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Language Known: English, Arabic

### **Education and work History**

*Oct 2008 - September 2012, PhD in Drug delivery and Biomaterials, Queen's University Belfast.*

PhD study was mainly about the optimization of drug-loaded polymeric nanoparticles to enhance their antibacterial and antitumour effects. The PhD study examined the development of novel drug-loaded nanoparticle formulations and their evaluation in photodynamic therapy for the treatment of cancer, and in the treatment of infectious diseases caused by *Pseudomonas aeruginosa*. In case of photodynamic therapy, the nanoparticles were surface functionalized with an antibody to enhance the targeting and anticancer effect of the photosensitizer-loaded polymeric nanoparticles.

Antibiotics loaded polymeric nanoparticles were functionalized with an enzyme that can degrade the extracellular DNA that is overexpressed in the cystic fibrosis sputum. This enhanced the penetration of the released antibiotic from the nanoparticles.

*September 2006- September 2008, R&D formulation scientist.*

This work was mainly including the first step in the generic product development for various dosage forms including tablets, capsules, topical medications, and syrups. Preformulation studies such as drug excipient compatibilities, drug exposure test. Formulation of generic products, Stabilities studies, bioequivalence studies of pharmaceutical products. Regulatory affairs for registration of pharmaceutical products.

*October 2002- September 2006, BSc in Pharmacy. University of Jordan, Amman, Jordan.*

Courses studied includes Physical Pharmacy, Compounding of the dosage forms, Industrial Pharmacy, Biochemistry, Organic chemistry, Biopharmaceutics, Pharmacology, Pharmacognosy. Phytochemistry.

## **Awards**

£20,000 from Queen's University Belfast to pursue a PhD in drug delivery and Biomaterials

Scholarship from the University of Jordan, Amman, Jordan to pursue a PhD in drug delivery and Biomaterials

## **Publications:**

Design of polymeric nanoparticles for enhanced activity against cancer and infectious diseases, PhD thesis. 2012, Queen's University Belfast.

Enhanced antitumor activity of the photosensitizer meso-Tetra(N-methyl-4-pyridyl) porphine tetra tosylate through encapsulation in antibody-targeted chitosan/alginate nanoparticles, Abdelghany SM, Schmid D, Deacon J, Jaworski J, Fay F, McLaughlin KM, Gormley JA, Burrows JF, Longley DB, Donnelly RF, Scott CJ. *Biomacromolecules*. 2013;14(2):302-10.

Gentamicin-loaded nanoparticles show improved antimicrobial effects towards *Pseudomonas aeruginosa* infection. Abdelghany SM, Quinn DJ, Ingram RJ, Gilmore BF, Donnelly RF, Taggart CC, Scott CJ. *Int J Nanomedicine*. 2012;7:4053-63.

Microneedle-mediated intradermal nanoparticle delivery: Potential for enhanced local administration of hydrophobic pre-formed photosensitisers. Donnelly RF, Morrow DI, Fay F, Scott CJ, Abdelghany S, Singh RR, Garland MJ, Woolfson AD. *Photodiagnosis Photodyn Ther*. 2010;7(4):222-31.

Microporation techniques for enhanced delivery of therapeutic agents. Singh TR, Garland MJ, Cassidy CM, Migalska K, Demir YK, Abdelghany S, Ryan E, Woolfson AD, Donnelly RF. *Recent Pat Drug Deliv Formul*. 2010;4(1):1-17.

## **Posters:**

Annual meeting of Ireland's School of Pharmacy, April 2009, encapsulation of cathepsin inhibitor E-64 as a model hydrophilic drug into PLGA nanoparticles. Abdelghany S, Fay F, Donnelly R, Scott C. Trinity College Dublin, Ireland.

Annual meeting of Pharmacy, March 2010, A sensitive fluorometric Enzymes activity assay for quantification of cathepsin inhibitors Abdelghany S, Pattani A, Fay F, Donnelly R, Scott C. Queen's University Belfast, UK

Annual meeting of Irelands schools of Pharmacy, April 2011, Gentamicin loaded PLGA nanoparticles enhanced its antibacterial effect in vitro, Royal college of surgeons, Dublin, Ireland.

The 15th Scientific Congress of the Association of Pharmacy Colleges in the Arab World & the 3rd International Conference of the Faculty of Pharmacy at the University of Jordan, 2013, Faculty of Pharmacy, University of Jordan.