



東北大学グローバルCOE

Network Medicine

創生拠点

NM高等教育セミナー

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Neural Control of Vascular Development in the Skin

2012年6月13日(水) 16時-17時30分
加齢医学研究所セミナー室1, 2

Angiogenesis is a potential therapeutic target in cancer and many other diseases. But what controls the formation of hierarchical and elaborated vascular network during angiogenesis remains elusive. To study the intricate processes of vascular branching, we have developed a beautiful and powerful embryonic skin vasculature model, which exhibits a directly observable vascular network with an anatomically recognizable pattern. In the limb skin, the arterial branching pattern coincides with the branching pattern of pre-established sensory nerves during angiogenesis. Our studies establish two distinct mechanisms underlie the anatomical proximity and adjacent patterning of sensory nerves and arteries: nerve-derived VEGF-A controls arterial differentiation, and nerve-derived chemokine ligand CXCL12 controls vessel branching and alignment with nerves. Recently, we have also found that in the limb skin, nerves modulate TGF β s, which influence lymphatic vessel development. Further genetic studies demonstrate that TGF β signaling functions as a negative regulator for the formation of lymphatic vessel network. These studies suggest a new concept in angiogenesis and lymphangiogenesis: namely that the coordinated local action of patterning and differentiation mechanisms mediated by tissue sub-structures, such as sensory nerves in the skin, underlies organ specific vascular network.

本セミナーは医学履修課程特別セミナー等を兼ねています。受講学生は履修簿を持参し、セミナー修了後にサインを受けること。聴講は自由大歓迎です。学部生の皆さんもぜひどうぞ。

拠点リーダー 岡 芳知 / 世話人 佐藤 靖史 (加齢医学研究所腫瘍循環研究分野)
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