

# DESIGN AND INVITRO EVALUATION OF METFORMIN FLOATING TABLETS USING HYDROPHILIC POLYMERS

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## ABSTRACT

Metformin HCl is an oral anti-diabetic drug from the biguanide class. It is the first line drug of choice and is used for the treatment of type 2 diabetes, particularly in overweight and obese people and those with normal kidney function and also as monotherapy as an adjunct to diet and exercise for the management of type 2 (non-insulin dependent) diabetes mellitus in patients whose hyperglycemia cannot be controlled by diet alone.

Sustained release gastroretentive dosage forms enable prolonged and continuous input of the drug to the upper parts of gastrointestinal tract and improve the bioavailability of medication that is characterized by narrow absorption window. Gastroretentive floating drug delivery systems (GFDDS) of metformin hydrochloride, an antidiabetic drug with an oral bioavailability of only 50% (because of its poor absorption from lower gastrointestinal tract) have been designed and evaluated.

The objective of the present investigation was to design and develop floating drug delivery system of Metformin Hydrochloride tablets. Floating tablets of Metformin Hydrochloride was developed using gas forming agents like sodium bicarbonate, organic acids like citric acid and polymers like HPMC K4M, Guar gum, Eudragit S. The prepared tablets evaluated in terms of their Precompression studies, Postcompression parameters, Total buoyancy time, Buoyancy lag time and Invitro study. The results of invitro drug release studies showed that formulation (F1) has better control over release of drug (95.12%) when compared to marketed product (93.24%) for 12hrs.

**KEYWORDS:** Metformin Hydrochloride, HPMC K4M, Guar Gum, Eudragit S100, Gas Forming Agents, Wet Granulation Method, Evaluation and Invitro Study