ID No.	K3002
Project Title	Intratissue cohabitation of commensal bacteria for immunity and symbiosis
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Report

IMSUT research group received the approval from the ethical committee at IMSUT for the proposed research to use human blood and fecal samples and small intestinal tissues collected at Osaka City University.

To assess the potential role of *Alcaligenes faecalis* in inducing immune tolerance, our preliminary and ongoing study examined *A. faecalis*-specific IgA Ab levels in healthy children and children with food allergies and gastrointestinal symptoms (e.g., diarrhea). As shown in Fig 1, *A. faecalis*-specific IgA Ab levels were significantly lower in food allergy patients than in age-matched healthy children. Because *A. faecalis*-specific IgA Abs reflect the intratissue cohabitation of *A. faecalis*, this result indicates that *A. faecalis* cohabitation in Peyer's patches may be altered in food allergy patients. Food allergies, which generally occur in early childhood, are caused by impaired immune tolerance followed by allergic sensitization. These data suggest that *A. faecalis* intratissue cohabitation regulates the induction and maintenance of oral tolerance in healthy children.

Since 2020 April, we have collected some blood, fecal and small intestinal samples from human children at Osaka City University, but because of COVID-19 spread, we were currently unable to examine those samples for *A. faecalis*. Those samples will be examined during the next year after the resolution of COVID-19.

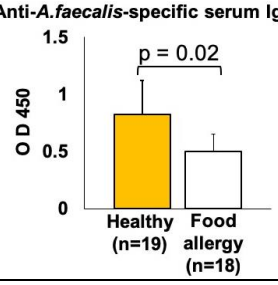

Fig. 1. *A. faecalis*-specific IgA Ab titers were lower in children with food allergies. ELISA was used to compare *A. faecalis*-specific IgA titers in healthy children (age: 5.4 ± 3.2 years and pediatric patients with food allergies (age: 5.0 ± 3.0 years).