Full wwPDB NMR Structure Validation Report

Dec 25, 2024 – 03:21 AM EST

PDB ID	:	5IAZ
BMRB ID	:	30020
Title	:	The C-terminal domain of rice beta-galactosidase 1
Authors	:	Rimlumduan, T.; Hua, Y.-l.; Tanaka, T.; Ketudat-Cairns, J.R.
Deposited on	:	2016-02-22

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

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

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

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

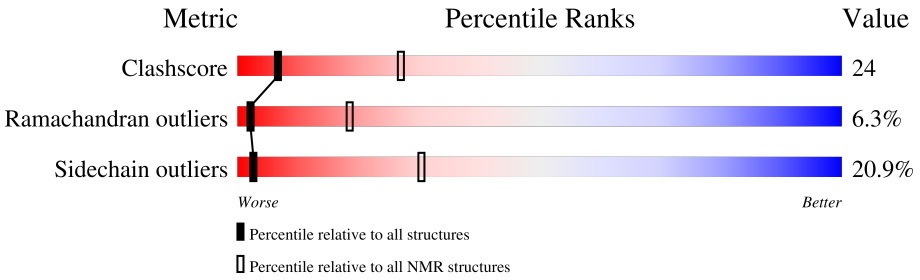
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
BMRB Restraints Analysis	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal 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 91%.

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 <=5%

Mol	Chain	Length	Quality of chain
1	A	122	31% 43% . 19% .

2 Ensemble composition and analysis (i)

This entry contains 25 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:728-A:737, A:757-A:841 (95)	1.05	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 3 clusters and 4 single-model clusters were found.

Cluster number	Models
1	1, 4, 5, 6, 8, 10, 11, 13, 14, 16, 19, 20, 21, 24
2	9, 15, 22, 25
3	2, 3, 12
Single-model clusters	7; 17; 18; 23

3 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 1729 atoms, of which 849 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called beta-galactosidase 1.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	118	1729	547	849	154	170	9	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	722	GLY	-	expression tag	UNP B8ANX7
A	723	SER	-	expression tag	UNP B8ANX7
A	724	HIS	-	expression tag	UNP B8ANX7
A	725	MET	-	expression tag	UNP B8ANX7

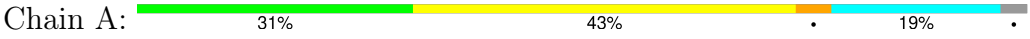
4 Residue-property plots

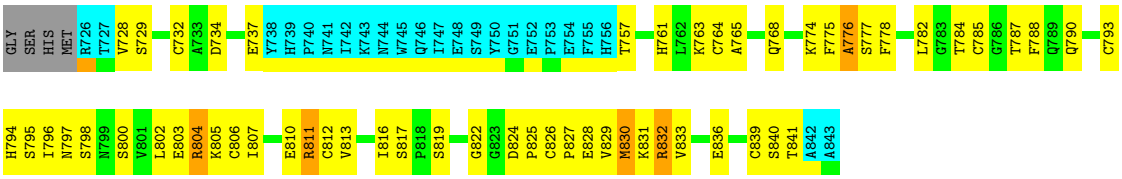
4.1 Average score per residue in the NMR ensemble

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: beta-galactosidase 1

Chain A:





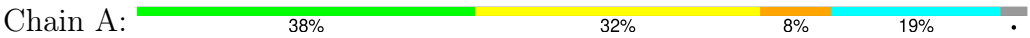
4.2 Scores per residue for each member of the ensemble

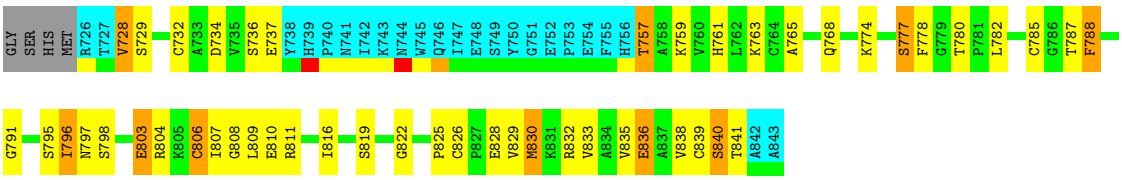
Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1 (medoid)

• Molecule 1: beta-galactosidase 1

Chain A:

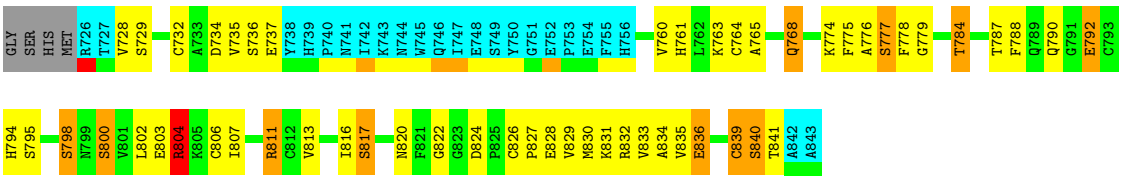




4.2.2 Score per residue for model 2

• Molecule 1: beta-galactosidase 1

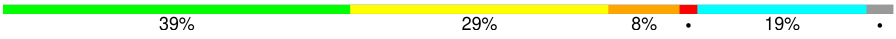
Chain A:

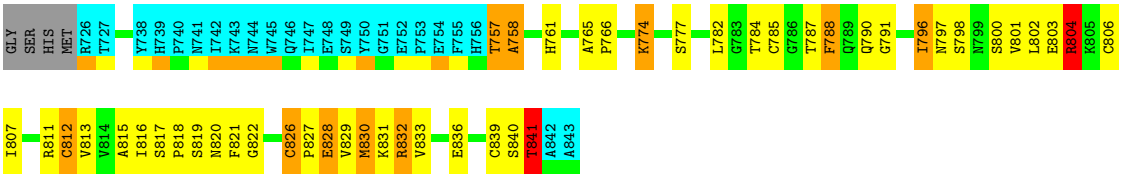


4.2.3 Score per residue for model 3

• Molecule 1: beta-galactosidase 1

Chain A:

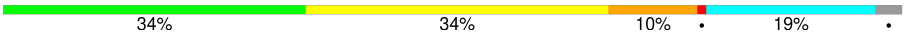


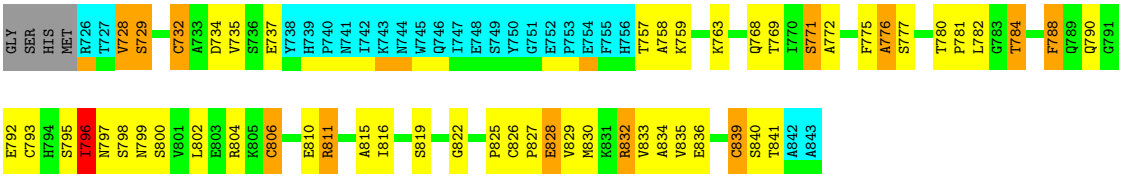


4.2.4 Score per residue for model 4

• Molecule 1: beta-galactosidase 1

Chain A:

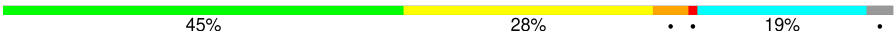


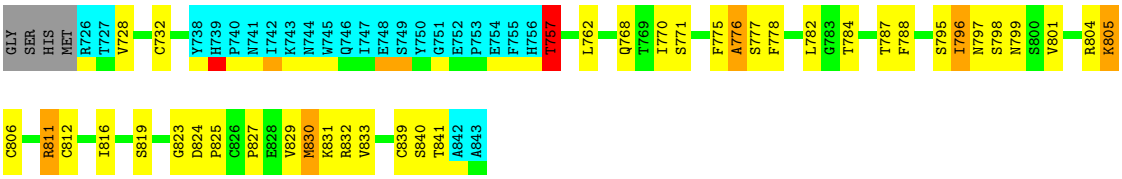


4.2.5 Score per residue for model 5

• Molecule 1: beta-galactosidase 1

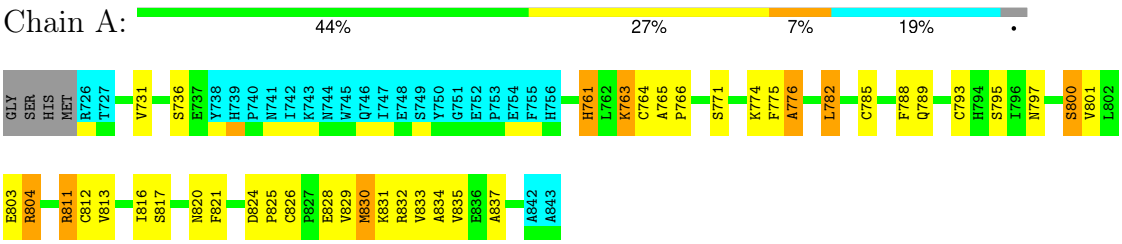
Chain A:





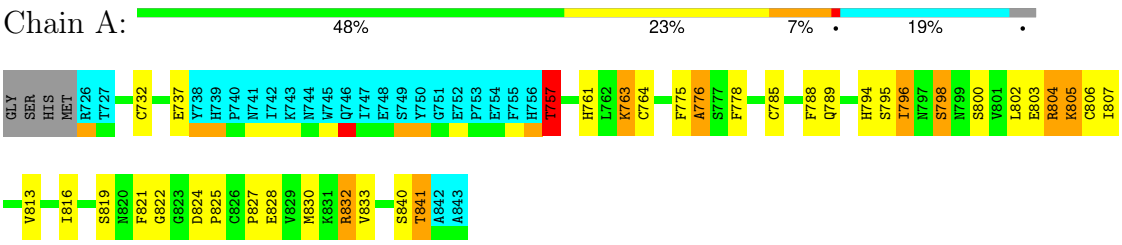
4.2.6 Score per residue for model 6

• Molecule 1: beta-galactosidase 1



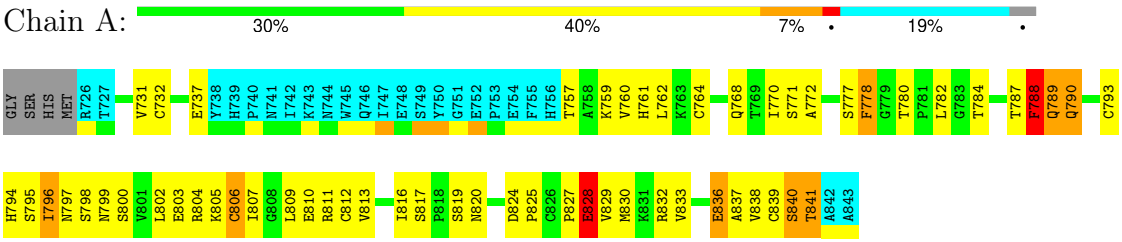
4.2.7 Score per residue for model 7

• Molecule 1: beta-galactosidase 1



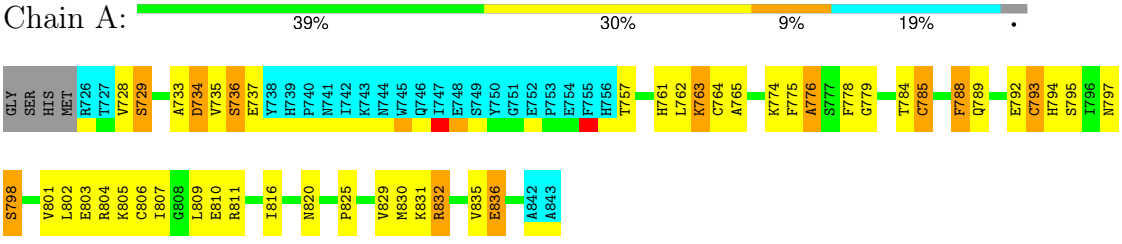
4.2.8 Score per residue for model 8

• Molecule 1: beta-galactosidase 1



4.2.9 Score per residue for model 9

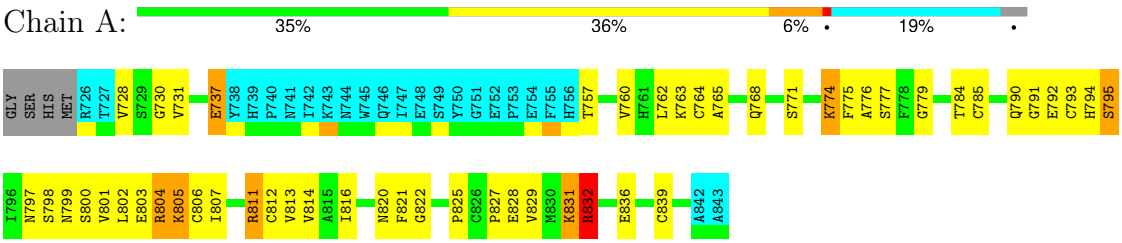
• Molecule 1: beta-galactosidase 1



4.2.10 Score per residue for model 10

• Molecule 1: beta-galactosidase 1

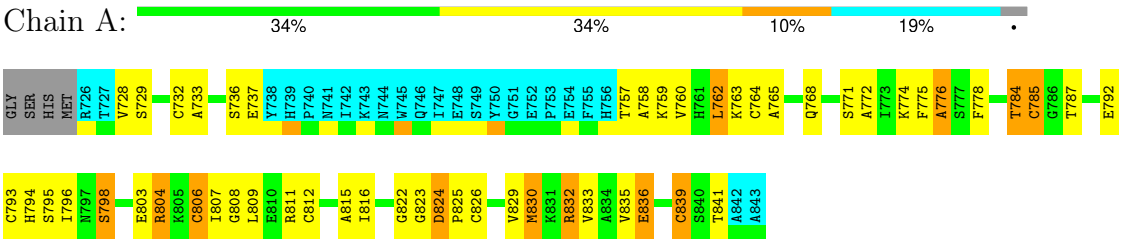
Chain A:



4.2.11 Score per residue for model 11

• Molecule 1: beta-galactosidase 1

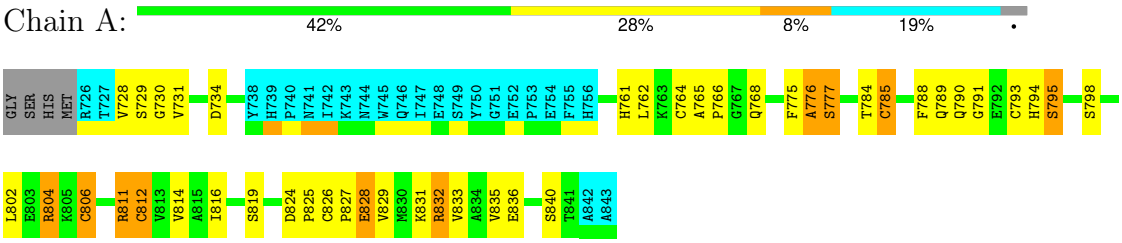
Chain A:



4.2.12 Score per residue for model 12

• Molecule 1: beta-galactosidase 1

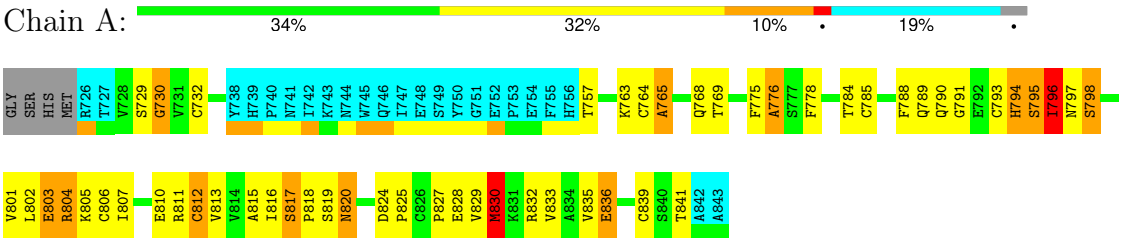
Chain A:



4.2.13 Score per residue for model 13

• Molecule 1: beta-galactosidase 1

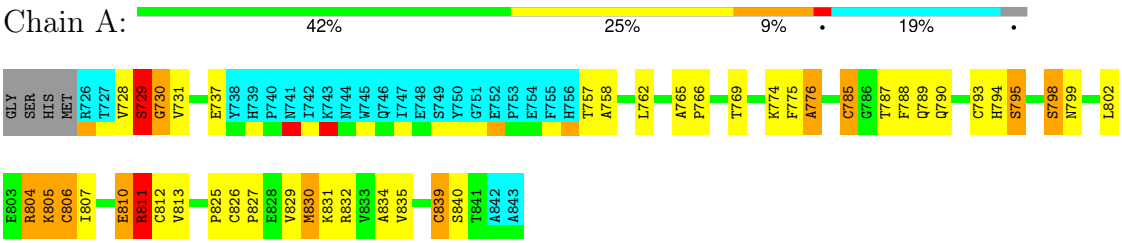
Chain A:



4.2.14 Score per residue for model 14

• Molecule 1: beta-galactosidase 1

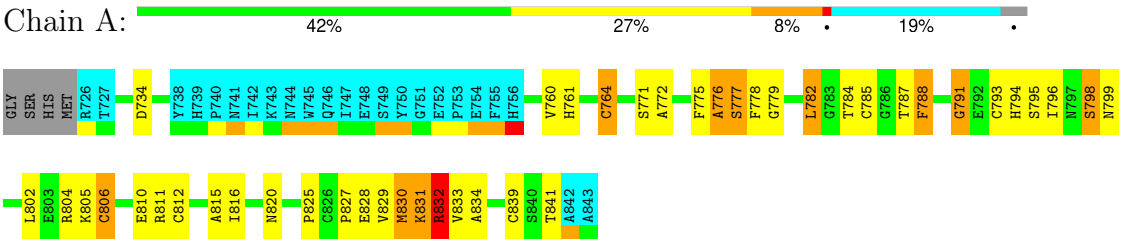
Chain A:



4.2.15 Score per residue for model 15

• Molecule 1: beta-galactosidase 1

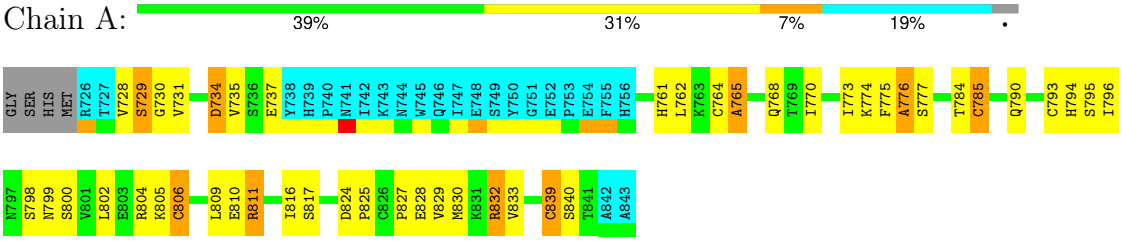
Chain A:



4.2.16 Score per residue for model 16

• Molecule 1: beta-galactosidase 1

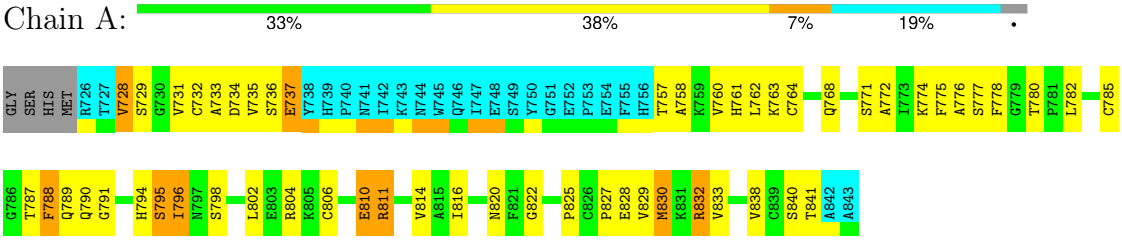
Chain A:



4.2.17 Score per residue for model 17

• Molecule 1: beta-galactosidase 1

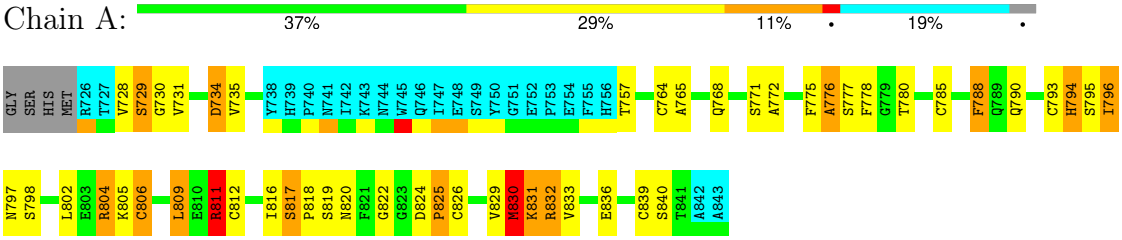
Chain A:



4.2.18 Score per residue for model 18

• Molecule 1: beta-galactosidase 1

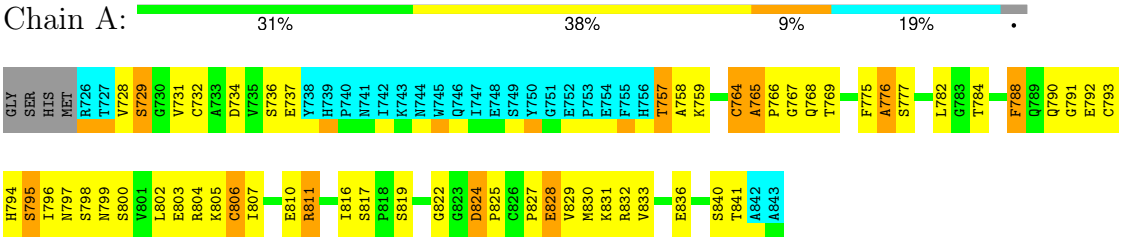
Chain A:



4.2.19 Score per residue for model 19

• Molecule 1: beta-galactosidase 1

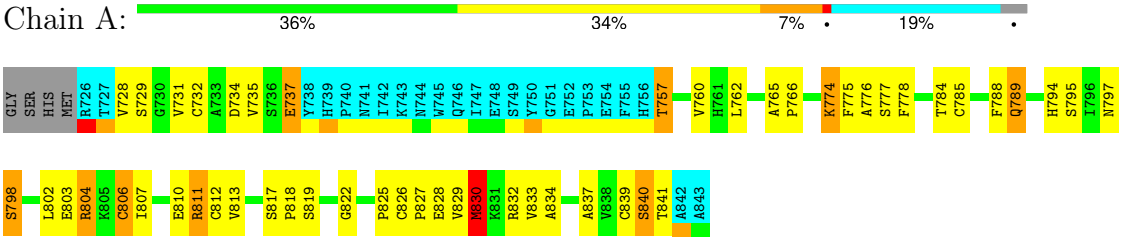
Chain A:



4.2.20 Score per residue for model 20

• Molecule 1: beta-galactosidase 1

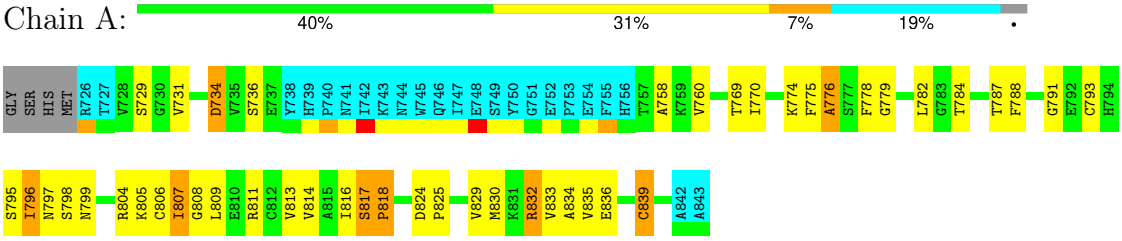
Chain A:



4.2.21 Score per residue for model 21

• Molecule 1: beta-galactosidase 1

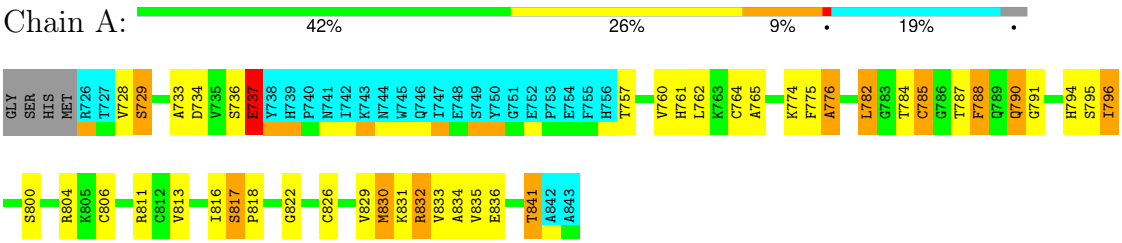
Chain A:



4.2.22 Score per residue for model 22

• Molecule 1: beta-galactosidase 1

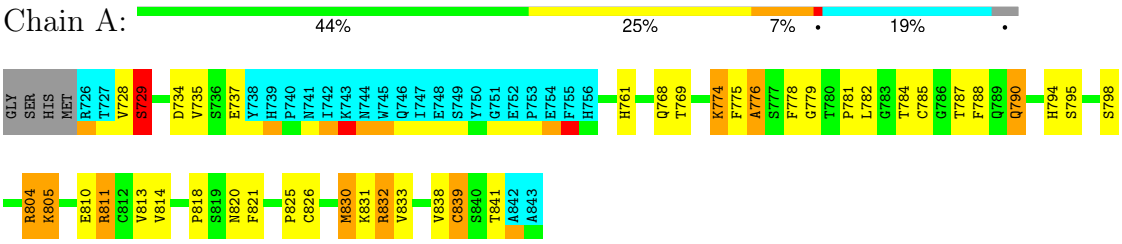
Chain A:



4.2.23 Score per residue for model 23

• Molecule 1: beta-galactosidase 1

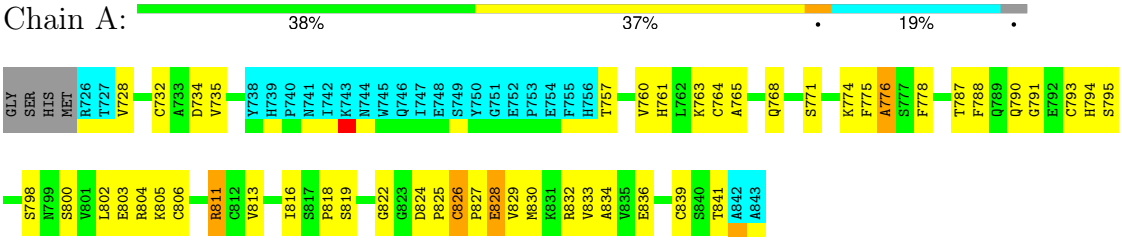
Chain A:



4.2.24 Score per residue for model 24

• Molecule 1: beta-galactosidase 1

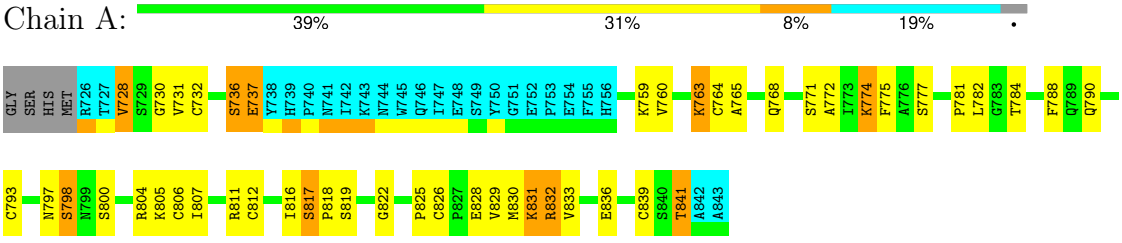
Chain A:



4.2.25 Score per residue for model 25

• Molecule 1: beta-galactosidase 1

Chain A:



5 Refinement protocol and experimental data overview

The models were refined using the following method: *DGSA-distance geometry simulated annealing.*

Of the 100 calculated structures, 25 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	refinement	v3.1

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	1333
Number of shifts mapped to atoms	1333
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	91%

6 Model quality

6.1 Standard geometry

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

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	Chirality	Planarity
1	A	0.0±0.0	2.9±0.3
All	All	0	72

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

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

Mol	Chain	Res	Type	Group	Models (Total)
1	A	804	ARG	Sidechain	25
1	A	832	ARG	Sidechain	25
1	A	811	ARG	Sidechain	22

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	681	673	673	33±6
All	All	17025	16825	16825	823

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 24.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:760:VAL:HG23	1:A:816:ILE:HD11	1.11	1.19	2	6
1:A:816:ILE:HD13	1:A:833:VAL:HG21	1.00	1.31	19	11
1:A:731:VAL:HG21	1:A:764:CYS:SG	0.89	2.06	10	1
1:A:728:VAL:HG23	1:A:839:CYS:O	0.89	1.67	16	1
1:A:760:VAL:CG2	1:A:816:ILE:HD11	0.89	1.97	15	6
1:A:801:VAL:HG11	1:A:820:ASN:OD1	0.88	1.68	9	1
1:A:760:VAL:O	1:A:813:VAL:HG23	0.85	1.70	20	1
1:A:735:VAL:HG21	1:A:760:VAL:HG22	0.82	1.51	17	2
1:A:761:HIS:CE1	1:A:813:VAL:HG22	0.82	2.09	6	1
1:A:770:ILE:HD12	1:A:809:LEU:O	0.79	1.77	8	2
1:A:803:GLU:O	1:A:807:ILE:HD12	0.79	1.77	13	2
1:A:805:LYS:HE2	1:A:814:VAL:HG22	0.79	1.55	23	1
1:A:816:ILE:CD1	1:A:833:VAL:HG21	0.77	2.09	17	5
1:A:827:PRO:O	1:A:829:VAL:HG23	0.77	1.79	15	8
1:A:765:ALA:HB1	1:A:766:PRO:HD2	0.77	1.57	3	5
1:A:776:ALA:HB3	1:A:799:ASN:HB2	0.76	1.56	21	1
1:A:816:ILE:HG21	1:A:833:VAL:HG21	0.75	1.58	21	8
1:A:776:ALA:HB3	1:A:799:ASN:HB3	0.75	1.56	16	1
1:A:760:VAL:HG23	1:A:816:ILE:CD1	0.75	2.05	15	2
1:A:728:VAL:HG12	1:A:729:SER:N	0.74	1.96	17	2
1:A:776:ALA:HB3	1:A:799:ASN:CB	0.74	2.13	21	1
1:A:735:VAL:HG21	1:A:760:VAL:CG2	0.74	2.13	2	1
1:A:806:CYS:C	1:A:807:ILE:HD12	0.73	2.04	9	1
1:A:788:PHE:CE1	1:A:834:ALA:HB1	0.73	2.18	21	2
1:A:765:ALA:HB3	1:A:768:GLN:OE1	0.72	1.84	10	4
1:A:787:THR:HG22	1:A:787:THR:O	0.72	1.85	5	5
1:A:728:VAL:HG12	1:A:728:VAL:O	0.72	1.83	5	3
1:A:782:LEU:C	1:A:782:LEU:HD13	0.71	2.06	5	1
1:A:816:ILE:HG23	1:A:833:VAL:HG21	0.71	1.62	13	3
1:A:816:ILE:HG23	1:A:833:VAL:CG2	0.70	2.17	16	1
1:A:782:LEU:HD21	1:A:790:GLN:O	0.69	1.87	23	1
1:A:728:VAL:O	1:A:728:VAL:HG13	0.69	1.87	1	4
1:A:775:PHE:O	1:A:776:ALA:HB2	0.69	1.88	12	17
1:A:796:ILE:HG22	1:A:796:ILE:O	0.68	1.86	1	5
1:A:784:THR:HG23	1:A:784:THR:O	0.68	1.88	16	1
1:A:795:SER:C	1:A:796:ILE:HG23	0.68	2.09	4	1
1:A:803:GLU:HG2	1:A:807:ILE:HD12	0.68	1.63	1	2
1:A:758:ALA:HB3	1:A:816:ILE:HB	0.68	1.63	19	1
1:A:802:LEU:HD22	1:A:802:LEU:N	0.67	2.05	20	4
1:A:782:LEU:HD13	1:A:782:LEU:O	0.66	1.89	5	1
1:A:840:SER:O	1:A:841:THR:HG23	0.65	1.91	1	3
1:A:729:SER:O	1:A:731:VAL:HG23	0.65	1.92	21	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:769:THR:HG22	1:A:810:GLU:HG3	0.65	1.67	19	1
1:A:775:PHE:CE2	1:A:788:PHE:CB	0.64	2.80	17	1
1:A:761:HIS:CE1	1:A:813:VAL:CG2	0.64	2.80	6	1
1:A:794:HIS:CE1	1:A:798:SER:OG	0.64	2.51	13	10
1:A:760:VAL:HG22	1:A:816:ILE:HD11	0.63	1.71	10	1
1:A:808:GLY:O	1:A:809:LEU:HD23	0.63	1.94	21	2
1:A:840:SER:C	1:A:841:THR:HG22	0.63	2.12	3	1
1:A:815:ALA:HB3	1:A:820:ASN:HD22	0.63	1.51	15	1
1:A:815:ALA:HB3	1:A:820:ASN:ND2	0.62	2.09	15	1
1:A:730:GLY:O	1:A:731:VAL:HG13	0.62	1.94	16	1
1:A:803:GLU:HA	1:A:807:ILE:HD12	0.62	1.70	20	1
1:A:813:VAL:O	1:A:813:VAL:HG13	0.62	1.95	14	5
1:A:816:ILE:HD13	1:A:833:VAL:CG2	0.62	2.25	17	5
1:A:758:ALA:O	1:A:816:ILE:HD12	0.61	1.95	11	1
1:A:778:PHE:CG	1:A:778:PHE:O	0.61	2.52	17	5
1:A:826:CYS:SG	1:A:829:VAL:HG21	0.61	2.36	3	4
1:A:776:ALA:HB1	1:A:798:SER:O	0.61	1.95	21	4
1:A:803:GLU:HA	1:A:807:ILE:HD13	0.61	1.71	9	1
1:A:733:ALA:CB	1:A:762:LEU:HD21	0.61	2.26	11	2
1:A:794:HIS:CD2	1:A:795:SER:O	0.61	2.53	20	3
1:A:816:ILE:HG21	1:A:833:VAL:CG2	0.61	2.26	11	4
1:A:794:HIS:CE1	1:A:798:SER:CB	0.61	2.84	10	5
1:A:816:ILE:CG2	1:A:833:VAL:HG21	0.60	2.27	13	10
1:A:794:HIS:CE1	1:A:795:SER:O	0.60	2.55	18	2
1:A:801:VAL:HG11	1:A:821:PHE:CE2	0.59	2.32	3	1
1:A:807:ILE:O	1:A:807:ILE:HG22	0.59	1.96	25	2
1:A:782:LEU:HD12	1:A:791:GLY:HA2	0.59	1.73	3	3
1:A:834:ALA:O	1:A:835:VAL:HG23	0.59	1.98	14	5
1:A:788:PHE:CE2	1:A:834:ALA:HB1	0.59	2.32	24	1
1:A:802:LEU:CD2	1:A:802:LEU:N	0.58	2.66	12	7
1:A:771:SER:O	1:A:772:ALA:HB2	0.58	1.97	15	6
1:A:778:PHE:CD2	1:A:778:PHE:O	0.58	2.57	13	2
1:A:784:THR:O	1:A:788:PHE:CZ	0.57	2.57	19	3
1:A:728:VAL:HG11	1:A:768:GLN:NE2	0.57	2.14	5	1
1:A:733:ALA:HB2	1:A:762:LEU:CD2	0.57	2.30	11	1
1:A:806:CYS:O	1:A:807:ILE:HD12	0.57	1.98	9	1
1:A:797:ASN:O	1:A:801:VAL:HG23	0.57	2.00	13	2
1:A:778:PHE:O	1:A:778:PHE:CD1	0.57	2.57	7	1
1:A:816:ILE:HG22	1:A:816:ILE:O	0.57	2.00	16	1
1:A:728:VAL:CG1	1:A:729:SER:N	0.56	2.67	17	1
1:A:765:ALA:HB3	1:A:768:GLN:HG3	0.56	1.76	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:775:PHE:CE2	1:A:788:PHE:HB3	0.56	2.35	17	3
1:A:784:THR:O	1:A:788:PHE:CE2	0.56	2.59	20	1
1:A:794:HIS:CG	1:A:795:SER:N	0.56	2.74	12	2
1:A:735:VAL:HG11	1:A:759:LYS:O	0.56	2.01	4	1
1:A:775:PHE:CD2	1:A:776:ALA:N	0.56	2.74	18	6
1:A:801:VAL:HG21	1:A:821:PHE:CD2	0.55	2.36	6	2
1:A:778:PHE:HD2	1:A:833:VAL:HG22	0.55	1.61	20	1
1:A:760:VAL:O	1:A:813:VAL:HG13	0.55	2.01	24	2
1:A:775:PHE:CZ	1:A:788:PHE:HB3	0.55	2.36	17	3
1:A:737:GLU:HA	1:A:758:ALA:HB3	0.55	1.77	4	1
1:A:802:LEU:N	1:A:802:LEU:HD22	0.55	2.14	12	6
1:A:801:VAL:O	1:A:805:LYS:CB	0.55	2.54	5	1
1:A:782:LEU:CD1	1:A:791:GLY:CA	0.55	2.85	19	2
1:A:778:PHE:CD2	1:A:833:VAL:HG22	0.55	2.36	23	3
1:A:784:THR:O	1:A:788:PHE:CD2	0.55	2.60	21	2
1:A:778:PHE:CZ	1:A:817:SER:O	0.54	2.60	21	1
1:A:802:LEU:N	1:A:802:LEU:CD2	0.54	2.71	20	3
1:A:813:VAL:O	1:A:813:VAL:CG1	0.54	2.55	22	6
1:A:736:SER:O	1:A:758:ALA:CB	0.54	2.55	21	1
1:A:780:THR:HG22	1:A:830:MET:O	0.54	2.02	18	1
1:A:734:ASP:C	1:A:735:VAL:HG23	0.54	2.23	20	5
1:A:796:ILE:O	1:A:796:ILE:CG2	0.53	2.56	17	3
1:A:827:PRO:O	1:A:828:GLU:CG	0.53	2.56	10	1
1:A:775:PHE:O	1:A:776:ALA:CB	0.53	2.56	12	11
1:A:795:SER:O	1:A:796:ILE:CG1	0.53	2.56	5	2
1:A:795:SER:O	1:A:797:ASN:N	0.53	2.41	18	6
1:A:776:ALA:O	1:A:798:SER:CB	0.53	2.56	4	4
1:A:790:GLN:OE1	1:A:794:HIS:CD2	0.53	2.62	8	1
1:A:789:GLN:O	1:A:791:GLY:N	0.53	2.41	17	1
1:A:840:SER:O	1:A:841:THR:CG2	0.53	2.57	1	3
1:A:840:SER:O	1:A:841:THR:CB	0.53	2.57	3	1
1:A:761:HIS:CB	1:A:813:VAL:HG22	0.53	2.34	7	2
1:A:734:ASP:OD2	1:A:832:ARG:CZ	0.53	2.57	16	1
1:A:794:HIS:NE2	1:A:795:SER:O	0.53	2.42	12	5
1:A:802:LEU:CD1	1:A:814:VAL:HG21	0.53	2.34	12	1
1:A:827:PRO:O	1:A:828:GLU:CB	0.52	2.56	8	5
1:A:788:PHE:CE1	1:A:834:ALA:CB	0.52	2.90	21	1
1:A:731:VAL:CG2	1:A:837:ALA:O	0.52	2.58	20	2
1:A:782:LEU:CD2	1:A:790:GLN:O	0.52	2.57	23	1
1:A:812:CYS:C	1:A:813:VAL:HG23	0.52	2.24	3	1
1:A:794:HIS:CE1	1:A:798:SER:HG	0.52	2.23	20	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:774:LYS:HG2	1:A:838:VAL:CG2	0.52	2.35	1	1
1:A:782:LEU:HD23	1:A:782:LEU:N	0.52	2.19	23	1
1:A:840:SER:C	1:A:841:THR:HG23	0.52	2.25	17	3
1:A:829:VAL:O	1:A:831:LYS:N	0.52	2.43	18	2
1:A:776:ALA:O	1:A:798:SER:CA	0.52	2.58	13	1
1:A:799:ASN:OD1	1:A:800:SER:N	0.51	2.43	16	2
1:A:778:PHE:C	1:A:778:PHE:CD1	0.51	2.80	8	2
1:A:760:VAL:HG21	1:A:833:VAL:HG11	0.51	1.81	15	1
1:A:784:THR:O	1:A:784:THR:CG2	0.51	2.57	16	1
1:A:731:VAL:HG22	1:A:837:ALA:O	0.51	2.04	8	1
1:A:728:VAL:O	1:A:729:SER:CB	0.51	2.57	14	1
1:A:798:SER:O	1:A:802:LEU:HD23	0.51	2.05	9	1
1:A:799:ASN:OD1	1:A:799:ASN:N	0.51	2.42	15	1
1:A:731:VAL:CG2	1:A:764:CYS:SG	0.51	2.98	19	1
1:A:778:PHE:HE2	1:A:816:ILE:HG23	0.51	1.66	5	1
1:A:795:SER:C	1:A:796:ILE:CG1	0.51	2.79	8	3
1:A:731:VAL:CG2	1:A:837:ALA:HB3	0.51	2.36	6	1
1:A:735:VAL:CG2	1:A:760:VAL:HG22	0.51	2.33	17	2
1:A:797:ASN:N	1:A:797:ASN:OD1	0.51	2.42	9	1
1:A:778:PHE:CE1	1:A:817:SER:O	0.51	2.64	21	1
1:A:782:LEU:CD1	1:A:791:GLY:HA2	0.50	2.36	15	3
1:A:775:PHE:CG	1:A:776:ALA:N	0.50	2.79	17	6
1:A:734:ASP:O	1:A:735:VAL:CG2	0.50	2.59	20	4
1:A:790:GLN:O	1:A:790:GLN:CG	0.50	2.60	4	4
1:A:795:SER:C	1:A:796:ILE:CG2	0.50	2.80	4	1
1:A:817:SER:OG	1:A:820:ASN:CB	0.50	2.59	18	1
1:A:775:PHE:CG	1:A:788:PHE:HB3	0.50	2.42	7	1
1:A:768:GLN:CG	1:A:840:SER:O	0.50	2.59	18	1
1:A:792:GLU:CG	1:A:792:GLU:O	0.50	2.59	2	1
1:A:817:SER:CB	1:A:818:PRO:CD	0.50	2.90	13	4
1:A:784:THR:O	1:A:788:PHE:CE1	0.50	2.64	2	3
1:A:763:LYS:HB3	1:A:811:ARG:CD	0.50	2.37	9	1
1:A:757:THR:CG2	1:A:816:ILE:O	0.50	2.59	1	1
1:A:761:HIS:HB2	1:A:813:VAL:HG22	0.50	1.83	7	1
1:A:784:THR:HG23	1:A:785:CYS:N	0.49	2.22	15	2
1:A:777:SER:HA	1:A:798:SER:CB	0.49	2.37	1	6
1:A:733:ALA:HB2	1:A:762:LEU:HD21	0.49	1.84	9	1
1:A:811:ARG:CG	1:A:811:ARG:O	0.49	2.60	10	1
1:A:803:GLU:HA	1:A:807:ILE:CG1	0.49	2.37	7	2
1:A:730:GLY:C	1:A:731:VAL:CG2	0.49	2.81	12	3
1:A:803:GLU:CG	1:A:807:ILE:HD12	0.49	2.37	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:829:VAL:HG12	1:A:829:VAL:O	0.49	2.07	25	1
1:A:757:THR:HG21	1:A:816:ILE:O	0.49	2.07	1	1
1:A:774:LYS:CB	1:A:836:GLU:OE1	0.49	2.61	10	1
1:A:817:SER:CB	1:A:818:PRO:HD2	0.49	2.37	21	4
1:A:824:ASP:OD2	1:A:824:ASP:N	0.49	2.46	19	1
1:A:782:LEU:O	1:A:789:GLN:N	0.49	2.46	8	1
1:A:732:CYS:CB	1:A:836:GLU:CD	0.49	2.82	8	1
1:A:728:VAL:O	1:A:839:CYS:O	0.48	2.31	5	7
1:A:787:THR:O	1:A:787:THR:CG2	0.48	2.59	14	2
1:A:816:ILE:HG12	1:A:833:VAL:HG21	0.48	1.84	16	1
1:A:788:PHE:O	1:A:789:GLN:CG	0.48	2.61	20	1
1:A:803:GLU:HA	1:A:807:ILE:CD1	0.48	2.37	2	2
1:A:813:VAL:C	1:A:814:VAL:CG2	0.48	2.81	21	1
1:A:795:SER:O	1:A:796:ILE:HG13	0.48	2.07	4	3
1:A:775:PHE:CZ	1:A:777:SER:HB2	0.48	2.44	2	1
1:A:730:GLY:C	1:A:731:VAL:HG23	0.48	2.28	12	2
1:A:805:LYS:O	1:A:806:CYS:SG	0.48	2.71	10	6
1:A:728:VAL:O	1:A:728:VAL:CG1	0.48	2.59	1	6
1:A:813:VAL:C	1:A:814:VAL:HG23	0.48	2.28	21	2
1:A:728:VAL:HG12	1:A:729:SER:H	0.48	1.68	17	1
1:A:778:PHE:CD2	1:A:833:VAL:CG2	0.48	2.97	23	1
1:A:805:LYS:CE	1:A:814:VAL:HG22	0.48	2.35	23	1
1:A:788:PHE:CZ	1:A:834:ALA:HB1	0.48	2.44	15	1
1:A:776:ALA:CB	1:A:798:SER:O	0.47	2.62	5	2
1:A:760:VAL:CG2	1:A:816:ILE:CD1	0.47	2.89	10	1
1:A:793:CYS:SG	1:A:794:HIS:N	0.47	2.87	18	1
1:A:768:GLN:CD	1:A:768:GLN:N	0.47	2.67	12	1
1:A:775:PHE:CD1	1:A:776:ALA:N	0.47	2.82	19	1
1:A:759:LYS:HE3	1:A:815:ALA:HB2	0.47	1.86	4	1
1:A:765:ALA:CB	1:A:768:GLN:OE1	0.47	2.61	10	1
1:A:795:SER:O	1:A:796:ILE:C	0.47	2.52	8	5
1:A:768:GLN:HG2	1:A:841:THR:N	0.47	2.24	11	1
1:A:805:LYS:O	1:A:812:CYS:SG	0.47	2.73	14	4
1:A:764:CYS:O	1:A:810:GLU:OE2	0.47	2.32	15	1
1:A:835:VAL:CG1	1:A:836:GLU:N	0.47	2.77	11	8
1:A:734:ASP:OD1	1:A:734:ASP:O	0.47	2.33	18	3
1:A:776:ALA:O	1:A:798:SER:HB2	0.47	2.10	19	5
1:A:785:CYS:HA	1:A:788:PHE:CZ	0.47	2.44	6	1
1:A:762:LEU:HD12	1:A:812:CYS:HB3	0.47	1.87	8	1
1:A:794:HIS:O	1:A:795:SER:O	0.47	2.32	13	2
1:A:782:LEU:HD12	1:A:791:GLY:HA3	0.47	1.84	17	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:782:LEU:HD13	1:A:791:GLY:HA2	0.47	1.87	22	1
1:A:774:LYS:HB3	1:A:836:GLU:CB	0.47	2.40	25	1
1:A:812:CYS:C	1:A:813:VAL:CG2	0.47	2.83	3	1
1:A:812:CYS:O	1:A:813:VAL:CG2	0.47	2.63	3	1
1:A:827:PRO:C	1:A:828:GLU:CG	0.47	2.80	8	1
1:A:775:PHE:C	1:A:775:PHE:CD1	0.47	2.87	10	1
1:A:784:THR:O	1:A:785:CYS:O	0.47	2.33	12	3
1:A:815:ALA:O	1:A:820:ASN:OD1	0.47	2.33	13	1
1:A:824:ASP:N	1:A:825:PRO:HD3	0.47	2.25	18	1
1:A:760:VAL:O	1:A:813:VAL:CG2	0.47	2.56	20	1
1:A:776:ALA:O	1:A:798:SER:O	0.47	2.33	18	3
1:A:777:SER:HA	1:A:798:SER:OG	0.47	2.10	25	2
1:A:829:VAL:O	1:A:830:MET:O	0.47	2.33	20	4
1:A:797:ASN:O	1:A:797:ASN:OD1	0.47	2.33	18	2
1:A:801:VAL:O	1:A:805:LYS:HB3	0.47	2.10	5	1
1:A:799:ASN:O	1:A:803:GLU:OE1	0.47	2.32	8	1
1:A:823:GLY:O	1:A:824:ASP:OD2	0.47	2.33	11	1
1:A:834:ALA:O	1:A:835:VAL:CG2	0.46	2.63	14	4
1:A:829:VAL:O	1:A:831:LYS:CD	0.46	2.63	10	1
1:A:731:VAL:HG12	1:A:732:CYS:N	0.46	2.25	17	1
1:A:782:LEU:CD1	1:A:791:GLY:HA3	0.46	2.41	17	2
1:A:774:LYS:HG3	1:A:775:PHE:N	0.46	2.24	20	1
1:A:795:SER:C	1:A:796:ILE:HD12	0.46	2.30	7	1
1:A:824:ASP:O	1:A:824:ASP:OD1	0.46	2.33	24	3
1:A:764:CYS:O	1:A:765:ALA:O	0.46	2.34	13	5
1:A:816:ILE:HD11	1:A:833:VAL:HG11	0.46	1.85	3	1
1:A:775:PHE:CE1	1:A:777:SER:OG	0.46	2.60	10	1
1:A:816:ILE:HG23	1:A:833:VAL:HG23	0.46	1.88	16	1
1:A:734:ASP:O	1:A:734:ASP:OD2	0.46	2.34	19	2
1:A:777:SER:HA	1:A:794:HIS:CE1	0.46	2.44	15	1
1:A:795:SER:O	1:A:798:SER:OG	0.46	2.30	18	1
1:A:778:PHE:O	1:A:778:PHE:CD2	0.46	2.68	1	2
1:A:787:THR:O	1:A:788:PHE:O	0.46	2.32	8	2
1:A:734:ASP:C	1:A:735:VAL:CG2	0.46	2.84	20	3
1:A:776:ALA:O	1:A:798:SER:HB3	0.46	2.10	23	5
1:A:831:LYS:O	1:A:832:ARG:CG	0.46	2.63	15	2
1:A:761:HIS:N	1:A:761:HIS:ND1	0.46	2.64	7	1
1:A:765:ALA:HB3	1:A:768:GLN:NE2	0.46	2.25	11	1
1:A:774:LYS:HG3	1:A:838:VAL:CG2	0.46	2.40	23	1
1:A:817:SER:OG	1:A:820:ASN:OD1	0.46	2.33	6	1
1:A:795:SER:O	1:A:796:ILE:HB	0.46	2.11	7	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:770:ILE:CD1	1:A:809:LEU:O	0.46	2.58	8	2
1:A:728:VAL:O	1:A:729:SER:O	0.46	2.33	22	2
1:A:768:GLN:C	1:A:769:THR:HG23	0.46	2.31	23	2
1:A:781:PRO:CD	1:A:832:ARG:HB3	0.46	2.41	4	2
1:A:840:SER:O	1:A:841:THR:O	0.46	2.34	8	1
1:A:835:VAL:HG12	1:A:836:GLU:N	0.46	2.26	11	3
1:A:829:VAL:O	1:A:831:LYS:HD2	0.45	2.11	10	1
1:A:811:ARG:HB3	1:A:811:ARG:NH2	0.45	2.26	14	1
1:A:768:GLN:O	1:A:810:GLU:OE2	0.45	2.34	16	1
1:A:768:GLN:HG3	1:A:841:THR:CA	0.45	2.41	2	1
1:A:817:SER:O	1:A:820:ASN:OD1	0.45	2.34	8	1
1:A:764:CYS:O	1:A:765:ALA:C	0.45	2.54	13	9
1:A:828:GLU:O	1:A:828:GLU:OE1	0.45	2.34	1	1
1:A:731:VAL:HG23	1:A:731:VAL:O	0.45	2.11	25	1
1:A:782:LEU:HD12	1:A:791:GLY:CA	0.45	2.42	1	1
1:A:730:GLY:O	1:A:731:VAL:CG1	0.45	2.64	16	1
1:A:734:ASP:O	1:A:735:VAL:HG23	0.45	2.12	4	1
1:A:734:ASP:N	1:A:734:ASP:OD1	0.45	2.45	17	2
1:A:840:SER:C	1:A:841:THR:CG2	0.45	2.84	17	1
1:A:736:SER:O	1:A:737:GLU:C	0.45	2.55	1	7
1:A:839:CYS:O	1:A:839:CYS:SG	0.45	2.74	5	1
1:A:737:GLU:OE2	1:A:778:PHE:CE2	0.45	2.70	7	1
1:A:795:SER:O	1:A:796:ILE:HD12	0.45	2.12	7	1
1:A:816:ILE:CD1	1:A:833:VAL:HG11	0.45	2.42	3	1
1:A:840:SER:O	1:A:841:THR:HB	0.45	2.11	3	1
1:A:775:PHE:CD2	1:A:788:PHE:HB3	0.45	2.47	5	1
1:A:830:MET:SD	1:A:830:MET:O	0.45	2.74	15	1
1:A:737:GLU:CB	1:A:831:LYS:HA	0.45	2.42	25	1
1:A:734:ASP:O	1:A:734:ASP:CG	0.45	2.56	19	3
1:A:729:SER:O	1:A:730:GLY:O	0.45	2.35	13	1
1:A:795:SER:O	1:A:796:ILE:CB	0.44	2.65	7	1
1:A:735:VAL:HG12	1:A:736:SER:N	0.44	2.26	17	1
1:A:794:HIS:ND1	1:A:795:SER:N	0.44	2.65	18	1
1:A:780:THR:HG22	1:A:830:MET:HG3	0.44	1.88	4	1
1:A:762:LEU:CD1	1:A:812:CYS:HB3	0.44	2.42	8	1
1:A:785:CYS:HA	1:A:788:PHE:CE1	0.44	2.47	14	1
1:A:732:CYS:SG	1:A:836:GLU:OE1	0.44	2.76	4	1
1:A:735:VAL:O	1:A:832:ARG:CG	0.44	2.66	16	1
1:A:829:VAL:O	1:A:830:MET:C	0.44	2.56	18	12
1:A:815:ALA:O	1:A:816:ILE:C	0.44	2.55	3	1
1:A:797:ASN:O	1:A:798:SER:C	0.44	2.55	13	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:784:THR:HG22	1:A:785:CYS:N	0.44	2.26	9	1
1:A:728:VAL:HG12	1:A:840:SER:HA	0.44	1.88	12	1
1:A:768:GLN:HG2	1:A:841:THR:CG2	0.44	2.43	24	1
1:A:763:LYS:CB	1:A:811:ARG:HG2	0.44	2.43	6	1
1:A:764:CYS:HB3	1:A:810:GLU:O	0.44	2.12	8	1
1:A:774:LYS:O	1:A:775:PHE:HB2	0.44	2.12	25	2
1:A:817:SER:OG	1:A:820:ASN:HB2	0.44	2.11	18	1
1:A:789:GLN:O	1:A:790:GLN:C	0.44	2.56	14	1
1:A:796:ILE:O	1:A:797:ASN:OD1	0.44	2.35	1	1
1:A:779:GLY:HA3	1:A:793:CYS:O	0.44	2.13	9	1
1:A:826:CYS:HB3	1:A:829:VAL:HG21	0.44	1.88	11	1
1:A:840:SER:OG	1:A:841:THR:N	0.44	2.48	1	1
1:A:834:ALA:C	1:A:835:VAL:HG23	0.44	2.33	22	2
1:A:840:SER:O	1:A:841:THR:OG1	0.44	2.32	8	2
1:A:766:PRO:C	1:A:768:GLN:OE1	0.44	2.57	12	1
1:A:776:ALA:CB	1:A:835:VAL:HG22	0.44	2.43	12	1
1:A:769:THR:CG2	1:A:810:GLU:HG3	0.44	2.43	14	1
1:A:788:PHE:CD1	1:A:834:ALA:HB1	0.44	2.48	21	1
1:A:790:GLN:O	1:A:791:GLY:C	0.43	2.57	3	3
1:A:827:PRO:O	1:A:828:GLU:C	0.43	2.57	10	3
1:A:763:LYS:CB	1:A:811:ARG:HD3	0.43	2.43	9	1
1:A:782:LEU:HD11	1:A:791:GLY:CA	0.43	2.42	15	1
1:A:735:VAL:CG1	1:A:736:SER:N	0.43	2.81	17	1
1:A:790:GLN:O	1:A:790:GLN:HG3	0.43	2.13	2	2
1:A:796:ILE:O	1:A:796:ILE:HD12	0.43	2.14	4	1
1:A:760:VAL:HG12	1:A:761:HIS:N	0.43	2.29	8	1
1:A:775:PHE:CZ	1:A:777:SER:HB3	0.43	2.48	12	2
1:A:794:HIS:CE1	1:A:798:SER:HB3	0.43	2.48	12	1
1:A:806:CYS:O	1:A:809:LEU:HD12	0.43	2.13	18	1
1:A:827:PRO:O	1:A:828:GLU:HB3	0.43	2.13	7	2
1:A:799:ASN:OD1	1:A:803:GLU:OE1	0.43	2.37	8	1
1:A:776:ALA:CB	1:A:798:SER:HB3	0.43	2.43	15	1
1:A:776:ALA:HB3	1:A:799:ASN:OD1	0.43	2.13	19	1
1:A:765:ALA:HB1	1:A:766:PRO:CD	0.43	2.36	3	1
1:A:770:ILE:CG1	1:A:839:CYS:SG	0.43	3.06	21	1
1:A:757:THR:O	1:A:758:ALA:C	0.43	2.56	3	1
1:A:806:CYS:HA	1:A:812:CYS:CB	0.43	2.43	10	3
1:A:794:HIS:NE2	1:A:796:ILE:HA	0.43	2.29	17	1
1:A:810:GLU:HG3	1:A:811:ARG:N	0.43	2.29	17	1
1:A:809:LEU:HD22	1:A:811:ARG:NH1	0.43	2.29	18	1
1:A:763:LYS:N	1:A:763:LYS:CD	0.43	2.80	25	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:774:LYS:CG	1:A:838:VAL:CG2	0.43	2.96	1	1
1:A:762:LEU:CB	1:A:812:CYS:HB3	0.43	2.44	5	1
1:A:782:LEU:O	1:A:788:PHE:HA	0.43	2.14	17	2
1:A:777:SER:HA	1:A:798:SER:HB3	0.43	1.90	18	2
1:A:802:LEU:O	1:A:806:CYS:HB2	0.43	2.14	2	4
1:A:830:MET:HG3	1:A:830:MET:O	0.43	2.14	4	1
1:A:763:LYS:O	1:A:763:LYS:CG	0.43	2.66	7	1
1:A:732:CYS:O	1:A:732:CYS:SG	0.42	2.77	25	2
1:A:768:GLN:HA	1:A:840:SER:O	0.42	2.13	5	1
1:A:795:SER:C	1:A:796:ILE:HG12	0.42	2.33	8	1
1:A:765:ALA:HB3	1:A:768:GLN:HB2	0.42	1.91	12	1
1:A:728:VAL:O	1:A:729:SER:OG	0.42	2.37	23	1
1:A:734:ASP:OD1	1:A:832:ARG:NE	0.42	2.52	16	1
1:A:777:SER:HB3	1:A:794:HIS:ND1	0.42	2.30	8	1
1:A:800:SER:O	1:A:804:ARG:CB	0.42	2.67	3	2
1:A:802:LEU:O	1:A:803:GLU:C	0.42	2.57	10	1
1:A:728:VAL:O	1:A:729:SER:HB2	0.42	2.15	14	3
1:A:826:CYS:SG	1:A:829:VAL:HG11	0.42	2.54	24	1
1:A:784:THR:O	1:A:788:PHE:CD1	0.42	2.72	2	1
1:A:733:ALA:C	1:A:734:ASP:OD1	0.42	2.57	17	1
1:A:789:GLN:HA	1:A:789:GLN:OE1	0.42	2.14	17	1
1:A:800:SER:O	1:A:804:ARG:HB3	0.42	2.15	3	2
1:A:737:GLU:HA	1:A:758:ALA:CB	0.42	2.44	4	1
1:A:806:CYS:O	1:A:807:ILE:C	0.42	2.58	10	3
1:A:790:GLN:OE1	1:A:794:HIS:ND1	0.42	2.52	13	1
1:A:826:CYS:HB3	1:A:829:VAL:CG2	0.42	2.45	11	2
1:A:770:ILE:HG13	1:A:839:CYS:HB3	0.42	1.92	5	1
1:A:823:GLY:C	1:A:824:ASP:OD2	0.42	2.58	5	1
1:A:779:GLY:O	1:A:832:ARG:HG2	0.42	2.15	10	1
1:A:793:CYS:O	1:A:794:HIS:HB3	0.42	2.15	13	1
1:A:792:GLU:O	1:A:792:GLU:CD	0.42	2.58	2	1
1:A:787:THR:O	1:A:787:THR:HG23	0.42	2.15	11	1
1:A:762:LEU:HB2	1:A:812:CYS:HB2	0.41	1.92	12	1
1:A:758:ALA:HB1	1:A:816:ILE:HD12	0.41	1.91	19	1
1:A:778:PHE:O	1:A:778:PHE:CG	0.41	2.71	24	1
1:A:774:LYS:CD	1:A:836:GLU:CD	0.41	2.89	3	1
1:A:781:PRO:CG	1:A:832:ARG:HB3	0.41	2.45	4	1
1:A:793:CYS:O	1:A:794:HIS:O	0.41	2.38	13	1
1:A:827:PRO:O	1:A:828:GLU:HB2	0.41	2.14	17	3
1:A:802:LEU:HD11	1:A:814:VAL:HG21	0.41	1.92	17	1
1:A:768:GLN:OE1	1:A:841:THR:HG23	0.41	2.15	25	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:768:GLN:O	1:A:769:THR:CG2	0.41	2.69	4	1
1:A:731:VAL:CG1	1:A:732:CYS:N	0.41	2.83	17	1
1:A:824:ASP:OD1	1:A:824:ASP:N	0.41	2.49	24	1
1:A:839:CYS:C	1:A:840:SER:OG	0.41	2.57	2	1
1:A:772:ALA:O	1:A:838:VAL:HB	0.41	2.15	17	2
1:A:799:ASN:O	1:A:799:ASN:OD1	0.41	2.38	21	1
1:A:840:SER:O	1:A:841:THR:C	0.41	2.57	7	1
1:A:734:ASP:O	1:A:734:ASP:OD1	0.41	2.37	15	1
1:A:778:PHE:CE2	1:A:830:MET:SD	0.41	3.13	15	1
1:A:734:ASP:C	1:A:734:ASP:OD2	0.41	2.58	20	1
1:A:808:GLY:C	1:A:809:LEU:HG	0.41	2.36	11	2
1:A:730:GLY:O	1:A:731:VAL:CG2	0.41	2.68	12	1
1:A:766:PRO:O	1:A:768:GLN:OE1	0.41	2.39	12	1
1:A:824:ASP:OD2	1:A:824:ASP:O	0.41	2.38	13	1
1:A:831:LYS:O	1:A:832:ARG:HG2	0.41	2.15	15	1
1:A:802:LEU:HD12	1:A:806:CYS:SG	0.41	2.55	18	1
1:A:730:GLY:C	1:A:731:VAL:HG13	0.41	2.36	25	1
1:A:737:GLU:OE2	1:A:778:PHE:CZ	0.41	2.74	7	1
1:A:778:PHE:CE1	1:A:816:ILE:HG23	0.41	2.51	9	1
1:A:788:PHE:O	1:A:789:GLN:HG2	0.41	2.15	20	1
1:A:728:VAL:O	1:A:729:SER:HB3	0.41	2.16	22	1
1:A:784:THR:O	1:A:785:CYS:HB2	0.41	2.15	22	1
1:A:779:GLY:O	1:A:832:ARG:HB2	0.41	2.16	15	1
1:A:782:LEU:C	1:A:782:LEU:CD1	0.41	2.79	5	1
1:A:793:CYS:O	1:A:794:HIS:HB2	0.41	2.16	19	1
1:A:778:PHE:C	1:A:778:PHE:CD2	0.41	2.93	21	1
1:A:824:ASP:O	1:A:824:ASP:CG	0.41	2.59	21	1
1:A:778:PHE:CE2	1:A:821:PHE:CE1	0.41	3.09	23	1
1:A:728:VAL:HA	1:A:839:CYS:O	0.41	2.16	24	1
1:A:818:PRO:O	1:A:819:SER:HB3	0.41	2.15	24	1
1:A:735:VAL:O	1:A:832:ARG:HG3	0.41	2.16	16	1
1:A:735:VAL:O	1:A:833:VAL:HB	0.41	2.16	18	1
1:A:797:ASN:O	1:A:800:SER:OG	0.41	2.39	25	1
1:A:802:LEU:CD1	1:A:806:CYS:SG	0.40	3.09	18	1
1:A:792:GLU:O	1:A:792:GLU:HG2	0.40	2.15	2	1
1:A:729:SER:HA	1:A:839:CYS:O	0.40	2.16	11	1
1:A:776:ALA:HB3	1:A:798:SER:HB3	0.40	1.92	15	1
1:A:800:SER:O	1:A:804:ARG:HB2	0.40	2.16	2	1
1:A:816:ILE:O	1:A:817:SER:CB	0.40	2.68	2	1
1:A:828:GLU:CG	1:A:828:GLU:O	0.40	2.68	6	1
1:A:764:CYS:SG	1:A:768:GLN:HB2	0.40	2.56	8	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:729:SER:O	1:A:730:GLY:C	0.40	2.58	16	1
1:A:784:THR:CG2	1:A:785:CYS:N	0.40	2.83	20	1
1:A:826:CYS:HB3	1:A:829:VAL:HB	0.40	1.93	3	1
1:A:768:GLN:HG2	1:A:840:SER:C	0.40	2.37	5	1
1:A:795:SER:C	1:A:797:ASN:N	0.40	2.74	8	1
1:A:759:LYS:CG	1:A:815:ALA:HA	0.40	2.47	11	1
1:A:784:THR:O	1:A:784:THR:HG23	0.40	2.16	12	1
1:A:770:ILE:HG12	1:A:839:CYS:SG	0.40	2.56	21	1
1:A:779:GLY:C	1:A:781:PRO:HD3	0.40	2.37	23	1
1:A:818:PRO:O	1:A:819:SER:CB	0.40	2.70	24	1
1:A:795:SER:OG	1:A:821:PHE:HB3	0.40	2.16	7	1
1:A:811:ARG:HG3	1:A:811:ARG:O	0.40	2.16	20	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	95/122 (78%)	73±3 (77±3%)	16±3 (17±3%)	6±2 (6±2%)	2	18
All	All	2375/3050 (78%)	1824 (77%)	402 (17%)	149 (6%)	2	18

All 27 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	825	PRO	22
1	A	776	ALA	18
1	A	822	GLY	14
1	A	796	ILE	12
1	A	830	MET	11
1	A	729	SER	9
1	A	806	CYS	8
1	A	788	PHE	7
1	A	795	SER	5
1	A	818	PRO	5

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Mol	Chain	Res	Type	Models (Total)
1	A	785	CYS	5
1	A	791	GLY	4
1	A	841	THR	3
1	A	730	GLY	3
1	A	765	ALA	3
1	A	737	GLU	3
1	A	728	VAL	2
1	A	779	GLY	2
1	A	828	GLU	2
1	A	792	GLU	2
1	A	757	THR	2
1	A	831	LYS	2
1	A	758	ALA	1
1	A	794	HIS	1
1	A	790	GLN	1
1	A	840	SER	1
1	A	807	ILE	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	78/101 (77%)	62±3 (79±4%)	16±3 (21±4%)	2 30
All	All	1950/2525 (77%)	1542 (79%)	408 (21%)	2 30

All 58 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	839	CYS	15
1	A	774	LYS	15
1	A	793	CYS	13
1	A	763	LYS	12
1	A	806	CYS	12
1	A	819	SER	12
1	A	830	MET	12
1	A	832	ARG	12

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Mol	Chain	Res	Type	Models (Total)
1	A	761	HIS	11
1	A	826	CYS	11
1	A	804	ARG	11
1	A	811	ARG	11
1	A	831	LYS	11
1	A	785	CYS	10
1	A	798	SER	10
1	A	817	SER	10
1	A	757	THR	9
1	A	836	GLU	9
1	A	732	CYS	9
1	A	784	THR	9
1	A	828	GLU	9
1	A	805	LYS	9
1	A	777	SER	8
1	A	810	GLU	8
1	A	800	SER	8
1	A	788	PHE	8
1	A	737	GLU	8
1	A	824	ASP	7
1	A	789	GLN	7
1	A	790	GLN	7
1	A	729	SER	6
1	A	764	CYS	6
1	A	787	THR	6
1	A	820	ASN	6
1	A	771	SER	6
1	A	762	LEU	6
1	A	840	SER	5
1	A	812	CYS	5
1	A	782	LEU	5
1	A	796	ILE	5
1	A	734	ASP	5
1	A	795	SER	5
1	A	803	GLU	4
1	A	792	GLU	4
1	A	841	THR	4
1	A	736	SER	4
1	A	759	LYS	3
1	A	780	THR	3
1	A	799	ASN	3
1	A	768	GLN	2

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Mol	Chain	Res	Type	Models (Total)
1	A	728	VAL	2
1	A	809	LEU	2
1	A	769	THR	2
1	A	797	ASN	2
1	A	778	PHE	1
1	A	773	ILE	1
1	A	794	HIS	1
1	A	802	LEU	1

6.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

6.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.6 Ligand geometry (i)

There are no ligands in this entry.

6.7 Other polymers (i)

There are no such molecules in this entry.

6.8 Polymer linkage issues (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 91% for the well-defined parts and 89% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *assignment_ TANAKA.txt*

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	1333
Number of shifts mapped to atoms	1333
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	1

7.1.2 Chemical shift referencing

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction ± precision, *ppm*	Suggested action
$^{13}C_{\alpha}$	117	0.12 ± 0.27	None needed (< 0.5 ppm)
$^{13}C_{\beta}$	108	-0.16 ± 0.15	None needed (< 0.5 ppm)
$^{13}C'$	103	0.22 ± 0.22	None needed (< 0.5 ppm)
^{15}N	104	0.47 ± 0.46	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 91%, i.e. 1065 atoms were assigned a chemical shift out of a possible 1170. 0 out of 15 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	456/474 (96%)	190/194 (98%)	180/190 (95%)	86/90 (96%)
Sidechain	585/642 (91%)	400/422 (95%)	179/200 (90%)	6/20 (30%)

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	Total	^{1}H	^{13}C	^{15}N
Aromatic	24/54 (44%)	24/28 (86%)	0/24 (0%)	0/2 (0%)
Overall	1065/1170 (91%)	614/644 (95%)	359/414 (87%)	92/112 (82%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 89%, i.e. 1331 atoms were assigned a chemical shift out of a possible 1491. 0 out of 15 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	556/586 (95%)	232/239 (97%)	220/236 (93%)	104/111 (94%)
Sidechain	727/797 (91%)	494/521 (95%)	224/249 (90%)	9/27 (33%)
Aromatic	48/108 (44%)	47/55 (85%)	0/48 (0%)	1/5 (20%)
Overall	1331/1491 (89%)	773/815 (95%)	444/533 (83%)	114/143 (80%)

7.1.4 Statistically unusual chemical shifts (i)

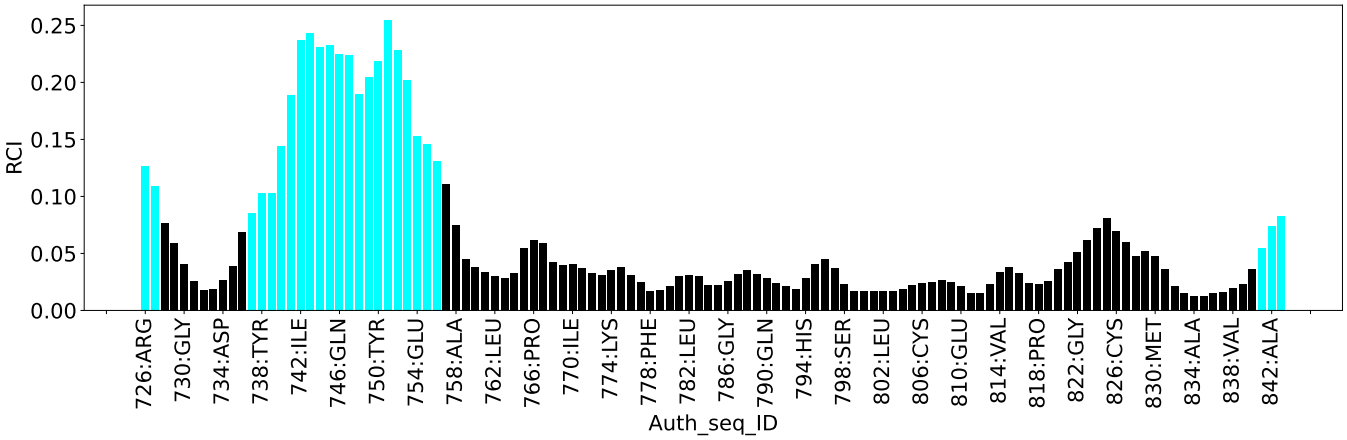
The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

List Id	Chain	Res	Type	Atom	Shift, *ppm*	Expected range, *ppm*	Z-score
1	A	780	THR	HG1	5.14	0.08 – 2.19	19.0

7.1.5 Random Coil Index (RCI) plots (i)

The image below reports *random coil index* values for the protein chains in the structure. The height of each bar gives a probability of a given residue to be disordered, as predicted from the available chemical shifts and the amino acid sequence. A value above 0.2 is an indication of significant predicted disorder. The colour of the bar shows whether the residue is in the well-defined core (black) or in the ill-defined residue ranges (cyan), as described in section 2 on ensemble composition.If well-defined core and ill-defined regions are not identified then it is shown as gray bars.

Random coil index (RCI) for chain A:


RCI
0.25
0.20
0.15
0.10
0.05
0.00
726:ARG
730:GLY
734:ASP
738:TYR
742:ILE
746:GLN
750:TYR
754:GLU
758:ALA
762:LEU
766:PRO
770:ILE
774:LYS
778:PHE
782:LEU
786:GLY
790:GLN
794:HIS
798:SER
802:LEU
806:CYS
810:GLU
814:VAL
818:PRO
822:GLY
826:CYS
830:MET
834:ALA
838:VAL
842:ALA
Auth_seq_ID

8 NMR restraints analysis

8.1 Conformationally restricting restraints

The following table provides the summary of experimentally observed NMR restraints in different categories. Restraints are classified into different categories based on the sequence separation of the atoms involved.

Description	Value
Total distance restraints	2151
Intra-residue (|i-j|=0)	550
Sequential (|i-j|=1)	523
Medium range (|i-j|>1 and |i-j|<5)	269
Long range (|i-j|≥5)	805
Inter-chain	0
Hydrogen bond restraints	0
Disulfide bond restraints	4
Total dihedral-angle restraints	75
Number of unmapped restraints	0
Number of restraints per residue	18.2
Number of long range restraints per residue[1]	6.6

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

8.2 Residual restraint violations

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

8.2.1 Average number of distance violations per model

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

Bins (Å)	Average number of violations per model	Max (Å)
0.1-0.2 (Small)	1.5	0.2
0.2-0.5 (Medium)	0.4	0.31
>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.

Bins (°)	Average number of violations per model	Max (°)
1.0-10.0 (Small)	6.2	6.39
10.0-20.0 (Medium)	None	None
>20.0 (Large)	None	None

9 Distance violation analysis (i)

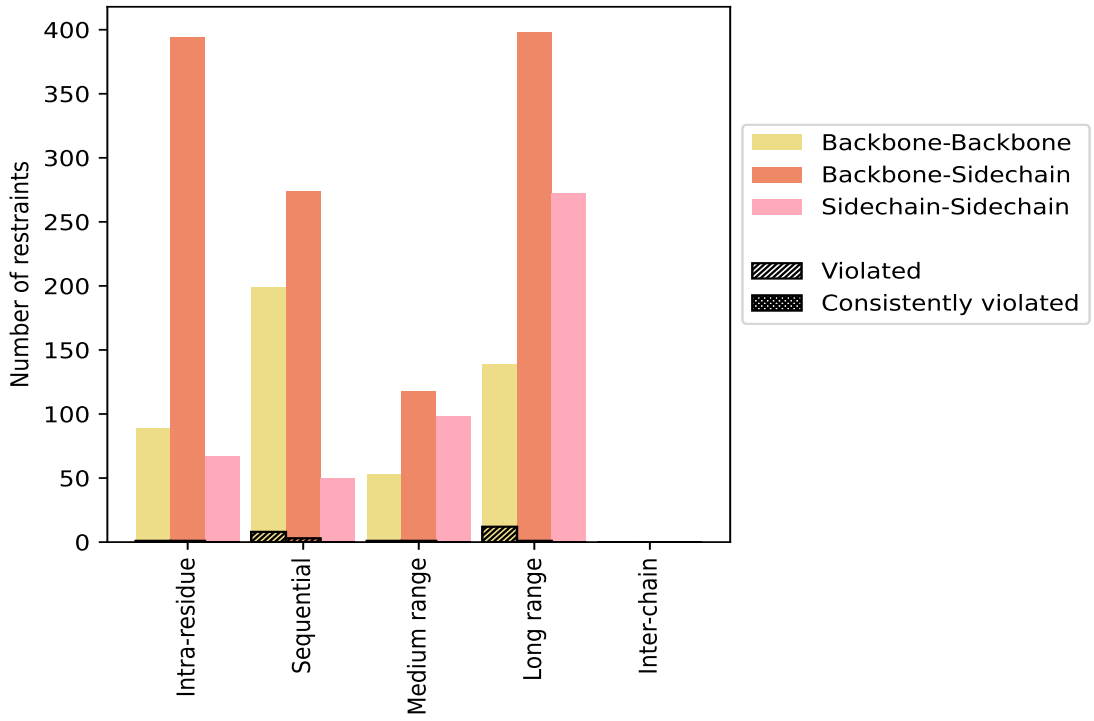
9.1 Summary of distance violations (i)

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

Restraints type	Count	%[1]	Violated[3]			Consistently Violated[4]		
			Count	%[2]	%[1]	Count	%[2]	%[1]
Intra-residue (|i-j|=0)	550	25.6	2	0.4	0.1	0	0.0	0.0
Backbone-Backbone	89	4.1	1	1.1	0.0	0	0.0	0.0
Backbone-Sidechain	394	18.3	1	0.3	0.0	0	0.0	0.0
Sidechain-Sidechain	67	3.1	0	0.0	0.0	0	0.0	0.0
Sequential (|i-j|=1)	523	24.3	11	2.1	0.5	0	0.0	0.0
Backbone-Backbone	199	9.3	8	4.0	0.4	0	0.0	0.0
Backbone-Sidechain	274	12.7	3	1.1	0.1	0	0.0	0.0
Sidechain-Sidechain	50	2.3	0	0.0	0.0	0	0.0	0.0
Medium range (|i-j|>1 & |i-j|<5)	269	12.5	2	0.7	0.1	0	0.0	0.0
Backbone-Backbone	53	2.5	1	1.9	0.0	0	0.0	0.0
Backbone-Sidechain	118	5.5	1	0.8	0.0	0	0.0	0.0
Sidechain-Sidechain	98	4.6	0	0.0	0.0	0	0.0	0.0
Long range (|i-j|≥5)	805	37.4	13	1.6	0.6	0	0.0	0.0
Backbone-Backbone	139	6.5	12	8.6	0.6	0	0.0	0.0
Backbone-Sidechain	398	18.5	1	0.3	0.0	0	0.0	0.0
Sidechain-Sidechain	268	12.5	0	0.0	0.0	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	4	0.2	0	0.0	0.0	0	0.0	0.0
Total	2151	100.0	28	1.3	1.3	0	0.0	0.0
Backbone-Backbone	480	22.3	22	4.6	1.0	0	0.0	0.0
Backbone-Sidechain	1184	55.0	6	0.5	0.3	0	0.0	0.0
Sidechain-Sidechain	487	22.6	0	0.0	0.0	0	0.0	0.0

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

9.1.1 Bar chart : Distribution of distance restraints and violations



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

9.2 Distance violation statistics for each model

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

Model ID	Number of violations						Mean (Å)	Max (Å)	SD[6] (Å)	Median (Å)
	IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total				
1	0	0	0	1	0	1	0.16	0.16	0.0	0.16
2	0	0	1	0	0	1	0.16	0.16	0.0	0.16
3	1	0	0	0	0	1	0.12	0.12	0.0	0.12
4	0	1	0	1	0	2	0.14	0.18	0.04	0.14
5	0	1	0	0	0	1	0.1	0.1	0.0	0.1
6	0	0	1	0	0	1	0.25	0.25	0.0	0.25
7	0	0	1	0	0	1	0.11	0.11	0.0	0.11
8	1	0	0	1	0	2	0.18	0.25	0.08	0.18
9	0	0	2	0	0	2	0.12	0.13	0.02	0.12
10	0	1	1	1	0	3	0.16	0.22	0.04	0.14

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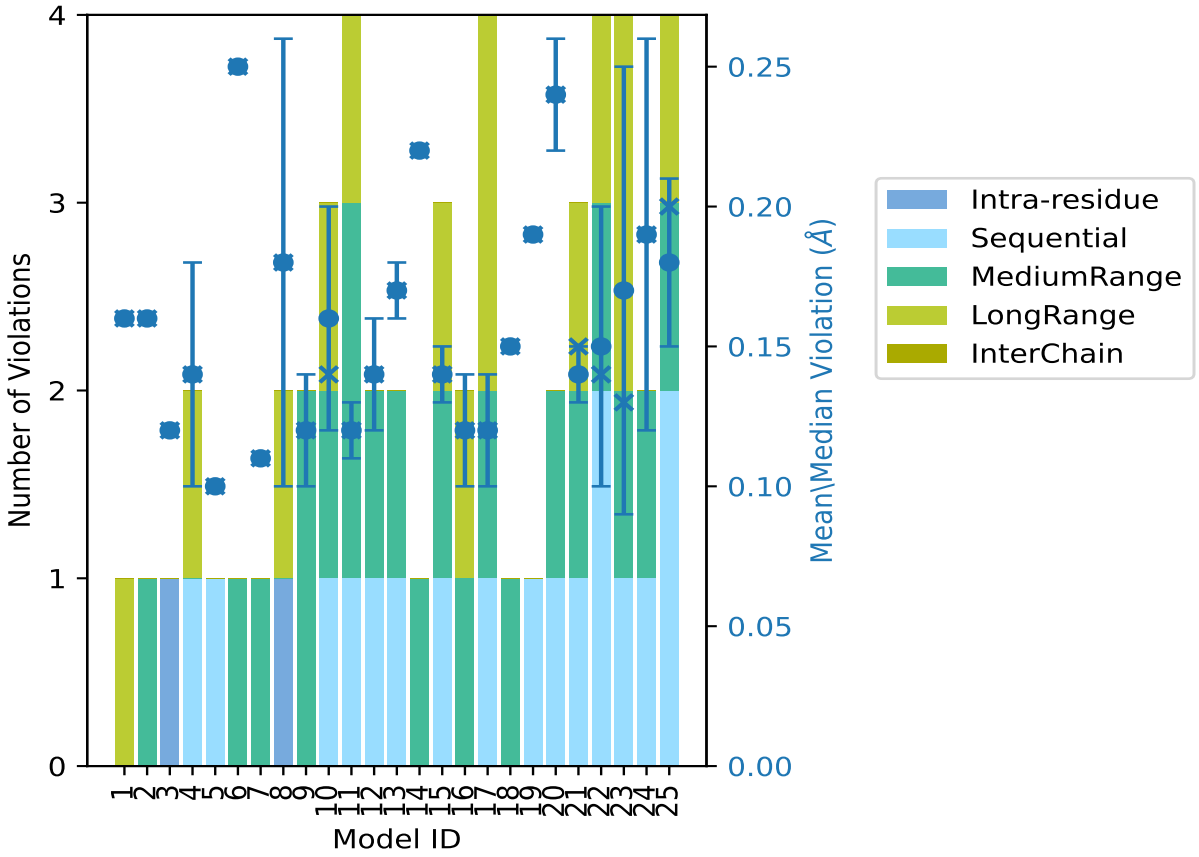
Model ID	Number of violations						Mean (Å)	Max (Å)	SD[6] (Å)	Median (Å)
	IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total				
11	0	1	2	1	0	4	0.12	0.14	0.01	0.12
12	0	1	1	0	0	2	0.14	0.15	0.02	0.14
13	0	1	1	0	0	2	0.17	0.18	0.01	0.17
14	0	0	1	0	0	1	0.22	0.22	0.0	0.22
15	0	1	1	1	0	3	0.14	0.15	0.01	0.14
16	0	0	1	1	0	2	0.12	0.13	0.02	0.12
17	0	1	1	2	0	4	0.12	0.15	0.02	0.12
18	0	0	1	0	0	1	0.15	0.15	0.0	0.15
19	0	1	0	0	0	1	0.19	0.19	0.0	0.19
20	0	1	1	0	0	2	0.24	0.26	0.02	0.24
21	0	1	1	1	0	3	0.14	0.15	0.01	0.15
22	0	2	1	1	0	4	0.15	0.23	0.05	0.14
23	0	1	1	2	0	4	0.17	0.31	0.08	0.13
24	0	1	1	0	0	2	0.19	0.26	0.07	0.19
25	0	2	1	1	0	4	0.18	0.21	0.03	0.2

[1]Intra-residue restraints, [2]Sequential restraints, [3]Medium range restraints, [4]Long range restraints, [5]Inter-chain restraints, [6]Standard deviation

9.2.1 Bar graph : Distance Violation statistics for each model



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

9.3 Distance violation statistics for the ensemble

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, 2119(IR:548, SQ:512, MR:267, LR:792, 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]	%
2	5	0	12	0	19	1	4.0
0	6	1	1	0	8	2	8.0
0	0	0	0	0	0	3	12.0
0	0	0	0	0	0	4	16.0
0	0	0	0	0	0	5	20.0
0	0	0	0	0	0	6	24.0

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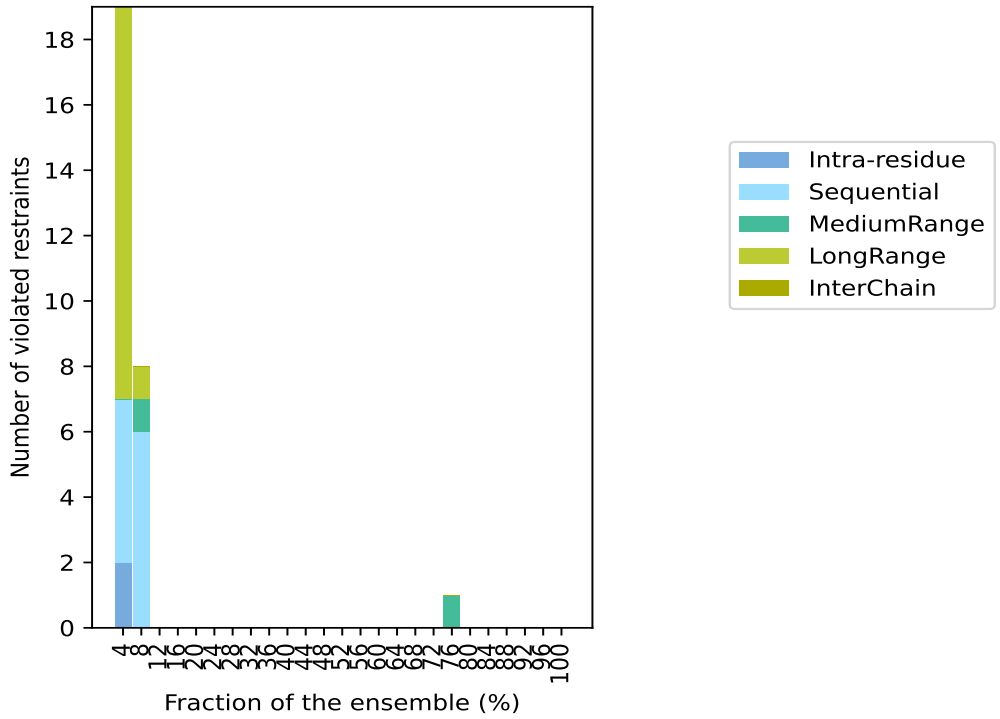
Number of violated restraints						Fraction of the ensemble	
IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total	Count[6]	%
0	0	0	0	0	0	7	28.0
0	0	0	0	0	0	8	32.0
0	0	0	0	0	0	9	36.0
0	0	0	0	0	0	10	40.0
0	0	0	0	0	0	11	44.0
0	0	0	0	0	0	12	48.0
0	0	0	0	0	0	13	52.0
0	0	0	0	0	0	14	56.0
0	0	0	0	0	0	15	60.0
0	0	0	0	0	0	16	64.0
0	0	0	0	0	0	17	68.0
0	0	0	0	0	0	18	72.0
0	0	1	0	0	1	19	76.0
0	0	0	0	0	0	20	80.0
0	0	0	0	0	0	21	84.0
0	0	0	0	0	0	22	88.0
0	0	0	0	0	0	23	92.0
0	0	0	0	0	0	24	96.0
0	0	0	0	0	0	25	100.0

[1]Intra-residue restraints, [2]Sequential restraints, [3]Medium range restraints, [4]Long range restraints, [5]Inter-chain restraints, [6] Number of models with violations

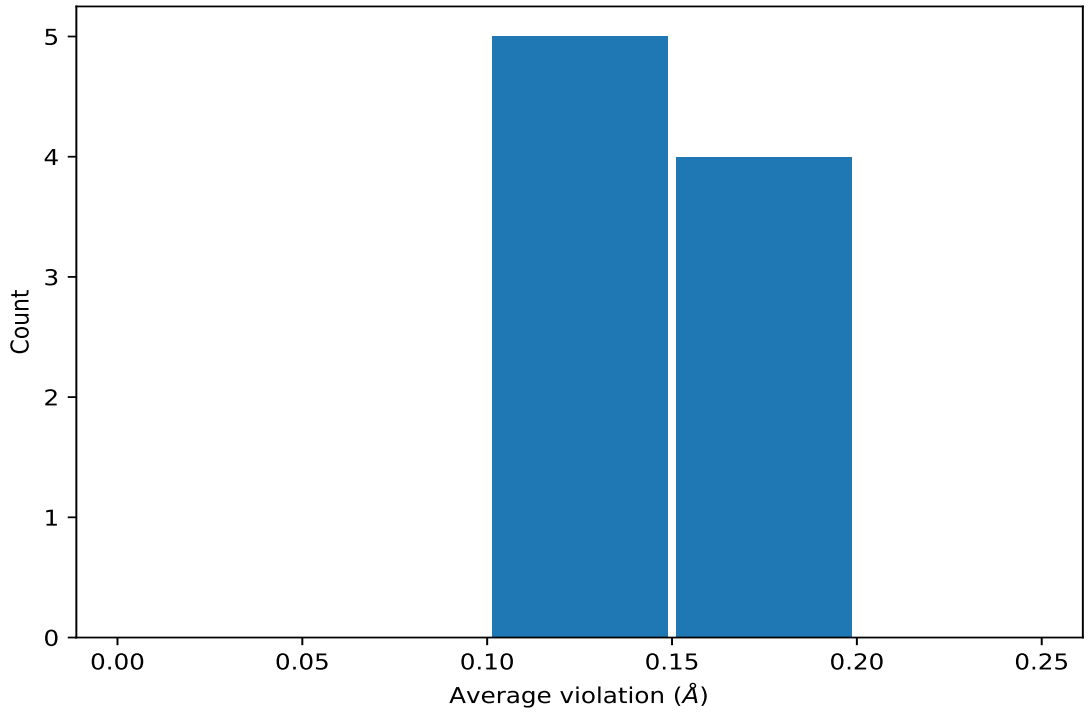
9.3.1 Bar graph : Distance violation statistics for the ensemble



9.4 Most violated distance restraints in the ensemble

9.4.1 Histogram : Distribution of mean distance violations

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



9.4.2 Table: Most violated distance restraints

The following table provides the mean and the standard deviation of theviolation 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.

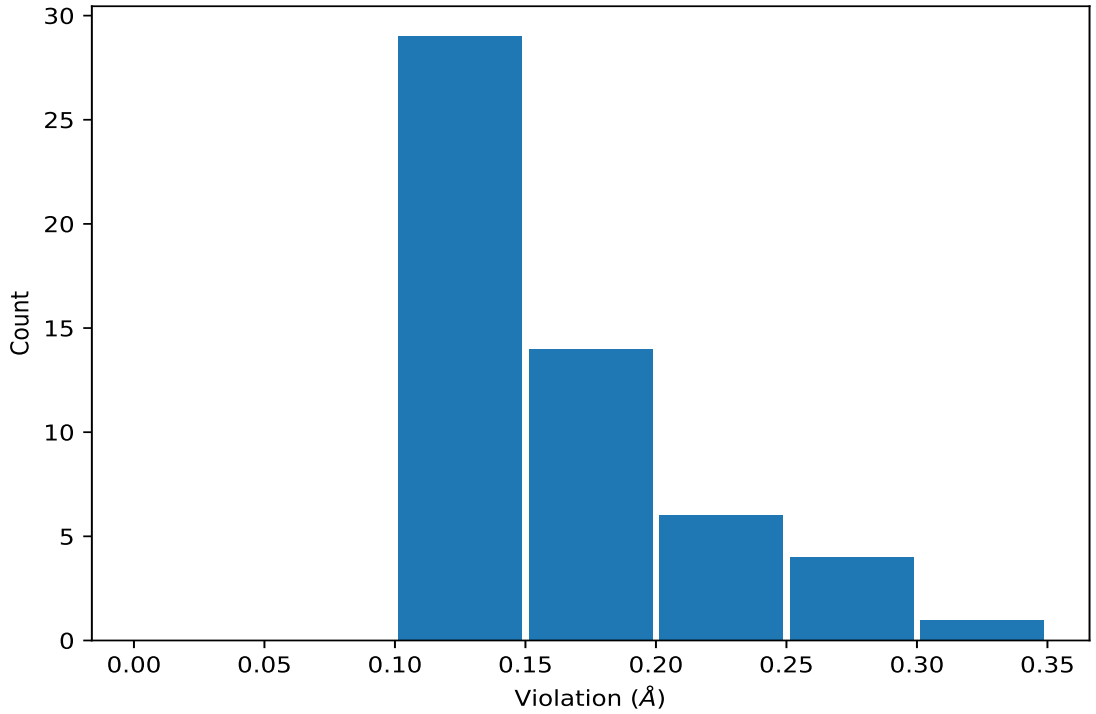
Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	19	0.18	0.06	0.16
(4,306)	1:841:A:THR:HB	1:842:A:ALA:H	2	0.18	0.04	0.18
(4,429)	1:778:A:PHE:H	1:798:A:SER:HA	2	0.17	0.01	0.17
(6,8)	1:744:A:ASN:HA	1:745:A:TRP:HD1	2	0.17	0.02	0.17
(4,169)	1:747:A:ILE:HA	1:748:A:GLU:H	2	0.15	0.02	0.15
(4,284)	1:827:A:PRO:HA	1:828:A:GLU:H	2	0.14	0.01	0.14
(4,193)	1:764:A:CYS:HA	1:765:A:ALA:H	2	0.12	0.02	0.12
(4,328)	1:800:A:SER:HA	1:803:A:GLU:H	2	0.11	0.01	0.11
(6,9)	1:745:A:TRP:HD1	1:746:A:GLN:HA	2	0.11	0.01	0.11

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

9.5 All violated distance restraints (i)

9.5.1 Histogram : Distribution of distance violations (i)

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



9.5.2 Table : All distance violations (i)

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

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	23	0.31
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	20	0.26
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	24	0.26
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	6	0.25
(4,126)	1:828:A:GLU:HA	1:828:A:GLU:H	8	0.25
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	22	0.23
(4,306)	1:841:A:THR:HB	1:842:A:ALA:H	20	0.23
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	10	0.22
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	14	0.22
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	25	0.21

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(4,432)	1:779:A:GLY:H	1:831:A:LYS:HA	25	0.2
(6,8)	1:744:A:ASN:HA	1:745:A:TRP:HD1	19	0.19
(4,305)	1:841:A:THR:HA	1:842:A:ALA:H	25	0.19
(4,429)	1:778:A:PHE:H	1:798:A:SER:HA	4	0.18
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	13	0.18
(4,429)	1:778:A:PHE:H	1:798:A:SER:HA	1	0.16
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	2	0.16
(4,169)	1:747:A:ILE:HA	1:748:A:GLU:H	13	0.16
(6,107)	1:735:A:VAL:HA	1:760:A:VAL:HA	21	0.15
(6,8)	1:744:A:ASN:HA	1:745:A:TRP:HD1	21	0.15
(4,394)	1:770:A:ILE:HA	1:840:A:SER:H	17	0.15
(4,352)	1:732:A:CYS:HA	1:837:A:ALA:H	23	0.15
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	12	0.15
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	18	0.15
(4,193)	1:764:A:CYS:HA	1:765:A:ALA:H	15	0.15
(4,381)	1:764:A:CYS:H	1:812:A:CYS:H	11	0.14
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	15	0.14
(4,306)	1:841:A:THR:HB	1:842:A:ALA:H	22	0.14
(4,284)	1:827:A:PRO:HA	1:828:A:GLU:H	10	0.14
(4,410)	1:775:A:PHE:H	1:835:A:VAL:HA	15	0.13
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	9	0.13
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	16	0.13
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	21	0.13
(4,284)	1:827:A:PRO:HA	1:828:A:GLU:H	17	0.13
(4,231)	1:790:A:GLN:HA	1:791:A:GLY:H	22	0.13
(4,169)	1:747:A:ILE:HA	1:748:A:GLU:H	11	0.13
(4,146)	1:727:A:THR:HA	1:728:A:VAL:H	25	0.13
(6,9)	1:745:A:TRP:HD1	1:746:A:GLN:HA	24	0.12
(4,423)	1:777:A:SER:H	1:834:A:ALA:H	10	0.12
(4,328)	1:800:A:SER:HA	1:803:A:GLU:H	11	0.12
(4,212)	1:776:A:ALA:HA	1:777:A:SER:H	12	0.12
(4,105)	1:807:A:ILE:HB	1:807:A:ILE:H	3	0.12
(6,113)	1:737:A:GLU:HA	1:833:A:VAL:HB	22	0.11
(4,405)	1:772:A:ALA:H	1:839:A:CYS:HA	23	0.11
(4,384)	1:769:A:THR:HA	1:809:A:LEU:H	17	0.11
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	7	0.11
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	11	0.11
(4,322)	1:794:A:HIS:HE1	1:798:A:SER:HA	17	0.11
(6,9)	1:745:A:TRP:HD1	1:746:A:GLN:HA	4	0.1
(4,378)	1:763:A:LYS:H	1:811:A:ARG:HA	16	0.1
(4,373)	1:761:A:HIS:HA	1:814:A:VAL:H	8	0.1
(4,328)	1:800:A:SER:HA	1:803:A:GLU:H	9	0.1

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(4,229)	1:789:A:GLN:HA	1:790:A:GLN:H	23	0.1
(4,193)	1:764:A:CYS:HA	1:765:A:ALA:H	5	0.1

10 Dihedral-angle violation analysis

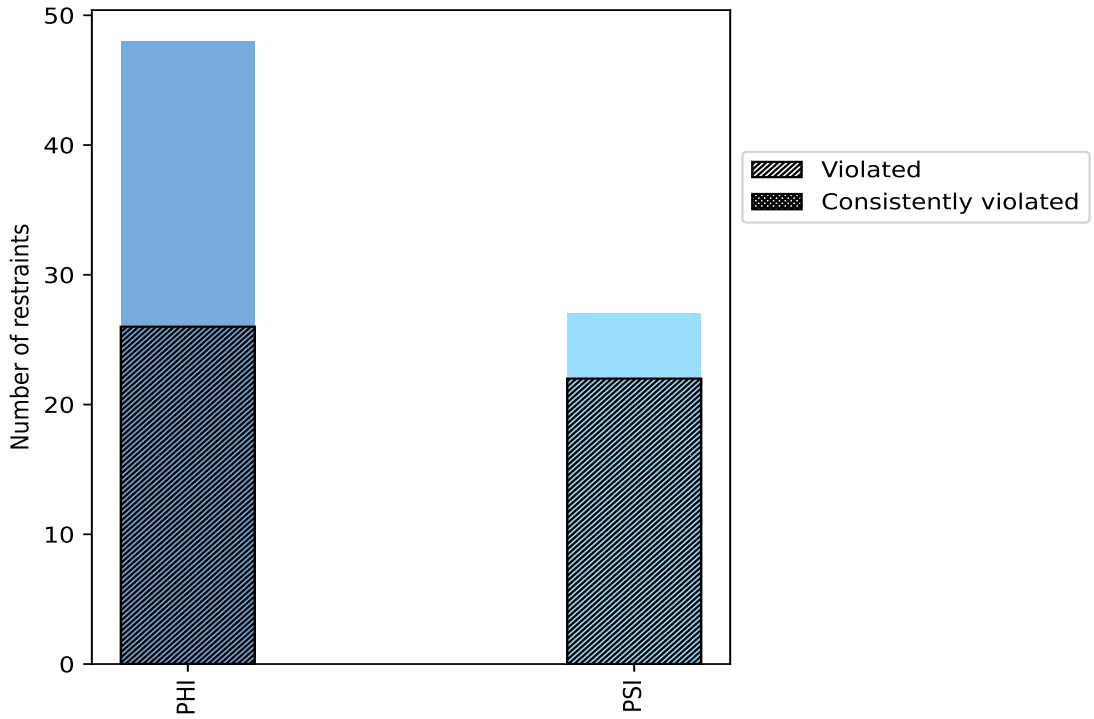
10.1 Summary of dihedral-angle violations

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

Angle type	Count	%[1]	Violated[3]			Consistently Violated[4]		
			Count	%[2]	%[1]	Count	%[2]	%[1]
PHI	48	64.0	26	54.2	34.7	0	0.0	0.0
PSI	27	36.0	22	81.5	29.3	0	0.0	0.0
Total	75	100.0	48	64.0	64.0	0	0.0	0.0

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

10.1.1 Bar chart : Distribution of dihedral-angles and violations



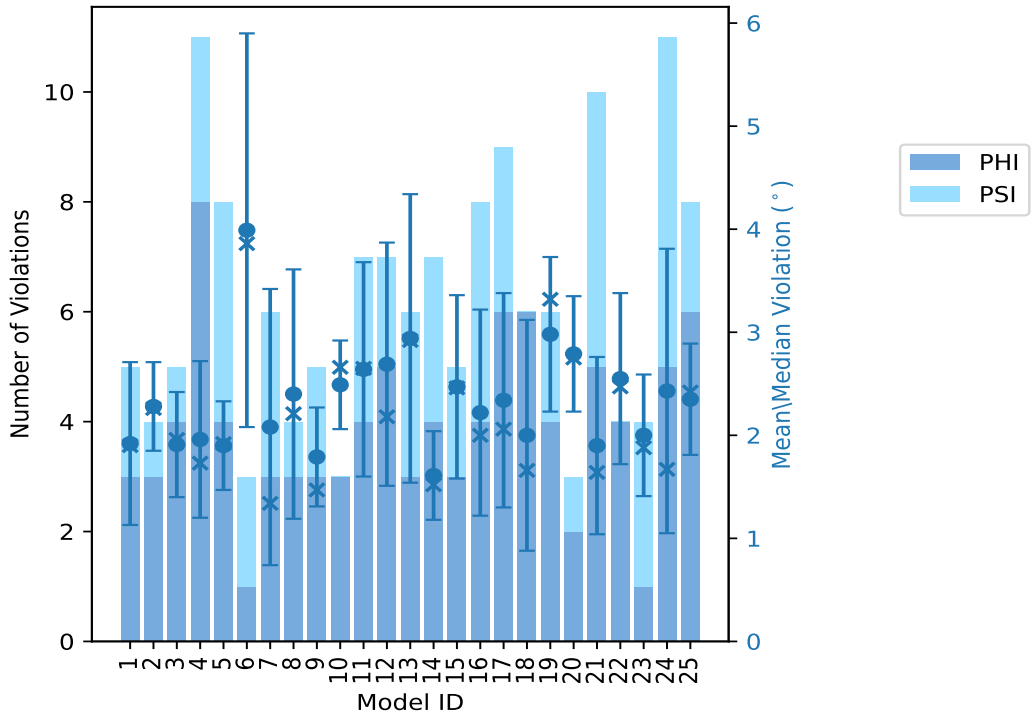
Violated and consistently violated restraints are shown using different hatch patterns in their respective categories

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

The following table provides the dihedral-angle violation statistics for each model in the ensemble. Violations less than 1° are not included in the statistics.

Model ID	Number of violations			Mean (°)	Max (°)	SD (°)	Median (°)
	PHI	PSI	Total				
1	3	2	5	1.92	3.23	0.79	1.9
2	3	1	4	2.28	2.85	0.43	2.26
3	4	1	5	1.91	2.55	0.51	1.96
4	8	3	11	1.96	3.72	0.76	1.73
5	4	4	8	1.9	2.52	0.43	1.92
6	1	2	3	3.99	6.39	1.91	3.86
7	3	3	6	2.08	4.67	1.34	1.34
8	3	1	4	2.4	4.13	1.21	2.21
9	3	2	5	1.79	2.49	0.48	1.47
10	3	0	3	2.49	2.92	0.43	2.66
11	4	3	7	2.64	4.44	1.04	2.65
12	5	2	7	2.69	5.0	1.18	2.18
13	3	3	6	2.94	5.4	1.4	2.92
14	4	3	7	1.61	2.34	0.43	1.52
15	3	2	5	2.47	3.73	0.89	2.46
16	4	4	8	2.22	4.48	1.0	2.0
17	6	3	9	2.34	4.56	1.04	2.06
18	6	0	6	2.0	4.29	1.12	1.66
19	4	2	6	2.98	3.8	0.75	3.32
20	2	1	3	2.79	3.49	0.56	2.75
21	5	5	10	1.9	4.1	0.86	1.64
22	4	0	4	2.55	3.63	0.83	2.47
23	1	3	4	2.0	2.91	0.59	1.88
24	5	6	11	2.43	4.54	1.38	1.67
25	6	2	8	2.35	3.05	0.54	2.42

10.2.1 Bar graph : Dihedral 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

10.3 Dihedral-angle violation statistics for the ensemble

Violation analysis may find that some restraints are violated in very 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 ensemble.

Number of violated restraints			Fraction of the ensemble	
PHI	PSI	Total	Count[1]	%
15	10	25	1	4.0
0	5	5	2	8.0
4	2	6	3	12.0
1	1	2	4	16.0
2	1	3	5	20.0
0	1	1	6	24.0
0	0	0	7	28.0
0	1	1	8	32.0
1	1	2	9	36.0
0	0	0	10	40.0
0	0	0	11	44.0

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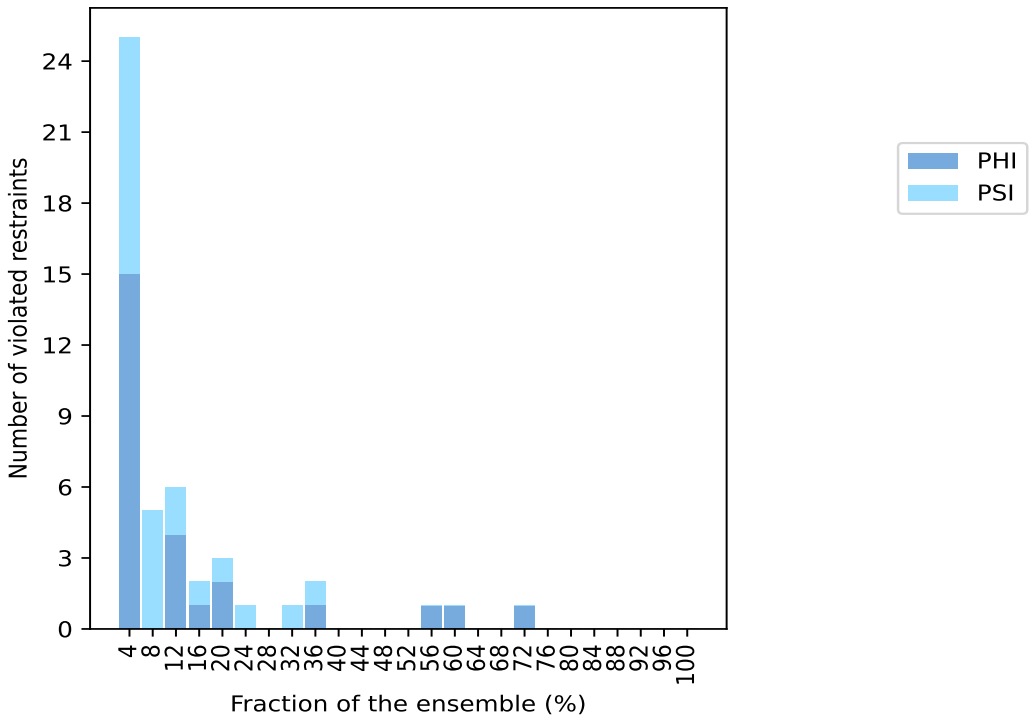
Number of violated restraints			Fraction of the ensemble	
PHI	PSI	Total	Count[1]	%
0	0	0	12	48.0
0	0	0	13	52.0
1	0	1	14	56.0
1	0	1	15	60.0
0	0	0	16	64.0
0	0	0	17	68.0
1	0	1	18	72.0
0	0	0	19	76.0
0	0	0	20	80.0
0	0	0	21	84.0
0	0	0	22	88.0
0	0	0	23	92.0
0	0	0	24	96.0
0	0	0	25	100.0

[1] Number of models with violations

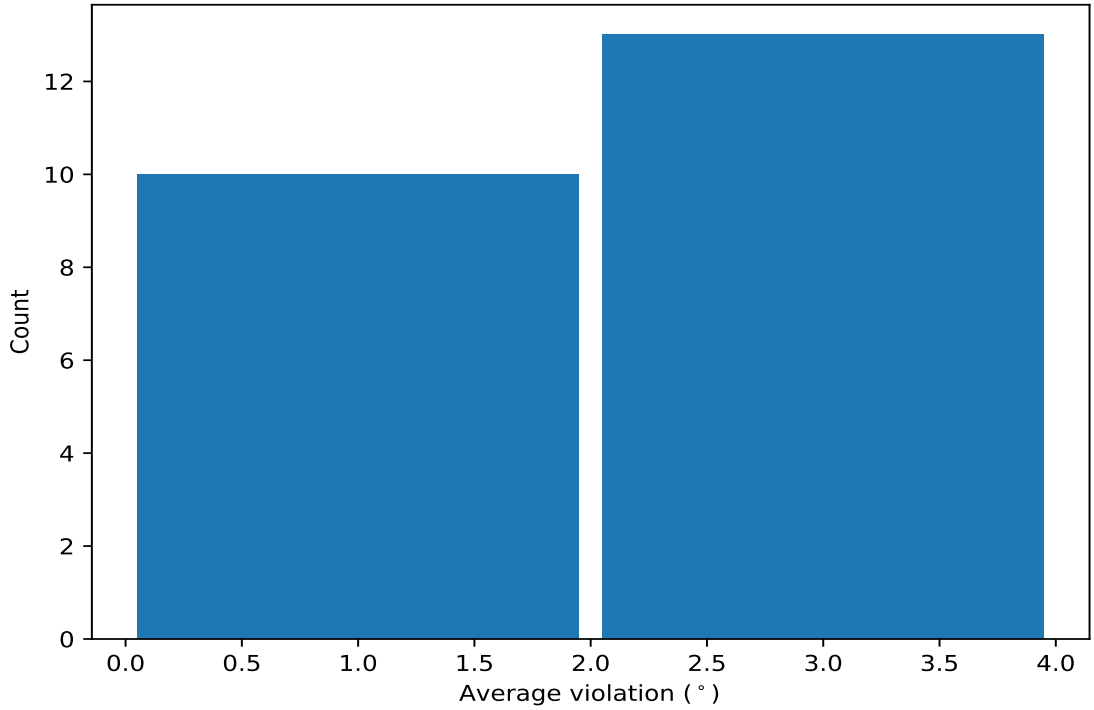
10.3.1 Bar graph : Dihedral-angle Violation statistics for the ensemble



10.4 Most violated dihedral-angle restraints in the ensemble

10.4.1 Histogram : Distribution of mean dihedral-angle violations

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



10.4.2 Table: Most violated dihedral-angle restraints

The following table provides the mean and the standard deviation of the violation for each restraint sorted by number of violated models and the mean value. The Key (restraint list ID, restraint ID) is the unique identifier for a given restraint.

Key	Atom-1	Atom-2	Atom-3	Atom-4	Models[1]	Mean	SD[2]	Median
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	18	2.65	1.23	2.42
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	15	2.14	1.1	1.79
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	14	3.0	1.02	3.08
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	9	3.12	0.65	3.17
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	9	1.83	0.69	1.61
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	8	1.95	0.5	1.84
(1,41)	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	1:763:A:LYS:N	6	3.19	1.79	2.56
(1,56)	1:737:A:GLU:C	1:738:A:TYR:N	1:738:A:TYR:CA	1:738:A:TYR:C	5	2.24	1.37	1.36
(1,47)	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	1:833:A:VAL:N	5	1.99	0.66	1.75
(1,25)	1:836:A:GLU:C	1:837:A:ALA:N	1:837:A:ALA:CA	1:837:A:ALA:C	5	1.96	0.51	2.06
(1,28)	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	1:801:A:VAL:N	4	2.18	0.96	2.2
(1,1)	1:799:A:ASN:C	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	4	1.97	0.69	1.74
(1,2)	1:800:A:SER:C	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	3	2.87	1.13	3.61

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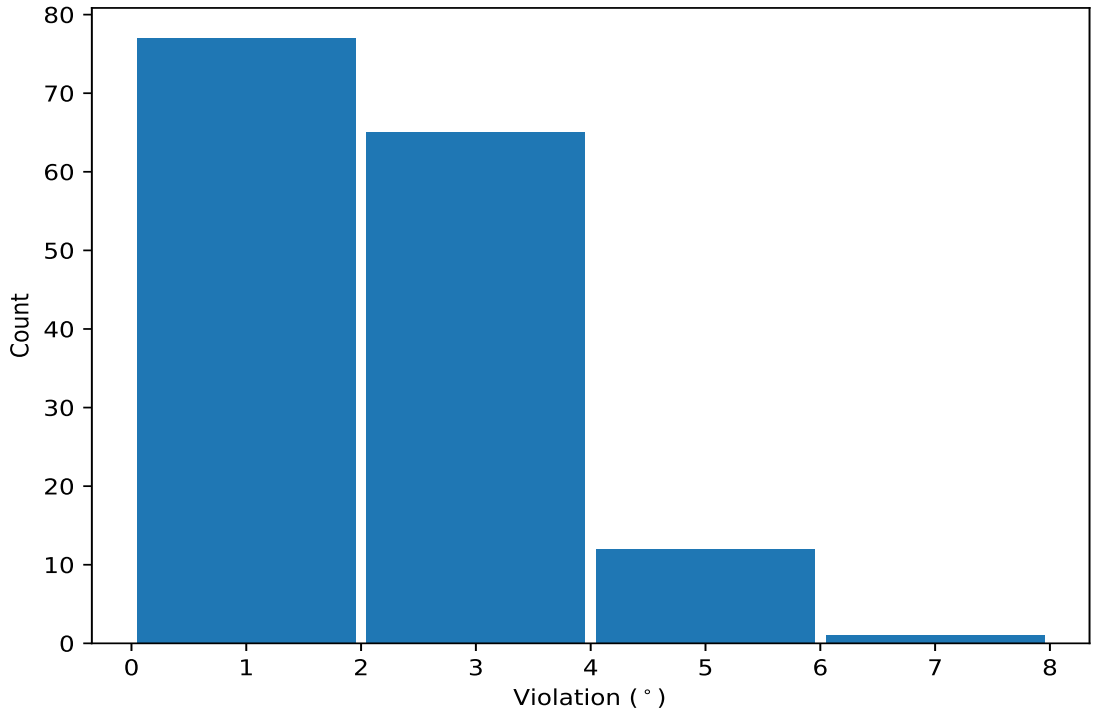
Key	Atom-1	Atom-2	Atom-3	Atom-4	Models[1]	Mean	SD[2]	Median
(1,35)	1:733:A:ALA:N	1:733:A:ALA:CA	1:733:A:ALA:C	1:734:A:ASP:N	3	2.1	0.6	1.91
(1,55)	1:727:A:THR:C	1:728:A:VAL:N	1:728:A:VAL:CA	1:728:A:VAL:C	3	2.07	0.83	2.13
(1,21)	1:832:A:ARG:C	1:833:A:VAL:N	1:833:A:VAL:CA	1:833:A:VAL:C	3	2.03	0.71	2.39
(1,20)	1:831:A:LYS:C	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	3	2.02	0.68	1.64
(1,29)	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	1:802:A:LEU:N	3	1.56	0.37	1.41
(1,36)	1:734:A:ASP:N	1:734:A:ASP:CA	1:734:A:ASP:C	1:735:A:VAL:N	2	2.7	1.39	2.7
(1,53)	1:838:A:VAL:N	1:838:A:VAL:CA	1:838:A:VAL:C	1:839:A:CYS:N	2	1.98	0.06	1.98
(1,37)	1:735:A:VAL:N	1:735:A:VAL:CA	1:735:A:VAL:C	1:736:A:SER:N	2	1.9	0.01	1.9
(1,38)	1:759:A:LYS:N	1:759:A:LYS:CA	1:759:A:LYS:C	1:760:A:VAL:N	2	1.89	0.58	1.89
(1,40)	1:761:A:HIS:N	1:761:A:HIS:CA	1:761:A:HIS:C	1:762:A:LEU:N	2	1.14	0.09	1.14

[1] Number of violated models, [2]Standard deviation, All angle values are in degree (°)

10.5 All violated dihedral-angle restraints

10.5.1 Histogram : Distribution of violations

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



10.5.2 Table: All violated dihedral-angle restraints

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.

Key	Atom-1	Atom-2	Atom-3	Atom-4	Model ID	Violation (°)
(1,41)	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	1:763:A:LYS:N	6	6.39
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	13	5.4
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	12	5.0
(1,56)	1:737:A:GLU:C	1:738:A:TYR:N	1:738:A:TYR:CA	1:738:A:TYR:C	7	4.67
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	17	4.56
(1,41)	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	1:763:A:LYS:N	24	4.54
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	16	4.48
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	24	4.44
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	11	4.44
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	24	4.39
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	18	4.29
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	8	4.13
(1,36)	1:734:A:ASP:N	1:734:A:ASP:CA	1:734:A:ASP:C	1:735:A:VAL:N	21	4.1
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	6	3.86
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	19	3.8
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	15	3.73
(1,2)	1:800:A:SER:C	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	4	3.72
(1,30)	1:802:A:LEU:N	1:802:A:LEU:CA	1:802:A:LEU:C	1:803:A:GLU:N	13	3.67
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	22	3.63
(1,2)	1:800:A:SER:C	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	12	3.61
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	19	3.55
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	20	3.49
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	11	3.45
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	19	3.4
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	24	3.26
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	1	3.23
(1,41)	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	1:763:A:LYS:N	19	3.23
(1,28)	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	1:801:A:VAL:N	17	3.18
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	11	3.17
(1,1)	1:799:A:ASN:C	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	15	3.12
(1,28)	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	1:801:A:VAL:N	13	3.09
(1,3)	1:801:A:VAL:C	1:802:A:LEU:N	1:802:A:LEU:CA	1:802:A:LEU:C	22	3.07
(1,55)	1:727:A:THR:C	1:728:A:VAL:N	1:728:A:VAL:CA	1:728:A:VAL:C	25	3.05
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	17	3.04
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	7	3.0
(1,20)	1:831:A:LYS:C	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	25	2.97
(1,47)	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	1:833:A:VAL:N	12	2.94
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	10	2.92
(1,35)	1:733:A:ALA:N	1:733:A:ALA:CA	1:733:A:ALA:C	1:734:A:ASP:N	23	2.91
(1,39)	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	1:761:A:HIS:N	8	2.88
(1,56)	1:737:A:GLU:C	1:738:A:TYR:N	1:738:A:TYR:CA	1:738:A:TYR:C	2	2.85
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	13	2.76
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	20	2.75
(1,72)	1:820:A:ASN:C	1:821:A:PHE:N	1:821:A:PHE:CA	1:821:A:PHE:C	21	2.74
(1,44)	1:812:A:CYS:N	1:812:A:CYS:CA	1:812:A:CYS:C	1:813:A:VAL:N	16	2.72
(1,43)	1:811:A:ARG:N	1:811:A:ARG:CA	1:811:A:ARG:C	1:812:A:CYS:N	25	2.69
(1,25)	1:836:A:GLU:C	1:837:A:ALA:N	1:837:A:ALA:CA	1:837:A:ALA:C	10	2.66
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	11	2.65
(1,21)	1:832:A:ARG:C	1:833:A:VAL:N	1:833:A:VAL:CA	1:833:A:VAL:C	25	2.65
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	4	2.63
(1,47)	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	1:833:A:VAL:N	2	2.55
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	3	2.55

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Key	Atom-1	Atom-2	Atom-3	Atom-4	Model ID	Violation (°)
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	5	2.52
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	9	2.49
(1,38)	1:759:A:LYS:N	1:759:A:LYS:CA	1:759:A:LYS:C	1:760:A:VAL:N	16	2.47
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	17	2.46
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	15	2.46
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	4	2.43
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	24	2.41
(1,21)	1:832:A:ARG:C	1:833:A:VAL:N	1:833:A:VAL:CA	1:833:A:VAL:C	5	2.39
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	4	2.39
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	14	2.34
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	3	2.33
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	9	2.24
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	1	2.24
(1,8)	1:732:A:CYS:C	1:733:A:ALA:N	1:733:A:ALA:CA	1:733:A:ALA:C	16	2.23
(1,70)	1:805:A:LYS:C	1:806:A:CYS:N	1:806:A:CYS:CA	1:806:A:CYS:C	25	2.2
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	12	2.18
(1,26)	1:837:A:ALA:C	1:838:A:VAL:N	1:838:A:VAL:CA	1:838:A:VAL:C	4	2.15
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	18	2.14
(1,55)	1:727:A:THR:C	1:728:A:VAL:N	1:728:A:VAL:CA	1:728:A:VAL:C	18	2.13
(1,25)	1:836:A:GLU:C	1:837:A:ALA:N	1:837:A:ALA:CA	1:837:A:ALA:C	5	2.13
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	20	2.12
(1,29)	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	1:802:A:LEU:N	19	2.07
(1,15)	1:762:A:LEU:C	1:763:A:LYS:N	1:763:A:LYS:CA	1:763:A:LYS:C	12	2.07
(1,25)	1:836:A:GLU:C	1:837:A:ALA:N	1:837:A:ALA:CA	1:837:A:ALA:C	17	2.06
(1,53)	1:838:A:VAL:N	1:838:A:VAL:CA	1:838:A:VAL:C	1:839:A:CYS:N	21	2.04
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	23	2.02
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	3	1.96
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	2	1.96
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	14	1.94
(1,53)	1:838:A:VAL:N	1:838:A:VAL:CA	1:838:A:VAL:C	1:839:A:CYS:N	5	1.93
(1,37)	1:735:A:VAL:N	1:735:A:VAL:CA	1:735:A:VAL:C	1:736:A:SER:N	17	1.91
(1,35)	1:733:A:ALA:N	1:733:A:ALA:CA	1:733:A:ALA:C	1:734:A:ASP:N	5	1.91
(1,57)	1:748:A:GLU:C	1:749:A:SER:N	1:749:A:SER:CA	1:749:A:SER:C	10	1.9
(1,37)	1:735:A:VAL:N	1:735:A:VAL:CA	1:735:A:VAL:C	1:736:A:SER:N	1	1.9
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	25	1.9
(1,41)	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	1:763:A:LYS:N	14	1.89
(1,25)	1:836:A:GLU:C	1:837:A:ALA:N	1:837:A:ALA:CA	1:837:A:ALA:C	22	1.88
(1,63)	1:773:A:ILE:C	1:774:A:LYS:N	1:774:A:LYS:CA	1:774:A:LYS:C	25	1.86
(1,1)	1:799:A:ASN:C	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	19	1.83
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	11	1.79
(1,7)	1:731:A:VAL:C	1:732:A:CYS:N	1:732:A:CYS:CA	1:732:A:CYS:C	2	1.78
(1,41)	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	1:763:A:LYS:N	16	1.77
(1,47)	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	1:833:A:VAL:N	23	1.75
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	12	1.75
(1,48)	1:833:A:VAL:N	1:833:A:VAL:CA	1:833:A:VAL:C	1:834:A:ALA:N	15	1.74
(1,6)	1:730:A:GLY:C	1:731:A:VAL:N	1:731:A:VAL:CA	1:731:A:VAL:C	4	1.73
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	6	1.71
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	21	1.68
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	24	1.67
(1,20)	1:831:A:LYS:C	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	21	1.64
(1,1)	1:799:A:ASN:C	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	21	1.64

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Key	Atom-1	Atom-2	Atom-3	Atom-4	Model ID	Violation (°)
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	5	1.62
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	21	1.62
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	13	1.61
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	22	1.61
(1,47)	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	1:833:A:VAL:N	5	1.57
(1,45)	1:813:A:VAL:N	1:813:A:VAL:CA	1:813:A:VAL:C	1:814:A:VAL:N	11	1.57
(1,19)	1:813:A:VAL:C	1:814:A:VAL:N	1:814:A:VAL:CA	1:814:A:VAL:C	3	1.57
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	16	1.55
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	8	1.54
(1,75)	1:839:A:CYS:C	1:840:A:SER:N	1:840:A:SER:CA	1:840:A:SER:C	14	1.52
(1,35)	1:733:A:ALA:N	1:733:A:ALA:CA	1:733:A:ALA:C	1:734:A:ASP:N	4	1.48
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	9	1.47
(1,14)	1:761:A:HIS:C	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	17	1.46
(1,20)	1:831:A:LYS:C	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	16	1.45
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	9	1.45
(1,42)	1:763:A:LYS:N	1:763:A:LYS:CA	1:763:A:LYS:C	1:764:A:CYS:N	25	1.44
(1,29)	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	1:802:A:LEU:N	11	1.41
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	4	1.4
(1,56)	1:737:A:GLU:C	1:738:A:TYR:N	1:738:A:TYR:CA	1:738:A:TYR:C	24	1.36
(1,52)	1:837:A:ALA:N	1:837:A:ALA:CA	1:837:A:ALA:C	1:838:A:VAL:N	7	1.36
(1,41)	1:762:A:LEU:N	1:762:A:LEU:CA	1:762:A:LEU:C	1:763:A:LYS:N	21	1.34
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	4	1.34
(1,38)	1:759:A:LYS:N	1:759:A:LYS:CA	1:759:A:LYS:C	1:760:A:VAL:N	24	1.31
(1,36)	1:734:A:ASP:N	1:734:A:ASP:CA	1:734:A:ASP:C	1:735:A:VAL:N	7	1.31
(1,28)	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	1:801:A:VAL:N	14	1.31
(1,34)	1:732:A:CYS:N	1:732:A:CYS:CA	1:732:A:CYS:C	1:733:A:ALA:N	23	1.3
(1,31)	1:803:A:GLU:N	1:803:A:GLU:CA	1:803:A:GLU:C	1:804:A:ARG:N	15	1.29
(1,12)	1:759:A:LYS:C	1:760:A:VAL:N	1:760:A:VAL:CA	1:760:A:VAL:C	12	1.28
(1,1)	1:799:A:ASN:C	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	9	1.28
(1,2)	1:800:A:SER:C	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	17	1.27
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	24	1.24
(1,40)	1:761:A:HIS:N	1:761:A:HIS:CA	1:761:A:HIS:C	1:762:A:LEU:N	14	1.23
(1,56)	1:737:A:GLU:C	1:738:A:TYR:N	1:738:A:TYR:CA	1:738:A:TYR:C	18	1.2
(1,29)	1:801:A:VAL:N	1:801:A:VAL:CA	1:801:A:VAL:C	1:802:A:LEU:N	4	1.2
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	17	1.16
(1,56)	1:737:A:GLU:C	1:738:A:TYR:N	1:738:A:TYR:CA	1:738:A:TYR:C	13	1.13
(1,47)	1:832:A:ARG:N	1:832:A:ARG:CA	1:832:A:ARG:C	1:833:A:VAL:N	21	1.13
(1,28)	1:800:A:SER:N	1:800:A:SER:CA	1:800:A:SER:C	1:801:A:VAL:N	1	1.13
(1,22)	1:833:A:VAL:C	1:834:A:ALA:N	1:834:A:ALA:CA	1:834:A:ALA:C	18	1.13
(1,13)	1:760:A:VAL:C	1:761:A:HIS:N	1:761:A:HIS:CA	1:761:A:HIS:C	3	1.13
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	5	1.12
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	21	1.12
(1,51)	1:836:A:GLU:N	1:836:A:GLU:CA	1:836:A:GLU:C	1:837:A:ALA:N	24	1.1
(1,25)	1:836:A:GLU:C	1:837:A:ALA:N	1:837:A:ALA:CA	1:837:A:ALA:C	18	1.09
(1,32)	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1:805:A:LYS:N	7	1.08
(1,5)	1:803:A:GLU:C	1:804:A:ARG:N	1:804:A:ARG:CA	1:804:A:ARG:C	1	1.08
(1,69)	1:796:A:ILE:C	1:797:A:ASN:N	1:797:A:ASN:CA	1:797:A:ASN:C	7	1.05
(1,40)	1:761:A:HIS:N	1:761:A:HIS:CA	1:761:A:HIS:C	1:762:A:LEU:N	24	1.05
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	16	1.05
(1,27)	1:838:A:VAL:C	1:839:A:CYS:N	1:839:A:CYS:CA	1:839:A:CYS:C	14	1.04
(1,21)	1:832:A:ARG:C	1:833:A:VAL:N	1:833:A:VAL:CA	1:833:A:VAL:C	4	1.04

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Key	Atom-1	Atom-2	Atom-3	Atom-4	Model ID	Violation (°)
(1,55)	1:727:A:THR:C	1:728:A:VAL:N	1:728:A:VAL:CA	1:728:A:VAL:C	8	1.03