"Biological Networks Are Robustly Designed"

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The interactions between proteins, DNA, and RNA in living cells constitute molecular networks that govern various cellular functions. To investigate the global dynamical properties and stabilities of such networks, we studied the network regulating the cell division (cell cycle) of the budding yeast. With the use of simple dynamical models, it was demonstrated that the cell-cycle network is extremely stable and robust for its function. The biological stationary state is a global attractor. The biological pathway is a globally attracting trajectory. These properties are largely preserved with respect to small perturbations to the network. These results suggest that cellular regulatory networks are robustly designed for their functions.

REFRESHMENTS AT 4:15 P.M.

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