Molecular Immunology

1. Staffs and Students (April, 2010)

Professor	Miyuki AZUMA	
Associate Professor	Hidenori HASE	
Assistant Professor	Yosuke KAMIMURA (〜Aug)	
	Tatsukuni OHNO (Sept〜)	
Adjunct instructor	Hiroshi KIYONO	Masaaki HASHIGUCHI
	Daisuke ITOH	Hiroko KOBORI (〜Aug)
	Yosuke KAMIMURA (Sept〜)	
Graduate Students	Yujia CAO (〜Sept.)	Oto ARAMAKI (Cariology and Operative Dentistry)
	Al Mamun MD ABDULLAH	
	Lu ZHANG	Chenyang ZHANG (Oct.〜)
	Youko SHIMIZU (Periodontology, 〜Nov)	
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. Morita M, Fujino M, Jiang G, Kitazawa Y, Xie L, Azuma M, Yagita H, Nagao S, Sugioka A, Kurosawa Y, Takahara S, Fung J, Qian S, Lu L, Li X. PD-1/B7-H1 interaction contribute to the spontaneous acceptance of mouse liver allograft. Am J Transplant 10: 40-46, 2010.

2. Azuma M, Ritprajak P, Hashiguchi M. Topical application of siRNA targeting cutaneous dendritic cells in allergic skin disease. Methods Mol Biol 623:373-81, 2010.

3. Ritprajak P, Hashiguchi M, Tsushima F, Chalermsarp N, Azuma M. Keratinocytes-associated B7-H1 directly regulates cutaneous effector CD8^{+} T cell responses. J. Immunol. 184: 4818-4925, 2010.

4. Kobori H, Hashiguchi M, Piao J, Kato M, Ritprajak P, Azuma M. Enhancement of effector CD8^{+} T cell function by tumour-associated B7-H3 and modulation of its counter receptor triggering receptor expressed on myeloid cell-like transcripts 2 (TLT-2) at tumor sites. Immunology 130 (3): 363-73, 2010.

5. Dias P, Giannoni F, Lee LN, Han D, Yoon S, Yagita H, Azuma M, Sarawar SR. CD4 T-cell help programs a change in CD8 T-cell function enabling effective long-term control of murine gammherpesvirus 68: role of PD-1-PD-L1 interactions. J Virol 84 (16): 8241-9, 2010.

6. T Fukaya, H Takagi, Y Sato, K Sato, K Eizumi, H Taya, T Shin, L Chen, C Dong, M Azuma, H Yagita, B Malissen, K Sato. Crucial roles of B7-H1 and B7-DC expressed on mesenteric lymph node dendritic cells in the generation of antigen-specific CD4^{+}Foxp3^{+} regulatory T cells in the establishment of oral tolerance. Blood. 116 (13): 2266-2276, 2010

7. J Hori, Taniguchi H, Eang M, Oshima M, Azuma M. GITR ligand-mediated local expansion of regulatory T cells contributes to immune privilege of corneal allografts. Invest Ophthalmol Vis Sci 51 (21): 6556-65, 2010

8. Zhou Q, Munger ME, HIghfill SL, Tolar J, Weigel BJ, Riddle M, Sharpe AH, Vallera DA, Azuma M, Levine BL, June CH, Murphy WJ, Munn DH, Blazer BR. Programmed death-1 (PD-1) signaling and regulatory T cells (Tregs) collaborate to resist the function of adoptive transferred cytotoxic T lymphocytes (CTLs) in advanced acute myeloid leukemia (AML). Blood 116 (14):2484-93, 2010.

9. Lee J, Chang Y, Lai W, Ko Z, Kuo MY, Chiang C, Azuma M, Chen CW, Chia J. Increased prevalence of interleukin-17-producing CD4^{+} tumor infiltrating lymphocytes in human oral squamous cell carcinoma. Head and Neck

DOI:10.1002/hed.21607 (2010 Nov 11).

10. Matsumoto K, Kan-O K, Eguchi-Tsuda M, Fukuyama S, Asai Y, Matsumoto T, Moriwaki A, Matsunaga Y, Tsutsui H, Kawai T, Takeuchi O, Akira S, Yagita H, Azuma M, Nakanishi Y, Inoue H. Essential Role of B7-H1 in Double-stranded RNA-induced Augmentation of an Asthma Phenotype in Mice. Am J Respir Cell Mol Biol. (on line publication 2010.8.27).

11. Azuma M. Role of the glucocorticoid-induced TNFR-related protein (GITR)-GITR ligand pathway in innate and adaptive immunity. Cri Rev Immunol. 30: 457-57, 2010.

12. Yamaura K, Watanabe T, Boenisch O, Yeung M, Yang S, Magee C, Padera R, Datta S, Schtton T, Kamimura Y, Azuma M, Najafian N. In vivo function of immune inhibiotory molecule B7-H4 in a murine vascularized model of cardiac transplantation. American J Transplant 10 : 2355-62, 2010.

13. Kanno Y, Sakurai D, Hase H, Kojima H, and Kobata T.TACI induces cIAP1-mediated ubiquitination of NIK by TRAF2 and TANK to limit non-canonical NF-kB signaling, J. Receptors and signal Transduction, 30: 121-132, 2010.

14. Oboki K, Ohno T, Kajiwara N, Arae K, Morita H, Ishii A, Nambu A, Abe T, Kiyonari H, Matsumoto K, Sudo K, Okumura K, Saito H, Nakae S. IL-33 is a crucial amplifier of innate rather than acquired immunity. Proc Natl Acad Sci USA. 107: 18581-6, 2010.

15. Ishii A, Oboki K, Nambu A, Morita H, Ohno T, Kajiwara N, Arae K, Sudo H, Okumura K, Saito H, Nakae S. Development of IL-17-mediated delayed-type hypersensitivity is not affected by down-regulation of IL-25 expression. Allergol Int. 59: 399-408, 2010.

16. Kajiwara N, Oboki K, Ohno T, Ishii A, Sunnarborg SW, Okumura K, Saito H, Nakae S.Amphiregulin is not essential for ovalbumin-induced acute airway inflammation in mice. Allergol Int. 59: 207-11, 2010.