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Colloidal systems for the delivery of cyclosporin A to the anterior segment of the eye.

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Abstract

Due to the eye's specific anatomical and physiological conformation, the treatment of eye diseases is a real challenge for pharmaceutical therapy. The presence of efficient protective barriers (i.e., the conjunctival and corneal membranes) and protective mechanisms (i.e., blinking and nasolachrymal drainage) makes this organ particularly impervious to local drug therapy. To overcome these issues, numerous strategies have been envisioned using pharmaceutical technology. Many formulations currently on the market or still under development are emulsions or colloidal systems intended to enhance precorneal residence time and corneal penetration, causing a consequent increase in drug bioavailability after instillation. After a review of some recent developments in the field of cyclosporin A formulations for the eye, a novel micellar formulation of cyclosporine A based on a diblock methoxy-poly(ethylene glycol)-hexysubstituted poly(lactides) (MPEG-hexPLA) is described.