



Wang, Chi-Young

Professor

Research Field: *Veterinary Virology and Avian disease*

Teaching Duty:

Veterinary Virology, Avian Diseases, Veterinary Immunology, Molecular Virology, and Molecular Immunology

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Educational and Professional Background

Professor, National Chung Hsing University

Ph.D., Auburn University, USA

Post-doctorate, University of Alabama at Birmingham (UAB), USA

Research Interests

Recent studies are motivated by practicing clinical diagnosis of avian viral diseases. We apply a comprehensive strategy including virology, immunology, and genetic engineering to study avian pathogens (beak and feather disease virus, avian polyomavirus, and avian coronavirus). These topics include (1) The functional and 3D structural analysis of viral proteins and evaluation of an anti-viral therapy in animals; (2) Production of monoclonal antibodies and establishment of diagnosis techniques based on these monoclonal antibodies; (3) Production of virus-like particles (VLP) which pack various biomolecules; (4) Characterization of the cell penetrating peptides derived from avian viruses. The ultimate goal is to improve diagnostic techniques, therapeutic approaches, preventive methods, and our understanding on avian viruses.

Academic Services

Viruses (SCI, IF=5.818) (guest editor: 2022 Jan-2022 Jul)

Viruses (SCI, IF=5.818) (topic advisory panel: 2022 Oct-Now)

Selected Publications

Wang, C. Y.*, Yeh, H. I., Chang, T. J., Hsiao, H. J., Tsai, M. S., Tsai, S. M., Liu, P. A., 2011. Attenuation of nitric oxide bioavailability in porcine aortic endothelial cells by classical swine fever virus. *Archives of Virology* 156:1151-1160.

Tsai, S. M., Chiang, Y. C., Chin, L. T., Liu, H. J., Wang, C. Y.*, 2011. Novel post-translational modifications of the hemagglutinin and neuraminidase proteins of avian influenza virus expressed by *Kluyveromyces lactis*. *Journal of Virological Methods* 175: 175-181.

Tsai, S. M., Liu, H. J., Shien, J. H., Lee, L. H., Chang, P. C., Wang, C. Y.*, 2012. Rapid and sensitive detection of infectious bursal disease virus by reverse transcription loop-mediated isothermal amplification combined with a lateral flow dipstick. *Journal of Virological Methods* 181:117-124.

Ho, C. F., Chan, K. W., Yeh, H. I., Kuo, J., Liu, H. J., Wang, C. Y.*, 2013. Ketone bodies upregulate endothelial connexin 43 (Cx43) gap junctions. *The Veterinary Journal* 198:696-701.

Ho, C. F., Chan, K. W., Yang, W. C., Chaing, Y. C., Chung, Y. T., Kuo, J., Wang, C. Y.*, 2013. Development of a multiplex amplification refractory mutation system reverse transcription polymerase chain reaction assay for the differential diagnosis of *Feline leukemia virus* vaccine and wild strains. *Journal of Veterinary Diagnostic Investigation* 26(4):496-506.

Huang, S. W., Ho, C. F., Chan, K. W., Cheng, M. C., Shien, J. H., Liu, H. J., Wang, C. Y.*, 2014. The genotyping of Infectious bronchitis virus in Taiwan by a multiplex amplification refractory system reverse transcription polymerase chain reaction. *Journal of Veterinary Diagnostic Investigation* 26(6):721-733.

Lin, F. Y., Tseng, Y. Y., Chan, K. W., Kuo, S. T., Yang, C. H., Wang, C. Y., Takasu, M., Hsu, W. L., Wong, M. L., 2015. Suppression of influenza virus infection by the orf virus isolated in Taiwan.

Journal of Veterinary Medical Sciences 77(9):1055-1062.

Huang, S. W., Liu, H. P., Chen, J. K., Shien, Y. W., Wong, M. L., Wang, C. Y.*, 2016. Dual ATPase and GTPase activity of the replication-associated protein (Rep) of beak and feather disease virus. *Virus Research* 231: 149-161.

Huang, S. W., Chiang, Y. C., Chin, C. Y., Tang, P. C., Wang, C. Y.*, 2016. The phylogenetic and recombinational analysis of beak and feather disease virus Taiwan isolates. *Archive of Virology* 161: 2969-2988.

Ho, C. F., Huang, S. W., Chan, K. W., Wu, J. S., Chang, S. P., Wang, C. Y.*, 2018. Development of an antigen-capture ELISA for beak and feather disease virus. *Archive of Virology* 163: 145-151.

Chen, J. K., Hsiao, C., Wu, J. S., Lin, S. Y., Wang, C. Y.*, 2019. Characterization of the endonuclease activity of the replication-associated protein of beak and feather disease virus. *Archive of Virology* 164: 2091-2106.

Chen, Y. Y., Yang, W. C., Chang, Y. K., Wang, C. Y., Huang, W. R., Li, J. Y., Chuang, K. P., Wu, H. Y., Tong, D. W., Liu, H. J., 2020. Construction of polycistronic baculovirus surface display vectors to express the PCV2 Cap (d41) protein and analysis of its immunogenicity in mice and swine. *Veterinary Research* 51: 112.

Chen, J. K., Hsiao, C., Lo, A. R., Wang, C. Y.*, 2020. Characterization of the nuclear localization sequence of beak and feather disease virus capsid proteins and their assembly into virus-like particles. *Virus Research* 289: 198144.

Huang, W. R., Li, J. Y., Liao, T. L., Yeh, C. M., Wang, C. Y., Wen, H. W., Hu, N. J., Wu, Y. Y., Hsu, C. Y., Chang, Y. K., Chang, C. D., Nielsen, B. L., Liu, H. J., 2022. Molecular chaperon TRiC governs avian reovirus replication by protecting outer-capsid protein σ C and inner core protein σ A and non-structural σ NS from ubiquitin-proteasome degradation. *Veterinary Microbiology* 264: 109277.

Liu, F. L., Chang, S. P., Liu, H. J., Liu, P. C., Wang, C. Y.*, 2022. Genomic and phylogenetic analysis of avian polyomaviruses isolated from parrots in Taiwan. *Virus Research* 308: 198634.

Chen, R. K., Hsiao, C., Yang, P. Y., Periyasamy, T., Wang, C. Y.*, 2022. Characterization of *Agapornis fischeri* interferon gamma and its activity against beak and feather disease virus. *Virus Research* 308: 198634.

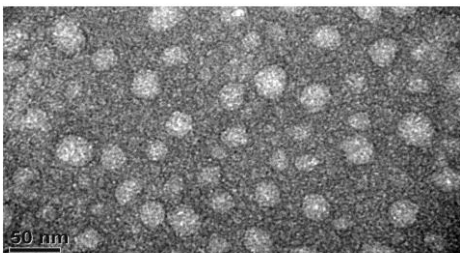
Hsu, C. Y., Chen, Y. H., Huang, W. R., Huang, J. W., Chen, I. C., Chang, Y. K., Wang, C. Y., Chang, C. D., Liao, T. L., Nielsen, B. L., Liu, H. J., 2022. Oncolytic avian reovirus σ A-modulated fatty acid metabolism through the PSMB6/Akt/SREBP1/acetyl-CoA carboxylase pathway to increase energy production for virus replication. *Veterinary Microbiology* 273: 109545.

Wang, C. W., Chen, Y. L., Mao, S. J. T., Lin, T. C., Wu, C. W., Thongchan, D., Wang, C. Y.*, Wu, H. Y., 2022. Pathogenicity of Avian Polyomaviruses and Prospect of Vaccine Development. *Viruses* 14: 2079.

Sitinjak, M. C., Chen, J. K., Lee, M. Y., Liu, H. J., Wang, C. Y.*, 2023. Characterization of a novel reporter system for beak and feather disease virus. *Gene* (accepted).

Book

Special Issue of “*Viruses*”: "State-of-the-Art Avian Viruses Research in Asia" (2022 Oct) (ISSN 1999-4915). Editor: Chi-Young Wang



BFDV virus like particles (VLPs)



Loss of feathers of BFDV-infected birds