

Viewing Structures Interactively in 3D on *rccb.org*

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RCSB PDB An Information Portal to 126278 Biological Macromolecular Structures

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Structure Summary **3D View** Annotations Sequence Sequence Similarity Structure Similarity Experiment Literature

Biological Assembly 1

4HHB

THE CRYSTAL STRUCTURE OF HUMAN DEOXYHAEMOGLOBIN AT 1.74 ANGSTROMS RESOLUTION

DOI: 10.2210/pdb/4hhb/pdb Entry 4HHB supersedes 1HHB

Classification: **OXYGEN TRANSPORT**

Deposited: 1984-03-07 Released: 1984-07-17

Deposition author(s): [Fermi, G.](#), [Perutz, M.F.](#)

Organism: [Homo sapiens](#)

Structural Biology Knowledgebase: 4HHB (2 models >17 annotations) [SRSKB.org](#)

Experimental Data Snapshot

Method: X-RAY DIFFRACTION

Resolution: 1.74 Å

R-Value Work: 0.135

wwPDB Validation

Metric	Percentile Ranks	Value
Clashscore		141
Ramachandran outliers		1.2%
Sidechain outliers		8.7%

Worse Better

Percentile relative to all X-ray structures

Percentile relative to X-ray structures of similar resolution

Literature

[Download Primary Citation](#)

The crystal structure of human deoxyhaemoglobin at 1.74 Å resolution

[Fermi, G.](#), [Perutz, M.F.](#), [Shaanan, B.](#), [Fourme, R.](#)

1. Access the structure summary page and then click the 3D View tab.

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NOTE: Use your mouse to drag, rotate, and zoom in and out of the structure. Help

Biological assembly

Structure Details

Structure: Biological Assembly 1

Symmetry Type: Global Symmetry

Symmetry: C2

Stoichiometry: A2B2

Select Orientation

Front C2 axis

Select Display Mode

Secondary Structure Subunit Symmetry

Display Options

Style: Cartoon

Color: Secondary Structure

Surface: None

H-Bonds SS Bonds

Rotation Black Background

Polyhedron Axes

Biological assembly **JSmol (JavaScript)** generated by PISA

Jmol (Java Applet)

PV (WebGL)

NGL (WebGL)

JSmol (JavaScript)

2. Choose the viewer from the drop down menu on the bottom of the interactive 3D view window:
 - **NGL** is a fast & interactive web-based tool for 3D visualization of large structures.
 - **Jsmol and Jmol**: JSmol, the JavaScript version of Jmol offers several options for display and analysis. The Jmol Applet works in most browsers.
 - **PV** is an alternative to JSmol that while not as feature-rich, uses WebGL and to enable hardware-accelerated graphics in modern web and mobile browsers.
3. Choose the structure display options from the right panel. Access additional options by right clicking on the interactive view panel for PV and Jsmol/Jmol.