GLYCOMICS WORKBENCH: A GRID TECHNOLOGY-BASED WORKBENCH FOR GLYCOME ANALYSIS

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A significant number of software tools and databases have been developed over the years for glycome analysis (1). However, full utilization of some of those useful tools is restricted due to the fact that those are not accessible via Web. This also restricts the semantic analysis of a vast amount of experimental data that were generated under the Consortium of Functional Glycomics (CFG), which is now hosted at the National Center for Functional Glycomics (2). This author proposes the development of a grid technology-based infrastructure, termed 'Glycomics Workbench', to integrate such useful computational tools and resources that can better serve the Glyco-community. Grid technology offers multiple advantages including high scalability and Web accessibility. Grid infrastructure includes grid services, grid computing, and data grid. Grid computing provides accessibility to High-Performance Computing, such as, XSEDE (3). Grid services built on Open Grid Collaborating Environments (OGCE) are based on several Web service technologies. Our earlier work on neoGrid (4,5) development was built on OGCE. Data grid is a commodity grid that can host exabytes of data that has become essential for glycome analysis. Our work on C-Grid (6,7) development was to fulfill that need. This proposed Glycomics Workbench development, however, needs active participation of researchers for creating 'molecule page' of their interest, an effort that can be achieved through a Consortium.

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