CDB SEMINAR

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11:00~12:00 A7F CDB Conference Room

Exploration of Mechanotransduction in Cells: Mechano-Sensing by Physical Extension of the Src Family Kinase Substrate p130Cas

Summary

Mechanical factors are involved in a number of biological phenomena including development, carcinogenesis, tissue regeneration, bone homeostasis, cardiovascular disorder, and neurogenesis. Recently, mechanically-initiated signal transduction, termed mechanotransduction, has been extensively studied. However, direct mechano-sensors that convert physical information into biochemical signals have not been identified aside from ion channels. Using an *in vitro* protein extension system, we found that p130Cas acts as a mechano-senor in the cytoskeleton by modulating its susceptibility to phosphorylation. We propose such 'substrate priming' is a general mechanism in the regulation of cell signaling.

Reference:

Sawada, Y. et al., "Force sensing by mechanical extension of the Src family kinase substrate p130Cas", *Cell* **127**, 1015-1026 (2006)

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