

Principal Researcher	Kazuo Sugamura			Number of Researchers	4	
Research Institution · Department · Title	Professor, Dept. of Microbiol. Immunol., Tohoku Univ, Sch. Of Med			Location of Institution	Sendai	
Title of Project	Signal transducing pathways in immune cells and immunological disorders caused by their dysfunctions					
Abstract of Research Project	<p>There are a variety of cytokines involved in regulating the development, differentiation, proliferation and activation of cells in the immune system. The cytokine receptor common γ (γc) chain is shared with at least six distinct cytokines, and a mutation of the γc chain causes an X-linked severe combined immunodeficiency with defects of T, NK and mature B cells. The first section of this research project will be an attempt to identify signaling molecules involved in the downstream signaling pathway to the γc chain, and to identify a causative gene(s) for a novel SCID. This study will continue to development of gene therapies for SCID patients. The second section of this research project will focus on OX40 ligand (OX40L), a member of the TNF family, which we originally cloned. We have established OX40L-deficient mice, and demonstrated that OX40L critically contributes to functional development of antigen presenting cells, and OX40L-transgenic mice spontaneously developed autoimmune-like diseases, such as interstitial pneumonia and inflammatory bowel disease. We are going to investigate the mechanism of development of these autoimmune-like diseases and try to establish therapeutic procedures for the diseases by the OX40L-transgenic mice as a model of autoimmune diseases.</p>					
References	<p>1. Murata, K., Ishii, N., Takano, H., Miura, S., Ndhlovu, L. C., Nose, M., Noda, T. and Sugamura, K.: Impairment of antigen-presenting cell function in mice lacking expression of OX40 ligand. <i>J. Exp. Med.</i>, 191, 365-374, 2000.</p> <p>2. Asao, H., Okuyama, C., Kumaki, S., Ishii, N., Tsuchiya, S., Foster, D., and Sugamura, K.: The common gamma chain (γc) is an indispensable subunit of the IL-21 receptor complex. <i>J. Immunol.</i>, 167, 1-5, 2001.</p>					
Term of Project	Fiscal years 2002-2006 (5 years)					
Budget Allocation	FY2002	FY2003	FY2004	FY2005	FY2006	TOTAL
(in thousand of yen)	13,700	21,500	19,800	17,200	12,900	85,100
Homepage Address	http://www.med.tohoku.ac.jp/study_room/20/index.html					