

Biographical Sketches

姓 名	(in Chinese) 施嘉和	ID No. (身份証或護照字號)	A102xxxxxx
Name (in Print)	Chiaho Shih	Date of Birth	
Signature	<i>Chiaho Shih</i>	Sex	<input checked="" type="checkbox"/> Male <input type="checkbox"/> Female
Education / Training (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
Institution and location	Degree	Year (s)	Field of study
National Taiwan University	B.S.	1969-1973	Microbiology
MIT, Cambridge, Mass.	Ph.D.	1975-1982	Oncogene/Cancer
Mass Gen Hospital/Harvard Medical School	Postdoc	1982-1985	Molecular Virology

Note: The Biographical Sketch may not exceed four pages. Items A and B (together) may not exceed two of the four-page limit. Follow the formats and instructions on the attached sample.

A. Positions and Honors.

- 1986 - 1992 Assistant Professor (Tenure Track), Department of Biochemistry and Biophysics, School of Medicine, University of Pennsylvania, Philadelphia, PA
- 1992 – 2000 Associate Professor (with Tenure), Department of Pathology School of Medicine, University of Texas Medical Branch (UTMB), Galveston, TX
- 2000 - 2008 Professor (with Tenure), Dept of Pathology, UTMB,
1992 - 1997 NIH Research Career Development Award (**RCDA**)
2002 Chief Meeting Organizer, 2002 International Meeting of Molecular Biology of Hepatitis Viruses, Asilomar Conference Center, CA
- 2006 - 2008 Member, International Committee on Taxonomy of Viruses (**ICTV**), Hepadnaviridae Study Group
- Advisory Committee: Served on several study sections in USA NIH, Taiwan NSC, NHRI, and NRPGM. Reviewers for grants of Hong Kong, Singapore, and Japan/South Africa, Wellcome Trust Intermediate Fellowship. Ad hoc reviewers of academic promotions and recruitment for universities in USA and Taiwan. Advisory Board, Development Center of Biotechnology (DCB), Taiwan.
- 2007 - present Professor, Adjunct appointment, Yang-Ming Univ. and National Defense Medical Center, Taiwan,
- 2007 - present Distinguished Research Fellow, IBMS, Academia Sinica
- 2010 - present Review Editor, *Frontiers in Virology*.
- 2012 - present Associate Editor, *Virology Journal*.
- 2013 - present Academic Editor, *PLOS ONE*
- 2013 - present Associate Editor, *J. Biomedical Sciences*

Representative Recent Publications (H-index = 32; average citations per item = 91.82, as of 8-10-2016)

1. Newman M, Chua PK, Tang FM, Su PY, **Shih C.** (2009). Testing an Electrostatic Interaction Hypothesis of Hepatitis B Virus Capsid Stability by Using an in vitro Capsid Disassembly/Reassembly System. *J. Virol.* 83:10616-10626.
2. Chua PK, Tang FM, Huang JY, Suen CS, and **Shih C.** (2010). Testing the Balanced Electrostatic Interaction Hypothesis of Hepatitis B Virus DNA Synthesis by Using an In Vivo Charge Re-balance Approach. *J. Virol.* 84: 2340-2351
3. Liu S, He J, **Shih C.**, Li K, Dai A, Hong Zhou Z, Zhang J. (2010). Structural comparisons of hepatitis B core antigen particles with different C-terminal lengths. *Virus Research* 149:241-244.
4. Shih, HH, **Shih C.**, Wang HW, Su CW, Sheen, IJ and Wu JC. (2010). Pro-205 of Large Hepatitis Delta antigen and Pro-62 of Major Hepatitis B Surface Antigen influence the Assembly of Different Genotypes of Hepatitis D Virus. *J. Gen. Virol.* 91:1004-1012.
5. Li HC, Huang EY, Su PY, Wu SY, Yang CC, Lin YS, Chang WC, and **Shih C.** (2010). Nuclear Export and Import of Human Hepatitis B Virus Capsid Protein and Particles. *PLoS Pathogens* 6(10): e1001162.
6. Wang CH, Davamani F, Sue SC, Lee SC, Wu PL, Tang FM, **Shih C.**, Huang TH, Wu WG. (2011). Cell surface heparan sulfates mediated internalization of PWWP/HATH domain of HDGF via macropinocytosis to fine-tune cell signaling process involved in and its effect on fibroblast cell migration. *Biochem. J.* 433(1):127-138.
7. Chen CC, Chang CM, Sun CP, Yu CP, Wu PY, Jeng KS, Hu CP, Chen PJ, Wu JC, **Shih C.**, Gershwin ME, and Tao MH (2012). Use of RNA interference to modulate liver adenoma development in a murine model transgenic for hepatitis B virus. *Gene Therapy* 19:25-33.
8. Chen HL, Huang JY, Chen CM, Chu TH and **Shih C.** (2012). MicroRNA-22 can reduce parathymosin expression in transdifferentiated hepatocytes. *PLoS ONE* 7(4): e34116.
9. **Shih, C.** (2012). "Chronic Hepatitis B and C". Editor, World Scientific Publisher Co. (WSPC), London, New Jersey, and Singapore.
10. Yu X, Jin L, Jih J, **Shih, C.** and Zhou H. (2013). 3.5Å cryoEM structure of hepatitis B virus core assembled from full-length core protein. *PLoS ONE* 8(9): e69729
11. Chen HL, Su PY, Chang YS, Wu SY, Liao YD, Yu HM, Lauderdale TL, Chang KC, and **Shih C.** (2013) Identification of a novel antimicrobial peptide from human hepatitis B virus core protein arginine-rich domain (ARD) *PLoS Pathogens* 9(6): e1003425.
12. Chu TH, Liou AT, Su PY, Wu HN, and **Shih C.** (2014). Nucleic Acid Chaperone Activity Associated with the ARD Domain of Human Hepatitis B Virus Core Protein. *J. Virol.* 88(5):2530-2543.
13. Yang CC, Huang EY, Li HC, Su PY, and **Shih C.** (2014). Nuclear export of human hepatitis B virus core protein and pregenomic RNA depends on the cellular NXF1-p15 machinery. *PLoS ONE* 9(10): e106683.
14. Liao CC, Liou AT, Chang YS, Wu SY, Chang CS, Lee CK, Kung JT, Tu PH, Yu YY, Lin CY, Lin JS, **Shih C.** (2014). Immunodeficient Mouse Models with Different Disease Profiles by in vivo Infection with the Same Clinical Isolate of Enterovirus 71. *J. Virol.* 88 (21): 12485-12499.
15. Huang JY, Chou SF, Lee JW, Chen HL, Chen CM, Tao MH, and **Shih C.** (2015). MicroRNA-130a can inhibit hepatitis B virus replication via targeting PGC1-alpha and PPAR-gamma. *RNA* 21: 385-400.

16. Huang MT, Liu WL, Lu CW, Huang JJ, Chuang HL, Huang YT, Hong JH, Liu P, Han DS, Chiang BL, **Shih C**, Chen PJ, Chen DS. (2015). Feedback regulation of IFN- α/β signaling by Axl receptor tyrosine kinase modulates HBV immunity. *Eur J Immunol.* 45:1696-1705.
17. Chou SF, Tsai ML, Huang JY, Chang YS, and **Shih C**. (2015). The dual role of an ESCRT-0 component HGS in HBV transcription and naked capsid secretion. *PLoS Pathogens* 11(10): e1005123.
18. **Shih C**, Chou SF, Yang CC, Huang JY, Chojilsuren G. and Jhou RS. (2016). Control and Eradication Strategies of Hepatitis B Virus. *Trends in Microbiology* 24 (9): 739-749 (invited review).
19. Liou AT, Wu SY, Liao CC, Chang YS, Chang CS, and **Shih C**. (2016). A new animal model containing human SCARB2 and lacking stat-1 is highly susceptible to EV71. *Scientific Reports* 6: 31151.
20. Huang JY, Chen HL, and **Shih C**. (2016). MicroRNA miR-204 and miR-1236 inhibit hepatitis B virus replication via two different mechanisms. *Scientific Reports* 6: 34740.
21. Chen HL, Su PY, and **Shih C**. (2016). Improvement of in vivo antimicrobial activity of HBc ARD peptides by D-arginine replacement. *Appl Microbiol Biotechnol.* 100(21): 9125-9132.
22. Su PY, Yang CJ, Chu TH, Chang CH, Chiang C, Tang FM, Lee CY, **Shih C**. (2016). HBV maintains electrostatic homeostasis by modulating negative charges from phosphoserine and encapsidated nucleic acids. *Scientific Reports* 6: 38959.
23. Yang CC, Li HC, Shih C. (2017). A Homokaryon Assay for Nucleocytoplasmic Shuttling Activity of HBV Core Protein. *Methods Mol Biol.* 1540:53-58.

http://www.ibms.sinica.edu.tw/pi_webpage/blue_style2016/page/highlight.php?p_id=58&journal_info_sysid=100878

PATENT:

United States Patent	10-20-92, # 5,156,970; Inventor: Chiaho Shih, Ph.D. Methods of Viral Propagation and Gene Expression
United States Patent	11-09-99, # 5,980,901; Inventor: Chiaho Shih, Ph.D Viral Defective Interfering Particles and Uses Thereof
Republic of China Patent	Approved in July, 2015; Inventor: Chiaho Shih, Ph.D 衍生自B型肝炎病毒核蛋白精胺酸密集區之抗菌胜肽 中華民國專利發明第 495642 號
One PCT Patent Application	Pending Inventor: Chiaho Shih, Ph.D Antimicrobial Peptide Derived from Hepatitis B Virus Core Protein Arginine-Rich Domain
Two PCT Patent Applications	Pending Inventor: Chiaho Shih, Ph.D Treating Hepatitis B Viral Infection and Metabolic Diseases with MicroRNAs
One US Provisional Application	Pending Inventor: Chiaho Shih, Ph.D, et al. Method and Composition for Treating Hepatitis B Virus Infection

One US Provisional Application Pending Inventor: Chiaho Shih, Ph.D, et al.
Modified Antimicrobial Peptides Derived from an Arginine-Rich
Domain

FUNDING:

----- 05/01/2014 - 04/30/2017 (completed) **MOST, Taiwan.** 一種新穎抗菌胜肽抗生素之修飾與最佳化研究. Principal Investigator. (MOST 104-2325-B-001-002)

----- 01/01/2015 – 12/31/2017 (ongoing) **MOST, Taiwan.** Molecular pathogenesis of enterovirus 71 in mouse models 利用小鼠模式探討腸病毒 71 型之分子致病機轉
Principal Investigator. (MOST 105 - 2321 - B - 001 – 027)