

## **Blizard Institute**

### **Ana O'Loghlen – Epigenetics & Cellular Senescence Group**

#### **1x PhD and 1x Postdoctoral position available**

Applications are invited for a three-year PhD studentship and a two-year Postdoctoral Research Associate position under the supervision of Ana O'Loghlen. The group is within the Centre for Genomics and Child Health in the Blizard Institute, Queen Mary University of London. The Blizard Institute is the largest institute of Barts and the London School of Medicine and Dentistry and aims to deliver excellence in all aspects of research, teaching and clinical service.

The O'Loghlen group is currently interested in investigating the basic mechanisms involved in the regulation of senescence, cancer and ageing. By performing functional genetic screens, we have unveiled many novel regulators of senescence, cancer and ageing. For example, using a genome-wide small hairpin library (shRNA) we found that depletion of the chemokine receptor CXCR2 (interleukin 8-receptor B) overcomes senescence and as a consequence an inflammatory response is activated (Acosta\*, O'Loghlen\* et al, Cell 2008; Acosta et al, Cell Cycle 2008). We have also found that the polycomb protein Cbx7, which is an important regulator of the *INK4a/ARF* locus, is an essential regulator of pluripotency in mouse embryonic stem cells and have identified a family of microRNAs, miR-125 and miR-181, implicated in this process (O'Loghlen et al, Cell Stem Cell 2012; Gil and O'Loghlen, Trends Cell Biol 2014). Recently, we have found a role for some the integrin beta 3 as a regulator of cellular senescence (Rapisarda et al, Cell Reports 2017; Borghesan and O'Loghlen, Cell Cycle 2017) and we are further investigating their role during ageing

#### **PhD fellowship (three years)**

Applications are invited for a three year PhD studentship to study the immune activation response during senescence and ageing. Candidates must be graduates with a BSc (First or Upper Second) or MSc (Distinction or Merit) and previous research experience will be an advantage. This 3 year studentship will commence on 1st October 2017 and the applicant will be based at the Blizard Institute in the QMUL Whitechapel Campus. This is an exciting opportunity for a graduate from disciplines related to Molecular, Cellular Biology and Immunology.

Ageing and cancer are currently a main concern of the UK society. Although they are primarily different diseases, they both share a common characteristic - the activation of a cellular phenotype called senescence. Senescence is a cellular response to damage. It is characterised by a cell cycle arrest, the production of various secretion factors and the recruitment of inflammatory cells, resulting in tissue remodelling. However, the precise mechanisms for the recruitment of immune cells and tissue remodelling are not well characterised. Here, we aim to develop a multi-cellular 3D hydrogel culture system to investigate the interaction between the activation of senescence and the immune response. We will further determine the implication of integrins during this interaction and will identify therapeutic drugs affecting macrophage recruitment to senescent cell sites.

This project will bring ground-breaking research and is an exciting collaborative project between the School of Medicine and Dentistry (O'Loghlen Group) and the School of Engineering and Materials Science (Azevedo Group).

### **Postdoc position (2 years)**

The selected candidate will be involved in an exciting project to investigate the different mechanisms of intercellular communication between senescent cells and the microenvironment. The study will further characterise cell-cell communication, the senescent secretome and the recruitment of the immune cells to sites where senescent cells are present. A combination of cell and molecular biology experiments, proteomics/genomics analysis and high-throughput screens will be used to address this project.

Candidates must have a PhD degree in life sciences. The selected candidate must have a strong background in molecular, cellular biology and mammalian tissue culture. Experience in cloning is essential. Familiarity with culturing primary cells and retroviral/lentiviral systems would be an advantage. Experience in exosome isolation and characterization will be an advantage, but not essential. We will also take into account applicants with an interest in mathematical modeling and/or bioinformatics, although this is not essential for this position. A first author publication would be highly valued.

The post is full time and for two years. Starting salary will be in the range £32,405- £35,109 per annum inclusive of London Allowance. Benefits include 30 days annual leave, defined benefit pension scheme and interest-free season ticket loan.

### **Further details for both positions**

Candidates must be able to demonstrate their eligibility to work in the UK in accordance with the Immigration, Asylum and Nationality Act 2006. Where required this may include entry clearance or continued leave to remain under the Points Based Immigration Scheme.

**Informal enquiries should be addressed to Dr Ana O'Loghlen at [a.ologhlen@qmul.ac.uk](mailto:a.ologhlen@qmul.ac.uk).**

**Details about the lab can be found at [TheOLOghlenLab](#) or [Blizard/OLOghlen](#)**

**The closing date for applications is 15 August 2017.**

*Valuing Diversity & Committed to Equality*