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# **Application of Nanoparticles in Cancer Therapy and Diagnosis**

Guest Editors:

#### Dr. Liane Isabel Ferreira Moura

BioNanoSciences—Drug Delivery & Immunotherapy Group, Research Institute for Medicines (iMed.ULisboa), Faculty of Pharmacy, University of Lisbon, Lisbon, Portugal

#### Dr. Murtaza M. Tambuwala

School of Pharmacy and Pharmaceutical Science, Ulster University, Coleraine BT52 1SA, UK

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## Message from the Guest Editors

Several studies have demonstrated that the trapping of anticancer medications in submicronic colloidal systems, such as nanoparticles, can help to regulate both the tissue and cell distribution characteristics of these treatments. Additionally, nanoparticles are useful for the targeted delivery of oligonucleotides to tumour cells. Furthermore, several types of nanoparticles have shown an intriguing ability to overcome MDR resistance. Polymeric nanoparticles, liposomes, dendrimers, nano-shells, carbon nanotubes, superparamagnetic nanoparticles, and nucleic acid-based nanoparticles are examples of current nanotechnology platforms used for anticancer drug delivery. Recently, nanotechnologies are also being used in combination therapeutic strategies, such as ultrasound, hyperthermia, or photodynamic therapy. Decorating nanoparticles with a molecular ligand for the 'active' targeting of cancerous cells is considered as the next step in developing better cancer targeting strategies using nanoparticles. Applying nanoparticles in imaging for cancer diagnosis could lead to early detection and, consequently, improved cancer management.



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#### Prof. Dr. Patrick J. Sinko

Department of Pharmaceutics, Ernest Mario School of Pharmacy, Rutgers University, Piscataway, NJ 08854, USA

#### Message from the Editor-in-Chief

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*Pharmaceutics* Editorial Office MDPI, St. Alban-Anlage 66 4052 Basel, Switzerland Tel: +41 61 683 77 34 www.mdpi.com mdpi.com/journal/pharmaceutics pharmaceutics@mdpi.com X@MDPIpharma