Nanomedicine to Treat Corneal Transplantation Rejection

Wednesday, November 1, 12:00 p.m. East Hall Room 1232

Dr. Qingguo Xu
Assistant Professor, Department of Pharmaceutics, School of Pharmacy
Virginia Commonwealth University

Abstract
Immunological graft rejection is the main cause of graft failure for corneal transplantation. Typical interventions for prevention of graft rejection are a prescription for topical corticosteroid eye drops that must be frequently administered. When there are early signs of graft rejection, drop administration is even more frequent up to once every one hour while awake. Long-term, frequent topical use of corticosteroids leads to poor patient compliance, and for those that comply, risk of elevated intraocular pressure (IOP). Here, I will describe a new method to provide sustained delivery of a common corticosteroid, dexamethasone sodium phosphate (DSP), by SCT administration to safely prevent and treat corneal graft rejection. In this talk, I will demonstrate how new nanomedicine can be designed with the goal of improved treatment of ocular disorders.

Biography
Qingguo Xu is an Assistant Professor of Pharmaceutics, Ophthalmology (affiliate) at the Virginia Commonwealth University. After receiving B.E and M.E. in Polymer Materials and Engineering from Tianjin University in China, he was awarded a Dorothy Hodgkin Scholarship to pursue a PhD in Materials at the University of Oxford with research focus on biomaterials and drug delivery. After his PhD, Dr. Xu worked as a Process Scientist in Unilever R&D center in England for two years prior to joining the Johns Hopkins School of Medicine as a postdoctoral fellow in the Center for Nanomedicine, where he worked with Justin Hanes, and 3 years later he became a Research Associate. Dr. Xu has experience in materials science, drug delivery, nanotechnology, and physiochemical characterization of mucosal and tissue barriers to drug delivery systems. A significant portion of his current work has involved the design and development of new methods for safe, effective drug delivery to the eye to treat various ocular disorders.