International Lecture Series
Disease Biology and Molecular Medicine

ALL WELCOME!

Valentine M. Macaulay

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7 p.m.

Historischer Saal im
Stadtmuseum Halle

Christian-Wolff-Haus
Große Märkerstr. 10
(ca. 100 m vom
Marktplatz)

"Role of insulin like growth factor signaling in cancer biology and therapy"

Val Macaulay's clinical interests are in melanoma, and in exploring the potential of novel signaling inhibitors to enhance sensitivity to conventional anti-cancer treatments. The main aim of her research is to understand the contribution of insulin-like growth factor (IGF) signalling to cancer biology. IGF-1 binds to receptors that are expressed on the surface of cancer cells, activating intracellular signalling pathways that promote cell growth, invasion and resistance to killing by cancer treatments. She has shown that IGF receptors are up-regulated in prostate and renal cancers, and detectable in advanced primary tumours and metastatic disease. She also demonstrated that IGF receptors undergo ligand-dependent import into the nucleus of human tumour cells, and nuclear IGF receptor is associated with adverse prognosis in renal cancer. These findings suggest a link with aggressive tumour behavior. Her other major interest is to develop approaches to exploit IGF receptor and related signalling molecules as targets for cancer treatment. Her research aims to identify factors that influence sensitivity to drugs that block IGF receptor, and test IGF receptor inhibition as a route to chemo/radio-sensitization. She recently showed that IGF receptor inhibition delays the repair of DNA double-strand breaks, apparently independent of its well-known ability to regulate apoptosis induction. Understanding the basis of this effect may enable effective exploitation of this approach in the clinic.

Selected publications
Ramcharan et al. 2015, **Oncotarget**. doi: 10.18632/oncotarget.5631 (Epub ahead of print). Pfister et al. 2015, **Cancer Cell** 28, 557. Dale et al. 2015, **Carcinogenesis** 36, 648. Gao et al. 2014 **Cancer Res** 74, 5866. Chitnis et al. 2014, **Oncogene** 33, 5262. Aleksic et al. 2010, **Cancer Res** 70, 6412.

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