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Emerging technologies in controlled long term delivery of ocular therapeutics

Ashim K. Mitra University of Missouri-Kansas City, USA

cular drug delivery remains a challenging task due to restrictive barrier functionalities of the eye structures. Dynamic and static ocular barriers impede transport and efficacy of various topically or systemically administered medications. New technologies for delivery of small molecules and biologics are of growing interest among clinical pharmacologists and pharmaceutical scientists for treating both anterior and posterior segment disorders. The major challenge is to deliver drugs and biologics at therapeutic concentrations to the targeted ocular tissues with minimal side effects. A better understanding of physiological and pathological conditions of the eye along with various methods of delivery would aid in the development of novel therapeutics. Nevertheless, delivery systems that can efficiently target the diseased ocular tissues, generate high drug levels, and maintain prolonged and effective concentrations are highly desirable. Such emerging drug delivery technologies have the potential to maintain and/or improve drug's therapeutic index. It can also boost both patient adherence to chronic therapy and patient outcomes. This symposium will provide both trainees and clinicians with an educational background for the development of novel therapeutic modalities to efficiently overcome major challenges associated with ocular drug delivery. Speakers will cover topics for improving drug penetration through ocular barriers and novel drug delivery approaches for delivering both small molecules and biologics at specific ocular compartments. Current momentum in the development of new drug delivery systems hold a promise towards much improved therapies for the treatment of vision threatening disorders such as age-related macular degeneration (AMD), diabetic macular edema (DME), proliferative vitreoretinopathy (PVR), uveitis and glaucoma. Emerging technologies that would provide controlled long term delivery of ocular therapeutics through less invasive routes for targeting intraocular tissues will be major highlights of this symposium.

Biography

Ashim K. Mitra received his Ph.D. in Pharmaceutical Chemistry in 1983 from the University of Kansas. He is currently a Curator's Professor of Pharmacy at the University of Missouri-Kansas City. He is also the Vice Provost for Interdisciplinary Research and Chairman of the Division of Pharmaceutical Sciences, and Codirector of the Vision Research Center at the University of Missouri-Kansas City School of Medicine. He has conducted extensive research in various drug delivery technologies, including ocular drug delivery for the past three decades. He has published nearly 300peer reviewed scientific research and review articles in high impact international journals. He has presented over 350 abstracts at scientific meetings, including the annual American Association of Pharmaceutical Scientists (AAPS), the Society of Toxicology, and The Association for Research in Vision and Ophthalmology (ARVO) conferences, and has given over 100 presentations to a wide audience (including several universities, pharmaceutical companies and scientific organizations).

MitraA@umkc.edu