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#### A. Personal Statement

Infectious diseases are still a huge menace to human health and continue unabated in tropical areas under the conditions of poverty and the unique natural and social environments. Various kinds of parasites infect humans for long periods of time without killing them, giving rise to tremendous social and/or economic loss. Since I have been eager to control Neglected Tropical Diseases (NTDs), I specially studied “Parasitology”, “Tropical Infectious Disease” and “Immunology”. I would like to develop deep insight into infectious diseases and the surrounding factors from various points of view through both field and laboratory studies. Our goal is to contribute to new knowledge and to provide new tools that are crucial to control infectious diseases.

As a doctoral student at Institute of Medical Bioregulation, Kyushu University, I studied host defense mechanism against various kinds of pathogens. After adoption to the Department of Parasitology, Kyushu University, as an assistant professor on Dec. 1997, I focused on the investigation on host defense mechanism against protozoan parasites. I and my colleagues found out that newly identified orphan cytokine receptor WSX-1 is required for the initiation of Th1 responses and resistance to *Leishmania major* infection using WSX-1 deficient mice. Then, IL-27 was identified to be one of the ligands for WSX-1. Furthermore, we clarified that IL-27/WSX-1 signaling pathway involves induction of transcriptional factor T-bet through activation of STAT1 and that WSX-1 is also required for the resistance to *T. cruzi* and *T. gondii* infection by regulation of pro-inflammatory cytokine production. Then, IL-27/WSX-1 jumped into the leading groups of the investigation about Th1/Th2 differentiation and immunoregulation. From 2015, we have initiated the study “live attenuated prophylactic vaccine for leishmaniasis” as an international multidisciplinary collaboration with the support by the Global Health Innovative Technology Fund.

Besides the immunological approach, we have been carried out field study in tropical countries, such as Bangladesh, Nepal, Bolivia and Kenya. Through the study, we elucidated that the prevalence of  $\alpha$ -thalassemia is correlate with the endemicity of malaria in Nepal and showed that  $\alpha$ -thalassemic individuals also show low malaria infection rate. *E. moshkovskii* infection was elucidated to associate with diarrhea in Bangladeshi children. In Kenya, we found that risk factors and spatial distribution of *Schistosoma mansoni* infection on the shores and islands of Lake Victoria, Mbita district, Kenya and those of *Schistosoma haematobium* and hookworm infections among schoolchildren in Kwale, Kenya.

#### B. Education

1999, Ph.D. Graduate school of Medical Sciences, Kyushu University, Fukuoka, Japan

1993, M.D. School of Medicine, Kumamoto University, Kumamoto, Japan

C. Position and Honors

Deputy Director (2017- present), Institute of Tropical Medicine, Nagasaki University

Professor (2009-present), Departments of Parasitology, Institute of Tropical

Medicine, Nagasaki University

Head of Animal Research Center for Tropical Infectious Diseases (2009 – 2013)

Assistant Professor (2007-2008), Departments of Parasitology, Kyushu University

Research Associate (2004 -2006), Division of Infectious Diseases & International

Health, Departments of Medicine, Pathology, and Microbiology, University of

Virginia

Assistant Professor (1997-2004), Departments of Parasitology, Kyushu University

D. Membership and Leadership

Temporal Advisor, WHO (2013, 2015)

Auditor, Japanese Society of Tropical Medicine (2017 - present)

Director, Japanese Society of Tropical Medicine (2012 - 2017)

Member, Japanese Society of Tropical Medicine (1998 - present)

Director, Japanese Society of Parasitology (2018 - )

Councilor, Japanese Society of Parasitology (2011 - present)

Member, Japanese Society of Parasitology (1998 - present)

Member, Japanese Society for Immunology (1998 - present)

E. Awards

2012 The Uehara Memorial Foundation Award

2011 The Takeda Foundation Award

2007 The Mochida Memorial Foundation Award

2003 Miyazaki Ichiro Incentive Award

2001 The honor for a young scientist by the Japanese Society of Parasitology

F. Publications

Original Articles

1) Moriyasu, T., Nakamura, R., Deloer, S., Senba, M., Kubo, M., Inoue, M., Culleton, R., Hamano, S.: *Schistosoma mansoni* infection suppresses the growth of *Plasmodium yoelii* parasites in the liver and reduces gametocyte infectivity to mosquitoes. *PLoS Negl. Trop. Dis.* 2018; accepted.

2) Shimokawa, C., Senba, M., Kobayashi, S., Kikuchi, M., Obi, S., Ochia, A., Hamano, S., Hisaeda, H.: Intestinal Inflammation-Mediated Clearance of Amebic Parasites Is Dependent on IFN- $\gamma$ . *J. Immunol.* 2017; doi: 10.4049/jimmunol.1700806.

3) Deloer, S., Nakamura, R., Kikuchi, M., Moriyasu, T., Kalenda, Y.D.J., Mohammed, E.S., Senba, M., Iwakura, Y., Yoshida, H., Hamano, S.: IL-17A contributes to reducing IFN- $\gamma$ /IL-4 ratio and persistence of *Entamoeba histolytica* during intestinal amebiasis. *Parasitol. Int.* 2017; 66(6): 817-823.

4) Chadeka, E.A., Nagi, S., Sunahara, T., Cheruiyot, N.B., Bahati, F., Ozeki, Y., Inoue, M., Osada-Oka, M., Okabe, M., Hirayama, Y., Changoma, M., Adachi, K., Mwendu, F., Kikuchi, M., Nakamura, R., Dan Justin, Y.K., Kaneko, S., Hirayama, K., Shimada, M., Ichinose, Y., Njenga, S.M., Matsumoto, S., Hamano, S.: Spatial Distribution and Risk Factors of *Schistosoma haematobium* and Hookworm Infections among Schoolchildren in Kwale, Kenya. *PLoS Negl. Trop. Dis.* 2017; 11(9):e0005872.

5) Bao, L.Q., Nhi, D.M., Huy, N.T., Hamano, S., Hirayama, K.: Tacrolimus prevents murine cerebral malaria. *Immunology*, 2017, 150(2): 155-161.

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- 8) Nzou, S.M., Fujii, Y., Miura, M., Mwau, M., Mwangi, A.W., Itoh, M., Salam, M.A., Hamano, S., Hirayama, K., Kaneko, S.: Development of multiplex serological assay for the detection of human African trypanosomiasis. *Parasitol Int.* 2016; 65(2): 121-127.
- 9) Tanigawa, C., Fujii, Y., Miura, M., Nzou, S.M., Mwangi, A.W., Nagi, S., Hamano, S., Njenga, S.M., Mbanefo, E.C., Hirayama, K., Mwau, M., Kaneko, S.: Species-specific serological detection for schistosomiasis by serine protease inhibitor (SERPIN) in multiplex assay. *PLoS Negl. Trop. Dis.* 2015; 9(8): e0004021.
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