Full wwPDB NMR Structure Validation Report (i)

Mar 6, 2022 – 09:40 AM EST

PDB ID	:	2KBW
Title	:	Solution Structure of human Mcl-1 complexed with human Bid_BH3 peptide
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Deposited on	:	2008-12-09

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 (i)) were used in the production of this report:

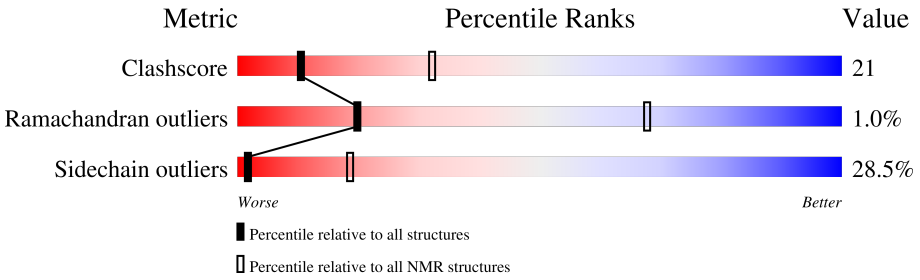
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	2.27
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)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

1 Overall quality at a glance (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	164	35% 41% . 18% .
2	B	35	29% 29% 6% 26% 11%

2 Ensemble composition and analysis

This entry contains 10 models. Model 2 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:173-A:191, A:204-A:237, A:242-A:318, B:78-B:99 (152)	0.27	2

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. No single-model clusters were found.

Cluster number	Models
1	1, 2, 3, 4, 5, 6, 9, 10
2	7, 8

3 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 3044 atoms, of which 1520 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Induced myeloid leukemia cell differentiation protein Mcl-1.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	160	2571	804	1284	233	246	4	0

- Molecule 2 is a protein called BH3-interacting domain death agonist.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
2	B	31	473	143	236	45	48	1	0

4 Residue-property plots

4.1 Average score per residue in the NMR ensemble

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

• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

Chain A:

• Molecule 2: BH3-interacting domain death agonist

Chain B:

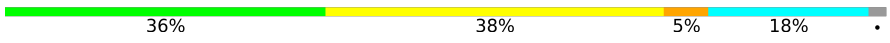
4.2 Scores per residue for each member of the ensemble

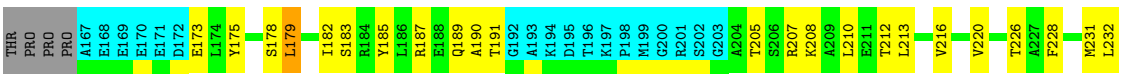
Colouring as in section 4.1 above.

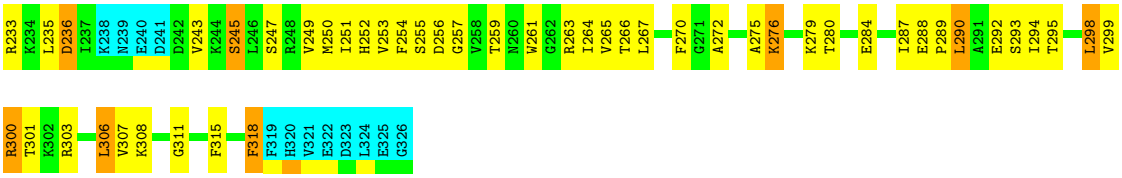
4.2.1 Score per residue for model 1

• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

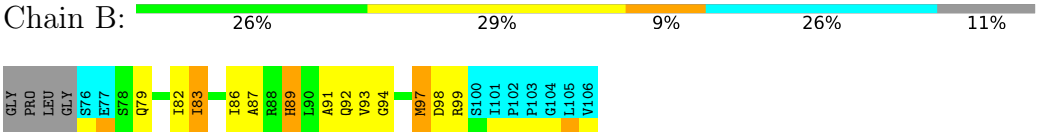
Chain A:





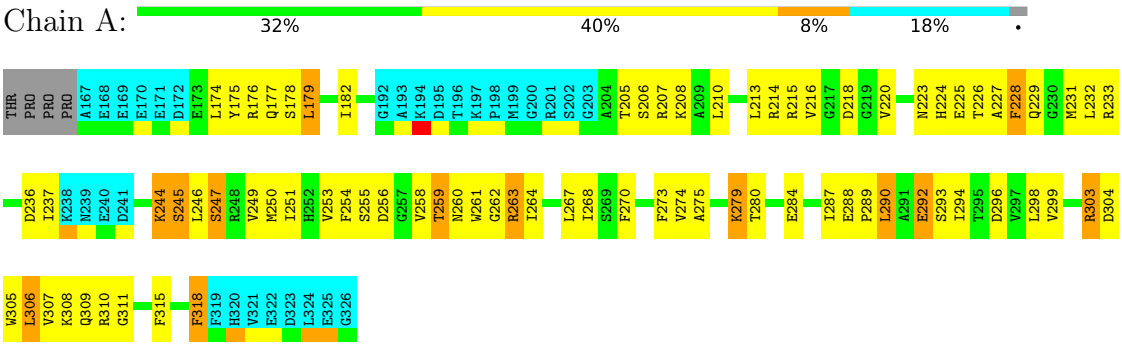


• Molecule 2: BH3-interacting domain death agonist

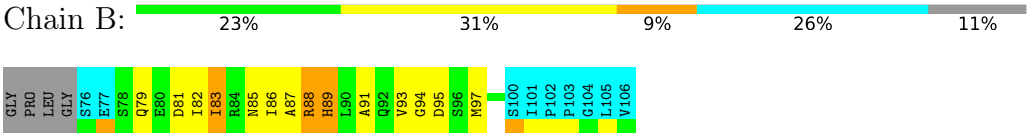


4.2.2 Score per residue for model 2 (medoid)

• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

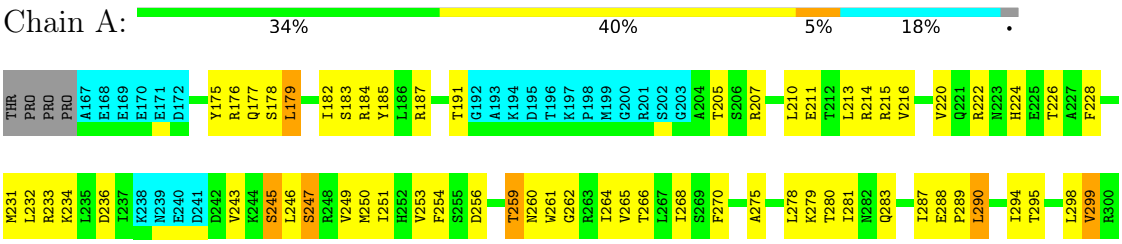


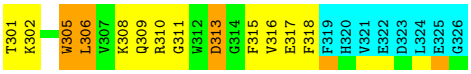
• Molecule 2: BH3-interacting domain death agonist



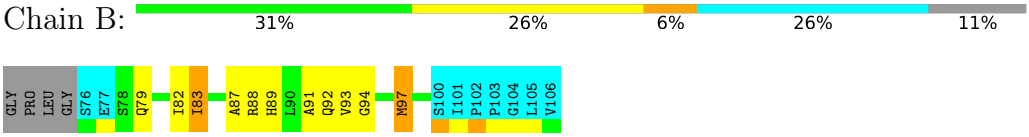
4.2.3 Score per residue for model 3

• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1



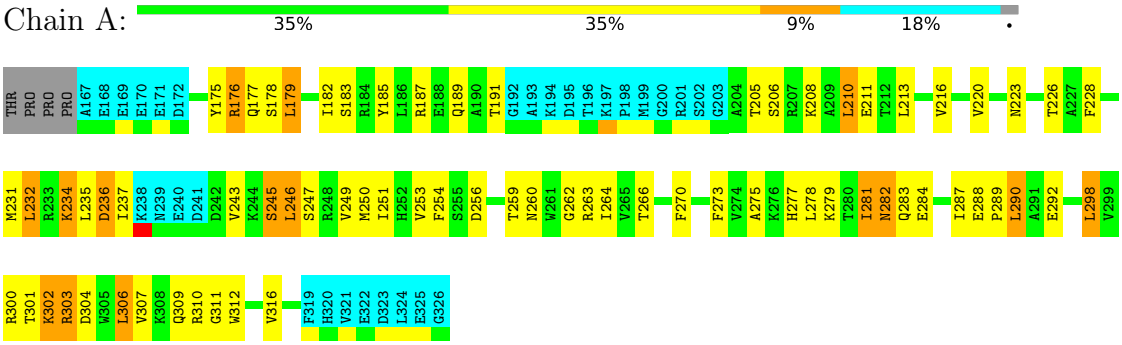


• Molecule 2: BH3-interacting domain death agonist

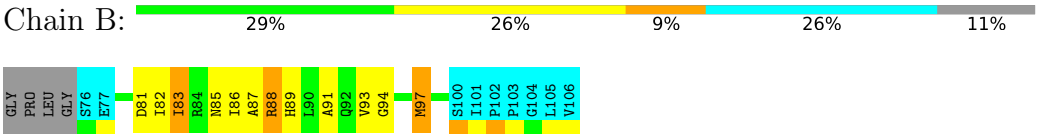


4.2.4 Score per residue for model 4

• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

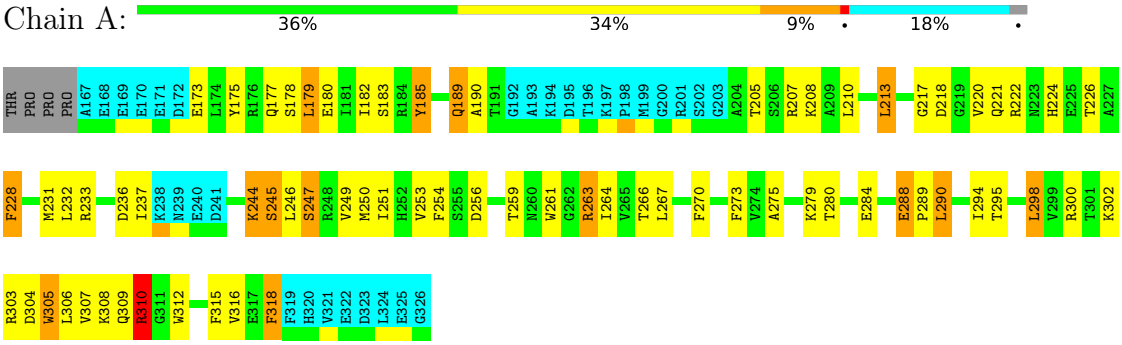


• Molecule 2: BH3-interacting domain death agonist



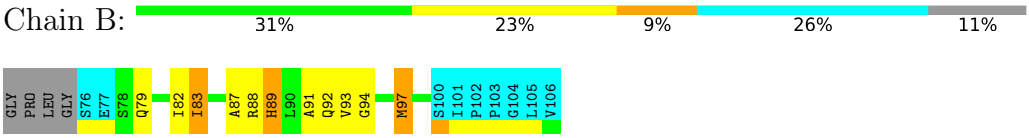
4.2.5 Score per residue for model 5

• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1



• Molecule 2: BH3-interacting domain death agonist

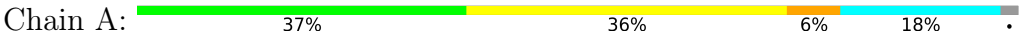
Chain B:

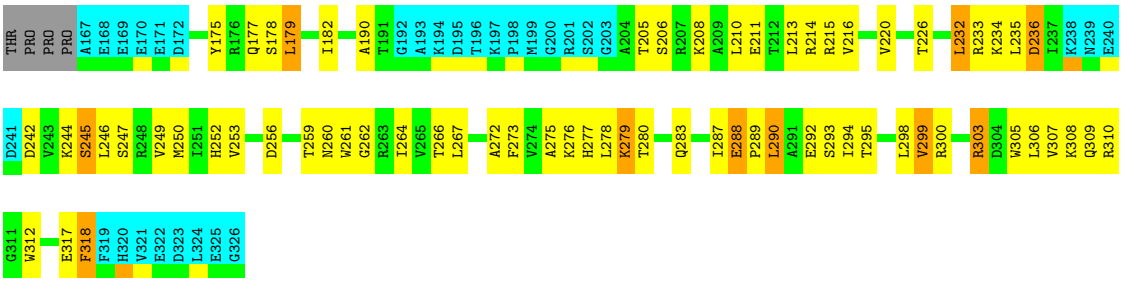


4.2.6 Score per residue for model 6

• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

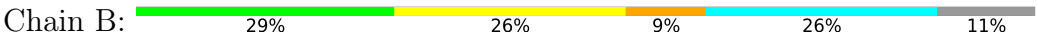
Chain A:

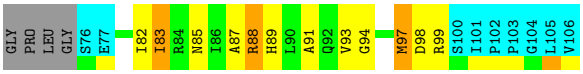




• Molecule 2: BH3-interacting domain death agonist

Chain B:

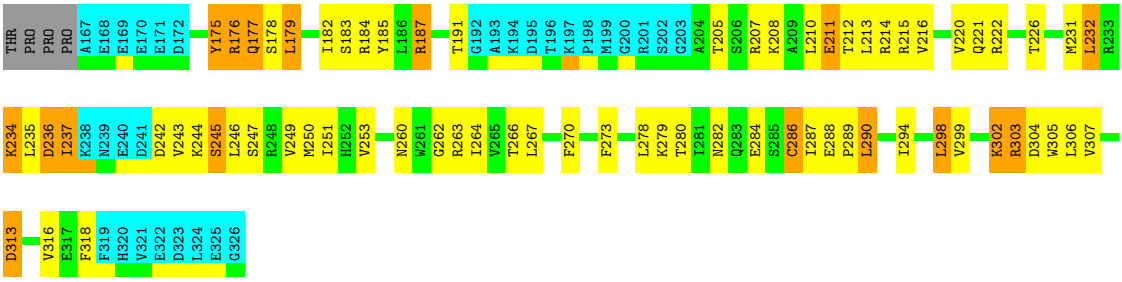




4.2.7 Score per residue for model 7

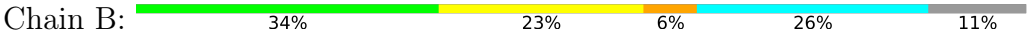
• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

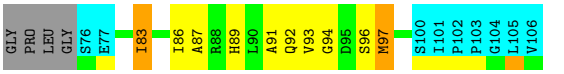
Chain A:



• Molecule 2: BH3-interacting domain death agonist

Chain B:

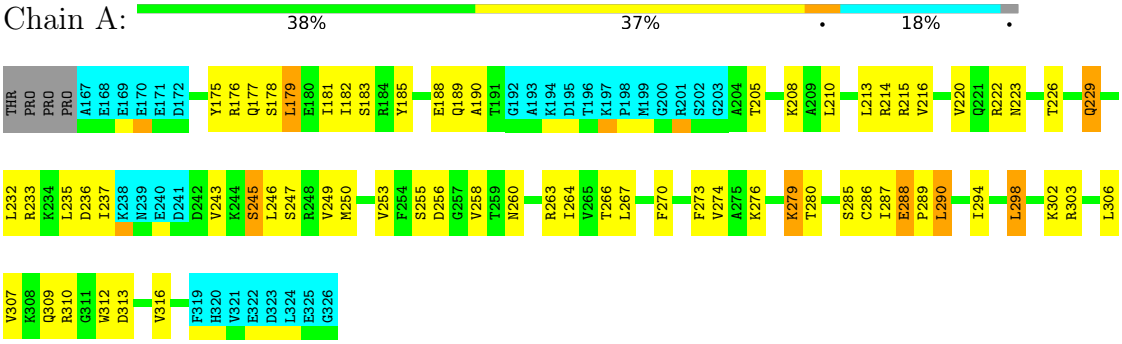




4.2.8 Score per residue for model 8

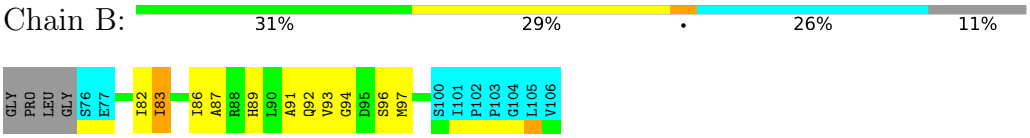
• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

Chain A:



• Molecule 2: BH3-interacting domain death agonist

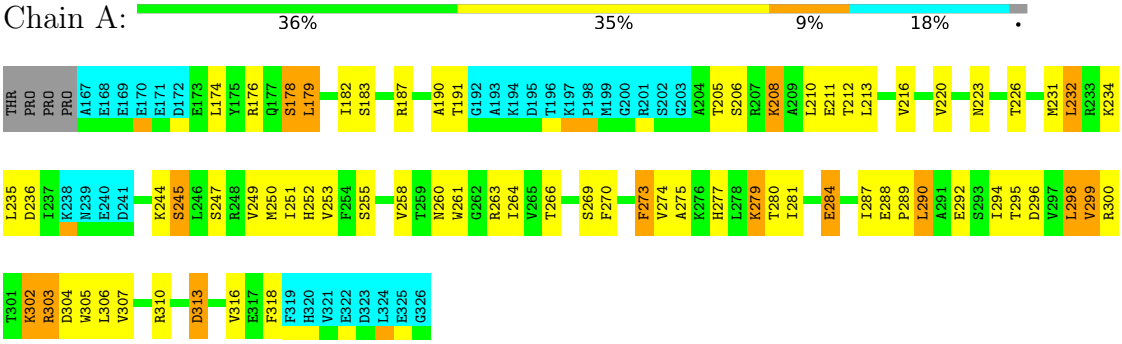
Chain B:



4.2.9 Score per residue for model 9

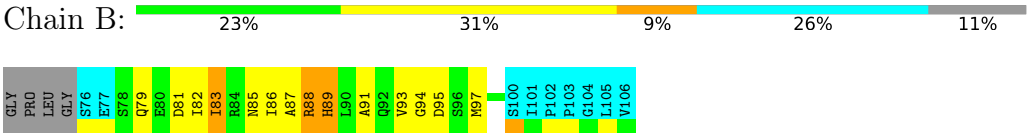
• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

Chain A:



• Molecule 2: BH3-interacting domain death agonist

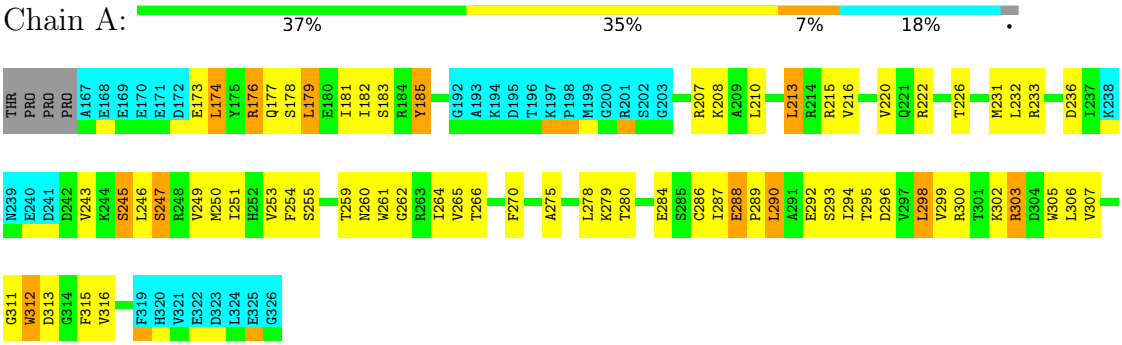
Chain B:



4.2.10 Score per residue for model 10

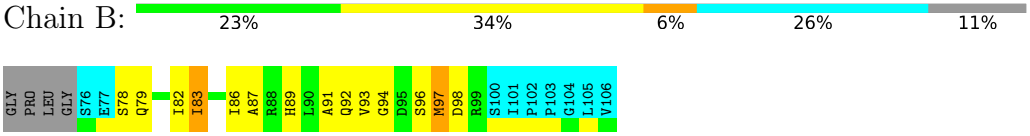
• Molecule 1: Induced myeloid leukemia cell differentiation protein Mcl-1

Chain A:



• Molecule 2: BH3-interacting domain death agonist

Chain B:



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
CYANA	structure solution	
CNS	refinement	

No chemical shift data was provided.

6 Model quality

6.1 Standard geometry

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

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no planarity outliers.

6.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	1056	1081	1078	50±5
2	B	175	172	171	17±2
All	All	12310	12530	12490	524

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 21.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:249:VAL:HG22	2:B:83:ILE:HG23	1.00	1.34	2	10
1:A:259:THR:HG21	1:A:305:TRP:CG	0.86	2.04	10	3
1:A:279:LYS:NZ	1:A:287:ILE:HD11	0.85	1.85	8	1
2:B:89:HIS:O	2:B:93:VAL:HG23	0.83	1.72	8	10
1:A:247:SER:O	1:A:251:ILE:HD12	0.81	1.75	1	8
1:A:279:LYS:CE	1:A:287:ILE:HD11	0.81	2.06	8	2
1:A:290:LEU:O	1:A:294:ILE:HD12	0.80	1.76	6	8
1:A:260:ASN:O	1:A:264:ILE:HD12	0.80	1.76	9	8
1:A:190:ALA:HB1	1:A:279:LYS:HG3	0.76	1.58	6	3
1:A:263:ARG:CZ	2:B:91:ALA:HB1	0.76	2.10	1	3
1:A:254:PHE:CE2	1:A:301:THR:HG21	0.75	2.16	4	1
1:A:279:LYS:HD3	1:A:287:ILE:HD11	0.74	1.60	3	4
1:A:303:ARG:O	1:A:307:VAL:HG23	0.72	1.83	6	9

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:263:ARG:NH2	2:B:91:ALA:HB1	0.71	2.01	7	4
1:A:253:VAL:HB	2:B:91:ALA:HB2	0.71	1.62	6	9
1:A:245:SER:OG	2:B:83:ILE:HD11	0.71	1.85	6	3
1:A:235:LEU:HG	2:B:86:ILE:HD13	0.70	1.62	7	4
1:A:178:SER:O	1:A:182:ILE:HG22	0.70	1.87	6	10
1:A:179:LEU:HD12	1:A:179:LEU:O	0.69	1.88	8	10
1:A:279:LYS:HG2	1:A:287:ILE:HD11	0.69	1.65	6	2
1:A:300:ARG:HD2	1:A:301:THR:HG23	0.69	1.64	1	1
1:A:179:LEU:HD12	1:A:179:LEU:C	0.69	2.09	4	10
1:A:231:MET:HG2	2:B:86:ILE:HG23	0.68	1.65	4	6
1:A:208:LYS:HB3	1:A:316:VAL:HG21	0.67	1.64	8	4
1:A:249:VAL:CG2	2:B:83:ILE:HD13	0.67	2.20	2	10
2:B:79:GLN:HA	2:B:82:ILE:HD12	0.67	1.66	3	5
1:A:249:VAL:HG22	2:B:83:ILE:CG2	0.67	2.16	2	10
1:A:249:VAL:O	1:A:253:VAL:HG13	0.67	1.88	5	9
1:A:178:SER:OG	1:A:295:THR:HG23	0.67	1.88	6	2
1:A:243:VAL:HG11	1:A:289:PRO:HB2	0.67	1.67	3	1
1:A:232:LEU:HD12	1:A:273:PHE:CE1	0.66	2.25	9	1
1:A:279:LYS:CG	1:A:287:ILE:HD11	0.66	2.21	6	1
1:A:279:LYS:HE3	1:A:287:ILE:HD11	0.66	1.68	8	1
1:A:286:CYS:O	1:A:290:LEU:HD12	0.65	1.91	8	2
1:A:190:ALA:HB1	1:A:279:LYS:CG	0.65	2.20	5	1
1:A:216:VAL:O	1:A:220:VAL:HG23	0.65	1.92	10	8
1:A:278:LEU:HD13	1:A:286:CYS:SG	0.65	2.32	10	1
1:A:272:ALA:HB1	1:A:276:LYS:NZ	0.64	2.07	6	2
1:A:249:VAL:HG23	2:B:83:ILE:HD13	0.63	1.69	2	10
1:A:250:MET:O	1:A:253:VAL:HG22	0.62	1.94	4	10
1:A:264:ILE:HG23	1:A:298:LEU:HD11	0.62	1.71	4	3
1:A:220:VAL:HG21	2:B:97:MET:CE	0.62	2.25	5	1
1:A:275:ALA:HB2	1:A:290:LEU:HD12	0.61	1.71	5	8
1:A:237:ILE:CG2	1:A:278:LEU:HD21	0.61	2.26	7	1
1:A:276:LYS:O	1:A:280:THR:HG23	0.60	1.96	8	1
1:A:249:VAL:HG13	2:B:87:ALA:HB2	0.60	1.73	6	10
1:A:259:THR:HG21	1:A:305:TRP:CB	0.60	2.26	10	3
1:A:253:VAL:HG12	2:B:87:ALA:C	0.60	2.17	3	10
1:A:300:ARG:CD	1:A:301:THR:HG23	0.59	2.27	1	1
1:A:253:VAL:HG21	1:A:263:ARG:NH2	0.59	2.11	2	1
1:A:187:ARG:O	1:A:191:THR:HG22	0.59	1.98	4	4
1:A:174:LEU:HD22	1:A:312:TRP:CH2	0.58	2.34	10	1
1:A:208:LYS:HB3	1:A:316:VAL:HG11	0.58	1.75	4	2
1:A:234:LYS:HB3	2:B:86:ILE:HD11	0.58	1.74	7	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:313:ASP:O	1:A:316:VAL:HG12	0.57	1.99	9	4
1:A:312:TRP:O	1:A:316:VAL:HG23	0.57	1.98	5	2
1:A:270:PHE:CE2	1:A:274:VAL:HG21	0.57	2.34	8	1
1:A:264:ILE:HD13	1:A:315:PHE:CE2	0.56	2.35	5	2
1:A:253:VAL:HG12	2:B:87:ALA:CA	0.56	2.30	5	5
1:A:278:LEU:HD13	1:A:283:GLN:O	0.56	2.00	6	3
1:A:309:GLN:O	1:A:310:ARG:HB2	0.56	2.00	8	4
1:A:264:ILE:HG22	1:A:268:ILE:HD12	0.56	1.76	2	2
1:A:235:LEU:O	1:A:236:ASP:CB	0.56	2.53	7	1
1:A:259:THR:HG21	1:A:305:TRP:CD1	0.55	2.35	10	2
1:A:187:ARG:O	1:A:191:THR:HG23	0.55	2.00	9	1
1:A:185:TYR:CE2	1:A:213:LEU:HD13	0.55	2.37	10	2
1:A:288:GLU:N	1:A:289:PRO:HD2	0.55	2.17	10	10
1:A:228:PHE:CE1	1:A:273:PHE:CZ	0.55	2.95	2	1
1:A:266:THR:OG1	2:B:94:GLY:HA2	0.54	2.03	1	9
1:A:272:ALA:HB1	1:A:276:LYS:HZ1	0.54	1.62	6	1
1:A:246:LEU:HD22	1:A:250:MET:HE3	0.54	1.78	6	2
1:A:302:LYS:N	1:A:302:LYS:HD2	0.54	2.18	9	1
1:A:249:VAL:CG2	2:B:83:ILE:HG23	0.53	2.23	8	6
1:A:253:VAL:HG12	2:B:87:ALA:HB1	0.53	1.78	5	2
1:A:245:SER:O	2:B:83:ILE:HD13	0.53	2.03	6	10
1:A:279:LYS:HE2	1:A:287:ILE:CD1	0.53	2.34	9	1
1:A:190:ALA:HB1	1:A:279:LYS:CE	0.52	2.34	8	1
1:A:228:PHE:CE1	1:A:273:PHE:CG	0.52	2.98	5	1
1:A:262:GLY:HA3	2:B:94:GLY:O	0.52	2.05	7	6
1:A:174:LEU:HD23	1:A:174:LEU:N	0.51	2.20	10	1
1:A:261:TRP:CZ2	1:A:318:PHE:CD1	0.51	2.99	9	2
1:A:220:VAL:HG12	1:A:224:HIS:HD2	0.51	1.64	5	1
1:A:224:HIS:CE1	1:A:228:PHE:CD2	0.51	2.98	5	1
1:A:253:VAL:CG2	1:A:263:ARG:NH2	0.51	2.74	2	1
1:A:261:TRP:CH2	1:A:318:PHE:CZ	0.51	2.99	6	2
1:A:258:VAL:HG13	1:A:263:ARG:HD2	0.51	1.82	2	1
1:A:278:LEU:HA	1:A:281:ILE:HG12	0.51	1.81	3	1
1:A:253:VAL:HG12	2:B:87:ALA:O	0.50	2.06	3	9
1:A:232:LEU:HD12	1:A:273:PHE:HE1	0.50	1.65	9	1
1:A:279:LYS:HE3	1:A:287:ILE:CD1	0.50	2.36	8	1
1:A:259:THR:HG21	1:A:305:TRP:CD2	0.50	2.42	5	2
1:A:273:PHE:CZ	1:A:277:HIS:CE1	0.50	3.00	4	1
1:A:211:GLU:HG3	1:A:212:THR:N	0.50	2.20	7	1
2:B:85:ASN:O	2:B:88:ARG:HG3	0.50	2.07	9	4
1:A:261:TRP:CH2	1:A:318:PHE:CD1	0.50	2.99	9	2

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:261:TRP:CH2	1:A:318:PHE:CE1	0.50	3.00	5	2
1:A:279:LYS:CD	1:A:287:ILE:HD11	0.50	2.33	3	5
1:A:258:VAL:HG13	1:A:263:ARG:NE	0.49	2.23	8	1
1:A:220:VAL:HG21	2:B:97:MET:HE3	0.49	1.83	5	1
1:A:298:LEU:O	1:A:302:LYS:HB2	0.49	2.07	9	1
1:A:228:PHE:CD1	1:A:229:GLN:N	0.48	2.81	2	1
1:A:279:LYS:HZ1	1:A:287:ILE:HD11	0.48	1.66	8	1
1:A:228:PHE:CZ	1:A:273:PHE:CB	0.48	2.96	5	1
1:A:253:VAL:HG12	2:B:87:ALA:CB	0.48	2.39	5	1
1:A:279:LYS:CE	1:A:284:GLU:HA	0.48	2.39	9	1
1:A:245:SER:HB3	2:B:83:ILE:HD11	0.47	1.85	7	2
1:A:232:LEU:HD13	1:A:273:PHE:HE2	0.47	1.68	7	1
1:A:243:VAL:HG21	1:A:289:PRO:CB	0.47	2.39	1	1
1:A:263:ARG:CZ	2:B:91:ALA:HA	0.47	2.39	5	1
1:A:182:ILE:HG23	1:A:183:SER:N	0.47	2.25	3	8
1:A:220:VAL:HG12	1:A:228:PHE:CE2	0.47	2.45	1	1
1:A:264:ILE:HG12	1:A:298:LEU:HD21	0.47	1.87	1	3
1:A:259:THR:HG23	1:A:302:LYS:HE2	0.46	1.85	4	1
1:A:182:ILE:HG21	1:A:295:THR:OG1	0.46	2.10	6	1
1:A:278:LEU:O	1:A:281:ILE:HD13	0.46	2.11	4	1
1:A:309:GLN:O	1:A:310:ARG:CB	0.46	2.63	5	2
1:A:220:VAL:HG12	1:A:228:PHE:CE1	0.46	2.45	4	2
1:A:190:ALA:CB	1:A:279:LYS:CE	0.46	2.94	8	1
1:A:281:ILE:O	1:A:282:ASN:CB	0.46	2.62	4	1
1:A:229:GLN:NE2	1:A:273:PHE:CZ	0.46	2.84	8	1
1:A:273:PHE:CG	1:A:274:VAL:N	0.46	2.84	9	1
1:A:190:ALA:HB1	1:A:279:LYS:CD	0.46	2.41	9	1
1:A:254:PHE:CZ	1:A:267:LEU:CD1	0.45	2.99	5	2
1:A:228:PHE:CD1	1:A:228:PHE:C	0.45	2.89	2	1
1:A:254:PHE:CE2	1:A:301:THR:CB	0.45	2.99	3	1
1:A:306:LEU:O	1:A:311:GLY:N	0.45	2.49	4	4
1:A:176:ARG:HD2	1:A:177:GLN:N	0.45	2.26	7	3
1:A:281:ILE:O	1:A:281:ILE:HG12	0.45	2.11	4	1
1:A:279:LYS:HE2	1:A:287:ILE:HD12	0.45	1.87	7	1
1:A:289:PRO:HA	1:A:292:GLU:HG2	0.45	1.89	10	4
1:A:228:PHE:CE1	1:A:273:PHE:CE1	0.45	3.05	2	1
1:A:228:PHE:CE1	1:A:273:PHE:CB	0.45	2.99	5	1
1:A:174:LEU:HD22	1:A:312:TRP:CZ2	0.45	2.46	10	1
1:A:264:ILE:HG22	1:A:268:ILE:CD1	0.45	2.42	2	1
1:A:220:VAL:HG12	1:A:224:HIS:CD2	0.45	2.47	5	1
1:A:299:VAL:O	1:A:303:ARG:HB3	0.45	2.11	1	5

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:254:PHE:CE2	1:A:267:LEU:CD1	0.45	2.99	5	1
1:A:302:LYS:N	1:A:302:LYS:HD3	0.45	2.27	7	1
1:A:179:LEU:C	1:A:179:LEU:CD1	0.45	2.82	7	2
1:A:264:ILE:HD13	1:A:315:PHE:CZ	0.44	2.47	5	1
1:A:235:LEU:O	1:A:236:ASP:O	0.44	2.35	6	3
1:A:303:ARG:HG2	1:A:304:ASP:N	0.44	2.27	9	1
1:A:289:PRO:O	1:A:293:SER:CB	0.44	2.65	1	3
1:A:281:ILE:HD11	1:A:283:GLN:HG2	0.44	1.90	4	1
1:A:236:ASP:O	1:A:237:ILE:O	0.44	2.36	7	1
1:A:224:HIS:O	1:A:227:ALA:N	0.44	2.48	2	1
1:A:259:THR:CG2	1:A:305:TRP:CD1	0.44	3.00	2	1
1:A:259:THR:HG21	1:A:305:TRP:CE3	0.44	2.47	3	1
1:A:232:LEU:HD13	1:A:273:PHE:HE1	0.43	1.72	6	1
1:A:270:PHE:CE2	1:A:274:VAL:CG2	0.43	3.01	8	1
1:A:261:TRP:CD1	1:A:315:PHE:CD1	0.43	3.05	1	1
1:A:247:SER:C	1:A:251:ILE:HD12	0.43	2.31	2	1
1:A:216:VAL:CG1	1:A:265:VAL:HG11	0.43	2.43	1	1
1:A:231:MET:HB2	1:A:270:PHE:CZ	0.43	2.49	10	3
1:A:279:LYS:HE2	1:A:284:GLU:HB3	0.43	1.90	9	1
1:A:245:SER:O	1:A:249:VAL:HG23	0.43	2.13	6	3
1:A:278:LEU:HD22	1:A:286:CYS:SG	0.43	2.54	10	1
1:A:225:GLU:HA	1:A:228:PHE:CD2	0.42	2.49	2	1
1:A:258:VAL:HG11	2:B:95:ASP:OD2	0.42	2.13	9	1
1:A:295:THR:O	1:A:299:VAL:HG23	0.42	2.14	3	1
1:A:261:TRP:CZ2	1:A:318:PHE:CD2	0.42	3.07	1	1
1:A:224:HIS:O	1:A:224:HIS:ND1	0.42	2.52	5	1
2:B:82:ILE:HG22	2:B:86:ILE:HD12	0.42	1.91	8	1
2:B:82:ILE:HD12	2:B:82:ILE:N	0.42	2.29	9	1
1:A:256:ASP:OD1	1:A:257:GLY:N	0.42	2.53	1	1
1:A:272:ALA:O	1:A:275:ALA:HB3	0.42	2.15	6	1
1:A:273:PHE:CE2	1:A:274:VAL:HG23	0.42	2.49	9	1
1:A:311:GLY:O	1:A:315:PHE:CD1	0.42	2.73	2	1
1:A:181:ILE:O	1:A:185:TYR:HB2	0.42	2.15	10	1
1:A:190:ALA:HB2	1:A:276:LYS:CE	0.42	2.45	1	1
1:A:288:GLU:N	1:A:289:PRO:CD	0.42	2.83	5	4
1:A:292:GLU:O	1:A:296:ASP:CB	0.42	2.68	2	3
1:A:232:LEU:HD21	1:A:277:HIS:CD2	0.42	2.50	4	1
1:A:175:TYR:O	1:A:175:TYR:HD1	0.42	1.97	7	1
1:A:254:PHE:CZ	1:A:263:ARG:NH1	0.41	2.87	2	1
1:A:260:ASN:OD1	1:A:261:TRP:CE3	0.41	2.73	2	3
1:A:185:TYR:HD1	1:A:210:LEU:HD11	0.41	1.74	4	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:B:82:ILE:CD1	2:B:82:ILE:N	0.41	2.82	6	1
1:A:295:THR:O	1:A:299:VAL:CG2	0.41	2.69	6	1
1:A:290:LEU:C	1:A:294:ILE:HD12	0.41	2.36	7	1
1:A:177:GLN:OE1	1:A:312:TRP:CZ2	0.41	2.74	10	1
1:A:270:PHE:CE1	1:A:274:VAL:CG2	0.41	3.04	2	1
1:A:237:ILE:HG21	1:A:278:LEU:HD21	0.41	1.89	7	1
1:A:279:LYS:CE	1:A:287:ILE:CD1	0.41	2.99	9	1
1:A:253:VAL:CG1	2:B:87:ALA:HB1	0.41	2.45	10	1
1:A:290:LEU:O	1:A:294:ILE:HD13	0.41	2.15	3	1
1:A:296:ASP:O	1:A:300:ARG:HB2	0.41	2.16	9	1
1:A:220:VAL:HG13	1:A:224:HIS:CD2	0.41	2.51	3	1
1:A:174:LEU:O	1:A:178:SER:CB	0.41	2.69	10	1
2:B:82:ILE:N	2:B:82:ILE:CD1	0.41	2.84	4	2
1:A:217:GLY:O	1:A:221:GLN:CB	0.41	2.69	5	1
1:A:232:LEU:HD13	1:A:273:PHE:CE2	0.41	2.51	7	1
1:A:254:PHE:CZ	1:A:298:LEU:HD22	0.41	2.50	10	1
2:B:79:GLN:N	2:B:82:ILE:HD12	0.41	2.31	1	1
1:A:243:VAL:HG13	1:A:289:PRO:HB2	0.41	1.92	4	1
1:A:228:PHE:CD1	1:A:273:PHE:CZ	0.40	3.09	2	1
1:A:185:TYR:CD1	1:A:189:GLN:OE1	0.40	2.75	5	1
1:A:279:LYS:HE2	1:A:284:GLU:HA	0.40	1.93	9	1
1:A:249:VAL:CG2	2:B:83:ILE:CD1	0.40	2.97	2	1
1:A:228:PHE:CE1	1:A:273:PHE:HB3	0.40	2.51	5	1
1:A:182:ILE:CG2	1:A:183:SER:N	0.40	2.84	3	1
1:A:244:LYS:HD3	1:A:245:SER:N	0.40	2.32	5	1
1:A:264:ILE:CG1	1:A:298:LEU:HD21	0.40	2.47	7	1
1:A:289:PRO:O	1:A:293:SER:HB2	0.40	2.16	10	1
1:A:181:ILE:O	1:A:185:TYR:CB	0.40	2.70	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	130/164 (79%)	117±2 (90±1%)	11±2 (9±1%)	1±0 (1±0%)	18 66

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	B	22/35 (63%)	20±1 (90±4%)	2±1 (10±4%)	0±0 (0±1%)	32 76
All	All	1520/1990 (76%)	1369 (90%)	136 (9%)	15 (1%)	20 68

All 6 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	236	ASP	10
1	A	282	ASN	1
1	A	310	ARG	1
1	A	237	ILE	1
2	B	79	GLN	1
1	A	311	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	115/143 (80%)	82±4 (71±4%)	33±4 (29±4%)	2 18
2	B	19/29 (66%)	14±1 (74±4%)	5±1 (26±4%)	2 23
All	All	1340/1720 (78%)	958 (71%)	382 (29%)	2 18

All 85 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	179	LEU	10
1	A	210	LEU	10
1	A	213	LEU	10
1	A	226	THR	10
1	A	232	LEU	10
1	A	245	SER	10
1	A	290	LEU	10
1	A	298	LEU	10
1	A	306	LEU	10
2	B	83	ILE	10

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Mol	Chain	Res	Type	Models (Total)
2	B	97	MET	10
1	A	205	THR	9
1	A	175	TYR	8
1	A	280	THR	8
1	A	233	ARG	7
1	A	284	GLU	7
1	A	176	ARG	7
1	A	246	LEU	7
1	A	302	LYS	7
1	A	207	ARG	6
1	A	318	PHE	6
2	B	92	GLN	6
1	A	177	GLN	6
1	A	215	ARG	6
1	A	247	SER	6
1	A	256	ASP	6
1	A	303	ARG	6
2	B	88	ARG	6
1	A	185	TYR	5
1	A	255	SER	5
1	A	300	ARG	5
1	A	308	LYS	5
1	A	214	ARG	5
1	A	244	LYS	5
1	A	211	GLU	5
1	A	222	ARG	5
1	A	189	GLN	4
1	A	208	LYS	4
1	A	270	PHE	4
1	A	295	THR	4
2	B	89	HIS	4
1	A	206	SER	4
1	A	223	ASN	4
1	A	267	LEU	4
1	A	279	LYS	4
1	A	304	ASP	4
1	A	234	LYS	4
1	A	305	TRP	4
1	A	313	ASP	4
1	A	288	GLU	4
1	A	173	GLU	3
1	A	252	HIS	3

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Mol	Chain	Res	Type	Models (Total)
1	A	259	THR	3
2	B	98	ASP	3
1	A	174	LEU	3
2	B	81	ASP	3
1	A	299	VAL	3
1	A	312	TRP	3
2	B	96	SER	3
2	B	99	ARG	2
1	A	218	ASP	2
1	A	228	PHE	2
1	A	263	ARG	2
1	A	184	ARG	2
1	A	317	GLU	2
1	A	310	ARG	2
1	A	242	ASP	2
1	A	277	HIS	2
1	A	276	LYS	1
1	A	292	GLU	1
2	B	95	ASP	1
1	A	281	ILE	1
1	A	180	GLU	1
1	A	187	ARG	1
1	A	221	GLN	1
1	A	282	ASN	1
1	A	286	CYS	1
1	A	188	GLU	1
1	A	229	GLN	1
1	A	285	SER	1
1	A	178	SER	1
1	A	269	SER	1
1	A	273	PHE	1
1	A	315	PHE	1
2	B	78	SER	1

6.3.3 RNA

There are no RNA molecules in this entry.

6.4 Non-standard residues in protein, DNA, RNA chains

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

6.5 Carbohydrates

There are no monosaccharides in this entry.

6.6 Ligand geometry

There are no ligands in this entry.

6.7 Other polymers

There are no such molecules in this entry.

6.8 Polymer linkage issues

There are no chain breaks in this entry.

7 Chemical shift validation (i)

No chemical shift data were provided