



Preface

It was for the fifth time that the Slovenian Pharmaceutical Society and the Faculty of Pharmacy, University of Ljubljana, acted as the organizers of the Central European Symposium on Pharmaceutical Technology and Biotechnology under the patronage of the European Federation of Pharmaceutical Sciences and the Controlled Release Society—Slovenian Local Chapter. The symposium was held on September 25–27, 2003, in Ljubljana, Slovenia, to present internationally recognized achievements of research laboratories of pharmaceutical industries and universities in the areas of pharmaceutical technology and biotechnology.

The symposium runs on a regional level and regained new perspectives in 2001 when the fourth one was organized together with our Austrian colleagues in Vienna. Moreover, 22 out of 154 papers were selected and the authors were asked to prepare full length papers that were included in a special issue of IJP, the International Journal of Pharmaceutics which originated in April 2003. Furthermore, it is our aim to continue our activities in terms of preparing the sixth symposium in Hungary in 2005.

The 2003 symposium presented novelties in the research on drug formulations, technological and biotechnological processes and drug transport processes. It was clearly demonstrated that the interrelationship between these three topics successfully provides an insight into problems linked with incorporation of drug substance, which can be either low or high molecular weight compound, into drug formulations, and the extent and rate of its release in the biological system. A special emphasis was devoted to the processes that take place inside drug formulation and at the interfacial surfaces between the drug substance and the excipients, between the drug formulation and the biological system, and between drug substance and

biological system. Understanding these processes is of critical importance for the development of advanced controlled and targeting drug delivery systems.

At the symposium, 113 contributions appeared as oral and poster presentations and published in the form of two-page abstracts in the Pharmaceutical Journal of Slovenia. After that, 23 authors representing various research groups were selected and asked to prepare full length papers to be included after review in the present issue of International Journal of Pharmaceutics. The presenting authors report on the research related to the properties of drug (prodrug) substance (physical and chemical stability, solubility, polymorphism, lipophilicity, particle size, surface characteristics), which have to be examined before incorporation in drug formulation because of their influence on the incorporation process itself and the behaviour when coming into contact with the components of biological system. Special attention is also paid to the properties of excipients (polymers, lipids, surfactants, bioadhesives, bioconjugates, lyoprotectants, antioxidants, antiadsorbents, aggregation blockers) such as rheological properties, charge, viscosity of dispersions, hydration, swelling and adhesion, which have a deciding influence on the processes taking place within the biological system. The properties of these molecules must meet specific criteria as to their chemistry, geometry, stability, biocompatibility and biodegradability. Since certain properties of biological systems and their influence on interactions and transport of drug substances is of great importance, contributions dealing with this are also included in the present issue. The models of growing complexity in the order: *in vitro* models, cell cultures, isolated tissues, isolated organs, *in vivo* models, are applied as well to study transport and interactions of pharmaceuticals and biopharmaceuticals and show the

diversity of structural and functional characteristics of the system. Among drug formulations, special attention is drawn to inclusion complexes, liposomes, solid dispersions, microspheres, pellets and nanoemulsions. Contributions covering special modes of application such as nasal and transdermal are included as well.

I am much obliged to Prof. A.T. Florence and Elsevier for giving me again the opportunity to publish by this means the proceedings of the symposium with a view to generate new knowledge for the benefit of further development of pharmaceutical technology and biotechnology. I would like to thank Prof. Julijana Kristl and Asst. Profs. Marija Bogataj, Franc Vrečer and Janez Kerc for their critical review of the abstracts

in the process of selecting the papers that appear in the present issue of IJP. I owe a great debt of thanks also to Dr. Tomaz Vovk for his technical and logistic support. Without his help, this issue would not spring up. And finally, thanks to the authors of the papers and the referees for their contribution to subsequent progress of international scientific community.

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