



School of Pharmacy PhD Projects 2014

Project Title Delivery of cathepsin inhibitors using targeted nanoparticle strategies

Supervisors Prof Christopher Scott, Dr Roberta Burden and Dr Rich Williams

Description This project brings together the expertise of the School of Pharmacy to the CCRCB aimed at the development of novel cancer treatment strategies – which encompass the use of novel small molecule cathepsin inhibitors developed by the medicinal chemistry lab of Dr Williams with the understanding of cathepsin biology and systemic nanoparticle drug delivery systems (Prof Scott). Work will be supported by MRC, Royal Society and PCUK grants that the applicants have in place.

The Scott laboratory has previously defined the potential of cathepsin S (CTSS) as cancer targets (Burden et al., Clin Cancer Res 2009; Small et al., Int J Cancer 2013), and the Williams lab has developed a range of new CTSS inhibitors. However, the success of CTSS inhibitors in the clinic to date has been disappointing in terms of efficacy, due to the inability to achieve sufficient dosing of drugs at the disease site.

We hypothesize that the encapsulation of a CTSS inhibitor in a polymeric stealth nanoparticle would provide therapeutically useful doses of the drug at the tumour site. We aim to produce and validate these particles using a range of tumour models. The successful student will be trained in drug development assays, pharmaceuticals formulation and molecular biology.

Start Date 1 October 2014

Keywords cathepsin, protease, cancer, nanomedicine

Contact Details

pharmacypostgrad@qub.ac.uk

How to Apply

Postgraduate applications should be made using Queen's Online:

<http://go.qub.ac.uk/pgapply>

Please note that there are two application processes: one for admission to the university and another for postgraduate awards.

Further Information

Additional information for prospective postgraduate students can be found on the School of Pharmacy website:

<http://www.qub.ac.uk/pha>

and the Queen's Postgraduate website:

<http://www.qub.ac.uk/home/ProspectiveStudents/PostgraduateStudents/>