

The role of Tie2 signalling in kidney fibrosis

Research area:

Vascular biology

Brief description

The project involves the vascular factor Tie2 and how it affects the development of fibrosis in kidney. You will have the opportunity to learn tissue dissection, immunofluorescence staining, confocal imaging, image analysis and molecular biology, including RNA preparation and real time PCR.

Aim

To investigate if Tie2 deficiency increase kidney fibrosis.

Background

Tie2 is a tyrosine kinase receptor expressed on endothelial cells and myeloid cells. Tie2 is activated and phosphorylated when Angiopoietin-1 (Angpt1) binds. Tek activation leads to downstream signals resulting in cell survival and stabilization. We have in a previous study shown that loss of Angiopoietin-1 increase kidney fibrosis.

Project plan

The project will investigate blood vessel density and fibrotic areas in kidneys from mice lacking Tie2 in endothelial cells. Methods to study this are immunohistochemistry, confocal imaging and image analysis for different markers. Other methods used including RNA preparation and real time PCR is used to look at gene expression of fibrotic markers.

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