Cuitian Peng

+44 7762 967655 | cuitian.peng.24@ucl.ac.uk

Research interest: Retina diseases, Dry AMD, Bioinformatics.

ACADEMIC EDUCATIONAL BACKGROUND

University of Chinese Academy of Sciences (UCAS) **Beijing, China**
M.S. in Biology and Medicine Sep 2021-July 2024
GPA: 3.84/4.00, Full-Funded Academic Scholarship
Thesis: Analysing molecular changes in the retina of chick myopia model using spatial and single-cell transcriptomics.
Modules: Bioinformatics, Microbial Genetics and Molecular Biology, Epigenetics, etc.

Beijing Genomic Institute (BGI) **Shenzhen, China**
Joint Master Student Sep 2022– 2024
Research Project Funding
Training: Genomics, Neuroscience, Epigenetics, etc.

Zhongkai University of Agriculture and Engineering **Guangzhou, China**
B.S. in Animal Science Sep 2017- July 2021
GPA: 3.4/4.00, Second Class Scholarship
Thesis: Effects of Resveratrol on *SIRT1* Signalling Pathway and Antioxidant Capacity of Ducks on Exposure to Acute Heat Stress
Modules: Animal Physiology, Animal Genetics, Veterinary Biology, etc.

SKILLS

- **Computer Programming language**: Linux, R, Python, Perl.
- **Laboratory Skills**: DNA extraction, PCR, ELISA, Western Blot, Single-cell RNA sequencing (scRNA-seq), Spatial Transcriptomics.
- **IT Skills**: Proficient in MS Office, including Work, Excel, PPT, etc.
- **Language Skills**: English (Proficient), Mandarin (Native), Cantonese (Native)

RESEARCH EXPERIENCES

Zhongkai University of Agriculture and Engineering, Guangzhou, China

Research Program:

< Establishment of RPA-LFD visual detection method for animal influenza A virus > 2018-2019

- The study aimed to establish a recombinant polymerase amplification-lateral flow dipstick (RPA-LFD) detection method for animal influenza A virus (IAV).
- My contributions: Performed the experiments & participate in the competition as a representative

< Effects of resveratrol on *SIRT1* signalling pathway and antioxidant capacity of duck liver under acute heat stress > 2020-2021

- This study aimed to investigate the effects of resveratrol supplementation on the antioxidant capacity of Shanma ducks under acute heat stress.
- My contributions: Performed the experiments & analyzed the data

BGI-research, Shenzhen, China

Research Program:

< Analysing molecular changes in the retina of chick myopia model using spatial and single-cell transcriptomics > 2022-2024

- Using spatial transcriptomics and single-cell transcriptomics technologies to map the cellular atlas of the retina, choroid, and sclera spaces and to compare the proportions, distributions, and gene expression levels induced by myopia in different cell types, subtypes, and structural regions of the retina. Additionally, to reveal the limitations of the chicken myopia model, this project investigates the spatial expression characteristics of human myopia-related pathogenic genes in the chicken retina, providing a theoretical basis for using the chicken model in myopia treatment.
- My contribution: Conceived and designed the experiments, performed the experiments, analyzed the data, provided reagents/materials/analysis tools, and wrote and revised the manuscripts.

< A Human Cerebral Single-Cell Spatial Atlas of Alzheimer's Disease > 2022-2024

- The study will utilize state-of-the-art spatial transcriptomics technology to establish methods for characterizing pathological features and microenvironmental indicators. Through these methods, we will explore the spatiotemporal interactions between pathological features and surrounding microenvironment components such as neurons, glial cells, and blood vessels, to elucidate their impact on core pathological changes in AD, including neuronal damage, neuroinflammation, and metabolic disturbances.
- My contribution: Performed the experiments & analyzed the data

PUBLICATIONS AND PATENTS

- **Journal Papers:** Effects of Resveratrol on Anti-oxidation and Anti-apoptosis of Hepatocytes of Ducks on Exposure to Acute Heat Stress[J]. Wanting Zhou, Chen Yang, Cuitian Peng. Acta Veterinaria et Zootechnica Sinica, 2023, 54(1): 239-251.doi: 10.11843/j.issn.0366-6964.2023.01.022
- **Patent:** A Method for Freezing and Embedding Brain Tissue. CN202311363954.4. Chinese Patent (CN), 2023.10. Ningyuan Zhu, Cuitian Peng, Yuanwei Zhang, Rouxi Chen, Junpu Mei, Xiaodong Fang

AWARDS AND ACHIEVEMENTS

- 1st Prize, BGI Graduation Exhibition Poster Selection Event, 2024.
- Participant of OptoRevolution: Exploring the Frontiers of Physiology with Light, 2023
- Member of the Organizing Committee of the International Conference on Genomics (ICG), 2022
- 1st Prize, The First Guangdong Province Undergraduate Animal Production College Student Innovation and Design Competition, 2021
- Excellent Student Cadre of Zhongkai University of Agriculture and Engineering, 2020
- Outstanding Work Award, The 2nd Guangdong-Hong Kong-Macao Greater Bay Area University Student Art Festival - University Student Art Achievements Exhibition
- National 2nd Place, National College Student Financial Elite Challenge Cup
- Obtained Level 13 Chinese Dance from Beijing Dance Academy