Full wwPDB NMR Structure Validation Report (i)

May 28, 2020 – 11:25 pm BST

PDB ID	:	2L3Y
Title	:	Solution structure of mouse IL-6
Authors	:	Veverka, V.; Redpath, N.T.; Carrington, B.; Muskett, F.W.; Taylor, R.J.; Henry, A.J.; Carr, M.D.
Deposited on	:	2010-09-25

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 following versions of software and data (see references (1)) were used in the production of this report:

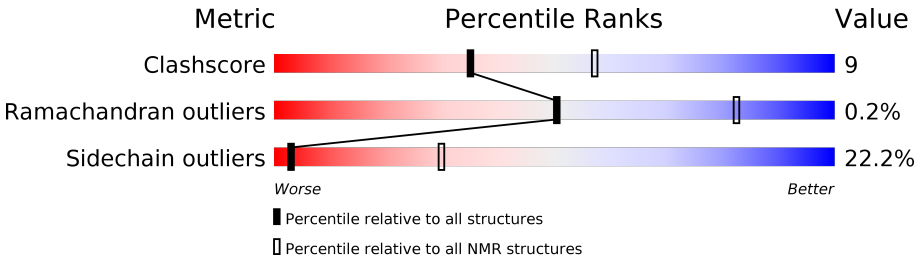
Cyrange	:	Kirchner and Güntert (2011)
NmrClust	:	Kelley et al. (1996)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	2.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

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	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	190	44% 23% 30% .

2 Ensemble composition and analysis

This entry contains 52 models. Model 22 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *closest to the average*.

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:24-A:70, A:91-A:139, A:149-A:154, A:164-A:188 (127)	0.35	22

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

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

NmrClust was unable to cluster the ensemble.

Error message: Inconsistent models

3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 3012 atoms, of which 1512 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Interleukin-6.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	184	3012	938	1512	263	292	7	0

There are 5 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	GLY	-	EXPRESSION TAG	UNP P08505
A	2	ALA	-	EXPRESSION TAG	UNP P08505
A	3	MET	-	EXPRESSION TAG	UNP P08505
A	4	GLY	-	EXPRESSION TAG	UNP P08505
A	5	SER	-	EXPRESSION TAG	UNP P08505

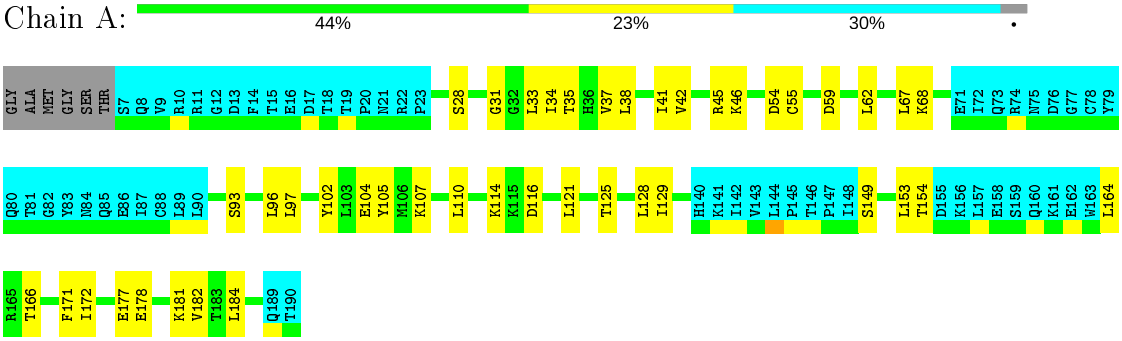
4 Residue-property plots

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: Interleukin-6

Chain A:



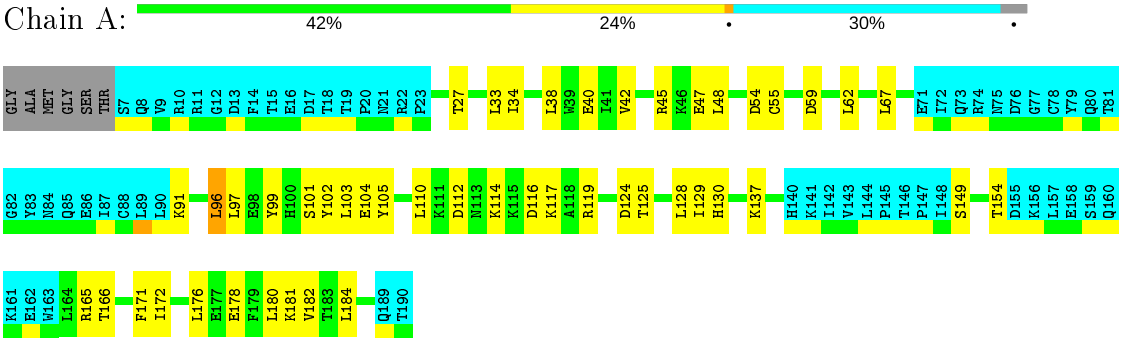
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

- Molecule 1: Interleukin-6

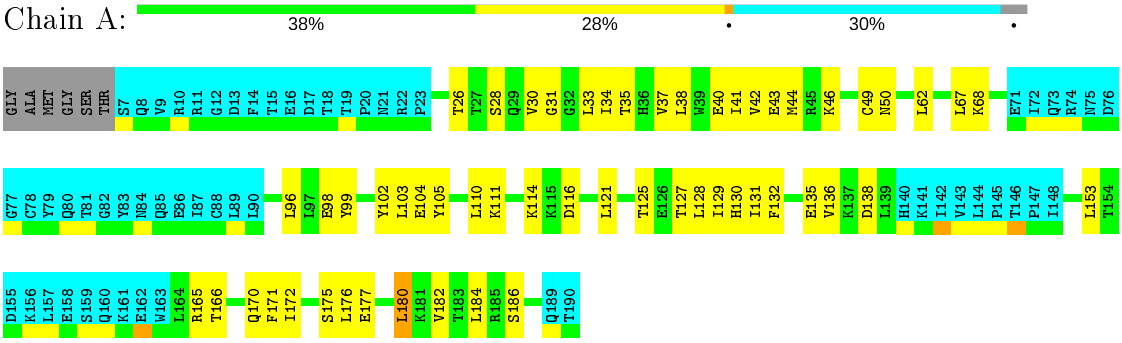
Chain A:



4.2.2 Score per residue for model 2

- Molecule 1: Interleukin-6

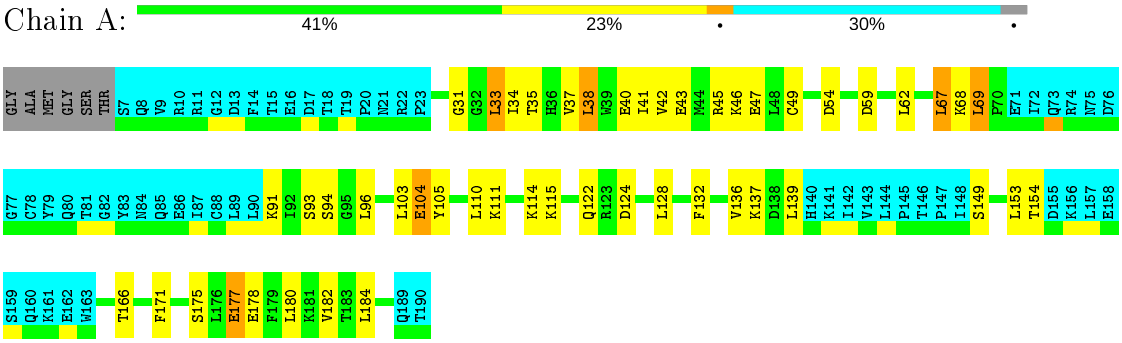
Chain A:



4.2.3 Score per residue for model 3

- Molecule 1: Interleukin-6

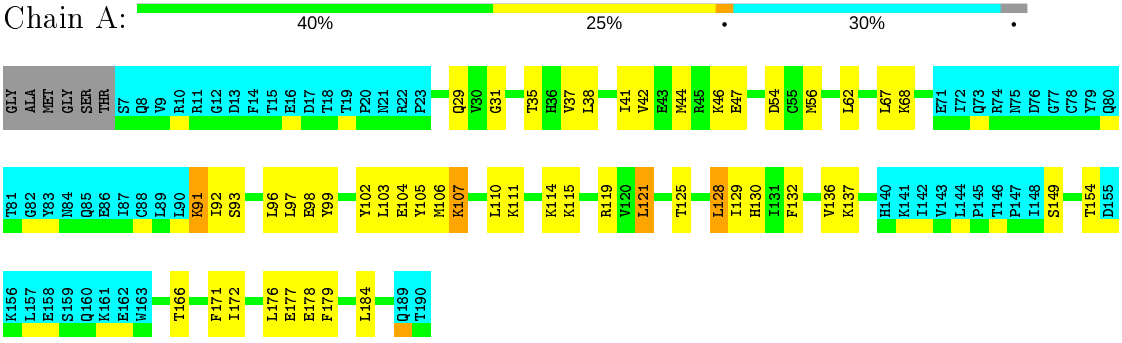
Chain A:



4.2.4 Score per residue for model 4

- Molecule 1: Interleukin-6

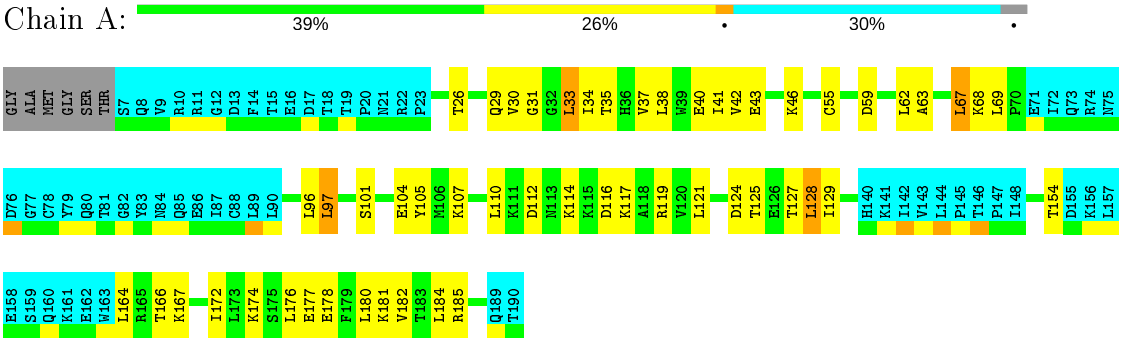
Chain A:



4.2.5 Score per residue for model 5

• Molecule 1: Interleukin-6

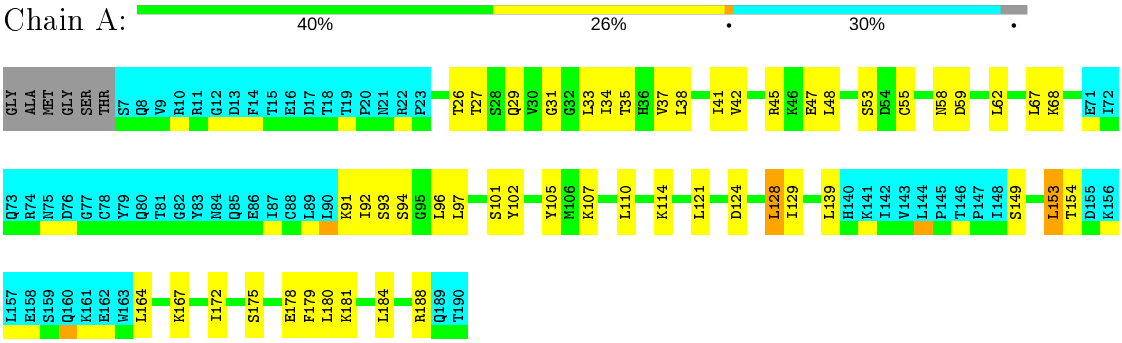
Chain A:



4.2.6 Score per residue for model 6

• Molecule 1: Interleukin-6

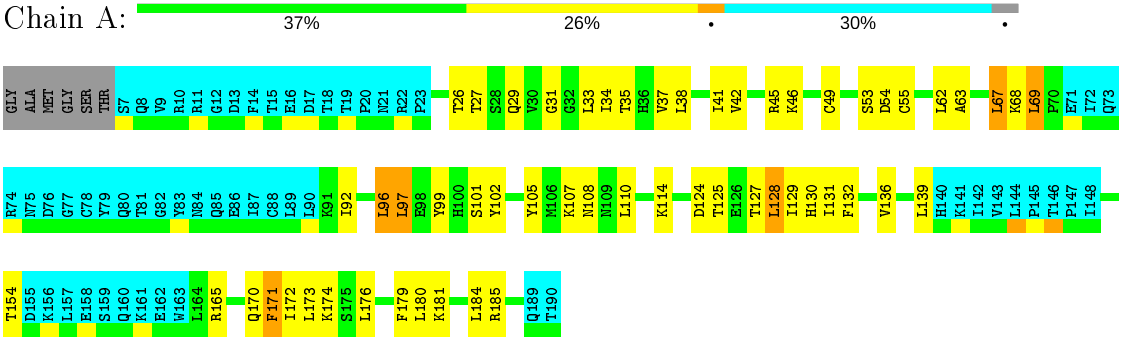
Chain A:



4.2.7 Score per residue for model 7

• Molecule 1: Interleukin-6

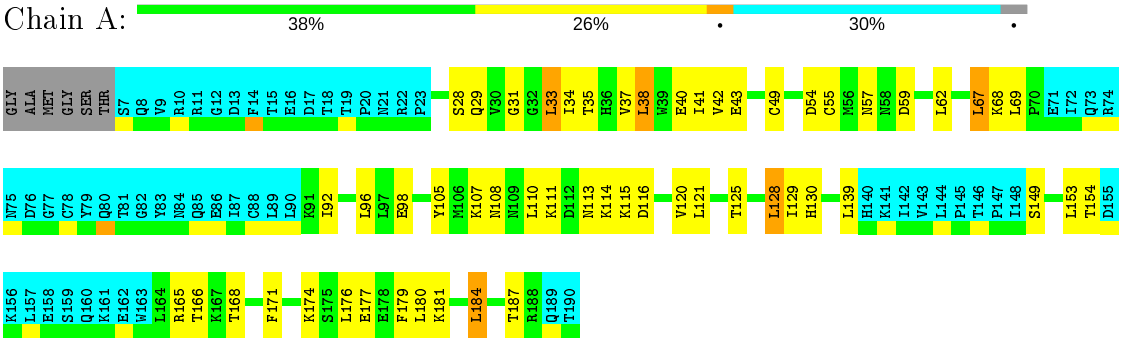
Chain A:



4.2.8 Score per residue for model 8

- Molecule 1: Interleukin-6

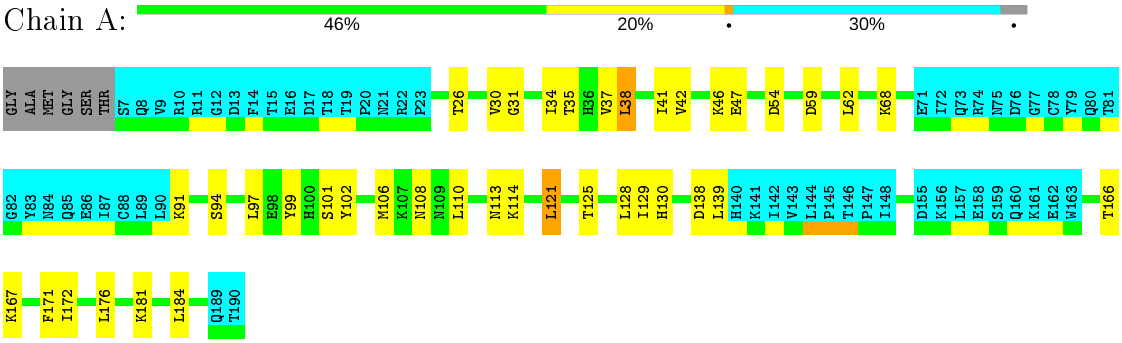
Chain A:



4.2.9 Score per residue for model 9

- Molecule 1: Interleukin-6

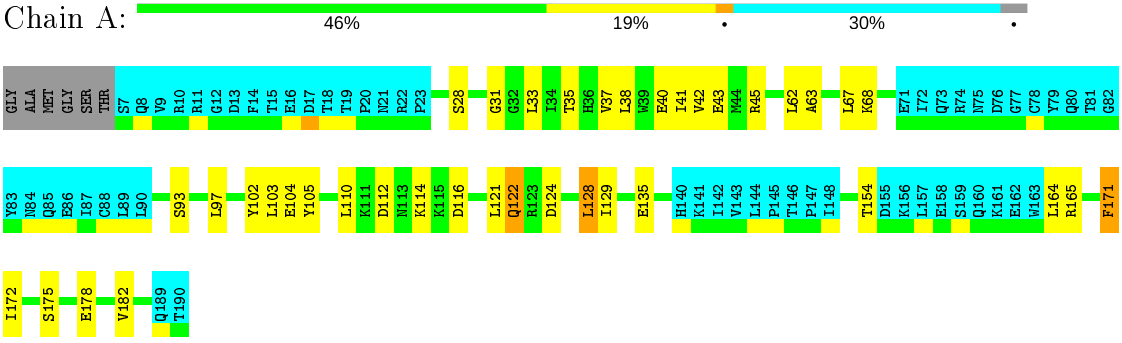
Chain A:



4.2.10 Score per residue for model 10

- Molecule 1: Interleukin-6

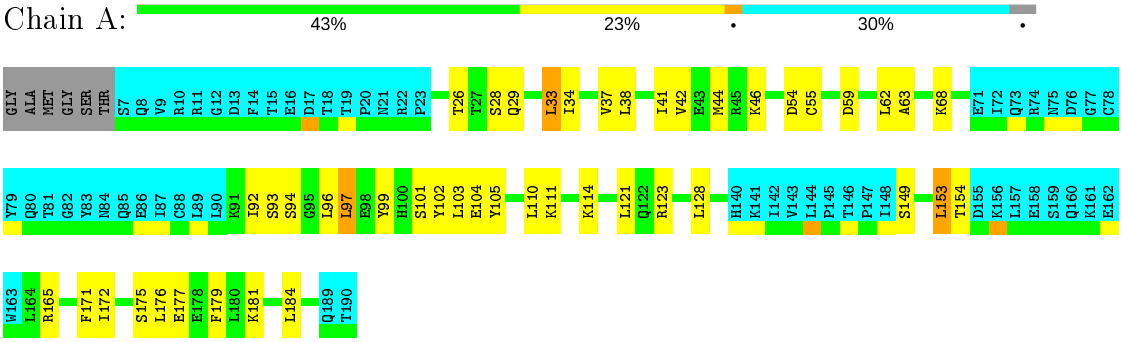
Chain A:



4.2.11 Score per residue for model 11

- Molecule 1: Interleukin-6

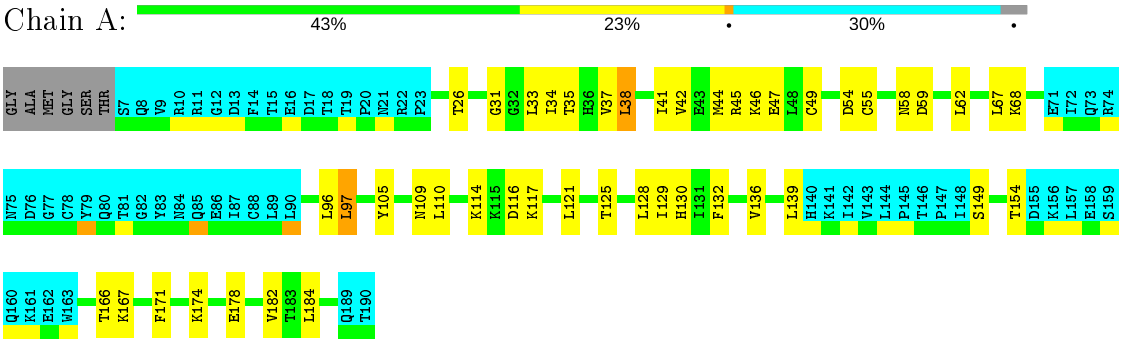
Chain A:



4.2.12 Score per residue for model 12

- Molecule 1: Interleukin-6

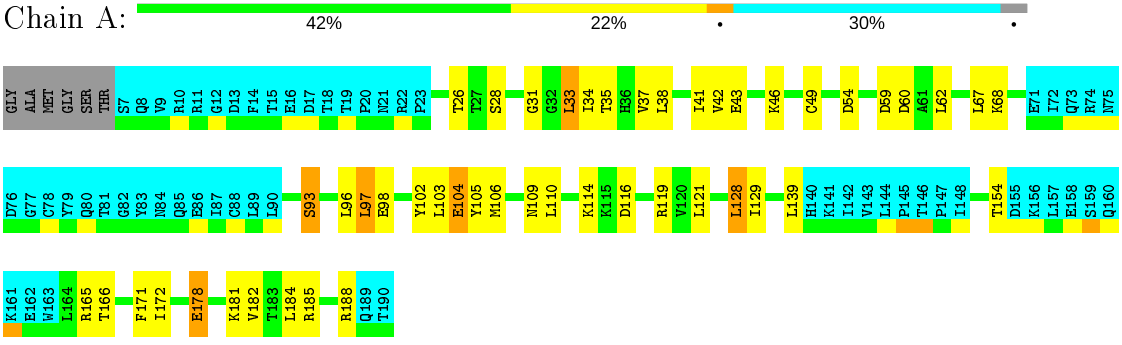
Chain A:



4.2.13 Score per residue for model 13

- Molecule 1: Interleukin-6

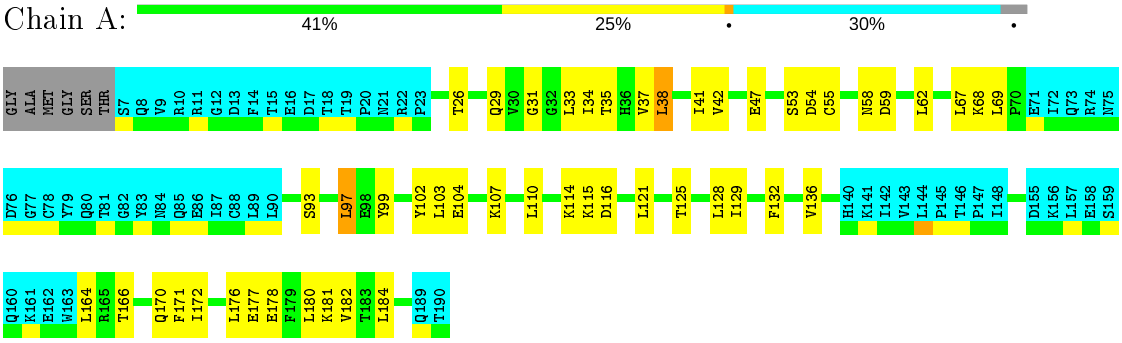
Chain A:



4.2.14 Score per residue for model 14

- Molecule 1: Interleukin-6

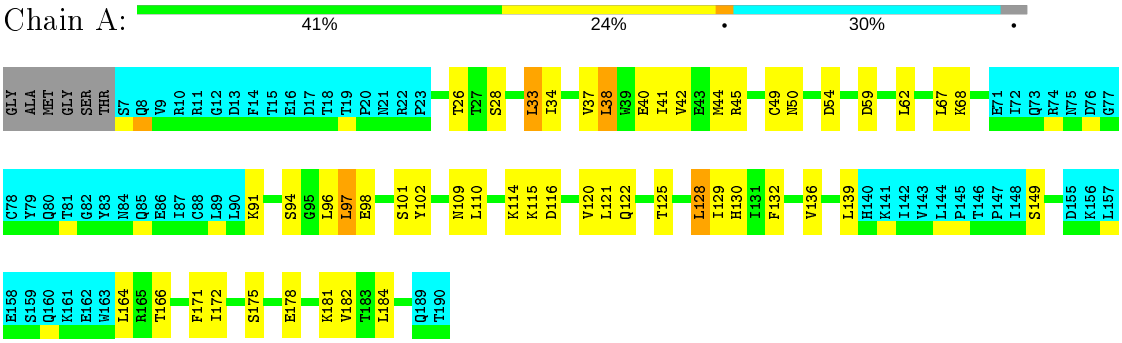
Chain A:



4.2.15 Score per residue for model 15

- Molecule 1: Interleukin-6

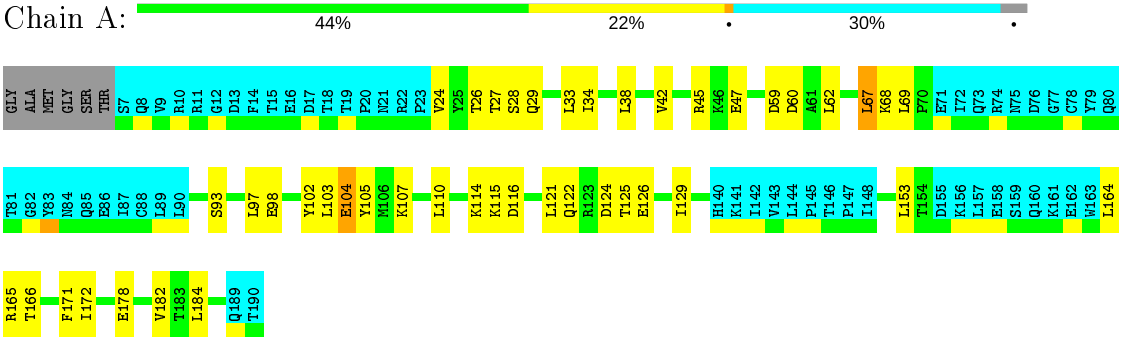
Chain A:



4.2.16 Score per residue for model 16

- Molecule 1: Interleukin-6

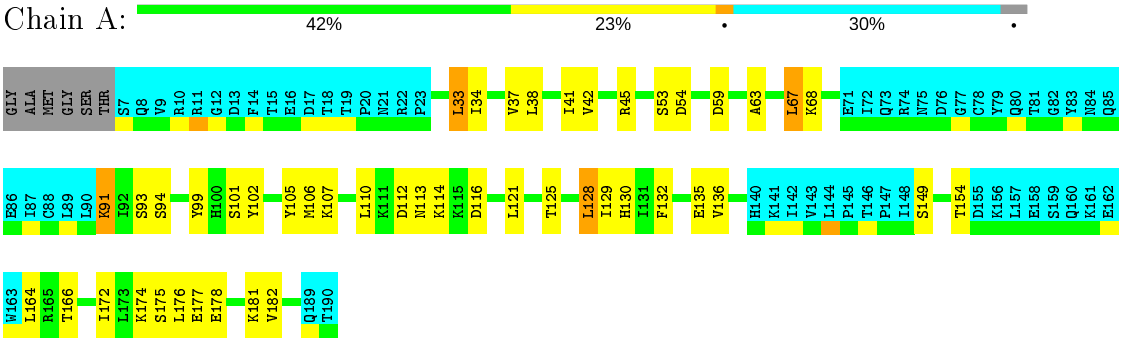
Chain A:



4.2.17 Score per residue for model 17

- Molecule 1: Interleukin-6

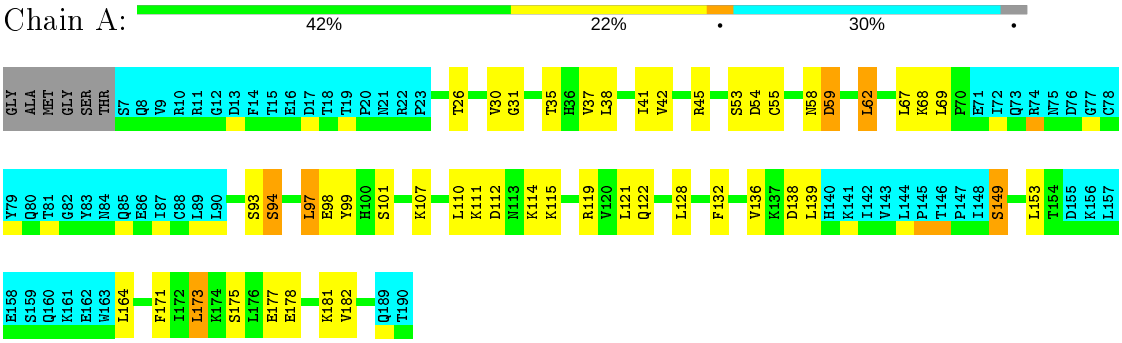
Chain A:



4.2.18 Score per residue for model 18

- Molecule 1: Interleukin-6

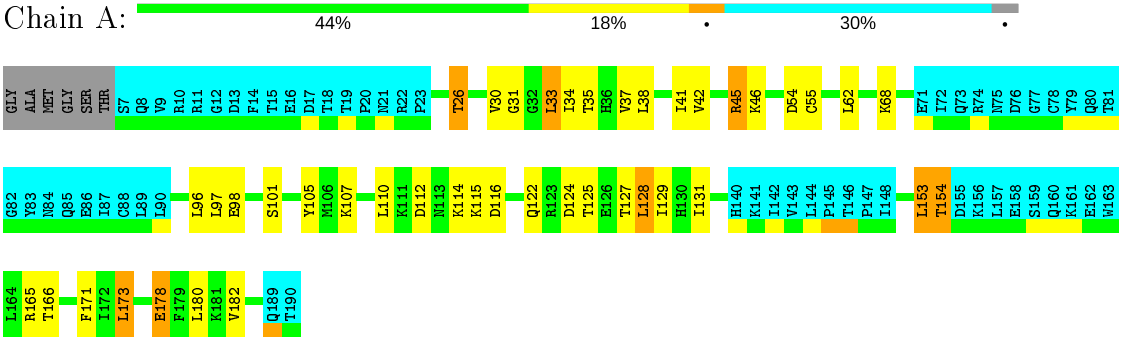
Chain A:



4.2.19 Score per residue for model 19

- Molecule 1: Interleukin-6

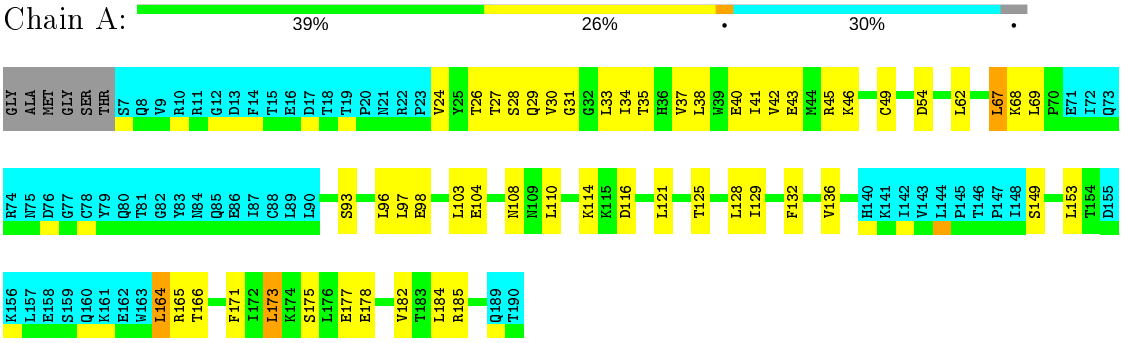
Chain A:



4.2.20 Score per residue for model 20

- Molecule 1: Interleukin-6

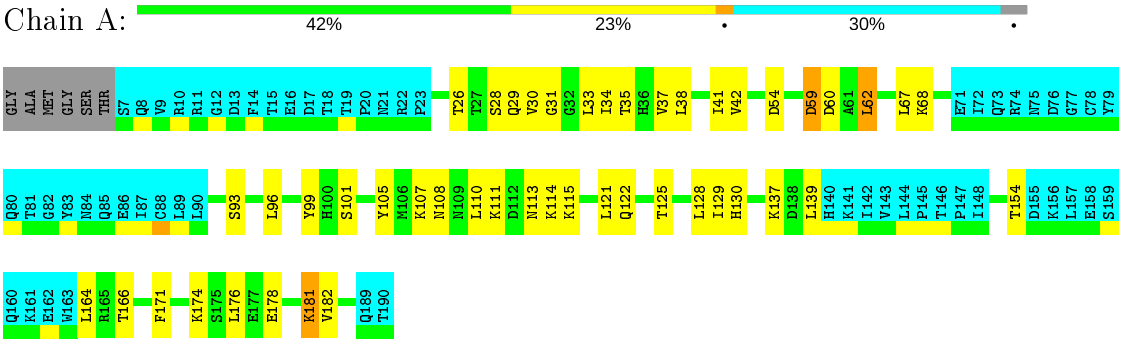
Chain A:



4.2.21 Score per residue for model 21

- Molecule 1: Interleukin-6

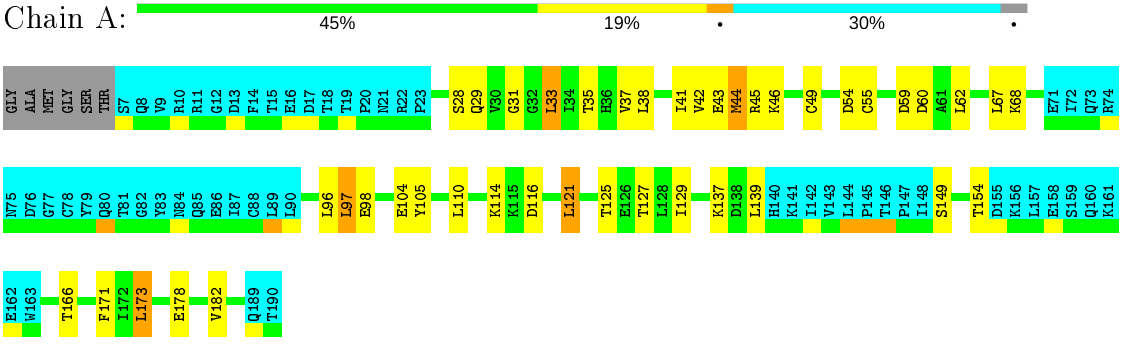
Chain A:



4.2.22 Score per residue for model 22 (medoid)

- Molecule 1: Interleukin-6

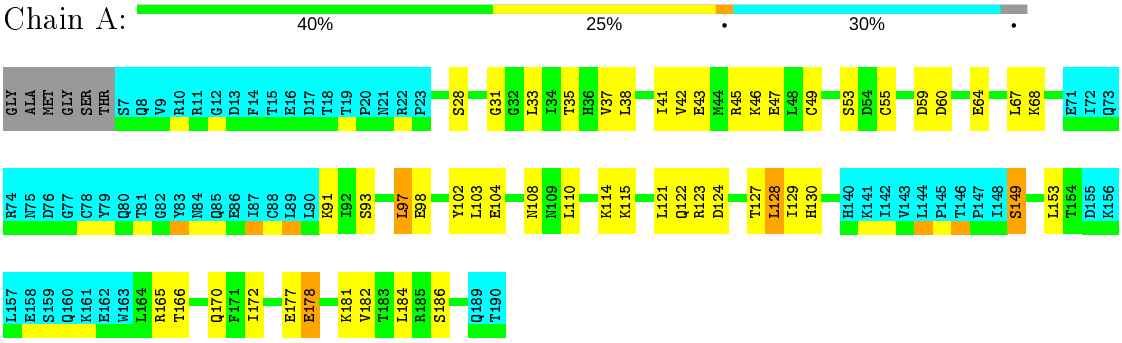
Chain A:



4.2.23 Score per residue for model 23

- Molecule 1: Interleukin-6

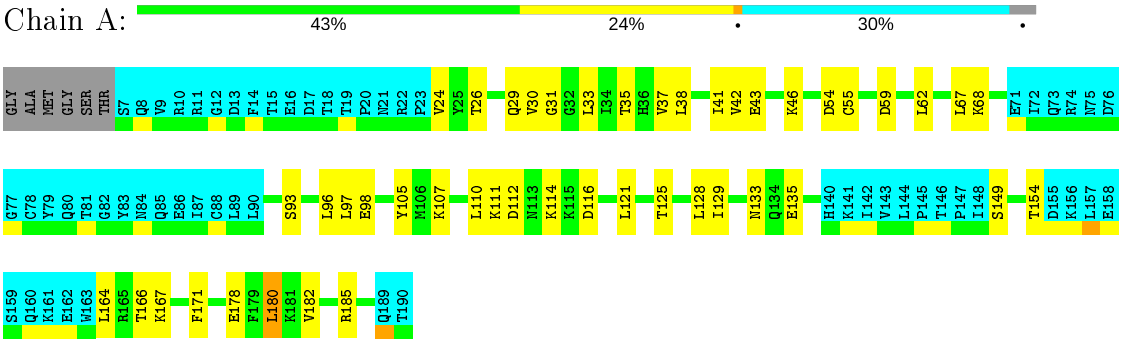
Chain A:



4.2.24 Score per residue for model 24

- Molecule 1: Interleukin-6

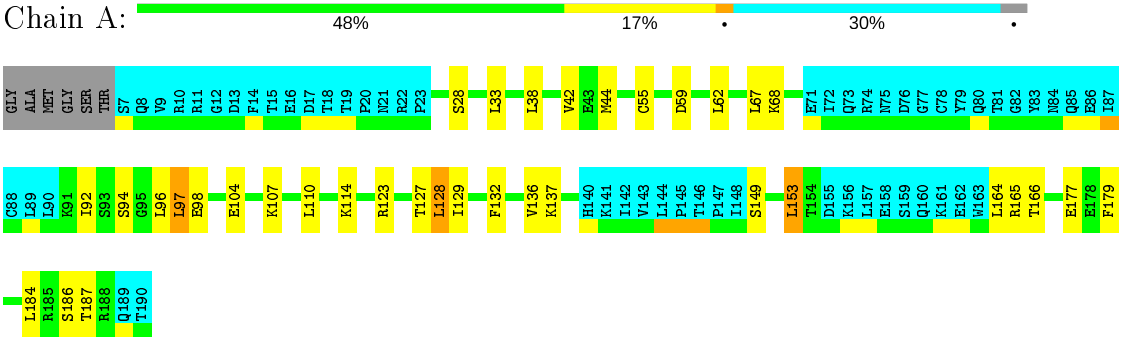
Chain A:



4.2.25 Score per residue for model 25

- Molecule 1: Interleukin-6

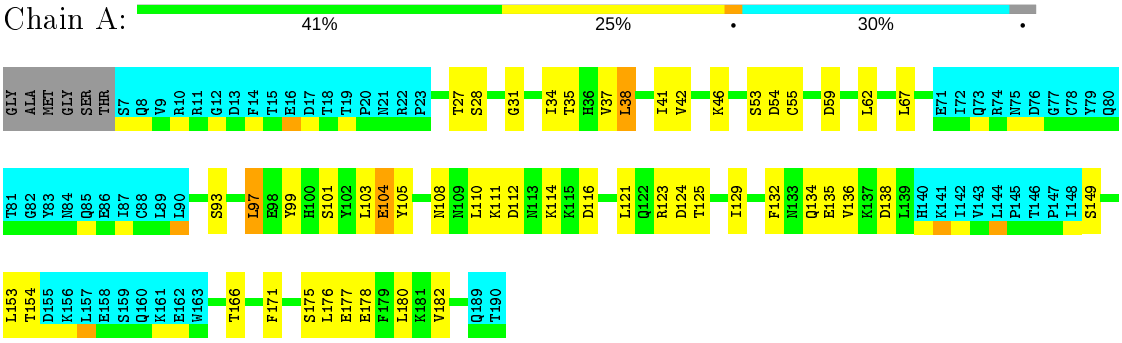
Chain A:



4.2.26 Score per residue for model 26

• Molecule 1: Interleukin-6

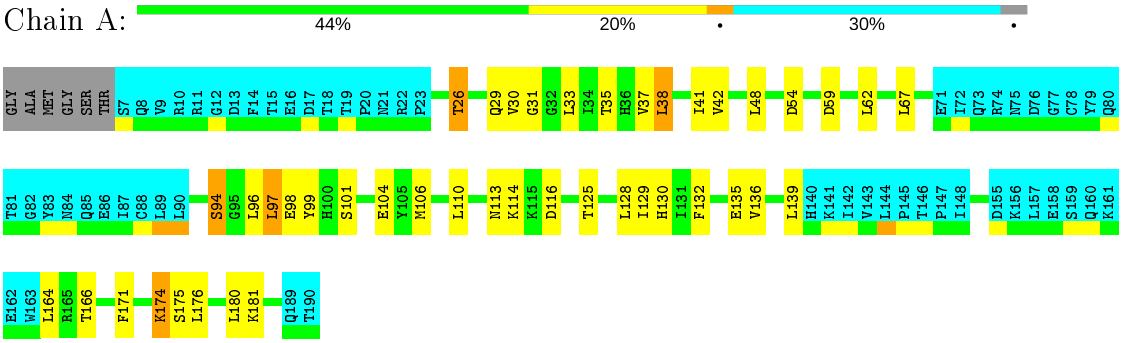
Chain A:



4.2.27 Score per residue for model 27

• Molecule 1: Interleukin-6

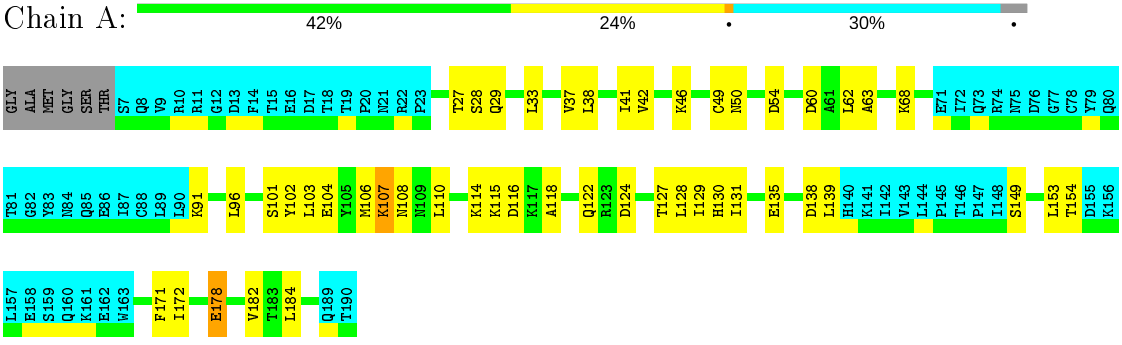
Chain A:



4.2.28 Score per residue for model 28

• Molecule 1: Interleukin-6

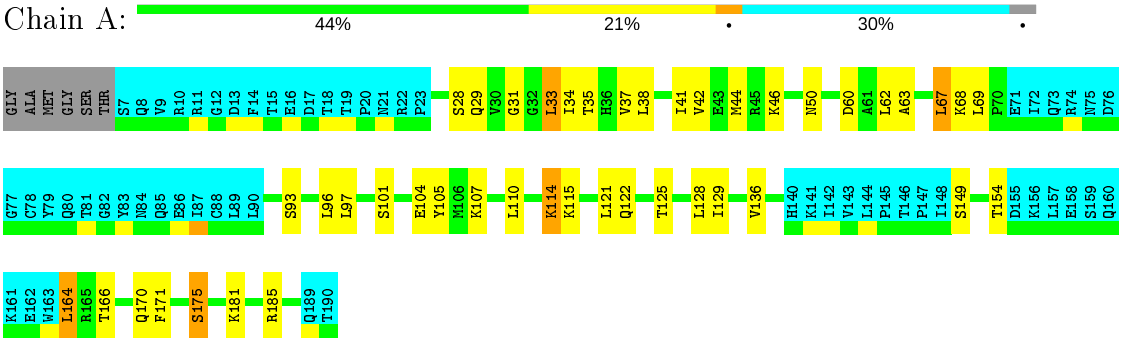
Chain A:



4.2.29 Score per residue for model 29

• Molecule 1: Interleukin-6

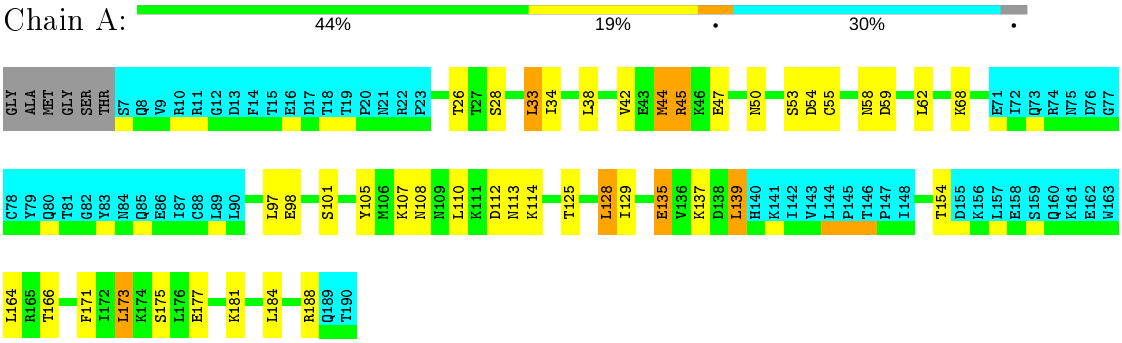
Chain A:



4.2.30 Score per residue for model 30

• Molecule 1: Interleukin-6

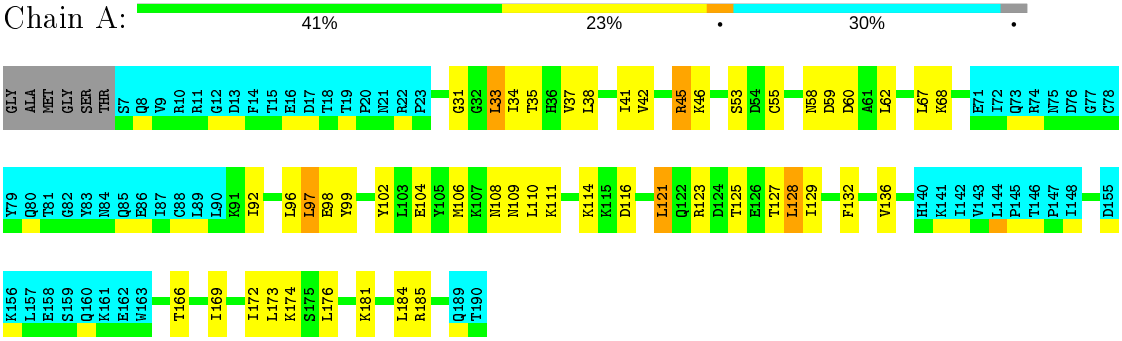
Chain A:



4.2.31 Score per residue for model 31

• Molecule 1: Interleukin-6

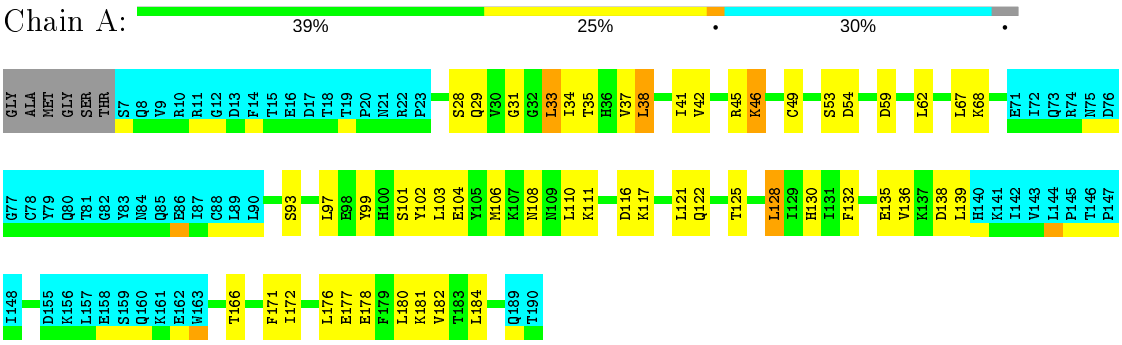
Chain A:



4.2.32 Score per residue for model 32

- Molecule 1: Interleukin-6

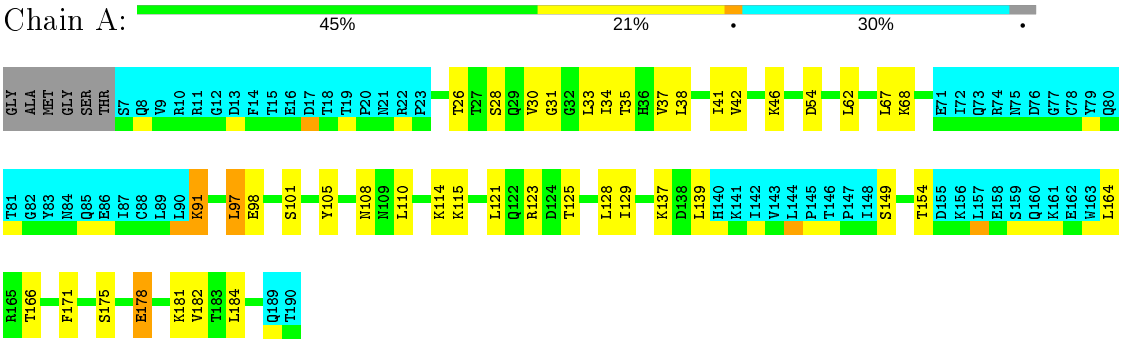
Chain A:



4.2.33 Score per residue for model 33

- Molecule 1: Interleukin-6

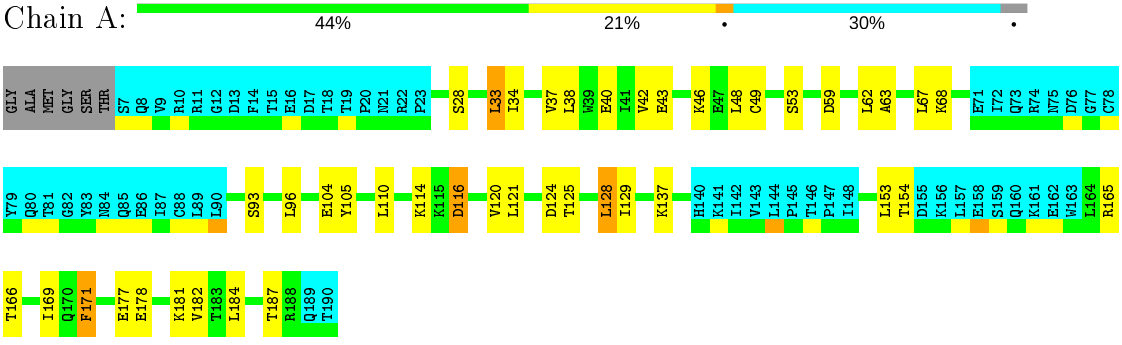
Chain A:



4.2.34 Score per residue for model 34

- Molecule 1: Interleukin-6

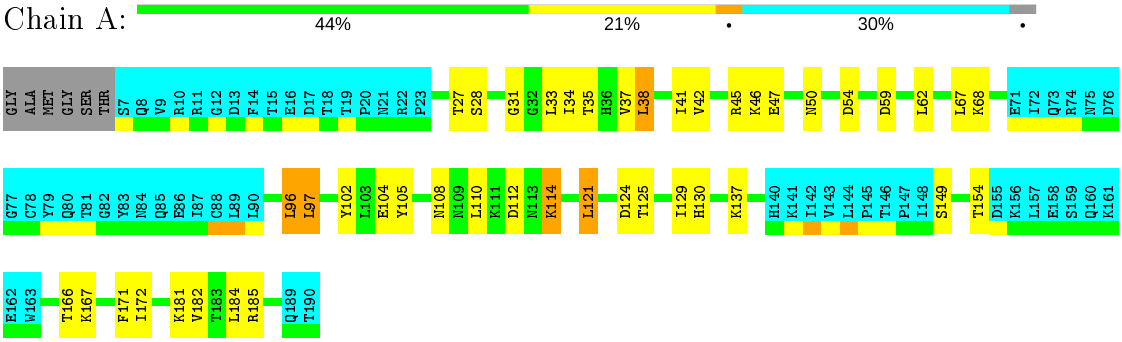
Chain A:



4.2.35 Score per residue for model 35

- Molecule 1: Interleukin-6

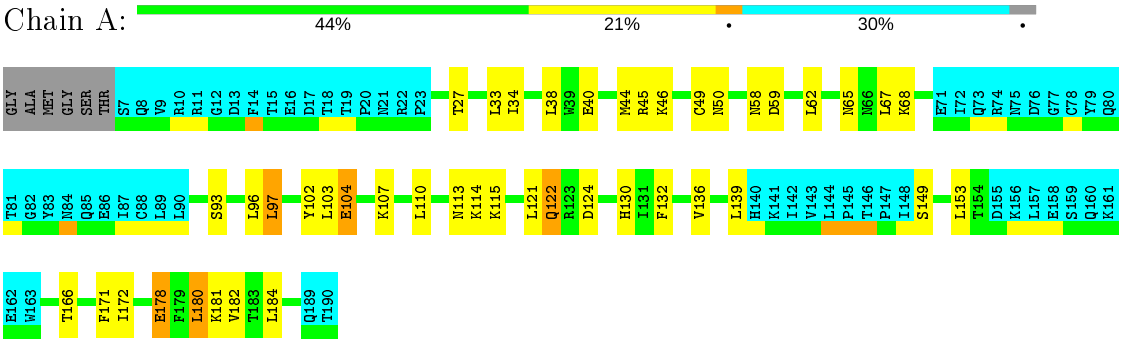
Chain A:



4.2.36 Score per residue for model 36

- Molecule 1: Interleukin-6

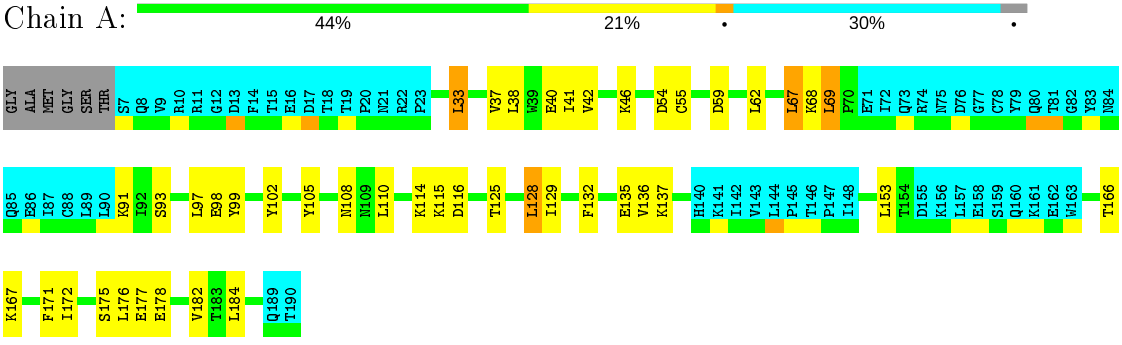
Chain A:



4.2.37 Score per residue for model 37

- Molecule 1: Interleukin-6

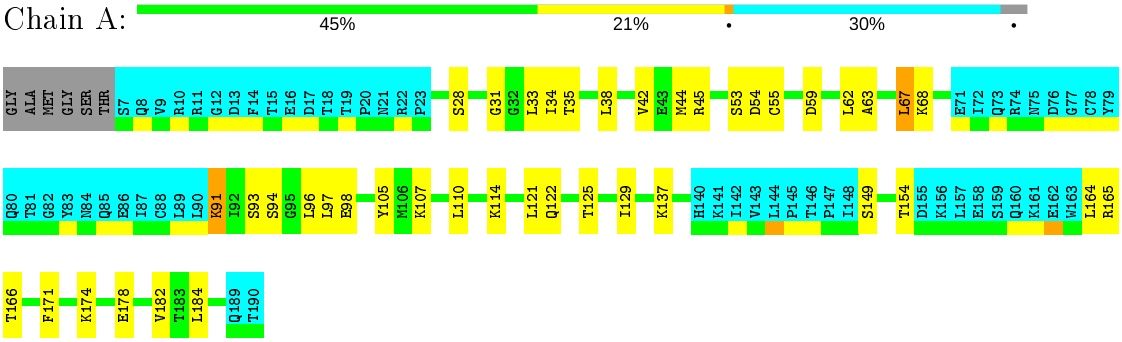
Chain A:



4.2.38 Score per residue for model 38

- Molecule 1: Interleukin-6

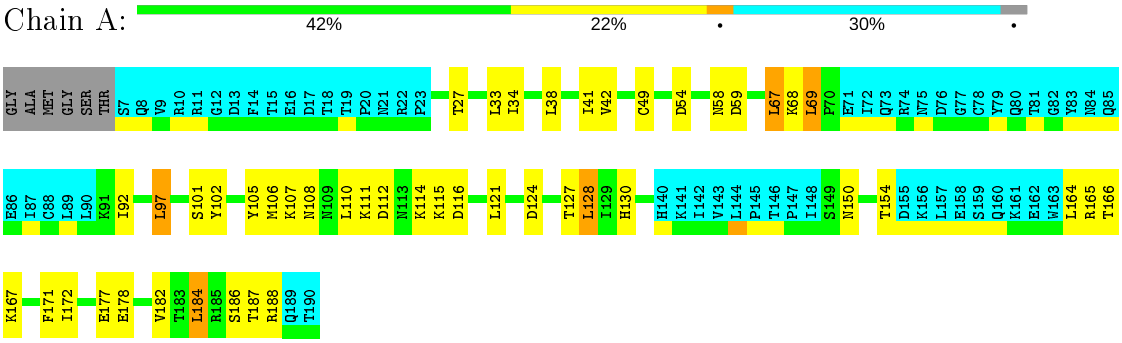
Chain A:



4.2.39 Score per residue for model 39

- Molecule 1: Interleukin-6

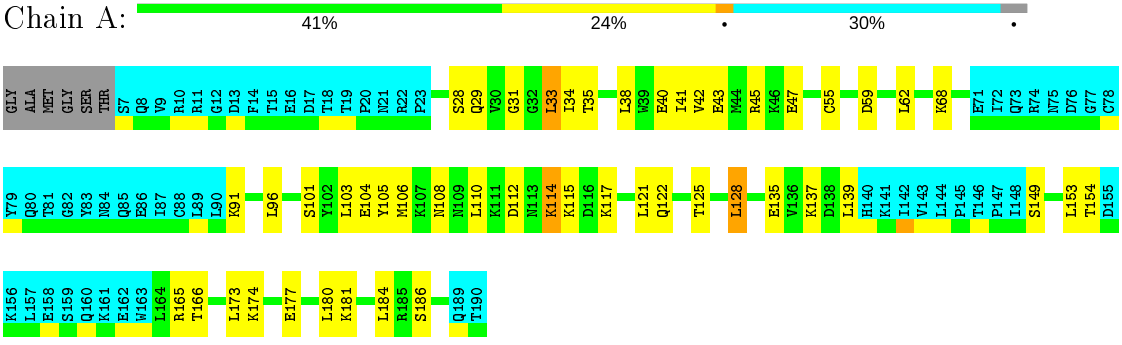
Chain A:



4.2.40 Score per residue for model 40

- Molecule 1: Interleukin-6

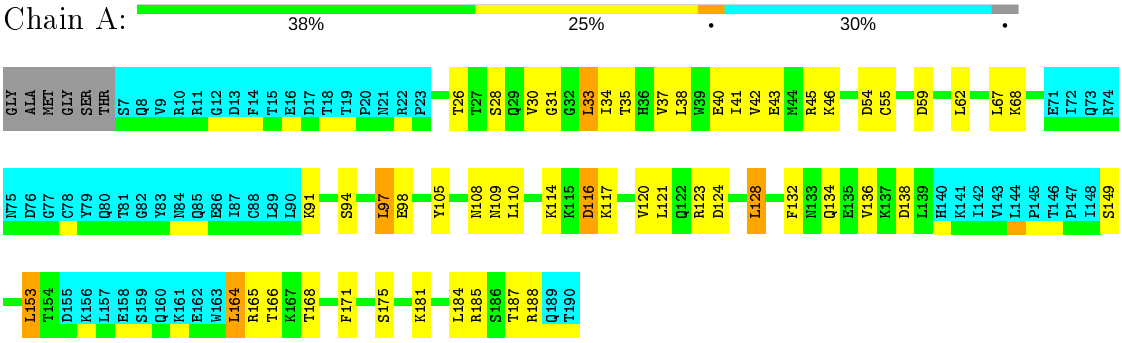
Chain A:



4.2.41 Score per residue for model 41

- Molecule 1: Interleukin-6

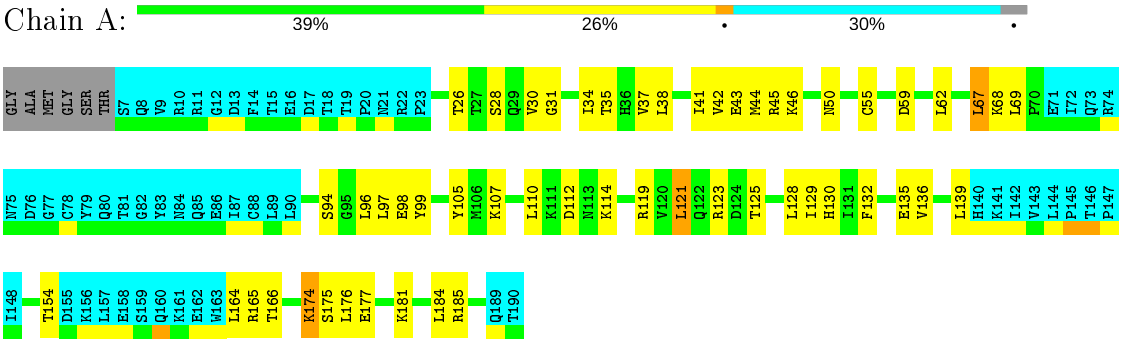
Chain A:



4.2.42 Score per residue for model 42

- Molecule 1: Interleukin-6

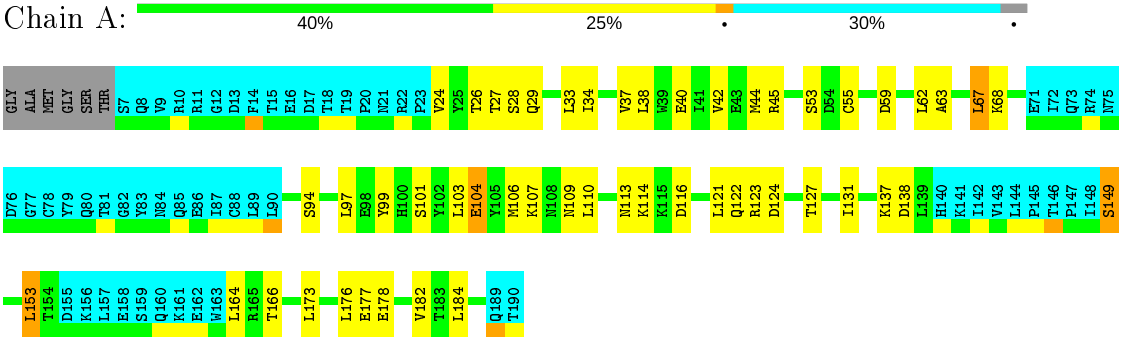
Chain A:



4.2.43 Score per residue for model 43

- Molecule 1: Interleukin-6

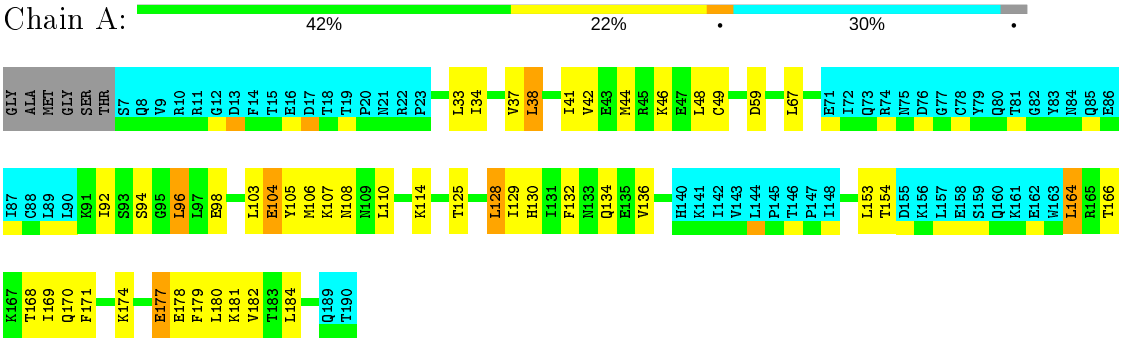
Chain A:



4.2.44 Score per residue for model 44

- Molecule 1: Interleukin-6

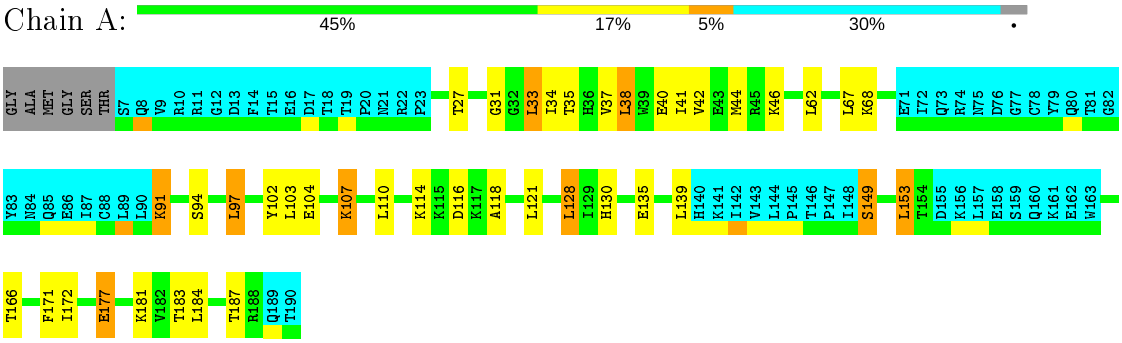
Chain A:



4.2.45 Score per residue for model 45

- Molecule 1: Interleukin-6

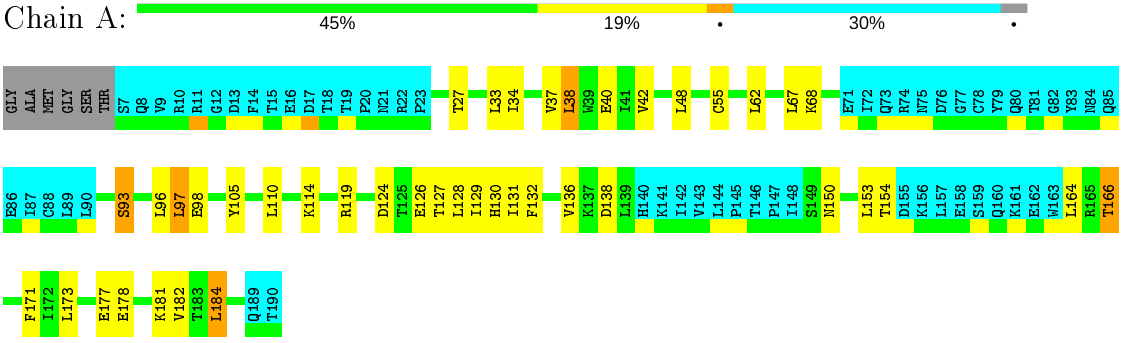
Chain A:



4.2.46 Score per residue for model 46

- Molecule 1: Interleukin-6

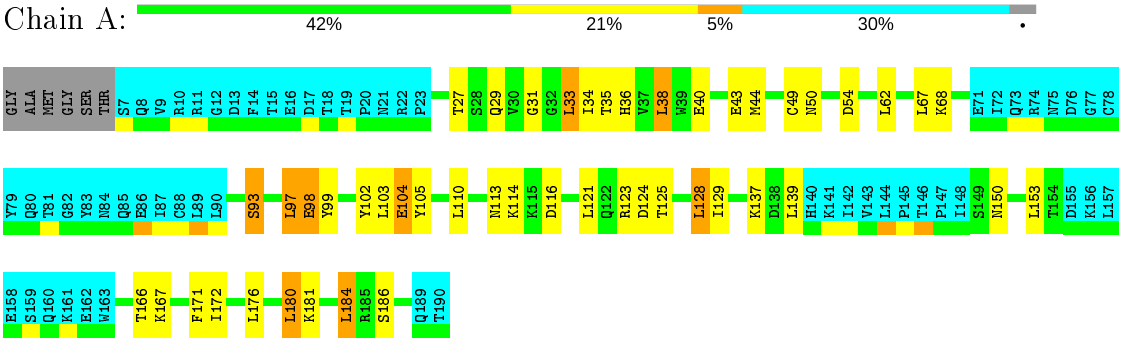
Chain A:



4.2.47 Score per residue for model 47

- Molecule 1: Interleukin-6

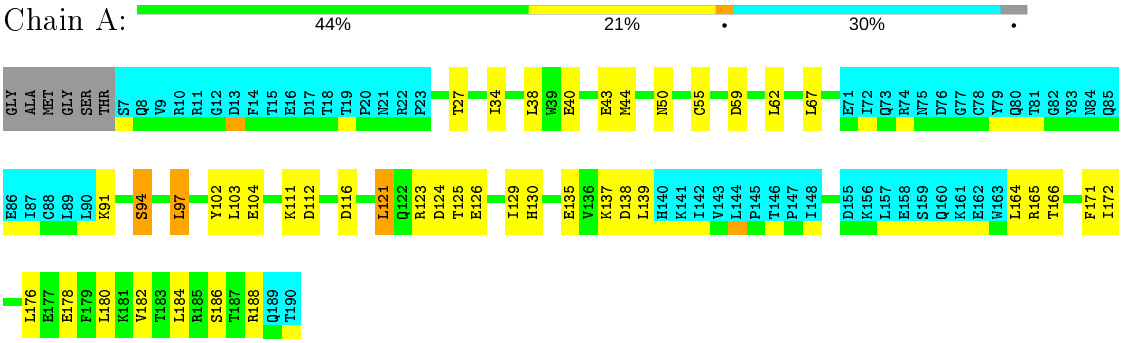
Chain A:



4.2.48 Score per residue for model 48

- Molecule 1: Interleukin-6

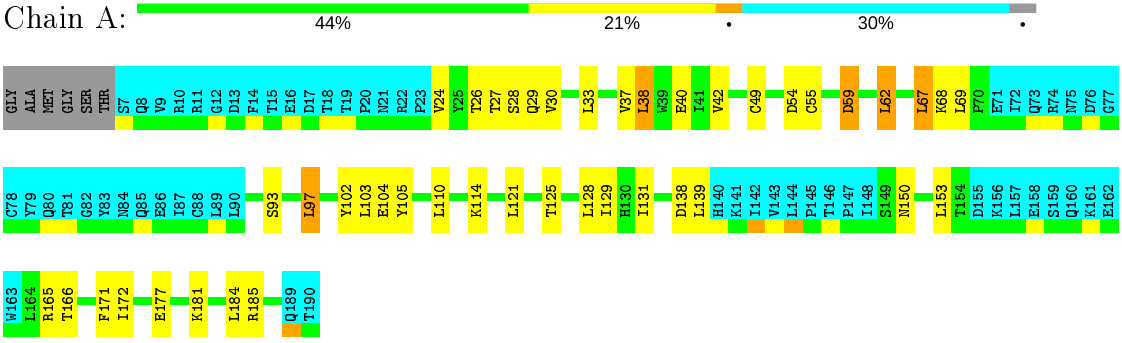
Chain A:



4.2.49 Score per residue for model 49

- Molecule 1: Interleukin-6

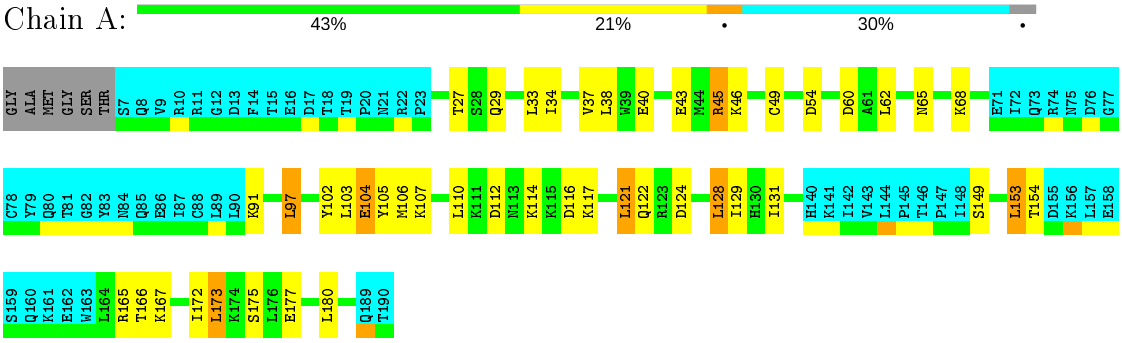
Chain A:



4.2.50 Score per residue for model 50

• Molecule 1: Interleukin-6

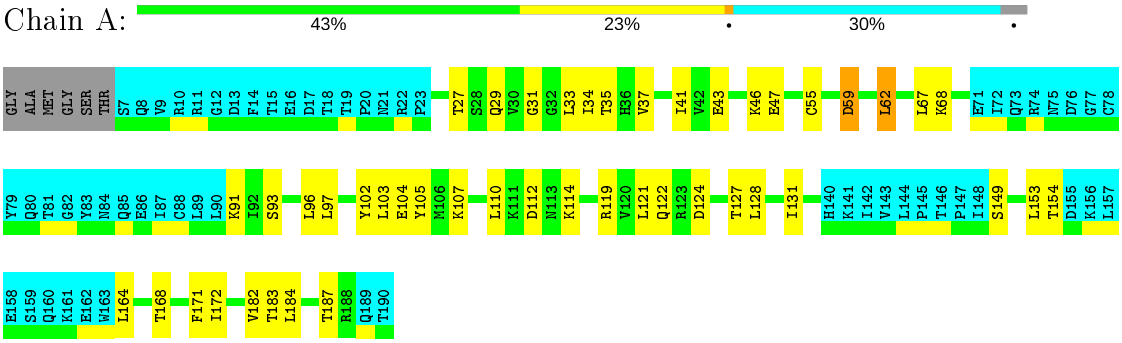
Chain A:



4.2.51 Score per residue for model 51

• Molecule 1: Interleukin-6

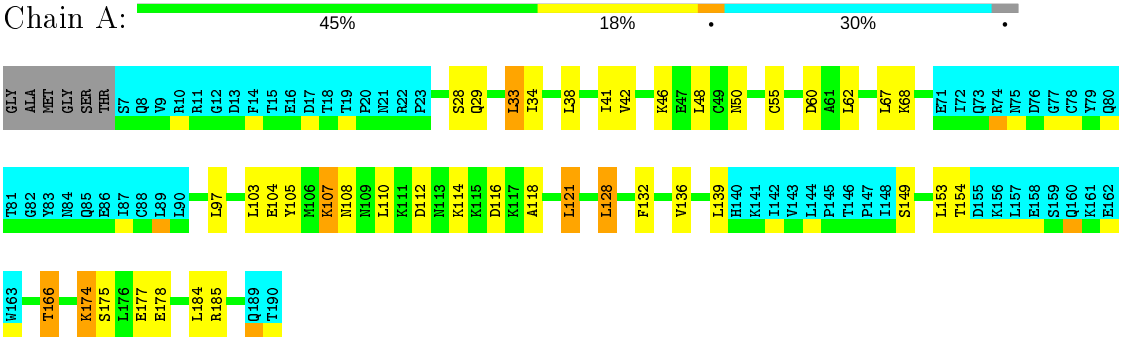
Chain A:



4.2.52 Score per residue for model 52

• Molecule 1: Interleukin-6

Chain A:



5 Refinement protocol and experimental data overview

The models were refined using the following method: *torsion angle dynamics*.

Of the 100 calculated structures, 52 were deposited, based on the following criterion: *structures with the least restraint violations*.

The authors did not provide any information on software used for structure solution, optimization or refinement.

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

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	1031	1061	1058	18±4
All	All	53612	55172	55016	940

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 9.

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:HG21	1:A:184:LEU:HD13	0.92	1.40	8	2
1:A:67:LEU:HD23	1:A:69:LEU:HD21	0.83	1.48	37	3
1:A:96:LEU:HD21	1:A:128:LEU:HD11	0.79	1.54	34	5
1:A:96:LEU:HD12	1:A:129:ILE:HD11	0.76	1.58	1	5
1:A:38:LEU:HD22	1:A:180:LEU:HD23	0.76	1.57	26	1
1:A:48:LEU:HD23	1:A:166:THR:HG22	0.72	1.61	46	2
1:A:105:TYR:CD1	1:A:154:THR:HG22	0.68	2.23	34	18
1:A:105:TYR:CE1	1:A:154:THR:HG22	0.68	2.24	26	22
1:A:67:LEU:HD22	1:A:69:LEU:HD12	0.66	1.66	8	4
1:A:33:LEU:HD21	1:A:128:LEU:HB3	0.66	1.68	15	17
1:A:106:MET:HE2	1:A:110:LEU:HD11	0.65	1.69	4	6
1:A:105:TYR:CD2	1:A:153:LEU:HD13	0.65	2.27	47	3
1:A:67:LEU:HD22	1:A:69:LEU:HD11	0.64	1.68	7	1
1:A:110:LEU:HD22	1:A:114:LYS:HB3	0.64	1.68	28	47

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:31:GLY:O	1:A:35:THR:HG23	0.63	1.93	4	33
1:A:24:VAL:HG23	1:A:26:THR:HG22	0.63	1.68	43	1
1:A:105:TYR:CE2	1:A:153:LEU:HD22	0.63	2.29	2	4
1:A:106:MET:CE	1:A:110:LEU:HD11	0.63	2.23	17	7
1:A:149:SER:O	1:A:153:LEU:HD12	0.63	1.94	3	8
1:A:125:THR:HG22	1:A:129:ILE:CD1	0.62	2.25	17	26
1:A:37:VAL:HG22	1:A:41:ILE:HD11	0.62	1.71	13	36
1:A:67:LEU:HD11	1:A:174:LYS:HE3	0.62	1.71	42	2
1:A:33:LEU:HD21	1:A:124:ASP:O	0.62	1.94	6	11
1:A:34:ILE:HG21	1:A:184:LEU:HD22	0.62	1.69	36	1
1:A:102:TYR:HB3	1:A:172:ILE:HD12	0.61	1.73	31	27
1:A:99:TYR:HB3	1:A:176:LEU:HD13	0.61	1.73	21	14
1:A:125:THR:HG22	1:A:129:ILE:HD11	0.61	1.72	17	19
1:A:37:VAL:HG22	1:A:41:ILE:CD1	0.60	2.27	6	25
1:A:24:VAL:HG13	1:A:26:THR:HG22	0.59	1.74	20	1
1:A:26:THR:O	1:A:30:VAL:HG23	0.59	1.97	19	12
1:A:106:MET:HE1	1:A:110:LEU:HD11	0.59	1.75	9	3
1:A:45:ARG:CB	1:A:173:LEU:HD23	0.59	2.27	50	1
1:A:110:LEU:HD22	1:A:114:LYS:CB	0.59	2.28	15	48
1:A:38:LEU:HD11	1:A:181:LYS:HG2	0.59	1.75	32	6
1:A:128:LEU:HA	1:A:131:ILE:HD12	0.59	1.74	50	1
1:A:42:VAL:HG22	1:A:177:GLU:OE1	0.58	1.98	45	4
1:A:38:LEU:O	1:A:42:VAL:HG23	0.58	1.98	3	46
1:A:178:GLU:O	1:A:182:VAL:HG23	0.58	1.98	14	24
1:A:105:TYR:CD2	1:A:153:LEU:HD23	0.58	2.33	41	3
1:A:34:ILE:HG21	1:A:184:LEU:HG	0.57	1.77	16	7
1:A:41:ILE:HG23	1:A:173:LEU:HD12	0.57	1.74	40	2
1:A:38:LEU:HD11	1:A:181:LYS:HG3	0.57	1.75	35	4
1:A:96:LEU:HD21	1:A:128:LEU:CD1	0.57	2.28	4	4
1:A:34:ILE:HG21	1:A:184:LEU:CD2	0.57	2.29	52	5
1:A:34:ILE:CG2	1:A:184:LEU:HD13	0.56	2.23	8	2
1:A:38:LEU:HD11	1:A:180:LEU:HB3	0.56	1.77	6	2
1:A:45:ARG:HB2	1:A:173:LEU:HD23	0.56	1.75	50	1
1:A:69:LEU:HD12	1:A:175:SER:CB	0.56	2.30	29	1
1:A:59:ASP:OD1	1:A:62:LEU:HD21	0.56	2.00	49	1
1:A:63:ALA:O	1:A:67:LEU:HD12	0.55	2.01	17	5
1:A:92:ILE:HG23	1:A:179:PHE:CZ	0.55	2.37	6	6
1:A:63:ALA:HB1	1:A:171:PHE:CE1	0.55	2.36	28	2
1:A:33:LEU:HD21	1:A:128:LEU:CB	0.55	2.32	15	6
1:A:99:TYR:CB	1:A:176:LEU:HD13	0.55	2.31	4	13
1:A:33:LEU:O	1:A:37:VAL:HG12	0.55	2.02	13	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:184:LEU:O	1:A:184:LEU:HD13	0.55	2.01	5	4
1:A:132:PHE:O	1:A:136:VAL:HG23	0.55	2.01	44	22
1:A:69:LEU:HD21	1:A:172:ILE:HG22	0.55	1.79	5	1
1:A:67:LEU:CD2	1:A:69:LEU:HD12	0.55	2.31	49	4
1:A:105:TYR:CE2	1:A:153:LEU:HD23	0.54	2.37	11	6
1:A:107:LYS:NZ	1:A:118:ALA:HB1	0.54	2.17	52	1
1:A:125:THR:HG22	1:A:129:ILE:HD12	0.54	1.80	33	12
1:A:38:LEU:CD1	1:A:180:LEU:HD23	0.54	2.33	6	1
1:A:128:LEU:HD23	1:A:129:ILE:N	0.54	2.18	25	7
1:A:34:ILE:CD1	1:A:184:LEU:HD22	0.53	2.33	13	2
1:A:45:ARG:HA	1:A:173:LEU:HD23	0.53	1.78	20	5
1:A:38:LEU:HD22	1:A:180:LEU:HD13	0.53	1.80	47	1
1:A:176:LEU:HD12	1:A:180:LEU:HD13	0.53	1.81	5	3
1:A:67:LEU:HD11	1:A:174:LYS:HE2	0.53	1.81	52	1
1:A:33:LEU:HD11	1:A:127:THR:HB	0.52	1.82	23	4
1:A:59:ASP:OD2	1:A:62:LEU:HD11	0.52	2.04	51	2
1:A:34:ILE:CD1	1:A:184:LEU:HD23	0.52	2.34	48	6
1:A:33:LEU:HD23	1:A:34:ILE:N	0.52	2.19	47	12
1:A:153:LEU:HD11	1:A:168:THR:HG21	0.52	1.81	41	3
1:A:42:VAL:HG22	1:A:177:GLU:CD	0.52	2.24	49	6
1:A:184:LEU:HD13	1:A:184:LEU:O	0.52	2.04	9	8
1:A:128:LEU:HD12	1:A:128:LEU:O	0.51	2.05	39	1
1:A:24:VAL:CG1	1:A:26:THR:HG22	0.51	2.35	20	1
1:A:97:LEU:HD23	1:A:98:GLU:N	0.51	2.21	33	4
1:A:44:MET:SD	1:A:173:LEU:HD21	0.51	2.45	30	2
1:A:103:LEU:HD12	1:A:104:GLU:N	0.51	2.20	28	25
1:A:178:GLU:O	1:A:182:VAL:HG13	0.51	2.06	16	5
1:A:30:VAL:CG1	1:A:131:ILE:HG21	0.51	2.36	49	1
1:A:96:LEU:HD13	1:A:128:LEU:HD11	0.51	1.80	20	1
1:A:96:LEU:HD23	1:A:129:ILE:HG12	0.51	1.83	28	1
1:A:67:LEU:HD11	1:A:174:LYS:CE	0.50	2.34	42	3
1:A:107:LYS:CE	1:A:118:ALA:HB1	0.50	2.37	52	3
1:A:92:ILE:HG22	1:A:96:LEU:HD11	0.50	1.83	31	1
1:A:96:LEU:HD12	1:A:129:ILE:CD1	0.50	2.35	35	5
1:A:67:LEU:CD2	1:A:69:LEU:HD21	0.50	2.36	3	2
1:A:107:LYS:HA	1:A:110:LEU:HD12	0.50	1.83	30	4
1:A:34:ILE:HG23	1:A:180:LEU:HD22	0.50	1.81	2	1
1:A:135:GLU:O	1:A:139:LEU:HD12	0.50	2.06	30	1
1:A:34:ILE:O	1:A:38:LEU:HD23	0.50	2.07	21	14
1:A:41:ILE:HG12	1:A:121:LEU:HD21	0.50	1.84	35	7
1:A:183:THR:O	1:A:187:THR:HG22	0.49	2.07	51	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:69:LEU:HD11	1:A:175:SER:CB	0.49	2.38	3	2
1:A:96:LEU:HD22	1:A:129:ILE:CG1	0.49	2.38	5	6
1:A:92:ILE:HG22	1:A:96:LEU:CD1	0.49	2.37	31	1
1:A:24:VAL:HG22	1:A:26:THR:HG23	0.49	1.82	24	1
1:A:42:VAL:HG12	1:A:46:LYS:CE	0.49	2.37	32	2
1:A:33:LEU:HD22	1:A:128:LEU:HB2	0.49	1.84	50	1
1:A:63:ALA:HB1	1:A:171:PHE:CZ	0.49	2.42	28	3
1:A:178:GLU:O	1:A:182:VAL:HG22	0.49	2.08	23	2
1:A:177:GLU:HA	1:A:180:LEU:HD12	0.49	1.85	3	1
1:A:34:ILE:HG21	1:A:184:LEU:HD23	0.49	1.85	52	2
1:A:116:ASP:O	1:A:120:VAL:HG23	0.48	2.08	41	2
1:A:38:LEU:HD11	1:A:180:LEU:CB	0.48	2.38	50	2
1:A:40:GLU:HB3	1:A:121:LEU:HD11	0.48	1.85	50	2
1:A:102:TYR:CD1	1:A:153:LEU:HD11	0.48	2.43	16	2
1:A:110:LEU:HD13	1:A:114:LYS:HB3	0.48	1.85	44	32
1:A:42:VAL:HG12	1:A:46:LYS:HE3	0.47	1.85	52	1
1:A:33:LEU:HD21	1:A:128:LEU:N	0.47	2.24	49	1
1:A:103:LEU:HD13	1:A:122:GLN:HB3	0.47	1.87	28	1
1:A:93:SER:O	1:A:97:LEU:HD12	0.47	2.08	46	1
1:A:96:LEU:HD13	1:A:129:ILE:HG12	0.46	1.85	46	4
1:A:40:GLU:OE2	1:A:120:VAL:HG11	0.46	2.10	8	1
1:A:103:LEU:HD21	1:A:125:THR:HG21	0.46	1.87	40	1
1:A:34:ILE:HG22	1:A:38:LEU:HD12	0.46	1.86	11	3
1:A:24:VAL:HG12	1:A:26:THR:HG23	0.46	1.87	49	1
1:A:38:LEU:HD11	1:A:181:LYS:CG	0.46	2.40	14	8
1:A:34:ILE:HD13	1:A:184:LEU:HD22	0.46	1.87	6	1
1:A:48:LEU:HD23	1:A:166:THR:CG2	0.46	2.36	46	1
1:A:102:TYR:CD1	1:A:172:ILE:HG21	0.46	2.45	16	1
1:A:48:LEU:HD21	1:A:169:ILE:HG21	0.46	1.87	44	2
1:A:45:ARG:HA	1:A:173:LEU:HD13	0.46	1.87	43	1
1:A:41:ILE:HG13	1:A:121:LEU:HD11	0.45	1.88	31	3
1:A:96:LEU:HD22	1:A:129:ILE:HG12	0.45	1.89	15	6
1:A:103:LEU:HD13	1:A:122:GLN:HA	0.45	1.88	16	5
1:A:184:LEU:HD12	1:A:184:LEU:O	0.45	2.10	15	2
1:A:127:THR:HG22	1:A:131:ILE:HD11	0.45	1.89	51	3
1:A:107:LYS:HE3	1:A:118:ALA:HB1	0.45	1.88	52	3
1:A:67:LEU:HD23	1:A:69:LEU:CD2	0.45	2.33	37	1
1:A:40:GLU:OE2	1:A:120:VAL:HG21	0.45	2.11	15	1
1:A:67:LEU:HD11	1:A:174:LYS:NZ	0.45	2.27	38	1
1:A:38:LEU:HD21	1:A:180:LEU:HB3	0.44	1.89	1	4
1:A:184:LEU:HA	1:A:187:THR:HG22	0.44	1.90	8	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:127:THR:O	1:A:131:ILE:HD12	0.44	2.12	7	4
1:A:67:LEU:HD23	1:A:171:PHE:CD2	0.44	2.48	10	1
1:A:34:ILE:HG21	1:A:184:LEU:CG	0.44	2.43	47	1
1:A:150:ASN:O	1:A:154:THR:HG23	0.43	2.12	39	2
1:A:24:VAL:CG2	1:A:26:THR:HG22	0.43	2.41	43	1
1:A:93:SER:O	1:A:97:LEU:HD23	0.43	2.13	4	1
1:A:153:LEU:CD1	1:A:168:THR:HG21	0.43	2.43	44	1
1:A:33:LEU:HD22	1:A:128:LEU:HD23	0.43	1.88	51	1
1:A:34:ILE:O	1:A:38:LEU:HD13	0.43	2.13	50	3
1:A:38:LEU:HD22	1:A:177:GLU:OE2	0.43	2.14	23	1
1:A:96:LEU:CD2	1:A:128:LEU:HD11	0.43	2.43	29	1
1:A:38:LEU:CD2	1:A:180:LEU:HD23	0.43	2.38	26	1
1:A:62:LEU:HD12	1:A:63:ALA:N	0.43	2.29	11	1
1:A:33:LEU:HD13	1:A:127:THR:HG21	0.43	1.90	22	1
1:A:176:LEU:HD11	1:A:180:LEU:HD11	0.43	1.91	48	1
1:A:38:LEU:HD11	1:A:180:LEU:HB2	0.43	1.91	50	1
1:A:45:ARG:NH1	1:A:173:LEU:HD12	0.42	2.29	31	1
1:A:125:THR:HA	1:A:128:LEU:HD23	0.42	1.90	32	2
1:A:184:LEU:C	1:A:184:LEU:HD13	0.42	2.34	35	7
1:A:69:LEU:O	1:A:69:LEU:HD12	0.42	2.14	7	1
1:A:102:TYR:HD1	1:A:153:LEU:HD11	0.42	1.72	16	1
1:A:184:LEU:HD13	1:A:184:LEU:C	0.42	2.35	5	8
1:A:48:LEU:HD12	1:A:114:LYS:HE3	0.42	1.92	6	3
1:A:105:TYR:CE1	1:A:154:THR:HG23	0.42	2.50	19	1
1:A:45:ARG:CA	1:A:173:LEU:HD23	0.41	2.46	18	1
1:A:33:LEU:CD1	1:A:127:THR:HG21	0.41	2.45	22	1
1:A:69:LEU:HD12	1:A:175:SER:OG	0.41	2.16	29	1
1:A:59:ASP:CG	1:A:62:LEU:HD21	0.41	2.35	21	1
1:A:128:LEU:HD22	1:A:180:LEU:HD21	0.41	1.92	2	1
1:A:92:ILE:HG23	1:A:179:PHE:CE1	0.41	2.50	7	1
1:A:48:LEU:HD23	1:A:114:LYS:CE	0.41	2.46	27	1
1:A:92:ILE:HG23	1:A:179:PHE:CE2	0.41	2.51	44	1
1:A:24:VAL:HG13	1:A:26:THR:HG23	0.41	1.93	16	1
1:A:184:LEU:O	1:A:187:THR:HG22	0.41	2.16	34	1
1:A:69:LEU:HD23	1:A:99:TYR:CE1	0.40	2.51	18	2
1:A:106:MET:SD	1:A:169:ILE:HG23	0.40	2.57	31	1
1:A:41:ILE:N	1:A:121:LEU:HD11	0.40	2.31	52	1
1:A:33:LEU:HD21	1:A:128:LEU:HD23	0.40	1.93	19	1
1:A:34:ILE:HD12	1:A:184:LEU:HD23	0.40	1.94	44	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	127/190 (67%)	120±2 (94±2%)	7±2 (5±1%)	0±1 (0±0%)	50 82
All	All	6604/9880 (67%)	6225 (94%)	363 (5%)	16 (0%)	50 82

All 4 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	164	LEU	7
1	A	91	LYS	5
1	A	188	ARG	3
1	A	111	LYS	1

6.3.2 Protein sidechains (i)

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	119/176 (68%)	93±4 (78±3%)	26±4 (22±3%)	3 30
All	All	6188/9152 (68%)	4814 (78%)	1374 (22%)	3 30

All 85 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	68	LYS	47
1	A	62	LEU	47
1	A	166	THR	45
1	A	67	LEU	42
1	A	171	PHE	40
1	A	121	LEU	40

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Mol	Chain	Res	Type	Models (Total)
1	A	59	ASP	38
1	A	128	LEU	37
1	A	97	LEU	35
1	A	54	ASP	32
1	A	33	LEU	31
1	A	46	LYS	30
1	A	116	ASP	30
1	A	55	CYS	28
1	A	28	SER	27
1	A	149	SER	25
1	A	139	LEU	24
1	A	29	GLN	23
1	A	107	LYS	23
1	A	130	HIS	22
1	A	93	SER	22
1	A	164	LEU	22
1	A	101	SER	21
1	A	98	GLU	21
1	A	165	ARG	21
1	A	45	ARG	21
1	A	181	LYS	20
1	A	108	ASN	19
1	A	49	CYS	19
1	A	43	GLU	18
1	A	91	LYS	18
1	A	177	GLU	18
1	A	27	THR	18
1	A	175	SER	17
1	A	112	ASP	17
1	A	44	MET	17
1	A	115	LYS	17
1	A	104	GLU	17
1	A	38	LEU	16
1	A	40	GLU	16
1	A	137	LYS	16
1	A	135	GLU	14
1	A	122	GLN	13
1	A	96	LEU	13
1	A	47	GLU	13
1	A	94	SER	13
1	A	53	SER	13
1	A	153	LEU	12

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Mol	Chain	Res	Type	Models (Total)
1	A	111	LYS	12
1	A	185	ARG	12
1	A	174	LYS	12
1	A	138	ASP	11
1	A	124	ASP	11
1	A	50	ASN	11
1	A	123	ARG	11
1	A	26	THR	10
1	A	178	GLU	10
1	A	60	ASP	10
1	A	167	LYS	10
1	A	113	ASN	9
1	A	58	ASN	8
1	A	184	LEU	8
1	A	119	ARG	8
1	A	117	LYS	7
1	A	173	LEU	7
1	A	180	LEU	7
1	A	186	SER	6
1	A	170	GLN	6
1	A	109	ASN	6
1	A	69	LEU	4
1	A	37	VAL	4
1	A	154	THR	3
1	A	188	ARG	3
1	A	114	LYS	3
1	A	126	GLU	3
1	A	134	GLN	3
1	A	150	ASN	2
1	A	65	ASN	2
1	A	57	ASN	1
1	A	64	GLU	1
1	A	127	THR	1
1	A	36	HIS	1
1	A	133	ASN	1
1	A	56	MET	1
1	A	106	MET	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 carbohydrates 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

No chemical shift data were provided