Special Issue

The Gut Microbiome in Early Life and Beyond: Implications for Health and Disease

Message from the Guest Editors

The gut microbiome plays a pivotal role in human health, influencing physiological, metabolic, and immunological processes over an individual's lifetime. Emerging evidence has highlighted the critical importance of the gut microbiome during early life, particularly in the context of the Developmental Origins of Health and Disease (DOHaD) framework. Early-life microbial colonization and maturation are shaped by factors such as birth mode, diet, antibiotic exposure, and environmental influences, which can have long-lasting effects on health outcomes. Dysbiosis during this critical developmental window has been linked to an increased risk of chronic diseases, including metabolic disorders, neurodevelopmental conditions, and immune-mediated diseases later in life.

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