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Formulation and *in Vitro* Evaluation of Sustained Release Tableted Microspheres of Gemcitabine

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Abstract : Gemcitabine is a nucleoside metabolic inhibitor that exhibits anti tumor activity with half-life of 32-94 minutes for shorter infusions and 245-638 minutes for longer infusions. The aim of the present study was to prepare and evaluate tableted microspheres that are loaded with Gemcitabine using solvent evaporation technique. Ethyl cellulose was used as a drug release retarding polymer. The microspheres were characterized by Fourier transform infrared spectroscopy (FT-IR) to confirm the cross linking reaction and chemical stability of Gemcitabine. The particles are spherical in shape and have smooth surfaces, as evidenced by the scanning electron microscopy. The microspheres were characterized for their particle size and distribution, tapped density, percent yield and encapsulation efficiency and *in vitro* drug release. The microspheres were directly compressed into tablets using different exipients. The tablets so prepared from these microspheres were evaluated for hardness, friability, weight variation, drug content and in vitro dissolution study.
Keywords: Gemcitabine, microspheres, solvent evaporation, tableted microsphers.

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