

Thesis Abstract

No. _____

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Title of Thesis: Multiomics analysis of microbiota-metabolites relations and meta-analysis for the effects of probiotics on children with atopic dermatitis			
Summary of Thesis: The gastrointestinal microbiota colonize the digestive tract and are composed of approximately 1014 microbes and more than 400 species. These microbes are responsible for maintaining the gastrointestinal environment by facilitating digestion and interacting with the host immune system. In this study, the relationships among microbiota, their host and metabolites are analyzed from the viewpoint of molecular biology and public health. First, the effect of microbiota on atopic dermatitis is reviewed and analyzed. The results of a meta-analysis examining the effects of probiotics on children with atopic dermatitis make it difficult to conclude that probiotics have a suppressing effect on atopic dermatitis (AD) symptoms based on some qualified papers. Among these studies, the differences of patient age and country region produced the strongest effects on AD. On the other hand, it is difficult to discuss the effect of probiotics considering the differences in probiotics, as well as the differing dynamics of microbial profiles, which proved to be a major limitation of this study. Second, metabolic analysis and microbial population analysis of the murine intestinal tract components are conducted to understand the ecosystem among the host, metabolites and microbiota. Metabolic profiles have differences among each part of the intestine. Particularly, sugar shows the largest differences, and sugars are clustered into seven groups.			
Keywords: Microbiota, Atopic dermatitis, Meta-analysis, Metabolome analysis, Microbial population analysis			