

# **1<sup>st</sup> International Congress on Food Technology**

## **Abstract Book**

The Association of Food Technology, Turkey & Akdeniz University

03-06 November, 2010 Antalya/ TURKEY

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1<sup>st</sup> International Congress on Food Technology supported by  
Scientific and Technological Research Council of Turkey (TÜBİTAK)

## **ENCAPSULATION PROTECTIVE EFFECT UPON VIABILITY OF PROBIOTIC BACTERIA THROUGHOUT STORAGE AND GASTROINTESTINAL TRACT**

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Microcapsules (MC) with fresh cultures of potential probiotic strains (*Lactobacillus paracasei* LAFTI<sup>®</sup> L26, *L. acidophilus* Ki and *Bifidobacterium animalis* BB-12<sup>®</sup>) were produced by spray-drying using whey protein concentrate (WPC<sub>50</sub>) with or without L-cysteine (0.5 g/L). After microencapsulation, the MC were stored, in duplicate, at 5°C over a period of 6 months during which the number of viable cells (VC) were evaluated. After 15, 60 and 120 days of storage, their resistance throughout gastrointestinal conditions was evaluated. In MC without L-cysteine, the VC numbers of *L. acidophilus* Ki and *B. animalis* BB-12<sup>®</sup> after 6 months of storage decreased from 10<sup>8</sup> to 10<sup>6</sup> cfu/g whereas no decrease was observed for *L. paracasei*. The presence of L-cysteine revealed a positive effect, especially for *L. acidophilus* Ki after 90 days of storage accounting for more than one logarithm cycle increase in viability. Encapsulation had a protective effect on the three probiotic strains when exposed to the gastrointestinal conditions in comparison to their free cells. This effect was particularly significant for *L. acidophilus* Ki in conditions similar to those of ileum/duodenum including the presence of pancreatin and bile salts. Storage time did not affect the resistance of the three probiotic strains to the gastrointestinal conditions.

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