



# Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 06:27 AM EDT

PDB ID : 1EI3  
Title : CRYSTAL STRUCTURE OF NATIVE CHICKEN FIBRINOGEN  
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Deposited on : 2000-02-23  
Resolution : 5.50 Å(reported)

This is a Full wwPDB X-ray 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/XrayValidationReportHelp>

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>.

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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  
Xtrriage (Phenix) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
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) : 2.36.2

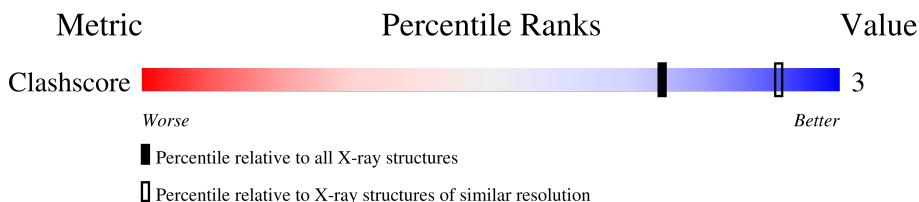
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 5.50 Å.


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	1010 (7.10-3.90)

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	A	491	 32% 68%
1	D	491	 31% 69%
2	B	464	 84% 15%
2	E	464	 85% 15%
3	C	409	 97% .
3	F	409	 97% .

## 2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 1896 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 FIBRINOGEN.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
1	A	159	Total C 159 159	0	0	159
1	D	153	Total C 153 153	0	0	153

- Molecule 2 is a protein called FIBRINOGEN.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
2	B	395	Total C 395 395	0	0	395
2	E	395	Total C 395 395	0	0	395

- Molecule 3 is a protein called FIBRINOGEN.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
3	C	397	Total C 397 397	0	0	397
3	F	397	Total C 397 397	0	0	397

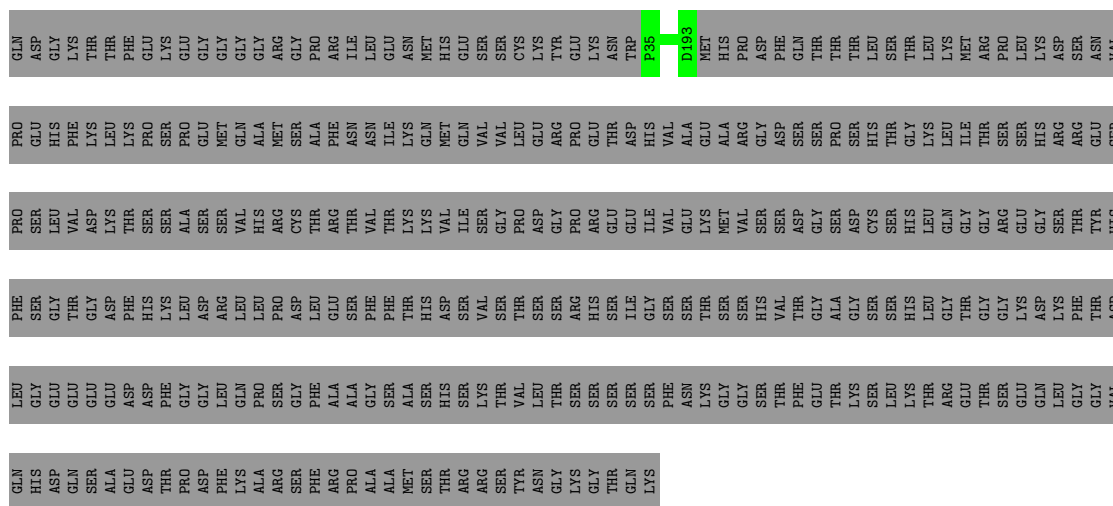
### 3 Residue-property plots [i](#)

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: FIBRINOGEN

Chain A: 32% 68%




- Molecule 1: FIBRINOGEN

Chain D: 31% 69%




- Molecule 2: FIBRINOGEN

Chain B:  84% 15%

GLN ALA SER VAL TYR ASP ASN GLU ASP SER PRO GLN ILE ASP ARG ALA HIS ARG LEU ASP LYS ARG GLN ALA ALA ALA PRO THR LEU ARG VAL VAL PRO PRO ILE SER THR TYR GLN ARG PRO PRO LYS GLN ASP GLN ALA MET LYS LYS GLY

PRO ILE TYR PRO ASP ALA G68 E86 L87 R108 Y109 F462 PRO ASP

- Molecule 2: FIBRINOGEN

Chain E:  85% 15%

GLN ALA SER VAL TYR ASP ASN GLU ASP SER PRO GLN ILE ASP ARG ALA HIS ARG LEU ASP LYS ARG GLN ALA ALA ALA PRO THR LEU ARG VAL VAL PRO PRO ILE SER THR TYR GLN ARG PRO PRO LYS GLN ASP GLN ALA MET LYS LYS GLY

PRO ILE TYR PRO ASP ALA G68 E86 L87 F462 PRO ASP

- Molecule 3: FIBRINOGEN

Chain C:  97%

Y1 R338 C339 Q397 GLN HIS SER GLY LEU LYS GLN VAL ASP SER

- Molecule 3: FIBRINOGEN

Chain F:  97%

Y1 R338 C339 Q397 GLN HIS SER GLY LEU LYS GLN VAL ASP SER

## 4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	114.73Å 101.85Å 210.23Å 90.00° 106.71° 90.00°	Depositor
Resolution (Å)	(Not available) – 5.50	Depositor
% Data completeness (in resolution range)	(Not available) ((Not available)-5.50)	Depositor
$R_{merge}$	0.09	Depositor
$R_{sym}$	(Not available)	Depositor
Refinement program		Depositor
R, $R_{free}$	(Not available) , (Not available)	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	1896	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	20.0	wwPDB-VP

## 5 Model quality [i](#)

### 5.1 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.

### 5.2 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	A	159	0	0	0	0
1	D	153	0	0	1	0
2	B	395	0	0	2	0
2	E	395	0	0	1	0
3	C	397	0	0	1	0
3	F	397	0	0	1	0
All	All	1896	0	0	6	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 3.

All (6) 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)
2:B:108:ARG:CA	2:B:109:VAL:CA	2.79	0.61
2:E:86:GLU:CA	2:E:87:LEU:CA	2.85	0.54
3:F:338:ARG:CA	3:F:339:CYS:CA	2.93	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:338:ARG:CA	3:C:339:CYS:CA	2.95	0.43
1:D:169:SER:CA	1:D:170:PHE:CA	2.97	0.43
2:B:86:GLU:CA	2:B:87:LEU:CA	2.97	0.42

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

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

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

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

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

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.



## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

## 6 Fit of model and data

### 6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

### 6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

### 6.4 Ligands

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers

EDS was not executed - this section is therefore empty.