



MICROENCAPSULATION OF *LACTOBACILLUS ACIDOPHILUS* 5 WITH ISOMALTO-OLIGOSACCHARIDE

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ABSTRACT

Co-extrusion microencapsulation of *Lactobacillus acidophilus* 5 (La-5) was performed using isomalto-oligosaccharide (IMO) as prebiotic, alginate as shell material and chitosan as the coating. The optimization of alginate (1.3% (w/v) to 1.7% (w/v)) and IMO concentration (1.0% (w/v) to 5.0% (w/v)) was evaluated based on bead size and microencapsulation efficiency of La-5. Subsequently, the chitosan-coated alginate with or without IMO were subjected to sequential digestion. It is found that 3.0% (w/v) IMO and 1.5% (w/v) alginate were the optimal concentration based on microencapsulation efficiency (MEE). The morphology of the beads containing IMO was found to be smooth and spherical, with diameter of 622.00 μm . The addition of IMO and chitosan are effective in protecting La-5 under gastric conditions but not effective in protecting the viability of La-5 under intestinal digestion.
