

Candidate Information

Position:	Research Fellow
School/Department:	School of Medicine, Dentistry and Biomedical Sciences
Reference:	24/111844
Closing Date:	Monday 27 May 2024
Salary:	£37,841 per annum
Anticipated Interview Date:	Friday 7 June 2024
Duration:	21 Months

JOB PURPOSE:

To deliver the exciting project funded by UK Medical Research Council which involves process development of extracellular vesicles-based therapy manufacturing as well as mechanistic studies at the research group led by Dr Anna D Krasnodembskaya at the Wellcome Wolfson Institute for Experimental Medicine.

The successful candidate will work as part of a research programme that is developing Mesenchymal Stromal Cells (MSC) derived extracellular vesicles (EVs) as novel therapy for the treatment of Acute Respiratory Distress Syndrome (ARDS). The main purpose of this project is to develop and optimise a scalable process of isolation of a specific EV fraction using bioreactor system and to demonstrate therapeutic usefulness of the resultant EV product and established mechanism of action in the in vitro models of ARDS. This project is milestones-driven so strict adherence to deadlines is essential. The successful applicant is expected to lead this ambitious cutting edge research project and will be involved with supervision, planning, day-to-day lab management, collaborations and outreach.

Applications are invited from enthusiastic, highly motivated, efficient and organised individuals with a strong commitment to a career in research and development.

Further information:

[https://pure.qub.ac.uk/portal/en/persons/anna-krasnodembskaya\(96497a43-4100-4999-8e0c-4d01a217Ab83fc\).html](https://pure.qub.ac.uk/portal/en/persons/anna-krasnodembskaya(96497a43-4100-4999-8e0c-4d01a217Ab83fc).html)

MAJOR DUTIES:

1. Develop, plan and deliver an area of personal research and expertise, and undertake research under supervision within a research project aimed at the development and optimisation of a process of isolation of specific EV fraction and testing the therapeutic efficacy of the resultant EV product using a range of experimental in vitro models of ARDS. This project is milestones-driven so strict adherence to deadlines is essential.
2. Maintain up-to-date knowledge of the field of interest at the cutting edge (e.g. recent advances in EV therapy development and GMP manufacturing, immunomodulation, lung regeneration, new models and techniques) and communicate the same to the group.
3. Design, develop and refine experimental apparatus, models, field research or experiments in order to obtain reliable and reproducible data.
4. Carry out analyses, critical evaluations and interpretations of experimental data and the literature using methodologies and other techniques appropriate to area of research.
5. Present regular progress reports on research to members of the research group, other groups within the Centre/University, to external audiences nationally and internationally to disseminate and publicise research findings.
6. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences.
7. Assist grant holder in the preparation of funding proposals and applications as well as project progress reports to external bodies.

8. Actively drive own career development, e.g. through Postdoctoral Development Committee activities, fellowship applications etc.
9. 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/group meetings and documentation, financial control, risk assessment of research activities and development of SOPs. Carry out routine administrative tasks associated with the day-to-day running of the research group in a communal lab setting.
10. Carry out undergraduate/post-graduate student and visiting researcher training and supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
11. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines and engage in technical training as needed.

ESSENTIAL CRITERIA:

1. Have or about to obtain a relevant PhD* in a biomedical field of laboratory-based research e.g cell therapy/extracellular vesicle therapy development, respiratory biology, biochemistry, or cell biology. (*must have within 3 months of commencement of employment)
2. Relevant, recent research experience in cell therapy/extracellular vesicle therapy development, respiratory biology, biochemistry, or cell biology.
3. Extensive previous hands-on experience in at least 3 of the following:
 1. MSC extracellular vesicles' (isolation, characterisation, functional assessment)
 2. Bioreactor cultures, biological product purification/concentration processes, TFF, size-exclusion chromatography
 3. Primary human pulmonary epithelial, endothelial and monocyte derived macrophages culture.
 4. Assays to evaluate mitochondrial biology/functionality
 5. Modern cellular and molecular biology methods: mammalian cell transfection, real time qPCR, Western blotting, multi-colour flow cytometry/cell sorting, immunohistochemistry, bioimaging (fluorescent, confocal/electron microscopy).
4. Reports, manuscript and abstract writing experience.
5. Recent high-quality original research publications in reputable peer-reviewed journals, commensurate with career stage.
6. Must be highly ambitious, motivated, efficient, organised and show a commitment to, and an interest in research topic (demonstrate in depth understanding of the MSC EV field, EV isolation processes, what evidence is required for the development of new therapy for a clinical trial stage, excellent knowledge of Dr Krasnodembskaya's research).
7. Competent in maintaining and communicating knowledge of cutting-edge of field of expertise.
8. Must be methodical in project management and meticulous in terms of experimental procedures, strict adherence to deadlines and record keeping.
9. Excellent oral and written communication skills.
10. Competent in giving effective and informative oral and poster presentations.
11. Evidence of having presented at national and international conferences (poster and oral).
12. Willingness to supervise postgraduate/undergraduate students and visiting researchers in the laboratory.
13. Strong ability to work from own initiative and to work independently but also work within a highly collaborative team to support/train others.
14. Must demonstrate good team working skills in multiple team settings as well as leadership qualities.
15. Must demonstrate excellent problem-solving skills and able to use own initiative.
16. Irregular hours including weekend working will be a component of the research at times.
17. Must be willing to travel to national and international meetings and collaborative laboratories.

DESIRABLE CRITERIA:

1. Experience with bioreactor cultures, cell therapy manufacturing, process development.
2. High quality grant, manuscript, ethics application, report, and abstract writing experience.
3. Productive PhD/postdoctoral experience as evidenced by a strong publication record commensurate with career stage.
4. Experience supervising /mentoring postgraduate/ undergraduate/school students and visiting researchers in the laboratory.
5. Research project management.