

Zhening Zhang

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EDUCATION BACKGROUND

The University of Strathclyde | Sept.2021– Jun.2022

- **BSc Hons** in Biochemistry and Pharmacology

China Pharmaceutical University (CPU) | Sept.2018– Jun.2022

- **B.S.** in Pharmacy (Biochemistry & Pharmacology) **GPA:** 3.84/4.00

RESEARCH EXPERIENCE

Graduation project | **Spred-1 and Spred-3 as tumor suppressors in different cancer types: a comprehensive data analysis**

- Instructed by Prof. Luke Chamberlain | Sept.2021-Mar.2022

- ✧ *Literature review of Sprouty/Spred family proteins and relevant Ras/Raf/ERK pathway;*
- ✧ *Extracted data on Spred-1 and Spred-3 from public databases, e.g., TCGA, Intogen and cBioPortal;*
- ✧ *Scientific mapping and analyzation of gene expression, mRNA level and patient outcome;*
- ✧ *Future plan in November: analyzation of possible gene/protein interaction in Spred family.*

Project participant | **Development of Extracorporeal liver assistance device (ELAD)**

- Instructed by Dr. John Brotherton and Dr. Dar He from Vital Therapies, Inc. | July 2021-Sept.2021

- ✧ Cultured and manufactured human C3A liver cell; Determination of albumin, transferrin and endotoxin for product quality control;
- ✧ Construction, purification and determination of self-designed QT antibody;
- ✧ Installation and test of ELAD bedside unit; Translation of Standard Operating Procedure.

Project leader | **2-deoxy glucose reprograms tumor metabolism and synergizes with antiangiogenesis inhibitor in metastatic breast cancer**

- Instructed by Prof. Juan Zhang | Jan.2020-July 2021

- ✧ Extracted VEGFR2 single chain antibody JZC00 from self-constructed engineering bacteria, applied SDS-PAGE and non-reduced Western blot for protein determine;
- ✧ *In vitro* study, the inhibitory effects of JZC00 combined with glycolysis inhibitor 2-DG on cell viability, colony formation, migration, cell cycle and apoptosis of breast cancer cells were studied.
- ✧ *In vivo* study, the effect of JZC00+2-DG on breast tumor growth and metastasis in vivo was explored. The subcutaneous xenograft model of 4T1 breast cancer in situ was constructed on balbc mice.
- ✧ Pathological assay certified 2-DG can alleviate the weakening effect on anti-angiogenic antibody JZC00 caused by tumor hypoxia microenvironment through HIF-1 α pathway;
- ✧ Took charge of experiment design, data processing, scientific mapping and paper writing; Guided juniors to carry out lab experiments based on this project.

Project participant | **Effect of ACS14 on hepatic ischemia reperfusion injury in mice**

- Instructed by Prof. Yong Yang | Sept.2019-Jan.2020

- ✧ Feed and management of experimental animal; Practiced surgery skill to improve survival rate up to 95%. Independently established the liver ischemia-reperfusion mouse model and reperfusion operation;

- ✧ Detected the degree of liver injury in mice using flow cytometry, blood ALT assay and H&E staining.

Core member | Study on the design and properties of binary deficient compounds

- Instructed by Asso. Prof. Fei Wang | Mar.2019- Jan.2020
 - ✧ Learned the properties of diyne polymers and discussed the research proposal with teammates;
 - ✧ Synthesized and purified Tetraphenylalkyne porphyrin and poly tetraphenylalkyne porphyrin; Analyzed the electrochemical and optical properties of the monomer and polymer;
 - ✧ Analyzed experimental data to make figure and wrote research paper; Participated in the mid-term defense on behalf of the research group (The project was rated as excellent).

PUBLICATION

- Manasik Gumah Ali[#], **Zhening Zhang[#]**, Huang Linhua, Nan Lidi, Mingzhu Pan, Kamal Hezam, Juan Zhang*, **2-deoxy glucose reprograms tumor metabolism and synergizes with antiangiogenesis inhibitor in metastatic breast cancer**, *Biomedicine & Pharmacotherapy (Co-first author, under review)*.
- Manasik Gumah Ali, **Zhening Zhang**, Qi Gao, Mingzhu Pan, Edward G Rowan & Juan Zhang, **Recent advances in therapeutic applications of neutralizing antibodies for virus infections: an overview**, *Immunologic Research*, volume 68, pages 325–339(2020).
- Junyan Tang, Xiaoya Liu, Chengwei Yang, **Zhening Zhang**, Rui Sun, Hongmei Li, Caolong Li* and Fei Wang*, **Carbon-rich nanofiber framework based on conjugated arylacetylene polymer for photocathodic enzymatic bioanalysis**, *Royal Society of Chemistry Advances*, 2019, 9, 4253-42542.
- Yuanyuan Li, Ling Xu, Tian Sang, **Zhening Zhang**, Yulin Tang & Xianhui Zhu, **A brief discussion on the precise treatment of hypertension with rheumatic heart disease and diabetes mellitus: inspired by a clinical case**, *Chinese Medical Journal (Under review)*.

HONOR AND AWARD

- **The First Prize Scholarship of world exploration**, 0.05% students awarded, 07/2021
- Top 10 League branch secretary of CPU, 05/2021
- **President Scholarship**--the highest scholarship awarded by CPU, 0.05% students awarded, 12/2020
- The Honorary Title of **Triple-A Student of Jiangsu Province**--0.05% students awarded, 06/2020
- Hangzhou Healsun Enterprise Scholarship, 06/2020
- The Honorary Title of Pacemaker to Merit Student--top 2 students awarded in each major, 12/2019
- The First Prize Scholarship for Outstanding Students--ranking 1st in comprehensive performance, 12/2019
- Excellent Student of Social Practice & Excellent Paper of Social Practice (*First author*), 11/2019

PROFESSIONAL SKILL

- **Experiment:** Immunological Assay (ELISA, IHC, FACS, WB), Cell-based experiment (Transfection, MTT, Transwell, Colony formation), Protein production, purification and determination, Animal experiment, Basic Organic chemistry experiment.
- **Instrument:** Flow Cytometer, Confocal Microscopy, HPLC, Multimode microplate reader, PCR, Multimagar, Nanodrop, Electrochemical workstation, Millipore, Rotary evaporator, pH meter.
- **Software:** Graphpad Prism, Image J, Gen5, Flowjo, Biorender, Chemdraw, Origin, Real Statistics, Angiotool, OBSim, APsim, Photoshop, Premiere.
- **Certificate:** Work License of Animal Experiment Practitioners in Jiangsu Province | Certificate for Red Cross First Aider.