

# Pharmaceutical Summit and Expo

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### Formulation and evaluation of floating microsponges for gastroretention of an Antidiabetic drug

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This research involves the development, optimization and *in vitro* evaluation of floating microsponges containing an antidiabetic drug by Quasi-emulsion solvent diffusion method for gastroretentive delivery. Microsponges of the selected drug were prepared using Ethyl cellulose as polymer, triethyl citrate as plasticiser, ethanol and dichloromethane as internal phase solvents, polyvinyl alcohol as emulsifier and distilled water as solvent for external phase. Process variables like temperature and stirring speed were optimised and trial batches were prepared to select the plasticizer and drug: polymer ratio for optimisation of formulation. Formulations were optimized using 32 full factorial design by taking ethyl cellulose and polyvinyl alcohol concentration, as independent variables and physical appearance of microsponges, the % entrapment efficiency, % buoyancy and % cumulative drug release as independent variables. The morphological characterization was done on the basis of Scanning Electron Microscopy (SEM). Fourier Transformed Infrared Spectroscopy (FTIR) was used to investigate drug-polymer interactions. DSC confirmed molecular dispersion of the drug in the microsponges' polymeric matrix. XRD revealed no chemical interaction between the drug and polymer used.

#### Biography

Meenakshi Bhavesh Patel has completed her BPharm in 2003 from Pune University and after qualifying GATE she did her MPharm, in Biopharmaceutics, from Shivaji University, Maharashtra. Presently, she is pursuing her PhD from Gujarat Technological University. Till now, she has guided 09 MPharm students. She has national and international publications to her credit and has organized and attended many seminars.

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