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DEVELOPMENT OF ANTIDIABETIC POLY HERBAL SUSTAINED RELEASE FORMULATION COMPOSED OF TRADITIONAL INDIAN PLANT EXTRACT WITH THEIR PROTECTIVE EFFECT ON ANTIOXIDANT ENZYME

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Objectives: Multifactorial metabolic diseases, for instance diabetes develop several complications like hyperlipidemia, hepatic toxicity, immunodeficiency etc., Hence, instead of mono-drug therapy the management of the disease requires the combination of herbs. In present study Floating tablets of hydro alcoholic extracts of *Triticum aestivum, Embelia ribes* and *Cedrus deodara* were developed with an aim to prolong its gastric residence time and increase the bioavailability of drug.

Methods: Direct compression technique was used for the formulation of polyherbal floating tablets which consists of different compositions of Hydroxy Propyl Methyl Cellulose Micro Crystalline Cellulose (MCC) and Sodium bicarbonate (NaHCO3). Formulation was optimized on the basis of floating time and in vitro drug release. *In-vivo* antidiabetic activity of optimized formulation were performed on alloxan induced diabetic rats.

Results: The buoyancy time of all tablet formulations were found to be less than 5 min and remained in floating condition throughout the study, maximum till 12 hours. The optimized formulation was found to be F4 which was having buoyancy time of 2.3 min. All the tablet formulations followed zero-order kinetics. In vivo antidaibetic study of F4 formulation the sugar level of alloxan induced diabetic rats were founds to be reduced ($P < 0.01$) significantly. The level of Glutathione, Catalase, Superoxide dismutase and Glutathione-S-Transferase in liver, kidney and pancreas tissue were found to be increased significantly after drug administration.

Conclusions: The optimized formulation shows sustained release of herbal constituents for more than 12 hours and In Vivo studies also showed its potential for the treatment of diabetes with antioxidant effects.