



A Review On Ophthalmic Drug Delivery Systems For Antibiotherapy

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ABSTRACT

The last fifty years, ophthalmic drug delivery research has made much progress, challenging scientists about the advantages and limitations of this drug delivery approach. Topical eye drops are the most commonly used formulation in ocular drug delivery. Despite the good tolerance for patients, this topical administration is only focus on the anterior ocular diseases and had a high precorneal loss of drugs due to the tears production and ocular barriers. Antibiotics are popularly used in solution or in ointment for the ophthalmic route. However, their local bioavailability needs to be improved in order to decrease the frequency of administrations and the side effects and to increase their therapeutic efficiency. For this purpose, sustained release forms for ophthalmic delivery of antibiotics were developed. This review briefly describes the ocular administration with the ocular barriers and the currently topical forms. It focuses on experimental results to bypass the limitations of ocular antibiotic delivery with new ocular technology as colloidal and in situ gelling systems or with the improvement of existing forms as implants and contact lenses. Nanotechnology is presently a promising drug delivery way to provide protection of antibiotics and improve pathway through ocular barriers and deliver drugs to specific target sites.