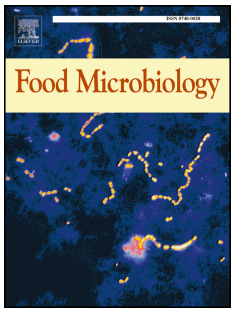
Accepted Manuscript



Greek functional Feta cheese: Enhancing quality and safety using a *Lactobacillus plantarum* strain with probiotic potential

Olga S. Papadopoulou, Anthoula A. Argyri, Evangelos E. Varzakis, Chrysoula C. Tassou, Nikos G. Chorianopoulos

PII: S0740-0020(17)30903-6

DOI: 10.1016/j.fm.2018.02.005

Reference: YFMIC 2956

To appear in: *Food Microbiology*

Received Date: 18 September 2017

Revised Date: 1 February 2018

Accepted Date: 6 February 2018

Please cite this article as: Papadopoulou, O.S., Argyri, A.A., Varzakis, E.E., Tassou, C.C., Chorianopoulos, N.G., Greek functional Feta cheese: Enhancing quality and safety using a *Lactobacillus plantarum* strain with probiotic potential, *Food Microbiology* (2018), doi: 10.1016/j.fm.2018.02.005.

Running title: Probiotic Feta with enhanced quality and safety

Greek functional Feta cheese: enhancing quality and safety using a *Lactobacillus plantarum* strain with probiotic potential

Olga S. Papadopoulou, Anthoula A. Argyri, Evangelos E. Varzakis, Chrysoula C. Tassou, and Nikos G. Chorianopoulos *

Institute of Technology of Agricultural Products, Hellenic Agricultural Organization DEMETER, 1 S. Venizelou Str, Lykovrisi, Athens, 14123, Greece.

* Corresponding author: Dr. Nikos Chorianopoulos

Tel.: +302102845940; Fax: +302102840740

E-mail address: nchorian@nagref.gr

ABSTRACT

The aim of the study was to investigate the performance of *Lactobacillus plantarum* T571 with probiotic potential as a co-starter culture in Feta cheese production and in its long-term storage. For this reason, Feta cheese was manufactured without (control) or with the probiotic T571 strain (probiotic) and then monitored during storage at 4 and 12˚C, respectively. The products were also inoculated with *Listeria monocytogenes* (3-strain cocktail). Results showed that lactic acid bacteria exceeded 6 log CFU/g during storage in all trials. The probiotic samples displayed higher acidity (≈1.5% lactic acid) and lower pH (≈4.2). Coliforms and *L. monocytogenes*, were inactivated in shorter time in probiotic samples, in comparison with the control ones. Pulsed field gel electrophoresis verified the presence of the probiotic strain in the cheese, until the end of storage at both temperatures, whilst the survival and distribution of the pathogenic strains depended on the trial. The sensory evaluation