



School of Pharmacy PhD Projects 2014

Project Title	A Bio-Inspired Gene Therapy Approach to Treat Metastatic Prostate Cancer Stem Cells
Supervisors	Dr Helen McCarthy & Prof Tracy Robson
Description	<p>Eligibility: Applicants must have at least an upper second class degree in Pharmacy, Molecular Biology, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, or a closely related discipline</p> <p>A major limiting factor in cancer gene therapy is the lack of a suitable delivery system to carry therapeutic genes safely and efficiently to the target tissues. Advancements in cancer gene therapy in general depend on the development of novel gene delivery systems (vectors) with high transfection efficiency at the target site and low toxicity. Therefore, there is a need for the development of gene carriers that can overcome the toxicity and inefficiency barriers.</p> <p>For systemic administration of therapeutic genes, the ideal vector should be designed to overcome many biological barriers; this may be possible using a non-viral biomimetic approach. Techniques in genetic engineering facilitate the biosynthesis of functional motifs and design of the vector architecture at a molecular level.</p> <p>The objective of this research studentship is to design and characterize a bio-inspired delivery vector to deliver the cytotoxic inducible nitric oxide synthase gene under the control of the human osteocalcin promoter to target prostate cancer stem cells.</p> <p>This 3-year project will provide the opportunity to gain technical expertise in molecular biology, in addition to <i>in vitro</i> and <i>in vivo</i> technologies.</p> <p>Further information on the project can be obtained by emailing Dr Helen McCarthy (h.mccarthy@qub.ac.uk).</p>
Start Date	1 October 2014
Keywords	Prostate Cancer, Gene Therapy, Non-Viral Delivery, Stem Cells

Contact Details

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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/>