



## Preparation and Characterization of Floating Gellan-Chitosan Polyelectrolyte Complex Beads

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**SUMMARY.** The objective of the present investigation was to evaluate the potential of gellan gum- low molecular weight chitosan (GG-LMCH) polyelectrolyte complex (PEC) in the form of beads as prolonged release stomach specific floating drug delivery system. PEC beads were prepared in one step, without using any chemical crosslinker, by dropwise addition of GG to a solution of LMCH in acetic acid. Buoyancy to the beads was attributed to the use of CaCO<sub>3</sub>. The % buoyancy, encapsulation efficiency and drug release from PEC beads were compared with Ca<sup>++</sup> crosslinked GG floating beads prepared under same conditions using rifabutin as model drug. Our finding showed that the PEC beads remained buoyant for up to 8 h and showed significantly better ( $p < 0.05$ ) control over drug release compared to Ca<sup>++</sup> crosslinked GG beads and, therefore, possess great potential for the stomach specific sustained delivery of drugs like rifabutin for the treatment of *Helicobacter pylori* infection.

**KEY WORDS:** Buoyancy, Drug release, Encapsulation efficiency, Gellan gum, Low molecular weight chitosan, Polyelectrolyte complex, Rifabutin.

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