

Immunotherapeutics

1. Staffs and Students (April, 2010)

Professor	Mari KANNAGI	
Associate Professor	Takao MASUDA	
Assistant Professor	Atsuhiko HASEGAWA	
Assistant Professor	Amane SASADA	
Postdoctoral Position	Takaya HAYASHI	
Graduate Student	Ayako TAKAMORI,	Nursarat AHMED,
	Yuki IWASAKI,	Shuichi KINPARA,
	Yotaro TAMAI,	Masashi MIYANO,
	Na ZENG,	Chihiro YAMAGUCHI
Research Student	Wakana MOCHIZUKI	

2. Purpose of Education

Our research area is in between clinical and basic science, involving immunology, microbiology, and molecular biology. We participate in education for undergraduate medical students in basic immunology and a part of clinical immunology. For graduate students, we provide opportunity to research mechanisms of infectious disease and develop immunological therapeutics.

Viral infection causes various diseases including immunodeficiency, malignancy, autoimmunity, and inflammation. Human immunodeficiency virus (HIV) causes acquired immunodeficiency syndrome (AIDS), and Human T-cell leukemia virus type-I (HTLV-I) causes adult T-cell leukemia (ATL) and various chronic inflammatory autoimmune-like diseases. To understand mechanisms of these diseases, investigation on host immunity is indispensable. Immune responses are usually protective but sometimes harmful for the host, and are important determinants for disease manifestation. The goal of research in our department is elucidation of the role of host immunity in the diseases and development of effective immunotherapy. We also investigate intracellular mechanisms of viral replication to target direct molecules for therapy.

3. Research Subjects

1. Analysis of immunological risks for ATL development in HTLV-I-carriers.
2. Development of anti-tumor vaccine using experimental animal model system for ATL.
3. Immunological and molecular mechanism of HTLV-1 induced tumorigenesis.
4. Molecular mechanism of HIV replication especially related to HIV-1 integrase.
5. Experiments based on gene therapy to suppress HIV-1 replication.
6. Immunological suppressive mechanisms on HIV-1 replication.

4. Clinical Services

5. Publications

Original article

1. Ahmed, N., T. Hayashi, A. Hasegawa, H. Furukawa, N. Okamura, T. Chida, T. Masuda, and M. Kannagi. Suppression of human immunodeficiency virus type 1 replication in macrophages by commensal bacteria preferentially stimulating Toll-like receptor 4. *J Gen Virol* 91:2804-13, 2010.
2. Hayashi, T., H. Nishitsuji, A. Takamori, A. Hasegawa, T. Masuda*, and M. Kannagi. DNA-dependent activator of IFN-regulatory factors enhances the transcription of HIV-1 through NF-kappaB. *Microbes Infect* 12:937-47, 2010.
3. Saeng-aroon, S., Tsuchiya, N., Auwanit., W., Ayuthaya. P.I. N., Pathipvanich,P., Sawanpanyalert, P., Rojanawiwat, A., Kannagi, M., Ariyoshi, K., Sugiura, W. Drug-resistant mutation patterns in CRF01_AE cases that failed d4T+3TC+nevirapine fixed-dosed, combination treatment: Follow-up study from the Lampang cohort. *Antiviral Research*, 87: 22-29, 2010.

Review Article

1. Kannagi M, Hasegawa A, Kinpara S, Shimizu Y, Takamori A, Utsunomiya A. Double control systems for human T-cell leukemia virus type 1 (HTLV-1) by innate and acquired immunity. *Cancer Sci*. Jan, 2011.

Book

International Scientific Meetings

1. M. Kannagi, S. Kinpara, A. Hasegawa, Y. Shimizu, H. Oiki, T. Masuda, Y. Yamano, A. Utsunomiya. Double control of viral expression by innate and acquired immunity in Human T-cell leukemia virus type-I infection. 14th International Congress of Immunology, August, 2010, Kobe.
2. Takamori A, Hasegawa A, Shimizu Y, Tamai Y, Zeng N, Utsunomiya A, Yamano Y, Maeda Y, Choi I, Uike N, Tanosaki R, Okamura J, Masuda M, Okudaira T, and Kannagi M. Functional studies on HTLV-1 Tax-specific CTLs in chronic ATL patients. The 14th International congress of immunology, Aug, 2010.
3. Ahmed N, Hayashi T, Hasegawa A, Furukawa H, Okamura N, Chida T, Masuda T, and Kannagi M. Potential control of HIV-1 replication in macrophages by commensal organisms stimulating TLR4. The 14th International congress of immunology, Aug, 2010.
4. Hasegawa A, Zeng N, Shimizu Y, Sasada A, Takamori A, Tamai Y, Utsunomiya A, Tanosaki R, Choi I, Uike N, Okamura J, and Kannagi M. Basic study on peptide-pulsed dendritic cell-based immunotherapy for adult T-cell leukemia. The 1st International Society for Cellular Therapy. Asia-Pacific Regional Meeting, Oct, 2010.
5. Yamamoto, S.P., K. Okawa, T. Masuda, Y. Morikawa, Y. Koyanagi and Y. Suzuki. Modulation of HIV-1 infection at late phase by an integrase-interactor, Huw1. CSH meeting Retroviruses, May, 2010.