DEVELOPMENT OF GASTRORETENTIVE SUSTAINED RELEASE DRUG DELIVERY SYSTEM FOR CERTAIN ANTIBIOTIC AND IT'S *IN-VITRO* AND *IN-VIVO* EVALUATION

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ABSTRACT

Gastric retention is designed to prolong gastric residence time of oral controlled release dosage forms. Prolonged contact time of drug with the gastrointestinal mucosa, leads to higher bioavailability, and hence therapeutic efficacy, reduced time intervals for drug administration, potentially reduced dose size and thus improved patient compliance. It helps in sustaining drug delivery mainly for drugs that show site specific absorption from the stomach or the upper intestine.

Ofloxacin is a broad-spectrum antimicrobial fluoroquinolone which has activity against a wide range of gram-negative and gram-positive microorganisms. It's an off-white to pale yellow crystalline powder. Following oral administration, the bioavailability of ofloxacin in the tablet formulation is approximately 98%. Clearance of ofloxacin is reduced in patients with impaired renal function (creatinine clearance rate <50 mL/min), and dosage adjustment is necessary.

The work in this thesis is divided into three chapters as follows:

Chapter 1: Development and evaluation of ofloxacin floating drug delivery system.

Chapter 2: Development and evaluation of ofloxacin size increasing drug delivery system.

Chapter 3: *In-vivo* comparative study of selected ofloxacin formulations and conventional tablet.