Huang, Chien-Jin

Professor

Research Interests: Molecular Virology, Molecular Biology, Hybridoma
Courses Taught: Advanced Microbiology, Advanced Clinical Virology, Advanced Molecular Biology, Monoclonal Antibody Techniques, Mechanisms in Virus Pathogenesis

Tel: 04-22840894 ext. 707
E-mail: cjhuang@dragon.nchu.edu.tw

Educational Background

- PhD, University of Washington, USA (1993)
- MS, National Chung Hsing University (1987)
- BS, National Chung Hsing University (1984)

Professional Career

- Director, Graduate Institute of Microbiology and Public Health, NCHU (2018~2021)
- Deputy Dean, College of Veterinary Medicine, NCHU (2015~2016)
- Professor, Graduate Institute of Microbiology and Public Health, NCHU (2009~)
- Professor, Graduate Institute of Veterinary Microbiology, NCHU (2006~2009)
- Associate Professor, Graduate Institute of Veterinary Microbiology, NCHU (1994~2006)
- Postdoctoral Fellow, Department of Microbiology, University of Washington (1993~1994)
- Research Assistant, Agriculture Biotechnology Laboratory, NCHU (1984~1988)

Research Interests

Our research interests mainly focus on the important porcine viruses including pseudorabies virus (PRV), classical swine fever virus (CSFV), and porcine circoviruses (PCVs). The defined gene deleted PRV recombinant virus has been constructed for pathogenesis study and vaccine development. CSFV recombinant glycoproteins expressed using yeast expression system show accurate conformation and eliciting high neutralizing antibody titers in vaccinated pigs. Recent studies on PCV2 and PCV3 include viral proteins expression, monoclonal antibodies preparation, infectious clone construction, virus-cell interaction study, and virus-like particle (VLP) vaccine development.

Selected Publications

1. Lin, W.L., M.S. Chien, Y.W. Du, P.C. Wu, and **C. Huang***. 2009. The N-terminus of porcine circovirus type 2 replication protein is required for nuclear localization and *ori* binding activities. *Biochemical and Biophysical Research Communications* 379: 1066-1071. (SCI)
2. Lin, G.J., T.Y. Liu, Y.Y. Tseng, Z.W. Chen, C.C. You, S.L. Hsuan, M.S. Chien, and **C. Haung***. 2009. Yeast-expressed classical swine fever virus glycoprotein E2 induces a protective immune response. *Veterinary Microbiology* 139:369-374. (SCI)

3. Wu, C.W., M.S. Chien, T.Y. Liu, G.J. Lin, W.C. Lee, and **C. Huang***. 2011. Characterization of the monoclonal antibody against classical swine fever virus glycoprotein E^{rns} and its application to an indirect sandwich ELISA. *Applied Microbiology and Biotechnology* 92:815-821. (SCI)
4. Lin, G.J., M.C. Deng, Z.W. Chen, T.Y. Liu, C.W. Wu, C.Y. Cheng, M.S. Chien, and **C. Haung***. 2012. Yeast-expressed classical swine fever E2 subunit candidate provides complete protection against lethal challenge infection and prevents horizontal virus transmission. *Vaccine* 20:2336-2341. (SCI)
5. Wu, P.C., W.L. Lin, C.M. Wu, J.N. Chi, M.S. Chien, and **C. Huang***. 2012. Characterization of porcine circovirus type 2 (PCV2) capsid particle assembly and its application to virus-like particle vaccine development. *Applied Microbiology and Biotechnology* 95:1501-1507. (SCI)
6. Wu, C.W., M.S. Chien, and **C. Huang***. 2013. Characterization of the swine U6 promoter for short hairpin RNA expression and its application to inhibition of virus replication. *Journal of Biotechnology* 168:78-84. (SCI)
7. Cheng, C.Y., C.W. Wu, G.J. Lin, W.C. Lee, M.S. Chien, and **C. Huang***. 2014. Enhancing expression of the classical swine fever virus glycoprotein E2 in yeast and its application to a blocking ELISA. *Journal of Biotechnology*174: 1-6. (SCI)
8. Chi, J.N., C.Y. Wu, M.S. Chien, P.C. Wu, C.M. Wu, and **C. Huang***. 2014. The preparation of porcine circovirus type 2 (PCV2) virus-like particles using a recombinant pseudorabies virus and its application to vaccine development. *Journal of Biotechnology* 181: 12-19. (SCI)
9. Wu, P.C., T.Y. Chen, J.N. Chi, M.S. Chien, and **C. Huang***. 2016. Efficient expression and purification of porcine circovirus type 2 virus-like particles in *Escherichia coli*. *Journal of Biotechnology* 220: 78-85. (SCI)
10. Wu, C.Y., C.M. Liao, J.N. Chi, M.S. Chien, and **C. Huang***. 2016. Growth properties and vaccine efficacy of recombinant pseudorabies virus defective in glycoprotein E and thymidine kinase gene. *Journal of Biotechnology* 229: 58-64. (SCI)
11. Wu, C.Y., C.W. Wu, C.M. Liao, M.S. Chien, and **C. Huang***. 2017. Enhancing expression of the pseudorabies virus glycoprotein E in yeast and its application in an indirect sandwich ELISA. *Journal of Applied Microbiology* 123: 594-601. (SCI)
12. Cheng, C.Y., C.W. Wu, M. S. Chien, and **C. Huang***. 2019. N-terminus of classical swine fever virus strain TD96 glycoprotein E^{rns} contains a potential heparin-binding domain. *Veterinary Microbiology* 232:79-83. (SCI)
13. Wu, C.W., T.Y. Wu, C.J. Kuo, Y.P. Lu, M.S. Chien, and **C. Huang***. 2020. Characterization of the monoclonal antibody specific to the ORF72 protein of koi herpesvirus and cellular distribution analysis of the viral protein. *Journal of Fish Diseases* 2020;00:1-9. (SCI)
14. Chang, C.C., C.W. Wu, Y.C. Chang, C.Y. Wu, M.S. Chien, and **C. Huang***. 2021. Detection and phylogenetic analysis of porcine circovirus type 3 in Taiwan. *Archives of Virology* 166:259-263. (SCI)
15. Chen, J.Y., C.M. Wu, M.Y. Chia, **C. Huang***, and M.S. Chien*. 2023. A prospective CSFV-PCV2 bivalent vaccine effectively protects against classical swine fever virus and porcine circovirus type 2 dual challenge and prevents horizontal transmission. *Veterinary Research* 54:57. (SCI)
16. Chang, C.C., C.Y. Wu, J.G. Ciou, C.W. Wu, Y.C. Wang, HW Chang, M.S. Chien, and **C.**

Huang*. 2023. Exploring the surface epitope and nuclear localization analysis of porcine circovirus type 3 capsid protein. *AMB Express* 13:141. (SCI)

17. Chang, C.C., C.Y. Wu, C.M. Wu, C.W. Wu, Y.C. Wang, G.J. Lin, M.S. Chien, and **C. Huang***. 2024. Cytotoxicity effect and transcriptome analysis of PCV3-infected cells revealed potential viral pathogenic mechanisms. *Microbial Pathogenesis* 192:106715. (SCIE)