



# QUEEN'S UNIVERSITY BELFAST

<b>*Title of studentship</b>	Engineering exosome-based therapeutics for cancer
<b>Value / what is covered?</b>	Fully funded  100% of UK/EU tuition fees paid and an annual stipend for UK residents only (living expenses), currently at £14,553
<b>Awarding body</b>	DFE
<b>Number of studentships</b>	1
<b>*Summary descriptive text / Example of research project</b>	Exosomes are cell-derived vesicles that carry proteins and RNAs for intercellular communication. Recently, they have been seen as a promising tool to improve cancer diagnosis and treatment. Exosomes have successfully delivered cancer therapeutics, such as siRNA, microRNA and cytotoxic drugs. Several clinical trials on exosome-based therapies for cancer treatment are ongoing. Exosomes are less toxic and better tolerated in the body. They have shown an intrinsic homing ability to a wide range of cells, including healthy and diseased tissues. This project aims to use exosomes, as a new approach to improve the delivery of cancer therapeutics to deep-seated and metastatic cancer lesions.
<b>*Supervisor(s)</b>	Dr Wafa Al-Jamal & Dr Jonathan Coulter
<b>*Eligibility / residence Status</b>	UK/EU only
<b>Country</b>	Northern Ireland
<b>*Start date and duration</b>	1 October 2018 Funding covers a three-year full-time PhD.
<b>*Faculty</b>	MHLS
<b>*Research centre / School</b>	Pharmacy
<b>Subject area</b>	Exosome, nanomedicine, drug delivery, cancer
<b>Candidate requirements / Key skills required for the post</b>	Applicants should have a 1st or 2.1 honours degree (or equivalent) in a relevant subject. Relevant subjects include Pharmacy, Molecular Biology, Pharmaceutical Sciences, Biochemistry, Biological/Biomedical Sciences, Chemistry, Engineering, or a closely related discipline. Students who have a 2.2 honours degree and a Master's degree may also be considered, but the School reserves the right to shortlist for

	interview only those applicants who have demonstrated high academic attainment to date
<b>*Deadline for applications</b>	31 January 2018
<b>*How to apply / contacts</b>	<p>Postgraduate Research applicants for Pharmacy who are interested in applying for a fully funded DFE studentship must have applied to Queen's, via the Direct Applications Portal, and submitted all required supporting documents by the closing date, which will be announced later in the Academic year.</p> <p><a href="https://dap.qub.ac.uk/portal/user/u_login.php">https://dap.qub.ac.uk/portal/user/u_login.php</a></p>
<b>Relevant links / more information</b>	<p><a href="http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/">http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/PostgraduatePositions/</a></p> <p><a href="http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/">http://www.qub.ac.uk/schools/SchoolofPharmacy/Research/</a></p> <p><a href="http://pure.qub.ac.uk/portal/en/persons/wafa-aljamal(d931b6ec-d950-47da-bfb2-d2a6fd7a6aa7).html">http://pure.qub.ac.uk/portal/en/persons/wafa-aljamal(d931b6ec-d950-47da-bfb2-d2a6fd7a6aa7).html</a></p>
<b>Keywords for search filters</b>	Exosome, nanomedicine, drug delivery, cancer
<b>Training provided through the research project</b>	<p>This highly interdisciplinary project combines expertise in molecular biology, drug delivery, targeting, and nanomedicine. It will provide a unique opportunity for excellent students to work in a stimulating multidisciplinary team. The candidate will be working on isolating exosomes from cell cultures, loading them with drugs, and functionalizing their surface with targeting moieties that recognize cancer cells. The developed exosomes will be characterized using nanoparticle tracking analysis, electron microscopy, qRT-PCR and western blot, confocal laser scanning microscopy and flow cytometry. The project will also involve evaluating the exosomes behaviour in vitro and in vivo models. The successful candidate will be a highly motivated, hard-working graduate with excellent communication and organizational skills.</p>
<b>Expected impact activities</b>	This research aims to offer a better and safer cancer treatment, using exosomes as a novel drug delivery system for cancer therapeutics.