Sözlü Sunum

Culturomics: A New Approach To İdentify The *Lactococcus* And *Enterococcus* Species Isolated From the Dairy Plant

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Giriş

Culturomics may be defined—by analogy with metagenomics—as an approach allowing an extensive assessment of the microbial composition by high-throughput culture. Such very high-throughput identification was only possible because identification was only possible because of the availability of MALDI- TOF MS (Matrix-assisted laser desorption ionization time-of-flight mass spectrometry), which not only represents a revolution in clinical diagnostic laboratories, but also represents a revolution in microbial ecology. Culturomics is a method allowing the description of the microbial composition by high-throughput culture with use of various selective and/or enrichment culture conditions coupled to MALDI-TOF MS identification.

Gereçler ve Yöntemler

The aim of this study was isolation of lactic acid bacteria from the dairy product and dairy plant by culturomics. In this study, 10 samples were collected from a dairy plant in Kastamonu province during white cheese production. f5 samples were; raw milk, starter culture added milk, curd, curd after draining and white cheese. Other 5 of them were the surface samples from the equipment that contacts with milk during the production. raw milk truck, cheese vessel, stirrer, cutting wire and cheesecloth. We used classical cultural methods to isolate LAB from all samples. 10 samples inoculated to the selective mediums by spread plate method. After incubation at optimum conditions, colonies were selected based on morphology of target microorganisms and inoculated to the selective medium by streak plate method. After the isolation, we performed MALDI- TOF mass spectrometry with VITEK ® MALDI- TOF MS (bioMérieux SA, Marcy- I'E´toile, France) analysis to identify bacteria on colonies.

Bulgular

In total, 60 pure cultures were isolated from the samples and analyzed with MALDI- TOF mass spectrometry. According to these results, 33 microorganisms were identified as Enterococcus species and 27 of them identified at species level. In addition, 6 microorganisms were defined as Lactococcus lactis.

Sonuç ve Tartışma

This study demonstrates that culturomics is fast and economically affordable method for bacteria identification. And it provides an advantage by allowing for further studies with microorganisms by combining the cultural methods and MALDI-TOF MS.

Anahtar Kelimeler: Culturomics, MALDI-TOF MS, white cheese, lactic acid bacteria, metagenomics

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