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## 學經歷

### Education

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| 2000 – 2005 | Ph.D., Department of Life Science, National Tsing Hua University                         |
| 1994 – 1996 | M.S., Graduate Institute of Microbiology and Immunology, National Defense Medical Center |
| 1990 – 1994 | B.S., Department of Medical Technology, China Medical College                            |

### Research experiences

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| 2015 | Professor, Department of Microbiology and Immunology, Chang Gung University                            |
| 2013 | Professor, Department of Microbiology, School of Medicine, China Medical University                    |
| 2011 | Assistant Professor, Department of Urology, The University of Texas Southwestern Medical Center        |
| 2005 | Post-doctoral fellow, Infectious Disease Control and International Medicine, Niigata University, Japan |

## 研究方向(Research Description)

### 1. Infection and immunity

Our current studies are focused on the investigation of molecular mechanisms of several bacterial components that involved in bacteria-induced pathogenesis of host. We have explored certain virulence factors that have been shown to be involved in the immune response caused by *Helicobacter pylori*. In addition, the functional studies of cytolethal distending toxin (CDT) secreted from *Campylobacter jejuni* as well as its theranostic application are currently studying in our laboratory.

### 2. Cancer biology and translational medicine

Seventy thousand patients were diagnosed with cancer in Taiwan every year. We have investigated some potent drugs against several types of cancers and explored their molecular mechanisms. The aims of discovery novel agents for inhibiting tumor cells are developing and charactering in our laboratory. Furthermore, we recently have been collaborated with physicians for the research of translational medicine. Our research interests including gut microbiota, infectious diseases, and cancer biology, which have been established in our collaborative teams.

## 著作(Selected Recent Publication, recent 5 years) (\*, corresponding author)

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- Chou LF, Chen TW, Yang HY, Tian YC, Chang MY, Hung CC, **Lai CH**, Hsu SH, Tsai CY, Ko YC, Lian JH, Yang CW. Implication of the IL-10-expression signature in the pathogenicity of *Leptospira*-infected macrophages. Microbiol Spectr. 2022;10(3):e0259521.
- Lo UG, Chen YA, Cen J, Deng S, Luo J, Zhau H, Ho L, **Lai CH**, Mu P, Chung LWK, Hsieh JT\*. The driver role of JAK-

STAT signalling in cancer stemness capabilities leading to new therapeutic strategies for therapy- and castration-resistant prostate cancer. *Clin Transl Med.* 2022;12(8):e978.

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- Kuo CJ, Ke JN, Kuo T, Lin CY, Hsieh SY, Chiu YF, Wu HY, Huang MZ, Bui NN, Chiu CH, Chiu CT, **Lai CH\***. Multiple amino acid substitutions in penicillin-binding protein-1A confer amoxicillin resistance in refractory *Helicobacter pylori* infection. *J Microbiol Immunol Infect.* 2022:S1684-1182(22)00104-9.
- Lee CF, Chen YA, Hernandez E, Pong RC, Ma S, Hofstad M, Kapur P, Zhau H, Chung LW, **Lai CH**, Lin H, Lee MS, Raj GV, Hsieh JT\*. The central role of Sphingosine kinase 1 in the development of neuroendocrine prostate cancer (NEPC): A new targeted therapy of NEPC. *Clin Transl Med.* 2022;12(2):e695.
- Hsu CY, Yeh JY, Chen CY, Wu HY, Chiang MH, Wu CL, Lin HJ, Chiu CH, **Lai CH\***. *Helicobacter pylori* cholesterol- $\alpha$ -glucosyltransferase manipulates cholesterol for bacterial adherence to gastric epithelial cells. *Virulence.* 2021;12(1):2341-2351.
- Lai YR, Chang YF, Ma J, Chiu CH, Kuo ML, **Lai CH\***. From DNA damage to cancer progression: potential effects of cytolethal distending toxin. *Front Immunol.* 2021;12(760451):1-8.
- Kuo CJ, Lee CH, Chang ML, Lin CY, Lin WR, Su MY, Chiu CH, Tseng CN, Wu YS, Chiu CT, **Lai CH\***. Multidrug resistance: The clinical dilemma of refractory *Helicobacter pylori* infection. *J Microbiol Immunol Infect.* 2021;54(6):1184-1187.
- Gagliardi MC, Iwabuchi K, **Lai CH\***. Editorial: Role of lipid rafts in anti-microbial immune response. *Front Immunol.* 2021;12:1-2.
- Lin TY, Lan WH, Chiu YF, Feng CL, Chiu CH, Kuo CJ, **Lai CH\***. Statins' regulation of the virulence factors of *Helicobacter pylori* and the production of ROS may inhibit the development of gastric cancer. *Antioxidants.* 2021;10(8): 1-14.
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- Chen YW, Huang MZ, Chen CL, Kuo CY, Yang CY, Chiang-Ni C, Chen YY, Wu HY, Kuo ML, Chiu CH, **Lai CH\***. PM<sub>2.5</sub> impairs macrophage functions to exacerbate pneumococcus-induced pulmonary pathogenesis. *Part Fibre Toxicol.* 2020;17(1):1-14.
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