

## Candidate Information

<b>Position:</b>	Research Assistant
<b>School/Department:</b>	Wellcome-Wolfson Inst for Experimental Medicine
<b>Reference:</b>	23/111244
<b>Closing Date:</b>	Monday 2 October 2023
<b>Salary:</b>	£32,024 - £36,744 per annum
<b>Anticipated Interview Date:</b>	Friday 13 October 2023
<b>Duration:</b>	Fixed term for 6 months or available until 30 April 2024, whichever is sooner

### JOB PURPOSE:

To join the cardiovascular research team led by Professor David Grieve within the Wellcome-Wolfson Institute for Experimental Medicine working on a project funded by the British Heart Foundation to investigate the influence of NADPH oxidases on endothelial progenitor cell function and pro-angiogenic signalling. The project will employ a broad range of cellular and molecular biology approaches using both in vitro and in vivo model systems to study (patho)physiological mechanisms underlying function of a highly-defined population of endothelial progenitor cells, known as endothelial colony-forming cells, in order to further investigate their therapeutic potential for ischaemic cardiovascular disease.

### MAJOR DUTIES:

1. To be actively involved in the existing research programme as directed by the line manager and to ensure adequate planning and progression of the investigation so that the overall research objectives are met.
2. To isolate and characterise endothelial colony forming cells (ECFCs) from human peripheral or umbilical cord blood.
3. To perform gene silencing or overexpression of NADPH oxidase isoforms or other candidate genes using lentiviral shRNA knockdown or overexpression or other appropriate technology.
4. To assess the influence of in vitro oxidative stress on ECFCs using a range of cell proliferation, migration, and tube formation functional assays and standard analyses of gene expression and activity.
5. To investigate the in vivo effects of ECFCs and explore their therapeutic potential for ischaemic cardiovascular disease using established experimental models and ex vivo analyses.
6. Design, develop and refine experimental apparatus or protocols in order to obtain reliable and informative data.
7. To present at national and international research meetings and prepare manuscripts for submission to major international journals.
8. Present regular progress reports on research to members of the local research group or to external audiences to disseminate and publicise research findings.
9. Prepare, often in consultation with the supervisor, material for publication in national and international journals and presentations at international conferences.
10. Assist the grant holder in the preparation of scientific manuscripts, funding proposals and applications to external bodies.
11. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
12. Carry out regular undergraduate supervision and occasional demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
13. To keep up-to-date with the scientific literature related to the area (academic papers, journals and textbooks) and use this to inform experimental approaches and study design.

### ESSENTIAL CRITERIA:

1. Degree or equivalent in subject relevant to research activity e.g molecular biology, cell biology, or a related area of biomedicine.
2. Recent research experience in vascular biology.

3. Relevant practical experience in the following techniques:
  - Endothelial colony forming cell culture.
  - Reactive oxygen species assays.
  - Western blotting and/or quantitative RT-PCR.
  - Gene expression modification.
  - Immunocytochemistry.
  - In vitro cellular functional assays.
  - Bioinformatics and pathway analysis.
  - In vivo cardiac models.
  - In vivo cardiac imaging.
4. Methodical approach to project management in regard to experimental procedures and record keeping.
5. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established cardiovascular research programmes.
6. Ability to communicate complex information clearly.
7. Ability to build contacts and participate in internal and external networks.
8. Demonstrable intellectual ability and awareness of the scientific literature pertaining to area of interest.
9. Ability to assess and organise resources.
10. Ability to work independently within the context of a research team.
11. Must demonstrate a clear interest in this area of research and show commitment to the specific research topic.
12. Must be prepared to work outside normal office hours.
13. Willing to attend and present at national and international meetings.

**DESIRABLE CRITERIA:**

1. May be working towards a PhD in the area of vascular biology or cardiovascular disease.
2. Investigation of clinical material and complex in vitro / in vivo model systems.
3. Handling of blood-derived cells, their isolation and characterisation and awareness of possible HTA implications.
4. Computing skills especially software commonly used in biomedical research (for example imaging and flow cytometry software).
5. Home Office personal licence.
6. A publication record which is commensurate with career stage and experience in regard to both output quantity and quality.
7. Experience in relevant skills/techniques not currently available within our group.
8. Experience teaching/supervising students and visiting researchers in the laboratory.
9. Research project management experience.
10. Computing skills especially for software commonly used in biomedical research such as FlowJo, R, and GraphPad Prism.
11. Evidence of having presented at conferences (poster and/or oral presentations).
12. Background or research interests which are compatible with the post.