Candidate Information

Position:	Research Fellow (Cancer Biology) School of Pharmacy
School/Department:	Pharmacy
Reference:	22/110265
Closing Date:	Monday 24 October 2022
Salary:	35,333 - £38,592 per annum
Anticipated Interview Date:	Wednesday 9 November 2022
Duration:	Fixed term available until 31 August 2026

JOB PURPOSE:

Blood tests, instead of invasive tissues biopsies, are the holy grail for cancer diagnosis and optimal treatment selection for patients. Such blood tests called “Liquid Biopsies” offer many advantages over tissue biopsies such as (i) being faster, cheaper, and routinely available; (ii) avoiding unnecessary delays for those with cancer and worry for those with harmless conditions; (iii) maximising optimal treatment choices, while avoiding use of often expensive drugs producing side-effects but no benefit; and (iv) reducing overall strain on healthcare. Even if Liquid Biopsies do not fully replace all tissue biopsies, they could add benefit by enabling on-going monitoring for tumour recurrence, treatment response, etc., contributing to improved quality-of-life and longevity.

Increasing evidence by members of the All-Ireland Cancer Liquid Biopsies Consortium (CLuB), at Trinity College Dublin (TCD) and Queen’s University Belfast (QUB) and others indicate that substantial information originating from tumours enter body fluids, such as the bloodstream, and so have potential as Liquid Biopsies, serving as non-invasive alternatives to surgical biopsies. These entities, representing the tumour, include circulating tumour cells, tumour DNA (mutated/methylated-DNA); RNA; and extracellular vesicles (i.e., shed vesicles containing cancer cell contents and implicated in drug-resistance, immune suppression, metastasis). Combining this multi-disciplinary expertise with expertise in big data analysis at the National University of Ireland Galway (NUI Galway) as an emerging hub of excellence, CLuB will synergistically evaluate component parts of cancer liquid biopsies, assessing their individual relevance and the added value of their co-analysis towards the development of personalised profiles and optimal patient care. It will also evaluate tumour organoids as ‘patient avatars’, contributing further information to the liquid biopsy, as well as assessing optimal treatment choices for the individual cancer patient.

There are, however, still many gaps in knowledge that need to be addressed to ensure optimal use of liquid biopsies for patients, societal, and economic benefit. Addressing this, CLuB’s objective is to provide excellent and integrated multi-disciplinary training to a critical mass of outstanding researchers, while performing novel cutting-edge research to address these gaps and generate new knowledge. This will be achieved by appointing 7 Post-Doctoral Fellows and 4 PhD students (as well as 3 Nurses and a Technician) offering secondments, training, and additional networking opportunities. All PI’s have highly relevant and complementary expertise that will collectively contribute to the training/mentoring of a critical cohort of CluB personnel as future leaders. This specific post, working in the Buckley group, School of Pharmacy, will focus on the development of a organoid-based biobank from patient samples and assess how this may be used as a source of secreted material to be assessed in liquid biopsy based assays.

MAJOR DUTIES:

1. Develop and execute research plans within the remit of the CluB project with the aid of the PIs
2. Develop and characterise an organoid-based living biobank for breast, ovarian and lung cancer.
3. Develop and curate clinical, biological and molecular datasets.
4. Assess the “secretome” of cancer organoids and compare/contrast to blood-based analyses.
5. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to area of research.
6. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.

7. Prepare, often in consultation with supervisor, material for IP protection and publication. If appropriate present at national/international conferences.
8. Assist grant holder in the preparation of funding proposals and applications to external bodies.
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 meetings and documentation, financial control, risk assessment of research activities.
10. Carry out occasional undergraduate 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. Development of a literature base.

ESSENTIAL CRITERIA:

1. Have or about to obtain a PhD in cancer biology, or biomedical sciences.
2. 3 years recent relevant experience in standard molecular biology assays (e.g. tissue culture of human and/or murine cancer cell lines, western blot, qPCR, flow cytometry)
3. Experience in assessment of key cancer phenotypes (proliferation, migration, invasion, etc.
4. Experience in advanced tissue culture techniques such as primary cell culture, tissue explants, organoids and/or 3D models.
5. Experience in Preparing material for publication and presentations at national/international conferences
6. Publication record commensurate with experience.
7. Experience of final year undergraduate student supervision. Wiliness to assist early stage PhD students establish core assay technical competence.
8. Ability to carry out routine administrative tasks associated with the research projects and laboratory maintenance.
9. Ability to communicate effectively, both verbally and in writing.
10. Practical problem-solving skills, and independence of thought are required.
11. Ability to present scientific arguments and data in a clear, concise and confident manner.
12. Ability to present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
13. A calm and conscientious scientist, able to work in a disciplined manner within a team environment.

DESIRABLE CRITERIA:

1. PhD with a focus on culture of primary cell culture or organoids.
2. Experience in cancer phenotype assays in primary cells/organoids.
3. Experience in liquid biopsy-related research.
4. Experience in small animal in vivo experiments .
5. Holds a UK home office.
6. Experience in bioinformatic analysis of omic datasets.
7. Integrated analysis of multi-omic datasets.
8. Experience in PPI.
9. Experience of assisting in preparation of funding proposals and applications to external bodies.
10. Experience in supervision of postgraduate students.