Life isn't 2-D, so why should our encyclopedias be?

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Biologists and biochemists are now able to access 3D images of biomacromolecules underlying biological functions and disease. Rather than relying on text to provide the understanding of biomacromolecule structures, a collaborative website called Proteopedia now provides a new resource by linking written information and three-dimensional structural information.

The wiki web resource, first described in BioMed Central's open access journal Genome Biology, displays protein structures and other biomacromolecules in interactive format. These 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 explained in the text. This makes the complex structural information readily accessible and comprehensible, even to people who are not structural biologists.

The resource was developed at the Weizmann Institute of Science in Israel by Jaime Prilusky, Eran Hodis, and Joel L. Sussman, together with colleagues at the Weizmann Institute and in the USA. According to Sussman, "Using Proteopedia, anyone can easily create descriptions of biomacromolecules linked to their 3D structure."

Aside from content added by Proteopedia's existing users, pages on each of the more than 50,000 entries in the Protein Data Bank have been automatically created with 'seed' information, creating pages that are already useful and primed for expansion by users. Members of the

scientific community are invited to request a user account to edit existing pages and to create new ones.

Hodis says, "We are presenting Proteopedia to the scientific community to judge its usefulness and merit, and we truly hope that it will offer an effective and appealing way to convey the link between 3D structure and function."

Source: BioMed Central