

MS10-O2 *Proteopedia* - a scientific 'Wiki' bridging the rift between 3D structure and function of biomacromolecules

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Scientists are now able to access 3D images of biomacromolecules underlying biological functions and disease. Rather than relying on text & 2D images to try to understand the function of biomacromolecular structures, a collaborative website called *Proteopedia*^{1,2} provides a new resource by linking written information & 3D structural information. This wiki web resource, <http://proteopedia.org>, displays protein structures & other biomacromolecules in an interactive format. The interactive images are surrounded by descriptive text containing hyperlinks that change the appearance (such as view, representations, colors or labels) of the adjacent 3D structure to reflect the concept discussed in the text. This makes the complex structural information readily accessible and comprehensible, even to non-structural biologists. Using *Proteopedia*, scientists & students can easily create descriptions of biomacromolecules linked to their 3D structure, e.g., a page on ribosome structure/function, <http://proteopedia.org/w/Ribosome>. Pages can be viewed on PCs, MACs, LINUX computers & even on iPads (that do not have JAVA), via the molecular viewer JSmol³, e.g., a page on HIV-1 protease, http://proteopedia.org/w/HIV-1_protease. Content is being added by *Proteopedia*'s ~2,900 users (in 60 different countries), in a dozen different languages, including Russian, Arabic & Chinese: [http://proteopedia.org/w/1vot_\(Chinese\)](http://proteopedia.org/w/1vot_(Chinese)). A number of journals & book publishers are using *Proteopedia* to complement their printed and web papers using *Proteopedia*'s "Interactive 3D Complements" (I3DCs) – see, e.g., <http://www.proteopedia.org/w/Journal:JBIC:6>. Pages for each of the >107,000 entries in the PDB have been automatically created with 'seed' information, and are both intrinsically useful and 'primed' for expansion by users. Scientists & students are invited to request a *Proteopedia* user account, **at no cost**, in order to edit existing pages & to create new ones, see: <http://proteopedia.org/w/Special:RequestAccount>.

References:

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The screenshot shows the Proteopedia homepage. At the top, there's a navigation bar with links for 'article', 'discussion', 'edit this page', and 'history'. Below that, a welcome message states 'Welcome to Proteopedia - The free, collaborative 3D-encyclopedia of proteins & other molecules ISSN 2310-4301'. A 'Table of Contents' and 'Structure Index' are provided. The main content area features a 'Featured Article' for 'HIV-1 Protease' by David Canner, which includes a 3D ribbon structure of the protein and descriptive text. To the right, there's a 'Proteopedia News' section with recent updates and a 'Scoreboard' table showing user statistics.

The Scoreboard			
Last 30 Days (Top 10)			
Score	Pages	Changes	Username
32	20	51	Lynmarie K. Thompson
30	9	1'8	Dana Emmert
29	7	1'0	Dalton R. Gibbs
27	10	81	Benjamin E. Nicholson
21	1	110	David A. Taves
20	4	7	Taylor Light
20	11	31	Shah Biran

Figure 1. Proteopedia homepage: <http://proteopedia.org>

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