Available online at www.sciencedirect.com
SCIENCE DIRECT®
International Journal of Pharmaceutics 288 (2005) 1
international journal of pharmaceutics
www.elsevier.com/locate/ijpharm

Editorial

Nanotechnology has been widely applied and developed in the field of electronics for the production of highly accumulated electric circuits in nano sizes. Nanotechnology is not independent of existing science or technology. Particularly in the field of pharmaceutical sciences, it means the science and the technology developed for the design, synthesis, fabrication, and characterization of molecular systems or molecular recognition materials that lead to the development of therapeutic systems at molecular scales with precision and specificity. They can be designed to interact with cells and tissues at a molecular level with a specified physiological function and can be most promising tools to satisfy unmet medical needs in several therapeutic fields, for example the treatment of respiratory diseases, disorders in the central nervous and cardiovascular systems. Other examples are drug delivery systems in therapies for cancer, vectors for hormones and also vaccines.

In IJP, we now have a special section devoted to pharmaceutical nanotechnology and would encourage authors to publish on the design, development, and characterization of new nanosystems. Biodegradable nanoparticles are often used as carriers of drug delivery systems. Drug delivery systems of nanoparticulates with molecular recognition capability should allow efficient drug accumulation at targeted sites. Polymeric micelles are formed by amphiphilic block polymers and utilized as drug carriers for systemic delivery of practically water-insoluble drugs.

In order to identify and characterize nanomaterials or nanosystems, information on individual molecular systems is required. Without the progress of molecular or atomic characterization techniques, it would be difficult to collect such information. Some of the examples of recently developed analytical techniques and instruments are fluorescence resonance energy transfer techniques, highly focused synchrotron X-ray sources for X-ray diffraction, reflection high-energy electron diffraction, scanning tunneling microscopy and atomic force microscopes. These are very useful tools to characterize nanosystems. This Journal encourages authors to publish methodology for the characterization of nanosystems as well as information on their interaction with biological membranes or cells.

Tsuneji Nagai (Editor-in-Chief)
Takashi Sonobe (Associate Editor)
Japan and Far East

0378-5173/$ – see front matter
doi:10.1016/j.ijpharm.2004.11.001