



Full wwPDB NMR Structure Validation Report ⓘ

Dec 25, 2024 – 03:00 AM EST

PDB ID : 4A1M
BMRB ID : 17953
Title : NMR Structure of protoporphyrin-IX bound murine p22HBP
Authors : Goodfellow, B.J.; Dias, J.S.; Macedo, A.L.; Ferreira, G.C.; Peterson, F.C.;
Volkman, B.F.; Duarte, I.C.N.
Deposited on : 2011-09-15

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/NMRValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
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) : 2.40

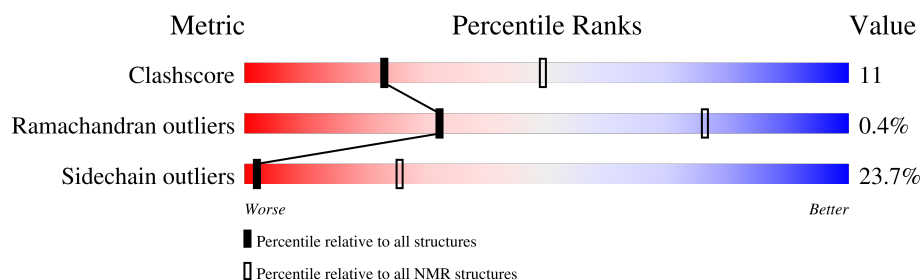
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

SOLUTION NMR

The overall completeness of chemical shifts assignment is 84%.

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	210492	14027
Ramachandran outliers	207382	12486
Sidechain outliers	206894	12463

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and a grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	195	

2 Ensemble composition and analysis

This entry contains 20 models. Model 1 is the overall representative, medoid model (most similar to other models).

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

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:18-A:73, A:78-A:172, A:181-A:190 (161)	0.73	1

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

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

The models can be grouped into 4 clusters and 2 single-model clusters were found.

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

3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 2814 atoms, of which 1381 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called HEME-BINDING PROTEIN 1.

Mol	Chain	Residues	Atoms						Trace
1	A	184	Total	C	H	N	O	S	0
			2814	911	1381	236	279	7	

There are 11 discrepancies between the modelled and reference sequences:

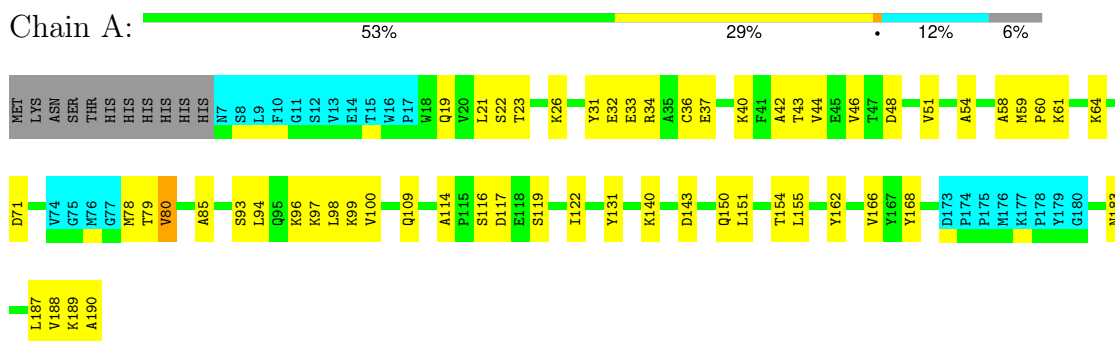
Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	MET	-	expression tag	UNP Q9R257
A	-3	LYS	-	expression tag	UNP Q9R257
A	-2	ASN	-	expression tag	UNP Q9R257
A	-1	SER	-	expression tag	UNP Q9R257
A	0	THR	-	expression tag	UNP Q9R257
A	1	HIS	-	expression tag	UNP Q9R257
A	2	HIS	-	expression tag	UNP Q9R257
A	3	HIS	-	expression tag	UNP Q9R257
A	4	HIS	-	expression tag	UNP Q9R257
A	5	HIS	-	expression tag	UNP Q9R257
A	6	HIS	-	expression tag	UNP Q9R257

4 Residue-property plots

4.1 Average score per residue in the NMR ensemble

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

• Molecule 1: HEME-BINDING PROTEIN 1

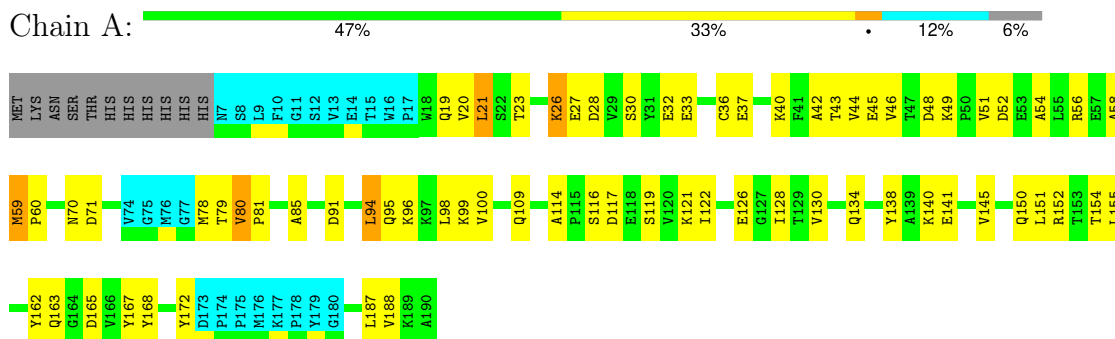


4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

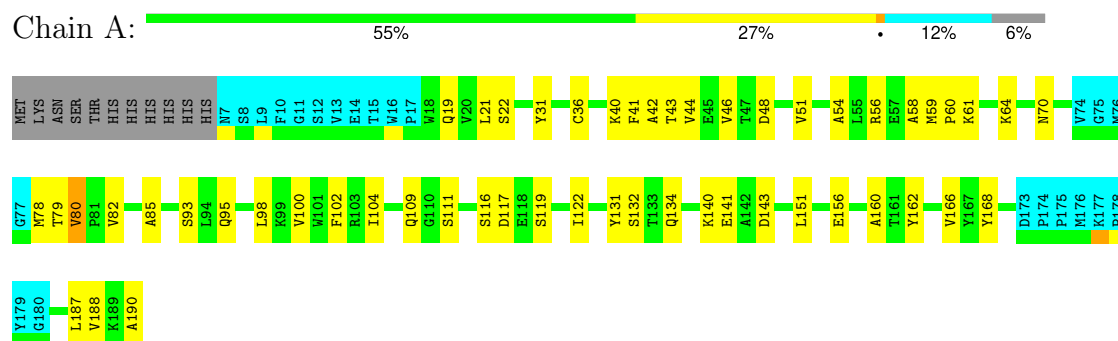
4.2.1 Score per residue for model 1 (medoid)

• Molecule 1: HEME-BINDING PROTEIN 1



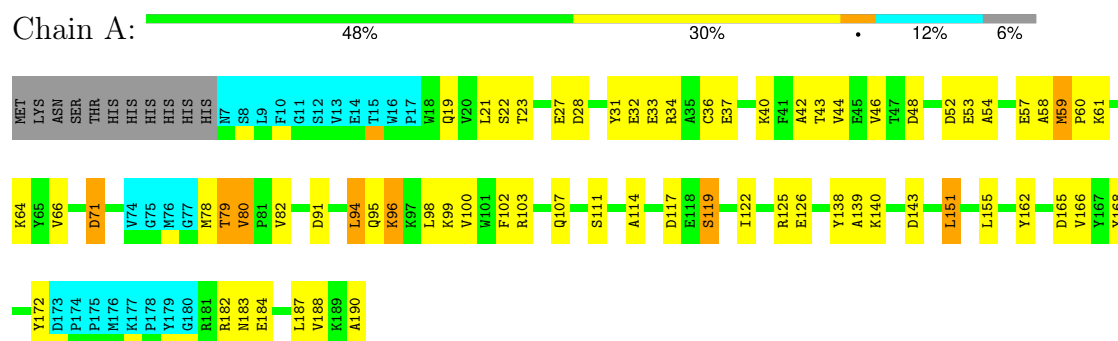
4.2.2 Score per residue for model 2

• Molecule 1: HEME-BINDING PROTEIN 1



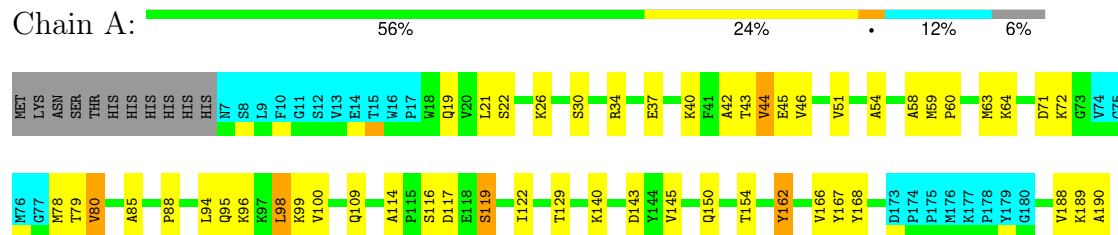
4.2.3 Score per residue for model 3

• Molecule 1: HEME-BINDING PROTEIN 1



4.2.4 Score per residue for model 4

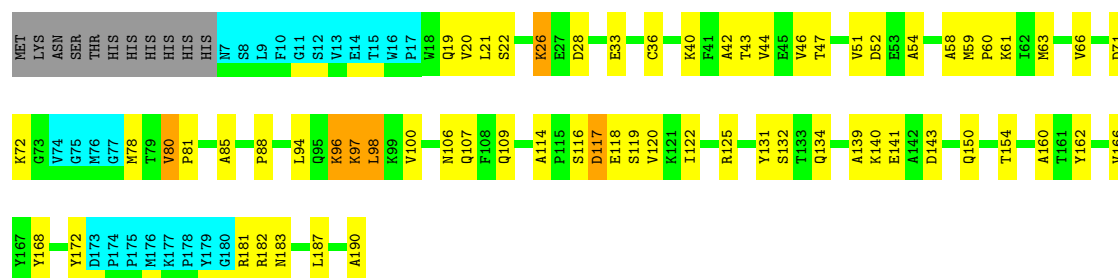
• Molecule 1: HEME-BINDING PROTEIN 1



4.2.5 Score per residue for model 5

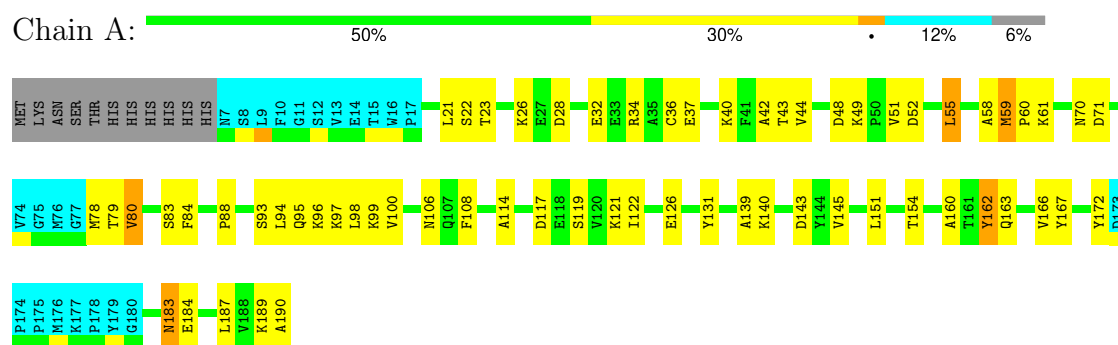
• Molecule 1: HEME-BINDING PROTEIN 1





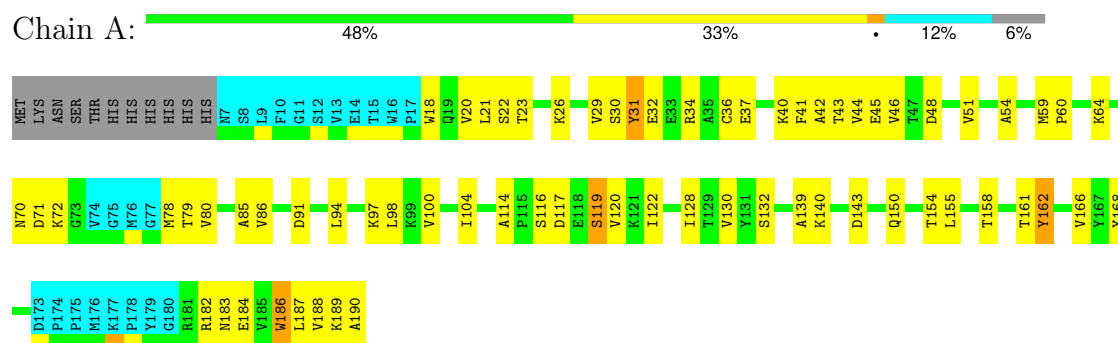
4.2.6 Score per residue for model 6

- Molecule 1: HEME-BINDING PROTEIN 1



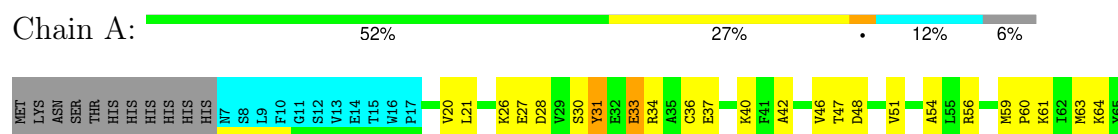
4.2.7 Score per residue for model 7

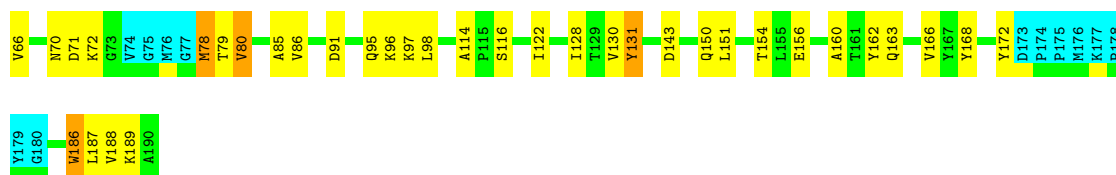
- Molecule 1: HEME-BINDING PROTEIN 1



4.2.8 Score per residue for model 8

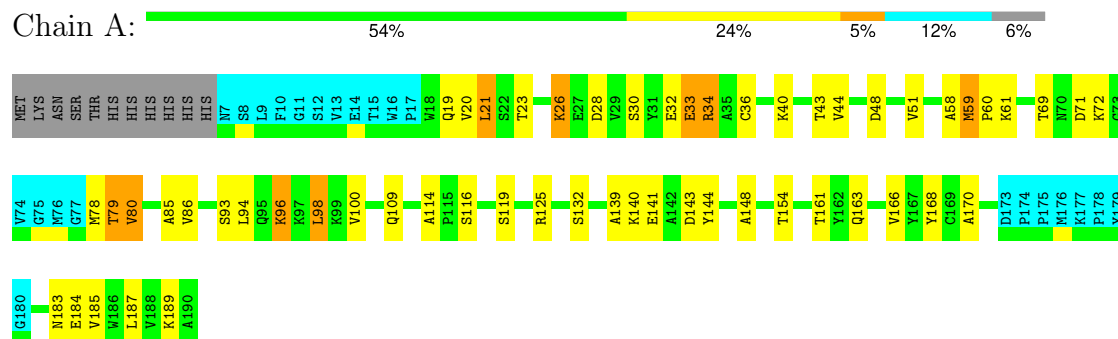
- Molecule 1: HEME-BINDING PROTEIN 1





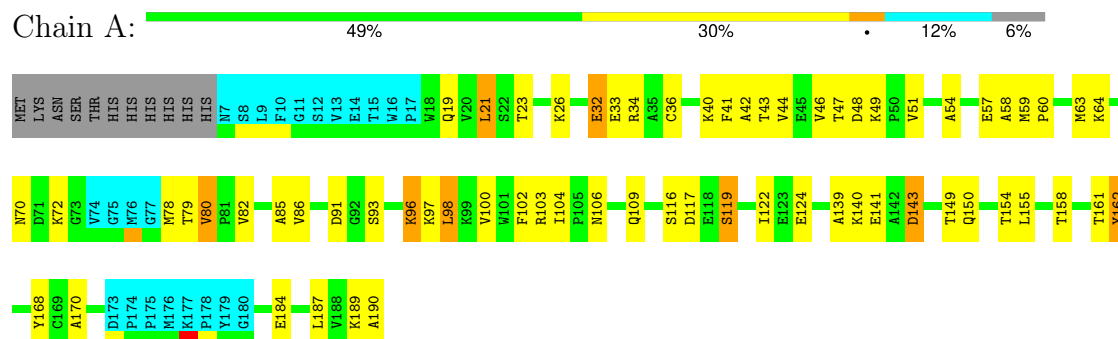
4.2.9 Score per residue for model 9

- Molecule 1: HEME-BINDING PROTEIN 1



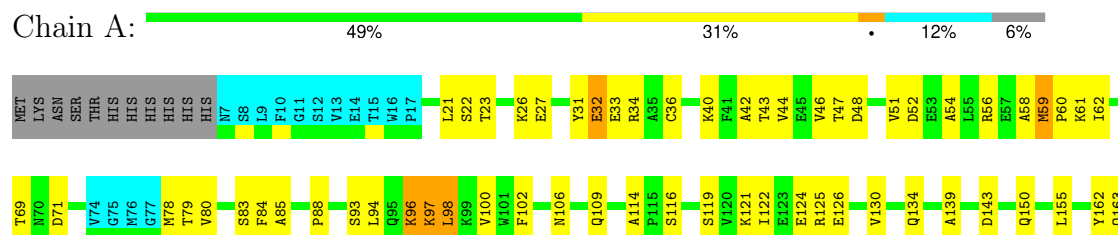
4.2.10 Score per residue for model 10

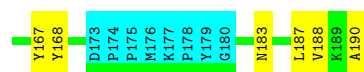
- Molecule 1: HEME-BINDING PROTEIN 1



4.2.11 Score per residue for model 11

- Molecule 1: HEME-BINDING PROTEIN 1





4.2.12 Score per residue for model 12

- Molecule 1: HEME-BINDING PROTEIN 1

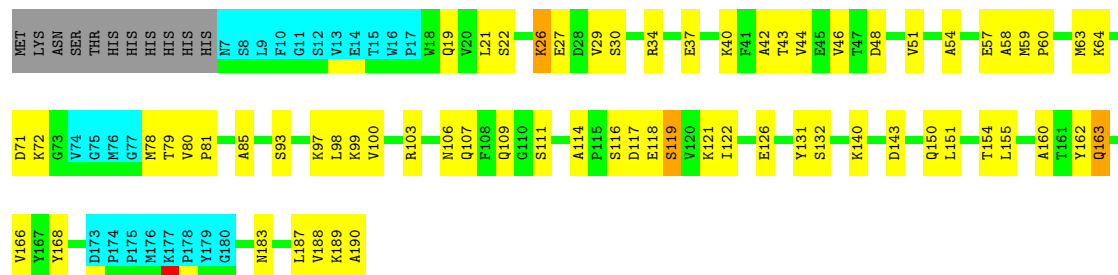
Chain A: 49% 30% 12% 6%



4.2.13 Score per residue for model 13

- Molecule 1: HEME-BINDING PROTEIN 1

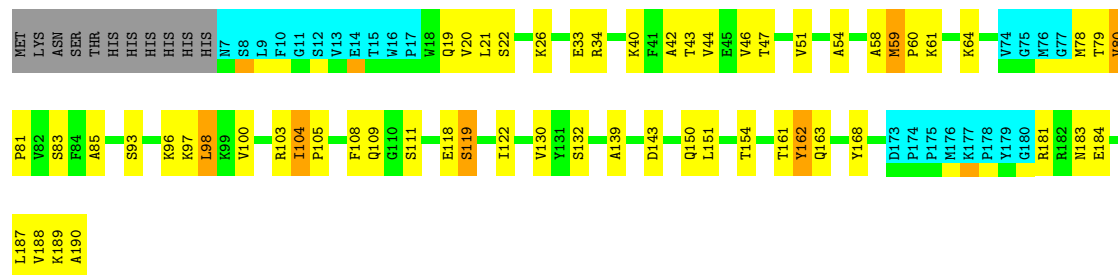
Chain A: 49% 32% 12% 6%



4.2.14 Score per residue for model 14

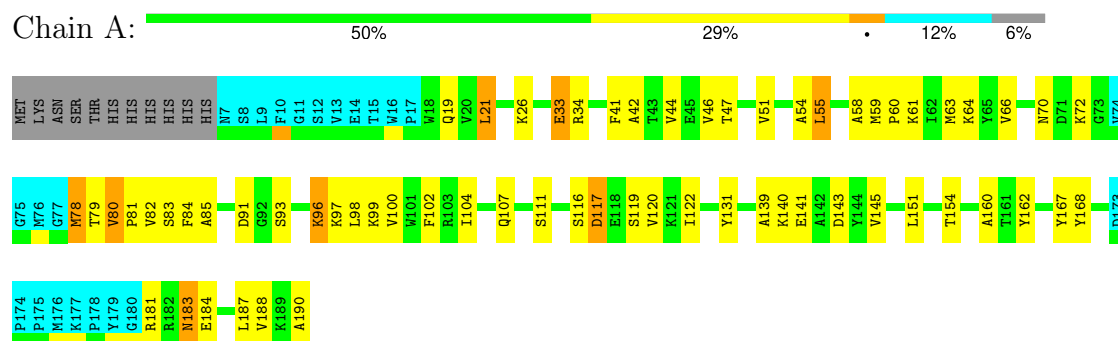
- Molecule 1: HEME-BINDING PROTEIN 1

Chain A: 53% 27% 12% 6%



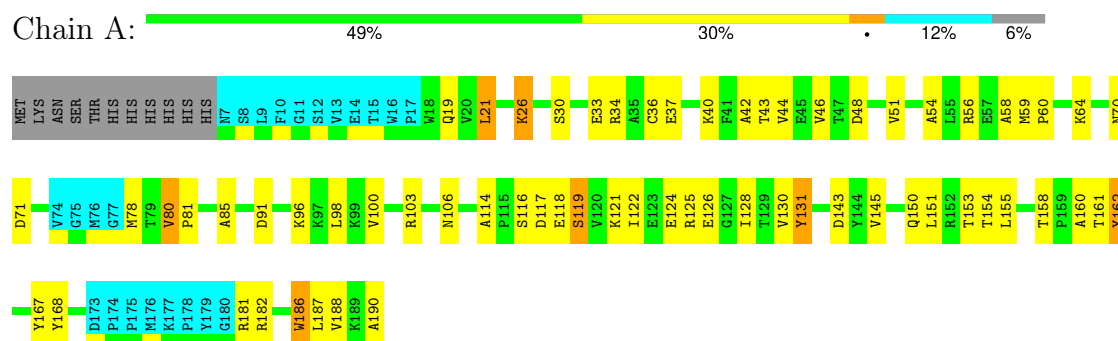
4.2.15 Score per residue for model 15

• Molecule 1: HEME-BINDING PROTEIN 1



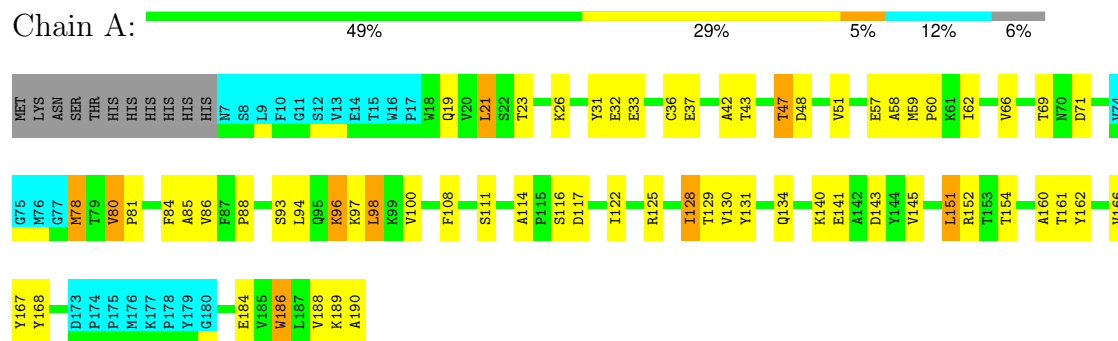
4.2.16 Score per residue for model 16

• Molecule 1: HEME-BINDING PROTEIN 1



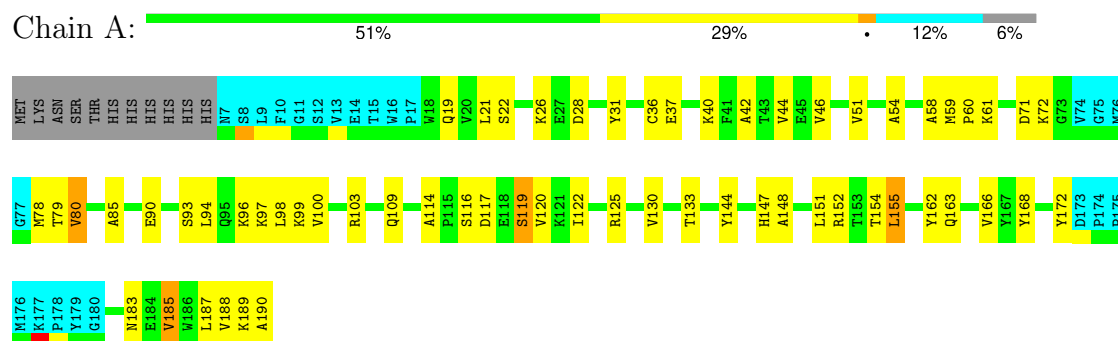
4.2.17 Score per residue for model 17

• Molecule 1: HEME-BINDING PROTEIN 1



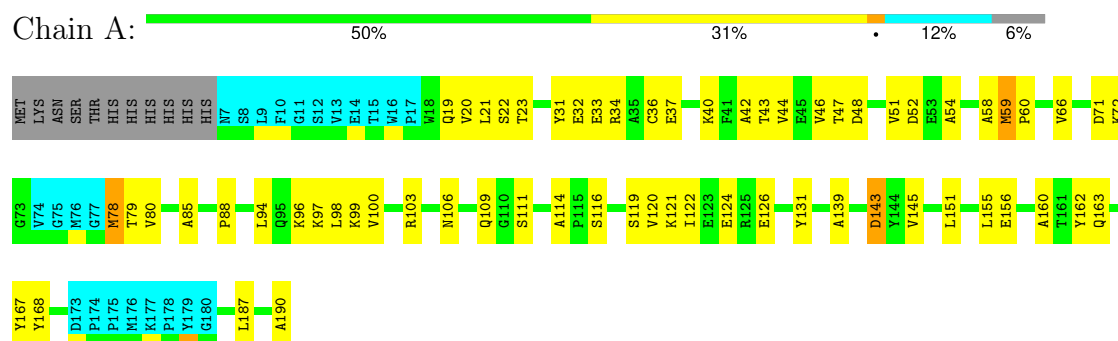
4.2.18 Score per residue for model 18

• Molecule 1: HEME-BINDING PROTEIN 1



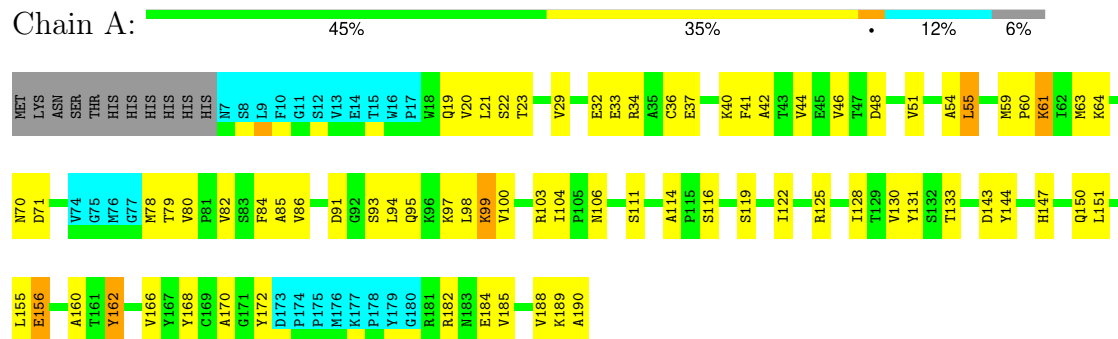
4.2.19 Score per residue for model 19

• Molecule 1: HEME-BINDING PROTEIN 1



4.2.20 Score per residue for model 20

• Molecule 1: HEME-BINDING PROTEIN 1



5 Refinement protocol and experimental data overview

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

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

Software name	Classification	Version
CYANA	refinement	
CYANA	structure solution	2.1

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	1903
Number of shifts mapped to atoms	1903
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	84%

6 Model quality

6.1 Standard geometry

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

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	1261	1220	1220	27±5
All	All	25220	24400	24400	542

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 11.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:151:LEU:HD23	1:A:187:LEU:HD12	0.98	1.30	2	7
1:A:51:VAL:HG13	1:A:98:LEU:HD13	0.78	1.55	17	11
1:A:44:VAL:HG22	1:A:100:VAL:HB	0.69	1.63	1	3
1:A:85:ALA:HB2	1:A:168:TYR:CZ	0.68	2.23	14	3
1:A:98:LEU:HD13	1:A:99:LYS:N	0.66	2.05	20	1
1:A:51:VAL:HG12	1:A:98:LEU:HD23	0.66	1.66	20	1
1:A:26:LYS:HB2	1:A:154:THR:HG23	0.65	1.68	4	11
1:A:85:ALA:HB2	1:A:168:TYR:CE1	0.65	2.27	13	12
1:A:44:VAL:HG23	1:A:119:SER:O	0.64	1.92	5	6
1:A:44:VAL:HG12	1:A:119:SER:O	0.64	1.92	13	9
1:A:162:TYR:C	1:A:190:ALA:HB2	0.64	2.13	16	16
1:A:21:LEU:HD23	1:A:33:GLU:CG	0.64	2.22	17	2
1:A:42:ALA:HB2	1:A:122:ILE:HD13	0.64	1.68	20	15
1:A:71:ASP:HB3	1:A:114:ALA:HB3	0.63	1.70	3	12

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:21:LEU:HD23	1:A:33:GLU:HG2	0.63	1.71	17	1
1:A:147:HIS:CD2	1:A:185:VAL:HG21	0.63	2.28	18	1
1:A:145:VAL:HG22	1:A:167:TYR:OH	0.63	1.92	17	8
1:A:131:TYR:OH	1:A:160:ALA:HB1	0.63	1.93	17	10
1:A:162:TYR:O	1:A:190:ALA:HB2	0.63	1.93	17	2
1:A:33:GLU:OE2	1:A:129:THR:HG23	0.63	1.94	17	1
1:A:51:VAL:HG13	1:A:98:LEU:CD1	0.62	2.25	5	14
1:A:21:LEU:HD21	1:A:33:GLU:HG2	0.62	1.71	16	1
1:A:117:ASP:HB3	1:A:120:VAL:HG12	0.61	1.72	5	2
1:A:130:VAL:HG12	1:A:188:VAL:HA	0.61	1.72	7	8
1:A:44:VAL:HG21	1:A:61:LYS:HD3	0.60	1.72	9	4
1:A:47:THR:HG22	1:A:97:LYS:HG3	0.60	1.71	10	4
1:A:42:ALA:HB2	1:A:122:ILE:CD1	0.60	2.27	20	19
1:A:151:LEU:CD2	1:A:187:LEU:HD12	0.59	2.27	18	4
1:A:20:VAL:HG22	1:A:34:ARG:HB3	0.59	1.74	7	1
1:A:85:ALA:HB2	1:A:168:TYR:CE2	0.59	2.31	16	6
1:A:46:VAL:HG11	1:A:54:ALA:HA	0.59	1.74	1	14
1:A:23:THR:HG22	1:A:32:GLU:CG	0.59	2.28	10	5
1:A:170:ALA:HB3	1:A:184:GLU:HB3	0.58	1.75	20	1
1:A:88:PRO:HA	1:A:94:LEU:HD23	0.58	1.75	19	7
1:A:66:VAL:HG23	1:A:78:MET:HG3	0.58	1.75	8	2
1:A:128:ILE:HD12	1:A:130:VAL:HG13	0.58	1.75	17	6
1:A:148:ALA:O	1:A:187:LEU:HD11	0.58	1.98	9	1
1:A:71:ASP:CB	1:A:114:ALA:HB3	0.58	2.29	6	8
1:A:84:PHE:CD1	1:A:98:LEU:HD11	0.57	2.34	11	2
1:A:31:TYR:CE2	1:A:155:LEU:HD23	0.57	2.33	7	1
1:A:133:THR:CG2	1:A:151:LEU:HD11	0.57	2.29	20	1
1:A:58:ALA:CB	1:A:100:VAL:HG21	0.57	2.30	2	16
1:A:59:MET:CE	1:A:82:VAL:HG11	0.56	2.30	20	3
1:A:80:VAL:HG11	1:A:103:ARG:O	0.56	2.00	13	1
1:A:139:ALA:HB1	1:A:143:ASP:HB3	0.56	1.76	19	1
1:A:23:THR:HG22	1:A:32:GLU:HG3	0.56	1.76	9	8
1:A:23:THR:HG22	1:A:32:GLU:HB2	0.56	1.77	3	2
1:A:82:VAL:HG22	1:A:102:PHE:CD1	0.56	2.35	15	2
1:A:21:LEU:HD12	1:A:21:LEU:O	0.56	2.01	10	3
1:A:131:TYR:CZ	1:A:160:ALA:HB1	0.56	2.36	16	3
1:A:20:VAL:HG22	1:A:34:ARG:HG3	0.56	1.76	9	1
1:A:54:ALA:HB3	1:A:98:LEU:HG	0.56	1.78	20	1
1:A:170:ALA:HB3	1:A:184:GLU:HG3	0.55	1.77	9	1
1:A:71:ASP:CG	1:A:114:ALA:HB3	0.55	2.22	5	4
1:A:31:TYR:HB3	1:A:151:LEU:HD21	0.55	1.78	8	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:139:ALA:HB3	1:A:183:ASN:OD1	0.55	2.01	5	5
1:A:44:VAL:HG22	1:A:119:SER:O	0.55	2.02	19	1
1:A:170:ALA:HB3	1:A:184:GLU:CB	0.55	2.32	10	1
1:A:55:LEU:HD11	1:A:84:PHE:CE1	0.55	2.37	20	2
1:A:66:VAL:HG23	1:A:78:MET:HG2	0.55	1.78	5	2
1:A:104:ILE:HG22	1:A:105:PRO:HD2	0.55	1.79	14	1
1:A:170:ALA:HB3	1:A:184:GLU:CG	0.55	2.32	9	1
1:A:55:LEU:HD11	1:A:84:PHE:CE2	0.54	2.37	6	1
1:A:44:VAL:HG11	1:A:61:LYS:CD	0.54	2.33	20	1
1:A:44:VAL:CG1	1:A:120:VAL:HG22	0.53	2.34	18	2
1:A:151:LEU:HD12	1:A:187:LEU:CD1	0.53	2.33	16	1
1:A:51:VAL:HG13	1:A:98:LEU:HD12	0.53	1.80	13	2
1:A:54:ALA:CB	1:A:98:LEU:HD22	0.53	2.34	15	5
1:A:29:VAL:HG13	1:A:154:THR:HG21	0.53	1.80	13	2
1:A:151:LEU:HD23	1:A:187:LEU:HB2	0.53	1.80	13	1
1:A:133:THR:CG2	1:A:185:VAL:HG23	0.53	2.33	18	1
1:A:86:VAL:O	1:A:166:VAL:HG13	0.53	2.03	8	1
1:A:155:LEU:O	1:A:158:THR:HG22	0.53	2.03	16	2
1:A:79:THR:O	1:A:80:VAL:HG13	0.52	2.05	9	6
1:A:44:VAL:CG2	1:A:120:VAL:HG22	0.52	2.35	19	1
1:A:58:ALA:HB3	1:A:100:VAL:HG21	0.52	1.79	19	10
1:A:168:TYR:CE1	1:A:188:VAL:HG22	0.52	2.39	3	1
1:A:21:LEU:HD12	1:A:22:SER:HB3	0.52	1.81	13	11
1:A:26:LYS:CB	1:A:154:THR:HG23	0.52	2.35	15	6
1:A:139:ALA:HB1	1:A:143:ASP:CB	0.52	2.34	19	2
1:A:155:LEU:HD13	1:A:162:TYR:OH	0.52	2.04	13	3
1:A:31:TYR:CZ	1:A:155:LEU:HD23	0.52	2.39	3	3
1:A:33:GLU:CD	1:A:129:THR:HG23	0.52	2.25	17	1
1:A:166:VAL:HG13	1:A:188:VAL:CG1	0.51	2.34	4	3
1:A:66:VAL:HG23	1:A:78:MET:CG	0.51	2.35	5	1
1:A:80:VAL:HG23	1:A:102:PHE:CZ	0.51	2.40	10	2
1:A:59:MET:N	1:A:60:PRO:HD2	0.51	2.19	4	20
1:A:86:VAL:HB	1:A:94:LEU:HD12	0.51	1.82	9	1
1:A:29:VAL:HG13	1:A:147:HIS:NE2	0.51	2.21	20	1
1:A:98:LEU:CD1	1:A:100:VAL:HG23	0.51	2.36	20	1
1:A:21:LEU:HD21	1:A:33:GLU:HB3	0.51	1.82	11	4
1:A:151:LEU:O	1:A:155:LEU:HD12	0.50	2.06	16	2
1:A:85:ALA:HB2	1:A:168:TYR:CD2	0.50	2.42	20	3
1:A:88:PRO:CA	1:A:94:LEU:HD23	0.50	2.36	17	4
1:A:80:VAL:HG22	1:A:81:PRO:HD2	0.49	1.84	14	6
1:A:82:VAL:HG22	1:A:102:PHE:CE1	0.49	2.43	15	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:55:LEU:HD11	1:A:84:PHE:CZ	0.49	2.42	15	3
1:A:31:TYR:HB3	1:A:151:LEU:HD11	0.49	1.84	18	2
1:A:47:THR:HG22	1:A:97:LYS:CG	0.49	2.37	10	2
1:A:46:VAL:HB	1:A:54:ALA:HB1	0.49	1.85	20	3
1:A:166:VAL:O	1:A:187:LEU:HD23	0.49	2.08	8	3
1:A:135:PHE:O	1:A:136:GLY:C	0.49	2.51	12	1
1:A:166:VAL:O	1:A:187:LEU:HD12	0.48	2.09	13	2
1:A:162:TYR:CE1	1:A:187:LEU:HD21	0.48	2.43	11	1
1:A:59:MET:HE1	1:A:82:VAL:HG11	0.48	1.85	20	1
1:A:21:LEU:HD11	1:A:33:GLU:OE1	0.47	2.09	15	2
1:A:151:LEU:HD23	1:A:187:LEU:CD1	0.47	2.35	18	1
1:A:44:VAL:HG21	1:A:58:ALA:CB	0.47	2.38	1	2
1:A:144:TYR:CD2	1:A:185:VAL:HG22	0.47	2.44	20	2
1:A:47:THR:HG22	1:A:97:LYS:HG2	0.47	1.85	11	3
1:A:26:LYS:HB3	1:A:154:THR:HG23	0.47	1.86	13	1
1:A:51:VAL:HG11	1:A:86:VAL:HG12	0.47	1.85	10	2
1:A:166:VAL:HG13	1:A:188:VAL:CG2	0.47	2.40	2	2
1:A:20:VAL:HG13	1:A:33:GLU:O	0.46	2.10	14	2
1:A:54:ALA:HB1	1:A:98:LEU:HD22	0.46	1.86	3	4
1:A:86:VAL:HB	1:A:94:LEU:HD22	0.46	1.88	20	2
1:A:139:ALA:HB3	1:A:183:ASN:ND2	0.46	2.25	9	3
1:A:59:MET:CB	1:A:60:PRO:CD	0.46	2.94	7	17
1:A:62:ILE:O	1:A:66:VAL:HG12	0.46	2.11	17	1
1:A:47:THR:HG23	1:A:97:LYS:HG3	0.46	1.88	17	1
1:A:44:VAL:HG11	1:A:61:LYS:HD2	0.45	1.88	20	1
1:A:128:ILE:CD1	1:A:130:VAL:HG13	0.45	2.40	8	2
1:A:170:ALA:HB3	1:A:184:GLU:HB2	0.45	1.86	10	1
1:A:66:VAL:HG21	1:A:78:MET:O	0.45	2.12	19	1
1:A:144:TYR:HA	1:A:147:HIS:CE1	0.45	2.47	18	1
1:A:85:ALA:HB2	1:A:168:TYR:CD1	0.44	2.47	13	6
1:A:147:HIS:CD2	1:A:148:ALA:N	0.44	2.86	18	1
1:A:20:VAL:HG23	1:A:33:GLU:O	0.44	2.12	5	3
1:A:44:VAL:HG21	1:A:58:ALA:HB1	0.44	1.88	1	1
1:A:41:PHE:HA	1:A:104:ILE:HD12	0.44	1.88	20	5
1:A:166:VAL:CG2	1:A:188:VAL:HG22	0.44	2.43	17	1
1:A:94:LEU:HD11	1:A:167:TYR:OH	0.44	2.12	11	1
1:A:186:TRP:CD1	1:A:186:TRP:N	0.44	2.85	8	4
1:A:21:LEU:HD21	1:A:33:GLU:CG	0.44	2.40	16	1
1:A:133:THR:HG21	1:A:151:LEU:HD11	0.44	1.87	20	1
1:A:23:THR:HG22	1:A:32:GLU:CB	0.44	2.41	3	1
1:A:98:LEU:HD11	1:A:100:VAL:HG23	0.44	1.87	20	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:54:ALA:HB3	1:A:98:LEU:HD22	0.44	1.90	5	2
1:A:86:VAL:HG12	1:A:98:LEU:HD12	0.43	1.90	9	1
1:A:80:VAL:HG23	1:A:81:PRO:HD2	0.43	1.90	13	1
1:A:21:LEU:HD11	1:A:33:GLU:HG3	0.43	1.90	3	2
1:A:51:VAL:HG21	1:A:94:LEU:CD1	0.43	2.44	18	1
1:A:21:LEU:HD12	1:A:22:SER:N	0.43	2.28	5	1
1:A:166:VAL:HG13	1:A:188:VAL:HB	0.43	1.90	3	1
1:A:59:MET:N	1:A:60:PRO:CD	0.42	2.82	4	1
1:A:94:LEU:HD22	1:A:94:LEU:H	0.42	1.74	1	2
1:A:21:LEU:HD21	1:A:33:GLU:HG3	0.42	1.90	3	2
1:A:20:VAL:HG22	1:A:34:ARG:HG2	0.42	1.91	20	1
1:A:155:LEU:HD22	1:A:158:THR:HG21	0.42	1.90	7	1
1:A:21:LEU:HD12	1:A:33:GLU:HB3	0.42	1.91	12	1
1:A:54:ALA:HB3	1:A:98:LEU:HD13	0.41	1.92	1	1
1:A:62:ILE:HG21	1:A:102:PHE:CD1	0.41	2.51	11	1
1:A:51:VAL:CG1	1:A:98:LEU:HD23	0.41	2.41	20	1
1:A:98:LEU:HD13	1:A:98:LEU:C	0.41	2.34	20	1
1:A:80:VAL:HG21	1:A:103:ARG:O	0.41	2.16	12	1
1:A:133:THR:HG22	1:A:185:VAL:HG23	0.41	1.93	18	1
1:A:86:VAL:O	1:A:166:VAL:HG23	0.41	2.15	7	1
1:A:98:LEU:HD21	1:A:100:VAL:HG23	0.41	1.92	7	1
1:A:98:LEU:O	1:A:98:LEU:HD23	0.41	2.16	10	1
1:A:161:THR:HG23	1:A:190:ALA:HB3	0.41	1.93	12	1
1:A:155:LEU:O	1:A:156:GLU:C	0.40	2.59	20	1
1:A:163:GLN:NE2	1:A:188:VAL:HG12	0.40	2.32	13	1
1:A:26:LYS:HB2	1:A:154:THR:HG22	0.40	1.92	16	1

6.3 Torsion angles ⓘ

6.3.1 Protein backbone ⓘ

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	160/195 (82%)	152±1 (95±1%)	7±1 (4±1%)	1±1 (0±0%)	32	76
All	All	3200/3900 (82%)	3043 (95%)	144 (4%)	13 (0%)	32	76

All 2 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	96	LYS	12
1	A	136	GLY	1

6.3.2 Protein sidechains ⓘ

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	133/163 (82%)	102±4 (76±3%)	32±4 (24±3%)	2	26
All	All	2660/3260 (82%)	2030 (76%)	630 (24%)	2	26

All 94 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	78	MET	19
1	A	40	LYS	18
1	A	80	VAL	18
1	A	143	ASP	18
1	A	116	SER	17
1	A	19	GLN	16
1	A	36	CYS	16
1	A	43	THR	16
1	A	48	ASP	15
1	A	117	ASP	14
1	A	37	GLU	13
1	A	79	THR	12
1	A	140	LYS	12
1	A	150	GLN	12
1	A	64	LYS	12
1	A	34	ARG	12
1	A	189	LYS	12
1	A	119	SER	11
1	A	93	SER	11
1	A	96	LYS	11
1	A	99	LYS	10
1	A	109	GLN	10

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Mol	Chain	Res	Type	Models (Total)
1	A	72	LYS	10
1	A	21	LEU	9
1	A	163	GLN	9
1	A	111	SER	9
1	A	125	ARG	9
1	A	30	SER	8
1	A	70	ASN	8
1	A	91	ASP	8
1	A	126	GLU	8
1	A	141	GLU	8
1	A	103	ARG	8
1	A	63	MET	8
1	A	162	TYR	8
1	A	28	ASP	7
1	A	52	ASP	7
1	A	59	MET	7
1	A	95	GLN	7
1	A	172	TYR	7
1	A	61	LYS	7
1	A	98	LEU	7
1	A	97	LYS	7
1	A	106	ASN	7
1	A	26	LYS	6
1	A	27	GLU	6
1	A	56	ARG	6
1	A	121	LYS	6
1	A	134	GLN	6
1	A	132	SER	6
1	A	182	ARG	6
1	A	184	GLU	6
1	A	161	THR	6
1	A	124	GLU	5
1	A	156	GLU	4
1	A	57	GLU	4
1	A	107	GLN	4
1	A	187	LEU	4
1	A	118	GLU	4
1	A	181	ARG	4
1	A	83	SER	4
1	A	183	ASN	4
1	A	186	TRP	4
1	A	33	GLU	4

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Mol	Chain	Res	Type	Models (Total)
1	A	45	GLU	3
1	A	49	LYS	3
1	A	152	ARG	3
1	A	165	ASP	3
1	A	31	TYR	3
1	A	151	LEU	3
1	A	55	LEU	3
1	A	108	PHE	3
1	A	69	THR	3
1	A	94	LEU	2
1	A	138	TYR	2
1	A	131	TYR	2
1	A	32	GLU	2
1	A	47	THR	2
1	A	22	SER	1
1	A	53	GLU	1
1	A	71	ASP	1
1	A	44	VAL	1
1	A	129	THR	1
1	A	18	TRP	1
1	A	149	THR	1
1	A	135	PHE	1
1	A	104	ILE	1
1	A	188	VAL	1
1	A	153	THR	1
1	A	86	VAL	1
1	A	128	ILE	1
1	A	90	GLU	1
1	A	155	LEU	1
1	A	185	VAL	1

6.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

6.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.6 Ligand geometry [i](#)

There are no ligands in this entry.

6.7 Other polymers [i](#)

There are no such molecules in this entry.

6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

7 Chemical shift validation

The completeness of assignment taking into account all chemical shift lists is 84% for the well-defined parts and 79% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *deposit2_1.bmr.b.csh*

7.1.1 Bookkeeping

The following table shows the results of parsing the chemical shift list and reports the number of nuclei with statistically unusual chemical shifts.

Total number of shifts	1903
Number of shifts mapped to atoms	1903
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	13

7.1.2 Chemical shift referencing

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction \pm precision, ppm	Suggested action
$^{13}\text{C}_\alpha$	167	-0.37 ± 0.09	None needed (< 0.5 ppm)
$^{13}\text{C}_\beta$	151	-0.31 ± 0.08	None needed (< 0.5 ppm)
$^{13}\text{C}'$	145	0.01 ± 0.10	None needed (< 0.5 ppm)
^{15}N	154	0.43 ± 0.42	None needed (< 0.5 ppm)

7.1.3 Completeness of resonance assignments

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 84%, i.e. 1789 atoms were assigned a chemical shift out of a possible 2128. 0 out of 23 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^1H	^{13}C	^{15}N
Backbone	765/802 (95%)	323/328 (98%)	297/322 (92%)	145/152 (95%)
Sidechain	901/1142 (79%)	619/738 (84%)	273/360 (76%)	9/44 (20%)

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	Total	¹ H	¹³ C	¹⁵ N
Aromatic	123/184 (67%)	77/88 (88%)	43/92 (47%)	3/4 (75%)
Overall	1789/2128 (84%)	1019/1154 (88%)	613/774 (79%)	157/200 (78%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 79%, i.e. 1903 atoms were assigned a chemical shift out of a possible 2411. 0 out of 26 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	¹ H	¹³ C	¹⁵ N
Backbone	812/913 (89%)	346/374 (93%)	312/368 (85%)	154/171 (90%)
Sidechain	955/1283 (74%)	657/831 (79%)	289/406 (71%)	9/46 (20%)
Aromatic	136/215 (63%)	85/103 (83%)	47/107 (44%)	4/5 (80%)
Overall	1903/2411 (79%)	1088/1308 (83%)	648/881 (74%)	167/222 (75%)

7.1.4 Statistically unusual chemical shifts ⓘ

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

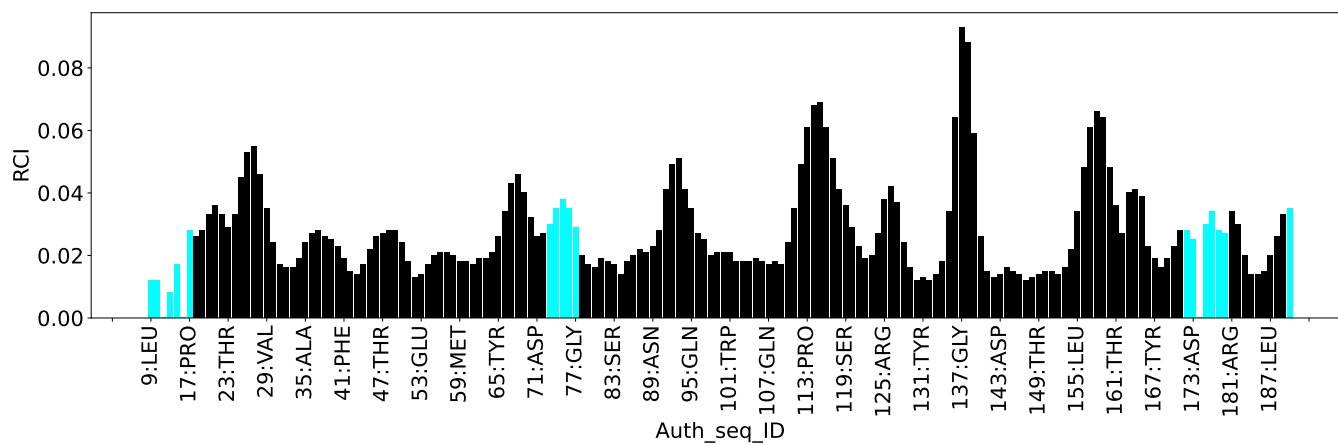
List Id	Chain	Res	Type	Atom	Shift, ppm	Expected range, ppm	Z-score
1	A	103	ARG	HG2	-0.44	0.26 – 2.87	-7.7
1	A	103	ARG	HG3	-0.52	0.15 – 2.94	-7.4
1	A	103	ARG	HD3	1.22	1.81 – 4.39	-7.3
1	A	183	ASN	HB3	0.58	1.12 – 4.38	-6.7
1	A	43	THR	HG21	0.01	0.08 – 2.19	-5.3
1	A	43	THR	HG22	0.01	0.08 – 2.19	-5.3
1	A	43	THR	HG23	0.01	0.08 – 2.19	-5.3
1	A	130	VAL	HG11	-0.53	-0.48 – 2.12	-5.2
1	A	130	VAL	HG12	-0.53	-0.48 – 2.12	-5.2
1	A	130	VAL	HG13	-0.53	-0.48 – 2.12	-5.2
1	A	81	PRO	HB2	0.31	0.37 – 3.78	-5.2
1	A	103	ARG	HB2	0.47	0.52 – 3.08	-5.2
1	A	176	MET	CG	38.63	25.46 – 38.60	5.0

7.1.5 Random Coil Index (RCI) plots ⓘ

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	1573
Intra-residue ($ i-j =0$)	281
Sequential ($ i-j =1$)	343
Medium range ($ i-j >1$ and $ i-j <5$)	248
Long range ($ i-j \geq 5$)	701
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	0
Total dihedral-angle restraints	0
Number of unmapped restraints	0
Number of restraints per residue	8.1
Number of long range restraints per residue ¹	3.6

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

8.2 Residual restraint violations

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

8.2.1 Average number of distance violations per model

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

Bins (Å)	Average number of violations per model	Max (Å)
0.1-0.2 (Small)	8.8	0.2
0.2-0.5 (Medium)	1.8	0.38
>0.5 (Large)	None	None

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

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

9 Distance violation analysis ⓘ

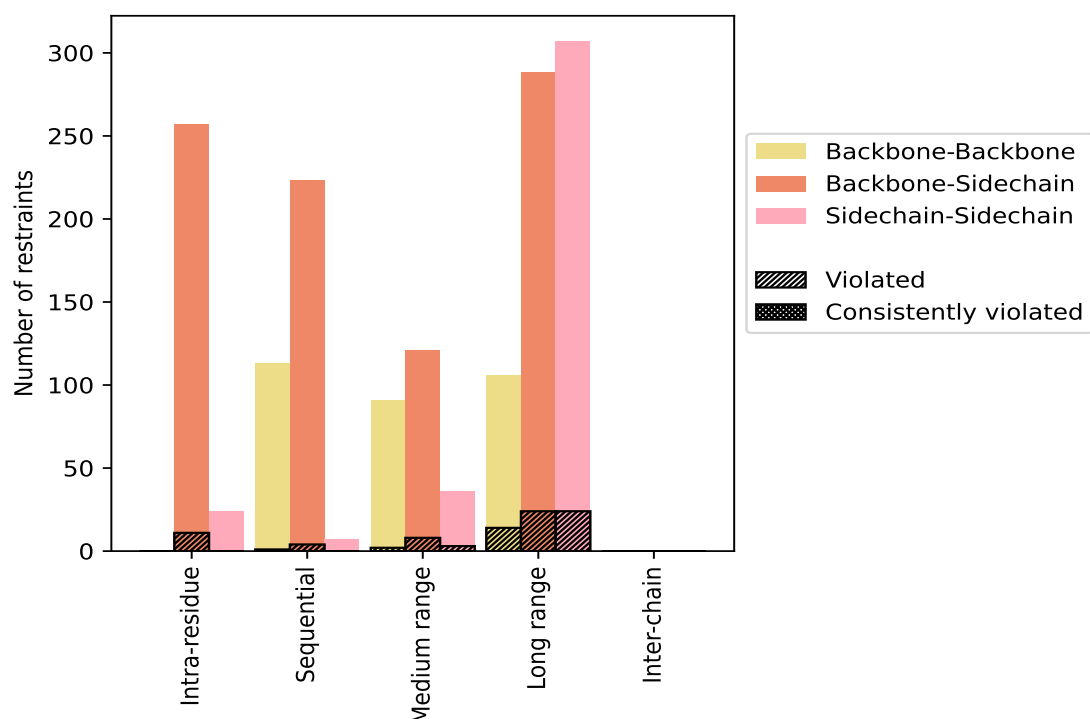
9.1 Summary of distance violations ⓘ

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

Restrains type	Count	% ¹	Violated ³			Consistently Violated ⁴		
			Count	% ²	% ¹	Count	% ²	% ¹
Intra-residue ($ i-j =0$)	281	17.9	11	3.9	0.7	0	0.0	0.0
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	257	16.3	11	4.3	0.7	0	0.0	0.0
Sidechain-Sidechain	24	1.5	0	0.0	0.0	0	0.0	0.0
Sequential ($ i-j =1$)	343	21.8	5	1.5	0.3	0	0.0	0.0
Backbone-Backbone	113	7.2	1	0.9	0.1	0	0.0	0.0
Backbone-Sidechain	223	14.2	4	1.8	0.3	0	0.0	0.0
Sidechain-Sidechain	7	0.4	0	0.0	0.0	0	0.0	0.0
Medium range ($ i-j >1$ & $ i-j <5$)	248	15.8	13	5.2	0.8	0	0.0	0.0
Backbone-Backbone	91	5.8	2	2.2	0.1	0	0.0	0.0
Backbone-Sidechain	121	7.7	8	6.6	0.5	0	0.0	0.0
Sidechain-Sidechain	36	2.3	3	8.3	0.2	0	0.0	0.0
Long range ($ i-j \geq 5$)	701	44.6	62	8.8	3.9	0	0.0	0.0
Backbone-Backbone	106	6.7	14	13.2	0.9	0	0.0	0.0
Backbone-Sidechain	288	18.3	24	8.3	1.5	0	0.0	0.0
Sidechain-Sidechain	307	19.5	24	7.8	1.5	0	0.0	0.0
Inter-chain	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Backbone	0	0.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
Sidechain-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
Hydrogen bond	0	0.0	0	0.0	0.0	0	0.0	0.0
Disulfide bond	0	0.0	0	0.0	0.0	0	0.0	0.0
Total	1573	100.0	91	5.8	5.8	0	0.0	0.0
Backbone-Backbone	310	19.7	17	5.5	1.1	0	0.0	0.0
Backbone-Sidechain	889	56.5	47	5.3	3.0	0	0.0	0.0
Sidechain-Sidechain	374	23.8	27	7.2	1.7	0	0.0	0.0

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

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



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

9.2 Distance violation statistics for each model [i](#)

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

Model ID	Number of violations						Mean (Å)	Max (Å)	SD ⁶ (Å)	Median (Å)
	IR ¹	SQ ²	MR ³	LR ⁴	IC ⁵	Total				
1	2	2	1	7	0	12	0.16	0.31	0.06	0.14
2	2	1	1	7	0	11	0.16	0.32	0.07	0.14
3	3	1	0	7	0	11	0.16	0.31	0.05	0.15
4	2	1	1	5	0	9	0.16	0.32	0.07	0.12
5	1	1	0	6	0	8	0.12	0.14	0.01	0.12
6	2	0	2	6	0	10	0.17	0.3	0.06	0.15
7	1	0	1	4	0	6	0.14	0.23	0.05	0.12
8	2	1	0	9	0	12	0.17	0.32	0.06	0.15
9	2	2	0	9	0	13	0.13	0.22	0.03	0.12
10	1	2	2	8	0	13	0.15	0.31	0.06	0.14

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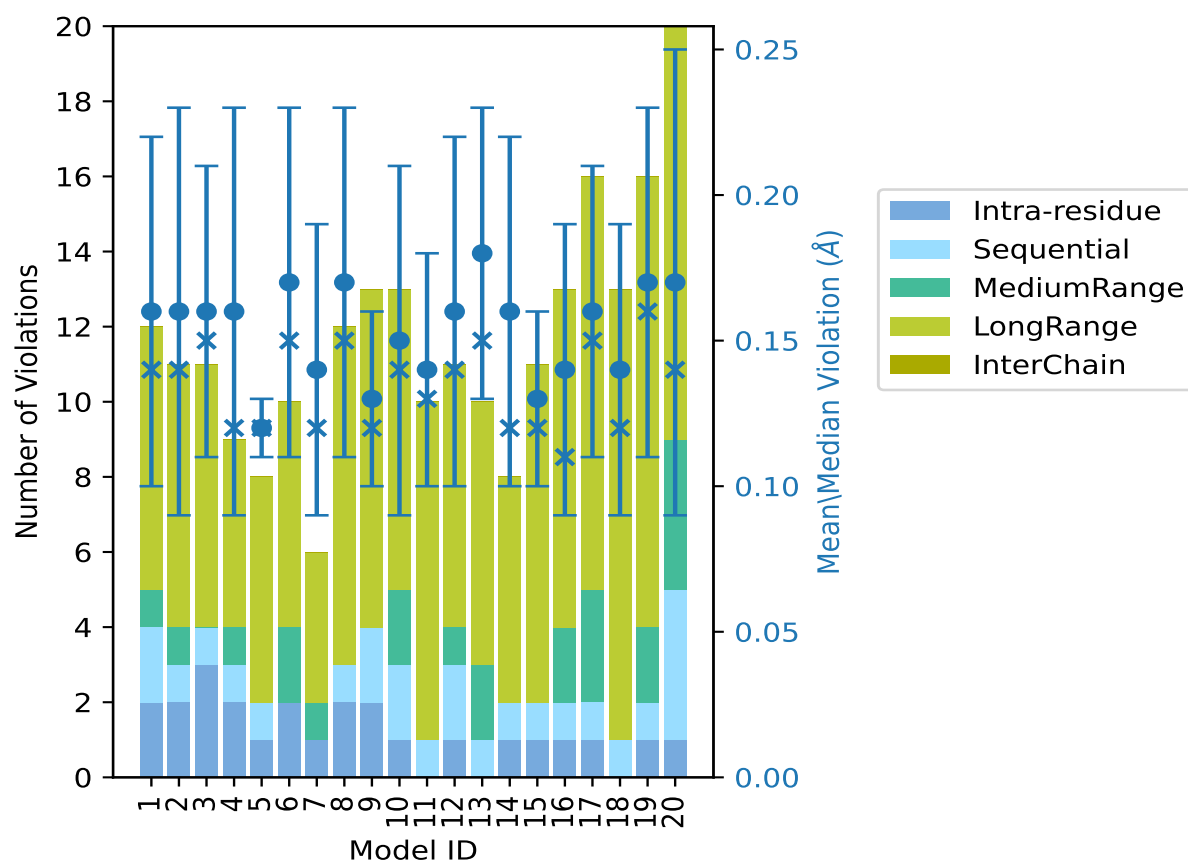
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Model ID	Number of violations						Mean (Å)	Max (Å)	SD ⁶ (Å)	Median (Å)
	IR ¹	SQ ²	MR ³	LR ⁴	IC ⁵	Total				
11	0	1	0	9	0	10	0.14	0.23	0.04	0.13
12	1	2	1	7	0	11	0.16	0.31	0.06	0.14
13	0	1	2	7	0	10	0.18	0.29	0.05	0.15
14	1	1	0	6	0	8	0.16	0.3	0.06	0.12
15	1	1	0	9	0	11	0.13	0.2	0.03	0.12
16	1	1	2	9	0	13	0.14	0.31	0.05	0.11
17	1	1	3	11	0	16	0.16	0.31	0.05	0.15
18	0	1	0	12	0	13	0.14	0.26	0.05	0.12
19	1	1	2	12	0	16	0.17	0.31	0.06	0.16
20	1	4	4	11	0	20	0.17	0.38	0.08	0.14

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

⁵Inter-chain restraints, ⁶Standard deviation

9.2.1 Bar graph : Distance Violation statistics for each model ⓘ



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

9.3 Distance violation statistics for the ensemble

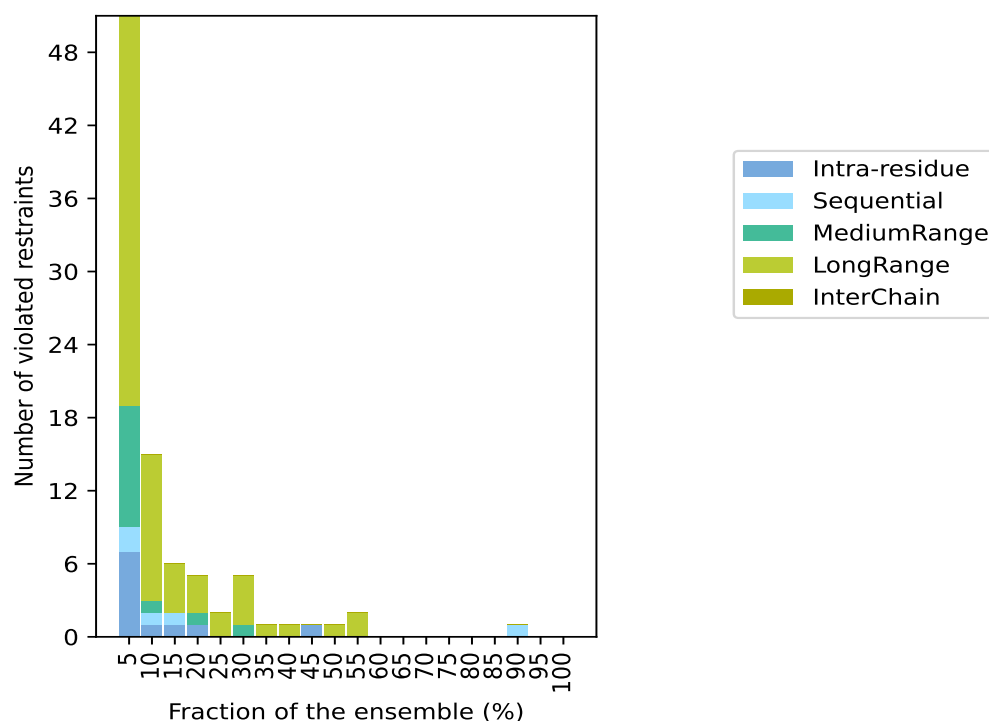
Violation analysis may find that some restraints are violated in few models and some are violated in most of models. The following table provides this information as number of violated restraints for a given fraction of the ensemble. In total, 1482(IR:270, SQ:338, MR:235, LR:639, IC:0) restraints are not violated in the ensemble.

Number of violated restraints						Fraction of the ensemble	
IR ¹	SQ ²	MR ³	LR ⁴	IC ⁵	Total	Count ⁶	%
7	2	10	32	0	51	1	5.0
1	1	1	12	0	15	2	10.0
1	1	0	4	0	6	3	15.0
1	0	1	3	0	5	4	20.0
0	0	0	2	0	2	5	25.0
0	0	1	4	0	5	6	30.0
0	0	0	1	0	1	7	35.0
0	0	0	1	0	1	8	40.0
1	0	0	0	0	1	9	45.0
0	0	0	1	0	1	10	50.0
0	0	0	2	0	2	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	1	0	0	0	1	18	90.0
0	0	0	0	0	0	19	95.0
0	0	0	0	0	0	20	100.0

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

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

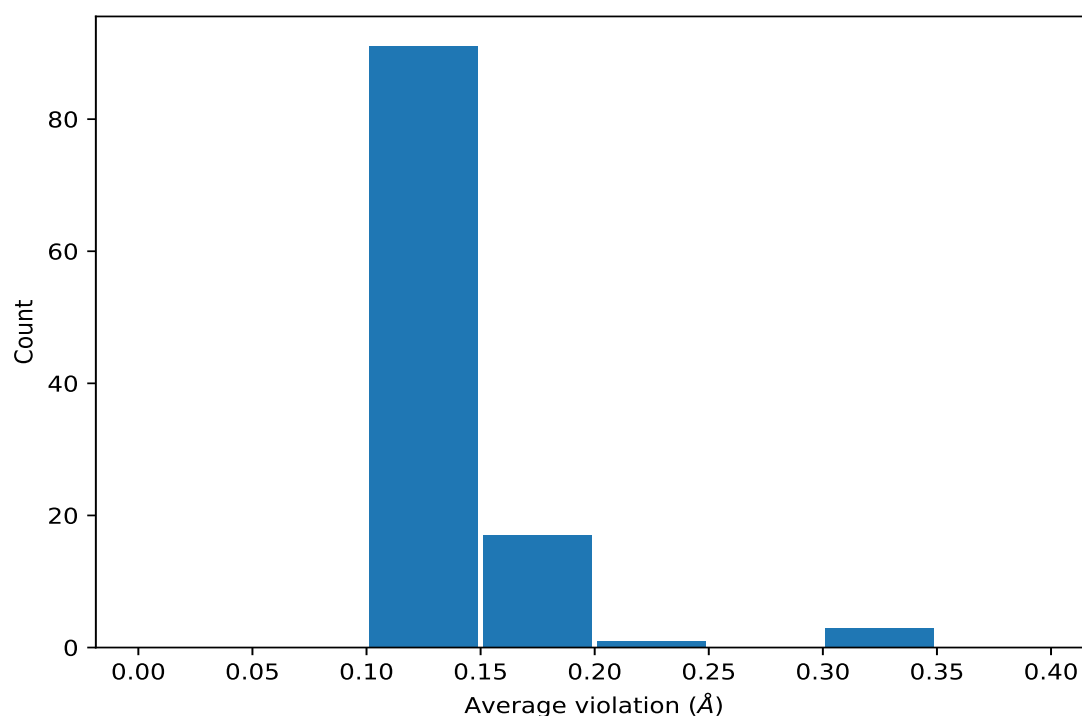
9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



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

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

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



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

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

Key	Atom-1	Atom-2	Models ¹	Mean (Å)	SD ¹ (Å)	Median (Å)
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	18	0.15	0.01	0.15
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	11	0.24	0.04	0.23
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	11	0.12	0.02	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	11	0.12	0.02	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	11	0.12	0.02	0.13
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	10	0.14	0.02	0.13
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	9	0.31	0.01	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	9	0.31	0.01	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	9	0.31	0.01	0.31
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	8	0.14	0.04	0.13
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	7	0.17	0.07	0.14
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	7	0.17	0.07	0.14
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD2	6	0.16	0.07	0.12
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD3	6	0.16	0.07	0.12
(1,1453)	1:161:A:THR:HA	1:190:A:ALA:H	6	0.14	0.03	0.13
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE1	6	0.14	0.02	0.14

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Key	Atom-1	Atom-2	Models ¹	Mean (Å)	SD ¹ (Å)	Median (Å)
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE2	6	0.14	0.02	0.14
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE1	6	0.14	0.02	0.14
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE2	6	0.14	0.02	0.14
(1,810)	1:84:A:PHE:HD1	1:100:A:VAL:HA	6	0.13	0.02	0.12
(1,810)	1:84:A:PHE:HD2	1:100:A:VAL:HA	6	0.13	0.02	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG21	6	0.11	0.01	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG22	6	0.11	0.01	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG23	6	0.11	0.01	0.12
(1,53)	1:21:A:LEU:HG	1:33:A:GLU:H	5	0.14	0.02	0.14
(1,322)	1:44:A:VAL:HG11	1:121:A:LYS:H	5	0.13	0.02	0.11
(1,322)	1:44:A:VAL:HG12	1:121:A:LYS:H	5	0.13	0.02	0.11
(1,322)	1:44:A:VAL:HG13	1:121:A:LYS:H	5	0.13	0.02	0.11
(1,322)	1:44:A:VAL:HG21	1:121:A:LYS:H	5	0.13	0.02	0.11
(1,322)	1:44:A:VAL:HG22	1:121:A:LYS:H	5	0.13	0.02	0.11
(1,322)	1:44:A:VAL:HG23	1:121:A:LYS:H	5	0.13	0.02	0.11
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG11	4	0.19	0.03	0.19
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG12	4	0.19	0.03	0.19
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG13	4	0.19	0.03	0.19
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG21	4	0.19	0.03	0.19
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG22	4	0.19	0.03	0.19
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG23	4	0.19	0.03	0.19
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE21	4	0.16	0.02	0.16
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE22	4	0.16	0.02	0.16
(1,1202)	1:131:A:TYR:HE1	1:190:A:ALA:H	4	0.15	0.04	0.16
(1,1202)	1:131:A:TYR:HE2	1:190:A:ALA:H	4	0.15	0.04	0.16
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD1	4	0.15	0.04	0.13
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD2	4	0.15	0.04	0.13
(1,1)	1:16:A:TRP:HD1	1:37:A:GLU:H	4	0.14	0.01	0.15
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD2	3	0.19	0.06	0.16
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD3	3	0.19	0.06	0.16
(1,591)	1:62:A:ILE:HG12	1:102:A:PHE:HA	3	0.13	0.03	0.12
(1,591)	1:62:A:ILE:HG13	1:102:A:PHE:HA	3	0.13	0.03	0.12
(1,871)	1:87:A:PHE:HD1	1:166:A:VAL:HB	3	0.13	0.02	0.13
(1,871)	1:87:A:PHE:HD2	1:166:A:VAL:HB	3	0.13	0.02	0.13
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD1	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD2	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD1	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD2	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD1	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD2	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD1	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD2	3	0.11	0.01	0.11

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Key	Atom-1	Atom-2	Models ¹	Mean (Å)	SD ¹ (Å)	Median (Å)
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD1	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD2	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD1	3	0.11	0.01	0.11
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD2	3	0.11	0.01	0.11
(1,1467)	1:162:A:TYR:HD1	1:163:A:GLN:H	3	0.11	0.01	0.12
(1,1467)	1:162:A:TYR:HD2	1:163:A:GLN:H	3	0.11	0.01	0.12
(1,1507)	1:167:A:TYR:HB2	1:185:A:VAL:HA	3	0.11	0.01	0.11
(1,1507)	1:167:A:TYR:HB3	1:185:A:VAL:HA	3	0.11	0.01	0.11
(1,1480)	1:163:A:GLN:HE21	1:166:A:VAL:H	2	0.19	0.03	0.19
(1,1480)	1:163:A:GLN:HE22	1:166:A:VAL:H	2	0.19	0.03	0.19
(1,753)	1:79:A:THR:HA	1:102:A:PHE:HZ	2	0.18	0.06	0.18
(1,1532)	1:169:A:CYS:HA	1:186:A:TRP:H	2	0.15	0.02	0.15
(1,416)	1:51:A:VAL:HB	1:52:A:ASP:H	2	0.14	0.03	0.14
(1,577)	1:62:A:ILE:H	1:62:A:ILE:HG12	2	0.13	0.02	0.13
(1,577)	1:62:A:ILE:H	1:62:A:ILE:HG13	2	0.13	0.02	0.13
(1,1150)	1:128:A:ILE:HD11	1:168:A:TYR:HE1	2	0.13	0.02	0.13
(1,1150)	1:128:A:ILE:HD11	1:168:A:TYR:HE2	2	0.13	0.02	0.13
(1,1150)	1:128:A:ILE:HD12	1:168:A:TYR:HE1	2	0.13	0.02	0.13
(1,1150)	1:128:A:ILE:HD12	1:168:A:TYR:HE2	2	0.13	0.02	0.13
(1,1150)	1:128:A:ILE:HD13	1:168:A:TYR:HE1	2	0.13	0.02	0.13
(1,1150)	1:128:A:ILE:HD13	1:168:A:TYR:HE2	2	0.13	0.02	0.13
(1,6)	1:18:A:TRP:H	1:37:A:GLU:HA	2	0.12	0.01	0.12
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB1	2	0.12	0.01	0.12
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB2	2	0.12	0.01	0.12
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB3	2	0.12	0.01	0.12
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB1	2	0.12	0.01	0.12
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB2	2	0.12	0.01	0.12
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB3	2	0.12	0.01	0.12
(1,1151)	1:128:A:ILE:HD11	1:186:A:TRP:HE3	2	0.12	0.0	0.12
(1,1151)	1:128:A:ILE:HD12	1:186:A:TRP:HE3	2	0.12	0.0	0.12
(1,1151)	1:128:A:ILE:HD13	1:186:A:TRP:HE3	2	0.12	0.0	0.12
(1,421)	1:51:A:VAL:HG21	1:84:A:PHE:HD1	2	0.11	0.0	0.11
(1,421)	1:51:A:VAL:HG21	1:84:A:PHE:HD2	2	0.11	0.0	0.11
(1,421)	1:51:A:VAL:HG22	1:84:A:PHE:HD1	2	0.11	0.0	0.11
(1,421)	1:51:A:VAL:HG22	1:84:A:PHE:HD2	2	0.11	0.0	0.11
(1,421)	1:51:A:VAL:HG23	1:84:A:PHE:HD1	2	0.11	0.0	0.11
(1,421)	1:51:A:VAL:HG23	1:84:A:PHE:HD2	2	0.11	0.0	0.11
(1,855)	1:86:A:VAL:HG11	1:168:A:TYR:HD1	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG11	1:168:A:TYR:HD2	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG12	1:168:A:TYR:HD1	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG12	1:168:A:TYR:HD2	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG13	1:168:A:TYR:HD1	2	0.11	0.01	0.11

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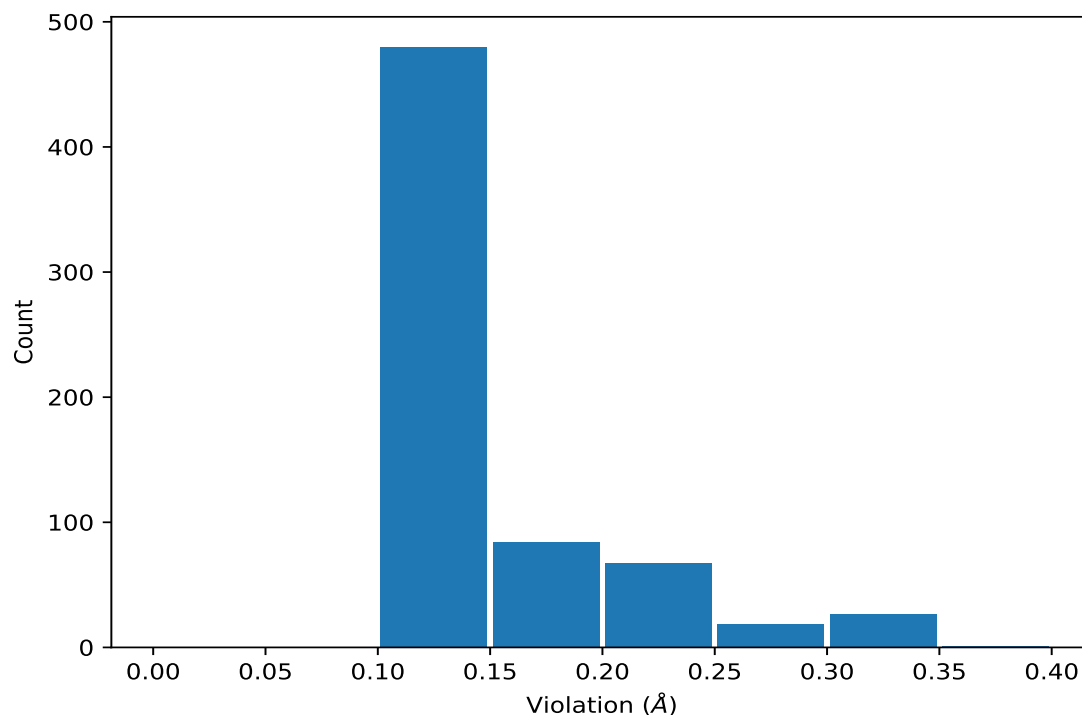
Key	Atom-1	Atom-2	Models ¹	Mean (Å)	SD ¹ (Å)	Median (Å)
(1,855)	1:86:A:VAL:HG13	1:168:A:TYR:HD2	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG21	1:168:A:TYR:HD1	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG21	1:168:A:TYR:HD2	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG22	1:168:A:TYR:HD1	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG22	1:168:A:TYR:HD2	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG23	1:168:A:TYR:HD1	2	0.11	0.01	0.11
(1,855)	1:86:A:VAL:HG23	1:168:A:TYR:HD2	2	0.11	0.01	0.11
(1,62)	1:22:A:SER:H	1:34:A:ARG:HA	2	0.11	0.0	0.11
(1,782)	1:83:A:SER:HA	1:170:A:ALA:H	2	0.11	0.0	0.11
(1,862)	1:87:A:PHE:H	1:95:A:GLN:H	2	0.11	0.0	0.11
(1,885)	1:87:A:PHE:HE1	1:99:A:LYS:H	2	0.11	0.0	0.11
(1,885)	1:87:A:PHE:HE2	1:99:A:LYS:H	2	0.11	0.0	0.11

¹Number of violated models, ²Standard deviation

9.5 All violated distance restraints [i](#)

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

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



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

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

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1327)	1:147:A:HIS:HD1	1:148:A:ALA:H	20	0.38
(1,1294)	1:144:A:TYR:H	1:147:A:HIS:HD1	20	0.35
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	4	0.32
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	4	0.32
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	4	0.32
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	8	0.32
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	8	0.32
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	8	0.32
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	2	0.32
(1,1408)	1:154:A:THR:H	1:154:A:THR:HB	16	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	1	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	1	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	1	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	2	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	2	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	2	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	3	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	3	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	3	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	12	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	12	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	12	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	17	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	17	0.31
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	17	0.31
(1,449)	1:53:A:GLU:H	1:53:A:GLU:HG2	19	0.31
(1,449)	1:53:A:GLU:H	1:53:A:GLU:HG3	19	0.31
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	10	0.31
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	19	0.3
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	19	0.3
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	6	0.3
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	6	0.3
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	6	0.3
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG21	14	0.3
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG22	14	0.3
(1,1345)	1:149:A:THR:H	1:149:A:THR:HG23	14	0.3
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD2	13	0.29

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD3	13	0.29
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	17	0.27
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	17	0.27
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD2	6	0.27
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD3	6	0.27
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	1	0.27
(1,1224)	1:133:A:THR:HG21	1:185:A:VAL:HA	18	0.26
(1,1224)	1:133:A:THR:HG22	1:185:A:VAL:HA	18	0.26
(1,1224)	1:133:A:THR:HG23	1:185:A:VAL:HA	18	0.26
(1,978)	1:98:A:LEU:HG	1:99:A:LYS:H	20	0.26
(1,1238)	1:135:A:PHE:H	1:183:A:ASN:H	12	0.23
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	8	0.23
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG11	19	0.23
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG12	19	0.23
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG13	19	0.23
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG21	19	0.23
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG22	19	0.23
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG23	19	0.23
(1,753)	1:79:A:THR:HA	1:102:A:PHE:HZ	13	0.23
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	4	0.23
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	7	0.23
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	11	0.23
(1,1531)	1:169:A:CYS:H	1:186:A:TRP:H	19	0.22
(1,1480)	1:163:A:GLN:HE21	1:166:A:VAL:H	19	0.22
(1,1480)	1:163:A:GLN:HE22	1:166:A:VAL:H	19	0.22
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG11	14	0.22
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG12	14	0.22
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG13	14	0.22
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG21	14	0.22
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG22	14	0.22
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG23	14	0.22
(1,601)	1:63:A:MET:H	1:63:A:MET:HG2	9	0.22
(1,601)	1:63:A:MET:H	1:63:A:MET:HG3	9	0.22
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD1	13	0.22
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD2	13	0.22
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	3	0.21
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	18	0.21
(1,1453)	1:161:A:THR:HA	1:190:A:ALA:H	8	0.2
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD2	15	0.2
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD3	15	0.2
(1,423)	1:51:A:VAL:HG11	1:55:A:LEU:HD11	10	0.2
(1,423)	1:51:A:VAL:HG11	1:55:A:LEU:HD12	10	0.2

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,423)	1:51:A:VAL:HG11	1:55:A:LEU:HD13	10	0.2
(1,423)	1:51:A:VAL:HG11	1:55:A:LEU:HD21	10	0.2
(1,423)	1:51:A:VAL:HG11	1:55:A:LEU:HD22	10	0.2
(1,423)	1:51:A:VAL:HG11	1:55:A:LEU:HD23	10	0.2
(1,423)	1:51:A:VAL:HG12	1:55:A:LEU:HD11	10	0.2
(1,423)	1:51:A:VAL:HG12	1:55:A:LEU:HD12	10	0.2
(1,423)	1:51:A:VAL:HG12	1:55:A:LEU:HD13	10	0.2
(1,423)	1:51:A:VAL:HG12	1:55:A:LEU:HD21	10	0.2
(1,423)	1:51:A:VAL:HG12	1:55:A:LEU:HD22	10	0.2
(1,423)	1:51:A:VAL:HG12	1:55:A:LEU:HD23	10	0.2
(1,423)	1:51:A:VAL:HG13	1:55:A:LEU:HD11	10	0.2
(1,423)	1:51:A:VAL:HG13	1:55:A:LEU:HD12	10	0.2
(1,423)	1:51:A:VAL:HG13	1:55:A:LEU:HD13	10	0.2
(1,423)	1:51:A:VAL:HG13	1:55:A:LEU:HD21	10	0.2
(1,423)	1:51:A:VAL:HG13	1:55:A:LEU:HD22	10	0.2
(1,423)	1:51:A:VAL:HG13	1:55:A:LEU:HD23	10	0.2
(1,423)	1:51:A:VAL:HG21	1:55:A:LEU:HD11	10	0.2
(1,423)	1:51:A:VAL:HG21	1:55:A:LEU:HD12	10	0.2
(1,423)	1:51:A:VAL:HG21	1:55:A:LEU:HD13	10	0.2
(1,423)	1:51:A:VAL:HG21	1:55:A:LEU:HD21	10	0.2
(1,423)	1:51:A:VAL:HG21	1:55:A:LEU:HD22	10	0.2
(1,423)	1:51:A:VAL:HG21	1:55:A:LEU:HD23	10	0.2
(1,423)	1:51:A:VAL:HG22	1:55:A:LEU:HD11	10	0.2
(1,423)	1:51:A:VAL:HG22	1:55:A:LEU:HD12	10	0.2
(1,423)	1:51:A:VAL:HG22	1:55:A:LEU:HD13	10	0.2
(1,423)	1:51:A:VAL:HG22	1:55:A:LEU:HD21	10	0.2
(1,423)	1:51:A:VAL:HG22	1:55:A:LEU:HD22	10	0.2
(1,423)	1:51:A:VAL:HG22	1:55:A:LEU:HD23	10	0.2
(1,423)	1:51:A:VAL:HG23	1:55:A:LEU:HD11	10	0.2
(1,423)	1:51:A:VAL:HG23	1:55:A:LEU:HD12	10	0.2
(1,423)	1:51:A:VAL:HG23	1:55:A:LEU:HD13	10	0.2
(1,423)	1:51:A:VAL:HG23	1:55:A:LEU:HD21	10	0.2
(1,423)	1:51:A:VAL:HG23	1:55:A:LEU:HD22	10	0.2
(1,423)	1:51:A:VAL:HG23	1:55:A:LEU:HD23	10	0.2
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	13	0.2
(1,1319)	1:145:A:VAL:HG11	1:148:A:ALA:HB1	20	0.19
(1,1319)	1:145:A:VAL:HG11	1:148:A:ALA:HB2	20	0.19
(1,1319)	1:145:A:VAL:HG11	1:148:A:ALA:HB3	20	0.19
(1,1319)	1:145:A:VAL:HG12	1:148:A:ALA:HB1	20	0.19
(1,1319)	1:145:A:VAL:HG12	1:148:A:ALA:HB2	20	0.19
(1,1319)	1:145:A:VAL:HG12	1:148:A:ALA:HB3	20	0.19
(1,1319)	1:145:A:VAL:HG13	1:148:A:ALA:HB1	20	0.19

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1319)	1:145:A:VAL:HG13	1:148:A:ALA:HB2	20	0.19
(1,1319)	1:145:A:VAL:HG13	1:148:A:ALA:HB3	20	0.19
(1,1319)	1:145:A:VAL:HG21	1:148:A:ALA:HB1	20	0.19
(1,1319)	1:145:A:VAL:HG21	1:148:A:ALA:HB2	20	0.19
(1,1319)	1:145:A:VAL:HG21	1:148:A:ALA:HB3	20	0.19
(1,1319)	1:145:A:VAL:HG22	1:148:A:ALA:HB1	20	0.19
(1,1319)	1:145:A:VAL:HG22	1:148:A:ALA:HB2	20	0.19
(1,1319)	1:145:A:VAL:HG22	1:148:A:ALA:HB3	20	0.19
(1,1319)	1:145:A:VAL:HG23	1:148:A:ALA:HB1	20	0.19
(1,1319)	1:145:A:VAL:HG23	1:148:A:ALA:HB2	20	0.19
(1,1319)	1:145:A:VAL:HG23	1:148:A:ALA:HB3	20	0.19
(1,1202)	1:131:A:TYR:HE1	1:190:A:ALA:H	17	0.19
(1,1202)	1:131:A:TYR:HE2	1:190:A:ALA:H	17	0.19
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	6	0.19
(1,306)	1:44:A:VAL:HB	1:100:A:VAL:HB	20	0.19
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE21	3	0.18
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE22	3	0.18
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	19	0.18
(1,1202)	1:131:A:TYR:HE1	1:190:A:ALA:H	3	0.18
(1,1202)	1:131:A:TYR:HE2	1:190:A:ALA:H	3	0.18
(1,416)	1:51:A:VAL:HB	1:52:A:ASP:H	10	0.18
(1,1532)	1:169:A:CYS:HA	1:186:A:TRP:H	8	0.17
(1,810)	1:84:A:PHE:HD1	1:100:A:VAL:HA	6	0.17
(1,810)	1:84:A:PHE:HD2	1:100:A:VAL:HA	6	0.17
(1,591)	1:62:A:ILE:HG12	1:102:A:PHE:HA	20	0.17
(1,591)	1:62:A:ILE:HG13	1:102:A:PHE:HA	20	0.17
(1,563)	1:61:A:LYS:HA	1:120:A:VAL:HG11	20	0.17
(1,563)	1:61:A:LYS:HA	1:120:A:VAL:HG12	20	0.17
(1,563)	1:61:A:LYS:HA	1:120:A:VAL:HG13	20	0.17
(1,563)	1:61:A:LYS:HA	1:120:A:VAL:HG21	20	0.17
(1,563)	1:61:A:LYS:HA	1:120:A:VAL:HG22	20	0.17
(1,563)	1:61:A:LYS:HA	1:120:A:VAL:HG23	20	0.17
(1,322)	1:44:A:VAL:HG11	1:121:A:LYS:H	16	0.17
(1,322)	1:44:A:VAL:HG12	1:121:A:LYS:H	16	0.17
(1,322)	1:44:A:VAL:HG13	1:121:A:LYS:H	16	0.17
(1,322)	1:44:A:VAL:HG21	1:121:A:LYS:H	16	0.17
(1,322)	1:44:A:VAL:HG22	1:121:A:LYS:H	16	0.17
(1,322)	1:44:A:VAL:HG23	1:121:A:LYS:H	16	0.17
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	17	0.17
(1,53)	1:21:A:LEU:HG	1:33:A:GLU:H	12	0.17
(1,1538)	1:170:A:ALA:HB1	1:186:A:TRP:HZ2	19	0.16
(1,1538)	1:170:A:ALA:HB2	1:186:A:TRP:HZ2	19	0.16

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1538)	1:170:A:ALA:HB3	1:186:A:TRP:HZ2	19	0.16
(1,1480)	1:163:A:GLN:HE21	1:166:A:VAL:H	17	0.16
(1,1480)	1:163:A:GLN:HE22	1:166:A:VAL:H	17	0.16
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE21	2	0.16
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE22	2	0.16
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	3	0.16
(1,1453)	1:161:A:THR:HA	1:190:A:ALA:H	16	0.16
(1,1323)	1:147:A:HIS:H	1:147:A:HIS:HD1	20	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG11	11	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG12	11	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG13	11	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG21	11	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG22	11	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG23	11	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG11	17	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG12	17	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG13	17	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG21	17	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG22	17	0.16
(1,822)	1:85:A:ALA:HA	1:166:A:VAL:HG23	17	0.16
(1,810)	1:84:A:PHE:HD1	1:100:A:VAL:HA	10	0.16
(1,810)	1:84:A:PHE:HD2	1:100:A:VAL:HA	10	0.16
(1,791)	1:84:A:PHE:H	1:170:A:ALA:HB1	19	0.16
(1,791)	1:84:A:PHE:H	1:170:A:ALA:HB2	19	0.16
(1,791)	1:84:A:PHE:H	1:170:A:ALA:HB3	19	0.16
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD2	7	0.16
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD3	7	0.16
(1,559)	1:61:A:LYS:H	1:61:A:LYS:HG2	8	0.16
(1,559)	1:61:A:LYS:H	1:61:A:LYS:HG3	8	0.16
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	12	0.16
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	15	0.16
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE1	15	0.16
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE2	15	0.16
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE1	15	0.16
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE2	15	0.16
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	2	0.15
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	2	0.15
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE21	15	0.15
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE22	15	0.15
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	13	0.15
(1,1150)	1:128:A:ILE:HD11	1:168:A:TYR:HE1	17	0.15
(1,1150)	1:128:A:ILE:HD11	1:168:A:TYR:HE2	17	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1150)	1:128:A:ILE:HD12	1:168:A:TYR:HE1	17	0.15
(1,1150)	1:128:A:ILE:HD12	1:168:A:TYR:HE2	17	0.15
(1,1150)	1:128:A:ILE:HD13	1:168:A:TYR:HE1	17	0.15
(1,1150)	1:128:A:ILE:HD13	1:168:A:TYR:HE2	17	0.15
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	11	0.15
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	11	0.15
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	11	0.15
(1,988)	1:101:A:TRP:HD1	1:168:A:TYR:HE1	6	0.15
(1,988)	1:101:A:TRP:HD1	1:168:A:TYR:HE2	6	0.15
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	9	0.15
(1,871)	1:87:A:PHE:HD1	1:166:A:VAL:HB	8	0.15
(1,871)	1:87:A:PHE:HD2	1:166:A:VAL:HB	8	0.15
(1,577)	1:62:A:ILE:H	1:62:A:ILE:HG12	4	0.15
(1,577)	1:62:A:ILE:H	1:62:A:ILE:HG13	4	0.15
(1,529)	1:58:A:ALA:HA	1:61:A:LYS:HG2	1	0.15
(1,529)	1:58:A:ALA:HA	1:61:A:LYS:HG3	1	0.15
(1,471)	1:55:A:LEU:H	1:55:A:LEU:HG	1	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	1	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	2	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	3	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	8	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	9	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	10	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	11	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	13	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	19	0.15
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	20	0.15
(1,160)	1:34:A:ARG:H	1:129:A:THR:HA	17	0.15
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE1	13	0.15
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE2	13	0.15
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE1	13	0.15
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE2	13	0.15
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE1	18	0.15
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE2	18	0.15
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE1	18	0.15
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE2	18	0.15
(1,53)	1:21:A:LEU:HG	1:33:A:GLU:H	10	0.15
(1,1)	1:16:A:TRP:HD1	1:37:A:GLU:H	13	0.15
(1,1)	1:16:A:TRP:HD1	1:37:A:GLU:H	18	0.15
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	3	0.14
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	3	0.14
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	1	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1453)	1:161:A:THR:HA	1:190:A:ALA:H	10	0.14
(1,1448)	1:160:A:ALA:HB1	1:189:A:LYS:HB2	17	0.14
(1,1448)	1:160:A:ALA:HB1	1:189:A:LYS:HB3	17	0.14
(1,1448)	1:160:A:ALA:HB2	1:189:A:LYS:HB2	17	0.14
(1,1448)	1:160:A:ALA:HB2	1:189:A:LYS:HB3	17	0.14
(1,1448)	1:160:A:ALA:HB3	1:189:A:LYS:HB2	17	0.14
(1,1448)	1:160:A:ALA:HB3	1:189:A:LYS:HB3	17	0.14
(1,1314)	1:145:A:VAL:H	1:148:A:ALA:HB1	20	0.14
(1,1314)	1:145:A:VAL:H	1:148:A:ALA:HB2	20	0.14
(1,1314)	1:145:A:VAL:H	1:148:A:ALA:HB3	20	0.14
(1,1221)	1:133:A:THR:HG21	1:151:A:LEU:H	20	0.14
(1,1221)	1:133:A:THR:HG22	1:151:A:LEU:H	20	0.14
(1,1221)	1:133:A:THR:HG23	1:151:A:LEU:H	20	0.14
(1,1202)	1:131:A:TYR:HE1	1:190:A:ALA:H	12	0.14
(1,1202)	1:131:A:TYR:HE2	1:190:A:ALA:H	12	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	6	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	6	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	6	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	8	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	8	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	8	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	19	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	19	0.14
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	19	0.14
(1,834)	1:86:A:VAL:H	1:166:A:VAL:HA	8	0.14
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD2	1	0.14
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD3	1	0.14
(1,551)	1:59:A:MET:HE1	1:62:A:ILE:HG21	6	0.14
(1,551)	1:59:A:MET:HE1	1:62:A:ILE:HG22	6	0.14
(1,551)	1:59:A:MET:HE1	1:62:A:ILE:HG23	6	0.14
(1,551)	1:59:A:MET:HE2	1:62:A:ILE:HG21	6	0.14
(1,551)	1:59:A:MET:HE2	1:62:A:ILE:HG22	6	0.14
(1,551)	1:59:A:MET:HE2	1:62:A:ILE:HG23	6	0.14
(1,551)	1:59:A:MET:HE3	1:62:A:ILE:HG21	6	0.14
(1,551)	1:59:A:MET:HE3	1:62:A:ILE:HG22	6	0.14
(1,551)	1:59:A:MET:HE3	1:62:A:ILE:HG23	6	0.14
(1,322)	1:44:A:VAL:HG11	1:121:A:LYS:H	12	0.14
(1,322)	1:44:A:VAL:HG12	1:121:A:LYS:H	12	0.14
(1,322)	1:44:A:VAL:HG13	1:121:A:LYS:H	12	0.14
(1,322)	1:44:A:VAL:HG21	1:121:A:LYS:H	12	0.14
(1,322)	1:44:A:VAL:HG22	1:121:A:LYS:H	12	0.14
(1,322)	1:44:A:VAL:HG23	1:121:A:LYS:H	12	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD1	17	0.14
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD2	17	0.14
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	4	0.14
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	5	0.14
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	14	0.14
(1,53)	1:21:A:LEU:HG	1:33:A:GLU:H	2	0.14
(1,1)	1:16:A:TRP:HD1	1:37:A:GLU:H	20	0.14
(1,1532)	1:169:A:CYS:HA	1:186:A:TRP:H	17	0.13
(1,1507)	1:167:A:TYR:HB2	1:185:A:VAL:HA	18	0.13
(1,1507)	1:167:A:TYR:HB3	1:185:A:VAL:HA	18	0.13
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	5	0.13
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	5	0.13
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE21	5	0.13
(1,1476)	1:163:A:GLN:HA	1:163:A:GLN:HE22	5	0.13
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	2	0.13
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	9	0.13
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	11	0.13
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	12	0.13
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB1	18	0.13
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB2	18	0.13
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB3	18	0.13
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB1	18	0.13
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB2	18	0.13
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB3	18	0.13
(1,1264)	1:139:A:ALA:HB1	1:143:A:ASP:H	20	0.13
(1,1264)	1:139:A:ALA:HB2	1:143:A:ASP:H	20	0.13
(1,1264)	1:139:A:ALA:HB3	1:143:A:ASP:H	20	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	9	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	9	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	9	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	16	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	16	0.13
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	16	0.13
(1,956)	1:94:A:LEU:H	1:94:A:LEU:HG	9	0.13
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	1	0.13
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	11	0.13
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	14	0.13
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	19	0.13
(1,871)	1:87:A:PHE:HD1	1:166:A:VAL:HB	5	0.13
(1,871)	1:87:A:PHE:HD2	1:166:A:VAL:HB	5	0.13
(1,810)	1:84:A:PHE:HD1	1:100:A:VAL:HA	19	0.13
(1,810)	1:84:A:PHE:HD2	1:100:A:VAL:HA	19	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD1	1	0.13
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD2	1	0.13
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD1	1	0.13
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD2	1	0.13
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD1	1	0.13
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD2	1	0.13
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD1	1	0.13
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD2	1	0.13
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD1	1	0.13
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD2	1	0.13
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD1	1	0.13
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD2	1	0.13
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD2	3	0.13
(1,609)	1:64:A:LYS:H	1:64:A:LYS:HD3	3	0.13
(1,308)	1:44:A:VAL:HB	1:120:A:VAL:HG11	3	0.13
(1,308)	1:44:A:VAL:HB	1:120:A:VAL:HG12	3	0.13
(1,308)	1:44:A:VAL:HB	1:120:A:VAL:HG13	3	0.13
(1,308)	1:44:A:VAL:HB	1:120:A:VAL:HG21	3	0.13
(1,308)	1:44:A:VAL:HB	1:120:A:VAL:HG22	3	0.13
(1,308)	1:44:A:VAL:HB	1:120:A:VAL:HG23	3	0.13
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE1	16	0.13
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE2	16	0.13
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE1	16	0.13
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE2	16	0.13
(1,53)	1:21:A:LEU:HG	1:33:A:GLU:H	17	0.13
(1,6)	1:18:A:TRP:H	1:37:A:GLU:HA	2	0.13
(1,1536)	1:170:A:ALA:HB1	1:186:A:TRP:HD1	14	0.12
(1,1536)	1:170:A:ALA:HB2	1:186:A:TRP:HD1	14	0.12
(1,1536)	1:170:A:ALA:HB3	1:186:A:TRP:HD1	14	0.12
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	15	0.12
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	15	0.12
(1,1467)	1:162:A:TYR:HD1	1:163:A:GLN:H	9	0.12
(1,1467)	1:162:A:TYR:HD2	1:163:A:GLN:H	9	0.12
(1,1467)	1:162:A:TYR:HD1	1:163:A:GLN:H	12	0.12
(1,1467)	1:162:A:TYR:HD2	1:163:A:GLN:H	12	0.12
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	5	0.12
(1,1462)	1:162:A:TYR:HB2	1:190:A:ALA:H	17	0.12
(1,1453)	1:161:A:THR:HA	1:190:A:ALA:H	6	0.12
(1,1453)	1:161:A:THR:HA	1:190:A:ALA:H	7	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG21	13	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG22	13	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG23	13	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG21	16	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG22	16	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG23	16	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG21	17	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG22	17	0.12
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG23	17	0.12
(1,1428)	1:155:A:LEU:HD11	1:162:A:TYR:HD1	18	0.12
(1,1428)	1:155:A:LEU:HD11	1:162:A:TYR:HD2	18	0.12
(1,1428)	1:155:A:LEU:HD12	1:162:A:TYR:HD1	18	0.12
(1,1428)	1:155:A:LEU:HD12	1:162:A:TYR:HD2	18	0.12
(1,1428)	1:155:A:LEU:HD13	1:162:A:TYR:HD1	18	0.12
(1,1428)	1:155:A:LEU:HD13	1:162:A:TYR:HD2	18	0.12
(1,1428)	1:155:A:LEU:HD21	1:162:A:TYR:HD1	18	0.12
(1,1428)	1:155:A:LEU:HD21	1:162:A:TYR:HD2	18	0.12
(1,1428)	1:155:A:LEU:HD22	1:162:A:TYR:HD1	18	0.12
(1,1428)	1:155:A:LEU:HD22	1:162:A:TYR:HD2	18	0.12
(1,1428)	1:155:A:LEU:HD23	1:162:A:TYR:HD1	18	0.12
(1,1428)	1:155:A:LEU:HD23	1:162:A:TYR:HD2	18	0.12
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB1	12	0.12
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB2	12	0.12
(1,1307)	1:144:A:TYR:HE1	1:170:A:ALA:HB3	12	0.12
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB1	12	0.12
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB2	12	0.12
(1,1307)	1:144:A:TYR:HE2	1:170:A:ALA:HB3	12	0.12
(1,1151)	1:128:A:ILE:HD11	1:186:A:TRP:HE3	11	0.12
(1,1151)	1:128:A:ILE:HD12	1:186:A:TRP:HE3	11	0.12
(1,1151)	1:128:A:ILE:HD13	1:186:A:TRP:HE3	11	0.12
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	17	0.12
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	17	0.12
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	17	0.12
(1,892)	1:88:A:PRO:HD2	1:167:A:TYR:HD1	8	0.12
(1,892)	1:88:A:PRO:HD2	1:167:A:TYR:HD2	8	0.12
(1,855)	1:86:A:VAL:HG11	1:168:A:TYR:HD1	20	0.12
(1,855)	1:86:A:VAL:HG11	1:168:A:TYR:HD2	20	0.12
(1,855)	1:86:A:VAL:HG12	1:168:A:TYR:HD1	20	0.12
(1,855)	1:86:A:VAL:HG12	1:168:A:TYR:HD2	20	0.12
(1,855)	1:86:A:VAL:HG13	1:168:A:TYR:HD1	20	0.12
(1,855)	1:86:A:VAL:HG13	1:168:A:TYR:HD2	20	0.12
(1,855)	1:86:A:VAL:HG21	1:168:A:TYR:HD1	20	0.12
(1,855)	1:86:A:VAL:HG21	1:168:A:TYR:HD2	20	0.12
(1,855)	1:86:A:VAL:HG22	1:168:A:TYR:HD1	20	0.12
(1,855)	1:86:A:VAL:HG22	1:168:A:TYR:HD2	20	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,855)	1:86:A:VAL:HG23	1:168:A:TYR:HD1	20	0.12
(1,855)	1:86:A:VAL:HG23	1:168:A:TYR:HD2	20	0.12
(1,810)	1:84:A:PHE:HD1	1:100:A:VAL:HA	3	0.12
(1,810)	1:84:A:PHE:HD2	1:100:A:VAL:HA	3	0.12
(1,753)	1:79:A:THR:HA	1:102:A:PHE:HZ	15	0.12
(1,591)	1:62:A:ILE:HG12	1:102:A:PHE:HA	1	0.12
(1,591)	1:62:A:ILE:HG13	1:102:A:PHE:HA	1	0.12
(1,569)	1:61:A:LYS:HB2	1:120:A:VAL:HG11	1	0.12
(1,569)	1:61:A:LYS:HB2	1:120:A:VAL:HG12	1	0.12
(1,569)	1:61:A:LYS:HB2	1:120:A:VAL:HG13	1	0.12
(1,569)	1:61:A:LYS:HB2	1:120:A:VAL:HG21	1	0.12
(1,569)	1:61:A:LYS:HB2	1:120:A:VAL:HG22	1	0.12
(1,569)	1:61:A:LYS:HB2	1:120:A:VAL:HG23	1	0.12
(1,569)	1:61:A:LYS:HB3	1:120:A:VAL:HG11	1	0.12
(1,569)	1:61:A:LYS:HB3	1:120:A:VAL:HG12	1	0.12
(1,569)	1:61:A:LYS:HB3	1:120:A:VAL:HG13	1	0.12
(1,569)	1:61:A:LYS:HB3	1:120:A:VAL:HG21	1	0.12
(1,569)	1:61:A:LYS:HB3	1:120:A:VAL:HG22	1	0.12
(1,569)	1:61:A:LYS:HB3	1:120:A:VAL:HG23	1	0.12
(1,348)	1:46:A:VAL:H	1:99:A:LYS:H	10	0.12
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD1	4	0.12
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD2	4	0.12
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD1	12	0.12
(1,191)	1:39:A:GLY:H	1:41:A:PHE:HD2	12	0.12
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	18	0.12
(1,175)	1:36:A:CYS:H	1:127:A:GLY:H	4	0.12
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE1	14	0.12
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE2	14	0.12
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE1	14	0.12
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE2	14	0.12
(1,53)	1:21:A:LEU:HG	1:33:A:GLU:H	9	0.12
(1,6)	1:18:A:TRP:H	1:37:A:GLU:HA	15	0.12
(1,1)	1:16:A:TRP:HD1	1:37:A:GLU:H	19	0.12
(1,1507)	1:167:A:TYR:HB2	1:185:A:VAL:HA	4	0.11
(1,1507)	1:167:A:TYR:HB3	1:185:A:VAL:HA	4	0.11
(1,1484)	1:163:A:GLN:HE21	1:190:A:ALA:HA	10	0.11
(1,1484)	1:163:A:GLN:HE22	1:190:A:ALA:HA	10	0.11
(1,1453)	1:161:A:THR:HA	1:190:A:ALA:H	4	0.11
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG21	6	0.11
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG22	6	0.11
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG23	6	0.11
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG21	7	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG22	7	0.11
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG23	7	0.11
(1,1342)	1:148:A:ALA:HB1	1:185:A:VAL:HG11	18	0.11
(1,1342)	1:148:A:ALA:HB1	1:185:A:VAL:HG12	18	0.11
(1,1342)	1:148:A:ALA:HB1	1:185:A:VAL:HG13	18	0.11
(1,1342)	1:148:A:ALA:HB1	1:185:A:VAL:HG21	18	0.11
(1,1342)	1:148:A:ALA:HB1	1:185:A:VAL:HG22	18	0.11
(1,1342)	1:148:A:ALA:HB1	1:185:A:VAL:HG23	18	0.11
(1,1342)	1:148:A:ALA:HB2	1:185:A:VAL:HG11	18	0.11
(1,1342)	1:148:A:ALA:HB2	1:185:A:VAL:HG12	18	0.11
(1,1342)	1:148:A:ALA:HB2	1:185:A:VAL:HG13	18	0.11
(1,1342)	1:148:A:ALA:HB2	1:185:A:VAL:HG21	18	0.11
(1,1342)	1:148:A:ALA:HB2	1:185:A:VAL:HG22	18	0.11
(1,1342)	1:148:A:ALA:HB2	1:185:A:VAL:HG23	18	0.11
(1,1342)	1:148:A:ALA:HB3	1:185:A:VAL:HG11	18	0.11
(1,1342)	1:148:A:ALA:HB3	1:185:A:VAL:HG12	18	0.11
(1,1342)	1:148:A:ALA:HB3	1:185:A:VAL:HG13	18	0.11
(1,1342)	1:148:A:ALA:HB3	1:185:A:VAL:HG21	18	0.11
(1,1342)	1:148:A:ALA:HB3	1:185:A:VAL:HG22	18	0.11
(1,1342)	1:148:A:ALA:HB3	1:185:A:VAL:HG23	18	0.11
(1,1331)	1:147:A:HIS:HB2	1:185:A:VAL:HG11	18	0.11
(1,1331)	1:147:A:HIS:HB2	1:185:A:VAL:HG12	18	0.11
(1,1331)	1:147:A:HIS:HB2	1:185:A:VAL:HG13	18	0.11
(1,1331)	1:147:A:HIS:HB2	1:185:A:VAL:HG21	18	0.11
(1,1331)	1:147:A:HIS:HB2	1:185:A:VAL:HG22	18	0.11
(1,1331)	1:147:A:HIS:HB2	1:185:A:VAL:HG23	18	0.11
(1,1331)	1:147:A:HIS:HB3	1:185:A:VAL:HG11	18	0.11
(1,1331)	1:147:A:HIS:HB3	1:185:A:VAL:HG12	18	0.11
(1,1331)	1:147:A:HIS:HB3	1:185:A:VAL:HG13	18	0.11
(1,1331)	1:147:A:HIS:HB3	1:185:A:VAL:HG21	18	0.11
(1,1331)	1:147:A:HIS:HB3	1:185:A:VAL:HG22	18	0.11
(1,1331)	1:147:A:HIS:HB3	1:185:A:VAL:HG23	18	0.11
(1,1226)	1:133:A:THR:HG21	1:186:A:TRP:HD1	16	0.11
(1,1226)	1:133:A:THR:HG22	1:186:A:TRP:HD1	16	0.11
(1,1226)	1:133:A:THR:HG23	1:186:A:TRP:HD1	16	0.11
(1,1220)	1:133:A:THR:HG21	1:148:A:ALA:HA	20	0.11
(1,1220)	1:133:A:THR:HG22	1:148:A:ALA:HA	20	0.11
(1,1220)	1:133:A:THR:HG23	1:148:A:ALA:HA	20	0.11
(1,1151)	1:128:A:ILE:HD11	1:186:A:TRP:HE3	14	0.11
(1,1151)	1:128:A:ILE:HD12	1:186:A:TRP:HE3	14	0.11
(1,1151)	1:128:A:ILE:HD13	1:186:A:TRP:HE3	14	0.11
(1,1150)	1:128:A:ILE:HD11	1:168:A:TYR:HE1	8	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1150)	1:128:A:ILE:HD11	1:168:A:TYR:HE2	8	0.11
(1,1150)	1:128:A:ILE:HD12	1:168:A:TYR:HE1	8	0.11
(1,1150)	1:128:A:ILE:HD12	1:168:A:TYR:HE2	8	0.11
(1,1150)	1:128:A:ILE:HD13	1:168:A:TYR:HE1	8	0.11
(1,1150)	1:128:A:ILE:HD13	1:168:A:TYR:HE2	8	0.11
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	4	0.11
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	4	0.11
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	4	0.11
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	5	0.11
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	5	0.11
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	5	0.11
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	16	0.11
(1,894)	1:88:A:PRO:HD3	1:166:A:VAL:H	18	0.11
(1,885)	1:87:A:PHE:HE1	1:99:A:LYS:H	11	0.11
(1,885)	1:87:A:PHE:HE2	1:99:A:LYS:H	11	0.11
(1,871)	1:87:A:PHE:HD1	1:166:A:VAL:HB	16	0.11
(1,871)	1:87:A:PHE:HD2	1:166:A:VAL:HB	16	0.11
(1,862)	1:87:A:PHE:H	1:95:A:GLN:H	9	0.11
(1,810)	1:84:A:PHE:HD1	1:100:A:VAL:HA	9	0.11
(1,810)	1:84:A:PHE:HD2	1:100:A:VAL:HA	9	0.11
(1,810)	1:84:A:PHE:HD1	1:100:A:VAL:HA	15	0.11
(1,810)	1:84:A:PHE:HD2	1:100:A:VAL:HA	15	0.11
(1,803)	1:84:A:PHE:HZ	1:98:A:LEU:HD11	20	0.11
(1,803)	1:84:A:PHE:HZ	1:98:A:LEU:HD12	20	0.11
(1,803)	1:84:A:PHE:HZ	1:98:A:LEU:HD13	20	0.11
(1,803)	1:84:A:PHE:HZ	1:98:A:LEU:HD21	20	0.11
(1,803)	1:84:A:PHE:HZ	1:98:A:LEU:HD22	20	0.11
(1,803)	1:84:A:PHE:HZ	1:98:A:LEU:HD23	20	0.11
(1,782)	1:83:A:SER:HA	1:170:A:ALA:H	12	0.11
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD2	17	0.11
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD3	17	0.11
(1,701)	1:71:A:ASP:H	1:74:A:VAL:H	16	0.11
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD1	11	0.11
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD2	11	0.11
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD1	11	0.11
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD2	11	0.11
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD1	11	0.11
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD2	11	0.11
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD1	11	0.11
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD2	11	0.11
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD1	11	0.11
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD2	11	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD1	11	0.11
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD2	11	0.11
(1,577)	1:62:A:ILE:H	1:62:A:ILE:HG12	10	0.11
(1,577)	1:62:A:ILE:H	1:62:A:ILE:HG13	10	0.11
(1,421)	1:51:A:VAL:HG21	1:84:A:PHE:HD1	10	0.11
(1,421)	1:51:A:VAL:HG21	1:84:A:PHE:HD2	10	0.11
(1,421)	1:51:A:VAL:HG22	1:84:A:PHE:HD1	10	0.11
(1,421)	1:51:A:VAL:HG22	1:84:A:PHE:HD2	10	0.11
(1,421)	1:51:A:VAL:HG23	1:84:A:PHE:HD1	10	0.11
(1,421)	1:51:A:VAL:HG23	1:84:A:PHE:HD2	10	0.11
(1,421)	1:51:A:VAL:HG21	1:84:A:PHE:HD1	20	0.11
(1,421)	1:51:A:VAL:HG21	1:84:A:PHE:HD2	20	0.11
(1,421)	1:51:A:VAL:HG22	1:84:A:PHE:HD1	20	0.11
(1,421)	1:51:A:VAL:HG22	1:84:A:PHE:HD2	20	0.11
(1,421)	1:51:A:VAL:HG23	1:84:A:PHE:HD1	20	0.11
(1,421)	1:51:A:VAL:HG23	1:84:A:PHE:HD2	20	0.11
(1,416)	1:51:A:VAL:HB	1:52:A:ASP:H	20	0.11
(1,373)	1:47:A:THR:H	1:49:A:LYS:HE2	19	0.11
(1,373)	1:47:A:THR:H	1:49:A:LYS:HE3	19	0.11
(1,366)	1:46:A:VAL:HG11	1:57:A:GLU:H	19	0.11
(1,366)	1:46:A:VAL:HG12	1:57:A:GLU:H	19	0.11
(1,366)	1:46:A:VAL:HG13	1:57:A:GLU:H	19	0.11
(1,366)	1:46:A:VAL:HG21	1:57:A:GLU:H	19	0.11
(1,366)	1:46:A:VAL:HG22	1:57:A:GLU:H	19	0.11
(1,366)	1:46:A:VAL:HG23	1:57:A:GLU:H	19	0.11
(1,322)	1:44:A:VAL:HG11	1:121:A:LYS:H	8	0.11
(1,322)	1:44:A:VAL:HG12	1:121:A:LYS:H	8	0.11
(1,322)	1:44:A:VAL:HG13	1:121:A:LYS:H	8	0.11
(1,322)	1:44:A:VAL:HG21	1:121:A:LYS:H	8	0.11
(1,322)	1:44:A:VAL:HG22	1:121:A:LYS:H	8	0.11
(1,322)	1:44:A:VAL:HG23	1:121:A:LYS:H	8	0.11
(1,322)	1:44:A:VAL:HG11	1:121:A:LYS:H	9	0.11
(1,322)	1:44:A:VAL:HG12	1:121:A:LYS:H	9	0.11
(1,322)	1:44:A:VAL:HG13	1:121:A:LYS:H	9	0.11
(1,322)	1:44:A:VAL:HG21	1:121:A:LYS:H	9	0.11
(1,322)	1:44:A:VAL:HG22	1:121:A:LYS:H	9	0.11
(1,322)	1:44:A:VAL:HG23	1:121:A:LYS:H	9	0.11
(1,322)	1:44:A:VAL:HG11	1:121:A:LYS:H	14	0.11
(1,322)	1:44:A:VAL:HG12	1:121:A:LYS:H	14	0.11
(1,322)	1:44:A:VAL:HG13	1:121:A:LYS:H	14	0.11
(1,322)	1:44:A:VAL:HG21	1:121:A:LYS:H	14	0.11
(1,322)	1:44:A:VAL:HG22	1:121:A:LYS:H	14	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,322)	1:44:A:VAL:HG23	1:121:A:LYS:H	14	0.11
(1,183)	1:37:A:GLU:HA	1:38:A:GLY:H	16	0.11
(1,113)	1:29:A:VAL:HG11	1:150:A:GLN:HA	20	0.11
(1,113)	1:29:A:VAL:HG12	1:150:A:GLN:HA	20	0.11
(1,113)	1:29:A:VAL:HG13	1:150:A:GLN:HA	20	0.11
(1,113)	1:29:A:VAL:HG21	1:150:A:GLN:HA	20	0.11
(1,113)	1:29:A:VAL:HG22	1:150:A:GLN:HA	20	0.11
(1,113)	1:29:A:VAL:HG23	1:150:A:GLN:HA	20	0.11
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE1	7	0.11
(1,86)	1:24:A:GLY:HA2	1:31:A:TYR:HE2	7	0.11
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE1	7	0.11
(1,86)	1:24:A:GLY:HA3	1:31:A:TYR:HE2	7	0.11
(1,62)	1:22:A:SER:H	1:34:A:ARG:HA	2	0.11
(1,8)	1:18:A:TRP:HA	1:37:A:GLU:H	13	0.11
(1,1528)	1:168:A:TYR:HD1	1:188:A:VAL:HG11	18	0.1
(1,1528)	1:168:A:TYR:HD1	1:188:A:VAL:HG12	18	0.1
(1,1528)	1:168:A:TYR:HD1	1:188:A:VAL:HG13	18	0.1
(1,1528)	1:168:A:TYR:HD1	1:188:A:VAL:HG21	18	0.1
(1,1528)	1:168:A:TYR:HD1	1:188:A:VAL:HG22	18	0.1
(1,1528)	1:168:A:TYR:HD1	1:188:A:VAL:HG23	18	0.1
(1,1528)	1:168:A:TYR:HD2	1:188:A:VAL:HG11	18	0.1
(1,1528)	1:168:A:TYR:HD2	1:188:A:VAL:HG12	18	0.1
(1,1528)	1:168:A:TYR:HD2	1:188:A:VAL:HG13	18	0.1
(1,1528)	1:168:A:TYR:HD2	1:188:A:VAL:HG21	18	0.1
(1,1528)	1:168:A:TYR:HD2	1:188:A:VAL:HG22	18	0.1
(1,1528)	1:168:A:TYR:HD2	1:188:A:VAL:HG23	18	0.1
(1,1507)	1:167:A:TYR:HB2	1:185:A:VAL:HA	20	0.1
(1,1507)	1:167:A:TYR:HB3	1:185:A:VAL:HA	20	0.1
(1,1467)	1:162:A:TYR:HD1	1:163:A:GLN:H	1	0.1
(1,1467)	1:162:A:TYR:HD2	1:163:A:GLN:H	1	0.1
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG21	10	0.1
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG22	10	0.1
(1,1432)	1:156:A:GLU:H	1:158:A:THR:HG23	10	0.1
(1,1380)	1:152:A:ARG:H	1:154:A:THR:H	2	0.1
(1,1258)	1:138:A:TYR:HE1	1:178:A:PRO:HB2	19	0.1
(1,1258)	1:138:A:TYR:HE1	1:178:A:PRO:HB3	19	0.1
(1,1258)	1:138:A:TYR:HE2	1:178:A:PRO:HB2	19	0.1
(1,1258)	1:138:A:TYR:HE2	1:178:A:PRO:HB3	19	0.1
(1,1202)	1:131:A:TYR:HE1	1:190:A:ALA:H	18	0.1
(1,1202)	1:131:A:TYR:HE2	1:190:A:ALA:H	18	0.1
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	3	0.1
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	3	0.1

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	3	0.1
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD11	7	0.1
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD12	7	0.1
(1,1010)	1:104:A:ILE:H	1:122:A:ILE:HD13	7	0.1
(1,885)	1:87:A:PHE:HE1	1:99:A:LYS:H	5	0.1
(1,885)	1:87:A:PHE:HE2	1:99:A:LYS:H	5	0.1
(1,862)	1:87:A:PHE:H	1:95:A:GLN:H	5	0.1
(1,855)	1:86:A:VAL:HG11	1:168:A:TYR:HD1	16	0.1
(1,855)	1:86:A:VAL:HG11	1:168:A:TYR:HD2	16	0.1
(1,855)	1:86:A:VAL:HG12	1:168:A:TYR:HD1	16	0.1
(1,855)	1:86:A:VAL:HG12	1:168:A:TYR:HD2	16	0.1
(1,855)	1:86:A:VAL:HG13	1:168:A:TYR:HD1	16	0.1
(1,855)	1:86:A:VAL:HG13	1:168:A:TYR:HD2	16	0.1
(1,855)	1:86:A:VAL:HG21	1:168:A:TYR:HD1	16	0.1
(1,855)	1:86:A:VAL:HG21	1:168:A:TYR:HD2	16	0.1
(1,855)	1:86:A:VAL:HG22	1:168:A:TYR:HD1	16	0.1
(1,855)	1:86:A:VAL:HG22	1:168:A:TYR:HD2	16	0.1
(1,855)	1:86:A:VAL:HG23	1:168:A:TYR:HD1	16	0.1
(1,855)	1:86:A:VAL:HG23	1:168:A:TYR:HD2	16	0.1
(1,782)	1:83:A:SER:HA	1:170:A:ALA:H	15	0.1
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD2	2	0.1
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD3	2	0.1
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD2	10	0.1
(1,757)	1:80:A:VAL:H	1:105:A:PRO:HD3	10	0.1
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD1	6	0.1
(1,661)	1:66:A:VAL:HG11	1:102:A:PHE:HD2	6	0.1
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD1	6	0.1
(1,661)	1:66:A:VAL:HG12	1:102:A:PHE:HD2	6	0.1
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD1	6	0.1
(1,661)	1:66:A:VAL:HG13	1:102:A:PHE:HD2	6	0.1
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD1	6	0.1
(1,661)	1:66:A:VAL:HG21	1:102:A:PHE:HD2	6	0.1
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD1	6	0.1
(1,661)	1:66:A:VAL:HG22	1:102:A:PHE:HD2	6	0.1
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD1	6	0.1
(1,661)	1:66:A:VAL:HG23	1:102:A:PHE:HD2	6	0.1
(1,591)	1:62:A:ILE:HG12	1:102:A:PHE:HA	11	0.1
(1,591)	1:62:A:ILE:HG13	1:102:A:PHE:HA	11	0.1
(1,279)	1:43:A:THR:HA	1:100:A:VAL:H	15	0.1
(1,261)	1:42:A:ALA:HA	1:62:A:ILE:HD11	9	0.1
(1,261)	1:42:A:ALA:HA	1:62:A:ILE:HD12	9	0.1
(1,261)	1:42:A:ALA:HA	1:62:A:ILE:HD13	9	0.1

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,157)	1:33:A:GLU:HB2	1:131:A:TYR:HE1	15	0.1
(1,157)	1:33:A:GLU:HB2	1:131:A:TYR:HE2	15	0.1
(1,157)	1:33:A:GLU:HB3	1:131:A:TYR:HE1	15	0.1
(1,157)	1:33:A:GLU:HB3	1:131:A:TYR:HE2	15	0.1
(1,139)	1:31:A:TYR:HE1	1:154:A:THR:HG21	16	0.1
(1,139)	1:31:A:TYR:HE1	1:154:A:THR:HG22	16	0.1
(1,139)	1:31:A:TYR:HE1	1:154:A:THR:HG23	16	0.1
(1,139)	1:31:A:TYR:HE2	1:154:A:THR:HG21	16	0.1
(1,139)	1:31:A:TYR:HE2	1:154:A:THR:HG22	16	0.1
(1,139)	1:31:A:TYR:HE2	1:154:A:THR:HG23	16	0.1
(1,62)	1:22:A:SER:H	1:34:A:ARG:HA	9	0.1

10 Dihedral-angle violation analysis ⓘ

No dihedral-angle restraints found