Jinghan Yang

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Education

Basic Medical Sciences

The School of Basic Medical Sciences, Peking University **2021.09 -- Present**

- GPA: 3.64/4.00(4/35); CET-6: 570
- Modules include: Nervous system (90/100); Lymphatic system (95.5/100); Endocrine system (95/100); Reproductive system (94/100); Pathogenic Biology and Basic Immunology Fundamentals (91/100); Diagnostics (92.7/100); General Chemistry Experiment (90/100); Introduction to Computing (90/100)

Research Experience

Cell Therapy For Diabetes: Curing Diabetes Using Engineered Liver Cells **2023.09 -- Present**

- Considering the current situation in which both type 1 and type 2 diabetes patients must frequently inject insulin throughout the day, particularly in the middle and later stages of the disease, we have identified a biological regulatory element that responds to blood glucose concentrations.
- Based on this discovery, we designed a system capable of producing and secreting insulin spontaneously in a manner dependent on blood glucose levels in vivo.
- Our goal is to simulate physiological conditions in which an increase in blood glucose levels after eating triggers insulin secretion, thereby achieving the desired therapeutic outcome.

Review: Progress on the Pathogenesis and Treatment of Diabetes Mellitus **2024.09 -- Present**

- Searched and reviewed the relevant literature on the definition, classification, and other aspects of diabetes in both current clinical and basic scientific fields.
- Summarized the pathogenesis and current treatment methods of the most common types, Type I and Type II.
- Proposed valuable directions for future research into diabetes treatment based on this review.

Establish a differentiation protocol for human embryonic stem cells into neural lineages **2025.05 -- Present**

- Started with the culture of human embryonic stem cell lines and differentiated neurons from the hypothalamic arcuate nucleus, following established protocols outlined in the existing literature.
- Our goal is to develop a human embryonic stem cell differentiation system that provides human samples for studying the central regulation of metabolism, while also serving as a valuable tool for drug screening.
- Our next step is to utilize CRISPR-Cas9 technology to develop reporter cell lines that facilitate differentiation. Simultaneously, we plan to design differentiation protocols for additional tissues.

Research Group Experience

Zhang Hongquan Lab, Peking University International Cancer Institute **2022.09 -- 2023.06**

- Regularly attended group meetings as an undergraduate intern. Studied the literature on the pathogenesis of common tumors, including breast and pancreatic cancer, along with related experimental techniques.

Pan Qi Lab, The Department of Endocrinology and Metabolism, Beijing Hospital **2023.07 -- 2023.08**

- Observed clinical work as a summer intern. Gained insight into the daily management and treatment plans for diabetic patients in the endocrinology department and to assess their actual needs.
- Attended the group meeting and seminar organized by Beijing Hospital to gain insights into the concepts and methodologies for conducting clinical trials of drugs and treatment plans.

Wang Liheng Lab, State Key Laboratory of Vascular Homeostasis and Remodeling **2023.09 -- Present**

- Completed undergraduate research project in this group and became a formal member. Our group focuses on glucose and lipid metabolism in the liver, as well as the effects of metabolism on aging.
- Continued my previous work to enhance and complete the project titled "Curing Diabetes Using Engineered Liver Cells, as well as the review titled "Progress on the Pathogenesis and Treatment of Diabetes Mellitus.
- Initiated the stem cell culture and differentiation project.

Campus Experience

Volunteer, The Autumn sports Meeting of Peking University **2021.10**

- Responsibled for coordinating with athletes from various events, ensuring athletes arrived at the competition venue on time, and photo shooting.

Volunteer, Student Union of Peking University **2021.10 -- 2022.05**

- Volunteered for several projects within the student union and have completed approximately 50 hours of volunteer service.
- Participated in organizing the student congress, coordinated equipment and venues, and contributed to the preparation and distribution of materials.
- Wrote promotional content and designed the layout for the school's official WeChat account posts related to school debates, food competitions, and other activities.
- Was honored as the Volunteer Star of the Peking University Student Union in November 2021.

Club Member, The Journalism and Communication Club of Peking University Health Science Center **2022.09 -- Present**

- The club is responsible for the publicity projects of Peking University Health Science Center and manages several social media accounts for the institution.
- Actively involved in the comprehensive planning and production of promotional videos for college entrance examinations.
- Completed the photography for numerous school activities.

Participant, The final review meeting for the "Innovative Talent Experimental Design" project **2024.12**

- Presented the preliminary results of engineered liver cell therapy for diabetes on poster and won the Excellent Award for Poster Presentation.

Volunteer, Special Meeting on Metabolic Pharmacology of the Chinese Pharmacological Society **2025.04**

- Participated in the preparation and hosting of this conference, primarily responsible for venue arrangements, organizingand distributing materials, and reminding the speakers of the remaining time for their presentations.

Skills & Interests

- Proficient in cellular and animal experimental techniques, including cell culture, protein and RNA extraction, quantitative PCR , Western blotting, immunofluorescence staining, mouse anatomy and sampling, intraperitoneal injection, and extraction of primary liver cells, among others.
- Proficient in experimental data processing tools, including Prism, Photoshop, Illustrator, and Excel, among others.
- Photography is an important part of my leisure time away from studying and researching. I enjoy capturing beautiful scenery and meaningful moments. For me, this activity serves not only as a form of relaxation but also as a means of observing and documenting the world and life.