

## COMPANY PROFILE: GRAYBUG



### GRAYBUG OVERVIEW

GrayBug is advancing ophthalmic therapeutics through a continuum of polymer-based drug delivery platforms and innovative products offering sustained competitive advantage. Its technologies include proprietary biodegradable drug-loaded nanoparticles, microparticles and injectable implants providing extended release of small to large molecules for intraocular applications to treat ocular diseases.

The company's business objective is to build and implement two synergistic development strategies in major global ocular disease segments:

1) **Proprietary Product Development Programs** with lead compounds in neovascular diseases such as age-related macular degeneration (AMD) and diabetic retinopathy, and glaucoma. Worldwide markets for AMD and glaucoma currently exceed US\$9 billion with significant market need existing for product enhancements and innovation through extended release drug delivery.

2) **Proprietary Polymer-Based Technologies** that deliver a wide range of drugs, including small molecules, peptides, proteins, aptamers, and other biologics.

### VALUE PROPOSITION

- Unique continuum of drug delivery platforms – small to large molecule spectrum including proteins – micro and nanoparticles, injectable implants
- Customised development for target drug
- Proven success rate with multiple molecules tested to date

- Significant reduction of inflammation associated with conventional particles, including PLGA microparticles
- Efficacy in multiple animal models for multiple drugs in the pipeline
- Published preclinical data – proof of concept for platform technology.

### PROOF-OF-CONCEPT

Proof of concept has been demonstrated in animals for all products in the pipeline (see Figure 1) including GrayBug's AMD and glaucoma drug candidates. The company's proprietary controlled-release drug delivery systems can be tailored to meet performance requirements of duration and rate of drug release. GrayBug possesses the technical expertise, experience, and capacity to collaborate with select partners in areas of mutual interest.

Our world-class team and advisors have over 100 peer-reviewed publications on the long-term, controlled delivery of biologics.

Products	Pathway Identification	API Selection	Formulation Development	In Vivo Efficacy	PK/PD	Non-GLP Toxicology	Lead Optimisation	GLP Studies	IND
Wet AMD	GB-102								
Glaucoma	GB-201								
	GB-202, GB-203 & GB-204								
Corneal Graft Rejection	GB-301								

Figure 1: Development pipeline showing milestone achievements.

“GrayBug’s controlled-release technologies may reduce dosing frequencies to only 2-3 times per year, which is expected to improve patient compliance and drug efficacy”



**Michael O'Rourke**  
President & CEO  
Former GM, VP Global Strategy  
Bausch + Lomb, Chiron Vision,  
Alza, Pfizer, and 3M



**Justin Hanes, PhD**  
Founder & CSO  
Lewis J. Ort Professor of Ophthalmology  
& Biomedical Engineering, Director of the  
Center for Nanomedicine at the Wilmer Eye  
Institute, Johns Hopkins School of Medicine

## GRAYBUG'S TECHNOLOGY

GrayBug's proprietary technologies allow customisable sustained release of all therapeutic classes, when delivered intraocularly (see Figure 2). GrayBug's controlled-release technologies may reduce dosing frequencies to only 2-3 times per year, which is expected to improve patient compliance and drug efficacy.

Pipeline products include GB-102, which is a single drug agent that inhibits multiple pathogenic angiogenesis signals, and innovative glaucoma therapies GB-201-204 for the controlled-release of intraocular pressure-lowering drugs and for long-term protection of the optic nerves to prevent blindness.

## SUMMARY

- GrayBug offers major product development opportunities for the extended and controlled release of small and large molecules including proteins
- Strong intellectual property position. Two issued US patents, and US and international patent application families protecting two drug delivery platform technologies through 2031
- Proprietary preclinical product development programs in AMD and glaucoma
- Strong and experienced management team in ocular drug delivery development and commercialisation, and world-class leaders in development of long-lasting protein delivery systems
- Awarded four Small Business Innovation Research (SBIR) grants

"Our world-class team and advisors have over 80 peer-reviewed publications on the long-term, controlled delivery of biologics"

GrayBug welcomes invitations from interested parties to enter discussions about significant business development and partnership opportunities.

## ABOUT GRAYBUG

GrayBug® is developing a continuum of proprietary controlled-release delivery technologies for strategic partnership and its own therapeutic products for major ocular diseases. GrayBug's technologies

were co-developed by GrayBug founder, Justin Hanes, PhD, who is the Lewis J Ort Professor of Ophthalmology at the Wilmer Eye Institute of the Johns Hopkins University, in collaboration with GrayBug co-founders, and leading clinician-scientists in ophthalmology from the Wilmer Eye Institute, Peter A Campochiaro, MD, and Peter J McDonnell, MD. The technologies were licensed from the Johns Hopkins University.

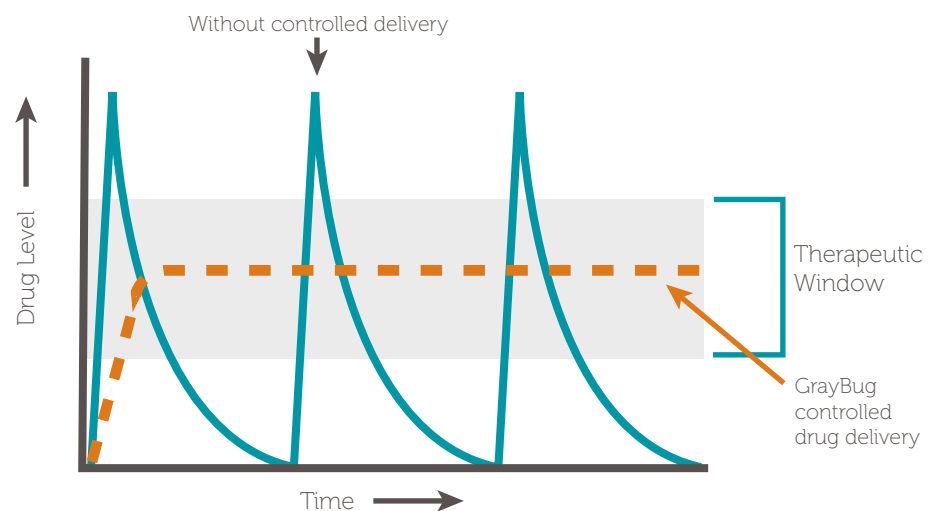


Figure 2: GrayBug controlled-release drug delivery.



**Peter Campochiaro, MD**

Founder

George S and Dolores Doré Eccles Professor of Ophthalmology & Neuroscience, Wilmer Eye Institute, Johns Hopkins School of Medicine



**Peter McDonnell, MD**

Founder

William Holland Wilmer Professor and Chair of Ophthalmology, Director of the Wilmer Eye Institute, Johns Hopkins School of Medicine

Contact: Michael O'Rourke, CEO  
T: +1 813 323 1438  
E: michael@graybug.com

**GrayBug**  
United States

[www.graybug.com](http://www.graybug.com)