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# LI-RUNG HUANG (黃麗蓉)

**AREA OF INTEREST:** HBV virology,  
Immunotherapy

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**EDUCATION:** **Ph.D.** (Sep. 2000~Jan. 2007), Graduate Institute of Microbiology, College of Medicine, National Taiwan University, Taipei, Taiwan

**Master of Science** (Sep. 1996~June 1998), Graduate Institute of Immunology, College of Medicine, National Taiwan University, Taipei, Taiwan

**Bachelor of Veterinary Medicine** (Sep. 1991~June 1996), Department of Veterinary Medicine, National Chung Hsing University, Taichung, Taiwan

## **PROFESSION EXPERIENCE:**

**Postdoctoral fellow** (Mar. 2008~present), Institute of Molecular Medicine and Experimental Immunology, Bonn University, Bonn, Germany

**Postdoctoral fellow** (Feb. 2007~Jan. 2008) Graduate Institute of Clinical Medicine, National Taiwan University, Taipei, Taiwan

**Research assistant** (July 1998~June 2000), Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan

I have worked with HBV animal models including mouse models and woodchuck model for more than ten years since my Ph.D study in Dr. Pei-Jer Chen's lab in 2000. During the period in Dr. Chen's lab, I published six papers including two major papers in P.N.A.S reporting my finding about mouse models for HBV persistence, three papers from collaboration with other researchers in the lab or from NTU and one paper related to SARS in 2004. Besides working on the mouse model, I was also involved in woodchuck study led by Dr. Hui-Lin Wu in hepatitis research center in NTUH due to my bachelor of veterinary medicine training background and immunological training in Academia Sinica when I was a master student. The profound scientific training makes me not only an independent researcher but also a team player who is able to set up feasible experimental protocol/design and execute own or collaborative projects.

When I study the HBV persistence more in detail, I realize that the development of therapeutic strategies for chronic HBV infections and HBV-related HCC need more input from the understanding of liver immunology. Therefore I join the lab led by Prof. Percy Knolle in Bonn University to study the impact of liver microenvironment on the generation of HBV-specific CD8<sup>+</sup> T cell response and also to develop anti-HBV immunotherapy since 2008 till now. I was awarded a two-year grant related to HBV study for training to be a group leader in 2009 and therefore I am working with one Ph.D student and one master student now.

#### **PATENT AND PUBLICATIONS**

1. **Patent No.:** US 7,452,696 B2; Patent date: Nov. 18, 2008 (Recombinant plasmid and method for expressing hepatitis B viral antigens and virions in vivo)
2. Huang, L.R., Chen, F.L., Chen, Y.T., Lin, Y.M. and Kung, J.T. **2000**. Potent induction of long-term CD8<sup>+</sup> T cell memory by short-term IL-4 exposure during T cell receptor stimulation. **Proc Natl Acad Sci U S A**. 97: 3406-11.
3. Lee, R.S., Hsu, S.J., Huang, L.R., Wu, H.L., Lin, S.L., Chen, D.S. and Chen, P.J. **2004**. Induction of humoral and cellular immune responses to hepatitis delta virus through DNA immunization in BALB/c mice. **Methods Mol Med** 96:111-28.
4. Huang, L.R., Chiu, C.M., Yeh, S.H., Huang, W.H., Hsueh, P.R., Yang, W.Z., Yang, J.Y., Su, I.J., Chang, S.C. and Chen, P.J. **2004**. Evaluation of antibody responses against SARS coronaviral nucleocapsid or spike proteins by immunoblotting or ELISA. **J Med Virol** 73: 338-46.
5. Wu, H.L., Huang, L.R., Huang, C.C., Lai, H.L., Liu, C.J., Huang, Y.T., Hsu, Y.W., Lu, C.Y., Chen, D.S. and Chen, P.J. **2005**. RNA interference-mediated control of hepatitis B virus and emergence of resistant mutant. **Gastroenterology** 128: 708-16.
6. Huang, L.R., Wu, H.L., Chen, P.J. and Chen, D.S. **2006**. An immunocompetent mouse model for the tolerance of human chronic hepatitis B virus infection. **Proc Natl Acad Sci U S A**. 103: 17862-67.
7. Chou C.H., Chen P.J., Jeng Y.M., Cheng A.L., Huang L.R., Cheng J.C. **2009**. Synergistic effect of radiation and interleukin-6 on hepatitis B virus reactivation in liver through STAT3 signaling pathway. **Int J Radiat Oncol Biol Phys**. 75:1545-52.
8. Lin, Y.J.<sup>\*</sup>, Huang, L.R.<sup>\*</sup>, Yang, H.C., Tzeng, H.T., Hsu, P.N., Chen, P.J. and Chen D.S. **2010**. Hepatitis B Virus Core Antigen Determines Viral Persistence in a C57BL/6 Mouse Model. **Proc Natl Acad Sci U S A**. 107:9340-5, (\* equal contribution)

#### **GRANT:**

The cellular and molecular mechanism for NK cell activation by HBcAg and its influence on the generation of effective antiviral immunity, BONFOR, 2009-2011, Germany

#### **MEETING ORAL PRESENTATION:**

1. Reverse genetic analysis of individual HBV gene in determining HBsAg persistence in C57BL/6 mouse model, 2007 International Meeting on the Molecular Biology of Hepatitis B Viruses, 2007, Rome.
2. Control of persistent HBV infection by hepatitis B core antigen-activated NK cells: a possible mechanism for the HBV persistence, 2007 International Meeting on the Molecular Biology of Hepatitis B Viruses, 2007, Rome.
3. Control of persistent HBV infection by hepatitis B core antigen-activated NK cells: a possible mechanism for the HBV persistence, Joint Annual Meeting of Immunology of Austrian and German Societies, 2008, Vienna.
4. Overcoming local barriers in adoptive T cell immunotherapy by increasing CD8 T cell fitness, 2010 International Meeting on the Molecular Biology of Hepatitis B Viruses, 2010, Taipei

**PROFESSIONAL SKILLS:**

1. **Animal experiments:** surgery, (hydrodynamic) injections, in vivo bioluminescence detection
2. **Cell culture:** cell lines, primary cell preparation and culture (liver cells and immune cells)
3. **Protein expression and purification**
4. **Recombinant retrovirus and adenovirus construction and preparation:** viral transduction
5. **ELISA/ELISPOT**
6. **Flowcytometry**
7. **Immunohistochemistry**
8. **Confocal microscopy**
9. **Real-time PCR**
10. **Molecular biology techniques:** cloning, Southern hybridization, northern hybridization, Western blot
11. **Scientific article writing**

**HONORS AND AWARDS:**

1. Shen Fong-Wen Award (沈豐文) for excellent master student (1998)
2. Award of excellent thesis (優秀論文獎) by 財團法人肝病防治學術基金會 (2007)
3. The 17<sup>th</sup> Annual Wang Ming-Ning Award (第十七屆王民寧獎) for Medical Ph.D thesis (2007)
4. Travel grant awards from International Meeting on the Molecular Biology of Hepatitis B Viruses (2004, 2005, 2007, 2010, 2011)

**PROFESSIONAL MEMBERSHIPS:** German Society for Immunology  
International Society for Cellular Therapy