



CDB SEMINAR

Yosuke Mukoyama (Yoh-suke Mukouyama)

Laboratory of Stem Cell and Neuro-Vascular Biology
Genetics and Developmental Biology Center
National Heart, Lung, and Blood Institute
National Institutes of Health

Friday, April 11, 2014

16:00~17:00 A7F Seminar Room

Dissection of branching morphogenesis and patterning mechanisms responsible for generating neurovascular wiring during organogenesis

Summary

Branching morphogenesis is a fundamental attribute of many organ systems.

The central theme of my laboratory's research program is to uncover the molecular control of the morphological processes underlying the architectural and stereotypical pattern of tubular branching networks. As examples of highly informative model systems, we have focused our studies on two vital tubular networks, the vascular and nervous systems, which share several anatomical and functional characteristics, and are often patterned similarly in peripheral tissues. Our recent discoveries and ongoing studies highlight the cellular dynamics and molecular mechanisms underlying i) the neuronal signals such as angiogenic factor VEGF-A and chemokine CXCL12 on arterial differentiation and branching pattern and ii) the vascular signals such as NGF on neuronal guidance. These studies provide a unique concept in branching morphogenesis and patterning: blood vessels and nerves take advantage of one another to follow the same path given that these two networks integrate into the various tissues of the body.

Host:

Mitsuru Morimoto

Lung Development, CDB

mmorimoto@cdb.riken.jp

Tel: 078-306-3199

(ext:1602)

RIKEN CENTER for DEVELOPMENTAL BIOLOGY (CDB)