



Full wwPDB NMR Structure Validation Report ⓘ

Mar 6, 2022 – 09:04 AM EST

PDB ID : 2KBO
Title : Structure, interaction, and real-time monitoring of the enzymatic reaction of wild type APOBEC3G
Authors : Furukawa, A.; Nagata, T.; Matsugami, A.; Habu, Y.; Sugiyama, R.; Hayashi, F.; Kobayashi, N.; Yokoyama, S.; Takaku, H.; Katahira, M.
Deposited on : 2008-12-04

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

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

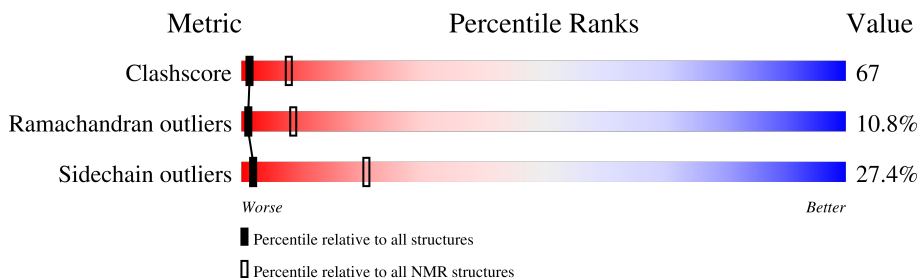
1 Overall quality at a glance

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	194	

2 Ensemble composition and analysis

This entry contains 10 models. Model 4 is the overall representative, medoid model (most similar to other models). The authors have identified model 1 as representative, based on the following criterion: *lowest energy*.

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

Well-defined (core) protein residues			
Well-defined core	Residue range (total)	Backbone RMSD (Å)	Medoid model
1	A:30-A:43, A:66-A:126, A:132-A:194 (138)	0.38	4

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 4 single-model clusters were found.

Cluster number	Models
1	1, 3, 8
2	2, 4, 6
Single-model clusters	5; 7; 9; 10

3 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 3128 atoms, of which 1517 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called DNA dC->dU-editing enzyme APOBEC-3G.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	194	3127	1017	1517	288	290	15	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	HIS	-	expression tag	UNP Q9HC16
A	2	MET	-	expression tag	UNP Q9HC16

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

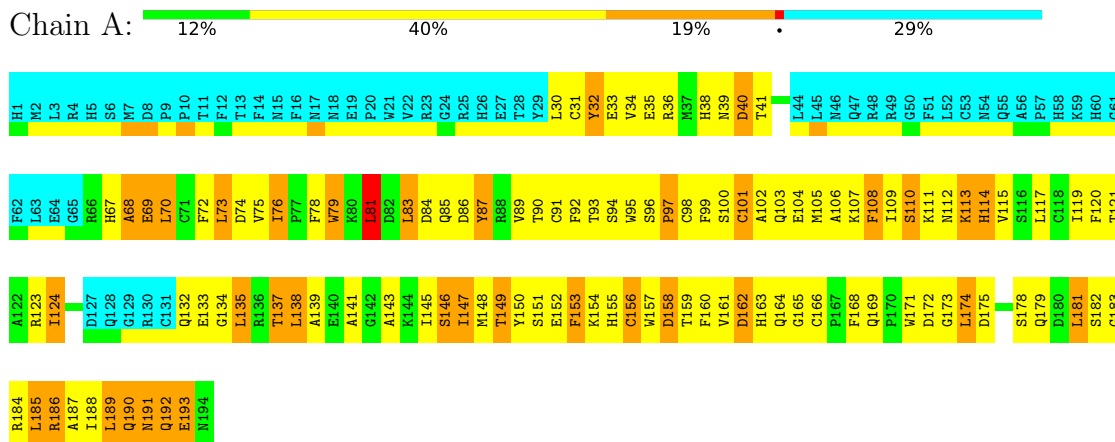
Mol	Chain	Residues	Atoms	
			Total	Zn
2	A	1	1	1

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: DNA dC->dU-editing enzyme APOBEC-3G

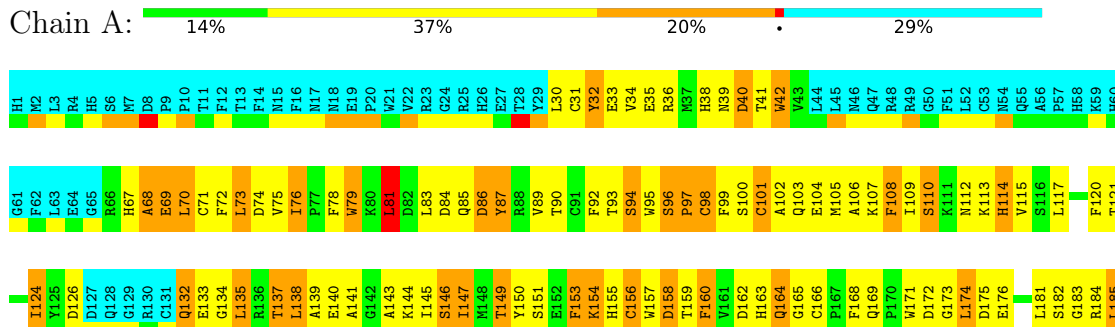


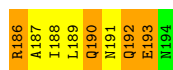
4.2 Scores per residue for each member of the ensemble

Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

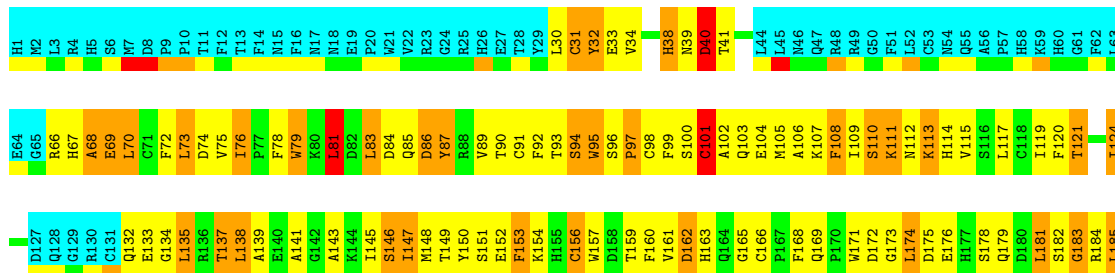
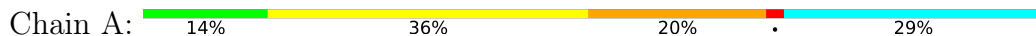
- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G





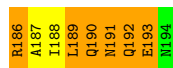
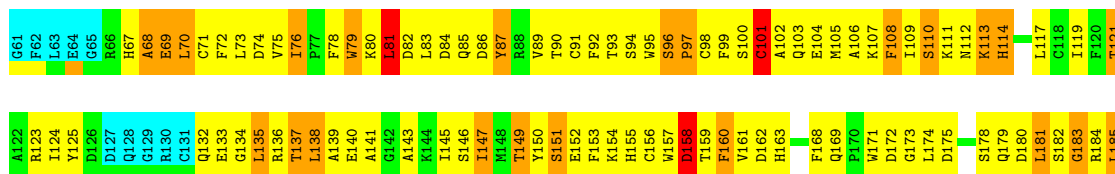
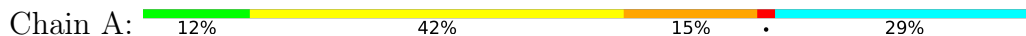
4.2.2 Score per residue for model 2

- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G



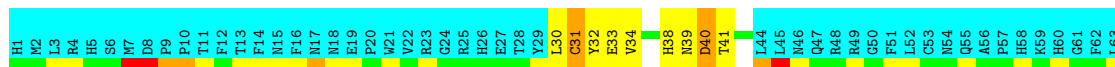
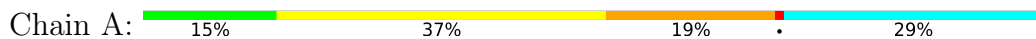
4.2.3 Score per residue for model 3

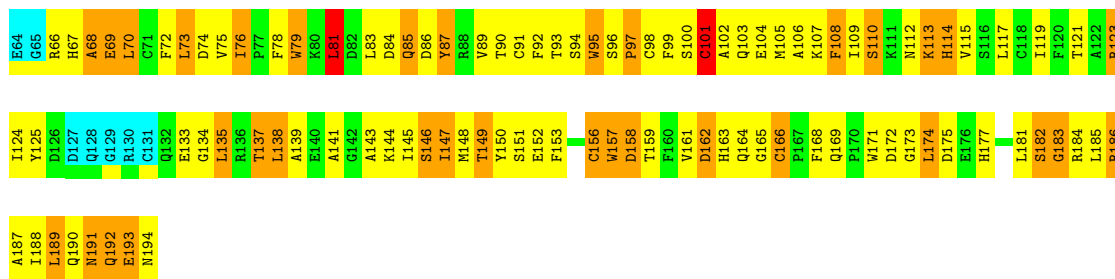
- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G



4.2.4 Score per residue for model 4 (medoid)

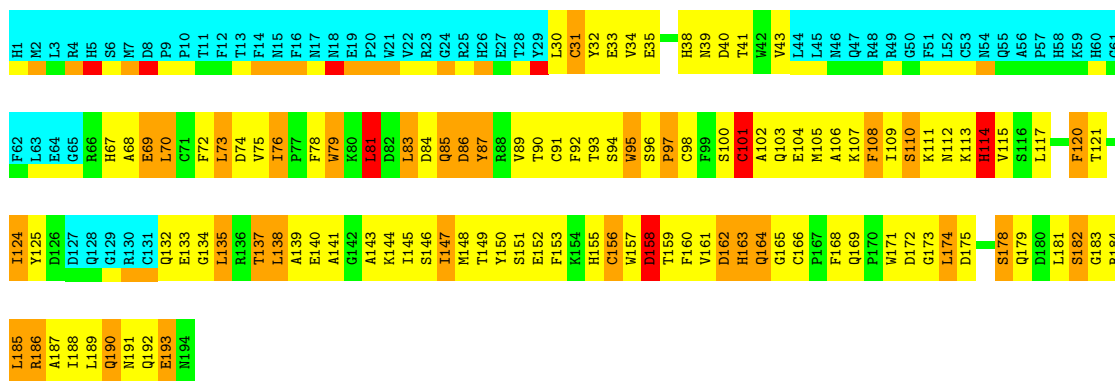
- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G





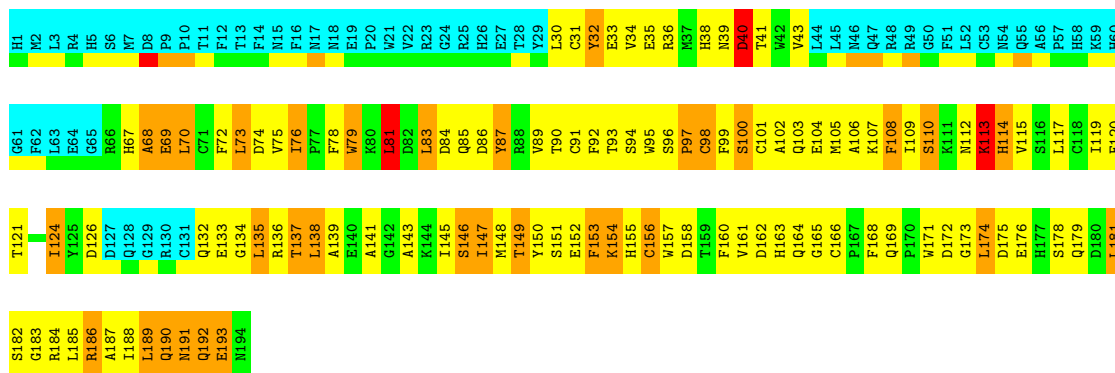
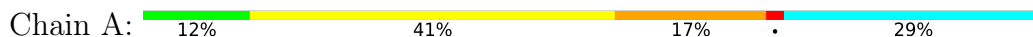
4.2.5 Score per residue for model 5

- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G



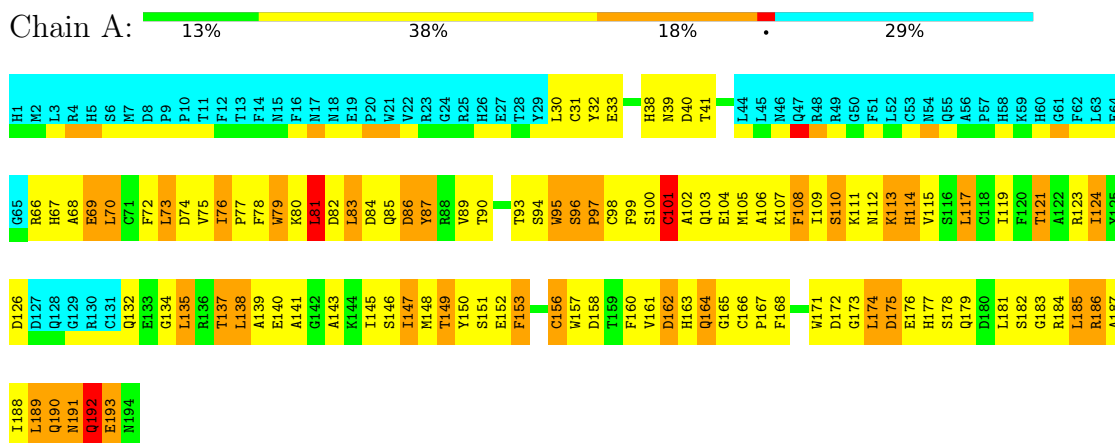
4.2.6 Score per residue for model 6

- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G



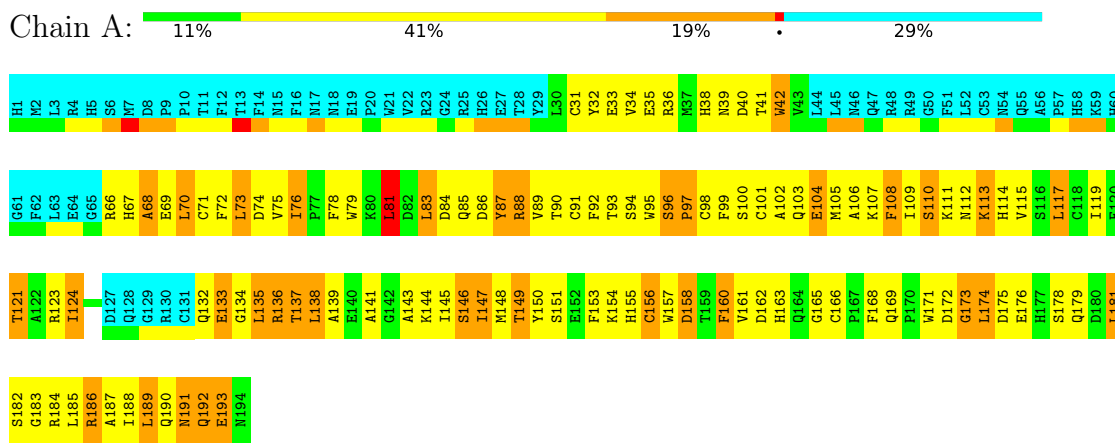
4.2.7 Score per residue for model 7

- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G



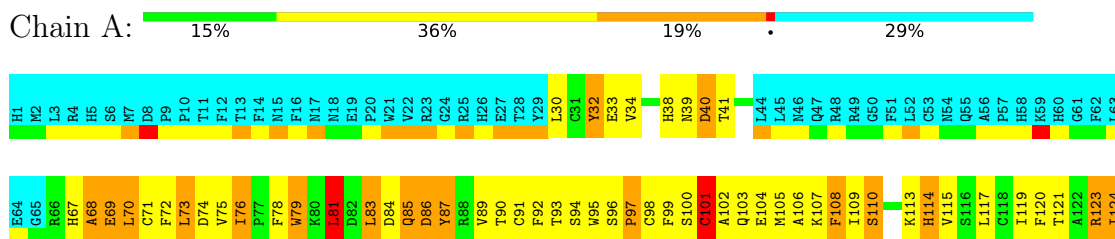
4.2.8 Score per residue for model 8

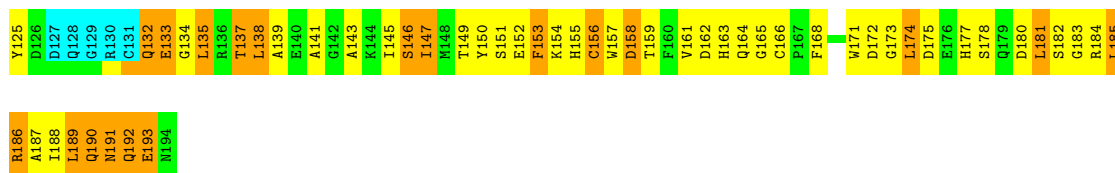
- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G



4.2.9 Score per residue for model 9

- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G

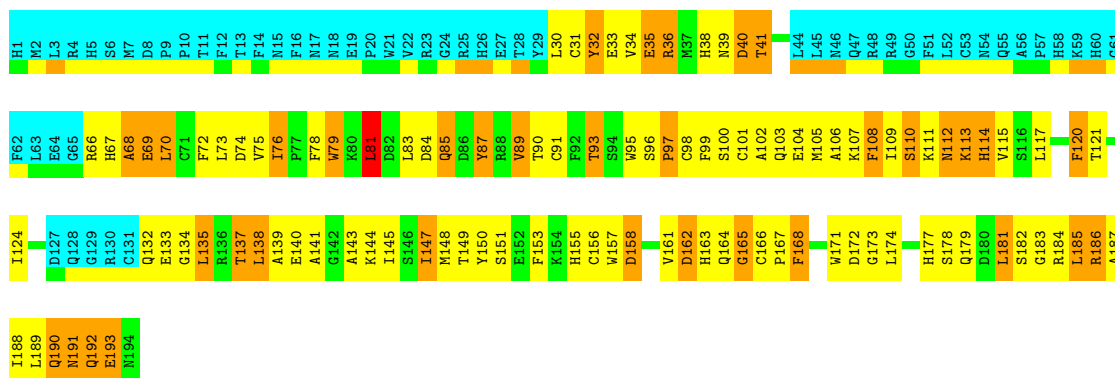




4.2.10 Score per residue for model 10

- Molecule 1: DNA dC->dU-editing enzyme APOBEC-3G

Chain A: 16% 36% 19% 29%



5 Refinement protocol and experimental data overview

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

Of the 200 calculated structures, 10 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	2.20
X-PLOR NIH	refinement	2.20

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:
ZN

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	1139	1074	1065	148±6
All	All	11400	10740	10684	1476

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 67.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:156:CYS:O	1:A:160:PHE:CE1	1.08	2.05	1	1
1:A:156:CYS:O	1:A:160:PHE:CZ	1.07	2.08	1	1
1:A:120:PHE:HE2	1:A:152:GLU:OE1	1.02	1.38	2	1
1:A:138:LEU:HD23	1:A:139:ALA:N	1.00	1.71	8	10
1:A:120:PHE:CZ	1:A:152:GLU:HB3	0.99	1.92	2	1
1:A:156:CYS:SG	1:A:160:PHE:HZ	0.99	1.80	1	1
1:A:70:LEU:H	1:A:70:LEU:HD22	0.95	1.21	3	9
1:A:81:LEU:HD12	1:A:81:LEU:H	0.93	1.23	5	10
1:A:70:LEU:HD22	1:A:70:LEU:H	0.90	1.24	5	1
1:A:120:PHE:CD1	1:A:148:MET:CE	0.87	2.58	2	1
1:A:120:PHE:CE2	1:A:152:GLU:OE1	0.85	2.28	2	1
1:A:120:PHE:HZ	1:A:152:GLU:HB3	0.85	1.29	2	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:115:VAL:CG1	1:A:117:LEU:HD11	0.82	2.04	7	1
1:A:120:PHE:CD1	1:A:148:MET:HE2	0.75	2.16	2	1
1:A:150:TYR:CG	1:A:151:SER:N	0.75	2.55	8	6
1:A:171:TRP:CZ2	1:A:174:LEU:HD21	0.74	2.17	10	1
1:A:83:LEU:HD13	1:A:83:LEU:C	0.72	2.05	1	3
1:A:150:TYR:CD2	1:A:151:SER:N	0.71	2.59	2	10
1:A:39:ASN:OD1	1:A:84:ASP:OD1	0.71	2.09	3	2
1:A:161:VAL:CG1	1:A:163:HIS:CD2	0.71	2.73	5	1
1:A:120:PHE:HZ	1:A:152:GLU:CB	0.71	1.99	2	1
1:A:38:HIS:O	1:A:41:THR:HG22	0.70	1.85	6	10
1:A:36:ARG:O	1:A:43:VAL:HG23	0.70	1.87	6	1
1:A:171:TRP:CH2	1:A:174:LEU:HD21	0.69	2.22	8	8
1:A:138:LEU:O	1:A:143:ALA:HB3	0.69	1.87	4	10
1:A:85:GLN:HE21	1:A:85:GLN:N	0.68	1.86	5	1
1:A:72:PHE:CE1	1:A:117:LEU:CD2	0.68	2.76	7	1
1:A:70:LEU:HD22	1:A:70:LEU:N	0.68	2.02	7	10
1:A:99:PHE:CG	1:A:100:SER:N	0.68	2.61	9	9
1:A:67:HIS:H	1:A:70:LEU:HD23	0.68	1.49	7	10
1:A:83:LEU:O	1:A:83:LEU:HD23	0.68	1.88	10	3
1:A:138:LEU:HD23	1:A:138:LEU:C	0.68	2.08	2	10
1:A:71:CYS:SG	1:A:72:PHE:N	0.68	2.65	1	1
1:A:81:LEU:H	1:A:81:LEU:CD1	0.68	2.02	10	8
1:A:157:TRP:CD2	1:A:166:CYS:SG	0.67	2.87	2	3
1:A:70:LEU:H	1:A:70:LEU:CD2	0.67	2.01	10	10
1:A:157:TRP:CE3	1:A:166:CYS:SG	0.67	2.87	9	3
1:A:117:LEU:HD12	1:A:117:LEU:H	0.67	1.49	7	1
1:A:135:LEU:HD22	1:A:188:ILE:HD13	0.66	1.65	4	6
1:A:186:ARG:N	1:A:186:ARG:CD	0.66	2.59	7	10
1:A:166:CYS:O	1:A:168:PHE:N	0.66	2.28	7	2
1:A:160:PHE:N	1:A:160:PHE:CD1	0.65	2.65	1	1
1:A:145:ILE:HD13	1:A:145:ILE:N	0.64	2.07	4	10
1:A:36:ARG:N	1:A:36:ARG:HD3	0.64	2.07	10	1
1:A:120:PHE:CD1	1:A:148:MET:HE3	0.63	2.26	2	1
1:A:120:PHE:CZ	1:A:152:GLU:CB	0.63	2.77	2	1
1:A:113:LYS:CD	1:A:113:LYS:H	0.63	2.06	6	2
1:A:132:GLN:NE2	1:A:184:ARG:HH11	0.63	1.91	1	1
1:A:72:PHE:O	1:A:75:VAL:N	0.62	2.31	5	10
1:A:135:LEU:HD13	1:A:188:ILE:HG21	0.62	1.71	9	10
1:A:99:PHE:CD2	1:A:100:SER:N	0.62	2.67	8	6
1:A:32:TYR:O	1:A:32:TYR:CD1	0.62	2.53	3	6
1:A:163:HIS:O	1:A:165:GLY:N	0.62	2.33	4	6

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:117:LEU:HD12	1:A:117:LEU:N	0.62	2.10	7	1
1:A:79:TRP:N	1:A:79:TRP:CD1	0.61	2.68	5	6
1:A:100:SER:O	1:A:103:GLN:N	0.61	2.33	1	9
1:A:93:THR:O	1:A:95:TRP:N	0.61	2.33	5	5
1:A:75:VAL:O	1:A:78:PHE:N	0.61	2.33	10	10
1:A:85:GLN:N	1:A:85:GLN:OE1	0.61	2.34	9	3
1:A:106:ALA:O	1:A:110:SER:N	0.61	2.33	7	10
1:A:156:CYS:SG	1:A:160:PHE:CZ	0.61	2.70	1	1
1:A:95:TRP:CE3	1:A:96:SER:O	0.61	2.54	1	1
1:A:182:SER:OG	1:A:183:GLY:N	0.61	2.33	4	5
1:A:157:TRP:CD1	1:A:158:ASP:N	0.60	2.69	10	2
1:A:123:ARG:HE	1:A:177:HIS:HD2	0.60	1.36	9	1
1:A:168:PHE:CE2	1:A:169:GLN:O	0.60	2.54	4	1
1:A:153:PHE:O	1:A:156:CYS:N	0.60	2.34	10	9
1:A:162:ASP:O	1:A:163:HIS:ND1	0.60	2.35	10	4
1:A:85:GLN:HE21	1:A:85:GLN:CA	0.60	2.09	5	1
1:A:39:ASN:N	1:A:85:GLN:OE1	0.60	2.35	8	4
1:A:75:VAL:O	1:A:78:PHE:CB	0.60	2.50	1	9
1:A:140:GLU:HG2	1:A:189:LEU:HD11	0.60	1.74	5	3
1:A:147:ILE:N	1:A:147:ILE:HD13	0.60	2.12	4	9
1:A:162:ASP:O	1:A:163:HIS:CD2	0.59	2.55	7	5
1:A:173:GLY:O	1:A:175:ASP:N	0.59	2.36	1	9
1:A:105:MET:SD	1:A:117:LEU:CD2	0.59	2.89	8	1
1:A:109:ILE:N	1:A:109:ILE:CD1	0.59	2.65	1	5
1:A:66:ARG:NH1	1:A:74:ASP:OD2	0.59	2.36	2	1
1:A:85:GLN:N	1:A:85:GLN:NE2	0.59	2.50	5	1
1:A:162:ASP:O	1:A:163:HIS:CG	0.59	2.55	1	4
1:A:153:PHE:CE2	1:A:157:TRP:CZ3	0.59	2.91	4	2
1:A:100:SER:O	1:A:102:ALA:N	0.59	2.36	4	9
1:A:113:LYS:O	1:A:115:VAL:N	0.58	2.36	1	5
1:A:182:SER:OG	1:A:186:ARG:NH1	0.58	2.35	5	1
1:A:36:ARG:N	1:A:36:ARG:CD	0.58	2.65	10	1
1:A:72:PHE:CD1	1:A:73:LEU:N	0.58	2.71	1	10
1:A:120:PHE:CD2	1:A:148:MET:SD	0.58	2.96	5	2
1:A:147:ILE:HD13	1:A:147:ILE:N	0.58	2.14	5	1
1:A:171:TRP:CH2	1:A:174:LEU:CD2	0.58	2.87	1	7
1:A:85:GLN:O	1:A:114:HIS:CE1	0.58	2.57	4	3
1:A:81:LEU:HD12	1:A:81:LEU:N	0.58	2.07	10	1
1:A:159:THR:HB	1:A:160:PHE:CD1	0.58	2.34	1	1
1:A:107:LYS:O	1:A:109:ILE:N	0.57	2.37	8	10
1:A:109:ILE:N	1:A:109:ILE:HD12	0.57	2.14	1	8

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:134:GLY:O	1:A:137:THR:N	0.57	2.37	8	7
1:A:132:GLN:NE2	1:A:184:ARG:NH1	0.57	2.53	1	1
1:A:162:ASP:C	1:A:163:HIS:CG	0.57	2.77	2	9
1:A:168:PHE:CD1	1:A:169:GLN:N	0.57	2.72	2	5
1:A:107:LYS:O	1:A:110:SER:N	0.57	2.38	7	2
1:A:105:MET:CE	1:A:138:LEU:HD12	0.57	2.30	8	8
1:A:113:LYS:CD	1:A:113:LYS:N	0.56	2.66	6	3
1:A:153:PHE:O	1:A:156:CYS:SG	0.56	2.63	7	1
1:A:120:PHE:CE2	1:A:152:GLU:HB3	0.56	2.33	2	1
1:A:182:SER:CB	1:A:186:ARG:NH1	0.56	2.69	5	2
1:A:162:ASP:C	1:A:163:HIS:ND1	0.56	2.59	5	1
1:A:123:ARG:HE	1:A:177:HIS:CD2	0.56	2.17	9	1
1:A:120:PHE:CD1	1:A:146:SER:OG	0.56	2.56	1	1
1:A:125:TYR:CE1	1:A:180:ASP:OD2	0.56	2.58	3	1
1:A:163:HIS:C	1:A:165:GLY:N	0.56	2.60	1	8
1:A:75:VAL:CG1	1:A:76:ILE:N	0.56	2.67	10	10
1:A:117:LEU:CD1	1:A:117:LEU:N	0.56	2.69	8	1
1:A:69:GLU:H	1:A:69:GLU:CD	0.56	2.05	4	8
1:A:160:PHE:CD1	1:A:160:PHE:O	0.56	2.59	3	1
1:A:72:PHE:O	1:A:74:ASP:N	0.55	2.39	8	10
1:A:81:LEU:HD13	1:A:87:TYR:CE1	0.55	2.35	4	1
1:A:140:GLU:OE2	1:A:189:LEU:HD21	0.55	2.00	3	3
1:A:109:ILE:HD12	1:A:109:ILE:N	0.55	2.16	2	1
1:A:68:ALA:HB1	1:A:91:CYS:SG	0.55	2.41	4	8
1:A:95:TRP:CD1	1:A:95:TRP:N	0.55	2.74	10	5
1:A:192:GLN:NE2	1:A:193:GLU:O	0.55	2.39	3	2
1:A:153:PHE:CE2	1:A:157:TRP:CH2	0.55	2.94	8	1
1:A:137:THR:O	1:A:141:ALA:CB	0.55	2.54	7	10
1:A:93:THR:C	1:A:95:TRP:N	0.55	2.60	5	5
1:A:93:THR:C	1:A:95:TRP:H	0.55	2.04	2	5
1:A:117:LEU:N	1:A:117:LEU:CD1	0.55	2.69	5	2
1:A:132:GLN:HE22	1:A:184:ARG:HH11	0.55	1.45	1	1
1:A:109:ILE:HG22	1:A:110:SER:N	0.55	2.17	10	8
1:A:148:MET:SD	1:A:156:CYS:CB	0.55	2.94	2	5
1:A:114:HIS:ND1	1:A:114:HIS:C	0.55	2.60	5	1
1:A:93:THR:HG22	1:A:94:SER:H	0.55	1.61	6	4
1:A:163:HIS:O	1:A:166:CYS:N	0.55	2.40	6	3
1:A:39:ASN:O	1:A:41:THR:N	0.54	2.40	8	10
1:A:76:ILE:CG2	1:A:87:TYR:CG	0.54	2.90	3	5
1:A:149:THR:O	1:A:153:PHE:N	0.54	2.40	6	8
1:A:31:CYS:SG	1:A:160:PHE:CZ	0.54	3.00	6	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:75:VAL:HG22	1:A:79:TRP:HE1	0.54	1.62	5	5
1:A:153:PHE:C	1:A:155:HIS:N	0.54	2.60	3	7
1:A:189:LEU:C	1:A:191:ASN:H	0.54	2.05	5	10
1:A:97:PRO:O	1:A:98:CYS:SG	0.54	2.66	4	8
1:A:157:TRP:CZ3	1:A:168:PHE:CD1	0.54	2.95	7	1
1:A:138:LEU:HD23	1:A:139:ALA:H	0.54	1.59	9	2
1:A:73:LEU:HD13	1:A:105:MET:HG2	0.54	1.80	6	6
1:A:99:PHE:CE2	1:A:100:SER:OG	0.54	2.56	9	4
1:A:72:PHE:C	1:A:74:ASP:N	0.54	2.60	7	10
1:A:98:CYS:O	1:A:102:ALA:CB	0.54	2.56	6	10
1:A:185:LEU:HD23	1:A:186:ARG:HH11	0.54	1.62	10	1
1:A:97:PRO:C	1:A:98:CYS:SG	0.54	2.87	7	9
1:A:93:THR:HG22	1:A:94:SER:N	0.54	2.16	6	2
1:A:85:GLN:OE1	1:A:85:GLN:CA	0.54	2.55	4	2
1:A:42:TRP:CD1	1:A:42:TRP:O	0.53	2.61	8	2
1:A:163:HIS:C	1:A:165:GLY:H	0.53	2.07	1	9
1:A:120:PHE:C	1:A:148:MET:SD	0.53	2.87	5	2
1:A:173:GLY:C	1:A:175:ASP:N	0.53	2.61	1	9
1:A:112:ASN:O	1:A:114:HIS:N	0.53	2.41	4	4
1:A:69:GLU:CD	1:A:69:GLU:H	0.53	2.06	5	2
1:A:133:GLU:CG	1:A:134:GLY:H	0.53	2.16	6	1
1:A:190:GLN:O	1:A:191:ASN:OD1	0.53	2.26	5	4
1:A:95:TRP:CH2	1:A:98:CYS:SG	0.53	3.01	5	4
1:A:85:GLN:O	1:A:114:HIS:NE2	0.53	2.42	7	2
1:A:158:ASP:O	1:A:158:ASP:OD1	0.53	2.27	1	6
1:A:184:ARG:O	1:A:187:ALA:N	0.53	2.41	8	10
1:A:182:SER:O	1:A:184:ARG:N	0.53	2.42	4	9
1:A:115:VAL:HG12	1:A:117:LEU:HD11	0.53	1.81	7	1
1:A:30:LEU:CB	1:A:93:THR:HG23	0.53	2.33	4	2
1:A:95:TRP:CZ3	1:A:98:CYS:SG	0.53	3.02	5	4
1:A:194:ASN:N	1:A:194:ASN:OD1	0.52	2.42	4	1
1:A:147:ILE:N	1:A:147:ILE:CD1	0.52	2.72	4	10
1:A:67:HIS:O	1:A:69:GLU:N	0.52	2.42	6	6
1:A:110:SER:O	1:A:113:LYS:NZ	0.52	2.43	5	2
1:A:33:GLU:O	1:A:90:THR:O	0.52	2.27	7	9
1:A:34:VAL:HG22	1:A:35:GLU:N	0.52	2.20	1	5
1:A:79:TRP:CE3	1:A:81:LEU:HD11	0.52	2.39	4	2
1:A:113:LYS:C	1:A:115:VAL:H	0.52	2.08	4	8
1:A:36:ARG:O	1:A:43:VAL:CG2	0.52	2.57	6	1
1:A:106:ALA:O	1:A:109:ILE:N	0.52	2.42	7	2
1:A:96:SER:OG	1:A:97:PRO:CD	0.51	2.59	3	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:96:SER:H	1:A:124:ILE:CG2	0.51	2.18	9	9
1:A:105:MET:O	1:A:106:ALA:C	0.51	2.49	3	10
1:A:105:MET:SD	1:A:109:ILE:HD13	0.51	2.45	8	2
1:A:83:LEU:HD13	1:A:83:LEU:O	0.51	2.05	6	7
1:A:113:LYS:C	1:A:115:VAL:N	0.51	2.64	9	5
1:A:75:VAL:HG22	1:A:79:TRP:NE1	0.51	2.21	7	2
1:A:149:THR:CG2	1:A:178:SER:OG	0.51	2.58	8	3
1:A:107:LYS:C	1:A:109:ILE:N	0.51	2.63	8	10
1:A:138:LEU:O	1:A:143:ALA:CB	0.51	2.58	1	9
1:A:191:ASN:OD1	1:A:191:ASN:O	0.51	2.28	5	7
1:A:86:ASP:C	1:A:87:TYR:CD1	0.51	2.84	8	4
1:A:83:LEU:O	1:A:114:HIS:NE2	0.51	2.44	4	1
1:A:84:ASP:O	1:A:84:ASP:OD1	0.51	2.29	1	4
1:A:123:ARG:HE	1:A:123:ARG:C	0.51	2.08	4	1
1:A:38:HIS:ND1	1:A:38:HIS:C	0.51	2.64	1	2
1:A:153:PHE:O	1:A:155:HIS:N	0.50	2.44	3	6
1:A:157:TRP:O	1:A:159:THR:N	0.50	2.44	5	4
1:A:38:HIS:ND1	1:A:38:HIS:O	0.50	2.45	1	1
1:A:84:ASP:C	1:A:85:GLN:HE21	0.50	2.10	5	1
1:A:86:ASP:OD1	1:A:114:HIS:CD2	0.50	2.65	9	1
1:A:112:ASN:C	1:A:114:HIS:H	0.50	2.10	6	4
1:A:100:SER:C	1:A:102:ALA:N	0.49	2.65	4	9
1:A:73:LEU:HD13	1:A:105:MET:HG3	0.49	1.83	2	1
1:A:161:VAL:C	1:A:163:HIS:H	0.49	2.10	9	9
1:A:90:THR:CG2	1:A:92:PHE:CE2	0.49	2.94	9	7
1:A:138:LEU:C	1:A:138:LEU:CD2	0.49	2.78	4	9
1:A:190:GLN:O	1:A:191:ASN:C	0.49	2.50	10	10
1:A:175:ASP:OD1	1:A:175:ASP:N	0.49	2.44	3	1
1:A:158:ASP:OD2	1:A:164:GLN:O	0.49	2.30	7	3
1:A:150:TYR:HA	1:A:174:LEU:HD13	0.49	1.83	10	2
1:A:103:GLN:O	1:A:104:GLU:C	0.49	2.51	4	10
1:A:120:PHE:CE1	1:A:152:GLU:HB3	0.49	2.42	6	1
1:A:72:PHE:CZ	1:A:117:LEU:CD2	0.49	2.96	7	1
1:A:112:ASN:C	1:A:114:HIS:N	0.49	2.62	4	6
1:A:114:HIS:C	1:A:114:HIS:ND1	0.49	2.64	3	2
1:A:185:LEU:HD23	1:A:186:ARG:NH1	0.49	2.22	10	1
1:A:106:ALA:HB2	1:A:138:LEU:CA	0.49	2.38	3	10
1:A:39:ASN:OD1	1:A:84:ASP:OD2	0.49	2.31	2	5
1:A:81:LEU:CD1	1:A:81:LEU:N	0.49	2.75	5	9
1:A:174:LEU:O	1:A:178:SER:OG	0.49	2.30	5	1
1:A:171:TRP:N	1:A:171:TRP:CE3	0.49	2.81	10	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:161:VAL:HG12	1:A:163:HIS:H	0.49	1.67	9	4
1:A:110:SER:O	1:A:113:LYS:CE	0.49	2.60	5	1
1:A:34:VAL:CG2	1:A:35:GLU:N	0.49	2.75	1	5
1:A:75:VAL:O	1:A:76:ILE:C	0.49	2.51	7	10
1:A:75:VAL:HG13	1:A:76:ILE:N	0.49	2.21	10	10
1:A:192:GLN:O	1:A:193:GLU:O	0.49	2.31	8	10
1:A:156:CYS:SG	1:A:157:TRP:N	0.49	2.86	7	1
1:A:85:GLN:O	1:A:86:ASP:OD1	0.49	2.31	1	2
1:A:144:LYS:C	1:A:145:ILE:HD13	0.49	2.28	4	4
1:A:157:TRP:CD1	1:A:161:VAL:HG11	0.48	2.42	4	1
1:A:114:HIS:O	1:A:114:HIS:CG	0.48	2.66	7	1
1:A:35:GLU:OE2	1:A:88:ARG:O	0.48	2.31	8	1
1:A:67:HIS:O	1:A:68:ALA:C	0.48	2.50	1	10
1:A:157:TRP:C	1:A:159:THR:N	0.48	2.67	9	5
1:A:157:TRP:O	1:A:161:VAL:N	0.48	2.43	3	2
1:A:157:TRP:C	1:A:159:THR:H	0.48	2.12	9	3
1:A:31:CYS:SG	1:A:32:TYR:N	0.48	2.86	3	1
1:A:85:GLN:N	1:A:85:GLN:CD	0.48	2.65	4	1
1:A:98:CYS:O	1:A:102:ALA:N	0.48	2.41	6	1
1:A:182:SER:O	1:A:183:GLY:C	0.48	2.51	2	10
1:A:151:SER:OG	1:A:152:GLU:N	0.48	2.46	3	2
1:A:191:ASN:O	1:A:191:ASN:OD1	0.48	2.31	4	2
1:A:112:ASN:OD1	1:A:112:ASN:N	0.48	2.46	8	1
1:A:136:ARG:C	1:A:136:ARG:HE	0.48	2.12	8	1
1:A:83:LEU:C	1:A:83:LEU:CD1	0.47	2.78	1	3
1:A:181:LEU:CD2	1:A:181:LEU:C	0.47	2.82	9	4
1:A:123:ARG:HG3	1:A:125:TYR:CE1	0.47	2.44	4	1
1:A:191:ASN:O	1:A:191:ASN:CG	0.47	2.53	5	6
1:A:105:MET:SD	1:A:109:ILE:CD1	0.47	3.02	8	5
1:A:83:LEU:HD23	1:A:83:LEU:C	0.47	2.30	4	2
1:A:171:TRP:O	1:A:173:GLY:N	0.47	2.45	8	3
1:A:96:SER:CB	1:A:97:PRO:CD	0.47	2.93	1	10
1:A:72:PHE:O	1:A:73:LEU:C	0.47	2.52	5	10
1:A:119:ILE:O	1:A:146:SER:OG	0.47	2.30	2	5
1:A:158:ASP:OD1	1:A:158:ASP:C	0.47	2.53	3	4
1:A:99:PHE:CD1	1:A:99:PHE:N	0.47	2.81	8	2
1:A:149:THR:O	1:A:150:TYR:C	0.47	2.53	10	9
1:A:184:ARG:O	1:A:185:LEU:C	0.47	2.53	8	10
1:A:79:TRP:CD1	1:A:79:TRP:N	0.47	2.82	9	2
1:A:106:ALA:HB2	1:A:138:LEU:CB	0.47	2.40	7	10
1:A:132:GLN:O	1:A:133:GLU:C	0.47	2.53	3	6

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:85:GLN:CA	1:A:85:GLN:NE2	0.47	2.78	5	1
1:A:150:TYR:CD1	1:A:150:TYR:N	0.47	2.82	9	3
1:A:35:GLU:CD	1:A:88:ARG:O	0.47	2.53	8	1
1:A:134:GLY:O	1:A:135:LEU:C	0.46	2.53	8	9
1:A:137:THR:CG2	1:A:138:LEU:N	0.46	2.78	10	3
1:A:175:ASP:N	1:A:175:ASP:OD1	0.46	2.48	4	1
1:A:191:ASN:C	1:A:191:ASN:OD1	0.46	2.53	6	6
1:A:152:GLU:O	1:A:156:CYS:N	0.46	2.48	5	1
1:A:133:GLU:CG	1:A:134:GLY:N	0.46	2.78	6	1
1:A:168:PHE:CE1	1:A:169:GLN:O	0.46	2.68	5	3
1:A:92:PHE:CZ	1:A:159:THR:HG21	0.46	2.45	4	2
1:A:182:SER:C	1:A:184:ARG:N	0.46	2.68	4	6
1:A:158:ASP:OD1	1:A:158:ASP:O	0.46	2.32	3	1
1:A:99:PHE:CD2	1:A:100:SER:OG	0.46	2.63	9	1
1:A:132:GLN:CB	1:A:188:ILE:HG22	0.46	2.40	5	2
1:A:39:ASN:C	1:A:41:THR:H	0.46	2.14	8	10
1:A:109:ILE:O	1:A:112:ASN:N	0.46	2.49	10	3
1:A:159:THR:HB	1:A:160:PHE:CE1	0.46	2.46	1	1
1:A:173:GLY:O	1:A:174:LEU:C	0.46	2.54	4	9
1:A:160:PHE:O	1:A:160:PHE:CG	0.46	2.69	3	1
1:A:72:PHE:CE1	1:A:117:LEU:HD23	0.46	2.45	7	1
1:A:84:ASP:C	1:A:85:GLN:OE1	0.46	2.54	10	2
1:A:191:ASN:CG	1:A:191:ASN:O	0.46	2.54	2	4
1:A:191:ASN:OD1	1:A:191:ASN:C	0.46	2.54	3	2
1:A:34:VAL:HB	1:A:89:VAL:HG13	0.46	1.86	2	7
1:A:69:GLU:CD	1:A:69:GLU:N	0.46	2.68	9	6
1:A:72:PHE:HB2	1:A:89:VAL:HG11	0.46	1.88	9	3
1:A:100:SER:O	1:A:101:CYS:C	0.46	2.54	9	7
1:A:69:GLU:N	1:A:69:GLU:CD	0.46	2.68	3	2
1:A:125:TYR:OH	1:A:180:ASP:CB	0.46	2.63	9	1
1:A:107:LYS:O	1:A:108:PHE:C	0.46	2.55	9	10
1:A:120:PHE:HE1	1:A:152:GLU:HB3	0.46	1.71	6	1
1:A:111:LYS:O	1:A:112:ASN:ND2	0.46	2.48	2	1
1:A:163:HIS:ND1	1:A:163:HIS:N	0.45	2.63	5	1
1:A:72:PHE:CB	1:A:89:VAL:HG11	0.45	2.41	9	3
1:A:75:VAL:O	1:A:78:PHE:HB3	0.45	2.11	7	1
1:A:73:LEU:HD11	1:A:108:PHE:CB	0.45	2.41	7	5
1:A:140:GLU:OE2	1:A:189:LEU:CD2	0.45	2.65	3	1
1:A:115:VAL:CG1	1:A:117:LEU:HD13	0.45	2.41	8	2
1:A:83:LEU:C	1:A:85:GLN:N	0.45	2.69	2	3
1:A:161:VAL:HG12	1:A:163:HIS:N	0.45	2.26	9	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:39:ASN:CG	1:A:40:ASP:H	0.45	2.14	6	6
1:A:109:ILE:O	1:A:112:ASN:C	0.45	2.55	6	2
1:A:33:GLU:O	1:A:90:THR:N	0.45	2.48	10	5
1:A:120:PHE:CD1	1:A:120:PHE:C	0.45	2.89	2	1
1:A:173:GLY:O	1:A:177:HIS:ND1	0.45	2.48	4	2
1:A:187:ALA:O	1:A:191:ASN:N	0.45	2.50	8	2
1:A:106:ALA:O	1:A:107:LYS:C	0.45	2.54	7	9
1:A:70:LEU:O	1:A:74:ASP:CG	0.45	2.55	6	1
1:A:171:TRP:CZ2	1:A:174:LEU:CD2	0.45	2.96	10	1
1:A:145:ILE:N	1:A:145:ILE:CD1	0.45	2.74	4	5
1:A:66:ARG:CZ	1:A:74:ASP:OD2	0.44	2.65	2	1
1:A:161:VAL:HG12	1:A:163:HIS:CG	0.44	2.47	5	1
1:A:175:ASP:OD2	1:A:176:GLU:N	0.44	2.48	7	1
1:A:178:SER:OG	1:A:179:GLN:N	0.44	2.50	10	1
1:A:175:ASP:CG	1:A:176:GLU:H	0.44	2.15	2	5
1:A:31:CYS:O	1:A:92:PHE:O	0.44	2.35	4	2
1:A:105:MET:HE3	1:A:138:LEU:HD12	0.44	1.89	8	2
1:A:149:THR:HG22	1:A:178:SER:HB2	0.44	1.89	9	1
1:A:186:ARG:CD	1:A:186:ARG:H	0.44	2.24	4	4
1:A:147:ILE:HG23	1:A:181:LEU:HD13	0.44	1.88	6	5
1:A:188:ILE:HD12	1:A:189:LEU:N	0.44	2.27	8	2
1:A:178:SER:O	1:A:179:GLN:C	0.44	2.55	5	6
1:A:149:THR:HG22	1:A:178:SER:CB	0.44	2.42	8	2
1:A:157:TRP:CD1	1:A:166:CYS:SG	0.44	3.10	8	1
1:A:162:ASP:O	1:A:162:ASP:OD2	0.44	2.35	8	1
1:A:157:TRP:CD1	1:A:161:VAL:HG21	0.44	2.48	8	2
1:A:178:SER:O	1:A:182:SER:N	0.44	2.49	5	1
1:A:87:TYR:CZ	1:A:114:HIS:ND1	0.44	2.86	4	2
1:A:145:ILE:HB	1:A:185:LEU:HD11	0.43	1.90	6	4
1:A:152:GLU:OE1	1:A:152:GLU:N	0.43	2.48	6	2
1:A:137:THR:O	1:A:141:ALA:N	0.43	2.45	7	1
1:A:182:SER:O	1:A:186:ARG:HD3	0.43	2.13	7	7
1:A:125:TYR:CD1	1:A:180:ASP:OD2	0.43	2.71	3	1
1:A:93:THR:O	1:A:120:PHE:O	0.43	2.35	6	2
1:A:76:ILE:CG2	1:A:87:TYR:CD1	0.43	3.01	6	3
1:A:30:LEU:HD13	1:A:68:ALA:HB2	0.43	1.89	4	2
1:A:160:PHE:O	1:A:160:PHE:CD1	0.43	2.72	8	1
1:A:86:ASP:OD1	1:A:114:HIS:NE2	0.43	2.52	1	1
1:A:83:LEU:O	1:A:85:GLN:N	0.43	2.51	2	1
1:A:84:ASP:OD1	1:A:84:ASP:O	0.43	2.36	3	1
1:A:190:GLN:O	1:A:192:GLN:N	0.43	2.52	3	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:30:LEU:HB2	1:A:93:THR:HG23	0.43	1.89	4	2
1:A:171:TRP:C	1:A:173:GLY:H	0.43	2.16	4	6
1:A:115:VAL:CG1	1:A:117:LEU:CD1	0.43	2.97	5	2
1:A:166:CYS:O	1:A:166:CYS:SG	0.43	2.76	5	1
1:A:42:TRP:CD1	1:A:42:TRP:C	0.43	2.92	8	1
1:A:181:LEU:C	1:A:181:LEU:CD2	0.43	2.87	6	1
1:A:119:ILE:HG22	1:A:121:THR:HG22	0.43	1.91	7	4
1:A:135:LEU:HD22	1:A:188:ILE:CD1	0.43	2.43	2	1
1:A:153:PHE:O	1:A:154:LYS:C	0.42	2.57	1	3
1:A:177:HIS:O	1:A:178:SER:C	0.42	2.56	9	1
1:A:149:THR:HG22	1:A:178:SER:HB3	0.42	1.90	10	1
1:A:85:GLN:CD	1:A:85:GLN:N	0.42	2.70	1	2
1:A:106:ALA:O	1:A:109:ILE:HB	0.42	2.14	6	4
1:A:189:LEU:O	1:A:191:ASN:N	0.42	2.52	5	2
1:A:158:ASP:OD1	1:A:164:GLN:C	0.42	2.57	5	1
1:A:150:TYR:O	1:A:154:LYS:NZ	0.42	2.47	2	1
1:A:189:LEU:C	1:A:191:ASN:N	0.42	2.72	5	3
1:A:158:ASP:OD1	1:A:164:GLN:O	0.42	2.36	5	1
1:A:87:TYR:CD1	1:A:87:TYR:N	0.42	2.85	7	2
1:A:120:PHE:CB	1:A:148:MET:SD	0.42	3.08	5	1
1:A:99:PHE:CE2	1:A:100:SER:CB	0.42	3.03	9	1
1:A:186:ARG:N	1:A:186:ARG:HD2	0.42	2.28	4	2
1:A:168:PHE:CD2	1:A:169:GLN:N	0.42	2.87	1	1
1:A:173:GLY:CA	1:A:175:ASP:OD1	0.42	2.67	1	1
1:A:186:ARG:N	1:A:186:ARG:HD3	0.42	2.29	7	5
1:A:171:TRP:CE3	1:A:171:TRP:N	0.42	2.87	9	1
1:A:76:ILE:HG21	1:A:87:TYR:CD2	0.42	2.50	2	2
1:A:31:CYS:SG	1:A:92:PHE:O	0.42	2.63	5	2
1:A:193:GLU:O	1:A:194:ASN:O	0.42	2.38	4	1
1:A:161:VAL:HG13	1:A:163:HIS:CD2	0.42	2.49	5	1
1:A:158:ASP:CG	1:A:164:GLN:O	0.42	2.58	1	1
1:A:96:SER:OG	1:A:97:PRO:HD2	0.41	2.15	8	3
1:A:132:GLN:HB2	1:A:188:ILE:HG22	0.41	1.92	2	1
1:A:173:GLY:C	1:A:177:HIS:HD1	0.41	2.18	4	1
1:A:106:ALA:CB	1:A:137:THR:HG22	0.41	2.45	6	1
1:A:70:LEU:N	1:A:70:LEU:HD13	0.41	2.30	8	1
1:A:32:TYR:CZ	1:A:34:VAL:HG12	0.41	2.51	6	1
1:A:123:ARG:NH1	1:A:177:HIS:CD2	0.41	2.88	7	1
1:A:105:MET:HE2	1:A:138:LEU:HD12	0.41	1.91	1	2
1:A:123:ARG:O	1:A:123:ARG:NE	0.41	2.45	4	1
1:A:76:ILE:N	1:A:77:PRO:HD2	0.41	2.30	7	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:105:MET:HE3	1:A:117:LEU:CD2	0.41	2.45	5	1
1:A:150:TYR:O	1:A:153:PHE:CB	0.41	2.68	3	2
1:A:112:ASN:CB	1:A:114:HIS:CE1	0.41	3.04	5	1
1:A:114:HIS:CE1	1:A:115:VAL:HG23	0.41	2.51	5	1
1:A:186:ARG:H	1:A:186:ARG:HD3	0.41	1.76	5	1
1:A:185:LEU:CD2	1:A:186:ARG:NH1	0.41	2.84	10	1
1:A:67:HIS:N	1:A:70:LEU:HD23	0.40	2.29	1	1
1:A:162:ASP:O	1:A:162:ASP:CG	0.40	2.57	9	2
1:A:98:CYS:O	1:A:99:PHE:C	0.40	2.59	8	1
1:A:186:ARG:HD3	1:A:186:ARG:H	0.40	1.76	8	1
1:A:33:GLU:OE2	1:A:92:PHE:CE2	0.40	2.74	3	1
1:A:153:PHE:C	1:A:155:HIS:H	0.40	2.20	5	1
1:A:117:LEU:N	1:A:117:LEU:HD12	0.40	2.32	5	1
1:A:31:CYS:SG	1:A:160:PHE:CE2	0.40	3.15	6	1
1:A:70:LEU:CD2	1:A:70:LEU:N	0.40	2.82	8	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	137/194 (71%)	84±3 (62±2%)	38±4 (28±3%)	15±2 (11±2%)	1	8
All	All	1370/1940 (71%)	844 (62%)	378 (28%)	148 (11%)	1	8

All 24 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	40	ASP	10
1	A	81	LEU	10
1	A	97	PRO	10
1	A	108	PHE	10
1	A	193	GLU	10
1	A	172	ASP	9
1	A	68	ALA	8

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Mol	Chain	Res	Type	Models (Total)
1	A	73	LEU	8
1	A	174	LEU	8
1	A	190	GLN	8
1	A	191	ASN	8
1	A	101	CYS	7
1	A	114	HIS	6
1	A	164	GLN	6
1	A	94	SER	5
1	A	158	ASP	5
1	A	162	ASP	5
1	A	113	LYS	5
1	A	183	GLY	3
1	A	132	GLN	2
1	A	167	PRO	2
1	A	192	GLN	1
1	A	173	GLY	1
1	A	165	GLY	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	125/175 (71%)	91±3 (73±2%)	34±3 (27±2%)	2	21
All	All	1250/1750 (71%)	907 (73%)	343 (27%)	2	21

All 70 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	32	TYR	10
1	A	70	LEU	10
1	A	76	ILE	10
1	A	79	TRP	10
1	A	81	LEU	10
1	A	87	TYR	10
1	A	110	SER	10
1	A	121	THR	10

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Mol	Chain	Res	Type	Models (Total)
1	A	135	LEU	10
1	A	137	THR	10
1	A	138	LEU	10
1	A	147	ILE	10
1	A	181	LEU	10
1	A	186	ARG	10
1	A	69	GLU	9
1	A	117	LEU	9
1	A	146	SER	9
1	A	101	CYS	9
1	A	86	ASP	8
1	A	124	ILE	8
1	A	156	CYS	8
1	A	192	GLN	8
1	A	31	CYS	7
1	A	149	THR	7
1	A	185	LEU	7
1	A	189	LEU	7
1	A	83	LEU	6
1	A	111	LYS	6
1	A	153	PHE	5
1	A	113	LYS	5
1	A	85	GLN	5
1	A	36	ARG	4
1	A	96	SER	4
1	A	154	LYS	4
1	A	160	PHE	4
1	A	95	TRP	4
1	A	123	ARG	4
1	A	158	ASP	4
1	A	89	VAL	4
1	A	114	HIS	3
1	A	136	ARG	3
1	A	133	GLU	3
1	A	120	PHE	3
1	A	42	TRP	2
1	A	94	SER	2
1	A	98	CYS	2
1	A	166	CYS	2
1	A	40	ASP	2
1	A	80	LYS	2
1	A	82	ASP	2

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Mol	Chain	Res	Type	Models (Total)
1	A	182	SER	2
1	A	168	PHE	2
1	A	38	HIS	1
1	A	151	SER	1
1	A	157	TRP	1
1	A	163	HIS	1
1	A	178	SER	1
1	A	100	SER	1
1	A	132	GLN	1
1	A	126	ASP	1
1	A	175	ASP	1
1	A	88	ARG	1
1	A	104	GLU	1
1	A	144	LYS	1
1	A	172	ASP	1
1	A	152	GLU	1
1	A	35	GLU	1
1	A	41	THR	1
1	A	93	THR	1
1	A	112	ASN	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](#)

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

6.7 Other polymers [i](#)

There are no such molecules in this entry.

6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

7 Chemical shift validation

No chemical shift data were provided