



wwPDB NMR Structure Validation Summary Report ⓘ

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PDB ID : 2KGX
Title : HADDOCK structure of the talin F3 domain in complex with talin 1655-1822
Authors : Goult, B.T.; Gingras, A.R.; Bate, N.; Critchley, D.R.; Barsukov, I.L.
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This is a wwPDB NMR Structure Validation Summary Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

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

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

MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
RCI : v_1n_11_5_13_A (Berjanski et al., 2005)
PANAV : Wang et al. (2010)
ShiftChecker : 2.29
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.29

1 Overall quality at a glance

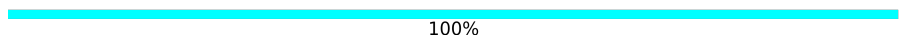
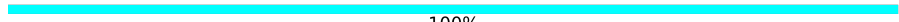
The following experimental techniques were used to determine the structure:

SOLUTION NMR

The overall completeness of chemical shifts assignment was not calculated.

There are no overall percentile quality scores available for this entry.

The table below summarises the geometric issues observed across the polymeric chains and their fit to the experimental data. The red, orange, yellow and green segments indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A cyan segment indicates the fraction of residues that are not part of the well-defined cores, and a grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	A	174	 100%
2	B	91	 100%

2 Ensemble composition and analysis

This entry contains 2 models. Identification of well-defined residues and clustering analysis are not possible.

3 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 2459 atoms, of which 445 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Talin-1.

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		S
1	A	174	1549	785	274	218	265	7	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1649	GLY	-	expression tag	UNP P26039
A	1650	ILE	-	expression tag	UNP P26039
A	1651	ASP	-	expression tag	UNP P26039
A	1652	PRO	-	expression tag	UNP P26039
A	1653	PHE	-	expression tag	UNP P26039
A	1654	THR	-	expression tag	UNP P26039

- Molecule 2 is a protein called MKIAA1027 protein.

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		S
2	B	91	910	478	171	120	139	2	0

There is a discrepancy between the modelled and reference sequences:

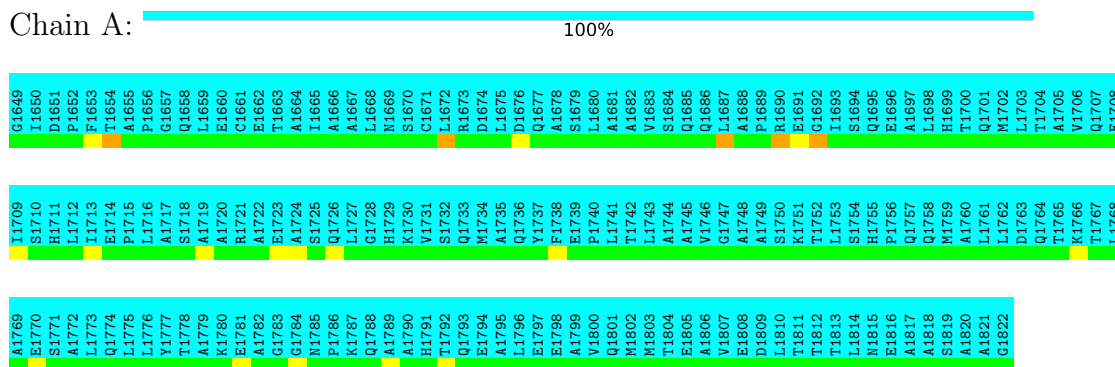
Chain	Residue	Modelled	Actual	Comment	Reference
B	336	SER	CYS	engineered mutation	UNP Q80TM2

4 Residue-property plots i

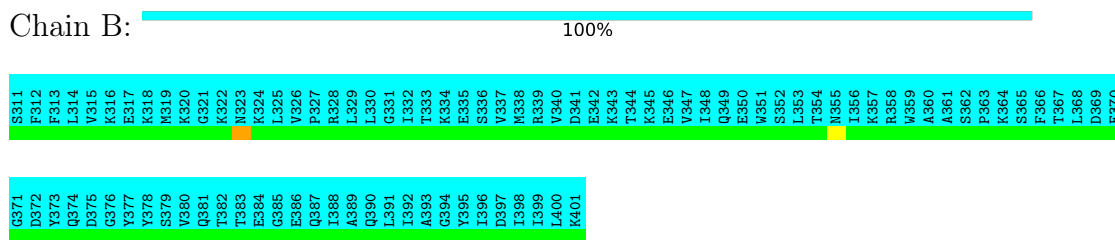
4.1 Average score per residue in the NMR ensemble

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: Talin-1



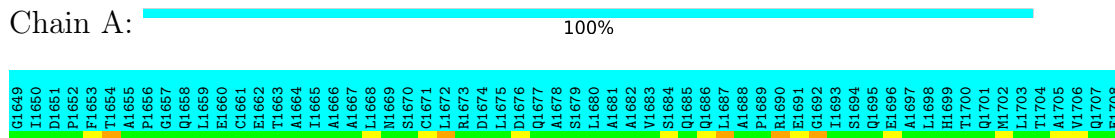
- Molecule 2: MKIAA1027 protein



4.2 Residue scores for the representative (author defined) model from the NMR ensemble

The representative model is number 1. Colouring as in section 4.1 above.

- Molecule 1: Talin-1



I1709
SI710
HI711
LI712
LI713
EI714
PI715
LI716
LI717
SI718
SI719
SI720
SI721
SI722
EI723
SI724
SI725
SI726
LI727
LI728
HI729
KI730
VI731
SI732
SI733
MI734
SI735
SI736
SI737
SI738
SI739
PI740
LI741
LI742
LI743
SI744
SI745
SI746
SI747
SI748
SI749
SI750
KI751
LI752
LI753
SI754
HI755
PI756
QI757
QI758
MI759
LI760
LI761
LI762
DI763
QI764
LI765
KI766
LI767
LI768

AI769
EI770
SI771
AI772
QI773
QI774
LI775
LI776
YI777
TI778
AI779
KI780
EI781
AI782
SI783
GI784
NI785
PI786
KI787
QI788
AI789
AI790
HI791
TI792
SI793
QI793
EI794
AI795
LI796
EI797
EI798
AI799
VI800
QI801
MI802
MI803
LI804
EI805
AI806
VI807
EI808
DI809
LI810
LI811
TI812
TI813
LI814
MI815
EI816
AI817
AI818
SI819
AI820
AI821
G1822

- Molecule 2: MKIAA1027 protein

Chain B:

100%

S811
F312
F313
L314
D315
K316
E317
K318
M319
K320
G321
K322
N323
K324
L325
V326
R328
R328
L329
L330
G331
I332
I333
K334
E335
S336
V337
M338
R339
V340
D341
E342
K343
T344
K345
E346
V347
I348
Q349
E350
W351
S352
L353
T354
M355
I356
K357
R358
W359
A360
A361
S362
P363
K364
S365
F366
T367
L368
D369
F370

G371
D372
Y373
Q374
D375
G376
Y377
Y378
S379
V380
Q381
T382
T383
E384
G385
E386
E387
I388
A389
Q390
L391
I392
A393
G394
Y395
I396
D397
I398
I399
L400
K401

5 Refinement protocol and experimental data overview

The models were refined using the following method: *Protein-protein docking*.

Of the 200 calculated structures, 2 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
HADDOCK	refinement	2

No chemical shift data was provided.

6 Model quality [i](#)

6.1 Standard geometry [i](#)

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

There are no bond-length outliers.

There are no bond-angle outliers.

There are no chirality outliers.

There are no planarity outliers.

6.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes
1	A	0	0	0	0±0
2	B	0	0	0	0±0
All	All	0	0	0	-

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 -.

There are no clashes.

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	0	-	-	-	-
2	B	0	-	-	-	-
All	All	0	-	-	-	-

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	0	-	-	-
2	B	0	-	-	-
All	All	0	-	-	-

There are no protein residues with a non-rotameric sidechain to report.

6.3.3 RNA [i](#)

There are no RNA molecules in this entry.

6.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

6.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.6 Ligand geometry [i](#)

There are no ligands in this entry.

6.7 Other polymers [i](#)

There are no such molecules in this entry.

6.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

7 Chemical shift validation

No chemical shift data were provided