Full wwPDB NMR Structure Validation Report (i)

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PDB ID	:	4A54
BMRB ID	:	18042
Title	:	Structural basis of the Dcp1:Dcp2 mRNA decapping complex activation by Edc3 and Scd6
Authors	:	Fromm, S.A.; Truffault, V.; Kamenz, J.; Braun, J.E.; Hoffmann, N.A.; Izaurralde, E.; Sprangers, R.
Deposited on	:	2011-10-24

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 (1)) were used in the production of this report:

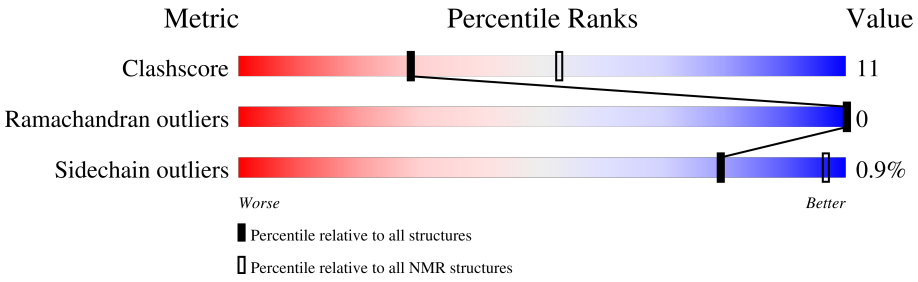
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
BMRB Restraints Analysis	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.33

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
SOLUTION NMR

The overall completeness of chemical shifts assignment is 41%.

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



Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	158937	12864
Ramachandran outliers	154571	11451
Sidechain outliers	154315	11428

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for >=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	96	51% 8% 41%
2	B	52	13% 87%

2 Ensemble composition and analysis (i)

This entry contains 22 models. Model 20 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative.

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:2-A:58, B:257-B:263 (64)	0.34	20

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 1 single-model cluster was found.

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

3 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 2239 atoms, of which 1124 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called EDC3.

Mol	Chain	Residues	Atoms						Trace
1	A	96	Total	C	H	N	O	S	0
			1496	456	756	128	152	4	

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	MET	-	expression tag	UNP O94752
A	0	GLY	-	expression tag	UNP O94752

- Molecule 2 is a protein called MRNA DECAPPING COMPLEX SUBUNIT 2.

Mol	Chain	Residues	Atoms					Trace
2	B	52	Total	C	H	N	O	0
			743	229	368	61	85	

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	240	GLY	-	expression tag	UNP O13828
B	241	ALA	-	expression tag	UNP O13828

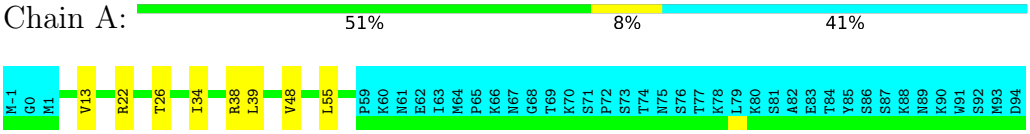
4 Residue-property plots (i)

4.1 Average score per residue in the NMR ensemble

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

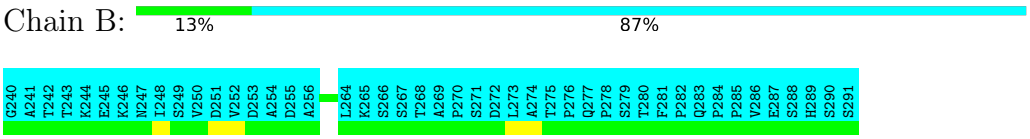
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

Chain B:



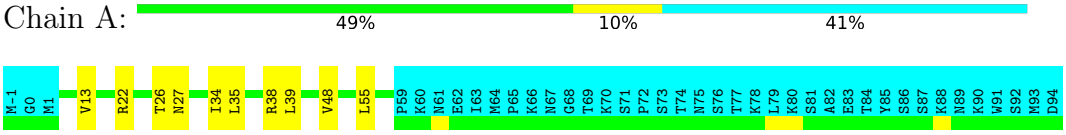
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

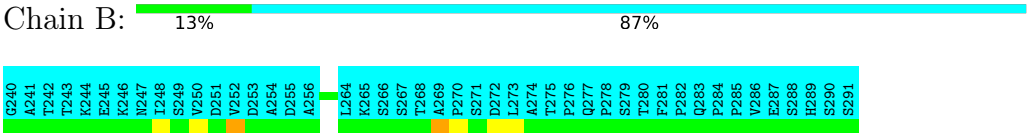
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

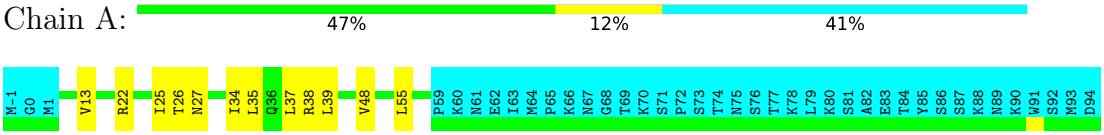
Chain B:



4.2.2 Score per residue for model 2

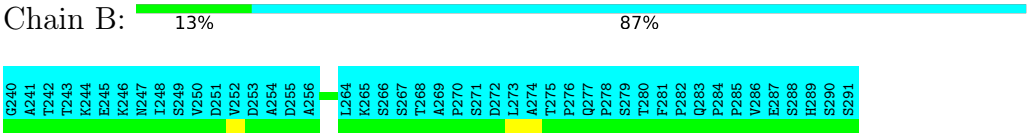
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

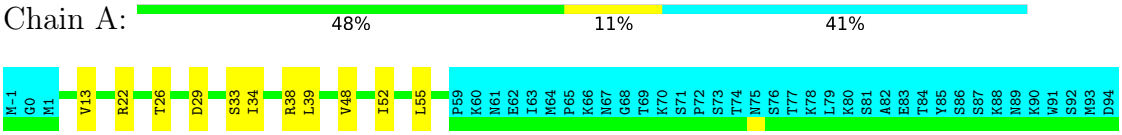
Chain B:



4.2.3 Score per residue for model 3

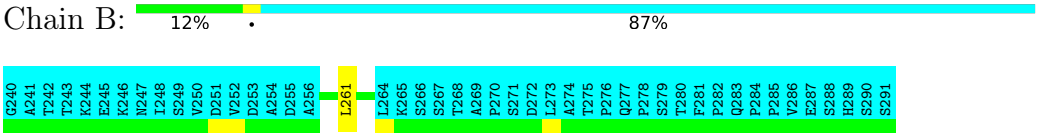
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

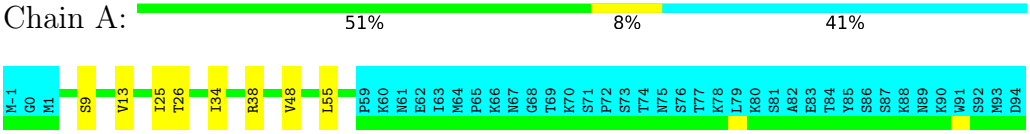
Chain B:



4.2.4 Score per residue for model 4

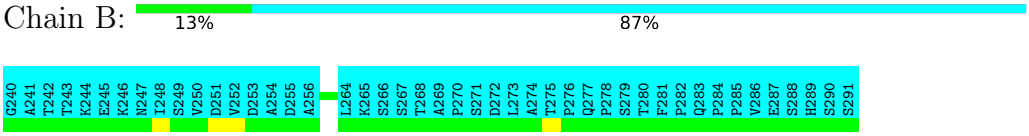
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

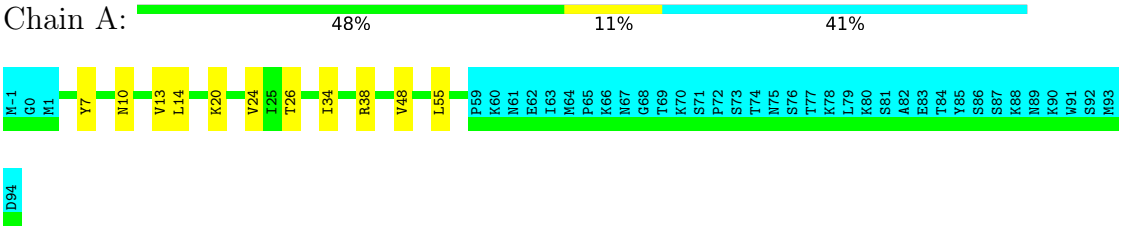
Chain B:



4.2.5 Score per residue for model 5

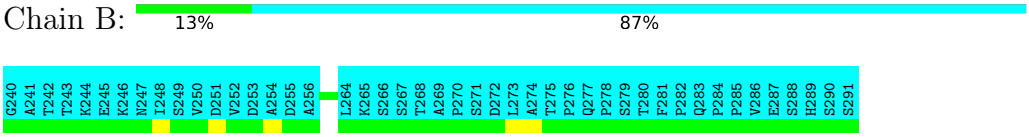
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

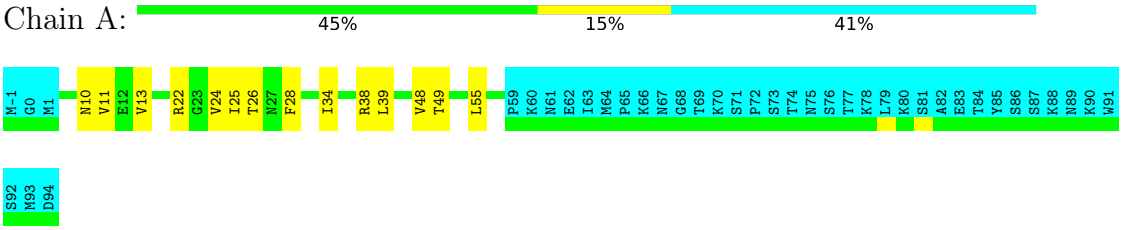
Chain B:



4.2.6 Score per residue for model 6

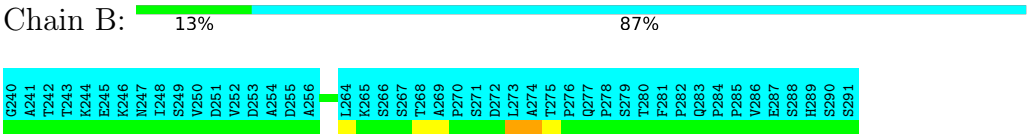
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

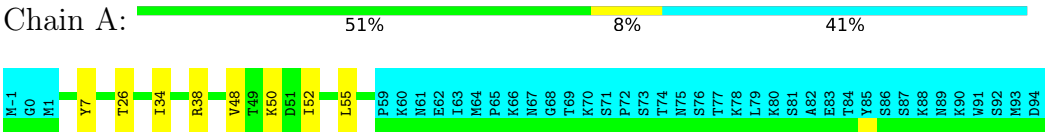
Chain B:



4.2.7 Score per residue for model 7

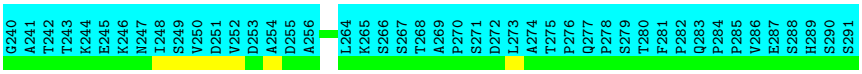
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

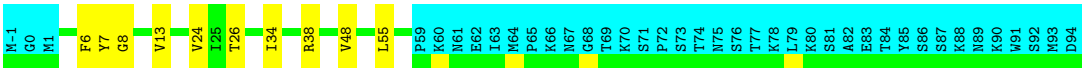
Chain B:



4.2.8 Score per residue for model 8

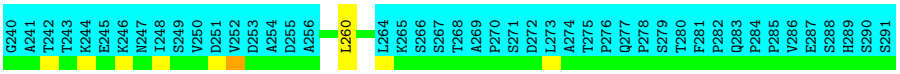
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

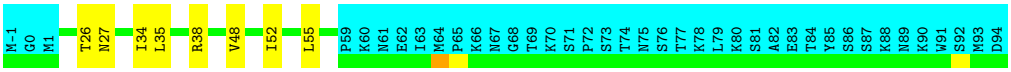
Chain B:



4.2.9 Score per residue for model 9

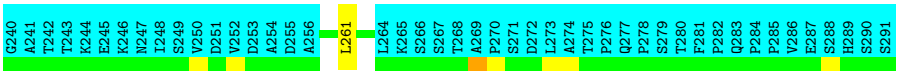
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

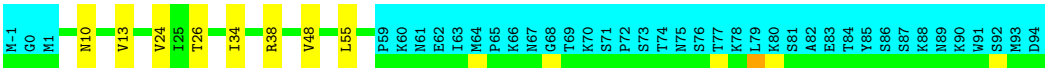
Chain B:



4.2.10 Score per residue for model 10

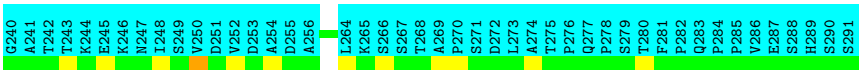
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

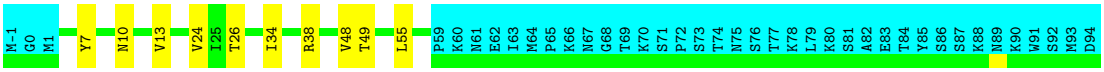
Chain B:



4.2.11 Score per residue for model 11

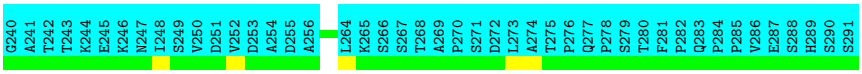
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

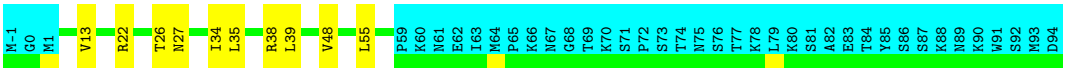
Chain B:



4.2.12 Score per residue for model 12

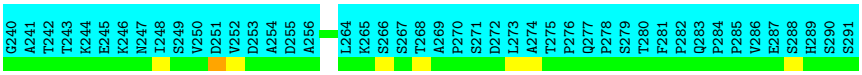
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

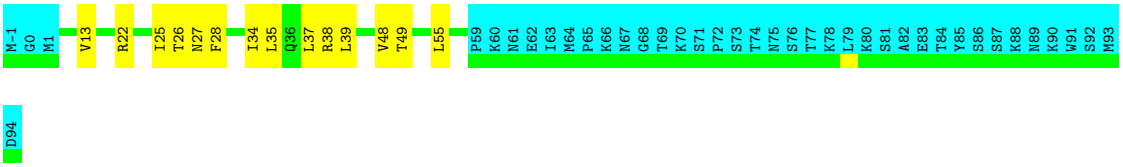
Chain B:



4.2.13 Score per residue for model 13

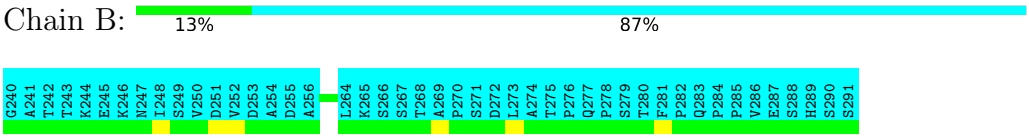
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

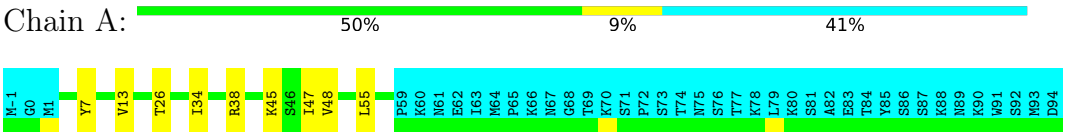
Chain B:



4.2.14 Score per residue for model 14

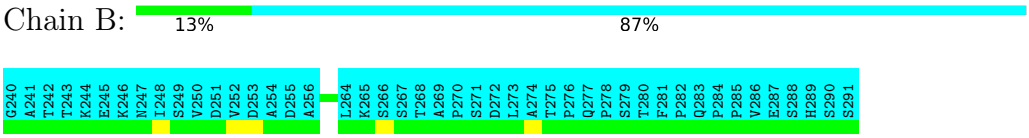
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

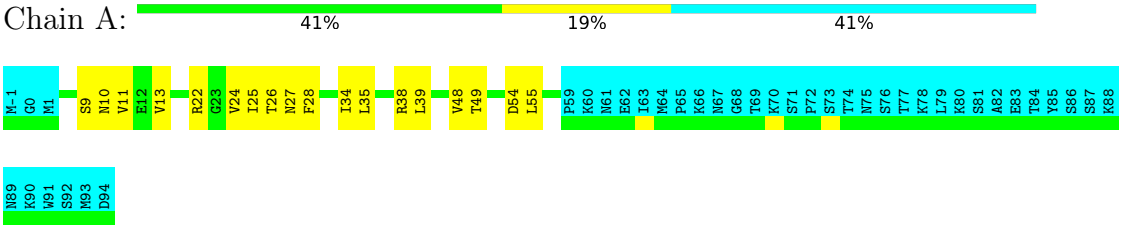
Chain B:



4.2.15 Score per residue for model 15

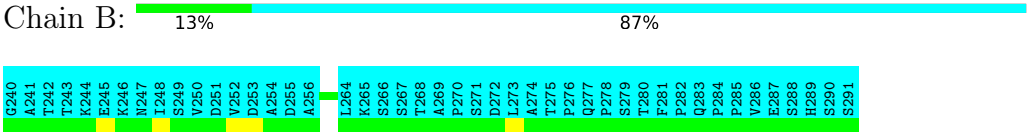
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

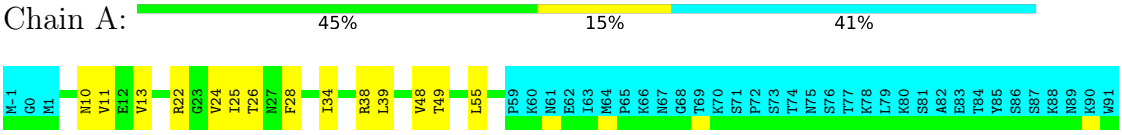
Chain B:



4.2.16 Score per residue for model 16

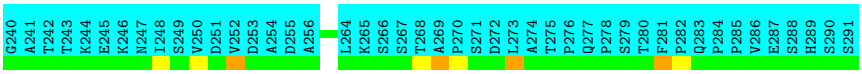
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

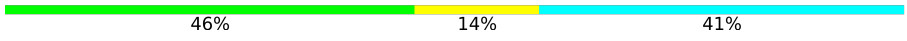
Chain B:

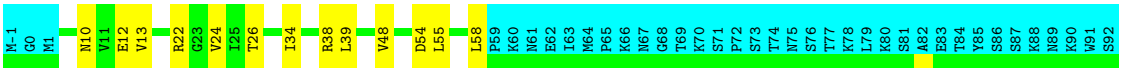


4.2.17 Score per residue for model 17

• Molecule 1: EDC3

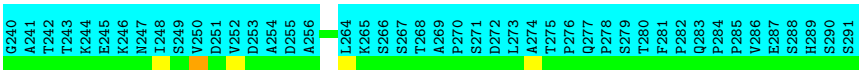
Chain A:





• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

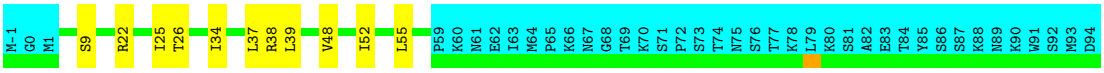
Chain B:



4.2.18 Score per residue for model 18

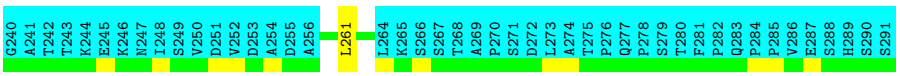
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

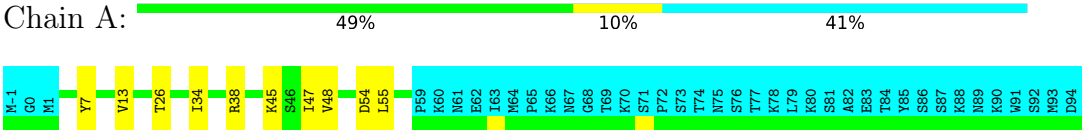
Chain B:



4.2.19 Score per residue for model 19

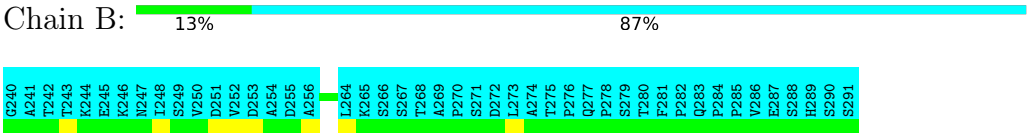
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

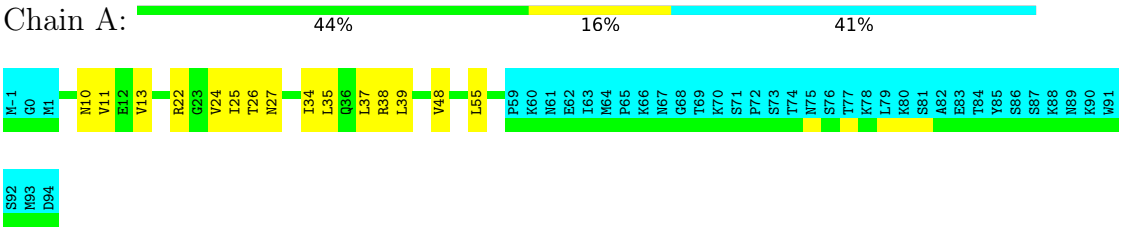
Chain B:



4.2.20 Score per residue for model 20 (medoid)

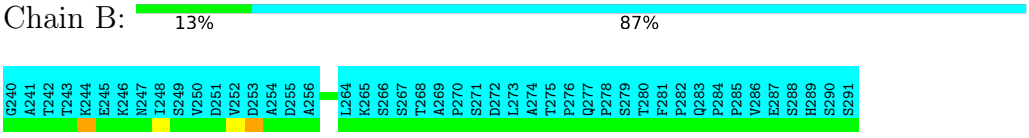
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

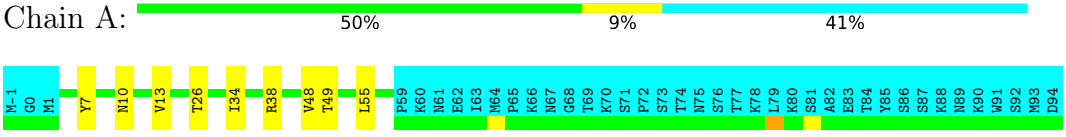
Chain B:



4.2.21 Score per residue for model 21

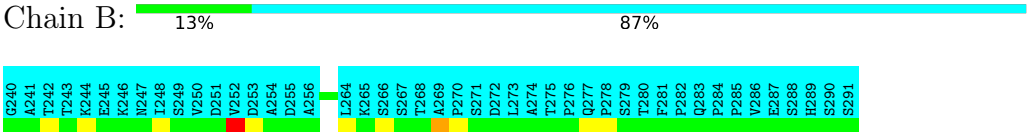
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

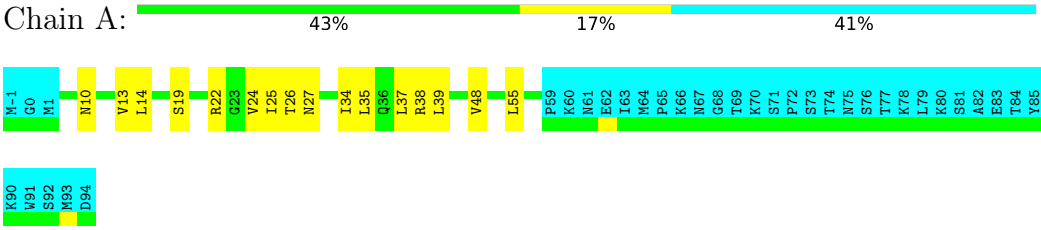
Chain B:



4.2.22 Score per residue for model 22

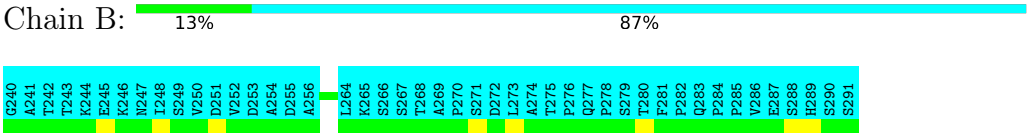
• Molecule 1: EDC3

Chain A:



• Molecule 2: MRNA DECAPPING COMPLEX SUBUNIT 2

Chain B:



5 Refinement protocol and experimental data overview

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

Of the 50 calculated structures, 22 were deposited, based on the following criterion: *LOWEST ENERGY*.

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

Software name	Classification	Version
X-PLOR	refinement	2.9.3
Sparky	structure solution	

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	466
Number of shifts mapped to atoms	466
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	41%

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	440	451	451	10±2
2	B	51	56	56	0±1
All	All	10802	11154	11154	231

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 11.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:34:ILE:HD12	1:A:48:VAL:HG22	0.98	1.36	8	22
1:A:34:ILE:HD13	1:A:48:VAL:HG13	0.76	1.57	12	22
1:A:10:ASN:ND2	1:A:24:VAL:HG22	0.68	2.03	11	8
1:A:10:ASN:CG	1:A:24:VAL:HG22	0.66	2.11	5	8
1:A:34:ILE:CD1	1:A:48:VAL:HG22	0.66	2.20	3	22
1:A:34:ILE:CD1	1:A:48:VAL:HG13	0.65	2.21	16	22
1:A:52:ILE:HG21	1:A:55:LEU:HD11	0.65	1.67	18	4
1:A:26:THR:HG21	1:A:38:ARG:HG3	0.62	1.70	1	4
1:A:10:ASN:OD1	1:A:24:VAL:HG22	0.60	1.96	17	3
1:A:13:VAL:HG22	1:A:55:LEU:CD2	0.60	2.26	10	18
1:A:45:LYS:HE2	1:A:47:ILE:HD11	0.58	1.74	19	1
1:A:26:THR:HG21	1:A:38:ARG:HB2	0.57	1.77	11	18
1:A:52:ILE:HG21	1:A:55:LEU:CD1	0.56	2.31	3	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:14:LEU:HD12	1:A:19:SER:O	0.55	2.02	22	1
1:A:11:VAL:HG21	1:A:25:ILE:HD11	0.54	1.79	16	4
1:A:13:VAL:HG22	1:A:55:LEU:HD23	0.54	1.79	10	2
1:A:26:THR:HG21	1:A:38:ARG:CG	0.54	2.33	1	3
1:A:9:SER:OG	1:A:25:ILE:HD12	0.52	2.04	4	3
1:A:13:VAL:CG1	1:A:52:ILE:HG23	0.52	2.35	3	1
1:A:13:VAL:HG13	1:A:55:LEU:CD2	0.50	2.37	1	15
1:A:10:ASN:OD1	1:A:24:VAL:HG13	0.48	2.09	10	1
1:A:55:LEU:HD12	2:B:261:LEU:HD13	0.47	1.85	3	3
1:A:25:ILE:HA	1:A:37:LEU:HD23	0.47	1.86	13	5
1:A:13:VAL:HG13	1:A:55:LEU:HD23	0.47	1.84	1	1
1:A:22:ARG:O	1:A:39:LEU:HD13	0.46	2.10	1	12
1:A:27:ASN:O	1:A:35:LEU:HD12	0.45	2.12	9	8
1:A:55:LEU:HD12	2:B:261:LEU:CD1	0.44	2.42	18	2
1:A:28:PHE:CE1	1:A:49:THR:HG21	0.42	2.49	16	4
1:A:13:VAL:HG13	1:A:55:LEU:HD21	0.42	1.92	2	3
1:A:14:LEU:HD13	1:A:20:LYS:HG2	0.42	1.91	5	1
1:A:12:GLU:HB2	1:A:58:LEU:HD11	0.41	1.91	17	1
1:A:45:LYS:HE3	1:A:47:ILE:HD11	0.41	1.92	14	1
1:A:29:ASP:O	1:A:33:SER:N	0.40	2.54	3	1
1:A:6:PHE:CE1	2:B:260:LEU:HD21	0.40	2.51	8	1
1:A:45:LYS:CE	1:A:47:ILE:HD11	0.40	2.47	14	1
1:A:8:GLY:O	1:A:24:VAL:HG13	0.40	2.16	8	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	57/96 (59%)	55±0 (96±0%)	2±0 (4±0%)	0±0 (0±0%)	100	100
2	B	7/52 (13%)	7±0 (100±0%)	0±0 (0±0%)	0±0 (0±0%)	100	100
All	All	1408/3256 (43%)	1364 (97%)	44 (3%)	0 (0%)	100	100

There are no Ramachandran outliers.

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	52/88 (59%)	51±1 (99±1%)	1±1 (1±1%)	77 96
2	B	7/46 (15%)	7±0 (100±0%)	0±0 (0±0%)	100 100
All	All	1298/2948 (44%)	1286 (99%)	12 (1%)	79 97

All 4 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	7	TYR	7
1	A	54	ASP	3
1	A	50	LYS	1
1	A	10	ASN	1

6.3.3 RNA

There are no RNA molecules in this entry.

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

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

6.5 Carbohydrates

There are no monosaccharides in this entry.

6.6 Ligand geometry

There are no ligands in this entry.

6.7 Other polymers

There are no such molecules in this entry.

6.8 Polymer linkage issues

There are no chain breaks in this entry.

7 Chemical shift validation

The completeness of assignment taking into account all chemical shift lists is 41% for the well-defined parts and 25% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *edc3_15.bmrb.csh*

7.1.1 Bookkeeping

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

Total number of shifts	466
Number of shifts mapped to atoms	466
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	0

7.1.2 Chemical shift referencing

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction ± precision, *ppm*	Suggested action
$^{13}C_{\alpha}$	79	-0.24 ± 0.31	None needed (< 0.5 ppm)
$^{13}C_{\beta}$	75	0.13 ± 0.24	None needed (< 0.5 ppm)
$^{13}C'$	75	0.32 ± 0.25	None needed (< 0.5 ppm)
^{15}N	71	-0.12 ± 0.52	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 41%, i.e. 357 atoms were assigned a chemical shift out of a possible 867. 0 out of 15 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	228/322 (71%)	57/130 (44%)	114/128 (89%)	57/64 (89%)
Sidechain	129/516 (25%)	0/336 (0%)	124/159 (78%)	5/21 (24%)

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	Total	^{1}H	^{13}C	^{15}N
Aromatic	0/29 (0%)	0/14 (0%)	0/15 (0%)	0/0 (—%)
Overall	357/867 (41%)	57/480 (12%)	238/302 (79%)	62/85 (73%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 25%, i.e. 466 atoms were assigned a chemical shift out of a possible 1894. 0 out of 21 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	296/727 (41%)	71/292 (24%)	154/296 (52%)	71/139 (51%)
Sidechain	170/1100 (15%)	0/714 (0%)	165/348 (47%)	5/38 (13%)
Aromatic	0/67 (0%)	0/33 (0%)	0/32 (0%)	0/2 (0%)
Overall	466/1894 (25%)	71/1039 (7%)	319/676 (47%)	76/179 (42%)

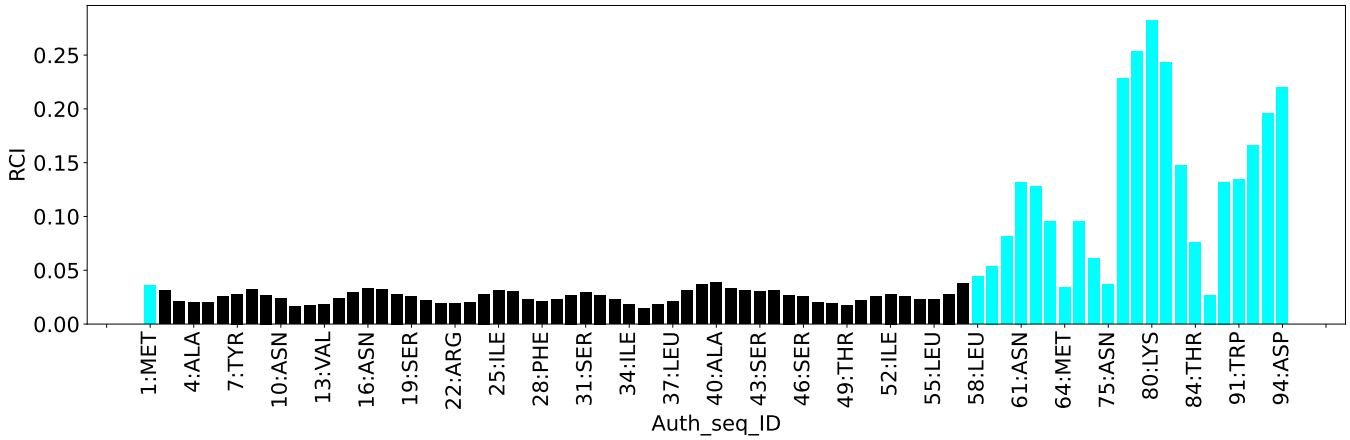
7.1.4 Statistically unusual chemical shifts (i)

There are no statistically unusual chemical shifts.

7.1.5 Random Coil Index (RCI) plots (i)

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

Random coil index (RCI) for chain A:



8 NMR restraints analysis

8.1 Conformationally restricting restraints

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

Description	Value
Total distance restraints	421
Intra-residue (|i-j|=0)	66
Sequential (|i-j|=1)	128
Medium range (|i-j|>1 and |i-j|<5)	47
Long range (|i-j|≥5)	136
Inter-chain	0
Hydrogen bond restraints	44
Disulfide bond restraints	0
Total dihedral-angle restraints	0
Number of unmapped restraints	0
Number of restraints per residue	2.8
Number of long range restraints per residue[1]	1.1

[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)	9.7	0.2
0.2-0.5 (Medium)	1.8	0.48
>0.5 (Large)	4.0	1.76

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

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

9 Distance violation analysis (i)

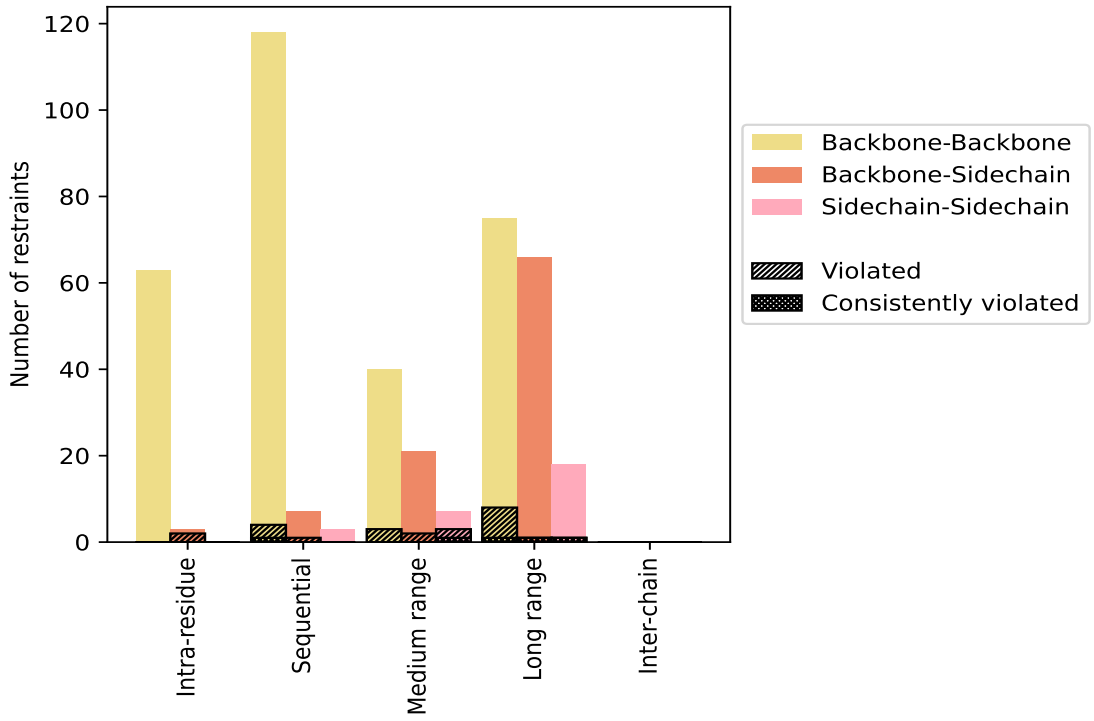
9.1 Summary of distance violations (i)

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)	66	15.7	2	3.0	0.5	0	0.0	0.0
Backbone-Backbone	63	15.0	0	0.0	0.0	0	0.0	0.0
Backbone-Sidechain	3	0.7	2	66.7	0.5	0	0.0	0.0
Sidechain-Sidechain	0	0.0	0	0.0	0.0	0	0.0	0.0
Sequential (|i-j|=1)	128	30.4	5	3.9	1.2	1	0.8	0.2
Backbone-Backbone	118	28.0	4	3.4	1.0	1	0.8	0.2
Backbone-Sidechain	7	1.7	1	14.3	0.2	0	0.0	0.0
Sidechain-Sidechain	3	0.7	0	0.0	0.0	0	0.0	0.0
Medium range (|i-j|>1 & |i-j|<5)	47	11.2	8	17.0	1.9	1	2.1	0.2
Backbone-Backbone	19	4.5	3	15.8	0.7	0	0.0	0.0
Backbone-Sidechain	21	5.0	2	9.5	0.5	0	0.0	0.0
Sidechain-Sidechain	7	1.7	3	42.9	0.7	1	14.3	0.2
Long range (|i-j|≥5)	136	32.3	7	5.1	1.7	3	2.2	0.7
Backbone-Backbone	52	12.4	5	9.6	1.2	1	1.9	0.2
Backbone-Sidechain	66	15.7	1	1.5	0.2	1	1.5	0.2
Sidechain-Sidechain	18	4.3	1	5.6	0.2	1	5.6	0.2
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	44	10.5	3	6.8	0.7	0	0.0	0.0
Disulfide bond	0	0.0	0	0.0	0.0	0	0.0	0.0
Total	421	100.0	25	5.9	5.9	5	1.2	1.2
Backbone-Backbone	296	70.3	15	5.1	3.6	2	0.7	0.5
Backbone-Sidechain	97	23.0	6	6.2	1.4	1	1.0	0.2
Sidechain-Sidechain	28	6.7	4	14.3	1.0	2	7.1	0.5

[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	2	4	8	0	14	0.36	1.44	0.38	0.14
2	2	1	4	8	0	15	0.37	1.46	0.37	0.13
3	0	2	5	8	0	15	0.36	1.4	0.36	0.15
4	2	3	3	6	0	14	0.36	1.47	0.39	0.12
5	0	3	6	7	0	16	0.37	1.76	0.45	0.14
6	0	2	5	8	0	15	0.36	1.39	0.36	0.14
7	0	2	6	8	0	16	0.37	1.74	0.44	0.15
8	0	3	6	6	0	15	0.39	1.7	0.44	0.14
9	1	2	7	7	0	17	0.34	1.45	0.36	0.15
10	0	2	3	7	0	12	0.41	1.47	0.41	0.15
11	0	2	6	6	0	14	0.42	1.72	0.45	0.16

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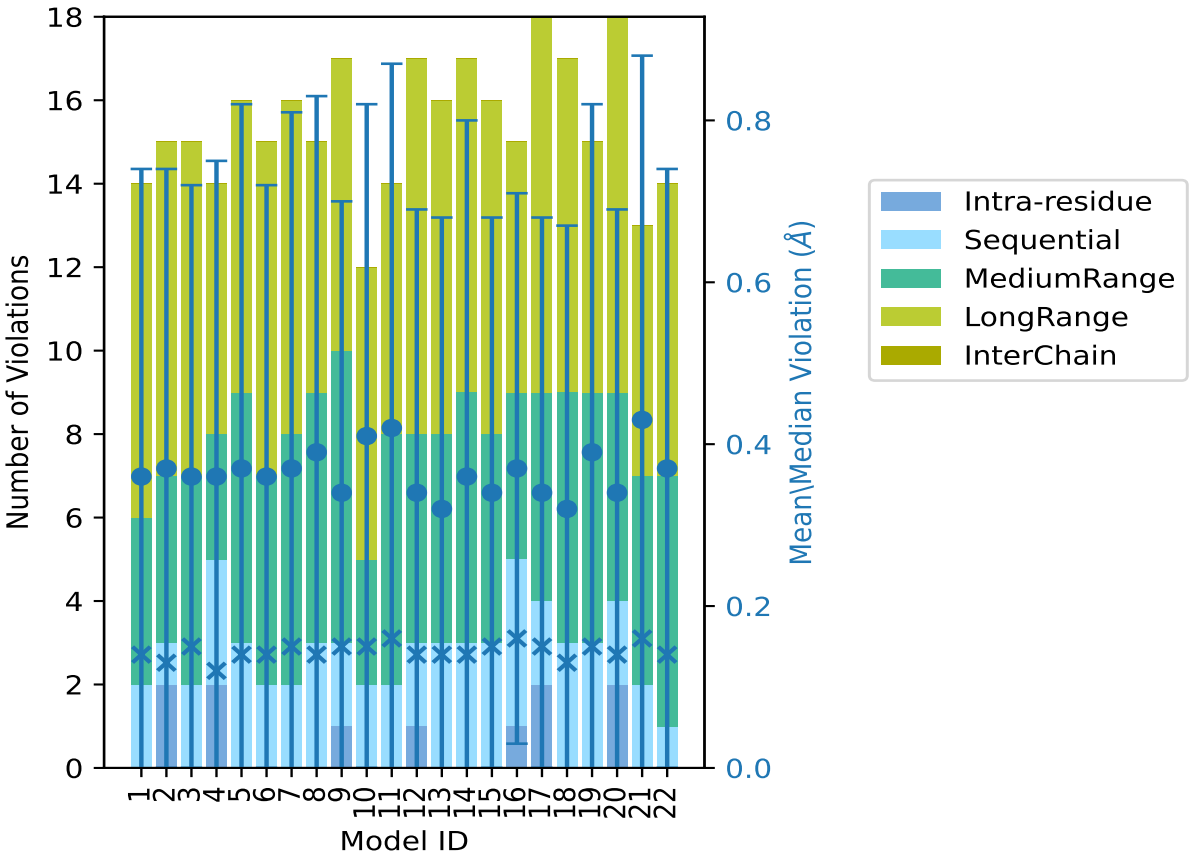
Model ID	Number of violations						Mean (Å)	Max (Å)	SD[6] (Å)	Median (Å)
	IR[1]	SQ[2]	MR[3]	LR[4]	IC[5]	Total				
12	1	2	5	9	0	17	0.34	1.41	0.35	0.14
13	0	3	5	8	0	16	0.32	1.4	0.36	0.14
14	0	3	6	8	0	17	0.36	1.76	0.44	0.14
15	0	3	5	8	0	16	0.34	1.38	0.34	0.15
16	1	4	4	6	0	15	0.37	1.33	0.34	0.16
17	2	2	5	9	0	18	0.34	1.4	0.34	0.15
18	0	3	6	8	0	17	0.32	1.36	0.35	0.13
19	0	3	6	6	0	15	0.39	1.71	0.43	0.15
20	2	2	5	9	0	18	0.34	1.43	0.35	0.14
21	0	2	5	6	0	13	0.43	1.69	0.45	0.16
22	0	1	6	7	0	14	0.37	1.41	0.37	0.14

[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

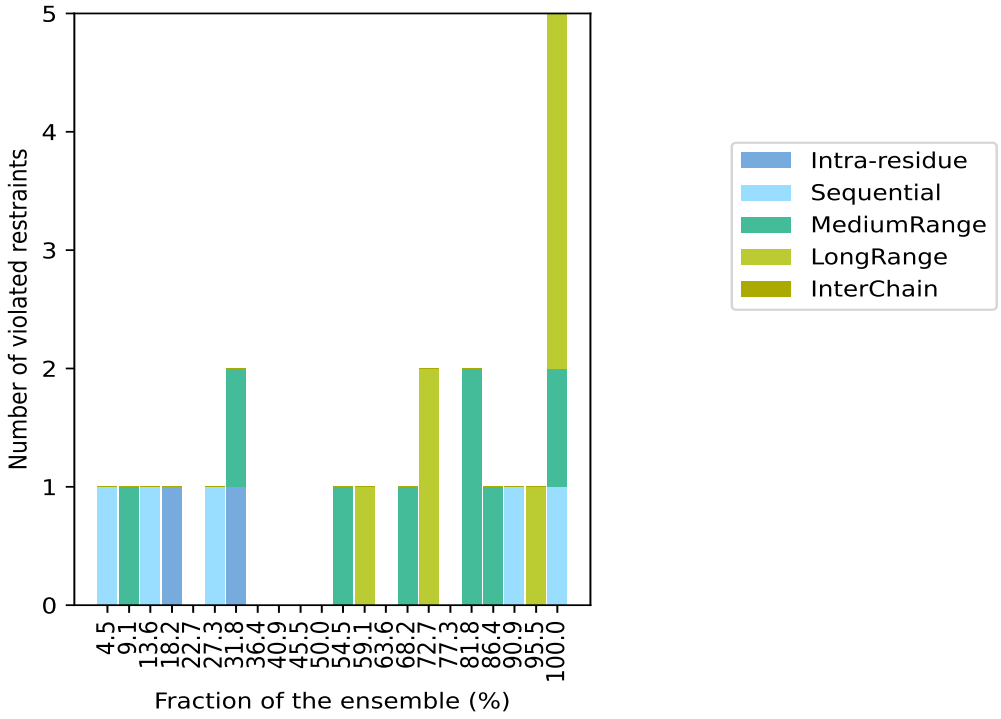
9.3 Distance violation statistics for the ensemble (i)

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, 355(IR:64, SQ:123, MR:39, LR:129, 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]	%
0	1	0	0	0	1	1	4.5
0	0	1	0	0	1	2	9.1
0	1	0	0	0	1	3	13.6
1	0	0	0	0	1	4	18.2
0	0	0	0	0	0	5	22.7
0	1	0	0	0	1	6	27.3
1	0	1	0	0	2	7	31.8
0	0	0	0	0	0	8	36.4
0	0	0	0	0	0	9	40.9
0	0	0	0	0	0	10	45.5
0	0	0	0	0	0	11	50.0
0	0	1	0	0	1	12	54.5
0	0	0	1	0	1	13	59.1
0	0	0	0	0	0	14	63.6
0	0	1	0	0	1	15	68.2
0	0	0	2	0	2	16	72.7
0	0	0	0	0	0	17	77.3
0	0	2	0	0	2	18	81.8
0	0	1	0	0	1	19	86.4
0	1	0	0	0	1	20	90.9
0	0	0	1	0	1	21	95.5
0	1	1	3	0	5	22	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

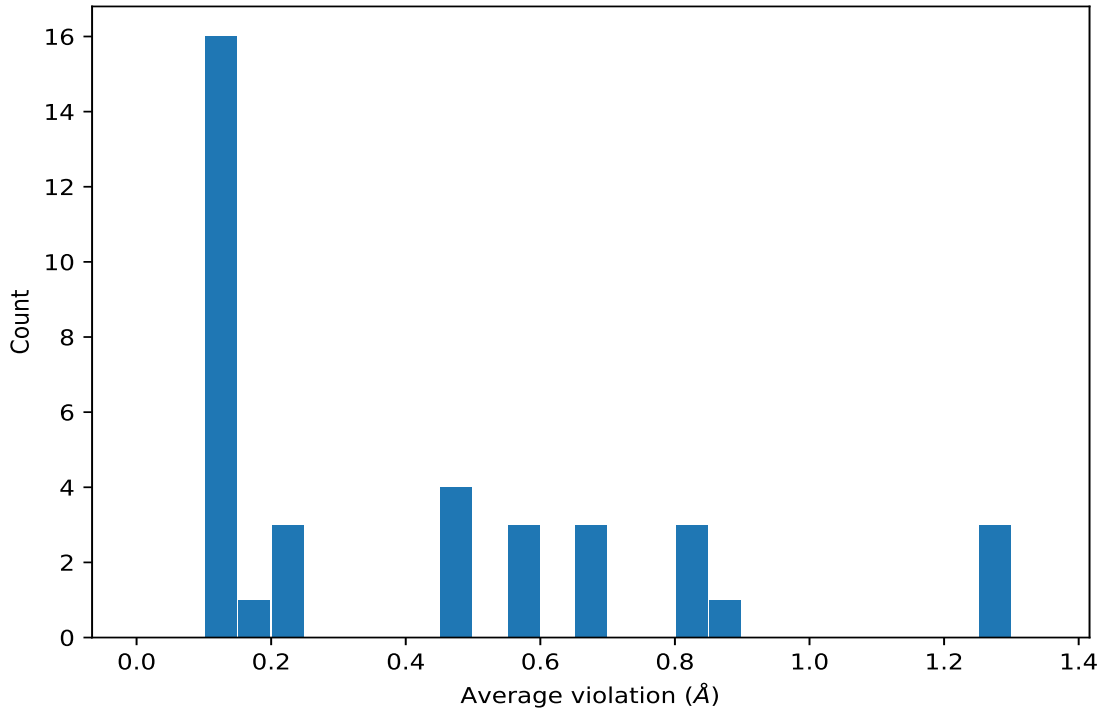
9.3.1 Bar graph : Distance violation statistics for the ensemble



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 (i)

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

Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	22	1.28	0.21	1.4
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	22	1.28	0.21	1.4
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	22	1.28	0.21	1.4
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	22	0.69	0.02	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	22	0.69	0.02	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	22	0.69	0.02	0.69
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	22	0.59	0.08	0.58
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	22	0.59	0.08	0.58
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	22	0.59	0.08	0.58
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	22	0.16	0.01	0.16
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	22	0.14	0.01	0.14
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	21	0.13	0.01	0.12
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	20	0.11	0.01	0.11
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	19	0.13	0.01	0.13
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	18	0.86	0.69	0.44
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	18	0.46	0.0	0.46

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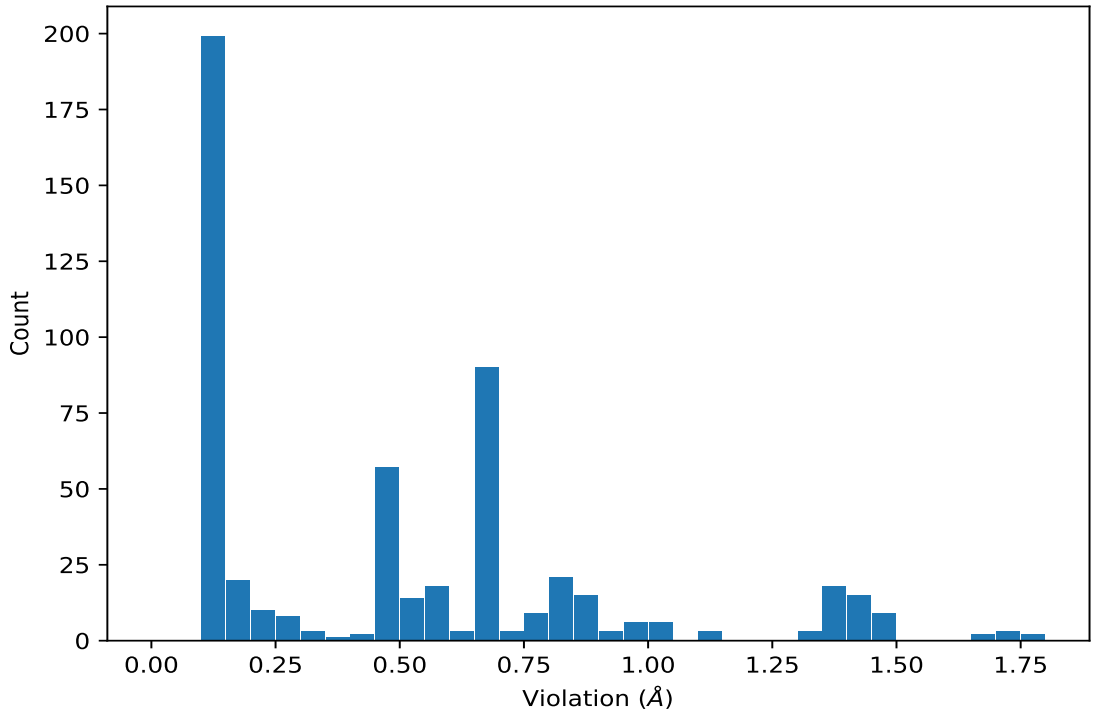
Key	Atom-1	Atom-2	Models[1]	Mean (Å)	SD[1] (Å)	Median (Å)
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	18	0.46	0.0	0.46
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	16	0.12	0.01	0.12
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	16	0.11	0.0	0.11
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	15	0.82	0.04	0.82
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	15	0.82	0.04	0.82
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	15	0.82	0.04	0.82
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	15	0.12	0.01	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	13	0.12	0.01	0.12
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	12	0.12	0.01	0.11
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	12	0.12	0.01	0.12
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	7	0.45	0.01	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	7	0.45	0.01	0.45
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	7	0.21	0.05	0.22
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	7	0.21	0.05	0.22
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	7	0.21	0.05	0.22
(2,230)	1:A:42:ASP:H	1:A:41:ASN:HA	6	0.11	0.0	0.11
(2,16)	1:A:50:LYS:HA	1:A:50:LYS:HG2	4	0.12	0.0	0.12
(1,34)	1:A:26:THR:H	1:A:36:GLN:O	4	0.11	0.0	0.11
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB2	3	0.13	0.02	0.11
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB3	3	0.13	0.02	0.11
(2,94)	1:A:54:ASP:H	1:A:52:ILE:HA	2	0.12	0.0	0.12

[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)
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	5	1.76
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	14	1.76
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	7	1.74
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	11	1.72
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	19	1.71
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	8	1.7
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	21	1.69
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	4	1.47
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	4	1.47
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	4	1.47
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	10	1.47
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	10	1.47
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	10	1.47
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	2	1.46
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	2	1.46
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	2	1.46

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	9	1.45
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	9	1.45
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	9	1.45
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	1	1.44
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	1	1.44
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	1	1.44
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	20	1.43
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	20	1.43
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	20	1.43
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	12	1.41
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	12	1.41
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	12	1.41
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	22	1.41
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	22	1.41
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	22	1.41
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	3	1.4
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	3	1.4
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	3	1.4
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	13	1.4
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	13	1.4
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	13	1.4
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	17	1.4
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	17	1.4
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	17	1.4
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	6	1.39
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	6	1.39
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	6	1.39
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	15	1.38
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	15	1.38
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	15	1.38
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	18	1.36
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	18	1.36
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	18	1.36
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	16	1.33
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	16	1.33
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	16	1.33
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	5	1.1
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	5	1.1
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	5	1.1
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	14	1.02
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	14	1.02
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	14	1.02

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	11	1.0
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	11	1.0
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	11	1.0
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	8	0.97
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	8	0.97
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	8	0.97
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	21	0.96
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	21	0.96
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	21	0.96
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	7	0.94
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	7	0.94
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	7	0.94
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	9	0.88
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	9	0.88
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	9	0.88
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	10	0.88
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	10	0.88
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	10	0.88
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	2	0.87
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	2	0.87
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	2	0.87
(2,110)	1:A:3:VAL:HG11	1:A:7:TYR:HE2	19	0.87
(2,110)	1:A:3:VAL:HG12	1:A:7:TYR:HE2	19	0.87
(2,110)	1:A:3:VAL:HG13	1:A:7:TYR:HE2	19	0.87
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	4	0.86
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	4	0.86
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	4	0.86
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	1	0.84
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	1	0.84
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	1	0.84
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	20	0.84
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	20	0.84
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	20	0.84
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	22	0.83
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	22	0.83
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	22	0.83
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	13	0.82
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	13	0.82
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	13	0.82
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	17	0.82
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	17	0.82
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	17	0.82

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	3	0.81
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	3	0.81
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	3	0.81
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	12	0.8
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	12	0.8
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	12	0.8
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	15	0.79
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	15	0.79
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	15	0.79
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	6	0.78
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	6	0.78
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	6	0.78
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	18	0.77
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	18	0.77
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	18	0.77
(2,84)	1:A:3:VAL:HG11	1:A:7:TYR:HD2	16	0.71
(2,84)	1:A:3:VAL:HG12	1:A:7:TYR:HD2	16	0.71
(2,84)	1:A:3:VAL:HG13	1:A:7:TYR:HD2	16	0.71
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	5	0.7
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	5	0.7
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	5	0.7
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	11	0.7
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	11	0.7
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	11	0.7
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	14	0.7
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	14	0.7
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	14	0.7
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	19	0.7
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	19	0.7
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	19	0.7
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	21	0.7
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	21	0.7
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	21	0.7
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	1	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	1	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	1	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	3	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	3	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	3	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	4	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	4	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	4	0.69

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	6	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	6	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	6	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	7	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	7	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	7	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	8	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	8	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	8	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	9	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	9	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	9	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	10	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	10	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	10	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	13	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	13	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	13	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	15	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	15	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	15	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	17	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	17	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	17	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	18	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	18	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	18	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	20	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	20	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	20	0.69
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	22	0.69
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	22	0.69
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	22	0.69
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	7	0.68
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	7	0.68
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	7	0.68
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	8	0.68
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	8	0.68
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	8	0.68
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	11	0.68
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	11	0.68
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	11	0.68

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	14	0.68
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	14	0.68
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	14	0.68
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	19	0.68
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	19	0.68
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	19	0.68
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	2	0.68
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	2	0.68
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	2	0.68
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	16	0.67
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	16	0.67
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	16	0.67
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	18	0.67
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	18	0.67
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	18	0.67
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	21	0.67
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	21	0.67
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	21	0.67
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	16	0.67
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	16	0.67
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	16	0.67
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	12	0.65
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	12	0.65
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	12	0.65
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	20	0.64
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	20	0.64
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	20	0.64
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	3	0.59
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	3	0.59
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	3	0.59
(2,256)	1:A:34:ILE:HD11	1:A:49:THR:H	12	0.59
(2,256)	1:A:34:ILE:HD12	1:A:49:THR:H	12	0.59
(2,256)	1:A:34:ILE:HD13	1:A:49:THR:H	12	0.59
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	10	0.57
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	10	0.57
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	10	0.57
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	13	0.57
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	13	0.57
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	13	0.57
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	5	0.56
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	5	0.56
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	5	0.56

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	6	0.56
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	6	0.56
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	6	0.56
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	15	0.53
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	15	0.53
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	15	0.53
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	17	0.53
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	17	0.53
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	17	0.53
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	22	0.53
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	22	0.53
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	22	0.53
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	16	0.52
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	18	0.52
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	1	0.51
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	1	0.51
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	1	0.51
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	4	0.48
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	4	0.48
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	4	0.48
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	2	0.46
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	2	0.46
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	2	0.46
(2,325)	1:A:3:VAL:HG21	1:A:28:PHE:HD2	9	0.46
(2,325)	1:A:3:VAL:HG22	1:A:28:PHE:HD2	9	0.46
(2,325)	1:A:3:VAL:HG23	1:A:28:PHE:HD2	9	0.46
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	12	0.46
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	12	0.46
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	16	0.46
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	16	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	1	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	1	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	2	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	2	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	3	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	3	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	5	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	5	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	6	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	6	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	7	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	7	0.46

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	8	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	8	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	9	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	9	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	11	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	11	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	12	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	12	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	15	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	15	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	17	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	17	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	19	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	19	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	20	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	20	0.46
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	22	0.46
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	22	0.46
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	2	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	2	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	4	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	4	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	17	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	17	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	20	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	20	0.45
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	10	0.45
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	10	0.45
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	14	0.45
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	14	0.45
(2,111)	1:A:41:ASN:HB2	1:A:43:SER:H	21	0.45
(2,111)	1:A:41:ASN:HB3	1:A:43:SER:H	21	0.45
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD2	9	0.44
(2,31)	1:A:50:LYS:H	1:A:50:LYS:HD3	9	0.44
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	15	0.37
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	3	0.35
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	6	0.33
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	13	0.33
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	21	0.28
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	21	0.28
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	21	0.28
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	17	0.27

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	19	0.26
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	19	0.26
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	19	0.26
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	22	0.25
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	8	0.22
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	8	0.22
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	8	0.22
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	11	0.22
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	11	0.22
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	11	0.22
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	7	0.21
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	7	0.21
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	7	0.21
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	20	0.2
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	12	0.19
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	15	0.18
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	19	0.18
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	20	0.18
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	5	0.17
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	7	0.17
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	8	0.17
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	9	0.17
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	11	0.17
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	17	0.17
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	5	0.16
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	5	0.16
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	5	0.16
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	21	0.16
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	11	0.16
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	17	0.16
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB2	16	0.16
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB3	16	0.16
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	13	0.16
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	16	0.16
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	15	0.15
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	3	0.15
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	5	0.15
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	7	0.15
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	9	0.15
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	11	0.15
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	14	0.15
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	19	0.15

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	1	0.15
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	3	0.15
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	10	0.15
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	11	0.15
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	14	0.15
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	1	0.15
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	2	0.15
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	3	0.15
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	4	0.15
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	6	0.15
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	12	0.15
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	22	0.15
(2,105)	1:A:4:ALA:HA	1:A:7:TYR:HD2	9	0.15
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	7	0.15
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	13	0.14
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	17	0.14
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	18	0.14
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	8	0.14
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	10	0.14
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	13	0.14
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	15	0.14
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	16	0.14
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	12	0.14
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	6	0.14
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	13	0.14
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	20	0.14
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	10	0.14
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	14	0.14
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	18	0.14
(2,220)	1:A:43:SER:H	1:A:42:ASP:HA	21	0.14
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	14	0.14
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	9	0.14
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	18	0.14
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	16	0.14
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	2	0.13
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	6	0.13
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	8	0.13
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	11	0.13
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	12	0.13
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	14	0.13
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	20	0.13
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	1	0.13

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	2	0.13
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	4	0.13
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	12	0.13
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	17	0.13
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	18	0.13
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	20	0.13
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	22	0.13
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	15	0.13
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	16	0.13
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	21	0.13
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	22	0.13
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	5	0.13
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	12	0.13
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	3	0.13
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	13	0.13
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	15	0.13
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	17	0.13
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	18	0.13
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	6	0.13
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	1	0.12
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	4	0.12
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	5	0.12
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	7	0.12
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	9	0.12
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	22	0.12
(2,94)	1:A:54:ASP:H	1:A:52:ILE:HA	18	0.12
(2,82)	1:A:4:ALA:HB1	1:A:7:TYR:HE2	14	0.12
(2,82)	1:A:4:ALA:HB2	1:A:7:TYR:HE2	14	0.12
(2,82)	1:A:4:ALA:HB3	1:A:7:TYR:HE2	14	0.12
(2,356)	1:A:28:PHE:HA	1:A:34:ILE:H	6	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	2	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	10	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	13	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	15	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	18	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	20	0.12
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	22	0.12
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	1	0.12
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	4	0.12
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	5	0.12
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	9	0.12
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	12	0.12

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	14	0.12
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	18	0.12
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	2	0.12
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	4	0.12
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	8	0.12
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	9	0.12
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	17	0.12
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	20	0.12
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	1	0.12
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	3	0.12
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	9	0.12
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	17	0.12
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	19	0.12
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	21	0.12
(2,230)	1:A:42:ASP:H	1:A:41:ASN:HA	16	0.12
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	1	0.12
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	3	0.12
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	10	0.12
(2,16)	1:A:50:LYS:HA	1:A:50:LYS:HG2	2	0.12
(2,16)	1:A:50:LYS:HA	1:A:50:LYS:HG2	4	0.12
(2,16)	1:A:50:LYS:HA	1:A:50:LYS:HG2	17	0.12
(2,16)	1:A:50:LYS:HA	1:A:50:LYS:HG2	20	0.12
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	2	0.12
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	6	0.12
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	9	0.12
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	20	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	1	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	3	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	12	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	13	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	15	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	17	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	18	0.12
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	22	0.12
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	16	0.11
(2,98)	1:A:29:ASP:H	1:A:33:SER:HA	19	0.11
(2,94)	1:A:54:ASP:H	1:A:52:ILE:HA	9	0.11
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	6	0.11
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	7	0.11
(2,348)	1:A:12:GLU:HA	1:A:23:GLY:H	17	0.11
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	3	0.11
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	7	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	8	0.11
(2,338)	1:A:10:ASN:HA	1:A:23:GLY:H	19	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	5	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	6	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	7	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	10	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	11	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	12	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	14	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	15	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	18	0.11
(2,319)	1:A:27:ASN:H	1:A:35:LEU:HA	19	0.11
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	2	0.11
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	7	0.11
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	8	0.11
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	13	0.11
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	20	0.11
(2,281)	1:A:25:ILE:HA	1:A:38:ARG:H	22	0.11
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB2	15	0.11
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB3	15	0.11
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB2	18	0.11
(2,238)	1:A:8:GLY:H	1:A:7:TYR:HB3	18	0.11
(2,230)	1:A:42:ASP:H	1:A:41:ASN:HA	4	0.11
(2,230)	1:A:42:ASP:H	1:A:41:ASN:HA	5	0.11
(2,230)	1:A:42:ASP:H	1:A:41:ASN:HA	8	0.11
(2,230)	1:A:42:ASP:H	1:A:41:ASN:HA	13	0.11
(2,230)	1:A:42:ASP:H	1:A:41:ASN:HA	19	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	4	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	5	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	6	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	7	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	8	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	9	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	11	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	12	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	13	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	15	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	16	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	17	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	18	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	19	0.11
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	20	0.11

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Key	Atom-1	Atom-2	Model ID	Violation (Å)
(2,180)	1:A:19:SER:H	1:A:18:ASP:HA	21	0.11
(2,169)	1:A:18:ASP:H	1:A:19:SER:H	14	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	5	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	8	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	11	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	13	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	14	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	19	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	21	0.11
(2,102)	1:A:52:ILE:H	1:A:50:LYS:HA	22	0.11
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	4	0.11
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	7	0.11
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	12	0.11
(1,40)	1:A:34:ILE:H	1:A:29:ASP:O	14	0.11
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	2	0.11
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	5	0.11
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	10	0.11
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	20	0.11
(1,39)	1:A:27:ASN:H	1:A:36:GLN:O	21	0.11
(1,34)	1:A:26:THR:H	1:A:36:GLN:O	1	0.11
(1,34)	1:A:26:THR:H	1:A:36:GLN:O	3	0.11
(1,34)	1:A:26:THR:H	1:A:36:GLN:O	14	0.11
(1,34)	1:A:26:THR:H	1:A:36:GLN:O	16	0.11

10 Dihedral-angle violation analysis (i)

Dihedral angle analysis failed due to data error in the dihedral angle restraints, possibly missing target value