



Preparation And Invitro Evaluation of Valdecoxib Nanosphere

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Abstract

Nanospheres can be elucidated as the colloidal systems where the therapeutic agents are enclosed in a colloidal polymeric matrix.

Keywords: Nanoparticles; polymers; evaporation technique, physical mixture

Introduction

Nanospheres can be elucidated as the colloidal systems where the therapeutic agents are enclosed in a colloidal polymeric matrix [1]. Usually the routes of administration of nanospheres are oral, local and systemic and are of small particle size, generally 10-200nm [2]. Nanospheres consist of drugs that are enclosed or dispersed in polymeric matrix, basically by dissolving or entrapment mechanism or encapsulation to the polymeric matrix. These nanospheres may be crystalline in nature or amorphous in nature and has the capability to save the drug from chemical and enzymatic degradation [3]. Nanospheres can be produced by various types of polymers. They are included under nanotechnology and can be called as nanoparticles.

Materials And Methods

Materials : Present research work involves the usage of materials such as parecoxib, which is the Active Pharmaceutical Ingredient and Eudragit, which is polymer. Acetone is used as a solvent. The profiles of API (active pharmaceutical ingredient)/drug, polymer and solvent are discussed here.

Results And Discussion

The nanospheres that are prepared are evaluated for particle size through scanning electron microscopy and other evaluations like drug polymer interactions through Differential scanning calorimetry and FT-IR. Entrapment Efficiency, zeta potential and *invitro* drug release are also evaluated for prepared nanospheres.

Conclusion:

From the results, it is concluded that the prepared parecoxib

loaded eudragit nanospheres are of great compatibility and has a higher drug release rate and surface morphology of smooth and round surfaces with the entrapment efficiency of 79.8 ± 0.32 . The Zeta potential of optimized formulation F3 was found to be -19.8mV and *Invitro* drug release of 92.5 ± 0.36 %. Thus these prepared parecoxib nanospheres can be effective in treating and efficient drug delivery.

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