CDB SEMINAR

Speaker: Yasuyo Shigetani

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Title: "Embryonic analysis of WISE, a novel Wnt modulating factor in trigeminal ganglion formation"

Date:	Tuesday , December 7
Time:	15:00 P.M. - 16:00 P.M.
Place:	1F Auditorium of Building C, CDB

Summary:

A novel secreted molecule, WISE, is known to bind to the extracellular region of LRP5/6 co-receptor in a similar way to Wnt and to modulate the Wnt signaling pathway. To analyze the function of WISE in an embryonic aspect, a retrovirus infection was performed in the chicken.

As a result, ectopically formed ganglia were observed on both sides at a level of midbrain and isthmus and they were connected to the intrinsic cranial nerves by their own neural branches. Molecular and lineage tracing analyses showed that the ectopic ganglion is regarded as characteristic of the trigeminal ganglion. An ectodermal electroporation of Wise in the presumptive trigeminal region induced a similar result, implying that WISE in the surface ectoderm is involved in the trigeminal placode formation. Staining with anti neural crest cell (NCC) antibody of the ectopic ganglion suggested that WISE in the placode may have a role in attracting the migrating NCCs. In an originated explant culture NCCs derived from the midbrain showed a great affinity for WISE.

Thus, WISE seems to have two distinctive roles in the trigeminal ganglion formation depending on the type of cell. It is an essential quest which Wnt pathway is actually utilized in those functions.

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