



Full wwPDB NMR Structure Validation Report ⓘ

Mar 25, 2026 – 12:35 PM UTC

PDB ID : 2KA9 / pdb_00002ka9
Title : Solution structure of PSD-95 PDZ12 complexed with cypin peptide
Authors : Wang, W.N.; Weng, J.W.; Zhang, X.; Liu, M.L.; Zhang, M.J.
Deposited on : 2008-11-03

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 types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
wwPDB-RCI : v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV : Wang et al. (2010)
wwPDB-ShiftChecker : v1.2
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

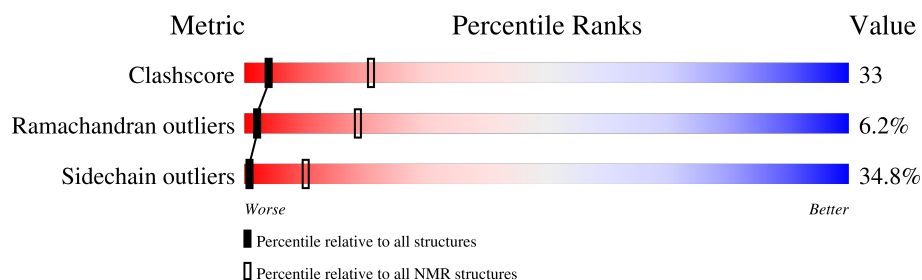
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

SOLUTION NMR

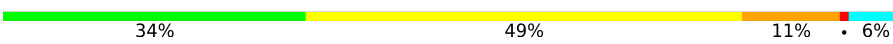
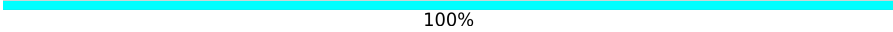
The overall completeness of chemical shifts assignment was not calculated.

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	229148	14424
Ramachandran outliers	224038	12848
Sidechain outliers	223484	12823

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	189	
2	B	9	
2	C	9	

2 Ensemble composition and analysis

This entry contains 20 models. Model 14 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *lowest energy*.

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

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:2-A:90 (89)	0.69	1
2	A:97-A:185, C:7-C:9 (92)	0.70	14

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 4 clusters. No single-model clusters were found.

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

3 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 3127 atoms, of which 1579 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Disks large homolog 4.

Mol	Chain	Residues	Atoms						Trace
1	A	189	Total	C	H	N	O	S	0
			2857	889	1443	248	273	4	

- Molecule 2 is a protein called cypin peptide.

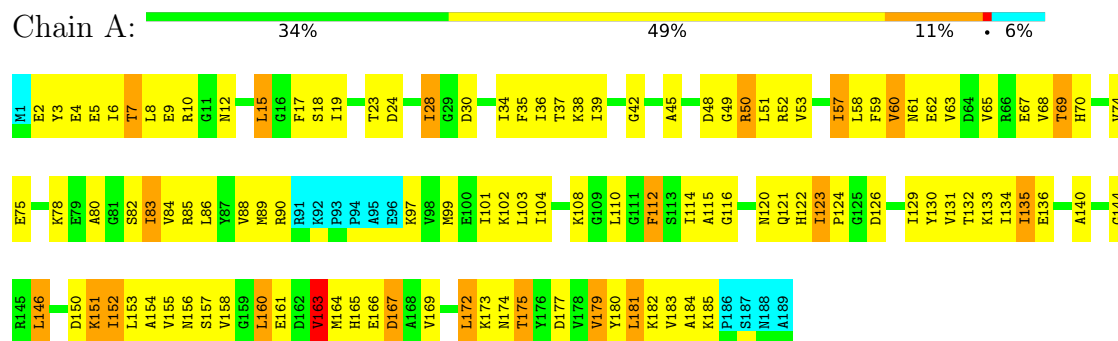
Mol	Chain	Residues	Atoms					Trace
2	B	9	Total	C	H	N	O	0
			135	43	68	10	14	
2	C	9	Total	C	H	N	O	0
			135	43	68	10	14	

4 Residue-property plots

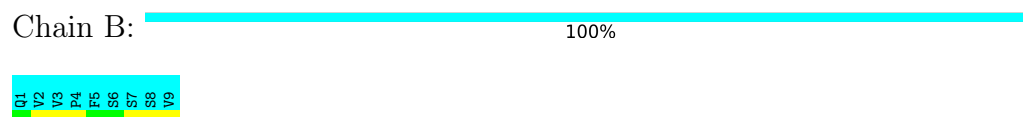
4.1 Average score per residue in the NMR ensemble

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

- Molecule 1: Disks large homolog 4



- Molecule 2: cypin peptide



- Molecule 2: cypin peptide

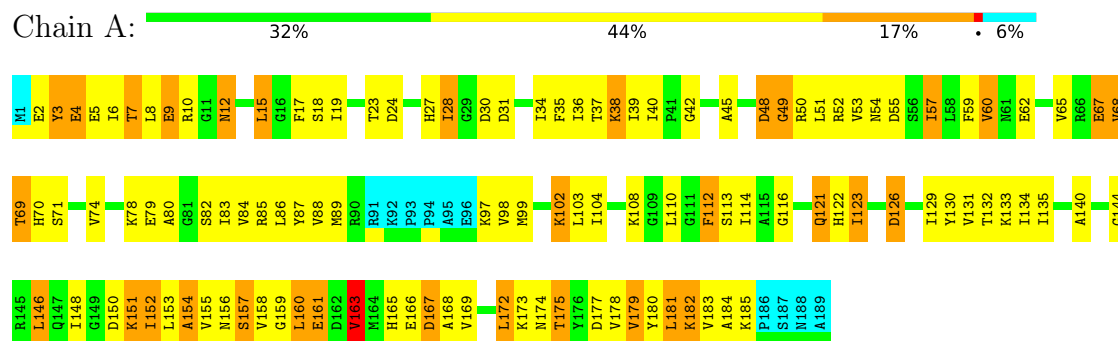


4.2 Scores per residue for each member of the ensemble

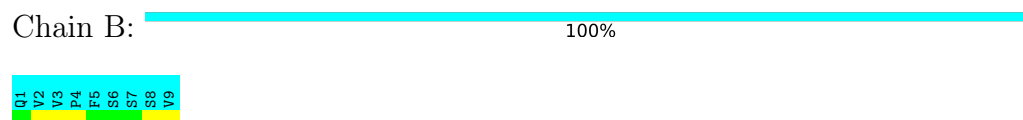
Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

- Molecule 1: Disks large homolog 4



- Molecule 2: cypin peptide

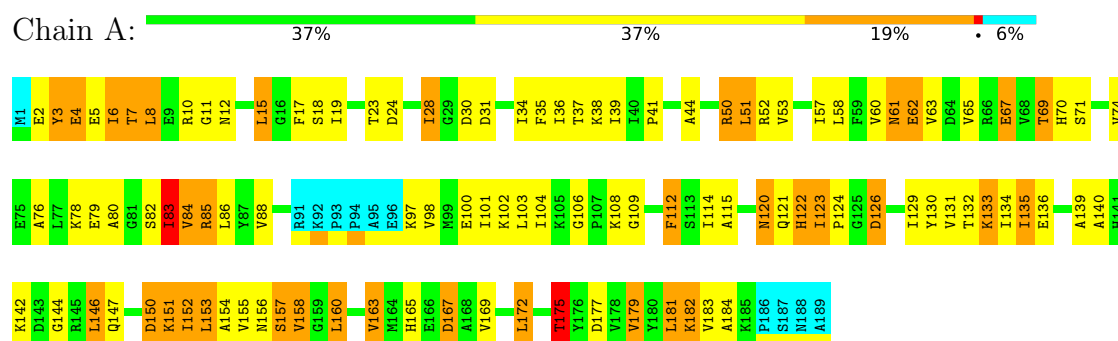


- Molecule 2: cypin peptide



4.2.2 Score per residue for model 2

- Molecule 1: Disks large homolog 4



- Molecule 2: cypin peptide



- Molecule 2: cypin peptide

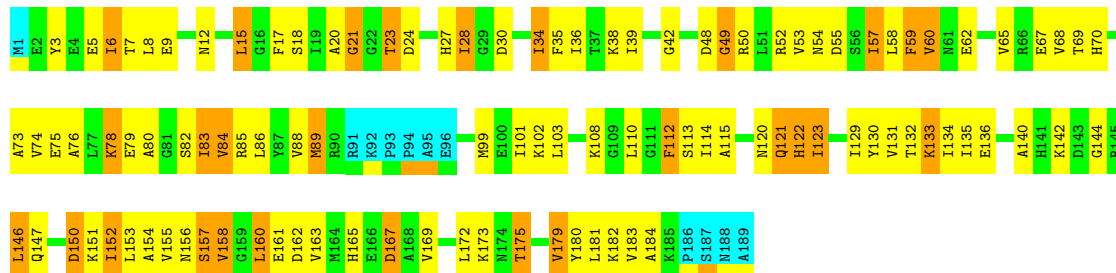




4.2.3 Score per residue for model 3

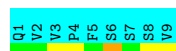
- Molecule 1: Disks large homolog 4

Chain A: 38% 41% 15% 6%



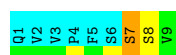
- Molecule 2: cypin peptide

Chain B: 100%



- Molecule 2: cypin peptide

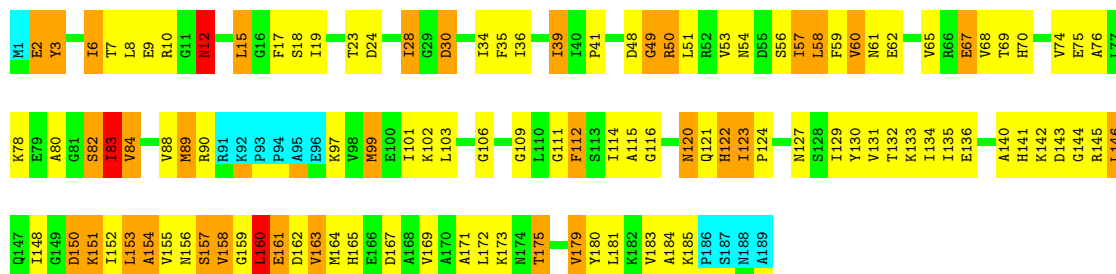
Chain C: 11% 11% 11% 67%



4.2.4 Score per residue for model 4

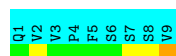
- Molecule 1: Disks large homolog 4

Chain A: 35% 41% 17% 6%



- Molecule 2: cypin peptide

Chain B:  100%



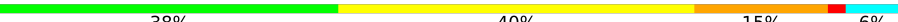
- Molecule 2: cypin peptide

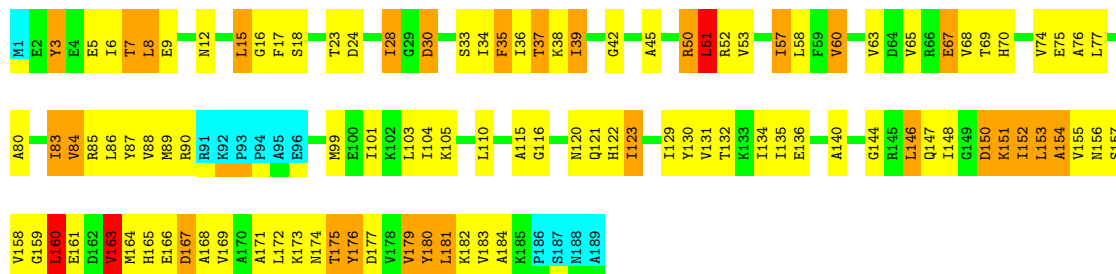
Chain C:  33% 67%



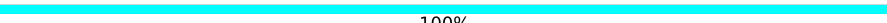
4.2.5 Score per residue for model 5

- Molecule 1: Disks large homolog 4

Chain A:  38% 40% 15% 6%



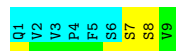
- Molecule 2: cypin peptide

Chain B:  100%



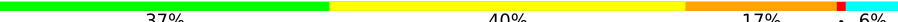
- Molecule 2: cypin peptide

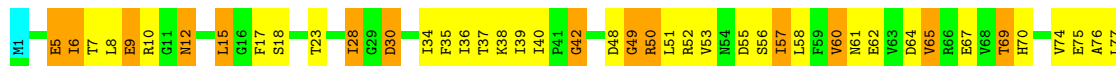
Chain C:  11% 22% 67%

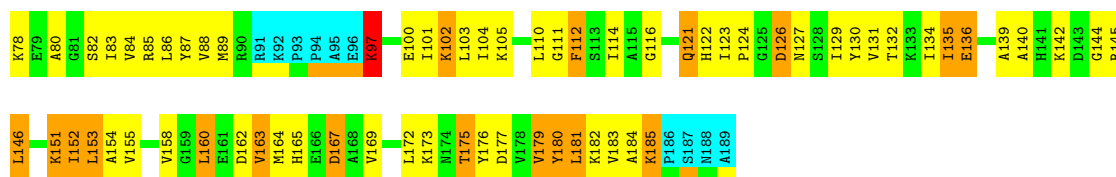


4.2.6 Score per residue for model 6

- Molecule 1: Disks large homolog 4

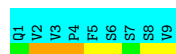
Chain A:  37% 40% 17% 6%





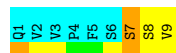
- Molecule 2: cypin peptide

Chain B: 100%



- Molecule 2: cypin peptide

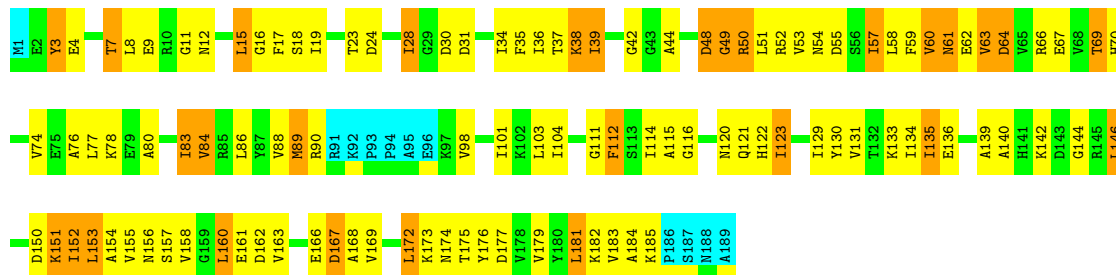
Chain C: 22% 11% 67%



4.2.7 Score per residue for model 7

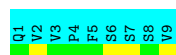
- Molecule 1: Disks large homolog 4

Chain A: 36% 43% 15% 6%



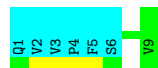
- Molecule 2: cypin peptide

Chain B: 100%



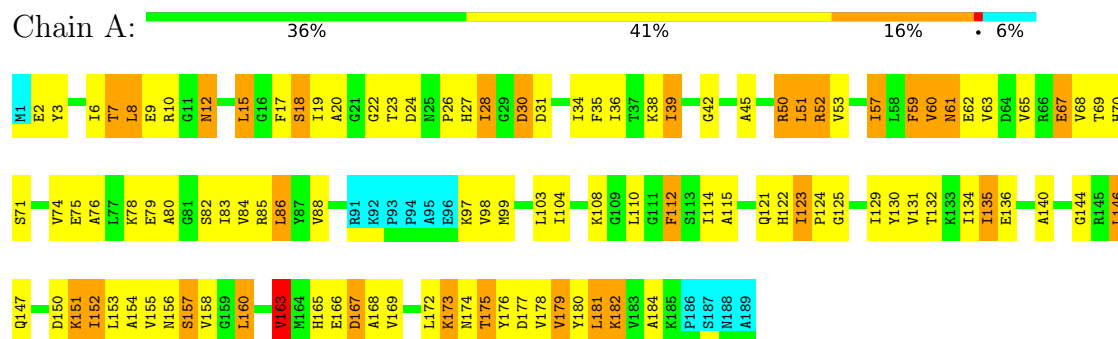
- Molecule 2: cypin peptide

Chain C: 33% 67%



4.2.8 Score per residue for model 8

- Molecule 1: Disks large homolog 4



- Molecule 2: cyprin peptide

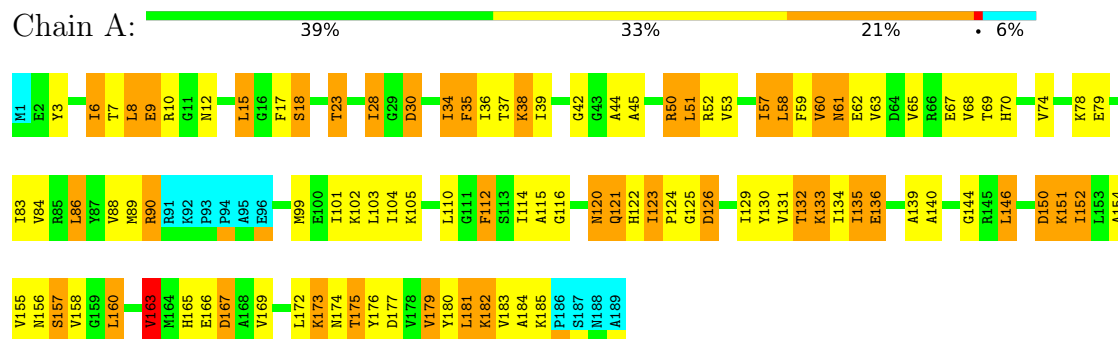


- Molecule 2: cyprin peptide

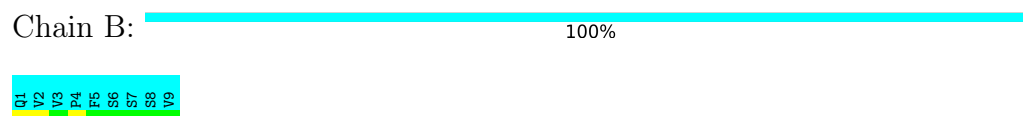


4.2.9 Score per residue for model 9

- Molecule 1: Disks large homolog 4



- Molecule 2: cyprin peptide

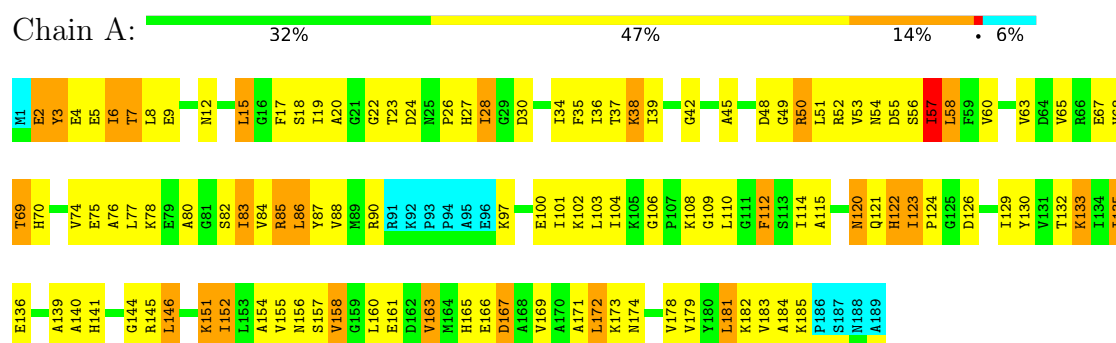


- Molecule 2: cypin peptide



4.2.10 Score per residue for model 10

- Molecule 1: Disks large homolog 4



- Molecule 2: cypin peptide

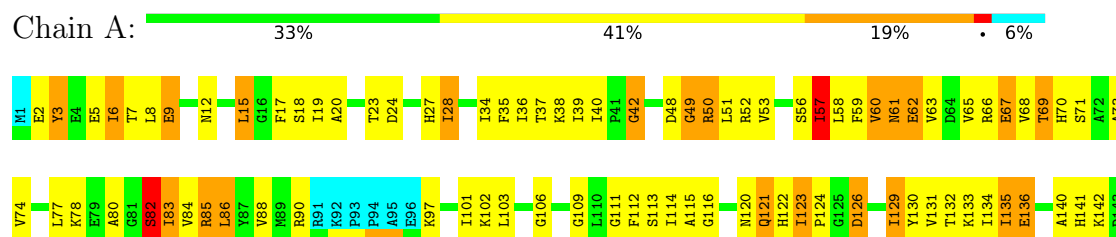


- Molecule 2: cypin peptide



4.2.11 Score per residue for model 11

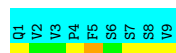
- Molecule 1: Disks large homolog 4





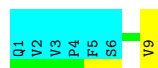
- Molecule 2: cypin peptide

Chain B: 100%



- Molecule 2: cypin peptide

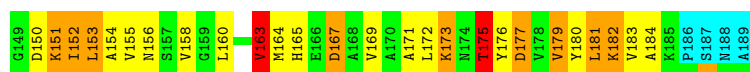
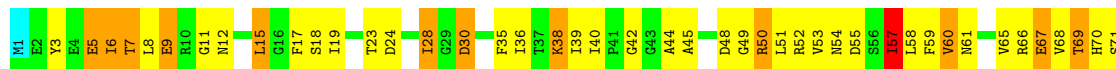
Chain C: 22% 11% 67%



4.2.12 Score per residue for model 12

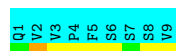
- Molecule 1: Disks large homolog 4

Chain A: 35% 41% 16% 6%



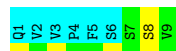
- Molecule 2: cypin peptide

Chain B: 100%



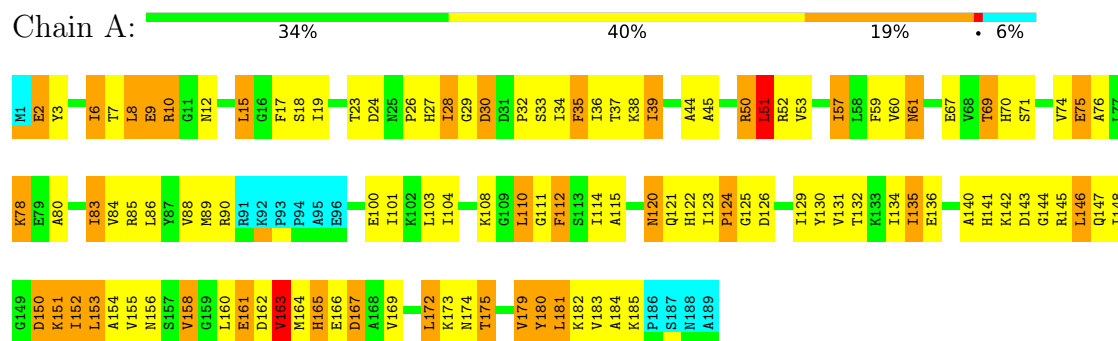
- Molecule 2: cypin peptide

Chain C: 22% 11% 67%

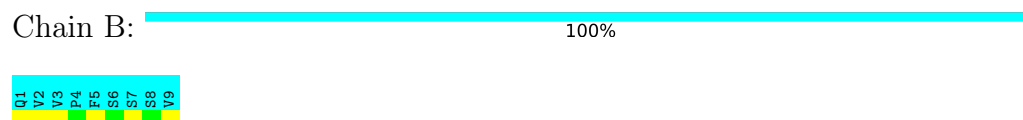


4.2.13 Score per residue for model 13

- Molecule 1: Disks large homolog 4



- Molecule 2: cypin peptide

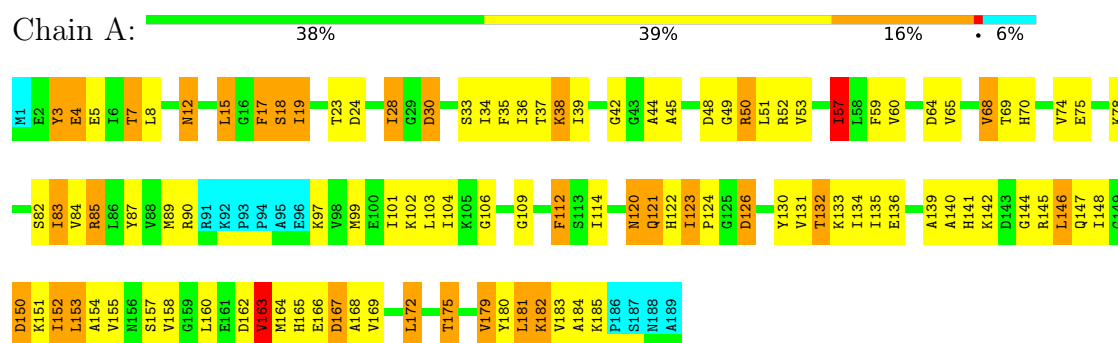


- Molecule 2: cypin peptide



4.2.14 Score per residue for model 14 (medoid)

- Molecule 1: Disks large homolog 4

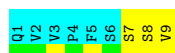


- Molecule 2: cypin peptide



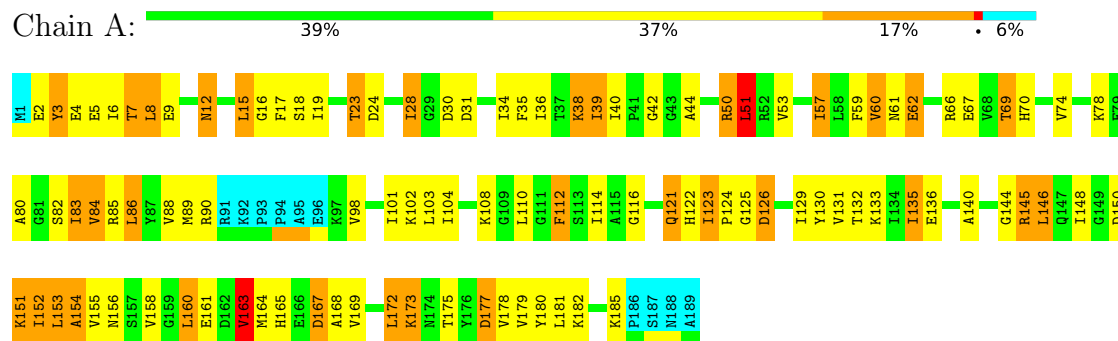
- Molecule 2: cypin peptide





4.2.15 Score per residue for model 15

- Molecule 1: Disks large homolog 4



- Molecule 2: cypin peptide

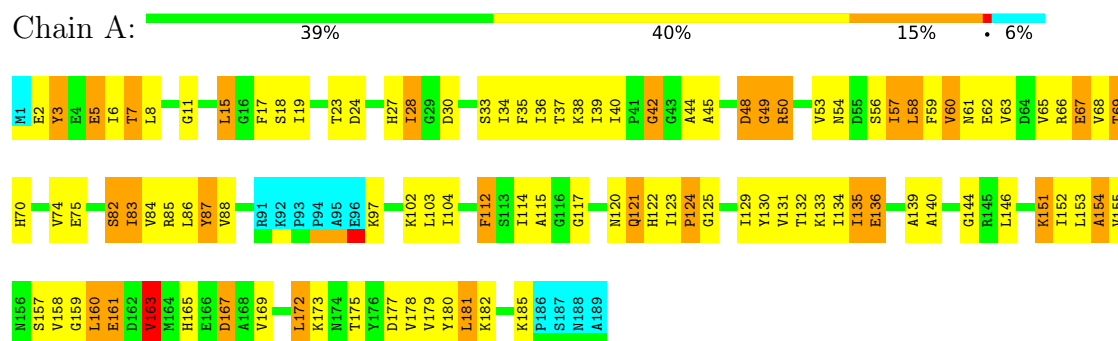


- Molecule 2: cypin peptide



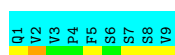
4.2.16 Score per residue for model 16

- Molecule 1: Disks large homolog 4



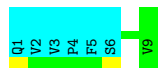
- Molecule 2: cypin peptide





- Molecule 2: cypin peptide

Chain C: 33% 67%



4.2.17 Score per residue for model 17

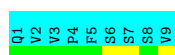
- Molecule 1: Disks large homolog 4

Chain A: 36% 46% 10% 6%



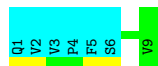
- Molecule 2: cypin peptide

Chain B: 100%



- Molecule 2: cypin peptide

Chain C: 33% 67%

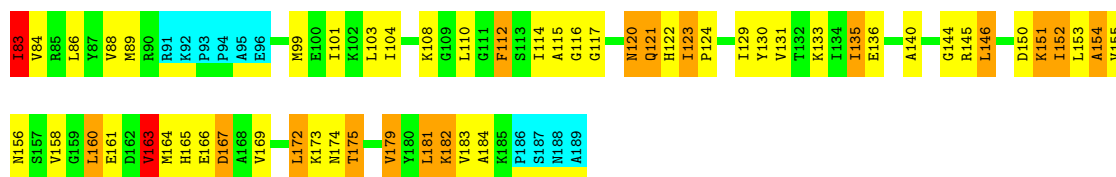


4.2.18 Score per residue for model 18

- Molecule 1: Disks large homolog 4

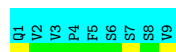
Chain A: 41% 38% 14% 6%





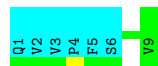
- Molecule 2: cypin peptide

Chain B: 100%



- Molecule 2: cypin peptide

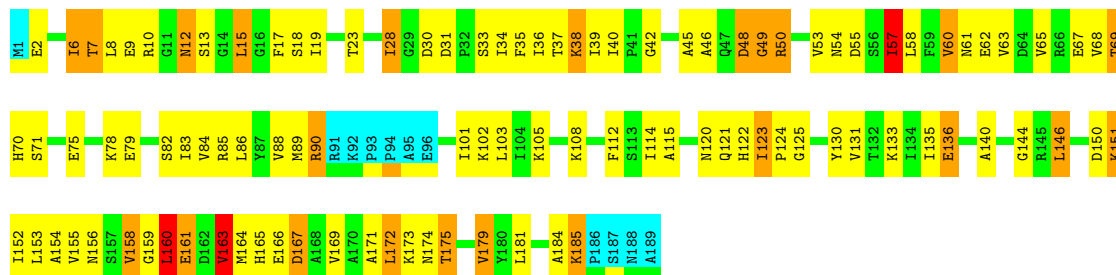
Chain C: 33% 67%



4.2.19 Score per residue for model 19

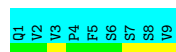
- Molecule 1: Disks large homolog 4

Chain A: 39% 41% 12% 6%



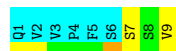
- Molecule 2: cypin peptide

Chain B: 100%



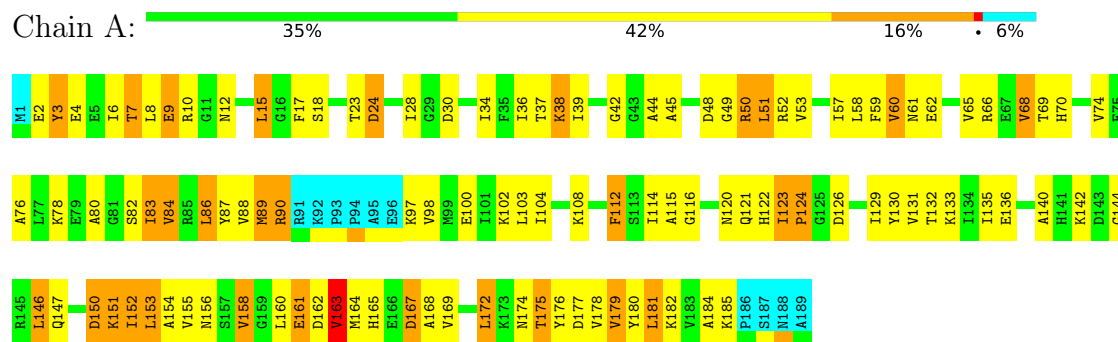
- Molecule 2: cypin peptide

Chain C: 11% 22% 67%



4.2.20 Score per residue for model 20

- Molecule 1: Disks large homolog 4



- Molecule 2: cypin peptide



- Molecule 2: cypin peptide



5 Refinement protocol and experimental data overview ⓘ

The models were refined using the following method: *simulated annealing*.

Of the 200 calculated structures, 20 were deposited, based on the following criterion: *structures with the lowest energy*.

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

Software name	Classification	Version
CNS	refinement	

No chemical shift data was provided.

6 Model quality ⓘ

6.1 Standard geometry ⓘ

There are no covalent bond-length or bond-angle outliers.

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no planarity outliers.

6.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in each chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes averaged over the ensemble.

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	1331	1358	1353	90±6
2	B	0	0	0	0±0
2	C	20	19	19	1±1
All	All	27020	27540	27440	1812

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 33.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:129:ILE:HD12	1:A:160:LEU:HD22	0.95	1.37	20	4
1:A:155:VAL:HG12	1:A:156:ASN:ND2	0.85	1.87	17	8
1:A:123:ILE:HD11	1:A:130:TYR:CD1	0.84	2.08	6	16
1:A:123:ILE:HD11	1:A:130:TYR:CG	0.84	2.06	17	16
1:A:103:LEU:HD12	1:A:140:ALA:HB2	0.84	1.49	15	2
1:A:172:LEU:HD12	1:A:173:LYS:N	0.83	1.89	6	7
1:A:57:ILE:HD11	1:A:60:VAL:HG13	0.83	1.48	19	1
1:A:80:ALA:HB1	1:A:84:VAL:HG12	0.81	1.51	10	3
1:A:115:ALA:HB3	1:A:122:HIS:CE1	0.81	2.11	3	3
1:A:114:ILE:HG22	1:A:131:VAL:HG22	0.80	1.52	1	9
1:A:15:LEU:HD13	1:A:17:PHE:CZ	0.80	2.11	6	13
1:A:103:LEU:HD12	1:A:181:LEU:HD11	0.80	1.54	2	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:86:LEU:HD13	1:A:88:VAL:HG13	0.80	1.52	18	5
1:A:57:ILE:HA	1:A:88:VAL:HG12	0.79	1.53	20	14
1:A:57:ILE:HG22	1:A:88:VAL:HG12	0.78	1.56	16	11
1:A:8:LEU:HG	1:A:15:LEU:HD23	0.76	1.57	11	20
1:A:129:ILE:O	1:A:152:ILE:HD12	0.76	1.81	20	1
1:A:114:ILE:HD11	1:A:172:LEU:HD22	0.76	1.57	12	14
1:A:51:LEU:HD13	1:A:90:ARG:CZ	0.75	2.12	20	1
1:A:38:LYS:HA	1:A:53:VAL:HG11	0.75	1.59	7	14
1:A:7:THR:HG23	1:A:85:ARG:HG2	0.75	1.57	10	2
1:A:6:ILE:HG22	1:A:86:LEU:O	0.74	1.82	20	1
1:A:115:ALA:HB3	1:A:122:HIS:HB2	0.74	1.58	7	10
1:A:155:VAL:HG13	1:A:181:LEU:HD23	0.73	1.59	14	4
1:A:80:ALA:HB1	1:A:84:VAL:CG1	0.73	2.12	17	5
1:A:60:VAL:HG12	1:A:63:VAL:HB	0.73	1.59	7	4
1:A:103:LEU:CB	1:A:181:LEU:HD21	0.73	2.12	2	3
1:A:80:ALA:HB1	1:A:84:VAL:HG11	0.73	1.61	17	4
1:A:37:THR:O	1:A:53:VAL:HG21	0.73	1.83	11	10
1:A:57:ILE:O	1:A:65:VAL:HG13	0.72	1.84	16	3
1:A:51:LEU:HD13	1:A:88:VAL:HG21	0.72	1.58	10	1
1:A:131:VAL:HG23	1:A:150:ASP:O	0.72	1.84	17	14
1:A:151:LYS:HD2	1:A:184:ALA:HB3	0.72	1.61	9	5
1:A:86:LEU:CD1	1:A:88:VAL:HG13	0.72	2.15	17	3
1:A:76:ALA:O	1:A:80:ALA:HB2	0.72	1.84	3	10
1:A:8:LEU:HD21	1:A:45:ALA:HB2	0.72	1.60	20	7
1:A:18:SER:O	1:A:36:ILE:HG23	0.71	1.85	19	18
1:A:23:THR:HG22	1:A:69:THR:N	0.71	2.00	8	19
1:A:7:THR:HG23	1:A:85:ARG:CG	0.71	2.15	10	2
1:A:61:ASN:O	1:A:63:VAL:HG23	0.71	1.84	11	1
1:A:57:ILE:HG12	1:A:60:VAL:HG13	0.71	1.63	6	1
1:A:123:ILE:HD12	1:A:126:ASP:HB3	0.71	1.60	11	7
1:A:178:VAL:HG13	1:A:178:VAL:O	0.71	1.85	1	1
1:A:163:VAL:HG11	1:A:167:ASP:CG	0.71	2.11	9	18
1:A:57:ILE:O	1:A:65:VAL:HG23	0.71	1.84	8	2
1:A:86:LEU:HD12	1:A:86:LEU:O	0.70	1.86	18	4
1:A:103:LEU:HG	1:A:140:ALA:HB2	0.70	1.63	19	9
1:A:24:ASP:CB	1:A:69:THR:HG23	0.70	2.16	10	9
1:A:140:ALA:HB1	1:A:146:LEU:HD21	0.70	1.64	10	4
1:A:160:LEU:HD22	1:A:171:ALA:HB1	0.70	1.62	10	1
1:A:60:VAL:HG13	1:A:86:LEU:HG	0.70	1.64	11	1
1:A:60:VAL:HG12	1:A:86:LEU:HG	0.69	1.63	13	1
1:A:111:GLY:O	1:A:134:ILE:HG23	0.69	1.87	7	6

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:160:LEU:HD13	1:A:162:ASP:OD2	0.69	1.85	4	1
1:A:173:LYS:HE3	2:C:9:VAL:HG21	0.69	1.65	15	1
1:A:159:GLY:C	1:A:160:LEU:HD12	0.69	2.13	4	2
1:A:134:ILE:HD11	1:A:146:LEU:O	0.68	1.88	11	11
1:A:6:ILE:HG21	1:A:50:ARG:HB3	0.68	1.65	4	2
1:A:8:LEU:O	1:A:84:VAL:HG22	0.68	1.87	11	4
1:A:116:GLY:HA2	1:A:129:ILE:HG12	0.68	1.64	18	1
1:A:19:ILE:HG22	1:A:36:ILE:HG12	0.68	1.66	10	11
1:A:11:GLY:CA	1:A:44:ALA:HB2	0.68	2.19	16	1
1:A:60:VAL:HG12	1:A:86:LEU:CD2	0.68	2.19	6	1
1:A:51:LEU:HD22	1:A:90:ARG:HG3	0.67	1.65	20	2
1:A:51:LEU:HD12	1:A:55:ASP:OD2	0.67	1.89	1	4
1:A:155:VAL:O	1:A:158:VAL:HG23	0.67	1.89	17	16
1:A:24:ASP:HB2	1:A:69:THR:HG22	0.67	1.66	2	3
1:A:155:VAL:HG13	1:A:181:LEU:HD22	0.67	1.66	13	2
1:A:152:ILE:HG22	1:A:182:LYS:O	0.67	1.89	1	16
1:A:103:LEU:HB2	1:A:181:LEU:HD21	0.66	1.66	2	4
1:A:155:VAL:CG2	1:A:160:LEU:HD21	0.66	2.21	3	3
1:A:9:GLU:HG2	1:A:83:ILE:HG23	0.66	1.66	7	2
1:A:103:LEU:CG	1:A:140:ALA:HB2	0.66	2.21	20	14
1:A:6:ILE:HD13	1:A:6:ILE:N	0.65	2.05	2	9
1:A:60:VAL:HG13	1:A:86:LEU:HB3	0.65	1.66	10	2
1:A:169:VAL:HA	1:A:172:LEU:HD23	0.65	1.68	7	12
1:A:55:ASP:OD2	1:A:88:VAL:HG21	0.65	1.92	19	4
1:A:129:ILE:HD12	1:A:160:LEU:HD13	0.65	1.65	8	2
1:A:129:ILE:CD1	1:A:160:LEU:HD13	0.64	2.21	8	2
1:A:60:VAL:O	1:A:62:GLU:N	0.64	2.30	7	7
1:A:173:LYS:HE2	2:C:9:VAL:HG11	0.64	1.69	15	1
1:A:70:HIS:CD2	1:A:74:VAL:HG23	0.64	2.28	5	15
1:A:60:VAL:HG12	1:A:86:LEU:CG	0.64	2.21	13	1
1:A:8:LEU:HD11	1:A:44:ALA:HB3	0.63	1.70	20	5
1:A:155:VAL:HG11	1:A:172:LEU:HB3	0.63	1.70	5	1
1:A:86:LEU:HD23	1:A:86:LEU:O	0.63	1.93	9	1
1:A:7:THR:HG23	1:A:85:ARG:HG3	0.63	1.70	1	1
1:A:103:LEU:HB2	1:A:181:LEU:HD11	0.63	1.71	1	4
1:A:155:VAL:HG11	1:A:172:LEU:CB	0.63	2.23	5	1
1:A:3:TYR:CE2	1:A:89:MET:HE3	0.63	2.28	12	1
1:A:60:VAL:HG22	1:A:65:VAL:HG11	0.63	1.70	3	1
1:A:154:ALA:HB1	1:A:158:VAL:O	0.62	1.93	13	17
1:A:129:ILE:HD12	1:A:160:LEU:HB3	0.62	1.70	16	2
1:A:158:VAL:HG21	1:A:171:ALA:HB1	0.62	1.71	5	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:104:ILE:HG12	1:A:139:ALA:HB1	0.61	1.70	7	4
1:A:86:LEU:HD13	1:A:86:LEU:N	0.61	2.09	8	2
1:A:103:LEU:HD22	1:A:110:LEU:HD23	0.61	1.72	3	2
1:A:155:VAL:HG23	1:A:160:LEU:HD11	0.61	1.71	16	2
1:A:9:GLU:HG3	1:A:83:ILE:HG23	0.61	1.71	20	5
1:A:103:LEU:CD1	1:A:140:ALA:HB2	0.61	2.25	20	7
1:A:114:ILE:CG2	1:A:131:VAL:HG22	0.61	2.23	1	4
1:A:34:ILE:HD13	1:A:73:ALA:HB2	0.61	1.72	3	1
1:A:123:ILE:HG22	1:A:124:PRO:HD2	0.61	1.71	4	8
1:A:60:VAL:HG13	1:A:61:ASN:N	0.61	2.10	7	1
1:A:151:LYS:CE	1:A:184:ALA:HB3	0.61	2.26	8	1
1:A:103:LEU:HD13	1:A:110:LEU:HD23	0.60	1.72	8	4
1:A:80:ALA:HB1	1:A:84:VAL:HG13	0.60	1.73	3	3
1:A:86:LEU:HD21	1:A:88:VAL:CG1	0.60	2.27	12	1
1:A:24:ASP:CB	1:A:69:THR:HG22	0.60	2.26	13	4
1:A:65:VAL:HG23	1:A:68:VAL:CG2	0.60	2.27	16	2
1:A:24:ASP:CG	1:A:69:THR:HG22	0.60	2.21	13	1
1:A:86:LEU:HD22	1:A:88:VAL:HG13	0.60	1.73	11	1
1:A:158:VAL:CG1	1:A:171:ALA:HB1	0.60	2.27	19	2
1:A:65:VAL:HG13	1:A:68:VAL:CG2	0.60	2.27	19	4
1:A:129:ILE:HD11	1:A:159:GLY:HA3	0.60	1.73	5	1
1:A:153:LEU:O	1:A:154:ALA:HB2	0.59	1.97	4	14
1:A:123:ILE:HD13	1:A:130:TYR:CD1	0.59	2.32	10	2
1:A:155:VAL:HG12	1:A:156:ASN:HD22	0.59	1.58	9	10
1:A:9:GLU:CG	1:A:83:ILE:HG23	0.59	2.27	20	3
1:A:165:HIS:O	1:A:169:VAL:HG23	0.59	1.98	20	19
1:A:6:ILE:HD13	1:A:50:ARG:HG3	0.59	1.72	18	3
1:A:158:VAL:HG11	1:A:171:ALA:HB2	0.59	1.72	5	1
1:A:116:GLY:HA3	1:A:129:ILE:HG12	0.59	1.74	17	9
1:A:103:LEU:HD22	1:A:110:LEU:HD22	0.59	1.73	12	1
1:A:178:VAL:O	1:A:178:VAL:CG1	0.59	2.50	1	1
1:A:24:ASP:HB3	1:A:69:THR:HG23	0.58	1.73	3	7
1:A:129:ILE:HD11	1:A:159:GLY:CA	0.58	2.28	5	1
1:A:50:ARG:NH2	1:A:86:LEU:HD22	0.58	2.14	9	1
1:A:58:LEU:HD11	1:A:89:MET:CG	0.58	2.29	12	1
1:A:36:ILE:HB	1:A:53:VAL:HA	0.58	1.73	12	9
1:A:175:THR:HB	1:A:179:VAL:HG21	0.58	1.76	19	14
1:A:122:HIS:CD2	1:A:123:ILE:HG12	0.58	2.34	18	2
1:A:114:ILE:HD12	1:A:129:ILE:HG21	0.58	1.74	18	1
1:A:154:ALA:CB	1:A:158:VAL:O	0.58	2.52	13	17
1:A:86:LEU:O	1:A:86:LEU:HD22	0.57	1.99	8	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:8:LEU:CD1	1:A:44:ALA:HB3	0.57	2.30	15	6
1:A:8:LEU:HD22	1:A:50:ARG:NH1	0.57	2.14	14	1
1:A:23:THR:HG22	1:A:69:THR:CG2	0.57	2.28	9	2
1:A:86:LEU:C	1:A:86:LEU:HD13	0.57	2.25	12	1
1:A:103:LEU:HD11	1:A:140:ALA:HB2	0.57	1.74	4	4
1:A:58:LEU:HD21	1:A:87:TYR:CD1	0.57	2.34	10	2
1:A:65:VAL:HG22	1:A:65:VAL:O	0.57	2.00	16	3
1:A:172:LEU:HD12	1:A:172:LEU:C	0.57	2.23	3	7
1:A:101:ILE:HD12	1:A:144:GLY:HA2	0.57	1.75	15	1
1:A:38:LYS:CA	1:A:53:VAL:HG11	0.57	2.28	20	8
1:A:112:PHE:CE2	1:A:114:ILE:HD13	0.57	2.35	1	4
1:A:104:ILE:HG22	1:A:178:VAL:HG13	0.57	1.75	17	3
1:A:129:ILE:CD1	1:A:160:LEU:HD22	0.57	2.30	13	1
1:A:40:ILE:O	1:A:46:ALA:HB2	0.57	1.99	19	1
1:A:112:PHE:CE2	1:A:114:ILE:HG21	0.57	2.35	15	16
1:A:35:PHE:CD1	1:A:35:PHE:N	0.56	2.71	9	5
1:A:155:VAL:HG21	1:A:160:LEU:HD21	0.56	1.76	3	2
1:A:65:VAL:HG12	1:A:68:VAL:HG21	0.56	1.78	8	3
1:A:129:ILE:HD12	1:A:160:LEU:CD2	0.56	2.31	13	1
1:A:24:ASP:HB3	1:A:69:THR:HG22	0.56	1.78	13	1
1:A:86:LEU:HD13	1:A:88:VAL:CG1	0.56	2.29	18	1
1:A:51:LEU:HD22	1:A:90:ARG:CG	0.55	2.31	20	1
1:A:146:LEU:HD12	1:A:146:LEU:O	0.55	2.00	20	1
1:A:104:ILE:CG1	1:A:139:ALA:HB1	0.55	2.31	6	3
1:A:23:THR:HG22	1:A:69:THR:HG23	0.55	1.78	2	3
1:A:98:VAL:HG13	1:A:153:LEU:HD21	0.55	1.79	7	3
1:A:84:VAL:HG23	1:A:84:VAL:O	0.55	2.02	9	6
1:A:57:ILE:HG22	1:A:88:VAL:CG1	0.55	2.31	17	5
1:A:154:ALA:HB3	1:A:182:LYS:HD2	0.55	1.77	7	1
1:A:65:VAL:O	1:A:65:VAL:HG12	0.55	2.02	19	8
1:A:160:LEU:HD23	1:A:160:LEU:N	0.55	2.17	2	1
1:A:60:VAL:HG12	1:A:86:LEU:HD22	0.55	1.79	6	1
1:A:172:LEU:O	1:A:175:THR:HG23	0.54	2.02	9	7
1:A:60:VAL:O	1:A:61:ASN:C	0.54	2.51	2	3
1:A:24:ASP:HB2	1:A:69:THR:HG23	0.54	1.79	4	9
1:A:129:ILE:HB	1:A:152:ILE:HD12	0.54	1.79	10	12
1:A:114:ILE:CD1	1:A:172:LEU:HD22	0.54	2.32	10	3
1:A:123:ILE:CD1	1:A:130:TYR:CD1	0.54	2.91	10	8
1:A:123:ILE:HD12	1:A:126:ASP:CB	0.54	2.31	11	1
1:A:131:VAL:HG21	1:A:150:ASP:OD1	0.54	2.03	19	1
1:A:60:VAL:HG12	1:A:86:LEU:HD23	0.54	1.78	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:134:ILE:HD12	1:A:147:GLN:HA	0.54	1.80	5	3
1:A:7:THR:HA	1:A:84:VAL:O	0.53	2.03	14	6
1:A:60:VAL:HG23	1:A:65:VAL:HG21	0.53	1.80	10	1
1:A:175:THR:CB	1:A:179:VAL:HG21	0.53	2.33	9	5
1:A:155:VAL:CG2	1:A:160:LEU:HD11	0.53	2.34	16	2
1:A:51:LEU:HD23	1:A:51:LEU:N	0.53	2.18	4	3
1:A:48:ASP:O	1:A:49:GLY:C	0.53	2.52	16	11
1:A:112:PHE:CE2	1:A:114:ILE:CG2	0.53	2.92	10	19
1:A:60:VAL:HG22	1:A:65:VAL:CG1	0.53	2.34	16	2
1:A:23:THR:HG22	1:A:69:THR:CA	0.52	2.33	6	6
1:A:155:VAL:HG11	1:A:175:THR:HG22	0.52	1.81	17	1
1:A:132:THR:O	1:A:148:ILE:HG23	0.52	2.04	4	5
1:A:51:LEU:HD12	1:A:55:ASP:CG	0.52	2.29	10	1
2:C:8:SER:O	2:C:9:VAL:HG13	0.52	2.05	15	5
1:A:101:ILE:HG13	1:A:183:VAL:HG21	0.52	1.81	12	10
1:A:15:LEU:HD13	1:A:17:PHE:CE1	0.52	2.39	14	1
1:A:129:ILE:HD11	1:A:168:ALA:HB1	0.52	1.80	11	5
1:A:181:LEU:N	1:A:181:LEU:HD23	0.52	2.19	2	5
1:A:51:LEU:HD12	1:A:52:ARG:N	0.52	2.20	2	3
1:A:144:GLY:HA3	1:A:146:LEU:HD23	0.52	1.81	15	3
1:A:135:ILE:HG22	1:A:136:GLU:H	0.52	1.63	19	18
1:A:57:ILE:CA	1:A:88:VAL:HG12	0.52	2.34	19	3
1:A:60:VAL:HG12	1:A:63:VAL:CB	0.52	2.33	7	1
1:A:159:GLY:HA2	1:A:168:ALA:HB2	0.52	1.82	5	1
1:A:114:ILE:CG1	1:A:172:LEU:HD22	0.52	2.35	7	2
1:A:19:ILE:HD11	1:A:70:HIS:NE2	0.52	2.20	11	2
1:A:58:LEU:HD12	1:A:59:PHE:HB2	0.51	1.83	3	1
1:A:6:ILE:CG2	1:A:7:THR:N	0.51	2.74	8	4
1:A:121:GLN:O	1:A:122:HIS:HB3	0.51	2.05	18	12
1:A:86:LEU:HD12	1:A:86:LEU:C	0.51	2.31	5	3
1:A:103:LEU:C	1:A:103:LEU:HD23	0.51	2.30	20	9
1:A:28:ILE:HG12	1:A:35:PHE:CZ	0.51	2.40	13	16
1:A:50:ARG:O	1:A:51:LEU:HG	0.51	2.05	17	3
1:A:103:LEU:CB	1:A:181:LEU:HD11	0.51	2.36	14	1
1:A:103:LEU:HB3	1:A:181:LEU:HD21	0.51	1.82	2	3
1:A:59:PHE:HA	1:A:65:VAL:HG12	0.51	1.82	16	1
1:A:103:LEU:HD22	1:A:110:LEU:HG	0.51	1.83	1	4
1:A:154:ALA:HB2	1:A:160:LEU:HD23	0.51	1.83	19	1
1:A:8:LEU:CG	1:A:15:LEU:HD23	0.51	2.35	1	1
1:A:172:LEU:C	1:A:172:LEU:HD12	0.51	2.30	17	12
1:A:158:VAL:HG11	1:A:171:ALA:CB	0.51	2.36	5	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:104:ILE:O	1:A:139:ALA:HB1	0.51	2.06	14	3
1:A:60:VAL:CG1	1:A:86:LEU:HD12	0.51	2.36	20	1
1:A:110:LEU:O	1:A:139:ALA:HB3	0.50	2.06	10	1
1:A:63:VAL:HG12	1:A:65:VAL:HG13	0.50	1.82	11	1
1:A:103:LEU:HD21	1:A:140:ALA:HB2	0.50	1.84	12	1
1:A:158:VAL:HB	1:A:160:LEU:HD21	0.50	1.83	2	1
1:A:57:ILE:O	1:A:57:ILE:HG13	0.50	2.06	17	7
1:A:101:ILE:HD12	1:A:144:GLY:CA	0.50	2.35	15	2
1:A:61:ASN:HD22	1:A:84:VAL:HG12	0.50	1.65	13	1
1:A:158:VAL:CG2	1:A:171:ALA:HB1	0.50	2.36	5	1
1:A:130:TYR:CE1	1:A:151:LYS:CB	0.50	2.94	5	16
1:A:155:VAL:HG21	1:A:160:LEU:HD11	0.50	1.83	2	1
1:A:28:ILE:CD1	1:A:35:PHE:CE1	0.50	2.94	13	1
1:A:11:GLY:HA3	1:A:44:ALA:HB2	0.50	1.84	16	1
1:A:78:LYS:C	1:A:78:LYS:CD	0.50	2.84	3	2
1:A:160:LEU:HB3	1:A:168:ALA:HB1	0.50	1.82	17	2
1:A:131:VAL:HG21	1:A:150:ASP:CG	0.50	2.32	19	1
1:A:151:LYS:CD	1:A:184:ALA:HB3	0.50	2.35	11	3
1:A:156:ASN:N	1:A:180:TYR:O	0.50	2.45	5	2
1:A:169:VAL:O	1:A:172:LEU:HG	0.50	2.06	5	4
1:A:154:ALA:HB2	1:A:160:LEU:CD2	0.50	2.37	19	1
1:A:75:GLU:O	1:A:78:LYS:HG3	0.50	2.07	13	2
1:A:86:LEU:HD13	1:A:86:LEU:O	0.49	2.07	12	1
1:A:57:ILE:HB	1:A:86:LEU:HD21	0.49	1.82	11	1
1:A:15:LEU:HB2	1:A:17:PHE:CE2	0.49	2.41	17	16
1:A:3:TYR:CD1	1:A:3:TYR:N	0.49	2.81	7	8
1:A:153:LEU:O	1:A:154:ALA:CB	0.49	2.59	4	2
1:A:104:ILE:HB	1:A:177:ASP:O	0.49	2.08	5	5
1:A:11:GLY:N	1:A:44:ALA:HB2	0.49	2.22	2	4
1:A:20:ALA:HB1	1:A:27:HIS:HB2	0.49	1.83	10	3
1:A:131:VAL:HG21	1:A:146:LEU:CD1	0.49	2.37	13	2
1:A:115:ALA:O	1:A:129:ILE:HG23	0.49	2.07	16	2
1:A:113:SER:N	1:A:133:LYS:O	0.49	2.46	3	1
1:A:6:ILE:HG21	1:A:50:ARG:HG3	0.49	1.84	6	1
1:A:60:VAL:HG23	1:A:65:VAL:CG2	0.49	2.37	20	6
1:A:60:VAL:HG22	1:A:61:ASN:H	0.49	1.68	2	3
1:A:7:THR:HG23	1:A:85:ARG:HD2	0.49	1.84	12	1
1:A:57:ILE:CG2	1:A:88:VAL:HG12	0.49	2.34	16	2
1:A:7:THR:HG23	1:A:85:ARG:HA	0.49	1.84	2	1
1:A:160:LEU:HD22	1:A:168:ALA:O	0.49	2.08	11	1
1:A:70:HIS:CD2	1:A:70:HIS:C	0.49	2.91	13	11

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:129:ILE:HD11	1:A:160:LEU:O	0.49	2.08	9	3
1:A:151:LYS:HG3	1:A:184:ALA:HB3	0.49	1.85	3	3
1:A:158:VAL:HG12	1:A:171:ALA:HB1	0.49	1.85	19	2
1:A:37:THR:C	1:A:53:VAL:HG21	0.49	2.32	11	2
1:A:103:LEU:HD22	1:A:110:LEU:CD2	0.49	2.37	12	1
2:C:9:VAL:OXT	2:C:9:VAL:HG13	0.49	2.07	11	1
1:A:57:ILE:HD11	1:A:60:VAL:CG1	0.49	2.29	19	1
1:A:8:LEU:HB3	1:A:84:VAL:HG23	0.49	1.83	5	2
1:A:122:HIS:CD2	1:A:123:ILE:CG1	0.49	2.96	18	2
1:A:130:TYR:CD1	1:A:151:LYS:CB	0.48	2.96	16	7
1:A:115:ALA:O	1:A:122:HIS:HB3	0.48	2.07	20	2
1:A:70:HIS:C	1:A:70:HIS:CD2	0.48	2.91	9	9
1:A:152:ILE:HG21	1:A:181:LEU:HB3	0.48	1.84	14	3
1:A:57:ILE:CG1	1:A:57:ILE:O	0.48	2.61	10	5
1:A:121:GLN:C	1:A:123:ILE:H	0.48	2.15	14	1
1:A:57:ILE:HD12	1:A:86:LEU:HB2	0.48	1.84	19	1
1:A:6:ILE:HG22	1:A:50:ARG:NE	0.48	2.23	5	1
1:A:36:ILE:C	1:A:53:VAL:HB	0.48	2.33	20	5
1:A:115:ALA:O	1:A:122:HIS:CB	0.48	2.61	7	2
1:A:50:ARG:NH2	1:A:86:LEU:HD21	0.48	2.24	10	2
1:A:110:LEU:HD22	1:A:172:LEU:HD13	0.48	1.83	13	1
1:A:98:VAL:HG13	1:A:98:VAL:O	0.48	2.07	8	3
1:A:159:GLY:C	1:A:161:GLU:H	0.48	2.16	5	3
1:A:103:LEU:CD1	1:A:181:LEU:HD11	0.48	2.33	2	1
1:A:155:VAL:N	1:A:158:VAL:O	0.48	2.36	5	1
1:A:131:VAL:HG11	1:A:134:ILE:HD11	0.48	1.86	16	2
1:A:176:TYR:CE1	1:A:178:VAL:O	0.48	2.67	20	2
1:A:58:LEU:HD23	1:A:88:VAL:C	0.48	2.33	17	2
1:A:58:LEU:HB3	1:A:89:MET:HE2	0.48	1.85	6	1
1:A:36:ILE:HB	1:A:53:VAL:CA	0.48	2.39	4	4
1:A:6:ILE:CG2	1:A:50:ARG:NE	0.48	2.77	5	1
1:A:57:ILE:O	1:A:57:ILE:HG23	0.48	2.09	6	1
1:A:160:LEU:HD13	1:A:172:LEU:HB3	0.48	1.85	12	1
1:A:129:ILE:HG13	1:A:160:LEU:O	0.48	2.09	16	2
1:A:6:ILE:HD12	1:A:88:VAL:HG21	0.48	1.85	17	1
1:A:183:VAL:HG12	1:A:184:ALA:N	0.48	2.23	13	15
1:A:102:LYS:CG	1:A:180:TYR:CD2	0.47	2.97	1	1
1:A:153:LEU:CD2	1:A:184:ALA:HB2	0.47	2.39	11	1
1:A:4:GLU:N	1:A:87:TYR:CE1	0.47	2.82	10	3
1:A:104:ILE:HG22	1:A:178:VAL:HG23	0.47	1.84	1	1
1:A:163:VAL:HG11	1:A:167:ASP:OD2	0.47	2.08	3	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:70:HIS:CD2	1:A:74:VAL:CG2	0.47	2.97	12	11
1:A:10:ARG:O	1:A:12:ASN:N	0.47	2.47	4	2
1:A:59:PHE:O	1:A:86:LEU:HD23	0.47	2.08	11	1
1:A:27:HIS:CD2	1:A:27:HIS:O	0.47	2.67	13	1
1:A:36:ILE:HG22	1:A:53:VAL:HB	0.47	1.87	14	4
1:A:175:THR:HB	1:A:179:VAL:HG11	0.47	1.85	20	1
1:A:58:LEU:HD21	1:A:89:MET:SD	0.47	2.50	7	1
1:A:122:HIS:CE1	1:A:132:THR:HG22	0.47	2.44	5	2
1:A:28:ILE:HG23	1:A:35:PHE:CZ	0.47	2.43	13	1
1:A:155:VAL:O	1:A:157:SER:N	0.47	2.44	4	6
1:A:80:ALA:CB	1:A:84:VAL:HG12	0.47	2.39	8	1
1:A:132:THR:O	1:A:148:ILE:HD13	0.47	2.09	14	1
1:A:53:VAL:HG23	1:A:54:ASN:N	0.47	2.25	16	9
1:A:140:ALA:O	1:A:144:GLY:N	0.47	2.48	11	20
1:A:15:LEU:CB	1:A:17:PHE:CE2	0.47	2.98	15	6
1:A:115:ALA:HB3	1:A:122:HIS:CB	0.47	2.40	4	1
1:A:112:PHE:CZ	1:A:114:ILE:HD13	0.47	2.45	6	1
1:A:153:LEU:HD23	1:A:184:ALA:HB2	0.47	1.86	11	1
2:C:9:VAL:OXT	2:C:9:VAL:HG22	0.47	2.09	11	1
1:A:82:SER:O	1:A:83:ILE:HG12	0.47	2.10	3	12
1:A:8:LEU:HB2	1:A:50:ARG:NH2	0.47	2.25	15	1
1:A:51:LEU:HD21	1:A:88:VAL:CG2	0.47	2.39	13	2
1:A:27:HIS:HB3	1:A:35:PHE:CD1	0.47	2.45	11	1
1:A:146:LEU:HB2	1:A:150:ASP:CG	0.46	2.36	1	1
1:A:6:ILE:HD13	1:A:6:ILE:H	0.46	1.70	11	3
1:A:20:ALA:HB3	1:A:27:HIS:CE1	0.46	2.45	11	1
1:A:51:LEU:HD13	1:A:88:VAL:HG11	0.46	1.87	1	1
1:A:155:VAL:HG23	1:A:160:LEU:CD1	0.46	2.39	16	2
1:A:123:ILE:CD1	1:A:130:TYR:CG	0.46	2.98	3	4
1:A:80:ALA:CB	1:A:84:VAL:HG13	0.46	2.39	4	1
1:A:130:TYR:CD1	1:A:151:LYS:HB3	0.46	2.46	9	9
1:A:134:ILE:HD13	1:A:146:LEU:O	0.46	2.10	5	1
1:A:102:LYS:HE3	1:A:178:VAL:HG12	0.46	1.85	16	1
1:A:15:LEU:HD13	1:A:17:PHE:CE2	0.46	2.46	19	1
1:A:86:LEU:CD2	1:A:88:VAL:HG13	0.46	2.41	12	1
1:A:115:ALA:CB	1:A:122:HIS:CB	0.46	2.93	16	2
1:A:152:ILE:HG21	1:A:181:LEU:HB2	0.46	1.88	9	5
1:A:3:TYR:CD2	1:A:89:MET:CG	0.46	2.99	3	1
1:A:155:VAL:O	1:A:156:ASN:HB2	0.46	2.11	5	1
1:A:65:VAL:HA	1:A:68:VAL:HG23	0.46	1.85	14	2
1:A:58:LEU:HD23	1:A:89:MET:CG	0.46	2.41	6	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:65:VAL:HG23	1:A:68:VAL:HG22	0.46	1.87	16	1
1:A:122:HIS:CD2	1:A:123:ILE:HD11	0.46	2.46	18	1
1:A:175:THR:OG1	1:A:179:VAL:HG22	0.46	2.10	5	1
1:A:155:VAL:HG11	1:A:175:THR:CG2	0.46	2.40	17	1
1:A:121:GLN:NE2	1:A:123:ILE:O	0.46	2.49	3	1
1:A:58:LEU:HD11	1:A:89:MET:HG3	0.46	1.88	12	1
1:A:169:VAL:HG22	2:C:7:SER:CB	0.46	2.41	3	1
1:A:51:LEU:HD13	1:A:86:LEU:HD11	0.46	1.86	12	1
1:A:156:ASN:ND2	1:A:179:VAL:HB	0.46	2.26	19	1
1:A:135:ILE:O	1:A:141:HIS:CE1	0.45	2.69	13	2
1:A:61:ASN:ND2	1:A:84:VAL:HG12	0.45	2.26	13	1
1:A:5:GLU:N	1:A:87:TYR:CE1	0.45	2.84	16	1
1:A:173:LYS:HD3	2:C:9:VAL:HG11	0.45	1.88	19	1
1:A:9:GLU:HA	1:A:82:SER:O	0.45	2.11	6	7
1:A:23:THR:CG2	1:A:69:THR:N	0.45	2.79	12	12
1:A:4:GLU:HG3	1:A:51:LEU:HD22	0.45	1.88	2	1
1:A:123:ILE:CD1	1:A:130:TYR:CD2	0.45	2.99	3	1
1:A:169:VAL:HG22	2:C:7:SER:OG	0.45	2.12	3	1
1:A:156:ASN:OD1	1:A:180:TYR:CZ	0.45	2.69	12	3
1:A:154:ALA:CB	1:A:160:LEU:HG	0.45	2.42	5	1
1:A:17:PHE:CE1	1:A:19:ILE:HG23	0.45	2.46	8	1
1:A:57:ILE:CD1	1:A:60:VAL:HG13	0.45	2.31	19	1
1:A:36:ILE:O	1:A:53:VAL:O	0.45	2.35	12	6
1:A:6:ILE:O	1:A:85:ARG:HA	0.45	2.12	11	2
1:A:51:LEU:HD21	1:A:88:VAL:HG21	0.45	1.86	15	2
1:A:86:LEU:HD21	1:A:88:VAL:HG13	0.45	1.86	12	1
1:A:57:ILE:O	1:A:57:ILE:CG1	0.45	2.64	7	2
1:A:112:PHE:CD2	1:A:114:ILE:CG2	0.45	3.00	1	1
1:A:106:GLY:N	1:A:109:GLY:O	0.45	2.49	4	6
1:A:110:LEU:N	1:A:110:LEU:HD12	0.45	2.26	15	1
1:A:6:ILE:HG23	1:A:50:ARG:CZ	0.45	2.42	17	1
1:A:3:TYR:HE2	1:A:89:MET:HE2	0.45	1.70	1	1
1:A:57:ILE:CD1	1:A:57:ILE:N	0.45	2.79	14	4
1:A:23:THR:HB	1:A:68:VAL:C	0.45	2.37	20	2
1:A:6:ILE:N	1:A:6:ILE:CD1	0.45	2.79	13	3
1:A:8:LEU:HD11	1:A:45:ALA:N	0.45	2.26	8	4
1:A:11:GLY:H	1:A:44:ALA:HB2	0.44	1.72	7	2
1:A:130:TYR:CE1	1:A:151:LYS:HB3	0.44	2.47	5	6
1:A:159:GLY:O	1:A:161:GLU:N	0.44	2.50	4	1
1:A:58:LEU:HD11	1:A:89:MET:SD	0.44	2.52	20	1
1:A:123:ILE:HD11	1:A:130:TYR:CD2	0.44	2.47	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:131:VAL:HG21	1:A:150:ASP:OD2	0.44	2.12	19	1
1:A:176:TYR:CD2	1:A:177:ASP:N	0.44	2.86	8	2
1:A:5:GLU:CG	1:A:87:TYR:CD1	0.44	3.01	12	1
1:A:110:LEU:HD23	1:A:112:PHE:CE1	0.44	2.48	13	1
1:A:86:LEU:HD23	1:A:88:VAL:HG13	0.44	1.90	10	1
1:A:8:LEU:HB3	1:A:84:VAL:CG2	0.44	2.42	8	2
1:A:176:TYR:CG	1:A:177:ASP:N	0.44	2.85	6	4
1:A:7:THR:HG22	1:A:85:ARG:HG2	0.44	1.88	16	2
1:A:160:LEU:CD2	1:A:171:ALA:HB3	0.44	2.43	17	1
1:A:8:LEU:HD21	1:A:45:ALA:HA	0.44	1.88	1	2
1:A:8:LEU:CD2	1:A:50:ARG:NH1	0.44	2.81	8	1
1:A:27:HIS:CB	1:A:35:PHE:CD1	0.44	3.00	11	1
1:A:156:ASN:OD1	1:A:180:TYR:CE2	0.44	2.71	20	4
1:A:160:LEU:HD22	1:A:171:ALA:HB3	0.44	1.90	12	2
1:A:144:GLY:O	1:A:145:ARG:HG3	0.44	2.13	15	1
1:A:176:TYR:CZ	1:A:178:VAL:O	0.44	2.71	20	2
1:A:60:VAL:HA	1:A:86:LEU:HB3	0.44	1.88	15	2
1:A:115:ALA:HB1	1:A:165:HIS:CE1	0.44	2.48	20	1
1:A:58:LEU:HD12	1:A:89:MET:HB3	0.43	1.88	4	1
1:A:50:ARG:NH1	1:A:51:LEU:CD2	0.43	2.81	6	1
1:A:102:LYS:CG	1:A:180:TYR:CE2	0.43	3.01	6	1
1:A:60:VAL:CG1	1:A:61:ASN:N	0.43	2.79	7	1
1:A:9:GLU:HB3	1:A:83:ILE:HG23	0.43	1.88	9	1
1:A:36:ILE:HB	1:A:53:VAL:O	0.43	2.11	11	3
1:A:17:PHE:CD1	1:A:17:PHE:N	0.43	2.85	14	1
1:A:6:ILE:HD13	1:A:50:ARG:CG	0.43	2.43	16	1
1:A:60:VAL:O	1:A:63:VAL:N	0.43	2.48	10	3
1:A:156:ASN:OD1	1:A:180:TYR:CG	0.43	2.71	8	2
1:A:57:ILE:O	1:A:57:ILE:HG12	0.43	2.12	10	5
1:A:45:ALA:O	1:A:49:GLY:N	0.43	2.50	20	2
1:A:65:VAL:HA	1:A:68:VAL:CG2	0.43	2.44	1	1
1:A:103:LEU:HD23	1:A:104:ILE:N	0.43	2.28	5	7
1:A:152:ILE:HG22	1:A:182:LYS:C	0.43	2.38	1	1
1:A:18:SER:O	1:A:36:ILE:CG2	0.43	2.65	4	1
1:A:8:LEU:HD13	1:A:48:ASP:OD2	0.43	2.13	11	2
1:A:19:ILE:HD11	1:A:74:VAL:CG2	0.43	2.44	12	1
1:A:101:ILE:HG21	1:A:146:LEU:CD2	0.43	2.42	19	1
1:A:158:VAL:HG12	1:A:159:GLY:N	0.43	2.29	16	2
1:A:165:HIS:O	1:A:169:VAL:CG2	0.43	2.66	3	9
1:A:131:VAL:HG21	1:A:146:LEU:HD12	0.43	1.90	13	2
1:A:162:ASP:C	1:A:163:VAL:CG2	0.43	2.91	20	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:169:VAL:HG22	2:C:7:SER:HB2	0.43	1.89	6	1
1:A:59:PHE:CA	1:A:65:VAL:HG12	0.43	2.43	16	1
2:C:9:VAL:OXT	2:C:9:VAL:HG23	0.43	2.14	9	1
1:A:180:TYR:CD1	1:A:180:TYR:N	0.43	2.86	13	1
1:A:103:LEU:HD23	1:A:103:LEU:C	0.43	2.39	5	1
1:A:172:LEU:HD11	2:C:7:SER:OG	0.43	2.13	6	1
1:A:173:LYS:CE	2:C:9:VAL:HG21	0.43	2.42	15	1
1:A:155:VAL:HG21	1:A:160:LEU:CD1	0.43	2.44	2	1
1:A:160:LEU:O	1:A:168:ALA:HB2	0.43	2.14	8	1
1:A:123:ILE:O	1:A:125:GLY:N	0.43	2.52	16	5
1:A:112:PHE:CD1	1:A:112:PHE:O	0.43	2.72	16	3
1:A:23:THR:HG22	1:A:69:THR:OG1	0.43	2.14	11	1
1:A:51:LEU:HD23	1:A:90:ARG:HD3	0.43	1.91	14	1
1:A:160:LEU:HD12	1:A:160:LEU:H	0.43	1.73	5	1
1:A:163:VAL:CG1	1:A:167:ASP:CB	0.43	2.97	5	3
1:A:61:ASN:HD21	1:A:84:VAL:HG13	0.43	1.74	20	1
1:A:40:ILE:O	1:A:42:GLY:N	0.43	2.52	11	4
1:A:29:GLY:O	1:A:30:ASP:CB	0.43	2.67	13	1
1:A:58:LEU:O	1:A:59:PHE:CG	0.42	2.72	11	2
1:A:158:VAL:CB	1:A:171:ALA:CB	0.42	2.97	5	1
1:A:8:LEU:O	1:A:84:VAL:HG23	0.42	2.14	16	1
1:A:132:THR:CG2	1:A:133:LYS:N	0.42	2.83	10	3
1:A:123:ILE:HG22	1:A:124:PRO:CD	0.42	2.43	11	2
1:A:8:LEU:HB2	1:A:50:ARG:CZ	0.42	2.44	13	3
1:A:39:ILE:HG13	1:A:53:VAL:HG12	0.42	1.91	8	1
1:A:57:ILE:H	1:A:57:ILE:HD13	0.42	1.74	12	1
1:A:152:ILE:HB	1:A:160:LEU:CD1	0.42	2.45	13	1
1:A:154:ALA:CA	1:A:158:VAL:O	0.42	2.67	20	2
1:A:165:HIS:CD2	2:C:7:SER:OG	0.42	2.72	13	1
1:A:99:MET:SD	1:A:101:ILE:HD11	0.42	2.54	4	1
1:A:130:TYR:CE1	1:A:151:LYS:HB2	0.42	2.49	20	3
1:A:144:GLY:C	1:A:146:LEU:HD23	0.42	2.39	4	3
1:A:103:LEU:CD2	1:A:140:ALA:HB2	0.42	2.44	12	1
1:A:6:ILE:HG23	1:A:50:ARG:NH2	0.42	2.29	15	1
1:A:172:LEU:O	1:A:175:THR:OG1	0.42	2.37	2	1
1:A:82:SER:C	1:A:83:ILE:CG1	0.42	2.93	2	3
1:A:57:ILE:CG1	1:A:60:VAL:HG13	0.42	2.39	6	1
1:A:39:ILE:CG1	1:A:53:VAL:CG1	0.42	2.97	17	2
1:A:2:GLU:O	1:A:90:ARG:N	0.42	2.53	19	1
1:A:15:LEU:HD21	1:A:84:VAL:HG21	0.42	1.91	3	1
1:A:74:VAL:O	1:A:78:LYS:HB3	0.42	2.14	3	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:156:ASN:OD1	1:A:180:TYR:CD2	0.42	2.73	9	3
1:A:28:ILE:HD11	1:A:35:PHE:CZ	0.42	2.50	5	3
1:A:115:ALA:HB1	1:A:165:HIS:NE2	0.42	2.30	20	1
1:A:61:ASN:HD21	1:A:84:VAL:HG12	0.42	1.74	6	1
1:A:48:ASP:O	1:A:50:ARG:N	0.42	2.53	7	4
1:A:7:THR:O	1:A:50:ARG:NH2	0.42	2.52	14	2
1:A:121:GLN:C	1:A:123:ILE:N	0.42	2.78	14	1
1:A:163:VAL:HG11	1:A:167:ASP:CB	0.42	2.45	15	5
1:A:101:ILE:HG23	1:A:144:GLY:CA	0.42	2.44	5	1
1:A:8:LEU:HB3	1:A:84:VAL:HG22	0.42	1.91	8	2
1:A:86:LEU:HD23	1:A:86:LEU:C	0.42	2.40	9	1
1:A:156:ASN:ND2	1:A:180:TYR:O	0.42	2.53	12	1
1:A:7:THR:HG23	1:A:85:ARG:HH11	0.42	1.74	19	1
1:A:9:GLU:HA	1:A:83:ILE:HA	0.42	1.92	6	2
1:A:129:ILE:CG2	1:A:152:ILE:CD1	0.42	2.98	9	2
1:A:132:THR:HG23	1:A:133:LYS:N	0.42	2.30	10	1
1:A:80:ALA:HB1	1:A:84:VAL:HG22	0.42	1.92	15	1
1:A:115:ALA:HB2	1:A:122:HIS:CB	0.42	2.45	16	1
1:A:49:GLY:O	1:A:50:ARG:C	0.42	2.62	17	1
1:A:38:LYS:N	1:A:38:LYS:CD	0.42	2.83	20	1
1:A:153:LEU:HD22	1:A:184:ALA:HB2	0.42	1.91	20	1
1:A:50:ARG:HH22	1:A:86:LEU:HD11	0.42	1.75	8	1
1:A:60:VAL:CG2	1:A:65:VAL:HG21	0.42	2.45	9	1
1:A:27:HIS:CD2	1:A:35:PHE:CE2	0.41	3.08	1	4
1:A:156:ASN:OD1	1:A:180:TYR:CD1	0.41	2.73	9	2
1:A:86:LEU:N	1:A:86:LEU:CD1	0.41	2.80	8	1
1:A:16:GLY:HA2	1:A:40:ILE:HD11	0.41	1.91	15	1
1:A:102:LYS:HG2	1:A:180:TYR:CD2	0.41	2.50	1	1
1:A:160:LEU:H	1:A:160:LEU:CD1	0.41	2.28	5	1
1:A:176:TYR:O	1:A:177:ASP:CB	0.41	2.68	5	1
1:A:16:GLY:O	1:A:39:ILE:CG2	0.41	2.69	17	2
1:A:24:ASP:CB	1:A:69:THR:CG2	0.41	2.98	8	2
1:A:34:ILE:HD11	1:A:68:VAL:O	0.41	2.15	9	1
1:A:6:ILE:CG2	1:A:50:ARG:CZ	0.41	2.97	15	1
1:A:79:GLU:CG	1:A:79:GLU:O	0.41	2.68	19	1
1:A:88:VAL:CG2	1:A:90:ARG:NH1	0.41	2.83	20	1
1:A:15:LEU:HD22	1:A:17:PHE:CE2	0.41	2.50	6	1
1:A:23:THR:N	1:A:69:THR:HA	0.41	2.31	18	1
1:A:163:VAL:HB	1:A:167:ASP:CB	0.41	2.45	20	1
1:A:60:VAL:HG13	1:A:86:LEU:CB	0.41	2.45	1	1
1:A:48:ASP:HB3	1:A:50:ARG:CD	0.41	2.46	12	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:50:ARG:O	1:A:51:LEU:C	0.41	2.63	8	2
1:A:87:TYR:N	1:A:87:TYR:CD1	0.41	2.88	5	1
1:A:101:ILE:O	1:A:180:TYR:CD1	0.41	2.73	5	1
1:A:8:LEU:HD22	1:A:50:ARG:NH2	0.41	2.30	6	1
1:A:51:LEU:HD23	1:A:90:ARG:CD	0.41	2.45	14	1
1:A:120:ASN:O	1:A:121:GLN:C	0.41	2.61	14	1
1:A:104:ILE:HA	1:A:177:ASP:O	0.41	2.16	15	1
1:A:59:PHE:O	1:A:87:TYR:N	0.41	2.52	16	1
1:A:59:PHE:CD1	1:A:63:VAL:O	0.41	2.73	9	3
1:A:24:ASP:HB2	1:A:69:THR:CG2	0.41	2.45	1	1
1:A:151:LYS:CG	1:A:184:ALA:HB3	0.41	2.46	3	1
1:A:2:GLU:C	1:A:3:TYR:CD1	0.41	2.98	10	5
1:A:156:ASN:OD1	1:A:180:TYR:CE1	0.41	2.73	9	2
1:A:53:VAL:HG23	1:A:54:ASN:ND2	0.41	2.31	7	1
1:A:59:PHE:CZ	1:A:64:ASP:CG	0.41	2.98	7	1
1:A:34:ILE:CD1	1:A:73:ALA:HB2	0.41	2.46	11	1
1:A:121:GLN:O	1:A:122:HIS:CB	0.41	2.68	18	1
1:A:8:LEU:HD13	1:A:48:ASP:HB2	0.41	1.93	1	1
1:A:39:ILE:HG13	1:A:53:VAL:CG1	0.41	2.46	4	3
1:A:58:LEU:O	1:A:59:PHE:CD2	0.41	2.73	9	2
1:A:17:PHE:CD1	1:A:17:PHE:C	0.41	2.98	8	1
1:A:48:ASP:HB3	1:A:50:ARG:HD2	0.41	1.92	11	1
1:A:26:PRO:CG	1:A:30:ASP:HA	0.41	2.46	13	1
1:A:2:GLU:C	1:A:3:TYR:CG	0.41	2.98	1	2
1:A:172:LEU:C	1:A:172:LEU:CD1	0.41	2.94	3	1
1:A:99:MET:N	1:A:183:VAL:O	0.41	2.54	5	1
1:A:17:PHE:HB3	1:A:39:ILE:HG23	0.41	1.91	8	1
1:A:6:ILE:HD12	1:A:88:VAL:CG2	0.41	2.46	17	1
1:A:156:ASN:OD1	1:A:180:TYR:N	0.41	2.54	17	1
1:A:122:HIS:CD2	1:A:123:ILE:CD1	0.41	3.03	18	1
1:A:134:ILE:CD1	1:A:146:LEU:O	0.41	2.67	1	3
1:A:57:ILE:HG21	1:A:86:LEU:CD2	0.41	2.46	2	1
1:A:21:GLY:C	1:A:34:ILE:HA	0.41	2.41	3	1
1:A:116:GLY:HA3	1:A:129:ILE:HA	0.41	1.92	4	1
1:A:16:GLY:O	1:A:39:ILE:HG23	0.41	2.16	5	1
1:A:50:ARG:NH1	1:A:50:ARG:CG	0.41	2.84	8	1
1:A:176:TYR:CD1	1:A:179:VAL:HG13	0.41	2.51	8	1
1:A:58:LEU:C	1:A:59:PHE:CG	0.41	2.99	11	1
1:A:162:ASP:C	1:A:163:VAL:HG22	0.41	2.40	13	1
1:A:36:ILE:N	1:A:53:VAL:O	0.41	2.54	14	1
1:A:59:PHE:CD2	1:A:63:VAL:O	0.41	2.74	17	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:135:ILE:HG22	1:A:136:GLU:N	0.41	2.30	19	1
1:A:155:VAL:HG23	1:A:160:LEU:CG	0.41	2.46	20	1
1:A:113:SER:O	1:A:131:VAL:HG13	0.41	2.16	11	1
1:A:123:ILE:CG2	1:A:126:ASP:CB	0.40	3.00	2	1
1:A:51:LEU:N	1:A:51:LEU:CD2	0.40	2.84	4	1
1:A:160:LEU:O	1:A:161:GLU:C	0.40	2.62	4	2
1:A:5:GLU:HB3	1:A:87:TYR:CD2	0.40	2.51	6	1
1:A:102:LYS:HG3	1:A:180:TYR:CZ	0.40	2.51	6	1
1:A:112:PHE:CZ	1:A:114:ILE:HG21	0.40	2.50	10	1
1:A:59:PHE:CZ	1:A:64:ASP:OD1	0.40	2.74	14	1
1:A:129:ILE:HD12	1:A:160:LEU:HB2	0.40	1.92	18	1
1:A:140:ALA:HB1	1:A:146:LEU:CD2	0.40	2.43	20	1
1:A:74:VAL:HA	1:A:77:LEU:HD21	0.40	1.93	7	1
1:A:86:LEU:C	1:A:86:LEU:CD2	0.40	2.95	10	1
1:A:58:LEU:O	1:A:59:PHE:CD1	0.40	2.75	11	1
1:A:5:GLU:HG2	1:A:87:TYR:CD1	0.40	2.51	12	1
1:A:60:VAL:HG12	1:A:86:LEU:CD1	0.40	2.46	13	1
1:A:59:PHE:O	1:A:86:LEU:CB	0.40	2.69	15	1
1:A:102:LYS:HE2	1:A:180:TYR:CZ	0.40	2.52	15	1
1:A:8:LEU:HD13	1:A:48:ASP:CB	0.40	2.45	1	1
1:A:116:GLY:O	1:A:165:HIS:HA	0.40	2.17	4	1
1:A:156:ASN:CG	1:A:180:TYR:O	0.40	2.65	15	1
1:A:84:VAL:O	1:A:84:VAL:CG2	0.40	2.69	19	1
1:A:141:HIS:O	1:A:145:ARG:HA	0.40	2.16	10	1
1:A:4:GLU:C	1:A:87:TYR:CE1	0.40	2.99	20	1
1:A:3:TYR:CE2	1:A:89:MET:HE2	0.40	2.50	1	1
1:A:7:THR:HG23	1:A:85:ARG:HD3	0.40	1.93	5	1
1:A:65:VAL:HA	1:A:68:VAL:HG22	0.40	1.93	12	1
1:A:87:TYR:CD1	1:A:87:TYR:C	0.40	2.99	12	1
1:A:23:THR:HB	1:A:68:VAL:CA	0.40	2.47	14	1
1:A:155:VAL:HB	1:A:158:VAL:HG23	0.40	1.92	20	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	178/189 (94%)	139±3 (78±1%)	28±3 (16±2%)	11±2 (6±1%)	2	19
2	B	0	-	-	-	-	-
2	C	2/9 (22%)	2±0 (92±18%)	0±0 (8±18%)	0±0 (0±0%)	100	100
All	All	3600/4140 (87%)	2819 (78%)	559 (16%)	222 (6%)	2	19

All 34 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	30	ASP	19
1	A	12	ASN	18
1	A	57	ILE	17
1	A	42	GLY	16
1	A	67	GLU	16
1	A	163	VAL	15
1	A	175	THR	15
1	A	120	ASN	15
1	A	124	PRO	11
1	A	49	GLY	9
1	A	61	ASN	8
1	A	154	ALA	7
1	A	51	LEU	6
1	A	160	LEU	5
1	A	157	SER	5
1	A	161	GLU	5
1	A	10	ARG	4
1	A	83	ILE	4
1	A	41	PRO	3
1	A	69	THR	3
1	A	148	ILE	2
1	A	97	LYS	2
1	A	22	GLY	2
1	A	26	PRO	2
1	A	125	GLY	2
1	A	82	SER	2
1	A	117	GLY	2
1	A	21	GLY	1
1	A	162	ASP	1
1	A	164	MET	1
1	A	176	TYR	1
1	A	65	VAL	1
1	A	32	PRO	1
1	A	50	ARG	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	140/149 (94%)	91±5 (65±4%)	49±5 (35±4%)	1 10
2	B	0	-	-	-
2	C	3/9 (33%)	2±1 (80±24%)	1±1 (20±24%)	3 33
All	All	2860/3340 (86%)	1866 (65%)	994 (35%)	1 10

All 111 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	7	THR	20
1	A	15	LEU	20
1	A	28	ILE	20
1	A	39	ILE	20
1	A	146	LEU	20
1	A	152	ILE	20
1	A	167	ASP	20
1	A	179	VAL	20
1	A	181	LEU	20
1	A	50	ARG	19
1	A	151	LYS	19
1	A	78	LYS	18
1	A	163	VAL	18
1	A	34	ILE	17
1	A	60	VAL	17
1	A	83	ILE	17
1	A	112	PHE	17
1	A	123	ILE	17
1	A	3	TYR	15
1	A	38	LYS	15
1	A	121	GLN	15
1	A	133	LYS	15
1	A	135	ILE	15
1	A	52	ARG	14
1	A	153	LEU	14
1	A	172	LEU	13
1	A	5	GLU	12

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Mol	Chain	Res	Type	Models (Total)
1	A	102	LYS	12
1	A	108	LYS	12
1	A	174	ASN	12
1	A	6	ILE	11
1	A	62	GLU	11
1	A	97	LYS	11
1	A	166	GLU	11
1	A	173	LYS	11
1	A	185	LYS	11
1	A	160	LEU	11
1	A	89	MET	11
1	A	9	GLU	10
1	A	161	GLU	10
1	A	182	LYS	10
1	A	85	ARG	10
1	A	150	ASP	10
1	A	75	GLU	10
1	A	90	ARG	10
1	A	164	MET	10
1	A	67	GLU	9
1	A	69	THR	9
1	A	99	MET	9
1	A	126	ASP	9
1	A	142	LYS	9
1	A	48	ASP	8
1	A	71	SER	8
1	A	157	SER	8
1	A	58	LEU	8
1	A	84	VAL	8
1	A	30	ASP	8
1	A	12	ASN	7
1	A	37	THR	7
1	A	59	PHE	7
1	A	79	GLU	7
1	A	147	GLN	7
1	A	158	VAL	7
2	C	7	SER	7
1	A	145	ARG	7
1	A	51	LEU	7
1	A	136	GLU	7
1	A	57	ILE	7
1	A	4	GLU	6

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Mol	Chain	Res	Type	Models (Total)
1	A	31	ASP	6
1	A	132	THR	6
1	A	2	GLU	6
1	A	8	LEU	6
1	A	120	ASN	6
1	A	33	SER	6
1	A	66	ARG	6
1	A	86	LEU	6
1	A	10	ARG	5
2	C	8	SER	5
1	A	18	SER	5
1	A	100	GLU	5
1	A	175	THR	5
1	A	177	ASP	5
1	A	56	SER	5
1	A	61	ASN	5
1	A	82	SER	5
1	A	180	TYR	5
1	A	122	HIS	4
1	A	23	THR	4
1	A	105	LYS	4
1	A	162	ASP	4
1	A	68	VAL	3
1	A	35	PHE	3
1	A	101	ILE	3
1	A	74	VAL	2
1	A	127	ASN	2
1	A	143	ASP	2
1	A	64	ASP	2
1	A	141	HIS	2
1	A	19	ILE	2
1	A	13	SER	2
1	A	40	ILE	1
1	A	113	SER	1
1	A	63	VAL	1
1	A	129	ILE	1
1	A	110	LEU	1
1	A	165	HIS	1
1	A	17	PHE	1
1	A	87	TYR	1
1	A	25	ASN	1
1	A	24	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 oligosaccharides in this entry.

6.6 Ligand geometry [i](#)

There are no ligands in this entry.

6.7 Other polymers [i](#)

There are no such molecules in this entry.

6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

7 Chemical shift validation

No chemical shift data were provided