KEYNOTE SPEAKER

Safety aspects of application of Lactic Acid Bacteria

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Abstract

LAB constitute a phylogenetically heterogeneous group of ubiquitous microorganisms that are naturally present in high nutrient containing organic products such as foods and occupy a wide range of ecological niches ranging from the surface of plants to the gastro-urogenital tract of animals. Currently, the LAB group includes a large number of cocci and bacilli, such as species of the genera *Carnobacterium, Enterococcus, Lactobacillus, Lactococcus, Leuconostoc, Oenococcus, Pediococcus, Streptococcus, Tetragenococcus, Vagococcus, Weissella,* etc. From a historical point of view, LAB has been used since ancient times in food fermentation processes and preservation. Due to their lack of pathogenicity, most LAB species have received the GRAS (Generally Recognized as Safe) status by the U.S. Food and Drug Administration. In addition to their important technological properties in food production, various species of LAB have been shown to possess therapeutic properties since they are able to prevent the development of some diseases as shown mostly using animal models and have the capacity to promote beneficial effects in human and animal health. In recent years, the number of functional food products enriched with live probiotic microorganisms, has increased exponentially since it is know that these can confer health benefits on the host. Besides all beneficial properties studied for various LAB, a special attention need to be pay on the possible presence of virulence factors, production of biogenic amines and antibiotic resistance. This virulence determinants have been well detected and studied in Enterococci and Streptococci, however, in last few years report on presence of virulence factors in otherwise GRAS Lactobacilli have been showing the potential upcoming problems. Horizontal gene transfer of virulence factors between pathogenic and LAB, including probiotics is a highly possible scenario in case of uncontrolled application of probiotics. In addition, some of the antimicrobial peptides expressed by LAB may be associate with high cytotoxic properties. A special attention need to be pay on the possible cytotoxicity levels of the expressed bacteriocins in order to drown conclusion for the safe application of the producer or antimicrobial peptides in the bio-preservation and as a probiotics.

Biography

Svetoslav Todorov has completed his Ph.D at ENITIAA, Nantes, France and Sofia University, Sofia, Bulgaria and postdoctoral studies from Stellenbosch University, South Africa and visiting professor at Sao Paulo University, Brazil. Currently he is a visiting professor at Federal University of Viçosa, Viçosa, Minas Gerais state, Brazil. He has published more than 130 papers in reputed journals and serving as a member of the editorial board. He is reviewer for more than 90 international journals. He has also delivered various keynotes and plenary lectures both nationally and internationally.