



QUEEN'S UNIVERSITY BELFAST

*Title of studentship	Liposomal delivery of antibiotics for treatment of pulmonary infection
Value / what is covered?	Fully funded 100% of UK/EU tuition fees paid and an annual stipend for UK residents only (living expenses), currently at £14,777
Awarding body	DFE
Number of studentships	1
*Summary descriptive text / Example of research project	<p>In respiratory diseases such as Cystic Fibrosis (CF) and COPD, the lungs are colonized by diverse polymicrobial bacterial communities. Inhaled antibiotics are currently only used in the treatment of chronic <i>P. aeruginosa</i> infection in CF and a major challenge with such treatment is antibiotic penetration into sputum. We have developed spray-dried liposomal formulations with excellent powder properties for pulmonary delivery. Preliminary data has shown that several antibiotics used in the treatment of chronic lung infection can be encapsulated in these formulations.</p> <p>The aim of this project will be to determine the activity of liposomal encapsulated antibiotics against a wide range of pathogens detected in the lung microbiome. In vitro activity will be determined using planktonic and biofilm models of infection under aerobic and anaerobic conditions, similar to those found in sputum in the lungs of CF patients. In vivo activity will be determined using both sputum from patients with lung infection and a mouse model of chronic lung infection in which antibiotics will be delivered via a nebulized chamber. Depending on results, further formulation studies may be undertaken to optimize antimicrobial activity. Extensive training will be provided throughout the project as part of internationally renowned research teams.</p>
*Supervisor(s)	Dr Vicky Kett (School of Pharmacy), Professor Michael Tunney (School of Pharmacy), Dr Rebecca Ingram (Centre for Infection & Immunity)
*Eligibility / residence Status	UK/EU only
Country	Northern Ireland
*Start date and duration	1 October 2019 Funding covers a three-year full-time PhD.
*Faculty	MHLS
*Research	Pharmacy

centre / School	
Subject area	
Candidate requirements / Key skills required for the post	Applicants should have a 1st or 2.1 honours degree (or equivalent) in a relevant subject. Relevant subjects include Pharmacy, Molecular Biology, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, Chemistry, Engineering, or a closely related discipline.
*Deadline for applications	7 th January 2019
*How to apply / contacts	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. https://dap.qub.ac.uk/portal/user/u_login.php
Relevant links / more information	http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/ http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/
Keywords for search filters	
Training provided through the research project	
Expected impact activities	