



SPEECH INFORMATION (For Conference Program Book)

Topic	Trajectory of Gut Microbiota in Infants and Its Role on Pediatric Allergic Diseases
Abstract	<p>The establishment of the human gut microbiome initiates since fetus, but at this stage, the species and number of microorganisms are still sparse. After birth, the abundance and diversity of the gut microbiome gradually increase through contact with the mother's birth canal, intake of breast milk, and environmental influences. The homeostasis of gut microbiota in early infancy contributes to normal immune development and several human diseases. In early infancy, <i>Bifidobacterium</i> is a dominant microbe resided in the gut, however, the abundance of this microorganism decreases when infants are one-year-old. Instead, <i>Bacteroides</i> gradually increased. A cohort follow-up study showed that infants with atopic dermatitis before one year of age had a significant lower abundance of <i>Bifidobacterium</i> than those without. Administration of <i>Bifidobacterium spp.</i> mixture significantly improve skin characteristics, inflammatory cytokines, and IL-31/STAT signaling pathway in a diet-induced atopic dermatitis mice model. Supplement of prebiotics, probiotics, and synbiotics in infant formula also showed benefits to prevent allergic diseases in young children, although the type of prebiotics or probiotic species are uncertain. In further precision medicine, we need to identify the critical gut microorganisms, which may relate to pediatric allergic diseases. On the other hand, to supplement of these lacking probiotics will prevent or treat these disorders.</p>

