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Probiotics in the management of lactose intolerance and immunity

Byong H Lee

Jiangnan University, China

Abstract

So far no health claims on probiotics have been approved in basic and clinical research, except for lactose intolerant and digestion. Lactose, a low value product as cheese whey pollutant, became the major industrial uses and is a most controversial component of diet, that is important in biology and medicine (may affect disease risks). Our clinical trials showed that lactose adaptation in lactose maldigesters (LNP, recessive trait, 65%) improved symptoms by altered colonic bacteria (bifidobacteria), increasing lactase activity, decreasing N-Acetyl-beta-D - glucosaminase activity and hydrogen breath in response to regular lactose ingestion. Stimulated probiotics by prebioitcs (GOS) helped maintain the healthy balance of gut flora in humans and chickens. This balance promoted better digestion, increased immunity, and lessens food intolerance. In the immune stimulation studies, the immune-modulating activity of cell walls of probiotics (*L. casei LLG*) was increased in Ig isotypes in cow milk. The titers of serum KLH-specific IgA in high *L. casei* and low *L. acidophilus* were significantly higher than those of control in chicken's after10 d after immunization.

Biography

Prof. Byong Lee obtained his degrees at University of Brit. Col., McGill University and studied his PhD (Microbiology/Immunology) at Hahnemann Medical College/University of Pennsylvania and has completed his PhD at Laval University, Canada. He was Professor (AAFC Chair) in Departments of Food Science and Microbiology/Immunology, McGill University for more than 26 years; he is Distinguished Professor, School of Biotechnology, Jiangnan University, China and Adjunct Professor, Dept. of Microbiology/Immunology, McGill University, Canada. He has been an invited Professor at Korea Seoul National University, France INRA/University of Bourgogne, Ireland Food Research Center, England Institute of Food Research/University of Reading, Canada National Research Council, and Champlain Industry as a Research Director, Canada.

Lee has published 175 refereed journals, two text books on Food Biotechnology, 16 book chapters and 15 patents/inventions. He gave 96 invited speeches at the international and internal conferences. He supervised more than 100 graduate students' post-docs. He has received many honors and awards including Marquis Who's Who in the World and he is serving as editorial board member for three journals.