Full wwPDB NMR Structure Validation Report (i)

Jun 4, 2023 – 10:21 AM EDT

PDB ID	:	2RSE
BMRB ID	:	11471
Title	:	NMR structure of FKBP12-mTOR FRB domain-rapamycin complex structure determined based on PCS
Authors	:	Kobashigawa, Y.; Ushio, M.; Saio, T.; Inagaki, F.
Deposited on	:	2012-01-25

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 types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

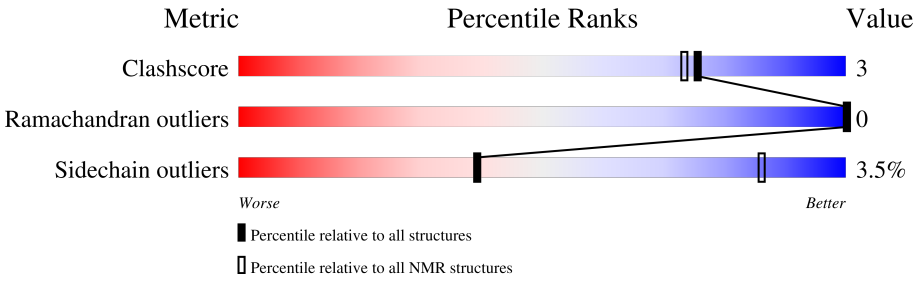
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
wwPDB-RCI	:	v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV	:	Wang et al. (2010)
wwPDB-ShiftChecker	:	v1.2
BMRB Restraints Analysis	:	v1.2
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.33

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 is 53%.

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	107	94% 6%
2	B	94	63% 28% 10%

2 Ensemble composition and analysis

This entry contains 20 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:902-A:1005 (104)	0.00	2
2	A:1006-A:1008, B:1009-B:1102 (97)	0.06	10

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

3 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 3196 atoms, of which 1566 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1A.

Mol	Chain	Residues	Atoms						Trace
1	A	107	Total	C	H	N	O	S	0
			1648	527	816	146	155	4	

- Molecule 2 is a protein called Serine/threonine-protein kinase mTOR.

Mol	Chain	Residues	Atoms						Trace
2	B	94	Total	C	H	N	O	S	0
			1546	508	750	139	142	7	

- Molecule 3 is TERBIUM(III) ION (three-letter code: TB) (formula: Tb).

Mol	Chain	Residues	Atoms	
3	A	2	Total	Tb
			2	2

4 Residue-property plots (i)

4.1 Average score per residue in the NMR ensemble

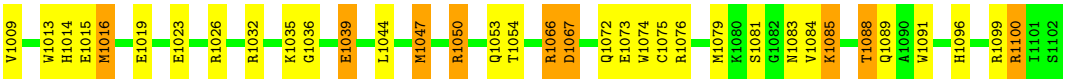
These plots are provided for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic is the same as shown in the summary in section 1 of this report. The second graphic shows the sequence where residues are colour-coded according to the number of geometric quality criteria for 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: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:

• Molecule 2: Serine/threonine-protein kinase mTOR

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: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:

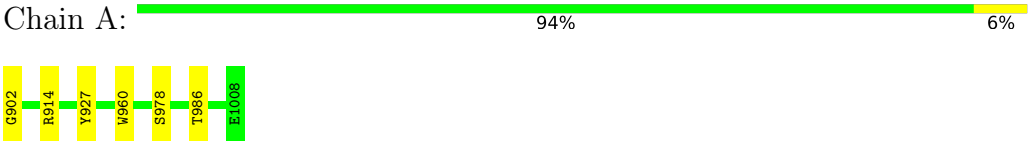
• Molecule 2: Serine/threonine-protein kinase mTOR

Chain B:

4.2.2 Score per residue for model 2 (medoid)

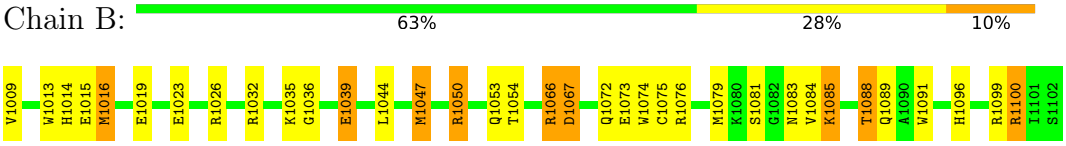
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

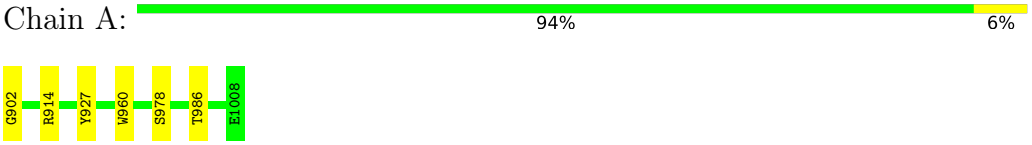
Chain B:



4.2.3 Score per residue for model 3

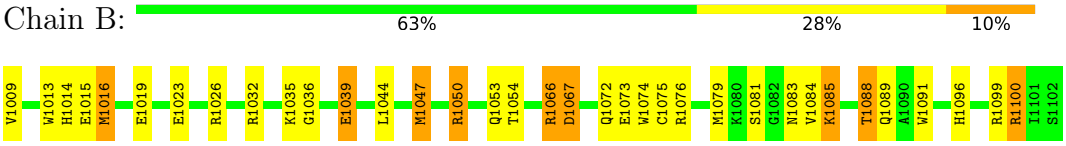
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

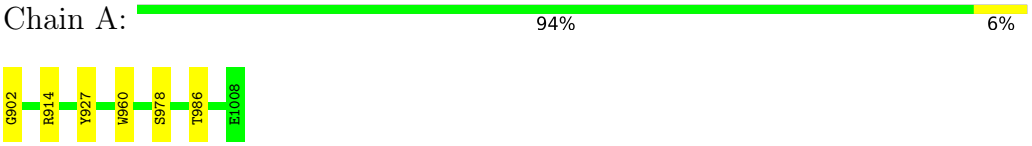
Chain B:



4.2.4 Score per residue for model 4

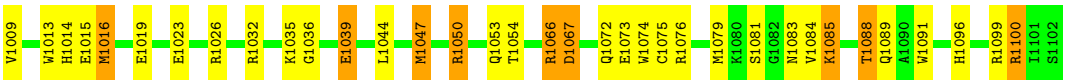
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

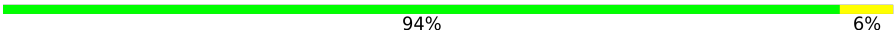
Chain B:



4.2.5 Score per residue for model 5

• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



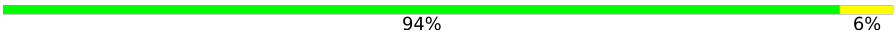
• Molecule 2: Serine/threonine-protein kinase mTOR

Chain B:

4.2.6 Score per residue for model 6

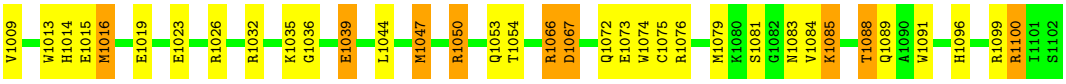
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

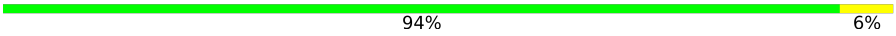
Chain B:



4.2.7 Score per residue for model 7

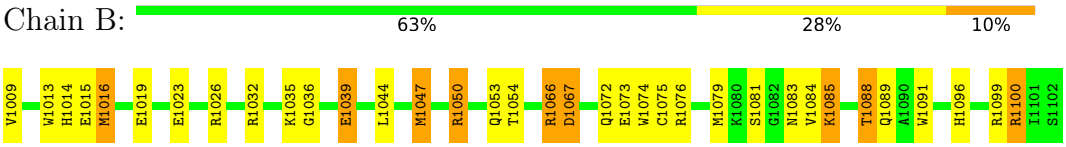
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

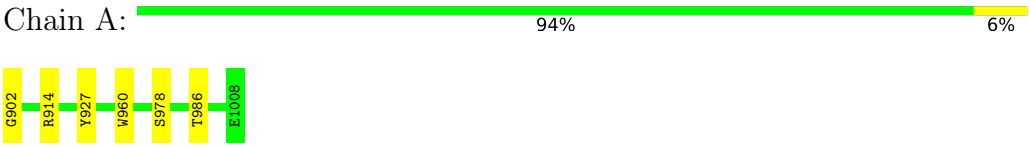
Chain B:



4.2.8 Score per residue for model 8

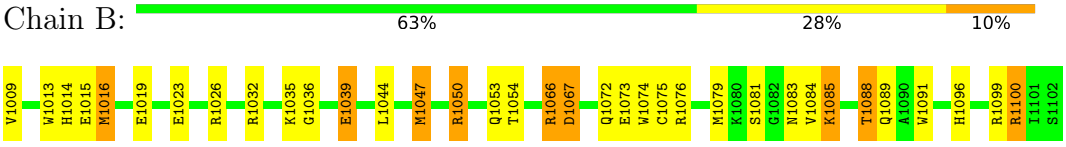
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

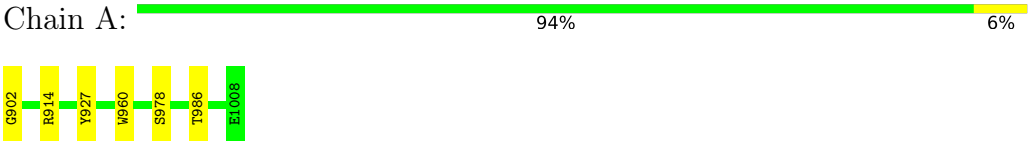
Chain B:



4.2.9 Score per residue for model 9

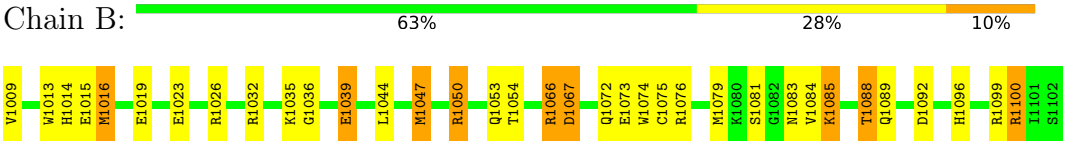
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

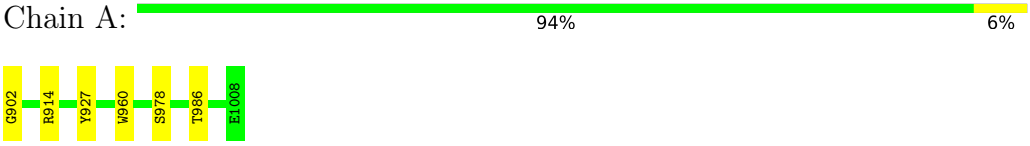
Chain B:



4.2.10 Score per residue for model 10

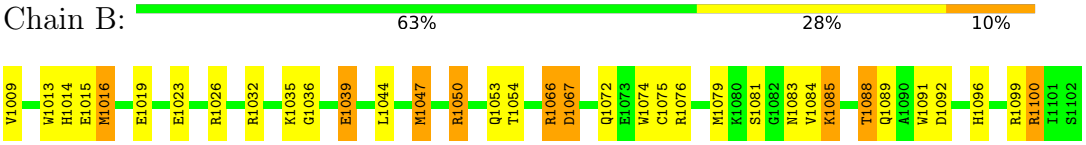
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

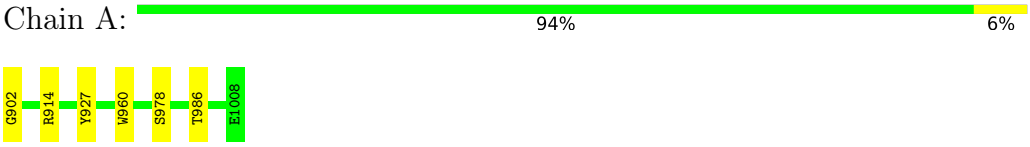
Chain B:



4.2.11 Score per residue for model 11

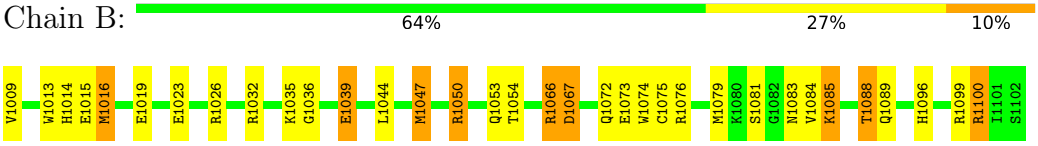
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

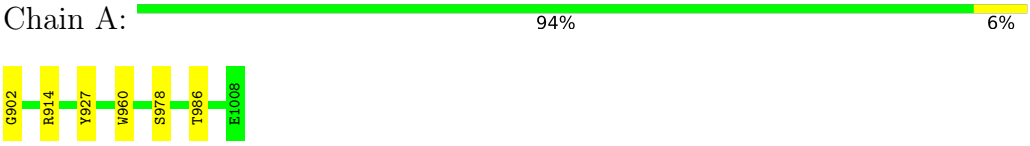
Chain B:



4.2.12 Score per residue for model 12

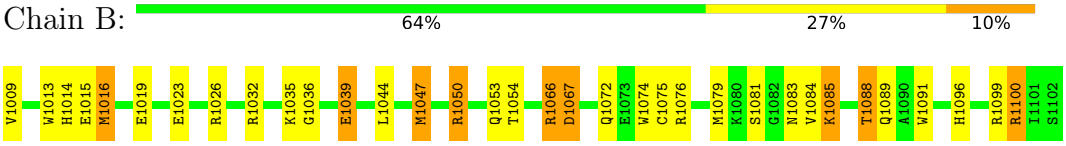
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

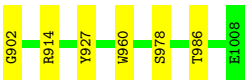
Chain B:



4.2.13 Score per residue for model 13

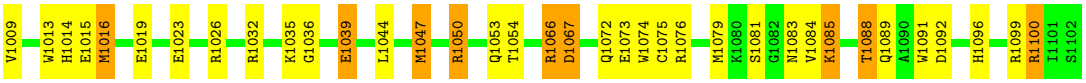
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

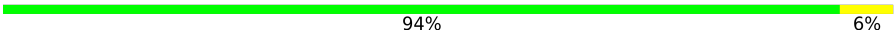
Chain B:



4.2.14 Score per residue for model 14

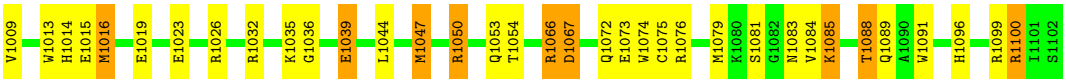
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

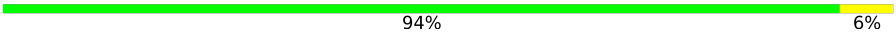
Chain B:



4.2.15 Score per residue for model 15

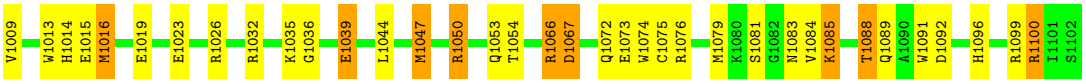
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

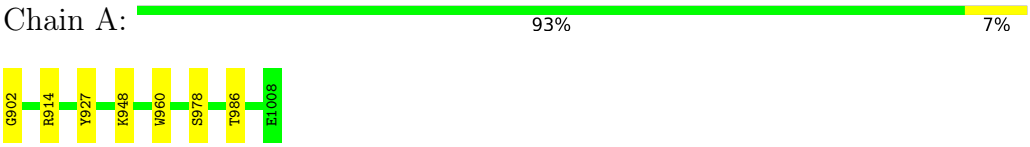
Chain B:



4.2.16 Score per residue for model 16

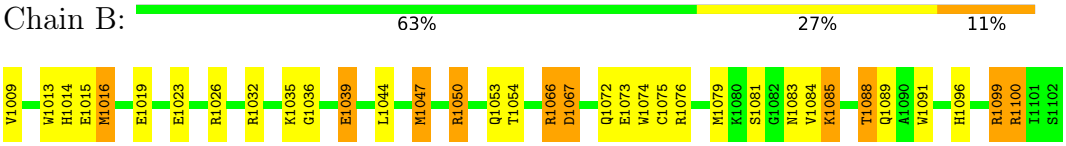
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

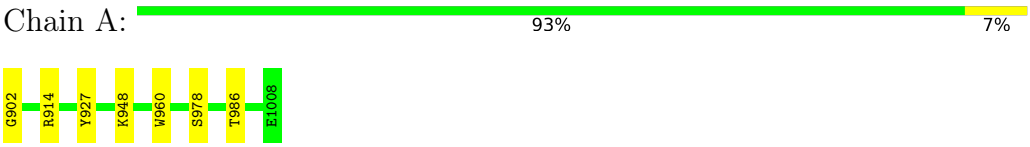
Chain B:



4.2.17 Score per residue for model 17

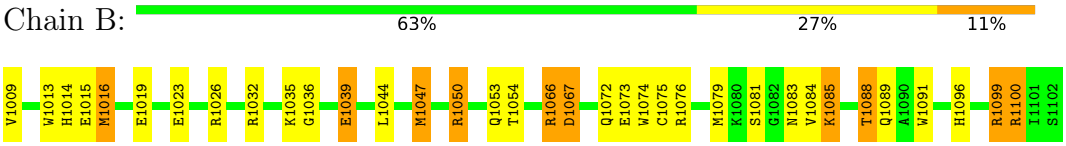
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

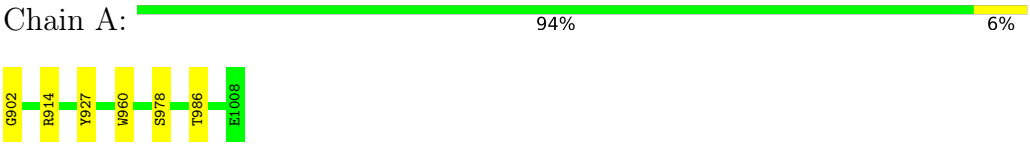
Chain B:



4.2.18 Score per residue for model 18

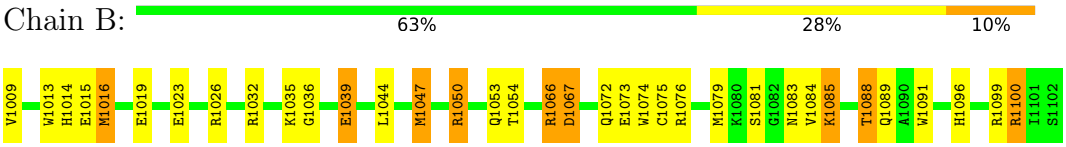
• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



• Molecule 2: Serine/threonine-protein kinase mTOR

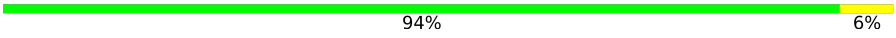
Chain B:



4.2.19 Score per residue for model 19

• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

Chain A:



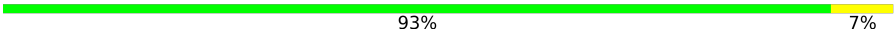
• Molecule 2: Serine/threonine-protein kinase mTOR

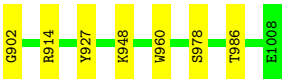
Chain B:

4.2.20 Score per residue for model 20

• Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1A

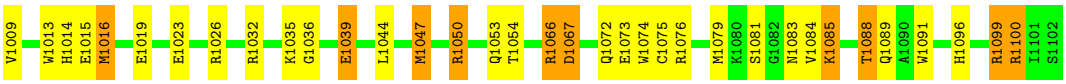
Chain A:





• Molecule 2: Serine/threonine-protein kinase mTOR

Chain B:



5 Refinement protocol and experimental data overview

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

Of the 100 calculated structures, 20 were deposited, based on the following criterion: *structures with the lowest energy.*

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

Software name	Classification	Version
X-PLOR NIH	refinement	

The following table shows chemical shift validation statistics as aggregates over all chemical shift files. Detailed validation can be found in section 7 of this report.

Chemical shift file(s)	working_cs.cif
Number of chemical shift lists	1
Total number of shifts	1480
Number of shifts mapped to atoms	1480
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Assignment completeness (well-defined parts)	53%

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: TB

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the (average) root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#Z>5	RMSZ	#Z>5
1	A	0.72±0.00	0±0/851 (0.0± 0.0%)	1.22±0.00	5±0/1146 (0.4± 0.0%)
2	B	1.50±0.00	3±0/818 (0.4± 0.0%)	2.21±0.00	32±1/1099 (2.9± 0.1%)
All	All	1.17	60/33380 (0.2%)	1.77	746/44900 (1.7%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	Chirality	Planarity
2	B	0.0±0.0	1.0±0.0
All	All	0	20

All unique bond outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)	Models	
								Worst	Total
2	B	1036	GLY	C-O	-8.10	1.10	1.23	7	20
2	B	1054	THR	CB-OG1	6.03	1.55	1.43	14	20
2	B	1016	MET	N-CA	5.58	1.57	1.46	9	20

All unique angle outliers are listed below. They are sorted according to the Z-score of the worst occurrence in the ensemble.

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)	Models	
								Worst	Total
2	B	1076	ARG	CD-NE-CZ	17.97	148.76	123.60	16	20
2	B	1099	ARG	NE-CZ-NH1	16.46	128.53	120.30	13	20
2	B	1099	ARG	NE-CZ-NH2	-11.90	114.35	120.30	13	20
2	B	1100	ARG	NE-CZ-NH1	9.05	124.83	120.30	10	20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})	Models	
								Worst	Total
2	B	1019	GLU	OE1-CD-OE2	8.31	133.27	123.30	3	20
2	B	1026	ARG	NE-CZ-NH2	-8.28	116.16	120.30	12	20
2	B	1009	VAL	CA-CB-CG1	8.06	122.99	110.90	14	20
2	B	1039	GLU	OE1-CD-OE2	7.97	132.87	123.30	19	20
2	B	1032	ARG	NE-CZ-NH1	-7.89	116.36	120.30	14	20
2	B	1023	GLU	OE1-CD-OE2	-7.78	113.97	123.30	10	20
2	B	1016	MET	CA-CB-CG	7.69	126.37	113.30	13	20
2	B	1084	VAL	CG1-CB-CG2	-7.62	98.70	110.90	17	20
2	B	1015	GLU	OE1-CD-OE2	7.62	132.44	123.30	15	20
2	B	1066	ARG	NE-CZ-NH2	7.60	124.10	120.30	13	20
1	A	960	TRP	CD1-CG-CD2	7.21	112.07	106.30	6	20
2	B	1100	ARG	NE-CZ-NH2	-7.18	116.71	120.30	16	20
2	B	1013	TRP	CE3-CZ3-CH2	-6.84	113.68	121.20	12	20
2	B	1074	TRP	CZ3-CH2-CZ2	6.79	129.75	121.60	3	20
2	B	1047	MET	N-CA-CB	-6.75	98.45	110.60	15	20
2	B	1074	TRP	CH2-CZ2-CE2	-6.72	110.68	117.40	8	20
2	B	1047	MET	CB-CA-C	6.64	123.68	110.40	15	20
2	B	1050	ARG	NE-CZ-NH1	-6.58	117.01	120.30	2	20
1	A	914	ARG	NE-CZ-NH1	5.92	123.26	120.30	19	20
2	B	1072	GLN	CG-CD-OE1	-5.83	109.93	121.60	2	20
2	B	1089	GLN	CG-CD-OE1	-5.82	109.97	121.60	6	20
2	B	1053	GLN	OE1-CD-NE2	5.80	135.24	121.90	5	20
2	B	1084	VAL	CA-CB-CG1	5.70	119.46	110.90	3	20
1	A	960	TRP	CE2-CD2-CG	-5.69	102.75	107.30	1	20
2	B	1053	GLN	CG-CD-NE2	-5.68	103.07	116.70	17	20
1	A	960	TRP	CG-CD1-NE1	-5.64	104.46	110.10	19	20
2	B	1072	GLN	OE1-CD-NE2	5.53	134.62	121.90	10	20
2	B	1067	ASP	CB-CG-OD1	5.43	123.19	118.30	5	20
2	B	1081	SER	O-C-N	-5.38	114.06	123.20	6	20
2	B	1023	GLU	CG-CD-OE1	5.27	128.84	118.30	2	20
1	A	927	TYR	CB-CG-CD1	-5.24	117.86	121.00	18	20
2	B	1073	GLU	OE1-CD-OE2	-5.14	117.13	123.30	2	15
2	B	1091	TRP	CA-CB-CG	-5.07	104.07	113.70	1	18
2	B	1019	GLU	CB-CG-CD	-5.03	100.62	114.20	3	9
2	B	1092	ASP	CB-CG-OD1	-5.03	113.78	118.30	10	4

There are no chirality outliers.

All unique planar outliers are listed below.

Mol	Chain	Res	Type	Group	Models (Total)
2	B	1088	THR	Mainchain	20

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	832	816	828	1±0
2	B	796	750	760	9±1
All	All	32600	31320	31760	200

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 3.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)	Models	
				Worst	Total
2:B:1016:MET:SD	2:B:1047:MET:SD	0.95	2.64	2	20
1:A:902:GLY:N	1:A:978:SER:HG	0.66	1.88	20	20
2:B:1067:ASP:OD2	2:B:1100:ARG:NH2	0.66	2.29	20	20
2:B:1016:MET:HG2	2:B:1044:LEU:CD2	0.60	2.26	1	20
2:B:1016:MET:SD	2:B:1047:MET:CE	0.58	2.91	12	20
2:B:1035:LYS:O	2:B:1039:GLU:HG3	0.58	1.98	19	20
2:B:1096:HIS:CD2	2:B:1100:ARG:HH21	0.57	2.18	15	20
1:A:948:LYS:O	2:B:1099:ARG:NH2	0.55	2.39	20	3
2:B:1085:LYS:NZ	2:B:1088:THR:HG21	0.48	2.24	20	20
2:B:1075:CYS:O	2:B:1079:MET:HG3	0.45	2.11	2	20
2:B:1016:MET:HG2	2:B:1044:LEU:HD22	0.40	1.93	20	17

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	105/107 (98%)	102±0 (97±0%)	3±0 (3±0%)	0±0 (0±0%)	100	100
2	B	92/94 (98%)	91±0 (99±0%)	1±0 (1±0%)	0±0 (0±0%)	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	3940/4020 (98%)	3860 (98%)	80 (2%)	0 (0%)	100 100

There are no Ramachandran outliers.

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	89/89 (100%)	88±0 (99±0%)	1±0 (1±0%)	74 96
2	B	82/82 (100%)	77±0 (94±0%)	5±0 (6±0%)	22 71
All	All	3420/3420 (100%)	3300 (96%)	120 (4%)	39 86

All 6 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	986	THR	20
2	B	1014	HIS	20
2	B	1050	ARG	20
2	B	1066	ARG	20
2	B	1083	ASN	20
2	B	1085	LYS	20

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

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

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

The completeness of assignment taking into account all chemical shift lists is 53% for the well-defined parts and 53% for the entire structure.

7.1 Chemical shift list 1

File name: working_cs.cif

Chemical shift list name: *assigned_chem_shift_list_1*

7.1.1 Bookkeeping

The following table shows the results of parsing the chemical shift list and reports the number of nuclei with statistically unusual chemical shifts.

Total number of shifts	1480
Number of shifts mapped to atoms	1480
Number of unparsed shifts	0
Number of shifts with mapping errors	0
Number of shifts with mapping warnings	0
Number of shift outliers (ShiftChecker)	1

7.1.2 Chemical shift referencing

The following table shows the suggested chemical shift referencing corrections.

Nucleus	# values	Correction ± precision, *ppm*	Suggested action
$^{13}C_{\alpha}$	195	-0.72 ± 0.20	Should be checked
$^{13}C_{\beta}$	137	0.32 ± 0.22	None needed (< 0.5 ppm)
$^{13}C'$	83	-1.00 ± 0.20	Should be applied
^{15}N	183	0.02 ± 0.30	None needed (< 0.5 ppm)

7.1.3 Completeness of resonance assignments

The following table shows the completeness of the chemical shift assignments for the well-defined regions of the structure. The overall completeness is 53%, i.e. 1478 atoms were assigned a chemical shift out of a possible 2794. 0 out of 30 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	754/1006 (75%)	293/412 (71%)	278/402 (69%)	183/192 (95%)
Sidechain	700/1517 (46%)	446/982 (45%)	248/470 (53%)	6/65 (9%)

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	Total	^{1}H	^{13}C	^{15}N
Aromatic	24/271 (9%)	14/135 (10%)	9/124 (7%)	1/12 (8%)
Overall	1478/2794 (53%)	753/1529 (49%)	535/996 (54%)	190/269 (71%)

The following table shows the completeness of the chemical shift assignments for the full structure. The overall completeness is 53%, i.e. 1478 atoms were assigned a chemical shift out of a possible 2794. 0 out of 30 assigned methyl groups (LEU and VAL) were assigned stereospecifically.

	Total	^{1}H	^{13}C	^{15}N
Backbone	754/1006 (75%)	293/412 (71%)	278/402 (69%)	183/192 (95%)
Sidechain	700/1517 (46%)	446/982 (45%)	248/470 (53%)	6/65 (9%)
Aromatic	24/271 (9%)	14/135 (10%)	9/124 (7%)	1/12 (8%)
Overall	1478/2794 (53%)	753/1529 (49%)	535/996 (54%)	190/269 (71%)

7.1.4 Statistically unusual chemical shifts (i)

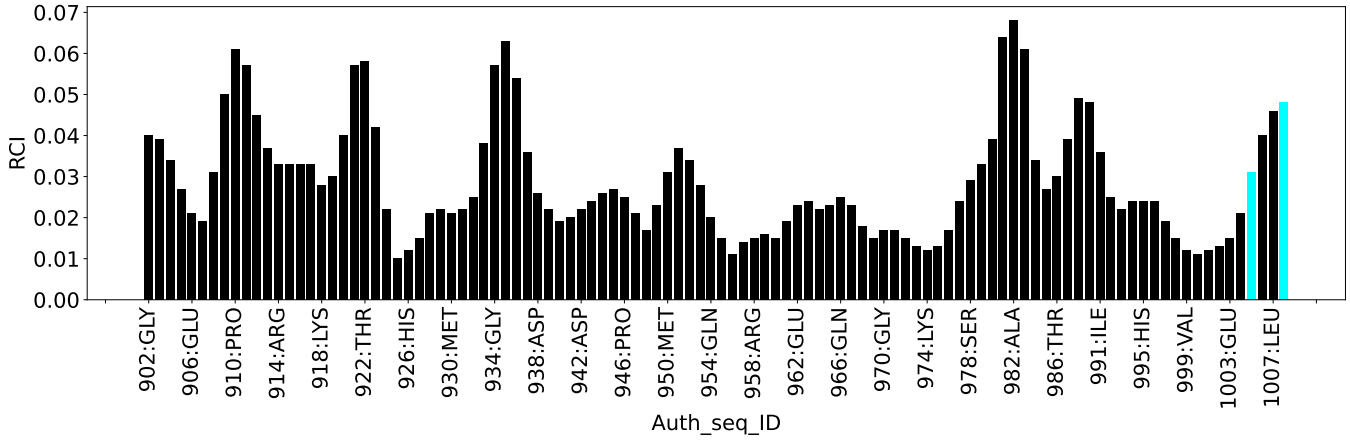
The following table lists the statistically unusual chemical shifts. These are statistical measures, and large deviations from the mean do not necessarily imply incorrect assignments. Molecules containing paramagnetic centres or hemes are expected to give rise to anomalous chemical shifts.

List Id	Chain	Res	Type	Atom	Shift, *ppm*	Expected range, *ppm*	Z-score
1	A	968	SER	HB3	2.36	2.49 – 5.20	-5.5

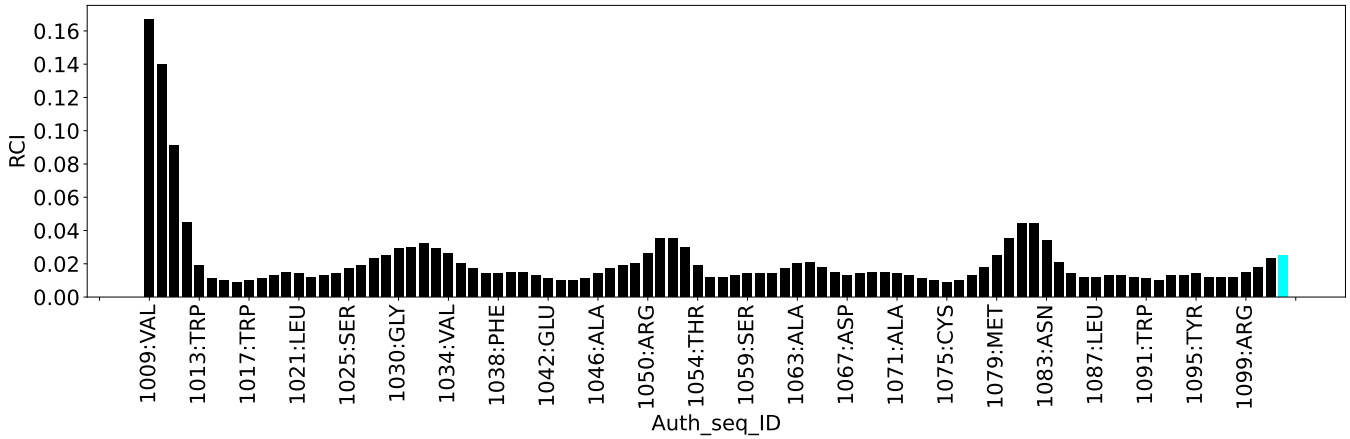
7.1.5 Random Coil Index (RCI) plots (i)

The image below reports *random coil index* values for the protein chains in the structure. The height of each bar gives a probability of a given residue to be disordered, as predicted from the available chemical shifts and the amino acid sequence. A value above 0.2 is an indication of significant predicted disorder. The colour of the bar shows whether the residue is in the well-defined core (black) or in the ill-defined residue ranges (cyan), as described in section 2 on ensemble composition.If well-defined core and ill-defined regions are not identified then it is shown as gray bars.

Random coil index (RCI) for chain A:



Random coil index (RCI) for chain B:



8 NMR restraints analysis

No restraints data found

9 Distance violation analysis (i)

No distance restraints data found

10 Dihedral-angle violation analysis (i)

No dihedral-angle restraints found