

Molecular Immunology

1. Staffs and Students (April, 2009)

Professor	Miyuki AZUMA	
Assistant Professor	Masaaki HASHIGUCHI	Yosuke KAMIMURA
Adjunct instructor	Hiroshi KIYONO	Fumihiko TSUSHIMA
Graduate Student	Hiroko KOBORI	Yujia CAO
	Takeshi KINEBUCHI	Oto ARAMAKI (Cariology and Operative Dentistry)
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Research Student	Lu Zhang	
Secretary	Hatsue TADANO	

2. Purpose of Education

Main objective of Molecular Immunology in the graduate course is to understand and study how the immune system works for biological defense. Students also learn immunopathology and immunophysiology of systemic and organ-specific immune diseases and how the immune diseases control and regulate.

3. Research Subjects

- 1) Roles of B7-CD28 and TNF-TNFR family costimulatory molecules
- 2) Lymphocyte functional molecules expressed on T cells and dendritic cells
- 3) Immune regulation by targeting costimulatory molecules
- 4) Dental and oral immunobiology

5. Publications

Original Article

1. Chalermarp N, Azuma M. Identification of three distinct subsets of migrating dendritic cells from oral mucosa within the regional lymph nodes. *Immunology* 127: 558-566, 2009
2. Piao J, Kamimura Y, Iwai H, Cao Y, Kikuchi K, Hashiguchi M, Masunaga T, Jiang H, Tamura K, Sakaguchi S, Azuma M. Enhancement of T cell-mediated anti-tumor immunity via the ectopically expressed glucocorticoid-induced tumor necrosis factor receptor-related receptor ligand on tumors. *Immunology* 127: 489-499, 2009
3. Kamimura Y, Iwai H, Piao J, Hashiguchi M, Azuma M. The Glucocorticoid-induced TNFR-related protein (GITR)-GITR ligand pathway acts as a mediator of cutaneous dendritic cell migration and promotes T-cell mediated acquired immunity. *J Immunol* 182:2708-2716, 2009
4. Parekh VV, Lalani S, Kim S, Halder R, Azuma M, Yagira H, Kumar V, Van Kaer L. PD-1/PD-L blockade prevents anergy induction and enhances the anti-tumor activities of glycolipid-activated invariant NKT cells. *J Immunol* 182:2816-2826, 2009.
5. Nakayama M, Akiba H, Takeda K, Kojima Y, Hashiguchi M, Azuma M, Yagita H, Okumura K. Tim-3 mediates phagocytosis of apoptotic cells and cross-presentation. *Blood* 113: 3821-3830, 2009
6. Takahashi N, Matsumoto K, Saito H, Nanki T, Miyasaka N, Kobata T, Azuma M, Lee S, Mizutani S, Morio T. Impaired CD4 and CD8 effector function and decreased memory T cell populations in ICOS-deficient patients. *J Immunol* 182:5515-5527, 2009
7. Youngnak-Piboonratnakit P, Dhaunuthai K, Thongprasom K, Luckprom P, Sarideechighu W, Luangjarmekorn L, Azuma M. Expression of IFN- γ before and after treatment of oral lichen planus with 0.1% fluocinolone acetonide in orabase. *J Oral Pathol Med.* 2009, doi:10.1111/j.1600-0714.2009.00805x
8. Yadav D, Hill N, Yagita H, Azuma M, Sarvetnick N. Altered availability of PD01/PD ligands is associated with the failure to control autoimmunity in NOD mice. *Cell Immunol* 258: 161-171, 2009
9. Kamimura Y, kobori H, Piao J, Hashiguchi M, Matsumoto K, Horose S, Azuma M. Possible involvement of soluble B7-H4 in T-cell-mediated inflammatory immune responses. *Biochem Biophys Res Commun* 389:349-353, 2009
10. Fife BT, Eagar TN, Pauken KE, Wu J, Obu T, Tang Q, Azuma M, Krummel MF, Bluestone JA. PD-1-PD-L1 interactions promote tolerance by blocking the T cell receptor stop signal. *Nature Immunol* 10: 1185-1193, 2009
11. Okudaira K, Hokari R, Tsuzuki Y, Okada Y, Komoto S, Watanabe C, Kurihara C, Kawaguchi A, Nagao S, Azuma M, Yagita H, Miura S. Blockade of B7-H1 or B7-DC induces an anti-tumor effect in a mouse pancreatic cancer model. *Int J Oncol* 13: 741-749, 2009