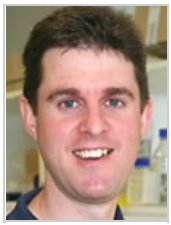
Dr Michael Tomlinson DPhil

Senior Research Fellow
MSci programme co-ordinator

School of Biosciences (/schools/biosciences/index.aspx)

Contact details



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About

Dr Mike Tomlinson has an international reputation in the two fields of platelets and cell surface biology, and has published in numerous edited books and scientific journals in these areas. He has been invited to speak at major international conferences, including Gordon Research and FASEB Summer Conferences in the United States, and organised the 4th European Conference on Tetraspanins in 2010.

Qualifications

BSc (University of Bath)

DPhil (University of Oxford)

Biography

Dr Mike Tomlinson grew up in Birmingham before studying as an undergraduate at the University of Bath. His postdoctoral studies were carried out at the Sir William Dunn School of Pathology with Drs Neil Barclay, Alan Williams and Mark Wright, as a member of Magdalen College, University of Oxford. He worked on tetraspanins on immune cells at a time when the field was in its infancy.

In 1996 he moved to the United States to study signal transduction by immune cell antigen receptors as a post-doctoral researcher, firstly with Drs Joe Bolen and Jim Johnston at DNAX Research Institute in Palo Alto, and secondly with Dr Art Weiss at the University of California in San Francisco.

Dr Tomlinson returned to the United Kingdom in 2004 to join Dr Steve Watson's empire in the University of Birmingham Medical School. He soon began his own research group through a MRC New Investigator Award fellowship to study the regulation of platelet receptor signalling by tetraspanin microdomains. In 2009 he joined the School of Biosciences, funded by a Senior Fellowship from the British Heart Foundation, to study the organisation of platelet and endothelial cell surface proteins by tetraspanin microdomains.

Teaching

Dr Tomlinson's main teaching in the School of Biosciences is to second year undergraduate students on platelets and clotting, to final year students on the topics of receptor tyrosine kinases and cell surface microdomains, and to masters students on therapeutic biologicals. He also teaches in the Medical School to final year BMedSc students on drug targeting in cancer. Previously he taught cell biology and cardiovascular sciences to second year BMedSc and MBChB students, and in 2008 was nominated for the 'Recognising Excellence in Medical Education Teaching Awards'.

Postgraduate supervision

Dr Mike Tomlinson has supervised three PhD students to completion and has two current PhD students in his group. For a list of possible PhD projects offered by Dr Tomlinson **www.findaphd.com/search/customlink.asp?inst=birm-Biol&supersurname=Tomlinson (http://www.findaphd.com/search/customlink.asp?inst=birm-Biol&supersurname=Tomlinson)**

Research

Research Theme within School of Biosciences: **Molecular Cell Biology and Signalling (/research/activity/molecular-cell-biology-signalling/index.aspx)**

Regulation of platelet and endothelial cell surface receptors by tetraspanin microdomains

Platelets and endothelial cells play essential roles in maintaining blood vessel integrity and in wound healing, but can also give rise to the initiation and progression of atherosclerosis, leading to heart attack and stroke. These cells possess an array of receptors and adhesion molecules that regulate their function in health and disease. The tetraspanins are a superfamily of transmembrane proteins that interact with and 'organise' other cell surface proteins into membrane microdomains, in organisms as diverse as plants, fungi and animals. Such partitioning of proteins into membrane microdomains is critical for processes such as cell signaling and adhesion. By identifying novel tetraspanin-associated proteins and characterizing their regulation within tetraspanin microdomains, Dr Mike Tomlinson hopes to identify new drug targets for the prevention and treatment of cardiovascular disease.

Dr Tomlinson's studies are heavily focussed on genetically modified platelets and primary endothelial cells, with some additional use of cell line models. The techniques that his group employ include genomics and proteomics, functional assays for platelets and endothelial cells, and analyses of protein-protein interactions through microscopy and biochemical methods.

He is funded by two Project Grants and one PhD Studentship from the British Heart Foundation.

Other activities

When not chasing after one of his four young children, Dr Tomlinson can be found contemplating Liverpool football club, San Francisco Giants baseball team, why he never won the Wimbledon tennis title, and his next fishing trip.

Publications

Rubinstein E, Charrin S and Tomlinson MG (2013). Organisation of tetraspanin web. In *Tetraspanins* (Berditchevski F and Rubinstein E, eds), Springer, Dordrecht, pp. 47-90.

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disintegrin and metalloprotease 10 (ADAM10) and regulates its maturation and cell surface expression. *J. Biol. Chem.* **287**: 39753-39765.

Bailey RL, Herbert JM, Kabir K, Heath VL, Bicknell R and Tomlinson MG (2011). The emerging role of tetraspanin microdomains on endothelial cells. *Biochem. Soc. Trans.* **39**: 1667–1673.

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