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Impact of microencapsulation of probiotic Lactobacillus plantarum and Lactobacillus casie with Prebiotics on acid and bile tolerance properties of spray dried Synbiotic milk powder

Prity Singh

Banaras Hindu University, India

Impact of microencapsulation of probiotic Lactobacillus plantarum and Lactobacillus casie with Prebiotics on acid and bile tolerance properties of in spray dried Synbiotic milk powder: In present study we prepared a synbiotic milk powder using three different types of prebiotics viz. FOS, GOS and Inulin to encapsulate the bacteria. Effect of these prebiotic on survivability of probiotic in gastrointestinal tract was assayed. the product was tested for its survival in simulated gastric intestinal conditions of acid and bile. For acid tolerance test 1 g sample of synbiotic milk powder was aseptically inoculated in 9.0 ml sterile peptone water, pH of solution had been adjusted to 2.0 using 37% hydrochloric acid to simulate gastric juice. The solution was subsequently incubated anaerobically at 37 °C. To determine cell survival, 1 ml solution was collected at 30, 60, 90 and 120 min, then poured on MRS agar plates and incubated at 37 °C for 48 to 72 h. After the incubation period, their colonies were counted. To determine cell viability in bile salt, 1g sample powder was inoculated into sterile peptone water which had already been mixed with 2.0% (w'v) bile salt. Further performance was conducted following the same protocol as gastric juice. Nine samples were prepared having different concentrations of prebiotics.

All of the 9 samples initially have more than l0 log CFU/ml of product. All synbiotic products tested showed a continuous loss in viability when exposed to acidic as well as alkaline conditions showing upto 3 log reductions however it was lesser than the loss in probiotic milk powder. Since the initial count of probiotics were high even after 2hr exposure to alkaline condition the final counts were within the limits of standard probiotic product.

Biography:

Prity Singh has completed her PhD from Banaras Hindu University, India at the age of 28 years. She has worked on development of probiotic milk powder and also worked on heavy metal analysis using AAS.