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ABSTRACT BOOK

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Formulation and Characterization of Floating Microspheres of Antidiabetic Drug

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Keywords: Floating, Gastric retention, Microspheres, Sustained release, Buoyancy

Aim and objectives: The aim of the present investigation was to characterize, optimize and evaluate microspheres of Empagliflozin and to increase its gastric retention time as well as sustain the release of the drug.

Methodology: Empagliflozin loaded microspheres were prepared by the non-aqueous solvent evaporation method using Eudragit RSPO and HPMC K1 blend as polymer. Microspheres were subjected to particle size analysis, micromeritic properties, buoyancy, drug loading, scanning electron microscopy analysis and FTIR study. The release rate was determined in simulated gastric fluid SGF (pH 1.2).

Results and Discussion: The Compatibility studies proved the compatibility between drug and excipients (Fig No. 1). Optimized batch was considered on the basis of mean particle size (798.06µm), drug content (93.22%), and buoyancy (87.5%). The microspheres of optimized formulation were spherical, discrete, porous and having a rough surface and slightly irregular shape (Fig No. 2). Drug release at 12 h for optimized batch was found 85.28 % which showed better drug release as compared to the pure drug (Fig No. 3).

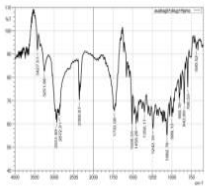

Fig No. 1: IR spectra of Drug + Eudragit RSPO + HPMC K100

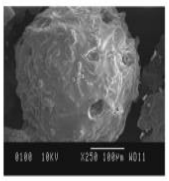

Fig. No. 2 SEM image of optimized batch

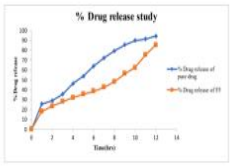

Fig. No. 3 *In vitro* dissolution profile of pure drug Empagliflozin and optimized batch

Conclusion: Thus, based on the findings, it is concluded that, floating microspheres of Empagliflozin drug can be successfully formulated for gastric retention and sustained release.

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