CDB SEMINAR

Speaker: Akira Kikuchi

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Title: "Regulation of Cellular Functions by Wnt Signal Network"

Date:	**Tuesday, March 29**
Time:	**16:00 -17:00**
Place:	**7F Conference Room of Building A,CDB**

Summary:

The genetics of development and cancer have converged in the identification of intra- and extra-cellular signaling pathways that are aberrantly regulated in cancer and are also central to embryonic patterning. The Wnt signaling pathway has provided an outstanding example of this. The binding of the Wnt ligand to its seven transmembrane type receptor, Frizzled, stimulates distinct intracellular signaling pathways, including the canonical pathway (β-catenin pathway) and the non-canonical pathway (planar cell polarity [PCP] and Ca^{2+} pathways). Through these pathways Wnt regulates cellular proliferation, differentiation, morphology, motility, and fate.

So far we have demonstrated that cytoplasmic β-catenin is destabilized by a multi-protein complex containing Axin, GSK-3β (glycogen synthase kinase-3β), and APC (adenomatous polyposis coli). We have also isolated novel proteins that are involved in the Wnt signal pathway. They are Axam (Axin-binding protein), Idax (Dvl-binding protein), and Duplin (β-catenin-binding protein). These results told us importance of the protein complex and post-translational modification in the regulation of the β-catenin pathway. In this seminar, I will talk about new mechanisms of the regulation of the Wnt signal thorough the post-translational modification: stabilization of β-catenin by cyclic AMP-dependent protein kinase; activation of T cell factor (Tcf) by sumoylation. Furthermore, I would like to show cellular responses by purified Wnt-3a and Wnt-5a.

Host: Shin-Ichi Nishikawa <Stem Cell Biology, CDB>
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