



黃千衿 Huang, Chienjin

職稱：教授

研究領域：分子病毒學、分子生物學、融合瘤

教授課程：高等微生物學、高等分子生物學、高等臨床病毒學、單源抗體技術學、病毒致病機轉

Tel: 04-22840894 轉 707

E-mail: cjhuang@dragon.nchu.edu.tw

### 簡要學經歷及重要榮譽

國立中興大學理學士 1984

國立中興大學理學碩士 1987

美國華盛頓大學哲學博士 1993

### 工作經歷

國立中興大學微生物暨公共衛生學研究所所長 2018~2021

國立中興大學獸醫學院副院長 2015~2016

國立中興大學微生物暨公共衛生學研究所教授 2009~

國立中興大學獸醫微生物學研究所教授 2006~2009

國立中興大學獸醫微生物學研究所副教授 1994~2006

美國華盛頓大學醫學院微生物系博士後研究 1993~1994

國立中興大學遺傳工程中心助理員 1984~1988

### 研究興趣及成果簡述

研究主軸為針對豬隻重要病毒包括假性狂犬病毒(PRV)、豬瘟病毒(CSFV)及豬環狀病毒(PCV)等進行分子致病機制之探討與診斷方法及疫苗的研發。我們已成功構築假性狂犬病毒基因缺損重組病毒株，可做為病毒致病特性及疫苗研發相關研究。在豬瘟病毒的研究方面，我們建立了酵母菌真核表現系統進行表現具正確構形之豬瘟病毒糖蛋白，能有效引起免疫豬隻產生高效中和抗體力價，並製備特異性單株抗體具有開發成為診斷套組之潛力。而在豬環狀病毒(PCV2、PCV3)的研究方面，針對病毒結構性外殼 Cap 蛋白進行抗原性分析、單株抗體製備、構築 PCV3 感染性質體、細胞毒性測試及製備全長 Cap 蛋白的類病毒顆粒，以期對此病毒與感染細胞之交互作用及致病機制有更深入了解。

### 代表著作

- 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. Huang\*. 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<sup>rns</sup> 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. Huang\*. 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<sup>rns</sup> 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)