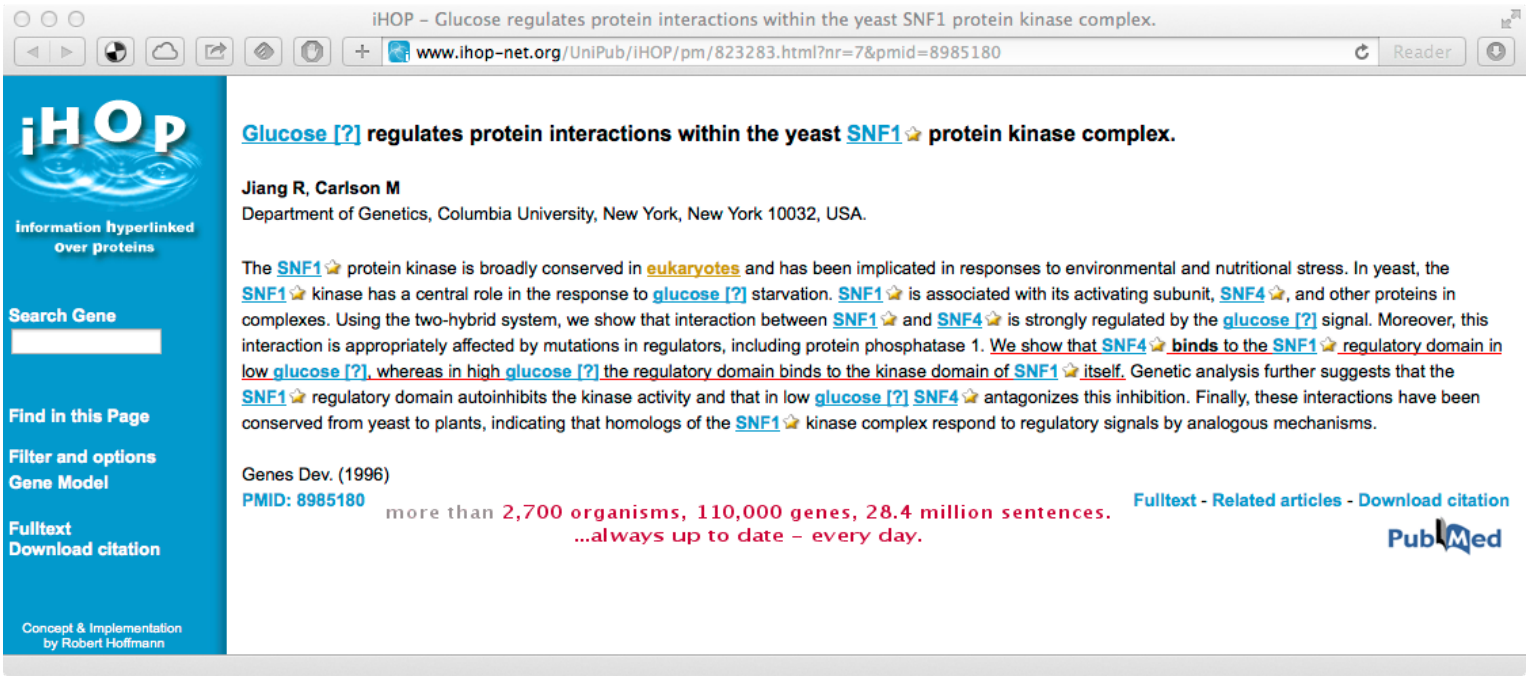
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Concept & Implementation by Robert Hoffmann
Glucose [?] regulates protein interactions within the yeast SNF1 protein kinase complex.
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The SNF1 protein kinase is broadly conserved in eukaryotes and has been implicated in responses to environmental and nutritional stress. In yeast, the SNF1 kinase has a central role in the response to glucose [?] starvation. SNF1 is associated with its activating subunit, SNF4, and other proteins in complexes. Using the two-hybrid system, we show that interaction between SNF1 and SNF4 is strongly regulated by the glucose [?] signal. Moreover, this interaction is appropriately affected by mutations in regulators, including protein phosphatase 1. We show that SNF4 binds to the SNF1 regulatory domain in low glucose [?], whereas in high glucose [?] the regulatory domain binds to the kinase domain of SNF1 itself. Genetic analysis further suggests that the SNF1 regulatory domain autoinhibits the kinase activity and that in low glucose [?] SNF4 antagonizes this inhibition. Finally, these interactions have been conserved from yeast to plants, indicating that homologs of the SNF1 kinase complex respond to regulatory signals by analogous mechanisms.
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