CV of Prof. Mark Slevin

Mark Slevin, a Reader of the Institute for Biomedical Research into Human Movement and Health of the Manchester Metropolitan University (United Kingdom), is a collaborating scientist, incorporated into the Cardiovascular Research Center (CSIC-ICCC) with a **BBVA Foundation Chair in Biomedicine** from November 2007.

The research of the Angiogenesis and Vascular Biology Group **of the Manchester Metropolitant University (MMU)**, directed by ***Mark Slevin,*** is focussed on understanding the fundamental mechanisms that lead to blood vessel formation. Increased perfusion is a necessary response to restore or increase tissue function, as for example, in muscle during rehabilitation following bed-rest, in the brain following stroke, or in wound healing. Nevertheless there can also be problems associated with increased microvessel formation in diseases, such as, proliferative diabetic retinopathy, atherosclerosis and in solid tumour growth. Understanding the molecular processes involved in modulating new blood vessel formation could lead to improved recovery where increased perfusion is desirable but also more efficient therapies to treat conditions where angiogenesis is a problem.

The research group has demonstrated the pro-angiogenic properties of naturally occurring sulphated polysaccharides. Identification of opticin as an inhibitor of angiogenesis associated with diabetic retinopathy and of CD105 as a major receptor of active endothelial cells, its involvement in TGF-b signalling pathways and its potential as a vascular target to image renal and colorectal tumours in humans. Changes in hyaluronan biosynthesis in the brain after ischaemic stroke have been demonstrated as has normal prion protein and C-reactive protein expression in neo-vasculature of unstable carotid atherosclerosis.

Group members: **Academic staff:** Professor Mark Slevin, Professor Shant Kumar, Dr May Azzawi, Dr John Gaffney. **Visiting Professors:** Professor Lina Badimon (ICCC, St Pau Hospital, Barcelona). **Research Fellows:** Dr Nick Mitsios, Dr Sabine Matou. **Research Students:** M Sutton, R Pennucci, R Al Baradie, S Hussain, A. Fallah.

Research interests:

- Signaling properties of hyaluronan
- Anti-angiogenic properties of Opticin/Glycation of proteins in diabetes mellitus
- Angiogenesis and neuroprotection after ischaemic stroke
- Gene and protein de-regulation associated with angiogenesis in atherosclerosis

Key Research Achievements:

• Identification of gangliosides shedding in the tissue and serum of patients with bladder and renal tumours 1993-1996
• First to demonstrate intra-cellular signaling pathways of Hyaluronan in vascular endothelial cells 1998-2002
• First to show gangliosides-induced inhibition of growth factor signaling in vascular endothelial cells 1999
• First to demonstrate vascular endothelial-cell growth factor expression correlated with stroke volume in the serum of patients with acute ischaemic stroke
• Identification of Opticin as an inhibitor of angiogenesis associated with diabetic retinopathy 2003-2006
• Examination of changes in gene and protein regulation after acute ischaemic stroke in man and identifying prion protein, and C-reactive protein as key modulators of the angiogenic process 2000-2006
• Identification of novel proteins expressed in unstable haemorrhagic/ulcerated carotid plaques 2006
• Identified changes in hyaluronan biosynthesis in the brain after ischaemic stroke 2006
• Identified prion protein and C-reactive protein expression in neo- vasculature of unstable carotid atherosclerosis (2007)
• Use of state-of-the-art Laser capture microdissection to isolate microvessels from stroke and arterial lesions and identification of novel markers of revascularization. (BBVA Chair award grant)