

大学院 医学・生命科学セミナー(臨時)

Medical and Life Science Seminar

Title: Regulation of gut homeostasis

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Place: Edu. Lib. Bldg., 4th FL., Lecture Room 4

会場： 図書講義棟4階 第4講義室

Abstract

Intestine is a unique tissue where several environmental factors including commensal microbiota and dietary compounds exist. In a healthy condition, activity of intestinal immunity is finely regulated to prevent inflammatory responses to these environmental factors. Dysregulated interaction of intestinal environmental factors and intestinal immunity causes development of inflammatory bowel disease (IBD) represented by Crohn's disease and ulcerative colitis. We are analyzing the mechanisms for the regulation of gut homeostasis by focusing on intestinal innate immunity. Several unique subsets of innate immune cells, which regulate immune responses positively and negatively, were identified in the intestinal lamina propria. We also found human counterparts of these cell subsets in the human colon, and activity of these subsets were altered in IBD patients. Thus, intestinal innate immune cells are critically involved in the pathogenesis of intestinal inflammation. We are also analyzing barrier function of colonic epithelial cells that are responsible for segregation of intestinal environmental factors and immunity, contributing to prevention of intestinal inflammation. Indeed, the presence of bacteria on the epithelial surface of the large intestine was reported in several mouse models of intestinal inflammation. We will present a novel mechanism for the maintenance of gut homeostasis by a molecule on intestinal epithelial cells

References

- 1) *Immunity* 42, 279-293, 2015., 2) *Gastroenterology* 145; 1380-1391, 2013.
- 3) *Proc. Natl. Acad. Sci. USA*. 109, 5010-5015, 2012.

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