ELSC-ICNC Seminar: Chaya Kalcheim

December 15, 2011

On the topic of: The dorsal neural tube: a dynamic setting for cell fate decisions

ELSC & ICNC cordially invite you

to the lecture given by:

Chaya Kalcheim
Department of Medical Neurobiology
Hebrew University-Hadassah Medical School, ELSC and IMRIC.

On the topic of:

“The dorsal neural tube: a dynamic setting for cell fate decisions”

The lecture will be held on Thursday, December 15th
at 17:00, at ELSC-ICNC: Silverman Bldg., 3rd Wing, 6th Floor, Edmond J. Safra Campus

Light refreshments at 16:45

Abstract:

The dorsal neural tube (future spinal cord and brain) first generates neural crest cells that exit the neural primordium following an epithelial-to-mesenchymal conversion to become sympathetic ganglia, Schwann cells, dorsal root sensory ganglia and melanocytes of the skin. Following the end of crest emigration, the dorsal midline of the neural tube becomes the roof plate, a signaling center for the organization of dorsal neuronal cell types. Recent lineage analysis we performed just before the onset of crest delamination revealed that the dorsal tube is a highly dynamic region sequentially traversed by fate-restricted crest progenitors. Furthermore, prospective roof plate cells were shown to originate ventral to presumptive crest and to progressively relocate dorsalward to occupy their definitive midline position following crest delamination. These data raise important questions regarding the molecular mechanisms of cell emigration in relation to fate acquisition, and suggest the possibility that spatial and/or temporal information in the dorsal neural tube determines initial segregation of neural crest cells into their derivatives. In addition, they emphasize the need to address what controls the end of neural crest production and consequent roof plate formation, a fundamental issue for understanding the separation between central and peripheral lineages during development of the nervous system.
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