Seminar/Talk

Cell migration promotes dynamic cellular interactions to control cerebral cortex morphogenesis

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Host: Simon Hippenmeyer

Interneurons navigate along multiple tangential paths to settle into appropriate cortical layers. They undergo a saltatory migration paced by intermittent nuclear jumps whose regulation relies on interplay between extracellular cues and genetic-encoded information. However, it remains unclear how cycles of pause and movement are coordinated at the molecular level. Post-translational modification of proteins contributes to cell migration regulation. The present study uncovers that carboxypeptidase 1 (CCP1), which promotes posttranslational protein deglutamylation, controls the pausing of migrating cortical interneurons. Moreover, we demonstrate that pausing during migration attenuates movement simultaneity at the population level thereby controlling the flow of interneurons invading the cortex. Interfering with the regulation of pausing not only affects the size of the cortical interneuron cohort but also impairs the generation of age-matched projection neurons of the upper layers. Importantly, several CCP1 variants have been discovered in patients suffering from brain malformation and our follow up work is to understand how these variant interfere with CCP1 function in brain development.

Friday, April 5, 2019 11:00am - 12:00pm
Seminar Room, Lab Building East

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