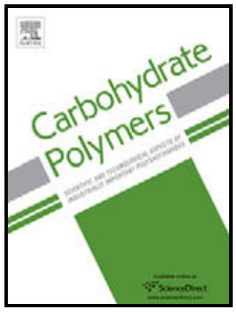

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Freeze-dried cylinders carrying chitosan nanoparticles for vaginal peptide delivery

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Highlights:

- - A practical and easily administrable vaginal system for peptide delivery was developed
- - Mucoadhesive Chitosan NPs loading with a model -peptide drug were developed
- - Freeze dried systems were able to deliver NPs into vaginal cavity
- - Peptide penetration into vaginal mucosa was obtained

Abstract

Recently nanoparticle-based vaginal drug delivery formulations have been acquiring great attention for the administration of peptide based-vaccines or microbicides to prevent or treat sexually transmitted diseases.

In this work, a straightforward and efficient strategy for the vaginal application and release of peptide-loaded mucoadhesive nanoparticles was developed. This essentially consists of chitosan nanoparticles encapsulated in suitable hydrophilic freeze-dried cylinders. Chitosan nanoparticles are responsible for carrying the peptide drug and allowing adhesion to the vaginal