

## FORMULATION AND EVALUATION OF CLARITHROMYCIN BEADS FOR THE TREATMENT OF HELICOBACTER PYLORI INFECTION

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**Background:** In the last decade, the number of cases suffering from stomach disease such as peptic ulcer and gastric cancer due to *Helicobacter pylori* infection has increased by far. An objective of the present study was to develop chitosan/gellan based floating-mucoadhesive beads of clarithromycin to provide prolonged contact time of antibiotic to treat stomach ulcer. Floating-mucoadhesive beads were prepared ionotropic gelation of chitosan/gellan beads and characterized for in vitro performance.

**Methods:** 1% of chitosan solution was made and then clarithromycin was added. Chitosan beads were made by simultaneous cross-linking in anionic 1% La gellan solution.

**Results:** The beads were spherical and roundness in the range of 0.4 to 0.6, but no significant difference was observed in these parameters. The mean particle size of beads obtained was in the range of 0.70 to 1.1 mm. Chitosan beads clarithromycin coated with were evaluated for drug release in 0.1 N HCl, pH 1.2. the prepared beads show less than 30% drug release at the end of 1 hour. The delay may be due to thick gellan coating that slows down the drug diffusion.

**Conclusions:** In this study we have demonstrated that the prepared controlled release drug therapy for the treatment of *H. pylori* using chitosan beads coated with gellan. gellan-coated chitosan beads containing clarithromycin showed complete growth inhibition of *H. pylori*. Thus, gellan-coated clarithromycin chitosan beads might be a promising drug delivery system for the treatment of *H. pylori* infection.