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研究領域：病毒學、免疫與疫苗學、分子生物學

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### 學歷：

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|-----------|-------------------|--------|
| 2016-2020 | 國立臺灣大學獸醫所         | 博士     |
| 2015-2016 | 國立臺灣大學分子暨比較病理學研究所 | 碩士直升博士 |
| 2010-2015 | 國立臺灣大學獸醫學系        | 學士     |

### 工作經歷：

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| 2022-2022 | 美國約翰霍普金斯大學醫學院 病理所                | 博士後研究員 |
| 2021-2022 | 西班牙農業食品科學研究所 動物健康中心 (IRTA-CreSA) | 博士後研究員 |
| 2020-2021 | 中央研究院 生物化學所                      | 博士後研究員 |

### 榮譽與其他經歷：

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| 2020、2018 | 衛福部傳染病防治研究及教育中心 優秀著作獎        |
| 2019      | 科技部補助赴國外從事博士後研究獎學金 (博後千里馬計畫) |

### 過去研究主題：

- 豬流行性下痢- 搜索新型豬流行性下痢之中和抗原決定位、桿狀病毒表現系統疫苗研發與測試、豬流行性下痢免疫吸附試驗套組開發、抗病毒抗體生產、病毒表面超微結構之分析
- 非洲豬瘟- CRISPR 基因編輯重組減毒病毒製造、DIVA 檢測方式研發
- 乳突瘤病毒- 犬貓乳突瘤病毒與惡性皮膚病變調查、犬貓乳突瘤病毒基因分析、人類乳突瘤病毒腫瘤誘導模式、人類病毒相關頭頸癌之機制探討

### 目前研究計畫：

- 國科會-非洲豬瘟病毒外套膜上血液吸附蛋白 CD2v 之糖基化研究與參與調控細胞與體液免疫反應之關聯 (112-2313-B-005 -047 -MY2)
- 中興大學獸醫學院-VMTH-CVM 研究合作計畫-臺灣牛隻乳突瘤病毒疾病調查與本土病毒株分離

代表著作：

### **Swine Viral Diseases**

1. Joan Pujols, Elena Blázquez, Joaquim Segalés, Fernando Rodríguez, **Chia-Yu Chang**, Jordi Argilagué, Laia Bosch-Camós, Rosa Rosell, Lola Pailler-García, Boris Gavrilov, Joy Campbell, Javier Polo. Feeding Spray-Dried Porcine Plasma to Pigs Improves the Protection Afforded by the African Swine Fever Virus (ASFV) BA71ΔCD2 Vaccine Prototype against Experimental Challenge with the Pandemic ASFV—Study 2. **Vaccines**, 11(4), 825. (2023)
2. Laia Bosch-Camos, Uxia Alonso, Anna Esteve-Codina, **Chia-Yu Chang**, Beatriz Martin-Mur, Francesc Accensi, Marta Muñoz, Maria J. Navas, Marc Dabad, Enric Vidal, Sonia Pina-Pedrero, Patricia Pleguezuelos, Ginevra Caratu, Maria L. Salas, Lihong Liu, Stanimira Bataklieva, Boris Gavrilov, Fernando Rodriguez, Jordi Argilagué. Cross-protection against African swine fever virus upon intranasal vaccination is associated with an adaptive-innate immune crosstalk. **PLOS Pathogens** 18(11): e1010931. (2022)
3. Cheng-Yu Huang\*, Piotr Draczkowski\*, Yong-Sheng Wang\*, **Chia-Yu Chang\***, Yu-Chun Chien, Yun-Han Cheng, Yi-Min Wu, Chun-Hsiung Wang, Yuan-Chih Chang, Yen-Chen Chang, Tzu-Jing Yang, Yu-Xi Tsai, Kay-Hooi Khoo, Hui-Wen Chang, Shang-Te Danny Hsu. In situ structure and dynamics of an alphacoronavirus spike protein by cryo-ET and cryo-EM. **Nature Communications** 13, 4877. (\*co-first author) (2022)
4. **Chia-Yu Chang**, Yong-Sheng Wang, Jou-Fei Wu, Tzu-Jing Yang, Yen-Chen Chang, Chanhee Chae, Hui-Wen Chang, Shang-Te Danny Hsu. Generation and Characterization of a Spike Glycoprotein Domain A-Specific Neutralizing Single-Chain Variable Fragment against Porcine Epidemic Diarrhea Virus. **Vaccines**, 9(8), 833. (2021)
5. Wei-Ting Hsu, **Chia-Yu Chang**, Chih-Hsuan Tsai, Sung-Chan Wei, Huei-Ru Lo, Robert John S. Lamis, Hui-Wen Chang, Yu-Chan Chao. PEDV Infection Generates Conformation-Specific Antibodies That Can Be Effectively Detected by a Cell-Based ELISA. **Viruses**, 13(2), 303. (2021)
6. **Chia-Yu Chang**, Wei-Ting Hsu, Pei-Shiue Tsai, Chi-Min Chen, Ivan-Chen Cheng, Yu-Chan Chao, Hui-Wen Chang. Oral Administration of Porcine Epidemic Diarrhea Virus Spike Protein Expressing in Silkworm Pupae Failed to Elicit Immune Responses in Pigs. **AMB Express**, Jan 28;10(1):20. (2020)
7. **Chia-Yu Chang**, Ju-Yi Peng, Yun-Han Cheng, Yen-Chen Chang, Yen-Tse Wu, Pei-Shiue Tsai, Hue-Ying Chiou, Chian-Ren Jeng, Hui-Wen Chang. Development and Comparison of Enzyme-

linked Immunosorbent Assays Based on Recombinant Trimeric Full-length and Truncated Spike Proteins for Detecting Antibodies against Porcine Epidemic Diarrhea Virus. **BMC Veterinary Research**, 15:421. (2019)

8. Ju-Yi Peng, Yi-Bing Horng, Ching-Ho Wu, **Chia-Yu Chang**, Yen-Chen Chang, Pei-Shiue Tsai, Chian-Ren Jeng, Yeong-Hsiang Cheng, Hui-Wen Chang. Evaluation of Antiviral Activity of *Bacillus licheniformis*-fermented Products against Porcine Epidemic Diarrhea Virus. **AMB Express**, 9:191. (2019)
9. Fu-Chun Hsueh, Chao-Nan Lin, Hue-Ying Chiou, Min-Yuan Chia, Ming-Tang Chiou, Takashi Haga, Chi-Fei Kao, Yen-Chen Chang, **Chia-Yu Chang**, Chian-Ren Jeng, Hui-Wen Chang. Updated Phylogenetic Analysis of the Spike Gene and Identification of A Novel Recombinant Porcine Epidemic Diarrhoea Virus Strain in Taiwan. **Transboundary Emerging Diseases**, 00:1–14. (2019)
10. **Chia-Yu Chang**, Ivan-Chen Cheng, Yen-Chen Chang, Pei-Shiue Tsai, Seiu-Yu Lai, Yu-Liang Huang, Chian-Ren Jeng, Victor Fei Pang, Hui-Wen Chang. Identification of Neutralizing Monoclonal Antibodies Targeting Novel Conformational Epitopes of the Porcine Epidemic Diarrhoea Virus Spike Protein. **Scientific Reports**, 9(1):2529. (2019)
11. **Chia-Yu Chang**, Wei-Ting Hsu, Yu-Chan Chao, Hui-Wen Chang. Display of Porcine Epidemic Diarrhea Virus Spike Protein on Baculovirus to Improve Immunogenicity and Protective Efficacy. **Viruses**, 10, 346. (2018)
12. Ju-Yi Peng, **Chia-Yu Chang**, Chi-Fei Kao, Yen-Chen Chang, Cheng-Shun Hsueh, Chian-Ren Jeng, Ivan-Chen Cheng, Victor Fei Pang, Pei-Shiue Tsai, Hui-Wen Chang. Different Intestinal Tropism of the G2b Taiwan Porcine Epidemic Diarrhea Virus-Pintung 52 Strain in Conventional 7-Day-Old Piglets. **The Veterinary Journal**; 237: 69-75. (2018)
13. Yen-Chen Chang, **Chia-Yu Chang**, Pei-Shiue Tsai, Hue-Ying Chiou, Chian-Ren Jeng, Victor Fei Pang, Hui-Wen Chang. Efficacy of Heat-Labile Enterotoxin B Subunit-adjuvanted Parenteral Porcine Epidemic Diarrhea Virus Trimeric Spike Subunit Vaccine in Piglets. **Applied Microbiology and Biotechnology**, Sep, 102(17):7499-7507. (2018)
14. Yen-Chen Chang, Chi-Fei Kao, **Chia-Yu Chang**, Chian-Ren Jeng, Pei-Shiue Tsai, Victor Fei Pang, Hue-Ying Chiou, Ju-Yi Peng, Ivan-Chen Cheng and Hui-Wen Chang. Evaluation and Comparison of the Pathogenicity and Host Immune Responses Induced by a G2b Taiwan Porcine Epidemic Diarrhea Virus (Strain Pintung 52) and Its Highly Cell-Culture Passaged Strain in Conventional 5-Week- Old Pigs. **Viruses**, 9, 121. (2017)

15. Ju-Yi Peng, Cai-Zhen Jian, **Chia-Yu Chang**, Hui-Wen Chang. Procine Epidemic Diarrhea. In: Jagadeesh Bayry (Ed), Emerging and Re-emerging Infectious Diseases of Livestock. Springer. p.273-283 (2017)

### **Papillomaviruses**

1. Nanako Yamashita-Kawanishi, **Chia-Yu Chang**, James K Chambers, Kazuyuki Uchida, Katsuki Sugiura, Iwao Kukimoto, Hui-Wen Chang, Takeshi Haga. Comparison of prevalence of *Felis catus* papillomavirus type 2 in squamous cell carcinomas in cats between Taiwan and Japan. **The Journal of Veterinary Medical Science**, Aug 6;83(8):1229-1233. (2021)
2. Nanako Yamashita-Kawanishi, Yuka Gushino, **Chia-Yu Chang**, Hui-Wen Chang, James K. Chambers, Kazuyuki Uchida, Takeshi Haga. Full-genome characterization of a novel *Felis catus* papillomavirus 4 subtype identified in a cutaneous squamous cell carcinoma of a domestic cat. **Virus Genes**, Aug; 57(4):380-384. (2021)
3. **Chia-Yu Chang**, Nanako Yamashita-Kawanishi, Sonoka Tomizawa, I-Li Liu, Wei-Tao Chen, Yen-Chen Chang, Wei-Hsiang Huang; Pei-Shiue Tsai, Kinji Shirota, James K Chambers, Kazuyuki Uchida, Takeshi Haga, Hui-Wen Chang. Whole Genomic Analysis and Comparison of Two Canine Papillomavirus Type 9 Strains in Malignant and Benign Skin Lesions. **Viruses**, 12, 736. (2020)
4. **Chia-Yu Chang**, Wei-Tao Chen, Takeshi Haga, Nanako Yamashita, Chi-Fen Lee, Masano Tsuzuki, Hui-Wen Chang. The Detection and Association of Canine Papillomavirus with Benign and Malignant Skin Lesions in Dogs. **Viruses**, 12(2), 170. (2020)
5. Yamashita-Kawanishi N, Sawanobori R, Matsumiya K, Uema A, Chambers JK, Uchida K, Shimakura H, Tsuzuki M, **Chia-Yu Chang**, Hui-Wen Chang, Takeshi Haga. Detection of *Felis catus* papillomavirus type 3 and 4 DNA from squamous cell carcinoma cases of cats in Japan. **The Journal of Veterinary Medical Science**, 80(8):1236-1240. (2018)

### **Other Subjects**

1. Yun-Han Cheng, Yen-Chen Chang, **Chia-Yu Chang**, Hui-Wen Chang. Identification and genomic characterization of *Baculovirus penaei* in *Litopenaeus vannamei* in Taiwan. **Journal of Fish Diseases** 46(6):611-617. (2023)