REACTOME: A KNOWLEDGEBASE OF BIOLOGICAL PATHWAYS

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Reactome, located at http://www.reactome.org is a curated, peer-reviewed resource of human biological processes. Given the genetic makeup of an organism, the complete set of possible reactions constitutes its reactome. The basic unit of the Reactome database is a reaction; reactions are then grouped into causal chains to form pathways. The Reactome data model allows us to represent many diverse processes in the human system, including the pathways of intermediary metabolism, regulatory pathways, and signal transduction, and high-level processes, such as the cell cycle. Reactome provides a qualitative framework, on which quantitative data can be superimposed. Tools have been developed to facilitate custom data entry and annotation by expert biologists, and to allow visualization and exploration of the finished dataset as an interactive process map. Although our primary curational domain is pathways from Homo sapiens, we regularly create electronic projections of human pathways onto other organisms via putative orthologs, thus making Reactome relevant to model organism research communities. The database is publicly available under open source terms, which allows both its content and its software infrastructure to be freely used and redistributed.