INTERNATIONAL COLLABORATIVE RESEARCH GROUP FOR LIFE SCIENCES presents;

Novel (lymph)angiogenic factors and their receptors:
From discovery towards translational research?

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10:00-11:00
Venue: 2F Seminar room
Center for AIDS Research
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Abstract:
Endothelial cells (or endothelium) play a key role in the development and function of blood and lymphatic vessels. Excessive proliferation or trans-differentiation (or even transformation) of endothelial cells leads to pathological angiogenesis/lymphangiogenesis or vascular malfunctions, which are hallmarks of cardiovascular disease and cancer. Major progress has been achieved over the past few years in identification of the key molecules involved in these processes and utilizing this knowledge for human therapy. However cancers frequently remain resistant to current anti-angiogenic treatments and strategies. This suggests that additional signalling pathways may be activated and play an important role in endothelial cell biology in this disease, hence supporting the need for their continued exploration as well as the development of novel agents and treatment combinations. On another hand, it points to a need to explore the heterogeneity of the tumour microenvironment in more detail, including inter- and intra-tumoural heterogeneity of the endothelium in particular.
My research has been focused on dissecting these pathways and, more specifically, on identifying and characterising novel (lymph)angiogenic factors and their receptors and exploring their relevance to human diseases (lymphedema, Kaposi sarcoma, endometrial and renal carcinoma), including their potential clinical/therapeutic applications. My current studies are also aimed at attempts to understand intra-tumoural heterogeneity of the endothelial cells in relation to their microenvironment. To integrate these two directions of my research, I apply multi-disciplinary approach by performing molecular and cell biology studies, utilizing relevant in vivo models and clinical materials and through conducting both independent research and collaborative projects at national and international levels.

In this talk, I will focus on studies, which are aimed at dissecting the prognostic and diagnostic utility of secreted proteins adrenomedullin and angiopoietin-like 2 in those human cancers, which might rely on these molecules and/or exhibit resistance to conventional systemic treatments or current targeted therapies (e.g. renal carcinoma and sarcoma). Finally, I will briefly discuss their potential application as targets for future functional studies and drug development for those pathologies, which are associated with aberrant angiogenesis and/or vascular and lymphatic insufficiency.

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