Full wwPDB NMR Structure Validation Report (i)

Feb 26, 2022 – 10:48 AM EST

PDB ID	:	2AIY
Title	:	R6 HUMAN INSULIN HEXAMER (SYMMETRIC), NMR, 20 STRUCTURES
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Deposited on	:	1998-12-28

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/NMRValidationReportHelp
with specific help available everywhere you see the (i) symbol.

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

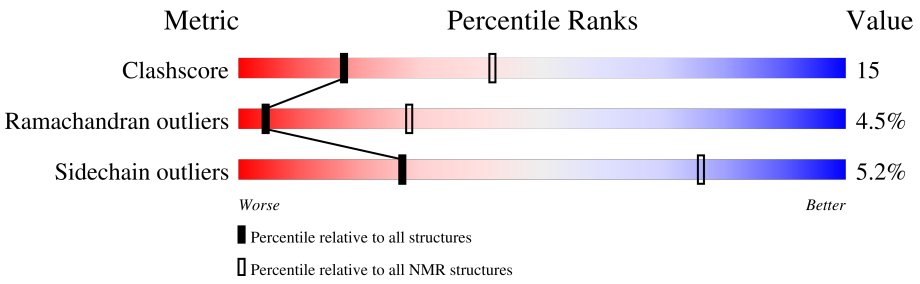
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	2.27
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.27

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 >=3, 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and a grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Mol	Chain	Length	Quality of chain
1	A	21	86% 10% 5%
1	C	21	86% 10% 5%
1	E	21	86% 10% 5%
1	G	21	86% 10% 5%
1	I	21	86% 10% 5%
1	K	21	86% 10% 5%
2	B	30	50% 50%
2	D	30	53% 47%

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Mol	Chain	Length	Quality of chain
2	F	30	50% 50%
2	H	30	53% 47%
2	J	30	53% 47%
2	L	30	50% 47%

2 Ensemble composition and analysis (i)

This entry contains 20 models. Model 6 is the overall representative, medoid model (most similar to other models).

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:1-A:21, B:1-B:30, C:1-C:21, D:1-D:30, E:1-E:21, F:1-F:30, G:1-G:21, H:1-H:30, I:1-I:21, J:1-J:30, K:1-K:21, L:1-L:29 (305)	0.86	6

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 and 1 single-model cluster was found.

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

3 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 4806 atoms, of which 2334 are hydrogens and 0 are deuteriums.

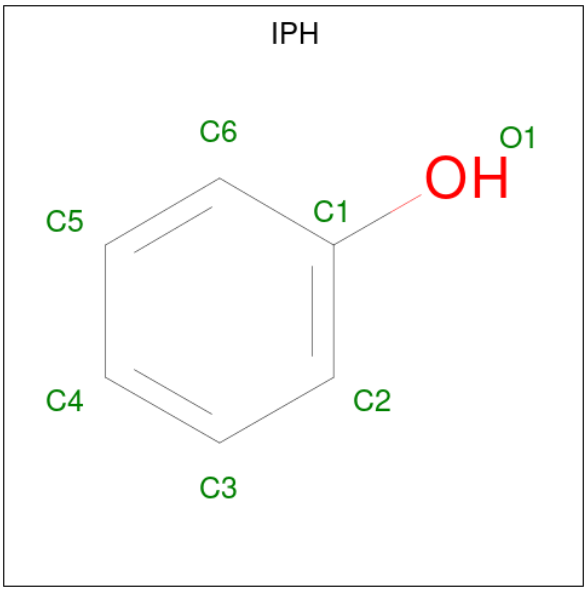
- Molecule 1 is a protein called PROTEIN (INSULIN).

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	21	312	99	149	25	35	4	0
1	C	21	312	99	149	25	35	4	0
1	E	21	312	99	149	25	35	4	0
1	G	21	312	99	149	25	35	4	0
1	I	21	312	99	149	25	35	4	0
1	K	21	312	99	149	25	35	4	0

- Molecule 2 is a protein called PROTEIN (INSULIN).

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
2	B	30	476	158	234	40	42	2	0
2	D	30	476	158	234	40	42	2	0
2	F	30	476	158	234	40	42	2	0
2	H	30	476	158	234	40	42	2	0
2	J	30	476	158	234	40	42	2	0
2	L	30	476	158	234	40	42	2	0

- Molecule 3 is PHENOL (three-letter code: IPH) (formula: C_6H_6O).



Mol	Chain	Residues	Atoms			
3	A	1	Total	C	H	O
			13	6	6	1
3	C	1	Total	C	H	O
			13	6	6	1
3	E	1	Total	C	H	O
			13	6	6	1
3	G	1	Total	C	H	O
			13	6	6	1
3	I	1	Total	C	H	O
			13	6	6	1
3	K	1	Total	C	H	O
			13	6	6	1

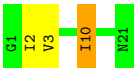
4 Residue-property plots (i)

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.

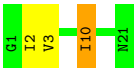
• Molecule 1: PROTEIN (INSULIN)

Chain A: 86% 10% 5%



• Molecule 1: PROTEIN (INSULIN)

Chain C: 86% 10% 5%

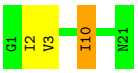


• Molecule 1: PROTEIN (INSULIN)

Chain E: 86% 10% 5%

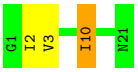
• Molecule 1: PROTEIN (INSULIN)

Chain G: 86% 10% 5%



• Molecule 1: PROTEIN (INSULIN)

Chain I: 86% 10% 5%



• Molecule 1: PROTEIN (INSULIN)

Chain K: 86% 10% 5%

G1 I2 V3 I10 N21

• Molecule 2: PROTEIN (INSULIN)

Chain B: 50% 50%

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 A14 L15 Y16 C19 G23 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain D: 53% 47%

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 Y16 C19 G23 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain F: 50% 50%

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 A14 L15 Y16 C19 G23 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain H: 53% 47%

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 A14 L15 Y16 C19 G23 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain J: 53% 47%

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 A14 L15 Y16 C19 G23 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain L: 50% 47%

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 Y16 C19 G23 F24 P28 K29 T30

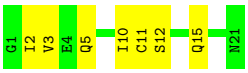
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

- Molecule 1: PROTEIN (INSULIN)

Chain A: 67% 33%



- Molecule 1: PROTEIN (INSULIN)

Chain C: 76% 24%

- Molecule 1: PROTEIN (INSULIN)

Chain E: 71% 24% 5%

- Molecule 1: PROTEIN (INSULIN)

Chain G: 76% 24%

- Molecule 1: PROTEIN (INSULIN)

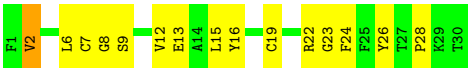
Chain I: 76% 24%

- Molecule 1: PROTEIN (INSULIN)

Chain K: 76% 24%

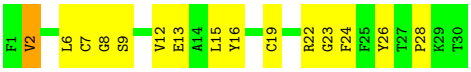
- Molecule 2: PROTEIN (INSULIN)

Chain B: 50% 47%



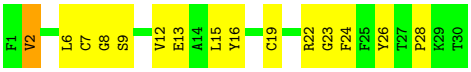
• Molecule 2: PROTEIN (INSULIN)

Chain D:



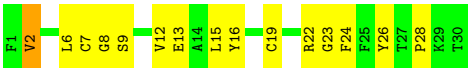
• Molecule 2: PROTEIN (INSULIN)

Chain F:



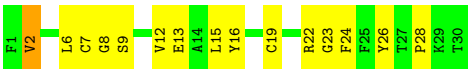
• Molecule 2: PROTEIN (INSULIN)

Chain H:



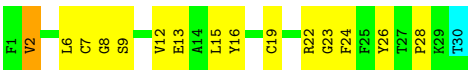
• Molecule 2: PROTEIN (INSULIN)

Chain J:



• Molecule 2: PROTEIN (INSULIN)

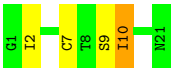
Chain L:



4.2.2 Score per residue for model 2

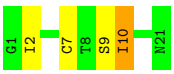
• Molecule 1: PROTEIN (INSULIN)

Chain A:



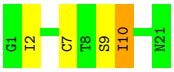
• Molecule 1: PROTEIN (INSULIN)

Chain C:



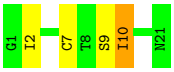
- Molecule 1: PROTEIN (INSULIN)

Chain E:



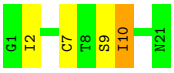
- Molecule 1: PROTEIN (INSULIN)

Chain G:



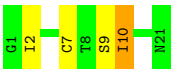
- Molecule 1: PROTEIN (INSULIN)

Chain I:



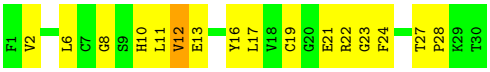
- Molecule 1: PROTEIN (INSULIN)

Chain K:



- Molecule 2: PROTEIN (INSULIN)

Chain B:

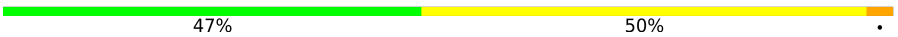


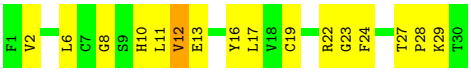
- Molecule 2: PROTEIN (INSULIN)

Chain D:

- Molecule 2: PROTEIN (INSULIN)

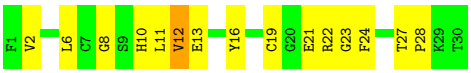
Chain F:





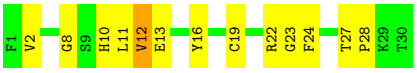
- Molecule 2: PROTEIN (INSULIN)

Chain H: 50% 47%



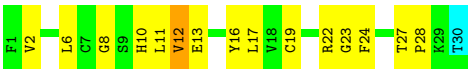
• Molecule 2: PROTEIN (INSULIN)

Chain J: 57% 40%



• Molecule 2: PROTEIN (INSULIN)

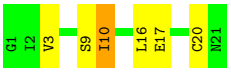
Chain L: 47% 47%



4.2.3 Score per residue for model 3

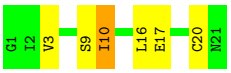
• Molecule 1: PROTEIN (INSULIN)

Chain A: 71% 24% 5%



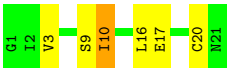
• Molecule 1: PROTEIN (INSULIN)

Chain C: 71% 24% 5%



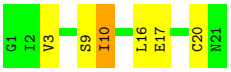
• Molecule 1: PROTEIN (INSULIN)

Chain E: 71% 24% 5%



• Molecule 1: PROTEIN (INSULIN)

Chain G: 71% 24% 5%



• Molecule 1: PROTEIN (INSULIN)

Chain I: 71% 24% 5%

G1 I2 V3 S9 I10 L16 E17 C20 N21

- Molecule 1: PROTEIN (INSULIN)

Chain K: 71% 24% 5%

G1 I2 V3 S9 I10 L16 E17 C20 N21

- Molecule 2: PROTEIN (INSULIN)

Chain B: 50% 47%

F1 V2 N3 C7 G8 S9 H10 L11 V12 E13 Y16 C19 R22 G23 Y26 T27 P28 K29 T30

- Molecule 2: PROTEIN (INSULIN)

Chain D: 50% 47%

F1 V2 N3 C7 G8 S9 H10 L11 V12 E13 Y16 C19 R22 G23 Y26 T27 P28 K29 T30

- Molecule 2: PROTEIN (INSULIN)

Chain F: 50% 47%

F1 V2 N3 C7 G8 S9 H10 L11 V12 E13 Y16 C19 R22 G23 Y26 T27 P28 K29 T30

- Molecule 2: PROTEIN (INSULIN)

Chain H: 50% 47%

F1 V2 N3 C7 G8 S9 H10 L11 V12 E13 Y16 C19 R22 G23 Y26 T27 P28 K29 T30

- Molecule 2: PROTEIN (INSULIN)

Chain J: 50% 47%

F1 V2 N3 C7 G8 S9 H10 L11 V12 E13 Y16 C19 R22 G23 Y26 T27 P28 K29 T30

- Molecule 2: PROTEIN (INSULIN)

Chain L: 47% 47%

4.2.4 Score per residue for model 4

• Molecule 1: PROTEIN (INSULIN)

Chain A: 81% 19%

• Molecule 1: PROTEIN (INSULIN)

Chain C: 81% 19%

• Molecule 1: PROTEIN (INSULIN)

Chain E: 81% 19%

• Molecule 1: PROTEIN (INSULIN)

Chain G: 76% 24%

• Molecule 1: PROTEIN (INSULIN)

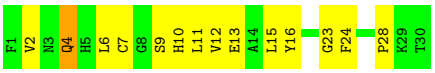
Chain I: 76% 24%

• Molecule 1: PROTEIN (INSULIN)

Chain K: 81% 19%

• Molecule 2: PROTEIN (INSULIN)

Chain B: 53% 43%



• Molecule 2: PROTEIN (INSULIN)

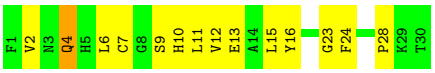
Chain D:

• Molecule 2: PROTEIN (INSULIN)

Chain F:

• Molecule 2: PROTEIN (INSULIN)

Chain H:



• Molecule 2: PROTEIN (INSULIN)

Chain J:

• Molecule 2: PROTEIN (INSULIN)

Chain L:

4.2.5 Score per residue for model 5

• Molecule 1: PROTEIN (INSULIN)

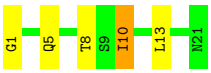
Chain A:

• Molecule 1: PROTEIN (INSULIN)

Chain C:

• Molecule 1: PROTEIN (INSULIN)

Chain E:

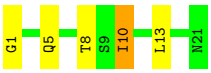


• Molecule 1: PROTEIN (INSULIN)

Chain G:

• Molecule 1: PROTEIN (INSULIN)

Chain I:

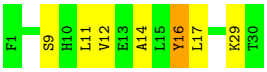


• Molecule 1: PROTEIN (INSULIN)

Chain K:

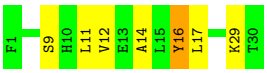
• Molecule 2: PROTEIN (INSULIN)

Chain B:



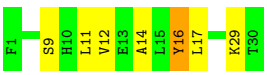
• Molecule 2: PROTEIN (INSULIN)

Chain D:



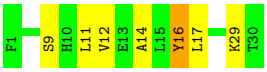
• Molecule 2: PROTEIN (INSULIN)

Chain F:



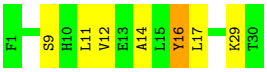
• Molecule 2: PROTEIN (INSULIN)

Chain H:



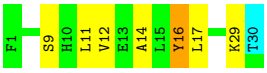
• Molecule 2: PROTEIN (INSULIN)

Chain J:



• Molecule 2: PROTEIN (INSULIN)

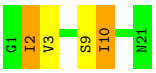
Chain L:



4.2.6 Score per residue for model 6 (medoid)

• Molecule 1: PROTEIN (INSULIN)

Chain A:



• Molecule 1: PROTEIN (INSULIN)

Chain C:

• Molecule 1: PROTEIN (INSULIN)

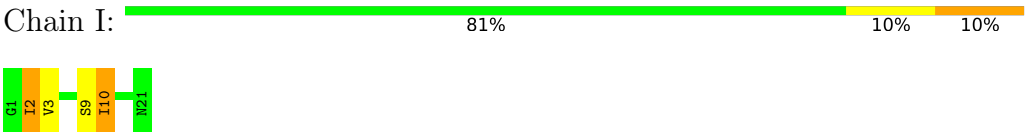
Chain E:

• Molecule 1: PROTEIN (INSULIN)

Chain G:

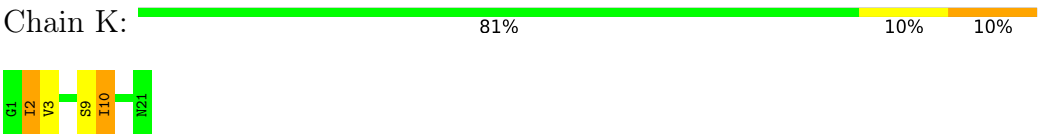
• Molecule 1: PROTEIN (INSULIN)

Chain I:



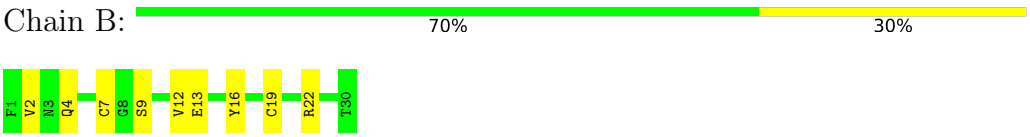
• Molecule 1: PROTEIN (INSULIN)

Chain K:



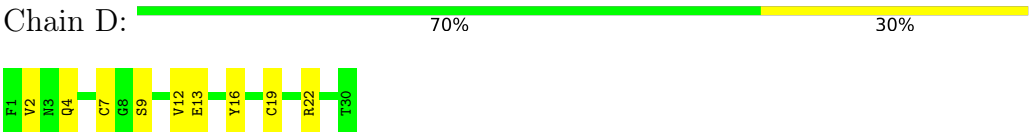
• Molecule 2: PROTEIN (INSULIN)

Chain B:



• Molecule 2: PROTEIN (INSULIN)

Chain D:

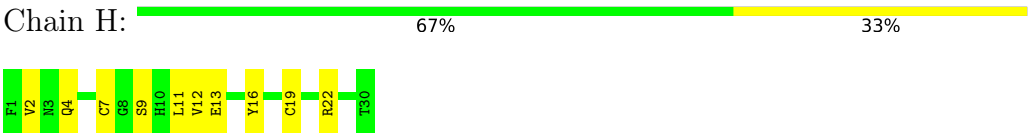


• Molecule 2: PROTEIN (INSULIN)

Chain F:

• Molecule 2: PROTEIN (INSULIN)

Chain H:



• Molecule 2: PROTEIN (INSULIN)

Chain J:

• Molecule 2: PROTEIN (INSULIN)

Chain L: 60% 37%

F1 V2 N3 Q4 C7 G8 S9 V12 E13 Y16 C19 R22 Y26 T30

4.2.7 Score per residue for model 7

- Molecule 1: PROTEIN (INSULIN)

Chain A: 48% 38% 14%

G1 I2 V3 E4 Q5 C6 C7 T8 S9 I10 C11 Q15 L16 E17 C20 N21

- Molecule 1: PROTEIN (INSULIN)

Chain C: 43% 43% 14%

G1 I2 V3 E4 Q5 C6 C7 T8 S9 I10 C11 Q15 L16 E17 C20 N21

- Molecule 1: PROTEIN (INSULIN)

Chain E: 48% 38% 14%

G1 I2 Q5 C6 C7 T8 S9 I10 C11 Q15 L16 E17 C20 N21

- Molecule 1: PROTEIN (INSULIN)

Chain G: 52% 33% 14%

G1 I2 Q5 C6 C7 T8 S9 I10 C11 E17 C20 N21

- Molecule 1: PROTEIN (INSULIN)

Chain I: 52% 33% 14%

G1 I2 Q5 C6 C7 T8 S9 I10 C11 Q15 L16 E17 C20 N21

- Molecule 1: PROTEIN (INSULIN)

Chain K: 52% 33% 14%

G1 I2 Q5 C6 C7 T8 S9 I10 C11 Q15 L16 E17 C20 N21

- Molecule 2: PROTEIN (INSULIN)

Chain B: 50% 43% 7%

• Molecule 2: PROTEIN (INSULIN)

Chain D: 50% 43% 7%

• Molecule 2: PROTEIN (INSULIN)

Chain F: 50% 43% 7%

• Molecule 2: PROTEIN (INSULIN)

Chain H: 50% 43% 7%

• Molecule 2: PROTEIN (INSULIN)

Chain J: 50% 43% 7%

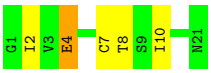
• Molecule 2: PROTEIN (INSULIN)

Chain L: 47% 43% 7%

4.2.8 Score per residue for model 8

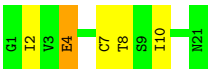
• Molecule 1: PROTEIN (INSULIN)

Chain A: 76% 19% 5%



• Molecule 1: PROTEIN (INSULIN)

Chain C: 76% 19% 5%

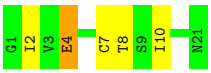


• Molecule 1: PROTEIN (INSULIN)

Chain E: 67% 33%

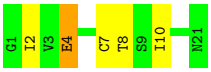
• Molecule 1: PROTEIN (INSULIN)

Chain G: 76% 19% 5%



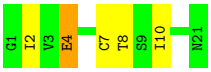
• Molecule 1: PROTEIN (INSULIN)

Chain I: 76% 19% 5%



• Molecule 1: PROTEIN (INSULIN)

Chain K: 76% 19% 5%



• Molecule 2: PROTEIN (INSULIN)

Chain B: 57% 40%

• Molecule 2: PROTEIN (INSULIN)

Chain D: 57% 40%

• Molecule 2: PROTEIN (INSULIN)

Chain F: 53% 43%

• Molecule 2: PROTEIN (INSULIN)

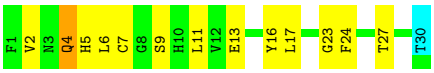
Chain H:

• Molecule 2: PROTEIN (INSULIN)

Chain J:

• Molecule 2: PROTEIN (INSULIN)

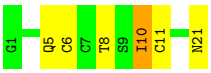
Chain L:



4.2.9 Score per residue for model 9

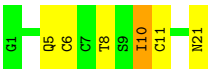
• Molecule 1: PROTEIN (INSULIN)

Chain A:



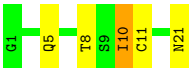
• Molecule 1: PROTEIN (INSULIN)

Chain C:



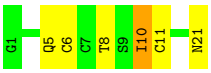
• Molecule 1: PROTEIN (INSULIN)

Chain E:



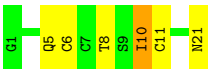
• Molecule 1: PROTEIN (INSULIN)

Chain G:



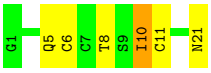
• Molecule 1: PROTEIN (INSULIN)

Chain I:



• Molecule 1: PROTEIN (INSULIN)

Chain K:



• Molecule 2: PROTEIN (INSULIN)

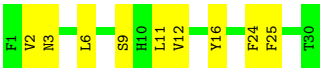
Chain B:

• Molecule 2: PROTEIN (INSULIN)

Chain D:

• Molecule 2: PROTEIN (INSULIN)

Chain F:



• Molecule 2: PROTEIN (INSULIN)

Chain H:

• Molecule 2: PROTEIN (INSULIN)

Chain J:

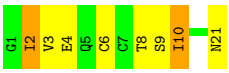
• Molecule 2: PROTEIN (INSULIN)

Chain L: 67% 30% •

4.2.10 Score per residue for model 10

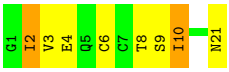
• Molecule 1: PROTEIN (INSULIN)

Chain A: 62% 29% 10%



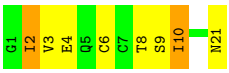
• Molecule 1: PROTEIN (INSULIN)

Chain C: 62% 29% 10%



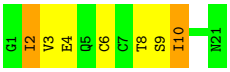
• Molecule 1: PROTEIN (INSULIN)

Chain E: 62% 29% 10%



• Molecule 1: PROTEIN (INSULIN)

Chain G: 67% 24% 10%



• Molecule 1: PROTEIN (INSULIN)

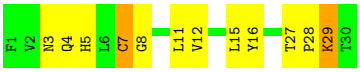
Chain I: 62% 29% 10%

• Molecule 1: PROTEIN (INSULIN)

Chain K: 67% 24% 10%

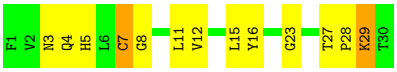
• Molecule 2: PROTEIN (INSULIN)

Chain B:



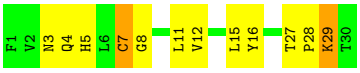
• Molecule 2: PROTEIN (INSULIN)

Chain D:



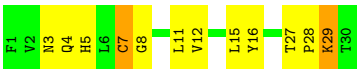
• Molecule 2: PROTEIN (INSULIN)

Chain F:



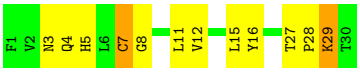
• Molecule 2: PROTEIN (INSULIN)

Chain H:



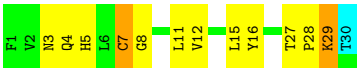
• Molecule 2: PROTEIN (INSULIN)

Chain J:



• Molecule 2: PROTEIN (INSULIN)

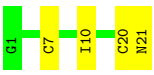
Chain L:



4.2.11 Score per residue for model 11

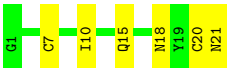
• Molecule 1: PROTEIN (INSULIN)

Chain A:



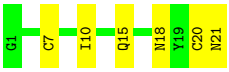
- Molecule 1: PROTEIN (INSULIN)

Chain C:



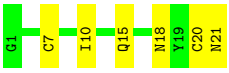
- Molecule 1: PROTEIN (INSULIN)

Chain E:



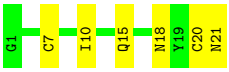
- Molecule 1: PROTEIN (INSULIN)

Chain G:



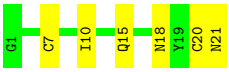
- Molecule 1: PROTEIN (INSULIN)

Chain I:



- Molecule 1: PROTEIN (INSULIN)

Chain K:



- Molecule 2: PROTEIN (INSULIN)

Chain B:

- Molecule 2: PROTEIN (INSULIN)

Chain D:

- Molecule 2: PROTEIN (INSULIN)

Chain F: 60% 33% 7%

F1 V2 N3 C7 G8 L11 V12 L15 Y16 L17 V18 C19 R22 G23 F24 T30

• Molecule 2: PROTEIN (INSULIN)

Chain H: 60% 33% 7%

F1 V2 N3 C7 G8 L11 V12 L15 Y16 L17 V18 C19 R22 G23 F24 T30

• Molecule 2: PROTEIN (INSULIN)

Chain J: 57% 37% 7%

F1 V2 N3 C7 G8 S9 H10 L11 V12 L15 Y16 L17 V18 C19 R22 G23 F24 T30

• Molecule 2: PROTEIN (INSULIN)

Chain L: 53% 37% 7%

F1 V2 N3 C7 G8 L11 V12 E13 A14 L15 Y16 L17 V18 C19 R22 G23 F24 T30

4.2.12 Score per residue for model 12

• Molecule 1: PROTEIN (INSULIN)

Chain A: 76% 14% 10%

G1 I2 V3 I10 L16 N21

• Molecule 1: PROTEIN (INSULIN)

Chain C: 81% 10% 10%

G1 I2 V3 I10 N21

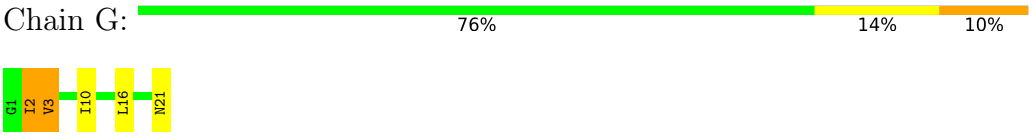
• Molecule 1: PROTEIN (INSULIN)

Chain E: 76% 14% 10%

G1 I2 V3 I10 L16 N21

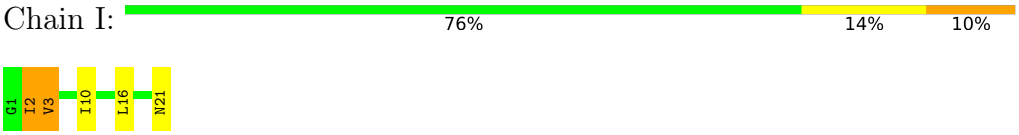
• Molecule 1: PROTEIN (INSULIN)

Chain G:



• Molecule 1: PROTEIN (INSULIN)

Chain I:



• Molecule 1: PROTEIN (INSULIN)

Chain K:

• Molecule 2: PROTEIN (INSULIN)

Chain B:

• Molecule 2: PROTEIN (INSULIN)

Chain D:

• Molecule 2: PROTEIN (INSULIN)

Chain F:

• Molecule 2: PROTEIN (INSULIN)

Chain H:

• Molecule 2: PROTEIN (INSULIN)

Chain J:

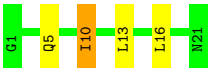
• Molecule 2: PROTEIN (INSULIN)

Chain L:

4.2.13 Score per residue for model 13

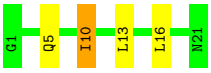
• Molecule 1: PROTEIN (INSULIN)

Chain A:



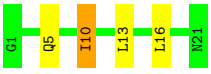
• Molecule 1: PROTEIN (INSULIN)

Chain C:



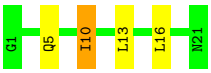
• Molecule 1: PROTEIN (INSULIN)

Chain E:



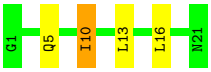
• Molecule 1: PROTEIN (INSULIN)

Chain G:



• Molecule 1: PROTEIN (INSULIN)

Chain I:

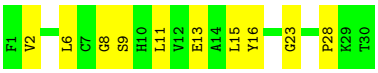


• Molecule 1: PROTEIN (INSULIN)

Chain K:

• Molecule 2: PROTEIN (INSULIN)

Chain B:



• Molecule 2: PROTEIN (INSULIN)

Chain D:

• Molecule 2: PROTEIN (INSULIN)

Chain F:

• Molecule 2: PROTEIN (INSULIN)

Chain H:

• Molecule 2: PROTEIN (INSULIN)

Chain J:

• Molecule 2: PROTEIN (INSULIN)

Chain L:

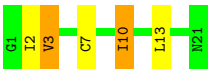
4.2.14 Score per residue for model 14

• Molecule 1: PROTEIN (INSULIN)

Chain A:

• Molecule 1: PROTEIN (INSULIN)

Chain C:



• Molecule 1: PROTEIN (INSULIN)

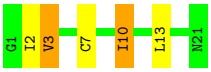
Chain E:

• Molecule 1: PROTEIN (INSULIN)

Chain G:

• Molecule 1: PROTEIN (INSULIN)

Chain I:



• Molecule 1: PROTEIN (INSULIN)

Chain K:

• Molecule 2: PROTEIN (INSULIN)

Chain B:

• Molecule 2: PROTEIN (INSULIN)

Chain D:

• Molecule 2: PROTEIN (INSULIN)

Chain F: 67% 33%

F1 V2 N3 Q4 H5 L6 S9 H10 L11 V12 E13 Y16 C19 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain H: 67% 33%

F1 Q4 H5 L6 S9 H10 L11 V12 E13 Y16 C19 G20 E21 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain J: 67% 33%

F1 Q4 H5 L6 S9 H10 L11 V12 E13 Y16 C19 G20 E21 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain L: 60% 37% •

F1 V2 N3 Q4 H5 L6 S9 H10 L11 V12 E13 Y16 C19 G20 E21 F24 P28 K29 T30

4.2.15 Score per residue for model 15

• Molecule 1: PROTEIN (INSULIN)

Chain A: 71% 24% 5%

G1 T8 S9 I10 E17 C20 N21

• Molecule 1: PROTEIN (INSULIN)

Chain C: 62% 33% 5%

G1 I2 V3 S9 I10 Q15 L16 E17 N18 Y19 C20 N21

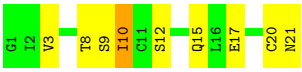
• Molecule 1: PROTEIN (INSULIN)

Chain E: 67% 29% 5%

G1 I2 V3 T8 S9 I10 E17 C20 N21

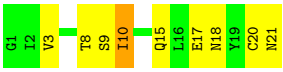
• Molecule 1: PROTEIN (INSULIN)

Chain G:



• Molecule 1: PROTEIN (INSULIN)

Chain I:



• Molecule 1: PROTEIN (INSULIN)

Chain K:

• Molecule 2: PROTEIN (INSULIN)

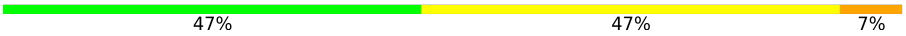
Chain B:

• Molecule 2: PROTEIN (INSULIN)

Chain D:

• Molecule 2: PROTEIN (INSULIN)

Chain F:



• Molecule 2: PROTEIN (INSULIN)

Chain H:

• Molecule 2: PROTEIN (INSULIN)

Chain J: 47% 47% 7%

F1 V2 N3 L6 C7 G8 S9 H10 L11 V12 E13 A14 L15 Y16 E21 R22 G23 F24 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain L: 47% 43% 7% •

F1 V2 N3 L6 C7 G8 S9 H10 L11 V12 E13 A14 L15 Y16 E21 R22 G23 F24 P28 K29 T30

4.2.16 Score per residue for model 16

• Molecule 1: PROTEIN (INSULIN)

Chain A: 76% 14% 10%

G1 I2 V3 I10 L16 N21

• Molecule 1: PROTEIN (INSULIN)

Chain C: 67% 24% 10%

G1 I2 V3 I10 C11 Q15 L16 N21

• Molecule 1: PROTEIN (INSULIN)

Chain E: 67% 24% 10%

G1 I2 V3 I10 C11 Q15 L16 N21

• Molecule 1: PROTEIN (INSULIN)

Chain G: 67% 24% 10%

G1 I2 V3 I10 C11 Q15 L16 N21

• Molecule 1: PROTEIN (INSULIN)

Chain I: 67% 24% 10%

G1 I2 V3 I10 C11 Q15 L16 N21

• Molecule 1: PROTEIN (INSULIN)

Chain K: 67% 24% 10%

G1 I2 V3 I10 C11 Q15 L16 N21

• Molecule 2: PROTEIN (INSULIN)

Chain B: 63% 33% •

F1 V2 N3 Q4 H5 L6 V12 L15 Y16 L17 V18 C19 F24 F25 Y26 T30

• Molecule 2: PROTEIN (INSULIN)

Chain D: 63% 33% •

F1 V2 N3 Q4 H5 L6 V12 L15 Y16 L17 V18 C19 F24 F25 Y26 T30

• Molecule 2: PROTEIN (INSULIN)

Chain F: 63% 33% •

F1 V2 N3 Q4 H5 L6 V12 L15 Y16 L17 V18 C19 F24 F25 Y26 T30

• Molecule 2: PROTEIN (INSULIN)

Chain H: 63% 33% •

F1 V2 N3 Q4 H5 L6 V12 L15 Y16 L17 V18 C19 F24 F25 Y26 T30

• Molecule 2: PROTEIN (INSULIN)

Chain J: 63% 33% •

F1 V2 N3 Q4 H5 L6 V12 L15 Y16 L17 V18 C19 F24 F25 Y26 T30

• Molecule 2: PROTEIN (INSULIN)

Chain L: 60% 33% • •

F1 V2 N3 Q4 H5 L6 V12 L15 Y16 L17 V18 C19 F24 F25 Y26 T30

4.2.17 Score per residue for model 17

• Molecule 1: PROTEIN (INSULIN)

Chain A: 86% 10% 5%

G1 I2 V3 C7 N21

• Molecule 1: PROTEIN (INSULIN)

Chain C: 86% 10% 5%

G1 I2 V3 C7 N21

• Molecule 1: PROTEIN (INSULIN)

Chain E: 86% 10% 5%

G1 I2 V3 C7 N21

• Molecule 1: PROTEIN (INSULIN)

Chain G: 76% 19% 5%

G1 I2 V3 C6 C7 C11 N21

• Molecule 1: PROTEIN (INSULIN)

Chain I: 76% 19% 5%

G1 I2 V3 C7 S12 Q15 N21

• Molecule 1: PROTEIN (INSULIN)

Chain K: 86% 10% 5%

G1 I2 V3 C7 N21

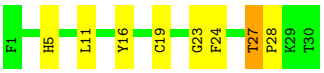
• Molecule 2: PROTEIN (INSULIN)

Chain B: 73% 23%

F1 L11 Y16 C19 G20 E21 R22 G23 F24 T27 P28 K29 T30

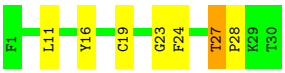
• Molecule 2: PROTEIN (INSULIN)

Chain D: 73% 23%



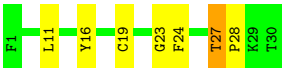
• Molecule 2: PROTEIN (INSULIN)

Chain F:



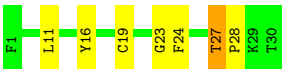
• Molecule 2: PROTEIN (INSULIN)

Chain H:



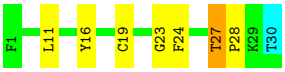
• Molecule 2: PROTEIN (INSULIN)

Chain J:



• Molecule 2: PROTEIN (INSULIN)

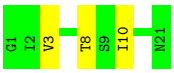
Chain L:



4.2.18 Score per residue for model 18

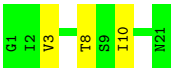
• Molecule 1: PROTEIN (INSULIN)

Chain A:



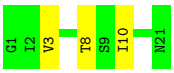
• Molecule 1: PROTEIN (INSULIN)

Chain C:



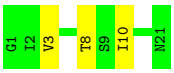
• Molecule 1: PROTEIN (INSULIN)

Chain E:



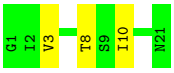
• Molecule 1: PROTEIN (INSULIN)

Chain G:



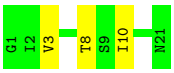
• Molecule 1: PROTEIN (INSULIN)

Chain I:



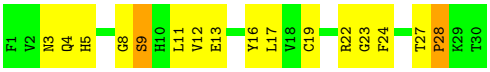
• Molecule 1: PROTEIN (INSULIN)

Chain K:



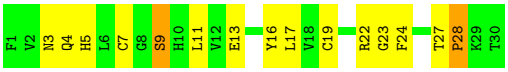
• Molecule 2: PROTEIN (INSULIN)

Chain B:



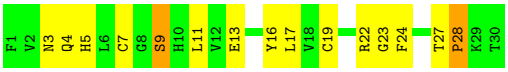
• Molecule 2: PROTEIN (INSULIN)

Chain D:



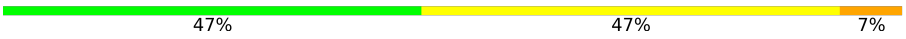
• Molecule 2: PROTEIN (INSULIN)

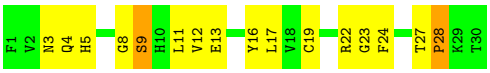
Chain F:



• Molecule 2: PROTEIN (INSULIN)

Chain H:





• Molecule 2: PROTEIN (INSULIN)

Chain J: 43% 50% 7%

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 Y16 L17 V18 C19 R22 G23 F24 T27 P28 K29 T30

• Molecule 2: PROTEIN (INSULIN)

Chain L: 40% 50% 7% •

F1 V2 N3 Q4 H5 L6 C7 G8 S9 H10 L11 V12 E13 Y16 L17 V18 C19 R22 G23 F24 T27 P28 K29 T30

4.2.19 Score per residue for model 19

• Molecule 1: PROTEIN (INSULIN)

Chain A: 76% 19% 5%

G1 S9 I10 Q15 N18 N21

• Molecule 1: PROTEIN (INSULIN)

Chain C: 90% 5% 5%

G1 I10 N21

• Molecule 1: PROTEIN (INSULIN)

Chain E: 81% 14% 5%

G1 I10 Q15 N18 N21

• Molecule 1: PROTEIN (INSULIN)

Chain G: 81% 14% 5%

G1 I10 Q15 N18 N21

• Molecule 1: PROTEIN (INSULIN)

Chain I: 81% 14% 5%

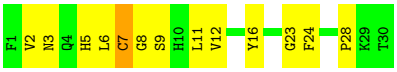
G1 I10 Q15 N18 N21

• Molecule 1: PROTEIN (INSULIN)

Chain K:

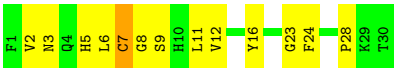
• Molecule 2: PROTEIN (INSULIN)

Chain B:



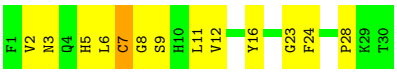
• Molecule 2: PROTEIN (INSULIN)

Chain D:



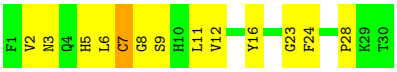
• Molecule 2: PROTEIN (INSULIN)

Chain F:



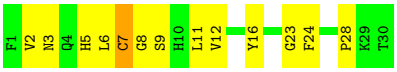
• Molecule 2: PROTEIN (INSULIN)

Chain H:



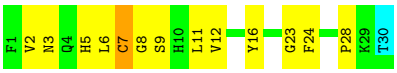
• Molecule 2: PROTEIN (INSULIN)

Chain J:



• Molecule 2: PROTEIN (INSULIN)

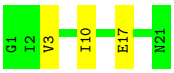
Chain L:



4.2.20 Score per residue for model 20

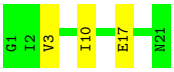
- Molecule 1: PROTEIN (INSULIN)

Chain A: 86% 14%



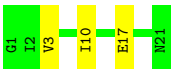
- Molecule 1: PROTEIN (INSULIN)

Chain C: 86% 14%



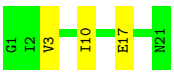
- Molecule 1: PROTEIN (INSULIN)

Chain E: 86% 14%



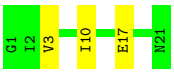
- Molecule 1: PROTEIN (INSULIN)

Chain G: 86% 14%



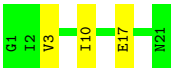
- Molecule 1: PROTEIN (INSULIN)

Chain I: 86% 14%



- Molecule 1: PROTEIN (INSULIN)

Chain K: 86% 14%

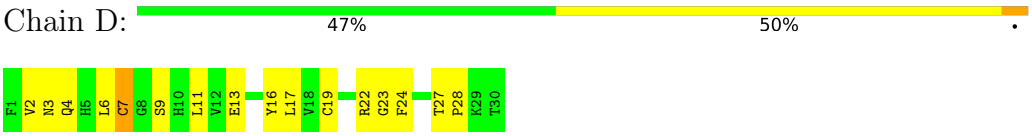


- Molecule 2: PROTEIN (INSULIN)

Chain B: 53% 43%

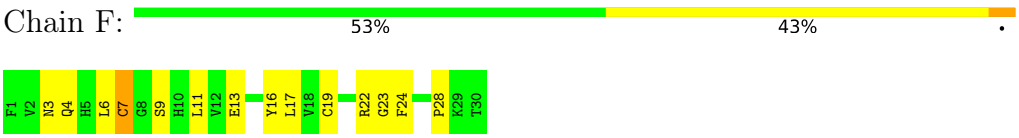
- Molecule 2: PROTEIN (INSULIN)

Chain D:



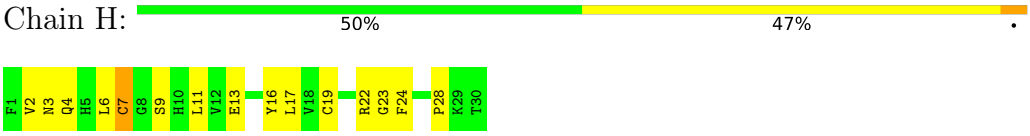
- Molecule 2: PROTEIN (INSULIN)

Chain F:



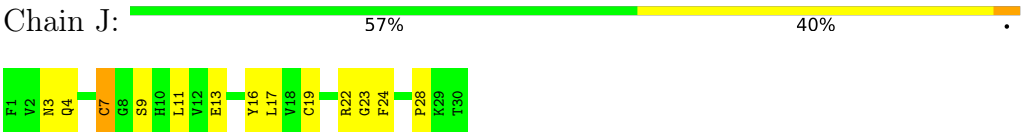
- Molecule 2: PROTEIN (INSULIN)

Chain H:



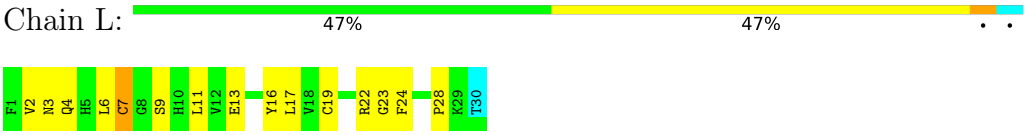
- Molecule 2: PROTEIN (INSULIN)

Chain J:



- Molecule 2: PROTEIN (INSULIN)

Chain L:



5 Refinement protocol and experimental data overview (i)

The models were refined using the following method: *SYMMETRY-ADR METHOD: SIMULATED ANNEALING, WATER-SHELL REFINEMENT, AND ENERGY MINIMIZATION.*

Of the 40 calculated structures, 20 were deposited, based on the following criterion: *LOWEST TOTAL ENERGY.*

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

Software name	Classification	Version
X-PLOR	refinement	3.1
X-PLOR	structure solution	

No chemical shift data was provided.

6 Model quality (i)

6.1 Standard geometry (i)

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

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 (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	163	149	149	4±2
1	C	163	149	149	4±2
1	E	163	149	149	4±3
1	G	163	149	149	4±2
1	I	163	149	149	4±2
1	K	163	149	149	4±2
2	B	242	234	232	14±5
2	D	242	234	232	14±5
2	F	242	234	232	14±5
2	H	242	234	232	14±5
2	J	242	234	232	14±5
2	L	234	227	225	14±5
3	A	7	6	6	2±1
3	C	7	6	6	2±1
3	E	7	6	6	2±1
3	G	7	6	6	2±1
3	I	7	6	6	2±1
3	K	7	6	6	2±1
All	All	49280	46540	46300	1449

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 15.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:J:19:CYS:HB3	2:J:22:ARG:HB2	0.93	1.40	11	7
2:F:19:CYS:HB3	2:F:22:ARG:HB2	0.92	1.42	11	7
2:L:19:CYS:HB3	2:L:22:ARG:HB2	0.90	1.44	11	7
2:H:19:CYS:HB3	2:H:22:ARG:HB2	0.89	1.43	11	7
2:J:9:SER:HB2	2:L:13:GLU:HG2	0.89	1.45	6	6
2:J:12:VAL:HG11	2:L:12:VAL:HG11	0.89	1.45	7	1
2:F:12:VAL:HG11	2:H:12:VAL:HG11	0.88	1.46	7	1
2:J:13:GLU:HG2	2:L:9:SER:HB2	0.88	1.46	6	6
2:B:12:VAL:HG11	2:D:12:VAL:HG11	0.87	1.47	7	1
2:B:13:GLU:HG2	2:D:9:SER:HB2	0.87	1.46	6	6
2:B:19:CYS:HB3	2:B:22:ARG:HB2	0.87	1.43	11	6
2:D:19:CYS:HB3	2:D:22:ARG:HB2	0.87	1.44	11	7
2:B:9:SER:HB2	2:D:13:GLU:HG2	0.86	1.46	6	6
2:F:9:SER:HB2	2:H:13:GLU:HG2	0.86	1.46	6	6
2:F:13:GLU:HG2	2:H:9:SER:HB2	0.85	1.46	6	6
3:I:22:IPH:H3	2:J:11:LEU:HA	0.85	1.48	17	1
3:K:22:IPH:H3	2:L:11:LEU:HA	0.85	1.48	17	1
2:F:16:TYR:HB3	2:F:24:PHE:HE2	0.84	1.32	8	5
3:C:22:IPH:H3	2:D:11:LEU:HA	0.84	1.48	17	1
2:D:16:TYR:HB3	2:D:24:PHE:HE2	0.84	1.33	8	5
2:J:16:TYR:HB3	2:J:24:PHE:HE2	0.83	1.33	8	5
3:G:22:IPH:H3	2:H:11:LEU:HA	0.83	1.48	17	1
2:L:16:TYR:HB3	2:L:24:PHE:HE2	0.83	1.33	8	5
3:E:22:IPH:H3	2:F:11:LEU:HA	0.83	1.49	17	1
2:H:16:TYR:HB3	2:H:24:PHE:HE2	0.83	1.32	8	5
2:J:12:VAL:HG21	2:L:12:VAL:HG21	0.82	1.51	16	4
3:A:22:IPH:H3	2:B:11:LEU:HA	0.82	1.49	17	1
2:F:12:VAL:HG21	2:H:12:VAL:HG21	0.82	1.49	16	4
2:B:16:TYR:HB3	2:B:24:PHE:HE2	0.82	1.33	8	5
2:B:12:VAL:HG21	2:D:12:VAL:HG21	0.80	1.51	16	4
2:H:19:CYS:HB3	2:H:22:ARG:HB3	0.79	1.53	2	2
2:D:19:CYS:HB3	2:D:22:ARG:HB3	0.78	1.55	2	2
2:B:19:CYS:HB3	2:B:22:ARG:HB3	0.77	1.54	2	2
2:J:19:CYS:HB3	2:J:22:ARG:HB3	0.77	1.54	2	2
2:J:23:GLY:HA2	2:L:28:PRO:HD2	0.77	1.56	19	10
2:J:28:PRO:HD2	2:L:23:GLY:HA2	0.77	1.56	19	10
2:L:19:CYS:HB3	2:L:22:ARG:HB3	0.77	1.55	2	2
2:F:19:CYS:HB3	2:F:22:ARG:HB3	0.76	1.55	2	2
2:B:2:VAL:HG12	1:I:10:ILE:HG13	0.76	1.58	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:10:ILE:HG13	2:F:2:VAL:HG12	0.75	1.56	19	1
2:F:23:GLY:HA2	2:H:28:PRO:HD2	0.75	1.56	19	10
2:F:28:PRO:HD2	2:H:23:GLY:HA2	0.75	1.57	19	10
2:H:2:VAL:HG12	1:K:10:ILE:HG13	0.75	1.59	19	1
1:E:10:ILE:HG23	3:E:22:IPH:H2	0.75	1.58	10	1
1:E:9:SER:HA	2:J:2:VAL:HG11	0.74	1.59	3	1
1:C:9:SER:HA	2:L:2:VAL:HG11	0.74	1.59	3	1
1:C:13:LEU:HD11	1:I:13:LEU:HD11	0.74	1.58	5	2
2:B:23:GLY:HA2	2:D:28:PRO:HD2	0.74	1.57	19	10
1:A:13:LEU:HD11	1:G:13:LEU:HD11	0.74	1.59	5	2
2:B:28:PRO:HD2	2:D:23:GLY:HA2	0.74	1.58	19	10
2:H:2:VAL:HG11	1:K:9:SER:HA	0.74	1.59	3	1
1:G:10:ILE:HG23	3:G:22:IPH:H2	0.73	1.60	10	1
1:A:10:ILE:HG23	3:A:22:IPH:H2	0.73	1.60	10	1
2:D:2:VAL:HG12	1:G:10:ILE:HG13	0.73	1.58	19	1
1:E:10:ILE:HG13	2:J:2:VAL:HG12	0.72	1.59	19	1
2:F:16:TYR:HB2	2:H:28:PRO:HG3	0.72	1.59	20	4
1:C:10:ILE:HG13	2:L:2:VAL:HG12	0.72	1.58	19	1
1:A:9:SER:HA	2:F:2:VAL:HG11	0.72	1.59	3	1
1:E:13:LEU:HD11	1:K:13:LEU:HD11	0.72	1.59	5	2
2:B:28:PRO:HG3	2:D:16:TYR:HB2	0.72	1.61	20	4
1:I:10:ILE:HG23	3:I:22:IPH:H2	0.72	1.58	10	1
1:K:10:ILE:HG23	3:K:22:IPH:H2	0.72	1.59	10	1
2:J:16:TYR:HB2	2:L:28:PRO:HG3	0.71	1.60	20	4
1:C:10:ILE:HG23	3:C:22:IPH:H2	0.71	1.61	10	1
2:B:16:TYR:HB2	2:D:28:PRO:HG3	0.71	1.60	20	4
2:B:2:VAL:HG11	1:I:9:SER:HA	0.71	1.61	3	1
2:J:28:PRO:HG3	2:L:16:TYR:HB2	0.70	1.60	20	4
2:D:2:VAL:HG11	1:G:9:SER:HA	0.70	1.61	3	1
2:D:13:GLU:HA	2:D:16:TYR:CE1	0.70	2.22	20	1
2:F:28:PRO:HG3	2:H:16:TYR:HB2	0.70	1.61	20	4
2:F:13:GLU:HA	2:F:16:TYR:CE1	0.70	2.22	20	1
2:J:13:GLU:HA	2:J:16:TYR:CE2	0.69	2.22	6	3
2:L:13:GLU:HA	2:L:16:TYR:CE2	0.69	2.23	6	3
2:J:13:GLU:HA	2:J:16:TYR:CE1	0.69	2.22	20	1
2:H:13:GLU:HA	2:H:16:TYR:CE2	0.69	2.22	6	3
2:B:13:GLU:HA	2:B:16:TYR:CE2	0.69	2.23	6	3
2:L:13:GLU:HA	2:L:16:TYR:CE1	0.69	2.21	20	1
2:H:13:GLU:HA	2:H:16:TYR:CE1	0.68	2.22	20	1
2:F:13:GLU:HA	2:F:16:TYR:CE2	0.68	2.22	6	3
2:L:12:VAL:HB	2:L:24:PHE:CZ	0.68	2.24	9	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:B:13:GLU:HA	2:B:16:TYR:CE1	0.68	2.22	20	1
2:D:12:VAL:HB	2:D:24:PHE:CZ	0.68	2.24	9	2
2:F:16:TYR:HB3	2:F:24:PHE:CE1	0.68	2.24	4	5
2:J:16:TYR:HB3	2:J:24:PHE:CE1	0.67	2.24	4	5
2:B:12:VAL:HB	2:B:24:PHE:CZ	0.67	2.25	9	2
2:L:16:TYR:HB3	2:L:24:PHE:CE1	0.67	2.25	4	5
2:H:12:VAL:HB	2:H:24:PHE:CZ	0.67	2.24	9	3
2:B:23:GLY:CA	2:D:28:PRO:HD2	0.67	2.19	17	3
2:D:13:GLU:HA	2:D:16:TYR:CE2	0.67	2.23	6	3
2:F:12:VAL:HB	2:F:24:PHE:CZ	0.67	2.24	9	3
2:J:28:PRO:HD2	2:L:23:GLY:CA	0.67	2.20	17	4
2:H:16:TYR:HB3	2:H:24:PHE:CE1	0.67	2.25	4	5
2:D:16:TYR:HB3	2:D:24:PHE:CE1	0.67	2.25	4	5
2:F:23:GLY:CA	2:H:28:PRO:HD2	0.66	2.20	17	4
3:E:22:IPH:H5	2:F:11:LEU:HA	0.66	1.68	2	3
2:B:16:TYR:HB3	2:B:24:PHE:CE1	0.66	2.25	4	5
1:I:2:ILE:HG23	1:I:3:VAL:H	0.66	1.51	6	2
1:K:16:LEU:HD11	3:K:22:IPH:H6	0.66	1.66	3	1
2:H:16:TYR:HB3	2:H:24:PHE:CE2	0.66	2.26	11	4
2:L:16:TYR:HB3	2:L:24:PHE:CE2	0.66	2.26	11	3
3:G:22:IPH:H5	2:H:11:LEU:HA	0.66	1.68	2	3
2:J:12:VAL:HB	2:J:24:PHE:CZ	0.66	2.25	9	3
3:C:22:IPH:H3	2:D:11:LEU:HD23	0.66	1.68	18	2
2:F:28:PRO:HD2	2:H:23:GLY:CA	0.65	2.21	17	4
3:K:22:IPH:H5	2:L:11:LEU:HA	0.65	1.67	2	3
2:B:16:TYR:HB3	2:B:24:PHE:CE2	0.65	2.27	11	3
2:F:16:TYR:HB3	2:F:24:PHE:CE2	0.65	2.26	11	4
2:B:6:LEU:HD21	3:I:22:IPH:H4	0.65	1.68	7	7
1:A:10:ILE:HD13	2:F:3:ASN:HB3	0.65	1.69	16	2
2:B:28:PRO:HD2	2:D:23:GLY:CA	0.65	2.21	17	5
2:B:13:GLU:HA	2:B:16:TYR:HE1	0.65	1.51	20	1
3:A:22:IPH:H4	2:F:6:LEU:HD21	0.65	1.68	7	7
2:D:16:TYR:HB3	2:D:24:PHE:CE2	0.65	2.26	11	4
2:B:12:VAL:HG13	2:B:24:PHE:HZ	0.65	1.52	7	1
2:D:6:LEU:HD21	3:G:22:IPH:H4	0.65	1.69	7	7
1:G:16:LEU:HD11	3:G:22:IPH:H6	0.65	1.67	3	1
2:J:16:TYR:HB3	2:J:24:PHE:CE2	0.65	2.26	11	3
3:C:22:IPH:H4	2:L:6:LEU:HD21	0.65	1.69	8	7
2:D:2:VAL:HB	1:G:10:ILE:HD13	0.65	1.68	3	1
2:J:23:GLY:CA	2:L:28:PRO:HD2	0.65	2.21	17	4
2:D:13:GLU:HA	2:D:16:TYR:HE1	0.65	1.50	20	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:H:13:GLU:HA	2:H:16:TYR:HE1	0.65	1.50	20	1
3:E:22:IPH:H4	2:J:6:LEU:HD21	0.64	1.69	8	7
2:H:6:LEU:HD21	3:K:22:IPH:H4	0.64	1.68	7	7
3:E:22:IPH:H3	2:F:11:LEU:HD23	0.64	1.68	18	2
3:K:22:IPH:H3	2:L:11:LEU:HD23	0.64	1.69	18	3
3:I:22:IPH:H5	2:J:11:LEU:HA	0.64	1.67	2	3
3:C:22:IPH:H5	2:D:11:LEU:HA	0.64	1.68	2	3
2:F:17:LEU:HD11	3:K:22:IPH:H5	0.64	1.69	11	1
2:L:13:GLU:HA	2:L:16:TYR:HE1	0.64	1.50	20	1
1:A:2:ILE:HG23	1:A:3:VAL:H	0.64	1.51	6	2
1:E:10:ILE:HD13	2:J:3:ASN:HB3	0.64	1.69	16	2
2:B:17:LEU:HD11	3:G:22:IPH:H5	0.64	1.69	11	1
3:A:22:IPH:H3	2:B:11:LEU:HD23	0.64	1.69	18	2
2:F:13:GLU:HA	2:F:16:TYR:HE1	0.64	1.51	20	1
1:A:16:LEU:HD11	3:A:22:IPH:H6	0.64	1.67	3	1
3:A:22:IPH:H5	2:B:11:LEU:HA	0.64	1.68	2	3
1:E:10:ILE:HD13	2:J:2:VAL:HB	0.64	1.70	3	1
3:E:22:IPH:H5	2:L:17:LEU:HD11	0.64	1.70	11	1
1:E:16:LEU:HD11	3:E:22:IPH:H6	0.63	1.69	3	1
3:I:22:IPH:H3	2:J:11:LEU:HD23	0.63	1.68	18	2
2:D:12:VAL:HG13	2:D:24:PHE:HZ	0.63	1.52	7	1
1:C:16:LEU:HD11	3:C:22:IPH:H6	0.63	1.68	3	1
1:I:16:LEU:HD11	3:I:22:IPH:H6	0.63	1.68	3	1
2:L:12:VAL:HG13	2:L:24:PHE:HZ	0.63	1.51	7	1
3:C:22:IPH:H5	2:J:17:LEU:HD11	0.63	1.69	11	1
1:K:2:ILE:HG23	1:K:3:VAL:H	0.63	1.53	6	2
2:D:17:LEU:HD11	3:I:22:IPH:H5	0.63	1.70	11	1
1:E:2:ILE:HG23	1:E:3:VAL:H	0.63	1.53	6	2
1:G:2:ILE:HG23	1:G:3:VAL:H	0.63	1.53	6	2
2:B:5:HIS:HB3	1:I:10:ILE:HD13	0.63	1.71	10	1
2:F:23:GLY:HA3	2:H:27:THR:HA	0.63	1.71	12	4
1:C:10:ILE:HD13	2:L:2:VAL:HB	0.63	1.70	3	1
2:J:12:VAL:HG13	2:J:24:PHE:HZ	0.63	1.53	7	1
3:G:22:IPH:H3	2:H:11:LEU:HD23	0.63	1.68	18	2
2:B:3:ASN:HB3	1:I:10:ILE:HD13	0.62	1.70	16	2
2:D:3:ASN:HB3	1:G:10:ILE:HD13	0.62	1.71	16	2
2:F:12:VAL:HG13	2:F:24:PHE:HZ	0.62	1.53	7	1
2:J:13:GLU:HA	2:J:16:TYR:HE1	0.62	1.50	20	1
1:C:2:ILE:HG23	1:C:3:VAL:H	0.62	1.53	6	2
2:H:12:VAL:HG13	2:H:24:PHE:HZ	0.62	1.53	7	1
1:K:7:CYS:HB2	2:L:11:LEU:HD11	0.62	1.72	7	7

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:B:23:GLY:HA3	2:D:27:THR:HA	0.62	1.71	12	4
1:C:3:VAL:HG21	2:D:28:PRO:HA	0.61	1.72	1	3
1:E:7:CYS:HB2	2:F:11:LEU:HD11	0.61	1.72	7	7
1:I:7:CYS:HB2	2:J:11:LEU:HD11	0.61	1.72	7	7
3:A:22:IPH:H5	2:H:17:LEU:HD11	0.61	1.70	11	1
2:H:3:ASN:HB3	1:K:10:ILE:HD13	0.61	1.71	16	2
1:A:7:CYS:HB2	2:B:11:LEU:HD11	0.61	1.72	7	7
1:G:7:CYS:HB2	2:H:11:LEU:HD11	0.61	1.73	7	7
2:J:27:THR:HA	2:L:23:GLY:HA3	0.61	1.71	12	4
2:H:2:VAL:HB	1:K:10:ILE:HD13	0.61	1.69	3	1
2:B:27:THR:HA	2:D:23:GLY:HA3	0.61	1.72	12	4
1:A:10:ILE:HD13	2:F:2:VAL:HB	0.61	1.71	3	1
1:I:1:GLY:O	1:I:5:GLN:HB3	0.61	1.96	5	1
2:H:5:HIS:HB3	1:K:10:ILE:HD13	0.61	1.72	10	1
1:I:3:VAL:HG21	2:J:28:PRO:HA	0.61	1.73	1	3
2:B:2:VAL:HB	1:I:10:ILE:HD13	0.61	1.70	3	1
1:K:3:VAL:HG21	2:L:28:PRO:HA	0.60	1.73	1	3
2:H:4:GLN:HA	2:H:7:CYS:HB3	0.60	1.73	8	4
2:D:5:HIS:HB3	1:G:10:ILE:HD13	0.60	1.72	10	1
2:F:4:GLN:HA	2:F:7:CYS:HB3	0.60	1.72	8	4
1:A:10:ILE:HD13	2:F:5:HIS:HB3	0.60	1.72	10	1
1:E:1:GLY:O	1:E:5:GLN:HB3	0.60	1.96	5	1
1:C:10:ILE:HD13	2:L:5:HIS:HB3	0.60	1.74	10	1
2:F:27:THR:HA	2:H:23:GLY:HA3	0.60	1.72	12	4
2:L:4:GLN:HA	2:L:7:CYS:HB3	0.60	1.73	8	4
1:A:1:GLY:O	1:A:5:GLN:HB3	0.60	1.97	5	1
1:C:10:ILE:HD13	2:L:3:ASN:HB3	0.60	1.73	16	2
1:A:3:VAL:HG21	2:B:28:PRO:HA	0.60	1.73	1	3
1:C:7:CYS:HB2	2:D:11:LEU:HD11	0.60	1.73	7	7
1:E:10:ILE:HD13	2:J:5:HIS:HB3	0.60	1.73	10	1
2:B:4:GLN:HA	2:B:7:CYS:HB3	0.59	1.73	8	4
1:E:3:VAL:HG21	2:F:28:PRO:HA	0.59	1.72	1	3
1:G:3:VAL:HG21	2:H:28:PRO:HA	0.59	1.72	1	3
1:C:1:GLY:O	1:C:5:GLN:HB3	0.59	1.97	5	1
1:A:21:ASN:HB2	2:B:24:PHE:HA	0.59	1.75	17	2
2:J:23:GLY:HA3	2:L:27:THR:HA	0.59	1.72	12	4
1:A:17:GLU:HA	1:A:20:CYS:SG	0.59	2.38	7	3
2:J:4:GLN:HA	2:J:7:CYS:HB3	0.59	1.75	4	4
2:B:9:SER:HB3	2:D:16:TYR:CE1	0.59	2.33	15	1
2:B:12:VAL:O	2:B:16:TYR:HB2	0.59	1.98	5	2
1:K:1:GLY:O	1:K:5:GLN:HB3	0.59	1.98	5	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:G:17:GLU:HA	1:G:20:CYS:SG	0.59	2.38	7	3
2:B:13:GLU:CG	2:D:9:SER:HB2	0.59	2.28	8	4
1:E:21:ASN:HB2	2:F:24:PHE:HA	0.58	1.75	17	2
1:E:17:GLU:HA	1:E:20:CYS:SG	0.58	2.39	7	3
2:B:9:SER:HB2	2:D:13:GLU:CG	0.58	2.29	8	4
1:I:17:GLU:HA	1:I:20:CYS:SG	0.58	2.39	15	3
1:C:17:GLU:HA	1:C:20:CYS:SG	0.58	2.39	7	3
2:D:4:GLN:HA	2:D:7:CYS:HB3	0.58	1.74	8	4
2:F:16:TYR:CE1	2:H:9:SER:HB3	0.58	2.34	15	1
2:J:16:TYR:CE1	2:L:9:SER:HB3	0.58	2.33	15	1
2:F:13:GLU:CG	2:H:9:SER:HB2	0.58	2.29	8	4
1:I:21:ASN:HB2	2:J:24:PHE:HA	0.58	1.76	17	2
1:K:17:GLU:HA	1:K:20:CYS:SG	0.58	2.39	15	3
1:G:1:GLY:O	1:G:5:GLN:HB3	0.58	1.99	5	1
2:B:16:TYR:CE1	2:D:9:SER:HB3	0.58	2.33	15	1
2:L:2:VAL:HG11	2:L:6:LEU:HD12	0.57	1.76	1	1
1:G:21:ASN:HB2	2:H:24:PHE:HA	0.57	1.76	17	2
2:F:9:SER:HB2	2:H:13:GLU:CG	0.57	2.29	8	4
2:B:3:ASN:HB3	2:B:7:CYS:HB3	0.57	1.76	10	1
2:D:2:VAL:HG11	2:D:6:LEU:HD12	0.57	1.76	1	1
2:J:9:SER:HB2	2:L:13:GLU:CG	0.57	2.29	8	4
2:J:13:GLU:CG	2:L:9:SER:HB2	0.57	2.29	8	4
2:F:9:SER:HB3	2:H:16:TYR:CE1	0.57	2.34	15	1
2:J:9:SER:HB3	2:L:16:TYR:CE1	0.57	2.33	15	1
1:C:21:ASN:HB2	2:D:24:PHE:HA	0.57	1.76	17	2
1:K:3:VAL:HG11	2:L:4:GLN:HG3	0.57	1.76	18	2
2:B:23:GLY:HA3	2:D:27:THR:HG22	0.57	1.76	7	5
2:J:8:GLY:HA2	2:J:11:LEU:HG	0.57	1.76	10	5
2:J:12:VAL:O	2:J:16:TYR:HB2	0.57	1.98	5	2
2:F:12:VAL:O	2:F:16:TYR:HB2	0.57	1.99	5	2
2:L:12:VAL:O	2:L:16:TYR:HB2	0.57	1.99	5	2
2:H:12:VAL:O	2:H:16:TYR:HB2	0.57	2.00	5	2
2:D:12:VAL:O	2:D:16:TYR:HB2	0.57	1.99	5	2
2:B:2:VAL:HG11	2:B:6:LEU:HD12	0.57	1.77	1	1
2:L:3:ASN:HB3	2:L:7:CYS:HB3	0.56	1.77	10	1
1:G:3:VAL:HG11	2:H:4:GLN:HG3	0.56	1.76	18	3
2:F:8:GLY:HA2	2:F:11:LEU:HG	0.56	1.76	10	5
2:F:2:VAL:HG11	2:F:6:LEU:HD12	0.56	1.76	1	1
2:H:2:VAL:HG11	2:H:6:LEU:HD12	0.56	1.77	1	1
1:I:3:VAL:HG11	2:J:4:GLN:HG3	0.56	1.77	18	2
2:L:8:GLY:HA2	2:L:11:LEU:HG	0.56	1.76	10	5

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:L:2:VAL:HG22	2:L:3:ASN:H	0.56	1.61	11	1
2:J:2:VAL:HG11	2:J:6:LEU:HD12	0.56	1.76	1	1
2:B:2:VAL:HG22	2:B:3:ASN:H	0.56	1.61	11	1
2:D:8:GLY:HA2	2:D:11:LEU:HG	0.56	1.78	19	5
2:H:3:ASN:HB3	2:H:7:CYS:HB3	0.56	1.78	10	1
1:E:3:VAL:HG11	2:F:4:GLN:HG3	0.56	1.77	18	2
2:J:12:VAL:HG21	2:L:12:VAL:CG2	0.56	2.31	12	3
2:B:5:HIS:HB3	1:I:10:ILE:CD1	0.55	2.31	10	1
2:H:5:HIS:HB3	1:K:10:ILE:CD1	0.55	2.31	10	1
2:J:3:ASN:HB3	2:J:7:CYS:HB3	0.55	1.77	10	1
2:L:2:VAL:O	2:L:6:LEU:HG	0.55	2.02	12	3
2:F:3:ASN:HB3	2:F:7:CYS:HB3	0.55	1.76	10	1
2:F:12:VAL:HG21	2:H:12:VAL:CG2	0.55	2.30	12	3
2:J:12:VAL:CG2	2:L:12:VAL:HG21	0.55	2.31	12	3
2:D:2:VAL:HG22	2:D:3:ASN:H	0.55	1.60	11	1
2:J:2:VAL:HG22	2:J:3:ASN:H	0.55	1.62	11	1
1:K:21:ASN:HB2	2:L:24:PHE:HA	0.55	1.77	17	2
2:H:8:GLY:HA2	2:H:11:LEU:HG	0.55	1.76	10	5
2:F:23:GLY:HA3	2:H:27:THR:HG22	0.55	1.79	7	4
2:B:8:GLY:HA2	2:B:11:LEU:HG	0.55	1.77	10	5
2:H:2:VAL:O	2:H:6:LEU:HG	0.55	2.02	12	3
1:C:10:ILE:HG12	3:C:22:IPH:H6	0.55	1.79	19	1
2:B:12:VAL:HG13	2:B:24:PHE:CZ	0.55	2.37	7	1
2:D:3:ASN:HB3	2:D:7:CYS:HB3	0.55	1.77	10	1
1:E:10:ILE:CD1	2:J:5:HIS:HB3	0.55	2.32	10	1
1:A:2:ILE:HD13	2:B:26:TYR:HE1	0.55	1.62	16	1
2:J:23:GLY:HA3	2:L:27:THR:HG22	0.55	1.77	7	4
3:K:22:IPH:H5	2:L:11:LEU:HD23	0.55	1.79	8	1
2:H:2:VAL:HG22	2:H:3:ASN:H	0.54	1.61	11	1
2:B:12:VAL:CG2	2:D:12:VAL:HG21	0.54	2.32	12	3
2:J:27:THR:HG22	2:L:23:GLY:HA3	0.54	1.79	7	4
2:D:5:HIS:HB3	1:G:10:ILE:CD1	0.54	2.32	10	1
1:E:10:ILE:HG12	3:E:22:IPH:H6	0.54	1.80	19	1
1:A:2:ILE:HD11	2:B:15:LEU:HD11	0.54	1.79	10	2
1:I:2:ILE:HD13	2:J:26:TYR:HE1	0.54	1.63	16	1
2:F:12:VAL:CG2	2:H:12:VAL:HG21	0.54	2.31	12	3
1:C:3:VAL:HG11	2:D:4:GLN:HG3	0.54	1.77	18	3
1:A:3:VAL:HG11	2:B:4:GLN:HG3	0.54	1.77	18	2
1:A:10:ILE:HG12	3:A:22:IPH:H6	0.54	1.79	19	1
1:K:10:ILE:HG12	3:K:22:IPH:H6	0.54	1.80	19	1
2:J:2:VAL:O	2:J:6:LEU:HG	0.54	2.03	12	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:E:2:ILE:HD13	2:F:26:TYR:HE1	0.54	1.62	16	1
2:B:12:VAL:HG21	2:D:12:VAL:CG2	0.54	2.32	12	3
1:C:10:ILE:CD1	2:L:5:HIS:HB3	0.54	2.32	10	1
2:B:27:THR:HG22	2:D:23:GLY:HA3	0.53	1.80	8	4
1:G:2:ILE:HD11	2:H:15:LEU:HD11	0.53	1.79	10	2
1:K:2:ILE:HD11	2:L:15:LEU:HD11	0.53	1.79	10	2
1:A:10:ILE:CD1	2:F:5:HIS:HB3	0.53	2.32	10	1
2:H:16:TYR:HB3	2:H:24:PHE:HE1	0.53	1.64	20	4
1:I:2:ILE:HD11	2:J:15:LEU:HD11	0.53	1.80	10	2
2:B:2:VAL:O	2:B:6:LEU:HG	0.53	2.03	12	2
2:F:27:THR:HG22	2:H:23:GLY:HA3	0.53	1.80	7	4
1:E:2:ILE:HD11	2:F:15:LEU:HD11	0.53	1.79	10	2
2:F:2:VAL:HG22	2:F:3:ASN:H	0.53	1.61	11	1
1:G:10:ILE:HG12	3:G:22:IPH:H6	0.53	1.79	19	1
1:C:2:ILE:HD11	2:D:15:LEU:HD11	0.53	1.80	10	2
2:B:9:SER:HB3	2:D:16:TYR:HE1	0.53	1.62	15	1
2:F:29:LYS:HD2	2:H:21:GLU:HB2	0.53	1.80	15	1
2:J:16:TYR:HB3	2:J:24:PHE:HE1	0.53	1.63	20	4
2:F:2:VAL:O	2:F:6:LEU:HG	0.53	2.03	12	2
1:K:2:ILE:HD13	2:L:26:TYR:HE1	0.53	1.63	16	1
3:I:22:IPH:H5	2:J:11:LEU:HD23	0.53	1.80	8	1
1:G:2:ILE:HD13	2:H:26:TYR:HE1	0.53	1.63	16	1
2:J:12:VAL:HG13	2:J:24:PHE:CZ	0.53	2.38	7	1
1:K:4:GLU:HB2	2:L:4:GLN:HE21	0.53	1.64	10	1
1:I:10:ILE:HG12	3:I:22:IPH:H6	0.53	1.80	19	1
2:L:16:TYR:HB3	2:L:24:PHE:HE1	0.52	1.64	20	5
2:J:9:SER:HB3	2:L:16:TYR:HE1	0.52	1.64	15	1
2:J:16:TYR:HE1	2:L:9:SER:HB3	0.52	1.64	15	1
1:C:2:ILE:HD13	2:D:26:TYR:HE1	0.52	1.63	16	1
2:D:2:VAL:HB	2:D:6:LEU:CD1	0.52	2.34	15	1
2:L:2:VAL:HB	2:L:6:LEU:CD1	0.52	2.34	15	1
2:D:10:HIS:HA	2:D:13:GLU:HG3	0.52	1.82	4	3
1:G:16:LEU:HB3	2:H:15:LEU:HD23	0.52	1.82	13	3
2:B:2:VAL:HB	2:B:6:LEU:CD1	0.52	2.34	15	1
2:L:12:VAL:HG13	2:L:24:PHE:CZ	0.52	2.37	7	1
3:C:22:IPH:H5	2:D:11:LEU:HD23	0.52	1.81	8	1
2:D:2:VAL:O	2:D:6:LEU:HG	0.52	2.04	12	3
2:F:2:VAL:HB	2:F:6:LEU:CD1	0.52	2.34	15	1
2:F:9:SER:HB3	2:H:16:TYR:HE1	0.52	1.65	15	1
1:A:16:LEU:HB3	2:B:15:LEU:HD23	0.52	1.81	13	3
2:F:17:LEU:HD12	2:L:17:LEU:HD12	0.52	1.82	12	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:F:16:TYR:HE1	2:H:9:SER:HB3	0.52	1.65	15	1
2:B:16:TYR:HB3	2:B:24:PHE:HE1	0.52	1.64	20	4
2:F:16:TYR:HB3	2:F:24:PHE:HE1	0.52	1.64	20	5
3:A:22:IPH:H5	2:B:11:LEU:HD23	0.52	1.80	8	1
2:B:17:LEU:HD12	2:H:17:LEU:HD12	0.52	1.81	12	1
2:J:2:VAL:HB	2:J:6:LEU:CD1	0.52	2.35	15	1
2:F:10:HIS:HA	2:F:13:GLU:HG3	0.52	1.82	4	3
1:C:16:LEU:HB3	2:D:15:LEU:HD23	0.52	1.82	13	2
1:E:16:LEU:HB3	2:F:15:LEU:HD23	0.52	1.81	13	3
1:A:5:GLN:HG3	1:A:11:CYS:SG	0.51	2.46	4	2
1:I:16:LEU:HB3	2:J:15:LEU:HD23	0.51	1.81	13	3
2:H:2:VAL:HB	2:H:6:LEU:CD1	0.51	2.34	15	1
2:F:12:VAL:HG13	2:F:24:PHE:CZ	0.51	2.38	7	1
3:G:22:IPH:H5	2:H:11:LEU:HD23	0.51	1.81	8	1
2:D:12:VAL:HG13	2:D:24:PHE:CZ	0.51	2.38	7	1
3:E:22:IPH:H5	2:F:11:LEU:HD22	0.51	1.83	12	2
2:B:9:SER:HB2	2:D:13:GLU:HG3	0.51	1.82	18	1
2:D:16:TYR:HB3	2:D:24:PHE:HE1	0.51	1.64	20	5
3:A:22:IPH:H5	2:B:11:LEU:HD22	0.51	1.83	12	2
2:H:6:LEU:HD21	3:K:22:IPH:C4	0.51	2.36	14	2
2:L:10:HIS:HA	2:L:13:GLU:HG3	0.51	1.82	4	3
3:E:22:IPH:H5	2:F:11:LEU:HD23	0.51	1.81	8	1
2:B:16:TYR:HE1	2:D:9:SER:HB3	0.51	1.64	15	1
2:J:10:HIS:HA	2:J:13:GLU:HG3	0.50	1.83	4	3
2:J:5:HIS:NE2	2:L:17:LEU:HG	0.50	2.21	7	2
3:C:22:IPH:C4	2:L:6:LEU:HD21	0.50	2.36	14	3
2:J:17:LEU:HG	2:L:5:HIS:NE2	0.50	2.21	7	2
2:B:6:LEU:HD21	3:I:22:IPH:C4	0.50	2.36	14	2
3:G:22:IPH:H5	2:H:11:LEU:HD22	0.50	1.83	12	2
2:D:17:LEU:HD12	2:J:17:LEU:HD12	0.50	1.84	12	1
1:K:16:LEU:HB3	2:L:15:LEU:HD23	0.50	1.82	13	3
1:K:16:LEU:HD11	3:K:22:IPH:C6	0.50	2.36	3	1
1:C:16:LEU:HD11	3:C:22:IPH:C6	0.50	2.37	3	1
2:F:17:LEU:HG	2:H:5:HIS:NE2	0.50	2.22	7	2
3:E:22:IPH:C4	2:J:6:LEU:HD21	0.50	2.36	14	1
2:B:13:GLU:HG3	2:D:9:SER:HB2	0.50	1.83	18	1
3:A:22:IPH:H5	2:B:14:ALA:CB	0.50	2.37	5	1
1:E:4:GLU:HB2	2:F:4:GLN:HE21	0.50	1.66	10	1
2:J:13:GLU:HG3	2:L:9:SER:HB2	0.50	1.84	18	1
2:F:9:SER:HB3	2:H:16:TYR:CE2	0.50	2.42	6	1
2:B:16:TYR:CE2	2:D:9:SER:HB3	0.50	2.42	6	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:H:10:HIS:HA	2:H:13:GLU:HG3	0.49	1.83	4	3
1:K:5:GLN:HG3	1:K:11:CYS:SG	0.49	2.47	4	1
3:A:22:IPH:C4	2:F:6:LEU:HD21	0.49	2.37	14	3
2:B:10:HIS:HA	2:B:13:GLU:HG3	0.49	1.83	4	3
1:C:5:GLN:HG3	1:C:11:CYS:SG	0.49	2.47	4	1
3:G:22:IPH:H5	2:H:14:ALA:CB	0.49	2.37	5	1
2:B:17:LEU:HG	2:D:5:HIS:NE2	0.49	2.22	7	1
2:H:12:VAL:HG13	2:H:24:PHE:CZ	0.49	2.38	7	1
1:I:4:GLU:HB2	2:J:4:GLN:HE21	0.49	1.67	10	1
2:B:21:GLU:HB2	2:D:29:LYS:HD2	0.49	1.83	15	1
1:A:9:SER:O	1:A:10:ILE:HB	0.49	2.07	10	5
1:I:9:SER:O	1:I:10:ILE:HB	0.49	2.07	10	4
1:A:16:LEU:HD11	3:A:22:IPH:C6	0.49	2.37	3	1
3:I:22:IPH:H5	2:J:14:ALA:CB	0.49	2.37	5	1
3:C:22:IPH:H5	2:D:11:LEU:HD22	0.49	1.83	12	2
1:E:5:GLN:HG3	1:E:11:CYS:SG	0.49	2.48	4	1
2:J:5:HIS:HA	2:L:16:TYR:HE1	0.49	1.68	19	1
2:F:5:HIS:NE2	2:H:17:LEU:HG	0.49	2.22	7	1
1:G:5:GLN:HG2	1:G:11:CYS:SG	0.49	2.47	7	2
2:F:9:SER:HB2	2:H:13:GLU:HG3	0.49	1.83	18	1
1:G:16:LEU:HD11	3:G:22:IPH:C6	0.49	2.36	3	1
3:K:22:IPH:H5	2:L:11:LEU:HD22	0.49	1.84	12	2
2:F:13:GLU:HG3	2:H:9:SER:HB2	0.49	1.83	18	1
2:D:6:LEU:HD21	3:G:22:IPH:C4	0.49	2.38	14	2
1:E:16:LEU:HD11	3:E:22:IPH:C6	0.49	2.38	3	1
1:G:5:GLN:HG3	1:G:11:CYS:SG	0.49	2.48	4	1
3:C:22:IPH:H5	2:D:14:ALA:CB	0.49	2.37	5	1
2:J:9:SER:HB3	2:L:16:TYR:CE2	0.49	2.42	6	1
1:K:5:GLN:HG2	1:K:11:CYS:SG	0.49	2.47	7	2
1:C:3:VAL:O	1:C:7:CYS:HB3	0.49	2.07	17	1
1:K:3:VAL:O	1:K:7:CYS:HB3	0.49	2.07	17	1
1:C:4:GLU:HB2	2:D:4:GLN:HE21	0.49	1.68	10	1
2:J:9:SER:HB2	2:L:13:GLU:HG3	0.49	1.83	18	1
3:K:22:IPH:H5	2:L:14:ALA:CB	0.49	2.37	5	1
1:A:4:GLU:HB2	2:B:4:GLN:HE21	0.49	1.68	10	1
2:J:21:GLU:HB2	2:L:29:LYS:HD2	0.49	1.85	15	1
2:F:8:GLY:HA3	2:F:26:TYR:OH	0.49	2.08	1	2
2:H:6:LEU:HD11	3:K:22:IPH:H5	0.49	1.85	1	1
2:L:12:VAL:HA	2:L:15:LEU:HB2	0.49	1.85	11	4
1:G:9:SER:O	1:G:10:ILE:HB	0.49	2.07	10	4
2:B:5:HIS:NE2	2:D:17:LEU:HG	0.48	2.23	7	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:I:22:IPH:H5	2:J:11:LEU:HD22	0.48	1.84	12	2
1:A:3:VAL:O	1:A:7:CYS:HB3	0.48	2.08	17	1
2:B:13:GLU:HG2	2:D:9:SER:HB3	0.48	1.84	13	1
1:K:3:VAL:HG11	2:L:4:GLN:CD	0.48	2.29	14	1
1:E:3:VAL:O	1:E:7:CYS:HB3	0.48	2.08	17	1
3:E:22:IPH:H5	2:J:6:LEU:HD11	0.48	1.84	1	1
2:H:2:VAL:HB	1:K:10:ILE:CD1	0.48	2.38	3	1
2:J:16:TYR:CE2	2:L:9:SER:HB3	0.48	2.44	6	1
1:I:5:GLN:HG2	1:I:11:CYS:SG	0.48	2.48	7	2
2:J:13:GLU:HG2	2:L:9:SER:HB3	0.48	1.85	13	1
2:F:12:VAL:HA	2:F:15:LEU:HB2	0.48	1.85	11	4
2:B:9:SER:HB3	2:D:16:TYR:CE2	0.48	2.43	6	1
1:A:6:CYS:HB3	3:A:22:IPH:H2	0.48	1.86	7	1
2:F:16:TYR:HE1	2:H:5:HIS:HA	0.48	1.68	19	1
2:J:16:TYR:HE1	2:L:5:HIS:HA	0.48	1.68	19	1
3:A:22:IPH:H5	2:F:6:LEU:HD11	0.48	1.85	1	1
2:J:8:GLY:HA3	2:J:26:TYR:OH	0.48	2.08	1	1
2:J:12:VAL:HA	2:J:15:LEU:HB2	0.48	1.85	11	4
2:J:13:GLU:HB3	2:L:9:SER:OG	0.48	2.09	7	1
2:J:5:HIS:CE1	2:L:17:LEU:HA	0.48	2.43	16	2
2:B:5:HIS:HA	2:D:16:TYR:HE1	0.48	1.68	19	1
2:B:16:TYR:HE1	2:D:5:HIS:HA	0.48	1.68	19	1
2:F:5:HIS:HA	2:H:16:TYR:HE1	0.48	1.67	19	1
2:H:12:VAL:HA	2:H:15:LEU:HB2	0.48	1.86	4	4
2:L:8:GLY:HA3	2:L:26:TYR:OH	0.48	2.09	1	2
2:D:2:VAL:HB	1:G:10:ILE:CD1	0.48	2.38	3	1
3:E:22:IPH:H5	2:F:14:ALA:CB	0.48	2.37	5	1
2:F:16:TYR:CE2	2:H:9:SER:HB3	0.48	2.43	6	1
2:B:12:VAL:HA	2:B:15:LEU:HB2	0.48	1.85	11	4
1:I:5:GLN:HG3	1:I:11:CYS:SG	0.48	2.48	4	1
3:K:22:IPH:H5	2:L:11:LEU:CD2	0.48	2.39	9	1
1:A:10:ILE:HG13	3:A:22:IPH:H6	0.48	1.86	13	1
1:C:10:ILE:HG13	3:C:22:IPH:H6	0.48	1.85	13	1
2:B:6:LEU:HD11	3:I:22:IPH:H5	0.48	1.84	1	1
1:E:9:SER:O	1:E:10:ILE:HB	0.48	2.08	10	6
1:G:10:ILE:HG13	3:G:22:IPH:H6	0.48	1.86	13	1
1:I:3:VAL:O	1:I:7:CYS:HB3	0.48	2.08	17	1
2:D:8:GLY:HA3	2:D:26:TYR:OH	0.47	2.09	1	1
1:C:9:SER:O	1:C:10:ILE:HB	0.47	2.08	10	5
1:G:4:GLU:HB2	2:H:4:GLN:HE21	0.47	1.69	10	1
2:J:9:SER:HB3	2:L:13:GLU:HG2	0.47	1.86	13	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:K:9:SER:O	1:K:10:ILE:HB	0.47	2.09	10	3
3:C:22:IPH:H5	2:D:11:LEU:CD2	0.47	2.39	9	1
2:L:3:ASN:O	2:L:7:CYS:HB3	0.47	2.10	20	4
2:D:13:GLU:O	2:D:17:LEU:HB2	0.47	2.09	20	2
2:D:12:VAL:HA	2:D:15:LEU:HB2	0.47	1.86	4	4
2:H:8:GLY:HA3	2:H:26:TYR:OH	0.47	2.09	1	1
1:C:5:GLN:HG2	1:C:11:CYS:SG	0.47	2.49	7	2
2:F:17:LEU:HA	2:H:5:HIS:CE1	0.47	2.44	18	2
1:A:10:ILE:CD1	2:F:2:VAL:HB	0.47	2.39	3	1
1:E:10:ILE:HG13	3:E:22:IPH:H6	0.47	1.85	13	1
1:G:3:VAL:O	1:G:7:CYS:HB3	0.47	2.08	17	1
2:B:8:GLY:HA3	2:B:26:TYR:OH	0.47	2.09	1	1
1:G:12:SER:HB3	1:G:15:GLN:HG3	0.47	1.86	1	2
1:C:6:CYS:HB3	3:C:22:IPH:H2	0.47	1.86	7	1
3:G:22:IPH:H5	2:H:11:LEU:CD2	0.47	2.39	9	1
2:F:13:GLU:O	2:F:17:LEU:HB2	0.47	2.10	20	2
2:L:13:GLU:O	2:L:17:LEU:HB2	0.47	2.09	20	3
2:B:9:SER:OG	2:D:13:GLU:HB3	0.47	2.09	7	1
3:A:22:IPH:H5	2:B:11:LEU:CD2	0.47	2.39	9	1
2:B:8:GLY:O	2:B:12:VAL:HG22	0.47	2.10	2	2
2:J:8:GLY:O	2:J:12:VAL:HG22	0.47	2.10	2	2
2:F:13:GLU:HB3	2:H:9:SER:OG	0.47	2.10	7	1
1:G:6:CYS:HB3	3:G:22:IPH:H2	0.47	1.87	7	1
1:I:6:CYS:HB3	3:I:22:IPH:H2	0.47	1.86	7	1
3:E:22:IPH:H5	2:F:11:LEU:CD2	0.47	2.40	9	1
2:B:9:SER:HB3	2:D:13:GLU:HG2	0.47	1.85	13	1
2:D:4:GLN:OE1	2:D:28:PRO:HA	0.47	2.10	14	1
1:I:3:VAL:HG11	2:J:4:GLN:CD	0.47	2.30	14	1
2:J:29:LYS:HD2	2:L:21:GLU:HB2	0.47	1.85	15	1
2:B:5:HIS:CE1	2:D:17:LEU:HA	0.47	2.44	18	2
1:A:3:VAL:HG22	2:B:26:TYR:CE1	0.47	2.45	3	1
1:I:16:LEU:HD11	3:I:22:IPH:C6	0.47	2.37	3	1
2:H:3:ASN:O	2:H:7:CYS:HB3	0.47	2.10	20	4
1:C:12:SER:HB3	1:C:15:GLN:HG3	0.47	1.87	1	1
3:C:22:IPH:H5	2:L:6:LEU:HD11	0.47	1.86	1	1
1:A:5:GLN:HG2	1:A:11:CYS:SG	0.47	2.50	7	2
2:J:9:SER:CB	2:L:13:GLU:HB3	0.47	2.40	7	1
1:K:6:CYS:HB3	3:K:22:IPH:H2	0.47	1.86	7	1
1:E:3:VAL:HG11	2:F:4:GLN:CD	0.47	2.31	14	1
2:J:4:GLN:OE1	2:J:28:PRO:HA	0.47	2.09	14	1
1:A:21:ASN:HB2	2:B:24:PHE:CA	0.47	2.39	17	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:E:21:ASN:HB2	2:F:24:PHE:CA	0.47	2.40	17	1
2:B:16:TYR:OH	2:D:9:SER:HB3	0.47	2.10	1	2
1:E:10:ILE:CD1	2:J:2:VAL:HB	0.47	2.39	3	1
2:B:9:SER:CB	2:D:13:GLU:HB3	0.47	2.40	7	1
2:F:21:GLU:HB2	2:H:29:LYS:HD2	0.47	1.86	15	1
2:H:13:GLU:O	2:H:17:LEU:HB2	0.47	2.10	20	2
2:B:13:GLU:O	2:B:17:LEU:HB2	0.46	2.10	20	3
1:E:6:CYS:HB3	3:E:22:IPH:H2	0.46	1.86	7	1
3:I:22:IPH:H5	2:J:11:LEU:CD2	0.46	2.40	9	1
2:J:16:TYR:OH	2:L:9:SER:HB3	0.46	2.11	1	2
2:D:8:GLY:O	2:D:12:VAL:HG22	0.46	2.10	2	1
1:C:3:VAL:HG22	2:D:26:TYR:CE1	0.46	2.45	3	1
2:F:13:GLU:HB3	2:H:9:SER:CB	0.46	2.40	7	1
1:C:21:ASN:HB2	2:D:24:PHE:CA	0.46	2.41	17	1
2:J:9:SER:HB3	2:L:16:TYR:OH	0.46	2.11	1	2
2:L:8:GLY:O	2:L:12:VAL:HG22	0.46	2.11	2	2
1:C:10:ILE:CD1	2:L:2:VAL:HB	0.46	2.39	3	1
2:J:3:ASN:O	2:J:7:CYS:HB3	0.46	2.11	20	4
1:K:10:ILE:HG13	3:K:22:IPH:H6	0.46	1.85	13	1
2:B:3:ASN:O	2:B:7:CYS:HB3	0.46	2.10	20	3
2:D:3:ASN:O	2:D:7:CYS:HB3	0.46	2.10	20	3
2:J:13:GLU:O	2:J:17:LEU:HB2	0.46	2.09	20	2
1:G:3:VAL:HG22	2:H:26:TYR:CE1	0.46	2.45	3	1
2:B:13:GLU:HB3	2:D:9:SER:OG	0.46	2.10	7	1
2:F:9:SER:HB3	2:H:13:GLU:HG2	0.46	1.85	13	1
2:F:9:SER:HB3	2:H:16:TYR:OH	0.46	2.11	1	2
2:B:4:GLN:OE1	2:B:28:PRO:HA	0.46	2.11	14	1
2:B:29:LYS:HD2	2:D:21:GLU:HB2	0.46	1.86	15	1
2:D:6:LEU:HD13	2:H:7:CYS:HB2	0.46	1.88	19	1
2:B:17:LEU:HA	2:D:5:HIS:CE1	0.46	2.45	18	2
2:F:5:HIS:CE1	2:H:17:LEU:HA	0.46	2.46	18	2
2:J:17:LEU:HA	2:L:5:HIS:CE1	0.46	2.46	16	2
2:B:13:GLU:HB3	2:D:9:SER:CB	0.46	2.40	7	1
2:F:9:SER:OG	2:H:13:GLU:HB3	0.46	2.11	7	1
2:F:9:SER:CB	2:H:13:GLU:HB3	0.46	2.40	7	1
2:F:13:GLU:HG2	2:H:9:SER:HB3	0.46	1.85	13	1
1:I:10:ILE:HG13	3:I:22:IPH:H6	0.46	1.85	13	1
2:F:8:GLY:O	2:F:12:VAL:HG22	0.46	2.10	2	1
1:E:5:GLN:HG2	1:E:11:CYS:SG	0.46	2.50	7	3
1:C:3:VAL:HG11	2:D:4:GLN:CD	0.46	2.31	14	1
1:G:3:VAL:HG11	2:H:4:GLN:CD	0.46	2.31	14	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:D:6:LEU:HD11	3:G:22:IPH:H5	0.46	1.86	1	1
1:E:12:SER:HB3	1:E:15:GLN:HG3	0.46	1.88	1	1
1:E:3:VAL:HG22	2:F:26:TYR:CE1	0.46	2.45	3	1
1:E:15:GLN:HA	1:E:18:ASN:ND2	0.46	2.26	11	1
1:G:3:VAL:HG22	2:H:30:THR:O	0.46	2.10	15	1
2:B:6:LEU:HD13	2:J:7:CYS:HB2	0.46	1.87	19	1
2:B:2:VAL:HB	1:I:10:ILE:CD1	0.46	2.41	3	1
1:K:3:VAL:HG22	2:L:26:TYR:CE1	0.46	2.46	3	1
1:I:12:SER:HB3	1:I:15:GLN:HG3	0.45	1.89	1	1
2:H:8:GLY:O	2:H:12:VAL:HG22	0.45	2.11	2	2
2:F:3:ASN:O	2:F:7:CYS:HB3	0.45	2.11	20	4
1:I:21:ASN:HB2	2:J:24:PHE:CA	0.45	2.41	17	1
2:F:7:CYS:HB2	2:J:6:LEU:HD13	0.45	1.88	19	1
2:B:9:SER:HB3	2:D:16:TYR:OH	0.45	2.11	1	2
1:I:3:VAL:HG22	2:J:30:THR:O	0.45	2.12	15	1
2:J:9:SER:OG	2:L:13:GLU:HB3	0.45	2.11	7	1
2:L:4:GLN:OE1	2:L:28:PRO:HA	0.45	2.12	14	1
2:F:28:PRO:HD3	2:H:23:GLY:HA2	0.45	1.87	15	1
2:J:23:GLY:HA2	2:L:28:PRO:HD3	0.45	1.88	15	1
2:B:7:CYS:HB2	2:F:6:LEU:HD13	0.45	1.89	19	1
2:F:4:GLN:OE1	2:F:28:PRO:HA	0.45	2.12	14	1
2:D:7:CYS:HB2	2:L:6:LEU:HD13	0.45	1.88	19	1
2:J:13:GLU:HB3	2:L:9:SER:CB	0.45	2.41	7	1
1:G:21:ASN:HB2	2:H:24:PHE:CA	0.45	2.41	17	1
2:H:6:LEU:HD13	2:L:7:CYS:HB2	0.45	1.88	19	1
1:A:3:VAL:HG11	2:B:4:GLN:CD	0.45	2.32	14	1
1:I:3:VAL:HG22	2:J:26:TYR:CE1	0.45	2.46	3	1
2:J:23:GLY:HA2	2:L:28:PRO:CD	0.44	2.43	4	1
1:E:6:CYS:O	1:E:10:ILE:HA	0.44	2.12	10	1
1:G:11:CYS:HB3	1:G:15:GLN:HG2	0.44	1.88	16	1
2:F:16:TYR:OH	2:H:9:SER:HB3	0.44	2.11	1	2
1:A:10:ILE:HG21	2:F:5:HIS:CD2	0.44	2.48	7	1
1:C:6:CYS:O	1:C:10:ILE:HA	0.44	2.11	10	1
2:F:9:SER:O	2:F:13:GLU:HG3	0.44	2.13	14	1
2:H:4:GLN:OE1	2:H:28:PRO:HA	0.44	2.12	14	1
1:A:5:GLN:NE2	1:A:15:GLN:HE21	0.44	2.11	7	1
1:K:21:ASN:HB2	2:L:24:PHE:CA	0.44	2.42	17	1
2:B:25:PHE:HA	2:D:25:PHE:HA	0.44	1.90	9	1
1:E:8:THR:HG23	1:E:9:SER:H	0.44	1.73	10	1
2:H:2:VAL:HB	2:H:6:LEU:HD11	0.44	1.90	15	1
2:B:28:PRO:CD	2:D:23:GLY:HA2	0.44	2.43	4	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:F:25:PHE:HA	2:H:25:PHE:HA	0.44	1.89	9	1
2:H:9:SER:O	2:H:13:GLU:HG3	0.44	2.13	14	1
2:H:2:VAL:HG13	2:L:7:CYS:SG	0.44	2.53	1	1
1:K:12:SER:HB3	1:K:15:GLN:HG3	0.43	1.90	1	1
2:H:7:CYS:SG	2:H:11:LEU:HD21	0.43	2.53	3	1
1:C:10:ILE:HD13	2:L:2:VAL:HA	0.43	1.90	12	1
2:J:9:SER:O	2:J:13:GLU:HG3	0.43	2.12	14	1
2:F:7:CYS:SG	2:F:11:LEU:HD21	0.43	2.54	3	2
2:F:28:PRO:CD	2:H:23:GLY:HA2	0.43	2.43	4	1
2:B:2:VAL:HA	1:I:10:ILE:HD13	0.43	1.90	12	1
2:D:9:SER:O	2:D:13:GLU:HG3	0.43	2.12	14	1
1:C:3:VAL:HG22	2:D:30:THR:O	0.43	2.13	15	1
2:J:28:PRO:HD3	2:L:23:GLY:HA2	0.43	1.89	15	1
1:I:6:CYS:O	1:I:10:ILE:HA	0.43	2.13	10	1
1:K:6:CYS:O	1:K:10:ILE:HA	0.43	2.12	10	1
1:A:20:CYS:HA	2:B:24:PHE:HB3	0.43	1.90	11	1
2:D:2:VAL:HA	1:G:10:ILE:HD13	0.43	1.90	12	1
2:B:28:PRO:HD3	2:D:23:GLY:HA2	0.43	1.89	15	1
2:D:7:CYS:SG	2:D:11:LEU:HD21	0.43	2.53	3	2
1:I:20:CYS:HA	2:J:24:PHE:HB3	0.43	1.90	11	1
2:B:2:VAL:HB	2:B:6:LEU:HD11	0.43	1.91	15	1
2:B:7:CYS:SG	2:B:11:LEU:HD21	0.43	2.53	3	1
2:J:25:PHE:HA	2:L:25:PHE:HA	0.43	1.90	9	1
2:B:7:CYS:SG	2:F:2:VAL:HG13	0.43	2.54	1	1
2:H:5:HIS:CD2	1:K:10:ILE:HG21	0.43	2.49	7	1
2:F:9:SER:O	2:F:12:VAL:HG22	0.43	2.14	9	1
2:L:2:VAL:HB	2:L:6:LEU:HD11	0.43	1.90	15	1
2:F:12:VAL:HB	2:F:24:PHE:HZ	0.43	1.74	16	1
2:D:5:HIS:CD2	1:G:10:ILE:HG21	0.43	2.48	7	1
1:G:4:GLU:CD	1:G:4:GLU:H	0.43	2.17	8	1
1:G:6:CYS:O	1:G:10:ILE:HA	0.43	2.14	10	1
2:B:9:SER:O	2:B:13:GLU:HG3	0.43	2.13	14	1
2:B:23:GLY:HA2	2:D:28:PRO:HD3	0.43	1.89	15	1
2:D:7:CYS:SG	2:L:2:VAL:HG13	0.43	2.54	1	1
2:L:7:CYS:SG	2:L:11:LEU:HD21	0.43	2.53	3	2
1:C:10:ILE:HG21	2:L:5:HIS:CD2	0.43	2.48	7	1
2:L:9:SER:O	2:L:12:VAL:HG22	0.43	2.14	9	1
1:I:15:GLN:HA	1:I:18:ASN:ND2	0.43	2.29	11	1
2:L:12:VAL:HB	2:L:24:PHE:HZ	0.43	1.74	16	1
1:A:15:GLN:O	1:A:18:ASN:HB3	0.43	2.14	19	1
2:D:2:VAL:HG13	2:H:7:CYS:SG	0.43	2.54	1	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
3:I:22:IPH:H2	2:J:11:LEU:HD22	0.43	1.91	3	1
1:E:10:ILE:HG21	2:J:5:HIS:CD2	0.43	2.49	7	1
1:A:10:ILE:HD13	2:F:2:VAL:HA	0.43	1.89	12	1
2:L:16:TYR:CD2	2:L:24:PHE:HE2	0.43	2.32	16	1
2:B:2:VAL:HG13	2:J:7:CYS:SG	0.42	2.54	1	1
2:J:7:CYS:SG	2:J:11:LEU:HD21	0.42	2.53	3	2
3:C:22:IPH:H5	2:D:14:ALA:HB2	0.42	1.91	5	1
1:C:15:GLN:HA	1:C:18:ASN:ND2	0.42	2.29	11	1
2:F:16:TYR:CD2	2:F:24:PHE:HE2	0.42	2.32	16	1
2:F:16:TYR:HE2	2:H:9:SER:CB	0.42	2.27	6	1
2:J:9:SER:O	2:J:12:VAL:HG22	0.42	2.14	9	1
1:E:8:THR:HG23	1:E:9:SER:N	0.42	2.29	10	1
2:H:2:VAL:HA	1:K:10:ILE:HD13	0.42	1.90	12	1
2:L:9:SER:O	2:L:13:GLU:HG3	0.42	2.13	14	1
1:A:6:CYS:O	1:A:10:ILE:HA	0.42	2.13	10	1
1:G:8:THR:HG23	1:G:9:SER:N	0.42	2.29	10	1
1:G:20:CYS:HA	2:H:24:PHE:HB3	0.42	1.90	11	1
2:B:12:VAL:HB	2:B:24:PHE:HZ	0.42	1.74	16	1
1:I:11:CYS:HB3	1:I:15:GLN:HG2	0.42	1.91	16	1
2:J:12:VAL:HB	2:J:24:PHE:HZ	0.42	1.74	16	1
1:K:2:ILE:HD13	2:L:26:TYR:CE1	0.42	2.49	16	1
2:F:7:CYS:SG	2:J:2:VAL:HG13	0.42	2.55	1	1
2:B:9:SER:O	2:B:12:VAL:HG22	0.42	2.14	9	1
2:D:2:VAL:HB	2:D:6:LEU:HD11	0.42	1.90	15	1
2:F:2:VAL:HB	2:F:6:LEU:HD11	0.42	1.91	15	1
2:B:16:TYR:HE2	2:D:9:SER:CB	0.42	2.27	6	1
2:B:12:VAL:HA	2:B:15:LEU:HD12	0.42	1.91	8	1
2:H:27:THR:HB	2:H:29:LYS:HG2	0.42	1.92	10	1
1:I:8:THR:HG23	1:I:9:SER:N	0.42	2.30	10	1
1:K:20:CYS:HA	2:L:24:PHE:HB3	0.42	1.91	11	1
1:A:10:ILE:CD1	2:F:3:ASN:H	0.42	2.28	14	1
2:D:12:VAL:HB	2:D:24:PHE:HZ	0.42	1.74	16	1
2:D:12:VAL:HA	2:D:15:LEU:HD12	0.42	1.91	8	1
1:G:8:THR:HG23	1:G:9:SER:H	0.42	1.74	10	2
1:C:11:CYS:HB3	1:C:15:GLN:HG2	0.42	1.92	16	1
2:J:16:TYR:CD2	2:J:24:PHE:HE2	0.42	2.33	16	1
2:F:23:GLY:HA2	2:H:28:PRO:CD	0.42	2.43	4	1
1:K:4:GLU:CD	1:K:4:GLU:H	0.42	2.17	8	1
1:C:8:THR:HG23	1:C:9:SER:N	0.42	2.29	10	1
1:K:15:GLN:HA	1:K:18:ASN:ND2	0.42	2.29	11	1
2:B:2:VAL:HG12	1:I:10:ILE:HD12	0.42	1.91	15	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:12:SER:HB3	1:A:15:GLN:HG3	0.42	1.91	1	1
3:G:22:IPH:H2	2:H:11:LEU:HD22	0.42	1.91	3	1
2:B:9:SER:CB	2:D:16:TYR:HE2	0.42	2.28	6	1
2:H:2:VAL:HG12	1:K:10:ILE:HD12	0.42	1.91	15	1
2:D:16:TYR:CD2	2:D:24:PHE:HE2	0.42	2.33	16	1
2:B:6:LEU:HD11	3:I:22:IPH:C5	0.42	2.45	1	1
2:H:12:VAL:HA	2:H:15:LEU:HD12	0.42	1.91	8	1
1:C:10:ILE:CD1	2:L:2:VAL:HA	0.42	2.45	12	1
1:E:3:VAL:HG22	2:F:30:THR:O	0.42	2.15	15	1
2:J:2:VAL:HB	2:J:6:LEU:HD11	0.42	1.91	15	1
2:H:16:TYR:CD2	2:H:24:PHE:HE2	0.42	2.33	16	1
1:I:15:GLN:O	1:I:18:ASN:HB3	0.42	2.15	19	1
2:F:9:SER:CB	2:H:16:TYR:HE2	0.42	2.27	6	1
1:E:20:CYS:HA	2:F:24:PHE:HB3	0.42	1.91	11	1
2:L:20:GLY:O	2:L:21:GLU:HB2	0.42	2.14	12	1
2:F:28:PRO:O	2:H:21:GLU:HA	0.42	2.14	14	1
2:B:16:TYR:CD2	2:B:24:PHE:HE2	0.42	2.33	16	1
3:E:22:IPH:H2	2:F:11:LEU:HD22	0.41	1.90	3	1
3:A:22:IPH:H5	2:B:14:ALA:HB2	0.41	1.90	5	1
1:I:5:GLN:NE2	1:I:15:GLN:HE21	0.41	2.13	7	1
1:K:5:GLN:NE2	1:K:15:GLN:HE21	0.41	2.13	7	1
1:K:8:THR:HG23	1:K:9:SER:N	0.41	2.30	10	1
2:L:27:THR:HB	2:L:29:LYS:HG2	0.41	1.91	10	1
1:G:15:GLN:HA	1:G:18:ASN:ND2	0.41	2.30	11	1
1:E:10:ILE:HD13	2:J:2:VAL:HA	0.41	1.91	12	1
1:C:10:ILE:HD12	2:L:2:VAL:HG12	0.41	1.91	15	1
1:E:5:GLN:NE2	1:E:15:GLN:HE21	0.41	2.13	7	1
2:F:12:VAL:HA	2:F:15:LEU:HD12	0.41	1.92	8	1
2:H:9:SER:O	2:H:12:VAL:HG22	0.41	2.14	9	1
2:B:27:THR:HB	2:B:29:LYS:HG2	0.41	1.91	10	1
1:C:15:GLN:O	1:C:18:ASN:HB2	0.41	2.15	15	1
2:F:23:GLY:HA2	2:H:28:PRO:HD3	0.41	1.90	15	1
1:K:11:CYS:HB3	1:K:15:GLN:HG2	0.41	1.90	16	1
3:C:22:IPH:H2	2:D:11:LEU:HD22	0.41	1.91	3	1
1:C:5:GLN:NE2	1:C:15:GLN:HE21	0.41	2.13	7	1
1:I:6:CYS:HB3	3:I:22:IPH:H6	0.41	1.92	9	1
1:E:15:GLN:O	1:E:18:ASN:HB3	0.41	2.15	19	1
2:F:29:LYS:HD2	2:H:21:GLU:O	0.41	2.16	2	1
1:I:4:GLU:CD	1:I:4:GLU:H	0.41	2.17	8	1
2:F:27:THR:HB	2:F:29:LYS:HG2	0.41	1.92	10	1
2:B:2:VAL:HG13	1:I:8:THR:C	0.41	2.35	15	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:E:10:ILE:HD12	2:J:2:VAL:HG12	0.41	1.90	15	1
2:H:12:VAL:HB	2:H:24:PHE:HZ	0.41	1.74	16	1
1:I:12:SER:HB2	1:I:15:GLN:HB2	0.41	1.93	17	1
2:D:6:LEU:HD13	2:H:7:CYS:SG	0.41	2.56	20	1
2:D:7:CYS:SG	2:L:6:LEU:HD13	0.41	2.55	20	1
1:A:10:ILE:HA	3:A:22:IPH:O1	0.41	2.15	5	1
1:A:6:CYS:HB3	3:A:22:IPH:H6	0.41	1.93	9	1
1:G:6:CYS:HB3	3:G:22:IPH:H6	0.41	1.93	9	1
2:B:21:GLU:OE2	2:D:5:HIS:HB2	0.41	2.16	17	1
3:A:22:IPH:C5	2:F:6:LEU:HD11	0.41	2.46	1	1
2:B:23:GLY:HA2	2:D:28:PRO:CD	0.41	2.43	4	1
1:I:10:ILE:HA	3:I:22:IPH:O1	0.41	2.16	5	1
2:J:9:SER:CB	2:L:16:TYR:HE2	0.41	2.27	6	1
1:K:6:CYS:HB3	3:K:22:IPH:H6	0.41	1.93	9	1
1:K:8:THR:HG23	1:K:9:SER:H	0.41	1.74	10	1
1:E:2:ILE:HD13	2:F:26:TYR:CE1	0.41	2.49	16	1
1:E:11:CYS:HB3	1:E:15:GLN:HG2	0.41	1.91	16	1
3:E:22:IPH:H5	2:F:14:ALA:HB2	0.41	1.93	5	1
1:K:10:ILE:HA	3:K:22:IPH:O1	0.41	2.16	5	1
2:J:16:TYR:HE2	2:L:9:SER:CB	0.41	2.28	6	1
2:J:12:VAL:HA	2:J:15:LEU:HD12	0.41	1.91	8	1
1:A:8:THR:HG23	1:A:9:SER:N	0.41	2.30	10	1
3:I:22:IPH:H3	2:J:11:LEU:CD2	0.41	2.46	6	1
2:D:9:SER:O	2:D:12:VAL:HG22	0.41	2.14	9	1
1:C:20:CYS:HA	2:D:24:PHE:HB3	0.41	1.91	11	1
2:B:7:CYS:SG	2:F:6:LEU:HD13	0.41	2.56	20	1
3:E:22:IPH:C5	2:J:6:LEU:HD11	0.41	2.45	1	1
3:K:22:IPH:H2	2:L:11:LEU:HD22	0.41	1.92	3	1
2:J:28:PRO:CD	2:L:23:GLY:HA2	0.41	2.43	4	1
1:A:10:ILE:CD1	2:F:2:VAL:HA	0.41	2.46	12	1
2:F:20:GLY:O	2:F:21:GLU:HB2	0.41	2.15	12	1
2:H:2:VAL:HA	1:K:10:ILE:CD1	0.41	2.46	12	1
2:B:3:ASN:H	1:I:10:ILE:CD1	0.41	2.29	14	1
2:B:28:PRO:O	2:D:21:GLU:HA	0.41	2.15	14	1
1:C:10:ILE:CD1	2:L:3:ASN:H	0.41	2.29	14	1
1:A:8:THR:C	2:F:2:VAL:HG13	0.41	2.36	15	1
2:D:2:VAL:HG12	1:G:10:ILE:HD12	0.41	1.93	15	1
1:I:2:ILE:HD13	2:J:26:TYR:CE1	0.41	2.49	16	1
1:G:15:GLN:O	1:G:18:ASN:HB3	0.41	2.16	19	1
2:D:6:LEU:HD11	3:G:22:IPH:C5	0.41	2.46	1	1
3:G:22:IPH:H3	2:H:11:LEU:CD2	0.41	2.46	6	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:C:4:GLU:CD	1:C:4:GLU:H	0.41	2.19	8	1
2:J:27:THR:HB	2:J:29:LYS:HG2	0.41	1.92	10	1
2:J:9:SER:O	2:L:13:GLU:HG2	0.41	2.16	11	1
2:D:2:VAL:HA	1:G:10:ILE:CD1	0.41	2.46	12	1
2:B:21:GLU:O	2:D:29:LYS:HD2	0.40	2.17	2	1
2:D:27:THR:HB	2:D:29:LYS:HG2	0.40	1.92	10	1
1:E:4:GLU:O	1:E:8:THR:HG22	0.40	2.16	10	1
1:E:8:THR:C	2:J:2:VAL:HG13	0.40	2.36	15	1
1:I:8:THR:HG23	1:I:9:SER:H	0.40	1.75	10	1
2:J:21:GLU:HA	2:L:28:PRO:O	0.40	2.15	14	1
1:E:10:ILE:HA	3:E:22:IPH:O1	0.40	2.15	5	1
1:C:8:THR:HG23	1:C:9:SER:H	0.40	1.75	10	1
2:B:2:VAL:HA	1:I:10:ILE:CD1	0.40	2.47	12	1
1:K:6:CYS:HA	1:K:9:SER:O	0.40	2.17	12	1
2:J:28:PRO:O	2:L:21:GLU:HA	0.40	2.16	14	1
2:H:6:LEU:HD13	2:L:7:CYS:SG	0.40	2.56	20	1
2:H:6:LEU:HD11	3:K:22:IPH:C5	0.40	2.46	1	1
2:B:9:SER:O	2:D:13:GLU:HG2	0.40	2.17	11	1
2:D:20:GLY:O	2:D:21:GLU:HB2	0.40	2.16	12	1
2:D:3:ASN:H	1:G:10:ILE:CD1	0.40	2.29	14	1
2:D:2:VAL:HG13	1:G:8:THR:C	0.40	2.37	15	1
3:A:22:IPH:H2	2:B:11:LEU:HD22	0.40	1.92	3	1
2:B:5:HIS:CD2	1:I:10:ILE:HG21	0.40	2.50	7	1
1:A:4:GLU:CD	1:A:4:GLU:H	0.40	2.20	8	1
1:C:6:CYS:HB3	3:C:22:IPH:H6	0.40	1.93	9	1
2:B:13:GLU:HG2	2:D:9:SER:O	0.40	2.17	11	1
1:I:15:GLN:O	1:I:18:ASN:HB2	0.40	2.16	15	1
1:G:6:CYS:HB3	1:G:11:CYS:HB2	0.40	1.69	17	1
2:B:6:LEU:HD13	2:J:7:CYS:SG	0.40	2.57	20	1

6.3 Torsion angles (i)

6.3.1 Protein backbone (i)

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	19/21 (90%)	15±1 (81±6%)	2±1 (11±5%)	2±1 (8±4%)	2 13

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	C	19/21 (90%)	15±1 (81±6%)	2±1 (11±5%)	2±1 (8±4%)	2	13
1	E	19/21 (90%)	16±1 (82±6%)	2±1 (10±5%)	2±1 (8±4%)	2	13
1	G	19/21 (90%)	15±1 (81±7%)	2±1 (11±6%)	2±1 (8±4%)	2	14
1	I	19/21 (90%)	15±1 (81±6%)	2±1 (11±5%)	2±1 (8±4%)	2	13
1	K	19/21 (90%)	15±1 (81±6%)	2±1 (11±6%)	2±1 (8±4%)	2	14
2	B	28/30 (93%)	25±1 (90±4%)	2±1 (8±4%)	1±1 (2±2%)	10	50
2	D	28/30 (93%)	25±1 (90±4%)	2±1 (8±4%)	1±1 (2±2%)	10	50
2	F	28/30 (93%)	25±1 (91±4%)	2±1 (8±4%)	1±1 (2±2%)	11	52
2	H	28/30 (93%)	25±1 (91±4%)	2±1 (7±4%)	1±1 (2±2%)	10	50
2	J	28/30 (93%)	25±1 (90±4%)	2±1 (8±4%)	1±1 (2±2%)	10	50
2	L	28/30 (93%)	25±1 (90±4%)	2±1 (8±4%)	1±1 (2±2%)	11	52
All	All	5640/6120 (92%)	4884 (87%)	500 (9%)	256 (5%)	4	28

All 46 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	10	ILE	18
1	C	10	ILE	18
1	E	10	ILE	18
1	G	10	ILE	18
1	I	10	ILE	18
1	K	10	ILE	18
1	A	2	ILE	9
1	C	2	ILE	9
1	E	2	ILE	9
1	G	2	ILE	9
1	I	2	ILE	9
1	K	2	ILE	9
2	B	2	VAL	7
2	D	2	VAL	7
2	F	2	VAL	7
2	H	2	VAL	7
2	J	2	VAL	7
2	L	2	VAL	7
1	A	3	VAL	4
1	C	3	VAL	4
2	B	3	ASN	3

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Mol	Chain	Res	Type	Models (Total)
2	D	3	ASN	3
2	F	3	ASN	3
2	H	3	ASN	3
2	J	3	ASN	3
2	L	3	ASN	3
1	E	3	VAL	3
1	I	3	VAL	3
1	G	3	VAL	2
1	K	3	VAL	2
2	B	20	GLY	1
2	D	20	GLY	1
2	H	20	GLY	1
2	J	20	GLY	1
1	A	5	GLN	1
1	C	5	GLN	1
1	E	5	GLN	1
1	G	5	GLN	1
1	I	5	GLN	1
1	K	5	GLN	1
2	B	28	PRO	1
2	D	28	PRO	1
2	F	28	PRO	1
2	H	28	PRO	1
2	J	28	PRO	1
2	L	28	PRO	1

6.3.2 Protein sidechains (i)

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	20/20 (100%)	19±1 (96±3%)	1±1 (4±3%)	35	83
1	C	20/20 (100%)	19±1 (96±3%)	1±1 (4±3%)	35	83
1	E	20/20 (100%)	19±1 (96±3%)	1±1 (4±3%)	35	83
1	G	20/20 (100%)	19±1 (96±3%)	1±1 (4±3%)	35	83
1	I	20/20 (100%)	19±1 (96±3%)	1±1 (4±3%)	33	81
1	K	20/20 (100%)	19±1 (96±3%)	1±1 (4±3%)	36	84

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	B	26/26 (100%)	24±1 (94±4%)	2±1 (6±4%)	22	71
2	D	26/26 (100%)	24±1 (94±4%)	2±1 (6±4%)	22	71
2	F	26/26 (100%)	24±1 (94±4%)	2±1 (6±4%)	22	71
2	H	26/26 (100%)	24±1 (94±4%)	2±1 (6±4%)	22	71
2	J	26/26 (100%)	24±1 (94±4%)	2±1 (6±4%)	23	72
2	L	25/26 (96%)	23±1 (94±4%)	2±1 (6±4%)	21	70
All	All	5500/5520 (100%)	5213 (95%)	287 (5%)	27	76

All 102 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)
2	B	16	TYR	7
2	D	16	TYR	7
2	F	16	TYR	7
2	H	16	TYR	7
2	L	16	TYR	7
1	A	21	ASN	7
1	C	21	ASN	7
1	E	21	ASN	7
1	I	21	ASN	7
2	B	7	CYS	6
2	D	7	CYS	6
2	F	7	CYS	6
2	H	7	CYS	6
2	J	7	CYS	6
2	L	7	CYS	6
1	G	8	THR	6
1	I	8	THR	6
2	J	16	TYR	6
1	G	21	ASN	6
1	K	21	ASN	6
1	A	8	THR	5
1	C	8	THR	5
1	E	8	THR	5
1	K	8	THR	5
2	B	9	SER	4
2	D	9	SER	4
2	F	9	SER	4
2	H	9	SER	4

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Mol	Chain	Res	Type	Models (Total)
2	J	9	SER	4
2	L	9	SER	4
2	B	4	GLN	3
2	D	4	GLN	3
2	F	4	GLN	3
2	H	4	GLN	3
2	J	4	GLN	3
2	L	4	GLN	3
2	B	19	CYS	3
2	D	19	CYS	3
2	F	19	CYS	3
2	H	19	CYS	3
2	J	19	CYS	3
2	L	19	CYS	3
2	B	11	LEU	2
2	B	29	LYS	2
2	D	11	LEU	2
2	D	29	LYS	2
2	F	11	LEU	2
2	F	29	LYS	2
2	H	11	LEU	2
2	H	29	LYS	2
2	J	11	LEU	2
2	J	29	LYS	2
2	L	11	LEU	2
2	L	29	LYS	2
1	A	17	GLU	2
1	C	17	GLU	2
1	E	17	GLU	2
1	G	17	GLU	2
1	I	17	GLU	2
1	K	17	GLU	2
2	B	12	VAL	1
2	D	12	VAL	1
2	F	12	VAL	1
2	H	12	VAL	1
2	J	12	VAL	1
2	L	12	VAL	1
2	B	1	PHE	1
2	D	1	PHE	1
2	F	1	PHE	1
2	H	1	PHE	1

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Mol	Chain	Res	Type	Models (Total)
2	J	1	PHE	1
2	L	1	PHE	1
2	B	17	LEU	1
2	D	17	LEU	1
2	F	17	LEU	1
2	H	17	LEU	1
2	J	17	LEU	1
2	L	17	LEU	1
2	B	15	LEU	1
2	D	15	LEU	1
2	F	15	LEU	1
2	H	15	LEU	1
2	J	15	LEU	1
2	L	15	LEU	1
1	A	4	GLU	1
1	C	4	GLU	1
1	E	4	GLU	1
1	G	4	GLU	1
1	I	4	GLU	1
1	K	4	GLU	1
1	A	13	LEU	1
1	C	13	LEU	1
1	E	13	LEU	1
1	G	13	LEU	1
1	I	13	LEU	1
1	K	13	LEU	1
2	B	27	THR	1
2	D	27	THR	1
2	F	27	THR	1
2	H	27	THR	1
2	J	27	THR	1
2	L	27	THR	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 monosaccharides in this entry.

6.6 Ligand geometry (i)

6 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds for which Mogul statistics could be retrieved, the number of bonds that are observed in the model and the number of bonds that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length is the number of standard deviations the observed value is removed from the expected value. A bond length with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond lengths.

Mol	Type	Chain	Res	Link	Bond lengths		
					Counts	RMSZ	#Z>2
3	IPH	K	22	-	7,7,7	0.31±0.03	0±0 (0±0%)
3	IPH	I	22	-	7,7,7	0.31±0.03	0±0 (0±0%)
3	IPH	G	22	-	7,7,7	0.31±0.03	0±0 (0±0%)
3	IPH	C	22	-	7,7,7	0.31±0.03	0±0 (0±0%)
3	IPH	A	22	-	7,7,7	0.31±0.03	0±0 (0±0%)
3	IPH	E	22	-	7,7,7	0.31±0.03	0±0 (0±0%)

In the following table, the Counts columns list the number of angles for which Mogul statistics could be retrieved, the number of angles that are observed in the model and the number of angles that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond angle is the number of standard deviations the observed value is removed from the expected value. A bond angle with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the average root-mean-square of all Z scores of the bond angles.

Mol	Type	Chain	Res	Link	Bond angles		
					Counts	RMSZ	#Z>2
3	IPH	K	22	-	8,8,8	0.24±0.02	0±0 (0±0%)
3	IPH	I	22	-	8,8,8	0.25±0.02	0±0 (0±0%)
3	IPH	G	22	-	8,8,8	0.24±0.02	0±0 (0±0%)
3	IPH	C	22	-	8,8,8	0.24±0.02	0±0 (0±0%)
3	IPH	A	22	-	8,8,8	0.25±0.01	0±0 (0±0%)
3	IPH	E	22	-	8,8,8	0.25±0.02	0±0 (0±0%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means

no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	IPH	G	22	-	-	-	0±0,1,1,1
3	IPH	A	22	-	-	-	0±0,1,1,1
3	IPH	I	22	-	-	-	0±0,1,1,1
3	IPH	C	22	-	-	-	0±0,1,1,1
3	IPH	E	22	-	-	-	0±0,1,1,1
3	IPH	K	22	-	-	-	0±0,1,1,1

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

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 (i)

No chemical shift data were provided