

Robustness and topology of the yeast cell cycle Boolean network

李文斌, 黃俊燕

Bioinformatics

Computer Science and Informatics

jyhuang@chu.edu.tw

Abstract

Yeast cell cycle Boolean network was used as a case study of robustness

to protein noise. Robustness was interpreted as involving stability of G1 steady state and sequence of gene expression from cell cycle START to stationary G1.

A robustness measure to evaluate robustness strength of a network was proposed.

Robust putative networks corresponding to the same steady state and sequence of gene expression of wild-type network were sampled. Architecture of wild-type yeast cell cycle network can be revealed by average topology profile of sampled robust putative networks.

Keyword : Yeast cell cycle network; Robustness;
Network topology; Boolean network.