

WebCell: an integrated web environment for modeling and simulation of cellular networks

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WebCell provides an integrated simulation environment for managing quantitative and qualitative information on cellular networks, and for interactively exploring their steady-state and dynamic behaviors over the web. A user-friendly web interface allows users to efficiently create, visualize, simulate and store their reaction network models, thereby facilitating kinetic modeling and simulation of biological systems of interest. Supported analysis methods for such models include structural pathway analysis, MCA, conservation analysis and dynamic simulation. In addition, a variety of model collections publicly available have been compiled to provide comprehensive implications for cellular dynamics of the models. Thus, this comprehensive, web-accessible and integrative system not only serves the educational demonstration site of publicly available kinetic models but also provides the customized modeling environment for quantitatively analyzing the cellular system. This work was supported by the Korean Systems Biology Research Program (M10309020000-03B5002-00000) of the MOST and by the BK21 project and by Center for Ultramicrochemical Process Systems sponsored by KOSEF.