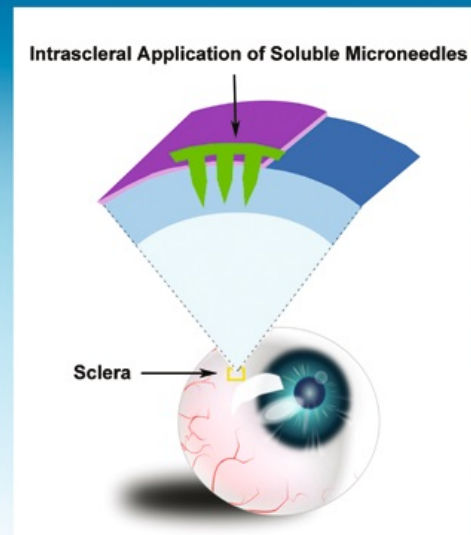
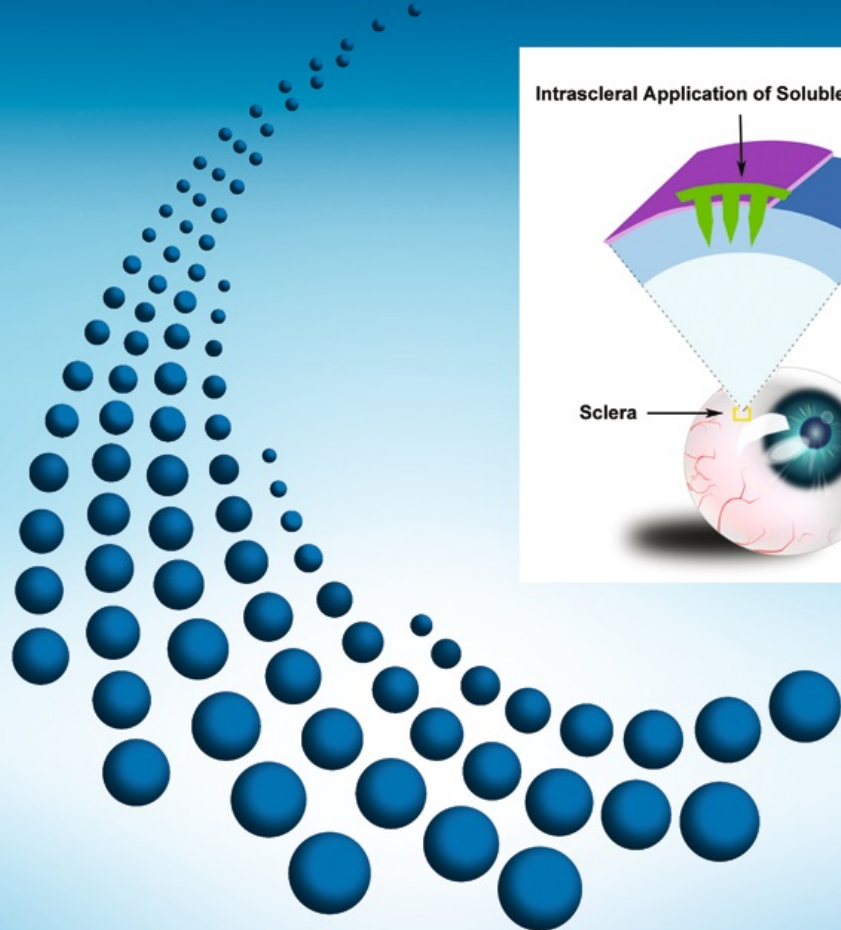


Global experts discuss new approaches and innovations in ocular drug delivery systems

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DRUG DELIVERY* and *TRANSLATIONAL RESEARCH

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Leading Delivery Science and Technology



A special issue on ocular drug delivery just published in the journal *Drug Delivery and Translational Research*. Credit: Springer/Controlled Research Society

The estimated number of visually impaired people in the world is 285 million, with 39 million blind people. About 65 percent of visually impaired people and 82 percent of all blind people are 50 years or older. Four major blinding diseases are age-related macular degeneration, diabetic retinopathy, diabetic macular edema, and glaucoma, due to their whole or partial impact on the posterior segment of the eye.

Current therapeutic options for these diseases may at best manage the condition, slowing or halting further deterioration or disease progression. New breakthrough treatments would benefit from robust sustained delivery of the drug to the target tissues in the posterior segment and, importantly, enhance compliance of patients with long-term treatment regimens for these chronic diseases—for example, avoiding or reducing the need for frequent injections. These drug delivery challenges to the posterior segment of the eye, for both small and large molecules, provide a significant market opportunity for the development of new therapies based on enhanced drug delivery methods and technologies.

The technologies required to deliver agents specifically and effectively to the eye are rapidly evolving. These technologies will have the potential to radically alter the way many diseases are treated, especially retinal blinding diseases. The next decade promises great strides in therapy for many currently poorly treated or untreatable ocular diseases. The future for sustained-release ocular drug delivery lies in reducing the treatment burden by innovations in delivery technology, biologics delivery, targeting gene therapy to the appropriate cell types, and combining effective small-molecule therapeutics with the appropriate

drug delivery system. Patient compliance and convenience will be key drivers for drug delivery success.

In order to address these topics, a special issue entitled "Ocular Drug Delivery" has just been published in *Drug Delivery and Translational Research*. It is co-edited by Dr. Ilva Rupenthal, Senior Lecturer and Director of the Buchanan Ocular Therapeutics Unit at the University of Auckland, New Zealand, and Michael O'Rourke, President of Scotia Vision Consultants, who has a track record of launching several products in the market. The special issue contains articles by recognized global experts and researchers in the field of ophthalmic drug delivery, covering a broad spectrum of drug delivery topics including current challenges faced with regard to the ocular barriers presented and establishment of suitable models to drive future technology success.

"The demand for new sustained release ocular drug delivery systems has never been greater. With the growing incidence and prevalence of the major eye diseases, patients and doctors are seeking new approaches to deliver therapeutics including both small and large molecules, balanced with the need to reduce the frequency burden of repeat intravitreal injections. New innovations will come from a greater understanding of the pharmacokinetics and technical demands of matching a drug with a sustained release delivery platform. This publication will address these needs and help push our understanding of ocular [drug delivery](#) to the next level," said Michael J. Cooney, MD, MBA, a retinal physician practicing in New York, U.S.A.

The market for potential new technologies is significant; the global pharmaceutical market was estimated at \$18.1 billion at year end 2013 and is estimated to grow to approximately \$23 billion by year end 2018. Within this time period, retinal pharmaceuticals are demonstrating the greatest growth, from \$6.9 billion to \$9.9 billion, or 7.5 percent compounded annual growth (CAGR). Glaucoma is the second largest

segment, with a projected \$5 billion in 2018 (3.1 percent CAGR), followed by dry eye at \$3.1 billion (4.3 percent CAGR).

More information: *Drug Delivery and Translational Research*, Volume 6, Issue 6, December 2016: Special Issue: Ocular Drug Delivery. Guest Editors: Ilva D. Rupenthal and Michael O'Rourke link.springer.com/journal/13346/6/6/page/1

Provided by Springer

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