



Full wwPDB NMR Structure Validation Report ⓘ

Apr 21, 2024 – 05:07 PM EDT

PDB ID : 2L3T
Title : Solution structure of tandem SH2 domain from Spt6
Authors : Liu, J.; Zhang, J.; Wu, J.; Shi, Y.
Deposited on : 2010-09-22

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/NMRValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI : v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV : Wang et al. (2010)
wwPDB-ShiftChecker : v1.2
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

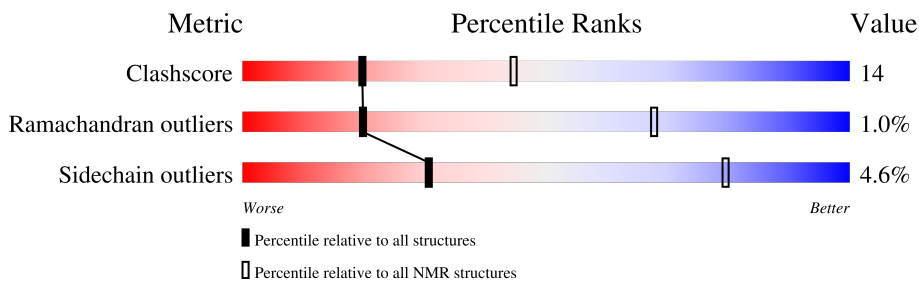
1 Overall quality at a glance i

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 $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	A	199	76% 20% ..

2 Ensemble composition and analysis

This entry contains 20 models. Model 1 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:3-A:194 (192)	0.94	1

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 2 clusters and 3 single-model clusters were found.

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

3 Entry composition

There is only 1 type of molecule in this entry. The entry contains 3331 atoms, of which 1647 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Transcription elongation factor SPT6.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	199	3331	1084	1647	292	305	3	0

There are 8 discrepancies between the modelled and reference sequences:

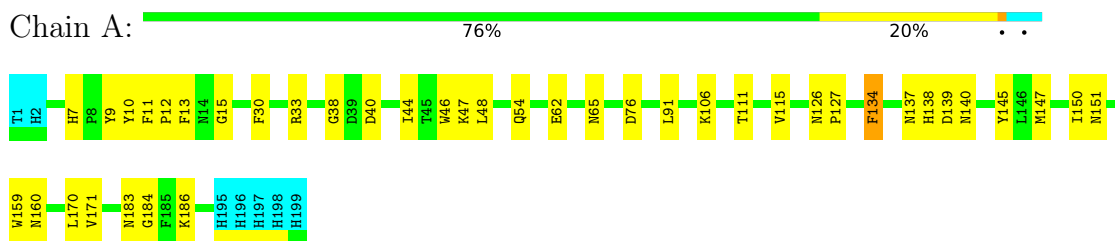
Chain	Residue	Modelled	Actual	Comment	Reference
A	192	LEU	-	expression tag	UNP P23615
A	193	GLU	-	expression tag	UNP P23615
A	194	HIS	-	expression tag	UNP P23615
A	195	HIS	-	expression tag	UNP P23615
A	196	HIS	-	expression tag	UNP P23615
A	197	HIS	-	expression tag	UNP P23615
A	198	HIS	-	expression tag	UNP P23615
A	199	HIS	-	expression tag	UNP P23615

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: Transcription elongation factor SPT6

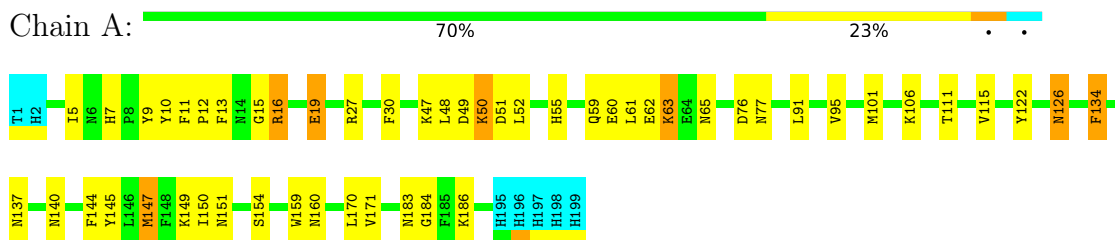


4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1 (medoid)

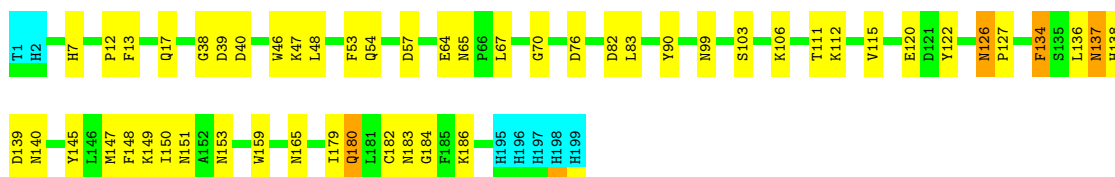
- Molecule 1: Transcription elongation factor SPT6



4.2.2 Score per residue for model 2

- Molecule 1: Transcription elongation factor SPT6

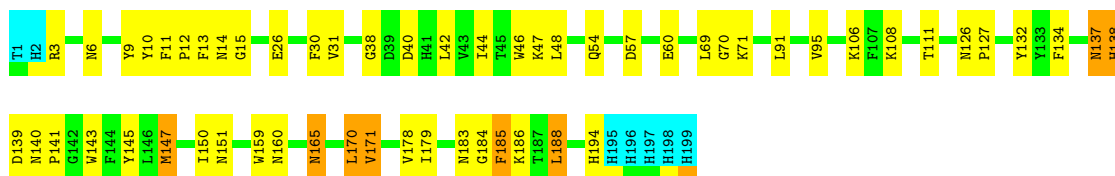




4.2.3 Score per residue for model 3

- Molecule 1: Transcription elongation factor SPT6

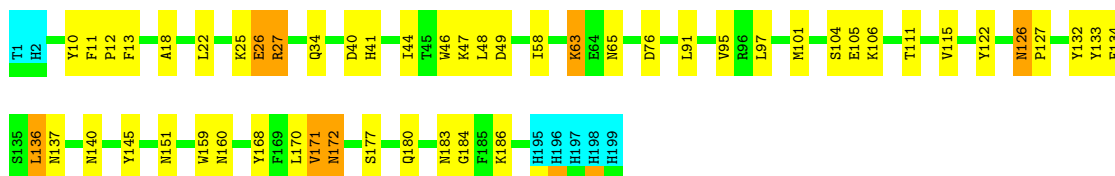
Chain A: 68% 25%



4.2.4 Score per residue for model 4

- Molecule 1: Transcription elongation factor SPT6

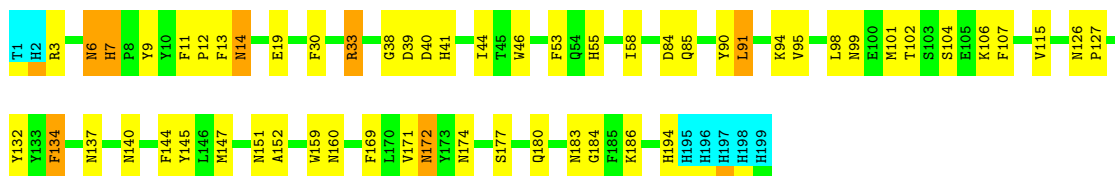
Chain A: 70% 23%



4.2.5 Score per residue for model 5

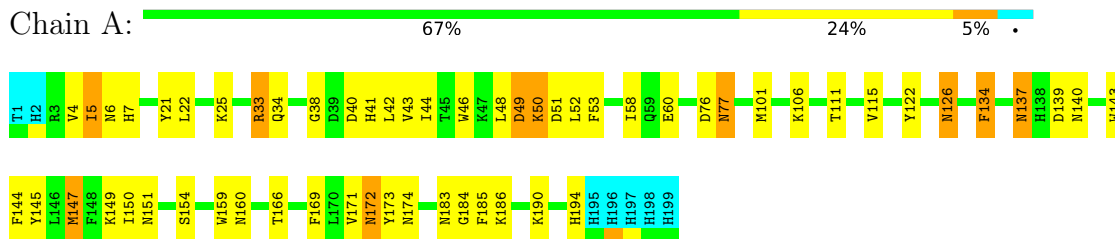
- Molecule 1: Transcription elongation factor SPT6

Chain A: 68% 25%



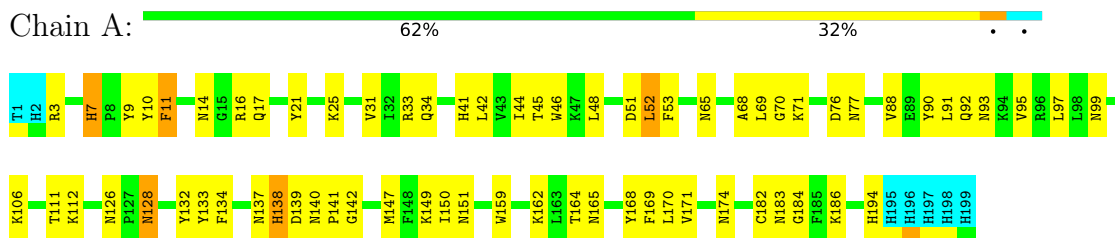
4.2.6 Score per residue for model 6

- Molecule 1: Transcription elongation factor SPT6



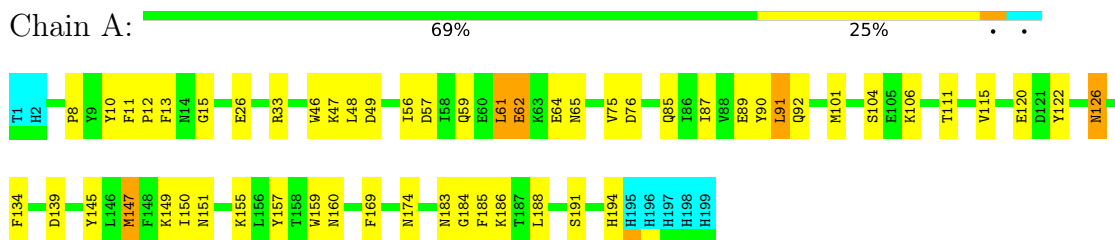
4.2.7 Score per residue for model 7

- Molecule 1: Transcription elongation factor SPT6



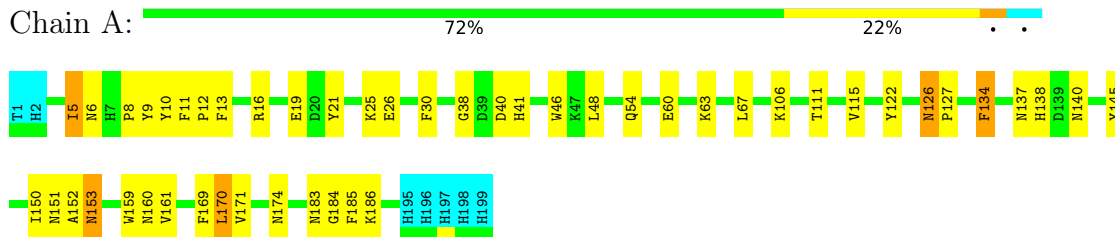
4.2.8 Score per residue for model 8

- Molecule 1: Transcription elongation factor SPT6



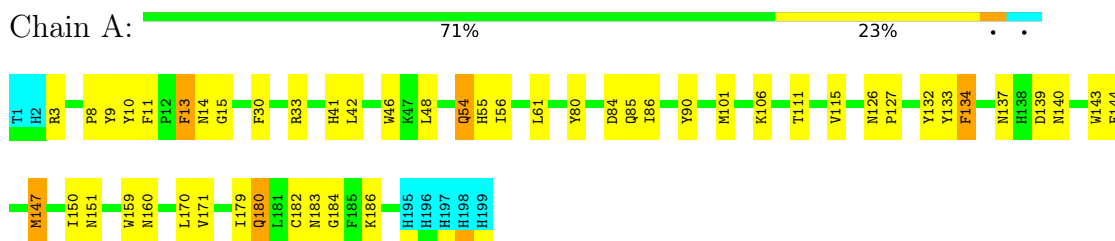
4.2.9 Score per residue for model 9

- Molecule 1: Transcription elongation factor SPT6



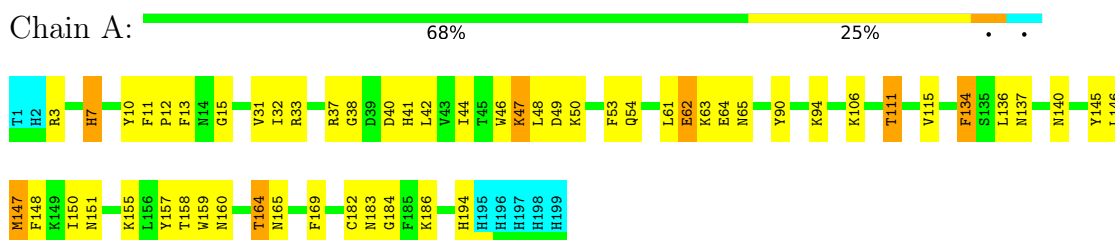
4.2.10 Score per residue for model 10

- Molecule 1: Transcription elongation factor SPT6



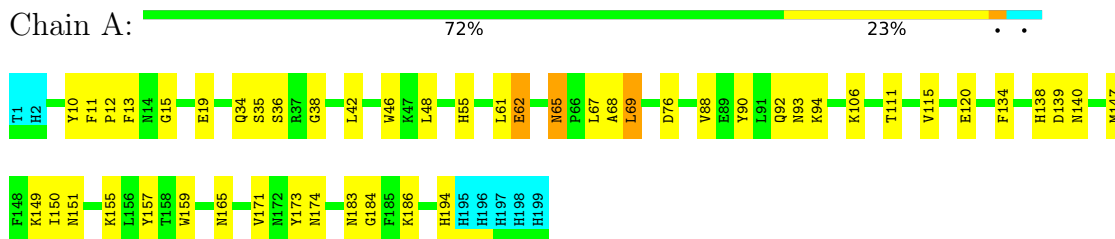
4.2.11 Score per residue for model 11

- Molecule 1: Transcription elongation factor SPT6



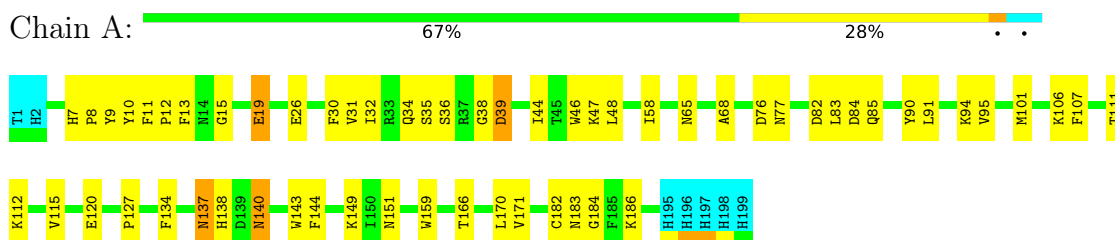
4.2.12 Score per residue for model 12

- Molecule 1: Transcription elongation factor SPT6



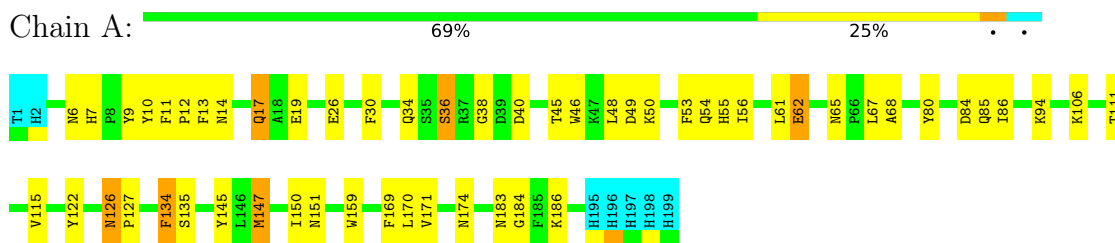
4.2.13 Score per residue for model 13

- Molecule 1: Transcription elongation factor SPT6



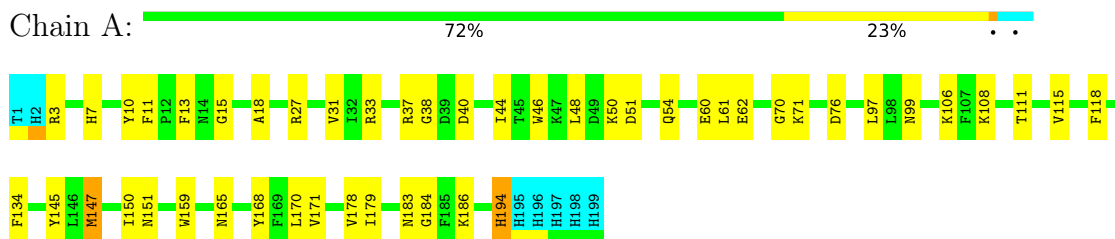
4.2.14 Score per residue for model 14

- Molecule 1: Transcription elongation factor SPT6



4.2.15 Score per residue for model 15

- Molecule 1: Transcription elongation factor SPT6



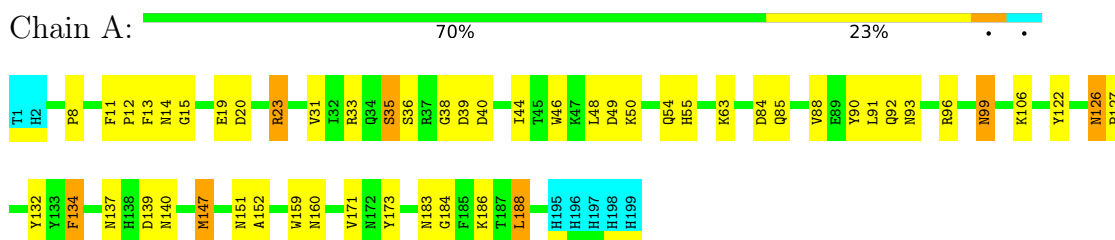
4.2.16 Score per residue for model 16

- Molecule 1: Transcription elongation factor SPT6



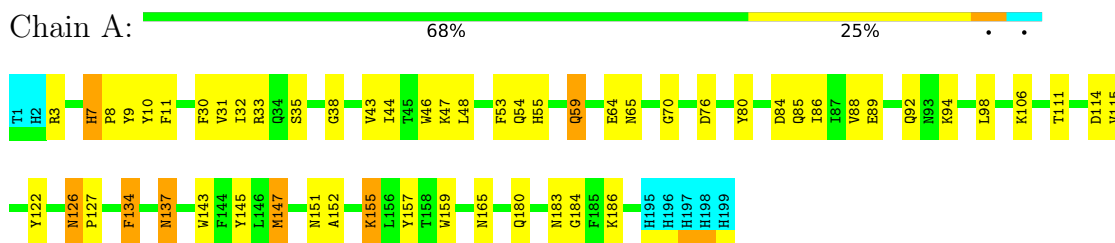
4.2.17 Score per residue for model 17

- Molecule 1: Transcription elongation factor SPT6



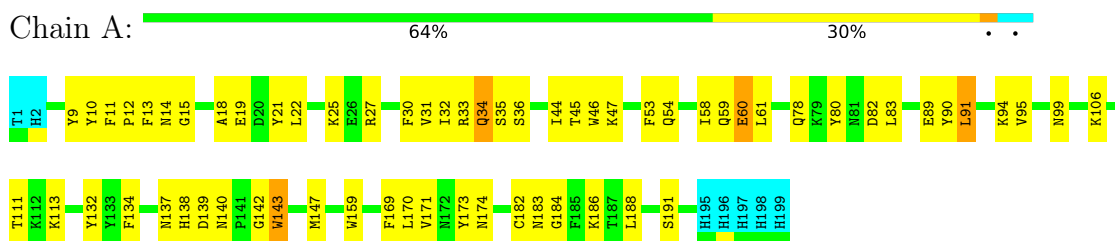
4.2.18 Score per residue for model 18

- Molecule 1: Transcription elongation factor SPT6



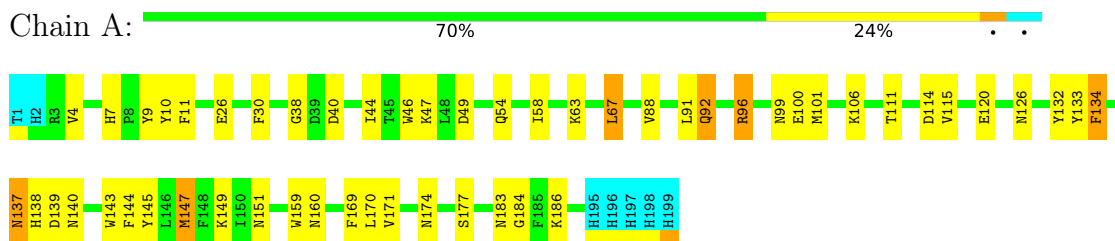
4.2.19 Score per residue for model 19

- Molecule 1: Transcription elongation factor SPT6



4.2.20 Score per residue for model 20

- Molecule 1: Transcription elongation factor SPT6



5 Refinement protocol and experimental data overview

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

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

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

Software name	Classification	Version
X-PLOR NIH	structure solution	2.24
X-PLOR NIH	refinement	2.24

No chemical shift data was provided.

6 Model quality i

6.1 Standard geometry i

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	1616	1596	1596	44±6
All	All	32320	31920	31920	890

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 14.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:4:VAL:O	1:A:7:HIS:ND1	0.81	2.14	6	1
1:A:48:LEU:HD12	1:A:48:LEU:N	0.79	1.93	1	14
1:A:91:LEU:HD13	1:A:92:GLN:H	0.76	1.40	8	1
1:A:91:LEU:HD13	1:A:92:GLN:N	0.76	1.97	8	1
1:A:87:ILE:O	1:A:91:LEU:HD12	0.73	1.83	8	1
1:A:52:LEU:N	1:A:52:LEU:HD22	0.67	2.04	6	1
1:A:46:TRP:HE1	1:A:54:GLN:NE2	0.67	1.88	20	3
1:A:31:VAL:O	1:A:44:ILE:HG23	0.67	1.90	17	6
1:A:38:GLY:O	1:A:40:ASP:N	0.66	2.28	2	7
1:A:90:TYR:CZ	1:A:94:LYS:NZ	0.65	2.64	13	2
1:A:80:TYR:CD1	1:A:86:ILE:HD11	0.64	2.27	10	1
1:A:183:ASN:O	1:A:186:LYS:N	0.64	2.31	3	20
1:A:180:GLN:N	1:A:180:GLN:NE2	0.64	2.46	2	2
1:A:172:ASN:HD22	1:A:172:ASN:N	0.64	1.91	4	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:15:GLY:N	1:A:33:ARG:NH1	0.63	2.46	8	2
1:A:182:CYS:SG	1:A:183:ASN:N	0.63	2.72	2	6
1:A:169:PHE:CE1	1:A:174:ASN:ND2	0.63	2.67	20	7
1:A:11:PHE:CD1	1:A:11:PHE:N	0.63	2.66	7	1
1:A:137:ASN:HD22	1:A:137:ASN:H	0.62	1.36	6	2
1:A:145:TYR:CE2	1:A:160:ASN:ND2	0.62	2.67	8	1
1:A:111:THR:O	1:A:115:VAL:HG23	0.62	1.93	9	15
1:A:37:ARG:O	1:A:39:ASP:N	0.62	2.27	16	1
1:A:9:TYR:CE2	1:A:30:PHE:CZ	0.62	2.88	10	2
1:A:59:GLN:HE21	1:A:59:GLN:H	0.62	1.36	18	1
1:A:63:LYS:H	1:A:63:LYS:CD	0.61	2.08	1	2
1:A:9:TYR:CD2	1:A:30:PHE:CZ	0.61	2.88	1	3
1:A:21:TYR:CE2	1:A:25:LYS:NZ	0.61	2.66	19	2
1:A:91:LEU:HD22	1:A:91:LEU:C	0.60	2.16	8	1
1:A:101:MET:SD	1:A:144:PHE:CZ	0.60	2.94	16	7
1:A:150:ILE:HD12	1:A:150:ILE:N	0.60	2.12	10	3
1:A:26:GLU:N	1:A:26:GLU:OE1	0.60	2.35	20	4
1:A:147:MET:N	1:A:147:MET:SD	0.60	2.75	10	9
1:A:46:TRP:CH2	1:A:48:LEU:HD21	0.60	2.32	4	1
1:A:9:TYR:CD1	1:A:30:PHE:CZ	0.60	2.90	18	4
1:A:48:LEU:N	1:A:48:LEU:CD1	0.60	2.64	1	14
1:A:145:TYR:CD2	1:A:160:ASN:ND2	0.59	2.70	8	1
1:A:106:LYS:O	1:A:134:PHE:CE2	0.59	2.55	12	20
1:A:140:ASN:O	1:A:142:GLY:N	0.59	2.35	7	1
1:A:90:TYR:CE1	1:A:94:LYS:NZ	0.59	2.71	19	2
1:A:18:ALA:CB	1:A:33:ARG:NH1	0.58	2.66	16	1
1:A:33:ARG:NH1	1:A:45:THR:OG1	0.58	2.36	16	1
1:A:59:GLN:HE21	1:A:59:GLN:N	0.58	1.96	18	1
1:A:136:LEU:HD23	1:A:137:ASN:N	0.58	2.13	16	1
1:A:52:LEU:N	1:A:52:LEU:CD2	0.58	2.66	6	1
1:A:47:LYS:NZ	1:A:50:LYS:O	0.58	2.36	1	1
1:A:13:PHE:N	1:A:13:PHE:CD1	0.58	2.70	10	1
1:A:65:ASN:ND2	1:A:68:ALA:N	0.58	2.50	12	1
1:A:171:VAL:HG12	1:A:171:VAL:O	0.58	1.99	4	1
1:A:30:PHE:CD1	1:A:91:LEU:HD21	0.58	2.34	20	1
1:A:94:LYS:NZ	1:A:165:ASN:ND2	0.58	2.51	12	1
1:A:151:ASN:OD1	1:A:152:ALA:N	0.58	2.37	9	4
1:A:38:GLY:C	1:A:40:ASP:H	0.57	2.02	17	7
1:A:15:GLY:N	1:A:33:ARG:HH12	0.57	1.97	15	1
1:A:11:PHE:O	1:A:33:ARG:NH1	0.57	2.37	5	1
1:A:34:GLN:C	1:A:36:SER:H	0.57	2.03	13	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:127:PRO:O	1:A:151:ASN:ND2	0.57	2.37	9	9
1:A:4:VAL:C	1:A:6:ASN:H	0.56	2.03	6	1
1:A:145:TYR:CZ	1:A:160:ASN:ND2	0.56	2.73	11	1
1:A:122:TYR:CE2	1:A:126:ASN:OD1	0.56	2.58	17	3
1:A:46:TRP:CE2	1:A:90:TYR:OH	0.56	2.58	8	1
1:A:84:ASP:OD1	1:A:85:GLN:N	0.56	2.39	17	5
1:A:148:PHE:CE1	1:A:159:TRP:CZ3	0.56	2.93	11	1
1:A:46:TRP:NE1	1:A:54:GLN:CG	0.56	2.69	9	3
1:A:46:TRP:CZ2	1:A:48:LEU:HD21	0.56	2.36	4	1
1:A:46:TRP:NE1	1:A:54:GLN:NE2	0.56	2.54	20	1
1:A:150:ILE:HD12	1:A:150:ILE:H	0.56	1.61	1	3
1:A:46:TRP:CE2	1:A:48:LEU:HD11	0.56	2.35	3	8
1:A:46:TRP:CZ3	1:A:48:LEU:CD2	0.56	2.89	12	1
1:A:149:LYS:NZ	1:A:151:ASN:O	0.55	2.39	7	1
1:A:106:LYS:NZ	1:A:182:CYS:SG	0.55	2.78	11	1
1:A:53:PHE:O	1:A:54:GLN:NE2	0.55	2.39	18	3
1:A:122:TYR:CD2	1:A:126:ASN:OD1	0.55	2.59	9	3
1:A:120:GLU:OE2	1:A:149:LYS:NZ	0.55	2.39	12	6
1:A:19:GLU:OE2	1:A:55:HIS:NE2	0.55	2.39	12	1
1:A:16:ARG:HE	1:A:16:ARG:N	0.55	1.98	1	1
1:A:13:PHE:O	1:A:33:ARG:NE	0.55	2.39	5	2
1:A:46:TRP:CZ2	1:A:94:LYS:NZ	0.55	2.75	14	2
1:A:90:TYR:CE1	1:A:165:ASN:ND2	0.55	2.75	2	1
1:A:122:TYR:CD1	1:A:126:ASN:OD1	0.55	2.60	14	5
1:A:172:ASN:N	1:A:172:ASN:ND2	0.55	2.54	4	3
1:A:12:PRO:O	1:A:13:PHE:CD2	0.55	2.60	12	9
1:A:166:THR:HG22	1:A:166:THR:O	0.55	2.02	6	1
1:A:137:ASN:ND2	1:A:140:ASN:O	0.55	2.40	10	5
1:A:16:ARG:N	1:A:16:ARG:NE	0.55	2.55	1	1
1:A:10:TYR:O	1:A:11:PHE:CD1	0.55	2.60	9	14
1:A:19:GLU:N	1:A:19:GLU:OE1	0.54	2.40	1	3
1:A:150:ILE:O	1:A:151:ASN:ND2	0.54	2.41	12	7
1:A:165:ASN:H	1:A:165:ASN:HD22	0.54	1.45	3	1
1:A:49:ASP:OD1	1:A:50:LYS:N	0.54	2.40	14	3
1:A:137:ASN:OD1	1:A:140:ASN:N	0.54	2.41	11	6
1:A:145:TYR:CE2	1:A:160:ASN:OD1	0.54	2.60	4	8
1:A:77:ASN:O	1:A:77:ASN:ND2	0.54	2.41	6	1
1:A:137:ASN:ND2	1:A:140:ASN:OD1	0.54	2.41	16	1
1:A:33:ARG:NH1	1:A:35:SER:OG	0.54	2.40	17	1
1:A:48:LEU:HD21	1:A:54:GLN:OE1	0.54	2.02	9	3
1:A:180:GLN:NE2	1:A:180:GLN:H	0.54	1.99	2	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:14:ASN:OD1	1:A:15:GLY:N	0.54	2.40	3	3
1:A:27:ARG:NH2	1:A:99:ASN:OD1	0.54	2.41	19	2
1:A:80:TYR:CE1	1:A:89:GLU:OE2	0.54	2.61	19	1
1:A:137:ASN:ND2	1:A:143:TRP:O	0.54	2.40	13	4
1:A:122:TYR:CE1	1:A:126:ASN:OD1	0.54	2.61	6	5
1:A:3:ARG:O	1:A:6:ASN:ND2	0.54	2.39	5	1
1:A:9:TYR:CD1	1:A:30:PHE:CE2	0.54	2.96	13	2
1:A:137:ASN:OD1	1:A:140:ASN:ND2	0.54	2.41	2	1
1:A:8:PRO:O	1:A:11:PHE:CZ	0.54	2.61	10	6
1:A:11:PHE:O	1:A:13:PHE:CE1	0.54	2.61	10	1
1:A:149:LYS:NZ	1:A:154:SER:O	0.54	2.40	1	2
1:A:180:GLN:H	1:A:180:GLN:HE21	0.54	1.46	2	2
1:A:17:GLN:N	1:A:17:GLN:OE1	0.54	2.40	14	2
1:A:61:LEU:HD13	1:A:62:GLU:H	0.54	1.62	8	1
1:A:146:LEU:CD1	1:A:159:TRP:HE1	0.54	2.15	11	1
1:A:188:LEU:C	1:A:188:LEU:HD12	0.53	2.23	3	2
1:A:143:TRP:CD1	1:A:143:TRP:N	0.53	2.76	19	2
1:A:47:LYS:HZ3	1:A:49:ASP:C	0.53	2.06	11	2
1:A:136:LEU:HD13	1:A:137:ASN:H	0.53	1.63	4	1
1:A:33:ARG:NH2	1:A:45:THR:OG1	0.53	2.42	16	2
1:A:93:ASN:ND2	1:A:165:ASN:O	0.53	2.42	7	1
1:A:46:TRP:HE1	1:A:54:GLN:HE21	0.53	1.46	19	3
1:A:76:ASP:OD2	1:A:165:ASN:ND2	0.53	2.42	16	2
1:A:4:VAL:O	1:A:6:ASN:N	0.53	2.41	6	1
1:A:169:PHE:CD1	1:A:174:ASN:ND2	0.53	2.77	20	1
1:A:9:TYR:O	1:A:11:PHE:CE1	0.53	2.62	7	1
1:A:13:PHE:O	1:A:33:ARG:NH1	0.53	2.42	19	1
1:A:34:GLN:HE22	1:A:42:LEU:CD2	0.53	2.16	12	1
1:A:12:PRO:O	1:A:13:PHE:CG	0.53	2.62	14	10
1:A:52:LEU:HD13	1:A:53:PHE:N	0.53	2.19	7	2
1:A:95:VAL:O	1:A:99:ASN:ND2	0.52	2.42	7	2
1:A:65:ASN:OD1	1:A:68:ALA:N	0.52	2.41	14	2
1:A:101:MET:SD	1:A:144:PHE:CE2	0.52	3.03	1	2
1:A:44:ILE:HD12	1:A:58:ILE:HD11	0.52	1.81	13	6
1:A:180:GLN:N	1:A:180:GLN:OE1	0.52	2.43	4	1
1:A:12:PRO:O	1:A:13:PHE:CD1	0.52	2.62	11	2
1:A:59:GLN:NE2	1:A:60:GLU:O	0.52	2.42	1	1
1:A:10:TYR:OH	1:A:34:GLN:NE2	0.52	2.42	19	2
1:A:111:THR:HG22	1:A:112:LYS:N	0.52	2.19	13	2
1:A:26:GLU:CD	1:A:26:GLU:H	0.52	2.08	9	3
1:A:34:GLN:O	1:A:36:SER:N	0.52	2.43	16	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:138:HIS:N	1:A:138:HIS:ND1	0.52	2.56	3	2
1:A:46:TRP:CZ2	1:A:90:TYR:OH	0.52	2.62	7	3
1:A:126:ASN:ND2	1:A:126:ASN:N	0.52	2.58	8	3
1:A:137:ASN:OD1	1:A:138:HIS:N	0.52	2.42	2	2
1:A:69:LEU:O	1:A:71:LYS:N	0.52	2.43	7	2
1:A:40:ASP:OD1	1:A:41:HIS:CD2	0.52	2.63	4	1
1:A:9:TYR:CE1	1:A:30:PHE:CZ	0.52	2.98	13	6
1:A:92:GLN:N	1:A:92:GLN:OE1	0.52	2.43	18	1
1:A:19:GLU:OE2	1:A:53:PHE:CD1	0.51	2.63	19	3
1:A:139:ASP:OD1	1:A:140:ASN:N	0.51	2.43	6	2
1:A:169:PHE:CE1	1:A:174:ASN:OD1	0.51	2.62	7	1
1:A:60:GLU:OE1	1:A:63:LYS:NZ	0.51	2.40	9	1
1:A:134:PHE:C	1:A:134:PHE:CD1	0.51	2.83	20	6
1:A:6:ASN:HD22	1:A:7:HIS:N	0.51	2.02	5	1
1:A:94:LYS:O	1:A:98:LEU:HD13	0.51	2.05	5	2
1:A:50:LYS:O	1:A:52:LEU:N	0.51	2.43	1	1
1:A:47:LYS:NZ	1:A:49:ASP:O	0.51	2.42	8	3
1:A:91:LEU:O	1:A:95:VAL:HG23	0.51	2.05	3	7
1:A:137:ASN:ND2	1:A:145:TYR:CE1	0.51	2.79	5	2
1:A:164:THR:OG1	1:A:165:ASN:N	0.51	2.44	11	1
1:A:150:ILE:HG23	1:A:151:ASN:N	0.51	2.21	7	1
1:A:99:ASN:OD1	1:A:99:ASN:C	0.51	2.50	20	1
1:A:162:LYS:NZ	1:A:164:THR:CG2	0.50	2.73	7	1
1:A:46:TRP:NE1	1:A:90:TYR:OH	0.50	2.45	8	1
1:A:21:TYR:OH	1:A:25:LYS:NZ	0.50	2.42	6	1
1:A:41:HIS:C	1:A:42:LEU:HD12	0.50	2.26	7	4
1:A:3:ARG:O	1:A:7:HIS:N	0.50	2.44	16	1
1:A:55:HIS:O	1:A:55:HIS:ND1	0.50	2.44	18	1
1:A:132:TYR:O	1:A:133:TYR:CD1	0.50	2.64	7	3
1:A:17:GLN:CD	1:A:17:GLN:N	0.50	2.65	7	1
1:A:65:ASN:HD21	1:A:68:ALA:N	0.50	2.03	12	1
1:A:64:GLU:OE1	1:A:65:ASN:ND2	0.50	2.44	16	1
1:A:63:LYS:CD	1:A:63:LYS:N	0.50	2.73	1	2
1:A:76:ASP:O	1:A:77:ASN:ND2	0.50	2.45	1	1
1:A:80:TYR:CD2	1:A:86:ILE:HD11	0.50	2.42	18	2
1:A:82:ASP:OD1	1:A:83:LEU:N	0.50	2.45	16	4
1:A:26:GLU:CD	1:A:26:GLU:N	0.49	2.66	16	1
1:A:145:TYR:CD1	1:A:145:TYR:N	0.49	2.80	15	3
1:A:70:GLY:O	1:A:71:LYS:CB	0.49	2.59	15	1
1:A:92:GLN:CD	1:A:93:ASN:N	0.49	2.66	17	1
1:A:88:VAL:O	1:A:92:GLN:CG	0.49	2.60	20	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:61:LEU:O	1:A:62:GLU:CB	0.49	2.60	8	7
1:A:80:TYR:CG	1:A:86:ILE:HD11	0.49	2.43	18	3
1:A:47:LYS:C	1:A:48:LEU:HD12	0.49	2.28	3	5
1:A:4:VAL:O	1:A:7:HIS:CE1	0.49	2.65	6	1
1:A:31:VAL:HG22	1:A:45:THR:O	0.49	2.08	19	1
1:A:48:LEU:HD12	1:A:48:LEU:H	0.49	1.65	9	1
1:A:14:ASN:ND2	1:A:17:GLN:NE2	0.49	2.61	14	1
1:A:41:HIS:ND1	1:A:59:GLN:OE1	0.49	2.45	16	1
1:A:151:ASN:OD1	1:A:151:ASN:N	0.49	2.45	20	1
1:A:63:LYS:H	1:A:63:LYS:HD3	0.49	1.68	4	1
1:A:38:GLY:C	1:A:40:ASP:N	0.49	2.67	17	3
1:A:155:LYS:O	1:A:157:TYR:CD2	0.49	2.66	18	5
1:A:97:LEU:HD21	1:A:168:TYR:CZ	0.49	2.42	15	1
1:A:35:SER:OG	1:A:38:GLY:N	0.49	2.46	18	1
1:A:4:VAL:HG13	1:A:5:ILE:N	0.48	2.23	6	2
1:A:97:LEU:HD11	1:A:168:TYR:CZ	0.48	2.43	4	2
1:A:92:GLN:N	1:A:92:GLN:CD	0.48	2.66	18	1
1:A:134:PHE:CD1	1:A:134:PHE:C	0.48	2.87	18	14
1:A:46:TRP:CZ2	1:A:48:LEU:HD11	0.48	2.43	6	5
1:A:25:LYS:CD	1:A:25:LYS:N	0.48	2.76	4	1
1:A:54:GLN:CD	1:A:55:HIS:N	0.48	2.67	10	1
1:A:14:ASN:ND2	1:A:17:GLN:HE22	0.48	2.07	14	1
1:A:4:VAL:C	1:A:6:ASN:N	0.48	2.66	6	1
1:A:33:ARG:CZ	1:A:45:THR:OG1	0.48	2.61	7	2
1:A:59:GLN:N	1:A:59:GLN:CD	0.48	2.66	8	1
1:A:3:ARG:O	1:A:7:HIS:ND1	0.48	2.46	11	2
1:A:54:GLN:NE2	1:A:55:HIS:CA	0.48	2.77	16	1
1:A:55:HIS:ND1	1:A:55:HIS:N	0.48	2.60	1	2
1:A:169:PHE:CE1	1:A:174:ASN:CG	0.48	2.87	7	1
1:A:40:ASP:N	1:A:40:ASP:OD1	0.48	2.45	16	1
1:A:54:GLN:NE2	1:A:141:PRO:O	0.48	2.47	3	1
1:A:51:ASP:O	1:A:53:PHE:CE2	0.48	2.67	6	1
1:A:54:GLN:NE2	1:A:55:HIS:C	0.48	2.67	10	1
1:A:46:TRP:HE1	1:A:54:GLN:CG	0.48	2.22	16	1
1:A:179:ILE:O	1:A:182:CYS:SG	0.47	2.68	16	3
1:A:5:ILE:HD13	1:A:5:ILE:H	0.47	1.69	9	1
1:A:146:LEU:HB2	1:A:159:TRP:CD1	0.47	2.43	11	1
1:A:115:VAL:HG13	1:A:147:MET:SD	0.47	2.49	2	5
1:A:61:LEU:CD1	1:A:62:GLU:H	0.47	2.22	8	1
1:A:137:ASN:HD22	1:A:137:ASN:N	0.47	2.00	6	2
1:A:33:ARG:CG	1:A:34:GLN:N	0.47	2.77	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:150:ILE:CG2	1:A:151:ASN:N	0.47	2.78	7	1
1:A:171:VAL:C	1:A:172:ASN:HD22	0.47	2.13	5	3
1:A:64:GLU:O	1:A:65:ASN:ND2	0.47	2.48	11	3
1:A:194:HIS:O	1:A:194:HIS:ND1	0.47	2.45	3	2
1:A:139:ASP:OD1	1:A:139:ASP:N	0.47	2.48	16	1
1:A:34:GLN:N	1:A:34:GLN:CD	0.47	2.67	19	1
1:A:54:GLN:NE2	1:A:141:PRO:C	0.47	2.68	3	1
1:A:137:ASN:OD1	1:A:143:TRP:O	0.47	2.32	3	1
1:A:146:LEU:O	1:A:158:THR:HG23	0.47	2.10	11	1
1:A:61:LEU:O	1:A:70:GLY:O	0.47	2.32	15	1
1:A:171:VAL:O	1:A:173:TYR:CD2	0.47	2.68	17	4
1:A:137:ASN:CG	1:A:145:TYR:CD2	0.47	2.89	18	1
1:A:136:LEU:HD13	1:A:137:ASN:N	0.46	2.25	4	1
1:A:138:HIS:O	1:A:138:HIS:CG	0.46	2.67	20	1
1:A:14:ASN:OD1	1:A:16:ARG:N	0.46	2.48	7	1
1:A:21:TYR:CZ	1:A:25:LYS:NZ	0.46	2.80	7	1
1:A:46:TRP:CD1	1:A:46:TRP:N	0.46	2.83	12	6
1:A:34:GLN:C	1:A:36:SER:N	0.46	2.69	12	4
1:A:13:PHE:CD1	1:A:18:ALA:HB2	0.46	2.45	15	1
1:A:5:ILE:O	1:A:10:TYR:CG	0.46	2.69	1	1
1:A:6:ASN:ND2	1:A:6:ASN:C	0.46	2.68	5	1
1:A:138:HIS:O	1:A:139:ASP:OD1	0.46	2.33	7	1
1:A:85:GLN:O	1:A:89:GLU:OE1	0.46	2.34	8	1
1:A:108:LYS:NZ	1:A:118:PHE:CE1	0.46	2.79	15	1
1:A:67:LEU:HD12	1:A:67:LEU:N	0.46	2.26	9	2
1:A:145:TYR:CD2	1:A:160:ASN:OD1	0.46	2.68	5	3
1:A:90:TYR:CE2	1:A:94:LYS:NZ	0.46	2.84	5	1
1:A:10:TYR:O	1:A:11:PHE:CG	0.46	2.69	9	1
1:A:76:ASP:O	1:A:77:ASN:CG	0.46	2.54	13	3
1:A:170:LEU:C	1:A:170:LEU:HD23	0.46	2.31	4	1
1:A:150:ILE:O	1:A:151:ASN:OD1	0.46	2.35	15	3
1:A:166:THR:O	1:A:166:THR:CG2	0.46	2.64	6	1
1:A:54:GLN:OE1	1:A:55:HIS:N	0.46	2.49	10	1
1:A:145:TYR:CE1	1:A:160:ASN:OD1	0.46	2.69	11	1
1:A:138:HIS:ND1	1:A:138:HIS:N	0.46	2.64	13	1
1:A:56:ILE:HD12	1:A:90:TYR:CZ	0.45	2.46	8	1
1:A:99:ASN:OD1	1:A:100:GLU:N	0.45	2.48	20	1
1:A:77:ASN:O	1:A:77:ASN:OD1	0.45	2.34	13	3
1:A:27:ARG:CD	1:A:48:LEU:O	0.45	2.64	15	1
1:A:76:ASP:O	1:A:77:ASN:OD1	0.45	2.34	6	1
1:A:136:LEU:O	1:A:137:ASN:O	0.45	2.35	2	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:127:PRO:O	1:A:151:ASN:OD1	0.45	2.35	13	1
1:A:27:ARG:NE	1:A:49:ASP:OD1	0.45	2.50	1	1
1:A:40:ASP:O	1:A:60:GLU:OE1	0.45	2.35	6	2
1:A:19:GLU:OE2	1:A:53:PHE:CE1	0.45	2.70	14	2
1:A:145:TYR:CZ	1:A:160:ASN:OD1	0.45	2.69	11	1
1:A:122:TYR:O	1:A:126:ASN:OD1	0.45	2.35	14	2
1:A:132:TYR:CD1	1:A:132:TYR:O	0.45	2.69	17	4
1:A:105:GLU:H	1:A:105:GLU:CD	0.45	2.12	4	1
1:A:137:ASN:ND2	1:A:137:ASN:O	0.45	2.50	6	1
1:A:160:ASN:OD1	1:A:160:ASN:O	0.45	2.35	17	2
1:A:13:PHE:O	1:A:33:ARG:CD	0.45	2.65	5	1
1:A:16:ARG:N	1:A:16:ARG:CD	0.44	2.80	1	1
1:A:40:ASP:O	1:A:41:HIS:ND1	0.44	2.49	9	2
1:A:96:ARG:HA	1:A:99:ASN:ND2	0.44	2.27	20	2
1:A:183:ASN:O	1:A:184:GLY:C	0.44	2.56	9	20
1:A:57:ASP:O	1:A:57:ASP:OD1	0.44	2.36	16	3
1:A:150:ILE:N	1:A:150:ILE:CD1	0.44	2.80	10	1
1:A:31:VAL:HG12	1:A:32:ILE:N	0.44	2.28	11	3
1:A:91:LEU:N	1:A:91:LEU:HD22	0.44	2.26	13	1
1:A:137:ASN:O	1:A:138:HIS:CG	0.44	2.70	16	1
1:A:139:ASP:OD1	1:A:140:ASN:ND2	0.44	2.50	3	1
1:A:14:ASN:OD1	1:A:14:ASN:N	0.44	2.50	5	1
1:A:54:GLN:C	1:A:55:HIS:HD1	0.44	2.15	17	1
1:A:162:LYS:HZ3	1:A:164:THR:CG2	0.44	2.26	7	1
1:A:54:GLN:C	1:A:55:HIS:ND1	0.44	2.70	17	1
1:A:34:GLN:CD	1:A:34:GLN:H	0.44	2.15	19	1
1:A:82:ASP:N	1:A:85:GLN:OE1	0.44	2.47	13	1
1:A:83:LEU:C	1:A:83:LEU:HD12	0.44	2.32	13	1
1:A:148:PHE:CD1	1:A:157:TYR:O	0.44	2.71	11	1
1:A:15:GLY:O	1:A:19:GLU:OE2	0.44	2.36	13	2
1:A:76:ASP:OD2	1:A:76:ASP:O	0.44	2.36	8	1
1:A:15:GLY:O	1:A:19:GLU:OE1	0.44	2.35	12	1
1:A:111:THR:CB	1:A:113:LYS:HZ3	0.44	2.26	19	1
1:A:177:SER:OG	1:A:180:GLN:OE1	0.44	2.35	4	3
1:A:135:SER:OG	1:A:145:TYR:CZ	0.44	2.69	14	1
1:A:3:ARG:O	1:A:6:ASN:OD1	0.43	2.35	3	1
1:A:75:VAL:O	1:A:76:ASP:OD1	0.43	2.35	8	1
1:A:88:VAL:O	1:A:92:GLN:CD	0.43	2.56	12	1
1:A:9:TYR:CE2	1:A:30:PHE:CE1	0.43	3.06	1	1
1:A:33:ARG:O	1:A:43:VAL:O	0.43	2.36	18	2
1:A:47:LYS:NZ	1:A:49:ASP:C	0.43	2.71	11	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:128:ASN:C	1:A:128:ASN:HD22	0.43	2.16	7	1
1:A:46:TRP:NE1	1:A:54:GLN:CD	0.43	2.72	9	1
1:A:53:PHE:O	1:A:54:GLN:OE1	0.43	2.35	2	1
1:A:18:ALA:O	1:A:22:LEU:HD13	0.43	2.13	4	2
1:A:137:ASN:CG	1:A:143:TRP:O	0.43	2.57	18	1
1:A:111:THR:OG1	1:A:114:ASP:OD1	0.43	2.36	18	1
1:A:49:ASP:CG	1:A:50:LYS:H	0.43	2.17	6	3
1:A:145:TYR:CD1	1:A:160:ASN:OD1	0.43	2.72	11	1
1:A:146:LEU:CB	1:A:159:TRP:NE1	0.43	2.81	11	1
1:A:138:HIS:CG	1:A:139:ASP:N	0.43	2.87	12	1
1:A:20:ASP:O	1:A:23:ARG:CG	0.43	2.67	17	1
1:A:3:ARG:O	1:A:7:HIS:CE1	0.43	2.72	7	1
1:A:9:TYR:O	1:A:11:PHE:CZ	0.43	2.71	7	1
1:A:14:ASN:CG	1:A:15:GLY:N	0.43	2.72	16	2
1:A:137:ASN:ND2	1:A:138:HIS:H	0.43	2.11	16	1
1:A:88:VAL:O	1:A:92:GLN:OE1	0.43	2.37	18	1
1:A:63:LYS:N	1:A:63:LYS:HD3	0.43	2.28	1	1
1:A:170:LEU:O	1:A:171:VAL:C	0.43	2.57	4	11
1:A:65:ASN:OD1	1:A:68:ALA:CB	0.43	2.67	7	1
1:A:38:GLY:O	1:A:39:ASP:OD2	0.43	2.36	13	1
1:A:76:ASP:OD1	1:A:165:ASN:OD1	0.43	2.37	2	1
1:A:54:GLN:NE2	1:A:54:GLN:C	0.43	2.71	16	1
1:A:148:PHE:CD1	1:A:148:PHE:N	0.42	2.87	2	1
1:A:137:ASN:H	1:A:137:ASN:ND2	0.42	2.09	6	1
1:A:90:TYR:OH	1:A:94:LYS:NZ	0.42	2.52	11	1
1:A:65:ASN:OD1	1:A:67:LEU:CB	0.42	2.67	12	1
1:A:65:ASN:CG	1:A:67:LEU:H	0.42	2.17	12	1
1:A:135:SER:OG	1:A:145:TYR:OH	0.42	2.37	14	1
1:A:140:ASN:O	1:A:140:ASN:OD1	0.42	2.37	17	1
1:A:60:GLU:O	1:A:60:GLU:OE2	0.42	2.37	19	1
1:A:89:GLU:OE1	1:A:89:GLU:N	0.42	2.53	8	1
1:A:139:ASP:O	1:A:140:ASN:CG	0.42	2.57	12	1
1:A:114:ASP:O	1:A:114:ASP:OD1	0.42	2.36	20	1
1:A:62:GLU:O	1:A:62:GLU:CD	0.42	2.58	1	1
1:A:42:LEU:CD1	1:A:60:GLU:OE2	0.42	2.68	3	1
1:A:178:VAL:HG13	1:A:179:ILE:N	0.42	2.28	15	2
1:A:69:LEU:HD12	1:A:69:LEU:O	0.42	2.14	12	1
1:A:137:ASN:C	1:A:139:ASP:H	0.42	2.17	17	1
1:A:148:PHE:CE1	1:A:157:TYR:O	0.42	2.72	11	1
1:A:76:ASP:OD2	1:A:165:ASN:OD1	0.42	2.37	12	2
1:A:139:ASP:O	1:A:139:ASP:OD1	0.42	2.36	8	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:132:TYR:O	1:A:133:TYR:CD2	0.42	2.72	10	1
1:A:82:ASP:OD2	1:A:84:ASP:OD2	0.42	2.37	13	1
1:A:35:SER:OG	1:A:38:GLY:CA	0.42	2.67	18	1
1:A:112:LYS:NZ	1:A:138:HIS:CG	0.42	2.87	2	1
1:A:88:VAL:O	1:A:92:GLN:HG2	0.42	2.14	7	1
1:A:88:VAL:HG12	1:A:92:GLN:NE2	0.42	2.29	7	1
1:A:57:ASP:OD1	1:A:57:ASP:N	0.42	2.53	8	1
1:A:86:ILE:O	1:A:90:TYR:CB	0.42	2.68	10	1
1:A:59:GLN:OE1	1:A:60:GLU:O	0.42	2.38	1	1
1:A:92:GLN:CG	1:A:93:ASN:N	0.42	2.82	7	1
1:A:75:VAL:O	1:A:76:ASP:CG	0.42	2.57	8	1
1:A:155:LYS:O	1:A:157:TYR:CE2	0.42	2.73	8	2
1:A:46:TRP:CH2	1:A:48:LEU:CD2	0.42	3.03	12	1
1:A:137:ASN:O	1:A:138:HIS:CD2	0.42	2.72	16	1
1:A:139:ASP:N	1:A:139:ASP:OD1	0.42	2.51	19	1
1:A:132:TYR:O	1:A:132:TYR:CD1	0.42	2.73	10	2
1:A:127:PRO:O	1:A:151:ASN:CB	0.42	2.68	4	1
1:A:194:HIS:CG	1:A:194:HIS:O	0.42	2.73	7	1
1:A:153:ASN:ND2	1:A:153:ASN:C	0.42	2.74	9	1
1:A:45:THR:HG23	1:A:55:HIS:ND1	0.42	2.30	14	1
1:A:9:TYR:CE1	1:A:30:PHE:CE1	0.42	3.07	18	1
1:A:188:LEU:O	1:A:191:SER:OG	0.42	2.34	19	2
1:A:16:ARG:O	1:A:19:GLU:CG	0.42	2.68	9	1
1:A:11:PHE:O	1:A:13:PHE:CD2	0.42	2.73	15	1
1:A:59:GLN:HE22	1:A:61:LEU:CD1	0.42	2.28	19	1
1:A:76:ASP:O	1:A:76:ASP:OD1	0.41	2.38	4	1
1:A:62:GLU:OE1	1:A:62:GLU:O	0.41	2.37	11	2
1:A:146:LEU:HD13	1:A:159:TRP:HE1	0.41	1.74	11	1
1:A:31:VAL:CG1	1:A:32:ILE:N	0.41	2.82	13	1
1:A:64:GLU:OE1	1:A:65:ASN:OD1	0.41	2.37	16	1
1:A:85:GLN:OE1	1:A:89:GLU:OE2	0.41	2.38	18	1
1:A:140:ASN:ND2	1:A:140:ASN:N	0.41	2.68	2	1
1:A:137:ASN:O	1:A:138:HIS:CB	0.41	2.69	7	1
1:A:6:ASN:N	1:A:6:ASN:HD22	0.41	2.12	9	1
1:A:160:ASN:OD1	1:A:161:VAL:N	0.41	2.53	9	1
1:A:150:ILE:HG22	1:A:151:ASN:HD22	0.41	1.75	11	1
1:A:91:LEU:N	1:A:91:LEU:CD2	0.41	2.83	13	1
1:A:51:ASP:O	1:A:51:ASP:OD1	0.41	2.37	15	1
1:A:17:GLN:OE1	1:A:17:GLN:N	0.41	2.53	2	1
1:A:137:ASN:CG	1:A:138:HIS:H	0.41	2.18	16	1
1:A:32:ILE:HD13	1:A:44:ILE:CG1	0.41	2.45	19	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:78:GLN:CD	1:A:80:TYR:HH	0.41	2.19	19	1
1:A:49:ASP:C	1:A:49:ASP:OD1	0.41	2.59	4	1
1:A:101:MET:O	1:A:104:SER:OG	0.41	2.32	4	4
1:A:7:HIS:O	1:A:10:TYR:N	0.41	2.48	18	1
1:A:6:ASN:HD22	1:A:6:ASN:C	0.41	2.19	5	1
1:A:91:LEU:C	1:A:91:LEU:CD2	0.41	2.87	8	1
1:A:46:TRP:HE1	1:A:54:GLN:CD	0.41	2.18	9	1
1:A:56:ILE:O	1:A:56:ILE:HG23	0.41	2.15	10	1
1:A:51:ASP:OD1	1:A:51:ASP:N	0.41	2.53	7	1
1:A:92:GLN:HG3	1:A:93:ASN:N	0.41	2.30	12	1
1:A:26:GLU:OE1	1:A:27:ARG:O	0.41	2.39	4	1
1:A:186:LYS:NZ	1:A:190:LYS:CE	0.41	2.84	6	1
1:A:88:VAL:O	1:A:92:GLN:NE2	0.41	2.54	7	1
1:A:136:LEU:HD23	1:A:137:ASN:H	0.41	1.74	16	1
1:A:67:LEU:HD23	1:A:67:LEU:N	0.41	2.31	20	1
1:A:9:TYR:CD2	1:A:30:PHE:CE2	0.41	3.09	10	1
1:A:56:ILE:O	1:A:56:ILE:CG2	0.41	2.68	10	1
1:A:54:GLN:C	1:A:54:GLN:CD	0.41	2.80	16	1
1:A:63:LYS:HG2	1:A:63:LYS:O	0.40	2.16	1	1
1:A:102:THR:HG23	1:A:107:PHE:CE2	0.40	2.51	5	1
1:A:94:LYS:HZ1	1:A:165:ASN:ND2	0.40	2.11	12	1
1:A:122:TYR:O	1:A:126:ASN:ND2	0.40	2.54	1	1
1:A:34:GLN:O	1:A:34:GLN:NE2	0.40	2.54	6	1
1:A:94:LYS:HZ3	1:A:165:ASN:ND2	0.40	2.14	12	1
1:A:65:ASN:H	1:A:68:ALA:HB3	0.40	1.75	13	1
1:A:30:PHE:CD1	1:A:30:PHE:N	0.40	2.90	16	1
1:A:185:PHE:O	1:A:188:LEU:HG	0.40	2.16	3	1
1:A:46:TRP:CD1	1:A:90:TYR:OH	0.40	2.74	8	1
1:A:44:ILE:CD1	1:A:58:ILE:HD11	0.40	2.47	6	1
1:A:55:HIS:C	1:A:56:ILE:HD12	0.40	2.37	14	1
1:A:142:GLY:C	1:A:143:TRP:CD1	0.40	2.95	19	1
1:A:99:ASN:O	1:A:103:SER:CB	0.40	2.70	2	1
1:A:6:ASN:OD1	1:A:6:ASN:C	0.40	2.59	3	1
1:A:64:GLU:O	1:A:65:ASN:OD1	0.40	2.40	8	1
1:A:84:ASP:OD1	1:A:84:ASP:O	0.40	2.38	18	1
1:A:40:ASP:OD2	1:A:63:LYS:NZ	0.40	2.52	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	192/199 (96%)	180±2 (94±1%)	10±2 (5±1%)	2±1 (1±1%)	20	68
All	All	3840/3980 (96%)	3593 (94%)	210 (5%)	37 (1%)	20	68

All 16 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	70	GLY	5
1	A	62	GLU	5
1	A	35	SER	5
1	A	39	ASP	4
1	A	137	ASN	4
1	A	50	LYS	2
1	A	171	VAL	2
1	A	38	GLY	2
1	A	51	ASP	1
1	A	5	ILE	1
1	A	49	ASP	1
1	A	138	HIS	1
1	A	141	PRO	1
1	A	3	ARG	1
1	A	36	SER	1
1	A	139	ASP	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	181/188 (96%)	173±2 (95±1%)	8±2 (5±1%)	31	79

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	3620/3760 (96%)	3455 (95%)	165 (5%)	31 79

All 64 unique residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type	Models (Total)
1	A	159	TRP	19
1	A	126	ASN	15
1	A	147	MET	13
1	A	134	PHE	12
1	A	7	HIS	10
1	A	91	LEU	5
1	A	63	LYS	4
1	A	185	PHE	4
1	A	19	GLU	3
1	A	65	ASN	3
1	A	180	GLN	3
1	A	137	ASN	3
1	A	136	LEU	3
1	A	172	ASN	3
1	A	67	LEU	2
1	A	153	ASN	2
1	A	111	THR	2
1	A	170	LEU	2
1	A	188	LEU	2
1	A	34	GLN	2
1	A	33	ARG	2
1	A	52	LEU	2
1	A	61	LEU	2
1	A	54	GLN	2
1	A	37	ARG	2
1	A	47	LYS	2
1	A	169	PHE	2
1	A	194	HIS	2
1	A	36	SER	2
1	A	16	ARG	1
1	A	108	LYS	1
1	A	138	HIS	1
1	A	165	ASN	1
1	A	26	GLU	1
1	A	27	ARG	1
1	A	6	ASN	1

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Mol	Chain	Res	Type	Models (Total)
1	A	14	ASN	1
1	A	22	LEU	1
1	A	77	ASN	1
1	A	11	PHE	1
1	A	128	ASN	1
1	A	5	ILE	1
1	A	13	PHE	1
1	A	44	ILE	1
1	A	164	THR	1
1	A	69	LEU	1
1	A	90	TYR	1
1	A	174	ASN	1
1	A	39	ASP	1
1	A	107	PHE	1
1	A	140	ASN	1
1	A	166	THR	1
1	A	17	GLN	1
1	A	50	LYS	1
1	A	106	LYS	1
1	A	23	ARG	1
1	A	99	ASN	1
1	A	59	GLN	1
1	A	155	LYS	1
1	A	60	GLU	1
1	A	143	TRP	1
1	A	92	GLN	1
1	A	96	ARG	1
1	A	177	SER	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](#)

There are no ligands in this entry.

6.7 Other polymers [i](#)

There are no such molecules in this entry.

6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

7 Chemical shift validation

No chemical shift data were provided