

## A Treatment For Ocular Discomfort

### BACKGROUND

The surface of the eye is covered with a tear film which is replenished on blinking. The tear film is composed of an inner mucous layer and an outermost lipid layer that prevents evaporation and lubricates the eyelid. These lipids are found in oil which mainly comes from the Meibomian glands of the eyelid. The oil provides a barrier to the outside world and prevents quick evaporation of moisture. However, the lipid layer can in sometimes become disrupted leading to evaporation of the tear film, which in turn causes symptoms of dry eye.

Dry eye is an umbrella term used to describe a widespread ocular condition whereby a range of deficits to the tear film leads to uncomfortable eyes - which can range from minor itching to significant pain. Whilst mostly an uncomfortable condition, in serious cases sufferers may experience extreme sensitivity to light in addition to significant pain, and permanent deterioration in vision.

Although, dry eye can affect people of any age, middle-aged and older adults are most commonly affected by dry eye because of the high prevalence of contact lens usage, systemic drug effects, autoimmune diseases, and refractive surgeries for those in these age groups. Worldwide (in the 9 major worldwide markets) prevalence of dry eye is expected to increase from around 415 million people in 2015 to around 460 million people in 2024 (*Source: Global Data*).

Current treatments span the use of drops, sprays, and ointments and gels. These formulations, though effective to a point and well-received by some users, can present many drawbacks, from short to moderate residence times in the eye, to difficult application and undesired blocking of clear vision.

### THE TECHNOLOGY

The Eurolens Research Team at The University of Manchester have developed a lipid containing composition that can be delivered to the surface of the eye by easy application to the lid margin, along the Meibomian gland openings. The composition can be contained within a format that is resistant to contamination, and the resulting formula has a longer repeated use and shelf life. This treatment is delivered to the eye using an applicator.

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Tearscope Imaging – tear film at lid margin 5 mins after application.



Tearscope Imaging – tear film at lid margin, 11 hours post-application.

## KEY BENEFITS

- Long acting formula with single application
- Effective to alleviate dry eye symptoms
- No impact on vision
- Easy application
- Potential to also enhance natural release of oils into tear film
- Resistant to contamination
- Longer repeated use and shelf life
- Easy and cost effective manufacture due to well understood manufacturing methods
- Low regulatory hurdles expected.

## APPLICATIONS

The technology has application as an effective over the counter treatment for dry eye. The technology also has the potential to be used as a delivery mechanism to deliver ocular pharmaceuticals for sustained release and residency in the eye.

## INTELLECTUAL PROPERTY

The technology has been protected by a recent University of Manchester UK patent filing and PCT filing.

## OPPORTUNITY

The technology presents an excellent licensing and development opportunity to biotechnology or pharmaceutical companies offering over the counter eye-related therapeutics.

## CONTACT

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