

Developing Novel Functional Foods with Immobilized Probiotic Cultures on Probiotics

Grigorios Nelios¹, Anastasios Nikolaou¹, Panayiotis Panas² and Yiannis Kourkoutas^{1*}

¹Laboratory of Applied Microbiology & Biotechnology, Department of Molecular Biology & Genetics, Democritus University of Thrace, Alexandroupolis, Greece

²QLCon, N.E.O. Patron-Athinon 57, Patras, Greece.

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ABSTRACT

Recently, public awareness for a healthy lifestyle has led to a continuously increasing demand for novel products containing probiotics. Probiotics are defined as “live microorganisms which, when administered in adequate amounts, confer a health benefit on the host”. In order to deliver the health benefits, functional foods should contain adequate amounts of probiotic microorganisms (at least 10^7 logcfu/g), a requirement that constitutes a real bottleneck for the food industry. Having been documented that cell immobilization offers multiple technological advantages, including maintenance of cell viability during food processing and storage, the aim of the present study was to investigate the production of novel functional food products containing immobilized probiotic cells. In this sense, three commercially available *Lactobacillus* strains were immobilized on various dried seeds and after freeze-drying, the functional ingredients prepared were incorporated in cookies, cereals and chocolate bars, in amounts equal or higher than the daily suggested doses. Remarkably, cell populations >7 logcfu/g were recorded in cookies and chocolate bars, while the corresponding levels in cereal bars were >8 logcfu/g. No decrease in viable cell counts was observed during storage for 1 month at 4°C. In contrast, storage at room temperature resulted in a significant decrease of probiotic cell loads.

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Keywords: Healthy lifestyle, Probiotics, Probiotic microorganisms, *Lactobacillus*

Corresponding author: Yiannis Kourkoutas, Laboratory of Applied Microbiology & Biotechnology, Department of Molecular Biology & Genetics, Democritus University of Thrace, Alexandroupolis, Greece, E-mail: ikourkou@mbg.duth.gr

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