Iontophoretic Ocular Drug Delivery (Hadasit)

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Need:

The introduction of various drugs to the cornea of the eye is a complicated procedure. The bioavailability of a drug when administered in eye drops is very low (less than 1% of the administered dose) due to continuous rinsing of the drug by the tears. An alternative method of administration of drugs is by subconjunctival injections into the eye. The injections require a physician, are very painful and may cause severe complications such as perforation of the globe and scarring of the conjunctiva bleeding etc. The major limitations of the iontophoresis system include the inability to control the delivery of the drugs in a solution form into the desired tissue, spill-off of the iontophoresis drug solution, and the intolerance of the patients to a current of more than 1 mAmp for more than 2 min (skin iontophoresis requires a current of >1 mAmp for 30 min). An efficacious and reproducible iontophoresis delivery system is of importance for treating and preventing ocular infections and other chronic and acute diseases of the eye.

Innovation:

The proposed product is a portable, easy to use, short duration iontophoretic device that ejects a high content of anionic or cationic molecules (i.e. a drug) from a soft gel upon application of a low current of