Full wwPDB NMR Structure Validation Report (i)

May 28, 2020 – 10:58 pm BST

PDB ID	:	2L5D
Title	:	Solution Structures of human PIWI-like 1 PAZ domain with ssRNA (5'-pUGACA)
Authors	:	Zeng, L.; Zhang, Q.; Yan, K.; Zhou, M.
Deposited on	:	2010-10-29

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

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

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

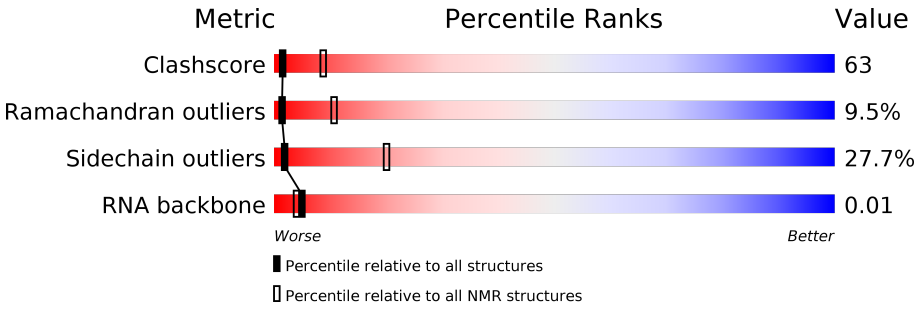
Cyrange	:	Kirchner and Güntert (2011)
NmrClust	:	Kelley et al. (1996)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
ShiftChecker	:	2.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

1 Overall quality at a glance

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
RNA backbone	4643	676

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	134	12% 40% 17% • 29%
2	B	5	20% 80%

2 Ensemble composition and analysis

This entry contains 20 models. Model 11 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:277-A:332, A:340-A:364, A:380-A:393 (95)	0.19	11

Ill-defined regions of proteins are excluded from the global statistics.

Ligands and non-protein polymers are included in the analysis.

The models can be grouped into 3 clusters and 1 single-model cluster was found.

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

3 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 2355 atoms, of which 1149 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Piwi-like protein 1.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	S	
1	A	134	2195	698	1093	188	211	5	0

- Molecule 2 is a RNA chain called 5'-R(*UP*GP*AP*CP*A)-3'.

Mol	Chain	Residues	Atoms						Trace
			Total	C	H	N	O	P	
2	B	5	160	48	56	20	32	4	0

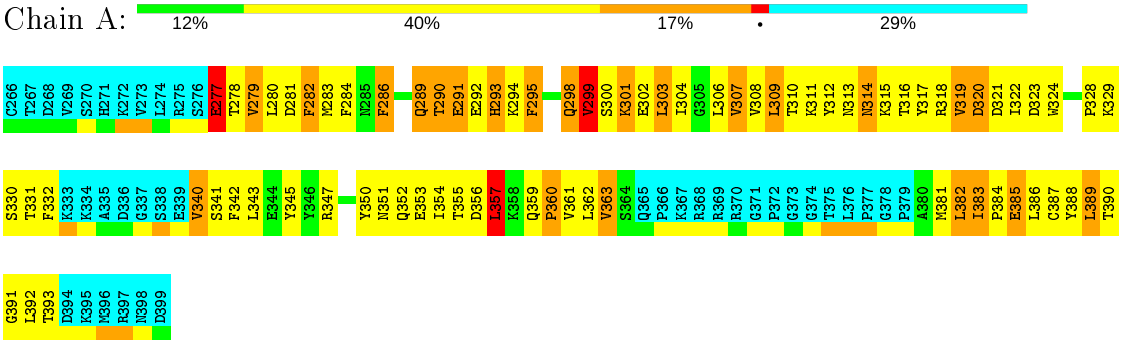
4 Residue-property plots

4.1 Average score per residue in the NMR ensemble

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

- Molecule 1: Piwi-like protein 1

Chain A:



- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

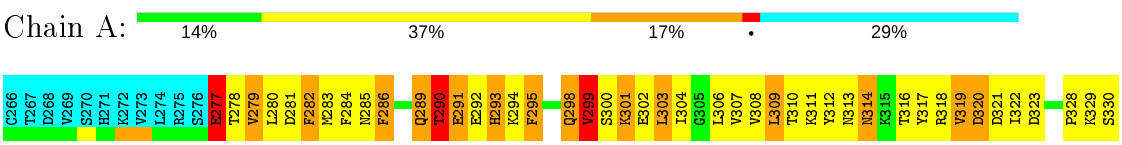
4.2 Scores per residue for each member of the ensemble

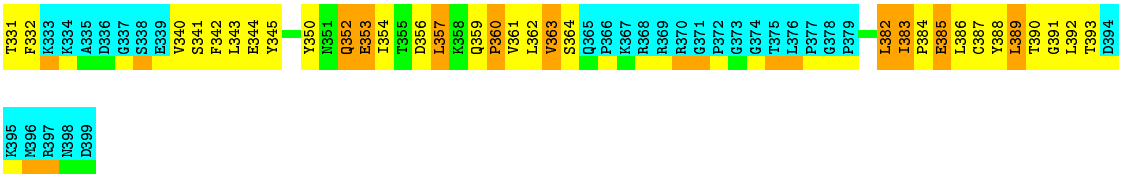
Colouring as in section 4.1 above.

4.2.1 Score per residue for model 1

- Molecule 1: Piwi-like protein 1

Chain A:

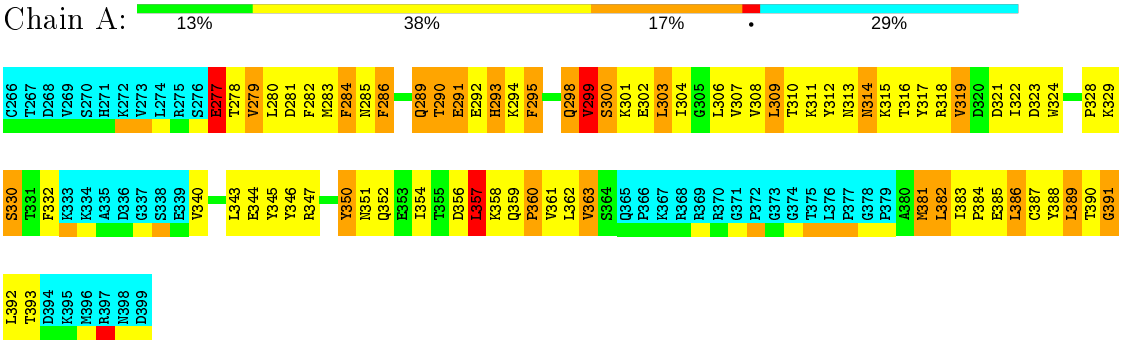




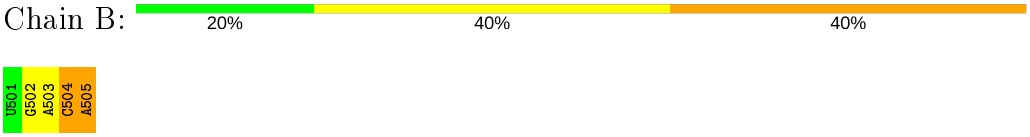
• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

4.2.2 Score per residue for model 2

• Molecule 1: Piwi-like protein 1

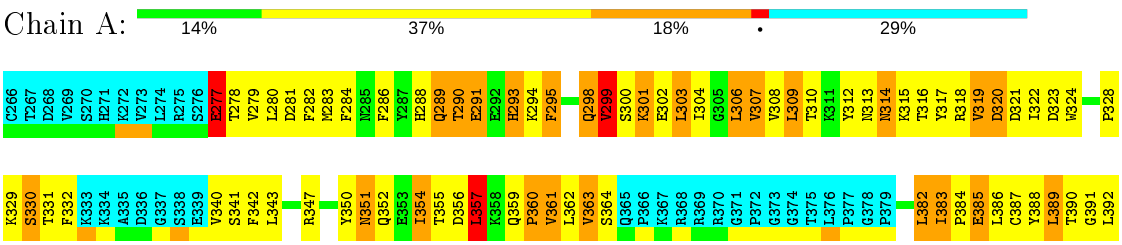


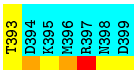
• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'



4.2.3 Score per residue for model 3

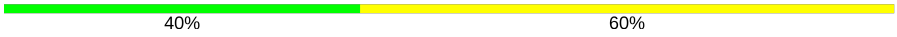
• Molecule 1: Piwi-like protein 1





• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

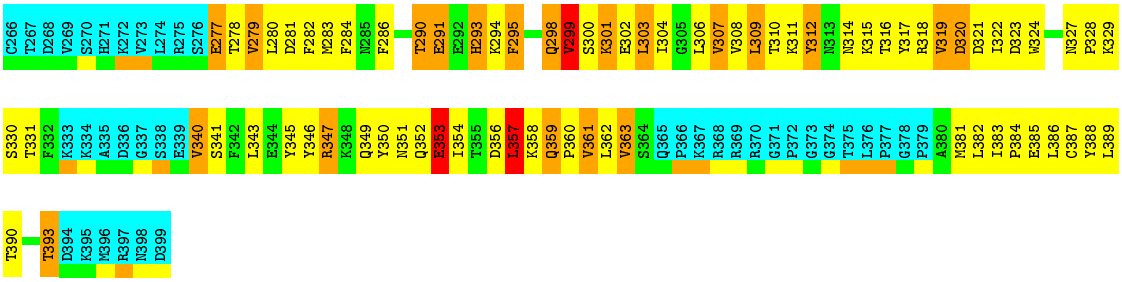
Chain B:



4.2.4 Score per residue for model 4

• Molecule 1: Piwi-like protein 1

Chain A:



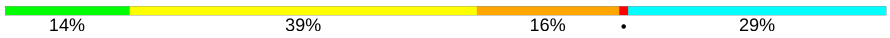
• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

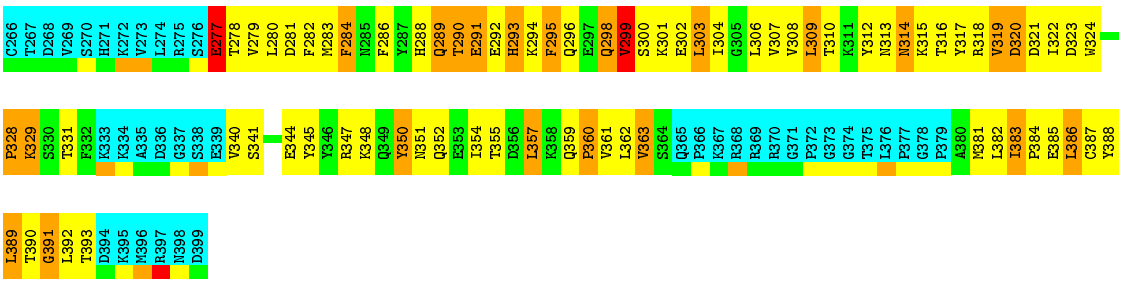
Chain B:

4.2.5 Score per residue for model 5

• Molecule 1: Piwi-like protein 1

Chain A:





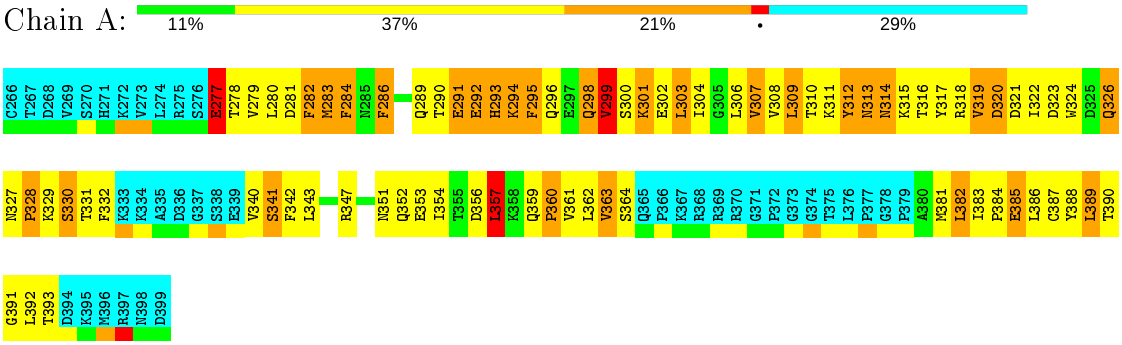
• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

4.2.6 Score per residue for model 6

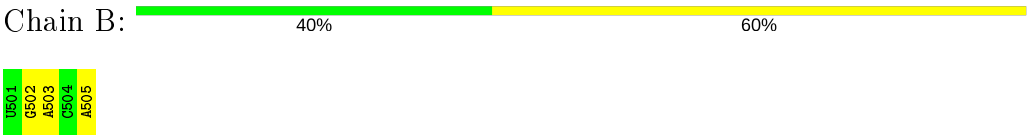
- Molecule 1: Piwi-like protein 1

Chain A:



- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

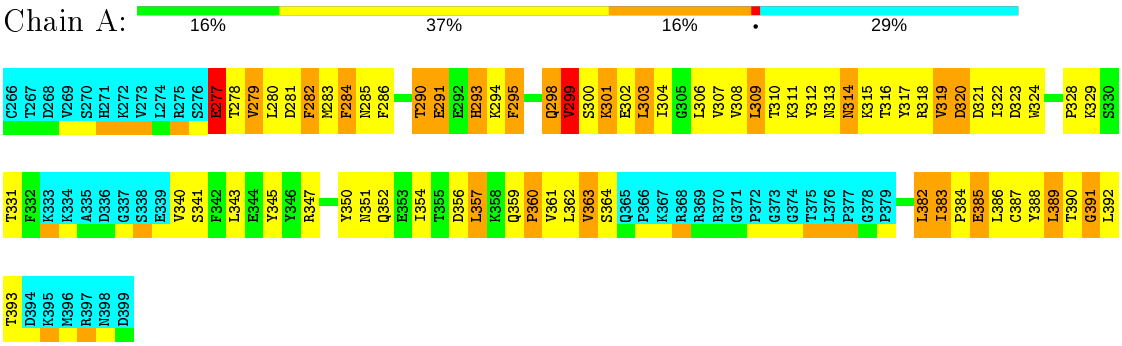
Chain B:



4.2.7 Score per residue for model 7

- Molecule 1: Piwi-like protein 1

Chain A:



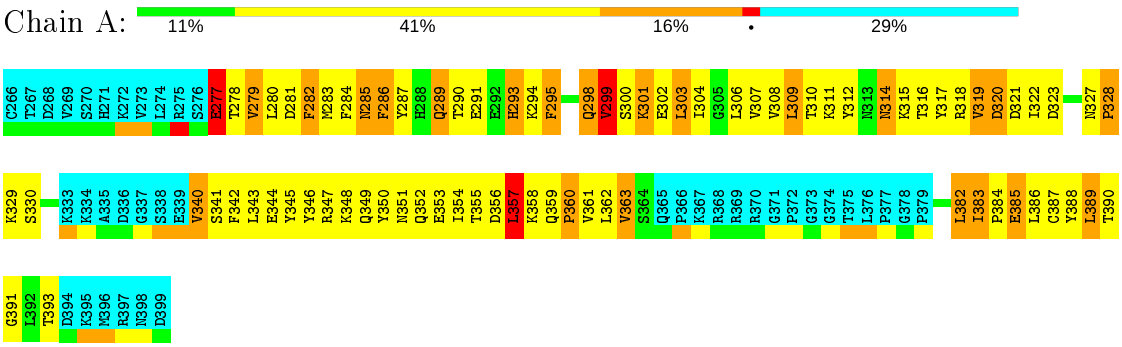
- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

4.2.8 Score per residue for model 8

- Molecule 1: Piwi-like protein 1

Chain A:



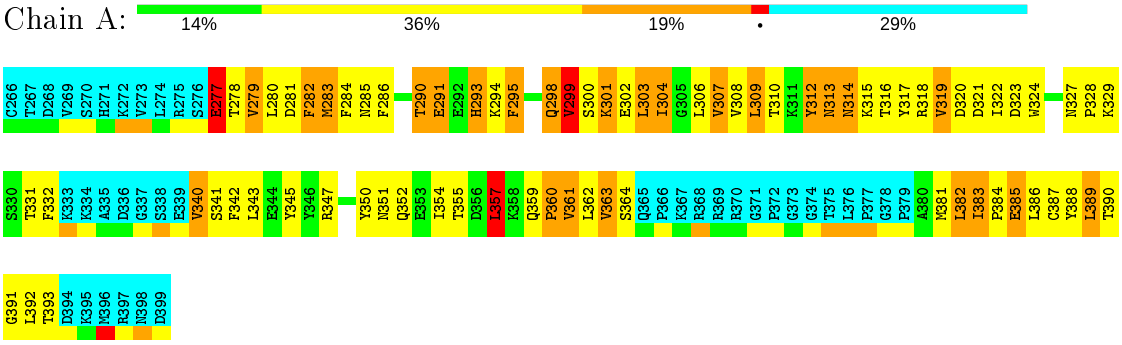
- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

4.2.9 Score per residue for model 9

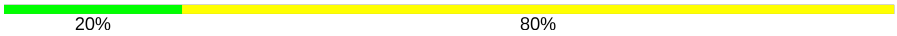
- Molecule 1: Piwi-like protein 1

Chain A:



- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

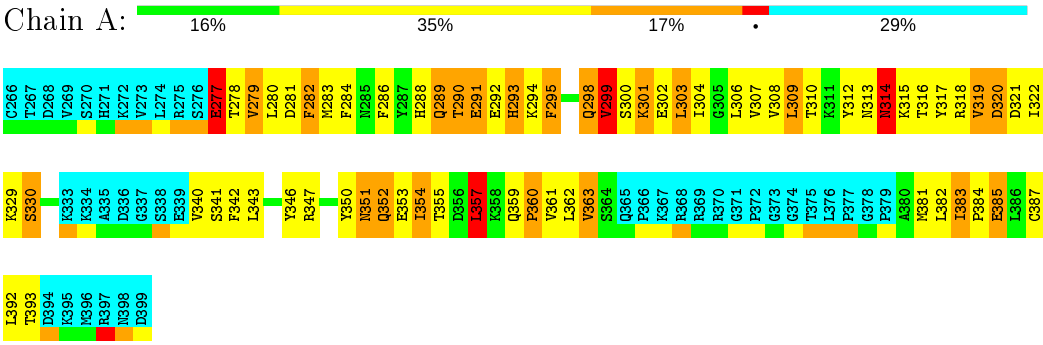
Chain B:



4.2.10 Score per residue for model 10

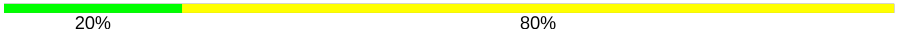
- Molecule 1: Piwi-like protein 1

Chain A:



- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

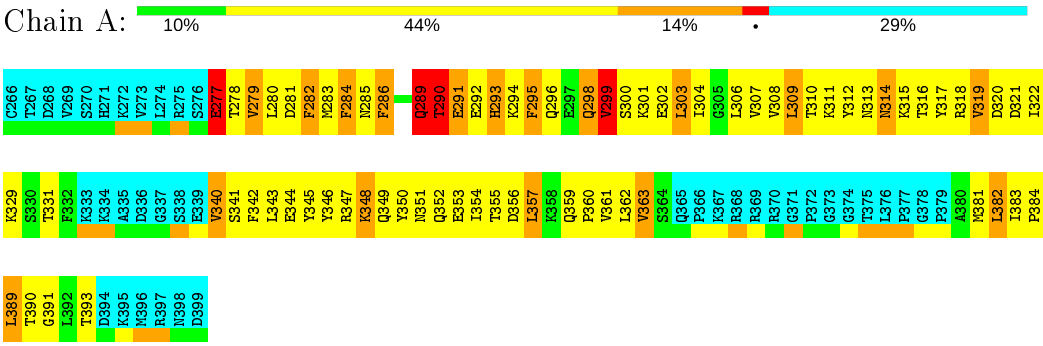
Chain B:



4.2.11 Score per residue for model 11 (medoid)

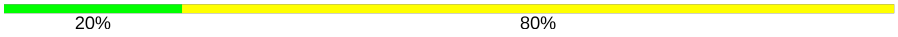
- Molecule 1: Piwi-like protein 1

Chain A:



- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

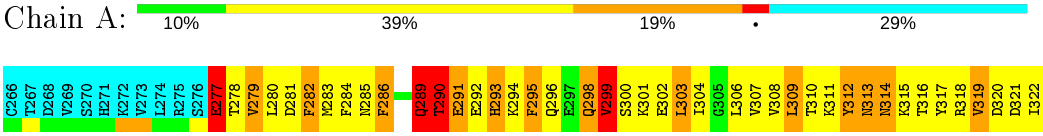
Chain B:



4.2.12 Score per residue for model 12

- Molecule 1: Piwi-like protein 1

Chain A:



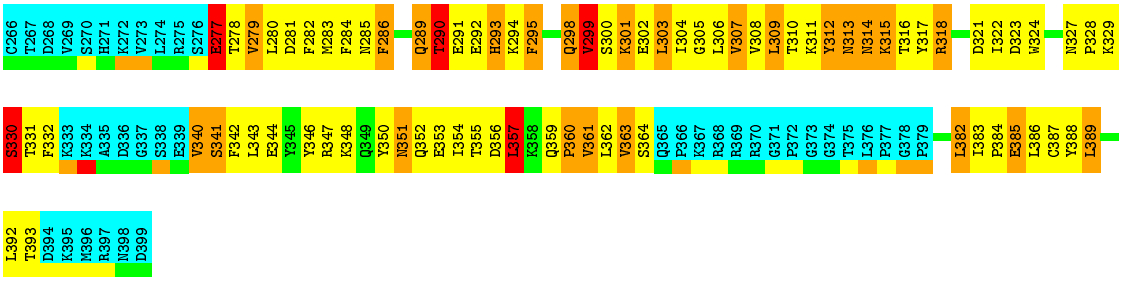
• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

4.2.13 Score per residue for model 13

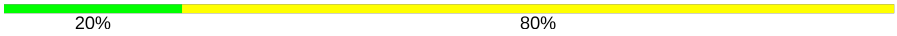
• Molecule 1: Piwi-like protein 1

Chain A:



• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

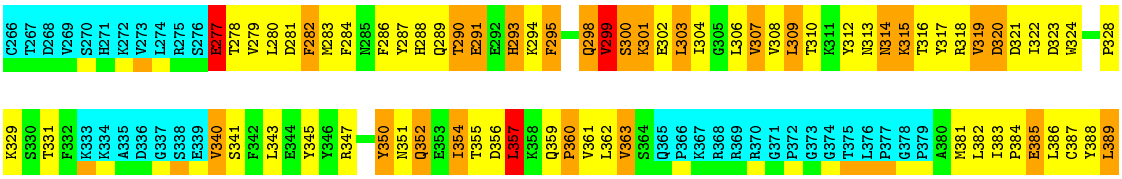
Chain B:

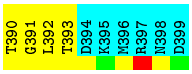


4.2.14 Score per residue for model 14

• Molecule 1: Piwi-like protein 1

Chain A:





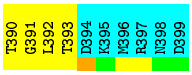
• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

4.2.15 Score per residue for model 15

• Molecule 1: Piwi-like protein 1

Chain A:



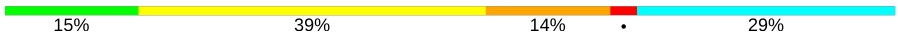
• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

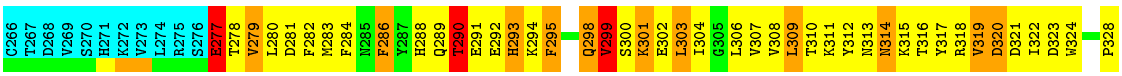
Chain B:

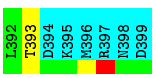
4.2.16 Score per residue for model 16

• Molecule 1: Piwi-like protein 1

Chain A:

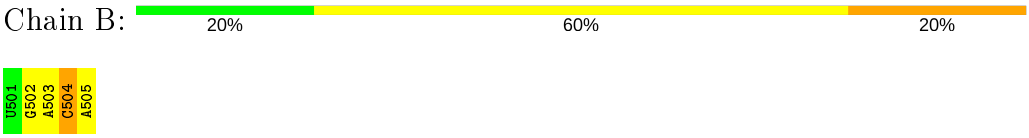






• Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

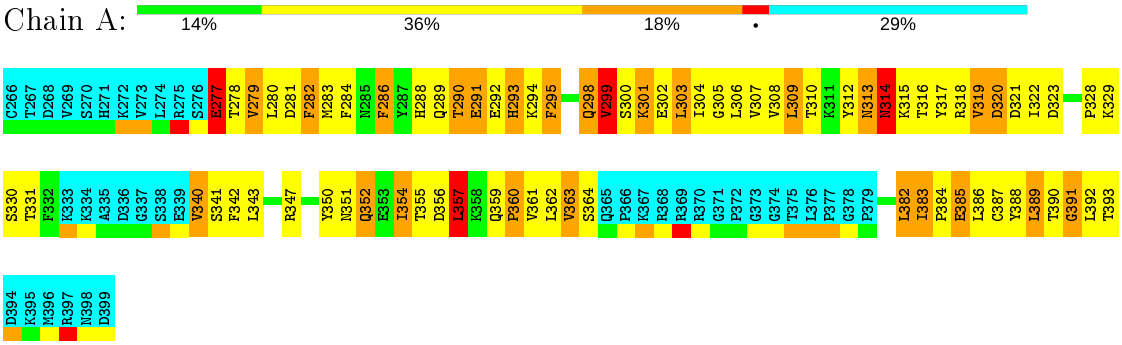
Chain B:



4.2.17 Score per residue for model 17

- Molecule 1: Piwi-like protein 1

Chain A:



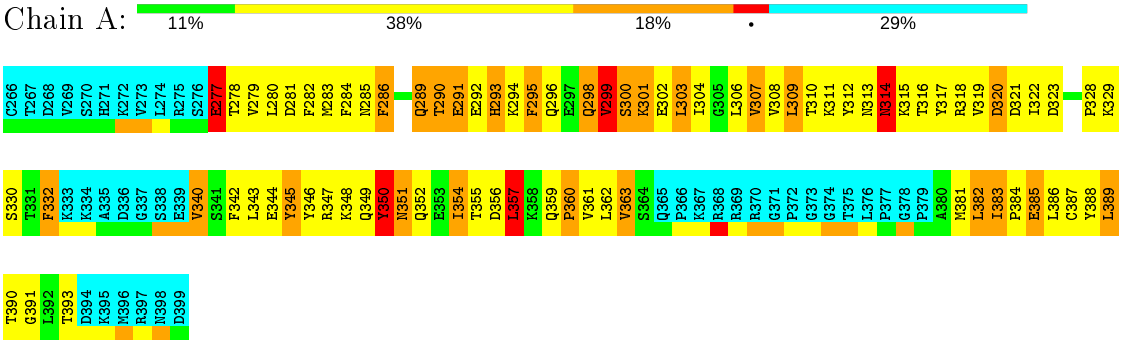
- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

4.2.18 Score per residue for model 18

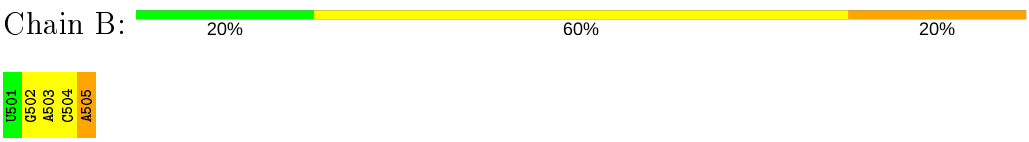
- Molecule 1: Piwi-like protein 1

Chain A:



- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

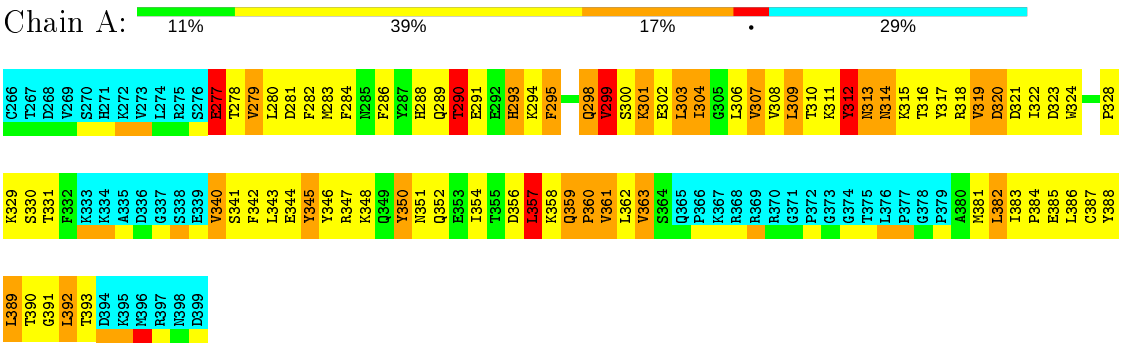
Chain B:



4.2.19 Score per residue for model 19

- Molecule 1: Piwi-like protein 1

Chain A:



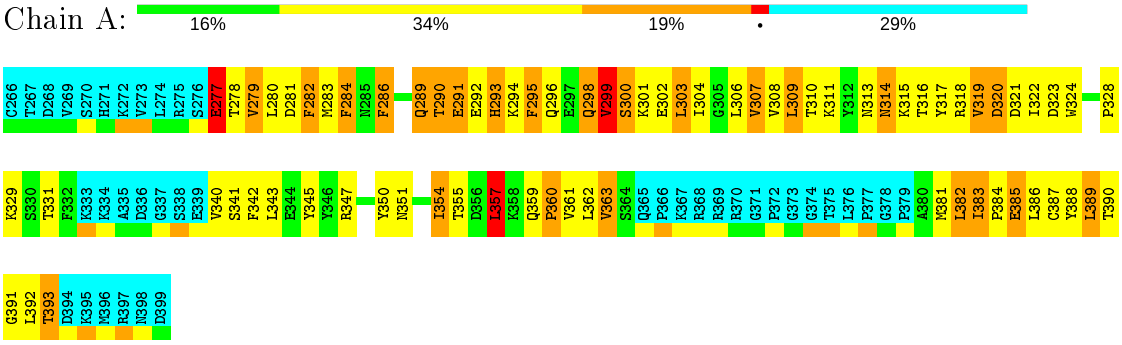
- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:

4.2.20 Score per residue for model 20

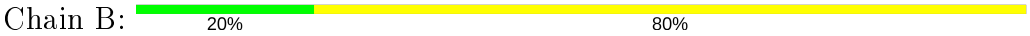
- Molecule 1: Piwi-like protein 1

Chain A:



- Molecule 2: 5'-R(*UP*GP*AP*CP*A)-3'

Chain B:



5 Refinement protocol and experimental data overview

The models were refined using the following method: *DGSA-distance geometry simulated annealing, torsion angle dynamics.*

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
ARIA	refinement	2.2
CNS	structure solution	1.2

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

COVALENT-GEOMETRY INFOmissingINFO

5.1 Too-close contacts

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	804	786	784	109±6
2	B	104	56	56	1±1
All	All	18160	16840	16800	2188

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 63.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:306:LEU:HD23	1:A:393:THR:HG22	0.82	1.50	19	20
1:A:354:ILE:HD12	1:A:383:ILE:HG21	0.82	1.51	2	9
1:A:303:LEU:HB2	1:A:322:ILE:HD11	0.81	1.52	4	20
1:A:384:PRO:HA	1:A:387:CYS:SG	0.79	2.18	11	6
1:A:352:GLN:HG3	1:A:386:LEU:HD22	0.79	1.51	8	14
1:A:350:TYR:N	1:A:350:TYR:CD1	0.78	2.51	18	1
1:A:279:VAL:HG13	1:A:387:CYS:SG	0.78	2.19	9	6
1:A:308:VAL:HB	1:A:387:CYS:HB3	0.77	1.56	19	14

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:279:VAL:HG23	1:A:283:MET:SD	0.74	2.23	18	18
1:A:299:VAL:O	1:A:303:LEU:HD12	0.72	1.84	4	20
1:A:361:VAL:HG12	1:A:362:LEU:H	0.72	1.45	10	10
1:A:308:VAL:HB	1:A:387:CYS:HB2	0.72	1.61	1	6
1:A:300:SER:HA	1:A:322:ILE:HD13	0.71	1.63	4	20
1:A:309:LEU:O	1:A:387:CYS:HA	0.70	1.87	16	20
1:A:291:GLU:HB2	1:A:294:LYS:HE2	0.70	1.63	6	1
1:A:279:VAL:HG22	1:A:387:CYS:SG	0.69	2.26	8	6
1:A:352:GLN:CG	1:A:386:LEU:HD22	0.69	2.18	13	9
1:A:340:VAL:HG23	1:A:344:GLU:CB	0.69	2.18	8	1
1:A:354:ILE:CD1	1:A:386:LEU:HD11	0.68	2.17	6	16
1:A:306:LEU:CD2	1:A:393:THR:HG22	0.68	2.19	3	19
1:A:308:VAL:HG13	1:A:319:VAL:CG1	0.68	2.19	17	18
1:A:309:LEU:HB3	1:A:388:TYR:HB2	0.67	1.64	9	19
1:A:391:GLY:O	1:A:393:THR:HG23	0.67	1.89	9	7
1:A:290:THR:HG23	1:A:295:PHE:HB2	0.67	1.67	6	1
1:A:323:ASP:HB3	1:A:361:VAL:HB	0.66	1.68	8	20
1:A:280:LEU:HD13	1:A:385:GLU:HG2	0.66	1.68	16	2
1:A:329:LYS:HB3	1:A:357:LEU:HD21	0.65	1.69	5	1
1:A:359:GLN:NE2	1:A:383:ILE:HG23	0.65	2.06	5	1
1:A:329:LYS:HB2	1:A:357:LEU:HD11	0.65	1.67	2	16
1:A:280:LEU:HD11	1:A:359:GLN:HB2	0.64	1.67	20	18
1:A:309:LEU:O	1:A:309:LEU:HD13	0.64	1.91	16	1
1:A:309:LEU:C	1:A:309:LEU:HD13	0.64	2.13	19	11
1:A:383:ILE:HB	1:A:386:LEU:HD12	0.64	1.69	13	14
1:A:293:HIS:HD2	1:A:294:LYS:H	0.63	1.34	14	15
1:A:352:GLN:OE1	1:A:352:GLN:N	0.63	2.31	4	1
1:A:308:VAL:HG13	1:A:319:VAL:HG11	0.63	1.69	14	11
1:A:346:TYR:HB3	1:A:352:GLN:HE21	0.63	1.52	10	1
1:A:349:GLN:HB3	1:A:350:TYR:CD1	0.63	2.28	18	1
1:A:306:LEU:HD13	1:A:307:VAL:N	0.63	2.09	14	17
1:A:350:TYR:N	1:A:350:TYR:HD1	0.63	1.89	18	2
1:A:317:TYR:CD2	1:A:382:LEU:HD21	0.63	2.29	17	16
1:A:299:VAL:O	1:A:302:GLU:HB2	0.63	1.94	4	20
1:A:309:LEU:HD13	1:A:309:LEU:C	0.62	2.14	7	8
1:A:309:LEU:HD12	1:A:388:TYR:HB2	0.62	1.70	16	1
1:A:280:LEU:HB2	1:A:384:PRO:C	0.62	2.14	11	18
1:A:293:HIS:CD2	1:A:293:HIS:N	0.62	2.66	6	11
1:A:309:LEU:HD23	1:A:388:TYR:HB2	0.62	1.70	15	1
1:A:293:HIS:CD2	1:A:294:LYS:H	0.62	2.13	3	20
1:A:362:LEU:HB2	1:A:382:LEU:HB2	0.62	1.70	18	17

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:343:LEU:HD22	1:A:357:LEU:CD2	0.62	2.25	10	16
1:A:328:PRO:HG3	1:A:359:GLN:HE21	0.61	1.54	5	1
1:A:309:LEU:HD21	1:A:314:ASN:HA	0.61	1.70	16	1
1:A:307:VAL:HG22	1:A:390:THR:OG1	0.61	1.94	9	16
1:A:361:VAL:HG13	1:A:382:LEU:O	0.61	1.96	2	4
1:A:308:VAL:HG21	1:A:382:LEU:HD13	0.61	1.72	20	9
1:A:295:PHE:O	1:A:299:VAL:HG23	0.61	1.96	3	20
1:A:307:VAL:HG13	1:A:393:THR:H	0.61	1.55	12	19
1:A:317:TYR:CE2	1:A:382:LEU:HD21	0.61	2.31	15	1
1:A:308:VAL:O	1:A:316:THR:HA	0.61	1.95	5	20
1:A:349:GLN:HB3	1:A:350:TYR:CE1	0.61	2.30	18	1
1:A:361:VAL:HG12	1:A:362:LEU:N	0.61	2.10	17	11
1:A:321:ASP:HB2	1:A:363:VAL:HG13	0.61	1.73	3	20
1:A:353:GLU:HG3	1:A:355:THR:HG23	0.60	1.73	8	3
1:A:289:GLN:HG3	1:A:290:THR:N	0.60	2.12	13	2
1:A:279:VAL:HG11	1:A:308:VAL:HG11	0.60	1.73	15	10
1:A:280:LEU:HD12	1:A:359:GLN:CD	0.60	2.16	16	1
1:A:354:ILE:HD11	1:A:383:ILE:HG13	0.60	1.74	17	10
1:A:300:SER:O	1:A:304:ILE:HG12	0.60	1.96	8	20
1:A:340:VAL:HG23	1:A:344:GLU:HB2	0.60	1.73	8	1
1:A:294:LYS:N	1:A:294:LYS:HE3	0.60	2.12	6	1
1:A:289:GLN:HE21	1:A:290:THR:HG22	0.59	1.55	12	4
1:A:306:LEU:HD21	1:A:391:GLY:HA2	0.59	1.74	3	7
1:A:300:SER:C	1:A:304:ILE:HG12	0.59	2.18	5	20
1:A:350:TYR:CD1	1:A:350:TYR:N	0.59	2.70	19	1
1:A:329:LYS:N	1:A:357:LEU:HD11	0.59	2.13	5	6
1:A:347:ARG:O	1:A:351:ASN:HA	0.59	1.97	8	18
1:A:354:ILE:HG13	1:A:383:ILE:HG21	0.59	1.73	9	8
1:A:279:VAL:HG21	1:A:362:LEU:HD21	0.58	1.73	3	4
1:A:312:TYR:HB3	1:A:352:GLN:NE2	0.58	2.13	4	1
1:A:280:LEU:O	1:A:284:PHE:HB2	0.58	1.98	8	19
1:A:289:GLN:CG	1:A:290:THR:HG22	0.58	2.28	13	1
1:A:308:VAL:CG2	1:A:382:LEU:HD13	0.58	2.29	1	9
1:A:289:GLN:HG3	1:A:290:THR:HG22	0.58	1.75	5	6
1:A:318:ARG:N	1:A:318:ARG:HD2	0.58	2.13	19	2
1:A:310:THR:HG23	1:A:315:LYS:O	0.58	1.99	8	10
1:A:354:ILE:HD12	1:A:386:LEU:HD11	0.57	1.76	20	3
1:A:279:VAL:HA	1:A:282:PHE:HB3	0.57	1.76	9	20
1:A:291:GLU:O	1:A:295:PHE:HB2	0.57	1.99	3	19
1:A:357:LEU:HD12	1:A:357:LEU:O	0.57	2.00	3	12
1:A:294:LYS:O	1:A:298:GLN:HG2	0.57	2.00	6	20

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:280:LEU:HD13	1:A:385:GLU:CG	0.56	2.30	16	2
1:A:278:THR:HG21	1:A:385:GLU:O	0.56	2.00	5	20
1:A:289:GLN:O	1:A:290:THR:O	0.56	2.23	16	3
1:A:331:THR:HG22	1:A:341:SER:HB3	0.56	1.76	7	8
1:A:292:GLU:O	1:A:295:PHE:HB3	0.56	2.00	6	13
1:A:350:TYR:H	1:A:350:TYR:HD1	0.56	1.43	18	1
1:A:280:LEU:HD12	1:A:384:PRO:HG2	0.56	1.78	8	10
1:A:315:LYS:HD2	1:A:317:TYR:OH	0.56	2.01	11	9
1:A:309:LEU:HD12	1:A:388:TYR:CG	0.56	2.36	16	1
1:A:310:THR:O	1:A:314:ASN:N	0.56	2.39	3	12
1:A:359:GLN:HB3	1:A:360:PRO:HD2	0.56	1.76	9	16
1:A:329:LYS:N	1:A:357:LEU:HD21	0.55	2.16	4	3
1:A:310:THR:HG22	1:A:382:LEU:HD22	0.55	1.77	15	2
1:A:329:LYS:HD2	1:A:357:LEU:HD11	0.55	1.78	5	1
1:A:279:VAL:HG22	1:A:384:PRO:HB3	0.55	1.77	5	3
1:A:303:LEU:O	1:A:306:LEU:HB3	0.55	2.01	4	18
1:A:359:GLN:OE1	1:A:385:GLU:N	0.55	2.39	5	1
1:A:309:LEU:HD22	1:A:310:THR:N	0.55	2.16	16	1
1:A:318:ARG:HD3	1:A:318:ARG:N	0.55	2.17	2	2
1:A:294:LYS:HE3	1:A:295:PHE:H	0.55	1.61	6	1
1:A:295:PHE:O	1:A:299:VAL:CG2	0.55	2.55	7	20
1:A:356:ASP:O	1:A:358:LYS:N	0.55	2.40	8	6
1:A:364:SER:HB2	1:A:382:LEU:HD11	0.55	1.77	13	2
1:A:286:PHE:CE2	1:A:298:GLN:HB2	0.54	2.37	3	11
1:A:321:ASP:O	1:A:363:VAL:HG13	0.54	2.02	9	10
1:A:290:THR:OG1	1:A:294:LYS:NZ	0.54	2.40	6	1
1:A:362:LEU:CB	1:A:382:LEU:HD12	0.54	2.32	6	6
1:A:328:PRO:HB2	1:A:357:LEU:HD13	0.54	1.77	19	16
1:A:277:GLU:O	1:A:388:TYR:HA	0.54	2.02	10	19
1:A:382:LEU:HB3	1:A:387:CYS:SG	0.54	2.43	15	13
2:B:503:A:H4'	2:B:504:C:OP2	0.54	2.02	8	1
1:A:283:MET:HG2	1:A:299:VAL:HG12	0.54	1.80	12	18
1:A:329:LYS:O	1:A:330:SER:C	0.54	2.46	13	7
1:A:310:THR:HB	1:A:312:TYR:CE1	0.54	2.38	9	12
1:A:308:VAL:HG11	1:A:362:LEU:HD13	0.54	1.79	2	3
1:A:361:VAL:CG1	1:A:362:LEU:N	0.54	2.71	2	7
1:A:329:LYS:HD3	1:A:357:LEU:HD21	0.54	1.77	18	11
1:A:346:TYR:HA	1:A:350:TYR:CD1	0.54	2.38	18	1
1:A:361:VAL:HG11	1:A:381:MET:CE	0.54	2.32	2	1
1:A:354:ILE:HD11	1:A:386:LEU:HD11	0.53	1.80	5	3
1:A:309:LEU:CD2	1:A:314:ASN:HA	0.53	2.33	16	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:352:GLN:NE2	1:A:352:GLN:H	0.53	2.01	1	1
1:A:390:THR:HB	1:A:392:LEU:HD13	0.53	1.81	19	1
1:A:291:GLU:N	1:A:294:LYS:NZ	0.53	2.57	6	1
1:A:331:THR:HG22	1:A:341:SER:HB2	0.53	1.78	20	3
1:A:309:LEU:HD12	1:A:388:TYR:CB	0.53	2.33	16	1
1:A:278:THR:HB	1:A:384:PRO:O	0.53	2.04	14	14
1:A:317:TYR:HD2	1:A:382:LEU:HD21	0.53	1.63	13	5
1:A:390:THR:CB	1:A:392:LEU:HD22	0.53	2.33	19	1
1:A:384:PRO:O	1:A:387:CYS:SG	0.53	2.67	9	6
1:A:329:LYS:O	1:A:330:SER:O	0.53	2.27	10	4
1:A:364:SER:CB	1:A:382:LEU:HD11	0.53	2.33	13	1
1:A:359:GLN:N	1:A:359:GLN:HE21	0.53	2.00	16	1
1:A:304:ILE:CD1	1:A:321:ASP:HA	0.53	2.34	8	20
1:A:303:LEU:HA	1:A:306:LEU:HD12	0.53	1.79	19	1
1:A:280:LEU:HG	1:A:359:GLN:HG3	0.53	1.80	13	12
1:A:345:TYR:O	1:A:349:GLN:HB2	0.53	2.04	15	1
1:A:354:ILE:CG1	1:A:383:ILE:HG21	0.52	2.34	12	8
1:A:357:LEU:O	1:A:357:LEU:HD12	0.52	2.04	13	4
1:A:313:ASN:N	1:A:313:ASN:HD22	0.52	2.02	17	1
1:A:308:VAL:HA	1:A:390:THR:HG23	0.52	1.81	5	1
1:A:293:HIS:N	1:A:293:HIS:CD2	0.52	2.77	10	7
1:A:280:LEU:HD12	1:A:359:GLN:OE1	0.52	2.05	5	1
1:A:359:GLN:H	1:A:359:GLN:HE21	0.52	1.48	16	1
1:A:346:TYR:HB3	1:A:352:GLN:NE2	0.52	2.19	4	1
1:A:389:LEU:HD23	1:A:389:LEU:H	0.52	1.65	10	8
1:A:308:VAL:CB	1:A:387:CYS:HB3	0.52	2.33	2	7
1:A:303:LEU:O	1:A:306:LEU:HB2	0.52	2.04	19	2
1:A:390:THR:HB	1:A:392:LEU:HD22	0.52	1.82	19	1
1:A:313:ASN:O	1:A:314:ASN:C	0.52	2.48	16	16
1:A:329:LYS:HE3	1:A:357:LEU:HG	0.51	1.81	3	11
1:A:294:LYS:O	1:A:295:PHE:C	0.51	2.49	19	10
1:A:280:LEU:HD23	1:A:280:LEU:O	0.51	2.04	5	1
1:A:312:TYR:CD2	1:A:386:LEU:HD13	0.51	2.40	19	10
1:A:354:ILE:HG22	1:A:355:THR:N	0.51	2.18	5	11
1:A:352:GLN:HB2	1:A:386:LEU:HD22	0.51	1.80	1	1
1:A:280:LEU:O	1:A:280:LEU:HD23	0.51	2.05	16	1
1:A:305:GLY:HA2	1:A:318:ARG:NH2	0.51	2.21	13	1
2:B:504:C:H4'	2:B:505:A:H5'	0.51	1.83	2	1
1:A:352:GLN:O	1:A:353:GLU:C	0.51	2.49	4	2
1:A:317:TYR:CD2	1:A:382:LEU:HD11	0.51	2.40	15	1
1:A:361:VAL:CG1	1:A:362:LEU:H	0.50	2.18	17	4

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:389:LEU:N	1:A:389:LEU:HD23	0.50	2.22	2	11
1:A:306:LEU:HD22	1:A:307:VAL:H	0.50	1.66	4	10
1:A:361:VAL:HA	1:A:384:PRO:HD3	0.50	1.81	14	2
1:A:390:THR:C	1:A:392:LEU:H	0.50	2.09	3	1
1:A:329:LYS:HB2	1:A:357:LEU:CD2	0.50	2.37	15	3
1:A:315:LYS:HD3	1:A:317:TYR:OH	0.50	2.07	13	6
1:A:346:TYR:CB	1:A:352:GLN:NE2	0.50	2.75	4	1
1:A:389:LEU:HD23	1:A:389:LEU:N	0.50	2.22	17	8
1:A:389:LEU:H	1:A:389:LEU:HD23	0.50	1.67	17	11
1:A:306:LEU:HD13	1:A:307:VAL:H	0.50	1.65	14	2
1:A:350:TYR:HB2	1:A:352:GLN:HE22	0.50	1.65	10	1
1:A:346:TYR:O	1:A:352:GLN:NE2	0.50	2.45	10	1
1:A:307:VAL:CG2	1:A:392:LEU:HD12	0.49	2.37	5	9
1:A:340:VAL:CG2	1:A:345:TYR:N	0.49	2.75	8	1
1:A:343:LEU:HD22	1:A:357:LEU:CD1	0.49	2.37	4	2
1:A:309:LEU:HD23	1:A:388:TYR:CB	0.49	2.35	15	1
1:A:307:VAL:HB	1:A:318:ARG:HA	0.49	1.84	9	16
1:A:390:THR:HB	1:A:392:LEU:HG	0.49	1.84	20	3
1:A:298:GLN:O	1:A:299:VAL:C	0.49	2.51	2	20
1:A:306:LEU:HD13	1:A:307:VAL:O	0.49	2.08	5	17
1:A:312:TYR:HD2	1:A:386:LEU:HD13	0.49	1.67	2	9
1:A:340:VAL:HG23	1:A:344:GLU:HB3	0.49	1.85	8	1
1:A:300:SER:O	1:A:304:ILE:N	0.49	2.45	9	2
1:A:304:ILE:C	1:A:306:LEU:H	0.49	2.11	16	11
1:A:312:TYR:HB2	1:A:350:TYR:CD2	0.49	2.43	14	10
1:A:309:LEU:C	1:A:309:LEU:CD1	0.49	2.81	13	11
1:A:312:TYR:HA	1:A:352:GLN:NE2	0.49	2.22	6	7
1:A:350:TYR:HB2	1:A:352:GLN:NE2	0.48	2.23	10	1
1:A:280:LEU:CD1	1:A:359:GLN:HB2	0.48	2.37	15	12
1:A:331:THR:HA	1:A:341:SER:HA	0.48	1.85	11	13
1:A:312:TYR:HB3	1:A:352:GLN:CD	0.48	2.28	10	2
1:A:359:GLN:HB3	1:A:360:PRO:CD	0.48	2.38	20	10
1:A:352:GLN:N	1:A:352:GLN:CD	0.48	2.66	10	1
1:A:286:PHE:CD2	1:A:299:VAL:HG13	0.48	2.44	14	13
1:A:362:LEU:HB2	1:A:382:LEU:HD12	0.48	1.84	6	3
1:A:280:LEU:HG	1:A:359:GLN:HG2	0.48	1.84	19	2
1:A:293:HIS:CD2	1:A:294:LYS:N	0.48	2.81	14	4
1:A:289:GLN:HG2	1:A:290:THR:HG22	0.48	1.85	10	2
1:A:286:PHE:O	1:A:290:THR:HG22	0.48	2.09	6	1
1:A:311:LYS:HB2	1:A:386:LEU:O	0.48	2.09	4	10
1:A:354:ILE:HD13	1:A:386:LEU:HD11	0.48	1.86	6	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:384:PRO:CA	1:A:387:CYS:SG	0.48	3.00	11	5
1:A:309:LEU:CD1	1:A:309:LEU:C	0.48	2.82	4	7
1:A:279:VAL:N	1:A:387:CYS:SG	0.47	2.88	9	4
2:B:505:A:C2'	2:B:505:A:N3	0.47	2.77	18	1
1:A:318:ARG:HD2	1:A:318:ARG:N	0.47	2.24	5	1
1:A:359:GLN:HB2	1:A:360:PRO:HD2	0.47	1.87	5	1
1:A:340:VAL:CG2	1:A:341:SER:N	0.47	2.76	8	1
1:A:341:SER:OG	1:A:342:PHE:N	0.47	2.47	11	2
1:A:346:TYR:CE2	1:A:383:ILE:HG12	0.47	2.44	19	6
1:A:311:LYS:HB3	1:A:352:GLN:NE2	0.47	2.23	11	2
1:A:317:TYR:HD2	1:A:382:LEU:HD11	0.47	1.68	15	1
1:A:343:LEU:HD22	1:A:357:LEU:HD11	0.47	1.86	15	1
1:A:308:VAL:HG13	1:A:319:VAL:HG12	0.47	1.86	11	6
1:A:280:LEU:HD13	1:A:385:GLU:CB	0.47	2.39	20	17
1:A:340:VAL:CG2	1:A:345:TYR:HB2	0.47	2.40	5	9
1:A:291:GLU:O	1:A:295:PHE:CB	0.47	2.62	6	5
1:A:291:GLU:CB	1:A:294:LYS:HE2	0.47	2.37	6	1
1:A:344:GLU:HB3	1:A:348:LYS:HE3	0.47	1.86	8	1
1:A:354:ILE:CD1	1:A:383:ILE:HG21	0.47	2.40	1	3
1:A:280:LEU:HD21	1:A:356:ASP:CG	0.47	2.28	13	9
1:A:278:THR:HA	1:A:387:CYS:O	0.47	2.09	9	5
1:A:307:VAL:CG1	1:A:393:THR:N	0.47	2.78	14	2
1:A:318:ARG:N	1:A:318:ARG:HD3	0.47	2.25	4	2
1:A:328:PRO:HB3	1:A:354:ILE:HG12	0.47	1.87	5	2
1:A:279:VAL:CG2	1:A:362:LEU:HD11	0.47	2.40	15	7
1:A:307:VAL:CG1	1:A:318:ARG:HD2	0.47	2.39	14	1
1:A:329:LYS:CB	1:A:357:LEU:HD11	0.47	2.39	19	13
1:A:280:LEU:HD23	1:A:280:LEU:C	0.47	2.31	5	1
1:A:347:ARG:HB3	1:A:348:LYS:HE3	0.47	1.84	11	1
1:A:327:ASN:C	1:A:329:LYS:H	0.47	2.13	6	7
1:A:311:LYS:HD2	1:A:352:GLN:HE22	0.47	1.68	11	3
1:A:317:TYR:OH	2:B:504:C:H5'	0.47	2.09	14	1
1:A:307:VAL:HG12	1:A:318:ARG:HD2	0.47	1.87	13	2
1:A:283:MET:CE	1:A:322:ILE:HG21	0.46	2.40	10	6
1:A:286:PHE:O	1:A:289:GLN:HG3	0.46	2.11	1	6
1:A:304:ILE:HD12	1:A:321:ASP:HA	0.46	1.87	8	4
2:B:503:A:O2'	2:B:504:C:P	0.46	2.73	8	1
1:A:279:VAL:HA	1:A:389:LEU:HD22	0.46	1.87	16	8
1:A:304:ILE:HG23	1:A:320:ASP:O	0.46	2.11	10	12
1:A:343:LEU:HD13	1:A:357:LEU:HD22	0.46	1.88	2	2
1:A:280:LEU:HD13	1:A:385:GLU:HB2	0.46	1.88	18	10

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:293:HIS:CD2	1:A:293:HIS:H	0.46	2.27	6	3
1:A:346:TYR:CA	1:A:352:GLN:NE2	0.46	2.79	4	1
1:A:329:LYS:HE2	1:A:357:LEU:HG	0.46	1.87	1	2
1:A:344:GLU:O	1:A:348:LYS:HG3	0.46	2.11	18	3
1:A:359:GLN:HG3	1:A:384:PRO:HB2	0.46	1.86	16	1
1:A:322:ILE:O	1:A:324:TRP:CD1	0.46	2.69	16	14
1:A:294:LYS:HE3	1:A:295:PHE:N	0.46	2.25	6	1
1:A:390:THR:CG2	1:A:392:LEU:HD22	0.46	2.40	19	1
1:A:304:ILE:HD12	1:A:320:ASP:O	0.46	2.10	3	8
1:A:311:LYS:HD2	1:A:352:GLN:NE2	0.46	2.26	13	1
1:A:356:ASP:C	1:A:358:LYS:N	0.46	2.69	4	6
1:A:295:PHE:CG	1:A:296:GLN:N	0.46	2.84	6	7
1:A:352:GLN:C	1:A:352:GLN:CD	0.46	2.74	1	1
1:A:283:MET:HE1	1:A:360:PRO:HG2	0.46	1.86	9	2
1:A:290:THR:HB	1:A:298:GLN:NE2	0.46	2.25	13	1
1:A:346:TYR:O	1:A:351:ASN:N	0.46	2.49	18	2
1:A:312:TYR:CD1	1:A:313:ASN:ND2	0.45	2.84	2	1
1:A:280:LEU:HB2	1:A:385:GLU:N	0.45	2.27	18	9
1:A:341:SER:O	1:A:342:PHE:C	0.45	2.55	8	3
1:A:383:ILE:N	2:B:505:A:N7	0.45	2.64	18	1
1:A:282:PHE:HZ	1:A:302:GLU:HB3	0.45	1.70	13	14
1:A:282:PHE:CD2	1:A:389:LEU:HD21	0.45	2.45	4	1
1:A:352:GLN:O	1:A:386:LEU:HD21	0.45	2.11	4	1
1:A:303:LEU:HD13	1:A:322:ILE:HG12	0.45	1.89	20	6
1:A:279:VAL:HG13	1:A:387:CYS:HB2	0.45	1.89	6	4
1:A:352:GLN:HG2	1:A:386:LEU:HD22	0.45	1.85	13	1
1:A:312:TYR:CD1	1:A:313:ASN:N	0.45	2.84	18	5
1:A:328:PRO:HG2	1:A:357:LEU:HA	0.45	1.89	15	3
1:A:280:LEU:HD11	1:A:356:ASP:CG	0.45	2.32	16	1
1:A:383:ILE:HB	2:B:505:A:H62	0.45	1.72	18	1
1:A:307:VAL:HG12	1:A:318:ARG:CD	0.45	2.41	13	1
1:A:279:VAL:HG21	1:A:362:LEU:HD11	0.45	1.89	18	2
1:A:389:LEU:CD2	1:A:389:LEU:H	0.45	2.24	10	8
1:A:390:THR:OG1	1:A:391:GLY:N	0.45	2.50	5	1
1:A:307:VAL:HG13	1:A:392:LEU:HB2	0.45	1.88	9	3
1:A:328:PRO:HD2	1:A:357:LEU:HD23	0.45	1.89	4	2
1:A:340:VAL:HG21	1:A:345:TYR:N	0.45	2.27	8	1
1:A:312:TYR:HB3	1:A:352:GLN:CG	0.45	2.41	18	1
1:A:354:ILE:CD1	1:A:383:ILE:HG13	0.44	2.42	17	2
1:A:309:LEU:HD21	1:A:314:ASN:CG	0.44	2.33	6	2
1:A:343:LEU:HA	1:A:354:ILE:HG13	0.44	1.90	1	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:282:PHE:C	1:A:284:PHE:N	0.44	2.71	4	10
1:A:277:GLU:HG2	1:A:389:LEU:HD11	0.44	1.89	14	7
1:A:356:ASP:C	1:A:358:LYS:H	0.44	2.15	4	5
1:A:328:PRO:O	1:A:342:PHE:HB2	0.44	2.13	18	6
1:A:295:PHE:CE1	1:A:299:VAL:HG21	0.44	2.48	6	13
1:A:329:LYS:HB3	1:A:357:LEU:HD11	0.44	1.89	5	1
1:A:363:VAL:HB	1:A:381:MET:SD	0.44	2.52	18	6
1:A:343:LEU:HA	1:A:354:ILE:HD13	0.44	1.89	17	1
1:A:381:MET:HG3	1:A:381:MET:O	0.44	2.11	2	1
1:A:347:ARG:HA	1:A:352:GLN:H	0.44	1.73	17	2
1:A:328:PRO:HD2	1:A:357:LEU:HD12	0.44	1.89	5	1
1:A:298:GLN:O	1:A:301:LYS:N	0.44	2.51	4	9
1:A:389:LEU:H	1:A:389:LEU:CD2	0.44	2.25	17	10
1:A:329:LYS:CA	1:A:357:LEU:HD21	0.44	2.43	4	3
1:A:307:VAL:HB	1:A:317:TYR:O	0.43	2.13	2	2
1:A:350:TYR:HD2	1:A:352:GLN:HE22	0.43	1.53	4	1
1:A:328:PRO:HA	1:A:383:ILE:HD11	0.43	1.90	16	3
1:A:347:ARG:O	1:A:351:ASN:N	0.43	2.52	4	2
1:A:279:VAL:HG22	1:A:384:PRO:CB	0.43	2.44	5	1
1:A:307:VAL:CG1	1:A:393:THR:H	0.43	2.26	14	2
1:A:352:GLN:HE21	1:A:352:GLN:H	0.43	1.55	1	1
1:A:279:VAL:CG1	1:A:387:CYS:SG	0.43	3.02	7	5
1:A:312:TYR:HB3	1:A:352:GLN:HG2	0.43	1.89	18	1
1:A:315:LYS:HB3	1:A:317:TYR:CZ	0.43	2.49	14	1
1:A:280:LEU:C	1:A:280:LEU:HD23	0.43	2.34	16	1
1:A:282:PHE:O	1:A:285:ASN:ND2	0.43	2.52	1	4
1:A:300:SER:O	1:A:301:LYS:C	0.43	2.57	18	6
1:A:340:VAL:CG2	1:A:345:TYR:H	0.43	2.27	8	1
1:A:317:TYR:OH	2:B:504:C:H5"	0.43	2.13	16	1
1:A:342:PHE:CD2	1:A:383:ILE:HD11	0.43	2.49	3	5
1:A:313:ASN:ND2	1:A:350:TYR:CD2	0.43	2.87	19	1
1:A:300:SER:O	1:A:303:LEU:N	0.43	2.51	13	16
1:A:305:GLY:H	1:A:320:ASP:HA	0.43	1.73	17	1
1:A:390:THR:HG21	1:A:392:LEU:HD22	0.42	1.91	19	1
1:A:381:MET:H	2:B:505:A:H4'	0.42	1.74	20	1
1:A:361:VAL:HG11	1:A:381:MET:HE2	0.42	1.89	2	1
1:A:279:VAL:CG2	1:A:384:PRO:HB3	0.42	2.44	5	1
1:A:312:TYR:HB3	1:A:352:GLN:CB	0.42	2.44	15	1
1:A:328:PRO:HA	1:A:383:ILE:CD1	0.42	2.44	6	1
1:A:347:ARG:HA	1:A:352:GLN:N	0.42	2.29	11	1
1:A:307:VAL:CG1	1:A:392:LEU:HB2	0.42	2.43	13	1

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:318:ARG:CD	1:A:318:ARG:N	0.42	2.79	2	1
1:A:293:HIS:H	1:A:293:HIS:CD2	0.42	2.33	5	4
1:A:381:MET:O	2:B:505:A:C1'	0.42	2.68	18	1
1:A:382:LEU:HD23	2:B:505:A:C2	0.42	2.49	18	1
1:A:310:THR:O	1:A:314:ASN:HA	0.42	2.13	19	1
1:A:328:PRO:C	1:A:357:LEU:HD21	0.42	2.35	4	1
1:A:285:ASN:O	1:A:289:GLN:HG2	0.42	2.15	8	1
1:A:357:LEU:O	1:A:358:LYS:HE2	0.42	2.14	16	2
1:A:317:TYR:HB3	1:A:364:SER:OG	0.42	2.14	17	2
1:A:312:TYR:HA	1:A:352:GLN:HE21	0.42	1.74	8	1
1:A:348:LYS:N	1:A:348:LYS:HE3	0.42	2.29	11	1
1:A:279:VAL:HA	1:A:389:LEU:CD2	0.42	2.44	1	1
1:A:307:VAL:O	1:A:390:THR:OG1	0.42	2.30	6	7
1:A:361:VAL:HG11	1:A:381:MET:HE3	0.42	1.92	20	1
1:A:362:LEU:HD11	1:A:387:CYS:SG	0.42	2.55	9	1
1:A:344:GLU:O	1:A:345:TYR:C	0.42	2.58	18	3
1:A:304:ILE:C	1:A:306:LEU:N	0.42	2.72	16	5
1:A:329:LYS:CA	1:A:357:LEU:HD11	0.42	2.45	19	4
1:A:382:LEU:HA	2:B:505:A:C5	0.42	2.50	18	1
1:A:330:SER:HB2	1:A:342:PHE:CE2	0.41	2.49	3	1
1:A:279:VAL:HB	1:A:303:LEU:CD2	0.41	2.45	9	2
1:A:328:PRO:HD2	1:A:357:LEU:O	0.41	2.15	8	1
1:A:303:LEU:O	1:A:304:ILE:C	0.41	2.56	19	1
1:A:299:VAL:O	1:A:303:LEU:CD1	0.41	2.66	7	3
1:A:312:TYR:HA	1:A:352:GLN:CD	0.41	2.36	12	1
1:A:315:LYS:HG2	1:A:317:TYR:CE2	0.41	2.49	15	1
1:A:323:ASP:HB2	1:A:363:VAL:HG12	0.41	1.93	4	1
1:A:345:TYR:O	1:A:349:GLN:CB	0.41	2.67	11	2
1:A:283:MET:HE1	1:A:322:ILE:HG21	0.41	1.91	10	3
1:A:329:LYS:CE	1:A:357:LEU:HD13	0.41	2.45	15	1
1:A:329:LYS:NZ	1:A:357:LEU:HD13	0.41	2.30	4	1
1:A:328:PRO:HG2	1:A:356:ASP:O	0.41	2.15	6	3
1:A:328:PRO:HB2	1:A:357:LEU:HG	0.41	1.93	8	1
1:A:362:LEU:HD12	1:A:387:CYS:SG	0.41	2.55	2	1
2:B:501:U:H4'	2:B:502:G:OP2	0.41	2.14	4	1
1:A:279:VAL:CG2	1:A:387:CYS:SG	0.41	3.07	13	1
1:A:308:VAL:CG2	1:A:387:CYS:SG	0.41	3.09	15	1
1:A:343:LEU:HD13	1:A:357:LEU:HD12	0.41	1.92	8	2
1:A:310:THR:CG2	1:A:382:LEU:HD22	0.41	2.46	5	1
1:A:390:THR:C	1:A:392:LEU:N	0.41	2.74	3	1
1:A:354:ILE:CG2	1:A:355:THR:N	0.41	2.84	5	3

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Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
1:A:295:PHE:CD2	1:A:296:GLN:HG3	0.41	2.51	6	1
1:A:347:ARG:O	1:A:351:ASN:CA	0.41	2.69	11	1
1:A:348:LYS:H	1:A:348:LYS:HE3	0.41	1.76	11	1
1:A:344:GLU:HG2	1:A:348:LYS:HD3	0.41	1.93	12	2
1:A:331:THR:HG22	1:A:341:SER:CA	0.41	2.46	13	1
1:A:290:THR:OG1	1:A:295:PHE:N	0.41	2.54	16	1
1:A:279:VAL:CG1	1:A:387:CYS:O	0.41	2.69	18	1
1:A:357:LEU:O	1:A:357:LEU:CD2	0.41	2.69	4	1
1:A:317:TYR:HB2	1:A:382:LEU:HD11	0.41	1.92	15	1
1:A:307:VAL:HG22	1:A:392:LEU:HD12	0.40	1.92	5	1
1:A:323:ASP:OD1	1:A:326:GLN:HG3	0.40	2.15	6	1
1:A:284:PHE:O	1:A:287:TYR:N	0.40	2.54	14	2
1:A:328:PRO:HB2	1:A:354:ILE:HG21	0.40	1.93	11	1
1:A:363:VAL:O	1:A:363:VAL:HG22	0.40	2.17	15	1
1:A:328:PRO:HG2	1:A:359:GLN:NE2	0.40	2.31	16	1
1:A:346:TYR:HA	1:A:352:GLN:NE2	0.40	2.31	4	1
1:A:357:LEU:O	1:A:357:LEU:HD23	0.40	2.16	4	1
1:A:345:TYR:O	1:A:349:GLN:HB3	0.40	2.16	8	1
1:A:317:TYR:HB3	1:A:364:SER:HB3	0.40	1.92	15	1
1:A:318:ARG:N	1:A:318:ARG:CD	0.40	2.83	19	1
1:A:280:LEU:HD21	1:A:356:ASP:OD2	0.40	2.15	2	1
1:A:388:TYR:O	1:A:390:THR:HG23	0.40	2.16	3	1
1:A:359:GLN:OE1	1:A:384:PRO:HB2	0.40	2.16	5	1
1:A:291:GLU:OE2	1:A:294:LYS:HG3	0.40	2.17	14	1
1:A:299:VAL:O	1:A:300:SER:C	0.40	2.58	16	1
1:A:279:VAL:HG13	1:A:387:CYS:O	0.40	2.16	17	1
1:A:383:ILE:HG22	1:A:385:GLU:N	0.40	2.32	1	1
1:A:290:THR:HG21	1:A:295:PHE:HA	0.40	1.94	12	1
1:A:331:THR:CG2	1:A:341:SER:OG	0.40	2.69	12	1
1:A:313:ASN:O	1:A:315:LYS:N	0.40	2.54	16	1
1:A:309:LEU:HD13	1:A:309:LEU:O	0.40	2.16	2	1

5.2 Torsion angles (i)

5.2.1 Protein backbone (i)

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	95/134 (71%)	64±2 (68±2%)	22±2 (23±2%)	9±1 (9±1%)	1 11
All	All	1900/2680 (71%)	1288 (68%)	432 (23%)	180 (9%)	1 11

All 18 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	295	PHE	20
1	A	277	GLU	20
1	A	360	PRO	20
1	A	299	VAL	20
1	A	314	ASN	17
1	A	291	GLU	16
1	A	357	LEU	15
1	A	290	THR	14
1	A	330	SER	12
1	A	391	GLY	8
1	A	289	GLN	6
1	A	328	PRO	4
1	A	353	GLU	2
1	A	304	ILE	2
1	A	312	TYR	1
1	A	393	THR	1
1	A	351	ASN	1
1	A	347	ARG	1

5.2.2 Protein sidechains (i)

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	92/125 (74%)	67±3 (72±3%)	25±3 (28±3%)	2 20
All	All	1840/2500 (74%)	1331 (72%)	509 (28%)	2 20

All 56 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	277	GLU	20
1	A	357	LEU	20
1	A	363	VAL	20
1	A	281	ASP	20
1	A	298	GLN	20
1	A	301	LYS	20
1	A	293	HIS	20
1	A	299	VAL	20
1	A	303	LEU	20
1	A	389	LEU	19
1	A	319	VAL	19
1	A	290	THR	19
1	A	309	LEU	19
1	A	320	ASP	17
1	A	340	VAL	16
1	A	382	LEU	15
1	A	279	VAL	14
1	A	385	GLU	14
1	A	350	TYR	13
1	A	383	ILE	13
1	A	282	PHE	12
1	A	286	PHE	12
1	A	307	VAL	10
1	A	332	PHE	9
1	A	354	ILE	9
1	A	289	GLN	9
1	A	288	HIS	7
1	A	361	VAL	7
1	A	284	PHE	7
1	A	312	TYR	6
1	A	313	ASN	6
1	A	381	MET	5
1	A	285	ASN	5
1	A	314	ASN	5
1	A	353	GLU	4
1	A	352	GLN	4
1	A	300	SER	4
1	A	351	ASN	4
1	A	359	GLN	3
1	A	341	SER	3
1	A	283	MET	2
1	A	315	LYS	2
1	A	345	TYR	2

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Mol	Chain	Res	Type	Models (Total)
1	A	386	LEU	2
1	A	311	LYS	1
1	A	344	GLU	1
1	A	306	LEU	1
1	A	393	THR	1
1	A	392	LEU	1
1	A	329	LYS	1
1	A	330	SER	1
1	A	294	LYS	1
1	A	326	GLN	1
1	A	318	ARG	1
1	A	292	GLU	1
1	A	348	LYS	1

5.2.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers	Suiteness
2	B	4/5 (80%)	4±0 (95±10%)	0±0 (4±9%)	0.01±0.03
All	All	82/100 (82%)	76 (93%)	3 (4%)	0.01

The overall RNA backbone suiteness is 0.01.

All unique RNA backbone outliers are listed below:

Mol	Chain	Res	Type	Models (Total)
2	B	504	C	19
2	B	502	G	19
2	B	505	A	19
2	B	503	A	19

All unique RNA pucker outliers are listed below:

Mol	Chain	Res	Type	Models (Total)
2	B	501	U	2
2	B	503	A	1

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

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

5.4 Carbohydrates

There are no carbohydrates in this entry.

5.5 Ligand geometry

There are no ligands in this entry.

5.6 Other polymers

There are no such molecules in this entry.

5.7 Polymer linkage issues

There are no chain breaks in this entry.

6 Chemical shift validation

No chemical shift data were provided