

Biodefense Research

1. Staffs and Students

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| Professor | Toshiaki Ohteki |
| Junior Associate Professor | Nobuyuki Onai |
| Assistant Professor | Hiroyuki Tezuka |
| Project Assistant Professor | Taku Sato |
| Graduate Student | Kaka Ryu |
| Secretarial Assistant | Hisako Kamioka |

2. Purpose of Education

Our research projects focus on biodefense and maintenance of immunological homeostasis. Our goal is to define the molecular mechanism of immune cell differentiation and activation under healthy conditions as well as conditions of disease. To accomplish this goal, we are trying to clarify the molecular basis of induction and failure of immunological tolerance by focusing on dendritic cells and mucosa-associated lymphoid tissues. On the basis of our findings, we will further pursue our research in the hope of developing new rational therapies for prevention and treatment of disease.

3. Research Subjects

- 1) Mechanism of tolerance induction and its failure in the mucosa-associated lymphoid tissues
- 2) Differentiation and homeostasis of dendritic cells
- 3) Regulation of hematopoiesis by immune system

4. Publications

Original article

1. Tomita T, Kanai T, Totsuka T, Nemoto Y, Okamoto R, Tsuchiya K, Sakamoto N, Ohteki T, Hibi T, and Watanabe M. IL-7 is essential for lymphopenia-driven turnover of colitogenic CD4+ memory T cells in Chronic colitis. *Eur J Immunol* 39, 2737-2747 (2009)
2. Sato T, Onai N, Suda T, and Ohteki T. Interferon regulatory factor-2 protects haematopoietic stem cells from type-I interferon-dependent replicative exhaustion. *Nat Med* 15, 696-700 (2009)
3. Yamada J, Hamuro J, Fukushima A, Ohteki T, Terai K, Iwakura Y, Yagita H, and Kinoshita S. MHC-matched corneal allograft rejection in an IFN- γ /IL-17-independent manner in C57BL/6 mice. *Invest Ophthalmol Vis Sci* 50, 2139-2146(2009)