Ebru Basaran, Pharm Anal Acta 3:1
doi: http://dx.doi.org/10.4172/2153-2435.S1.07

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Pharmaceutics & Novel Drug Delivery Systems

20-22 February 2012 San Francisco Airport Marriott Waterfront, USA

TITLE

Ocular Application of Cyclosporine A using Chitosan Nanoparticles

Ebru Basaran

Anadolu University, Turkey

Cyclosporine A (CsA) is a potent ocular immunosuppressant mostly used to treat autoimmune uveitis and dry eye syndrome. Topical ocular administration of CsA provides a good alternative to the systemic delivery, however, due to its very poor water solubility, the formulation of CsA is a great challenge.

Most efforts in ophthalmic drug delivery have been devoted to increasing the corneal penetration of drugs with the final goal of improving the efficacy of treatments. CsA's solubilization within nanocarriers showed promising results for increased corneal penetration in in vivo studies. However, the short residence time of the colloidal systems in the ocular mucosa and therefore problem in obtaining the optimal drug concentration at the ophthalmic site of action are the major drawbacks related to the topical application of nanocarriers. To overcome those problems many approaches have been developed and among them the use of cationic nanoparticles has gained considerable interest due to their character in enhancing ocular penetration and higher stability.

Chitosan (CS) is a natural polymer derived from chitin by deacetylation has been studied extensively as a drug carrier, because it offers many advantages. It is one of the most promising polymers for drug delivery through the mucosal routes because of its polycationic, biocompatible, biodegradable and non-toxic nature, as well as its mucoadhesive and permeation-enhancing properties. In this study, incorporation of CsA into CS nanoparticles was successfully achieved using spray drying method. Characterization of the particles were analyzes in detail and the ocular penetration of CsA was evaluated using in vivo study results.

Biography

Ebru Basaran has completed her Ph.D about "Ocular Application of Cyclosporine A Using Solid Lipid Nanoparticles" at 2007. She is working as an Assist. Prof. at the Anadolu University Faculty of Pharmacy Department of Pharmaceutical Technology since 2007. She has attended over 10 international meetings as an oral presenter and she was awarded by NAGAI Foundation as the "Best Research Work" of FAPA meeting at 2008. She has 4 scientific publications