

Dry Eye Invention Promises Novel Application of Nanotechnology

NEW YORK CITY, NEW YORK, USA, June 12, 2024 /EINPresswire.com/ -- An innovative approach for dry eye disease management has been patented in collaboration with Dr. Christopher Starr, a leading dry eye disease expert, global key opinion leader and associate professor of ophthalmology at Weill Cornell Medicine, and AT Research Partners.

Awarded as [US Patent 12,005,077](#), the invention is entitled, "Broad-Spectrum Antimicrobial, Biocompatible and Preservative-Free Functionalized Fullerenes Ophthalmic Solution with Reactive Oxygen Species Scavenging and Advanced Targeting, Penetration, and Hydration."

This new approach to ocular therapeutics is based on a bioactive, endogenously sterile solution that would target surface symptoms while providing oxidative cellular debris cleansing. As such, nanoparticles functionalized with halogens would allow for deeper penetration through intricate ocular barriers while combining antimicrobial and antioxidant properties to enhance tear film stability and moisture.

Upon commercialization, this innovation would also leverage the self-sterilizing properties of nanoparticles, which inherently prevent contamination and eliminate the need for traditional preservatives otherwise essential for consumer safety.

Untreated, dry eye disease is a multifactorial condition, characterized by the loss of tear film homeostasis. It can lead to ocular surface damage and a range of symptoms that can significantly impact overall health and quality of life, from mild irritation to severe discomfort and reduced vision. Dry eye disease affects up to 50% of the US population. With its prevalence varying significantly by region, the incidence is also increasing among younger demographics –



Christopher E. Starr, MD, FACS.

compounded by occupational, social, entertainment and gaming screen time.

AT Research Partners looks forward to working with Dr. Starr toward a commercialization collaboration with an appropriate industry partner.

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About AT Research Partners: [A.T. Research Partners](https://www.atresearchpartners.com) is an invention origination company focused on the development of intellectual property. Visit www.atresearchpartners.com to learn more about their expertise, achievements, and intellectual property portfolio.

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