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## Formulation and evaluation of nano-sponges containing glibenclamide for management of diabetes

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Diabetes mellitus commonly referred to as diabetes, is a group of metabolic disorders in which there are high blood sugar levels over a prolonged period. Nanotechnology has been a promising therapeutic and scientific approach to effectively deal in healthcare with a potential to bring significant improvements in management disorder and diseases. Controlling blood sugar levels is the major goal of diabetes treatment. Glibenclamide is orally administered sulphonylurea anti-diabetic drug which is BCS class II drug. Aim of the study is to formulate and evaluate nano-sponges containing glibenclamide to control the release and increase its bioavailability. Nano-sponges are prepared using ethyl cellulose polymer and PVA as surfactant by emulsion-solvent evaporation method. The effects of different surfactant concentration, drug: polymer ratio and sonication time on the physical characteristics of the nano-sponges as well as the drug entrapment efficiency of the nano-sponges were investigated. The nanoparticles were obtained in the size range of 400-600 nm. The zeta potential is between -20 mv to -25mv. Encapsulation efficiency ranges from 64% to 70% and drug loading capacity range from 31% to 42%. Dissolution studies were carried out using phosphate buffer pH 7.4. The percent cumulative release of glibenclamide from nano-sponges decreased with increasing polymer concentration.

### Biography

Shripathy D has completed his B pharm in 1999, M pharm in 2004 and is pursuing his PhD from Rajiv Gandhi University of health sciences, Bangalore, Karnataka under the guidance of Dr. Ramakrishna Shabaraya. He has presented more than eight research presentations in national conferences and he has published more than ten publications in national and international journals. He is recipient of several research grant from Rajiv Gandhi University and other funding agencies.

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