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## Effect of simulated gastric juice over viability in microencapsulated *Lactobacillus casei*

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Probiotics must be delivered alive to exert a positive health effects in site of action (the intestine). Once reach the intestine, they should establish themselves and exert a positive health effects. They must survive the stomach acidic, bile acid and others degradative enzyme through intestinal tract. The aim of current study was to evaluate the performance of microencapsulated *Lactobacillus casei* using alginate gel matrix to facilitate a suitable carrier system to enhance this objective and confer protection from the acidity. A solution with lyophilized *L. casei* at 5 g/L ( $10^8$  CFU/mL) was prepared and mixed (1:1) with sodium alginate solution at 2%. As a hardening solution, calcium chloride at 0.1 M with gently stirring was used. Microencapsulator provide by BUCHI (Encapsulated B-390) was used. Simulated gastric juice (SGJ) with 9 g/L of sodium chloride and 3g/L of pepsin was prepared. Different pH was adjusted with 1 M HCl. 400 mg of microspheres containing *L. casei* were mixed in 20 mL of SGJ with pH adjusted at 2.0; 2.5; 3.0; 3.5 and 4.0 and incubated until 120 min at 37 °C and 50 rpm. Microencapsulated *Lactobacillus* were filtered and dissolved in sodium citrate to released and count CFU in supernatant. The best results were obtained at pH 4.0 (over 70% of survival at 90 minute). At pH 3.5 the survival was over 20% at 60 min, however at pH less than 3.0 there was a rapid loss of viability and the survival was null at 90 min. Then, a microencapsulated is an available technique to maintain viability of probiotics to protect the passage through intestinal tract.

### Biography

Araceli Olivares is a Biochemical Engineer at the Pontifical Catholic University of Valparaiso (PUCV), Chile. She is a Researcher of the Center for Studies on Healthy Food (CREAS) since 2011. She has 3 published patents (one in Chilean and two in Unites State Patent Office) and 5 application patents in USPTO.

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