3. OBJECTIVE

Many drugs are known to have absorption window. Thus the absorption of drugs takes place in certain regions of the gastrointestinal tract, mainly upper intestinal tract. Ofloxacin is a broad-spectrum antibiotic and is active against both Gram-positive and Gram-negative bacteria and used to treat the infections of respiratory tract, kidney, skin, soft tissue, UTI, Urethral and cervical gonorrhoea. Ofloxacin exhibits pH dependant solubility. It is more soluble in acidic pH and slightly soluble at neutral or alkaline pH conditions (intestinal environment). Hence, gastroretentive dosage form will be developed for ofloxacin which would increase the bioavailability of ofloxacin.

Ranitidine hydrochloride is a specific H₂-receptor antagonist used to treat the peptic and duodenal ulcers. Ranitidine hydrochloride has limited absorption when it reaches the large intestine and hence low bioavailability. The recommended adult oral dosage of ranitidine is 150 mg twice daily or 300 mg once daily. A conventional dose of 150 mg can inhibit gastric acid secretion up to 5 hours. An alternative dose of 300 mg leads to plasma fluctuations; thus a sustained release dosage form of ranitidine hydrochloride is desirable. As ranitidine is absorbed in the initial upper part of the small intestine and has 50% absolute bioavailability. Hence prolonging the retention time in upper part of the small intestine may result in increased bioavailability and reducing the dosing frequency.