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Preparation and evaluation of floating drug delivery system using natural polymers

M.V.N. Madhavi*, P.Subhash Chandra Bose[1] and Dr. R. Nagaraju[2]

Pharmaceutical Division, Mallareddy College of Pharmacy, Maisammaguda, Dhulapally, Secunderabad, India
[1]MNR College of Pharmacy, Sanga Reddy, A.P., India
[2]Institute of Pharmaceutical Technology, Sri Padmavathi Mahila Visva Vidyalayam (Women's University), Tirupathi, India

Natural polymers and their derivatives are used widely in pharmaceutical dosage forms. These natural polysaccharides hold advantages over synthetic polymers, generally because they are non toxic, less expensive and freely available. Biopolymers can be modified to have tailor-made materials for drug delivery systems and thus can compete with synthetic biodegradable materials available in the market. Ghatti gum and karaya gum are natural polymers obtained as gum exudates. The aim of the present work was to study the effect of ghatti gum and karaya gum as carriers in developing floating tablets using Tramadol as model drug. Tramadol is a opoid analgesic. It acts as a weak agonist at all types of opoid receptors with some selectivity for the mu-receptors. The formulations were prepared by varying the concentrations of polymers under study. The tablets were prepared by direct compression technique using PVP K-30 as binder and sodium bicarbonate for development of CO2. The prepared formulations were evaluated for hardness, thickness, friability, weight variation, floating capability, dimensional stability, swelling studies, erosion studies and FTIR for its compatibility. In vitro dissolution was carried out in pH 1.2 HCl buffer at 37±1 °C using basket type USP dissolution apparatus. The drug release from prepared tablets was found to be vary with vary in gum concentration. From the study it was concluded that floating drug delivery system can be prepared by using the use of natural polymers as carriers.

Brain targetted drug delivery system

M. Phanindra, D. Sai Praveen and B. Dileep

GITAM Institute of Pharmacy, Visakhapatnam, India

Existence of blood brain barrier renders the development of diagnostic and therapeutic agents for neurological disorders very challenging. The BBB which restricts the delivery of drugs or diagnostic agents to brain,is an uninterrupted monolayer of tightly connected endothelial cells covering the luminal surface of cerebral vasculature. Therefore various strategies have been proposed to improve the delivery of different drugs to this tissue which includes colloidal drug carriers, micelles, liposomes and nanotechnology.The review deals in about the status of BBB and different pathologies of the brain like neurodegenerative, cerebrovascular and inflammatory diseases. The first part of the poster aims to review the strategies developed to circumvent the BBB and deliver drugs into the brain. The use of nanotechnology, its recent trends in the development of magic bullet a smart nano vehicle(SNV) that can penetrate the BBB and deliver drug to specific region of brain, nanoparticulate pebbles to treat cancers and drug delivery through liposomes are discussed which are crucial part of the poster contains future aspects of brain drug targeting.

Antihypertensive transdermal patches

K. Mani Kumar
GITAM University, India

In the present era Antihypertensive transdermal patches are useful in enhancing the bioavailibity as well as in improving the patient compliance. Currently a number of antihypertensive transdermal patches are introduced in to the pharmaceutical market. Clonidine was the first antihypertensive drug developed in the transdermal form. Most of the reported methods in the literature employed solvent evaporation method or solvent casting method for the preparation of transdermal patches. Depending on the release required over a period of time, the concentrations of polymer, plasticizer and penetrant were varied. Transdermal dosage forms, though a costly alternative to the conventional formulations, are becoming popular because of some unique advantages . Controlled zero-order absorption, simple administration mode and the option of easy removal in case of adverse manifestations make them particularly desirable in cardiovascular therapy also . The disadvantages of antihypertensive drugs such as more frequent of administration, extensive first pass metabolism and variable bioavailability, make it is an ideal candidate for transdermal drug delivery systems. Nitroglycerin and isosorbide dinitrate, the two antiischaemic drugs; and clonidine as said earlier are being extensively used in the transdermal form. Studies that compared these patches with the established dosage forms had shown that though patches were costlier than conventional prescription products, they reduced the occurrence of hospitalization and diagnostic costs. Currently a number of antihypertensive drugs are being developed for transdermal administration.