INTEGRATING TOOLS AND DATA: NCIBI SUITE OF TOOLS

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Abstract: Creating a workspace for biologists to explore hypotheses, understand relationships among genes and proteins, and link together diverse information is a key part of the mission of the National Center for Integrative Biomedical Informatics (NCIBI; www.ncibi.org). The NCIBI Suite of Tools demonstrates integration between NCIBI Tools and Data (MiMI, SAGA/TALE, MiSearch, GIN, Gene2MeSH, BioNLP) and popular bioinformatics resources such as Cytoscape, GenePattern, and NCBI EntrezGene and PubMed to form a network of applications linking protein interactions, pathways data, and literature-based annotation to uncover potential biological relationships. Beginning with a list of genes from our organ-specific Diabetes Complications project, we present a clinically relevant scenario that demonstrates various aspects and integration points of the NCIBI Suite of Tools. By fostering frequent interactions between the developers and the biological scientists at the NCIBI, we were able to integrate various tools and data to show feasibility and to facilitate subsequent use by the broader scientific community to enhance their biomedical research. RCMI investigators have become regular users of these tools. These and other tools developed or adapted at NCIBI are freely available for use at: http://portal.ncibi.org/gateway/toolsAbout.html. In addition, online tutorials and other resources are available for first-time users on the NCIBI website.

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