



Full wwPDB NMR Structure Validation Report ⓘ

Apr 26, 2016 – 04:34 PM BST

PDB ID : 1OMU
Title : SOLUTION STRUCTURE OF OVOMUCOID (THIRD DOMAIN) FROM DOMESTIC TURKEY (298K, PH 4.1) (NMR, 50 STRUCTURES) (REFINED MODEL USING NETWORK EDITING ANALYSIS)
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Deposited on : 1995-10-11

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
<http://wwpdb.org/validation/2016/NMRValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

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

Cyrange : Kirchner and Güntert (2011)
NmrClust : Kelley et al. (1996)
MolProbity : 4.02b-467
Mogul : unknown
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
RCI : v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV : Wang et al. (2010)
ShiftChecker : rb-20027457
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20027457

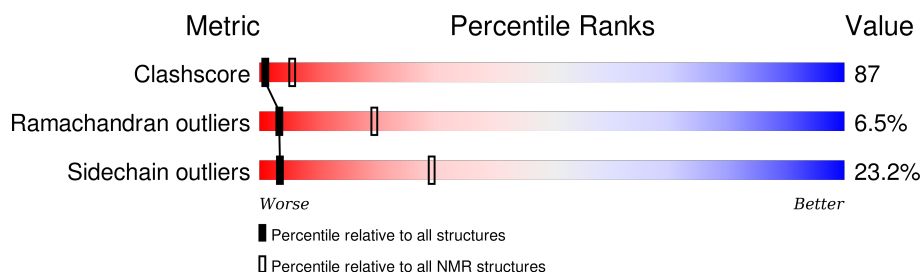
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

SOLUTION NMR

The overall completeness of chemical shifts assignment was not calculated.

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	114402	11133
Ramachandran outliers	111179	9975
Sidechain outliers	111093	9958

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

Mol	Chain	Length	Quality of chain
1	A	56	

2 Ensemble composition and analysis

This entry contains 50 models. Model 33 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:5-A:56 (52)	0.45	33

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 7 clusters and 7 single-model clusters were found.

Cluster number	Models
1	7, 11, 14, 15, 16, 21, 22, 26, 27, 39, 48
2	1, 10, 19, 28, 35, 36, 40, 41, 43
3	4, 13, 20, 25, 33, 37, 38, 44
4	3, 6, 8, 18, 45, 47
5	5, 23, 24, 30, 42
6	2, 46
7	31, 32
Single-model clusters	9; 12; 17; 29; 34; 49; 50

3 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 814 atoms, of which 396 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called OVOMUCOID (THIRD DOMAIN).

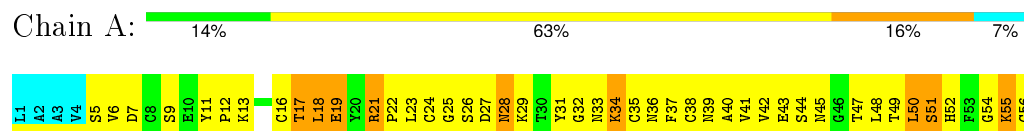
Mol	Chain	Residues	Atoms						Trace
1	A	56	Total	C	H	N	O	S	0
			814	258	396	70	84	6	

4 Residue-property plots [i](#)

4.1 Average score per residue in the NMR ensemble

These plots are provided for all protein, RNA and DNA 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: OVOMUCOID (THIRD DOMAIN)

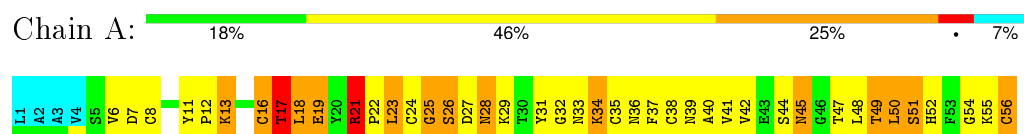


4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

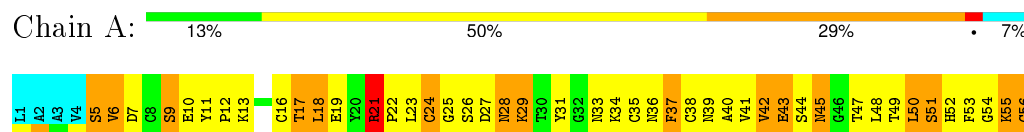
4.2.1 Score per residue for model 1

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



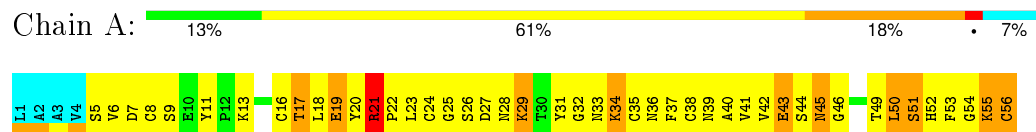
4.2.2 Score per residue for model 2

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



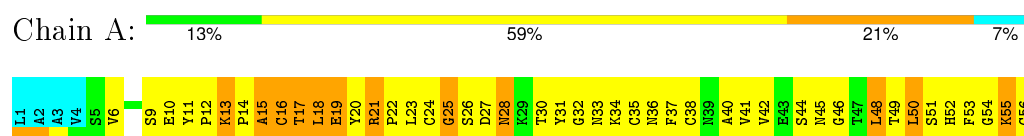
4.2.3 Score per residue for model 3

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



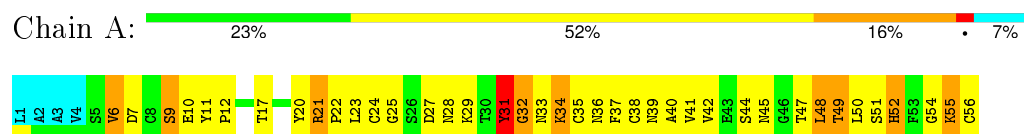
4.2.4 Score per residue for model 4

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



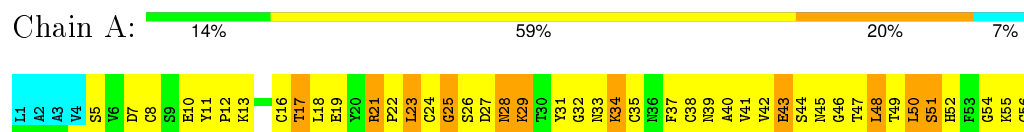
4.2.5 Score per residue for model 5

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



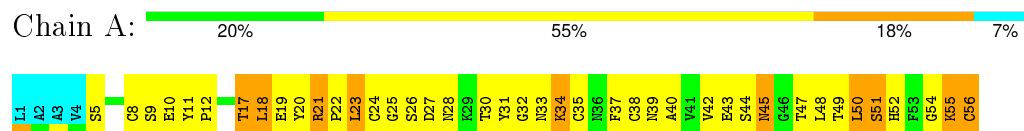
4.2.6 Score per residue for model 6

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



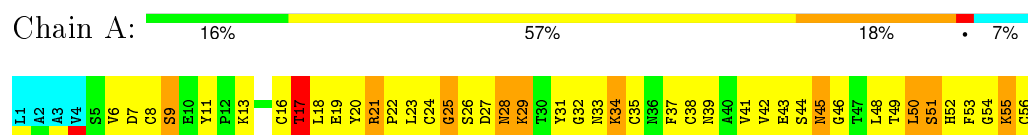
4.2.7 Score per residue for model 7

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



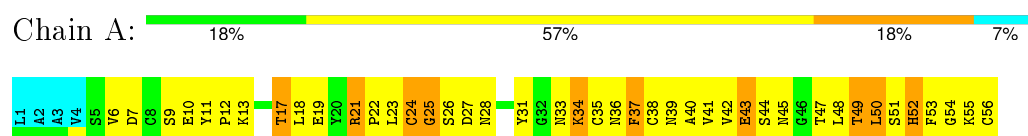
4.2.8 Score per residue for model 8

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



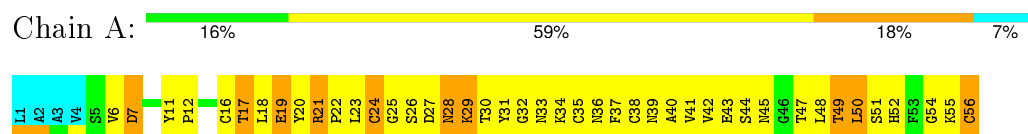
4.2.9 Score per residue for model 9

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



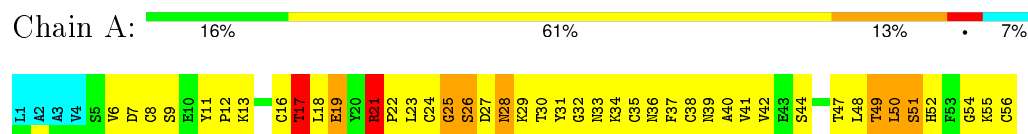
4.2.10 Score per residue for model 10

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



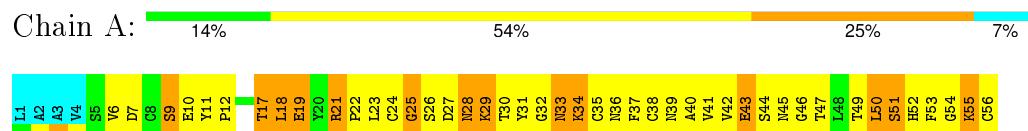
4.2.11 Score per residue for model 11

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



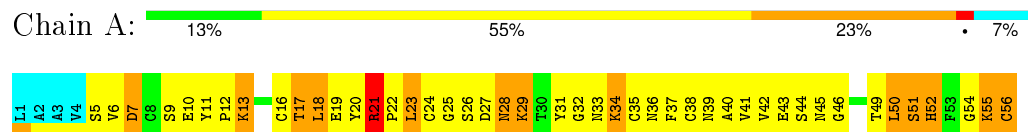
4.2.12 Score per residue for model 12

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



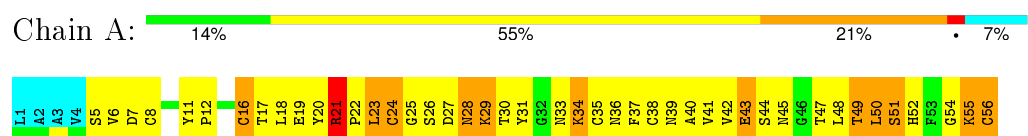
4.2.13 Score per residue for model 13

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



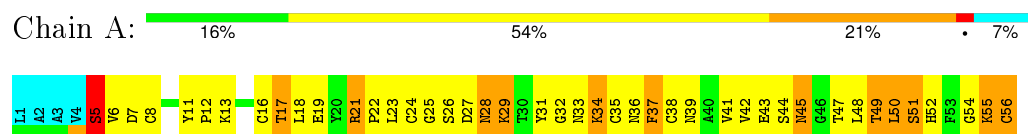
4.2.14 Score per residue for model 14

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



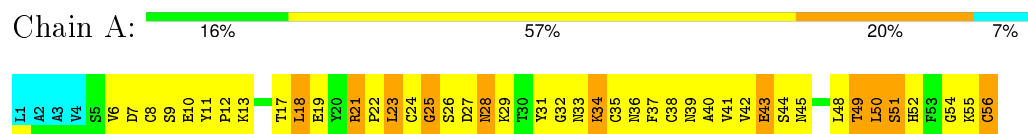
4.2.15 Score per residue for model 15

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



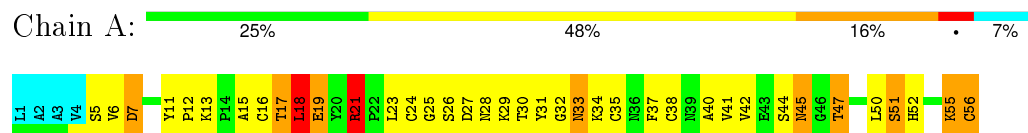
4.2.16 Score per residue for model 16

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



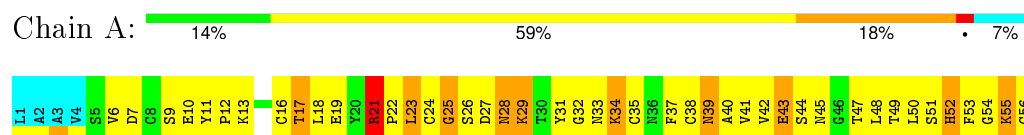
4.2.17 Score per residue for model 17

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



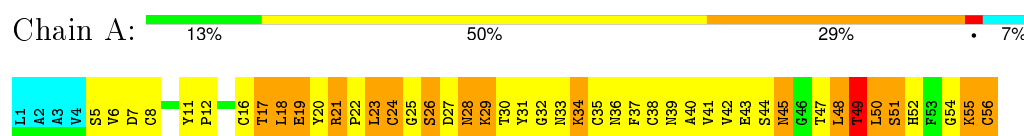
4.2.18 Score per residue for model 18

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



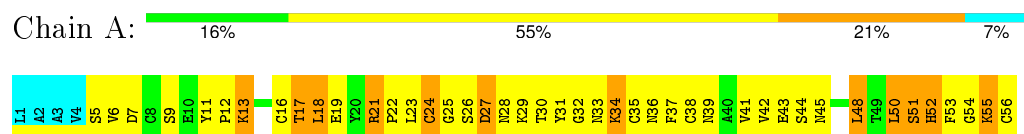
4.2.19 Score per residue for model 19

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



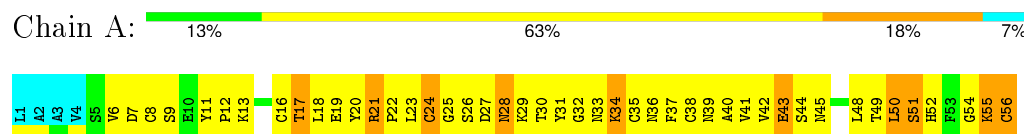
4.2.20 Score per residue for model 20

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



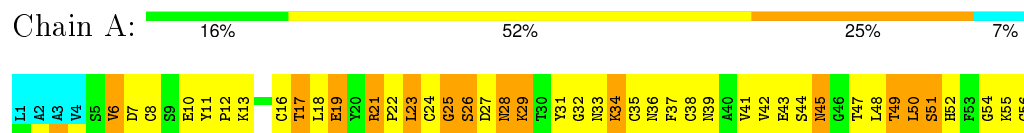
4.2.21 Score per residue for model 21

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



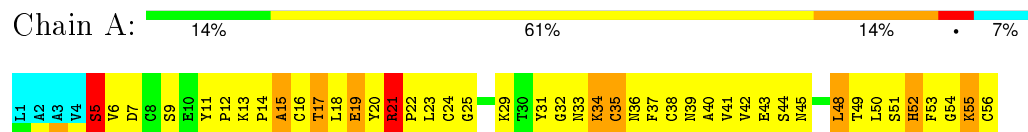
4.2.22 Score per residue for model 22

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



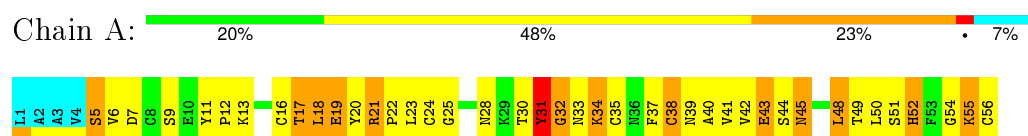
4.2.23 Score per residue for model 23

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



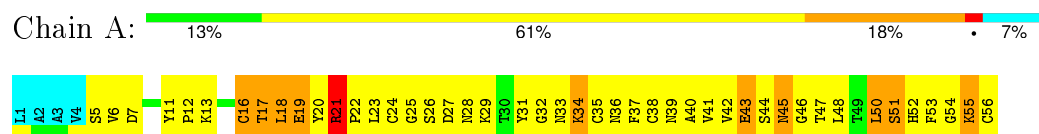
4.2.24 Score per residue for model 24

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



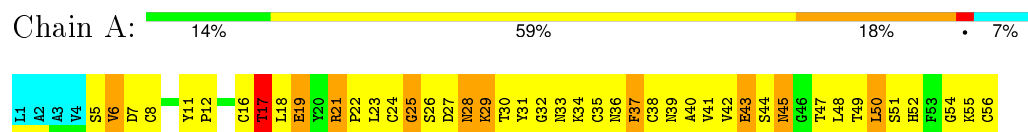
4.2.25 Score per residue for model 25

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



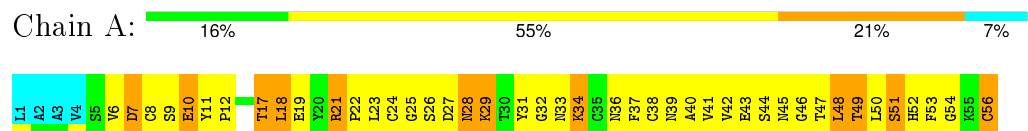
4.2.26 Score per residue for model 26

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



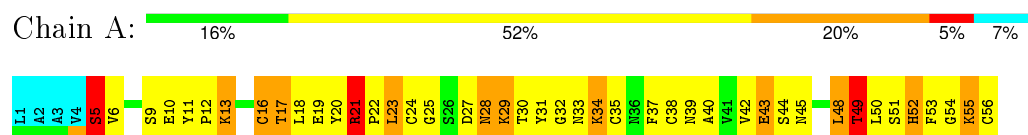
4.2.27 Score per residue for model 27

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



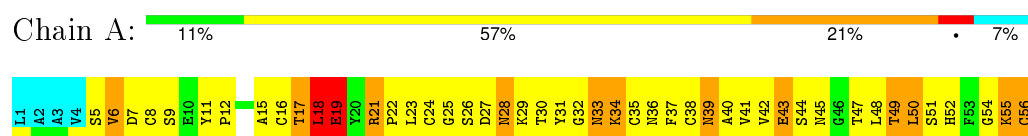
4.2.28 Score per residue for model 28

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



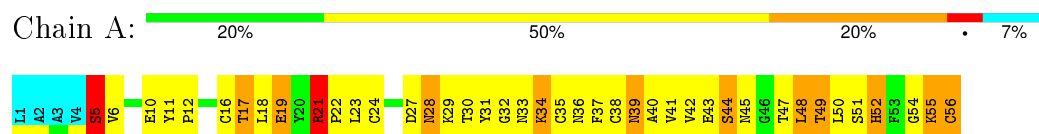
4.2.29 Score per residue for model 29

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



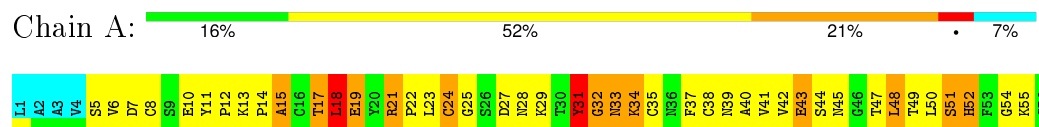
4.2.30 Score per residue for model 30

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



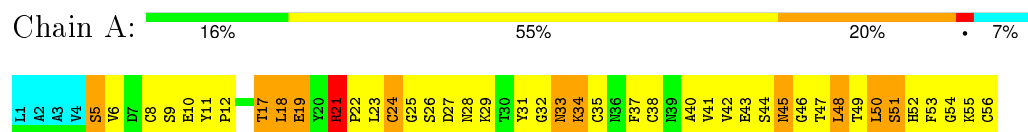
4.2.31 Score per residue for model 31

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



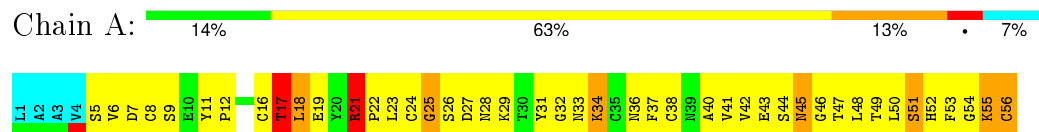
4.2.32 Score per residue for model 32

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



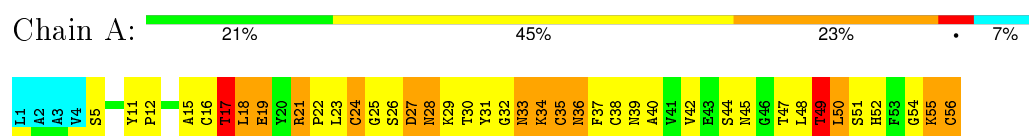
4.2.33 Score per residue for model 33 (medoid)

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



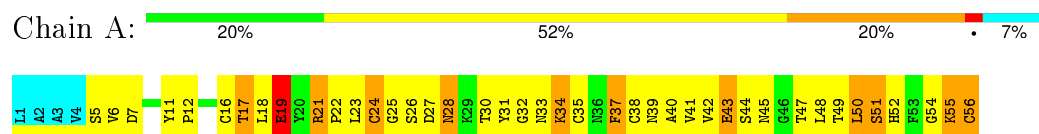
4.2.34 Score per residue for model 34

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



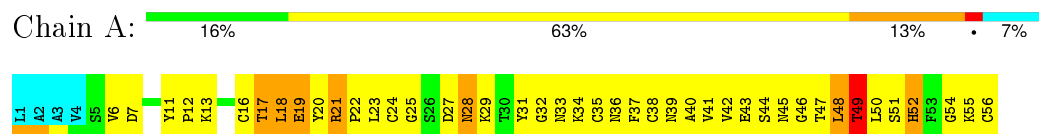
4.2.35 Score per residue for model 35

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



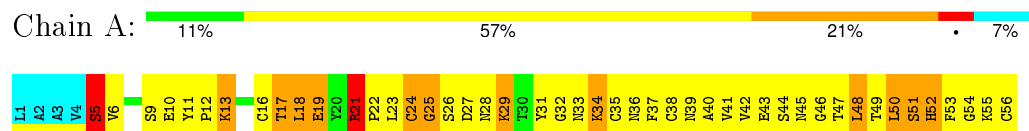
4.2.36 Score per residue for model 36

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



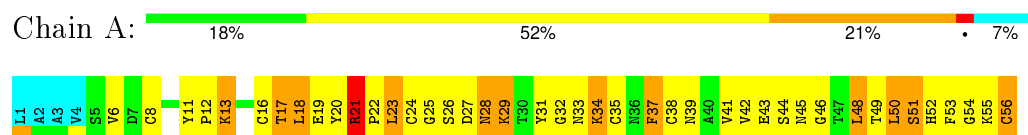
4.2.37 Score per residue for model 37

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



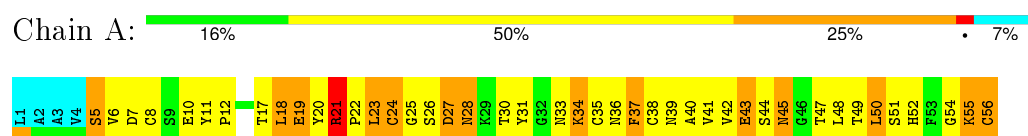
4.2.38 Score per residue for model 38

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



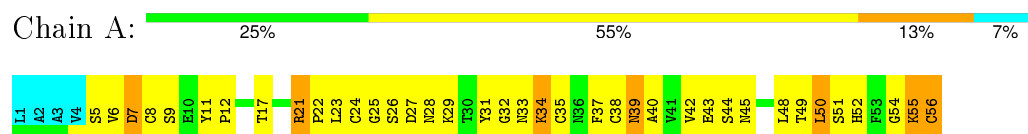
4.2.39 Score per residue for model 39

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



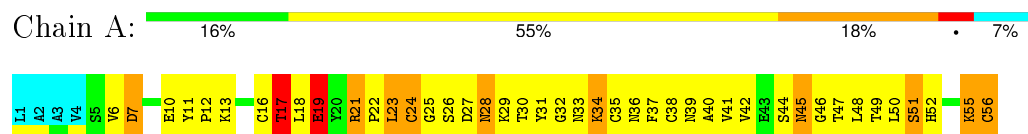
4.2.40 Score per residue for model 40

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



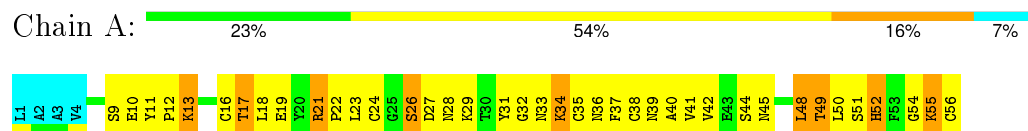
4.2.41 Score per residue for model 41

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



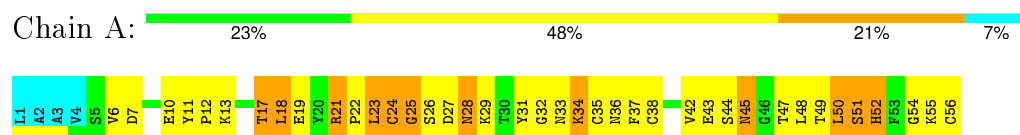
4.2.42 Score per residue for model 42

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



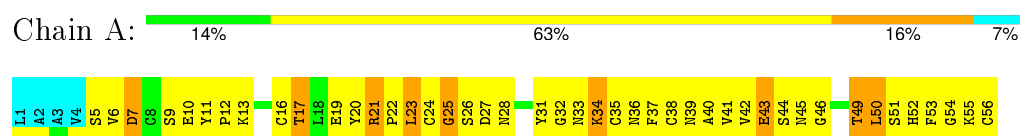
4.2.43 Score per residue for model 43

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



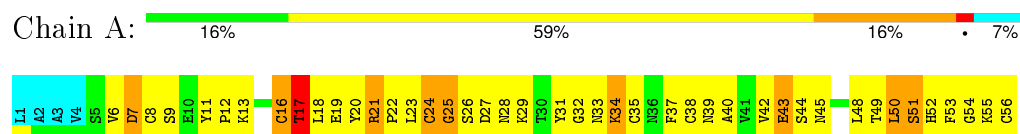
4.2.44 Score per residue for model 44

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



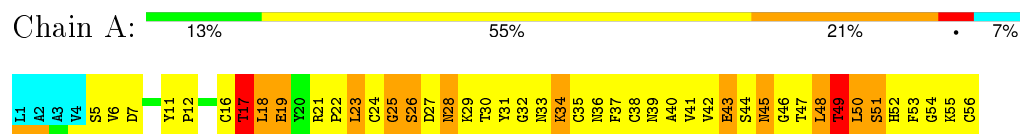
4.2.45 Score per residue for model 45

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



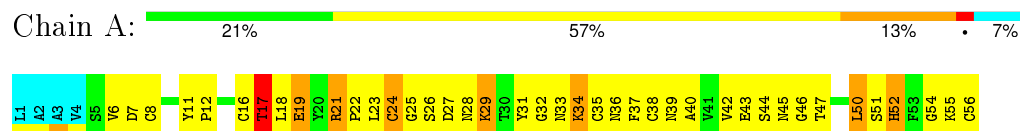
4.2.46 Score per residue for model 46

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



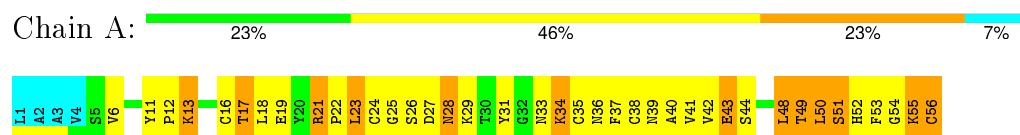
4.2.47 Score per residue for model 47

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



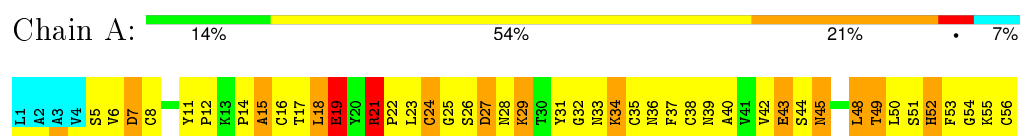
4.2.48 Score per residue for model 48

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



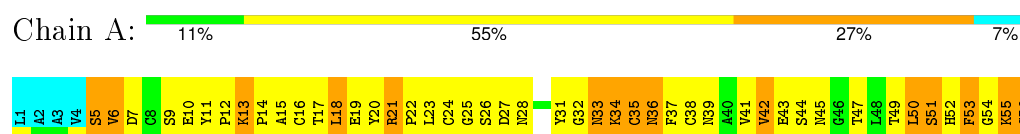
4.2.49 Score per residue for model 49

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



4.2.50 Score per residue for model 50

- Molecule 1: OVOMUCOID (THIRD DOMAIN)



5 Refinement protocol and experimental data overview

Of the ? calculated structures, 50 were deposited, based on the following criterion: ?.

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

Software name	Classification	Version
X-PLOR	refinement	3.1

No chemical shift data was provided. No validations of the models with respect to experimental NMR restraints is performed at this time.

6 Model quality [i](#)

6.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the (average) root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#Z>5	RMSZ	#Z>5
1	A	1.01±0.01	0±0/401 (0.0±0.0%)	0.94±0.01	0±0/541 (0.0±0.1%)
All	All	1.01	0/20050 (0.0%)	0.94	10/27050 (0.0%)

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

Mol	Chain	Chirality	Planarity
1	A	0.0±0.0	1.0±0.2
All	All	0	48

There are no bond-length outliers.

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	31	TYR	CB-CG-CD1	-5.88	117.47	121.00	24	3
1	A	37	PHE	CB-CG-CD2	-5.48	116.96	120.80	2	7

There are no chirality outliers.

All unique planar outliers are listed below.

Mol	Chain	Res	Type	Group	Models (Total)
1	A	21	ARG	Sidechain	48

6.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in each chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	393	364	364	66±9
All	All	19650	18200	18200	3281

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 87.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:24:CYS:O	1:A:50:LEU:HD12	0.99	1.57	27	22
1:A:45:ASN:OD1	1:A:47:THR:HG23	0.98	1.58	39	3
1:A:11:TYR:O	1:A:42:VAL:HG21	0.95	1.61	12	20
1:A:38:CYS:O	1:A:42:VAL:HG13	0.94	1.61	24	6
1:A:11:TYR:CB	1:A:42:VAL:HG11	0.92	1.93	38	39
1:A:23:LEU:HD12	1:A:37:PHE:CB	0.92	1.94	25	23
1:A:25:GLY:HA3	1:A:48:LEU:HD11	0.89	1.45	19	23
1:A:12:PRO:HB3	1:A:42:VAL:HG21	0.88	1.43	44	22
1:A:44:SER:O	1:A:47:THR:HG22	0.88	1.69	31	16
1:A:18:LEU:HD13	1:A:18:LEU:N	0.86	1.83	43	1
1:A:31:TYR:CZ	1:A:37:PHE:CD1	0.86	2.63	31	3
1:A:11:TYR:HB3	1:A:42:VAL:HG11	0.84	1.47	25	36
1:A:29:LYS:HE2	1:A:48:LEU:HD13	0.84	1.49	48	3
1:A:50:LEU:HD11	1:A:52:HIS:O	0.82	1.75	49	8
1:A:41:VAL:HG22	1:A:48:LEU:HD23	0.81	1.51	4	11
1:A:23:LEU:HD11	1:A:34:LYS:HA	0.81	1.53	28	26
1:A:23:LEU:HD12	1:A:33:ASN:C	0.79	1.97	32	6
1:A:39:ASN:O	1:A:42:VAL:HG22	0.79	1.76	35	5
1:A:23:LEU:HD12	1:A:37:PHE:HB2	0.79	1.53	25	23
1:A:24:CYS:SG	1:A:56:CYS:N	0.78	2.56	6	18
1:A:44:SER:OG	1:A:47:THR:HG22	0.76	1.80	47	4
1:A:6:VAL:HG21	1:A:23:LEU:HD22	0.76	1.57	17	7
1:A:38:CYS:O	1:A:42:VAL:HG22	0.76	1.81	20	6
1:A:25:GLY:CA	1:A:48:LEU:HD11	0.75	2.11	16	24
1:A:48:LEU:O	1:A:49:THR:HG23	0.75	1.81	42	8
1:A:31:TYR:CE1	1:A:37:PHE:CD1	0.75	2.75	24	3
1:A:31:TYR:CZ	1:A:40:ALA:HB2	0.74	2.16	12	18
1:A:44:SER:O	1:A:47:THR:HG23	0.74	1.83	26	11
1:A:29:LYS:CE	1:A:48:LEU:HD13	0.74	2.12	27	2
1:A:48:LEU:O	1:A:48:LEU:HD12	0.73	1.84	46	2
1:A:37:PHE:O	1:A:41:VAL:HG23	0.73	1.82	2	20

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:18:LEU:O	1:A:19:GLU:O	0.73	2.07	31	13
1:A:31:TYR:CE1	1:A:40:ALA:HB2	0.72	2.19	30	2
1:A:48:LEU:HD12	1:A:48:LEU:O	0.72	1.84	19	2
1:A:48:LEU:C	1:A:49:THR:HG23	0.71	2.04	22	13
1:A:6:VAL:HG22	1:A:53:PHE:CZ	0.71	2.21	8	5
1:A:40:ALA:HA	1:A:43:GLU:CG	0.71	2.16	49	16
1:A:23:LEU:HD23	1:A:53:PHE:CD2	0.70	2.21	46	3
1:A:11:TYR:CD1	1:A:38:CYS:SG	0.70	2.84	6	5
1:A:50:LEU:HD11	1:A:52:HIS:C	0.70	2.06	35	5
1:A:18:LEU:HD12	1:A:18:LEU:N	0.70	2.02	25	1
1:A:31:TYR:CZ	1:A:37:PHE:CE1	0.70	2.79	24	3
1:A:37:PHE:CE1	1:A:48:LEU:HD11	0.70	2.21	49	2
1:A:27:ASP:O	1:A:28:ASN:CB	0.69	2.40	6	46
1:A:41:VAL:HG22	1:A:48:LEU:CD2	0.69	2.16	30	5
1:A:45:ASN:O	1:A:47:THR:HG23	0.68	1.88	37	1
1:A:37:PHE:CE2	1:A:50:LEU:HD12	0.68	2.24	9	1
1:A:14:PRO:O	1:A:15:ALA:HB2	0.68	1.89	4	5
1:A:23:LEU:HD13	1:A:34:LYS:HA	0.67	1.66	50	4
1:A:24:CYS:HB3	1:A:52:HIS:CD2	0.67	2.24	42	32
1:A:18:LEU:HD22	1:A:18:LEU:H	0.67	1.48	43	1
1:A:23:LEU:HD22	1:A:53:PHE:CD2	0.67	2.25	12	4
1:A:6:VAL:CG2	1:A:23:LEU:HD22	0.67	2.19	17	6
1:A:38:CYS:O	1:A:42:VAL:HG12	0.67	1.90	46	19
1:A:51:SER:OG	1:A:52:HIS:CD2	0.67	2.48	36	10
1:A:11:TYR:HB2	1:A:42:VAL:HG11	0.66	1.67	11	22
1:A:18:LEU:C	1:A:18:LEU:HD12	0.66	2.11	11	1
1:A:6:VAL:O	1:A:6:VAL:HG12	0.66	1.89	41	3
1:A:37:PHE:CE1	1:A:48:LEU:HD21	0.66	2.25	40	11
1:A:6:VAL:HG13	1:A:7:ASP:N	0.66	2.06	50	9
1:A:6:VAL:HG12	1:A:6:VAL:O	0.66	1.90	49	6
1:A:24:CYS:HB2	1:A:52:HIS:CD2	0.65	2.27	44	9
1:A:23:LEU:HD12	1:A:37:PHE:HB3	0.65	1.69	33	16
1:A:41:VAL:CG2	1:A:48:LEU:HD23	0.65	2.20	4	4
1:A:45:ASN:ND2	1:A:47:THR:HG21	0.65	2.07	37	1
1:A:48:LEU:C	1:A:48:LEU:HD12	0.65	2.12	19	6
1:A:6:VAL:HG23	1:A:50:LEU:HD22	0.65	1.69	23	1
1:A:16:CYS:C	1:A:17:THR:HG23	0.65	2.12	14	1
1:A:18:LEU:HD22	1:A:34:LYS:CG	0.64	2.22	32	1
1:A:44:SER:HG	1:A:47:THR:HG22	0.64	1.50	47	1
1:A:31:TYR:CE2	1:A:40:ALA:HB2	0.64	2.28	26	18
1:A:50:LEU:HD21	1:A:53:PHE:CE1	0.64	2.27	12	6

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:18:LEU:HD13	1:A:34:LYS:HG3	0.64	1.70	34	1
1:A:24:CYS:CB	1:A:52:HIS:NE2	0.63	2.61	31	39
1:A:6:VAL:HG22	1:A:53:PHE:CE2	0.63	2.27	18	9
1:A:18:LEU:CB	1:A:33:ASN:ND2	0.63	2.62	34	7
1:A:29:LYS:HE2	1:A:40:ALA:HB1	0.63	1.70	31	1
1:A:17:THR:C	1:A:18:LEU:HD13	0.63	2.12	43	1
1:A:23:LEU:C	1:A:31:TYR:CE1	0.62	2.71	24	3
1:A:31:TYR:CZ	1:A:40:ALA:CB	0.62	2.82	30	10
1:A:18:LEU:HD13	1:A:34:LYS:HG2	0.62	1.72	12	1
1:A:6:VAL:CG2	1:A:50:LEU:HD22	0.62	2.25	23	1
1:A:52:HIS:CD2	1:A:52:HIS:O	0.62	2.53	23	5
1:A:23:LEU:HD21	1:A:53:PHE:CD2	0.62	2.30	32	1
1:A:17:THR:O	1:A:18:LEU:CB	0.61	2.47	1	1
1:A:26:SER:OG	1:A:48:LEU:O	0.61	2.18	19	6
1:A:23:LEU:HD13	1:A:33:ASN:C	0.61	2.16	31	1
1:A:23:LEU:O	1:A:31:TYR:CD1	0.61	2.54	24	3
1:A:18:LEU:HD22	1:A:34:LYS:HG2	0.61	1.71	32	3
1:A:37:PHE:CZ	1:A:50:LEU:CB	0.61	2.84	40	18
1:A:25:GLY:HA2	1:A:31:TYR:OH	0.61	1.95	5	3
1:A:31:TYR:CD2	1:A:36:ASN:O	0.61	2.54	19	25
1:A:48:LEU:HG	1:A:49:THR:N	0.61	2.10	5	24
1:A:40:ALA:HB3	1:A:48:LEU:CD2	0.61	2.26	28	2
1:A:11:TYR:CD2	1:A:38:CYS:SG	0.60	2.94	10	14
1:A:11:TYR:CG	1:A:38:CYS:SG	0.60	2.95	9	14
1:A:21:ARG:O	1:A:33:ASN:HA	0.60	1.97	34	50
1:A:52:HIS:O	1:A:52:HIS:CD2	0.60	2.54	28	4
1:A:25:GLY:CA	1:A:31:TYR:OH	0.60	2.49	31	3
1:A:6:VAL:HG21	1:A:23:LEU:HD13	0.60	1.74	4	6
1:A:23:LEU:CD1	1:A:34:LYS:N	0.60	2.65	32	6
1:A:37:PHE:CZ	1:A:50:LEU:HB2	0.60	2.31	2	26
1:A:23:LEU:HB2	1:A:31:TYR:CD1	0.60	2.32	24	3
1:A:11:TYR:CB	1:A:42:VAL:CG1	0.60	2.79	47	16
1:A:23:LEU:HD22	1:A:53:PHE:HD2	0.60	1.54	12	1
1:A:45:ASN:ND2	1:A:47:THR:CG2	0.59	2.66	37	1
1:A:51:SER:OG	1:A:52:HIS:HD2	0.59	1.79	44	13
1:A:48:LEU:CG	1:A:49:THR:N	0.59	2.65	30	8
1:A:48:LEU:O	1:A:49:THR:CG2	0.59	2.50	42	4
1:A:31:TYR:CD1	1:A:36:ASN:O	0.59	2.55	49	9
1:A:37:PHE:HE1	1:A:48:LEU:HD21	0.59	1.58	31	5
1:A:23:LEU:CD1	1:A:34:LYS:HA	0.59	2.28	13	47
1:A:24:CYS:O	1:A:50:LEU:CB	0.59	2.51	29	9

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:25:GLY:N	1:A:31:TYR:CZ	0.59	2.71	31	3
1:A:25:GLY:N	1:A:31:TYR:OH	0.58	2.36	31	1
1:A:34:LYS:CG	1:A:35:CYS:N	0.58	2.67	5	14
1:A:31:TYR:CE2	1:A:37:PHE:CD1	0.58	2.92	31	3
1:A:6:VAL:HG11	1:A:34:LYS:HB2	0.58	1.74	49	1
1:A:52:HIS:HE2	1:A:56:CYS:HA	0.58	1.59	21	12
1:A:23:LEU:CD2	1:A:53:PHE:CD2	0.58	2.86	45	8
1:A:55:LYS:H	1:A:55:LYS:CD	0.58	2.11	17	3
1:A:50:LEU:HD22	1:A:50:LEU:O	0.58	1.99	9	1
1:A:22:PRO:O	1:A:54:GLY:CA	0.58	2.52	13	35
1:A:11:TYR:CD1	1:A:38:CYS:HB3	0.58	2.33	45	16
1:A:22:PRO:O	1:A:54:GLY:N	0.58	2.37	50	29
1:A:31:TYR:CD1	1:A:37:PHE:HB2	0.58	2.34	31	3
1:A:50:LEU:HG	1:A:51:SER:N	0.58	2.12	38	45
1:A:51:SER:C	1:A:52:HIS:CD2	0.58	2.77	49	3
1:A:11:TYR:CE1	1:A:35:CYS:HA	0.58	2.34	38	15
1:A:40:ALA:HA	1:A:43:GLU:HG2	0.58	1.76	31	16
1:A:18:LEU:CD1	1:A:18:LEU:N	0.57	2.57	43	2
1:A:26:SER:OG	1:A:49:THR:CB	0.57	2.52	19	2
1:A:6:VAL:CG2	1:A:53:PHE:CZ	0.57	2.87	8	3
1:A:20:TYR:CE1	1:A:32:GLY:O	0.57	2.57	5	7
1:A:55:LYS:N	1:A:55:LYS:CD	0.57	2.67	2	2
1:A:37:PHE:CZ	1:A:50:LEU:HB3	0.57	2.35	8	14
1:A:33:ASN:OD1	1:A:34:LYS:N	0.57	2.38	44	1
1:A:25:GLY:CA	1:A:48:LEU:CD1	0.57	2.82	49	2
1:A:6:VAL:HG12	1:A:7:ASP:N	0.57	2.15	36	13
1:A:48:LEU:HD12	1:A:48:LEU:C	0.57	2.20	49	5
1:A:11:TYR:CG	1:A:38:CYS:HB3	0.57	2.35	5	25
1:A:11:TYR:CE2	1:A:35:CYS:HA	0.57	2.35	32	18
1:A:31:TYR:OH	1:A:40:ALA:HB2	0.57	1.99	44	2
1:A:23:LEU:CD1	1:A:37:PHE:CB	0.56	2.81	33	13
1:A:37:PHE:CZ	1:A:48:LEU:HD11	0.56	2.35	49	1
1:A:29:LYS:O	1:A:31:TYR:CD1	0.56	2.58	33	5
1:A:24:CYS:HB2	1:A:52:HIS:NE2	0.56	2.14	5	23
1:A:55:LYS:CD	1:A:55:LYS:H	0.56	2.14	15	3
1:A:29:LYS:CD	1:A:48:LEU:HD13	0.56	2.30	27	1
1:A:5:SER:C	1:A:53:PHE:CE1	0.56	2.79	50	1
1:A:11:TYR:CD1	1:A:13:LYS:CG	0.56	2.89	50	2
1:A:24:CYS:CB	1:A:52:HIS:CD2	0.56	2.88	14	23
1:A:6:VAL:HG22	1:A:7:ASP:N	0.56	2.16	11	4
1:A:23:LEU:CD2	1:A:53:PHE:CE2	0.56	2.89	46	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:23:LEU:HD12	1:A:34:LYS:N	0.56	2.14	32	1
1:A:11:TYR:CD2	1:A:38:CYS:HB3	0.56	2.36	40	8
1:A:25:GLY:HA3	1:A:48:LEU:CD1	0.56	2.30	16	8
1:A:18:LEU:HB3	1:A:33:ASN:ND2	0.55	2.17	34	7
1:A:48:LEU:C	1:A:49:THR:CG2	0.55	2.75	1	7
1:A:11:TYR:CD1	1:A:13:LYS:HG3	0.55	2.37	28	5
1:A:5:SER:O	1:A:53:PHE:CZ	0.55	2.58	50	1
1:A:23:LEU:CD1	1:A:34:LYS:CA	0.55	2.84	32	6
1:A:50:LEU:O	1:A:50:LEU:CD2	0.55	2.54	9	1
1:A:27:ASP:OD1	1:A:29:LYS:CG	0.55	2.55	42	5
1:A:50:LEU:C	1:A:50:LEU:CD2	0.55	2.75	9	1
1:A:27:ASP:OD2	1:A:29:LYS:CG	0.55	2.54	38	3
1:A:6:VAL:CG2	1:A:7:ASP:N	0.55	2.69	12	2
1:A:14:PRO:O	1:A:15:ALA:CB	0.55	2.54	4	1
1:A:32:GLY:CA	1:A:36:ASN:OD1	0.55	2.55	34	1
1:A:16:CYS:O	1:A:17:THR:CB	0.55	2.54	1	2
1:A:31:TYR:CG	1:A:37:PHE:HA	0.55	2.36	30	29
1:A:23:LEU:HD12	1:A:33:ASN:O	0.55	2.02	34	7
1:A:39:ASN:O	1:A:43:GLU:CG	0.55	2.54	47	9
1:A:26:SER:CB	1:A:49:THR:OG1	0.55	2.55	39	9
1:A:11:TYR:HB2	1:A:42:VAL:CG1	0.55	2.32	29	19
1:A:6:VAL:HG22	1:A:7:ASP:H	0.55	1.62	31	9
1:A:18:LEU:HD12	1:A:18:LEU:C	0.55	2.22	41	2
1:A:25:GLY:HA2	1:A:49:THR:O	0.55	2.02	27	19
1:A:29:LYS:CE	1:A:31:TYR:OH	0.55	2.55	18	1
1:A:25:GLY:HA2	1:A:37:PHE:CE1	0.54	2.37	50	17
1:A:21:ARG:O	1:A:33:ASN:CB	0.54	2.55	32	4
1:A:11:TYR:CD2	1:A:13:LYS:HG3	0.54	2.37	11	3
1:A:39:ASN:O	1:A:42:VAL:CG2	0.54	2.56	37	3
1:A:34:LYS:HG3	1:A:35:CYS:N	0.54	2.16	23	9
1:A:11:TYR:CE1	1:A:13:LYS:HG3	0.54	2.38	37	6
1:A:24:CYS:O	1:A:50:LEU:HA	0.54	2.03	15	11
1:A:44:SER:O	1:A:45:ASN:CB	0.54	2.56	15	19
1:A:33:ASN:N	1:A:36:ASN:OD1	0.54	2.41	34	2
1:A:22:PRO:O	1:A:54:GLY:O	0.54	2.26	45	14
1:A:10:GLU:C	1:A:11:TYR:CG	0.54	2.81	12	2
1:A:19:GLU:OE1	1:A:19:GLU:N	0.54	2.41	41	1
1:A:26:SER:CB	1:A:49:THR:O	0.54	2.56	33	4
1:A:33:ASN:N	1:A:33:ASN:OD1	0.54	2.41	24	5
1:A:51:SER:O	1:A:52:HIS:CB	0.54	2.56	49	3
1:A:18:LEU:HD12	1:A:35:CYS:HB2	0.54	1.78	34	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:11:TYR:OH	1:A:34:LYS:CD	0.54	2.56	33	2
1:A:30:THR:OG1	1:A:56:CYS:N	0.54	2.41	29	10
1:A:39:ASN:O	1:A:43:GLU:HG2	0.53	2.03	37	15
1:A:24:CYS:O	1:A:50:LEU:HB2	0.53	2.02	9	11
1:A:35:CYS:O	1:A:39:ASN:ND2	0.53	2.41	7	7
1:A:44:SER:OG	1:A:47:THR:CG2	0.53	2.56	31	2
1:A:55:LYS:N	1:A:55:LYS:HD3	0.53	2.17	41	1
1:A:38:CYS:O	1:A:41:VAL:N	0.53	2.42	14	13
1:A:26:SER:N	1:A:49:THR:O	0.53	2.41	41	22
1:A:37:PHE:CE2	1:A:50:LEU:HB2	0.53	2.37	50	13
1:A:48:LEU:O	1:A:49:THR:CB	0.53	2.56	42	5
1:A:38:CYS:O	1:A:40:ALA:N	0.53	2.41	30	10
1:A:27:ASP:O	1:A:28:ASN:HB2	0.53	2.03	14	19
1:A:24:CYS:O	1:A:50:LEU:CD1	0.53	2.56	48	3
1:A:23:LEU:CD1	1:A:33:ASN:C	0.53	2.77	5	5
1:A:24:CYS:SG	1:A:52:HIS:NE2	0.53	2.82	26	2
1:A:31:TYR:O	1:A:32:GLY:C	0.53	2.47	24	43
1:A:11:TYR:CB	1:A:38:CYS:SG	0.53	2.97	9	5
1:A:37:PHE:CZ	1:A:50:LEU:HA	0.53	2.39	23	4
1:A:25:GLY:C	1:A:50:LEU:HA	0.53	2.24	46	28
1:A:18:LEU:CD2	1:A:34:LYS:HG2	0.53	2.34	32	1
1:A:50:LEU:CD2	1:A:53:PHE:CE1	0.53	2.92	28	2
1:A:11:TYR:HA	1:A:12:PRO:C	0.53	2.24	2	20
1:A:24:CYS:SG	1:A:52:HIS:CE1	0.53	3.02	26	1
1:A:11:TYR:CE1	1:A:13:LYS:HD3	0.53	2.38	50	1
1:A:6:VAL:CG1	1:A:7:ASP:N	0.53	2.71	19	10
1:A:17:THR:O	1:A:18:LEU:CG	0.53	2.57	1	1
1:A:28:ASN:N	1:A:28:ASN:OD1	0.53	2.42	18	1
1:A:51:SER:OG	1:A:52:HIS:N	0.52	2.41	40	16
1:A:40:ALA:CB	1:A:48:LEU:HD22	0.52	2.34	28	2
1:A:24:CYS:HB2	1:A:52:HIS:CE1	0.52	2.39	49	1
1:A:45:ASN:CG	1:A:45:ASN:O	0.52	2.48	37	1
1:A:30:THR:HG21	1:A:55:LYS:HD2	0.52	1.80	10	2
1:A:16:CYS:SG	1:A:36:ASN:ND2	0.52	2.83	1	3
1:A:24:CYS:HB3	1:A:52:HIS:NE2	0.52	2.19	31	13
1:A:5:SER:C	1:A:53:PHE:CZ	0.52	2.83	50	1
1:A:33:ASN:ND2	1:A:36:ASN:OD1	0.52	2.42	44	1
1:A:47:THR:O	1:A:47:THR:HG22	0.52	2.04	19	1
1:A:27:ASP:OD2	1:A:29:LYS:CD	0.52	2.58	31	2
1:A:38:CYS:O	1:A:39:ASN:C	0.52	2.48	30	17
1:A:26:SER:N	1:A:50:LEU:HA	0.52	2.20	38	12

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:24:CYS:C	1:A:31:TYR:CZ	0.52	2.83	5	2
1:A:11:TYR:CE2	1:A:38:CYS:SG	0.52	3.03	40	4
1:A:52:HIS:NE2	1:A:56:CYS:HA	0.52	2.20	29	13
1:A:24:CYS:O	1:A:50:LEU:CA	0.52	2.58	29	8
1:A:11:TYR:OH	1:A:34:LYS:CE	0.52	2.57	37	8
1:A:33:ASN:CG	1:A:36:ASN:OD1	0.52	2.48	44	2
1:A:10:GLU:OE1	1:A:10:GLU:N	0.52	2.43	50	7
1:A:10:GLU:N	1:A:10:GLU:OE1	0.52	2.42	28	3
1:A:52:HIS:NE2	1:A:56:CYS:SG	0.51	2.83	38	11
1:A:7:ASP:OD1	1:A:8:CYS:N	0.51	2.43	29	3
1:A:6:VAL:CG1	1:A:8:CYS:SG	0.51	2.98	26	2
1:A:8:CYS:HB3	1:A:11:TYR:CD2	0.51	2.41	7	6
1:A:48:LEU:O	1:A:49:THR:OG1	0.51	2.28	30	12
1:A:27:ASP:O	1:A:28:ASN:HB3	0.51	2.05	36	30
1:A:5:SER:HB3	1:A:53:PHE:CE1	0.51	2.40	23	1
1:A:24:CYS:HA	1:A:29:LYS:O	0.51	2.06	28	9
1:A:23:LEU:HB2	1:A:31:TYR:CE1	0.51	2.40	24	2
1:A:11:TYR:CE2	1:A:13:LYS:HG3	0.51	2.41	42	2
1:A:10:GLU:O	1:A:11:TYR:CD1	0.51	2.64	12	1
1:A:24:CYS:O	1:A:25:GLY:O	0.51	2.28	45	19
1:A:17:THR:O	1:A:18:LEU:HB2	0.51	2.05	1	4
1:A:6:VAL:O	1:A:7:ASP:O	0.51	2.29	17	8
1:A:34:LYS:O	1:A:36:ASN:N	0.51	2.43	50	2
1:A:50:LEU:HD21	1:A:53:PHE:CD1	0.51	2.41	49	2
1:A:44:SER:O	1:A:45:ASN:CG	0.51	2.49	50	11
1:A:36:ASN:HA	1:A:39:ASN:OD1	0.51	2.05	29	1
1:A:24:CYS:HB3	1:A:51:SER:OG	0.51	2.05	42	8
1:A:40:ALA:CA	1:A:43:GLU:HG2	0.51	2.36	31	4
1:A:22:PRO:O	1:A:54:GLY:C	0.51	2.49	18	36
1:A:10:GLU:O	1:A:11:TYR:CG	0.51	2.64	12	2
1:A:8:CYS:HB3	1:A:11:TYR:CD1	0.51	2.41	22	6
1:A:24:CYS:SG	1:A:25:GLY:N	0.50	2.84	17	1
1:A:48:LEU:HD12	1:A:49:THR:N	0.50	2.21	41	1
1:A:11:TYR:CD2	1:A:39:ASN:OD1	0.50	2.65	6	5
1:A:24:CYS:SG	1:A:52:HIS:CD2	0.50	3.05	14	8
1:A:26:SER:HB2	1:A:49:THR:OG1	0.50	2.07	39	13
1:A:6:VAL:CG1	1:A:6:VAL:O	0.50	2.59	41	5
1:A:9:SER:CB	1:A:10:GLU:OE2	0.50	2.59	12	1
1:A:45:ASN:OD1	1:A:47:THR:CG2	0.50	2.55	17	1
1:A:11:TYR:CE1	1:A:13:LYS:CG	0.50	2.95	50	2
1:A:11:TYR:CE1	1:A:38:CYS:SG	0.50	3.04	11	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:17:THR:OG1	1:A:33:ASN:ND2	0.50	2.45	48	2
1:A:17:THR:O	1:A:33:ASN:ND2	0.50	2.44	3	2
1:A:29:LYS:HE3	1:A:48:LEU:HD13	0.50	1.84	19	1
1:A:44:SER:O	1:A:45:ASN:OD1	0.50	2.30	7	3
1:A:23:LEU:CB	1:A:31:TYR:CE1	0.50	2.94	5	3
1:A:24:CYS:N	1:A:50:LEU:HD12	0.50	2.22	16	1
1:A:31:TYR:OH	1:A:40:ALA:HB1	0.50	2.07	30	1
1:A:12:PRO:CB	1:A:42:VAL:HG21	0.50	2.35	13	3
1:A:19:GLU:N	1:A:19:GLU:OE1	0.50	2.45	4	1
1:A:23:LEU:HB2	1:A:37:PHE:CD1	0.49	2.42	9	1
1:A:51:SER:O	1:A:52:HIS:CD2	0.49	2.65	49	3
1:A:37:PHE:CE2	1:A:50:LEU:HD13	0.49	2.42	50	1
1:A:34:LYS:CD	1:A:34:LYS:C	0.49	2.80	32	1
1:A:24:CYS:HB3	1:A:51:SER:HG	0.49	1.67	42	1
1:A:27:ASP:CG	1:A:29:LYS:CG	0.49	2.80	42	1
1:A:8:CYS:HA	1:A:11:TYR:CD1	0.49	2.42	8	3
1:A:37:PHE:O	1:A:40:ALA:N	0.49	2.45	31	3
1:A:22:PRO:HA	1:A:31:TYR:O	0.49	2.07	44	31
1:A:41:VAL:HG13	1:A:46:GLY:HA2	0.49	1.82	36	2
1:A:11:TYR:CZ	1:A:38:CYS:CB	0.49	2.95	45	1
1:A:25:GLY:O	1:A:51:SER:HB2	0.49	2.07	49	11
1:A:16:CYS:O	1:A:17:THR:HB	0.49	2.07	1	1
1:A:52:HIS:O	1:A:53:PHE:O	0.49	2.31	50	1
1:A:47:THR:O	1:A:47:THR:CG2	0.49	2.60	19	1
1:A:45:ASN:O	1:A:45:ASN:OD1	0.49	2.30	37	3
1:A:8:CYS:HA	1:A:11:TYR:CD2	0.49	2.42	33	1
1:A:44:SER:O	1:A:47:THR:CG2	0.49	2.56	46	2
1:A:16:CYS:O	1:A:17:THR:O	0.49	2.31	6	31
1:A:31:TYR:CE2	1:A:40:ALA:CB	0.49	2.96	3	3
1:A:18:LEU:HB2	1:A:33:ASN:ND2	0.49	2.22	34	2
1:A:24:CYS:O	1:A:31:TYR:OH	0.49	2.31	24	2
1:A:35:CYS:O	1:A:39:ASN:OD1	0.49	2.30	29	4
1:A:27:ASP:OD1	1:A:28:ASN:N	0.49	2.46	19	2
1:A:45:ASN:OD1	1:A:45:ASN:O	0.49	2.31	21	1
1:A:26:SER:OG	1:A:49:THR:HB	0.49	2.07	19	2
1:A:45:ASN:OD1	1:A:45:ASN:C	0.49	2.51	39	2
1:A:44:SER:OG	1:A:47:THR:OG1	0.49	2.31	7	4
1:A:27:ASP:OD1	1:A:29:LYS:HG2	0.48	2.08	19	3
1:A:23:LEU:CD1	1:A:37:PHE:HB3	0.48	2.36	44	9
1:A:55:LYS:HG3	1:A:56:CYS:N	0.48	2.23	6	6
1:A:31:TYR:CD1	1:A:36:ASN:C	0.48	2.86	44	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:11:TYR:OH	1:A:34:LYS:HE3	0.48	2.08	13	9
1:A:23:LEU:HB2	1:A:37:PHE:CG	0.48	2.43	11	5
1:A:16:CYS:HA	1:A:35:CYS:CB	0.48	2.38	48	3
1:A:40:ALA:HB1	1:A:48:LEU:HD22	0.48	1.84	21	1
1:A:31:TYR:CD2	1:A:37:PHE:HA	0.48	2.43	45	6
1:A:11:TYR:HB2	1:A:38:CYS:SG	0.48	2.49	48	7
1:A:11:TYR:CZ	1:A:35:CYS:HA	0.48	2.43	28	5
1:A:52:HIS:CE1	1:A:56:CYS:HA	0.48	2.44	27	4
1:A:8:CYS:HA	1:A:11:TYR:CE1	0.48	2.43	27	3
1:A:24:CYS:C	1:A:31:TYR:OH	0.48	2.52	31	3
1:A:16:CYS:O	1:A:35:CYS:SG	0.48	2.72	14	1
1:A:24:CYS:SG	1:A:25:GLY:O	0.48	2.72	41	11
1:A:29:LYS:O	1:A:56:CYS:SG	0.48	2.72	28	2
1:A:41:VAL:O	1:A:46:GLY:N	0.48	2.46	25	2
1:A:21:ARG:O	1:A:33:ASN:CA	0.48	2.61	31	3
1:A:25:GLY:HA2	1:A:37:PHE:CZ	0.48	2.43	15	7
1:A:28:ASN:O	1:A:28:ASN:OD1	0.48	2.32	31	5
1:A:9:SER:O	1:A:9:SER:OG	0.48	2.32	8	2
1:A:20:TYR:O	1:A:22:PRO:HD3	0.48	2.08	24	15
1:A:21:ARG:O	1:A:33:ASN:HB2	0.47	2.08	31	3
1:A:26:SER:OG	1:A:49:THR:O	0.47	2.31	42	4
1:A:31:TYR:CG	1:A:36:ASN:O	0.47	2.67	11	1
1:A:12:PRO:HB3	1:A:42:VAL:CG2	0.47	2.38	13	1
1:A:10:GLU:CD	1:A:10:GLU:N	0.47	2.67	31	5
1:A:11:TYR:CE1	1:A:38:CYS:HB3	0.47	2.43	45	5
1:A:39:ASN:C	1:A:42:VAL:HG22	0.47	2.30	10	4
1:A:40:ALA:CB	1:A:48:LEU:CD2	0.47	2.92	28	3
1:A:6:VAL:HG21	1:A:23:LEU:CD2	0.47	2.38	38	1
1:A:39:ASN:O	1:A:43:GLU:HB2	0.47	2.10	12	11
1:A:30:THR:OG1	1:A:56:CYS:SG	0.47	2.72	11	6
1:A:55:LYS:O	1:A:56:CYS:OXT	0.47	2.33	4	5
1:A:24:CYS:SG	1:A:54:GLY:O	0.47	2.73	6	6
1:A:37:PHE:CZ	1:A:50:LEU:CA	0.47	2.98	42	4
1:A:11:TYR:CE1	1:A:38:CYS:CB	0.47	2.97	45	1
1:A:13:LYS:CB	1:A:14:PRO:HD2	0.47	2.40	50	1
1:A:29:LYS:HE3	1:A:31:TYR:CE2	0.47	2.45	18	1
1:A:48:LEU:C	1:A:49:THR:OG1	0.47	2.53	34	7
1:A:51:SER:O	1:A:52:HIS:HB3	0.47	2.08	47	9
1:A:44:SER:OG	1:A:44:SER:O	0.47	2.32	47	4
1:A:28:ASN:OD1	1:A:56:CYS:SG	0.47	2.73	37	2
1:A:44:SER:O	1:A:44:SER:OG	0.47	2.33	48	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:18:LEU:O	1:A:19:GLU:C	0.47	2.53	35	33
1:A:52:HIS:CD2	1:A:52:HIS:N	0.47	2.83	37	6
1:A:27:ASP:O	1:A:28:ASN:CG	0.47	2.53	38	9
1:A:30:THR:HG23	1:A:55:LYS:HA	0.47	1.86	10	1
1:A:42:VAL:HG23	1:A:43:GLU:N	0.47	2.25	9	3
1:A:24:CYS:SG	1:A:29:LYS:O	0.47	2.73	13	3
1:A:40:ALA:O	1:A:44:SER:CB	0.47	2.62	9	4
1:A:11:TYR:CB	1:A:12:PRO:HA	0.47	2.39	23	12
1:A:7:ASP:OD1	1:A:10:GLU:OE1	0.47	2.33	6	2
1:A:31:TYR:HE2	1:A:40:ALA:HB2	0.47	1.68	3	1
1:A:33:ASN:OD1	1:A:35:CYS:SG	0.46	2.73	45	4
1:A:17:THR:O	1:A:18:LEU:O	0.46	2.33	31	4
1:A:34:LYS:O	1:A:38:CYS:SG	0.46	2.73	20	4
1:A:33:ASN:OD1	1:A:33:ASN:N	0.46	2.48	27	2
1:A:24:CYS:O	1:A:51:SER:OG	0.46	2.32	5	1
1:A:11:TYR:OH	1:A:34:LYS:HG3	0.46	2.10	17	1
1:A:23:LEU:HB3	1:A:50:LEU:HD13	0.46	1.87	36	3
1:A:22:PRO:CG	1:A:55:LYS:HD2	0.46	2.39	2	1
1:A:55:LYS:O	1:A:56:CYS:O	0.46	2.33	3	2
1:A:28:ASN:O	1:A:28:ASN:CG	0.46	2.53	48	6
1:A:37:PHE:CE2	1:A:50:LEU:CD1	0.46	2.98	9	1
1:A:11:TYR:OH	1:A:34:LYS:HD3	0.46	2.11	44	1
1:A:51:SER:C	1:A:52:HIS:CG	0.46	2.88	49	1
1:A:7:ASP:O	1:A:8:CYS:SG	0.46	2.73	14	2
1:A:52:HIS:N	1:A:52:HIS:CD2	0.46	2.83	32	7
1:A:10:GLU:HG2	1:A:11:TYR:CD1	0.46	2.46	32	2
1:A:37:PHE:O	1:A:38:CYS:C	0.46	2.54	31	3
1:A:27:ASP:O	1:A:28:ASN:OD1	0.46	2.33	36	2
1:A:19:GLU:CA	1:A:19:GLU:OE1	0.46	2.63	4	1
1:A:15:ALA:O	1:A:16:CYS:SG	0.46	2.73	29	3
1:A:45:ASN:ND2	1:A:47:THR:HB	0.46	2.26	47	2
1:A:18:LEU:HG	1:A:19:GLU:N	0.46	2.25	19	2
1:A:27:ASP:OD1	1:A:29:LYS:HG3	0.46	2.11	42	5
1:A:19:GLU:OE1	1:A:19:GLU:CA	0.46	2.64	41	1
1:A:29:LYS:O	1:A:31:TYR:CE1	0.46	2.69	3	3
1:A:41:VAL:CG1	1:A:46:GLY:HA2	0.46	2.40	25	1
1:A:28:ASN:OD1	1:A:28:ASN:O	0.46	2.33	35	3
1:A:34:LYS:O	1:A:38:CYS:CB	0.46	2.64	2	2
1:A:26:SER:HB2	1:A:49:THR:O	0.46	2.11	45	8
1:A:52:HIS:CG	1:A:52:HIS:O	0.46	2.68	46	1
1:A:27:ASP:OD2	1:A:29:LYS:HD2	0.46	2.11	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:45:ASN:C	1:A:45:ASN:OD1	0.46	2.54	17	2
1:A:42:VAL:O	1:A:42:VAL:HG22	0.46	2.11	31	1
1:A:34:LYS:O	1:A:38:CYS:HB3	0.46	2.11	6	1
1:A:11:TYR:CE1	1:A:13:LYS:HE2	0.46	2.45	13	1
1:A:55:LYS:O	1:A:56:CYS:C	0.45	2.55	8	20
1:A:28:ASN:CG	1:A:28:ASN:O	0.45	2.54	26	2
1:A:34:LYS:O	1:A:35:CYS:C	0.45	2.52	50	4
1:A:24:CYS:O	1:A:25:GLY:C	0.45	2.53	9	1
1:A:50:LEU:N	1:A:50:LEU:HD13	0.45	2.27	9	1
1:A:29:LYS:HE2	1:A:31:TYR:OH	0.45	2.10	18	2
1:A:23:LEU:HD23	1:A:53:PHE:CD1	0.45	2.46	50	1
1:A:26:SER:OG	1:A:49:THR:OG1	0.45	2.34	46	2
1:A:48:LEU:O	1:A:49:THR:O	0.45	2.34	49	3
1:A:19:GLU:HB2	1:A:21:ARG:NH1	0.45	2.26	41	1
1:A:27:ASP:C	1:A:28:ASN:OD1	0.45	2.54	39	4
1:A:38:CYS:C	1:A:40:ALA:N	0.45	2.69	36	10
1:A:50:LEU:CG	1:A:51:SER:N	0.45	2.80	24	8
1:A:41:VAL:O	1:A:46:GLY:HA2	0.45	2.11	6	10
1:A:25:GLY:HA2	1:A:48:LEU:HD11	0.45	1.87	16	2
1:A:11:TYR:HB3	1:A:12:PRO:HA	0.45	1.89	17	22
1:A:40:ALA:CA	1:A:43:GLU:CG	0.45	2.95	31	7
1:A:27:ASP:O	1:A:28:ASN:ND2	0.45	2.49	15	2
1:A:29:LYS:HB3	1:A:31:TYR:CE1	0.45	2.46	33	2
1:A:45:ASN:O	1:A:46:GLY:C	0.45	2.55	12	5
1:A:34:LYS:O	1:A:38:CYS:HB2	0.45	2.11	15	11
1:A:44:SER:O	1:A:45:ASN:HB2	0.45	2.12	22	23
1:A:5:SER:HA	1:A:50:LEU:CD2	0.45	2.42	35	1
1:A:34:LYS:NZ	1:A:34:LYS:HB2	0.45	2.27	38	2
1:A:25:GLY:CA	1:A:49:THR:O	0.45	2.65	19	3
1:A:33:ASN:ND2	1:A:35:CYS:SG	0.45	2.90	23	3
1:A:27:ASP:OD2	1:A:29:LYS:HB2	0.45	2.12	49	1
1:A:29:LYS:HE3	1:A:31:TYR:CZ	0.45	2.47	18	1
1:A:39:ASN:N	1:A:39:ASN:OD1	0.45	2.50	23	2
1:A:27:ASP:OD2	1:A:29:LYS:CE	0.45	2.65	6	1
1:A:21:ARG:O	1:A:23:LEU:CD1	0.45	2.65	5	1
1:A:27:ASP:OD2	1:A:29:LYS:HD3	0.44	2.11	31	1
1:A:7:ASP:O	1:A:38:CYS:SG	0.44	2.75	5	1
1:A:19:GLU:O	1:A:33:ASN:HB3	0.44	2.12	14	3
1:A:16:CYS:O	1:A:17:THR:C	0.44	2.55	3	5
1:A:35:CYS:O	1:A:39:ASN:CG	0.44	2.56	18	5
1:A:25:GLY:CA	1:A:51:SER:HB3	0.44	2.43	23	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:7:ASP:OD2	1:A:10:GLU:OE2	0.44	2.36	41	1
1:A:27:ASP:OD2	1:A:29:LYS:HG2	0.44	2.12	14	3
1:A:32:GLY:C	1:A:33:ASN:OD1	0.44	2.55	50	1
1:A:6:VAL:O	1:A:7:ASP:C	0.44	2.55	44	1
1:A:44:SER:C	1:A:45:ASN:ND2	0.44	2.71	32	2
1:A:6:VAL:HG22	1:A:23:LEU:HD22	0.44	1.89	40	1
1:A:48:LEU:HD12	1:A:49:THR:O	0.44	2.12	49	1
1:A:10:GLU:CA	1:A:10:GLU:OE1	0.44	2.63	4	1
1:A:23:LEU:HD11	1:A:34:LYS:N	0.44	2.27	5	1
1:A:29:LYS:HD2	1:A:31:TYR:OH	0.44	2.12	30	1
1:A:7:ASP:C	1:A:8:CYS:SG	0.44	2.96	27	16
1:A:40:ALA:O	1:A:43:GLU:HG3	0.44	2.13	16	8
1:A:17:THR:OG1	1:A:18:LEU:N	0.44	2.51	9	2
1:A:34:LYS:CB	1:A:34:LYS:NZ	0.44	2.81	50	2
1:A:27:ASP:OD1	1:A:27:ASP:C	0.44	2.57	12	2
1:A:39:ASN:HA	1:A:42:VAL:CG2	0.44	2.42	1	6
1:A:23:LEU:HD23	1:A:53:PHE:CG	0.44	2.47	32	1
1:A:28:ASN:OD1	1:A:56:CYS:CB	0.43	2.66	6	1
1:A:32:GLY:HA3	1:A:36:ASN:OD1	0.43	2.13	34	1
1:A:44:SER:C	1:A:45:ASN:OD1	0.43	2.56	47	3
1:A:28:ASN:ND2	1:A:56:CYS:HB3	0.43	2.28	11	2
1:A:11:TYR:CE1	1:A:13:LYS:CD	0.43	3.01	50	1
1:A:52:HIS:C	1:A:52:HIS:CD2	0.43	2.92	24	2
1:A:27:ASP:OD1	1:A:29:LYS:HE2	0.43	2.13	12	1
1:A:37:PHE:CD1	1:A:37:PHE:C	0.43	2.89	5	1
1:A:11:TYR:OH	1:A:35:CYS:SG	0.43	2.73	4	2
1:A:9:SER:O	1:A:10:GLU:HG3	0.43	2.13	50	3
1:A:24:CYS:O	1:A:50:LEU:CG	0.43	2.67	19	1
1:A:31:TYR:O	1:A:33:ASN:N	0.43	2.51	24	1
1:A:23:LEU:CB	1:A:31:TYR:HE1	0.43	2.25	5	2
1:A:19:GLU:OE1	1:A:19:GLU:HA	0.43	2.14	46	1
1:A:27:ASP:OD2	1:A:29:LYS:HG3	0.43	2.13	19	1
1:A:12:PRO:CB	1:A:39:ASN:OD1	0.43	2.66	34	2
1:A:24:CYS:C	1:A:51:SER:HG	0.43	2.16	23	1
1:A:5:SER:HB2	1:A:53:PHE:CE1	0.43	2.47	50	1
1:A:10:GLU:O	1:A:13:LYS:CD	0.43	2.66	50	1
1:A:34:LYS:HE2	1:A:35:CYS:N	0.43	2.29	14	1
1:A:44:SER:C	1:A:45:ASN:CG	0.43	2.78	27	5
1:A:21:ARG:C	1:A:32:GLY:O	0.43	2.57	43	3
1:A:25:GLY:O	1:A:51:SER:HB3	0.43	2.13	28	2
1:A:29:LYS:C	1:A:56:CYS:SG	0.43	2.97	42	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:11:TYR:CE2	1:A:13:LYS:HB2	0.43	2.49	48	1
1:A:50:LEU:CD1	1:A:52:HIS:O	0.43	2.66	34	1
1:A:31:TYR:CD1	1:A:37:PHE:CB	0.43	3.01	31	1
1:A:8:CYS:SG	1:A:38:CYS:O	0.43	2.77	6	1
1:A:18:LEU:CD2	1:A:34:LYS:HD3	0.43	2.44	12	2
1:A:24:CYS:CB	1:A:52:HIS:HE2	0.43	2.26	13	1
1:A:15:ALA:C	1:A:16:CYS:SG	0.43	2.97	17	3
1:A:24:CYS:SG	1:A:55:LYS:C	0.43	2.97	6	1
1:A:40:ALA:O	1:A:44:SER:HB3	0.42	2.14	9	4
1:A:33:ASN:O	1:A:37:PHE:HB2	0.42	2.13	34	2
1:A:17:THR:CG2	1:A:19:GLU:HG2	0.42	2.43	1	1
1:A:35:CYS:O	1:A:36:ASN:C	0.42	2.57	23	1
1:A:18:LEU:CD1	1:A:18:LEU:C	0.42	2.81	11	1
1:A:6:VAL:CG2	1:A:53:PHE:CE2	0.42	3.01	38	1
1:A:39:ASN:O	1:A:43:GLU:HG3	0.42	2.12	47	1
1:A:22:PRO:CG	1:A:55:LYS:HG2	0.42	2.44	29	1
1:A:24:CYS:N	1:A:31:TYR:CE1	0.42	2.87	31	1
1:A:48:LEU:C	1:A:48:LEU:CD1	0.42	2.85	49	1
1:A:18:LEU:C	1:A:19:GLU:O	0.42	2.58	17	5
1:A:6:VAL:O	1:A:6:VAL:CG1	0.42	2.67	17	1
1:A:13:LYS:CB	1:A:14:PRO:CD	0.42	2.97	50	1
1:A:6:VAL:HG22	1:A:53:PHE:HE2	0.42	1.74	44	1
1:A:28:ASN:OD1	1:A:56:CYS:HB3	0.42	2.14	12	1
1:A:11:TYR:HB3	1:A:42:VAL:CG1	0.42	2.35	47	1
1:A:22:PRO:HA	1:A:33:ASN:HA	0.42	1.90	31	1
1:A:31:TYR:OH	1:A:37:PHE:CE1	0.42	2.72	5	2
1:A:23:LEU:HB3	1:A:50:LEU:CD1	0.42	2.44	16	1
1:A:9:SER:C	1:A:10:GLU:CD	0.42	2.78	4	2
1:A:55:LYS:CD	1:A:55:LYS:N	0.42	2.82	41	1
1:A:31:TYR:CE1	1:A:40:ALA:CB	0.42	2.98	30	1
1:A:39:ASN:HA	1:A:42:VAL:HG22	0.42	1.91	1	2
1:A:32:GLY:O	1:A:33:ASN:HB3	0.42	2.15	34	1
1:A:29:LYS:O	1:A:29:LYS:HG3	0.42	2.14	31	2
1:A:11:TYR:CD1	1:A:39:ASN:OD1	0.42	2.73	2	2
1:A:13:LYS:HB3	1:A:14:PRO:HD2	0.42	1.91	50	1
1:A:48:LEU:C	1:A:49:THR:HG1	0.42	2.12	10	1
1:A:40:ALA:HA	1:A:43:GLU:CD	0.42	2.35	37	1
1:A:37:PHE:C	1:A:39:ASN:N	0.42	2.72	24	2
1:A:9:SER:C	1:A:10:GLU:OE2	0.42	2.58	16	1
1:A:27:ASP:OD1	1:A:29:LYS:HD2	0.42	2.14	18	1
1:A:41:VAL:O	1:A:46:GLY:CA	0.42	2.68	13	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:27:ASP:N	1:A:27:ASP:OD1	0.42	2.53	27	2
1:A:41:VAL:HG22	1:A:48:LEU:HD22	0.42	1.91	23	1
1:A:18:LEU:HD21	1:A:34:LYS:HD3	0.42	1.90	31	2
1:A:21:ARG:O	1:A:23:LEU:HD12	0.42	2.15	5	2
1:A:26:SER:HB3	1:A:49:THR:OG1	0.42	2.15	13	1
1:A:17:THR:CG2	1:A:18:LEU:N	0.42	2.83	1	1
1:A:24:CYS:SG	1:A:51:SER:OG	0.42	2.72	39	1
1:A:51:SER:HG	1:A:52:HIS:CD2	0.42	2.32	30	1
1:A:9:SER:HB3	1:A:10:GLU:OE2	0.41	2.15	12	1
1:A:20:TYR:CE2	1:A:22:PRO:HG3	0.41	2.50	5	1
1:A:37:PHE:O	1:A:40:ALA:HB3	0.41	2.15	30	1
1:A:12:PRO:HA	1:A:39:ASN:OD1	0.41	2.16	31	6
1:A:9:SER:C	1:A:10:GLU:OE1	0.41	2.59	28	1
1:A:21:ARG:O	1:A:23:LEU:HG	0.41	2.15	42	1
1:A:11:TYR:CE2	1:A:13:LYS:HD2	0.41	2.50	23	1
1:A:11:TYR:CD2	1:A:13:LYS:CG	0.41	3.03	11	1
1:A:24:CYS:O	1:A:51:SER:CB	0.41	2.68	5	1
1:A:10:GLU:C	1:A:11:TYR:CD2	0.41	2.93	12	2
1:A:31:TYR:OH	1:A:40:ALA:CB	0.41	2.67	30	2
1:A:40:ALA:O	1:A:44:SER:N	0.41	2.53	27	1
1:A:29:LYS:HD3	1:A:48:LEU:CD1	0.41	2.44	31	1
1:A:23:LEU:HD21	1:A:53:PHE:CE2	0.41	2.50	50	1
1:A:31:TYR:HB3	1:A:37:PHE:N	0.41	2.30	8	2
1:A:22:PRO:CG	1:A:55:LYS:HG3	0.41	2.45	12	1
1:A:42:VAL:O	1:A:42:VAL:CG2	0.41	2.67	31	1
1:A:26:SER:HB3	1:A:49:THR:HG1	0.41	1.74	21	1
1:A:44:SER:O	1:A:45:ASN:ND2	0.41	2.53	21	1
1:A:11:TYR:OH	1:A:34:LYS:HD2	0.41	2.14	33	1
1:A:11:TYR:OH	1:A:35:CYS:HA	0.41	2.15	28	1
1:A:27:ASP:CG	1:A:29:LYS:HD2	0.41	2.36	18	1
1:A:16:CYS:O	1:A:17:THR:OG1	0.41	2.32	14	1
1:A:18:LEU:N	1:A:18:LEU:HD23	0.41	2.30	46	1
1:A:37:PHE:O	1:A:39:ASN:N	0.41	2.54	24	2
1:A:24:CYS:SG	1:A:30:THR:OG1	0.41	2.75	4	2
1:A:23:LEU:N	1:A:23:LEU:HD12	0.41	2.30	5	1
1:A:27:ASP:C	1:A:27:ASP:OD1	0.41	2.57	1	1
1:A:44:SER:O	1:A:45:ASN:C	0.41	2.58	27	1
1:A:6:VAL:HG21	1:A:23:LEU:CD1	0.41	2.45	36	1
1:A:36:ASN:CA	1:A:39:ASN:OD1	0.41	2.68	29	1
1:A:11:TYR:CD1	1:A:11:TYR:N	0.41	2.88	27	1
1:A:29:LYS:HD3	1:A:31:TYR:CZ	0.41	2.51	8	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:16:CYS:SG	1:A:39:ASN:ND2	0.41	2.94	44	1
1:A:31:TYR:HB3	1:A:36:ASN:O	0.41	2.16	5	1
1:A:9:SER:OG	1:A:10:GLU:OE2	0.41	2.38	5	1
1:A:27:ASP:OD1	1:A:29:LYS:HB3	0.41	2.15	31	1
1:A:10:GLU:O	1:A:13:LYS:HG3	0.40	2.16	43	1
1:A:23:LEU:HD12	1:A:23:LEU:N	0.40	2.31	31	1
1:A:25:GLY:CA	1:A:50:LEU:HA	0.40	2.46	21	1
1:A:20:TYR:CZ	1:A:22:PRO:HB3	0.40	2.51	5	1
1:A:11:TYR:HB3	1:A:39:ASN:OD1	0.40	2.17	2	1
1:A:6:VAL:O	1:A:7:ASP:HB3	0.40	2.16	41	1
1:A:10:GLU:N	1:A:10:GLU:CD	0.40	2.74	37	1
1:A:40:ALA:HA	1:A:43:GLU:HG3	0.40	1.88	13	1
1:A:18:LEU:HD22	1:A:34:LYS:HB3	0.40	1.92	31	1
1:A:24:CYS:HB3	1:A:52:HIS:O	0.40	2.16	50	1
1:A:18:LEU:H	1:A:18:LEU:HD23	0.40	1.76	50	1
1:A:53:PHE:CD1	1:A:53:PHE:N	0.40	2.90	32	1
1:A:20:TYR:C	1:A:22:PRO:HD3	0.40	2.37	4	2
1:A:24:CYS:C	1:A:25:GLY:O	0.40	2.59	9	1
1:A:33:ASN:C	1:A:33:ASN:OD1	0.40	2.59	17	1
1:A:23:LEU:HB3	1:A:31:TYR:HE1	0.40	1.76	31	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	51/56 (91%)	40±2 (78±4%)	8±2 (15±4%)	3±1 (7±3%)	3	19
All	All	2550/2800 (91%)	1988 (78%)	395 (15%)	167 (7%)	3	19

All 16 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	17	THR	45
1	A	28	ASN	29

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Mol	Chain	Res	Type	Models (Total)
1	A	25	GLY	17
1	A	19	GLU	15
1	A	49	THR	13
1	A	5	SER	10
1	A	7	ASP	9
1	A	18	LEU	8
1	A	33	ASN	6
1	A	15	ALA	4
1	A	52	HIS	3
1	A	32	GLY	3
1	A	39	ASN	2
1	A	53	PHE	1
1	A	35	CYS	1
1	A	6	VAL	1

6.3.2 Protein sidechains ⓘ

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	46/48 (96%)	35±2 (77±5%)	11±2 (23±5%)	3	29
All	All	2300/2400 (96%)	1767 (77%)	533 (23%)	3	29

All 35 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	55	LYS	45
1	A	34	LYS	43
1	A	50	LEU	36
1	A	43	GLU	34
1	A	29	LYS	32
1	A	51	SER	31
1	A	13	LYS	28
1	A	56	CYS	24
1	A	5	SER	23
1	A	48	LEU	22
1	A	9	SER	21

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Mol	Chain	Res	Type	Models (Total)
1	A	18	LEU	21
1	A	45	ASN	19
1	A	21	ARG	19
1	A	24	CYS	18
1	A	23	LEU	17
1	A	19	GLU	16
1	A	49	THR	16
1	A	17	THR	14
1	A	52	HIS	13
1	A	26	SER	7
1	A	16	CYS	6
1	A	6	VAL	6
1	A	27	ASP	4
1	A	31	TYR	3
1	A	10	GLU	2
1	A	36	ASN	2
1	A	35	CYS	2
1	A	42	VAL	2
1	A	39	ASN	2
1	A	44	SER	1
1	A	38	CYS	1
1	A	28	ASN	1
1	A	47	THR	1
1	A	33	ASN	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 carbohydrates 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

No chemical shift data were provided