

KEYNOTE SPEAKER

Insight into the Ecology and Potential of Health Benefits of Human-Residential Bifidobacteria.

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Abstract

The genus *Bifidobacterium* has been classified into 48 taxa, including 39 species and nine subspecies. Most of the taxa are residents of the intestine, including in warm-blooded mammals and social insects. Some of these bifidobacteria species are typical inhabitants of the human gut (designated as human-residential bifidobacteria, HRB). The gut of breast-fed infants is predominantly colonised by bifidobacteria of species such as *Bifidobacterium breve*, *B. longum* subsp. *infantis*, *B. longum* subsp. *longum* and *B. bifidum* (designated as infant-type HRB). Species and population of colonised bifidobacteria change with aging; *B. adolescentis*, *B. catenulatum*, *B. pseudocatenulatum*, and *B. longum* subsp. *longum* are frequently isolated from the adult intestine (designated as adult-type HRB). Conversely, *B. animalis* subsp. *animalis*, *B. thermophilum*, *B. pseudolongum* and others naturally colonise the guts of other animals, and *B. animalis* subsp. *lactis* has been used as a probiotic or yogurt starter in industrial production (designated as non-HRB).

This lecture will give some topics on our recent achieves in the researches of changes of the composition of microbiota from newborn infants to centenarians analyzed by high-throughput sequencing of amplicons derived from the V3-V4 region of the 16S rRNA gene, comparative genomic analyses of strains belonging to HRB and non-HRB, and the difference of compatibility of bifidobacteria species with human breast milk. These findings provide insight into the understanding of the changes of microbiota composition and mechanism for the selective colonisation of infant-type HRB in the infant intestine.

Biography

Xiao Jin Zhong obtained his Ph. D in Microbiology at the Nagoya University, Japan in 1991. He is interested in various research areas including probiotics, *Bifidobacterium*, health benefits of probiotics, microbiota and fermentation technology. Xiao Jin Zhong has also been awarded for Fellow of Japan Society for Bioscience, Biotechnology, and Agrochemistry.