



School of Pharmacy PhD Projects 2014

Project Title	Identifying and targeting prostate tumour initiating cells to achieve enhanced tumour control
Supervisors	Dr Jonathan Coulter, Professor Tracy Robson
Description	<p>The development of castrate-resistant prostate cancer remains a significant problem, with treatment options for advanced metastatic disease limited to improving patient quality of life. Furthermore, it is well established that tumor hypoxia is known to strongly predict for poor treatment outcome in prostate cancer. An increasingly accepted hypothesis for treatment failure is the presence of tumour initiating cells (TICs).</p> <p>This PhD project will establish if hypoxia is a key factor in promoting the proportion of prostate TICs. Furthermore, the functional impact of these TICs in relation to both chemo- and radiotherapy resistance will be determined. Cells will be cultured in low nutrient, non-adherent conditions, which encourages TIC proliferation resulting in the formation of 3-dimensional prostaspheres; TIC numbers \pm hypoxia will be determined.</p> <p>In parallel TIC enriched cultures will be treated with a novel CD44 binding peptide derived from the active domain of FKBPL. Professor Robson has extensively demonstrated the potent anti-stem cell and anti-angiogenic properties of this peptide in various breast cancer models. Here the student will establish if the same peptide can promote TIC differentiation into a treatment sensitive state, thereby helping to reduce the likelihood of tumour recurrence in the prostate cancer setting.</p>
Start Date	1 October 2014
Keywords	Tumour initiating cells, hypoxia, radiation sensitivity, prostate cancer

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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/>