



Full wwPDB NMR Structure Validation Report ⓘ

Feb 19, 2018 – 12:09 am GMT

PDB ID : 2K0F
Title : Calmodulin complexed with calmodulin-binding peptide from smooth muscle myosin light chain kinase
Authors : Gsponer, J.; Christodoulou, J.; Cavalli, A.; Bui, J.M.; Richter, B.; Dobson, C.M.; Vendruscolo, M.
Deposited on : 2008-02-02

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 ⓘ 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
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)
RCI : v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV : Wang et al. (2010)
ShiftChecker : trunk30686
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk30686

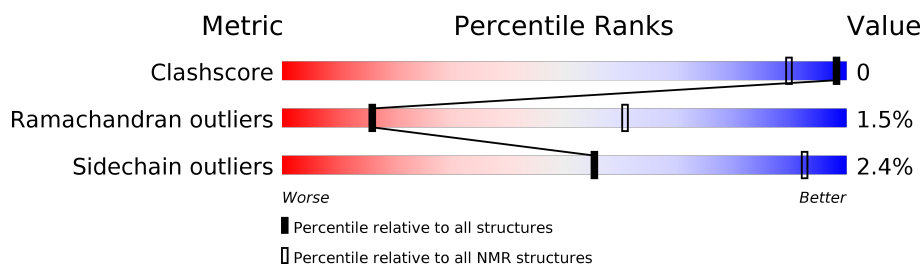
1 Overall quality at a glance

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	136279	12091
Ramachandran outliers	132675	10835
Sidechain outliers	132484	10811

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	148	 84% 11% . .
2	B	19	 63% 21% 16%

2 Ensemble composition and analysis

This entry contains 160 models. Model 54 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative.

The following residues are included in the computation of the global validation metrics.

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:3-A:142, B:1-B:16 (156)	0.80	54

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 13 clusters and 7 single-model clusters were found.

Cluster number	Models
1	2, 4, 6, 7, 8, 11, 12, 14, 16, 18, 20, 22, 24, 28, 29, 30, 31, 32, 34, 36, 38, 40, 42, 44, 45, 46, 50, 52, 54, 56, 60, 61, 66, 70, 74, 76, 82, 86, 88, 92, 98, 102, 104, 105, 106, 108, 114, 116, 118, 120, 121, 122, 124, 126, 130, 132, 134, 135, 136, 138, 140, 142, 148, 152, 154, 156, 158, 159
2	1, 3, 9, 15, 17, 21, 23, 25, 27, 33, 37, 39, 41, 43, 53, 57, 59, 63, 69, 72, 75, 77, 79, 85, 87, 93, 95, 101, 109, 111, 117, 119, 125, 127, 133, 141, 143, 149
3	26, 62, 78, 80, 84, 96, 100, 112, 128, 144, 160
4	35, 47, 51, 67, 83, 99, 115, 131, 147
5	49, 65, 81, 97, 113, 129, 145
6	5, 13, 19, 110
7	55, 71, 103
8	58, 90, 94
9	139, 155
10	91, 107
11	137, 153
12	48, 64
13	68, 150
Single-model clusters	10; 73; 89; 123; 146; 151; 157

3 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 2494 atoms, of which 1213 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called calmodulin.

Mol	Chain	Residues	Atoms						Trace
1	A	142	Total	C	H	N	O	S	0
			2168	687	1047	180	245	9	

- Molecule 2 is a protein called 19-mer peptide from Myosin light chain kinase.

Mol	Chain	Residues	Atoms					Trace
2	B	19	Total	C	H	N	O	0
			322	95	166	37	24	

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	9	HIS	ASN	ENGINEERED	UNP Q15746

- Molecule 3 is CALCIUM ION (three-letter code: CA) (formula: Ca).

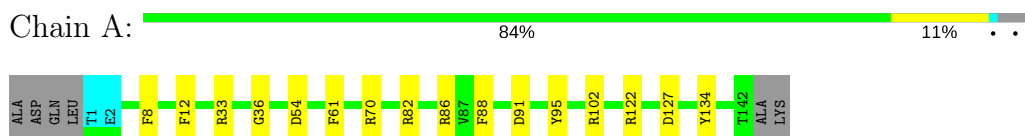
Mol	Chain	Residues	Atoms	
3	A	4	Total	Ca
			4	4

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: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase

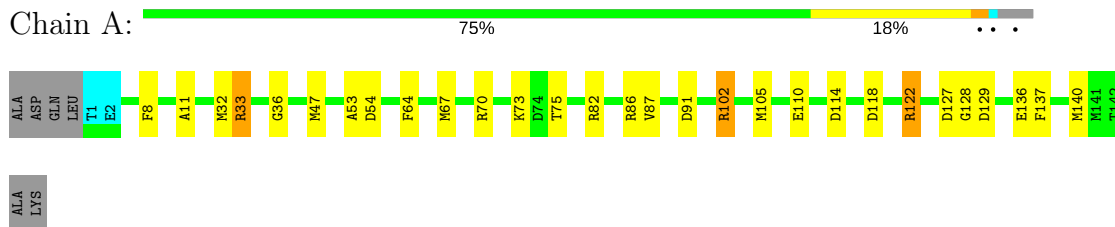


4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

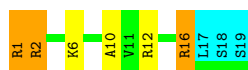
4.2.1 Score per residue for model 1

- Molecule 1: calmodulin



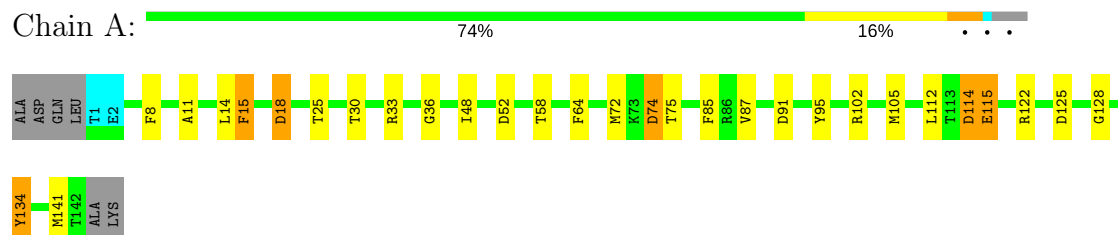
- Molecule 2: 19-mer peptide from Myosin light chain kinase





4.2.2 Score per residue for model 2

- Molecule 1: calmodulin

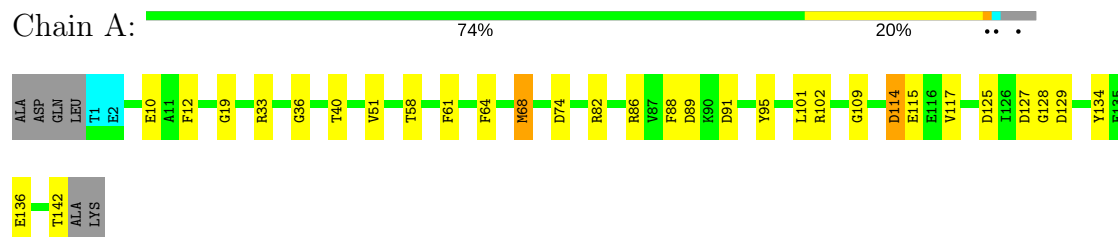


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.3 Score per residue for model 3

- Molecule 1: calmodulin

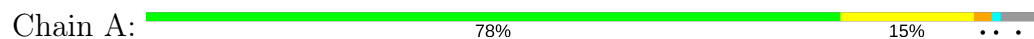


- Molecule 2: 19-mer peptide from Myosin light chain kinase



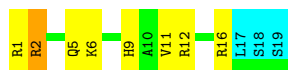
4.2.4 Score per residue for model 4

- Molecule 1: calmodulin



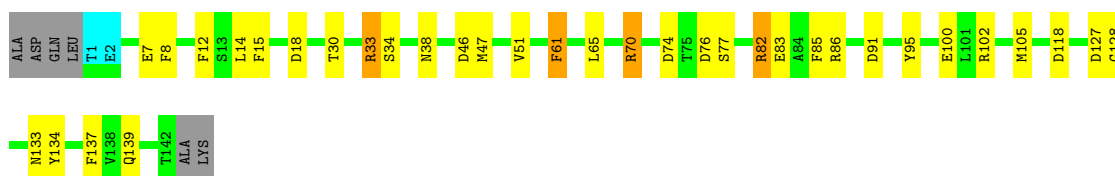


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.5 Score per residue for model 5

- Molecule 1: calmodulin

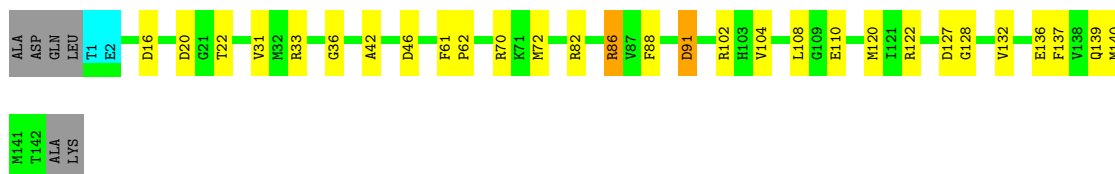
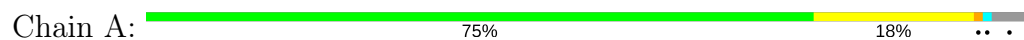


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.6 Score per residue for model 6

- Molecule 1: calmodulin

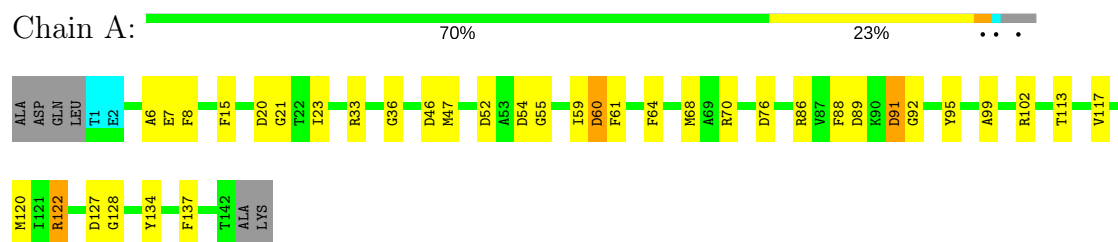


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.7 Score per residue for model 7

- Molecule 1: calmodulin

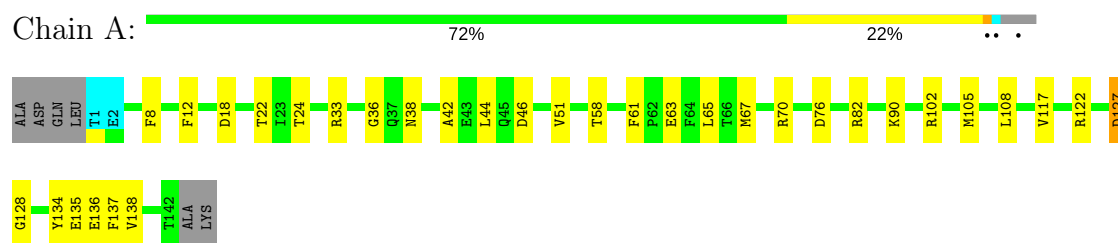


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.8 Score per residue for model 8

- Molecule 1: calmodulin

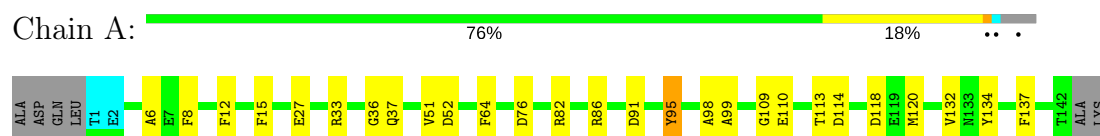


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.9 Score per residue for model 9

- Molecule 1: calmodulin

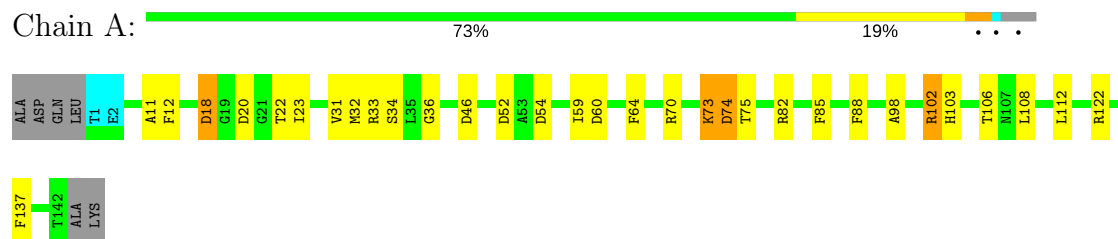


- Molecule 2: 19-mer peptide from Myosin light chain kinase

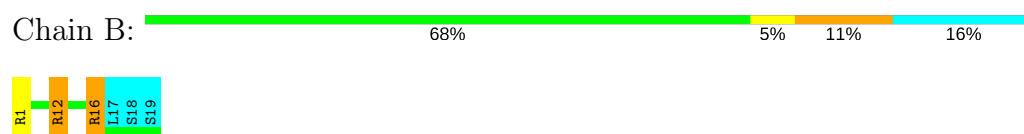


4.2.10 Score per residue for model 10

- Molecule 1: calmodulin

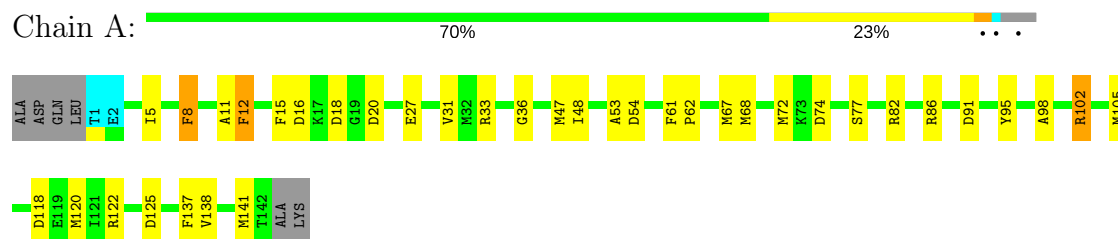


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.11 Score per residue for model 11

- Molecule 1: calmodulin

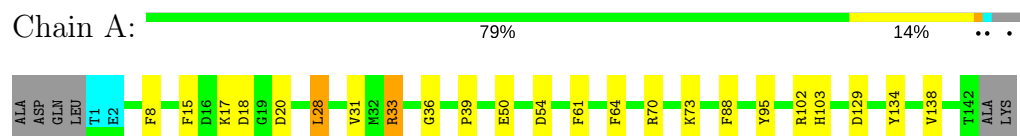


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.12 Score per residue for model 12

- Molecule 1: calmodulin

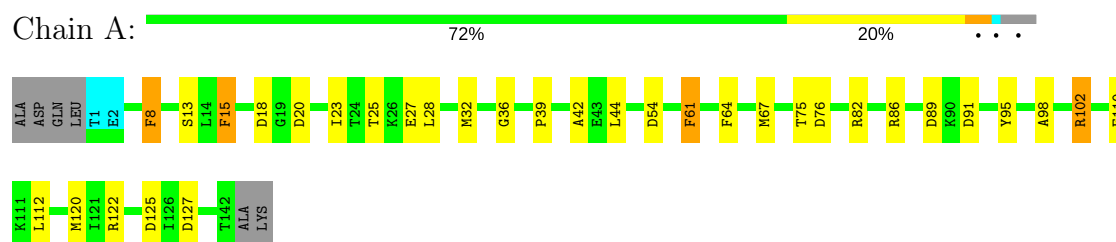


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.13 Score per residue for model 13

- Molecule 1: calmodulin

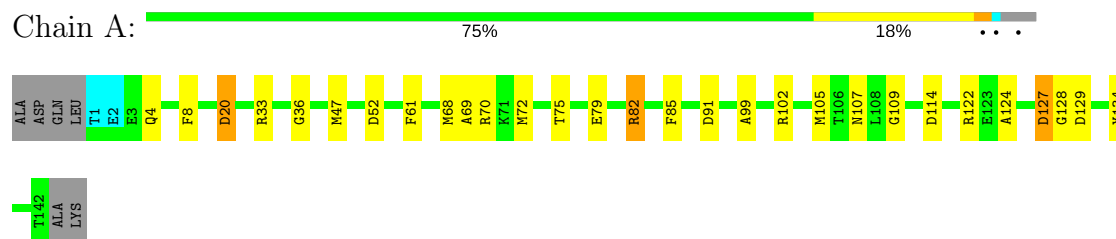


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.14 Score per residue for model 14

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase





4.2.15 Score per residue for model 15

- Molecule 1: calmodulin

Chain A: 79% 15% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

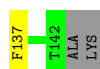
Chain B: 53% 26% 5% 16%



4.2.16 Score per residue for model 16

- Molecule 1: calmodulin

Chain A: 74% 18% ...



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 53% 16% 16% 16%



4.2.17 Score per residue for model 17

- Molecule 1: calmodulin

Chain A: 78% 16% ..

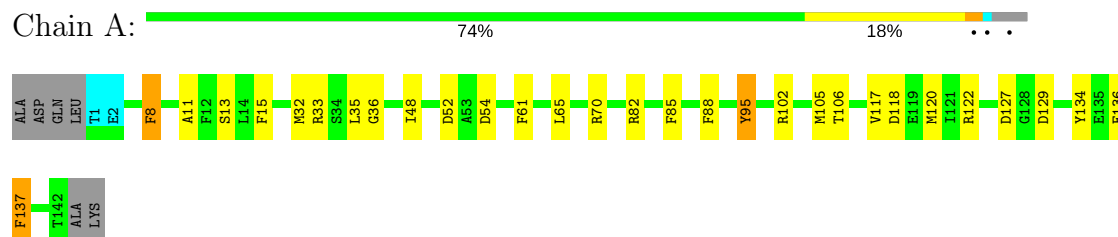


- Molecule 2: 19-mer peptide from Myosin light chain kinase

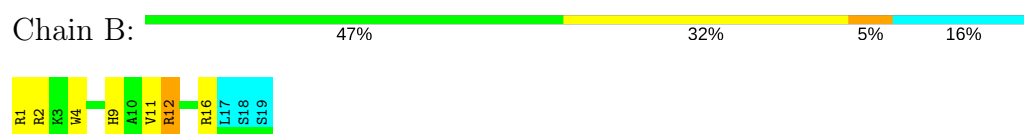


4.2.18 Score per residue for model 18

- Molecule 1: calmodulin

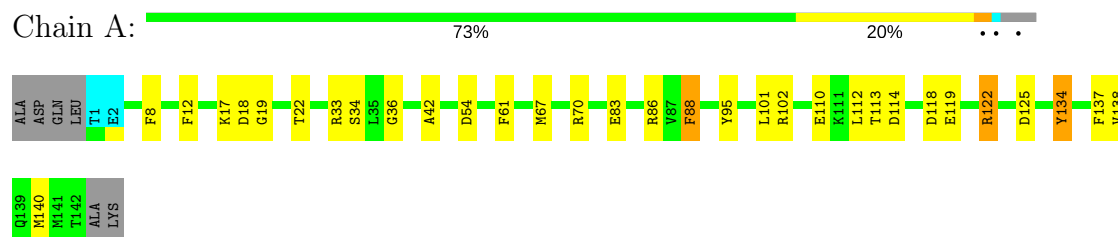


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.19 Score per residue for model 19

- Molecule 1: calmodulin




- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.20 Score per residue for model 20

- Molecule 1: calmodulin

Chain A: 



- Molecule 2: 19-mer peptide from Myosin light chain kinase

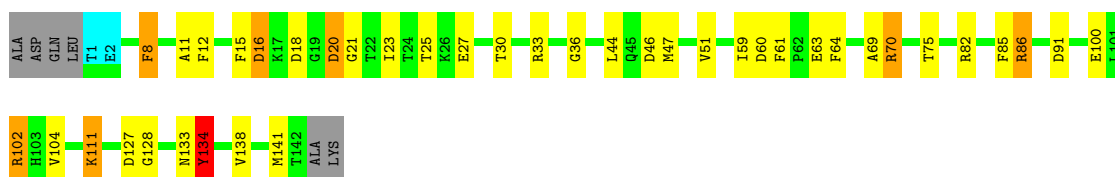
Chain B: 



4.2.21 Score per residue for model 21

- Molecule 1: calmodulin

Chain A: 



- Molecule 2: 19-mer peptide from Myosin light chain kinase

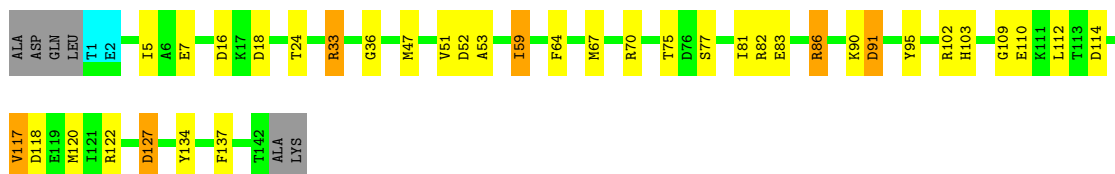
Chain B: 



4.2.22 Score per residue for model 22

- Molecule 1: calmodulin

Chain A: 



- Molecule 2: 19-mer peptide from Myosin light chain kinase

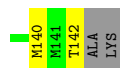
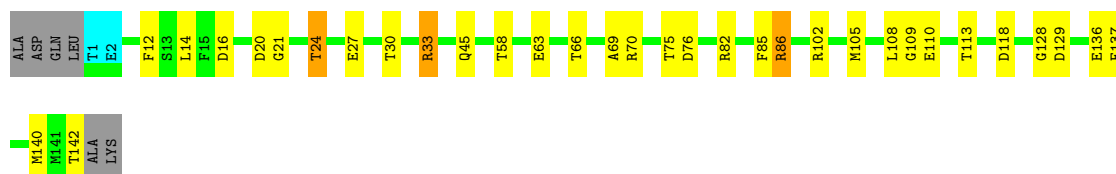
Chain B: 



4.2.23 Score per residue for model 23

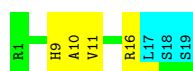
- Molecule 1: calmodulin

Chain A: 72% 20% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

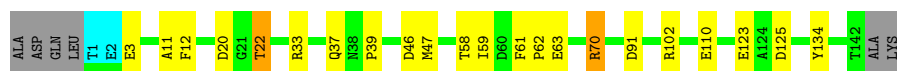
Chain B: 63% 21% 16%



4.2.24 Score per residue for model 24

- Molecule 1: calmodulin

Chain A: 80% 14% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

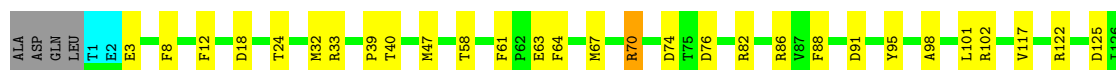
Chain B: 63% 16% 5% 16%

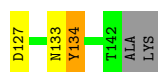


4.2.25 Score per residue for model 25

- Molecule 1: calmodulin

Chain A: 73% 20% ..





- Molecule 2: 19-mer peptide from Myosin light chain kinase

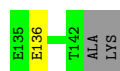
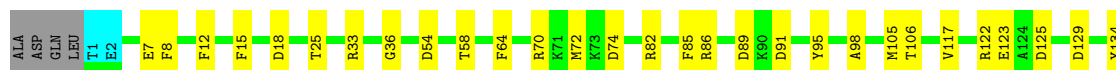
Chain B: 63% 21% 16%



4.2.26 Score per residue for model 26

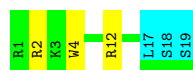
- Molecule 1: calmodulin

Chain A: 74% 20% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 68% 16% 16%



4.2.27 Score per residue for model 27

- Molecule 1: calmodulin

Chain A: 79% 14% ..



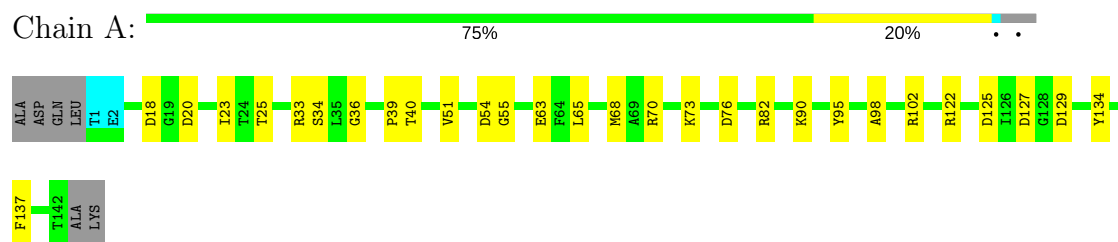
- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 58% 21% 5% 16%



4.2.28 Score per residue for model 28

- Molecule 1: calmodulin

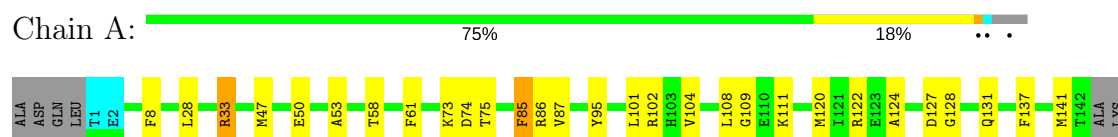


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.29 Score per residue for model 29

- Molecule 1: calmodulin

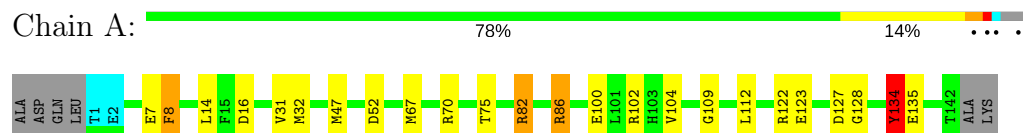


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.30 Score per residue for model 30

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase

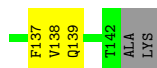




4.2.31 Score per residue for model 31

- Molecule 1: calmodulin

Chain A: 72% 22% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

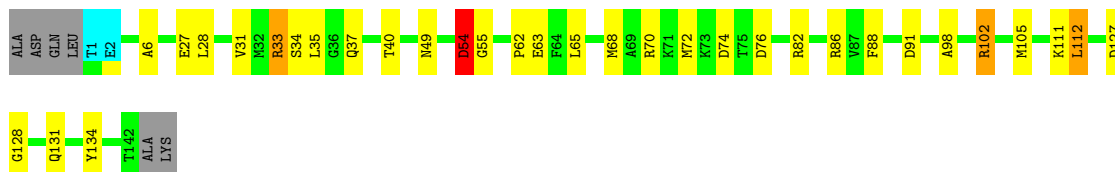
Chain B: 68% 11% 5% 16%



4.2.32 Score per residue for model 32

- Molecule 1: calmodulin

Chain A: 72% 20% ...



- Molecule 2: 19-mer peptide from Myosin light chain kinase

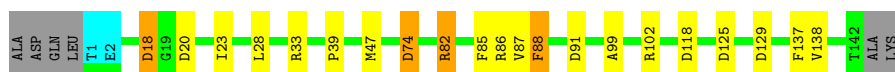
Chain B: 53% 32% 16%



4.2.33 Score per residue for model 33

- Molecule 1: calmodulin

Chain A: 80% 11% ...

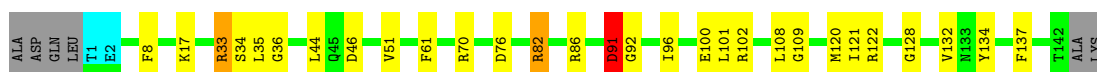


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.34 Score per residue for model 34

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.35 Score per residue for model 35

- Molecule 1: calmodulin

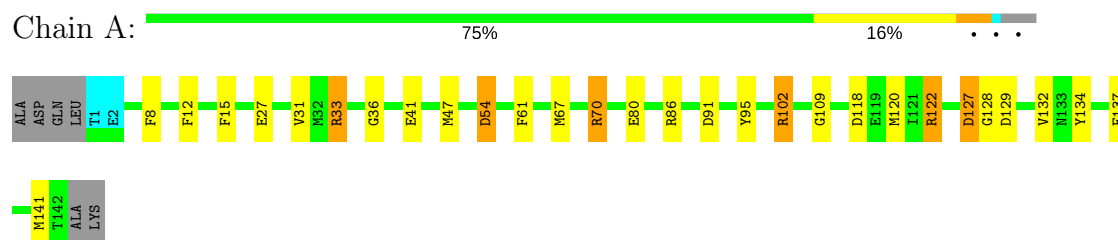


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.36 Score per residue for model 36

- Molecule 1: calmodulin

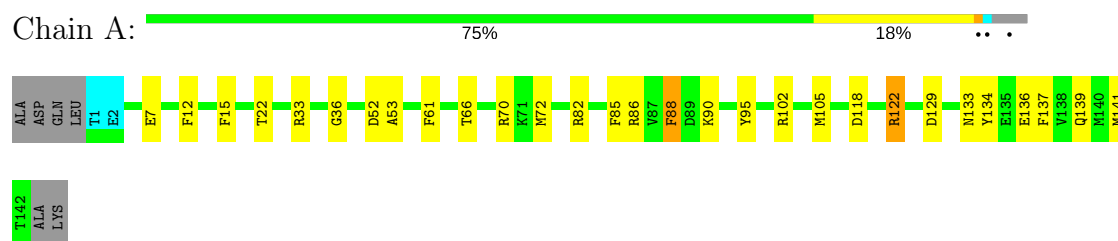


- Molecule 2: 19-mer peptide from Myosin light chain kinase

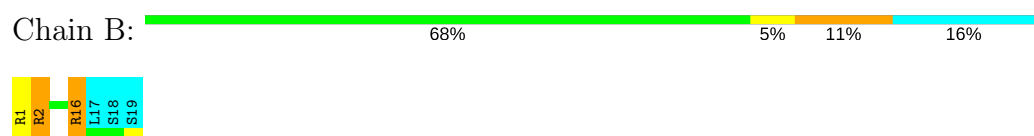


4.2.37 Score per residue for model 37

- Molecule 1: calmodulin

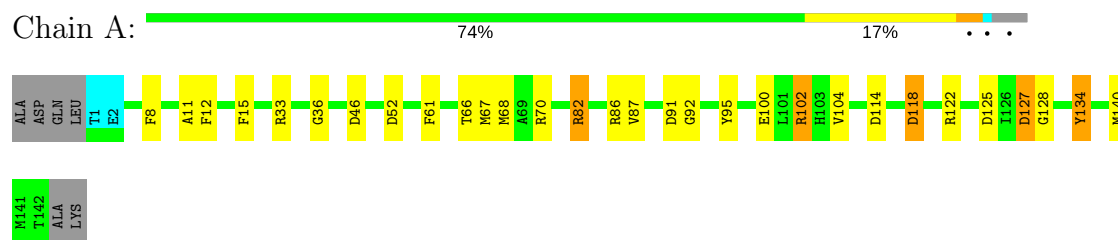


- Molecule 2: 19-mer peptide from Myosin light chain kinase

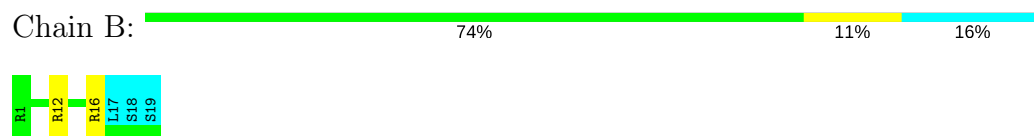


4.2.38 Score per residue for model 38

- Molecule 1: calmodulin

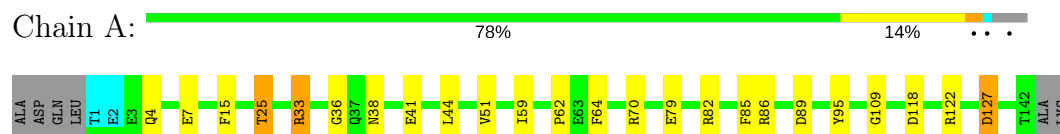


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.39 Score per residue for model 39

- Molecule 1: calmodulin

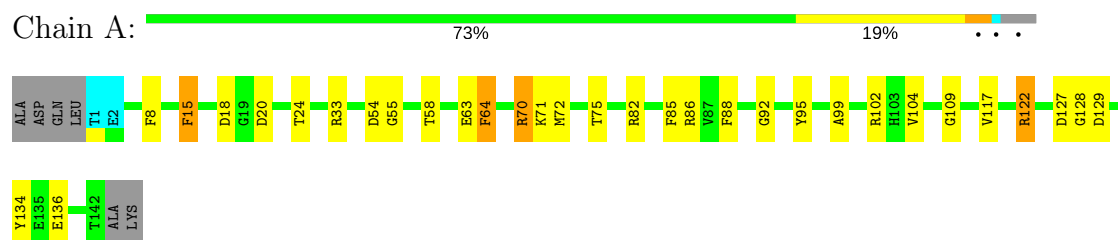


- Molecule 2: 19-mer peptide from Myosin light chain kinase

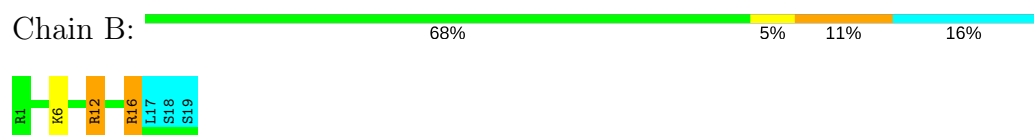


4.2.40 Score per residue for model 40

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.41 Score per residue for model 41

- Molecule 1: calmodulin



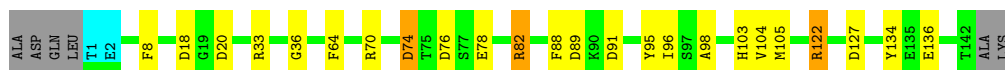
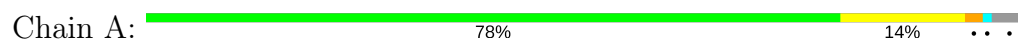


- Molecule 2: 19-mer peptide from Myosin light chain kinase

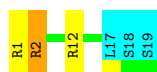


4.2.42 Score per residue for model 42

- Molecule 1: calmodulin

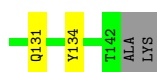
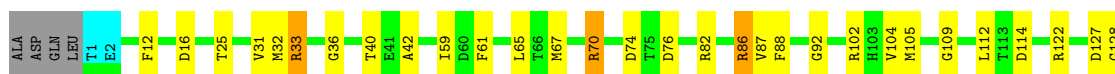


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.43 Score per residue for model 43

- Molecule 1: calmodulin

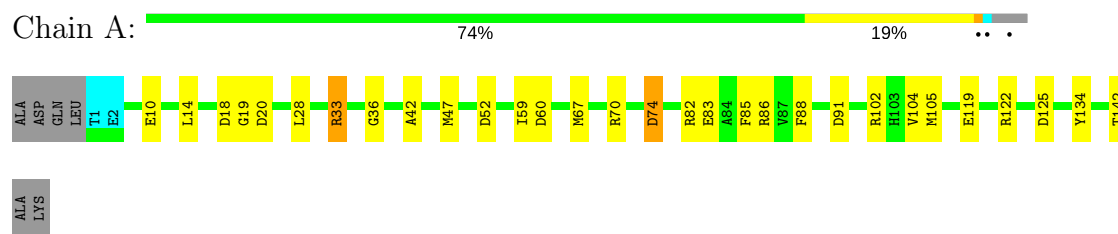


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.44 Score per residue for model 44

- Molecule 1: calmodulin

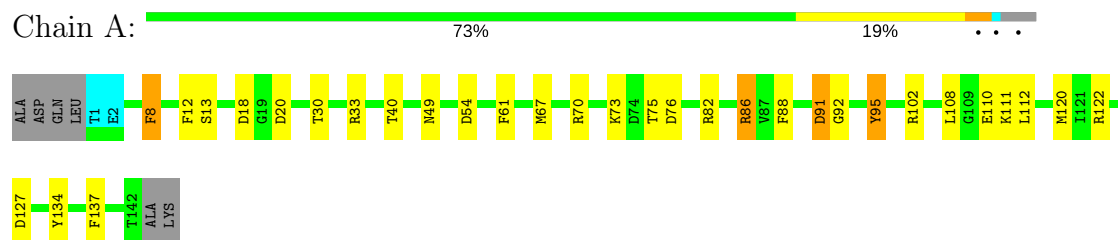


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.45 Score per residue for model 45

- Molecule 1: calmodulin

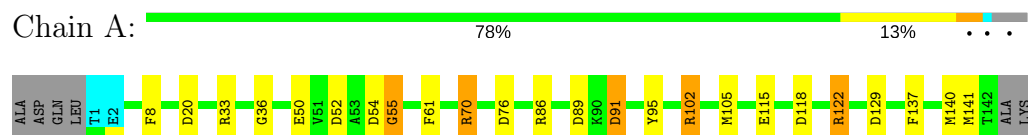


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.46 Score per residue for model 46

- Molecule 1: calmodulin

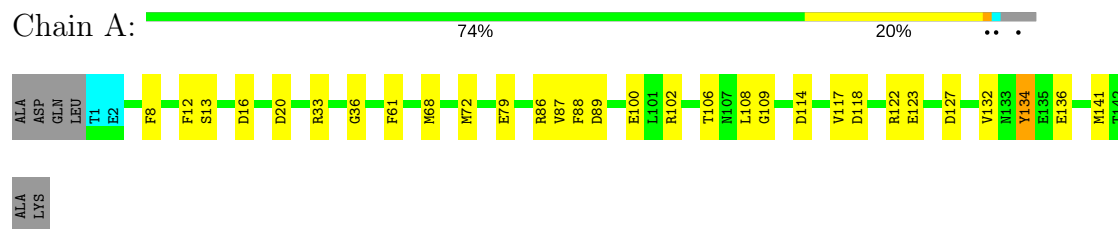


- Molecule 2: 19-mer peptide from Myosin light chain kinase

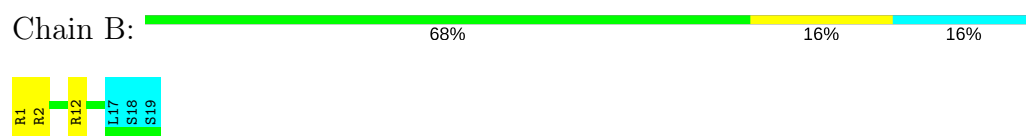


4.2.47 Score per residue for model 47

- Molecule 1: calmodulin

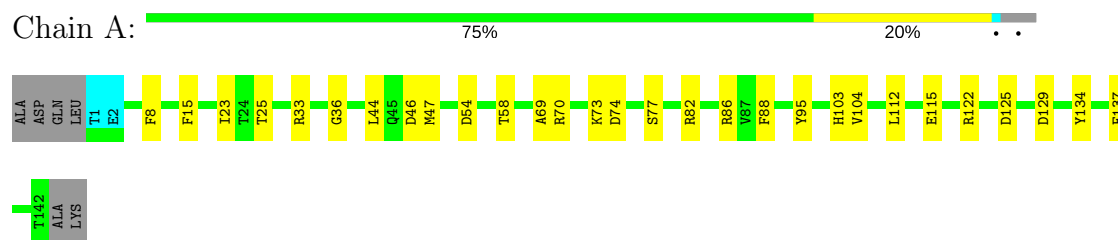


- Molecule 2: 19-mer peptide from Myosin light chain kinase

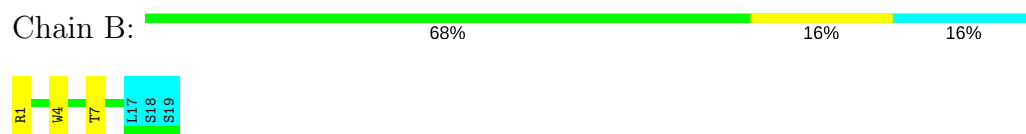


4.2.48 Score per residue for model 48

- Molecule 1: calmodulin




- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.49 Score per residue for model 49

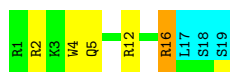
- Molecule 1: calmodulin

Chain A: 



- Molecule 2: 19-mer peptide from Myosin light chain kinase

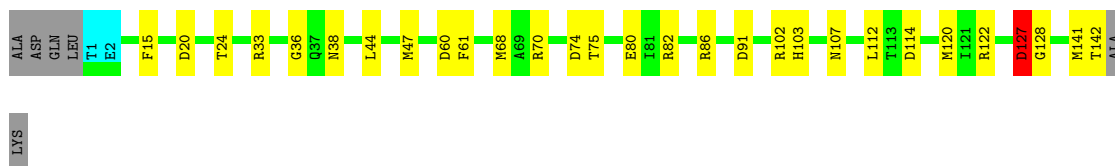
Chain B: 



4.2.50 Score per residue for model 50

- Molecule 1: calmodulin

Chain A: 



- Molecule 2: 19-mer peptide from Myosin light chain kinase

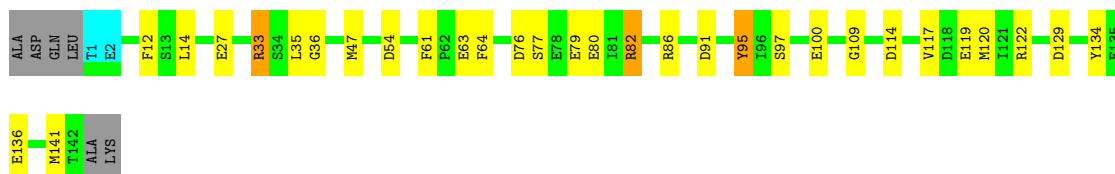
Chain B: 



4.2.51 Score per residue for model 51

- Molecule 1: calmodulin

Chain A: 



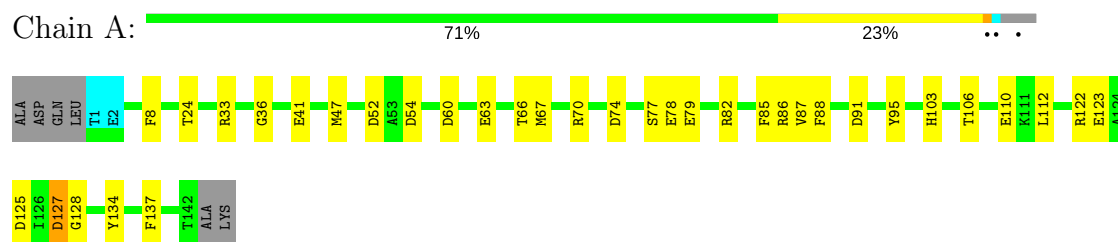
- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 

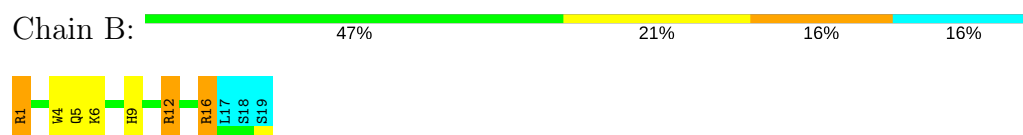


4.2.52 Score per residue for model 52

- Molecule 1: calmodulin

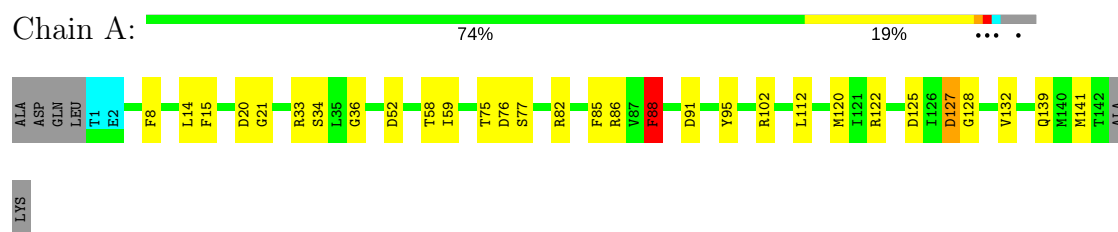


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.53 Score per residue for model 53

- Molecule 1: calmodulin

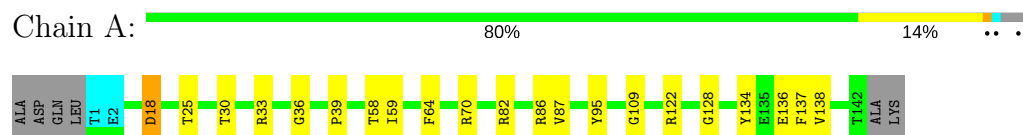


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.54 Score per residue for model 54 (medoid)

- Molecule 1: calmodulin

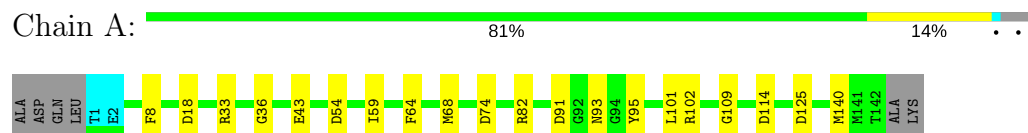


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.55 Score per residue for model 55

- Molecule 1: calmodulin

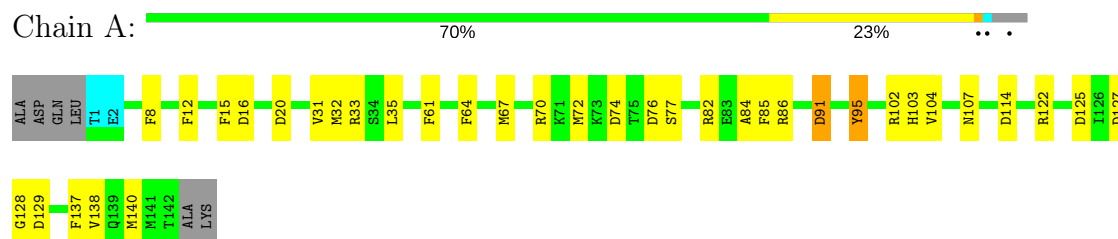


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.56 Score per residue for model 56

- Molecule 1: calmodulin

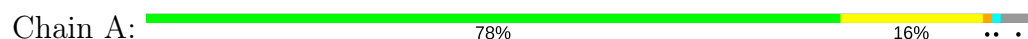


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.57 Score per residue for model 57

- Molecule 1: calmodulin



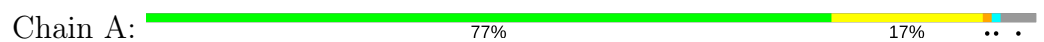


- Molecule 2: 19-mer peptide from Myosin light chain kinase

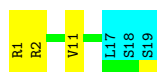


4.2.58 Score per residue for model 58

- Molecule 1: calmodulin

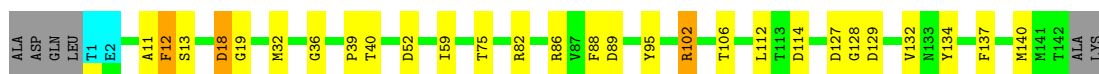


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.59 Score per residue for model 59

- Molecule 1: calmodulin



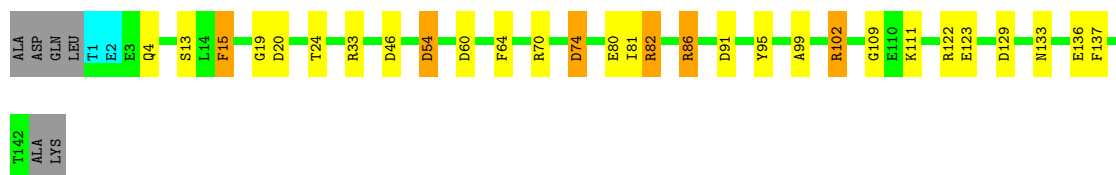
- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.60 Score per residue for model 60

- Molecule 1: calmodulin



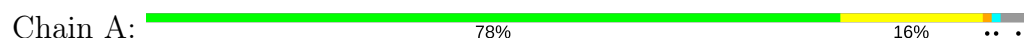


- Molecule 2: 19-mer peptide from Myosin light chain kinase

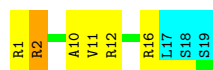


4.2.61 Score per residue for model 61

- Molecule 1: calmodulin

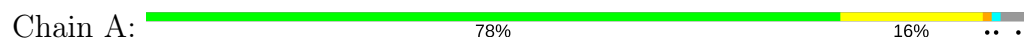


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.62 Score per residue for model 62

- Molecule 1: calmodulin

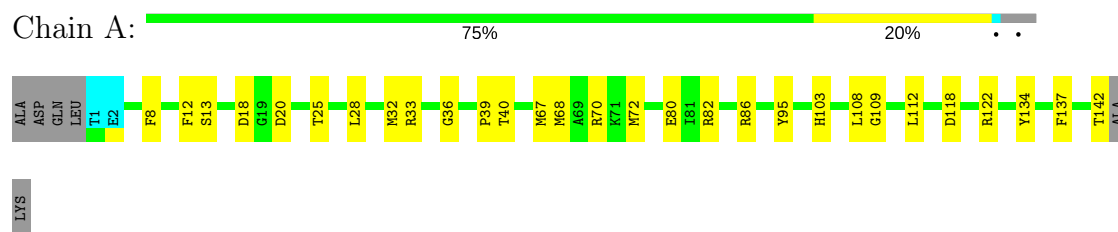


- Molecule 2: 19-mer peptide from Myosin light chain kinase

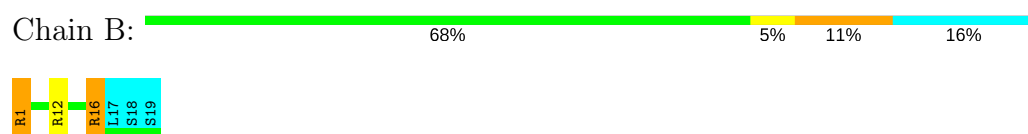


4.2.63 Score per residue for model 63

- Molecule 1: calmodulin

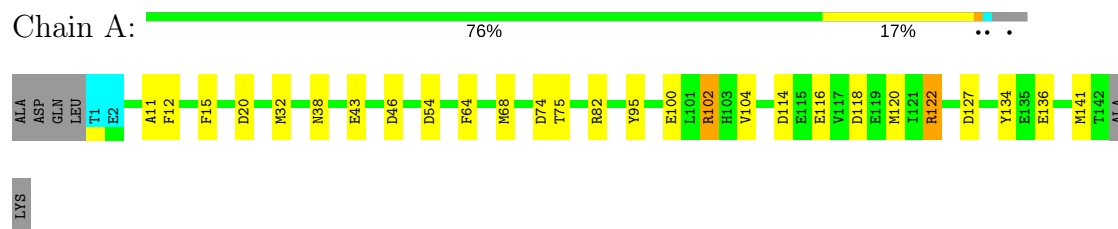


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.64 Score per residue for model 64

- Molecule 1: calmodulin

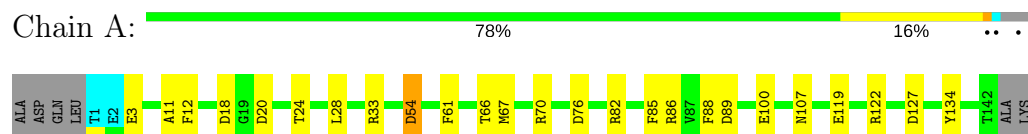


- Molecule 2: 19-mer peptide from Myosin light chain kinase

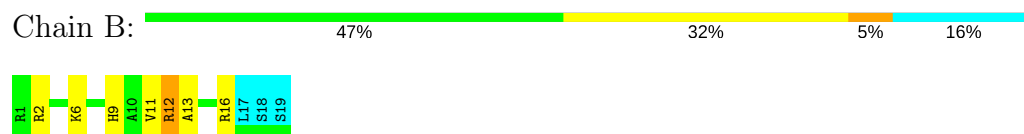


4.2.65 Score per residue for model 65

- Molecule 1: calmodulin

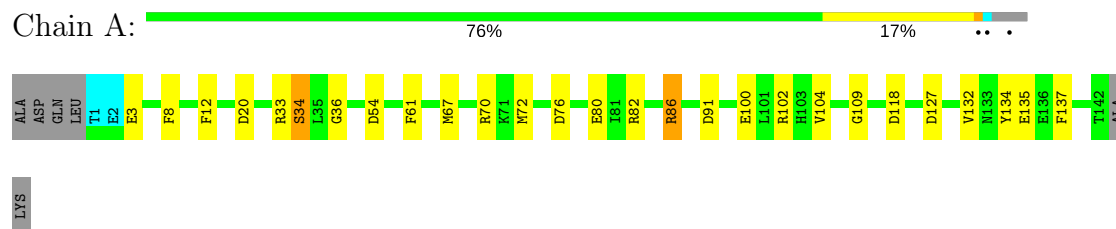


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.66 Score per residue for model 66

- Molecule 1: calmodulin

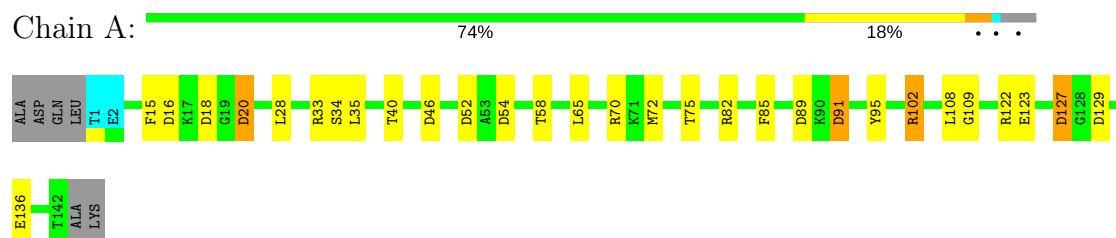


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.67 Score per residue for model 67

- Molecule 1: calmodulin




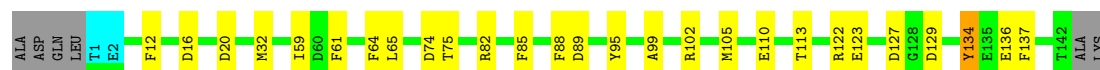
- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.68 Score per residue for model 68

- Molecule 1: calmodulin

Chain A: 



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 



4.2.69 Score per residue for model 69

- Molecule 1: calmodulin

Chain A: 




- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 



4.2.70 Score per residue for model 70

- Molecule 1: calmodulin

Chain A: 



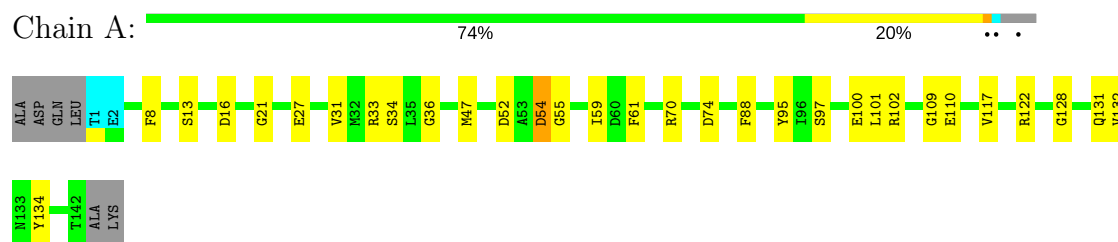
- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 



4.2.71 Score per residue for model 71

- Molecule 1: calmodulin

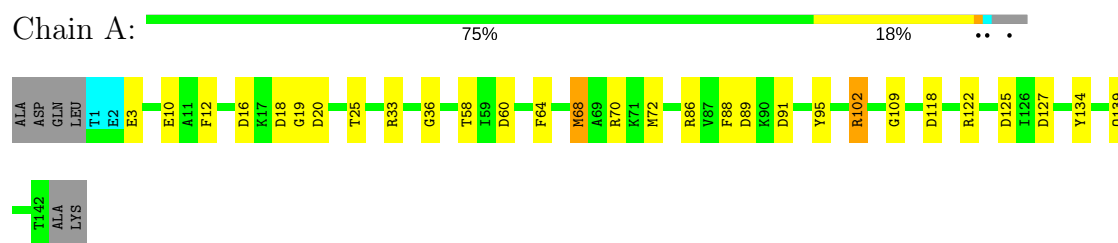


- Molecule 2: 19-mer peptide from Myosin light chain kinase

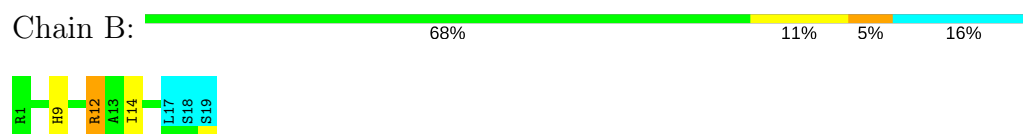


4.2.72 Score per residue for model 72

- Molecule 1: calmodulin

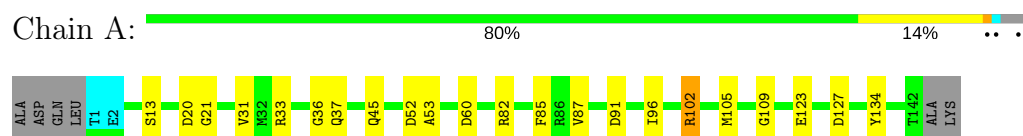


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.73 Score per residue for model 73

- Molecule 1: calmodulin

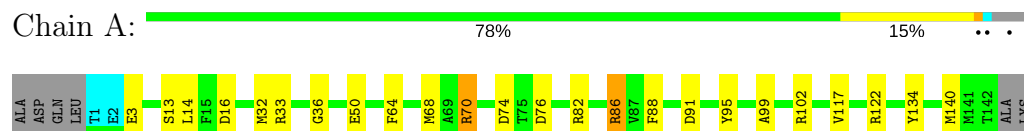


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.74 Score per residue for model 74

- Molecule 1: calmodulin

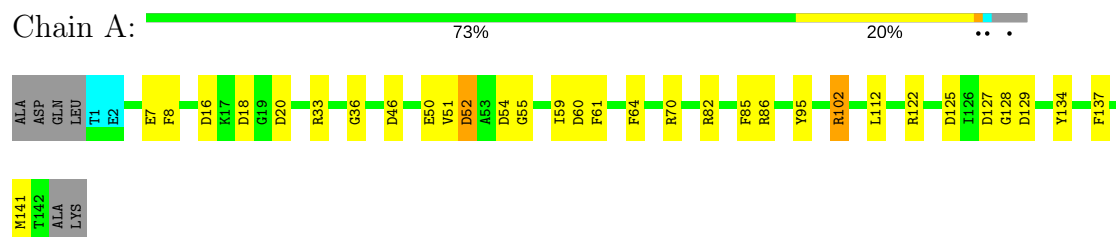


- Molecule 2: 19-mer peptide from Myosin light chain kinase

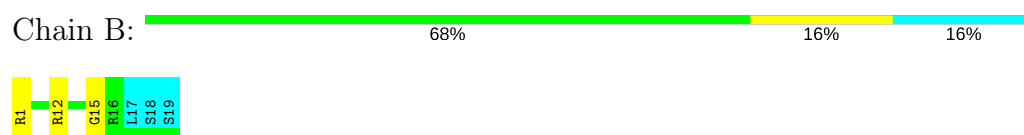


4.2.75 Score per residue for model 75

- Molecule 1: calmodulin



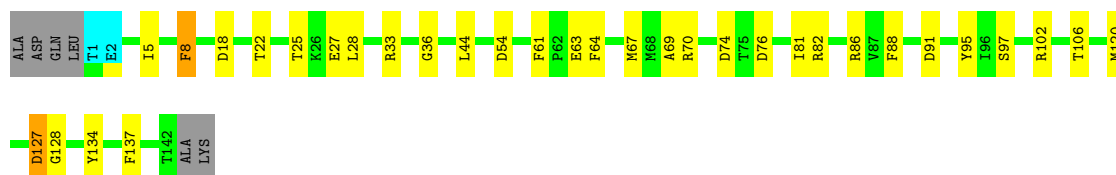
- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.76 Score per residue for model 76

- Molecule 1: calmodulin



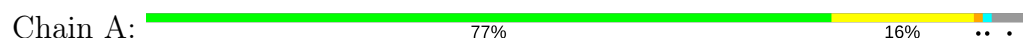


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.77 Score per residue for model 77

- Molecule 1: calmodulin

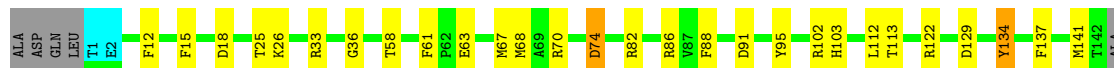
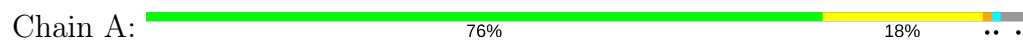


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.78 Score per residue for model 78

- Molecule 1: calmodulin

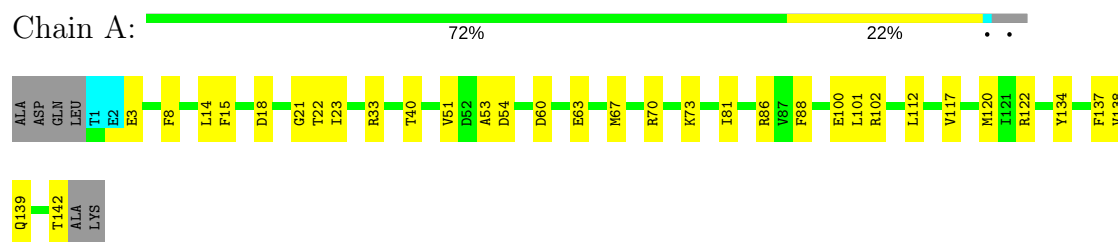


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.79 Score per residue for model 79

- Molecule 1: calmodulin

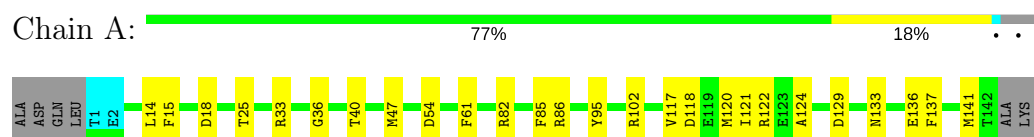


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.80 Score per residue for model 80

- Molecule 1: calmodulin

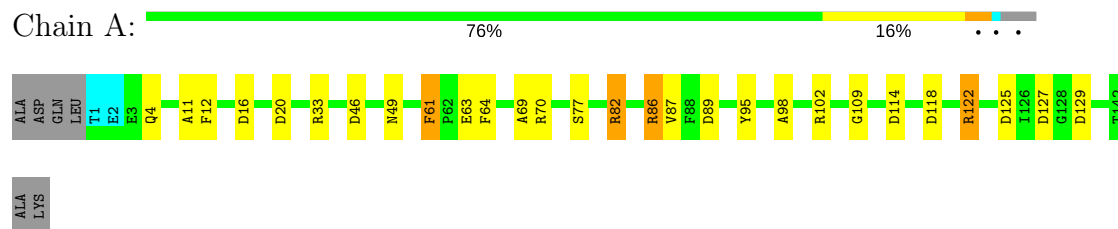


- Molecule 2: 19-mer peptide from Myosin light chain kinase

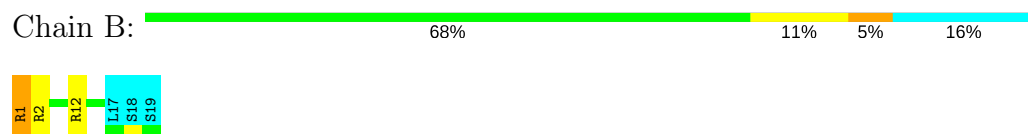


4.2.81 Score per residue for model 81

- Molecule 1: calmodulin

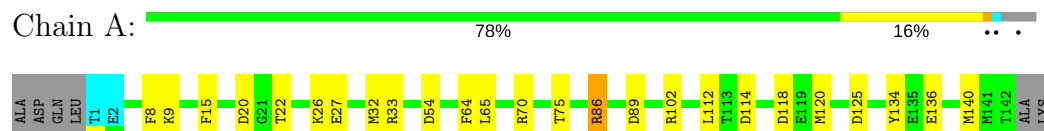


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.82 Score per residue for model 82

- Molecule 1: calmodulin

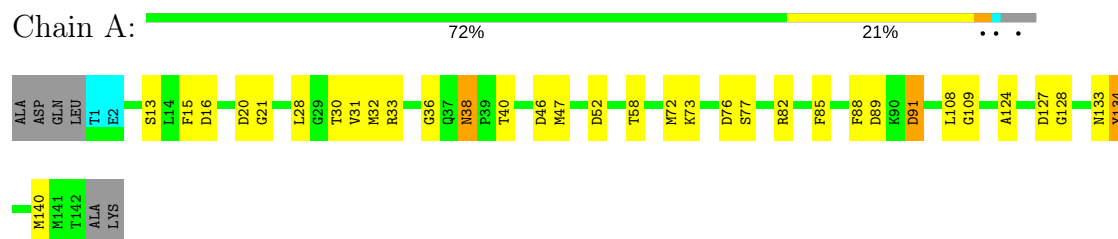


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.83 Score per residue for model 83

- Molecule 1: calmodulin

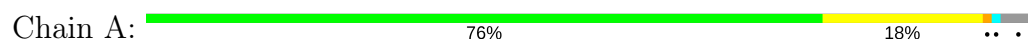


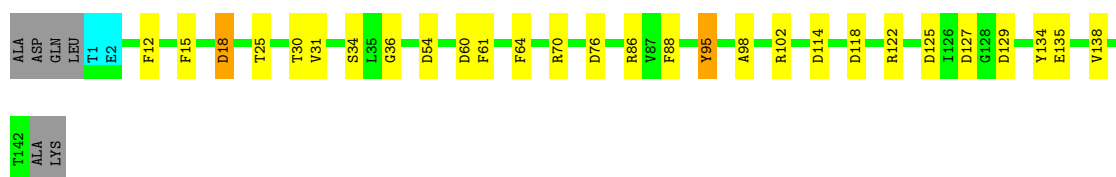
- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.84 Score per residue for model 84

- Molecule 1: calmodulin



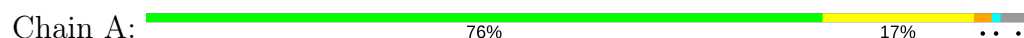


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.85 Score per residue for model 85

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.86 Score per residue for model 86

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase





4.2.87 Score per residue for model 87

- Molecule 1: calmodulin

Chain A: 79% 16% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 53% 26% 5% 16%



4.2.88 Score per residue for model 88

- Molecule 1: calmodulin

Chain A: 80% 14% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

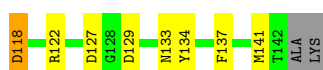
Chain B: 58% 26% 16%



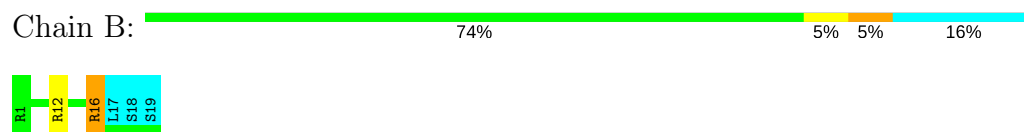
4.2.89 Score per residue for model 89

- Molecule 1: calmodulin

Chain A: 68% 26% ..

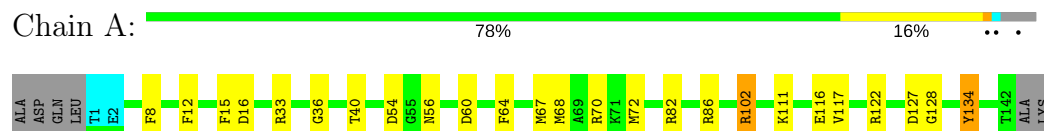


- Molecule 2: 19-mer peptide from Myosin light chain kinase

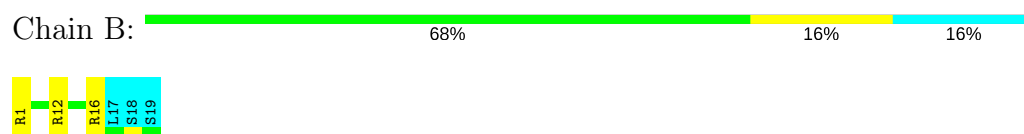


4.2.90 Score per residue for model 90

- Molecule 1: calmodulin

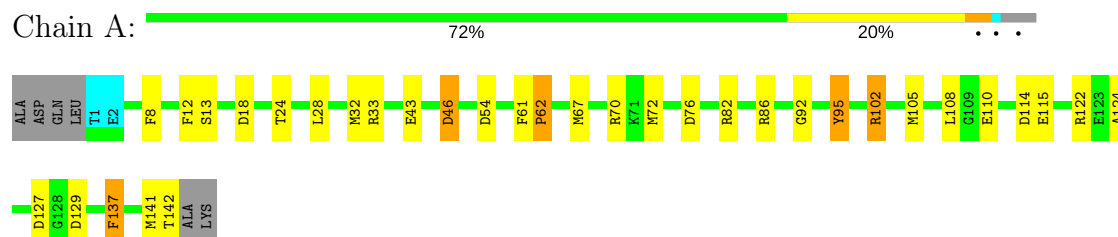


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.91 Score per residue for model 91

- Molecule 1: calmodulin

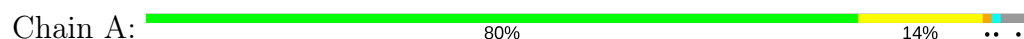


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.92 Score per residue for model 92

- Molecule 1: calmodulin



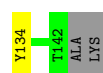
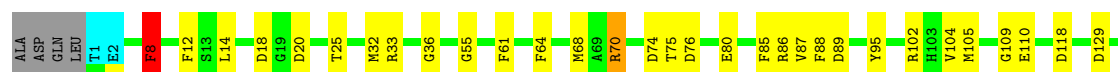


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.93 Score per residue for model 93

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.94 Score per residue for model 94

- Molecule 1: calmodulin

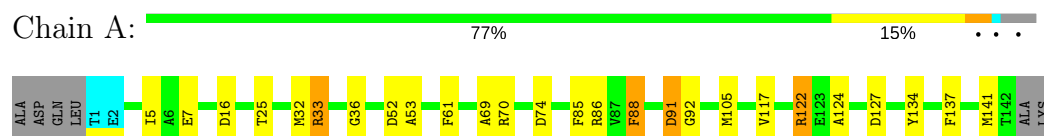


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.95 Score per residue for model 95

- Molecule 1: calmodulin

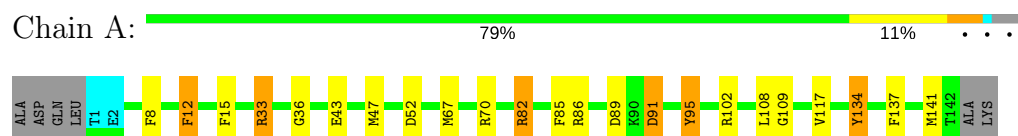


- Molecule 2: 19-mer peptide from Myosin light chain kinase

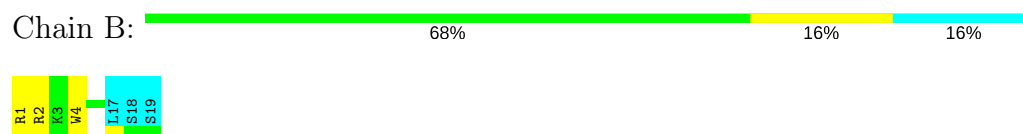


4.2.96 Score per residue for model 96

- Molecule 1: calmodulin

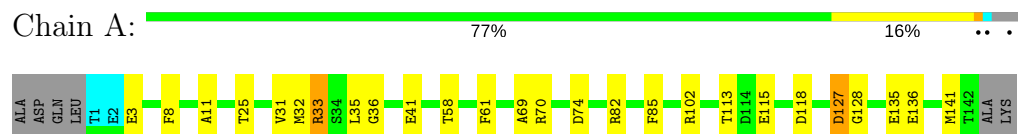


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.97 Score per residue for model 97

- Molecule 1: calmodulin

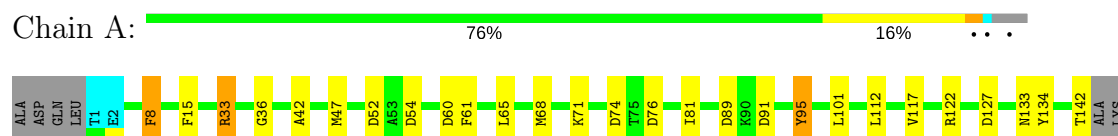


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.98 Score per residue for model 98

- Molecule 1: calmodulin

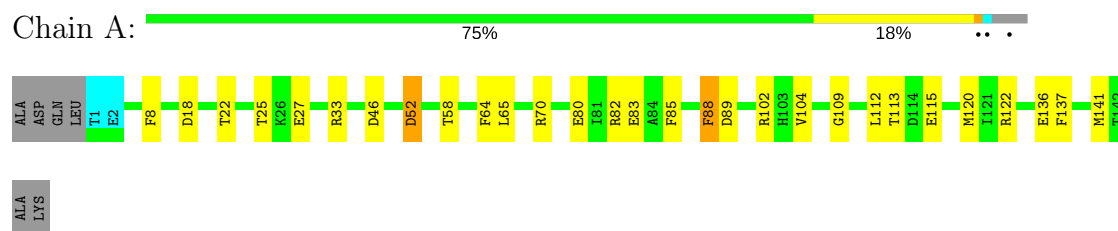


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.99 Score per residue for model 99

- Molecule 1: calmodulin

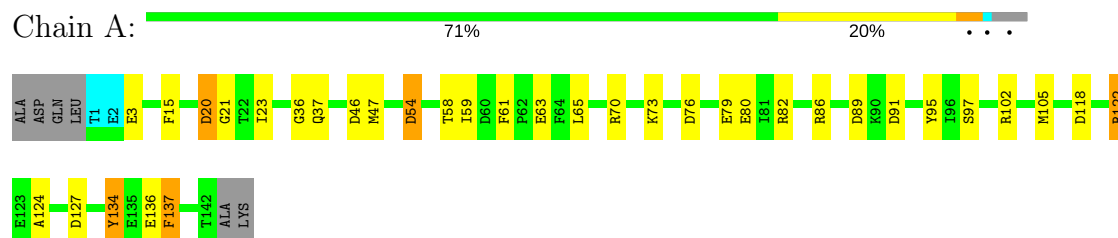


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.100 Score per residue for model 100

- Molecule 1: calmodulin

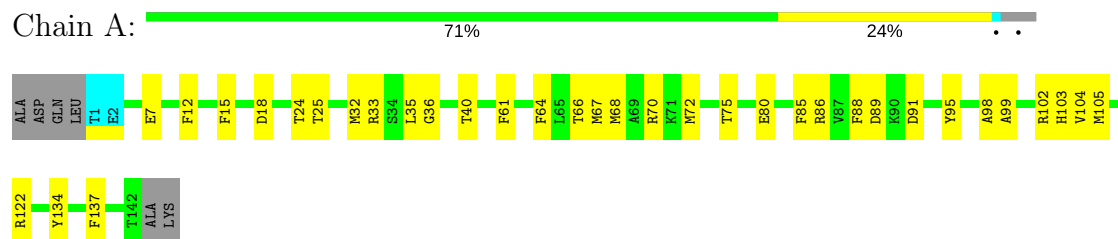


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.101 Score per residue for model 101

- Molecule 1: calmodulin

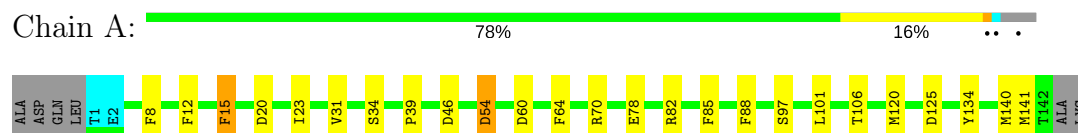


- Molecule 2: 19-mer peptide from Myosin light chain kinase

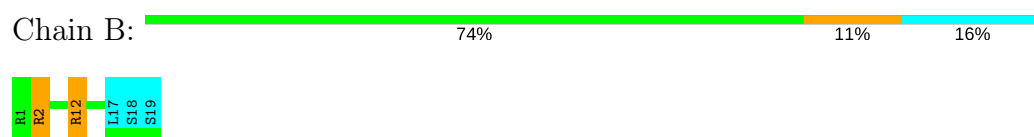


4.2.102 Score per residue for model 102

- Molecule 1: calmodulin



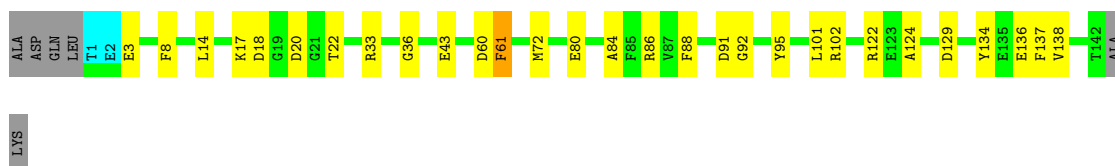
- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.103 Score per residue for model 103

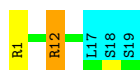
- Molecule 1: calmodulin





- Molecule 2: 19-mer peptide from Myosin light chain kinase

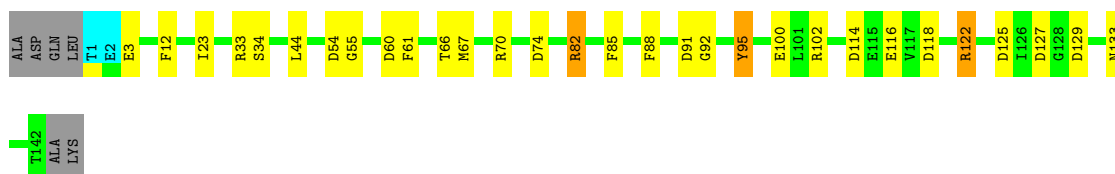
Chain B: 74% 5% 5% 16%



4.2.104 Score per residue for model 104

- Molecule 1: calmodulin

Chain A: 74% 18% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

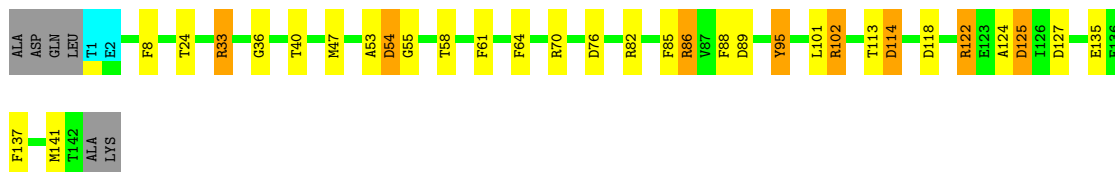
Chain B: 63% 21% 16%



4.2.105 Score per residue for model 105

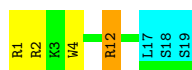
- Molecule 1: calmodulin

Chain A: 73% 16% 5% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 63% 16% 5% 16%



4.2.106 Score per residue for model 106

- Molecule 1: calmodulin

Chain A: 77% 16% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 53% 21% 11% 16%



4.2.107 Score per residue for model 107

- Molecule 1: calmodulin

Chain A: 72% 21% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 63% 11% 11% 16%



4.2.108 Score per residue for model 108

- Molecule 1: calmodulin

Chain A: 76% 18% ..



ALA
LYS

- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B:  68% 5% 11% 16%R1
R2
R12
R16
L17
S18
S19

4.2.109 Score per residue for model 109

- Molecule 1: calmodulin

Chain A:  78% 16% ..ALA
ASP
GLN
LEU
T1
E2
F8
A11
F15
T23
Y31
K32
R33
G36
Q37
D54
D60
F61
N68
A69
R70
R86
V87
F88
Y95
R102
H103
V104
G109
E119
D127
G128
E136
T142
ALA
LYS

- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B:  37% 37% 11% 16%R1
R2
Q5
K6
T7
G8
H9
V11
I14
G15
R16
L17
S18
S19

4.2.110 Score per residue for model 110

- Molecule 1: calmodulin

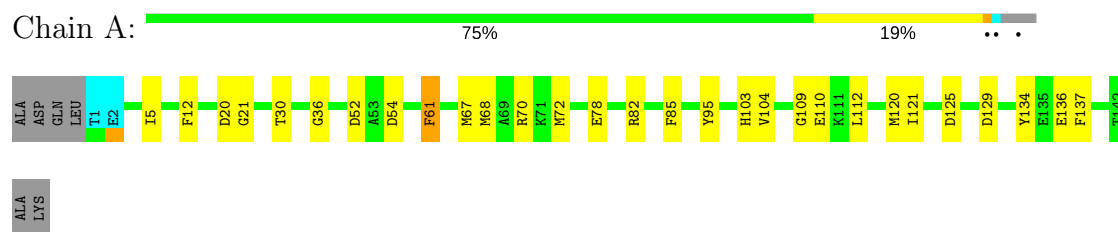
Chain A:  74% 20% ..ALA
ASP
GLN
LEU
T1
E2
F8
A11
F12
S13
D16
R17
D18
G19
D20
R33
S34
L35
G36
D52
T58
F64
R70
D74
A84
F85
R86
V87
F88
Y95
I96
L101
R102
T106
G109
E110
D118
E119
M120
I121
R122
D129
Y134
M141
T142
ALA
LYS

- Molecule 2: 19-mer peptide from Myosin light chain kinase

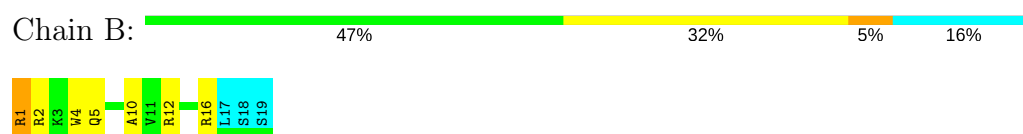
Chain B:  53% 26% 5% 16%R1
R2
K3
V4
R12
A13
I14
G15
R16
L17
S18
S19

4.2.111 Score per residue for model 111

- Molecule 1: calmodulin

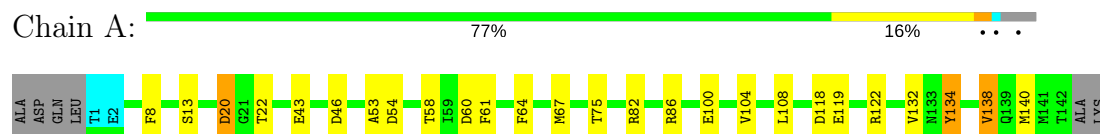


- Molecule 2: 19-mer peptide from Myosin light chain kinase

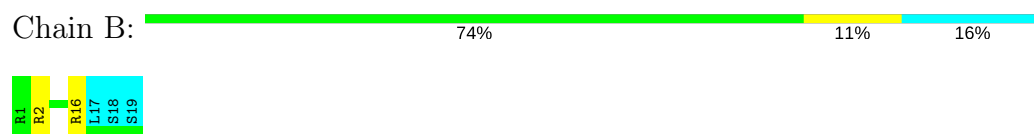


4.2.112 Score per residue for model 112

- Molecule 1: calmodulin

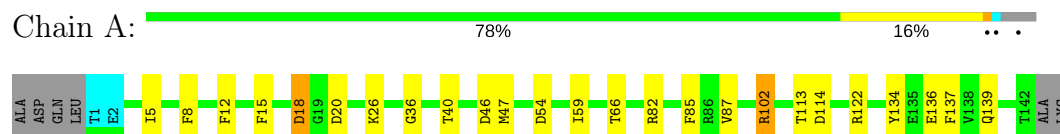


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.113 Score per residue for model 113

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase

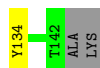
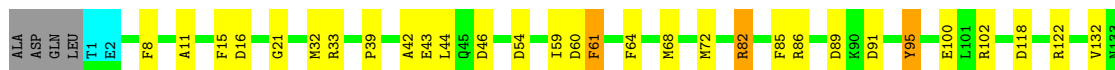




4.2.114 Score per residue for model 114

- Molecule 1: calmodulin

Chain A: 74% 19% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

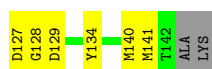
Chain B: 58% 16% 11% 16%



4.2.115 Score per residue for model 115

- Molecule 1: calmodulin

Chain A: 70% 23% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 63% 21% 16%



4.2.116 Score per residue for model 116

- Molecule 1: calmodulin

Chain A: 71% 24% ..

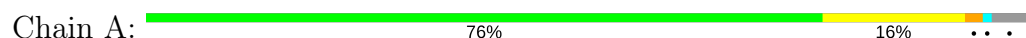


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.117 Score per residue for model 117

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase

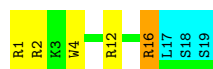


4.2.118 Score per residue for model 118

- Molecule 1: calmodulin

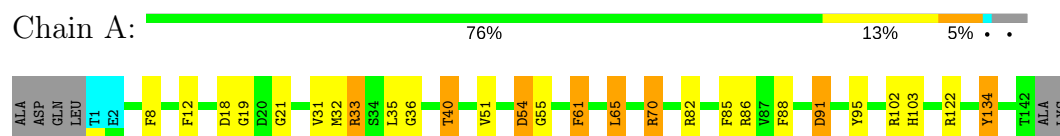


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.119 Score per residue for model 119

- Molecule 1: calmodulin

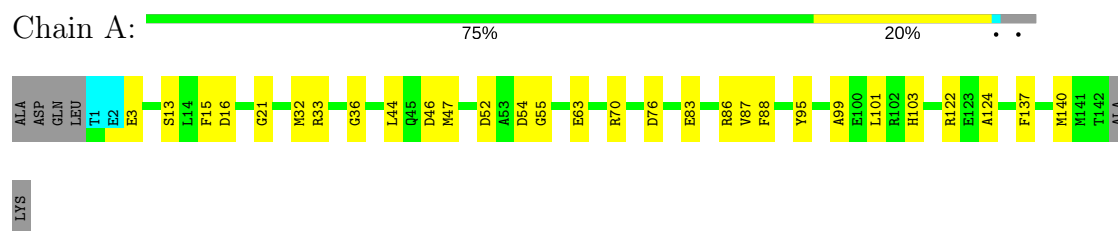


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.120 Score per residue for model 120

- Molecule 1: calmodulin

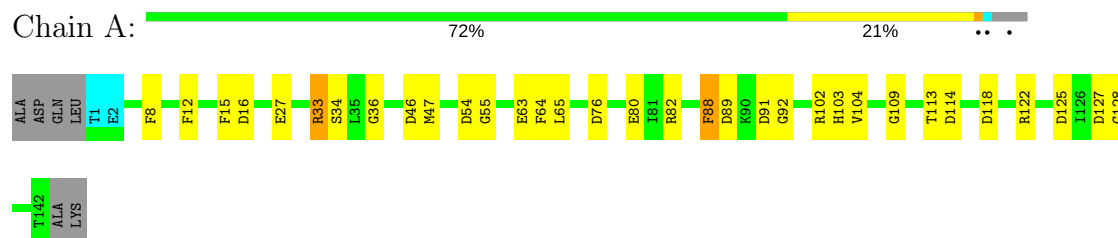


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.121 Score per residue for model 121

- Molecule 1: calmodulin

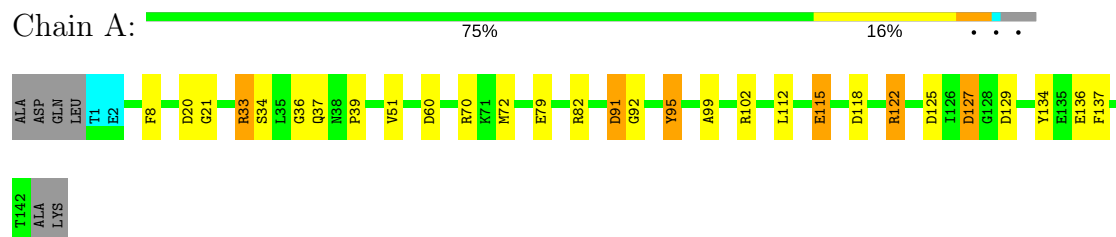


- Molecule 2: 19-mer peptide from Myosin light chain kinase

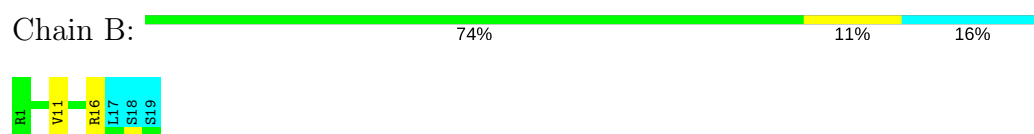


4.2.122 Score per residue for model 122

- Molecule 1: calmodulin

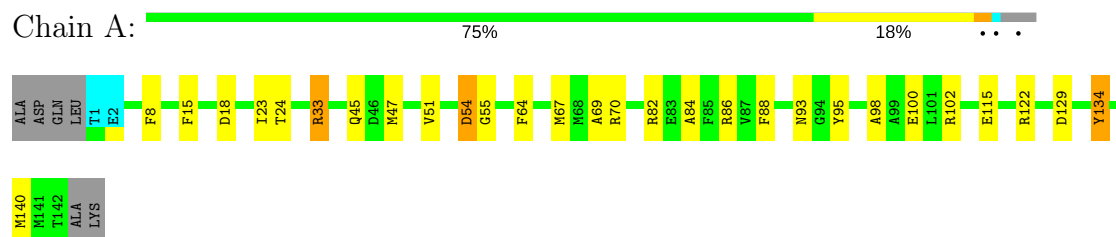


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.123 Score per residue for model 123

- Molecule 1: calmodulin

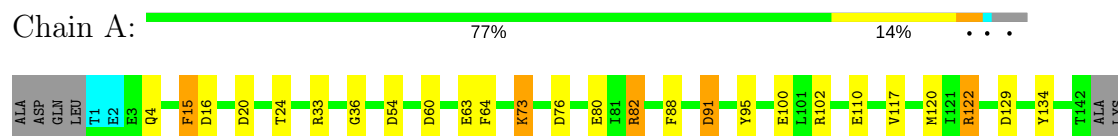


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.124 Score per residue for model 124

- Molecule 1: calmodulin

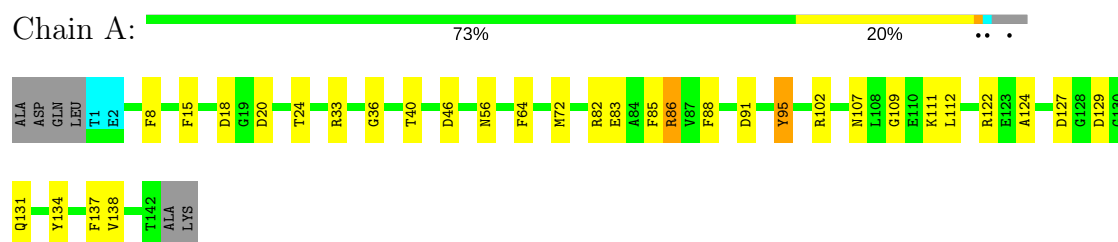


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.125 Score per residue for model 125

- Molecule 1: calmodulin

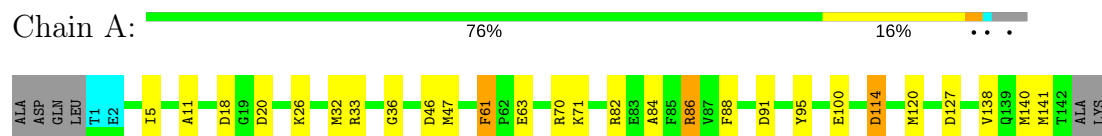


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.126 Score per residue for model 126

- Molecule 1: calmodulin

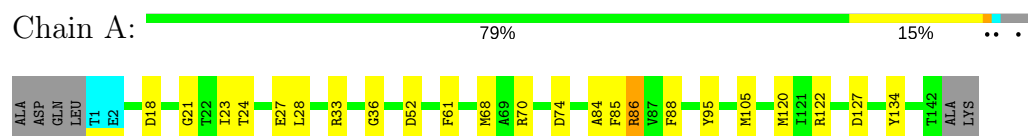


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.127 Score per residue for model 127

- Molecule 1: calmodulin

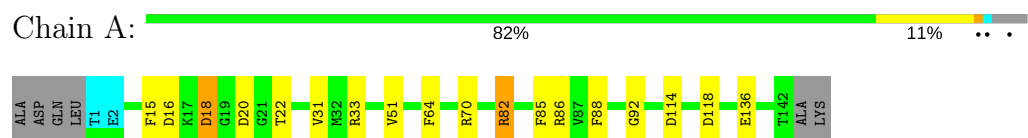


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.128 Score per residue for model 128

- Molecule 1: calmodulin

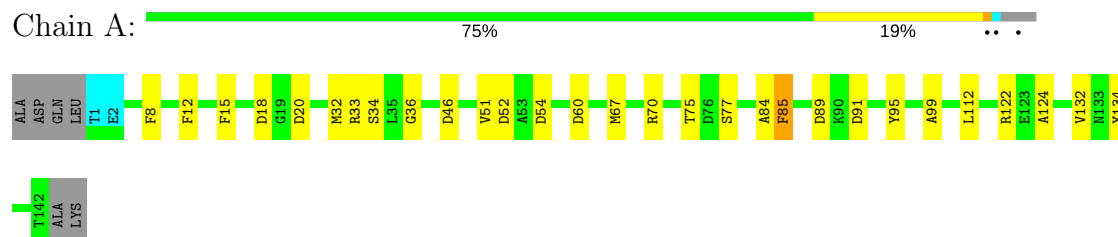


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.129 Score per residue for model 129

- Molecule 1: calmodulin



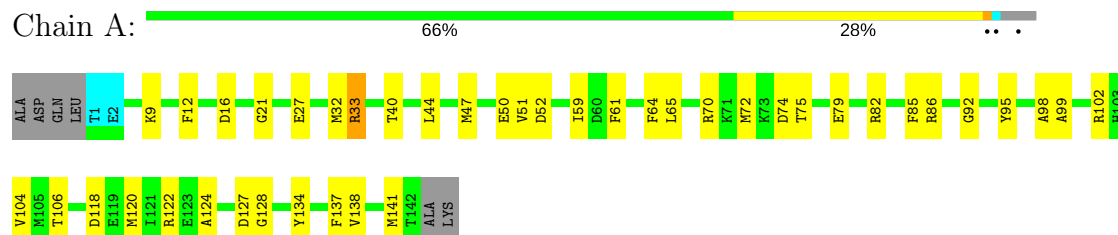
- Molecule 2: 19-mer peptide from Myosin light chain kinase





4.2.130 Score per residue for model 130

- Molecule 1: calmodulin

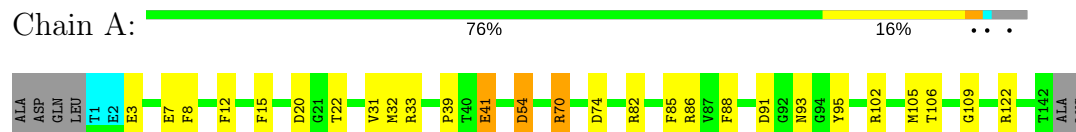


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.131 Score per residue for model 131

- Molecule 1: calmodulin

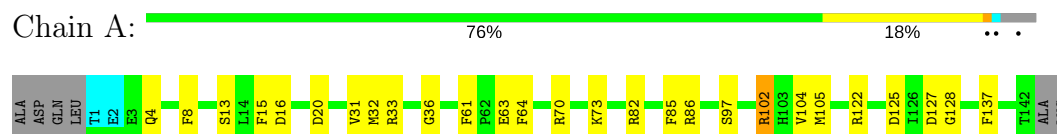


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.132 Score per residue for model 132

- Molecule 1: calmodulin

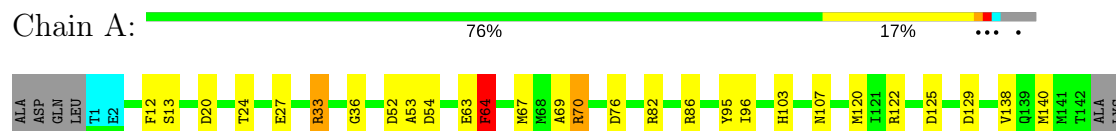


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.133 Score per residue for model 133

- Molecule 1: calmodulin

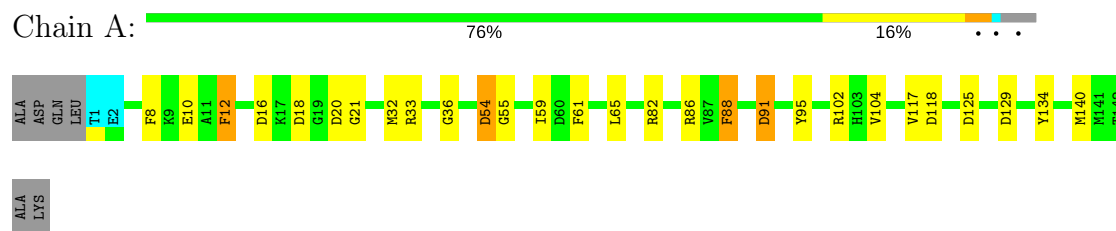


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.134 Score per residue for model 134

- Molecule 1: calmodulin



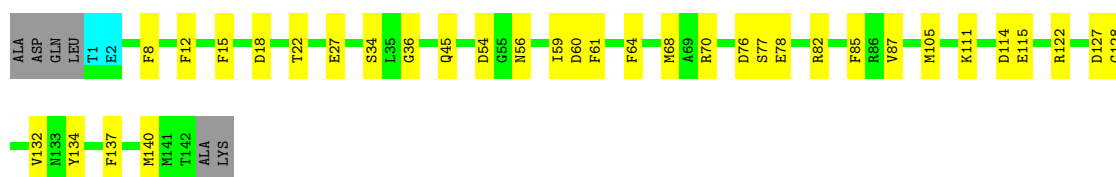
- Molecule 2: 19-mer peptide from Myosin light chain kinase



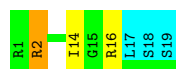
4.2.135 Score per residue for model 135

- Molecule 1: calmodulin



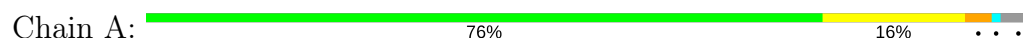


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.136 Score per residue for model 136

- Molecule 1: calmodulin

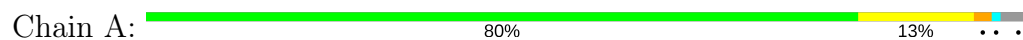


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.137 Score per residue for model 137

- Molecule 1: calmodulin

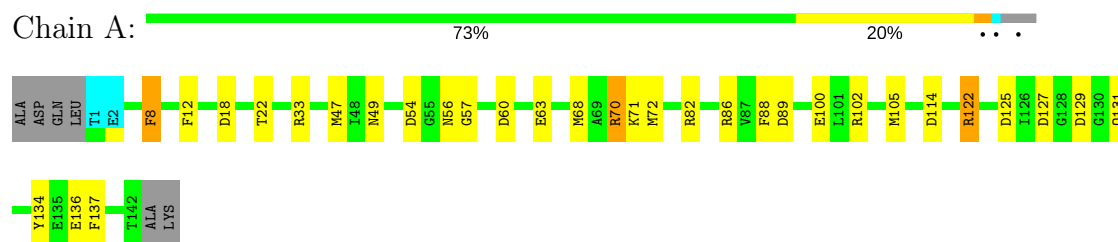


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.138 Score per residue for model 138

- Molecule 1: calmodulin

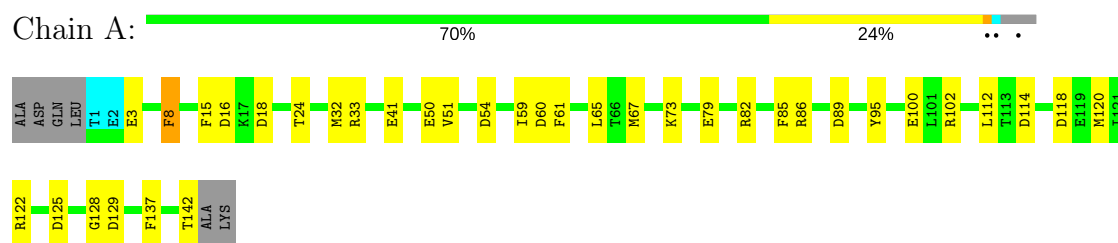


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.139 Score per residue for model 139

- Molecule 1: calmodulin

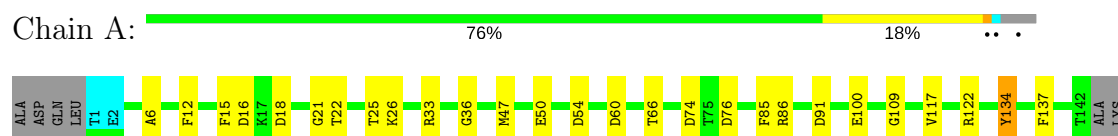


- Molecule 2: 19-mer peptide from Myosin light chain kinase

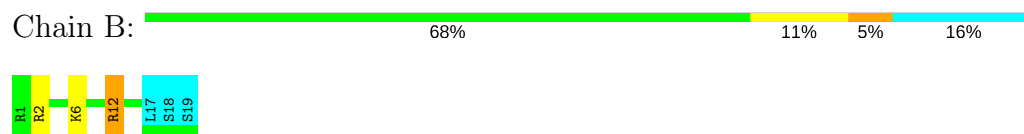


4.2.140 Score per residue for model 140

- Molecule 1: calmodulin

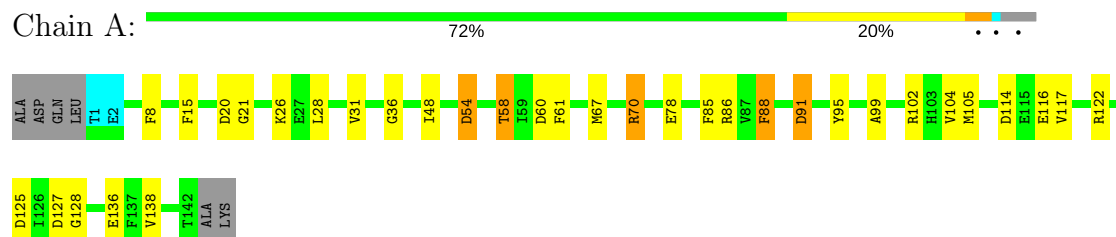


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.141 Score per residue for model 141

- Molecule 1: calmodulin

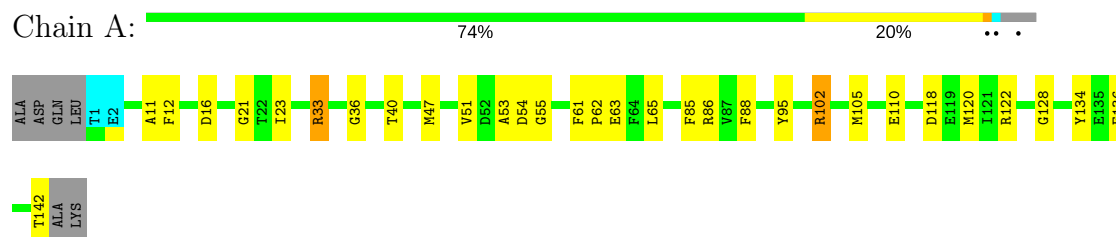


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.142 Score per residue for model 142

- Molecule 1: calmodulin

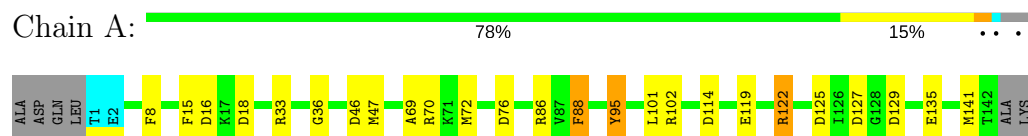


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.143 Score per residue for model 143

- Molecule 1: calmodulin

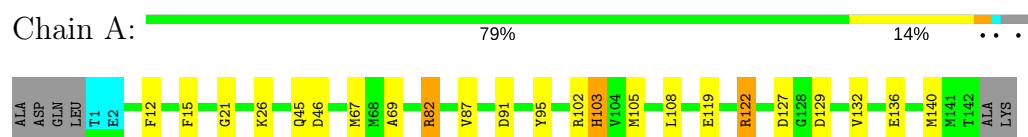


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.144 Score per residue for model 144

- Molecule 1: calmodulin

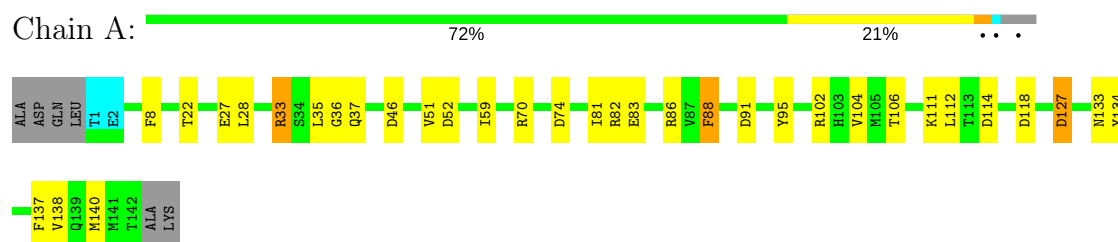


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.145 Score per residue for model 145

- Molecule 1: calmodulin

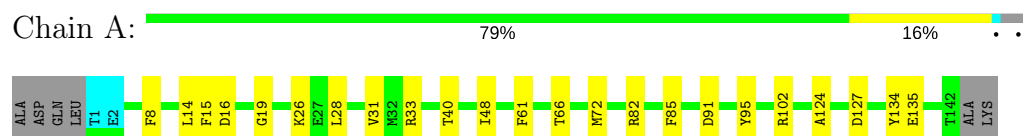


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.146 Score per residue for model 146

- Molecule 1: calmodulin

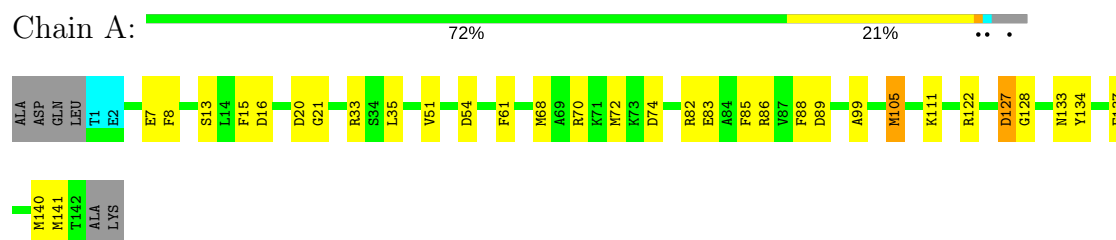


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.147 Score per residue for model 147

- Molecule 1: calmodulin

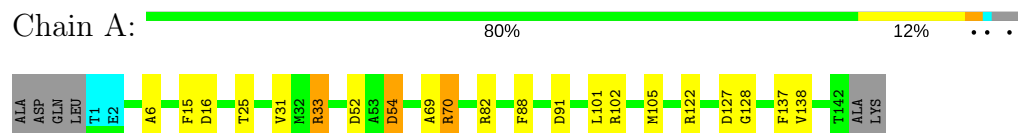


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.148 Score per residue for model 148

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase

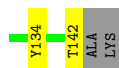
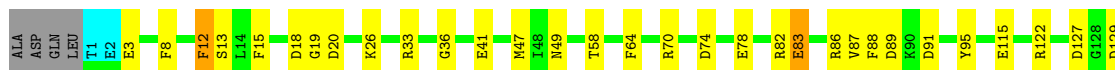




4.2.149 Score per residue for model 149

- Molecule 1: calmodulin

Chain A: 72% 21% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 47% 26% 11% 16%



4.2.150 Score per residue for model 150

- Molecule 1: calmodulin

Chain A: 79% 14% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

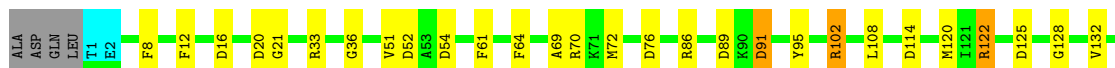
Chain B: 58% 16% 11% 16%

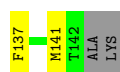


4.2.151 Score per residue for model 151

- Molecule 1: calmodulin

Chain A: 74% 18% ..





- Molecule 2: 19-mer peptide from Myosin light chain kinase

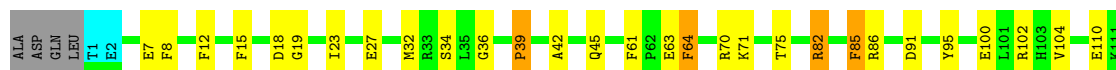
Chain B: 68% 11% 5% 16%



4.2.152 Score per residue for model 152

- Molecule 1: calmodulin

Chain A: 70% 21% ..



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 53% 32% 16%



4.2.153 Score per residue for model 153

- Molecule 1: calmodulin

Chain A: 75% 18% ..



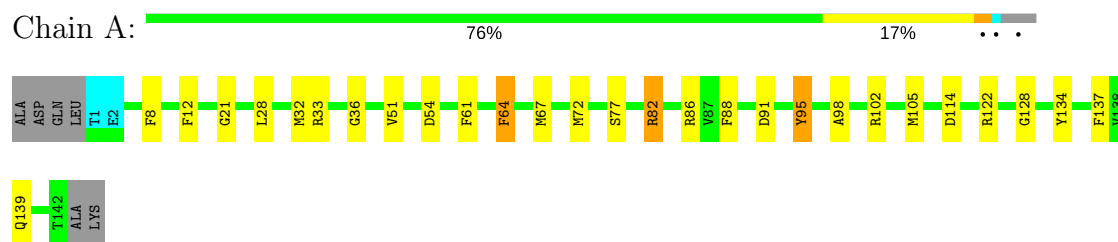
- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 68% 11% 5% 16%



4.2.154 Score per residue for model 154

- Molecule 1: calmodulin

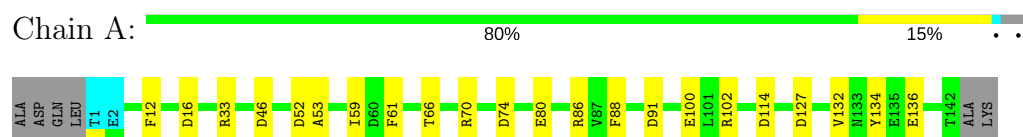


- Molecule 2: 19-mer peptide from Myosin light chain kinase

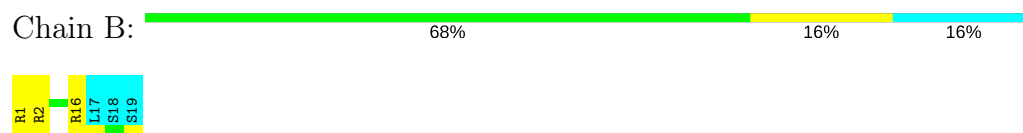


4.2.155 Score per residue for model 155

- Molecule 1: calmodulin

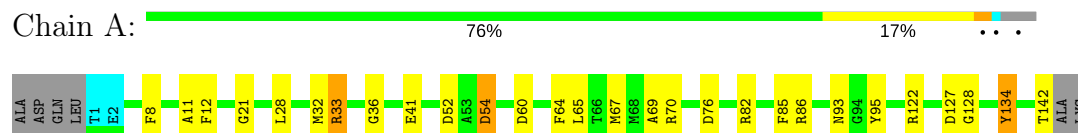


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.156 Score per residue for model 156

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase

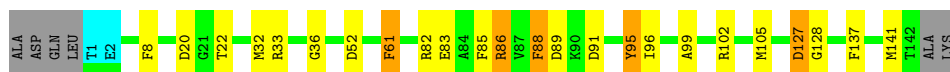




4.2.157 Score per residue for model 157

- Molecule 1: calmodulin

Chain A: 78% 13% . . .



- Molecule 2: 19-mer peptide from Myosin light chain kinase

Chain B: 58% 21% 5% 16%



4.2.158 Score per residue for model 158

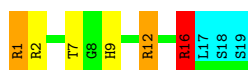
- Molecule 1: calmodulin

Chain A: 76% 19% . .



- Molecule 2: 19-mer peptide from Myosin light chain kinase

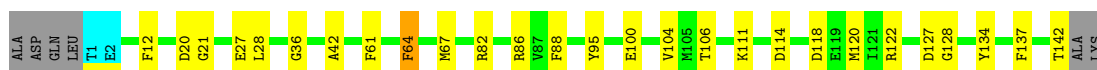
Chain B: 53% 16% 11% 5% 16%



4.2.159 Score per residue for model 159

- Molecule 1: calmodulin

Chain A: 76% 18% . .

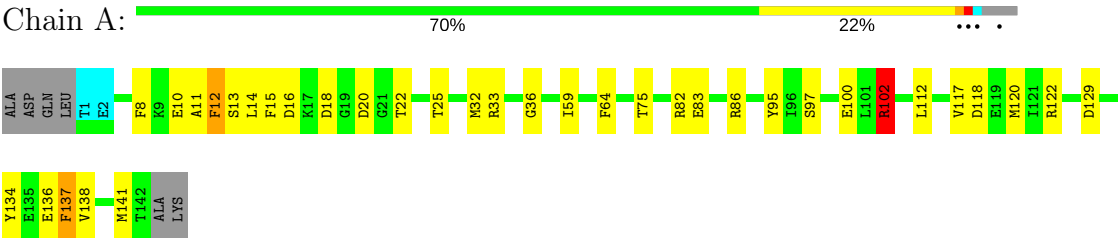


- Molecule 2: 19-mer peptide from Myosin light chain kinase



4.2.160 Score per residue for model 160

- Molecule 1: calmodulin



- Molecule 2: 19-mer peptide from Myosin light chain kinase



5 Refinement protocol and experimental data overview

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

Of the 160 calculated structures, 160 were deposited, based on the following criterion: *all calculated structures submitted*.

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

Software name	Classification	Version
CHARMM	refinement	C30

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](#)

Bond lengths and bond angles in the following residue types are not validated in this section: CA

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	0.97±0.00	0±0/1117 (0.0±0.0%)	1.97±0.07	28±5/1499 (1.9±0.4%)
2	B	1.26±0.00	0±0/138 (0.0±0.0%)	2.24±0.22	5±2/183 (3.0±1.1%)
All	All	1.00	0/200800 (0.0%)	2.00	5351/269120 (2.0%)

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	2.7±1.3
2	B	0.0±0.0	1.2±1.0
All	All	0	631

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	70	ARG	NE-CZ-NH2	-26.19	107.20	120.30	152	58
1	A	33	ARG	NE-CZ-NH1	24.27	132.44	120.30	88	91
1	A	88	PHE	CB-CG-CD2	20.29	135.00	120.80	6	48
2	B	1	ARG	NE-CZ-NH2	-20.05	110.28	120.30	103	66
1	A	70	ARG	NE-CZ-NH1	18.75	129.67	120.30	7	78
1	A	82	ARG	NE-CZ-NH1	18.51	129.56	120.30	150	79
2	B	16	ARG	NE-CZ-NH1	18.38	129.49	120.30	145	78
2	B	12	ARG	NE-CZ-NH1	18.10	129.35	120.30	129	81
1	A	86	ARG	NE-CZ-NH2	-17.93	111.33	120.30	50	59
2	B	1	ARG	NE-CZ-NH1	17.68	129.14	120.30	92	86

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	82	ARG	NE-CZ-NH2	-17.51	111.55	120.30	138	62
1	A	122	ARG	NE-CZ-NH1	17.30	128.95	120.30	101	81
2	B	12	ARG	NE-CZ-NH2	-17.27	111.66	120.30	139	76
1	A	122	ARG	NE-CZ-NH2	-16.85	111.88	120.30	78	72
1	A	102	ARG	NE-CZ-NH1	16.37	128.48	120.30	110	75
1	A	86	ARG	NE-CZ-NH1	16.32	128.46	120.30	131	83
2	B	16	ARG	NE-CZ-NH2	-15.93	112.34	120.30	145	67
1	A	134	TYR	CB-CG-CD1	-15.88	111.47	121.00	76	38
2	B	2	ARG	NE-CZ-NH1	15.62	128.11	120.30	145	76
2	B	2	ARG	NE-CZ-NH2	-15.61	112.50	120.30	1	70
1	A	102	ARG	NE-CZ-NH2	-15.10	112.75	120.30	153	68
1	A	134	TYR	CB-CG-CD2	-15.01	112.00	121.00	86	61
1	A	8	PHE	CB-CG-CD2	-14.78	110.45	120.80	48	56
1	A	95	TYR	CB-CG-CD2	14.68	129.81	121.00	93	54
1	A	15	PHE	CB-CG-CD1	-14.47	110.67	120.80	100	35
1	A	12	PHE	CB-CG-CD1	-14.26	110.82	120.80	72	39
1	A	85	PHE	CB-CG-CD2	-14.21	110.86	120.80	147	32
1	A	33	ARG	NE-CZ-NH2	-14.07	113.26	120.30	98	50
1	A	64	PHE	CB-CG-CD1	14.00	130.60	120.80	75	37
1	A	61	PHE	CB-CG-CD2	-13.72	111.20	120.80	8	45
1	A	137	PHE	CB-CG-CD2	13.23	130.06	120.80	28	30
1	A	46	ASP	CB-CG-OD1	13.21	130.19	118.30	21	24
1	A	16	ASP	CB-CG-OD2	-12.88	106.71	118.30	31	19
1	A	127	ASP	CB-CG-OD2	12.87	129.88	118.30	14	32
1	A	88	PHE	CB-CG-CD1	-12.78	111.85	120.80	44	48
1	A	64	PHE	CB-CG-CD2	12.73	129.71	120.80	26	29
1	A	89	ASP	CB-CG-OD1	12.56	129.61	118.30	115	18
1	A	72	MET	CG-SD-CE	-12.31	80.51	100.20	32	26
1	A	137	PHE	CB-CG-CD1	-12.30	112.19	120.80	130	33
1	A	54	ASP	CB-CG-OD1	12.22	129.30	118.30	80	19
1	A	15	PHE	CB-CG-CD2	12.21	129.35	120.80	82	48
1	A	95	TYR	CB-CG-CD1	12.04	128.23	121.00	4	44
1	A	18	ASP	CB-CG-OD2	-11.97	107.53	118.30	54	21
1	A	129	ASP	CB-CG-OD1	11.92	129.03	118.30	56	44
1	A	8	PHE	CB-CG-CD1	-11.83	112.52	120.80	152	43
1	A	85	PHE	CB-CG-CD1	11.65	128.96	120.80	147	42
1	A	46	ASP	CB-CG-OD2	-11.53	107.92	118.30	61	16
1	A	118	ASP	CB-CG-OD2	11.46	128.62	118.30	36	20
1	A	125	ASP	CB-CG-OD2	-11.41	108.03	118.30	33	22
1	A	52	ASP	CB-CG-OD1	11.25	128.42	118.30	107	25
1	A	20	ASP	CB-CG-OD1	11.14	128.32	118.30	62	38

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	61	PHE	CB-CG-CD1	11.14	128.59	120.80	8	37
1	A	16	ASP	CB-CG-OD1	11.10	128.29	118.30	31	33
1	A	76	ASP	CB-CG-OD1	10.65	127.89	118.30	105	34
1	A	120	MET	CG-SD-CE	-10.56	83.31	100.20	110	34
1	A	91	ASP	CB-CG-OD1	10.48	127.73	118.30	148	32
1	A	127	ASP	CB-CG-OD1	10.39	127.65	118.30	8	22
1	A	60	ASP	CB-CG-OD1	10.31	127.58	118.30	7	17
1	A	18	ASP	CB-CG-OD1	10.26	127.54	118.30	54	25
1	A	12	PHE	CB-CG-CD2	10.22	127.96	120.80	36	33
1	A	105	MET	CG-SD-CE	-10.14	83.98	100.20	95	42
1	A	60	ASP	CB-CG-OD2	10.06	127.36	118.30	139	18
1	A	114	ASP	CB-CG-OD1	10.04	127.33	118.30	35	21
1	A	68	MET	CG-SD-CE	-9.90	84.37	100.20	7	31
1	A	20	ASP	CB-CG-OD2	-9.85	109.44	118.30	159	28
1	A	104	VAL	CA-CB-CG1	9.77	125.55	110.90	158	14
1	A	91	ASP	CB-CG-OD2	9.71	127.04	118.30	6	41
1	A	54	ASP	CB-CG-OD2	9.59	126.93	118.30	55	31
1	A	118	ASP	CB-CG-OD1	9.59	126.93	118.30	130	31
1	A	52	ASP	CB-CG-OD2	9.57	126.92	118.30	115	25
1	A	82	ARG	NH1-CZ-NH2	-9.56	108.88	119.40	150	14
1	A	32	MET	CG-SD-CE	-9.49	85.01	100.20	115	39
1	A	70	ARG	NH1-CZ-NH2	9.31	129.64	119.40	152	17
2	B	1	ARG	NH1-CZ-NH2	-9.25	109.22	119.40	14	11
1	A	114	ASP	CB-CG-OD2	-9.22	110.01	118.30	152	18
1	A	89	ASP	CB-CG-OD2	-9.19	110.03	118.30	26	20
2	B	11	VAL	CA-CB-CG1	9.18	124.67	110.90	34	11
1	A	67	MET	CG-SD-CE	-9.12	85.61	100.20	141	38
1	A	134	TYR	CG-CD1-CE1	-9.10	114.02	121.30	76	19
1	A	113	THR	CA-CB-CG2	-9.05	99.72	112.40	88	11
1	A	51	VAL	CG1-CB-CG2	-8.99	96.52	110.90	9	2
1	A	74	ASP	CB-CG-OD1	8.90	126.31	118.30	93	23
1	A	100	GLU	OE1-CD-OE2	-8.88	112.65	123.30	104	23
1	A	33	ARG	NH1-CZ-NH2	-8.88	109.64	119.40	38	7
1	A	74	ASP	CB-CG-OD2	8.85	126.26	118.30	15	17
1	A	136	GLU	OE1-CD-OE2	-8.85	112.69	123.30	20	37
1	A	13	SER	N-CA-CB	8.81	123.72	110.50	120	8
1	A	102	ARG	NH1-CZ-NH2	-8.76	109.77	119.40	75	12
1	A	51	VAL	CA-CB-CG1	-8.75	97.78	110.90	145	16
2	B	4	TRP	CB-CG-CD2	-8.63	115.38	126.60	124	9
1	A	47	MET	CG-SD-CE	-8.61	86.42	100.20	29	33
1	A	76	ASP	CB-CG-OD2	-8.60	110.56	118.30	105	23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	10	GLU	OE1-CD-OE2	-8.60	112.98	123.30	72	1
1	A	125	ASP	CB-CG-OD1	8.57	126.02	118.30	132	22
1	A	24	THR	CA-CB-CG2	-8.54	100.45	112.40	158	15
1	A	58	THR	CA-CB-CG2	-8.46	100.56	112.40	29	15
2	B	11	VAL	CG1-CB-CG2	-8.46	97.37	110.90	18	7
1	A	98	ALA	CB-CA-C	8.40	122.70	110.10	153	10
1	A	69	ALA	CB-CA-C	-8.39	97.52	110.10	81	13
1	A	75	THR	CA-CB-CG2	-8.30	100.77	112.40	59	19
1	A	66	THR	CA-CB-CG2	-8.23	100.88	112.40	104	5
2	B	12	ARG	NH1-CZ-NH2	-8.22	110.36	119.40	24	15
1	A	134	TYR	CG-CD2-CE2	-8.20	114.74	121.30	153	18
1	A	99	ALA	N-CA-CB	8.15	121.51	110.10	137	16
1	A	87	VAL	CG1-CB-CG2	8.15	123.94	110.90	135	9
1	A	63	GLU	OE1-CD-OE2	-8.09	113.59	123.30	23	30
1	A	141	MET	CG-SD-CE	-8.09	87.26	100.20	110	28
1	A	56	ASN	N-CA-CB	8.05	125.09	110.60	61	1
1	A	98	ALA	N-CA-CB	-7.98	98.92	110.10	84	9
1	A	122	ARG	NH1-CZ-NH2	-7.95	110.65	119.40	105	10
1	A	140	MET	CG-SD-CE	-7.91	87.54	100.20	6	25
1	A	12	PHE	N-CA-CB	-7.90	96.37	110.60	85	6
1	A	25	THR	CA-CB-CG2	-7.88	101.36	112.40	62	19
2	B	10	ALA	CB-CA-C	7.76	121.75	110.10	28	6
1	A	106	THR	CA-CB-CG2	7.76	123.27	112.40	159	7
1	A	82	ARG	O-C-N	-7.74	110.32	122.70	130	3
1	A	14	LEU	CB-CG-CD1	7.74	124.15	111.00	160	5
1	A	53	ALA	N-CA-CB	7.71	120.90	110.10	22	7
2	B	11	VAL	O-C-N	-7.67	110.42	122.70	61	3
1	A	61	PHE	CB-CA-C	7.60	125.60	110.40	66	7
1	A	20	ASP	CB-CA-C	7.57	125.54	110.40	112	5
1	A	137	PHE	O-C-N	-7.56	110.60	122.70	138	6
1	A	95	TYR	CG-CD1-CE1	-7.56	115.25	121.30	13	12
1	A	31	VAL	CA-CB-CG1	7.55	122.23	110.90	94	7
2	B	7	THR	O-C-N	-7.55	110.37	123.20	158	8
1	A	137	PHE	CG-CD2-CE2	-7.54	112.51	120.80	87	2
2	B	14	ILE	O-C-N	-7.53	110.41	123.20	16	6
1	A	99	ALA	CB-CA-C	7.51	121.36	110.10	7	5
1	A	42	ALA	N-CA-CB	7.49	120.59	110.10	152	7
1	A	27	GLU	OE1-CD-OE2	-7.49	114.31	123.30	145	22
1	A	97	SER	O-C-N	-7.48	110.73	122.70	115	2
1	A	11	ALA	N-CA-CB	7.48	120.57	110.10	114	10
2	B	4	TRP	CB-CG-CD1	7.47	136.71	127.00	124	6

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	78	GLU	O-C-N	-7.45	110.78	122.70	111	3
1	A	117	VAL	CA-CB-CG2	-7.44	99.74	110.90	158	6
1	A	14	LEU	CB-CG-CD2	-7.43	98.36	111.00	44	4
1	A	95	TYR	CZ-CE2-CD2	-7.43	113.12	119.80	84	8
1	A	77	SER	N-CA-CB	7.37	121.56	110.50	53	9
1	A	49	ASN	O-C-N	-7.36	110.92	122.70	149	4
1	A	6	ALA	N-CA-CB	-7.34	99.82	110.10	4	5
1	A	129	ASP	CB-CG-OD2	-7.33	111.71	118.30	81	23
1	A	82	ARG	CD-NE-CZ	7.27	133.78	123.60	126	3
1	A	86	ARG	NH1-CZ-NH2	-7.27	111.40	119.40	54	10
1	A	7	GLU	OE1-CD-OE2	-7.27	114.58	123.30	117	6
1	A	40	THR	CA-CB-CG2	-7.21	102.30	112.40	63	12
1	A	136	GLU	O-C-N	-7.20	111.17	122.70	108	2
1	A	123	GLU	OE1-CD-OE2	-7.20	114.67	123.30	117	12
2	B	1	ARG	CD-NE-CZ	7.19	133.67	123.60	99	2
1	A	13	SER	O-C-N	-7.19	111.20	122.70	132	3
2	B	10	ALA	N-CA-CB	7.16	120.12	110.10	149	11
1	A	135	GLU	OE1-CD-OE2	-7.16	114.71	123.30	66	5
1	A	132	VAL	CA-CB-CG1	7.14	121.62	110.90	9	7
1	A	12	PHE	CG-CD2-CE2	-7.14	112.95	120.80	43	5
1	A	47	MET	CA-CB-CG	7.11	125.38	113.30	80	4
2	B	13	ALA	CB-CA-C	7.10	120.76	110.10	137	7
1	A	99	ALA	O-C-N	-7.10	111.34	122.70	85	1
1	A	132	VAL	CA-CB-CG2	-7.09	100.27	110.90	47	4
2	B	11	VAL	CB-CA-C	7.08	124.86	111.40	55	2
1	A	138	VAL	CG1-CB-CG2	-7.08	99.57	110.90	69	12
1	A	95	TYR	CG-CD2-CE2	-7.08	115.64	121.30	61	8
1	A	104	VAL	CA-CB-CG2	-7.08	100.28	110.90	101	10
1	A	88	PHE	N-CA-CB	7.07	123.32	110.60	45	6
1	A	64	PHE	CG-CD2-CE2	-7.05	113.04	120.80	86	5
2	B	16	ARG	CB-CA-C	7.05	124.51	110.40	135	2
1	A	124	ALA	CB-CA-C	-7.05	99.53	110.10	130	5
1	A	87	VAL	CA-CB-CG1	7.04	121.46	110.90	43	5
1	A	98	ALA	C-N-CA	7.01	139.23	121.70	11	3
1	A	44	LEU	CB-CG-CD1	6.99	122.89	111.00	50	3
1	A	117	VAL	CA-CB-CG1	6.99	121.39	110.90	62	8
1	A	138	VAL	O-C-N	-6.98	111.54	122.70	145	1
2	B	2	ARG	NH1-CZ-NH2	-6.97	111.73	119.40	145	4
1	A	103	HIS	CA-CB-CG	-6.97	101.75	113.60	52	6
1	A	47	MET	N-CA-CB	6.97	123.14	110.60	118	3
1	A	53	ALA	CB-CA-C	6.96	120.53	110.10	29	4

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	102	ARG	CD-NE-CZ	-6.95	113.88	123.60	70	5
1	A	79	GLU	OE1-CD-OE2	-6.94	114.97	123.30	116	8
1	A	65	LEU	O-C-N	-6.94	111.60	122.70	43	3
1	A	58	THR	N-CA-CB	6.90	123.42	110.30	100	8
1	A	119	GLU	O-C-N	-6.90	111.66	122.70	109	4
1	A	47	MET	O-C-N	-6.88	111.69	122.70	138	6
2	B	7	THR	N-CA-CB	6.87	123.36	110.30	62	5
1	A	65	LEU	CB-CG-CD1	-6.84	99.37	111.00	28	1
1	A	22	THR	CA-CB-CG2	-6.83	102.84	112.40	115	6
1	A	55	GLY	O-C-N	-6.81	111.80	122.70	46	3
1	A	32	MET	CA-CB-CG	6.80	124.87	113.30	120	4
2	B	4	TRP	CG-CD2-CE3	-6.79	127.79	133.90	48	8
1	A	80	GLU	OE1-CD-OE2	-6.78	115.16	123.30	93	9
1	A	69	ALA	O-C-N	-6.76	111.88	122.70	48	1
1	A	131	GLN	O-C-N	-6.75	111.89	122.70	125	1
1	A	44	LEU	O-C-N	-6.75	111.90	122.70	17	2
2	B	9	HIS	CB-CA-C	-6.75	96.91	110.40	27	2
2	B	14	ILE	C-N-CA	6.74	136.46	122.30	72	3
2	B	16	ARG	CD-NE-CZ	-6.73	114.17	123.60	1	5
1	A	95	TYR	CB-CA-C	-6.69	97.03	110.40	156	2
1	A	78	GLU	OE1-CD-OE2	-6.68	115.28	123.30	158	4
1	A	127	ASP	C-N-CA	6.68	136.33	122.30	149	1
1	A	134	TYR	CD1-CE1-CZ	-6.67	113.79	119.80	21	3
2	B	11	VAL	CA-CB-CG2	-6.65	100.93	110.90	97	3
1	A	40	THR	O-C-N	-6.64	112.07	122.70	83	3
1	A	64	PHE	O-C-N	-6.64	112.08	122.70	132	4
1	A	134	TYR	CZ-CE2-CD2	-6.63	113.83	119.80	32	3
1	A	133	ASN	N-CA-CB	6.62	122.52	110.60	147	1
1	A	111	LYS	O-C-N	-6.60	112.14	122.70	147	4
1	A	34	SER	N-CA-CB	6.60	120.40	110.50	71	16
1	A	14	LEU	CB-CA-C	-6.60	97.66	110.20	23	2
1	A	10	GLU	N-CA-CB	-6.59	98.73	110.60	134	1
1	A	69	ALA	N-CA-CB	-6.58	100.88	110.10	76	8
1	A	22	THR	N-CA-CB	6.57	122.79	110.30	145	12
1	A	90	LYS	N-CA-CB	-6.57	98.77	110.60	136	2
2	B	7	THR	CA-CB-CG2	-6.57	103.20	112.40	106	7
1	A	20	ASP	N-CA-CB	6.57	122.42	110.60	40	3
2	B	5	GLN	O-C-N	-6.56	112.20	122.70	13	3
2	B	9	HIS	CA-CB-CG	-6.56	102.45	113.60	128	5
1	A	65	LEU	CB-CG-CD2	-6.56	99.86	111.00	156	7
1	A	18	ASP	CB-CA-C	-6.55	97.29	110.40	135	2

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	18	ASP	N-CA-CB	6.55	122.39	110.60	45	2
1	A	83	GLU	OE1-CD-OE2	-6.52	115.47	123.30	99	7
1	A	28	LEU	CB-CG-CD1	-6.52	99.92	111.00	12	6
2	B	12	ARG	CD-NE-CZ	6.51	132.72	123.60	134	3
2	B	4	TRP	CZ3-CH2-CZ2	-6.51	113.79	121.60	142	3
2	B	1	ARG	CB-CA-C	6.50	123.41	110.40	62	1
1	A	137	PHE	N-CA-CB	-6.50	98.90	110.60	157	3
2	B	16	ARG	NH1-CZ-NH2	-6.48	112.27	119.40	37	6
1	A	64	PHE	CD1-CE1-CZ	-6.47	112.34	120.10	40	3
1	A	26	LYS	CB-CA-C	6.46	123.33	110.40	82	1
1	A	108	LEU	CB-CG-CD2	6.46	121.98	111.00	63	4
1	A	138	VAL	CA-CB-CG2	-6.45	101.23	110.90	160	5
1	A	28	LEU	C-N-CA	6.45	135.84	122.30	145	1
1	A	86	ARG	O-C-N	-6.45	112.39	122.70	50	7
1	A	102	ARG	CG-CD-NE	-6.44	98.27	111.80	153	2
1	A	134	TYR	O-C-N	-6.44	112.39	122.70	111	5
1	A	132	VAL	CG1-CB-CG2	-6.44	100.60	110.90	71	4
1	A	120	MET	CA-CB-CG	6.43	124.23	113.30	102	2
1	A	124	ALA	N-CA-CB	6.43	119.10	110.10	146	9
1	A	70	ARG	N-CA-CB	-6.43	99.03	110.60	67	1
1	A	61	PHE	CG-CD1-CE1	6.42	127.87	120.80	27	1
1	A	95	TYR	CD1-CG-CD2	6.41	124.95	117.90	61	1
1	A	66	THR	O-C-N	-6.40	112.46	122.70	113	1
2	B	16	ARG	O-C-N	-6.39	112.48	122.70	79	3
1	A	106	THR	OG1-CB-CG2	-6.38	95.33	110.00	76	2
1	A	131	GLN	N-CA-CB	6.38	122.08	110.60	32	4
1	A	26	LYS	CA-CB-CG	6.37	127.41	113.40	146	2
1	A	110	GLU	OE1-CD-OE2	-6.36	115.67	123.30	71	8
1	A	8	PHE	N-CA-CB	6.36	122.05	110.60	152	1
1	A	122	ARG	CD-NE-CZ	6.36	132.51	123.60	11	4
1	A	55	GLY	CA-C-O	-6.36	109.15	120.60	119	1
1	A	105	MET	O-C-N	-6.36	112.53	122.70	107	1
1	A	3	GLU	OE1-CD-OE2	-6.35	115.68	123.30	79	5
1	A	114	ASP	N-CA-CB	-6.35	99.18	110.60	92	4
1	A	119	GLU	OE1-CD-OE2	-6.34	115.69	123.30	144	3
1	A	118	ASP	C-N-CA	6.34	137.55	121.70	19	2
1	A	142	THR	N-CA-CB	6.34	122.34	110.30	98	7
1	A	73	LYS	N-CA-CB	6.33	122.00	110.60	153	3
1	A	87	VAL	CA-CB-CG2	-6.33	101.41	110.90	120	4
1	A	83	GLU	C-N-CA	6.33	137.52	121.70	41	2
1	A	42	ALA	CB-CA-C	6.32	119.58	110.10	159	5

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	72	MET	O-C-N	-6.32	112.59	122.70	37	4
1	A	136	GLU	CB-CA-C	-6.32	97.77	110.40	80	1
2	B	10	ALA	O-C-N	-6.32	112.59	122.70	125	4
1	A	114	ASP	CB-CA-C	6.30	123.00	110.40	128	2
1	A	84	ALA	N-CA-CB	6.29	118.91	110.10	123	5
1	A	75	THR	C-N-CA	6.29	137.42	121.70	40	1
1	A	27	GLU	N-CA-CB	6.28	121.90	110.60	51	1
1	A	83	GLU	CA-CB-CG	6.28	127.21	113.40	125	1
1	A	61	PHE	O-C-N	-6.27	109.18	121.10	105	3
1	A	61	PHE	CA-C-N	6.27	134.66	117.10	139	10
1	A	93	ASN	N-CA-CB	6.27	121.89	110.60	131	1
2	B	9	HIS	N-CA-CB	-6.27	99.32	110.60	134	1
1	A	118	ASP	N-CA-CB	-6.26	99.33	110.60	142	1
1	A	46	ASP	N-CA-CB	-6.25	99.34	110.60	67	1
1	A	29	GLY	O-C-N	-6.25	112.70	122.70	89	1
1	A	82	ARG	N-CA-CB	-6.25	99.36	110.60	150	4
1	A	104	VAL	CG1-CB-CG2	-6.24	100.91	110.90	56	2
2	B	2	ARG	N-CA-C	6.24	127.85	111.00	62	2
1	A	50	GLU	N-CA-CB	-6.24	99.37	110.60	12	2
1	A	133	ASN	CA-CB-CG	6.24	127.12	113.40	25	2
1	A	24	THR	CA-CB-OG1	6.24	122.10	109.00	41	1
1	A	113	THR	O-C-N	-6.23	112.73	122.70	7	4
1	A	31	VAL	CG1-CB-CG2	-6.23	100.93	110.90	62	10
1	A	21	GLY	O-C-N	-6.23	112.73	122.70	107	1
1	A	30	THR	CA-CB-CG2	6.23	121.12	112.40	21	6
1	A	88	PHE	CG-CD1-CE1	-6.23	113.95	120.80	33	4
1	A	54	ASP	CB-CA-C	6.22	122.84	110.40	147	7
2	B	2	ARG	C-N-CA	6.22	137.25	121.70	130	1
1	A	89	ASP	C-N-CA	6.22	137.25	121.70	121	1
1	A	97	SER	N-CA-CB	-6.22	101.17	110.50	100	3
1	A	89	ASP	N-CA-CB	-6.21	99.42	110.60	61	3
1	A	56	ASN	CB-CG-OD1	6.21	134.01	121.60	90	2
1	A	70	ARG	CG-CD-NE	-6.20	98.77	111.80	26	4
1	A	64	PHE	CD1-CG-CD2	6.20	126.36	118.30	81	2
1	A	75	THR	N-CA-CB	6.19	122.06	110.30	129	5
1	A	12	PHE	CZ-CE2-CD2	6.19	127.53	120.10	43	2
1	A	84	ALA	CB-CA-C	-6.18	100.83	110.10	110	4
1	A	43	GLU	OE1-CD-OE2	-6.18	115.89	123.30	112	3
1	A	10	GLU	O-C-N	-6.17	112.82	122.70	31	3
1	A	83	GLU	O-C-N	-6.17	112.82	122.70	136	5
1	A	8	PHE	CB-CA-C	6.17	122.74	110.40	105	2

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	112	LEU	CB-CG-CD2	6.17	121.49	111.00	122	10
1	A	24	THR	O-C-N	-6.17	112.83	122.70	91	4
1	A	68	MET	CB-CA-C	-6.17	98.06	110.40	138	1
1	A	5	ILE	O-C-N	-6.17	112.83	122.70	111	4
1	A	46	ASP	CB-CA-C	6.16	122.72	110.40	8	3
1	A	65	LEU	N-CA-CB	6.16	122.72	110.40	35	1
1	A	140	MET	CA-CB-CG	6.16	123.77	113.30	112	2
1	A	65	LEU	CB-CA-C	-6.15	98.51	110.20	119	1
1	A	135	GLU	O-C-N	-6.15	112.86	122.70	84	2
2	B	7	THR	C-N-CA	6.15	135.22	122.30	48	3
1	A	33	ARG	CA-CB-CG	6.15	126.93	113.40	63	1
2	B	2	ARG	O-C-N	-6.15	112.86	122.70	129	5
1	A	72	MET	CA-CB-CG	6.15	123.75	113.30	116	2
1	A	95	TYR	N-CA-CB	6.14	121.66	110.60	129	2
1	A	54	ASP	O-C-N	-6.14	112.76	123.20	41	2
1	A	142	THR	CA-CB-CG2	-6.14	103.80	112.40	139	5
1	A	86	ARG	CD-NE-CZ	6.14	132.19	123.60	50	4
1	A	4	GLN	CA-CB-CG	6.13	126.89	113.40	124	2
1	A	80	GLU	N-CA-CB	-6.13	99.56	110.60	137	1
2	B	4	TRP	CH2-CZ2-CE2	6.13	123.53	117.40	96	6
1	A	115	GLU	OE1-CD-OE2	-6.11	115.97	123.30	149	5
1	A	106	THR	N-CA-CB	6.09	121.88	110.30	26	4
1	A	64	PHE	CG-CD1-CE1	-6.09	114.10	120.80	81	1
2	B	1	ARG	CG-CD-NE	-6.09	99.01	111.80	2	5
1	A	139	GLN	N-CA-CB	6.09	121.56	110.60	5	2
1	A	125	ASP	N-CA-CB	-6.09	99.65	110.60	141	5
1	A	26	LYS	O-C-N	-6.09	112.96	122.70	113	4
1	A	134	TYR	CD1-CG-CD2	6.08	124.59	117.90	112	7
1	A	104	VAL	O-C-N	-6.08	112.97	122.70	153	3
1	A	21	GLY	CA-C-O	-6.08	109.66	120.60	7	1
1	A	3	GLU	CB-CA-C	6.07	122.53	110.40	136	2
1	A	20	ASP	O-C-N	-6.07	112.89	123.20	110	1
1	A	64	PHE	N-CA-CB	-6.06	99.69	110.60	77	2
1	A	108	LEU	CB-CG-CD1	6.06	121.30	111.00	29	5
1	A	73	LYS	O-C-N	-6.06	113.00	122.70	45	4
1	A	54	ASP	OD1-CG-OD2	-6.05	111.80	123.30	102	1
1	A	95	TYR	CD1-CE1-CZ	-6.05	114.36	119.80	104	6
1	A	35	LEU	CB-CG-CD2	6.05	121.28	111.00	18	4
1	A	67	MET	CA-CB-CG	6.05	123.58	113.30	22	2
1	A	141	MET	N-CA-CB	6.04	121.47	110.60	78	3
1	A	33	ARG	CG-CD-NE	-6.04	99.13	111.80	116	3

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	6	ALA	CB-CA-C	-6.03	101.06	110.10	32	3
1	A	35	LEU	CB-CG-CD1	-6.01	100.77	111.00	101	1
1	A	93	ASN	CB-CG-OD1	6.01	133.61	121.60	156	2
1	A	52	ASP	C-N-CA	6.01	136.72	121.70	116	2
1	A	50	GLU	OE1-CD-OE2	-6.01	116.09	123.30	130	2
2	B	16	ARG	CG-CD-NE	-6.00	99.20	111.80	7	4
1	A	37	GLN	CG-CD-OE1	5.99	133.58	121.60	73	1
1	A	45	GLN	O-C-N	-5.99	113.12	122.70	73	4
1	A	87	VAL	O-C-N	-5.98	113.13	122.70	2	4
1	A	48	ILE	O-C-N	-5.98	113.14	122.70	2	5
2	B	12	ARG	N-CA-CB	-5.98	99.84	110.60	29	2
1	A	120	MET	CB-CA-C	5.98	122.36	110.40	50	2
1	A	82	ARG	CB-CA-C	5.98	122.35	110.40	150	2
1	A	112	LEU	O-C-N	-5.97	113.14	122.70	10	3
1	A	15	PHE	CB-CA-C	-5.97	98.47	110.40	131	3
1	A	62	PRO	C-N-CA	5.96	136.61	121.70	39	1
1	A	16	ASP	O-C-N	-5.96	113.16	122.70	121	4
1	A	7	GLU	N-CA-CB	-5.96	99.88	110.60	131	4
1	A	76	ASP	N-CA-CB	5.96	121.32	110.60	86	1
1	A	52	ASP	N-CA-CB	-5.95	99.89	110.60	49	1
1	A	139	GLN	CB-CA-C	-5.95	98.51	110.40	6	2
1	A	25	THR	OG1-CB-CG2	-5.94	96.33	110.00	86	3
2	B	3	LYS	O-C-N	-5.94	113.20	122.70	119	2
1	A	37	GLN	CB-CA-C	-5.93	98.53	110.40	145	1
1	A	76	ASP	CB-CA-C	-5.92	98.57	110.40	69	1
1	A	25	THR	N-CA-CB	5.91	121.53	110.30	99	4
2	B	4	TRP	CE2-CD2-CE3	5.91	125.79	118.70	48	6
1	A	59	ILE	C-N-CA	5.90	136.46	121.70	114	3
1	A	45	GLN	N-CA-CB	-5.90	99.98	110.60	118	2
1	A	120	MET	O-C-N	-5.89	113.27	122.70	124	2
1	A	71	LYS	N-CA-CB	-5.89	99.99	110.60	40	3
1	A	68	MET	O-C-N	-5.88	113.29	122.70	78	2
1	A	35	LEU	CB-CA-C	-5.88	99.03	110.20	56	2
1	A	38	ASN	N-CA-CB	-5.88	100.02	110.60	8	4
1	A	107	ASN	CA-CB-CG	-5.88	100.47	113.40	125	1
1	A	141	MET	CA-CB-CG	5.87	123.29	113.30	147	1
1	A	129	ASP	C-N-CA	5.87	134.63	122.30	48	2
1	A	11	ALA	O-C-N	-5.87	113.31	122.70	110	4
1	A	100	GLU	N-CA-CB	5.87	121.16	110.60	92	1
1	A	32	MET	O-C-N	-5.87	113.31	122.70	156	1
1	A	59	ILE	CB-CA-C	5.86	123.32	111.60	24	2

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	60	ASP	O-C-N	-5.86	113.32	122.70	104	4
1	A	11	ALA	CB-CA-C	-5.86	101.31	110.10	2	8
2	B	6	LYS	C-N-CA	5.86	136.34	121.70	1	4
1	A	116	GLU	OE1-CD-OE2	5.85	130.32	123.30	90	4
1	A	67	MET	N-CA-CB	-5.85	100.07	110.60	16	3
1	A	104	VAL	C-N-CA	5.85	136.32	121.70	42	1
1	A	113	THR	N-CA-CB	5.85	121.41	110.30	105	2
1	A	124	ALA	O-C-N	-5.84	113.35	122.70	91	2
1	A	90	LYS	O-C-N	-5.83	113.36	122.70	87	3
1	A	40	THR	N-CA-CB	5.83	121.38	110.30	28	3
2	B	12	ARG	O-C-N	-5.82	113.39	122.70	68	2
1	A	112	LEU	CB-CG-CD1	5.81	120.88	111.00	50	5
1	A	41	GLU	CB-CA-C	-5.81	98.78	110.40	36	1
1	A	107	ASN	N-CA-CB	-5.80	100.16	110.60	65	1
1	A	81	ILE	CB-CA-C	5.80	123.20	111.60	79	1
1	A	108	LEU	CB-CA-C	5.79	121.20	110.20	96	2
2	B	12	ARG	CG-CD-NE	-5.79	99.64	111.80	52	7
1	A	136	GLU	N-CA-CB	5.78	121.00	110.60	80	1
1	A	18	ASP	C-N-CA	5.78	134.43	122.30	2	5
1	A	108	LEU	N-CA-C	5.78	126.60	111.00	6	1
1	A	33	ARG	N-CA-CB	-5.78	100.20	110.60	38	1
1	A	81	ILE	O-C-N	-5.77	113.47	122.70	60	3
1	A	82	ARG	CG-CD-NE	-5.75	99.72	111.80	35	5
1	A	61	PHE	CG-CD2-CE2	5.75	127.12	120.80	104	2
1	A	39	PRO	N-CD-CG	5.75	111.82	103.20	94	2
1	A	67	MET	O-C-N	-5.74	113.52	122.70	11	1
1	A	91	ASP	OD1-CG-OD2	-5.74	112.40	123.30	7	2
1	A	28	LEU	N-CA-CB	5.74	121.87	110.40	32	3
1	A	79	GLU	N-CA-CB	-5.74	100.28	110.60	47	1
1	A	30	THR	O-C-N	-5.73	113.53	122.70	2	1
1	A	77	SER	O-C-N	-5.73	113.53	122.70	154	1
1	A	38	ASN	CA-C-N	5.72	133.13	117.10	83	1
1	A	133	ASN	O-C-N	-5.72	113.55	122.70	145	1
1	A	122	ARG	O-C-N	-5.71	113.56	122.70	47	4
1	A	121	ILE	CA-CB-CG2	5.71	122.32	110.90	61	1
1	A	66	THR	N-CA-CB	5.71	121.15	110.30	38	4
1	A	72	MET	CB-CA-C	5.71	121.82	110.40	103	2
1	A	30	THR	CA-CB-OG1	5.70	120.98	109.00	54	2
1	A	128	GLY	O-C-N	-5.70	113.58	122.70	2	1
1	A	37	GLN	O-C-N	-5.70	113.58	122.70	86	4
1	A	101	LEU	CB-CG-CD2	-5.70	101.31	111.00	102	3

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	31	VAL	CA-CB-CG2	-5.70	102.36	110.90	11	4
1	A	88	PHE	CB-CA-C	-5.69	99.01	110.40	138	2
1	A	51	VAL	CA-CB-CG2	5.69	119.43	110.90	147	5
1	A	40	THR	CA-CB-OG1	5.68	120.93	109.00	32	4
1	A	72	MET	N-CA-CB	-5.68	100.37	110.60	154	2
1	A	117	VAL	CG1-CB-CG2	-5.68	101.81	110.90	74	5
1	A	24	THR	N-CA-CB	5.67	121.08	110.30	105	2
1	A	62	PRO	O-C-N	-5.67	113.63	122.70	32	2
1	A	28	LEU	O-C-N	-5.67	113.57	123.20	127	4
1	A	68	MET	N-CA-CB	-5.66	100.41	110.60	50	2
1	A	137	PHE	CD1-CG-CD2	5.66	125.66	118.30	1	1
2	B	13	ALA	N-CA-CB	5.66	118.02	110.10	149	3
1	A	93	ASN	C-N-CA	5.65	134.17	122.30	123	1
1	A	74	ASP	O-C-N	-5.65	113.66	122.70	70	3
1	A	89	ASP	O-C-N	-5.64	113.68	122.70	94	2
1	A	101	LEU	CB-CA-C	-5.64	99.49	110.20	25	1
1	A	20	ASP	C-N-CA	5.63	134.13	122.30	112	1
1	A	138	VAL	CA-CB-CG1	5.63	119.35	110.90	8	6
1	A	41	GLU	O-C-N	-5.62	113.70	122.70	97	1
1	A	114	ASP	C-N-CA	5.62	135.76	121.70	16	3
1	A	122	ARG	CG-CD-NE	-5.62	99.99	111.80	65	3
1	A	137	PHE	CB-CA-C	5.61	121.62	110.40	100	2
1	A	62	PRO	N-CD-CG	5.61	111.62	103.20	142	1
1	A	30	THR	OG1-CB-CG2	-5.61	97.09	110.00	111	1
2	B	5	GLN	C-N-CA	5.61	135.72	121.70	160	2
1	A	63	GLU	O-C-N	-5.61	113.73	122.70	25	1
1	A	4	GLN	N-CA-CB	-5.60	100.51	110.60	14	1
1	A	66	THR	C-N-CA	5.60	135.71	121.70	140	1
1	A	142	THR	OG1-CB-CG2	-5.60	97.11	110.00	159	2
1	A	111	LYS	CB-CA-C	5.59	121.58	110.40	145	1
2	B	6	LYS	CA-C-O	5.59	131.84	120.10	65	2
1	A	25	THR	O-C-N	-5.58	113.78	122.70	26	1
1	A	43	GLU	O-C-N	-5.58	113.78	122.70	91	3
1	A	102	ARG	O-C-N	-5.58	113.78	122.70	136	2
1	A	110	GLU	O-C-N	-5.57	113.78	122.70	108	2
1	A	53	ALA	O-C-N	-5.57	113.78	122.70	70	2
1	A	8	PHE	CG-CD2-CE2	-5.56	114.68	120.80	112	1
1	A	77	SER	CB-CA-C	-5.56	99.54	110.10	5	2
2	B	4	TRP	NE1-CE2-CZ2	5.56	136.51	130.40	111	1
1	A	85	PHE	N-CA-CB	-5.56	100.60	110.60	125	5
1	A	66	THR	OG1-CB-CG2	-5.55	97.23	110.00	58	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	39	PRO	N-CA-CB	5.55	109.96	103.30	116	1
1	A	109	GLY	O-C-N	-5.54	113.83	122.70	93	2
2	B	4	TRP	N-CA-CB	5.54	120.57	110.60	130	3
1	A	70	ARG	O-C-N	-5.54	113.84	122.70	26	2
1	A	114	ASP	CA-CB-CG	-5.54	101.22	113.40	107	2
1	A	32	MET	N-CA-CB	5.54	120.56	110.60	132	2
1	A	30	THR	N-CA-CB	5.53	120.81	110.30	4	3
1	A	47	MET	C-N-CA	5.52	135.50	121.70	80	1
1	A	134	TYR	N-CA-CB	-5.52	100.67	110.60	54	1
1	A	91	ASP	N-CA-CB	-5.52	100.67	110.60	94	1
1	A	124	ALA	C-N-CA	5.51	135.47	121.70	125	1
1	A	140	MET	N-CA-CB	-5.51	100.69	110.60	57	2
1	A	63	GLU	C-N-CA	5.51	135.47	121.70	78	1
1	A	115	GLU	N-CA-CB	-5.50	100.70	110.60	135	2
2	B	8	GLY	O-C-N	-5.50	113.90	122.70	35	1
1	A	113	THR	OG1-CB-CG2	-5.50	97.36	110.00	68	1
1	A	80	GLU	O-C-N	-5.50	113.91	122.70	99	1
2	B	4	TRP	CD2-CE2-CZ2	-5.50	115.71	122.30	73	2
1	A	5	ILE	CA-CB-CG1	5.49	121.44	111.00	89	1
1	A	61	PHE	CA-CB-CG	-5.49	100.72	113.90	78	1
1	A	139	GLN	O-C-N	-5.49	113.92	122.70	113	1
1	A	7	GLU	CG-CD-OE2	5.48	129.26	118.30	26	1
1	A	73	LYS	C-N-CA	5.48	135.41	121.70	94	3
1	A	110	GLU	N-CA-CB	-5.47	100.75	110.60	9	1
1	A	73	LYS	CB-CA-C	5.47	121.34	110.40	124	3
1	A	74	ASP	N-CA-CB	-5.47	100.75	110.60	155	1
1	A	15	PHE	CG-CD1-CE1	-5.47	114.79	120.80	146	1
1	A	51	VAL	C-N-CA	5.46	135.36	121.70	28	1
2	B	8	GLY	C-N-CA	5.46	135.36	121.70	76	1
1	A	103	HIS	O-C-N	-5.46	113.97	122.70	119	3
1	A	136	GLU	CG-CD-OE2	5.45	129.21	118.30	99	1
1	A	133	ASN	CB-CA-C	5.44	121.28	110.40	80	3
1	A	85	PHE	CG-CD2-CE2	5.44	126.78	120.80	21	2
1	A	78	GLU	CB-CA-C	-5.44	99.52	110.40	41	1
1	A	76	ASP	O-C-N	-5.43	114.00	122.70	45	1
1	A	43	GLU	CA-CB-CG	-5.43	101.44	113.40	55	1
1	A	22	THR	O-C-N	-5.43	114.00	122.70	107	2
1	A	58	THR	O-C-N	-5.43	114.01	122.70	25	2
1	A	51	VAL	O-C-N	-5.43	114.01	122.70	142	3
1	A	37	GLN	CA-CB-CG	5.43	125.34	113.40	24	1
1	A	97	SER	C-N-CA	5.43	135.28	121.70	76	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	18	ASP	O-C-N	-5.42	113.99	123.20	129	2
1	A	15	PHE	CG-CD2-CE2	-5.41	114.85	120.80	125	3
1	A	44	LEU	CB-CG-CD2	5.41	120.19	111.00	21	3
1	A	95	TYR	C-N-CA	5.41	135.22	121.70	133	1
2	B	14	ILE	CG1-CB-CG2	-5.40	99.52	111.40	135	1
1	A	13	SER	CB-CA-C	-5.40	99.84	110.10	107	5
1	A	41	GLU	N-CA-CB	5.39	120.31	110.60	156	2
1	A	8	PHE	O-C-N	-5.39	114.07	122.70	5	4
2	B	16	ARG	C-N-CA	5.39	135.18	121.70	38	1
1	A	111	LYS	N-CA-CB	5.39	120.30	110.60	29	2
2	B	4	TRP	CB-CA-C	-5.39	99.62	110.40	118	1
1	A	23	ILE	C-N-CA	5.38	135.14	121.70	102	1
1	A	45	GLN	CB-CA-C	-5.38	99.65	110.40	108	2
2	B	15	GLY	C-N-CA	5.37	135.13	121.70	129	2
1	A	9	LYS	CA-CB-CG	5.37	125.22	113.40	82	1
1	A	129	ASP	CA-CB-CG	5.37	125.20	113.40	67	2
1	A	17	LYS	CB-CA-C	5.36	121.12	110.40	103	1
1	A	81	ILE	CA-CB-CG1	5.36	121.19	111.00	118	1
1	A	135	GLU	CB-CA-C	-5.36	99.68	110.40	146	1
1	A	15	PHE	O-C-N	-5.36	114.13	122.70	18	1
1	A	92	GLY	O-C-N	-5.36	114.13	122.70	91	2
1	A	8	PHE	CG-CD1-CE1	5.36	126.69	120.80	40	1
1	A	35	LEU	O-C-N	-5.36	114.10	123.20	147	3
1	A	91	ASP	CB-CA-C	5.35	121.10	110.40	55	2
1	A	96	ILE	O-C-N	-5.35	114.14	122.70	133	1
1	A	73	LYS	CA-CB-CG	5.35	125.16	113.40	10	1
1	A	71	LYS	CA-C-O	5.34	131.32	120.10	126	1
1	A	19	GLY	O-C-N	5.34	131.25	122.70	69	1
1	A	7	GLU	CB-CA-C	5.34	121.08	110.40	152	2
1	A	12	PHE	CD1-CE1-CZ	-5.34	113.69	120.10	151	2
1	A	118	ASP	CB-CA-C	5.34	121.07	110.40	105	2
1	A	117	VAL	O-C-N	-5.33	114.17	122.70	96	2
1	A	38	ASN	CA-C-O	-5.33	108.91	120.10	50	1
1	A	123	GLU	N-CA-CB	5.33	120.19	110.60	52	1
1	A	76	ASP	OD1-CG-OD2	-5.33	113.18	123.30	74	1
1	A	22	THR	CA-CB-OG1	5.32	120.18	109.00	103	1
1	A	49	ASN	C-N-CA	5.32	135.00	121.70	117	1
1	A	75	THR	O-C-N	-5.32	114.19	122.70	94	2
1	A	117	VAL	CB-CA-C	-5.32	101.29	111.40	98	1
1	A	61	PHE	N-CA-CB	-5.32	101.03	110.60	66	1
1	A	134	TYR	C-N-CA	5.32	134.99	121.70	123	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	110	GLU	CB-CA-C	-5.31	99.77	110.40	19	2
1	A	120	MET	N-CA-CB	-5.31	101.05	110.60	50	1
1	A	17	LYS	N-CA-CB	5.30	120.15	110.60	12	1
1	A	4	GLN	C-N-CA	5.30	134.95	121.70	39	2
1	A	115	GLU	CA-CB-CG	5.30	125.06	113.40	97	2
1	A	46	ASP	CA-CB-CG	-5.29	101.75	113.40	125	1
1	A	111	LYS	C-N-CA	5.29	134.93	121.70	32	1
1	A	12	PHE	O-C-N	-5.29	114.23	122.70	21	3
1	A	63	GLU	CB-CA-C	5.29	120.98	110.40	138	1
1	A	34	SER	CB-CA-C	-5.28	100.06	110.10	121	2
1	A	34	SER	C-N-CA	5.28	134.90	121.70	19	1
1	A	23	ILE	O-C-N	-5.28	114.25	122.70	79	3
1	A	87	VAL	CB-CA-C	-5.28	101.37	111.40	54	1
1	A	39	PRO	O-C-N	-5.28	114.25	122.70	152	1
1	A	48	ILE	CA-CB-CG1	-5.28	100.98	111.00	18	1
2	B	4	TRP	CD1-NE1-CE2	5.27	113.75	109.00	101	2
1	A	109	GLY	C-N-CA	5.27	134.88	121.70	96	1
1	A	137	PHE	CD1-CE1-CZ	-5.26	113.78	120.10	95	1
1	A	85	PHE	CG-CD1-CE1	5.26	126.59	120.80	146	2
2	B	13	ALA	O-C-N	-5.26	114.28	122.70	127	1
1	A	128	GLY	CA-C-O	-5.26	111.13	120.60	106	1
1	A	10	GLU	CB-CA-C	5.25	120.91	110.40	3	1
1	A	59	ILE	N-CA-CB	5.25	122.88	110.80	22	1
1	A	127	ASP	O-C-N	-5.25	114.28	123.20	84	2
1	A	17	LYS	O-C-N	5.25	131.09	122.70	34	2
2	B	14	ILE	CA-CB-CG2	-5.25	100.41	110.90	30	1
1	A	107	ASN	CB-CA-C	-5.24	99.92	110.40	14	1
1	A	22	THR	OG1-CB-CG2	-5.24	97.94	110.00	15	1
1	A	85	PHE	CD1-CE1-CZ	-5.24	113.81	120.10	119	1
1	A	15	PHE	CZ-CE2-CD2	-5.24	113.81	120.10	123	1
2	B	9	HIS	O-C-N	-5.24	114.32	122.70	94	2
1	A	41	GLU	OE1-CD-OE2	-5.24	117.02	123.30	39	4
1	A	26	LYS	N-CA-CB	-5.24	101.18	110.60	149	1
1	A	121	ILE	O-C-N	-5.23	114.33	122.70	34	3
2	B	16	ARG	N-CA-CB	5.23	120.02	110.60	154	1
1	A	117	VAL	CA-C-O	5.23	131.08	120.10	7	1
2	B	2	ARG	CD-NE-CZ	5.23	130.92	123.60	19	1
1	A	7	GLU	CG-CD-OE1	-5.22	107.85	118.30	26	1
2	B	2	ARG	CB-CA-C	-5.22	99.95	110.40	24	1
1	A	33	ARG	CD-NE-CZ	5.22	130.91	123.60	158	3
2	B	6	LYS	N-CA-CB	-5.22	101.20	110.60	32	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	75	THR	CA-CB-OG1	5.21	119.95	109.00	17	1
2	B	6	LYS	CA-C-N	-5.21	105.73	117.20	32	1
1	A	61	PHE	N-CA-C	5.21	125.08	111.00	130	1
2	B	11	VAL	N-CA-C	5.21	125.07	111.00	19	1
2	B	11	VAL	CA-C-O	5.21	131.04	120.10	61	1
1	A	85	PHE	C-N-CA	5.21	134.72	121.70	157	1
1	A	119	GLU	C-N-CA	5.20	134.70	121.70	51	2
1	A	126	ILE	O-C-N	-5.20	114.38	122.70	116	1
1	A	99	ALA	C-N-CA	5.20	134.69	121.70	68	1
1	A	101	LEU	CA-CB-CG	5.20	127.25	115.30	19	1
2	B	5	GLN	CB-CA-C	-5.20	100.00	110.40	159	1
1	A	65	LEU	CA-C-N	5.19	128.61	117.20	100	1
1	A	84	ALA	O-C-N	-5.19	114.40	122.70	127	1
1	A	96	ILE	CA-CB-CG2	-5.18	100.53	110.90	157	1
1	A	122	ARG	CB-CG-CD	5.18	125.06	111.60	72	1
2	B	4	TRP	NE1-CE2-CD2	5.18	112.48	107.30	141	1
1	A	46	ASP	C-N-CA	5.18	134.64	121.70	64	1
1	A	79	GLU	CB-CA-C	5.18	120.75	110.40	122	1
1	A	4	GLN	CA-C-O	-5.17	109.24	120.10	81	1
1	A	7	GLU	O-C-N	-5.17	114.43	122.70	27	1
1	A	106	THR	O-C-N	-5.17	114.44	122.70	131	2
1	A	4	GLN	O-C-N	-5.16	114.44	122.70	94	1
1	A	75	THR	CA-C-O	5.15	130.92	120.10	64	1
1	A	25	THR	CA-CB-OG1	5.15	119.82	109.00	140	1
1	A	100	GLU	O-C-N	-5.15	114.46	122.70	158	2
1	A	5	ILE	C-N-CA	5.15	134.57	121.70	95	1
1	A	20	ASP	OD1-CG-OD2	-5.15	113.52	123.30	65	2
1	A	125	ASP	O-C-N	-5.14	114.47	122.70	111	2
2	B	4	TRP	CG-CD1-NE1	5.14	115.24	110.10	11	1
1	A	141	MET	O-C-N	-5.14	114.48	122.70	96	1
2	B	4	TRP	CD2-CE3-CZ3	-5.14	112.12	118.80	147	2
1	A	71	LYS	O-C-N	-5.14	114.48	122.70	138	1
1	A	6	ALA	O-C-N	-5.13	114.48	122.70	148	1
1	A	48	ILE	C-N-CA	5.13	134.53	121.70	11	1
1	A	55	GLY	C-N-CA	5.13	134.53	121.70	58	1
1	A	7	GLU	CA-CB-CG	5.13	124.68	113.40	77	1
1	A	110	GLU	CA-CB-CG	5.13	124.68	113.40	94	1
1	A	34	SER	O-C-N	-5.13	114.50	122.70	66	1
2	B	4	TRP	CE3-CZ3-CH2	5.12	126.83	121.20	32	1
1	A	103	HIS	CB-CA-C	-5.12	100.16	110.40	42	2
1	A	42	ALA	C-N-CA	5.12	134.50	121.70	152	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	127	ASP	CA-CB-CG	5.12	124.65	113.40	52	1
1	A	100	GLU	CG-CD-OE2	5.11	128.53	118.30	21	1
1	A	16	ASP	N-CA-CB	-5.11	101.40	110.60	23	1
1	A	133	ASN	C-N-CA	5.11	134.48	121.70	49	1
1	A	101	LEU	O-C-N	-5.11	114.53	122.70	55	1
1	A	140	MET	O-C-N	-5.11	114.53	122.70	144	2
1	A	88	PHE	CD1-CG-CD2	-5.11	111.66	118.30	6	3
1	A	74	ASP	N-CA-C	5.11	124.78	111.00	60	1
1	A	137	PHE	CG-CD1-CE1	-5.10	115.19	120.80	46	1
1	A	24	THR	OG1-CB-CG2	-5.10	98.27	110.00	101	1
1	A	49	ASN	CB-CA-C	5.10	120.60	110.40	138	1
1	A	58	THR	OG1-CB-CG2	-5.10	98.27	110.00	149	1
2	B	2	ARG	CG-CD-NE	-5.09	101.10	111.80	98	1
1	A	89	ASP	CB-CA-C	5.09	120.59	110.40	67	1
1	A	16	ASP	CA-C-O	5.09	130.79	120.10	47	1
1	A	142	THR	CA-CB-OG1	5.09	119.69	109.00	139	1
1	A	86	ARG	N-CA-C	5.09	124.74	111.00	27	1
1	A	127	ASP	N-CA-CB	5.09	119.76	110.60	50	1
1	A	31	VAL	O-C-N	-5.09	114.56	122.70	131	2
1	A	108	LEU	C-N-CA	5.08	132.98	122.30	47	1
1	A	111	LYS	CD-CE-NZ	-5.08	100.01	111.70	135	1
1	A	107	ASN	O-C-N	-5.08	114.57	122.70	56	1
1	A	141	MET	CB-CA-C	-5.08	100.24	110.40	95	1
1	A	70	ARG	CD-NE-CZ	5.08	130.71	123.60	108	1
1	A	11	ALA	N-CA-C	5.08	124.71	111.00	142	1
1	A	44	LEU	CB-CA-C	5.08	119.84	110.20	50	1
2	B	1	ARG	O-C-N	-5.07	114.59	122.70	24	1
1	A	58	THR	CA-CB-OG1	5.07	119.65	109.00	54	1
1	A	19	GLY	CA-C-O	5.07	129.73	120.60	119	1
1	A	59	ILE	CA-C-O	5.07	130.75	120.10	61	1
1	A	64	PHE	CB-CA-C	5.07	120.53	110.40	9	1
2	B	1	ARG	CA-CB-CG	5.07	124.55	113.40	86	1
1	A	46	ASP	O-C-N	-5.07	114.59	122.70	94	1
1	A	16	ASP	CA-CB-CG	-5.07	102.26	113.40	140	1
1	A	85	PHE	CB-CA-C	5.06	120.53	110.40	88	1
1	A	129	ASP	N-CA-C	5.06	124.67	111.00	31	1
1	A	52	ASP	N-CA-C	5.06	124.66	111.00	75	1
1	A	113	THR	CA-CB-OG1	5.06	119.62	109.00	108	1
1	A	116	GLU	C-N-CA	5.06	134.35	121.70	141	1
2	B	1	ARG	N-CA-CB	-5.06	101.50	110.60	133	1
2	B	4	TRP	CD1-CG-CD2	-5.05	102.26	106.30	11	1

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
1	A	9	LYS	O-C-N	-5.05	114.62	122.70	49	1
1	A	63	GLU	CG-CD-OE1	5.05	128.40	118.30	124	1
1	A	119	GLU	CA-C-O	5.04	130.69	120.10	109	1
1	A	80	GLU	C-N-CA	5.04	134.31	121.70	36	1
1	A	111	LYS	CB-CG-CD	5.04	124.71	111.60	21	1
1	A	33	ARG	CB-CA-C	5.04	120.48	110.40	104	1
1	A	97	SER	CB-CA-C	5.04	119.67	110.10	132	1
1	A	113	THR	C-N-CA	5.04	134.29	121.70	23	1
1	A	5	ILE	CA-CB-CG2	5.04	120.97	110.90	113	1
1	A	5	ILE	N-CA-CB	5.04	122.38	110.80	89	1
1	A	141	MET	CA-C-N	5.03	128.27	117.20	47	1
1	A	18	ASP	CA-CB-CG	5.03	124.47	113.40	8	1
1	A	45	GLN	CA-C-N	5.03	128.27	117.20	23	1
1	A	88	PHE	CZ-CE2-CD2	-5.03	114.06	120.10	83	1
1	A	12	PHE	CB-CA-C	5.03	120.45	110.40	137	1
1	A	28	LEU	CB-CG-CD2	5.02	119.53	111.00	33	1
1	A	70	ARG	CA-CB-CG	5.02	124.45	113.40	109	1
1	A	107	ASN	CB-CG-OD1	5.02	131.64	121.60	20	1
1	A	115	GLU	O-C-N	-5.02	114.67	122.70	2	1
2	B	7	THR	CA-C-O	5.01	130.63	120.10	97	1
1	A	74	ASP	CA-CB-CG	-5.01	102.37	113.40	95	1
1	A	112	LEU	CB-CA-C	-5.01	100.69	110.20	59	1
1	A	122	ARG	N-CA-CB	-5.01	101.59	110.60	13	1
1	A	57	GLY	C-N-CA	5.00	134.21	121.70	138	1
1	A	122	ARG	C-N-CA	5.00	134.20	121.70	105	1
1	A	43	GLU	CG-CD-OE1	5.00	128.30	118.30	112	1

There are no chirality outliers.

All unique planar outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Group	Models (Total)
2	B	12	ARG	Sidechain	52
2	B	16	ARG	Sidechain	50
2	B	2	ARG	Sidechain,Peptide	47
1	A	33	ARG	Sidechain	47
1	A	95	TYR	Sidechain	40
1	A	102	ARG	Sidechain	39
2	B	1	ARG	Peptide,Sidechain	38
1	A	86	ARG	Sidechain	36
1	A	134	TYR	Sidechain	35

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Mol	Chain	Res	Type	Group	Models (Total)
1	A	82	ARG	Sidechain	35
1	A	70	ARG	Sidechain	35
1	A	122	ARG	Sidechain	33
1	A	137	PHE	Sidechain,Mainchain	21
1	A	61	PHE	Sidechain	16
1	A	8	PHE	Sidechain	15
1	A	12	PHE	Sidechain	13
1	A	15	PHE	Sidechain	11
1	A	64	PHE	Sidechain	11
1	A	88	PHE	Sidechain	10
1	A	85	PHE	Sidechain	8
2	B	9	HIS	Sidechain	7
1	A	103	HIS	Mainchain,Sidechain	6
1	A	63	GLU	Peptide,Sidechain	3
1	A	73	LYS	Peptide	2
1	A	112	LEU	Peptide	2
1	A	13	SER	Peptide	1
2	B	6	LYS	Mainchain	1
1	A	38	ASN	Peptide	1
1	A	115	GLU	Peptide	1
2	B	3	LYS	Mainchain	1
1	A	58	THR	Peptide	1
1	A	124	ALA	Peptide	1
1	A	101	LEU	Mainchain	1
1	A	30	THR	Mainchain	1
1	A	75	THR	Peptide	1
1	A	114	ASP	Peptide	1
1	A	83	GLU	Mainchain	1
1	A	40	THR	Peptide	1
1	A	140	MET	Mainchain	1
1	A	141	MET	Mainchain	1
1	A	39	PRO	Peptide	1
1	A	100	GLU	Mainchain	1
1	A	26	LYS	Mainchain	1

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	1105	1035	1035	1±1
2	B	135	145	148	0±0
All	All	199040	188800	189279	103

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 0.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:51:VAL:HG21	1:A:59:ILE:HD12	0.71	1.62	39	1
1:A:8:PHE:CD2	1:A:65:LEU:HD22	0.60	2.31	139	1
1:A:28:LEU:HD23	1:A:44:LEU:HD13	0.57	1.76	13	1
1:A:28:LEU:HD23	1:A:44:LEU:HD11	0.56	1.76	76	1
1:A:90:LYS:HD2	1:A:103:HIS:CD2	0.56	2.36	22	1
1:A:61:PHE:CZ	1:A:65:LEU:HD21	0.56	2.36	35	1
1:A:87:VAL:HG21	2:B:11:VAL:HG13	0.55	1.77	62	2
2:B:7:THR:O	2:B:11:VAL:HG12	0.54	2.03	71	2
2:B:5:GLN:O	2:B:9:HIS:CD2	0.54	2.61	121	3
1:A:61:PHE:CE2	1:A:65:LEU:HD11	0.54	2.37	5	2
1:A:134:TYR:O	1:A:138:VAL:HG23	0.53	2.02	62	3
1:A:99:ALA:O	1:A:103:HIS:CD2	0.53	2.62	101	1
1:A:14:LEU:HD23	2:B:10:ALA:CB	0.52	2.33	2	1
1:A:35:LEU:HD11	1:A:108:LEU:HD21	0.50	1.83	67	1
1:A:108:LEU:CD1	2:B:7:THR:HG23	0.49	2.36	88	1
1:A:101:LEU:HD13	2:B:4:TRP:CH2	0.49	2.41	3	2
1:A:61:PHE:HB3	1:A:62:PRO:HD3	0.49	1.85	11	2
1:A:108:LEU:HD12	2:B:7:THR:HG23	0.49	1.83	88	2
1:A:28:LEU:HD11	2:B:14:ILE:HD13	0.49	1.84	156	1
1:A:126:ILE:HG22	1:A:136:GLU:HG2	0.48	1.85	58	1
1:A:115:GLU:CD	1:A:115:GLU:H	0.47	2.13	122	1
1:A:68:MET:CE	2:B:13:ALA:HB2	0.47	2.40	3	1
2:B:5:GLN:O	2:B:9:HIS:CG	0.47	2.67	4	1
1:A:103:HIS:CE1	1:A:107:ASN:HD21	0.47	2.28	133	2
1:A:96:ILE:HD12	1:A:132:VAL:HB	0.47	1.87	34	1
1:A:12:PHE:CE1	1:A:23:ILE:HD11	0.47	2.44	152	1
1:A:101:LEU:HD13	2:B:4:TRP:CZ3	0.46	2.45	105	1
1:A:7:GLU:OE2	2:B:2:ARG:NH2	0.46	2.47	30	1
1:A:28:LEU:CD2	1:A:44:LEU:HD11	0.46	2.40	76	1
1:A:28:LEU:O	1:A:31:VAL:HG12	0.46	2.11	83	1
1:A:88:PHE:CD1	1:A:104:VAL:HG21	0.45	2.46	141	2
1:A:64:PHE:CE2	2:B:9:HIS:CE1	0.45	3.04	72	1
1:A:102:ARG:HH12	1:A:114:ASP:CG	0.45	2.13	105	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:85:PHE:CE2	1:A:96:ILE:HD11	0.45	2.45	117	1
1:A:85:PHE:CE2	1:A:134:TYR:CE1	0.45	3.05	106	1
1:A:88:PHE:CZ	1:A:104:VAL:HG11	0.45	2.47	145	1
1:A:23:ILE:HB	1:A:59:ILE:HG23	0.45	1.88	10	3
1:A:85:PHE:CD2	1:A:134:TYR:CE1	0.45	3.05	152	2
1:A:102:ARG:NH2	1:A:114:ASP:OD1	0.44	2.50	1	1
1:A:118:ASP:OD2	1:A:122:ARG:NH1	0.44	2.49	81	1
1:A:88:PHE:HA	1:A:104:VAL:HG21	0.44	1.90	94	1
1:A:102:ARG:CG	1:A:117:VAL:HG11	0.44	2.43	160	1
1:A:83:GLU:O	1:A:87:VAL:HG23	0.44	2.13	137	3
1:A:134:TYR:CE2	1:A:138:VAL:HG21	0.43	2.48	112	1
1:A:54:ASP:OD1	1:A:55:GLY:N	0.43	2.50	134	2
1:A:114:ASP:HA	1:A:117:VAL:HG12	0.43	1.89	22	1
2:B:7:THR:O	2:B:11:VAL:HG23	0.43	2.12	28	1
1:A:85:PHE:CE1	1:A:96:ILE:HD11	0.43	2.48	73	1
1:A:12:PHE:CE1	1:A:23:ILE:HG13	0.43	2.48	104	1
1:A:112:LEU:H	1:A:112:LEU:HD22	0.42	1.74	129	1
1:A:23:ILE:HA	1:A:27:GLU:OE1	0.42	2.15	127	1
1:A:3:GLU:H	1:A:3:GLU:CD	0.42	2.17	24	1
1:A:8:PHE:CD2	1:A:65:LEU:CD1	0.42	3.03	8	1
1:A:79:GLU:OE1	1:A:82:ARG:NH1	0.42	2.51	14	1
1:A:81:ILE:HG21	1:A:138:VAL:HG22	0.42	1.90	17	1
1:A:112:LEU:N	1:A:112:LEU:HD23	0.42	2.30	139	1
1:A:8:PHE:CE1	2:B:9:HIS:CE1	0.42	3.08	138	1
1:A:102:ARG:HH21	1:A:114:ASP:CG	0.42	2.18	64	1
1:A:103:HIS:CD2	1:A:107:ASN:ND2	0.42	2.87	31	1
1:A:12:PHE:CZ	1:A:23:ILE:HG13	0.42	2.50	116	2
1:A:8:PHE:CE2	1:A:65:LEU:HD13	0.42	2.50	121	1
1:A:138:VAL:O	1:A:142:THR:HG23	0.42	2.14	79	1
1:A:37:GLN:O	1:A:39:PRO:HD3	0.41	2.15	122	1
1:A:68:MET:HG3	2:B:9:HIS:CE1	0.41	2.50	72	1
1:A:102:ARG:HH22	1:A:114:ASP:CG	0.41	2.18	151	1
1:A:8:PHE:HA	2:B:9:HIS:CE1	0.41	2.50	98	1
2:B:7:THR:O	2:B:10:ALA:HB3	0.41	2.15	146	1
1:A:15:PHE:HB2	1:A:23:ILE:HD13	0.41	1.93	13	1
1:A:8:PHE:CD2	2:B:9:HIS:HE1	0.41	2.33	150	1
1:A:24:THR:HG22	1:A:58:THR:HG22	0.41	1.92	23	1
1:A:115:GLU:H	1:A:115:GLU:CD	0.41	2.19	123	1
1:A:80:GLU:CD	2:B:16:ARG:HH22	0.41	2.19	100	1
1:A:14:LEU:HD12	2:B:10:ALA:HB2	0.41	1.91	35	1
1:A:80:GLU:CD	2:B:12:ARG:HE	0.41	2.19	103	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:80:GLU:OE2	2:B:16:ARG:NH1	0.41	2.51	124	2
1:A:124:ALA:HB2	2:B:4:TRP:CE2	0.41	2.51	15	1
2:B:11:VAL:HA	2:B:14:ILE:HG22	0.41	1.93	15	1
1:A:28:LEU:CD2	1:A:48:ILE:HD11	0.40	2.47	141	1
1:A:23:ILE:HB	1:A:59:ILE:CG2	0.40	2.46	85	1
1:A:8:PHE:CD1	2:B:9:HIS:CE1	0.40	3.10	18	1
1:A:31:VAL:O	1:A:34:SER:HB2	0.40	2.16	84	1
1:A:12:PHE:CE1	1:A:23:ILE:HD12	0.40	2.51	136	1
1:A:118:ASP:O	1:A:122:ARG:HB2	0.40	2.16	46	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	139/148 (94%)	128±3 (92±2%)	9±3 (6±2%)	2±2 (2±1%)	15	59
2	B	15/19 (79%)	14±1 (95±6%)	1±1 (4±5%)	0±0 (0±1%)	47	81
All	All	24640/26720 (92%)	22755 (92%)	1511 (6%)	374 (2%)	16	61

All 35 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	36	GLY	112
1	A	128	GLY	55
1	A	109	GLY	40
1	A	21	GLY	30
1	A	127	ASP	24
1	A	55	GLY	16
1	A	92	GLY	14
1	A	54	ASP	12
1	A	74	ASP	12
1	A	19	GLY	9
1	A	91	ASP	8
2	B	2	ARG	6

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Mol	Chain	Res	Type	Models (Total)
1	A	52	ASP	4
1	A	35	LEU	3
1	A	16	ASP	3
1	A	73	LYS	3
1	A	86	ARG	2
1	A	77	SER	2
1	A	39	PRO	2
2	B	11	VAL	2
1	A	49	ASN	1
1	A	38	ASN	1
1	A	125	ASP	1
1	A	108	LEU	1
1	A	89	ASP	1
1	A	15	PHE	1
1	A	18	ASP	1
1	A	5	ILE	1
1	A	101	LEU	1
1	A	98	ALA	1
1	A	50	GLU	1
1	A	53	ALA	1
1	A	115	GLU	1
1	A	117	VAL	1
1	A	20	ASP	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	120/126 (95%)	117±2 (98±1%)	3±2 (2±1%)	54	92
2	B	12/15 (80%)	12±0 (98±4%)	0±0 (2±4%)	63	94
All	All	21120/22560 (94%)	20609 (98%)	511 (2%)	55	92

All 99 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	91	ASP	36

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Mol	Chain	Res	Type	Models (Total)
1	A	127	ASP	33
1	A	54	ASP	31
1	A	59	ILE	27
1	A	18	ASP	24
1	A	20	ASP	16
1	A	3	GLU	13
1	A	88	PHE	13
1	A	74	ASP	13
1	A	39	PRO	11
2	B	6	LYS	10
1	A	133	ASN	9
1	A	110	GLU	9
1	A	112	LEU	9
1	A	114	ASP	8
2	B	11	VAL	8
2	B	16	ARG	7
1	A	104	VAL	7
1	A	65	LEU	7
1	A	134	TYR	6
1	A	23	ILE	6
1	A	105	MET	6
1	A	101	LEU	6
1	A	8	PHE	6
1	A	75	THR	6
1	A	117	VAL	6
2	B	14	ILE	5
1	A	139	GLN	5
1	A	118	ASP	5
1	A	12	PHE	5
1	A	14	LEU	5
1	A	7	GLU	5
1	A	13	SER	5
1	A	60	ASP	5
1	A	25	THR	4
1	A	111	LYS	4
1	A	16	ASP	4
1	A	15	PHE	4
1	A	22	THR	4
1	A	64	PHE	4
1	A	125	ASP	4
1	A	46	ASP	3
1	A	52	ASP	3

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Mol	Chain	Res	Type	Models (Total)
1	A	131	GLN	3
1	A	44	LEU	3
1	A	28	LEU	3
1	A	140	MET	3
1	A	33	ARG	3
1	A	37	GLN	3
1	A	108	LEU	3
1	A	62	PRO	3
1	A	61	PHE	3
1	A	50	GLU	3
1	A	77	SER	3
1	A	56	ASN	3
1	A	132	VAL	3
1	A	72	MET	3
2	B	2	ARG	3
1	A	31	VAL	3
1	A	90	LYS	3
1	A	58	THR	2
1	A	97	SER	2
1	A	67	MET	2
1	A	96	ILE	2
1	A	34	SER	2
1	A	9	LYS	2
1	A	66	THR	2
1	A	81	ILE	2
2	B	5	GLN	2
1	A	41	GLU	2
1	A	121	ILE	2
1	A	32	MET	2
1	A	115	GLU	2
1	A	40	THR	2
1	A	89	ASP	1
1	A	35	LEU	1
1	A	26	LYS	1
1	A	85	PHE	1
1	A	47	MET	1
1	A	87	VAL	1
1	A	103	HIS	1
2	B	7	THR	1
1	A	68	MET	1
1	A	122	ARG	1
1	A	141	MET	1

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Mol	Chain	Res	Type	Models (Total)
1	A	48	ILE	1
1	A	86	ARG	1
1	A	24	THR	1
1	A	78	GLU	1
1	A	51	VAL	1
1	A	45	GLN	1
2	B	9	HIS	1
1	A	43	GLU	1
1	A	129	ASP	1
1	A	142	THR	1
1	A	71	LYS	1
1	A	5	ILE	1
1	A	106	THR	1
1	A	76	ASP	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](#)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

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