

# Biodegradable polymer lenses integrated with an active principle and method to obtain them

Published date: Aug. 27, 2019

## Technology description

## FEATURES

The technology consists in a method for manufacturing biodegradable polymer lenses which include a mixture of polymers, an active principle and at least one excipient, These lenses allow to increase the contact time of the active principle with the ocular membrane increasing its bioavailability, besides to avoid the elimination of doses by the normal tearing of the eye; wherein the polymer mixture comprises: a first polymer that is used as a film-forming agent; a second polymer that is used to form a matrix to trap the active principle, thus allowing it to be released in a controlled manner; and, a third polymer whose function is to form part of the matrix for the controlled release of the active principle, and where the combination of the second polymer with said third polymer, confer to the lenses better properties of both resistance to rupture and bio-adhesion, making them more flexible.

### MARKET INFORMATION

Ocular inflammation constitutes a local response of the ocular tissues and its annexes to an aggression, which can be for various reasons; can cause irreversible damage to ocular function and structures attached to the eyeball, causing total blindness, without light perception, legal vision with 20/200 or visual field less than 30 degrees.

The incidence of uveitis and inflammatory eye pathology in developed countries is 15 to 17 cases per 100 000 inhabitants / year. It is the cause of 10% to 15% of new cases of blindness.

On the other hand, the size of the global ophthalmic drug market in 2016 was valued at USD 29.6 billion is expected to reach USD 42.6 billion in the year 2023.

The ophthalmic industry according to the purpose of the prescription is segmented into a) dry eye, b) glaucoma, c) infection / inflammation / allergy, d) disorders of the retina and e) others. This last segment is uveitis and conjunctivitis.

As can be seen, the drugs to treat inflammatory processes are in segments c) and e).

Regarding the pharmaceutical forms used to treat ophthalmic diseases, as can be seen in the following figure, liquids dominate the market.

# TECHNOLOGY READINESS LEVEL

According TRL level this invention corresponds to TRL 3, it means proof of concept research

## Application area

The main application of this technology is to self-administration eye medications, proposing itself as an alternative to existing pharmaceutical forms.

The objective of lenses is to medications to treat ocular inflammatory processes.

## Advantages

The contact lenses allow to increase the contact time of the active principle with the ocular membrane, increasing its bioavailability, in addition to avoiding the elimination of doses by the normal tearing of the eye. This will make the therapy more efficient for the patient, whether for local or systemic effects.

## Institution

[Universidad Nacional Autónoma de México](#)

联系我们



叶先生

电话 : 021-65679356

手机：13414935137

邮箱：yeyingsheng@zf-ym.com