INNOVECTIS
Ein Unternehmen der
Johann Wolfgang Goethe-Universität
Frankfurt am Main

Technology Offer

Solid eye drops:
Ocular drug delivery rethought

Benefits

- **Game-changing drug delivery system for ophthalmic drug delivery**
- **Immediately dissolving nanofibers prolong the contact time of drugs in the eye**
- **High drug stability, dosage accuracy, and drug recovery**
- **Superior cell viability and barrier integrity compared to conventional liquid eye drops**

Project Status

- **Very successful preclinical phase**
- **Further clinical development ongoing**

Patents

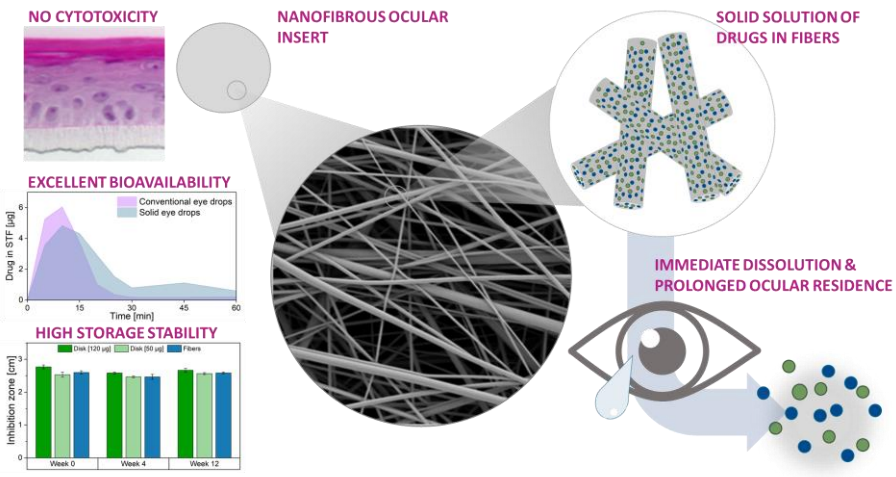
- **Europ. priority patent application: EP21181716**
- **Filed 25th of June 2021 by Goethe University**

Offer

- **Technology can be licensed or assigned**
- **Collaborations for further development welcome**

Scientists at Goethe-University Frankfurt am Main (Germany) have developed electrospun solid eye drops, with the potential to revolutionize ophthalmic drug delivery. Nearly every newly developed drug compound, from small molecules to antibodies up to mRNA, can easily be encapsulated within the system and applied to the patient's eye for adequate treatment of clinically relevant ophthalmic diseases.

The instantly dissolving nanofiber patches combine the advantages of solid drug delivery systems, such as high storage stability, consistent dosing, and antimicrobial properties, with the benefits of liquid eye drops. Unlike liquid drug formulations, solid eye drops require fewer excipients for stabilization, such as preservatives, since the actives are embedded in a water-free polymeric fiber. The fiber matrix quantitatively encapsulates the drugs in their active form, enabling an instant therapeutic effect on the eye.



When applied to the human eye, the nanofibers dissolve and form a gel releasing the drugs. This prolongs the contact of the actives on the ocular surface, thus reducing the application frequency for the patient and enhancing therapeutic efficacy. The biocompatibility of the developed solid eye drops was proven using an OECD-approved *in vitro* cornea model (OECD 492). In this, models treated with the developed solid eye drops display superior cell viability, barrier properties, and cell morphology compared to conventional liquid eye drops.

High dosing accuracy, increased ocular contact time, reduced excipients, and high drug stability during storage make this biocompatible system an attractive candidate for further clinical evaluation with excellent market potential in solving future challenges of ophthalmic drug delivery.

The Frankfurt University team looks forward to cooperating with commercial partners to transfer the invention toward industry and market exploitation.

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