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New approaching to improve quality and functionality of probiotic fermented milks

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Abstract

Sensorial features play an important role in probiotic product acceptance from consumers. Thus, to improve texture and body of fermented milks and yoghurts, several strategies have been proposed. Among these, the application of high pressure homogenization (HPH) and the use of strains able to produce exopolysaccharides have been proposed. Also co-inoculate of probiotic strains with traditional starters and the modulation of physico-chemical variables, commonly used at industrial level, has been suggested. Thus, the main objective of this work was the evaluation of the effects of the co-inoculums of *Lactobacillus casei* BFE5264, endowed with proved probiotic features, with *Lb. delbrueckii* subsp. *bulgaricus* FP1 and *S. thermophilus* LI3 in milk, previously treated by HPH at 60 MPa and added with skim milk and UHT cream on the product acidification kinetic, aroma profile, texture and microstructure. The results achieved were compared with those obtained by fermented milks from not HPH-milk. Also the viability of the different microbial species during the storage at 4°C was evaluated.. The results evidenced that the combined use of HPH and probiotic strain co-inoculums with the traditional yoghurt starters allowed the reduction of the product coagulation time, the increase of probiotic strain viability, the improvement of product volatile profile and a positive product effect on mice immune-system modulation. Moreover, the rheological indices and the microphotographs indicated the positive effects of HPH on the product viscosity index and exopolysaccharides production, respectively.

Biography

Francesca Patrignani completed her PhD in Food Biotechnology in 2004 from the University of Bologna, Italy. She was guest researcher at the BFE, Karlsruhe Germany, and at the Industrial Dairy Institute of Santa Fe, Argentina. Actually she has a postdoc position at the University of Bologna, where she is involved in several research activities regarding: i) study of high pressure homogenization for the treatment of several fluid food matrixes ii) functional characterization of LAB from food source and iii) study of microbial cell responses to sub-lethal stresses.

Francesca Patrignani has published 32 papers and realized 40 presentations to international symposia.

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