Seminar/Talk

Non Adhesive Function of N-cadherin During Neuronal Migration

Yves Jossin
University of Louvain, Institute of Neuroscience

Host: Simon Hippenmeyer

The cerebral cortex is composed of different types and sub-types of neurons that accumulate into 6 layers according to their birth date. These layers are connected with other neurons inside and outside the cortex. Excitatory neurons are born in a region called the ventricular zone and migrate first as bipolar cells to the intermediate zone where they initiate a multipolar migration (slow and characterized by frequent changes in direction). Then neurons resume a bipolar migration (fast and unidirectional) towards a region of the cortex called the cortical plate where they form synapses with each other. The Reelin signaling pathway is important for cortical organization, dendrite growth and synaptic function. As such, it has been involved in lissencephalies, schizophrenia, epilepsy and autism. During embryonic development, absence of Reelin results in improper layering of the cerebral cortex and other structures of the nervous system. The very first steps of the signaling cascade are already known. Its mechanism of action, however, still remains elusive. We recently demonstrated that Reelin mediates a new polarizing function that affects multipolar neuronal migration at the intermediate zone by regulating Rap1 which in turn regulates N-Cadherin. Cadherins are homophilic receptors involved in cell to cell adhesion. Today I will present some of our recent data suggesting a mechanism of action for N-Cadherin in the regulation of neuronal migration that does not depend on its homophilic adhesive property.

Tuesday, January 23, 2018 01:30pm - 02:30pm
Lab East, Seminar room / Ground floor

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