A Comprehensive Review of Bioactive Compounds from Lactic Acid Bacteria: Potential Functions as Functional Food in Dietetics and the Food Industry

ABSTRACT

Lactic acid bacteria (LAB) are beneficial microbes known for their health-promoting properties. LAB are well known for their ability to produce substantial amounts of bioactive compounds during fermentation. Peptides, exopolysaccharides (EPS), bacteriocins, some amylase, protease, lipase enzymes, and lactic acid are the most important bioactive compounds generated by LAB activity during fermentation. Additionally, the product produced by LAB is dependent on the type of fermentation used. LAB derived from the genera Lactobacillus and Enterococcus are the most popular probiotics at present. Consuming fermented foods has been previously connected to a number of health-promoting benefits such as antibacterial activity and immune system modulation. Furthermore, functional food implementations lead to the application of LAB in therapeutic nutrition such as prebiotic, immunomodulatory, antioxidant, anti-tumor, blood glucose lowering actions. Understanding the characteristics of LAB in diverse sources and its potential as a functional food is crucial for therapeutic applications. This review presents an overview of functional food knowledge regarding interactions between LAB isolated from dairy products (dairy LAB) and fermented foods, as well as the prospect of functioning LAB in human health. Finally, the health advantages of LAB bioactive compounds are emphasized.