



School of Pharmacy PhD Projects 2015

Project Title Evaluation of plasmonic photothermic-induced cell death as a novel form of immunotherapy

Supervisors Chris Scott (Pharmacy), Steven Bell (Chemistry) and Dan Longley (CCRCB)

Description The delivery of gold laden polymeric nanoparticles and subsequent specific activation with laser excitement of the gold core will result in photothermic cell death. This will induce localised inflammation that can be exploited further to drive cytotoxic T-cell immunotherapy that can be augmented by the co-delivery of molecularly targeted agents. Previously Bell and Scott have collaborated together to examine the ability to entrap gold core clusters in Scott's polymeric nanoparticle systems that Scott and Longley has previously shown hold much utility for the treatment of cancer, both in vitro and in vivo (Fay et al., Biomaterials, 2011; Abdelghany et al., Biomacromolecules, 2013; Schmid et al., Mol Therapy, 2014; Schmid et al, Cell Death Dis 2014).

In this new proposed project, the therapeutic utility of this system will be analysed as a potential form of immunotherapy, driving antigen spreading through innate and adaptive immune responses in the tumour microenvironment. The successful student will gain expertise in the development of nanoparticle formulations, their physiochemical characterization and application in suitable tumour models.

Start Date September 2015

Keywords

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/>