Survival of *Bifidobacterium* BB-12 Microencapsulated with Prebiotics During Storage

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Microencapsulation is a method used to improve the stability of probiotic during storage in functional foods. Reconstituted skim milk (RSM) is widely used as protective agent for microencapsulation of probiotics, but only few studies have been reported on the application of prebiotics as a source of coating materials. The aim of this study was to evaluate the survival of probiotic culture *Bifidobacterium* BB-12 microencapsulated by spray drying with partial replacement of RSM, with the prebiotics inulin, oligofructose, and oligofructose-enriched inulin (at a ratio of 1:1, 200 g L⁻¹ total concentrations), during storage for 180 days at 4 °C. The microcapsules were obtained in a mini spray dryer, at air inlet temperature of 150 °C and outlet temperature of 55 °C. The bifidobacteria was released from the microcapsules in phosphate buffer (0.1 M, pH 7.0), followed by homogenization. The survival of bifidobacteria was assessed by pour plate with modified MRS agar, after 3 days of anaerobic incubation at 37 °C. All the microcapsules showed a high survival rate of bifidobacteria during storage. The microcapsules produced with inulin and those produced with oligofructose-enriched inulin showed higher initial count. However, blending oligofructose-enriched inulin with RSM and blending oligofructose with RSM resulted in better protection of bifidobacteria during storage. The results showed that the oligofructose-enriched inulin is the most appropriate prebiotic to be used as partial replacement of RSM to microencapsulate *Bifidobacterium* BB-12 by spray drying, with a great potential as a functional ingredient to be applied in dairy foods.