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REVIEW ARTICLE ON FORMULATION AND EVALUATION OF DELAYED RELEASE TABLET OF OMEPRAZOLE

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ABSTRACT
Omeprazole is formulated as delayed release tablets to provide desired effect at certain time in maintained drug concentration without any unwanted effect with patient compliance also to improve it bioavailability by decreasing its expose to gastric acid. A delayed release dosage form is designed to release the drug from the dosage form at a time other than promptly after administration. Then the tablets were prepared by wet granulation method rather than direct compression because of cohesive property of the drug. Optimized core tablet then subjected for enteric coating by selected base coat polymer cellulose derivative for preventing core tablet from moisture. The coated formulations were compared with marketed sample for optimization. Dissolution results of tablets with enteric coating have shown release of omeprazole in simulated gastrointestinal fluid pH 1.2, but most of the drug released in pH 6.8 Phosphate buffer. At the end it was found that prepared formulation gave satisfactory results compared with marketed sample dissolution profile. Hence prepared formulation by-pass the degradation of omeprazole by enteric coating approach and can be used as single unit dosage for the treatment of acid-related diseases. Thus a pharmaceutically equivalent, robust formulation of omeprazole delayed release tablet was developed.

Keywords: omeprazole, FT-IR spectrophotometric method, Enteric coating, Delayed release tablets, In *vitro* drug release.

INTRODUCTION
Omeprazole is belonging to proton-pump inhibitors category.Proton-pump inhibitors (PPIs) are a group of drugs, whose main action is a pronounced and long-lasting reduction of gastric acid production. They are the most potent inhibitors of acid secretion available today. Inhibitors act by irreversibly blocking the hydrogen/potassiumATPEnzyme system of the gastric parietal cells. The proton pump is the terminal stage in gastric acid secretion, being directly responsible for secreting H^+ ions into the gastric lumen, making it an ideal target for inhibiting acid secretion. [1] Oral drug delivery is the most widely utilized route of administration among all the routes that have been explored for systemic delivery of drugs via pharmaceutical products of different dosage form. Oral route is considered most natural, convenient and safe due to its ease of administration, patient acceptance, and cost effective manufacturing process. Pharmaceutical products designed for oral delivery are mainly immediate release type or conventional drug delivery systems, which are designed for immediate release of drug for rapid absorption [2-3] .In oral drug delivery the substance is taken from the mouth. Many medications are taken orally because they are intended to have a systemic action, reaching various parts of the body via the bloodstream. Oral drug delivery is the most widely utilized route of administration among all the routes that have been explored for systemic delivery of drugs via pharmaceutical products of different dosage form. Oral route is considered most natural, convenient and safe due to its ease of administration, patient acceptance, and cost effective manufacturing process. Pharmaceutical products designed for oral delivery are mainly immediate release type or conventional drug delivery systems, which are designed for immediate release of drug for rapid absorption.

Controlled drug delivery systems: Controlled release is a term referring to the presentation or delivery of compounds in response to stimuli or time.It refers to time dependent release in oral dose formulations. Timed release has several distinct variants such as sustained release where prolonged release is intended, pulse release, delayed release (e.g. to target different regions of the GI tract) etc.