

**The 673rd Kitasato Medical Society  
Invitational Academic Lecture Series Abstract**

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**Angiopoietin/Tie signaling:  
Gatekeeper of vessel maturation,  
remodeling and angiocrine signaling**

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The field of angiogenesis research has primarily focussed on the mechanisms of sprouting angiogenesis. Yet, vessel sprouts need to assemble and mature into a hierarchically structured directional flow-enabling vascular network. The Angiopoietin ligands (Ang1 and Ang2) with the Tie receptors (Tie1 and Tie2) serve as vascular receptor tyrosine kinase system controlling vessel maturation and remodeling. Moreover, Ang/Tie signaling plays a critical role in the control of angiocrine signaling, the mechanism through which the vascular endothelium controls its microenvironment through the release of paracrine acting growth factors. This presentation will summarize the state-of-the-art in Ang/Tie signaling and focus on novel mechanisms of Ang/Tie signaling related to Tie1 function and non-endothelial Tie2 signaling as well as the contribution of Ang/Tie signaling towards angiocrine signal transduction during tissue regeneration and tumor growth.