Bai Yu

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Education

Peking University, School of Basic Medical Sciences **Beijing, China**

Ph.D. student in Human Anatomy and Histology, Supervisor: Weiguang Zhang *Sep 2025 - Jun 2029*

Peking University, School of Basic Medical Sciences **Beijing, China**

M.S. in Human Anatomy and Histology, Supervisor: Lihua Qin *Sep 2022 - Jun 2025*

China Medical University, First Clinical College **Shenyang, China**

Bachelor of Medical Laboratory Technology *Sep 2018 - Jul 2022*

Research Experience

Neuroendocrine Mechanisms of Perimenopausal Visceral Obesity

Graduate research, Peking University

- ***Model Development & Validation:*** *Established a perimenopausal visceral fat accumulation model and validated key behavioral, imaging (e.g., MRI-based fat quantification), and molecular (e.g., adipokine profiles, hypothalamic gene expression) indicators.*
- ***Neural Circuit Mapping:*** *Employed single-cell RNA sequencing to profile Kisspeptin neuron subpopulations and utilized retrograde/anterograde viral tracing to delineate their afferent inputs and efferent projections.*
- ***Functional Manipulation:*** *Applied chemogenetic (DREADDs) and electrophysiological techniques to modulate the activity of Kisspeptin neurons and their key downstream targets, assessing resultant effects on visceral fat deposition and metabolic parameters.*
- ***Mechanistic Investigation:*** *Utilized CUT&Tag chromatin profiling and estrogen receptor agonists/antagonists to elucidate the estrogen-mediated transcriptional regulation within Kisspeptin neurons and its role in circuit dysregulation.*
- ***Significance:*** *The study identified a central neuroendocrine pathway linking perimenopausal estrogen decline to visceral obesity, highlighting novel therapeutic targets.*

Publications

- ***Bai, Y.****, Sun, Y., Wang, W., Chen, C., Wang, H., Li, M., Zhang, W., & Qin, L. (2026). Mechanistic study of hypothalamic arcuate kisspeptin neurons regulating perimenopausal visceral fat accumulation via the dorsomedial hypothalamic nucleus. Advanced Science* ***(Under Review - Major Revision)****.*
- *Wang H, Sun Y, Wang W, Wang X, Zhang J,* ***Bai Y****, Wang K, Luan L, Yan J, Qin L. Mapping the 5-HTergic neural pathways in perimenopausal mice and elucidating the role of oestrogen receptors in 5-HT neurotransmission. Heliyon. 2024, 10(6): e27976*

Conference Experience

The 37th Annual Conference of the Chinese Society of Anatomy *July 21–24, 2023 | Chengdu, China*

Oral Presentation: "Mapping the 5-HTergic Neural Pathways in Perimenopausal Mice and Elucidating the Role of Estrogen Receptors in 5-HT Neurotransmission"

Professional Skills

- ***Language Proficiency:*** *Chinese (native), English (conversational).*
- ***Experimental Skills:*** *Proficient in stereotaxic injection, western blotting (protein immunoblotting), quantitative reverse transcription polymerase chain reaction (qRT-PCR), cell/tissue HE staining, immunofluorescence, cell culture techniques, general animal experimentation techniques (certified for laboratory animal handling), genotyping of genetically edited animals, and computational & bioinformatics skills.*
- ***Technical Skills:*** *Python, MS Office, Adobe Illustrator, Photoshop*