



# Full wwPDB NMR Structure Validation Report ⓘ

May 28, 2020 – 09:54 pm BST

PDB ID : 2FV4  
Title : NMR solution structure of the yeast kinetochore Spc24/Spc25 globular domain  
Authors : Schnell, J.R.; Chou, J.J.  
Deposited on : 2006-01-29

This is a Full wwPDB NMR Structure Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto: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.

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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 : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
RCI : v\_1n\_11\_5\_13\_A (Berjanski et al., 2005)  
PANAV : Wang et al. (2010)  
ShiftChecker : 2.11  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

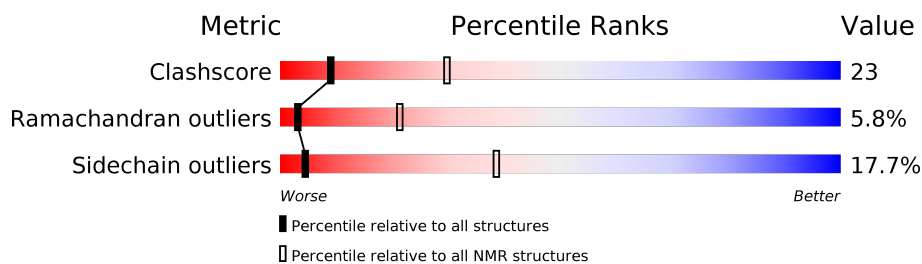
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*SOLUTION NMR*

The overall completeness of chemical shifts assignment was not calculated.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	NMR archive (#Entries)
Clashscore	158937	12864
Ramachandran outliers	154571	11451
Sidechain outliers	154315	11428

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for  $\geq 3$ , 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	98	
2	B	77	

## 2 Ensemble composition and analysis

This entry contains 20 models. Model 7 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:134-A:152, A:158-A:173, A:183-A:221, B:156-B:184, B:188-B:194, B:199-B:213 (125)	0.45	7

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 3 clusters and 6 single-model clusters were found.

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

### 3 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 2347 atoms, of which 1176 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region.

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		S
1	A	89	1363	432	677	123	128	3	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	124	GLY	-	CLONING ARTIFACT	UNP P40014
A	125	SER	-	CLONING ARTIFACT	UNP P40014
A	126	HIS	-	CLONING ARTIFACT	UNP P40014
A	127	MET	-	CLONING ARTIFACT	UNP P40014

- Molecule 2 is a protein called Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region.

Mol	Chain	Residues	Atoms					Trace
			Total	C	H	N	O	
2	B	58	984	310	499	83	92	0

There is a discrepancy between the modelled and reference sequences:

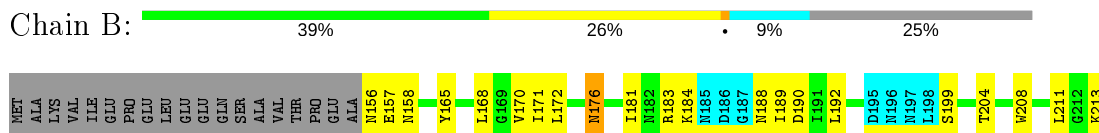
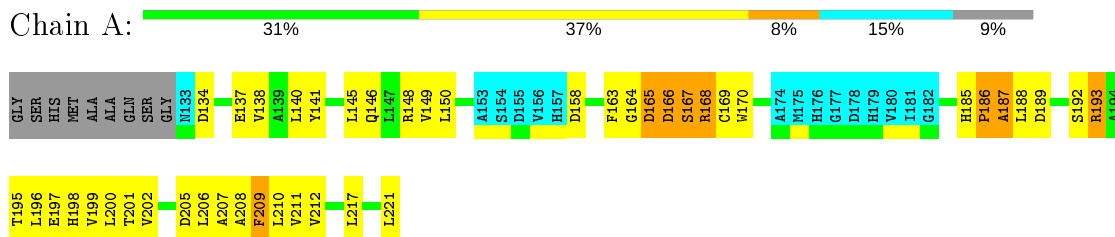
Chain	Residue	Modelled	Actual	Comment	Reference
B	137	MET	-	CLONING ARTIFACT	UNP Q04477

## 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.

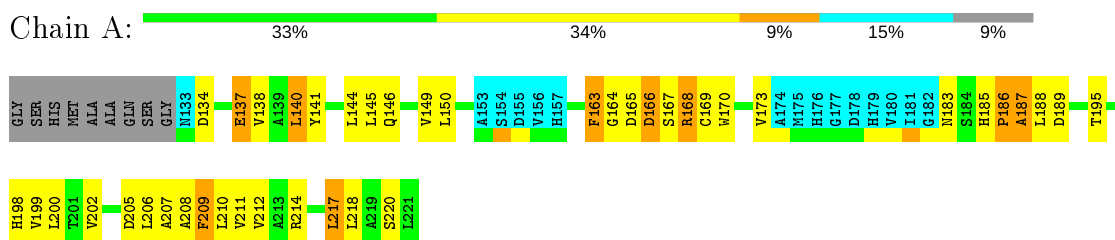
- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

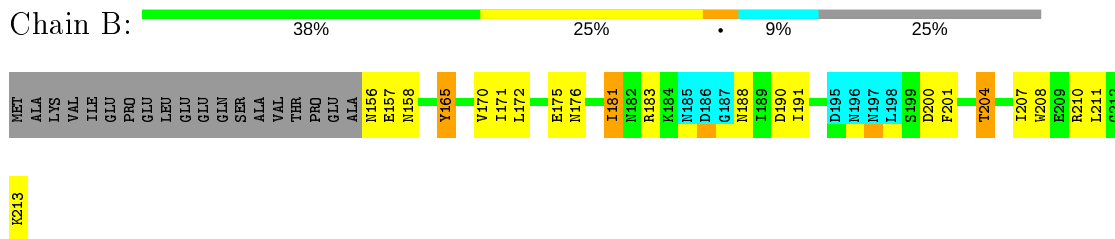


Colouring as in section 4.1 above.

#### 4.2.1 Score per residue for model 1

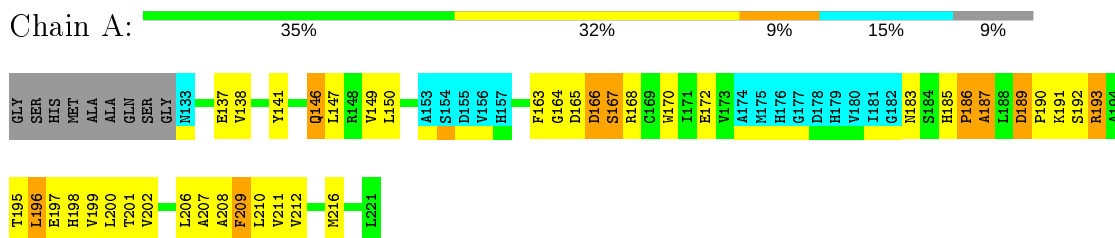
- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region



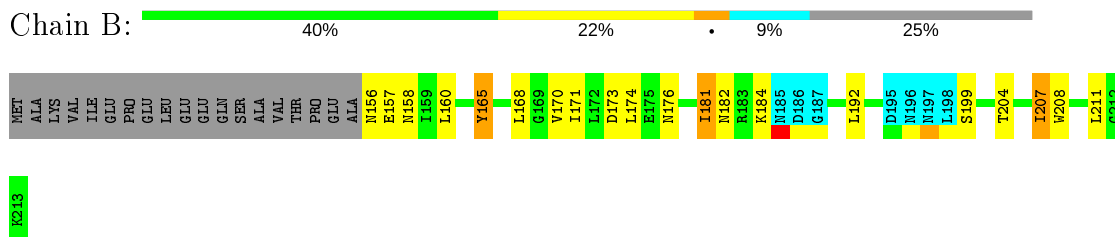


#### 4.2.2 Score per residue for model 2

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

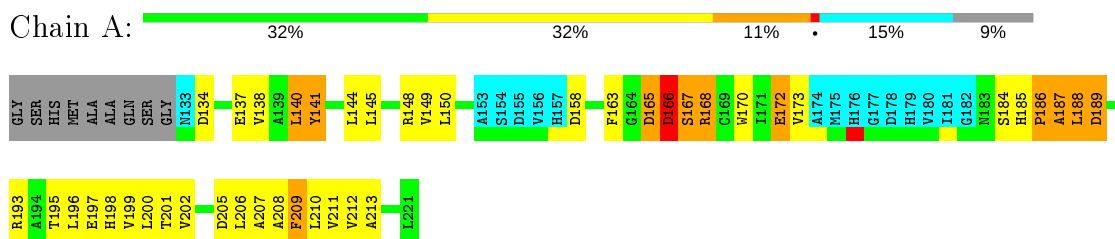


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

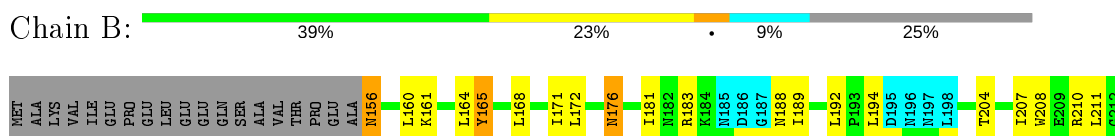


#### 4.2.3 Score per residue for model 3

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region



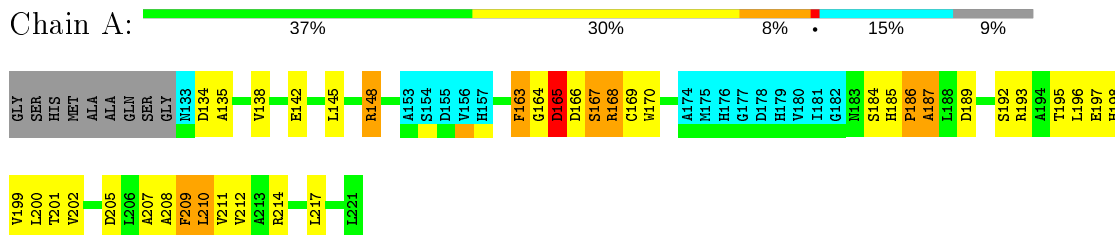
- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region



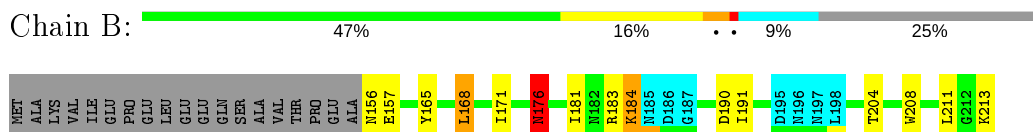
K213

#### 4.2.4 Score per residue for model 4

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

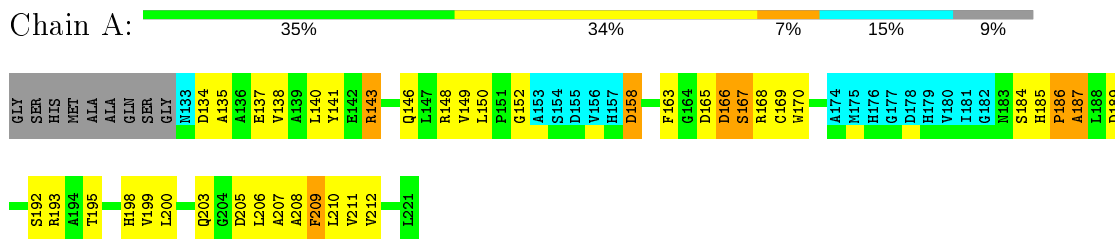


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

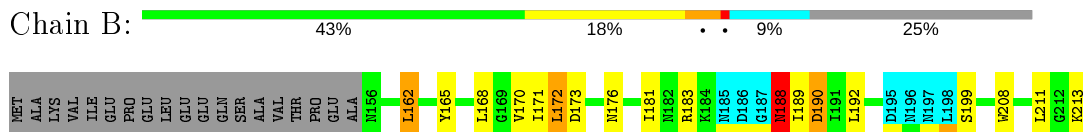


#### 4.2.5 Score per residue for model 5

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region



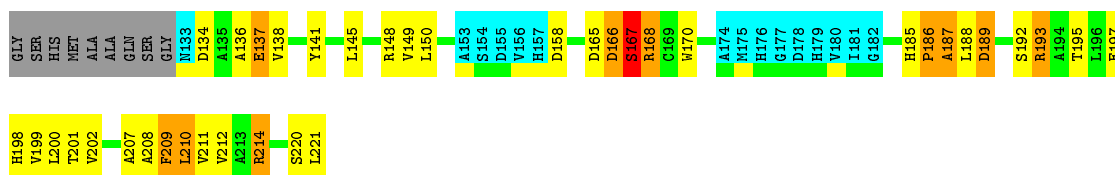
- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region



#### 4.2.6 Score per residue for model 6

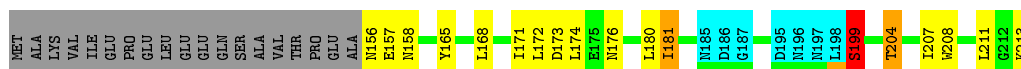
- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region





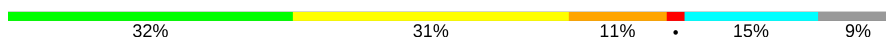
- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

Chain B: 



#### 4.2.7 Score per residue for model 7 (medoid)

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

Chain A: 



- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

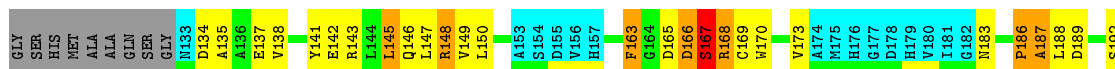
Chain B: 



#### 4.2.8 Score per residue for model 8

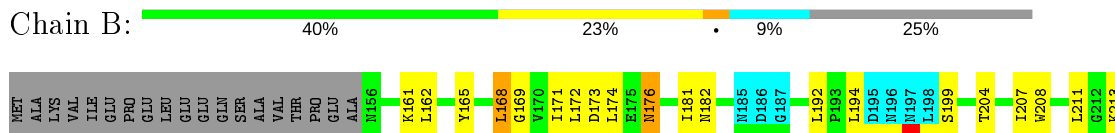
- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

Chain A: 



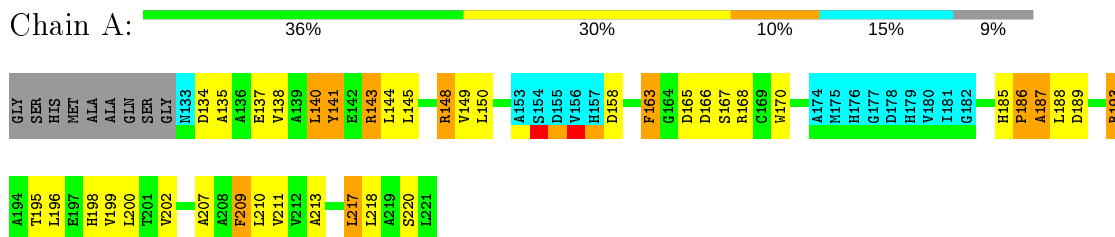
- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region



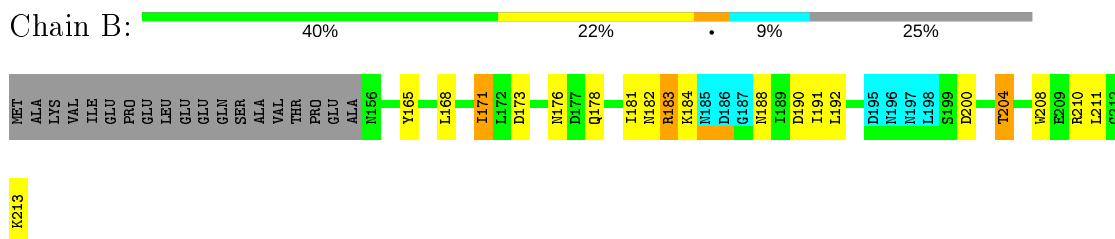


#### 4.2.9 Score per residue for model 9

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

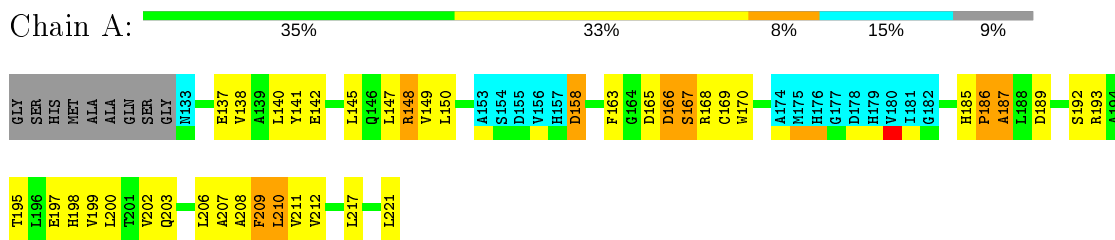


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

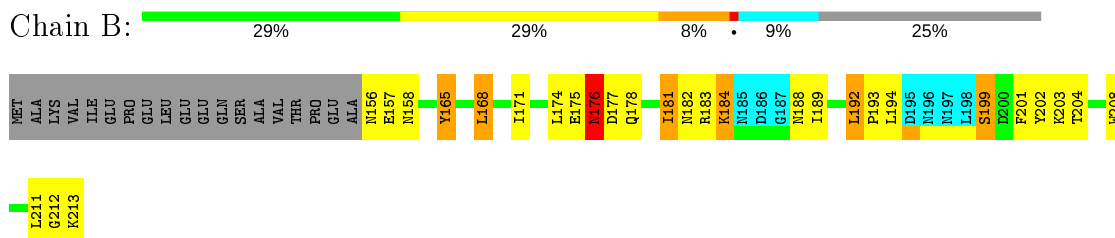


#### 4.2.10 Score per residue for model 10

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

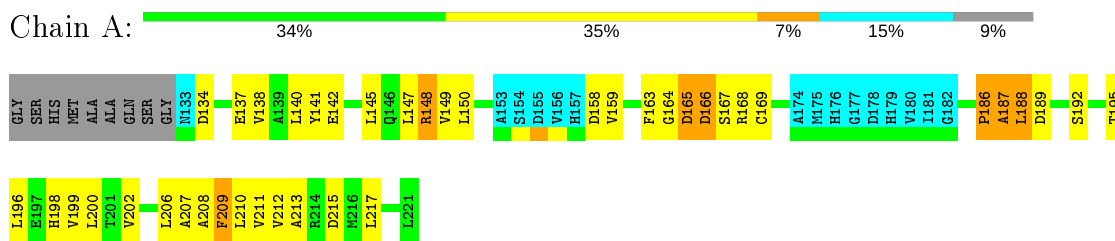


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

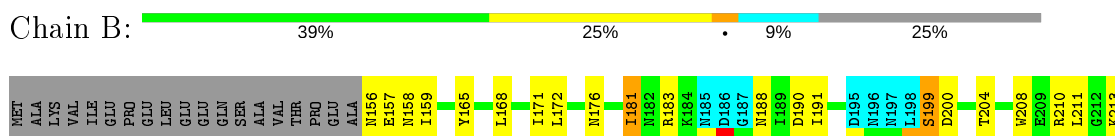


### 4.2.11 Score per residue for model 11

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

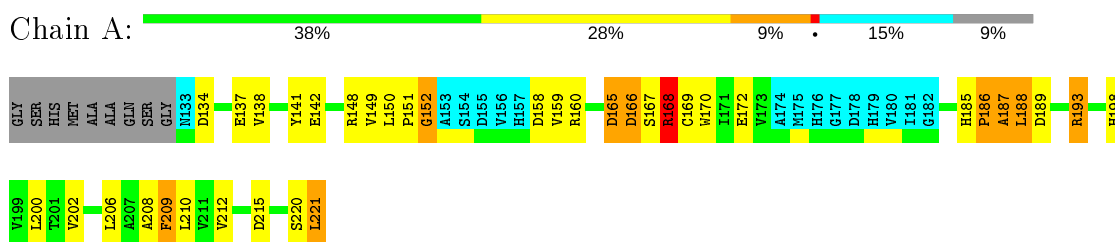


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

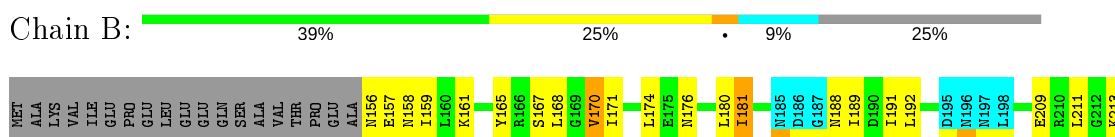


### 4.2.12 Score per residue for model 12

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

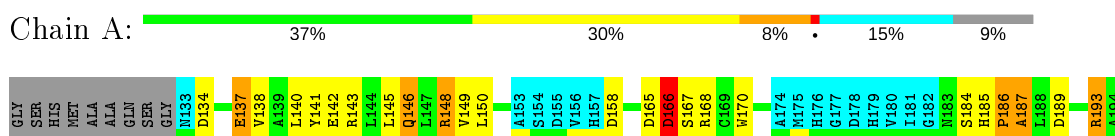


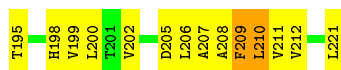
- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region



### 4.2.13 Score per residue for model 13

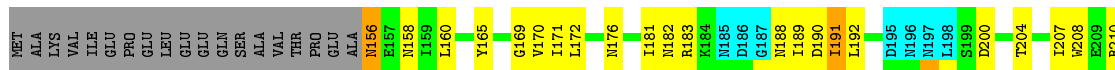
- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region





- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

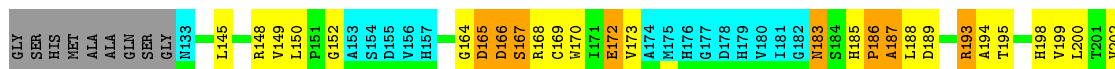
Chain B:



#### 4.2.14 Score per residue for model 14

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

Chain A:



- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

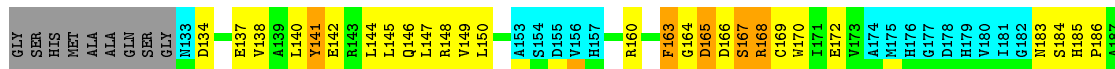
Chain B:



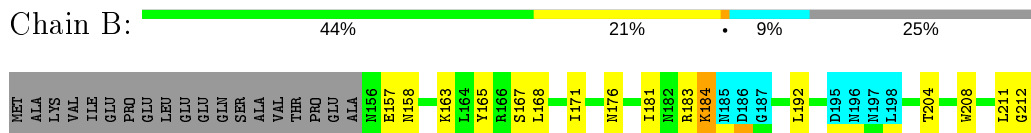
#### 4.2.15 Score per residue for model 15

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

Chain A:

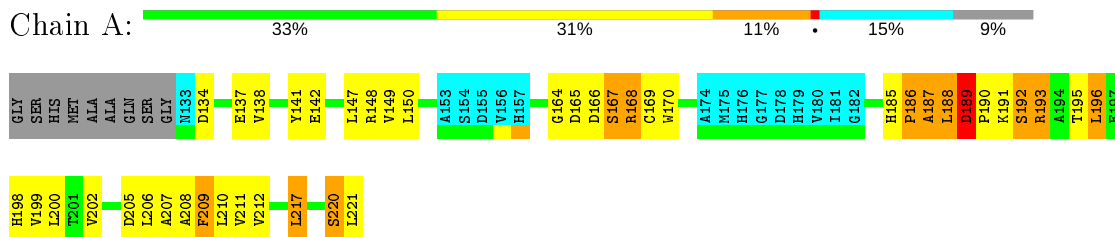


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

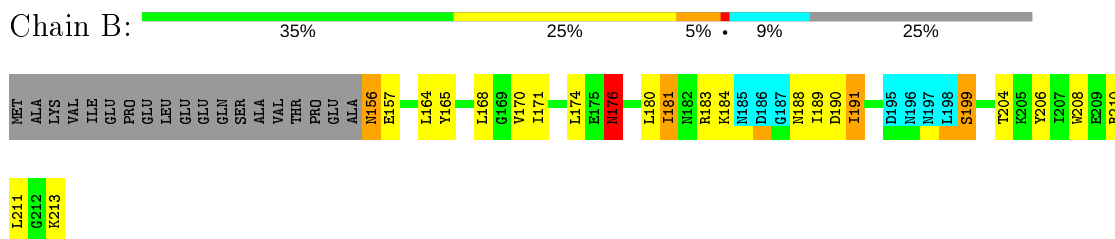


#### 4.2.16 Score per residue for model 16

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

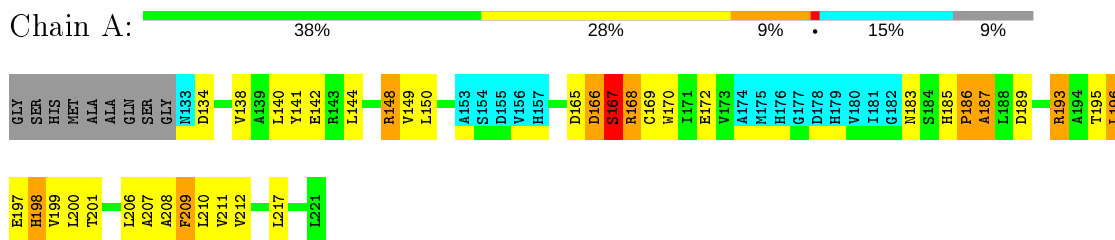


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

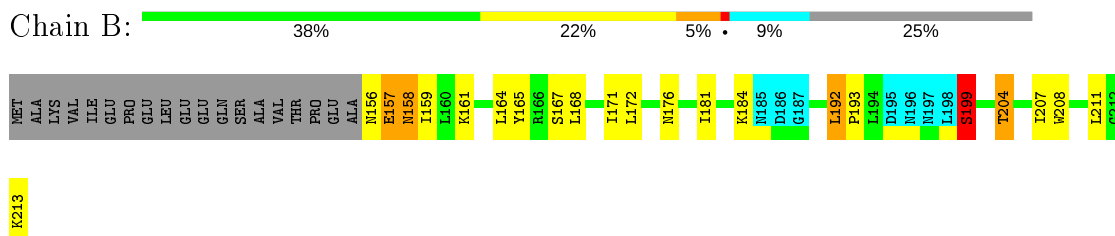


#### 4.2.17 Score per residue for model 17

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

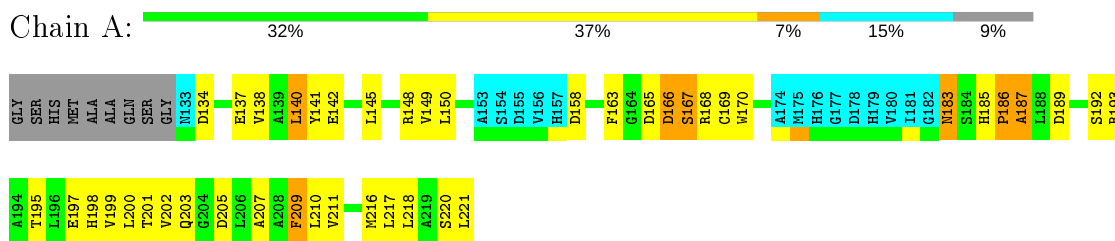


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

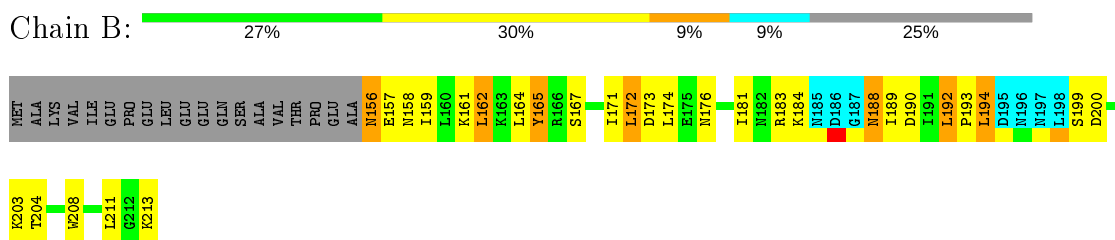


### 4.2.18 Score per residue for model 18

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

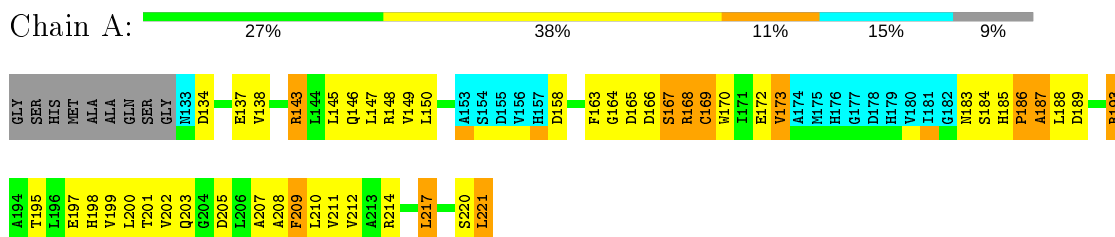


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

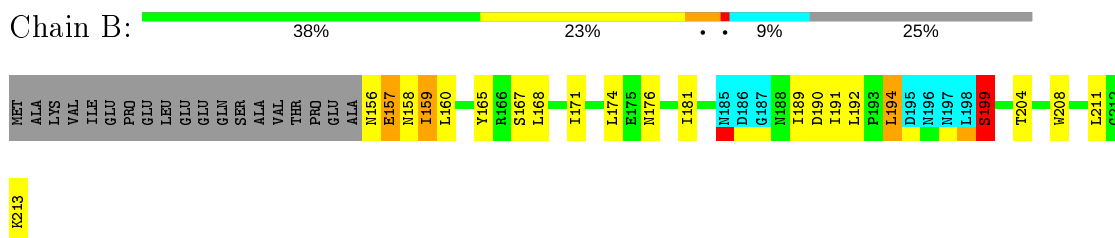


### 4.2.19 Score per residue for model 19

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region

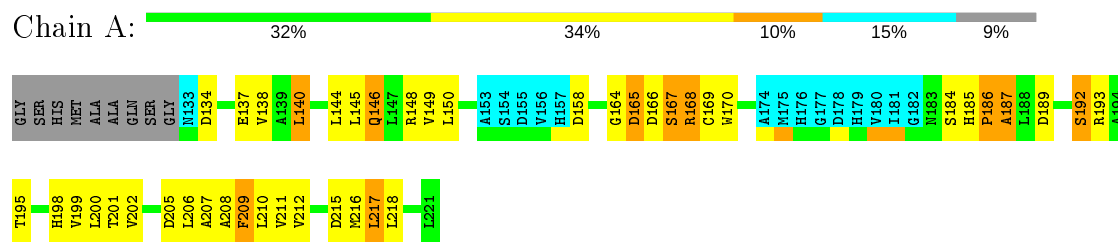


- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region

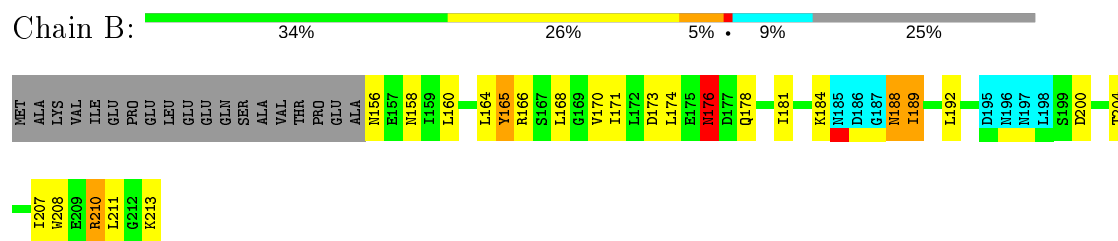


### 4.2.20 Score per residue for model 20

- Molecule 1: Hypothetical 25.2 kDa protein in AFG3-SEB2 intergenic region



- Molecule 2: Hypothetical 24.6 kDa protein in ILV2-ADE17 intergenic region



## 5 Refinement protocol and experimental data overview (i)

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

Of the 30 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
Xplor-NIH	refinement	2.11

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

COVALENT-GEOMETRY INFOmissingINFO

### 5.1 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	578	583	583	35±4
2	B	433	459	458	16±4
All	All	20220	20840	20820	947

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 23.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:217:LEU:HD23	1:A:218:LEU:N	0.84	1.87	9	4
1:A:206:LEU:HD23	1:A:206:LEU:O	0.81	1.76	17	3
1:A:188:LEU:HD13	1:A:188:LEU:N	0.75	1.97	11	1
1:A:134:ASP:O	1:A:138:VAL:HG23	0.74	1.83	18	16
2:B:191:ILE:H	2:B:191:ILE:HD13	0.74	1.41	16	2
2:B:162:LEU:N	2:B:162:LEU:HD23	0.73	1.98	18	2
1:A:169:CYS:SG	1:A:217:LEU:HD11	0.73	2.23	7	2
1:A:207:ALA:O	1:A:211:VAL:HG23	0.73	1.83	8	19
1:A:145:LEU:HD12	2:B:165:TYR:CE1	0.72	2.20	6	3
1:A:220:SER:O	1:A:221:LEU:OXT	0.71	2.08	6	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:208:ALA:O	1:A:212:VAL:HG23	0.69	1.88	15	18
1:A:149:VAL:HG11	2:B:157:GLU:OE2	0.68	1.89	16	1
1:A:210:LEU:HD23	1:A:210:LEU:O	0.67	1.89	1	4
1:A:195:THR:O	1:A:199:VAL:HG23	0.67	1.88	9	17
1:A:166:ASP:O	1:A:168:ARG:N	0.67	2.26	13	9
1:A:145:LEU:HD12	2:B:165:TYR:CZ	0.67	2.25	13	3
1:A:145:LEU:HD12	2:B:165:TYR:CE2	0.66	2.25	19	4
2:B:162:LEU:HD23	2:B:162:LEU:N	0.65	2.06	5	1
1:A:209:PHE:CG	1:A:210:LEU:N	0.65	2.65	16	20
2:B:165:TYR:N	2:B:165:TYR:CD1	0.64	2.63	3	5
1:A:170:TRP:CH2	1:A:185:HIS:CG	0.64	2.86	1	17
1:A:166:ASP:OD2	1:A:217:LEU:HD12	0.64	1.92	11	1
1:A:145:LEU:HD21	2:B:208:TRP:CH2	0.63	2.28	8	1
1:A:147:LEU:HD13	1:A:147:LEU:C	0.63	2.13	7	1
1:A:186:PRO:O	1:A:187:ALA:HB2	0.63	1.94	11	18
1:A:147:LEU:C	1:A:147:LEU:HD13	0.63	2.13	16	1
1:A:145:LEU:HD21	2:B:208:TRP:CZ3	0.63	2.29	8	1
1:A:166:ASP:OD2	1:A:221:LEU:HD11	0.63	1.94	10	1
1:A:140:LEU:CD1	1:A:144:LEU:HD12	0.62	2.24	9	5
1:A:170:TRP:CH2	1:A:185:HIS:ND1	0.62	2.67	10	2
1:A:165:ASP:O	1:A:167:SER:N	0.62	2.32	1	4
1:A:214:ARG:HH12	2:B:168:LEU:HD11	0.62	1.54	4	1
1:A:145:LEU:HD21	1:A:214:ARG:HH21	0.62	1.54	4	1
1:A:193:ARG:NH2	1:A:194:ALA:HB2	0.62	2.09	7	2
1:A:170:TRP:CZ3	1:A:185:HIS:CD2	0.62	2.88	3	4
2:B:165:TYR:CD1	2:B:165:TYR:N	0.62	2.63	20	2
1:A:210:LEU:HD23	1:A:210:LEU:C	0.62	2.16	9	2
2:B:176:ASN:ND2	2:B:176:ASN:N	0.61	2.48	4	1
1:A:210:LEU:C	1:A:210:LEU:HD23	0.61	2.16	15	1
1:A:187:ALA:HB3	1:A:220:SER:OG	0.60	1.95	19	3
1:A:170:TRP:CH2	1:A:185:HIS:CE1	0.60	2.90	14	1
2:B:183:ARG:NH1	2:B:210:ARG:NH2	0.60	2.50	16	2
1:A:187:ALA:C	1:A:188:LEU:HD13	0.60	2.17	11	1
2:B:183:ARG:NH1	2:B:210:ARG:HH22	0.60	1.95	7	1
2:B:183:ARG:HH11	2:B:210:ARG:NH2	0.59	1.95	16	2
1:A:145:LEU:HD23	1:A:214:ARG:HH22	0.59	1.58	19	2
1:A:198:HIS:O	1:A:202:VAL:HG23	0.59	1.98	9	18
2:B:191:ILE:N	2:B:191:ILE:HD13	0.59	2.13	13	2
1:A:137:GLU:CG	2:B:174:LEU:HD11	0.58	2.27	10	2
1:A:165:ASP:OD2	1:A:221:LEU:HD11	0.58	1.97	6	1
1:A:170:TRP:CZ3	1:A:185:HIS:CG	0.58	2.90	10	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:209:PHE:CD1	1:A:209:PHE:C	0.58	2.77	9	13
1:A:217:LEU:C	1:A:217:LEU:HD23	0.58	2.19	1	3
1:A:147:LEU:HD23	1:A:148:ARG:N	0.58	2.13	10	1
2:B:168:LEU:CD1	2:B:208:TRP:CZ3	0.58	2.86	17	3
1:A:137:GLU:OE2	2:B:174:LEU:HD12	0.58	1.97	20	1
1:A:209:PHE:C	1:A:209:PHE:CD1	0.58	2.77	19	7
1:A:170:TRP:CZ2	1:A:185:HIS:CG	0.57	2.92	14	5
1:A:165:ASP:OD2	1:A:217:LEU:HD12	0.57	1.98	16	1
1:A:165:ASP:O	1:A:166:ASP:O	0.57	2.23	8	5
1:A:215:ASP:OD1	1:A:216:MET:N	0.57	2.38	20	1
1:A:188:LEU:HD23	1:A:220:SER:O	0.56	2.00	12	1
1:A:217:LEU:HD23	1:A:217:LEU:C	0.56	2.20	9	1
1:A:137:GLU:O	1:A:141:TYR:CD1	0.56	2.59	2	11
1:A:163:PHE:N	1:A:163:PHE:CD1	0.56	2.72	9	5
1:A:144:LEU:HD22	2:B:204:THR:HG21	0.56	1.78	17	4
2:B:156:ASN:O	2:B:158:ASN:N	0.56	2.39	12	13
1:A:163:PHE:CD2	1:A:217:LEU:HD21	0.56	2.36	19	1
2:B:183:ARG:NH2	2:B:210:ARG:NH2	0.56	2.53	13	1
2:B:183:ARG:NH2	2:B:210:ARG:HE	0.55	1.99	1	1
1:A:140:LEU:HD11	1:A:144:LEU:HD12	0.55	1.78	3	4
1:A:170:TRP:HE1	1:A:183:ASN:ND2	0.55	1.99	19	1
1:A:149:VAL:HG11	2:B:161:LYS:NZ	0.55	2.15	14	1
1:A:214:ARG:NH2	2:B:208:TRP:CE3	0.55	2.74	8	2
1:A:149:VAL:C	1:A:150:LEU:HD22	0.55	2.23	19	19
2:B:204:THR:O	2:B:208:TRP:CG	0.54	2.61	7	11
1:A:145:LEU:HD22	2:B:208:TRP:CH2	0.54	2.37	20	3
2:B:191:ILE:H	2:B:191:ILE:CD1	0.54	2.15	16	1
1:A:170:TRP:CH2	1:A:185:HIS:CD2	0.54	2.96	3	7
2:B:172:LEU:HD23	2:B:173:ASP:H	0.54	1.62	5	3
1:A:193:ARG:HH11	1:A:193:ARG:CG	0.54	2.15	8	6
1:A:193:ARG:CG	1:A:193:ARG:HH11	0.54	2.15	17	6
1:A:210:LEU:O	1:A:210:LEU:HD23	0.54	2.01	18	2
1:A:148:ARG:HH11	1:A:148:ARG:CG	0.54	2.16	4	2
1:A:193:ARG:NH1	1:A:193:ARG:CG	0.54	2.70	17	9
2:B:176:ASN:N	2:B:176:ASN:OD1	0.54	2.41	16	3
1:A:193:ARG:NH2	1:A:197:GLU:OE2	0.54	2.41	6	1
2:B:168:LEU:HD12	2:B:208:TRP:CH2	0.54	2.38	17	3
1:A:163:PHE:O	1:A:165:ASP:N	0.54	2.40	10	5
1:A:168:ARG:HH11	1:A:168:ARG:CG	0.54	2.16	13	2
2:B:188:ASN:O	2:B:189:ILE:O	0.53	2.25	20	1
1:A:142:GLU:OE1	1:A:148:ARG:NH2	0.53	2.41	4	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:170:TRP:CZ2	1:A:185:HIS:CD2	0.53	2.97	14	1
1:A:205:ASP:O	1:A:207:ALA:N	0.53	2.42	16	7
2:B:158:ASN:OD1	2:B:159:ILE:N	0.53	2.41	17	2
1:A:163:PHE:CD1	1:A:163:PHE:N	0.53	2.76	8	3
1:A:190:PRO:O	1:A:192:SER:N	0.53	2.41	16	2
1:A:193:ARG:CG	1:A:193:ARG:NH1	0.53	2.71	16	3
1:A:160:ARG:NH1	1:A:172:GLU:OE1	0.53	2.42	7	1
1:A:217:LEU:N	1:A:217:LEU:HD22	0.53	2.19	18	1
1:A:158:ASP:OD1	1:A:159:VAL:N	0.53	2.42	7	2
1:A:183:ASN:OD1	1:A:183:ASN:N	0.53	2.42	14	1
1:A:160:ARG:NE	1:A:172:GLU:OE2	0.53	2.42	15	1
1:A:148:ARG:CG	1:A:148:ARG:NH1	0.52	2.72	11	4
1:A:206:LEU:HD22	2:B:167:SER:HB3	0.52	1.82	17	1
1:A:137:GLU:HG2	2:B:174:LEU:HD11	0.52	1.80	10	1
1:A:165:ASP:N	1:A:165:ASP:OD1	0.52	2.42	19	1
1:A:143:ARG:HH11	1:A:143:ARG:CG	0.52	2.17	9	2
1:A:134:ASP:OD1	1:A:135:ALA:N	0.52	2.42	9	4
1:A:137:GLU:O	1:A:141:TYR:CG	0.52	2.63	18	2
2:B:169:GLY:O	2:B:182:ASN:ND2	0.52	2.43	13	1
1:A:168:ARG:NH1	1:A:168:ARG:CG	0.52	2.71	7	2
2:B:173:ASP:N	2:B:173:ASP:OD1	0.52	2.42	20	1
1:A:142:GLU:OE1	2:B:161:LYS:NZ	0.52	2.42	12	1
2:B:191:ILE:CD1	2:B:191:ILE:N	0.52	2.73	13	1
1:A:165:ASP:O	1:A:166:ASP:CB	0.52	2.58	19	3
1:A:149:VAL:HG23	2:B:161:LYS:NZ	0.52	2.20	17	1
1:A:186:PRO:O	1:A:187:ALA:CB	0.51	2.58	1	18
2:B:211:LEU:O	2:B:213:LYS:N	0.51	2.43	7	14
1:A:184:SER:OG	1:A:193:ARG:NE	0.51	2.42	4	2
1:A:143:ARG:CG	1:A:143:ARG:NH1	0.51	2.72	9	4
2:B:190:ASP:OD1	2:B:191:ILE:N	0.51	2.43	19	6
1:A:197:GLU:O	1:A:201:THR:HG23	0.51	2.05	6	9
1:A:144:LEU:HD21	2:B:200:ASP:HB3	0.51	1.83	20	1
1:A:140:LEU:CD1	1:A:144:LEU:HD11	0.51	2.35	15	1
1:A:184:SER:OG	1:A:193:ARG:NH2	0.51	2.42	15	1
1:A:158:ASP:OD1	1:A:158:ASP:N	0.51	2.43	10	1
2:B:200:ASP:OD1	2:B:201:PHE:N	0.51	2.44	1	1
1:A:148:ARG:CG	1:A:148:ARG:HH11	0.51	2.18	8	3
1:A:163:PHE:CE2	1:A:217:LEU:HD21	0.51	2.40	19	1
2:B:206:TYR:OH	2:B:210:ARG:NH1	0.51	2.43	16	1
1:A:149:VAL:CG1	2:B:161:LYS:NZ	0.51	2.73	14	1
1:A:137:GLU:OE1	1:A:137:GLU:N	0.51	2.44	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:145:LEU:O	1:A:214:ARG:NH1	0.51	2.42	1	1
1:A:137:GLU:CG	1:A:141:TYR:CE1	0.51	2.94	7	1
1:A:164:GLY:O	1:A:165:ASP:CB	0.51	2.58	14	1
1:A:146:GLN:NE2	1:A:164:GLY:O	0.50	2.45	20	4
1:A:143:ARG:CG	1:A:143:ARG:HH11	0.50	2.17	5	2
1:A:166:ASP:N	1:A:166:ASP:OD1	0.50	2.42	5	1
2:B:175:GLU:O	2:B:176:ASN:CB	0.50	2.59	10	2
1:A:209:PHE:CD1	1:A:210:LEU:N	0.50	2.79	6	16
1:A:166:ASP:O	1:A:167:SER:C	0.50	2.49	3	2
2:B:183:ARG:HH12	2:B:210:ARG:HH21	0.50	1.50	3	1
2:B:191:ILE:N	2:B:191:ILE:CD1	0.50	2.74	16	1
1:A:165:ASP:O	1:A:169:CYS:SG	0.50	2.70	19	1
2:B:156:ASN:CG	2:B:157:GLU:N	0.50	2.65	16	1
1:A:172:GLU:O	1:A:193:ARG:NH2	0.50	2.44	19	1
2:B:176:ASN:OD1	2:B:176:ASN:N	0.50	2.41	20	1
1:A:172:GLU:OE1	1:A:173:VAL:N	0.50	2.44	3	1
1:A:196:LEU:O	1:A:196:LEU:HD13	0.50	2.06	16	1
1:A:141:TYR:CE2	2:B:162:LEU:HD22	0.50	2.42	8	1
1:A:220:SER:O	1:A:221:LEU:O	0.50	2.30	12	1
1:A:145:LEU:HD23	2:B:208:TRP:CH2	0.50	2.41	1	2
1:A:196:LEU:HD13	1:A:196:LEU:O	0.50	2.06	8	3
1:A:190:PRO:C	1:A:192:SER:N	0.50	2.66	16	2
1:A:188:LEU:C	1:A:188:LEU:HD12	0.49	2.27	15	1
1:A:166:ASP:O	1:A:167:SER:CB	0.49	2.59	7	7
2:B:160:LEU:O	2:B:160:LEU:HD23	0.49	2.07	13	1
2:B:162:LEU:N	2:B:162:LEU:CD2	0.49	2.66	18	1
1:A:148:ARG:NH1	1:A:148:ARG:CG	0.49	2.71	4	1
1:A:220:SER:C	1:A:221:LEU:OXT	0.49	2.50	6	1
2:B:157:GLU:H	2:B:157:GLU:CD	0.49	2.11	19	1
1:A:196:LEU:HD21	1:A:213:ALA:HB2	0.49	1.84	3	1
2:B:211:LEU:C	2:B:213:LYS:N	0.49	2.65	1	19
1:A:206:LEU:O	1:A:206:LEU:HD23	0.49	2.07	11	1
1:A:163:PHE:CD2	1:A:169:CYS:SG	0.48	3.03	1	1
1:A:165:ASP:CG	1:A:217:LEU:HD21	0.48	2.28	20	1
1:A:166:ASP:C	1:A:168:ARG:H	0.48	2.12	17	4
2:B:201:PHE:CD2	2:B:202:TYR:N	0.48	2.82	10	1
1:A:192:SER:OG	1:A:216:MET:SD	0.48	2.70	18	2
1:A:164:GLY:O	1:A:165:ASP:O	0.48	2.32	15	2
2:B:183:ARG:NE	2:B:190:ASP:OD2	0.48	2.46	5	2
2:B:157:GLU:CD	2:B:157:GLU:H	0.48	2.12	18	3
2:B:183:ARG:CZ	2:B:190:ASP:OD2	0.48	2.62	11	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:167:SER:O	1:A:168:ARG:CB	0.48	2.59	14	1
1:A:205:ASP:C	1:A:207:ALA:N	0.48	2.67	20	8
1:A:137:GLU:CG	1:A:138:VAL:N	0.48	2.76	2	2
1:A:160:ARG:NH1	1:A:172:GLU:CD	0.48	2.67	7	1
2:B:176:ASN:C	2:B:176:ASN:ND2	0.48	2.68	10	1
1:A:189:ASP:OD1	1:A:191:LYS:N	0.48	2.46	2	1
1:A:214:ARG:NH1	2:B:208:TRP:CB	0.48	2.77	8	1
2:B:156:ASN:C	2:B:158:ASN:N	0.47	2.67	10	13
1:A:188:LEU:CD1	1:A:188:LEU:N	0.47	2.70	11	1
1:A:198:HIS:O	1:A:202:VAL:CG2	0.47	2.62	16	12
2:B:172:LEU:HD23	2:B:173:ASP:N	0.47	2.24	5	1
1:A:149:VAL:CG2	2:B:161:LYS:NZ	0.47	2.77	17	1
1:A:143:ARG:NH1	1:A:143:ARG:CG	0.47	2.75	19	1
1:A:203:GLN:OE1	1:A:208:ALA:CB	0.47	2.62	5	2
1:A:172:GLU:OE1	1:A:172:GLU:CA	0.47	2.62	14	1
1:A:195:THR:O	1:A:199:VAL:CG2	0.47	2.63	2	6
1:A:142:GLU:OE1	1:A:148:ARG:CZ	0.47	2.62	13	1
1:A:142:GLU:CD	1:A:148:ARG:NH2	0.47	2.68	15	1
1:A:142:GLU:O	1:A:148:ARG:NH2	0.47	2.47	17	1
1:A:214:ARG:HH12	2:B:208:TRP:CB	0.47	2.22	8	1
2:B:211:LEU:C	2:B:213:LYS:H	0.47	2.13	5	18
1:A:145:LEU:HD21	1:A:214:ARG:NH2	0.47	2.24	4	1
1:A:193:ARG:CB	1:A:193:ARG:CZ	0.47	2.91	20	2
1:A:196:LEU:HD23	1:A:196:LEU:O	0.47	2.09	15	1
1:A:198:HIS:ND1	1:A:198:HIS:C	0.47	2.67	17	1
1:A:166:ASP:CG	1:A:167:SER:H	0.47	2.13	1	1
2:B:157:GLU:N	2:B:157:GLU:OE1	0.47	2.42	15	2
2:B:162:LEU:H	2:B:162:LEU:CD2	0.47	2.22	18	1
2:B:162:LEU:CD2	2:B:162:LEU:N	0.47	2.73	5	1
2:B:181:ILE:CD1	2:B:207:ILE:HG21	0.47	2.39	2	3
1:A:210:LEU:O	1:A:210:LEU:HD13	0.47	2.10	6	1
1:A:167:SER:O	1:A:168:ARG:O	0.46	2.33	12	11
1:A:205:ASP:CG	2:B:184:LYS:HZ1	0.46	2.13	4	1
1:A:196:LEU:C	1:A:196:LEU:HD13	0.46	2.30	8	1
1:A:149:VAL:HG23	2:B:161:LYS:HZ3	0.46	1.69	17	1
2:B:208:TRP:CD1	2:B:208:TRP:N	0.46	2.81	19	7
2:B:160:LEU:HD23	2:B:160:LEU:O	0.46	2.11	3	1
1:A:169:CYS:SG	1:A:186:PRO:O	0.46	2.70	16	2
1:A:158:ASP:N	1:A:158:ASP:OD1	0.46	2.48	5	1
1:A:145:LEU:HD23	1:A:214:ARG:NH2	0.46	2.26	19	1
1:A:207:ALA:O	1:A:211:VAL:CG2	0.46	2.64	1	10

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:142:GLU:OE2	2:B:161:LYS:NZ	0.46	2.49	18	1
2:B:156:ASN:ND2	2:B:156:ASN:N	0.46	2.64	3	1
1:A:141:TYR:CE1	2:B:172:LEU:HD22	0.46	2.46	11	1
1:A:189:ASP:OD1	1:A:191:LYS:CB	0.46	2.64	2	1
1:A:214:ARG:NH2	2:B:168:LEU:HD21	0.46	2.26	4	1
2:B:200:ASP:OD1	2:B:200:ASP:N	0.46	2.49	9	2
2:B:169:GLY:CA	2:B:182:ASN:OD1	0.46	2.64	8	1
1:A:170:TRP:CZ2	1:A:185:HIS:CB	0.46	2.99	15	2
1:A:196:LEU:HD11	1:A:213:ALA:HB2	0.46	1.88	9	2
1:A:170:TRP:NE1	1:A:183:ASN:OD1	0.45	2.48	8	1
1:A:134:ASP:OD1	2:B:158:ASN:ND2	0.45	2.47	15	1
1:A:137:GLU:HB3	2:B:174:LEU:HD11	0.45	1.87	6	2
1:A:147:LEU:HD23	1:A:147:LEU:C	0.45	2.32	10	1
1:A:188:LEU:CD2	1:A:189:ASP:H	0.45	2.24	3	1
1:A:160:ARG:HH11	1:A:172:GLU:CD	0.45	2.14	7	1
1:A:211:VAL:HG21	2:B:212:GLY:CA	0.45	2.41	10	1
2:B:168:LEU:CD1	2:B:208:TRP:CH2	0.45	2.99	17	1
2:B:208:TRP:HA	2:B:211:LEU:HD12	0.45	1.88	8	5
1:A:145:LEU:HD13	2:B:165:TYR:CE1	0.45	2.47	10	2
1:A:142:GLU:OE1	1:A:148:ARG:NE	0.45	2.48	8	1
2:B:183:ARG:HH11	2:B:210:ARG:CZ	0.45	2.24	7	1
2:B:161:LYS:CB	2:B:161:LYS:HZ3	0.45	2.25	8	1
1:A:217:LEU:H	1:A:217:LEU:HD22	0.45	1.70	18	1
1:A:206:LEU:O	1:A:206:LEU:CD2	0.45	2.62	2	1
2:B:176:ASN:N	2:B:176:ASN:HD22	0.45	2.07	4	1
1:A:212:VAL:O	1:A:215:ASP:OD1	0.45	2.35	20	1
1:A:142:GLU:CD	1:A:148:ARG:HH21	0.45	2.16	11	2
1:A:210:LEU:HD13	2:B:168:LEU:HD23	0.45	1.89	10	1
1:A:145:LEU:CD1	2:B:165:TYR:CZ	0.45	2.99	11	1
1:A:188:LEU:O	1:A:189:ASP:CB	0.45	2.65	16	1
1:A:166:ASP:CG	1:A:217:LEU:HD12	0.44	2.33	11	1
2:B:156:ASN:OD1	2:B:156:ASN:N	0.44	2.49	13	1
1:A:137:GLU:HG3	2:B:174:LEU:HD11	0.44	1.88	19	3
1:A:188:LEU:HD22	1:A:188:LEU:H	0.44	1.72	11	1
1:A:165:ASP:O	1:A:166:ASP:C	0.44	2.56	13	4
1:A:206:LEU:CD2	1:A:206:LEU:O	0.44	2.62	3	1
2:B:173:ASP:OD1	2:B:178:GLN:O	0.44	2.36	9	2
2:B:156:ASN:C	2:B:156:ASN:ND2	0.44	2.70	16	1
1:A:163:PHE:O	1:A:164:GLY:O	0.44	2.35	7	1
2:B:183:ARG:N	2:B:188:ASN:O	0.44	2.51	3	2
1:A:185:HIS:ND1	1:A:185:HIS:O	0.44	2.51	20	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:192:SER:CB	1:A:216:MET:SD	0.44	3.06	2	2
2:B:208:TRP:N	2:B:208:TRP:CD1	0.44	2.84	7	6
2:B:165:TYR:CD1	2:B:170:VAL:HG11	0.44	2.48	12	1
1:A:210:LEU:C	1:A:210:LEU:CD2	0.44	2.86	19	1
2:B:182:ASN:OD1	2:B:182:ASN:O	0.44	2.36	8	1
1:A:159:VAL:O	1:A:172:GLU:OE1	0.44	2.36	12	1
2:B:172:LEU:O	2:B:173:ASP:OD1	0.43	2.36	6	1
2:B:183:ARG:O	2:B:184:LYS:O	0.43	2.36	15	2
1:A:134:ASP:OD2	2:B:158:ASN:OD1	0.43	2.36	6	1
2:B:173:ASP:OD2	2:B:173:ASP:O	0.43	2.37	9	1
2:B:192:LEU:HD23	2:B:193:PRO:HD2	0.43	1.90	18	3
1:A:142:GLU:CD	1:A:148:ARG:NE	0.43	2.71	13	1
2:B:156:ASN:C	2:B:158:ASN:H	0.43	2.17	19	6
2:B:169:GLY:O	2:B:182:ASN:OD1	0.43	2.36	8	1
2:B:171:ILE:HD11	2:B:182:ASN:ND2	0.43	2.29	9	1
1:A:217:LEU:C	1:A:217:LEU:CD2	0.43	2.85	20	3
1:A:203:GLN:C	1:A:205:ASP:N	0.43	2.71	15	1
1:A:205:ASP:OD1	1:A:207:ALA:N	0.43	2.48	4	1
2:B:210:ARG:O	2:B:213:LYS:OXT	0.43	2.36	11	1
1:A:167:SER:O	1:A:168:ARG:C	0.43	2.56	12	1
1:A:187:ALA:O	1:A:220:SER:OG	0.43	2.35	6	1
1:A:183:ASN:N	1:A:193:ARG:HH21	0.43	2.12	2	1
2:B:183:ARG:HH22	2:B:210:ARG:NH2	0.43	2.11	9	1
1:A:211:VAL:HG21	2:B:212:GLY:HA3	0.43	1.89	10	2
1:A:189:ASP:OD2	1:A:189:ASP:O	0.43	2.37	15	1
1:A:138:VAL:O	1:A:142:GLU:OE1	0.43	2.37	16	1
1:A:137:GLU:OE2	2:B:174:LEU:HD21	0.43	2.14	16	1
1:A:144:LEU:HD22	2:B:204:THR:CG2	0.43	2.43	17	1
1:A:145:LEU:CD2	1:A:214:ARG:HH21	0.43	2.24	4	1
1:A:193:ARG:O	1:A:197:GLU:OE1	0.43	2.37	7	1
2:B:175:GLU:O	2:B:176:ASN:OD1	0.43	2.37	7	1
2:B:188:ASN:OD1	2:B:189:ILE:N	0.43	2.50	16	2
1:A:215:ASP:O	1:A:215:ASP:OD1	0.43	2.37	11	1
1:A:142:GLU:CD	1:A:148:ARG:CZ	0.43	2.87	13	1
1:A:166:ASP:OD1	1:A:167:SER:N	0.42	2.47	14	3
1:A:165:ASP:CG	1:A:166:ASP:N	0.42	2.72	12	1
1:A:208:ALA:O	1:A:212:VAL:CG2	0.42	2.66	12	1
1:A:215:ASP:OD1	2:B:209:GLU:OE2	0.42	2.37	14	2
1:A:163:PHE:O	1:A:166:ASP:OD1	0.42	2.37	3	1
1:A:203:GLN:O	1:A:205:ASP:N	0.42	2.52	15	1
2:B:183:ARG:O	2:B:184:LYS:C	0.42	2.58	15	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:142:GLU:CD	1:A:142:GLU:N	0.42	2.72	16	1
1:A:221:LEU:OXT	1:A:221:LEU:HG	0.42	2.13	19	1
2:B:159:ILE:CG1	2:B:160:LEU:N	0.42	2.82	7	1
2:B:200:ASP:OD1	2:B:201:PHE:CD2	0.42	2.73	14	1
1:A:147:LEU:C	1:A:147:LEU:CD1	0.42	2.85	16	1
2:B:170:VAL:HG22	2:B:181:ILE:HG23	0.42	1.89	16	1
1:A:193:ARG:CD	1:A:193:ARG:C	0.42	2.87	9	1
2:B:173:ASP:O	2:B:173:ASP:CG	0.42	2.58	9	1
2:B:156:ASN:O	2:B:157:GLU:C	0.42	2.58	7	3
1:A:164:GLY:O	1:A:165:ASP:OD1	0.42	2.37	11	1
2:B:207:ILE:CD1	2:B:208:TRP:NE1	0.42	2.83	13	1
2:B:164:LEU:C	2:B:164:LEU:HD23	0.42	2.35	14	1
1:A:190:PRO:C	1:A:192:SER:H	0.42	2.18	16	1
2:B:157:GLU:O	2:B:160:LEU:N	0.42	2.53	19	1
1:A:145:LEU:HD22	2:B:208:TRP:CZ2	0.42	2.50	3	1
2:B:188:ASN:CG	2:B:189:ILE:N	0.42	2.73	7	1
1:A:142:GLU:CD	2:B:161:LYS:NZ	0.42	2.73	12	1
1:A:172:GLU:OE1	1:A:172:GLU:N	0.42	2.52	14	1
1:A:189:ASP:O	1:A:192:SER:OG	0.42	2.37	6	1
2:B:192:LEU:HD23	2:B:192:LEU:C	0.42	2.35	13	1
1:A:183:ASN:O	1:A:184:SER:OG	0.42	2.34	15	1
1:A:189:ASP:CG	1:A:191:LYS:H	0.41	2.18	2	1
2:B:181:ILE:CG2	2:B:211:LEU:HD11	0.41	2.45	12	3
1:A:205:ASP:C	1:A:207:ALA:H	0.41	2.18	19	4
1:A:169:CYS:SG	1:A:185:HIS:O	0.41	2.71	10	1
1:A:203:GLN:C	1:A:205:ASP:H	0.41	2.19	18	3
2:B:210:ARG:O	2:B:213:LYS:O	0.41	2.37	20	1
2:B:164:LEU:O	2:B:165:TYR:C	0.41	2.57	16	2
1:A:137:GLU:CD	2:B:174:LEU:HD12	0.41	2.35	20	1
2:B:192:LEU:C	2:B:192:LEU:HD23	0.41	2.35	12	1
2:B:199:SER:OG	2:B:201:PHE:CZ	0.41	2.67	10	1
1:A:166:ASP:CG	1:A:167:SER:N	0.41	2.74	1	1
2:B:189:ILE:O	2:B:189:ILE:HG23	0.41	2.15	5	2
1:A:134:ASP:N	1:A:134:ASP:OD1	0.41	2.52	8	1
1:A:172:GLU:O	1:A:173:VAL:HG23	0.41	2.15	14	1
2:B:162:LEU:H	2:B:162:LEU:HD23	0.41	1.69	18	1
2:B:189:ILE:O	2:B:190:ASP:OD1	0.41	2.39	18	1
1:A:146:GLN:OE1	2:B:201:PHE:CE1	0.41	2.74	7	1
1:A:166:ASP:O	1:A:167:SER:OG	0.41	2.36	14	1
1:A:172:GLU:CG	1:A:183:ASN:H	0.41	2.29	17	1
1:A:192:SER:OG	1:A:216:MET:CG	0.41	2.69	18	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:173:VAL:O	1:A:173:VAL:HG13	0.41	2.15	19	1
1:A:221:LEU:CG	1:A:221:LEU:OXT	0.41	2.69	19	1
1:A:141:TYR:CE1	2:B:172:LEU:HD13	0.41	2.51	5	1
2:B:168:LEU:HD13	2:B:168:LEU:O	0.41	2.15	8	1
1:A:165:ASP:OD2	1:A:169:CYS:SG	0.41	2.79	18	1
2:B:182:ASN:O	2:B:211:LEU:HD23	0.41	2.16	2	1
2:B:176:ASN:ND2	2:B:178:GLN:CB	0.41	2.84	10	1
1:A:163:PHE:CG	1:A:217:LEU:CD1	0.41	3.04	10	1
1:A:151:PRO:O	1:A:152:GLY:O	0.41	2.39	12	1
1:A:207:ALA:O	1:A:208:ALA:C	0.41	2.59	7	1
1:A:170:TRP:CZ3	1:A:185:HIS:ND1	0.41	2.89	18	2
1:A:206:LEU:HD22	2:B:167:SER:CB	0.41	2.46	17	1
1:A:145:LEU:O	1:A:146:GLN:C	0.40	2.59	13	2
1:A:166:ASP:C	1:A:168:ARG:N	0.40	2.74	8	2
1:A:170:TRP:CH2	1:A:185:HIS:CB	0.40	3.04	5	1
1:A:164:GLY:O	1:A:165:ASP:C	0.40	2.60	7	1
1:A:188:LEU:O	1:A:189:ASP:CG	0.40	2.60	16	1
1:A:166:ASP:HB3	1:A:221:LEU:HD11	0.40	1.93	16	1
1:A:165:ASP:OD2	1:A:217:LEU:HD21	0.40	2.16	20	1
1:A:149:VAL:O	1:A:150:LEU:HD22	0.40	2.17	11	1
1:A:218:LEU:CD1	1:A:218:LEU:N	0.40	2.85	18	1
2:B:204:THR:O	2:B:208:TRP:CD2	0.40	2.75	18	1
1:A:188:LEU:CD1	1:A:188:LEU:C	0.40	2.90	15	1
1:A:166:ASP:OD1	1:A:166:ASP:N	0.40	2.42	18	1
1:A:140:LEU:HG	2:B:174:LEU:HD21	0.40	1.93	18	1

## 5.2 Torsion angles [i](#)

### 5.2.1 Protein backbone [i](#)

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	73/98 (74%)	62±2 (85±2%)	6±2 (8±2%)	5±1 (7±2%)	2	18
2	B	49/77 (64%)	42±2 (86±3%)	5±1 (9±3%)	2±1 (4±1%)	4	29
All	All	2440/3500 (70%)	2087 (86%)	212 (9%)	141 (6%)	3	21



All 20 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	186	PRO	20
2	B	176	ASN	20
1	A	187	ALA	19
1	A	168	ARG	18
2	B	157	GLU	9
1	A	167	SER	9
1	A	166	ASP	9
1	A	165	ASP	7
1	A	206	LEU	5
2	B	188	ASN	5
2	B	199	SER	4
2	B	184	LYS	4
1	A	152	GLY	3
1	A	164	GLY	2
1	A	188	LEU	2
1	A	192	SER	1
1	A	191	LYS	1
1	A	189	ASP	1
2	B	189	ILE	1
1	A	173	VAL	1

### 5.2.2 Protein sidechains [i](#)

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	62/78 (79%)	51±2 (82±3%)	11±2 (18±3%)	4	37
2	B	49/71 (69%)	41±2 (83±4%)	8±2 (17±4%)	5	40
All	All	2220/2980 (74%)	1828 (82%)	392 (18%)	4	38

All 71 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	209	PHE	20
2	B	171	ILE	20

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Mol	Chain	Res	Type	Models (Total)
2	B	181	ILE	20
1	A	189	ASP	19
1	A	200	LEU	18
1	A	148	ARG	16
1	A	193	ARG	14
2	B	168	LEU	13
2	B	192	LEU	13
2	B	204	THR	11
1	A	140	LEU	11
1	A	167	SER	11
1	A	188	LEU	10
2	B	172	LEU	9
1	A	169	CYS	9
1	A	217	LEU	9
1	A	166	ASP	8
2	B	199	SER	8
2	B	165	TYR	8
2	B	170	VAL	8
1	A	192	SER	7
2	B	207	ILE	6
1	A	163	PHE	5
1	A	210	LEU	5
1	A	147	LEU	5
2	B	176	ASN	5
1	A	146	GLN	5
1	A	206	LEU	4
2	B	159	ILE	4
2	B	156	ASN	4
2	B	191	ILE	4
1	A	221	LEU	4
2	B	167	SER	4
1	A	158	ASP	4
1	A	184	SER	4
1	A	196	LEU	4
1	A	168	ARG	3
1	A	172	GLU	3
1	A	165	ASP	3
2	B	180	LEU	3
1	A	183	ASN	3
2	B	164	LEU	3
2	B	188	ASN	3
1	A	143	ARG	3

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Mol	Chain	Res	Type	Models (Total)
1	A	137	GLU	3
1	A	220	SER	3
2	B	160	LEU	2
2	B	194	LEU	2
1	A	214	ARG	2
1	A	138	VAL	2
1	A	198	HIS	2
2	B	173	ASP	2
2	B	162	LEU	2
1	A	201	THR	2
2	B	190	ASP	1
2	B	210	ARG	1
1	A	173	VAL	1
2	B	163	LYS	1
1	A	142	GLU	1
2	B	177	ASP	1
2	B	182	ASN	1
2	B	158	ASN	1
2	B	203	LYS	1
1	A	145	LEU	1
2	B	178	GLN	1
1	A	205	ASP	1
2	B	161	LYS	1
2	B	183	ARG	1
2	B	166	ARG	1
2	B	175	GLU	1
1	A	197	GLU	1

### 5.2.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.3 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

### 5.4 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.5 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.6 Other polymers [i](#)

There are no such molecules in this entry.

## 5.7 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Chemical shift validation

No chemical shift data were provided