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Characterization of Lactic Acid Bacteria from Tajikistan Fermented Goat Milk

Gyu-Sung Cho¹, Claudia Cappello², Elisabetta Cilli³, Paola Mattarelli², Charles M.A.P. Franz¹

¹Department of Microbiology and Biotechnology, Max Rubner-Institut, Hermann-Weigmann-Straße 1, 24103 Kiel, Germany

²Department of Agricultural Sciences, University of Bologna, Viale Fanin 42, 40127 Bologna, Italy ³Department of Cultural Heritage (DBC), Laboratories of Physical Anthropology and Ancient DNA, Via Ariani 1, University of Bologna, Ravenna, 48121, Italy

A fermented goat's milk produced by the Yaghnobi population in Tajikistan was studied in order to characterize the biodiversity of lactobacilli in the product.

A total of 22 lactobacilli were isolated on de Man, Rogosa and Sharpe (MRS) agar plates. Firstly the strains were characterized phenotypically and genotypically in order to identify these at species level. Phenotyping characterization included gram staining, testing for the presence of catalase and oxidase enzymes, as well as for the type of isomer of lactic acid produced. The 16S rRNA gene, RNA polymerase alpha subunit (*rpoA*), phenylalanyl - tRNA synthase alpha subunit (*pheS*), and ATP synthase alpha chain (*atpA*) genes of all strains were amplified and sequenced; moreover strains were studied for their clonal relationships by means of amplified ribosomal DNA restriction analysis (ARDRA).

Based on this polyphasic approach, the species could be identified as *Lactobacillus delbrueckii*, *Lactobacillus helveticus*, *Lactobacillus plantarum* and *Lactobacillus casei* species

The present work, for the first time, provides a deep characterization of lactobacilli population of a traditional fermented goat's milk from the Yaghnobi people which so far has not been studied.

Keywords: *Lactobacillus*, Taxonomy, Yaghnobi, Fermented goat milk, ARDRA