



CDB SEMINAR

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Monday, December 9, 2013

16:00~17:00 A7F Seminar Room

Regulation of ligand-independent Notch signal through intracellular trafficking

Summary

The Notch signaling pathway defines a conserved mechanism that regulates cell-fate decisions in metazoans. Signaling is modulated by a complex genetic circuitry, which includes several molecular players that affect different steps in receptor activation, trafficking and ligand-receptor interactions. To extend the repertoire of such modulators, we used a "Notchome" approach, in which we tried to integrate all information that were obtained from genetic screens related to Notch as well as proteomic data from Drosophila Protein interaction Map (DPiM). We thus identified Shrub, a core component of the ESCRT-III complex, that emerged with several independent links to Notch in the Notchome approach. We found that Notch receptor, targeted for degradation lysosomal degradation through multivesicular bodies (MVBs) is diverted towards activation upon mono-ubiquitination through a synergy between the ubiquitin ligase Deltex, the non-visual β -arrestin Kurtz and Shrub. This activation path is not universal but appears to depend on the cellular context. Furthermore we recently found that CG14767, a lysosomal associated transmembrane protein, regulates the context specific activation of Notch signaling. I would like to introduce our recent work on the regulation of Notch signaling by a lysosomal associated transmembrane protein.

Host:

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