

# Changes in the Diversity and Composition of Fecal Microbiota by the Administration of Probiotics in Pigs

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### Abstract

Many reports have demonstrated that probiotics affect the host health beneficially through the modulation of microbial communities in the digestive tract. Therefore monitoring the impact of probiotics on the gut microbiota of humans and animals has been the subject of numerous investigations over the past years. Especially, understanding and modulation of the gut microbiota of pigs are important from an economical prospective. Recently, in-depth investigation of gastrointestinal bacterial diversity has been facilitated with the advent of high-throughput pyrosequencing of the prokaryotic 16S rRNA libraries because it can provide in-depth and robust information on the intestinal microbiomes. In this study, the changes in the fecal microbiota of pigs by the administration of probiotics were investigated using 16S rRNA gene pyrosequencing. A more stable bacterial community was observed after administration of the probiotics, compared with the control group. In addition, the levels of several pathogenic bacteria were decreased in the probiotic-fed group. Interestingly, the abundance of *Lactobacillus* spp. increased concurrently with probiotic administration. High-throughput 16S rRNA gene pyrosequencing technique enabled us to evaluate large datasets for more comprehensive and quantitative evaluation of the gut microbiota, as influenced by probiotic intervention.

### Biography

Dae-Kyung Kang is a Professor in the Department of Animal Resource Science, Dankook University, South Korea. He completed his PhD in 1999 at Department of Biotechnology, The University of Tokyo, Japan, and continued his work as a Visiting Scholar at the NIH, USA. He also worked as Research Head of EASY Bio, Inc. for 5 years before joining faculty member in Dankook University. His current research interest includes intestinal microbiota, genetic engineering of lactic acid bacteria. He has published more than 60 papers in peer-reviewed journals and he is also the inventor of 12 patents. Now he serves as Editor-in-Chief of the Korean Journal for Food Science of Animal Resources.