

学 位 論 文

**Increased production of intestinal immunoglobulins  
in *Syntenin-1* deficient mice**

(*Syntenin-1* 欠損マウスでは腸管免疫グロブリン産生が亢進する)

富山大学大学院  
医学薬学教育部（博士課程）  
生命・臨床医学専攻（小児科学）

氏 名 田村 賢太郎

## Abstract

Syntenin-1 (Syndecan-binding protein, Sdcbp) is an intracellular PDZ protein that binds multiple proteins and regulates protein trafficking, cancer metastasis, exosome production, synaptic formation, and interleukin (IL) -5 signaling. However, the functions of Syntenin-1 have not yet been clearly characterized in detail, especially in vivo. In this study, I generated a *Syntenin-1* knockout (KO) mouse strain and analyzed the role(s) of Syntenin-1 in IL-5 signaling, because the direct interaction of Syntenin-1 with the cytoplasmic domain of the IL-5 receptor  $\alpha$  subunit and the regulation of IL-5 signaling by Syntenin-1 have been reported. I found that the levels of immunoglobulin (Ig) G1 and IgM in fecal extract were significantly higher in the *Syntenin-1* KO mice than in wild-type (WT) mice, and fecal IgA level tended to increase in the KO mice. I also found that IgA production of purified splenic B cells stimulated with lipopolysaccharide (LPS), transforming growth factor (TGF)  $-\beta$ , and IL-5 was increased in *Syntenin-1* KO mice. Surface IgA-positive cells and eosinophils in the intestinal lamina propria, and gut-associated lymphoid tissues and B-1 B cells in peritoneal exudate were not significantly different in numbers and ratios between the *Syntenin-1* KO and WT control mice. My data indicate that Syntenin-1 plays important roles in intestinal homeostasis by negatively regulating Ig production in vivo. The analysis of *Syntenin-1* KO mice may provide novel information on not only mucosal immunity but also other functions of Syntenin-1 such as cancer metastasis and neural development.