Jingyu Zhang

No. 37 Yongwang Road, Daxing District, Beijing, China

Tel: +86 17852622110; E-mail: zhang.jing.yu@outlook.com; Personal Homepage: jingyuzh.github.io/

EDUCATION

Peking Union Medical College (Tsinghua University Health Science Center) **Beijing, China**

Master of Science in Medicinal Chemistry **Sept. 2021– Present**

Shandong University (SDU) **Shandong, China**

Bachelor of Science in Pharmacy **Sept. 2017 – June 2021**

- **GPA:** 89.60 / 100.00

RESEARCH EXPERIENCE

Chemical Composition and Biological Activity Research of the Roots and Stem Bark of *Illicium brevistylum* A.C.Smith **Sept. 2021 – June 2024**

Graduate Research Topic; Advisor: Professor Shuanggang Ma, Peking Union Medical College

- Conducted an independent research project to investigate the chemical composition and biological activity of the roots and stem bark of *Illicium brevistylum* A.C.Smith, a plant species with potential medicinal properties.
- Utilized various chromatographic methods, including silica gel column chromatography, high-performance liquid chromatography, polyamide, macroporous resin, gel, and ODS chromatography, to selectively isolate prenylated C_6-C_3 compounds and *seco*-prezizaane-type sesquiterpenes from the plant material.
- Employed a range of techniques, including UV, IR, MS, NMR, ECD, and X-ray diffraction, to identify the structures of the isolated compounds, thereby enhancing our understanding of the plant's chemical composition.
- Conducted pharmacological activity screening of the isolated compounds, evaluating their biological activities and potential as drug candidates.
- Collected, processed, and analyzed experimental data, leading to robust conclusions about the properties and potential therapeutic applications of the isolated compounds.

Isolation, Identification, and Activity Study of Secondary Metabolites from *Zostera marina* L. L

Independent Researcher; Advisor: Professor Xu Liu, Marine College, Shandong University **July 2021**

- Isolated and identified secondary metabolites from *Zostera marina* L. L, a marine plant species, and assessed their antioxidant activity.
- Employed ethyl acetate extraction and silica gel chromatography to separate the ethanol extracts from *Zostera marina* L. L into different components based on their affinities.
- Successfully isolated two pure compounds and determined their structures through analytical methods such as Mass Spectrometry (MS), Proton Nuclear Magnetic Resonance (^{1}H-NMR), and Carbon-13 Nuclear Magnetic Resonance (^{13}C-NMR).
- Evaluated the antioxidant activity of the isolated compounds using the DPPH method, providing insights into their potential therapeutic applications.
- Conducted various laboratory operations, including rotary evaporation, thin-layer chromatography, and silica column chromatography, to enhance the purity and yield of the isolated compounds.

Development of a Ginger Weight Loss Biscuit

Project leader; Weihai Municipal Planned Scientific Research Project **Oct. 2018 – Sept. 2019**

- Led a team to design and develop a meal replacement biscuit primarily formulated with weight-reducing ingredients such as ginger, lotus leaf, fructooligosaccharides, and resistant starch.
- Conducted a comprehensive literature review to investigate the applications and effects of these ingredients in meal replacement biscuits, which informed the formulation of our product.
- Conducted rigorous testing of the biscuit, including taste tests and evaluations of its weight loss efficacy.
- Analyzed and interpreted data from these tests, leading to further refinement of the biscuit's formulation.
- Prepared a detailed patent application, outlining the unique formulation and potential benefits of our weight loss biscuit.

Hormonal Regulation of Saltwater Irrigation Efficiency in Maize Seedlings **July 2018 – May 2019**

Project leader; Advisor: Professor Hongzhan Liu, Marine College, Shandong University

- Investigated the role of the plant hormone Brassinosteroid (BR) in regulating the response of maize seedlings to saltwater irrigation.
- Conducted experimental operations, which involved the application of BR to maize seedlings and subsequent monitoring of their response to saltwater irrigation.
- Utilized plant physiology knowledge to measure various parameters of the seedlings, including fresh weight, dry weight, water saturation deficit, root vitality, leaf weight, area, and chlorophyll content.
- Applied appropriate methods to process and analyze the experimental data, leading to a rigorous evaluation of the effects of BR on saltwater irrigation efficiency.
- Contributed to the understanding of how plant hormones can enhance crop resilience to challenging environmental conditions, such as high salinity.

Screening of Inorganic Fungicides Against the Skin Ulceration Disease of Stichopus japonicus
Project leader; Advisor: Professor Hongzhan Liu, Marine College, Shandong University **July 2018** – **May 2019**

- Led a team to investigate the effects of different concentrations of copper, zinc, and selenium ions, as well as their combined concentrations, on the growth characteristics of pathogenic bacteria causing skin ulceration disease in Stichopus japonicus.
- Employed bacterial culture techniques, including solid and liquid cultures, to cultivate and study the pathogenic bacteria.
- Utilized spectrophotometry to detect and measure the growth characteristics of the bacteria under different heavy metal ion concentrations.

PUBLICATIONS

- **Zhang J Y**. Explore the dawn of cancer treatment.Business Story. 2018(10):2.DOI:CNKI:SUN:SGUS.0.2018-10-116. (in Chinese)
- Yang J, Zhang J P, Gao R M, Li W R, **Zhang J Y**, et al. Cadinane sesquiterpenes from the stems and branches of *Illicium ternstroemioides*. *J. Asian Nat. Prod. Res*. **2024**, *26*(2), 204-213.
- Yang J, Li W R, Wang Q R, **Zhang J Y**, et al. Prenylated C_6-C_3 derivatives from the root of *Illicium ternstroemioides* with antiviral activity. *J. Asian Nat. Prod. Res*. **2024**, *26*(4), 452-464.
- **Zhang J Y**, Yang H L, Li W R, et al. Bioactive prenylated C_6-C_3 derivatives from the roots of *Illicium brevistylum*. *J. Asian Nat. Prod. Res*. doi: 10.1080/10286020.2024.2365437. (Online ahead of print)

HONORS

Best Graduation Thesis Award (Top 1), SDU	June 2021
Distinguished Reader Award, SDU	June 2021
First Place Scholarship, SDU	Sept. 2019
Undergraduate Research Training Program Project - Third Place, SDU	May 2019
Distinguished Research Assistant Award, SDU	July 2019
Second Place Scholarship, SDU	Sept. 2018
First Place Scholarship, PUMC	Nov. 2023
Outstanding Postgraduate Student Award, PUMC	Nov. 2023

SKILLS&INTERESTS

Research Skills:
Bacterial Culture: Proficient in solid and liquid culture techniques, as well as microbial fermentation.
Structural Analysis: Skilled in using UV, IR, MS, NMR, and X-ray diffraction.
ChemDraw and MestReNova: Proficient in drawing chemical structures and processing NMR data.
Natural Product Isolation: Experienced in chromatographic methods (including silica gel column chromatography and high-performance liquid chromatography)
Protein Isolation and Purification: Skilled in protein centrifugation, ultrafiltration and SDS-PAGE.

Interests:
Running, Reading, Classical Poetry