Dr Hanene Ali-Boucetta PhD, MPharm, MRPharmS

Lecturer in Pharmaceutical Nanoscience

Pharmacy and Therapeutics

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About

Hanene is a lecturer in pharmaceutical nanoscience and part of the team developing the new Master of Pharmacy (MPharm) undergraduate degree programme within the College of Medical and Dental Sciences.

Hanene teaches and researches in pharmaceutics, drug delivery and nanomedicine. Her primary research interests are in the development and engineering of drug delivery systems to efficaciously target diseased areas. She is also interested in the area of nanotoxicology which allows for the design of safe drug delivery systems.

Hanene has published numerous papers in scientific journals as well as reviews and book chapters in the fields of drug delivery and cancer therapy, nanotoxicology and the biomedical applications of carbon based nanomaterials.

Qualifications

- PhD
- MPharm (Hons)
- MRPharmS
- Maplethorpe Fellow

Biography

Hanene graduated with a first class honours Master of Pharmacy degree (MPharm) from the School of Pharmacy, University of London (now the UCL School of Pharmacy) in 2006. Her interest in pharmaceutics and drug delivery started during her undergraduate studies especially after choosing the drug delivery module that was then led by Prof. A. T. Florence and Prof. K. Kostarelos and increased upon completing her MPharm project working on the interaction between phospholipid membranes (liposomes) and therapeutic nanomaterials under the supervision of Prof. Kostarelos.

Straight after her MPharm, Hanene joined the Nanomedicine Laboratory at UCL School of Pharmacy for a PhD investigating the pharmacokinetics and toxicology of carbon nanotubes and their development into effective nanovectors for cancer therapeutics.

Upon completion of her PhD, Hanene was awarded the prestigious C W Maplethorpe Research and Teaching Postdoctoral Fellowship from the University of London. She then remained in the Nanomedicine Lab (UCL School of Pharmacy) as a research and teaching fellow working on the development of carbon nanotubes as multimodal modalities for cancer therapeutics. She was also involved in other projects such as the development of graphene oxide for biomedical applications in which she collaborated with the 2010 Nobel Prize winners of Physics. As a Maplethorpe teaching fellow; Hanene was also involved in teaching MPharm, MSc and MRes students. She was a co-module leader of the Nanomedicine & Targeted Delivery module and taught lectures ranging from the areas of nanomedicine, cancer drug delivery to nanotoxicology and nanotechnology in diagnostic devices. She has also supervised MPharm, MSc and MRes students with their projects and provided them with technical training, guidance, progress assessment and feedback about their work.

In September 2012; Hanene joined the School of Clinical and Experimental Medicine as a lecturer in pharmaceutical nanoscience as part of the team developing the new integrated MPharm degree at the University of Birmingham.

Teaching

MPharm Undergraduate Degree Programme

Postgraduate supervision

Hanene is interested in supervising research projects in the following areas:

- Nanomedicine
- Drug Delivery Systems
- Carbon Nanotubes and Carbon based Nanomaterials
- Cancer Therapeutics
- Nanotoxicology

Research

Hanene's current research interests are in the development of carbon nanotubes and other delivery vectors for cancer therapy and other disorders requiring an effective delivery vector. In addition, she is interested in efficient intracellular delivery and targeting of small molecules (anticancer drugs) and macromolecules (protein and nucleic

acid). She has extensive experience in the area of nanotoxicology in which she developed a toxicity assay for the assessment of the cytotoxicity of carbon based nanomaterials which is now widely used especially in the nanomedicine Lab (UCL School of Pharmacy). She has also collaborated with the 2010 Noble prize winners of Physics working in the development of graphene oxide for biomedical applications. Her research philosophy spins around the safe and efficacious delivery of medicines to the site of action using drug delivery vectors and carriers.

Other activities

Co-editor of special issue on “Carbon Nanotubes in Medicine & Biology" to be published within the journal **Advanced Drug Delivery Reviews** (ISI® 2010 Impact Factor: 11.502)

Publications

Ali-Boucetta, H., Bitounis, B., Nair, R. R., Servant, A., Bossche, J. Van den., Kostarelos, K. (2012), Purified graphene oxide dispersions do not show in vitro cytotoxicity and in vivo pathogenicity. **Advanced Healthcare Materials**, in press, doi: 10.1002/adhm.201200248.

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Ali-Boucetta, H., Al-Jamal, K.T., McCarthy, D., Prato, M., Bianco, A., Kostarelos, K. (2008) Multiwalled carbon nanotube-doxorubicin supramolecular complexes for cancer therapeutics**. Chemical Communications** 4:459-461.

Lacerda,L., Ali-Boucetta, H., Herrero , M.A., Pastorin , G., Bianco , A., Prato, M.,Kostarelos , K.(2008) Tissue histology and physiology following intravenous administration of different types of functionalized multiwalled carbon nanotubes**, Nanomedicine**, 3(2):149-161.

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