



# Full wwPDB NMR Structure Validation Report ⓘ

May 11, 2026 – 04:27 PM EDT

PDB ID : 9OMB / pdb\_00009omb  
BMRB ID : 31244  
Title : NRDJ-1 Intein NMR solution structure  
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Deposited on : 2025-05-13

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
wwPDB-RCI : v\_1n\_11\_5\_13\_A (Berjanski et al., 2005)  
PANAV : Wang et al. (2010)  
wwPDB-ShiftChecker : v1.2  
BMRB Restraints Analysis : v1.2  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

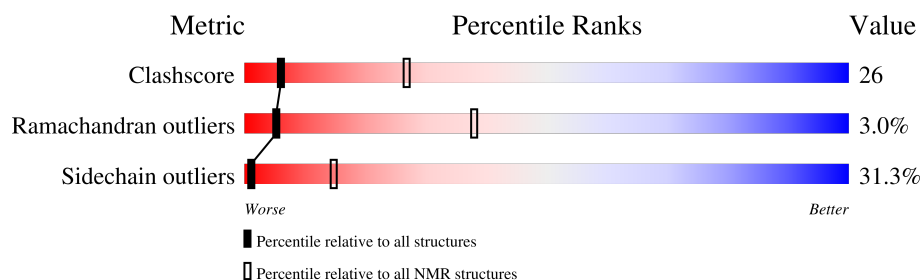
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment is 92%.

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



Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	229148	14424
Ramachandran outliers	224038	12848
Sidechain outliers	223484	12823

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

Mol	Chain	Length	Quality of chain
1	A	151	<div> <div>44%</div> <div>37%</div> <div>14%</div> <div>• 5%</div> </div>

## 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:1-A:106, A:114-A:151 (144)	0.21	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 2 clusters and 2 single-model clusters were found.

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

### 3 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 2370 atoms, of which 1179 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Nrdj-1 intein.

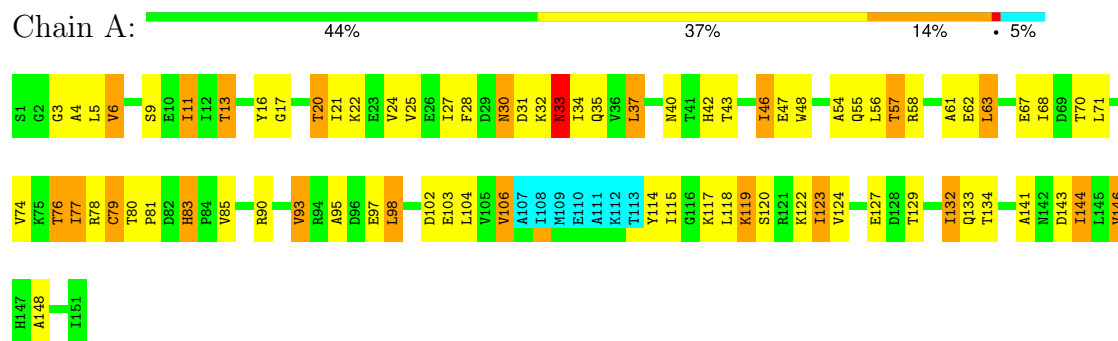
Mol	Chain	Residues	Atoms						Trace
1	A	151	Total	C	H	N	O	S	0
			2370	747	1179	203	239	2	

## 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: Nrdj-1 intein

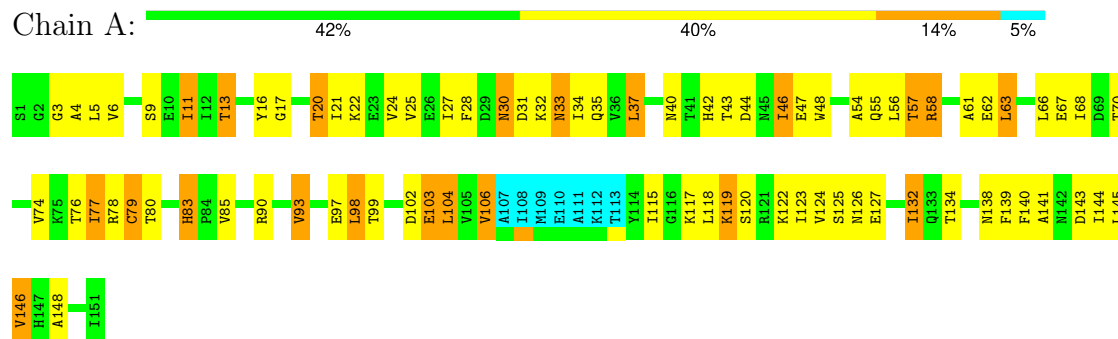


### 4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

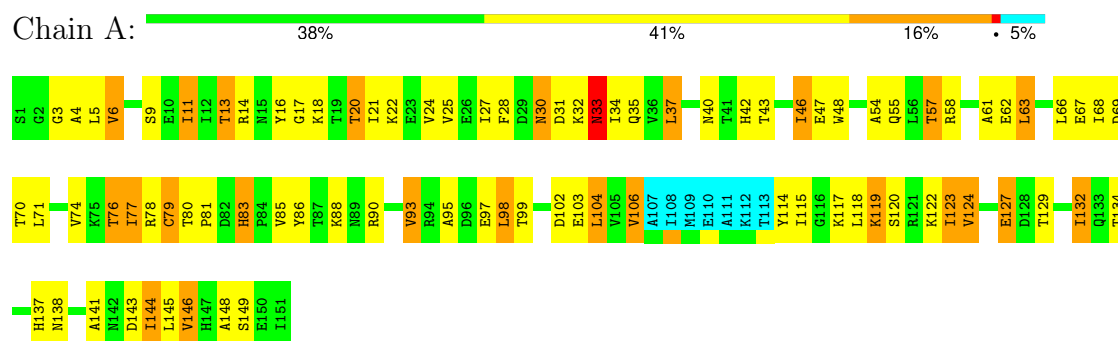
#### 4.2.1 Score per residue for model 1 (medoid)

- Molecule 1: Nrdj-1 intein



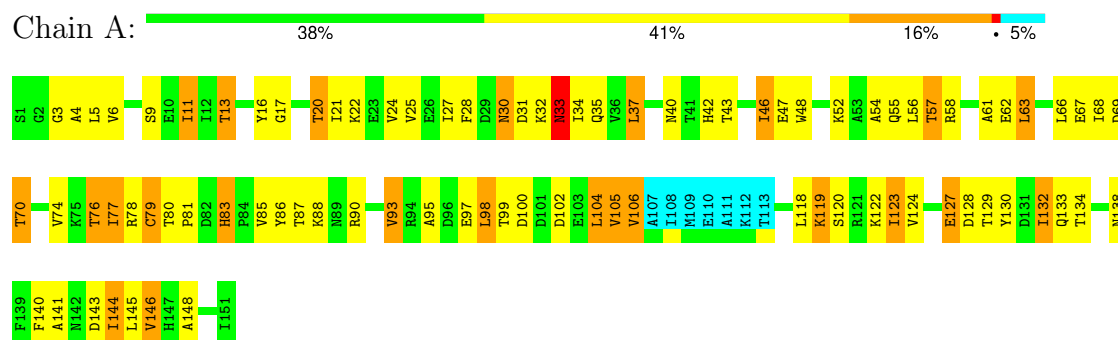
## 4.2.2 Score per residue for model 2

- Molecule 1: Nrdj-1 intein



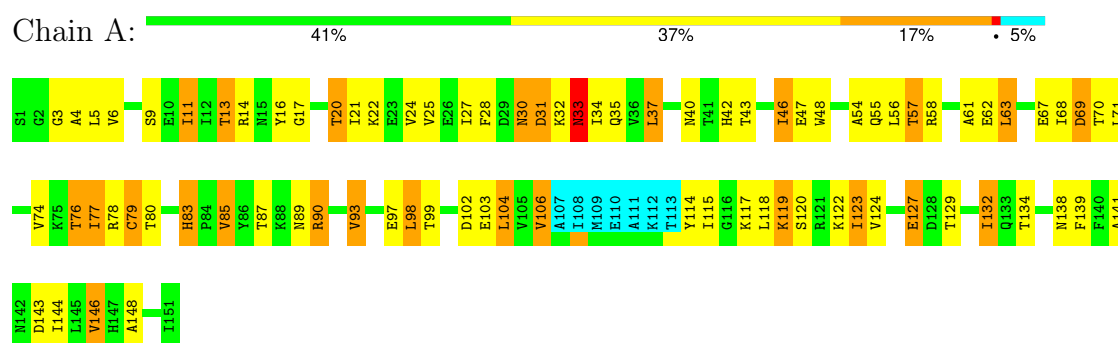
## 4.2.3 Score per residue for model 3

- Molecule 1: Nrdj-1 intein



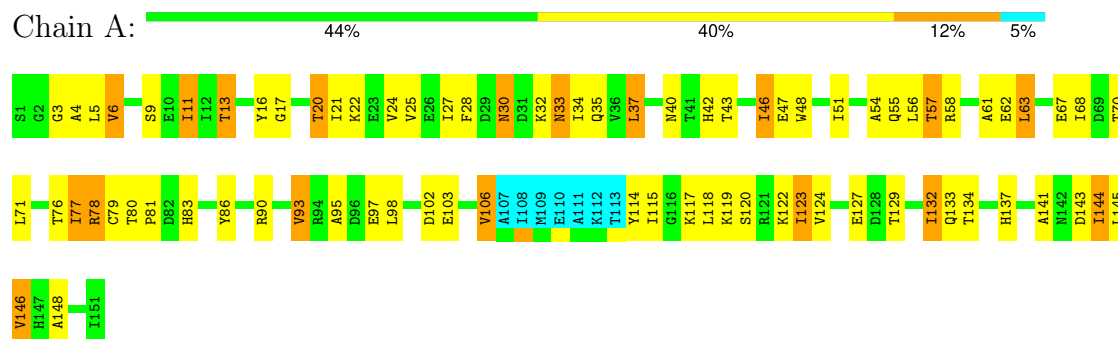
## 4.2.4 Score per residue for model 4

- Molecule 1: Nrdj-1 intein



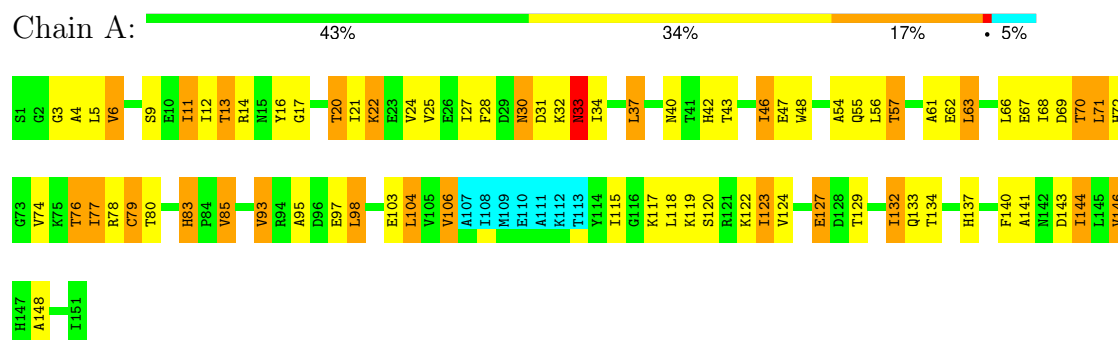
### 4.2.5 Score per residue for model 5

- Molecule 1: Nrdj-1 intein



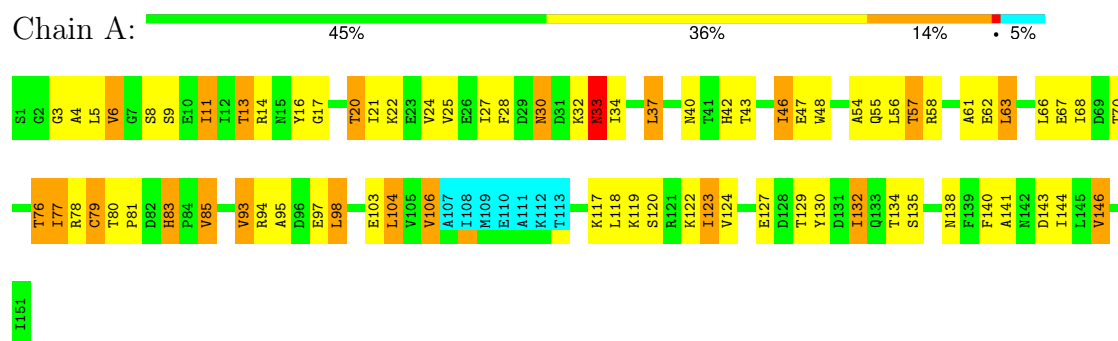
### 4.2.6 Score per residue for model 6

- Molecule 1: Nrdj-1 intein



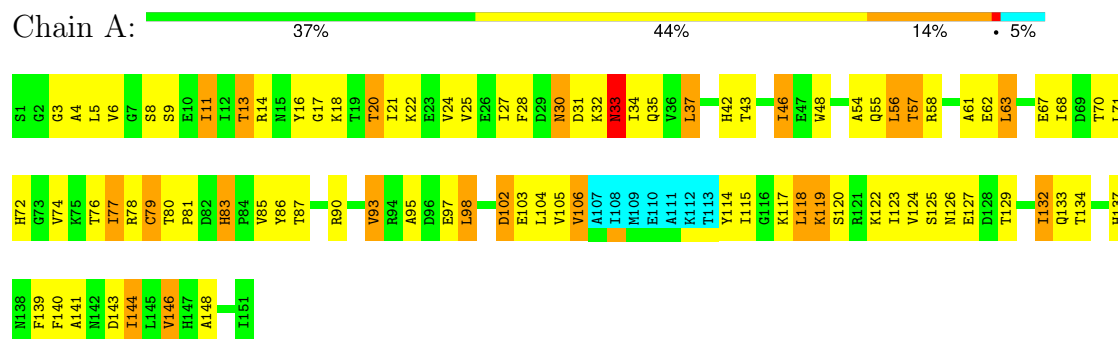
### 4.2.7 Score per residue for model 7

- Molecule 1: Nrdj-1 intein



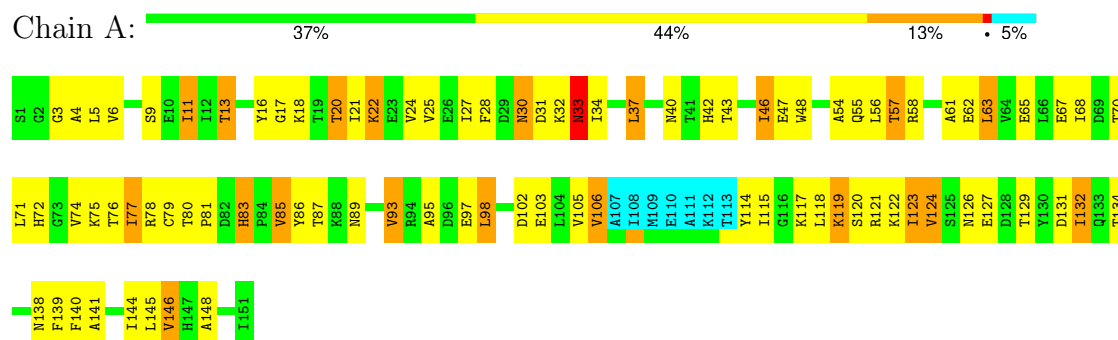
## 4.2.8 Score per residue for model 8

- Molecule 1: Nrdj-1 intein



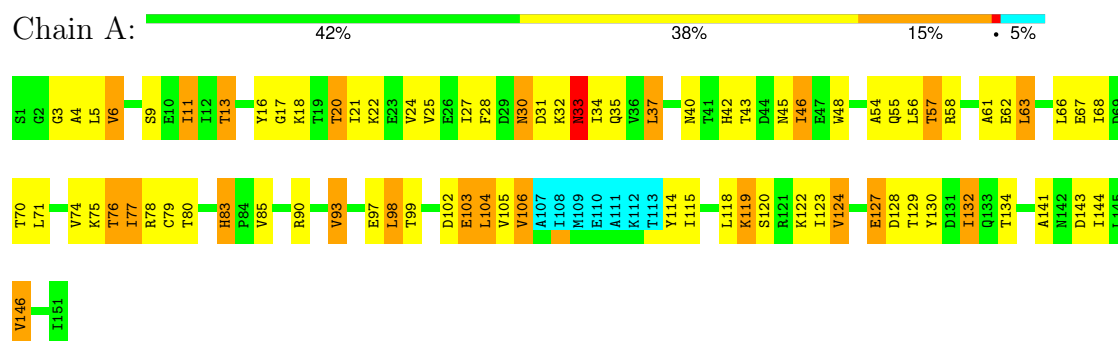
## 4.2.9 Score per residue for model 9

- Molecule 1: Nrdj-1 intein



## 4.2.10 Score per residue for model 10

- Molecule 1: Nrdj-1 intein

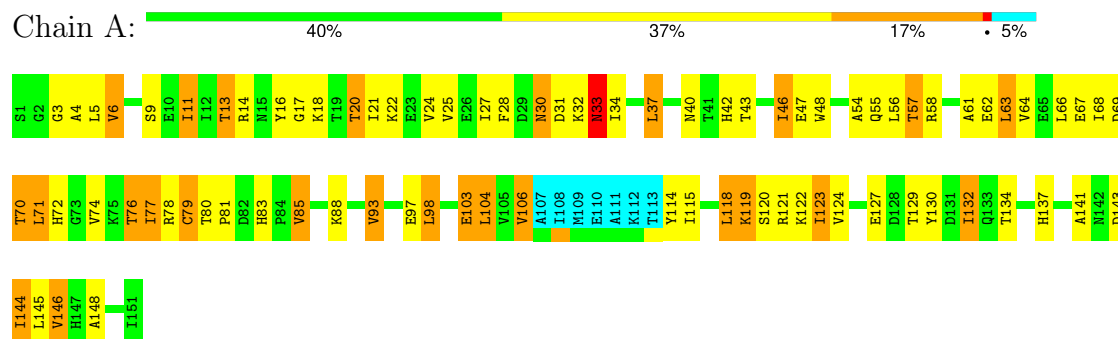






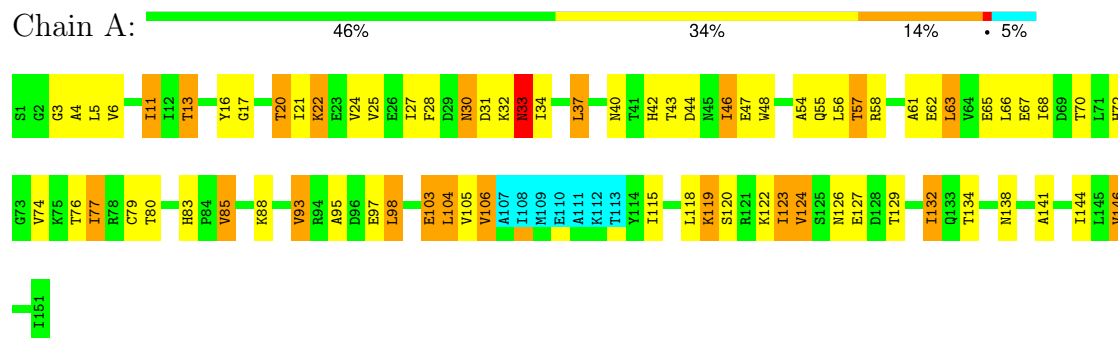
### 4.2.14 Score per residue for model 14

- Molecule 1: Nrdj-1 intein



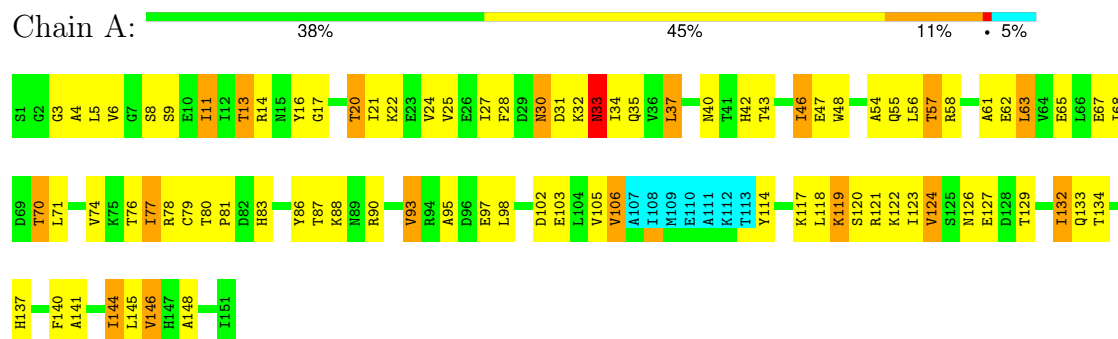
### 4.2.15 Score per residue for model 15

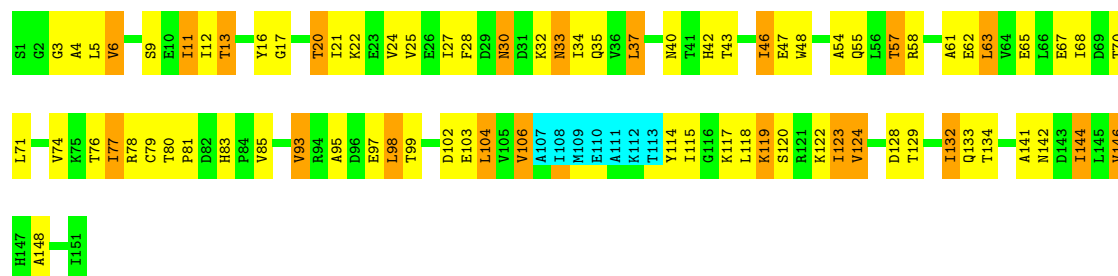
- Molecule 1: Nrdj-1 intein



### 4.2.16 Score per residue for model 16

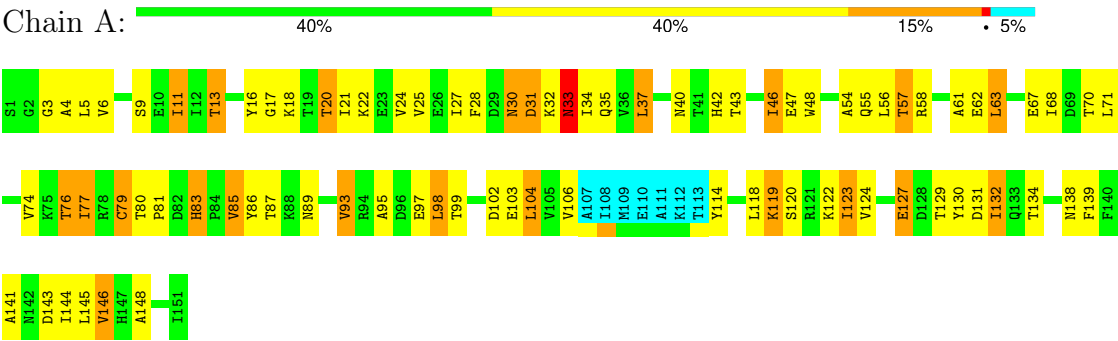
- Molecule 1: Nrdj-1 intein





4.2.20 Score per residue for model 20

● Molecule 1: Nrdj-1 intein



## 5 Refinement protocol and experimental data overview

The models were refined using the following method: *CYANA*.

Of the 40 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
ARTINA	structure calculation	
ARTINA	refinement	

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	1891
Number of shifts mapped to atoms	1891
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	92%

## 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	1140	1123	1125	60±5
All	All	22800	22460	22500	1190

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 26.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:11:ILE:HD12	1:A:24:VAL:HG21	0.80	1.53	13	20
1:A:71:LEU:HD13	1:A:114:TYR:CE2	0.75	2.17	18	3
1:A:6:VAL:HG11	1:A:63:LEU:HD13	0.72	1.62	5	20
1:A:27:ILE:HG22	1:A:33:ASN:ND2	0.71	2.00	16	20
1:A:98:LEU:HD11	1:A:104:LEU:HD11	0.71	1.61	6	12
1:A:13:THR:HG21	1:A:16:TYR:CD2	0.71	2.21	10	20
1:A:77:ILE:HG21	1:A:144:ILE:HD13	0.71	1.62	12	1
1:A:78:ARG:HD3	1:A:124:VAL:HG21	0.70	1.60	8	4
1:A:71:LEU:HD22	1:A:114:TYR:CE2	0.70	2.21	20	8
1:A:13:THR:HG23	1:A:34:ILE:HG23	0.70	1.64	2	17
1:A:22:LYS:O	1:A:25:VAL:HG22	0.70	1.87	8	20
1:A:68:ILE:HD13	1:A:77:ILE:CG1	0.69	2.18	14	20
1:A:6:VAL:CG1	1:A:63:LEU:HD13	0.69	2.18	17	20
1:A:141:ALA:HB3	1:A:146:VAL:HG11	0.68	1.63	15	20

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:62:GLU:O	1:A:80:THR:HG22	0.68	1.89	5	20
1:A:68:ILE:HD13	1:A:77:ILE:HG12	0.68	1.65	14	20
1:A:90:ARG:HD2	1:A:93:VAL:HG23	0.67	1.66	18	2
1:A:98:LEU:HD11	1:A:104:LEU:HD21	0.67	1.65	14	1
1:A:21:ILE:O	1:A:25:VAL:HG13	0.67	1.90	15	20
1:A:99:THR:HG22	1:A:102:ASP:OD2	0.66	1.90	10	5
1:A:65:GLU:CD	1:A:124:VAL:HG13	0.66	2.15	18	5
1:A:76:THR:C	1:A:77:ILE:HD13	0.65	2.17	11	20
1:A:71:LEU:HD23	1:A:72:HIS:N	0.64	2.07	6	1
1:A:93:VAL:HG22	1:A:97:GLU:CD	0.64	2.17	18	20
1:A:4:ALA:HB1	1:A:57:THR:HG21	0.64	1.69	15	20
1:A:70:THR:HG21	1:A:106:VAL:HG11	0.63	1.71	12	4
1:A:81:PRO:HA	1:A:95:ALA:HB3	0.63	1.70	18	14
1:A:67:GLU:C	1:A:68:ILE:HD12	0.62	2.19	15	20
1:A:93:VAL:HG22	1:A:97:GLU:OE2	0.62	1.95	15	19
1:A:37:LEU:HD22	1:A:48:TRP:CE3	0.62	2.28	10	20
1:A:37:LEU:HD22	1:A:48:TRP:CZ3	0.61	2.30	10	20
1:A:85:VAL:HG13	1:A:144:ILE:HG23	0.61	1.70	2	5
1:A:85:VAL:HG11	1:A:144:ILE:HD12	0.61	1.73	3	2
1:A:76:THR:O	1:A:77:ILE:HD13	0.60	1.97	14	9
1:A:63:LEU:HD11	1:A:127:GLU:HB2	0.60	1.73	5	15
1:A:98:LEU:HD21	1:A:104:LEU:CD2	0.59	2.27	14	1
1:A:64:VAL:HG23	1:A:66:LEU:CD2	0.59	2.28	14	1
1:A:4:ALA:HB2	1:A:131:ASP:OD2	0.59	1.97	13	3
1:A:13:THR:HG21	1:A:16:TYR:HB2	0.59	1.74	20	20
1:A:83:HIS:NE2	1:A:85:VAL:HG22	0.59	2.13	14	11
1:A:63:LEU:HD11	1:A:127:GLU:CB	0.58	2.28	14	15
1:A:83:HIS:CE1	1:A:85:VAL:HG22	0.58	2.34	18	14
1:A:27:ILE:CG2	1:A:34:ILE:HD12	0.57	2.29	14	19
1:A:103:GLU:HB2	1:A:115:ILE:HG23	0.57	1.75	4	15
1:A:85:VAL:HG21	1:A:144:ILE:HD12	0.57	1.77	17	1
1:A:78:ARG:CD	1:A:124:VAL:HG21	0.57	2.29	8	2
1:A:6:VAL:HG21	1:A:78:ARG:HG2	0.57	1.77	3	7
1:A:66:LEU:HD11	1:A:95:ALA:HB1	0.56	1.76	15	2
1:A:137:HIS:HA	1:A:148:ALA:HB3	0.56	1.77	6	8
1:A:69:ASP:HB2	1:A:74:VAL:HG22	0.56	1.76	2	6
1:A:68:ILE:HD12	1:A:68:ILE:N	0.56	2.15	14	20
1:A:5:LEU:HD13	1:A:79:CYS:HB3	0.56	1.77	16	20
1:A:24:VAL:O	1:A:27:ILE:HG23	0.55	2.01	6	20
1:A:27:ILE:HG23	1:A:34:ILE:HD12	0.55	1.78	1	19
1:A:61:ALA:HB3	1:A:129:THR:CG2	0.55	2.30	11	19

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:104:LEU:HB3	1:A:144:ILE:HD11	0.55	1.79	19	1
1:A:85:VAL:CG1	1:A:144:ILE:HG23	0.54	2.33	2	4
1:A:66:LEU:HD12	1:A:118:LEU:CD1	0.54	2.32	14	1
1:A:71:LEU:HD21	1:A:114:TYR:CD2	0.54	2.38	14	1
1:A:54:ALA:HB2	1:A:132:ILE:HG22	0.54	1.80	8	20
1:A:98:LEU:HD21	1:A:104:LEU:HD21	0.54	1.79	14	1
1:A:71:LEU:HD13	1:A:114:TYR:CZ	0.53	2.39	18	1
1:A:85:VAL:HG21	1:A:144:ILE:HG12	0.53	1.80	19	1
1:A:99:THR:HG22	1:A:102:ASP:CG	0.53	2.29	1	5
1:A:83:HIS:O	1:A:83:HIS:CG	0.53	2.61	17	14
1:A:63:LEU:HD11	1:A:127:GLU:N	0.52	2.19	8	4
1:A:87:THR:HG22	1:A:89:ASN:H	0.52	1.65	9	4
1:A:87:THR:HG21	1:A:102:ASP:HB2	0.52	1.82	8	2
1:A:133:GLN:HA	1:A:148:ALA:HB1	0.52	1.82	17	11
1:A:86:TYR:CB	1:A:145:LEU:HD12	0.52	2.34	20	4
1:A:58:ARG:HG3	1:A:61:ALA:HB2	0.51	1.81	10	18
1:A:6:VAL:CG1	1:A:63:LEU:HD22	0.51	2.35	2	4
1:A:27:ILE:HG22	1:A:33:ASN:HD22	0.51	1.66	17	12
1:A:93:VAL:CG1	1:A:98:LEU:HD22	0.51	2.35	10	7
1:A:85:VAL:CG2	1:A:144:ILE:HG23	0.51	2.35	17	1
1:A:5:LEU:HD22	1:A:79:CYS:CB	0.51	2.36	5	20
1:A:11:ILE:HD11	1:A:20:THR:C	0.51	2.31	19	18
1:A:61:ALA:HB3	1:A:129:THR:HG23	0.50	1.84	5	15
1:A:98:LEU:CD1	1:A:104:LEU:HD21	0.50	2.34	14	1
1:A:141:ALA:HB3	1:A:146:VAL:CG1	0.49	2.37	7	8
1:A:11:ILE:CD1	1:A:24:VAL:HG21	0.49	2.37	11	15
1:A:85:VAL:HG23	1:A:144:ILE:HG23	0.49	1.85	12	2
1:A:30:ASN:O	1:A:31:ASP:CB	0.49	2.60	4	16
1:A:56:LEU:HD23	1:A:57:THR:N	0.49	2.22	5	12
1:A:123:ILE:HD13	1:A:124:VAL:N	0.48	2.24	9	4
1:A:56:LEU:HD21	1:A:128:ASP:OD2	0.48	2.08	17	1
1:A:56:LEU:HD11	1:A:128:ASP:OD2	0.47	2.09	17	1
1:A:70:THR:HG21	1:A:106:VAL:HG21	0.47	1.85	6	3
1:A:90:ARG:CD	1:A:93:VAL:HG23	0.47	2.40	4	1
1:A:98:LEU:HD12	1:A:118:LEU:HD13	0.47	1.86	8	2
1:A:11:ILE:HG22	1:A:140:PHE:O	0.47	2.09	7	9
1:A:74:VAL:HG13	1:A:119:LYS:HE2	0.47	1.87	16	17
1:A:68:ILE:HD13	1:A:77:ILE:HG13	0.47	1.86	3	5
1:A:85:VAL:HG11	1:A:144:ILE:HG13	0.47	1.87	6	1
1:A:71:LEU:HD22	1:A:114:TYR:HE2	0.46	1.69	2	2
1:A:30:ASN:C	1:A:30:ASN:ND2	0.46	2.73	3	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:64:VAL:HG23	1:A:66:LEU:HD21	0.46	1.87	14	1
1:A:6:VAL:HG12	1:A:63:LEU:HD22	0.45	1.88	2	1
1:A:98:LEU:HD21	1:A:104:LEU:HD11	0.45	1.88	18	2
1:A:85:VAL:HG13	1:A:144:ILE:CG2	0.45	2.41	2	2
1:A:86:TYR:HB3	1:A:145:LEU:HD12	0.45	1.89	20	1
1:A:30:ASN:ND2	1:A:30:ASN:C	0.45	2.74	8	16
1:A:66:LEU:HB3	1:A:68:ILE:HD11	0.45	1.88	10	5
1:A:71:LEU:HD13	1:A:114:TYR:CD2	0.45	2.47	11	3
1:A:11:ILE:HD11	1:A:21:ILE:HA	0.45	1.88	13	9
1:A:13:THR:HG21	1:A:16:TYR:HD2	0.45	1.70	13	1
1:A:66:LEU:HD22	1:A:66:LEU:N	0.45	2.27	1	7
1:A:90:ARG:NE	1:A:93:VAL:HG23	0.45	2.27	10	6
1:A:139:PHE:CE2	1:A:148:ALA:HB2	0.45	2.47	4	6
1:A:62:GLU:O	1:A:63:LEU:HD23	0.45	2.11	6	1
1:A:71:LEU:HD13	1:A:114:TYR:HD2	0.45	1.72	2	2
1:A:104:LEU:HD13	1:A:104:LEU:N	0.45	2.26	13	2
1:A:27:ILE:HD12	1:A:27:ILE:C	0.45	2.37	16	17
1:A:27:ILE:HG12	1:A:51:ILE:HG21	0.45	1.89	13	2
1:A:98:LEU:CG	1:A:104:LEU:HD21	0.45	2.42	14	1
1:A:13:THR:HG21	1:A:16:TYR:CG	0.44	2.47	10	12
1:A:87:THR:HG21	1:A:102:ASP:CB	0.44	2.43	3	1
1:A:6:VAL:HG21	1:A:78:ARG:CG	0.44	2.42	9	1
1:A:71:LEU:HD12	1:A:72:HIS:N	0.44	2.27	14	1
1:A:141:ALA:O	1:A:144:ILE:HG22	0.44	2.12	5	2
1:A:25:VAL:HG11	1:A:130:TYR:CD1	0.44	2.48	7	4
1:A:104:LEU:HD22	1:A:104:LEU:H	0.43	1.72	13	7
1:A:87:THR:HG21	1:A:102:ASP:OD2	0.43	2.13	12	1
1:A:85:VAL:HG21	1:A:144:ILE:CG1	0.43	2.43	19	1
1:A:40:ASN:ND2	1:A:47:GLU:HB2	0.43	2.28	3	17
1:A:13:THR:HG21	1:A:16:TYR:CB	0.43	2.44	3	12
1:A:118:LEU:HD11	1:A:121:ARG:HG2	0.43	1.90	14	1
1:A:68:ILE:CG1	1:A:104:LEU:CD1	0.43	2.97	14	1
1:A:56:LEU:HD11	1:A:128:ASP:CG	0.43	2.38	17	1
1:A:98:LEU:CD2	1:A:104:LEU:HD21	0.42	2.44	14	1
1:A:37:LEU:HD11	1:A:46:ILE:HB	0.42	1.92	17	20
1:A:85:VAL:HG12	1:A:86:TYR:N	0.42	2.30	2	3
1:A:123:ILE:C	1:A:123:ILE:HD13	0.42	2.39	15	12
1:A:88:LYS:HE3	1:A:105:VAL:HG22	0.42	1.90	16	2
1:A:103:GLU:C	1:A:104:LEU:HD13	0.42	2.40	13	1
1:A:40:ASN:ND2	1:A:45:ASN:ND2	0.41	2.69	10	2
1:A:87:THR:HG21	1:A:102:ASP:CG	0.41	2.40	12	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:56:LEU:HD23	1:A:58:ARG:N	0.41	2.30	5	3
1:A:139:PHE:CE1	1:A:141:ALA:HB2	0.41	2.50	18	1
1:A:139:PHE:CD2	1:A:148:ALA:HB2	0.41	2.51	8	1
1:A:105:VAL:O	1:A:105:VAL:HG13	0.41	2.15	9	2
1:A:104:LEU:N	1:A:104:LEU:HD22	0.41	2.30	13	1
1:A:93:VAL:O	1:A:93:VAL:HG12	0.41	2.16	3	3
1:A:27:ILE:C	1:A:27:ILE:HD12	0.41	2.41	18	2
1:A:74:VAL:HG13	1:A:119:LYS:CE	0.41	2.45	16	4
1:A:54:ALA:HB2	1:A:132:ILE:CG2	0.41	2.46	2	1
1:A:6:VAL:HG11	1:A:78:ARG:CG	0.41	2.46	19	1
1:A:130:TYR:CD2	1:A:130:TYR:N	0.40	2.89	14	4
1:A:56:LEU:HD23	1:A:58:ARG:H	0.40	1.75	8	2
1:A:68:ILE:N	1:A:68:ILE:CD1	0.40	2.84	14	1
1:A:27:ILE:CG1	1:A:54:ALA:HB3	0.40	2.45	7	3
1:A:12:ILE:N	1:A:12:ILE:HD12	0.40	2.32	19	3
1:A:64:VAL:HG21	1:A:81:PRO:HB3	0.40	1.92	14	1
1:A:30:ASN:ND2	1:A:33:ASN:HB3	0.40	2.32	6	2
1:A:77:ILE:HG22	1:A:142:ASN:HB3	0.40	1.93	19	1
1:A:93:VAL:HG13	1:A:97:GLU:HG2	0.40	1.93	12	1
1:A:67:GLU:CD	1:A:76:THR:HG23	0.40	2.42	15	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	142/151 (94%)	127±1 (89±1%)	11±1 (8±1%)	4±1 (3±1%)	5	38
All	All	2840/3020 (94%)	2540 (89%)	216 (8%)	84 (3%)	5	38

All 6 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	3	GLY	20
1	A	17	GLY	20

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Mol	Chain	Res	Type	Models (Total)
1	A	33	ASN	15
1	A	32	LYS	15
1	A	6	VAL	10
1	A	31	ASP	4

### 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	128/133 (96%)	88±3 (69±2%)	40±3 (31±2%)	1	15
All	All	2560/2660 (96%)	1758 (69%)	802 (31%)	1	15

All 70 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	11	ILE	20
1	A	13	THR	20
1	A	20	THR	20
1	A	28	PHE	20
1	A	30	ASN	20
1	A	33	ASN	20
1	A	37	LEU	20
1	A	42	HIS	20
1	A	43	THR	20
1	A	46	ILE	20
1	A	55	GLN	20
1	A	57	THR	20
1	A	63	LEU	20
1	A	70	THR	20
1	A	77	ILE	20
1	A	93	VAL	20
1	A	98	LEU	20
1	A	106	VAL	20
1	A	119	LYS	20
1	A	120	SER	20
1	A	122	LYS	20

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Mol	Chain	Res	Type	Models (Total)
1	A	123	ILE	20
1	A	132	ILE	20
1	A	134	THR	20
1	A	144	ILE	20
1	A	146	VAL	20
1	A	9	SER	19
1	A	118	LEU	19
1	A	124	VAL	18
1	A	35	GLN	13
1	A	104	LEU	13
1	A	117	LYS	13
1	A	143	ASP	13
1	A	83	HIS	12
1	A	127	GLU	12
1	A	76	THR	11
1	A	79	CYS	10
1	A	14	ARG	10
1	A	18	LYS	9
1	A	103	GLU	8
1	A	126	ASN	8
1	A	138	ASN	8
1	A	85	VAL	7
1	A	102	ASP	7
1	A	78	ARG	6
1	A	32	LYS	5
1	A	56	LEU	5
1	A	145	LEU	5
1	A	90	ARG	5
1	A	105	VAL	5
1	A	22	LYS	5
1	A	72	HIS	5
1	A	44	ASP	3
1	A	88	LYS	3
1	A	128	ASP	3
1	A	8	SER	3
1	A	75	LYS	3
1	A	125	SER	2
1	A	71	LEU	2
1	A	121	ARG	2
1	A	58	ARG	1
1	A	149	SER	1
1	A	52	LYS	1

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Mol	Chain	Res	Type	Models (Total)
1	A	100	ASP	1
1	A	69	ASP	1
1	A	94	ARG	1
1	A	135	SER	1
1	A	96	ASP	1
1	A	87	THR	1
1	A	47	GLU	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 92% for the well-defined parts and 92% for the entire structure.

### 7.1 Chemical shift list 2

File name: working\_cs.cif

Chemical shift list name: *flya*

#### 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	1891
Number of shifts mapped to atoms	1891
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	3

#### 7.1.2 Chemical shift referencing

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction $\pm$ precision, ppm	Suggested action
$^{13}\text{C}_\alpha$	151	$-0.18 \pm 0.14$	None needed ( $< 0.5$ ppm)
$^{13}\text{C}_\beta$	144	$-0.23 \pm 0.08$	None needed ( $< 0.5$ ppm)
$^{13}\text{C}'$	151	$0.23 \pm 0.09$	None needed ( $< 0.5$ ppm)
$^{15}\text{N}$	147	$0.89 \pm 0.33$	Should be applied

#### 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 92%, i.e. 1799 atoms were assigned a chemical shift out of a possible 1958. 0 out of 22 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	$^1\text{H}$	$^{13}\text{C}$	$^{15}\text{N}$
Backbone	718/719 (100%)	290/291 (100%)	288/288 (100%)	140/140 (100%)
Sidechain	1014/1107 (92%)	693/717 (97%)	308/350 (88%)	13/40 (32%)

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	<b>Total</b>	<b><sup>1</sup>H</b>	<b><sup>13</sup>C</b>	<b><sup>15</sup>N</b>
Aromatic	67/132 (51%)	61/66 (92%)	0/60 (0%)	6/6 (100%)
Overall	1799/1958 (92%)	1044/1074 (97%)	596/698 (85%)	159/186 (85%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 92%, i.e. 1889 atoms were assigned a chemical shift out of a possible 2050. 0 out of 22 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	<b>Total</b>	<b><sup>1</sup>H</b>	<b><sup>13</sup>C</b>	<b><sup>15</sup>N</b>
Backbone	753/754 (100%)	304/305 (100%)	302/302 (100%)	147/147 (100%)
Sidechain	1069/1164 (92%)	731/755 (97%)	325/368 (88%)	13/41 (32%)
Aromatic	67/132 (51%)	61/66 (92%)	0/60 (0%)	6/6 (100%)
Overall	1889/2050 (92%)	1096/1126 (97%)	627/730 (86%)	166/194 (86%)

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

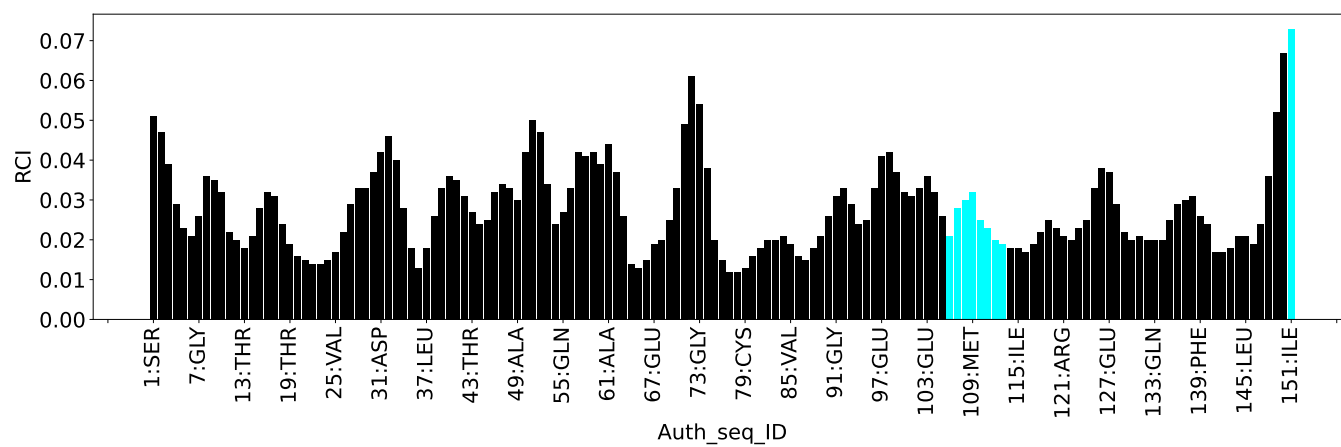
The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

List Id	Chain	Res	Type	Atom	Shift, ppm	Expected range, ppm	Z-score
2	A	14	ARG	HB2	0.45	0.52 – 3.08	-5.3
2	A	14	ARG	HD2	1.92	1.97 – 4.26	-5.2
2	A	147	HIS	HD2	4.60	4.65 – 9.35	-5.1

#### 7.1.5 Random Coil Index (RCI) plots [i](#)

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

Random coil index (RCI) for chain A:





## 8 NMR restraints analysis

### 8.1 Conformationally restricting restraints

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

Description	Value
Total distance restraints	3389
Intra-residue ( $ i-j =0$ )	645
Sequential ( $ i-j =1$ )	813
Medium range ( $ i-j >1$ and $ i-j <5$ )	401
Long range ( $ i-j \geq 5$ )	1530
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	22.4
Number of long range restraints per residue <sup>1</sup>	10.1

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

### 8.2 Residual restraint violations

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

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

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

Bins (Å)	Average number of violations per model	Max (Å)
0.1-0.2 (Small)	8.6	0.2
0.2-0.5 (Medium)	1.3	0.34
>0.5 (Large)	0.1	1.01

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

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

## 9 Distance violation analysis ⓘ

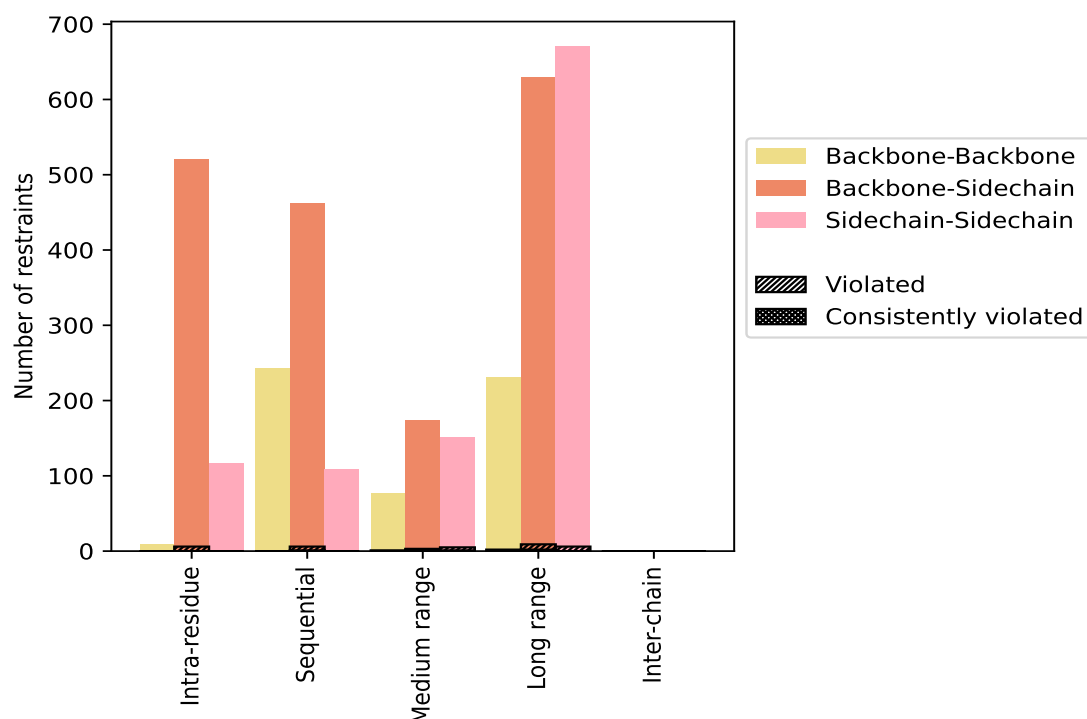
### 9.1 Summary of distance violations ⓘ

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	% <sup>1</sup>	Violated <sup>3</sup>			Consistently Violated <sup>4</sup>		
			Count	% <sup>2</sup>	% <sup>1</sup>	Count	% <sup>2</sup>	% <sup>1</sup>
<a href="#">Intra-residue ( i-j =0)</a>	<a href="#">645</a>	<a href="#">19.0</a>	<a href="#">6</a>	<a href="#">0.9</a>	<a href="#">0.2</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0.0</a>
Backbone-Backbone	9	0.3	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	520	15.3	6	1.2	0.2	0	0.0	0.0
Sidechain-Sidechain	116	3.4	0	0.0	0.0	0	0.0	0.0
<a href="#">Sequential ( i-j =1)</a>	<a href="#">813</a>	<a href="#">24.0</a>	<a href="#">6</a>	<a href="#">0.7</a>	<a href="#">0.2</a>	<a href="#">1</a>	<a href="#">0.1</a>	<a href="#">0.0</a>
Backbone-Backbone	243	7.2	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	462	13.6	6	1.3	0.2	1	0.2	0.0
Sidechain-Sidechain	108	3.2	0	0.0	0.0	0	0.0	0.0
<a href="#">Medium range ( i-j &gt;1 &amp;  i-j &lt;5)</a>	<a href="#">401</a>	<a href="#">11.8</a>	<a href="#">9</a>	<a href="#">2.2</a>	<a href="#">0.3</a>	<a href="#">3</a>	<a href="#">0.7</a>	<a href="#">0.1</a>
Backbone-Backbone	76	2.2	1	1.3	0.0	0	0.0	0.0
Backbone-Sidechain	174	5.1	3	1.7	0.1	2	1.1	0.1
Sidechain-Sidechain	151	4.5	5	3.3	0.1	1	0.7	0.0
<a href="#">Long range ( i-j ≥5)</a>	<a href="#">1530</a>	<a href="#">45.1</a>	<a href="#">17</a>	<a href="#">1.1</a>	<a href="#">0.5</a>	<a href="#">2</a>	<a href="#">0.1</a>	<a href="#">0.1</a>
Backbone-Backbone	231	6.8	2	0.9	0.1	0	0.0	0.0
Backbone-Sidechain	629	18.6	9	1.4	0.3	2	0.3	0.1
Sidechain-Sidechain	670	19.8	6	0.9	0.2	0	0.0	0.0
<a href="#">Inter-chain</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0.0</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0.0</a>
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
<a href="#">Hydrogen bond</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0.0</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0.0</a>
<a href="#">Disulfide bond</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0.0</a>	<a href="#">0</a>	<a href="#">0.0</a>	<a href="#">0.0</a>
<a href="#">Total</a>	<a href="#">3389</a>	<a href="#">100.0</a>	<a href="#">38</a>	<a href="#">1.1</a>	<a href="#">1.1</a>	<a href="#">6</a>	<a href="#">0.2</a>	<a href="#">0.2</a>
Backbone-Backbone	559	16.5	3	0.5	0.1	0	0.0	0.0
Backbone-Sidechain	1785	52.7	24	1.3	0.7	5	0.3	0.1
Sidechain-Sidechain	1045	30.8	11	1.1	0.3	1	0.1	0.0

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

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



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

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

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

Model ID	Number of violations						Mean (Å)	Max (Å)	SD <sup>6</sup> (Å)	Median (Å)
	IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total				
1	2	1	3	6	0	12	0.14	0.31	0.05	0.13
2	1	1	3	5	0	10	0.16	0.32	0.06	0.15
3	1	1	3	7	0	12	0.15	0.3	0.05	0.14
4	0	1	3	4	0	8	0.16	0.31	0.06	0.15
5	0	1	3	5	0	9	0.16	0.32	0.06	0.14
6	2	1	3	4	0	10	0.16	0.3	0.05	0.14
7	0	1	3	4	0	8	0.16	0.31	0.06	0.15
8	0	1	5	5	0	11	0.15	0.33	0.06	0.13
9	0	1	3	4	0	8	0.17	0.33	0.07	0.14
10	1	1	4	4	0	10	0.15	0.3	0.05	0.14

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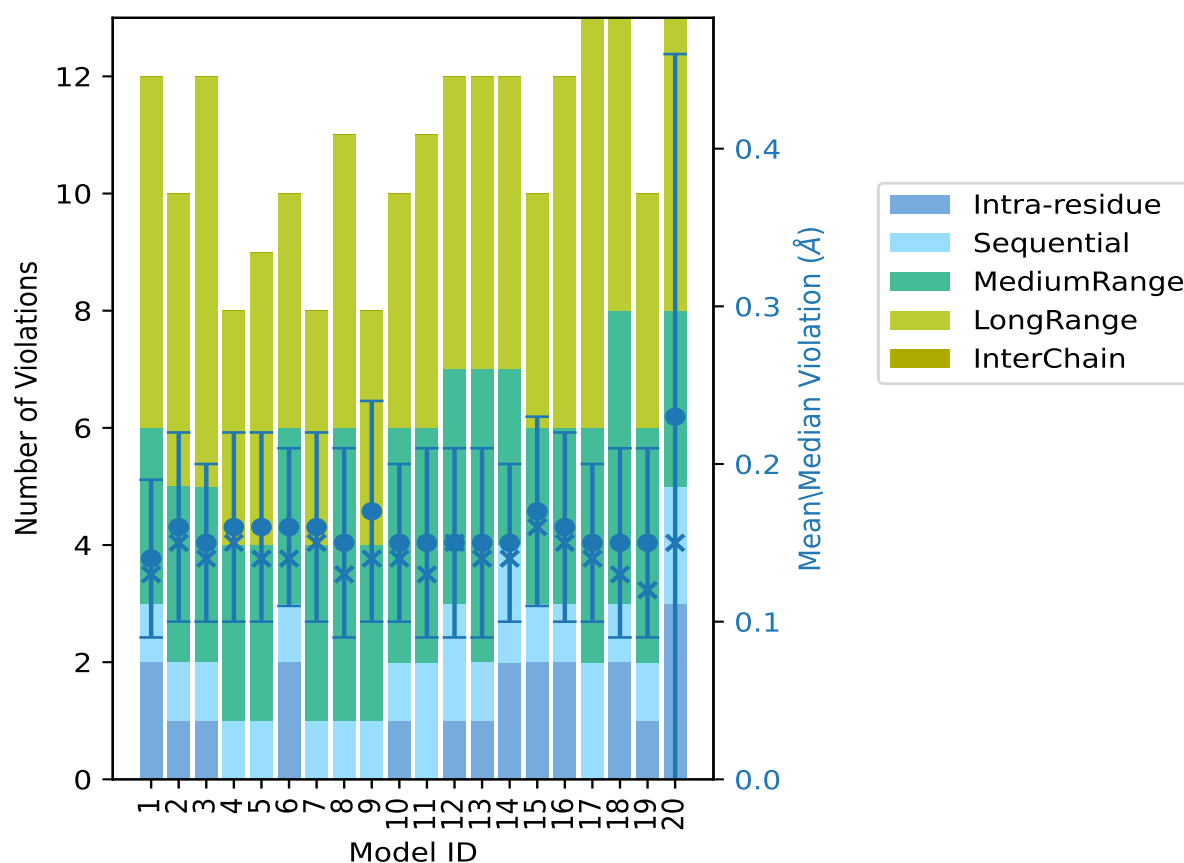
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Model ID	Number of violations						Mean (Å)	Max (Å)	SD <sup>6</sup> (Å)	Median (Å)
	IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total				
11	0	2	4	5	0	11	0.15	0.32	0.06	0.13
12	1	2	4	5	0	12	0.15	0.34	0.06	0.15
13	1	1	5	5	0	12	0.15	0.32	0.06	0.14
14	2	2	3	5	0	12	0.15	0.3	0.05	0.14
15	2	1	3	4	0	10	0.17	0.32	0.06	0.16
16	2	1	3	6	0	12	0.16	0.32	0.06	0.15
17	0	2	4	7	0	13	0.15	0.32	0.05	0.14
18	2	1	5	5	0	13	0.15	0.33	0.06	0.13
19	1	1	4	4	0	10	0.15	0.31	0.06	0.12
20	3	2	3	5	0	13	0.23	1.01	0.23	0.15

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

<sup>5</sup>Inter-chain restraints, <sup>6</sup>Standard deviation

### 9.2.1 Bar graph : Distance Violation statistics for each model ⓘ



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

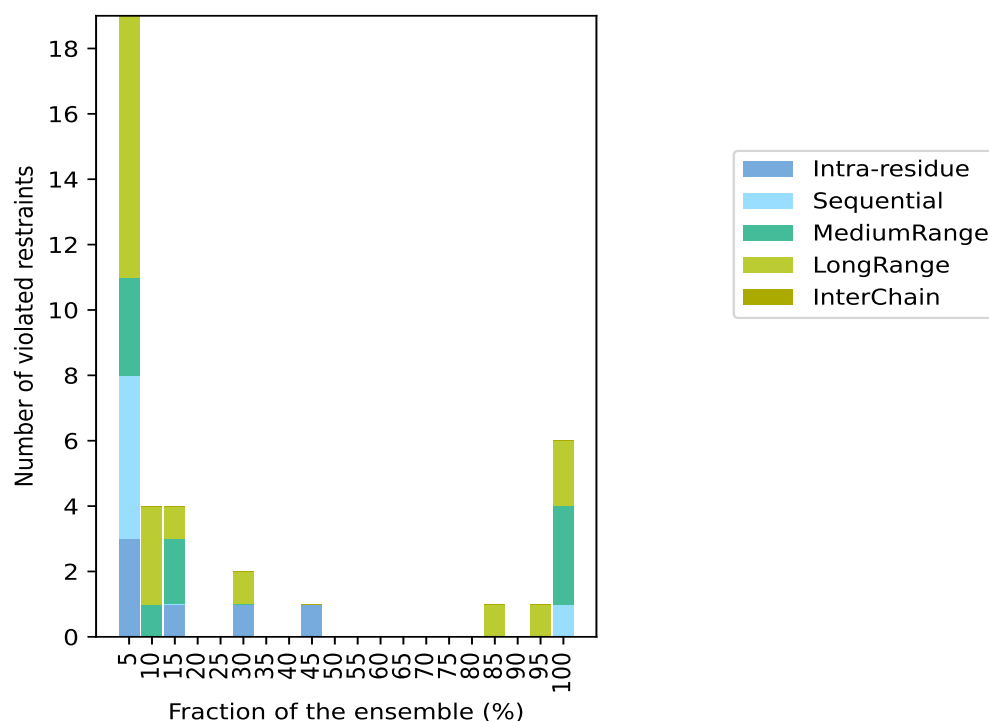
Violation analysis may find that some restraints are violated in few models and some are violated in most of models. The following table provides this information as number of violated restraints for a given fraction of the ensemble. In total, 3351(IR:639, SQ:807, MR:392, LR:1513, IC:0) restraints are not violated in the ensemble.

Number of violated restraints						Fraction of the ensemble	
IR <sup>1</sup>	SQ <sup>2</sup>	MR <sup>3</sup>	LR <sup>4</sup>	IC <sup>5</sup>	Total	Count <sup>6</sup>	%
3	5	3	8	0	19	1	5.0
0	0	1	3	0	4	2	10.0
1	0	2	1	0	4	3	15.0
0	0	0	0	0	0	4	20.0
0	0	0	0	0	0	5	25.0
1	0	0	1	0	2	6	30.0
0	0	0	0	0	0	7	35.0
0	0	0	0	0	0	8	40.0
1	0	0	0	0	1	9	45.0
0	0	0	0	0	0	10	50.0
0	0	0	0	0	0	11	55.0
0	0	0	0	0	0	12	60.0
0	0	0	0	0	0	13	65.0
0	0	0	0	0	0	14	70.0
0	0	0	0	0	0	15	75.0
0	0	0	0	0	0	16	80.0
0	0	0	1	0	1	17	85.0
0	0	0	0	0	0	18	90.0
0	0	0	1	0	1	19	95.0
0	1	3	2	0	6	20	100.0

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

<sup>5</sup>Inter-chain restraints, <sup>6</sup> Number of models with violations

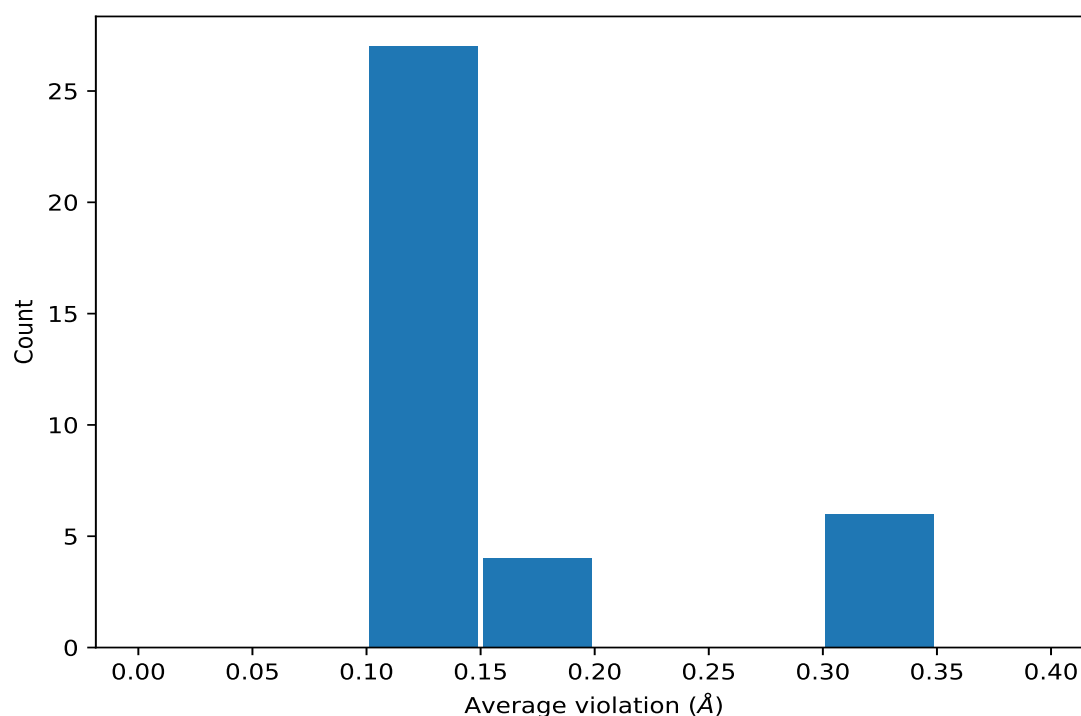
### 9.3.1 Bar graph : Distance violation statistics for the ensemble [i](#)



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

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

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



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

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

Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	20	0.32	0.01	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	20	0.32	0.01	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	20	0.32	0.01	0.32
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	20	0.32	0.01	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	20	0.32	0.01	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	20	0.32	0.01	0.32
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	20	0.18	0.03	0.18
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	20	0.16	0.01	0.16
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	20	0.15	0.02	0.16
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	20	0.14	0.02	0.14
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	20	0.11	0.01	0.11
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	19	0.13	0.01	0.13
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	17	0.14	0.01	0.14
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	9	0.12	0.01	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	9	0.12	0.01	0.11
(1,2152)	1:113:A:THR:H	1:113:A:THR:HB	6	0.14	0.0	0.14

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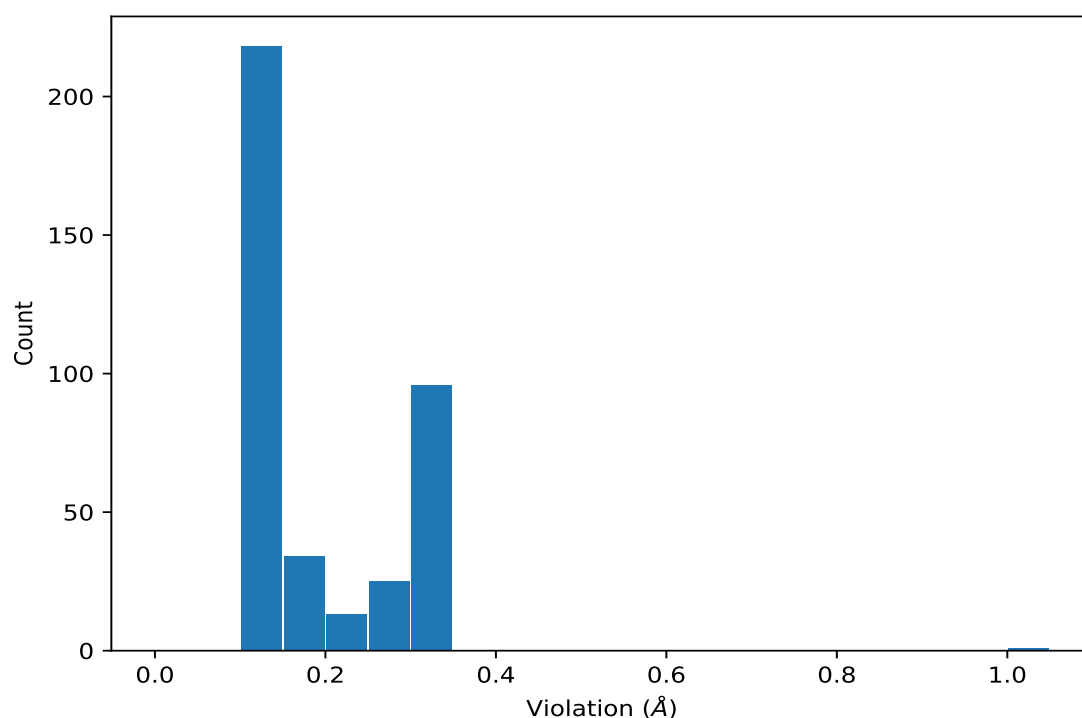
Key	Atom-1	Atom-2	Models <sup>1</sup>	Mean (Å)	SD <sup>1</sup> (Å)	Median (Å)
(1,2555)	1:86:A:TYR:H	1:93:A:VAL:H	6	0.12	0.0	0.12
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE2	3	0.16	0.04	0.18
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE3	3	0.16	0.04	0.18
(1,3178)	1:85:A:VAL:HG11	1:145:A:LEU:HA	3	0.12	0.01	0.12
(1,3178)	1:85:A:VAL:HG12	1:145:A:LEU:HA	3	0.12	0.01	0.12
(1,3178)	1:85:A:VAL:HG13	1:145:A:LEU:HA	3	0.12	0.01	0.12
(1,3178)	1:85:A:VAL:HG21	1:145:A:LEU:HA	3	0.12	0.01	0.12
(1,3178)	1:85:A:VAL:HG22	1:145:A:LEU:HA	3	0.12	0.01	0.12
(1,3178)	1:85:A:VAL:HG23	1:145:A:LEU:HA	3	0.12	0.01	0.12
(1,1201)	1:144:A:ILE:HG21	1:146:A:VAL:HB	3	0.12	0.02	0.11
(1,1201)	1:144:A:ILE:HG22	1:146:A:VAL:HB	3	0.12	0.02	0.11
(1,1201)	1:144:A:ILE:HG23	1:146:A:VAL:HB	3	0.12	0.02	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG21	3	0.11	0.0	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG22	3	0.11	0.0	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG23	3	0.11	0.0	0.11
(1,2075)	1:87:A:THR:H	1:92:A:TYR:HA	2	0.12	0.02	0.12
(1,1699)	1:43:A:THR:HB	1:45:A:ASN:HD21	2	0.12	0.01	0.12
(1,2179)	1:40:A:ASN:HB2	1:47:A:GLU:H	2	0.12	0.0	0.12
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB1	2	0.11	0.0	0.11
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB2	2	0.11	0.0	0.11
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB3	2	0.11	0.0	0.11

<sup>1</sup>Number of violated models, <sup>2</sup>Standard deviation

## 9.5 All violated distance restraints [i](#)

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

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



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

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

Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2145)	1:92:A:TYR:HD1	1:93:A:VAL:H	20	1.01
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	12	0.34
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	12	0.34
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	12	0.34
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	12	0.34
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	12	0.34
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	12	0.34
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	8	0.33
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	8	0.33
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	8	0.33
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	8	0.33
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	8	0.33
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	8	0.33
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	9	0.33
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	9	0.33
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	9	0.33

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	9	0.33
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	9	0.33
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	9	0.33
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	18	0.33
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	18	0.33
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	18	0.33
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	18	0.33
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	18	0.33
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	18	0.33
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	2	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	2	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	2	0.32
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	2	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	2	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	2	0.32
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	5	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	5	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	5	0.32
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	5	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	5	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	5	0.32
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	11	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	11	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	11	0.32
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	11	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	11	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	11	0.32
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	13	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	13	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	13	0.32
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	13	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	13	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	13	0.32
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	15	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	15	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	15	0.32
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	15	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	15	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	15	0.32
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	16	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	16	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	16	0.32

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	16	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	16	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	16	0.32
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	17	0.32
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	17	0.32
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	17	0.32
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	17	0.32
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	17	0.32
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	17	0.32
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	1	0.31
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	1	0.31
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	1	0.31
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	1	0.31
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	1	0.31
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	1	0.31
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	4	0.31
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	4	0.31
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	4	0.31
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	4	0.31
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	4	0.31
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	4	0.31
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	7	0.31
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	7	0.31
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	7	0.31
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	7	0.31
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	7	0.31
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	7	0.31
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	19	0.31
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	19	0.31
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	19	0.31
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	19	0.31
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	19	0.31
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	19	0.31
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	20	0.31
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	20	0.31
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	20	0.31
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	20	0.31
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	20	0.31
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	20	0.31
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	3	0.3
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	3	0.3
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	3	0.3

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	3	0.3
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	3	0.3
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	3	0.3
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	6	0.3
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	6	0.3
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	6	0.3
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	6	0.3
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	6	0.3
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	6	0.3
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	10	0.3
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	10	0.3
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	10	0.3
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	10	0.3
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	10	0.3
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	10	0.3
(1,3234)	1:93:A:VAL:HG11	1:97:A:GLU:HB3	14	0.3
(1,3234)	1:93:A:VAL:HG12	1:97:A:GLU:HB3	14	0.3
(1,3234)	1:93:A:VAL:HG13	1:97:A:GLU:HB3	14	0.3
(1,3234)	1:93:A:VAL:HG21	1:97:A:GLU:HB3	14	0.3
(1,3234)	1:93:A:VAL:HG22	1:97:A:GLU:HB3	14	0.3
(1,3234)	1:93:A:VAL:HG23	1:97:A:GLU:HB3	14	0.3
(1,1180)	1:86:A:TYR:HA	1:92:A:TYR:HD1	20	0.26
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	15	0.24
(1,1961)	1:121:A:ARG:H	1:121:A:ARG:HG2	16	0.22
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	9	0.22
(1,738)	1:68:A:ILE:HG13	1:104:A:LEU:HG	14	0.22
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	18	0.21
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE2	15	0.2
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE3	15	0.2
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	5	0.2
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	8	0.2
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	11	0.2
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	12	0.2
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	16	0.2
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	17	0.2
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	14	0.19
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	20	0.19
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	16	0.18
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	5	0.18
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	6	0.18
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	7	0.18
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	12	0.18

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE2	2	0.18
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE3	2	0.18
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	3	0.18
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	6	0.17
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	7	0.17
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	9	0.17
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	10	0.17
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	11	0.17
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	1	0.17
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	2	0.17
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	17	0.17
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	18	0.17
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	20	0.17
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	5	0.17
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	2	0.17
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	8	0.16
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	12	0.16
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	13	0.16
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	15	0.16
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	20	0.16
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	3	0.16
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	4	0.16
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	15	0.16
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	2	0.16
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	13	0.16
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	13	0.16
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	19	0.16
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	3	0.15
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	4	0.15
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	20	0.15
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	1	0.15
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	15	0.15
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	16	0.15
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	8	0.15
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	9	0.15
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	11	0.15
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	13	0.15
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	16	0.15
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	17	0.15
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	12	0.15
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	18	0.15
(1,2152)	1:113:A:THR:H	1:113:A:THR:HB	18	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	3	0.15
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	11	0.15
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	12	0.15
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	17	0.15
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	4	0.15
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	6	0.15
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	7	0.15
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	14	0.14
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	14	0.14
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	15	0.14
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	15	0.14
(1,3296)	1:107:A:ALA:HB1	1:110:A:GLU:HG2	19	0.14
(1,3296)	1:107:A:ALA:HB1	1:110:A:GLU:HG3	19	0.14
(1,3296)	1:107:A:ALA:HB2	1:110:A:GLU:HG2	19	0.14
(1,3296)	1:107:A:ALA:HB2	1:110:A:GLU:HG3	19	0.14
(1,3296)	1:107:A:ALA:HB3	1:110:A:GLU:HG2	19	0.14
(1,3296)	1:107:A:ALA:HB3	1:110:A:GLU:HG3	19	0.14
(1,3178)	1:85:A:VAL:HG11	1:145:A:LEU:HA	18	0.14
(1,3178)	1:85:A:VAL:HG12	1:145:A:LEU:HA	18	0.14
(1,3178)	1:85:A:VAL:HG13	1:145:A:LEU:HA	18	0.14
(1,3178)	1:85:A:VAL:HG21	1:145:A:LEU:HA	18	0.14
(1,3178)	1:85:A:VAL:HG22	1:145:A:LEU:HA	18	0.14
(1,3178)	1:85:A:VAL:HG23	1:145:A:LEU:HA	18	0.14
(1,3008)	1:56:A:LEU:HD11	1:128:A:ASP:HB2	17	0.14
(1,3008)	1:56:A:LEU:HD11	1:128:A:ASP:HB3	17	0.14
(1,3008)	1:56:A:LEU:HD12	1:128:A:ASP:HB2	17	0.14
(1,3008)	1:56:A:LEU:HD12	1:128:A:ASP:HB3	17	0.14
(1,3008)	1:56:A:LEU:HD13	1:128:A:ASP:HB2	17	0.14
(1,3008)	1:56:A:LEU:HD13	1:128:A:ASP:HB3	17	0.14
(1,3008)	1:56:A:LEU:HD21	1:128:A:ASP:HB2	17	0.14
(1,3008)	1:56:A:LEU:HD21	1:128:A:ASP:HB3	17	0.14
(1,3008)	1:56:A:LEU:HD22	1:128:A:ASP:HB2	17	0.14
(1,3008)	1:56:A:LEU:HD22	1:128:A:ASP:HB3	17	0.14
(1,3008)	1:56:A:LEU:HD23	1:128:A:ASP:HB2	17	0.14
(1,3008)	1:56:A:LEU:HD23	1:128:A:ASP:HB3	17	0.14
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	17	0.14
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	4	0.14
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	5	0.14
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	6	0.14
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	12	0.14
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	17	0.14
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	10	0.14

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	19	0.14
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	1	0.14
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	2	0.14
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	7	0.14
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	8	0.14
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	13	0.14
(1,2152)	1:113:A:THR:H	1:113:A:THR:HB	1	0.14
(1,2152)	1:113:A:THR:H	1:113:A:THR:HB	3	0.14
(1,2152)	1:113:A:THR:H	1:113:A:THR:HB	6	0.14
(1,2152)	1:113:A:THR:H	1:113:A:THR:HB	10	0.14
(1,2152)	1:113:A:THR:H	1:113:A:THR:HB	20	0.14
(1,2075)	1:87:A:THR:H	1:92:A:TYR:HA	16	0.14
(1,1201)	1:144:A:ILE:HG21	1:146:A:VAL:HB	13	0.14
(1,1201)	1:144:A:ILE:HG22	1:146:A:VAL:HB	13	0.14
(1,1201)	1:144:A:ILE:HG23	1:146:A:VAL:HB	13	0.14
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	4	0.14
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	6	0.14
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	14	0.14
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	20	0.14
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	1	0.14
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	10	0.14
(1,922)	1:95:A:ALA:H	1:97:A:GLU:HB3	14	0.14
(1,3344)	1:128:A:ASP:HB2	1:129:A:THR:H	17	0.13
(1,3344)	1:128:A:ASP:HB3	1:129:A:THR:H	17	0.13
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	2	0.13
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	7	0.13
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	9	0.13
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	11	0.13
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	19	0.13
(1,2690)	1:59:A:PRO:HA	1:60:A:ASN:HD22	14	0.13
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	3	0.13
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	5	0.13
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	17	0.13
(1,1699)	1:43:A:THR:HB	1:45:A:ASN:HD21	10	0.13
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	8	0.13
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	15	0.13
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	16	0.13
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	18	0.13
(1,557)	1:38:A:ALA:HB1	1:40:A:ASN:HD21	8	0.13
(1,557)	1:38:A:ALA:HB2	1:40:A:ASN:HD21	8	0.13
(1,557)	1:38:A:ALA:HB3	1:40:A:ASN:HD21	8	0.13
(1,3178)	1:85:A:VAL:HG11	1:145:A:LEU:HA	13	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3178)	1:85:A:VAL:HG12	1:145:A:LEU:HA	13	0.12
(1,3178)	1:85:A:VAL:HG13	1:145:A:LEU:HA	13	0.12
(1,3178)	1:85:A:VAL:HG21	1:145:A:LEU:HA	13	0.12
(1,3178)	1:85:A:VAL:HG22	1:145:A:LEU:HA	13	0.12
(1,3178)	1:85:A:VAL:HG23	1:145:A:LEU:HA	13	0.12
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	1	0.12
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	5	0.12
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	19	0.12
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	3	0.12
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	14	0.12
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	11	0.12
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	19	0.12
(1,2555)	1:86:A:TYR:H	1:93:A:VAL:H	11	0.12
(1,2555)	1:86:A:TYR:H	1:93:A:VAL:H	12	0.12
(1,2555)	1:86:A:TYR:H	1:93:A:VAL:H	16	0.12
(1,2555)	1:86:A:TYR:H	1:93:A:VAL:H	17	0.12
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	4	0.12
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	6	0.12
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	16	0.12
(1,2179)	1:40:A:ASN:HB2	1:47:A:GLU:H	10	0.12
(1,2078)	1:126:A:ASN:HD21	1:127:A:GLU:H	14	0.12
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	7	0.12
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	9	0.12
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	10	0.12
(1,988)	1:88:A:LYS:HA	1:88:A:LYS:HE2	20	0.12
(1,988)	1:88:A:LYS:HA	1:88:A:LYS:HE3	20	0.12
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	1	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	1	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	6	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	6	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	13	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	13	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	16	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	16	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	18	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	18	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	19	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	19	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG2	20	0.11
(1,3387)	1:150:A:GLU:HA	1:150:A:GLU:HG3	20	0.11
(1,3178)	1:85:A:VAL:HG11	1:145:A:LEU:HA	2	0.11
(1,3178)	1:85:A:VAL:HG12	1:145:A:LEU:HA	2	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,3178)	1:85:A:VAL:HG13	1:145:A:LEU:HA	2	0.11
(1,3178)	1:85:A:VAL:HG21	1:145:A:LEU:HA	2	0.11
(1,3178)	1:85:A:VAL:HG22	1:145:A:LEU:HA	2	0.11
(1,3178)	1:85:A:VAL:HG23	1:145:A:LEU:HA	2	0.11
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	2	0.11
(1,2810)	1:30:A:ASN:HD22	1:32:A:LYS:H	18	0.11
(1,2774)	1:37:A:LEU:HG	1:46:A:ILE:H	13	0.11
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB1	1	0.11
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB2	1	0.11
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB3	1	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG21	11	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG22	11	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG23	11	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG21	17	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG22	17	0.11
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG23	17	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	2	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	4	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	5	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	6	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	7	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	8	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	10	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	12	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	13	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	14	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	15	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	18	0.11
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	20	0.11
(1,2555)	1:86:A:TYR:H	1:93:A:VAL:H	5	0.11
(1,2555)	1:86:A:TYR:H	1:93:A:VAL:H	19	0.11
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	9	0.11
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	11	0.11
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	14	0.11
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	15	0.11
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	20	0.11
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE2	14	0.11
(1,2266)	1:88:A:LYS:H	1:88:A:LYS:HE3	14	0.11
(1,2179)	1:40:A:ASN:HB2	1:47:A:GLU:H	18	0.11
(1,1699)	1:43:A:THR:HB	1:45:A:ASN:HD21	18	0.11
(1,1201)	1:144:A:ILE:HG21	1:146:A:VAL:HB	18	0.11
(1,1201)	1:144:A:ILE:HG22	1:146:A:VAL:HB	18	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(1,1201)	1:144:A:ILE:HG23	1:146:A:VAL:HB	18	0.11
(1,1142)	1:40:A:ASN:HB3	1:47:A:GLU:HG2	3	0.11
(1,1142)	1:40:A:ASN:HB3	1:47:A:GLU:HG3	3	0.11
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	1	0.11
(1,992)	1:5:A:LEU:HG	1:79:A:CYS:HA	19	0.11
(1,3252)	1:100:A:ASP:HB2	1:101:A:ASP:H	11	0.1
(1,3252)	1:100:A:ASP:HB3	1:101:A:ASP:H	11	0.1
(1,3158)	1:82:A:ASP:HB2	1:83:A:HIS:H	12	0.1
(1,3158)	1:82:A:ASP:HB3	1:83:A:HIS:H	12	0.1
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB1	8	0.1
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB2	8	0.1
(1,2754)	1:6:A:VAL:H	1:61:A:ALA:HB3	8	0.1
(1,2749)	1:6:A:VAL:H	1:9:A:SER:HA	13	0.1
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG21	12	0.1
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG22	12	0.1
(1,2737)	1:23:A:GLU:H	1:25:A:VAL:HG23	12	0.1
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	1	0.1
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	3	0.1
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	9	0.1
(1,2653)	1:60:A:ASN:HD21	1:128:A:ASP:H	16	0.1
(1,2490)	1:6:A:VAL:H	1:79:A:CYS:HB3	10	0.1
(1,2335)	1:42:A:HIS:HD1	1:47:A:GLU:HG2	3	0.1
(1,2335)	1:42:A:HIS:HD1	1:47:A:GLU:HG3	3	0.1
(1,2075)	1:87:A:THR:H	1:92:A:TYR:HA	17	0.1
(1,1761)	1:106:A:VAL:H	1:106:A:VAL:HG11	12	0.1
(1,1761)	1:106:A:VAL:H	1:106:A:VAL:HG12	12	0.1
(1,1761)	1:106:A:VAL:H	1:106:A:VAL:HG13	12	0.1
(1,1248)	1:65:A:GLU:H	1:123:A:ILE:HG21	1	0.1
(1,1248)	1:65:A:GLU:H	1:123:A:ILE:HG22	1	0.1
(1,1248)	1:65:A:GLU:H	1:123:A:ILE:HG23	1	0.1
(1,1201)	1:144:A:ILE:HG21	1:146:A:VAL:HB	8	0.1
(1,1201)	1:144:A:ILE:HG22	1:146:A:VAL:HB	8	0.1
(1,1201)	1:144:A:ILE:HG23	1:146:A:VAL:HB	8	0.1
(1,912)	1:65:A:GLU:HG2	1:76:A:THR:HB	8	0.1
(1,269)	1:39:A:PHE:HD1	1:145:A:LEU:HG	3	0.1

## 10 Dihedral-angle violation analysis ⓘ

No dihedral-angle restraints found