劉新梧　LIU, Shin-Wu

Assistant Professor

Professional specialty：
Virology, Biochemistry, Molecular Biology

Courses Taught：
Undergraduate：Medical Biochemistry, Veterinary Virology and Lab, Veterinary Immunology and Lab, Infectious Diseases of Animals, Principles of Molecular Medicine

Graduate: Molecular Virology, Molecular Immunology, Seminar on Special Topics, Seminar on Animal Virology

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Educational background

2000-2007 Dept. of Cell and Developmental Biology, Rutgers University, Ph.D.
1997-1999 Graduate Program of Veterinary Microbiology, National Chung-Hsing University, M.S.
1992-1997 Dept. of Veterinary Medicine, National Chung-Hsing University, B.V.M.

Current position and professional career

2018- Assistant Professor, Dept. of Veterinary Medicine, National Chung-Hsing Unversity
2016-2017 Research Fellow, Vascular and Genomic Center, Changhua Christian Hospital
2015-2016 Postdoctoral Fellow, Institute of Biomedical Sciences, Academia Sinica,
2014-2015 Postdoctoral Fellow, Institute of Molecular Biology, Academia Sinica,
2008-2014 Postdoctoral Visiting Fellow, Laboratory of Viral Diseases, National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health(NIH)

Honors

2013 Postdoctoral Travel Award: 2013 American Society of Virology Annual Meeting. Pennsylvania State University, State College, PA, USA
2014 Fellows Award for Research Excellence (FARE): National Institutes of Health, Bethesda, MD, USA
2019 Role Model Award for Faculty-Student Mentorship, Faculty Teaching and Learning Mentorship Program, National Chung Hsing University
2023 Outstanding Service Award for Labor Education Mentorship, National Chung Hsing University

Research Interests

1. Functional roles of poxvirus decapping enzymes in RNA processing, viral replication, and modulation of host innate immune responses, and evaluation of their potential as antiviral therapeutic targets
2. Development of poxvirus-based vaccine vectors

3. Investigation of avipoxvirus genomic variable regions and their roles in viral virulence
4. Epidemiological, genomic, and molecular virology studies of feline calicivirus, feline herpesvirus 1, and feline foamy virus

Publications

1. Lan B, Chang CY, **Liu SW**, Wu CC, Lai KM, Liu HP*. 2026. Machine Learning-Assisted Detection of Canine Mammary Tumors Using Serum Autoantibody Signatures. Vet Q (accepted)
2. Chiu CY, Tzeng CY, **Liu SW**, Chen CJ, Kuan YH, Hu CC*, and Chen WY*. 2026. Nicotiflorin alleviates obesity by activating brown adipose tissue through the β3-adrenergic receptor pathway. Adv Pharmacol Pharm Sci (accepted)
3. Mthethwa MN, Chang ML, Chang Ishcol MR, Chen YF, Hsu WL, Shen GT, Wu SY, Li MS, **Liu SW***. 2025. Biochemical and functional characterization of orf virus decapping protein OV71. Virol J 22(1):407.
4. Chiang CY, **Liu SW**, Chen CJ, Chen WY*. 2025. Chlorpyrifos Induces Apoptosis in Macrophages by Activating Both Intrinsic and Extrinsic Apoptotic Pathways. Environ Toxicol 40:1150-1159.
5. Yamada Y, Chuang ST, Tseng CY, Liao GR, **Liu SW**, Tseng YY, Lin FY, Hsu WL*. 2023. Deletion of gene OV132 attenuates Orf virus more effectively than gene OV112. Appl Microbiol Biotechnol. 107(2-3):835-851.
6. **Liu SW**, Chang JC, Chuang SF, Liu KH, Cheng WL, Chang HJ, Chang HS, Lin TT, Hsieh CL, Lin WY, Hsieh M, Kuo SJ*, Liu CS*. 2019. Far-infrared Radiation Improves Motor Dysfunction and Neuropathology in Spinocerebellar Ataxia Type 3 Mice. Cerebellum 18:22-32. (co-first author)
7. Tarn WY*, Kuo HC, Yu HI, **Liu SW**, Tseng CT, Dhananjaya D, Hung KY, Tu CC, Chang SH, Huang GJ, Chiu IM. 2016. RBM4 promotes neuronal differentiation and neurite outgrowth via modulating Numb isoform expression. Mol Biol Cell 27: 1676-1683.
8. **Liu SW**, Katsafanas GC, Liu R, Wyatt LS, Moss B*. 2015. Poxvirus decapping enzymes enhance virulence by preventing the accumulation of dsRNA and the induction of innate antiviral responses.Cell Host & Microbe 17: 320-331.
9. **Liu SW,** Wyatt LS, Orandle MS, Minai M, Moss B*. 2014. The D10 decapping enzyme of vaccinia virus contributes to decay of cellular and viral mRNAs and to virulence in mice. J Virol 88: 202-211.
10. Parrish S, Hurchalla M, **Liu SW**, Moss B*. 2009. The African swine fever virus g5R protein possesses mRNA decapping activity. Virology 393:177-182.
11. **Liu SW**, Jiao X, Welch S, and Kiledjian M*. 2008. Analysis of mRNA decapping. Methods Enzymol 448: 3-21.
12. Singh J, Salcius M, **Liu SW**, Staker BL, Mishra R, Thurmond J, Michaud G, Mattoon DR, Printen J, Christensen J, Bjornsson JM, Pollok BA, Kiledjian M, Stewart L, Jarecki J*, Gurney ME*. 2008. DcpS as a therapeutic target for spinal muscular atrophy. ACS Chem Biol 3: 711-722.
13. **Liu SW**, Rajagopal V, Patel SS*, and Kiledjian, M*. 2008. Mechanistic and kinetic analysis of the DcpS scavenger decapping enzyme. J Biol Chem 283:16427-16436.
14. Shen V, Liu H, **Liu SW**, Jiao X, and Kiledjian M*. 2007. DcpS scavenger decapping enzyme can modulate pre-mRNA splicing. RNA 14:1132-1142.
15. **Liu SW**, Jiao X, Liu H, Gu M, Lima CD and Kiledjian, M*. 2004. Functional analysis of mRNA scavenger decapping enzymes. RNA 10:1412-1422.
16. Gu M, Fabrega C, **Liu SW**, Liu H, Kiledjian M and Lima CD*. 2004. Insights into the structure, mechanism, and regulation of scavenger mRNA decapping activity. Mol Cell 9:14:67-80.

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