

10th World Congress on

NUTRITION & FOOD SCIENCES

May 29-31, 2017 Osaka, Japan

Functionality of milk fermented with *Lactobacillus* spp. on metabolic bone health in ovariectomized rats**Mi Ri Park, Sang Don Ryu and Younghoon Kim**
Chonbuk National University, Korea

The osteoporosis primary definition is a skeletal disorder of post-menopausal women or of old people. But, recent definition is, a systemic skeletal disease characterized by low bone mass and the micro architectural deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fracture. Here, we focused on evaluating the noble functionality of fermented milk with selected probiotics for anti-osteoporosis using *in vitro* and *in vivo* assays. Among selected probiotic bacteria, *Lactobacillus plantarum* B719 exhibited higher ($p < 0.05$) proliferation in MC3T3-E1 osteoblast cells, and was thus selected for subsequent analysis, involving for the comparison of osteoprotective effects with *L. plantarum* B719 fermented milk product (FMP-B719). Furthermore, the effects of FMP-B719 were investigated with medically ovariectomized (OVX) rats at the age of eight weeks. Results also demonstrated that assessment items for bone health including bone mineral density (BMD) in FMP-B719 group are significantly improved compared to that of OVX groups ($p < 0.05$). Interestingly, metagenome analysis showed that the taxonomic composition at the phylum level showed a considerable alteration in fecal microbiota induced by FMP-B719. Taken together, we proposed that FMP-B719 could be a potential candidate for prevention of osteoporosis, improvement of bone remodeling as well as inhibition of bone resorption through influencing dynamics of gut microbiota.

Biography

Mi Ri Park is a PhD candidate and has great experience on functionality of dairy originated foods including milk and probiotics for promoting human health. In recent, she is focusing on the molecular mechanisms of probiotic strain and its fermented products for anti-aging activity. In addition, she has interests in central nervous system (CNS) function by modulating signaling pathways of the microbiota-gut-brain axis. She has taken a novel viewpoint in this review by specifically highlighting that the gut microbial composition may be a key player for various metabolic diseases, and this may thus have critical impacts on CNS function, with significant implications for brain function and behavior.

mrpark@jbnu.ac.kr

Notes: