WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB NMR Structure Validation Report ⓘ

Oct 22, 2024 – 12:29 PM EDT

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

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

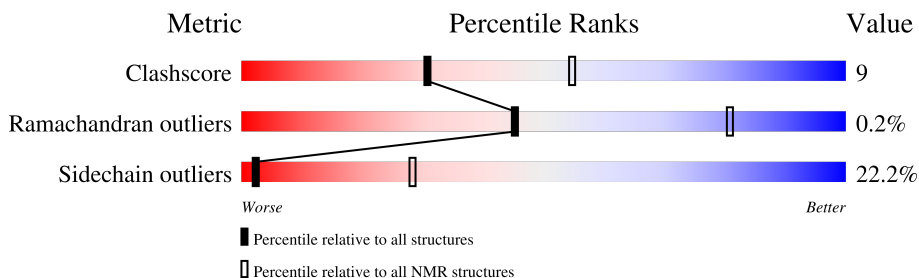|		
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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	Percentile Ranks	Value
Clashscore		9
Ramachandran outliers		0.2%
Sidechain outliers		22.2%

Worse *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all NMR structures

Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	210492	14027
Ramachandran outliers	207382	12486
Sidechain outliers	206894	12463

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

Mol	Chain	Length	Quality of chain
1	A	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)	0.61	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 (i)

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, 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.
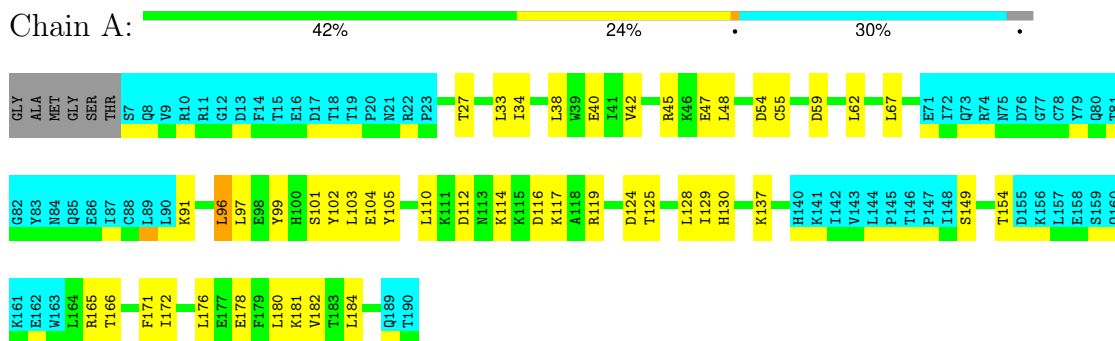
• Molecule 1: Interleukin-6
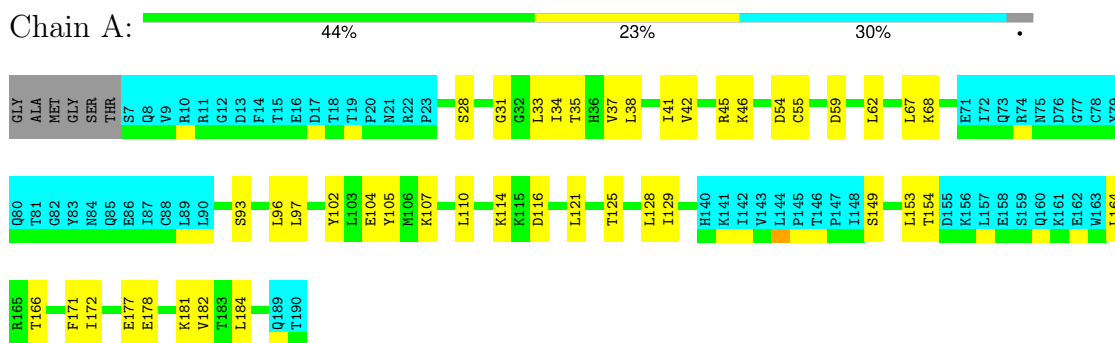
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

• Molecule 1: Interleukin-6
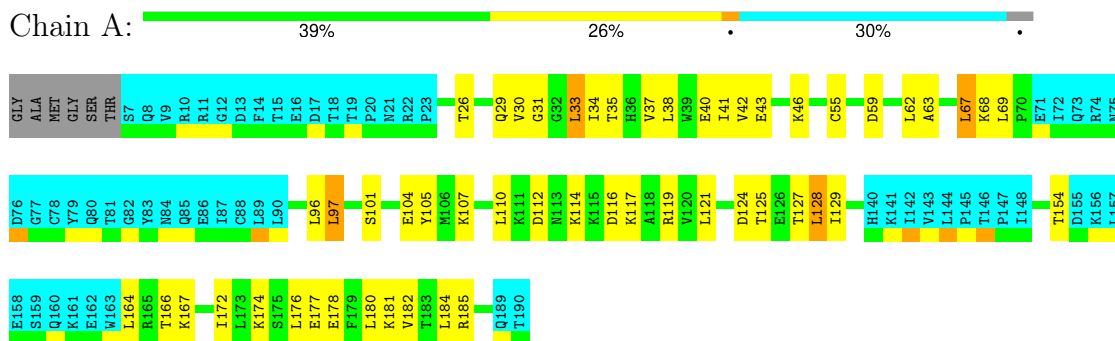
4.2.2 Score per residue for model 2

• 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

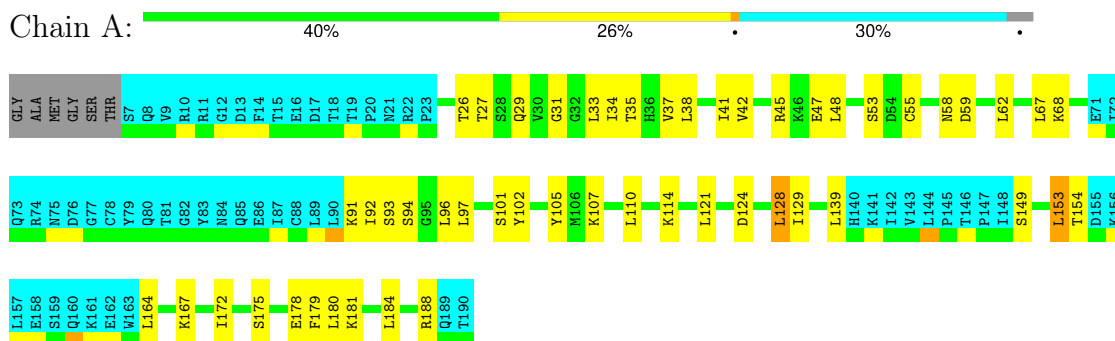• Molecule 1: Interleukin-6

Chain A:
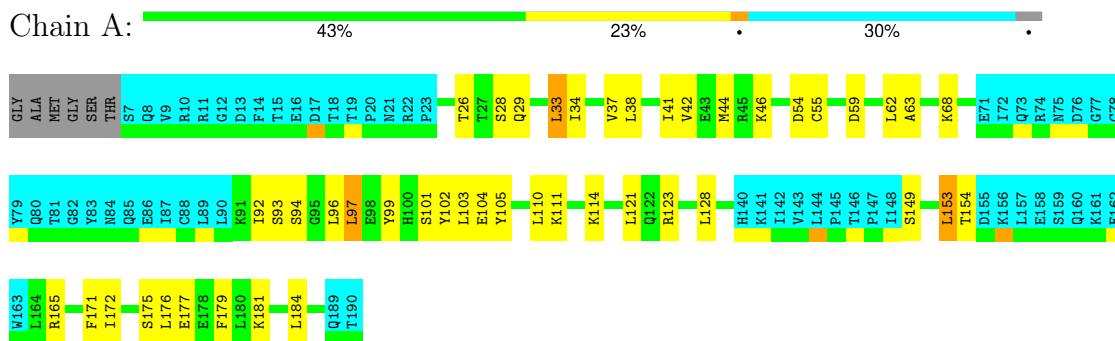
4.2.12 Score per residue for model 12

• 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:

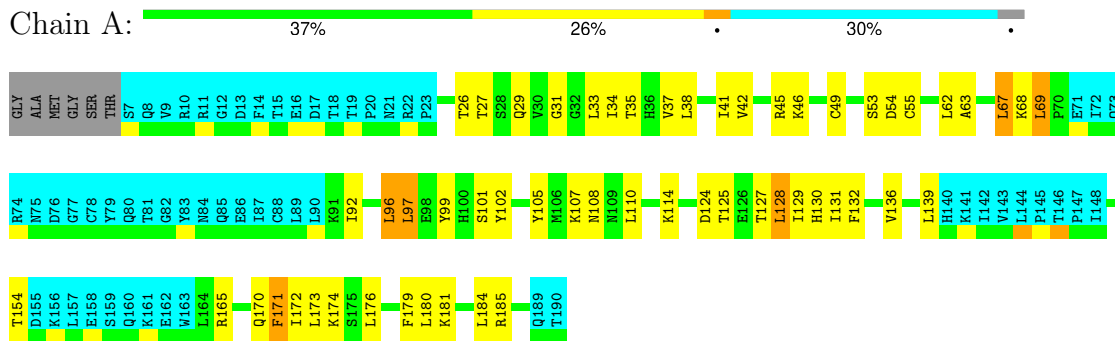### 4.2.15 Score per residue for model 15

• Molecule 1: Interleukin-6

Chain A:

4.2.16 Score per residue for model 16
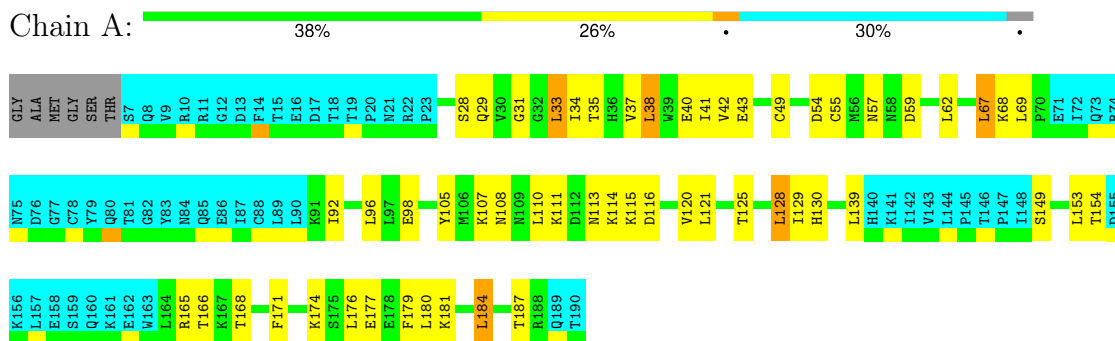
• Molecule 1: Interleukin-6

Chain A:

4.2.17　Score per residue for model 17

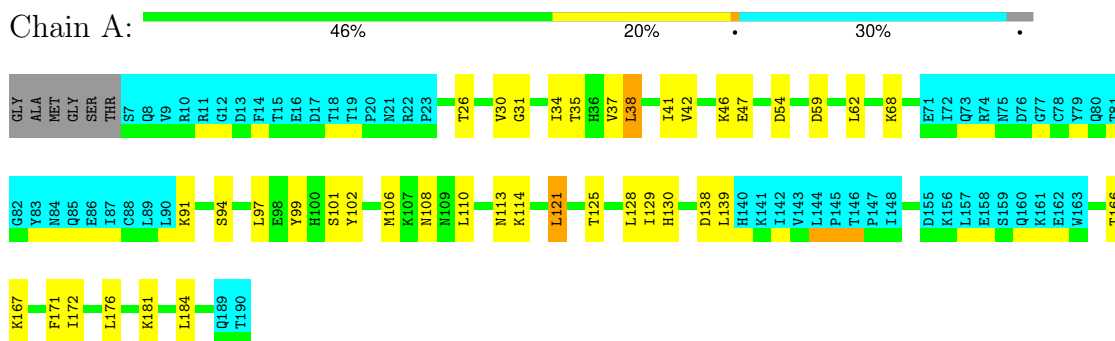• Molecule 1: Interleukin-6
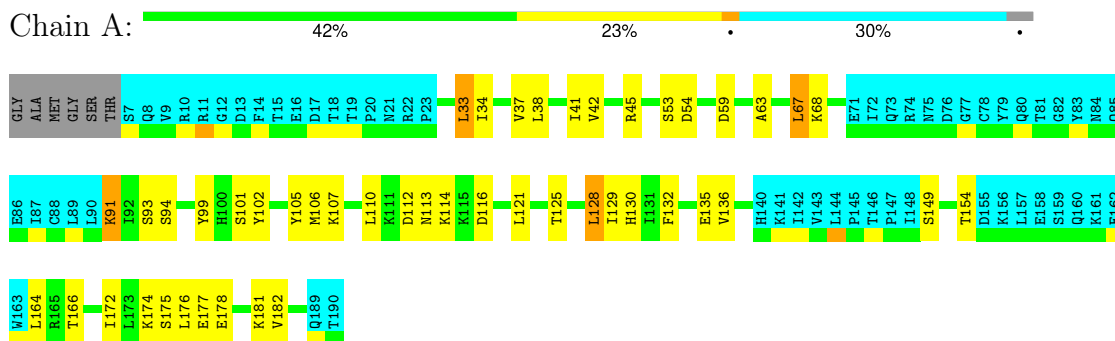
Chain A:

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)

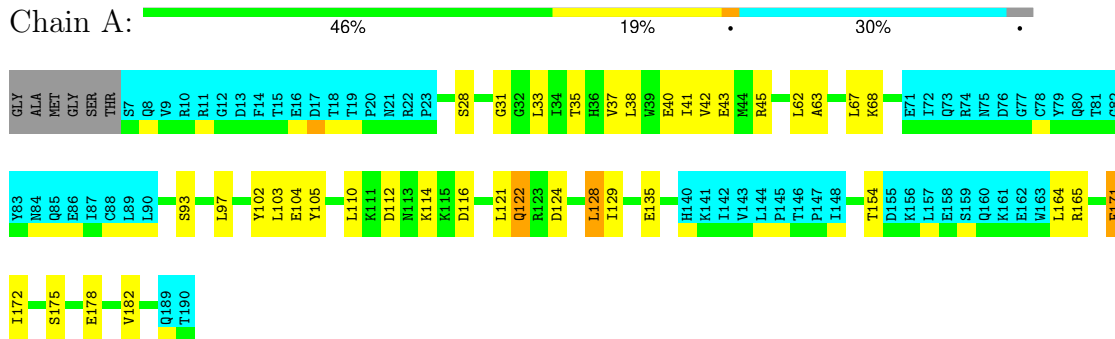• Molecule 1: Interleukin-6

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
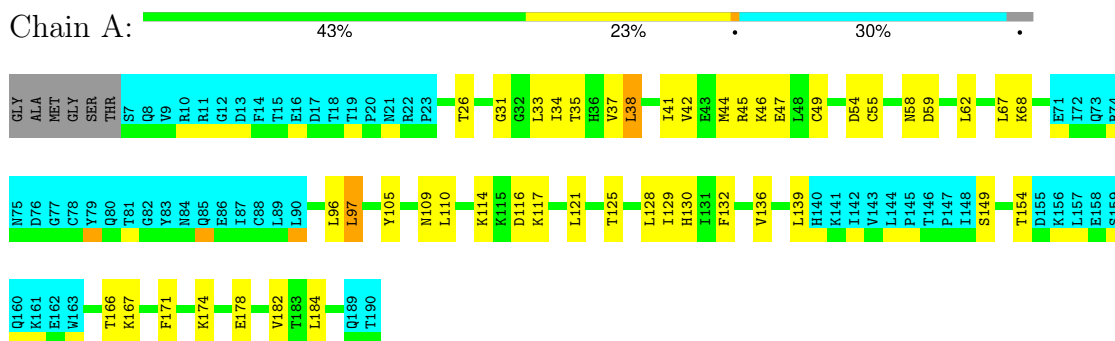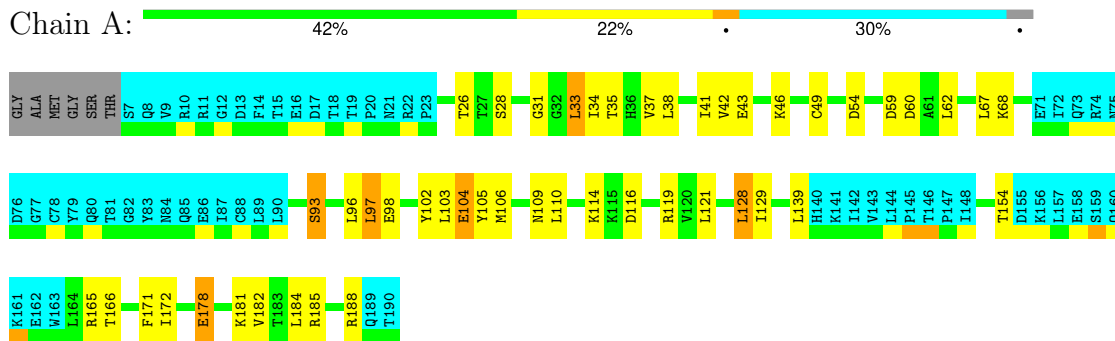
• Molecule 1: Interleukin-6

Chain A: 41% 25% • 30% •

GLY ALA MET GLY SER THR S7 Q8 V9 R10 R11 G12 D13 F14 T15 E16 D17 T18 T19 P20 N21 R22 P23 T27 S28 G31 I34 T35 H36 V37 L38 I41 V42 K46 S53 D54 C55 D59 L62 L67 E71 I72 Q73 R74 N75 D76 G77 C78 Y79 Q80

T81 G82 Y83 N84 Q85 E86 I87 C88 L89 L90 S93 L97 E98 Y99 H100 S101 Y102 L103 E104 Y105 N108 N109 L110 K111 D112 N113 K114 K115 D116 L121 Q122 R123 D124 T125 I129 F132 N133 Q134 E135 V136 K137 D138 L139 H140 K141 I142 V143 L144 P145 T146 P147 I148 S149

L153 T154 D155 K156 L157 E158 S159 Q160 K161 E162 W163 T166 F171 S175 L176 E177 E178 F179 L180 K181 V182 Q189 T190

4.2.27 Score per residue for model 27

• Molecule 1: Interleukin-6

Chain A: 44% 20% • 30% •

GLY ALA MET GLY SER THR S7 Q8 V9 R10 R11 G12 D13 F14 T15 E16 D17 T18 T19 P20 N21 R22 P23 T26 Q29 V30 G31 G32 L33 I34 T35 H36 V37 L38 I41 V42 L48 D54 D59 L62 L67 E71 I72 Q73 R74 N75 D76 C78 Y79 Q80

T81 G82 Y83 N84 Q85 E86 I87 C88 L89 L90 S94 G95 L96 L97 E98 Y99 H100 S101 E104 Y105 M106 L110 N113 K114 K115 D116 T125 L128 I129 H130 I131 F132 E135 V136 L139 H140 K141 I142 V143 L144 P145 T146 P147 I148 D155 K156 L157 E158 S159 Q160 K161

E162 W163 L164 R165 T166 F171 K174 S175 L176 L180 K181 Q189 T190

4.2.28 Score per residue for model 28

• Molecule 1: Interleukin-6

Chain A: 42% 24% • 30% •

GLY ALA MET GLY SER THR S7 Q8 V9 R10 R11 G12 D13 F14 T15 E16 D17 T18 T19 P20 N21 R22 P23 T27 S28 Q29 L33 V37 L38 I41 V42 K46 C49 N50 D54 D60 A61 L62 A63 K68 E71 I72 Q73 R74 N75 D76 G77 C78 Y79 Q80

T81 G82 Y83 N84 Q85 E86 I87 C88 L89 L90 K91 L96 S101 Y102 L103 E104 Y105 M106 K107 N108 N109 L110 K114 K115 D116 K117 A118 Q122 R123 D124 T127 L128 I129 H130 I131 E135 D138 L139 H140 K141 I142 V143 L144 P145 T146 P147 I148 S149 L153 T154 D155 K156

L157 E158 S159 Q160 K161 E162 W163 F171 I172 E178 V182 T183 L184 Q189 T190

4.2.29 Score per residue for model 29

• Molecule 1: Interleukin-6

Chain A:

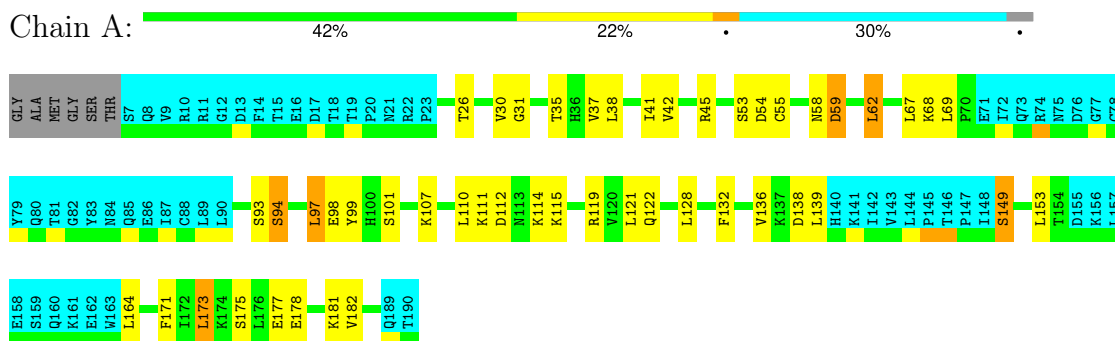### 4.2.30 Score per residue for model 30

• Molecule 1: Interleukin-6

Chain A:

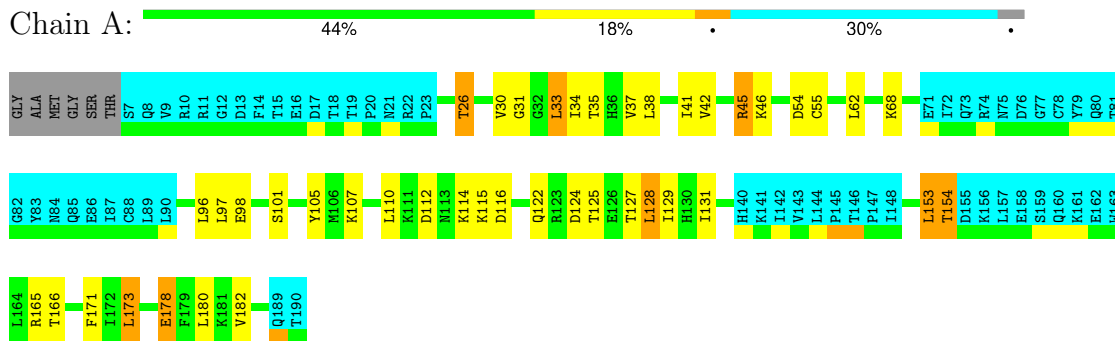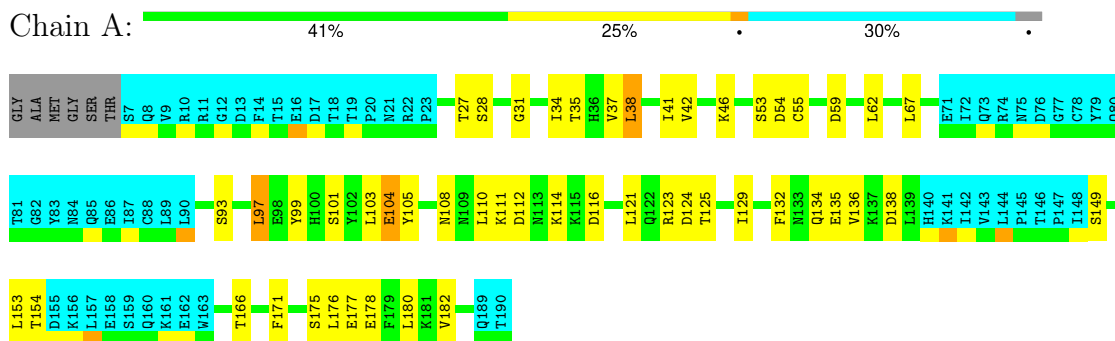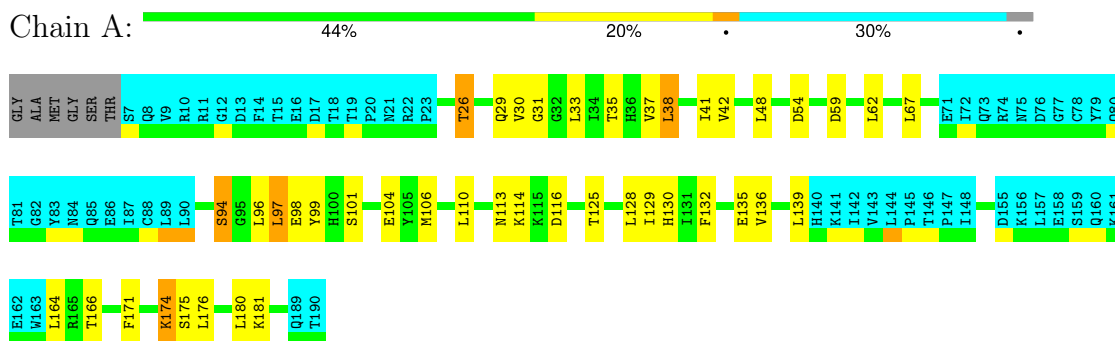### 4.2.31 Score per residue for model 31

• Molecule 1: Interleukin-6

Chain A:

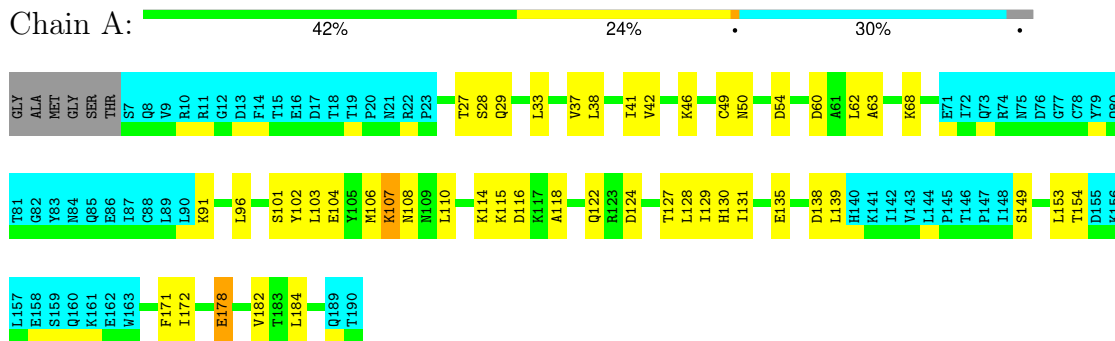### 4.2.32 Score per residue for model 32

• 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:

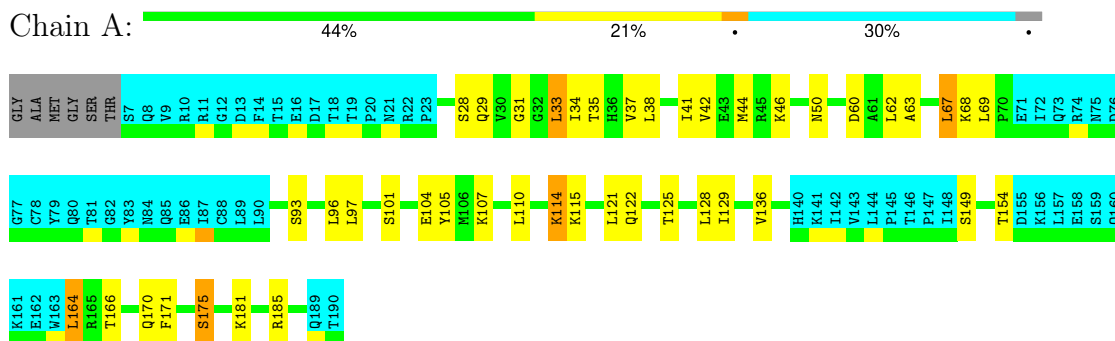### 4.2.37 Score per residue for model 37

• Molecule 1: Interleukin-6

Chain A:

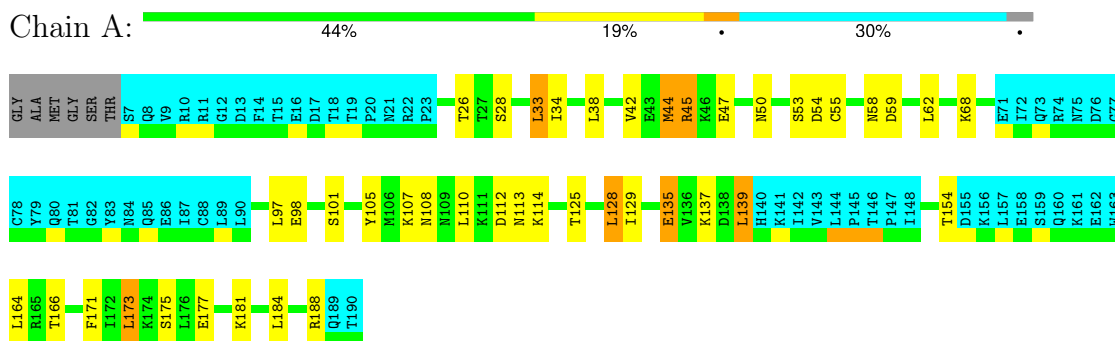### 4.2.38 Score per residue for model 38

• Molecule 1: Interleukin-6

Chain A:

4.2.39 Score per residue for model 39

• Molecule 1: Interleukin-6
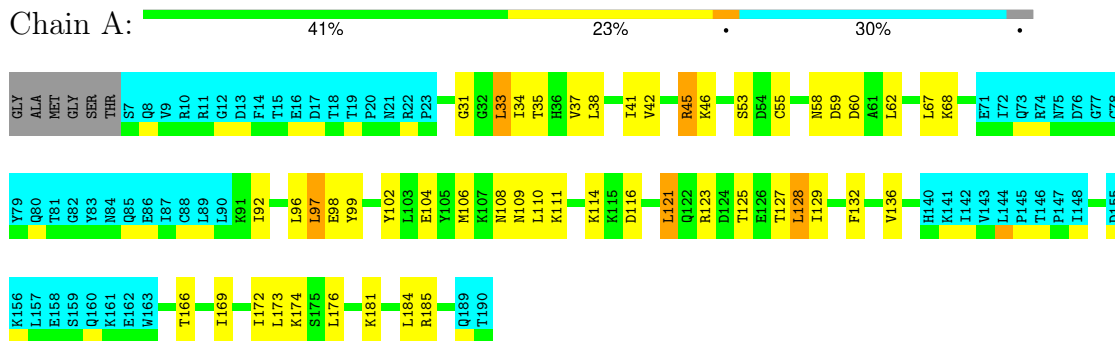
Chain A:

4.2.40 Score per residue for model 40

• Molecule 1: Interleukin-6

Chain A:
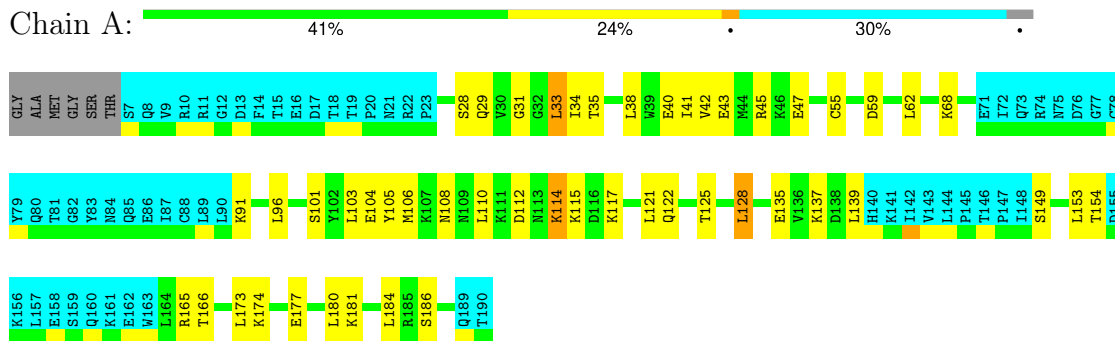
4.2.41　Score per residue for model 41

• Molecule 1: Interleukin-6

Chain A:
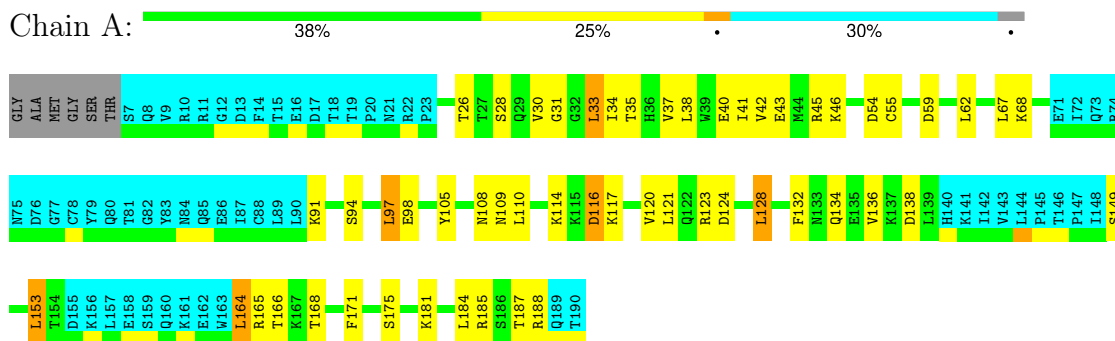
4.2.42　Score per residue for model 42

• Molecule 1: Interleukin-6

Chain A:
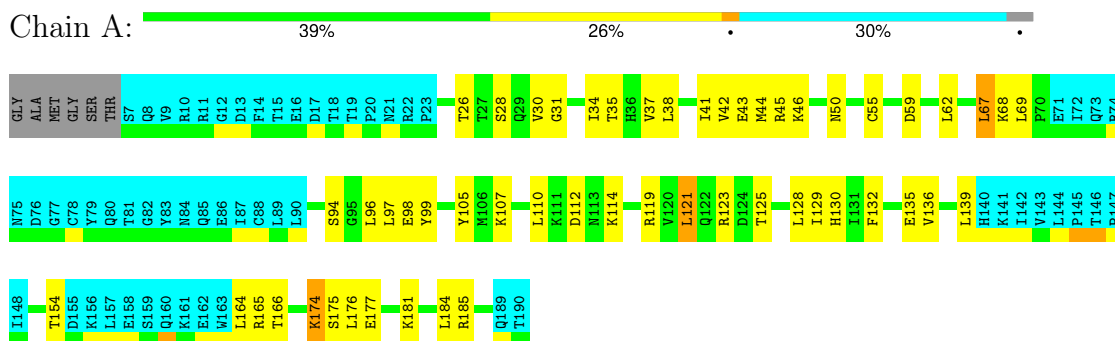
4.2.43　Score per residue for model 43

• Molecule 1: Interleukin-6

Chain A:
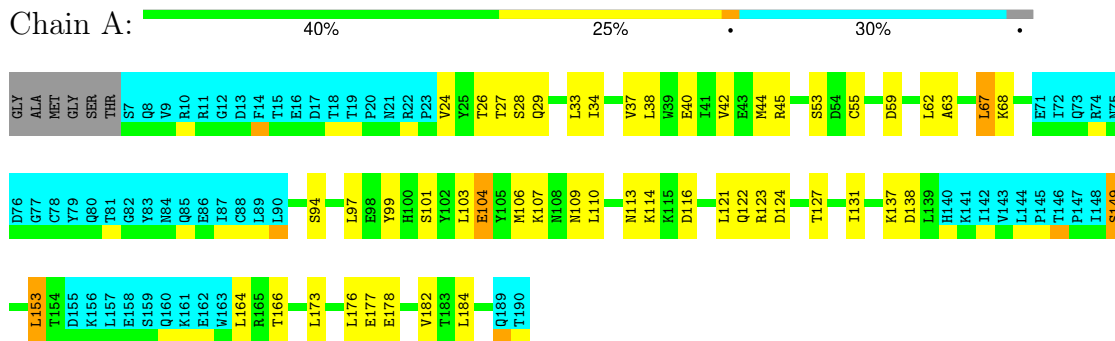
4.2.44 Score per residue for model 44

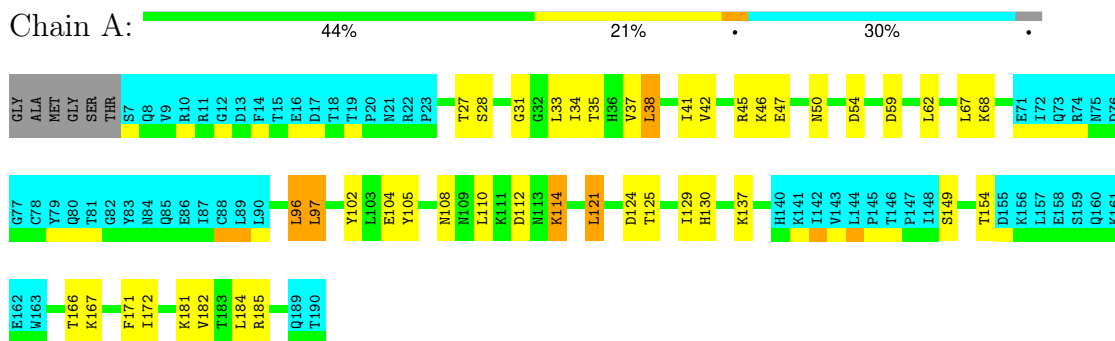• Molecule 1: Interleukin-6

Chain A:
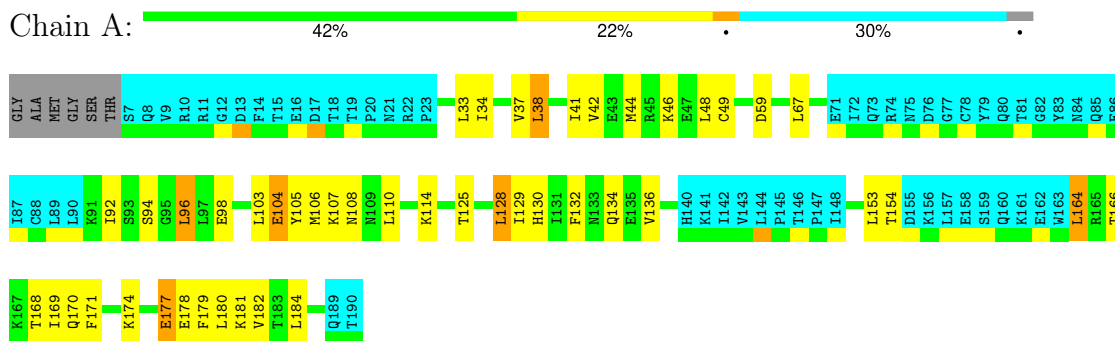
4.2.45 Score per residue for model 45

• Molecule 1: Interleukin-6

Chain A:
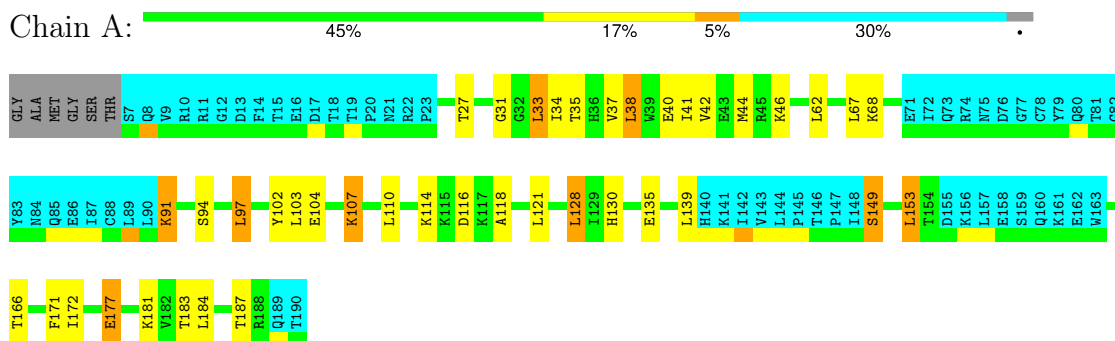
4.2.46 Score per residue for model 46

• 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
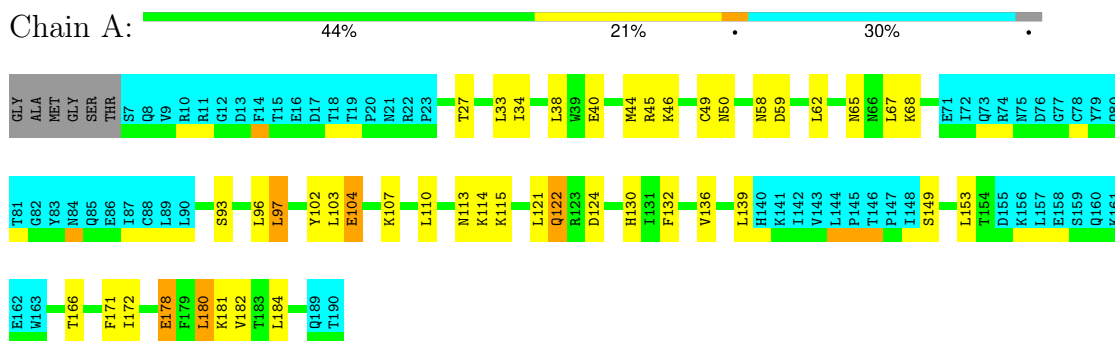
• Molecule 1: Interleukin-6

Chain A:
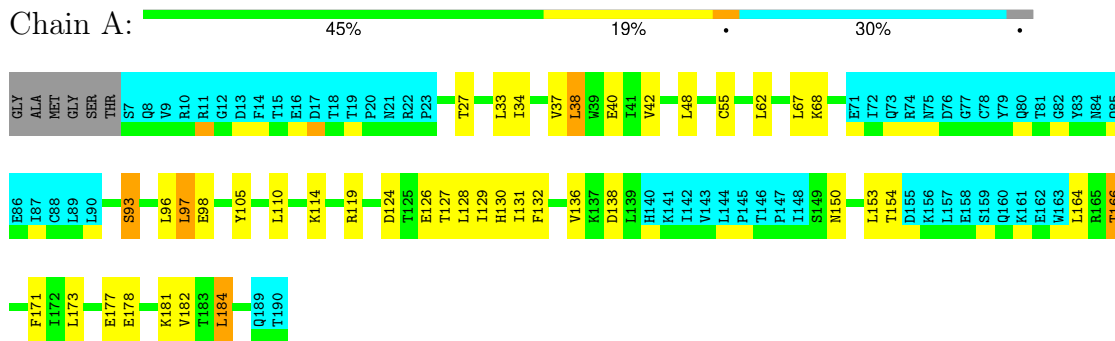
4.2.50 Score per residue for model 50

• Molecule 1: Interleukin-6

Chain A:
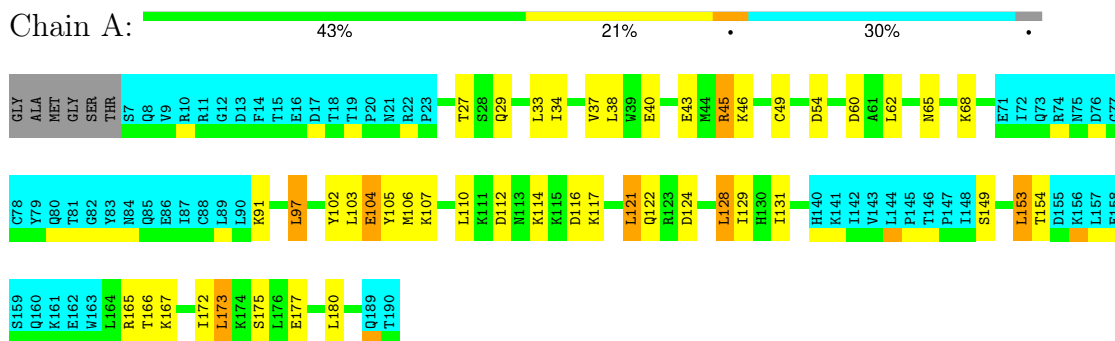
4.2.51 Score per residue for model 51

• Molecule 1: Interleukin-6

Chain A:

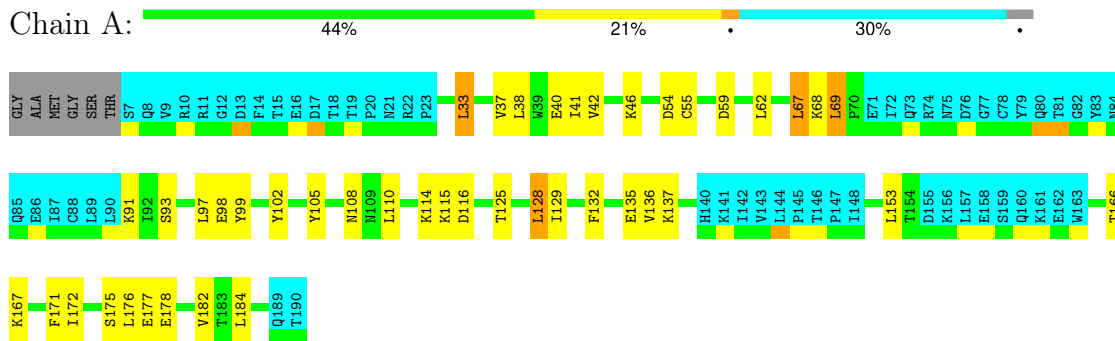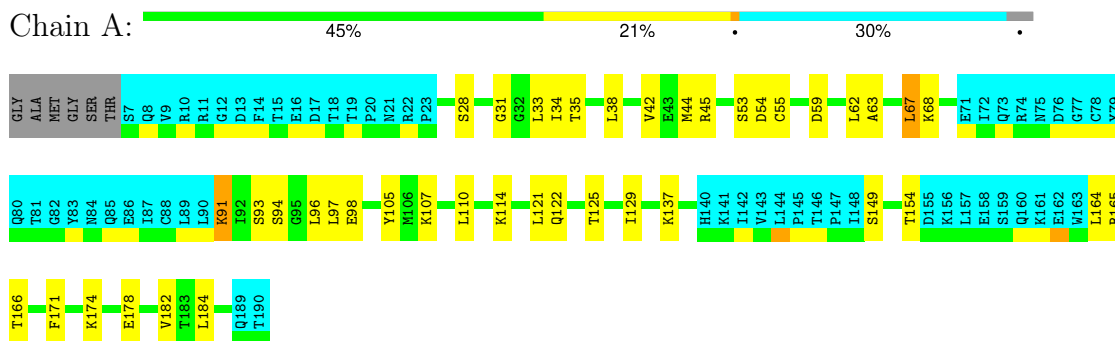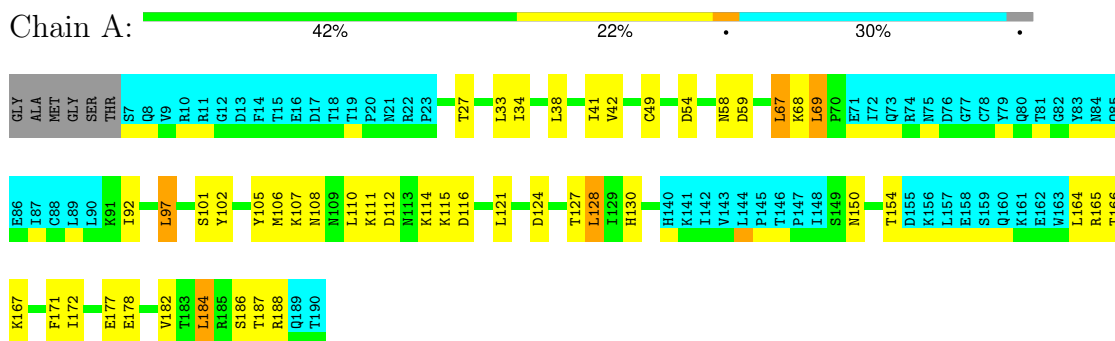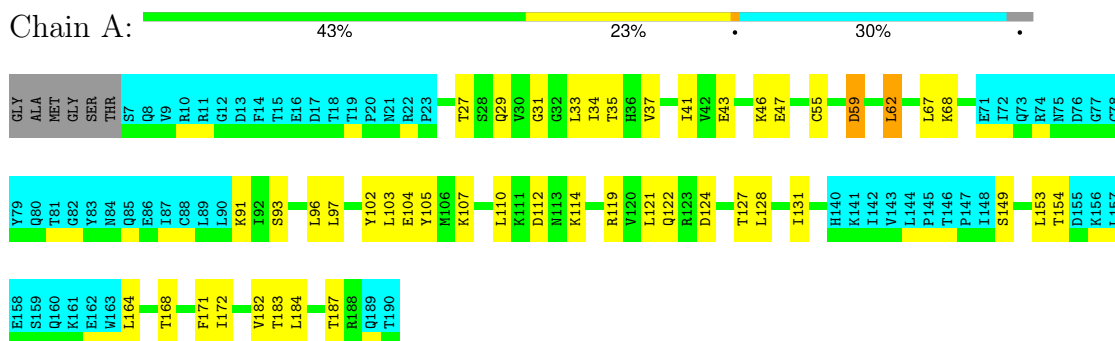### 4.2.52 Score per residue for model 52

• Molecule 1: Interleukin-6

Chain A:
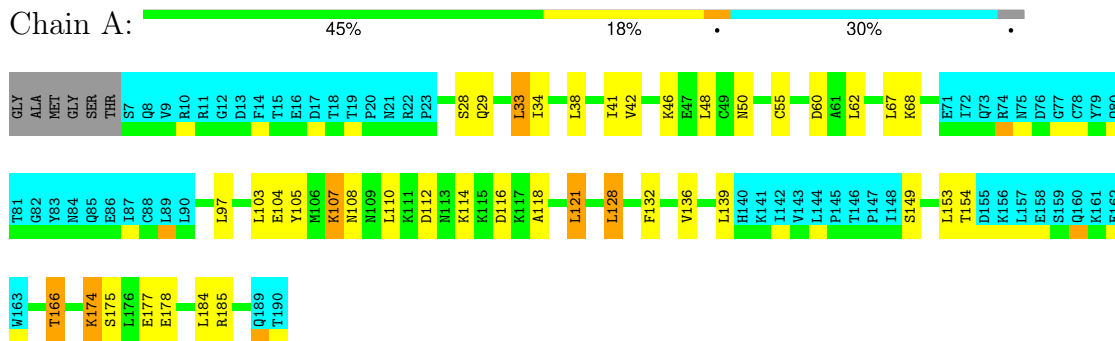
5 Refinement protocol and experimental data overview (i)

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.

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

Continued on next page...

Continued from previous page...

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

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models Worst	Models Total
1:A:184:LEU:O	1:A:184:LEU:HD13	0.55	2.01	5	11
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: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
1:A:69:LEU:HD11	1:A:175:SER:CB	0.49	2.38	3	2

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models Worst	Total
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
1:A:127:THR:O	1:A:131:ILE:HD12	0.44	2.12	7	4

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models Worst	Total
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	13
1:A:69:LEU:HD12	1:A:69:LEU:O	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	2
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:184:LEU:HD13	1:A:184:LEU:O	0.40	2.16	4	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 ⓘ

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	127/190 (67%)	120±2 (94±2%)	7±2 (5±1%)	0±1 (0±0%)	45	81
All	All	6604/9880 (67%)	6225 (94%)	363 (5%)	16 (0%)	45	81

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 ⓘ

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%)	2	28
All	All	6188/9152 (68%)	4814 (78%)	1374 (22%)	2	28

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

Continued on next page...

Continued from previous page...

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	116	ASP	30
1	A	46	LYS	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	45	ARG	21
1	A	101	SER	21
1	A	165	ARG	21
1	A	98	GLU	21
1	A	181	LYS	20
1	A	49	CYS	19
1	A	108	ASN	19
1	A	27	THR	18
1	A	91	LYS	18
1	A	43	GLU	18
1	A	177	GLU	18
1	A	112	ASP	17
1	A	44	MET	17
1	A	175	SER	17
1	A	104	GLU	17
1	A	115	LYS	17
1	A	40	GLU	16
1	A	137	LYS	16
1	A	38	LEU	16
1	A	135	GLU	14
1	A	47	GLU	13
1	A	96	LEU	13
1	A	94	SER	13
1	A	122	GLN	13
1	A	53	SER	13
1	A	111	LYS	12

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Models (Total)
1	A	174	LYS	12
1	A	185	ARG	12
1	A	153	LEU	12
1	A	50	ASN	11
1	A	138	ASP	11
1	A	124	ASP	11
1	A	123	ARG	11
1	A	178	GLU	10
1	A	167	LYS	10
1	A	26	THR	10
1	A	60	ASP	10
1	A	113	ASN	9
1	A	119	ARG	8
1	A	184	LEU	8
1	A	58	ASN	8
1	A	117	LYS	7
1	A	180	LEU	7
1	A	173	LEU	7
1	A	170	GLN	6
1	A	186	SER	6
1	A	109	ASN	6
1	A	69	LEU	4
1	A	37	VAL	4
1	A	188	ARG	3
1	A	126	GLU	3
1	A	154	THR	3
1	A	134	GLN	3
1	A	114	LYS	3
1	A	65	ASN	2
1	A	150	ASN	2
1	A	56	MET	1
1	A	57	ASN	1
1	A	64	GLU	1
1	A	133	ASN	1
1	A	106	MET	1
1	A	127	THR	1
1	A	36	HIS	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 oligosaccharides 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