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Animal-origin probiotics vs plant-origin probiotics

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At the beginning of the 20th century, Ellie Metchnikoff (1845–1916), Ernest Moro (1874–1951), and Leo Rettger (1874–1954) made their first scientific contributions to the research on probiotics. In humans, lactic acid bacteria (LAB) have a strong influence on the host's health because LAB is an important biodefense factor for preventing colonization by and subsequent proliferation of pathogenic bacteria in the intestine. Probiotics is largely used to produce fermented products of animal (dairy) and plant origin. Recently, fruit or vegetable products containing probiotics are preferred by some consumers. In the formulation of fruit or vegetable probiotic products, *Lactobacillus acidophilus, L. casei, L. plantarum, L. rhamnosus* and *Bifidobacterium lactis* are most utilized. European, American and Asian (especially in Japan and South Korea) markets already commonly sell probiotic products from fruits and vegetables. *Lactobacillus plantarum* is a heterogeneous and versatile species encountered in a variety of environmental niches, including fermented food products, such as dairy, meat, fish, and vegetables, as well as plant matter. This species exhibits various biological effects such as antitumor, anticoagulant, antiviral, immune modulatory and anti-inflammatory, antidiabetic, and antioxidant or free radical scavenging activity. My research group discovered *L. plantarum* strains isolated from kimchi and infant feces. These strains have a high survival rate in low pH conditions. Proteins isolated from *L. plantarum* L67 could stimulate the apoptotic signals and then consequently induce programmed cell death in HT-29 cells. The results in this study suggest that *L. plantarum* L67 could be used as a probiotic culture to produce dairy or vegetable fermented foods. Some companies insist that plant origin-probiotics are superior than animal-origin probiotics without any scientific data that supports the claim. How are plant proteins much better than animal proteins for human health? Simple answer is that it is not

Biography

Sejong Oh has earned his BSc degree from Korea University and his PhD majoring in Dairy Chemistry and Biotechnology from the same university. He joined the R & D Center of Korea Yakult Co. Ltd. in 1990. In 1998, he has worked for the New York State Experimental Station in the Department of Food Science and Technology, Cornell University. In 2003, he was appointed to the Division of Animal Science, Chonnam National University as a Professor and he served as Vice Dean of Agriculture and Life Science, Chonnam National University since 2016. From 2008 to 2015, he was working as a Visiting Scientist at the Canadian Research Institute for Food Safety, University of Guelph. His current research interests include factors of controlling growth and survival of microorganisms in foods; beneficial uses of microorganisms; and applications of bacteriocins produced by lactic acid bacteria. He has authored more than 100 peer-reviewed publications, five book chapters (3 Korean and 3 English) and 35 patents including 2 US patents. He is also an Editor-in-Chief at the *Journal of Milk Science & Biotechnology*, and the *Korean Journal for Food Science of Animal Resources*, and the *Current Topics in Lactic Acid Bacteria and Probiotics*. He is currently a member of the American Society for Microbiology, the American Dairy Science Association, the Institute of Food Technologists and the Microbiological Society of Korea.

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