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Fourth International Nanomedicine and Drug Delivery Symposium (NanoDDS'06)

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This issue of the Journal of Controlled Release offers several publications from participants of the Fourth International Nanomedicine and Drug Delivery Symposium (NanoDDS'06: www.nanodds.org/) held on October 8–10, 2007 in Omaha, Nebraska, USA [1]. This symposium focused on recent advances in nanomedicine, especially nanosystems for diagnosis and therapy of human diseases. The 2006 symposium continued a series of meetings initiated as a joint US/Japan Mini-Symposium in 2003 in Omaha, Nebraska and followed by the second symposium in 2004 in Brooklyn, New York [2,3] and the third symposium in 2005 in Baltimore, Maryland [4]. The fourth symposium attracted nearly 180 scientists from 16 countries, 24 leading experts as guest speakers and several dozen poster presenters. One of the initial symposium series organizers, Prof. Kazunori Kataoka of University of Tokyo, Japan presented a Plenary Lecture in honor and memory of late Professor Victor A. Kabanov (1934-2006). The topics of invited lectures covered nanomaterial chemistry and engineering, fate and function of nanoparticles in cells, nanomedicines for cancer therapy, nanotechnology approaches for bioimaging, pathology and therapy of neurodegenerative disorders and pathogen detection. A panel of leading academic and industrial scientists critically discussed challenges in clinical development of novel nanomedicines.

This issue presents some important topics that were covered during the 2006 symposium. Particular attention is in design and evaluation of novel nanomaterials for drug and gene delivery. One of the articles discusses fabrication of polymeric nanoparticles by innovative lithographic technique. Another article provides an update on formulations of biodegradable nanogel carriers for delivery of nucleoside analogs into a cell. Of significant interest to the readers will be an article discussing particle shape as an important design parameter for micro- and nanoscale drug delivery carriers. A theme of gene delivery is presented by several publications including development of novel colloiddally stable copolymer systems for gene delivery and use of multicellular tumor spheroids for screening non-viral polymeric gene vectors with low cytotoxicity and high transfection efficiencies. Considerable attention is also in development of innovative approaches for analysis of the intracellular behavior of DNA nanoparticles such as fluorescence correlation spectroscopy. All together, we believe that this issue will be of interest to numerous readers of the journal and will nicely supplement two other recent special issues presenting original and review contributions from the previous symposia of this series [3,4].

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The need for the discovery and development of technologies to improve the delivery of therapeutic and diagnostic agents in the body has been widely recognized. The use of nanoscale technologies to design novel drug delivery systems and devices is a rapidly developing area of biomedical research that promises breakthrough advances in diagnosis and therapy. During four years of its existence the International Nanomedicine and Drug Delivery Symposium series has emerged as one of the best meetings in its field. The fifth symposium (NanoDDS'07) will be held in Boston, Massachusetts, on November 2-3, 2007 [5]. It will focus on the "next generation" therapies to deliver drugs, radionuclides, therapeutic proteins and recombinant DNA to focal areas of disease or to tumors to maximize clinical benefit while limiting untoward side effects.

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