

Search for...

Q Search

Search in: All Article Chapter eBook



Purchase PDF

Composite Microspheres of Rosin Gum and Ethyl cellulose for Controlled Release of an Anti-diabetic Drug: in-vitro and in-vivo Assessment

Author(s): Kumari Niharika, Hanakunti M. Nanjappaiah, Akram A. Naikawadi, Raghavendra V. Kulkarni.

Journal Name: Drug Delivery Letters

Volume 4 , Issue 3 , 2014

DOI : 10.2174/2210303104666140909004015 (<https://doi.org/10.2174/2210303104666140909004015>)

[Journal Home \(/node/696\)](#)

Abstract:

In the present work, an attempt was made to develop and evaluate composite microspheres for controlled release of an anti-diabetic drug, nateglinide (NTG). The composite microspheres were prepared using rosin gum and ethyl cellulose as retardant polymers for drug release by solvent evaporation method. DSC and XRD analysis indicated the uniform dispersion of drug in the microspheres. The microspheres were capable of releasing drug for 24 h and the drug release mechanism followed non-Fickian transport. In vivo anti-diabetic activity conducted on wistar rats indicated that the plain (unformulated) NTG showed maximum percent reduction in blood glucose up to 2 h and then the blood glucose was increased. While in case of rats treated with test microspheres (RN6), the percent reduction in glucose level was slow up to 2 h as compared to plain drug, then it was gradually increased to 72.83 % at the end of 24 h. Histopathology of rat pancreas suggested that the regeneration of β cells was seen in the rats treated with RN6 microspheres. It can be concluded from the study that, the prepared microspheres are versatile delivery systems for nateglinide, which could release drug for longer period of time.

Keywords: Controlled release, ethyl cellulose, microspheres, nateglinide, rosin gum.

Mark Item

Purchase PDF

Rights & Permissions

Print

Export

Other

Article Details

VOLUME: 4

ISSUE: 3

Year: 2014

Page: [227 - 235]

Pages: 9

DOI: 10.2174/2210303104666140909004015 (<https://doi.org/10.2174/2210303104666140909004015>)

Price: \$58

(/terms/termandcondition.html?1)

© 2017 Bentham Science Publishers (<http://www.eurekaselect.com/136826/page/terms-and-conditions>)

