

Curriculum Vitae
Li-Chung Hsu (徐立中), Ph.D.

Personal Information

Title: Professor/Director

Organization: Institute of Molecular Medicine, College of Medicine, National Taiwan University

Address: No. 7 Chung Shan South Road, Taipei 10002, Taiwan

Phone: (886)2-2312-3456 Ext 265700

Fax: (886)2-2395-7801

Email: lichunghsu@ntu.edu.tw

Education

- | | |
|---------------|---|
| December 2001 | University of Illinois at Chicago, Chicago, Illinois
Ph.D. in Molecular Genetics
Thesis title: Regulation of transcription initiation at G+C-rich promoters |
| June 1990 | National Chung Hsing University, Taichung, Taiwan, R.O.C.
Master of Science in Food Science
Thesis title: Development and application of anti-H ELISA kit for detection of <i>Salmonella</i> in foods |
| June 1988 | National Chung Hsing University, Taichung, Taiwan, R.O.C.
Bachelor of Science in Food Science |

Professional Experience

- | | |
|--------------|--|
| 2025-present | Director, Institute of Molecular Medicine, College of Medicine, National Taiwan University |
| 2022-2025 | Director, Graduate Institute of Immunology, College of Medicine, National Taiwan University |
| 2022-present | Professor, Institute of Molecular Medicine/Graduate Institute of Immunology, College of Medicine, National Taiwan University |
| 2014-2022 | Associate Professor, Institute of Molecular Medicine, College of Medicine, National Taiwan University |
| 2007-2014 | Assistant Professor, Institute of Molecular Medicine, College of Medicine, National Taiwan University |
| 2005-2007 | Assistant Research Scientist, Department of Pharmacology, University of California, San Diego |
| 2002-2005 | Postdoctoral Fellow, Department of Pharmacology, University of California, San Diego |
| 1991-1995 | Research Assistant, Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, R.O.C. |
| 1990-1991 | Research Assistant, Cell Biology and Immunology Division, Development Center for Biotechnology, Taipei, Taiwan, R.O.C. |

Awards and Honors

- | | |
|--------------|--|
| 2025 | The Dr. Tsung-Ming Tu Memorial Lecture Award
(114 年『故杜聰明博士紀念演講獎』) |
| 2025-present | The 18 th term Board Member of the Chinese Society of Cell and Molecular Biology (中華民國細分學會第十八屆理事) |

2023-2025	Coordinator of the “Microbiology, Immunology, and Laboratory Medicine” Division, National Science and Technology Council (NSTC) (國科會「微免及檢驗醫學」學門召集人)
2022	The Outstanding Research Award of MOST (110 年度科技部傑出研究獎)
2021	The Outstanding Immunology Scholar Award, The Chinese Society of Immunology, Taiwan (中華民國免疫學會傑出研究學者獎)
2018	The 16 th Science paper award, The Far Eastern Y. Z. Hsu Science and Technology Memorial Foundation (第十六屆有庠科技論文獎-生技醫藥類)
2017	Moon-Shan Biomedical Research Form, Taipei Medical University (姆山生物醫學研究講座，臺北醫學大學)
2014&2017-2025	國科會補助大專校院延攬特殊優秀人才措施獎
2013	IUIS - Bill and Melinda GATES Foundation Travel Awards for Young Immunologists from Developing Countries
2012	2012 "Excellent Teaching Award" National Taiwan University (100 學年度台灣大學「教學優良」獎)
2012	Young Scientist Award, The TienTe Lee Biomedical Foundation (第七屆永信李天德醫藥科技獎-青年科學家學術研究獎)
2005-2008	Career Development Award, Crohn's & Colitis Foundation of America
2005	Career Development Award, Tobacco-Related Disease Research Program
2002-2005	Postdoctoral Fellowship, Cancer Research Institute
1998-2001	University Fellowship, University of Illinois at Chicago
1994	The Excellent Researcher Award of the National Science Council, Taiwan, R.O.C. (國科會乙等獎助)

Research Interests

1. Regulatory mechanisms of inflammatory responses and cell death
2. Crosstalk between innate and adaptive immunity
3. Mechanisms and functions of macrophage polarization and tumor-associated macrophages

Publications

1. Chang YC, Wu CC, Hsiao FT, Lin YS, Lai TY, Huang KH, Tang SC, Lee CY, Chou SJ, and **Hsu LC***. Myeloid ZNRF1 Suppresses Autoimmune Demyelination and Neuroinflammation by Regulating MHC-II-Mediated T cell Activation. *J Neuroinflammation*. 2025 Oct 22;22:239 (*correspondence)
2. Lin YS[†], Chang YC[†], Pu TY[†], Chuang TH, and **Hsu LC***. Involvement of nucleic acid-sensing Toll-like receptors in human diseases and their controlling mechanisms. *J Biomed Sci*. 2025 Jun 10;32(1):56 (*correspondence)
3. Yang CY, Tseng YC, Tu YF, Kuo BJ, **Hsu LC**, Lien CI, Lin YS, Wang YT, Lu YC, Su TW, Lo YC*, and Lin SC*. Reverse hierarchical DED assembly in the cFLIP-procaspase-8 and cFLIP-procaspase-8-FADD complexes. *Nat Commun*. 2024 Oct 17;15(1):8974

4. Yang CY, Lien CI, Tseng YC, Tu YF, Kulczyk AW, Lu YC, Wang YT, Su TW, **Hsu LC***, Lo YC*, and Lin SC*. Deciphering DED assembly mechanisms in FADD-procaspase-8-cFLIP complexes regulating apoptosis. *Nat Commun*. 2024 May 6;15(1):3791 (*correspondence)
5. Liao WT, Chiang YJ, Yang-Yen HF, **Hsu LC**, Chang ZF, and Yen JJY. CBAP regulates the function of Akt-associated TSC protein complexes to modulate mTORC1 signaling. *J Biol Chem*. 2023 Dec; 299(12):105455
6. Lin YS, Chang YC, Chao TL, Tsai YM, Jhuang SJ, Ho YH, Lai TY, Liu YL, Chen CY, Tsai CY, Hsueh YP, Chang SY, Chuang TH, Lee CY, and **Hsu LC***. The Src-ZNRF1 axis controls TLR3 trafficking and interferon responses to limit lung barrier damage. *J Exp Med*. 2023 Aug 7;220(8):e20220727 (*correspondence)
7. Yang JX, Tseng JC, Tien CF, Lee CY, Liu YL, Lin JJ, Tsai PJ, Liao HC, Liu SJ, Su YW, **Hsu LC**, Chen JK, Huang MH, Yu GY, Chuang TH*. TLR9 and STING agonists cooperatively boost the immune response to SARS-CoV-2 RBD vaccine through an increased germinal center B cell response and reshaped T helper responses. *Int J Biol Sci*. 2023 May 29;19(9):2897-2913.
8. Kung PJ, Lai TY, Cao J, **Hsu LC**, Chiang TC, Ou-Yang P, Tsai CY, Tsai YF, Lin CW, Chen CC, Tsai MK, Tien YW, and Lee CY. The role of S100A9 in the interaction between pancreatic ductal adenocarcinoma cells and stromal cells. *Cancer Immunol Immunother*. 2022 Mar;71(3):705-718.
9. Wang YT, Liu TY, Shen CH, Lin SY, Hung CC, **Hsu LC**, and Chen GC. K48/K63-linked polyubiquitination of ATG9A by TRAF6 E3 ligase regulates oxidative stress-induced autophagy. *Cell Rep*. 2022 Feb 22;38:110354
10. Tseng JC, Chang YC, Huang CM, **Hsu LC*** and Chuang TH*. Therapeutic Development Based on the Immunopathogenic Mechanisms of Psoriasis. *Pharmaceutics* 2021 July 11;13(7):1064 (*correspondence)
11. Lin CC, Shen YR, Chang CC, Guo SY, Young YY, Lai TY, Yu IS, Lee CY, Chuang TH, Tsai HY, and **Hsu LC***. Terminal uridylyltransferase 7 regulates TLR4-triggered inflammation by controlling Regnase-1 mRNA uridylation and degradation. *Nat Commun*. 2021 Jun 29;12:3878 (*correspondence)
12. Shen CH, Chou CC, Lai TY, Hsu JE, Lin YS, Liu HY, Chen YK, Ho IL, Hsu PH, Chuang TH, Lee CY, and **Hsu LC***. ZNRF1 mediates epidermal growth factor receptor ubiquitination to control receptor lysosomal trafficking and degradation. *Front Cell Dev Biol*. 2021 Apr 29;9:642625 (*correspondence)
13. Chuang YC, Tseng JC, Yang JX, Liu YL, Yeh DW, Lai CY, Yu GY, **Hsu LC**, Huang CM, and Chuang TH. Toll-Like Receptor 21 of Chicken and Duck Recognize a Broad Array of Immunostimulatory CpG-oligodeoxynucleotide Sequences. *Vaccines (Basel)*. 2020 Nov 2;8(4):639.
14. Lu CH, Lai CY, Yeh DW, Liu YL, Su YW, **Hsu LC**, Chang CH, Jin SLC, and Chuang TH. Involvement of M1 Macrophage Polarization in Endosomal Toll-like Receptors Activated Psoriatic Inflammation. *Mediators Inflamm*. 2018 Dec 16; 2018:3523642
15. Chen YJ, Wang SF, Weng IC, Hong MH, Lo TH, Jan JT, **Hsu LC**, Chen HY, and Liu FT. Galectin-3 Enhances Avian H5N1 Influenza A Virus-Induced Pulmonary Inflammation by Promoting NLRP3 Inflammasome Activation. *Am J Pathol*. 2018 Apr;188(4):1031-1042.
16. Lai CY, Su YW, Lin KI, **Hsu LC**, and Chuang TH. Natural Modulators of Endosomal Toll-Like Receptor-Mediated Psoriatic Skin Inflammation. *J Immunol Res*. 2017;2017:7807313.

17. Chang TH, Huang JH, Lin HC, Chen WY, Lee YH, **Hsu LC**, Netea MG, Ting JP, and Wu-Hsieh BA. Dectin-2 is a primary receptor for NLRP3 inflammasome activation in dendritic cell response to *Histoplasma capsulatum*. **PLoS Pathog.** 2017 Jul 3;13(7):e1006485.
18. Lee CY, Lai TY, Tsai MK, Chang YC, Ho YH, Yu IS, Yeh TW, Chou CC, Lin YS, Lawrence T, and **Hsu LC*** The Ubiquitin Ligase ZNRF1 promotes caveolin-1 ubiquitination and degradation to modulate inflammation. **Nat Commun.** 2017 Jun 8;8:15502. (*correspondence)
19. Huang MT, Chen YL, Lien CI, Liu WL, **Hsu LC**, Yagita H, and Chiang BL. Notch Ligand DLL4 Alleviates Allergic Airway Inflammation via Induction of a Homeostatic Regulatory Pathway. **Sci Rep.** 2017 Mar 6;7:43535.
20. Tsai WT, Lo YC, Wu MS, Li CY, Kuo YP, Lai YH, Tsai Y, Chen KC, Chuang TH, Yao CH, Lee JC, **Hsu LC**, Hsu JT, Yu GY. Mycotoxin Patulin Suppresses Innate Immune Responses by Mitochondrial Dysfunction and p62/Sequestosome-1-dependent Mitophagy. **J Biol Chem.** 2016 Sep 9;291(37):19299-311.
21. Yeh DW, Chen YS, Lai CY, Liu YL, Lu CH, Lo JF, Chen L, **Hsu LC**, Luo Y, Xiang R, Chuang TH. Downregulation of COMMD1 by miR-205 promotes a positive feedback loop for amplifying inflammatory- and stemness-associated properties of cancer cells. **Cell Death Differ.** 2016 May;23(5):841-52.
22. Lee CY, Lai TY, Tsai MK, Ou-Yang P, Tsai CY, Wu SW, **Hsu LC**, Chen JS. The influence of a caveolin-1 mutant on the function of P-glycoprotein. **Sci Rep.** 2016 Feb 4;6:20486.
23. Daniel J. Klionsky and 1269 other authors including **Hsu LC**. Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition). **Autophagy.** 2016 Jan 21;12(1):1-222.
24. Lee YL, Yen JJ, **Hsu LC**, Kuo NW, Su MW, Yang MF, Hsiao YP, Wang IJ, Liu FT. Association of STAT6 genetic variants with childhood atopic dermatitis in Taiwanese population. **J Dermatol Sci.** 2015 Sep;79(3):222-8.
25. Chuang TH, Lai CY, Tseng PH, Yuan CJ, **Hsu LC**. Development of CpG-oligodeoxynucleotides for effective activation of rabbit TLR9 mediated immune responses. **PLoS One.** 2014 Sep 30;9(9):e108808.
26. Chuang SY, Yang CH, Chou CC, Chiang YP, Chuang TH, **Hsu LC*** TLR-induced PAI-2 expression suppresses IL-1 β processing via increasing autophagy and NLRP3 degradation. **Proc Natl Acad Sci USA.** 2013 Oct 1;110(40):16079-16084 (*correspondence)
27. Lai TY, Wu SD, Tsai MH, Chuang EY, Chuang LL, **Hsu LC***, Lai LC* Transcription of *Tnfrsf103* Is Regulated by NF- κ B and p38 via C/EBP β in Activated Macrophages. **PLoS One.** 2013 Sep 2;8(9):e73153. (*correspondence)
28. Bebi M, Hensler ME, Davantage S, **Hsu LC**, Karin M, Park JM, Alexopoulou L, Liu GY, Nizet V, Lawrence T. The Pore-Forming Toxin β hemolysin/cytolysin Triggers p38 MAPK-Dependent IL-10 Production in Macrophages and Inhibits Innate Immunity. **PLoS Pathog.** 2012;8(7):e1002812.
29. **Hsu LC***, Enzler T, Seita J, Timmer AM, Lee CY, Lai TY, Yu GY, Lai LC, Temkin V, Sinzig U, Aung T, Nizet V, Weissman IL, and Karin M* Interleukin 1 β -driven neutrophilia preserves anti-bacterial defense in absence of IKK β . **Nat Immunol.** 2011 Feb;12(2):144-50 (*correspondence)
30. Xu C, Liu J, **Hsu LC**, Luo Y, Xiang R, and Chuang TH. Functional interaction of Hsp90 and Beclin 1 modulates Toll-like receptor mediated autophagy. **FASEB J.** 2011 Aug;25(8):2700-10.

31. Lee CY, Lai TY, Wu YM, Hu RH, Lee PH, **Hsu LC**, and Tsai MK. Gene expression of P-glycoprotein and cytochrome P450 3A4 in peripheral blood mononuclear cells and correlation with expression in liver. *Transplant Proc.* 2010 Apr;42(3):834-6 .
32. Liu J, Xu C, **Hsu LC**, Luo Y, Xiang R, and Chuang TH. A five-amino-acid motif in the undefined region of the TLR8 ectodomain is required for species-specific ligand recognition. *Mol Immunol.* 2010 Feb;47(5):1083-90.
33. Timmer AM, Timmer JC, Pence MA, **Hsu LC**, Ghochani M, Frey TG, Karin M, Salvesen GS, and Nizet V. Streptolysin O promotes group A Streptococcus immune evasion by accelerated macrophage apoptosis. *J Biol Chem.* 2009 Jan 9;284(2):862-71.
34. **Hsu LC***, Ali SR, McGillivray S, Tseng PH, Mariathasan S, Humke EW, Eckmann L, Powell JJ, Nizet V, Dixit VM, and Karin M* A NOD2–NALP1 complex mediates caspase-1-dependent IL-1 β secretion in response to Bacillus anthracis infection and muramyl dipeptide. *Proc Natl Acad Sci USA.* 2008 Jun 3;105(22):7803-7808 (*correspondence)
35. Greten FG, Arkan MC, Bollrath J, **Hsu LC**, Goode J, Miething C, Göktuna SI, Neuenhahn M, Fierer J, Paxian S, Rooijen NV, Xu Y, O' Cain T, Jaffee BB, Busch DH, Duyster J, Schmid RM, Eckmann L, and Karin M. NF- κ B is a negative regulator of IL-1 β secretion as revealed by genetic and pharmacological inhibition of IKK β . *Cell.* 2007 Sep 7;130(5):918-31.
36. Gerbod-Giannone MC, Li Y, Holleboom A, Han S, **Hsu LC**, Tabas I, and Tall AR. TNF α induces ABCA1 through NF- κ B in macrophages and in phagocytes ingesting apoptotic cells. *Proc Natl Acad Sci USA.* 2006 Feb 28;103(9):3112-7.
37. Häcker H, Redecke V, Blagoev B, Kratchmarova I, **Hsu LC**, Wang GG, Kamps MP, Raz E, Wagner H, Häcker G, Mann M, and Karin M. Specificity in Toll-like receptor signalling through distinct effector functions of TRAF3 and TRAF6. *Nature.* 2006 Jan 12;439(7073):204-7.
38. Ruocco MG, Maeda S, Park JM, Lawrence T, **Hsu LC**, Schett G, Wagner EF, and Karin M. I κ B kinase β (IKK β), but not IKK α , is a critical mediator of osteoclast survival and is required for inflammation-induced bone loss. *J Exp Med.* 2005 May 16;201(10):1677-87.
39. Maeda S, **Hsu LC**, Liu H, Bankston LA, Iimura M, Kagnoff MF, Eckmann L and Karin M. A Nod2 mutation linked to Crohn's disease potentiates NF- κ B activation and IL-1 β processing. *Science.* 2005 Feb 4;307(5710):734-8.
40. Valledor AV, **Hsu LC**, Ogawa S, Sawka-Verhelle D, Karin M and Glass CK. Activation of liver X receptors and retinoid X receptors prevents bacterial-induced macrophage apoptosis. *Proc Natl Acad Sci USA.* 2004 Dec 21;101(51):17813-8.
41. Luo JL, Maeda S, **Hsu LC**, Yagita H, Karin K. Inhibition of NF- κ B in cancer cells converts inflammation-induced tumor growth mediated by TNF α to TRAIL-mediated tumor regression. *Cancer Cell.* 2004 Sep;6(3):297-305.
42. **Hsu LC**, Park JM, Zhang K, Luo JL, Maeda S, Kaufman RJ, Eckmann L, Guiney DG, and Karin M. The protein kinase PKR is required for macrophage apoptosis after activation of Toll-like receptor 4. *Nature.* 2004 Mar 18;428(6980):341-345.
43. **Hsu LC**, Liu S, Abedinpour F, Beech RD, Lahti JM, Kidd VJ, Greenspan JA, and Yeung CY. The Murine G+C-rich Promoter Binding Protein mGPBP is required for promoter-specific transcription. *Mol Cell Biol.* 2003 Dec;23(23): 8773-85.
44. Trembley JH, Hu D, **Hsu LC**, Yeung CY, Slaughter C, Lahti JM, and Kidd VJ. PITSLRE p110 protein kinases associate with transcription complexes and affect their activity. *J Biol Chem.* 2002 Jan 25;277(4):2589-96.
45. Yeh JR, **Hsu LC**, Chung Bc. Sp1-like proteins function in the transcription of human ferredoxin genes. *J Biomed Sci.* 2000 Mar-Apr;7(2):144-51.

46. Hsu NC, Guzov VM, **Hsu LC**, Chung Bc. Characterization of the consequence of a novel Glu-380 to Asp mutation by expression of functional P450c21 in Escherichia coli. **Biochim Biophys Acta**. 1999 Feb 10;1430(1):95-102.
47. **Hsu LC**, Hsu NC, Guzova J, Guzov V, Chang SF, and Chung Bc. The Common I172N Mutation Causes Conformational Change of Cytochrome P450c21 Revealed by Systematic Mutation, Kinetic, and structural studies. **J Biol Chem**. 1996 Feb 9;271(6):3306-3310.
48. Hu MC, **Hsu LC**, Hsu NC, and Chung Bc. Function and Membrane topology of wild-type and mutated cytochrome P-450c21. **Biochem J**. 1996 May 15;316:325-329.
49. **Hsu LC**, Hu MC, Cheng HC, Lu JC, and Chung Bc. The N- terminal Hydrophobic Domain of P450c21 is required for Membrane Insertion and Enzyme Stability. **J Biol Chem**. 1993 Jul 15;268(20):14682-14686.

Patents

1. **Hsu LC**, and Karin M (2010) Methods And Compositions For Reducing Microbial Induced Apoptosis. **U.S. Patent No. 7,776,527**
2. Yeung CY, **Hsu LC**, and Liu S (2008) Isolated DNA encoding A GPBP polypeptide, vectors comprising such DNA, isolated GPBP polypeptides, and isolated antibodies that bind to GPBP polypeptides. **Taiwan, R.O.C. New Invention patent no. I291991**.
3. Glass CK, Valledor AE, Karin M, and **Hsu LC** (2007) Compounds That Prevent Macrophage Apoptosis And Uses Thereof. **U.S. Patent Application No. US 11/792154** (Filed).
4. Liu JJ, Fu WT, **Hsu LC**, Tang TK, Chen ST, Lai IS, and Chang TH (1991) Antibodies against *Chlamydia* and the process for preparing the same. **Taiwan, R.O.C. New Invention patent no. 55766**.