Structure
Editorial

Structural Genomics

Structural genomics is an ongoing worldwide effort that is attempting to characterize the structures of most proteins (http://sg.pdb.org/). It has been proposed that this aim can be achieved by selecting representative members of protein sequence families, determining their structures by X-ray crystallography and/or NMR spectroscopy, and building models for the remaining proteins by comparative modeling.

After several years of discussion among scientists and funding agencies, the US structural genomics effort was launched in 2000, when the National Institutes of Health (NIH) funded the pilot phase of the Protein Structure Initiative (PSI-1) (http://www.nigms.nih.gov/Initiatives/PSI/). The PSI is currently in the third year of its second production phase (PSI-2). PSI-2 consists of four large production centers, six small specialized technology development centers and four centers designed to enhance PSI products and provide additional resources to the community. In addition to the US centers, there are several other major structural genomics centers in Canada, Europe, and Japan.

To date, the PSI structural genomics effort has produced approximately 2,500 structures; the current throughput is 150–200 structures per year per PSI production center. In addition, the PSI disseminates methods, tools, and reagents developed by structural genomics to the greater scientific community.

While the number of structures and impact has been substantive, the cost of the PSI-2 initiative is large. In the US alone, the NIH spends approximately $65 million each year on this effort. As a result, legitimate questions arise as to whether or not the money on PSI is well spent, especially at a time when funding for independent investigator-driven research appears scarce. To facilitate this debate, we will publish commentaries from both supporters and opponents of the structural genomics effort in the next few issues of *Structure*; we invite any additional comments from readers to be e-mailed to the Editors (structure@cell.com) We believe this debate is especially timely because of the ongoing need to shape PSI-3, which may or may not begin in 2010.

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