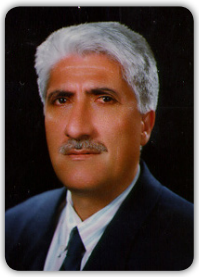

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Probiotic *Lactobacillus helveticus* strain identification, characterization and use in clinical practice

During the last fifteen years, the Lactobacillus (90 species) and Bifidobacterium(47 species) genera has evolved as Probiotics and contains to date more than 140 species. A collection of 119 *Lactobacillus helveticus* strains were isolated from cheeses. Thus, the aim of this work was to classify the strains of *L. helveticus* in relation to their origin, strain identification and clinical use. Extraction of *L. helveticus* from dairy products are based on an initial crude homogenization in a blender, then using selective media.

Analysis at genus, species, strain levels

The genus Lactobacillus is heterogeneous, with the G+C content of the DNA of its species varying from 33 to 55%. The *L. helveticus* DPC 4571 strain, whole-genome-sequencing project produced a circular chromosomal sequence of 2,080,931 nucleotides with an average GC content of 37.73%. The nucleotide sequences of *Lactobacillus helveticus* 16S ribosomal DNA (rDNA) provide an accurate basis for identification. Enzymatic tests kits can be used for the rapid and theoretically reproducible phenotypic identification of pure cultures. Protein fingerprinting is a better method for species identification of *L. helveticus.* Restriction enzyme analysis (REA) involves the extraction and digestion of chromosomal DNA with restriction endonucleases and separation of the fragments by conventional gel electrophoresis s (CGE). This study presents available tools to characterize lactobacilli at genus, species or strain level using either culture-dependent methods: phenotypical and using new culture-independent advanced molecular methods. Enzymes used for PFGE, hybridization probes and PCR-based method primers are identified. Microbial strain identification software tools, and Metagenomic analysis with strain-level resolution reveals fine-scale variation between strains. *Lactobacillus helveticus* in clinical practice. *L.helveticus* relatively new probiotic and used many clinical and laboratory studies shows evidence of probiotic effectiveness.

Speaker Biography

Fatih Yildiz is the founding member of the Department of Food Engineering of the Middle East Technical University in Ankara, Turkey. He has obtained his education at Maryland University in College Park, USA. His previous work experience includes teaching positions at the University of Minnesota and the Maryland University, USA. His current research activities are focused on functional foods, health claims, as well as DNA technologies in food and agriculture and minimally processed foods. He is the author and editor of one of the first book published on phytoestrogens entitled "Phytoestrogens in Functional Foods" published by CRC and published several other books. He is currently Founder and Director of Mogan International Research Center Ankara Turkey, organizing conferences, writing books and consultant for companies among others.

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