# CDB SEMINAR

## Speaker: Mototsugu Eiraku

<RIKEN Brain Science Institute, Laboratory for Neural Cell Polarity>

## Title: "DNER acts as neuron-specific Notch ligand during Bergmann glial development"

**Date: Thursday, September 29**

**Place: 1F Auditorium of Building C, CDB**

**Time: 16:00 ~ 17:00**


**Summary:**

Differentiation of CNS glia is regulated by Notch signaling through neuron-glia interaction. We have identified DNER, a neuron specific transmembrane protein, as a novel ligand of Notch during cellular morphogenesis of Bergmann glia in the cerebellum. DNER binds to Notch1 at cell-cell contacts and activates Notch signaling *in vitro*. In the developing cerebellum, DNER is highly expressed in Purkinje cell dendrites, which are tightly associated with radial fibers of Bergmann glia expressing Notch. DNER specifically binds to Bergmann glia in culture and induces process extention by activating gamma-secretase- and Deltex-dependent Notch signaling. Inhibition of Deltex-dependent, but not RBP-J-dependent, Notch signaling in Bergmann glia suppresses formation and maturation of radial fibers in organotypic slice cultures. In addition, the deficiency of DNER retards the formation of radial fibers and results in abnormal arrangement of Bergmann glia. Thus, DNER mediates neuron-glia interaction and promotes morphological differentiation of Bergmann glia via Deltex-dependent Notch signaling.



**Host Yoshiki Sasai Organogenesis and Neurogenesis, CDB**

E-mail sasailab@cdb.riken.jp Tel: 078-306-1841(Ext: 5201)

RIKEN Center for developmental Biology http://www.cdb.riken.go.jp/