



Caetano Reis e Sousa

Immunobiology Group



Dendritic cells play a major role in the initiation and regulation of adaptive immunity. We study how dendritic cells become activated by signals from pathogens or host cells and how they instruct T cells. Our results open up new strategies for cancer immunotherapy and for vaccination against cancer-promoting infectious agents.

Ian Tomlinson

Molecular and Population Genetics Group



We work primarily on tumours of the large bowel and tumourigenesis that results from dysregulation of the pathways of cellular energy production. We use linkage analysis, large scale association studies and candidate gene testing to identify bowel cancer susceptibility genes, and aim to identify germline predictors of colorectal cancer behaviour. We are also investigating the effects of Wnt pathway activation in colorectal tumours, with particular regard to different combinations of APC mutations and their functional consequences.

Nick Wright

Histopathology Unit



We aim to increase understanding of the nature of stem cell transdifferentiation, the mechanisms of growth control in the intestine, and the spread of mutated clones in the gut. We also work to understand factors that determine bone marrow stem cell homing and transformation *in vivo*, and the processes involved in bone marrow stem cell engraftment, repair and regeneration.

CANCER RESEARCH UK



London Research Institute

For further information about the London Research Institute, visit:
www.london-research-institute.org.uk

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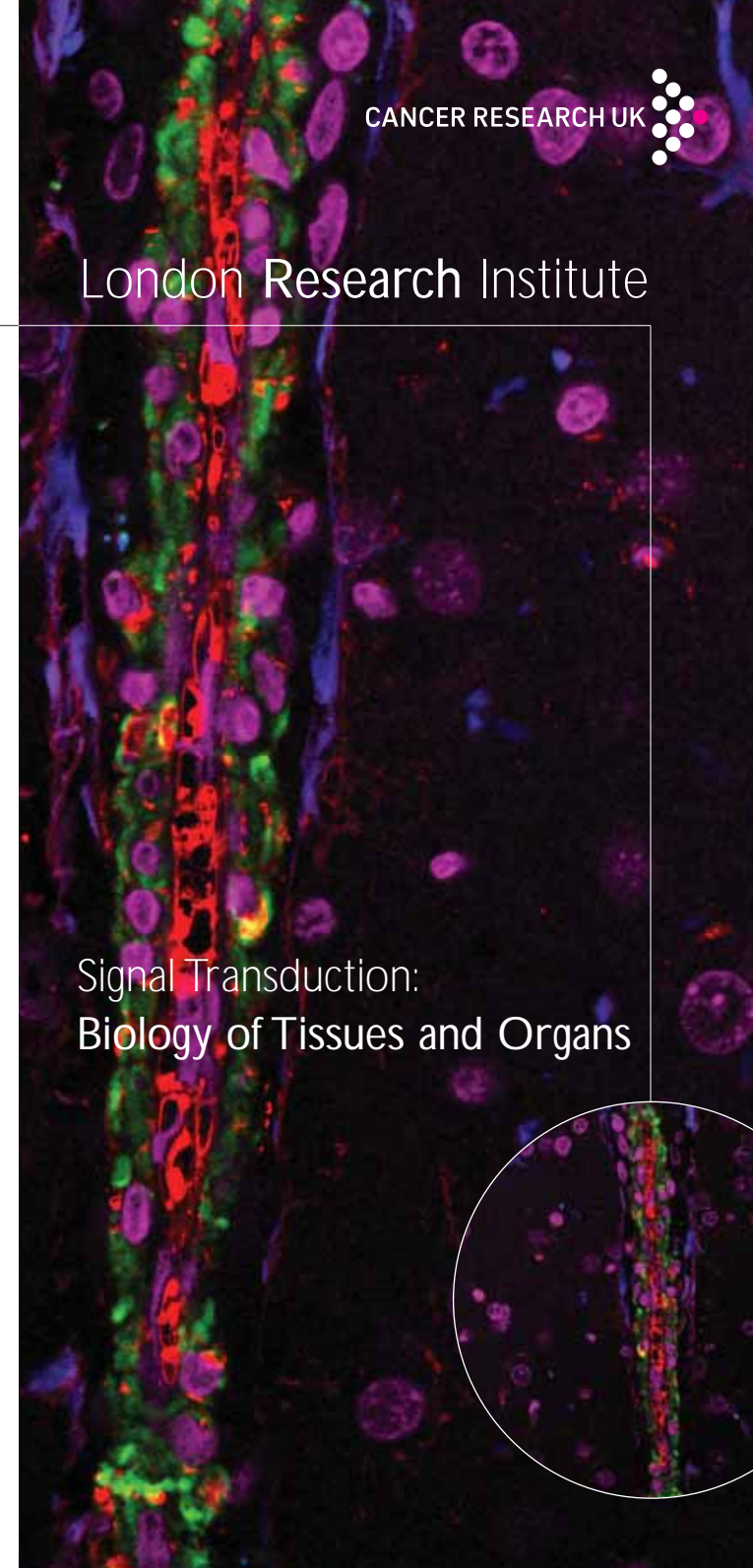
Image source: Holger Gerhardt

Signal Transduction: Biology of Tissues and Organs

CANCER RESEARCH UK



London Research Institute



The Cancer Research UK London Research Institute has an international reputation for research into the basic biology of cancer. Themes of research are signal transduction (biology of tissues and organs, and molecular cell biology) and genome integrity (cell cycle and chromosomes, and DNA repair). Our group leaders who work on signal transduction, specifically the biology of tissues and organs, have outlined their laboratories' research below.

Ralf Adams

Vascular Development Group

'How do cells make tissues?' This question is our central research interest. We are particularly interested in the molecular mechanisms controlling the angiogenic growth of blood vessels. By gaining insight into the role of signalling pathways during normal development, we hope to understand their potential relevance for tumour growth, vascularisation and metastasis.



Facundo D Batista

Lymphocyte Interaction Group

We want to understand the cellular and molecular mechanisms by which B cell activation and fate are controlled. Understanding how to enhance the production of specific antibodies has the potential to constitute an important tool for cancer treatment and diagnosis.



Dominique Bonnet

Haematopoietic Stem Cell Group

We are interested in understanding the developmental programme of normal stem cells and how aberrations in this programme initiate leukaemia. We hope that comparing the phenotype and molecular profile of normal and leukaemic stem cells will help us to find new therapeutic strategies aimed at killing the leukaemia stem cell pool.



Holger Gerhardt

Vascular Biology Group

Our research is focused on mechanisms of vascular patterning in development and disease. Blood vessels carry nutrients and oxygen to supply all tissues in the organism. In development, communication between the tissues and newly forming blood vessels ensures functional patterning. Understanding the basic mechanisms of vascular pattern formation will aid in the development of strategies to specifically target neo-vessel formation in anti-tumour therapy.



Nancy Hogg

Leukocyte Adhesion Group

We are interested in how one member of the integrin family, LFA-1, controls the function and, in particular, the migration of immune T cells. Two other types of immune cells, neutrophils and monocytes, express abundant levels of the Ca²⁺ binding S100 proteins, MRP-8 and MRP-12. We are currently investigating the function of these proteins.



David Ish-Horowicz

Developmental Genetics Group

We analyse the molecular pathways that direct spatial organisation in early embryos, with a particular interest in body segmentation. We use a variety of model systems to understand the logic of animal development, helping us understand how gene regulation and function might go wrong in pathogenic circumstances.



Julian Lewis

Vertebrate Development Group

A handful of cell signalling pathways are responsible for almost all the intercellular communications that guide patterns of cell differentiation during tissue development, regeneration, and repair. We are studying the part played by the Notch signalling pathway, particularly its role in controlling the timing of developmental events.



Tajja Mäkinen

Lymphatic Development Group

Lymphatic vessels are important for tissue fluid homeostasis and immune surveillance, and they play an active role in pathological conditions, such as inflammation and tumour metastasis. We study the molecular mechanisms regulating the development and growth of lymphatic vessels. Our results may open up novel therapeutic strategies against lymphatic disorders.

