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

Pharmacokinetics of glimepiride fast dissolving colon targeted pellets: A chronotherapeutic approach

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The present work was conceded with an objective to delay the release of insulin secretagogue viz., glimepiride and to study its in- vitro/in- vivo behavior in colon. The pellets of glimepiride were prepared by extrusion spheronization technique using potato starch as base and PVPK 30 as binder solution. The pellets were coated with Eudragit S100 and Eudragit L100 in order to provide delayed release of drug in colon. The prepared pellets were evaluated for drug content, friability, particle size analysis, in-vitro disintegration time, in-vitro drug release studies and in-vivo behavior. The pellets were evaluated by differential scannning calorimetry (DSC), powder X-ray diffraction (PXRD) and scanning electron microscopy (SEM) to study the stability of drug in the carrier system. The in vitro release studies of developed pellets indicated the delayed release as there was no release till 5 hours of the study. The results were statistically analyzed by one way ANOVA followed by tukey post hoc test for multiple comparison. The pharmacokinetic studies revealed that the Tmax of formulated pellets was 8 hr where as for the pure drug it was 4 hrs indicating pellet release in colon. In conclusion, the starch pellets of glimepiride coated with Eudragits were prepared successfully and can be beneficial for chronotherapy of diabetes.

New derivative spectrophotometric methods for the determination of Rizatriptan Benzoate

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Two simple, rapid and sensitive derivative spectrophotometric methods were developed for the determination of Rizatriptan benzoate in pharmaceutical dosage forms. Rizatriptan benzoate is chemically described as 3-[2-(dimethylamino) ethyl] -5-(1H-1, 2, 4-triazol-1-ylmethyl) indole monobenzoate. It is a selective serotonin 5-HT1B/1D receptor agonist which is used in the acute treatment of migraine headaches. The literature survey reveals very few methods such as Liquid chromatography, LC-MS/MS were developed for the determination of Rizatriptan benzoate. A double beam UV-VIS spectrophotometer (UV-1800, Shimadzu, Japan) connected to computer loaded with spectra manager software UV Probe was employed with spectral bandwidth of 1nm and wavelength accuracy of ± 0.3 nm with a pair of 10 mm matched quartz cells. Method A was developed in 0.1N HCl and the amplitude was recorded (216.80-234.06 nm). Method B was developed in distilled water and the amplitude was recorded (216.64-233.78 nm). A graph was plotted by taking the concentration of the solutions on the x-axis and the corresponding amplitude values on the y-axis. Rizatriptan benzoate obeys Beer-Lambert's law over the concentration range of 0.5-30 µg/ml (r^2= 0.998) for Method A and 1.0-35 µg/ml (r^2= 0.998) for Method B respectively. The % RSD in precision and accuracy studies was found to be less than 2.0. The proposed methods were validated as per the ICH guidelines. The developed methods can be successfully applied for the determination of Rizatriptan benzoate in pharmaceutical formulations.