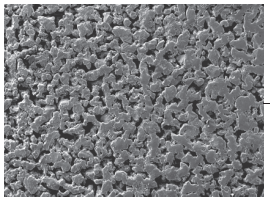
LARGE PHARMA OPHTHALMOLOGY MONOCLONAL ANTIBODY DRUG DELIVERY IMPLANT ACHIEVES OVER 98% CLINICAL SUCCESS USING MOTT DRUG DIFFUSION TECHNOLOGY

Mott's implantable drug diffusion technology is part of a revolutionary ophthalmology monoclonal antibody delivery system that has shown success in clinical trials with patients. A precision biocompatible titanium release control element was engineered specifically to meet the drug's requirements and dosage regimen to successfully treat wet age-related macular degeneration.

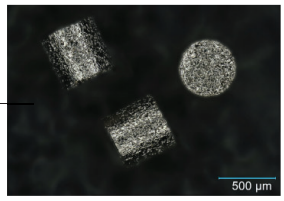
The implanted reservoir-based passive diffusion device, approximately 8mm long by 2mm wide, replaces a monthly drug injection. The monoclonal antibody solution is released directly into the vitreous humor via a controlled diffusion process. Refilled every 6 months with a simple outpatient procedure, the device is strongly preferred by patients over monthly injections in the clinical study.

KEY CLINICAL RESULTS

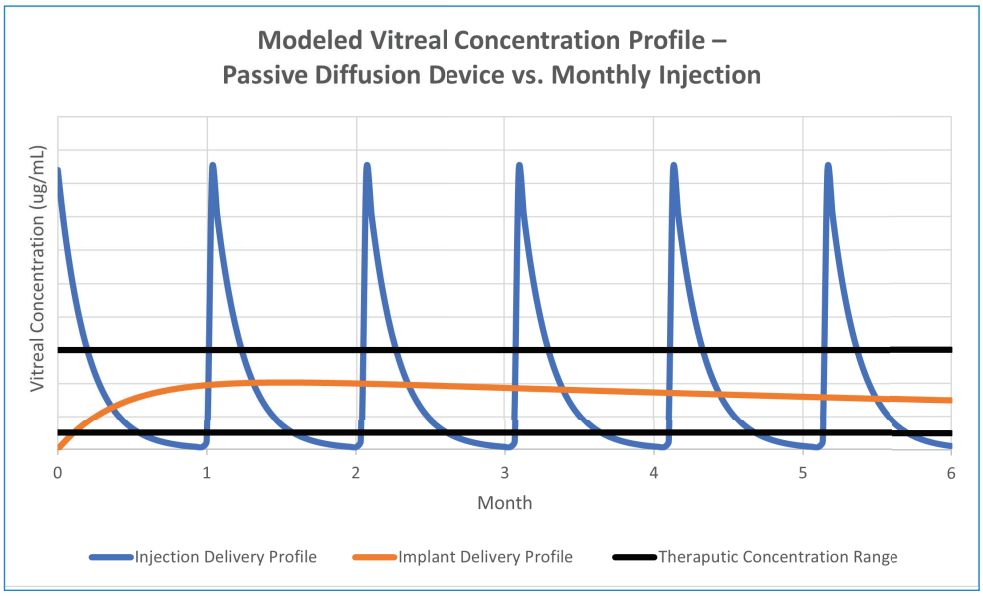
- Single dose therapeutic window extended to 6 months, showing higher mean serum concentration levels and reducing concentration variability by half relative to injection.
- Less than 2% of patients experienced adverse events by week 40.
- Implant refilled successfully, with 95% of patients not requiring supplemental treatment.



Magnified Element Surface



Release Control Elements



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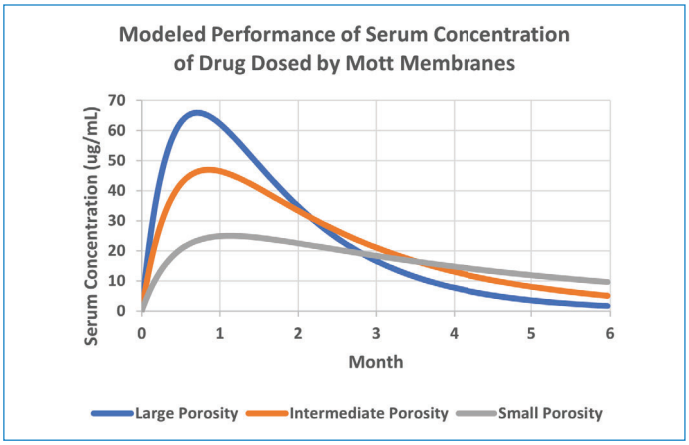
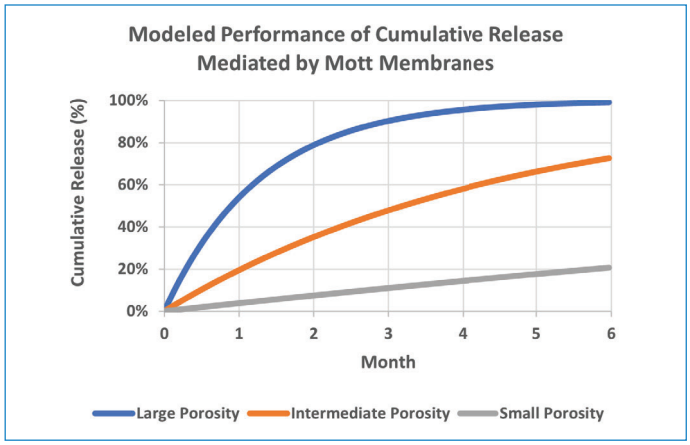
MOTT DESIGN CAPABILITY FOR IMPLANTABLE RELEASE DEVICES PROVIDES WIDE RANGE OF MOLECULE TYPES, DOSING REGIMENS, AND IMPLANT CONFIGURATIONS

HOW IT WORKS

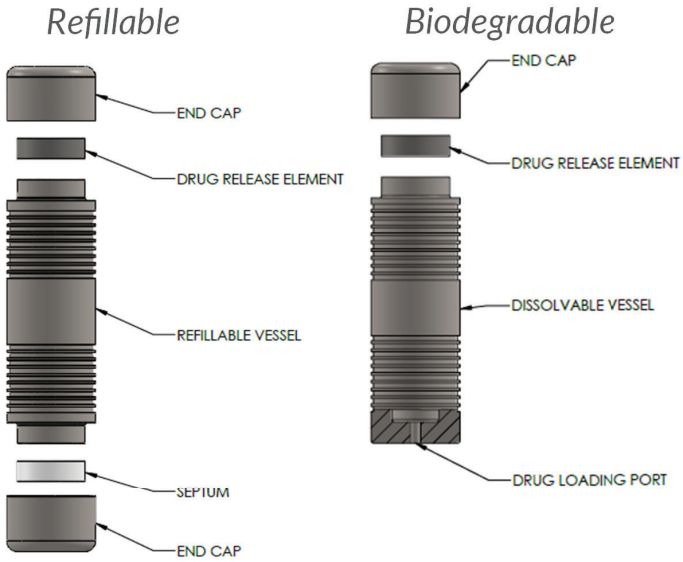
Mott's porous media properties and device dimensions are tailored specifically to control the diffusion rate of the drug molecule to achieve and sustain therapeutic dosages over weeks or months as needed.





DEVICE DESIGN TAILORED TO THE TREATMENT

Customized designs are available for delivery of a wide variety of compounds, such as small molecules, oligonucleotides, peptides/proteins/biosimilars, monoclonal antibodies, and lipid nanoparticles. Options available in both refillable and biodegradable designs to meet drug-specific requirements. Advanced proprietary modeling incorporating pharmacokinetic data is available to predict release rates within ± 30% of in vivo values. This can be a great advantage for overcoming toxicity challenges, dosing to specific areas, increasing patient compliance, and extending life cycles for existing approved drug molecules.



TYPICAL DESIGN RANGES

Size Ranges: 20 – 1,000 uL
Delivery Rates: 0.1 - 15% of dose/day
In vivo Release Variation: ± 6%
Compounds: 0.1 – 150 kDa and Nanoparticles
Excipients: Aqueous and non-aqueous

CONTACT US: Learn how we customize our technology specifically for your therapeutic agent!
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