

# Tumour Angiogenesis

## Why we focus on Angiogenesis

Angiogenesis is the formation of new blood vessels from pre-existing ones and is essential for cancer progression and metastasis.

Manipulating tumour angiogenesis could stop cancer growth and spread. Understanding the cellular and molecular basis of tumour angiogenesis will lead us to novel and improved ways to control cancer; preventing metastasis, regrowth after treatment and improving current treatments through combination therapy.

## What we do

- We aim to improve the understanding of the molecular regulation of tumour angiogenesis.
- Since angiogenesis is a feature of all solid cancers, it is crucial that we unravel both the molecular and cellular basis of this process.
- Our work provides essential insights into the critical functions of growth factor receptors, adhesion molecules and cytokines in the control of tumour angiogenesis in various cancer models.
- Importantly, we have discovered novel targets for anti-angiogenic therapy that we aim will, one day, improve the treatment of human cancer.

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## Key Publications

- Tavora *et al.* Endothelial-cell FAK targeting sensitizes tumours to DNA-damaging therapy. *Nature*. 2014; 2;514(7520): 112-6
- Kostourou *et al.* FAK-heterozygous mice display enhanced tumour angiogenesis. *Nat Commun*. 2013; 4:2020
- Reynolds *et al.* Enhanced pathological angiogenesis in mice lacking  $\beta 3$ -integrin or  $\beta 3$ - and  $\beta 5$ -integrins. *Nature Medicine* 2002; 8: 27-34.
- Reynolds *et al.* Stimulation of tumour growth and angiogenesis by low concentrations of integrin inhibitors in therapy-resistant tumours. *Nature Medicine* 2009; 15: 392-400.

## Who does the research

Prof. Kairbaan Hodivala-Dilke

Transgenic mouse models,  
cell biology in cancer

Prof. Frances Balkwill

Immune response,  
tumour microenvironment

## Major Funders

- Breast Cancer Campaign
- Cancer Research UK
- Medical Research Council
- Worldwide Cancer Research