HIS:HB2	1:A:301:PRO:HA	17	0.43
(1,82)	1:A:299:HIS:HB3	1:A:301:PRO:HA	17	0.43
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	16	0.42
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	16	0.42
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	12	0.39
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	12	0.39
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	12	0.39
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	12	0.39
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	12	0.39
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	12	0.39
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG11	15	0.38
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG12	15	0.38
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG13	15	0.38
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG21	15	0.38
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG22	15	0.38
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG23	15	0.38
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	3	0.38
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG2	9	0.38
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG3	9	0.38
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	6	0.37
(1,175)	1:A:301:PRO:HG2	1:A:310:TYR:HA	2	0.37
(1,175)	1:A:301:PRO:HG3	1:A:310:TYR:HA	2	0.37
(1,29)	1:A:308:ILE:HG12	1:A:310:TYR:HE1	6	0.36
(1,160)	1:A:300:VAL:HG11	1:A:307:GLN:H	17	0.36
(1,160)	1:A:300:VAL:HG12	1:A:307:GLN:H	17	0.36
(1,160)	1:A:300:VAL:HG13	1:A:307:GLN:H	17	0.36
(1,160)	1:A:300:VAL:HG21	1:A:307:GLN:H	17	0.36
(1,160)	1:A:300:VAL:HG22	1:A:307:GLN:H	17	0.36
(1,160)	1:A:300:VAL:HG23	1:A:307:GLN:H	17	0.36
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	5	0.35
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	5	0.35
(1,10)	1:A:310:TYR:HD1	1:A:312:PRO:HD3	20	0.34
(1,90)	1:A:308:ILE:HG12	1:A:310:TYR:HD1	6	0.33

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,90)	1:A:308:ILE:HG13	1:A:310:TYR:HD1	6	0.33
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB2	19	0.32
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB3	19	0.32
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	17	0.32
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	17	0.32
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	17	0.32
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	17	0.32
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	17	0.32
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	17	0.32
(1,63)	1:A:280:LYS:HE2	1:A:282:LEU:H	18	0.32
(1,63)	1:A:280:LYS:HE3	1:A:282:LEU:H	18	0.32
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	16	0.32
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG21	2	0.31
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG22	2	0.31
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG23	2	0.31
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG21	2	0.31
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG22	2	0.31
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG23	2	0.31
(1,40)	1:A:299:HIS:HE1	1:A:301:PRO:HA	9	0.31
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	12	0.31
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG2	6	0.3
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG3	6	0.3
(1,90)	1:A:308:ILE:HG12	1:A:310:TYR:HD1	16	0.3
(1,90)	1:A:308:ILE:HG13	1:A:310:TYR:HD1	16	0.3
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	1	0.3
(1,174)	1:A:301:PRO:HB2	1:A:310:TYR:H	16	0.3
(1,174)	1:A:301:PRO:HB3	1:A:310:TYR:H	16	0.3
(1,170)	1:A:301:PRO:HD2	1:A:309:VAL:HG11	16	0.3
(1,170)	1:A:301:PRO:HD2	1:A:309:VAL:HG12	16	0.3
(1,170)	1:A:301:PRO:HD2	1:A:309:VAL:HG13	16	0.3
(1,170)	1:A:301:PRO:HD2	1:A:309:VAL:HG21	16	0.3
(1,170)	1:A:301:PRO:HD2	1:A:309:VAL:HG22	16	0.3
(1,170)	1:A:301:PRO:HD2	1:A:309:VAL:HG23	16	0.3
(1,170)	1:A:301:PRO:HD3	1:A:309:VAL:HG11	16	0.3
(1,170)	1:A:301:PRO:HD3	1:A:309:VAL:HG12	16	0.3
(1,170)	1:A:301:PRO:HD3	1:A:309:VAL:HG13	16	0.3
(1,170)	1:A:301:PRO:HD3	1:A:309:VAL:HG21	16	0.3
(1,170)	1:A:301:PRO:HD3	1:A:309:VAL:HG22	16	0.3
(1,170)	1:A:301:PRO:HD3	1:A:309:VAL:HG23	16	0.3
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	18	0.29
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	18	0.29
(1,175)	1:A:301:PRO:HG2	1:A:310:TYR:HA	3	0.29

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,175)	1:A:301:PRO:HG3	1:A:310:TYR:HA	3	0.29
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	17	0.29
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG2	20	0.28
(1,94)	1:A:310:TYR:HD1	1:A:312:PRO:HG3	20	0.28
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	19	0.28
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	19	0.28
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	19	0.28
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	19	0.28
(1,40)	1:A:299:HIS:HE1	1:A:301:PRO:HA	8	0.28
(1,187)	1:A:299:HIS:HB2	1:A:311:LYS:H	20	0.28
(1,187)	1:A:299:HIS:HB3	1:A:311:LYS:H	20	0.28
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	6	0.28
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	20	0.28
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	20	0.28
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	20	0.28
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	20	0.28
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	2	0.28
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	2	0.28
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	4	0.28
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	4	0.28
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	17	0.28
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	3	0.27
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	3	0.27
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	3	0.27
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	3	0.27
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	3	0.27
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	3	0.27
(1,6)	1:A:295:ASP:HB3	1:A:297:ILE:H	19	0.27
(1,40)	1:A:299:HIS:HE1	1:A:301:PRO:HA	20	0.27
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB2	8	0.27
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB3	8	0.27
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	12	0.27
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	12	0.27
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	12	0.26
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	12	0.26
(1,63)	1:A:280:LYS:HE2	1:A:282:LEU:H	16	0.26
(1,63)	1:A:280:LYS:HE3	1:A:282:LEU:H	16	0.26
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	18	0.26
(1,25)	1:A:309:VAL:HB	1:A:311:LYS:H	12	0.26
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB2	17	0.26
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB3	17	0.26
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	18	0.26

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	18	0.26
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	18	0.26
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	18	0.26
(1,77)	1:A:296:ASN:H	1:A:298:LYS:HG2	15	0.25
(1,77)	1:A:296:ASN:H	1:A:298:LYS:HG3	15	0.25
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	9	0.25
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG2	6	0.25
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG3	6	0.25
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	2	0.25
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	19	0.25
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB2	17	0.24
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB3	17	0.24
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	19	0.24
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	19	0.24
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	19	0.24
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	19	0.24
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	19	0.24
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	19	0.24
(1,27)	1:A:299:HIS:HD2	1:A:301:PRO:HD3	2	0.24
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB2	5	0.24
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB3	5	0.24
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	8	0.24
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	19	0.24
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	19	0.24
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG12	20	0.24
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG13	20	0.24
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG12	20	0.24
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG13	20	0.24
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG12	20	0.24
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG13	20	0.24
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG12	20	0.24
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG13	20	0.24
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG12	20	0.24
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG13	20	0.24
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG12	20	0.24
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG13	20	0.24
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD11	4	0.24
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD12	4	0.24
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD13	4	0.24
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG2	11	0.24
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG3	11	0.24
(1,77)	1:A:296:ASN:H	1:A:298:LYS:HG2	19	0.23

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,77)	1:A:296:ASN:H	1:A:298:LYS:HG3	19	0.23
(1,57)	1:A:277:ILE:HG12	1:A:279:ASN:H	11	0.23
(1,57)	1:A:277:ILE:HG13	1:A:279:ASN:H	11	0.23
(1,187)	1:A:299:HIS:HB2	1:A:311:LYS:H	4	0.23
(1,187)	1:A:299:HIS:HB3	1:A:311:LYS:H	4	0.23
(1,175)	1:A:301:PRO:HG2	1:A:310:TYR:HA	1	0.23
(1,175)	1:A:301:PRO:HG3	1:A:310:TYR:HA	1	0.23
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	8	0.23
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	8	0.23
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD2	6	0.22
(1,98)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	6	0.22
(1,64)	1:A:284:LEU:HB2	1:A:286:ASN:H	15	0.22
(1,64)	1:A:284:LEU:HB3	1:A:286:ASN:H	15	0.22
(1,43)	1:A:277:ILE:HG21	1:A:279:ASN:HA	16	0.22
(1,43)	1:A:277:ILE:HG22	1:A:279:ASN:HA	16	0.22
(1,43)	1:A:277:ILE:HG23	1:A:279:ASN:HA	16	0.22
(1,41)	1:A:297:ILE:HB	1:A:299:HIS:HE1	20	0.22
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	10	0.22
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	10	0.22
(1,160)	1:A:300:VAL:HG11	1:A:307:GLN:H	11	0.22
(1,160)	1:A:300:VAL:HG12	1:A:307:GLN:H	11	0.22
(1,160)	1:A:300:VAL:HG13	1:A:307:GLN:H	11	0.22
(1,160)	1:A:300:VAL:HG21	1:A:307:GLN:H	11	0.22
(1,160)	1:A:300:VAL:HG22	1:A:307:GLN:H	11	0.22
(1,160)	1:A:300:VAL:HG23	1:A:307:GLN:H	11	0.22
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG21	15	0.22
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG22	15	0.22
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG23	15	0.22
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG21	15	0.22
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG22	15	0.22
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG23	15	0.22
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG11	13	0.21
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG12	13	0.21
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG13	13	0.21
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG21	13	0.21
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG22	13	0.21
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG23	13	0.21
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG21	10	0.21
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG22	10	0.21
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG23	10	0.21
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG21	10	0.21
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG22	10	0.21

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG23	10	0.21
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	1	0.21
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	1	0.21
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	1	0.21
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	1	0.21
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	1	0.21
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	1	0.21
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG12	9	0.21
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG13	9	0.21
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG12	9	0.21
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG13	9	0.21
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB2	1	0.21
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB3	1	0.21
(1,187)	1:A:299:HIS:HB2	1:A:311:LYS:H	9	0.21
(1,187)	1:A:299:HIS:HB3	1:A:311:LYS:H	9	0.21
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	15	0.21
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	15	0.21
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	16	0.21
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	16	0.21
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG2	17	0.21
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG3	17	0.21
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	19	0.21
(1,91)	1:A:308:ILE:HD11	1:A:310:TYR:HB2	2	0.2
(1,91)	1:A:308:ILE:HD11	1:A:310:TYR:HB3	2	0.2
(1,91)	1:A:308:ILE:HD12	1:A:310:TYR:HB2	2	0.2
(1,91)	1:A:308:ILE:HD12	1:A:310:TYR:HB3	2	0.2
(1,91)	1:A:308:ILE:HD13	1:A:310:TYR:HB2	2	0.2
(1,91)	1:A:308:ILE:HD13	1:A:310:TYR:HB3	2	0.2
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	20	0.2
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	20	0.2
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	10	0.2
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD11	15	0.2
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD12	15	0.2
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD13	15	0.2
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	19	0.2
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	19	0.2
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	19	0.2
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	19	0.2
(1,110)	1:A:295:ASP:HA	1:A:298:LYS:H	7	0.2
(1,110)	1:A:295:ASP:HA	1:A:298:LYS:H	16	0.2
(1,110)	1:A:295:ASP:HA	1:A:298:LYS:H	17	0.2
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	3	0.19

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	3	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG11	14	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG12	14	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG13	14	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG21	14	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG22	14	0.19
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG23	14	0.19
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	18	0.19
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	18	0.19
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	18	0.19
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	18	0.19
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	18	0.19
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	18	0.19
(1,46)	1:A:270:PRO:HG2	1:A:272:GLY:HA2	3	0.19
(1,46)	1:A:270:PRO:HG2	1:A:272:GLY:HA3	3	0.19
(1,46)	1:A:270:PRO:HG3	1:A:272:GLY:HA2	3	0.19
(1,46)	1:A:270:PRO:HG3	1:A:272:GLY:HA3	3	0.19
(1,40)	1:A:299:HIS:HE1	1:A:301:PRO:HA	4	0.19
(1,25)	1:A:309:VAL:HB	1:A:311:LYS:H	17	0.19
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB2	11	0.19
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB3	11	0.19
(1,174)	1:A:301:PRO:HB2	1:A:310:TYR:H	12	0.19
(1,174)	1:A:301:PRO:HB3	1:A:310:TYR:H	12	0.19
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD11	17	0.19
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD12	17	0.19
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD13	17	0.19
(1,155)	1:A:290:LYS:HB2	1:A:296:ASN:H	11	0.19
(1,155)	1:A:290:LYS:HB3	1:A:296:ASN:H	11	0.19
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	2	0.19
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	2	0.19
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB2	11	0.19
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB3	11	0.19
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB2	11	0.19
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB3	11	0.19
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB2	11	0.19
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB3	11	0.19
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB2	11	0.19
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB3	11	0.19
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB2	11	0.19
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB3	11	0.19
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB2	11	0.19
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB3	11	0.19

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG12	17	0.19
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG13	17	0.19
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG12	17	0.19
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG13	17	0.19
(1,79)	1:A:297:ILE:HD11	1:A:299:HIS:HB2	19	0.18
(1,79)	1:A:297:ILE:HD11	1:A:299:HIS:HB3	19	0.18
(1,79)	1:A:297:ILE:HD12	1:A:299:HIS:HB2	19	0.18
(1,79)	1:A:297:ILE:HD12	1:A:299:HIS:HB3	19	0.18
(1,79)	1:A:297:ILE:HD13	1:A:299:HIS:HB2	19	0.18
(1,79)	1:A:297:ILE:HD13	1:A:299:HIS:HB3	19	0.18
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG12	3	0.18
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG13	3	0.18
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG12	3	0.18
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG13	3	0.18
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	19	0.18
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD2	1	0.18
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD3	1	0.18
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD2	1	0.18
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD3	1	0.18
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	14	0.18
(1,173)	1:A:298:LYS:HD2	1:A:307:GLN:HB2	12	0.18
(1,173)	1:A:298:LYS:HD2	1:A:307:GLN:HB3	12	0.18
(1,173)	1:A:298:LYS:HD3	1:A:307:GLN:HB2	12	0.18
(1,173)	1:A:298:LYS:HD3	1:A:307:GLN:HB3	12	0.18
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	9	0.18
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	9	0.18
(1,150)	1:A:270:PRO:HD2	1:A:275:VAL:H	5	0.18
(1,150)	1:A:270:PRO:HD3	1:A:275:VAL:H	5	0.18
(1,9)	1:A:308:ILE:HD11	1:A:310:TYR:HA	18	0.17
(1,9)	1:A:308:ILE:HD12	1:A:310:TYR:HA	18	0.17
(1,9)	1:A:308:ILE:HD13	1:A:310:TYR:HA	18	0.17
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG21	13	0.17
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG22	13	0.17
(1,76)	1:A:295:ASP:HB2	1:A:297:ILE:HG23	13	0.17
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG21	13	0.17
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG22	13	0.17
(1,76)	1:A:295:ASP:HB3	1:A:297:ILE:HG23	13	0.17
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	13	0.17
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	13	0.17
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	13	0.17
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	13	0.17
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	20	0.17

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	20	0.17
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	20	0.17
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	20	0.17
(1,63)	1:A:280:LYS:HE2	1:A:282:LEU:H	7	0.17
(1,63)	1:A:280:LYS:HE3	1:A:282:LEU:H	7	0.17
(1,4)	1:A:279:ASN:HA	1:A:281:LYS:H	10	0.17
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	7	0.17
(1,28)	1:A:268:HIS:HD2	1:A:270:PRO:HA	1	0.17
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	4	0.17
(1,175)	1:A:301:PRO:HG2	1:A:310:TYR:HA	10	0.17
(1,175)	1:A:301:PRO:HG3	1:A:310:TYR:HA	10	0.17
(1,173)	1:A:298:LYS:HD2	1:A:307:GLN:HB2	11	0.17
(1,173)	1:A:298:LYS:HD2	1:A:307:GLN:HB3	11	0.17
(1,173)	1:A:298:LYS:HD3	1:A:307:GLN:HB2	11	0.17
(1,173)	1:A:298:LYS:HD3	1:A:307:GLN:HB3	11	0.17
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	6	0.17
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	6	0.17
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	13	0.17
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	13	0.17
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB2	6	0.17
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB3	6	0.17
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB2	6	0.17
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB3	6	0.17
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB2	6	0.17
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB3	6	0.17
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB2	6	0.17
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB3	6	0.17
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB2	6	0.17
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB3	6	0.17
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB2	6	0.17
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB3	6	0.17
(1,150)	1:A:270:PRO:HD2	1:A:275:VAL:H	2	0.17
(1,150)	1:A:270:PRO:HD3	1:A:275:VAL:H	2	0.17
(1,145)	1:A:300:VAL:HB	1:A:304:GLY:HA2	11	0.17
(1,145)	1:A:300:VAL:HB	1:A:304:GLY:HA3	11	0.17
(1,143)	1:A:293:SER:HB2	1:A:297:ILE:H	18	0.17
(1,143)	1:A:293:SER:HB3	1:A:297:ILE:H	18	0.17
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG12	14	0.17
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG13	14	0.17
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG12	14	0.17
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG13	14	0.17
(1,11)	1:A:310:TYR:HE1	1:A:312:PRO:HD3	9	0.17

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,106)	1:A:285:SER:HB3	1:A:288:GLN:H	16	0.17
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	1	0.16
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	1	0.16
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	2	0.16
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	2	0.16
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	2	0.16
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	2	0.16
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	2	0.16
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	2	0.16
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD21	8	0.16
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD22	8	0.16
(1,33)	1:A:308:ILE:HG13	1:A:310:TYR:HE1	2	0.16
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG12	9	0.16
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG13	9	0.16
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG12	9	0.16
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG13	9	0.16
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG12	9	0.16
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG13	9	0.16
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG12	9	0.16
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG13	9	0.16
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG12	9	0.16
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG13	9	0.16
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG12	9	0.16
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG13	9	0.16
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	4	0.16
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	4	0.16
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	4	0.16
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	4	0.16
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	6	0.16
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	6	0.16
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	6	0.16
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	6	0.16
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	12	0.16
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	12	0.16
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB2	5	0.16
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB3	5	0.16
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB2	5	0.16
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB3	5	0.16
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB2	5	0.16
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB3	5	0.16
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB2	5	0.16
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB3	5	0.16

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB2	5	0.16
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB3	5	0.16
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB2	5	0.16
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB3	5	0.16
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	2	0.16
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	16	0.15
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	16	0.15
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG2	20	0.15
(1,97)	1:A:310:TYR:HE1	1:A:312:PRO:HG3	20	0.15
(1,9)	1:A:308:ILE:HD11	1:A:310:TYR:HA	7	0.15
(1,9)	1:A:308:ILE:HD12	1:A:310:TYR:HA	7	0.15
(1,9)	1:A:308:ILE:HD13	1:A:310:TYR:HA	7	0.15
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	10	0.15
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	10	0.15
(1,63)	1:A:280:LYS:HE2	1:A:282:LEU:H	15	0.15
(1,63)	1:A:280:LYS:HE3	1:A:282:LEU:H	15	0.15
(1,54)	1:A:276:GLN:HG2	1:A:278:ILE:HG12	20	0.15
(1,54)	1:A:276:GLN:HG2	1:A:278:ILE:HG13	20	0.15
(1,54)	1:A:276:GLN:HG3	1:A:278:ILE:HG12	20	0.15
(1,54)	1:A:276:GLN:HG3	1:A:278:ILE:HG13	20	0.15
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG12	15	0.15
(1,53)	1:A:276:GLN:HB2	1:A:278:ILE:HG13	15	0.15
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG12	15	0.15
(1,53)	1:A:276:GLN:HB3	1:A:278:ILE:HG13	15	0.15
(1,41)	1:A:297:ILE:HB	1:A:299:HIS:HE1	6	0.15
(1,34)	1:A:306:VAL:HA	1:A:308:ILE:HD11	1	0.15
(1,34)	1:A:306:VAL:HA	1:A:308:ILE:HD12	1	0.15
(1,34)	1:A:306:VAL:HA	1:A:308:ILE:HD13	1	0.15
(1,28)	1:A:268:HIS:HD2	1:A:270:PRO:HA	8	0.15
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB2	1	0.15
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB3	1	0.15
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD2	14	0.15
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD3	14	0.15
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD2	14	0.15
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD3	14	0.15
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG12	4	0.15
(1,167)	1:A:300:VAL:HG11	1:A:308:ILE:HG13	4	0.15
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG12	4	0.15
(1,167)	1:A:300:VAL:HG12	1:A:308:ILE:HG13	4	0.15
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG12	4	0.15
(1,167)	1:A:300:VAL:HG13	1:A:308:ILE:HG13	4	0.15
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG12	4	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,167)	1:A:300:VAL:HG21	1:A:308:ILE:HG13	4	0.15
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG12	4	0.15
(1,167)	1:A:300:VAL:HG22	1:A:308:ILE:HG13	4	0.15
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG12	4	0.15
(1,167)	1:A:300:VAL:HG23	1:A:308:ILE:HG13	4	0.15
(1,160)	1:A:300:VAL:HG11	1:A:307:GLN:H	8	0.15
(1,160)	1:A:300:VAL:HG12	1:A:307:GLN:H	8	0.15
(1,160)	1:A:300:VAL:HG13	1:A:307:GLN:H	8	0.15
(1,160)	1:A:300:VAL:HG21	1:A:307:GLN:H	8	0.15
(1,160)	1:A:300:VAL:HG22	1:A:307:GLN:H	8	0.15
(1,160)	1:A:300:VAL:HG23	1:A:307:GLN:H	8	0.15
(1,152)	1:A:289:SER:HB2	1:A:294:LYS:HD2	19	0.15
(1,152)	1:A:289:SER:HB2	1:A:294:LYS:HD3	19	0.15
(1,152)	1:A:289:SER:HB3	1:A:294:LYS:HD2	19	0.15
(1,152)	1:A:289:SER:HB3	1:A:294:LYS:HD3	19	0.15
(1,110)	1:A:295:ASP:HA	1:A:298:LYS:H	2	0.15
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	11	0.15
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	18	0.15
(1,106)	1:A:285:SER:HB3	1:A:288:GLN:H	7	0.15
(1,79)	1:A:297:ILE:HD11	1:A:299:HIS:HB2	13	0.14
(1,79)	1:A:297:ILE:HD11	1:A:299:HIS:HB3	13	0.14
(1,79)	1:A:297:ILE:HD12	1:A:299:HIS:HB2	13	0.14
(1,79)	1:A:297:ILE:HD12	1:A:299:HIS:HB3	13	0.14
(1,79)	1:A:297:ILE:HD13	1:A:299:HIS:HB2	13	0.14
(1,79)	1:A:297:ILE:HD13	1:A:299:HIS:HB3	13	0.14
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	1	0.14
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	1	0.14
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	1	0.14
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	1	0.14
(1,69)	1:A:286:ASN:HD21	1:A:288:GLN:HB2	16	0.14
(1,69)	1:A:286:ASN:HD21	1:A:288:GLN:HB3	16	0.14
(1,69)	1:A:286:ASN:HD22	1:A:288:GLN:HB2	16	0.14
(1,69)	1:A:286:ASN:HD22	1:A:288:GLN:HB3	16	0.14
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD21	2	0.14
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD22	2	0.14
(1,5)	1:A:278:ILE:HA	1:A:280:LYS:H	13	0.14
(1,39)	1:A:310:TYR:HD1	1:A:312:PRO:HD2	4	0.14
(1,31)	1:A:299:HIS:HD2	1:A:301:PRO:HG2	8	0.14
(1,31)	1:A:299:HIS:HD2	1:A:301:PRO:HG2	9	0.14
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	12	0.14
(1,30)	1:A:299:HIS:HD2	1:A:301:PRO:HG3	13	0.14
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB2	4	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,191)	1:A:268:HIS:H	1:A:283:ASP:HB3	4	0.14
(1,187)	1:A:299:HIS:HB2	1:A:311:LYS:H	8	0.14
(1,187)	1:A:299:HIS:HB3	1:A:311:LYS:H	8	0.14
(1,172)	1:A:270:PRO:HG2	1:A:279:ASN:HA	20	0.14
(1,172)	1:A:270:PRO:HG3	1:A:279:ASN:HA	20	0.14
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	3	0.14
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	3	0.14
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	5	0.14
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	5	0.14
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	5	0.14
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	5	0.14
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	11	0.14
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	11	0.14
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG2	8	0.14
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG3	8	0.14
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	4	0.13
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	4	0.13
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	10	0.13
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	10	0.13
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	10	0.13
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	10	0.13
(1,65)	1:A:284:LEU:HD11	1:A:286:ASN:H	6	0.13
(1,65)	1:A:284:LEU:HD12	1:A:286:ASN:H	6	0.13
(1,65)	1:A:284:LEU:HD13	1:A:286:ASN:H	6	0.13
(1,65)	1:A:284:LEU:HD21	1:A:286:ASN:H	6	0.13
(1,65)	1:A:284:LEU:HD22	1:A:286:ASN:H	6	0.13
(1,65)	1:A:284:LEU:HD23	1:A:286:ASN:H	6	0.13
(1,51)	1:A:274:LYS:HG2	1:A:276:GLN:HG2	11	0.13
(1,51)	1:A:274:LYS:HG2	1:A:276:GLN:HG3	11	0.13
(1,51)	1:A:274:LYS:HG3	1:A:276:GLN:HG2	11	0.13
(1,51)	1:A:274:LYS:HG3	1:A:276:GLN:HG3	11	0.13
(1,31)	1:A:299:HIS:HD2	1:A:301:PRO:HG2	20	0.13
(1,27)	1:A:299:HIS:HD2	1:A:301:PRO:HD3	10	0.13
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB2	2	0.13
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB3	2	0.13
(1,182)	1:A:300:VAL:HB	1:A:311:LYS:HA	5	0.13
(1,168)	1:A:301:PRO:HB2	1:A:309:VAL:H	7	0.13
(1,168)	1:A:301:PRO:HB3	1:A:309:VAL:H	7	0.13
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD11	8	0.13
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD12	8	0.13
(1,164)	1:A:300:VAL:HB	1:A:308:ILE:HD13	8	0.13
(1,14)	1:A:293:SER:HA	1:A:295:ASP:H	15	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG12	10	0.13
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG13	10	0.13
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG12	10	0.13
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG13	10	0.13
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	6	0.13
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	7	0.13
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	13	0.13
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG11	6	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG12	6	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG13	6	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG21	6	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG22	6	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG23	6	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG11	11	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG12	11	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG13	11	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG21	11	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG22	11	0.12
(1,80)	1:A:298:LYS:HA	1:A:300:VAL:HG23	11	0.12
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB2	13	0.12
(1,78)	1:A:297:ILE:H	1:A:299:HIS:HB3	13	0.12
(1,74)	1:A:291:CYS:HB2	1:A:293:SER:H	1	0.12
(1,74)	1:A:291:CYS:HB3	1:A:293:SER:H	1	0.12
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	8	0.12
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	8	0.12
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	8	0.12
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	8	0.12
(1,67)	1:A:286:ASN:HA	1:A:288:GLN:HG2	1	0.12
(1,67)	1:A:286:ASN:HA	1:A:288:GLN:HG3	1	0.12
(1,55)	1:A:276:GLN:HE21	1:A:278:ILE:HD11	18	0.12
(1,55)	1:A:276:GLN:HE21	1:A:278:ILE:HD12	18	0.12
(1,55)	1:A:276:GLN:HE21	1:A:278:ILE:HD13	18	0.12
(1,55)	1:A:276:GLN:HE22	1:A:278:ILE:HD11	18	0.12
(1,55)	1:A:276:GLN:HE22	1:A:278:ILE:HD12	18	0.12
(1,55)	1:A:276:GLN:HE22	1:A:278:ILE:HD13	18	0.12
(1,51)	1:A:274:LYS:HG2	1:A:276:GLN:HG2	14	0.12
(1,51)	1:A:274:LYS:HG2	1:A:276:GLN:HG3	14	0.12
(1,51)	1:A:274:LYS:HG3	1:A:276:GLN:HG2	14	0.12
(1,51)	1:A:274:LYS:HG3	1:A:276:GLN:HG3	14	0.12
(1,43)	1:A:277:ILE:HG21	1:A:279:ASN:HA	13	0.12
(1,43)	1:A:277:ILE:HG22	1:A:279:ASN:HA	13	0.12
(1,43)	1:A:277:ILE:HG23	1:A:279:ASN:HA	13	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,187)	1:A:299:HIS:HB2	1:A:311:LYS:H	11	0.12
(1,187)	1:A:299:HIS:HB3	1:A:311:LYS:H	11	0.12
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD2	7	0.12
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD3	7	0.12
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD2	7	0.12
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD3	7	0.12
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	2	0.12
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	2	0.12
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	2	0.12
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	2	0.12
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	3	0.12
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	3	0.12
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB2	2	0.12
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB3	2	0.12
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB2	2	0.12
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB3	2	0.12
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB2	2	0.12
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB3	2	0.12
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB2	2	0.12
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB3	2	0.12
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB2	2	0.12
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB3	2	0.12
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB2	2	0.12
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB3	2	0.12
(1,150)	1:A:270:PRO:HD2	1:A:275:VAL:H	8	0.12
(1,150)	1:A:270:PRO:HD3	1:A:275:VAL:H	8	0.12
(1,132)	1:A:304:GLY:HA2	1:A:307:GLN:H	5	0.12
(1,132)	1:A:304:GLY:HA3	1:A:307:GLN:H	5	0.12
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG12	2	0.12
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG13	2	0.12
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG12	2	0.12
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG13	2	0.12
(1,108)	1:A:296:ASN:H	1:A:299:HIS:HD2	6	0.12
(1,104)	1:A:294:LYS:HA	1:A:297:ILE:H	20	0.12
(1,89)	1:A:307:GLN:HG2	1:A:309:VAL:HA	9	0.11
(1,89)	1:A:307:GLN:HG3	1:A:309:VAL:HA	9	0.11
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD2	14	0.11
(1,72)	1:A:288:GLN:HG2	1:A:290:LYS:HD3	14	0.11
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD2	14	0.11
(1,72)	1:A:288:GLN:HG3	1:A:290:LYS:HD3	14	0.11
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD21	16	0.11
(1,56)	1:A:277:ILE:HB	1:A:279:ASN:HD22	16	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,54)	1:A:276:GLN:HG2	1:A:278:ILE:HG12	7	0.11
(1,54)	1:A:276:GLN:HG2	1:A:278:ILE:HG13	7	0.11
(1,54)	1:A:276:GLN:HG3	1:A:278:ILE:HG12	7	0.11
(1,54)	1:A:276:GLN:HG3	1:A:278:ILE:HG13	7	0.11
(1,43)	1:A:277:ILE:HG21	1:A:279:ASN:HA	4	0.11
(1,43)	1:A:277:ILE:HG22	1:A:279:ASN:HA	4	0.11
(1,43)	1:A:277:ILE:HG23	1:A:279:ASN:HA	4	0.11
(1,43)	1:A:277:ILE:HG21	1:A:279:ASN:HA	5	0.11
(1,43)	1:A:277:ILE:HG22	1:A:279:ASN:HA	5	0.11
(1,43)	1:A:277:ILE:HG23	1:A:279:ASN:HA	5	0.11
(1,40)	1:A:299:HIS:HE1	1:A:301:PRO:HA	7	0.11
(1,36)	1:A:310:TYR:HD1	1:A:312:PRO:HB2	1	0.11
(1,3)	1:A:306:VAL:HA	1:A:308:ILE:H	17	0.11
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB2	13	0.11
(1,189)	1:A:299:HIS:HE1	1:A:312:PRO:HB3	13	0.11
(1,188)	1:A:284:LEU:HD11	1:A:297:ILE:H	4	0.11
(1,188)	1:A:284:LEU:HD12	1:A:297:ILE:H	4	0.11
(1,188)	1:A:284:LEU:HD13	1:A:297:ILE:H	4	0.11
(1,188)	1:A:284:LEU:HD21	1:A:297:ILE:H	4	0.11
(1,188)	1:A:284:LEU:HD22	1:A:297:ILE:H	4	0.11
(1,188)	1:A:284:LEU:HD23	1:A:297:ILE:H	4	0.11
(1,187)	1:A:299:HIS:HB2	1:A:311:LYS:H	1	0.11
(1,187)	1:A:299:HIS:HB3	1:A:311:LYS:H	1	0.11
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD2	6	0.11
(1,185)	1:A:270:PRO:HG2	1:A:281:LYS:HD3	6	0.11
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD2	6	0.11
(1,185)	1:A:270:PRO:HG3	1:A:281:LYS:HD3	6	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG21	17	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG22	17	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG23	17	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG21	17	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG22	17	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG23	17	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG21	18	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG22	18	0.11
(1,179)	1:A:298:LYS:HG2	1:A:308:ILE:HG23	18	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG21	18	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG22	18	0.11
(1,179)	1:A:298:LYS:HG3	1:A:308:ILE:HG23	18	0.11
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD11	19	0.11
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD12	19	0.11
(1,17)	1:A:306:VAL:H	1:A:308:ILE:HD13	19	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB2	8	0.11
(1,159)	1:A:292:GLY:HA2	1:A:299:HIS:HB3	8	0.11
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB2	8	0.11
(1,159)	1:A:292:GLY:HA3	1:A:299:HIS:HB3	8	0.11
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG21	13	0.11
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG22	13	0.11
(1,158)	1:A:270:PRO:HB2	1:A:277:ILE:HG23	13	0.11
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG21	13	0.11
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG22	13	0.11
(1,158)	1:A:270:PRO:HB3	1:A:277:ILE:HG23	13	0.11
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	9	0.11
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	9	0.11
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA2	20	0.11
(1,154)	1:A:299:HIS:HE1	1:A:304:GLY:HA3	20	0.11
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA2	20	0.11
(1,153)	1:A:299:HIS:HD2	1:A:304:GLY:HA3	20	0.11
(1,152)	1:A:289:SER:HB2	1:A:294:LYS:HD2	6	0.11
(1,152)	1:A:289:SER:HB2	1:A:294:LYS:HD3	6	0.11
(1,152)	1:A:289:SER:HB3	1:A:294:LYS:HD2	6	0.11
(1,152)	1:A:289:SER:HB3	1:A:294:LYS:HD3	6	0.11
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB2	4	0.11
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB3	4	0.11
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB2	4	0.11
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB3	4	0.11
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB2	4	0.11
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB3	4	0.11
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB2	4	0.11
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB3	4	0.11
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB2	4	0.11
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB3	4	0.11
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB2	4	0.11
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB3	4	0.11
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB2	9	0.11
(1,151)	1:A:284:LEU:HD11	1:A:289:SER:HB3	9	0.11
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB2	9	0.11
(1,151)	1:A:284:LEU:HD12	1:A:289:SER:HB3	9	0.11
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB2	9	0.11
(1,151)	1:A:284:LEU:HD13	1:A:289:SER:HB3	9	0.11
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB2	9	0.11
(1,151)	1:A:284:LEU:HD21	1:A:289:SER:HB3	9	0.11
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB2	9	0.11
(1,151)	1:A:284:LEU:HD22	1:A:289:SER:HB3	9	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB2	9	0.11
(1,151)	1:A:284:LEU:HD23	1:A:289:SER:HB3	9	0.11
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG2	5	0.11
(1,144)	1:A:294:LYS:H	1:A:298:LYS:HG3	5	0.11
(1,143)	1:A:293:SER:HB2	1:A:297:ILE:H	4	0.11
(1,143)	1:A:293:SER:HB3	1:A:297:ILE:H	4	0.11
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG12	11	0.11
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG13	11	0.11
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG12	11	0.11
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG13	11	0.11
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG12	12	0.11
(1,128)	1:A:294:LYS:HD2	1:A:297:ILE:HG13	12	0.11
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG12	12	0.11
(1,128)	1:A:294:LYS:HD3	1:A:297:ILE:HG13	12	0.11
(1,127)	1:A:294:LYS:HA	1:A:297:ILE:HG12	4	0.11
(1,127)	1:A:294:LYS:HA	1:A:297:ILE:HG13	4	0.11
(1,125)	1:A:288:GLN:HB2	1:A:291:CYS:HA	8	0.11
(1,125)	1:A:288:GLN:HB3	1:A:291:CYS:HA	8	0.11
(1,109)	1:A:284:LEU:H	1:A:287:VAL:H	1	0.11

## 10 Dihedral-angle violation analysis

No dihedral-angle restraints found