



School of Pharmacy PhD Projects 2014

Project Title Ultrashort Self-assembling Peptides/Peptidomimetics as Ocular Drug Delivery Vehicles

Supervisors Dr Garry Laverty, Dr Thakur Raghu Raj Singh, Prof David Jones.

Description The aim of this project is to develop highly ordered, nanomaterial structures with well-defined properties and a vast array of functions for drug delivery of pharmaceuticals to the eye. Self-assembled ultrashort peptide/peptidomimetics harness a “bottom-up” approach whereby the peptide backbone provides a primer for functionality allowing smart functional materials to be developed for specific drug delivery applications in response to defined environmental and external stimuli (e.g. enzymatic, pH, temperature). The peptide structure also allows for the conjugation of drugs to the primary sequence with controlled delivery to the site of action via the porous hydrogel structure. Ultrashort sequences represent a cost-effective strategy capable of forming self-assembled hydrogels with many advantages over current synthetic materials including: tunable biodegradability, increased chemical versatility, minimal immunogenicity and maximal biocompatibility.

The project will provide the successful applicant with the opportunity to advance their skills in peptide synthesis, purification and characterisation, spectroscopy, rheology, tissue culture, drug release and pharmaceutical formulation. The student will benefit from: having access to state of the art laboratory facilities within the McClay Research Centre; enrollment into the Queen’s University PhD programme and associated training; working closely with supervisors together with internal and external collaborators.

Start Date 1 October 2014

Keywords Peptide, Ocular, Drug Delivery, Self-assembly, Nanomaterial

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/>