J Bioequiv Availab, 4.3
doi: http://dx.doi.org/10.4172/0975-0851.S1.11

OMICS Group Conferences
Accelerating Scientific Discovery

3rd World Congress on
Bioavailability & Bioequivalence

March 26-28, 2012 Marriott Hotel & Convention Centre, Hyderabad, India

Design and evaluation of Olmesartan Medoxomil timed release dosage form to match the Circadian Rhythms of hypertension

J.N. Ravi Varma*, S.A.Sunil, K. Sandhya, M.V. Srikanth and K.V. Ramana Murthy

A.U. College of Pharmaceutical Sciences, Andhra University, Visakhapatnam, A.P, India

The aim of this study was to develop chronotherapeutic drug delivery systems (ChDDS) of olmesartan medoxomil (OM) using hydrogenated castor oil (HCO) and hydrogenated vegetable oil (HVO) with a predetermined lag time of 6 hrs by compression coating technique. Solubility and in vitro dissolution of OM were increased by formulation of solid dispersions using novel carrier, sucrose fatty acid ester (SFE 1811) as the drug belongs to BCS class II with low solubility and high permeability. The optimized solid dispersion was formulated as immediate release core tablets which were further coated with HCO and HVO using compression coating technique. Different coat: core tablet weight ratios were tried out and as the coating polymers are of waxy nature, channeling agent (directly compressible lactose) was incorporated into coat to form pores on surface of coat to enhance penetration of dissolution media. Compression coated tablets (CCT) formulated with HCO in 1:1.5 and HVO in 1:1 ratio of core tablet weight and coating polymer were considered as optimized formulation, but CCT formulated with HVO was considered as final optimized formulation, as the desired lag time was obtained with less concentration of polymer. FTIR spectra indicated no interaction between drug and polymers used. As the developed ChDDS using compression coating technique is simple to prepare and can be easily scaled up with minor modifications of existing equipment and also in vitro lag time of 6 hrs obtained before immediate release of drug makes it a suitable formulation for treatment of hypertension which follows circadian rhythm.

Formulation design of Montelukast sodium oral dispersible tablets

D. Ravishanker*, G. Bharat Raj and K. Vijaya Sri

*Malla Reddy College of Pharmacy, Maissamma Guda, Secundrabad, A.P, India

The present study was aimed at developing a oral dispersible tablet formulation based on an effective montelukast – superdisintegrants able to allow a rapid and complete dissolution of this poor soluble drug. Two different superdisintegrants were evaluated: sodium starch glycolate and l- hydroxy propyl cellulose by using by direct compression method. All prepared formulations were evaluated for physico-chemical parameters. The formulations exhibited good disintegration properties with total disintegration time in the range of 25 to 35 s. In vitro dissolution studies revealed that the L-hydroxy propyl cellulose showed highest release rate than sodium starch glycolate. The optimized tablet formulation was compared with conventional marketed tablet for drug release profiles. This formulation showed nearly faster drug release compared to the conventional commercial tablet formulation. Kinetic studies indicated that all the formulations followed first order release with diffusion mechanism. Short-term stability studies on the formulation indicated that there were no significant changes in drug content and in vitro dispersion time. Finally, it can be reasonably expected that the obtained drug dissolution rate improvement will result in an increase of its bioavailability, with the possibility of reducing drug dosage and side effects.

Micro needles – A pain free drug delivery system

G. Asha and B.Sarvani

GITAM Institute of Pharmacy, India

Optimization of drug delivery is important in modern therapy. With the limitations of oral drug delivery and the pain and needle phobias associated with traditional injections, drug delivery research has focussed on the transdermal delivery route.

Again, advances in the processing of the materials on a micro scale have led to the development and introduction of devices that employ very small needles – MICRO NEEDLES. Micro needles when used to puncture skin, will by pass the stratum corneum . They create transient aqueous transport pathways of micron dimensions and enhance the transdermal permeability. The future of drug delivery is assured to be significantly influenced by microfabrication technologies. For these studies, needle arrays have been used to pierce holes into skin to increase transport by diffusion or iontophoresis or as drug carriers that release drug into the skin from the micro needle surface coating. To address practical applications of micro needles , the ratio of micro needle fracture force to skin insertion force (i.e, margin of safety) was found to be optimum for needles with small tip radius and large wall thickness.