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**Effect of microencapsulation of *Lactobacillus casei* 01 on physicochemical and sensorial characteristics white bread**Tatiana Beldarrain-Iznaga<sup>1</sup>, Villalobos-Carvajal R<sup>1</sup>, Sevillano-Armesto E<sup>2</sup>, Pino-Alea J<sup>2</sup>, Bringas M<sup>2</sup> and Alvarez M<sup>2</sup><sup>1</sup>University of BioBio, Chile<sup>2</sup>Food Research Institute, Cuba

The aim of this study was to evaluate the sensorial and physic-chemical characteristics of white bread with free *Lactobacillus casei* and survival of free and microencapsulated in maltodextrin by spray drying. Two variants were prepared: Var 1 with freeze dried culture and Var 2 with the probiotic microencapsulated in maltodextrin by spray drying. During the manufacture viable cell counts, specific volume and moisture content of the bread were determined after baking for 0, 5, 10 and 15 min at 180 °C, respectively. The spray drying process was performed with a Buchi B-290 mini spray dryer at constant air inlet temperature of 150±2 °C and outlet temperature of 55±3 °C. The viable cell counts of the microcapsules were determined during their storage for 60 days at 4 °C. The microcapsules were also evaluated in relation to their morphology, particle size, moisture content, water activity and thermal properties. The microcapsules produced showed a high survival rate of *Lactobacillus* during storage at 4°C. In white bread with free cells of *Lactobacillus casei*, the viable counts decrease 5 logarithmic units, although some bacteria survived in the bread even after baking for 10 min while in maltodextrin microencapsulation the counts decreased 4 logarithmic units. In both variants of white bread, moisture contents and specific volumes increased with baking and significative difference in water activity and sensorial characteristics not were found.

[tatiana.beldarrain1401@alumnos.biobio.cl](mailto:tatiana.beldarrain1401@alumnos.biobio.cl)**Reclassification of *Enterobacter sakazakii* isolates and characterization of their transmission and virulence related factors**

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*Cronobacter* (previously known as *Enterobacter sakazakii*) is a diverse bacterial genus consisting of seven species: *C. sakazakii*, *C. malonaticus*, *C. turicensis*, *C. universalis*, *C. muytjensii*, *C. dublinensis* and *C. condimenti*. In this study the taxonomic relationship and pathogenicity of *Cronobacter* spp. was further investigated in relation to factors that are related to their transmission and virulence. A total of 35 isolates previously identified as *E. sakazakii* and 7 known *Cronobacter* reference strains were reclassified on the basis of biochemical tests, 16S rDNA gene sequences and multilocus sequence typing results. After the initial classification of the isolates, further characterization of each isolate was carried out with the use of multiple assays including motility assay, biofilm assay, ELISA assay with OmpA and OmpX antibodies, adhesion assay and invasion assay using 4 to 7 day old human intestinal epithelial Caco-2 cells. Virulence and transmission related characteristics were expressed at different levels among all the isolates studied, however *C. sakazakii*, *C. malonaticus* and *C. turicensis* notably had the highest expression of each of the respective phenotypes. All the virulence and transmission related factors were expressed in a species dependent manner even though a clear relationship between the expressions of these characters could not be established with their ST type allocation. However the existence of novel positive correlations between each of the phenotypes-biofilm formation, motility, expression of OmpA and OmpX, adhesion and invasion to 4 to 7 day old human Caco-2 cells was also elucidated for the first time in this study.

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