



# Full wwPDB NMR Structure Validation Report ⓘ

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PDB ID : 1TFT  
Title : NMR Structure of an Antagonists of the XIAP-Caspase-9 Interaction Complexed to the BIR3 domain of XIAP  
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Deposited on : 2004-05-27

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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.

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

Cyrange : Kirchner and Güntert (2011)  
NmrClust : Kelley et al. (1996)  
MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
buster-report : 1.1.7 (2018)  
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

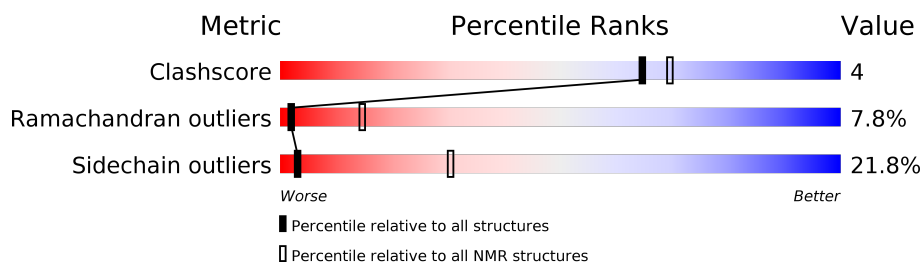
# 1 Overall quality at a glance

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

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  $\geq 3$ , 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	117	

## 2 Ensemble composition and analysis

This entry contains 1 models. Identification of well-defined residues and clustering analysis are not possible.

### 3 Entry composition i

There are 3 unique types of molecules in this entry. The entry contains 1914 atoms, of which 929 are hydrogens and 0 are deuteriums.

- Molecule 1 is a protein called Baculoviral IAP repeat-containing protein 4.

Mol	Chain	Residues	Atoms					Trace	
			Total	C	H	N	O		S
1	A	117	1832	597	887	162	180	6	0

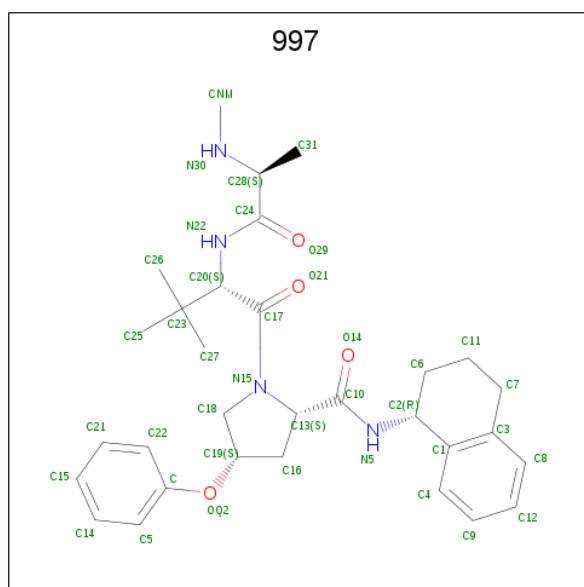
There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	240	MET	-	INITIATING METHIONINE	UNP P98170

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

Mol	Chain	Residues	Atoms	
			Total	Zn
2	A	1	1	1

- Molecule 3 is 1-[3,3-DIMETHYL-2-(2-METHYLAMINO-PROPIONYLAMINO)-BUTYRYL]-4-PHENOXY-PYRROLIDINE-2-CARBOXYLIC ACID(1,2,3,4-TETRAHYDRO-NAPHTHALEN-1-YL)-AMIDE (three-letter code: 997) (formula: C<sub>31</sub>H<sub>42</sub>N<sub>4</sub>O<sub>4</sub>).



Mol	Chain	Residues	Atoms				
			Total	C	H	N	O
3	A	1	81	31	42	4	4



## 5 Refinement protocol and experimental data overview

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

Of the ? calculated structures, 1 were deposited, based on the following criterion: ?.

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

Software name	Classification	Version
CNS	refinement	2000

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

## 6 Model quality [i](#)

### 6.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, 997

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	945	887	881	8
3	A	39	42	42	1
All	All	985	929	923	8

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 4.

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

Atom-1	Atom-2	Clash(Å)	Distance(Å)
1:A:319:GLN:NE2	3:A:998:997:H30	0.51	2.02
1:A:271:THR:OG1	1:A:291:ALA:HB3	0.49	2.07
1:A:296:ASP:O	1:A:298:VAL:HG12	0.48	2.08
1:A:267:ALA:O	1:A:271:THR:HG23	0.48	2.08
1:A:331:LEU:HD13	1:A:339:ILE:HG13	0.46	1.87
1:A:284:LEU:HD23	1:A:316:PRO:HB3	0.45	1.88
1:A:290:TYR:CE2	1:A:292:LEU:HD23	0.42	2.50
1:A:306:GLY:O	1:A:307:LEU:HD22	0.40	2.17

## 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	115/117 (98%)	77 (67%)	29 (25%)	9 (8%)	2	14
All	All	115/117 (98%)	77 (67%)	29 (25%)	9 (8%)	2	14

All 9 Ramachandran outliers are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type
1	A	247	ASP
1	A	255	ASN
1	A	262	MET
1	A	344	LEU
1	A	258	ARG
1	A	253	SER
1	A	288	GLY
1	A	354	ARG
1	A	245	SER

### 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	101/101 (100%)	79 (78%)	22 (22%)	3	30
All	All	101/101 (100%)	79 (78%)	22 (22%)	3	30

All 22 residues with a non-rotameric sidechain are listed below. They are sorted by the frequency of occurrence in the ensemble.

Mol	Chain	Res	Type
1	A	241	SER

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Mol	Chain	Res	Type
1	A	330	LEU
1	A	331	LEU
1	A	248	ARG
1	A	290	TYR
1	A	277	TYR
1	A	345	THR
1	A	303	CYS
1	A	300	CYS
1	A	318	GLU
1	A	256	LEU
1	A	322	LYS
1	A	344	LEU
1	A	283	GLN
1	A	254	THR
1	A	328	LYS
1	A	274	THR
1	A	352	LEU
1	A	276	ILE
1	A	279	VAL
1	A	269	ILE
1	A	282	GLU

### 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 carbohydrates in this entry.

LIGAND-GEOMETRY INFOmissingINFO

### 6.6 Other polymers [i](#)

There are no such molecules in this entry.

## 6.7 Polymer linkage issues

There are no chain breaks in this entry.

## 7 Chemical shift validation

No chemical shift data were provided