



# Full wwPDB Geometry-Only Validation Report ⓘ

Mar 6, 2022 – 04:12 PM EST

PDB ID : 2QFH  
Title : Solution Structure of the C-terminal SCR-16/20 fragment of Complement Factor H.  
Authors : Okemefuna, A.I.; Gilbert, H.E.; Griggs, K.M.; Ormsby, R.J.; Gordon, D.L.; Perkins, S.J.  
Deposited on : 2007-06-27  
Resolution : Not provided

This is a Full wwPDB Geometry-Only 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/XrayValidationReportHelp>

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:

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

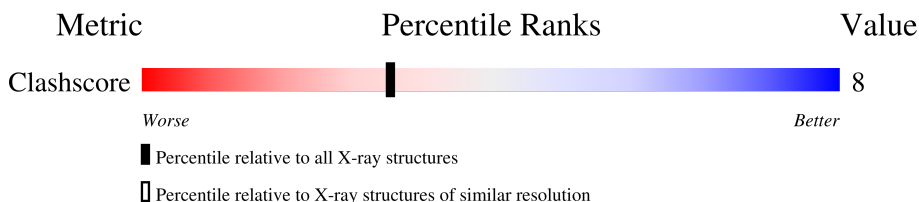
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*SOLUTION SCATTERING*

The reported resolution of this entry is unknown.

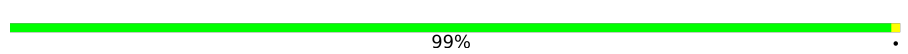
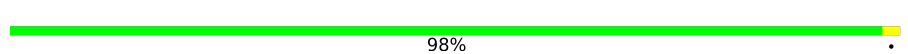
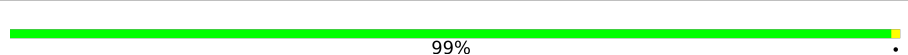
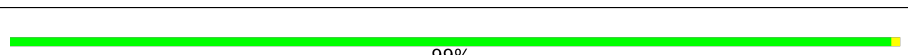
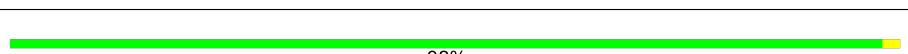
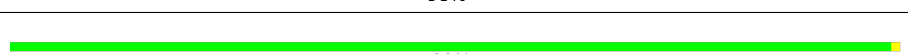
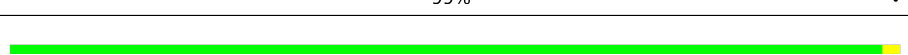
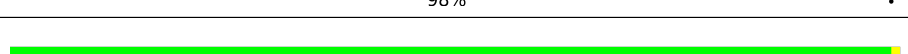
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	-

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. 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  $\leq 5\%$

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	1-A	333	 99% .
1	10-A	333	 98% .
1	2-A	333	 99% .
1	3-A	333	 97% .
1	4-A	333	 99% .
1	5-A	333	 99% .
1	6-A	333	 98% .
1	7-A	333	 99% .
1	8-A	333	 98% .
1	9-A	333	 99% .

## 2 Entry composition i

There is only 1 type of molecule in this entry. The entry contains 3330 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Complement factor H.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
1	1-A	333	Total C 333 333	0	0	333
1	2-A	333	Total C 333 333	0	0	333
1	3-A	333	Total C 333 333	0	0	333
1	4-A	333	Total C 333 333	0	0	333
1	5-A	333	Total C 333 333	0	0	333
1	6-A	333	Total C 333 333	0	0	333
1	7-A	333	Total C 333 333	0	0	333
1	8-A	333	Total C 333 333	0	0	333
1	9-A	333	Total C 333 333	0	0	333
1	10-A	333	Total C 333 333	0	0	333

There are 29 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	922	GLU	-	expression tag	UNP P08603
A	923	ALA	-	expression tag	UNP P08603
A	924	GLU	-	expression tag	UNP P08603
A	925	ALA	-	expression tag	UNP P08603
A	926	GLU	-	expression tag	UNP P08603
A	927	PHE	-	expression tag	UNP P08603
A	1232	PRO	-	expression tag	UNP P08603
A	1233	LEU	-	expression tag	UNP P08603
A	1234	GLU	-	expression tag	UNP P08603

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1235	GLN	-	expression tag	UNP P08603
A	1236	LYS	-	expression tag	UNP P08603
A	1237	LEU	-	expression tag	UNP P08603
A	1238	ILE	-	expression tag	UNP P08603
A	1239	SER	-	expression tag	UNP P08603
A	1240	GLU	-	expression tag	UNP P08603
A	1241	GLU	-	expression tag	UNP P08603
A	1242	ASP	-	expression tag	UNP P08603
A	1243	LEU	-	expression tag	UNP P08603
A	1244	ASN	-	expression tag	UNP P08603
A	1245	SER	-	expression tag	UNP P08603
A	1246	ALA	-	expression tag	UNP P08603
A	1247	VAL	-	expression tag	UNP P08603
A	1248	ASP	-	expression tag	UNP P08603
A	1249	HIS	-	expression tag	UNP P08603
A	1250	HIS	-	expression tag	UNP P08603
A	1251	HIS	-	expression tag	UNP P08603
A	1252	HIS	-	expression tag	UNP P08603
A	1253	HIS	-	expression tag	UNP P08603
A	1254	HIS	-	expression tag	UNP P08603

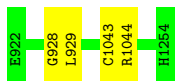
### 3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-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 outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

Note EDS was not executed.

- Molecule 1: Complement factor H

Chain 1-A:  99%



- Molecule 1: Complement factor H

Chain 2-A:  99%



- Molecule 1: Complement factor H

Chain 3-A:  97%



- Molecule 1: Complement factor H

Chain 4-A:  99%



- Molecule 1: Complement factor H

Chain 5-A:  99%



- Molecule 1: Complement factor H

Chain 6-A:  98%



- Molecule 1: Complement factor H

Chain 7-A:  99%



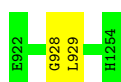
- Molecule 1: Complement factor H

Chain 8-A:  98%



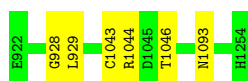
- Molecule 1: Complement factor H

Chain 9-A:  99%



- Molecule 1: Complement factor H

Chain 10-A:  98%



## 4 Model quality [i](#)

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

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 root-mean-square of all Z scores of the bond lengths (or angles).

There are no protein, RNA or DNA chains available to summarize Z scores of covalent bonds and angles.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 4.2 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 the 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 within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1-A	333	0	0	2	0
1	2-A	333	0	0	2	0
1	3-A	333	0	0	5	0
1	4-A	333	0	0	2	0
1	5-A	333	0	0	2	0
1	6-A	333	0	0	4	0
1	7-A	333	0	0	2	0
1	8-A	333	0	0	4	0
1	9-A	333	0	0	1	0
1	10-A	333	0	0	3	0
All	All	3330	0	0	27	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 8.

All (27) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1046:THR:CA	1:A:1093:ASN:CA	1.79	1.56
1:A:997:ASN:CA	1:A:1045:ASP:CA	1.97	1.43
1:A:1046:THR:CA	1:A:1069:SER:CA	2.12	1.28
1:A:1046:THR:CA	1:A:1068:PRO:CA	2.12	1.27
1:A:1056:ASN:CA	1:A:1104:ASP:CA	2.14	1.25
1:A:1055:GLN:CA	1:A:1104:ASP:CA	2.33	1.05
1:A:1046:THR:CA	1:A:1093:ASN:CA	2.51	0.88
1:A:996:GLU:CA	1:A:1045:ASP:CA	2.65	0.75
1:A:987:THR:CA	1:A:1010:ALA:CA	2.65	0.75
1:A:1046:THR:CA	1:A:1092:LEU:CA	2.69	0.70
1:A:1047:SER:CA	1:A:1069:SER:CA	2.70	0.70
1:A:1043:CYS:CA	1:A:1044:ARG:CA	2.80	0.60
1:A:1046:THR:CA	1:A:1069:SER:CA	2.86	0.53
1:A:1043:CYS:CA	1:A:1044:ARG:CA	2.86	0.53
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.50
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.50
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.50
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.50
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.50
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.50
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.50
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.49
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.49
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.49
1:A:928:GLY:CA	1:A:929:LEU:CA	2.90	0.49
1:A:1042:THR:CA	1:A:1044:ARG:CA	2.90	0.48
1:A:1046:THR:CA	1:A:1069:SER:CA	2.91	0.48
1:A:987:THR:CA	1:A:1034:ASN:CA	2.95	0.44

There are no symmetry-related clashes.

### 4.3 Torsion angles [i](#)

#### 4.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

#### 4.3.2 Protein sidechains [i](#)

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



### 4.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 4.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 4.6 Ligand geometry [i](#)

There are no ligands in this entry.

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

There are no such residues in this entry.

### 4.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.