



Research Centre:	National Institute for Cellular Biotechnology
Post title:	Postdoctoral Researcher in the functional assessment of PI3K/AKT pathway mutations as predictors of PI3K inhibitor sensitivity
Level on Framework:	Level 1
Post duration:	Fixed-term contract up to 24 months

As part of this role the researcher will be required to participate in the DCU Research Career Framework. This framework is designed to provide significant professional development opportunities to Researchers and offer the best opportunities in terms of a wider career path.

Background and Role:

A postdoctoral position is available with the Molecular Therapies for Cancer in Ireland within the National Institute for Cellular Biotechnology at Dublin City University (DCU) to undertake research on the following project: "The impact of mutations in PI3K/AKT pathway gene loci on response to PI3K inhibitors". This postdoctoral position is funded through a Health Research Board Emerging investigator award.

PI3K-inhibitors demonstrate clinical efficacy in the treatment of breast cancer. Oncogenic missense mutations in the PIK3CA gene are the most obvious potential prognostic and therapeutic markers of PI3K-inhibitor sensitivity. However, many patients who don't have a PIK3CA missense mutation also respond to PI3Kinhibitors.

Supporting this, data generated by our lab, as well as published clinical trial results, suggest that an extended cohort of patients who are PIK3CA wild-type could benefit from PI3K-inhibitors. We therefore hypothesise that both coding and non-coding 'regulatory' mutations in the gene loci of members of the PI3K/AKT-pathway, influence how BCs respond to PI3K inhibitors.

Therefore, the key question this proposal will address is "*what is the extended cohort of gene mutations in patients with PIK3CA wild-type tumours that predict responsiveness to PI3K-inhibitors*". To test our hypothesis, we will undertake the following:

Objective 1: To identify novel coding and non-coding mutations in the gene loci of members of the PI3K/AKT pathway.

Objective 2: To functionally evaluate the oncogenic potential of coding and non-coding mutations which affect the activity of the PI3K/AKT-pathway.

Objective 3: To determine the most synergistic combinations of PI3K inhibitors and specific targeted therapies to best treat a cohort of BC patients with PI3K/AKT-pathway mutated cancer.

Impact on breast cancer: At the end of this project we will have identified the most oncogenic mutations affecting the PI3K/AKT-pathway and discovered the most synergistic combination of drugs that can be used to effectively treat breast cancers with these mutations.

The project will be supervised by Dr. Alex Eustace, Research lead of Molecular Therapeutics for Cancer in Ireland, DCU.

Principle Duties and Responsibilities:

See Job Description for full list of duties and responsibilities.

Minimum Criteria

The successful candidate will hold a PhD in the area of cancer/molecular biology or a related discipline.

In addition, it is desirable that the candidate has a subset of the following skills:

- Experience with CRISPR editing (including design, viral transfection, functional assessment)
- Molecular Biology techniques (Cloning/primer design/PCR/luciferase reporter assays)
- Maintenance and quality control of a panel of cancer cell lines
- Assessment of the effect of targeted therapies on cell growth, cell cycle progression and cell death mechanisms
- *In vivo* rodent tumour models and drug delivery
- Experience in working with the R-statistical platform
- Experience in the use of UCSC browser

Mandatory Training:

The post holder will be required to undertake the following mandatory compliance training: Orientation, Health and Safety and Intellectual Property and Data Protection training. Other training may need to be undertaken when required.

Salary Scale: 1st point of the Post-Doctoral Researcher IUA Scale* €38,632 per annum.

Appointments will be commensurate with qualifications and experience and will be made on the appropriate point of the salary scales, in line with current Government pay policy.

Closing date: 14th of February 2021

This role requires a start date of April 1st 2021.

Candidates will be assessed on the following competencies:

Discipline knowledge and Research skills – Demonstrates knowledge of a research discipline and the ability to conduct a specific programme of research within that discipline

Understanding the Research Environment – Demonstrates an awareness of the research environment (for example funding bodies) and the ability to contribute to grant applications

Communicating Research – Demonstrates the ability to communicate their research with their peers and the wider research community (for example presenting at conferences and publishing research in relevant journals) and the potential to teach and tutor students

Managing & Leadership skills - Demonstrates the potential to manage a research project including the supervision of undergraduate students

Informal enquiries to:

Dr. Alex Eustace, NICB, DCU

E-mail: alex.eustace@dcu.ie

Phone: +353 (0) 87 2764018

Please do not send applications to this email address, instead apply as described below.

Application Procedure

Application forms are available from the DCU Current Vacancies website at <https://www.dcu.ie/hr/vacancies/current.shtml>.

Applications must be submitted by e-mail to hr.applications@dcu.ie

Please clearly state the role that you are applying for in your application and email subject line:

Job Ref #RF1465 Postdoctoral Researcher in the functional assessment of PI3K/AKT pathway mutations as predictors of PI3K inhibitor sensitivity

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