

# 4<sup>th</sup> International Conference on Clinical & Experimental Ophthalmology

July 14-16, 2014 DoubleTree by Hilton Baltimore-BWI Airport, USA

## Non-degradable and biodegradable implants

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Oligonucleotides, peptides and proteins remain a significant challenge for sustained or controlled delivery. Many of these agents have been clinically validated in ophthalmology with great success as exemplified by Macugen®, Eylea® and Lucentis®. However, there remains a critical unmet medical need to sustain or target the delivery of these agents. The clinical application of macromolecule drug substances is limited due to poor bioavailability and disposition. Direct intravitreal administration of these agents mitigates the issues of poor bioavailability, however short half-lives relative to duration of therapy results in a requirement for frequent high dose administrations.

Current strategies and recent advances for the sustained delivery of macromolecules will be reviewed. Intravitreal delivery considerations for these agents not only includes sustained release, but also enhancing cellular their therapeutic profile. Prevention of aggregation and degradation in addition to sustained release are keys to enabling local delivery of these agents. In this presentation advances in the delivery of these therapeutic agents will be reviewed.

### Biography

Patrick M. Hughes is the Vice President, Drug Delivery at Allergan, Inc. responsible for preformulations, early candidate formulations, and developing novel drug delivery systems for small molecules and macromolecules. Patrick also serves as Global Project Leader for several drug delivery development projects. Patrick has authored numerous manuscripts and book chapters on ocular pharmacokinetics and drug delivery. Additionally, he co-edited an edition of Advanced Drug Delivery Reviews. He has more than 20 US patents and 70 patent applications in the area of drug delivery. Patrick Hughes received a BS degree in Pharmacy and a Ph.D. in Industrial and Physical Pharmacy from Purdue University. At Purdue Patrick worked on ophthalmic prodrugs and ocular pharmacokinetics.

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