

Abstract of Presentation

Note: This paper should be typed in “Times New Roman” of 12pt.

Presentation Title(Should be no more than 20 words):

Systems Drug Discovery

Abstract :

Many potential drugs that specifically target a particular protein considered to underlie a given disease have been found to be less effective than hoped, or to cause significant side effects. The intrinsic robustness of living systems against various perturbations is a key factor that prevents such compounds from being successful. By studying complex network systems and reformulating control and communication theories that are well established in engineering, a theoretical foundation for a systems-oriented approach to more effectively control the robustness of living systems, particularly at the cellular level, could be developed. Here, I use examples that are based on existing drugs to illustrate the concept of robustness, and then discuss how a greater consideration of the importance of robustness could influence the design of new drugs that will be intended to control complex systems.