Peng Zhang

PhD student at Zhejiang University

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EDUCATION

Zhejiang University *June 2023 - present*

PhD of Bioinformatics

Advisor: -

Ningbo University *Sep 2020 - June 2023*

Master of Agriculture

Advisor: Zhaoxia Cui

Tianjin Agricultural University *June 2020*

Bachelor of Agriculture

Advisor: Sudong Xia

RESEARCH INTEREST

I am interested in studying the conservation and variation of biological mechanisms and phenomena, with a specific focus on the evolutionary history of sex determination and sex chromosomes. I hope to use genomic techniques to deepen our understanding of the history and make a niche in this field.

RESEARCH EXPERIENCE

Masters Research

Utilizing multi-omic data to delve into the sexual development of a decapod crab, particularly in a conserved group of transcription factors known as the *Dmrt* gene, a detailed phylogenetic and molecular evolutionary study reveals two distinct groups of *Dmrt* genes in malacostracan crustaceans (crabs and crayfish). One group exhibits a cryptic mutation while the other has undergone positive selection. These findings suggest a unique evolutionary history and mechanism of transcriptional regulation of *Dmrt* genes in Malacostraca.

Worked closely with students in the lab, we investigate the sex determination mechanism and sex chromosomes of the Chinese mitten crab, gradually unveiling the mystery underlying this species.

Works in the endocrine pathway and comparative transcriptomic analyses of another two crabs resulted in the publication of two peer-reviewed papers.

TECHNICAL SKILLSET

Bioinformatics: Linux and Perl

R programming: Statistical analysis and data visualization

Molecular lab works: RNAi and RT-qPCR

English: IELTS score of 7 (out of 9)

PUBLICATIONS

Zhang, P., Yang, Y.Y., Xu, Y.F., Cui, Z.X. (2023). Analyses of the *Dmrt* family in a decapod crab, *Eriocheir sinensis* uncover new facets on the evolution of DM domain genes[J]. *Front. Physiol.*

Yang, Y.Y., **Zhang, P**., Cui, Z.X., Bao, C.C. (2021). *Bone morphogenetic protein 2* is involved in oocyte maturation through an autocrine/paracrine pathway in *Scylla paramamosain*[J]. *Front. Mar. Sci.*

Yang, Y.Y., Xu, Y.F., **Zhang, P.**, Cui, Z.X., Bao, C.C. (2021). Comparative genomic and transcriptomic analyses of *CHHs* and their putative receptors in *Scylla paramamosain*, *Portunus trituberculatus*, and *Eriocheir sinensis*[J]. *Front. Mar. Sci*.

崔朝霞，杨亚男，冯天翼，**张鹏**，韩睿，鲁文涛. 一种中华绒螯蟹的性别鉴定特异性DNA序列及性别鉴定方法[P]. 中国, CN114438222A, 2022.05.06