

Haorong Wang

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EDUCATION

Jinan University

Bachelor of Science in Biological Sciences

Guangzhou, Guangdong

Sept. 2023 – Expected Jul. 2027

Major: *Biological Sciences*

GPA: 3.72/5.00 **Rank:** 5/37

- **Relevant courses:** Biological Informatics (95), Probability & Mathematical Stat. (92),
Molecular Biology (85), Cell Biology (88), Biochemistry (88)

Minor: *Japanese*

RESEARCH EXPERIENCE

Oxidative Stress-Induced Mitochondrial Translocation of GPX4 and Ferroptosis Regulation

Core Member | Advisor: **Prof. Zhi Huang**

Nov. 2023 – Oct. 2024

- Worked on a GPX4-related experimental project under supervision and gradually became able to carry out core laboratory procedures independently.
- Built ox-LDL-induced oxidative stress models in RAW264.7 macrophages and used CCK-8 assays to optimise dose and time conditions for later GPX4- and ferroptosis-related experiments.
- Used **Western blotting** to examine GPX4-related protein changes under oxidative stress, while also building a basic understanding of bulk RNA-seq analysis.

The Role and Mechanism of TGM1 in Retinol-Induced Skin Thinning

Core Member | Advisor: **Prof. Qi Xiang**

Jan. 2026 – Jul. 2026

- Established a topical retinol-treated SD rat model and analysed skin injury and barrier remodelling using histopathology, Oil Red O staining, RT-qPCR, and Western blotting.
- Conducted HaCaT and 293T cell assays, including MTT, RT-qPCR, Western blotting, and CETSA, to assess retinol cytotoxicity, TGM1 expression, and protein thermal stability.
- Integrated RNA-seq, molecular docking, and 100-ns molecular dynamics simulations with in vivo and in vitro validation to identify TGM1 as a candidate mediator of retinol-induced skin barrier alterations.

sgRNA Design for CRISPR-Based Editing of Rice Susceptibility Genes

Team Leader | Advisor: **Prof. Dianjing Guo** (The Chinese University of Hong Kong)

Jul. 2025 – Aug. 2025

- Led the main analytical work of a short-term CRISPR design project on rice susceptibility genes.
- Identified candidate susceptibility genes for CRISPR editing by screening functional annotations from **eggNOG** and **InterPro**, focusing on susceptibility-related Description, GO, and KEGG terms.
- Designed sgRNA candidates using **Sequence Scan for CRISPR (SSC)** by selecting spacer sequences with high predicted activity and compatible Cas9 PAM sites (NGG).

AI-Assisted Molecular Optimisation and Simulation for Menopause-Related Skincare Formulations

Core Member | Interdisciplinary Collaboration | Advisor: **Prof. Qi Xiang**

Sept. 2025 – Dec. 2025

- Worked on an interdisciplinary project that used AI-based molecular optimisation and computational validation to improve existing skincare formulations.
- Used docking workflows, PyMOL, and GROMACS to evaluate candidate bioactive compounds and examine their molecular interactions.
- Worked with computer science teammates on graph neural network-based optimisation ideas, helping connect biological questions with computational modelling tasks.

AWARDS AND HONORS

Second-Class Scholarship of Outstanding Students , Jinan University	2024 – 2025
Third-Class Scholarship of Outstanding Students , Jinan University	2023 – 2024
Second Prize (University Level) , 11 th Challenge Cup, Jinan University	2024 – 2025
Third Prize , Guangdong Provincial Biochemistry Skills Competition	2025
Second Prize , The National College Cosmetics Innovation Competition	2025
Third Prize , Jinan University “AI+” Application Innovation Competition	2025
Bronze Award , 13 th Jinan University “Challenge Cup” Innovation and Entrepreneurship Competition	2026
Honorable Mention , Mathematical Contest in Modeling (MCM), COMAP	2026

LEADERSHIP AND SERVICE

Member , Life Science and Technology College Volunteer Group	2023 – 2024
Helped organise student volunteer activities and campus events.	
Head of Social Practice Department , Life Science and Technology College Volunteer Group	2024 – 2025
- Organised campus volunteer activities and coordinated student participation in social practice events. - Worked with Guangzhou Metro on volunteer event planning and execution.	

TECHNICAL SKILLS

Programming:	R, Python, C/C++
Bioinformatics:	edgeR, limma, DESeq2, clusterProfiler, ggplot2, scanpy, gseapy, Seurat
Data Analysis:	pandas, numpy, matplotlib, scikit-learn, basic PyTorch
Molecular Modelling:	GROMACS, PyMOL, docking workflows
Laboratory Skills:	CCK-8 assay, Western blot, PCR, RT-qPCR, Flow cytometry
Tools:	L ^A T _E X, Linux command line, Git, Snakemake
Languages:	Mandarin (Native), Cantonese (Native), English (Fluent), Japanese (CEFR B1)