



QUEEN'S UNIVERSITY BELFAST

*Title of studentship	Dissecting the functions of the histone deacetylase 6 (HDAC6) protein in cancer
Value / what is covered?	
Awarding body	
Number of studentships	1
*Summary descriptive text / Example of research project	<p>The HDAC6 protein is upregulated in cancer and associated with increased proliferation and metastasis. Several HDAC6 inhibitors have been developed and are in clinical trials. However, recent published data including data generated in our lab indicates that the enzymatic inhibition of HDAC6 in solid tumours is ineffective. The HDAC6 protein is a large protein with important protein scaffold properties and our current research is focused on determining the functions of each of modular units of this protein in cancer cells.</p> <p>We propose elucidating the enzymatic independent functions of HDAC6 in cell proliferation and migration. In this PhD, a number of HDAC6 mutant proteins will be generated and over-expressed in cancer cells. The oncogenic phenotype of the mutant proteins will be investigated. The protein-protein interactions of each of the modular units of the HDAC6 protein will be elucidated. Finally, methods to enhance the inhibition of HDAC6 in cancer cells either with single agents or in combination with various anti-neoplastic agents will be evaluated <i>in vitro</i>.</p>
*Supervisor(s)	Fiona Furlong, School of Pharmacy
*Eligibility / residence Status	All applicants welcome
Country	Northern Ireland
*Start date and duration	open
*Faculty	MHLS
*Research centre / School	Pharmacy
Subject area	Cancer pharmacology, drug discovery, personalised medicine, cancer
Candidate requirements	Applicants should have a 1st or 2.1 honours degree (or equivalent) in a relevant subject. Relevant subjects include Pharmacy, Pharmacology, Molecular Biology,

/ Key skills required for the post	Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, or a closely related discipline. Students who have a 2.2 honours degree and a Master's degree may also be considered, but the School reserves the right to shortlist for interview only those applicants who have demonstrated high academic attainment to date
*Deadline for applications	open
*How to apply / contacts	<p>Postgraduate Research applicants for Pharmacy who are interested in applying for a fully funded DFE studentship must have applied to Queen's, via the Direct Applications Portal, and submitted all required supporting documents by the closing date, which will be announced later in the Academic year.</p> <p>https://dap.qub.ac.uk/portal/user/u_login.php</p>
Relevant links / more information	<p>http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/</p> <p>http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/</p>
Keywords for search filters	Cancer; cell biology; cell signalling; pharmacology; drug action;
Training provided through the research project	<p>The project will provide hands-on training for the student in the following:</p> <ul style="list-style-type: none"> • Protein over-expression techniques • Protein detection methods • Protein-protein interaction • Cancer cell culture • Real time monitoring of cell proliferation • Real time monitoring of cell migration • Assays to measure cell viability and apoptosis • Protein, RNA and DNA isolation methods • A thorough understanding of cancer biology <p>Working as a PhD will also provide the following training:</p> <ul style="list-style-type: none"> • Oral and poster presentation skills • Working as part of a team • Project management: Planning and organising experiments, time management • Team work • statistical analysis
Expected impact activities	Discovery of the mechanism of action of HDAC6 is likely to lead to the development of methods to specifically target the oncogenic function of this protein or direct the decision for the use of combinations of therapy for HDAC6 overexpressing tumours.