

Guojia WU

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TianJin Medical University(TMU), HePin, TianJin - 300070, China

RESEARCH INTEREST

With a strong foundation in both basic medicine and bioinformatics, I specialize in applying bioinformatics techniques to investigate cancer biology, particularly focusing on the roles of genomics and epigenetic modifications in tumor development and progression. I am also interested in tumor immune infiltration and its interaction with the genomic and epigenetic landscape. I am passionate about identifying potential therapeutic targets through integrative bioinformatics analyses, and exploring how genetic and methylation alterations contribute to cancer development and treatment response.

EDUCATION



• Basic Medical Science College, TianJin Medical University

Sep. 2021 - Jun. 2026 (Expected)

Bachelor of Science in Basic Medicine (Chu Hsien-I class)

TianJin, China

- **GPA:** 3.77 / 4.00 (Overall); **RANKING** : 2nd (Third year) / 1st (Overall) out of 22 students;
- **IELTs:** 7.0 (Validated Score, R:8.0, L:7.0, S:6.0, W:6.0);

RESEARCH PROJECTS

• Molecular Simulation-Driven Optimization of CDK7 Inhibitors (Independent project) Jul. 2023 - Jun. 2024

Supervisor: Prof. Ruhong Zhou Supported by ZJU Key Research Project Fund (50,000 RMB, 10 people total);



- **Developed a covalent model** for the THZ1-CAK complex (PDBID: 6XD3) incorporating non-standard amino acids, using CHARMM-GUI with the CHARMM force field for proteins and CGenFF for the small molecule.
- Implemented virtual screening utilizing Smina, **identified 147 potential positive fragments using Smina's scoring function**, and generated linkers between selected fragments and the stable core-fragment of THZ1.
- Conducted molecular dynamic with NAMD3 to relax the conformation of the generated links, selecting stable ligands and identifying 17 candidate ligands for further evaluation.
- **Employed Free Energy Perturbation (FEP) calculations** to identify the top three ligands with superior free energy profiles compared to the original small molecules.

PUBLICATIONS

A=RESEARCH ARTICLE, R=REVIEW, P=PUBLICATION, S=IN SUBMISSION

- [AP.1] Guojia Wu, et al. (2024). **Diagnostic sensitivity of immune-inflammatory cell proportion in early diagnosis of endometrial cancer.** publication in *Clinical Surgical Oncology*.
- [AS.1] Guojia Wu, et al. (2025). **Comprehensive evaluation and interpretative insights of peptide-HLA binding prediction tools using explainable artificial intelligence.** Manuscript submitted for publication in *BioArxiv*.
- [AS.2] Wei Li, Guojia Wu, et al. (2025). **A bibliometric analysis of immunotherapy in glioblastoma.** Manuscript under review.
- [RP.1] Guojia Wu, et al. (2024). **progress of the effect of hydroxyacyl-coenzyme A dehydrogenase in cancer development and its mechanism.** publication in *Basic & Clinical Medicine*.

SKILLS

- **Programming Languages:** Experienced in R, Python, html and Shell; adaptively learning languages and tools based on project requirements.
- **Wet Lab Techniques:** Western blotting, DNA electrophoresis, plasmid construction and extraction, PCR, cell culture, migration and invasion assays, CCK-8 assay, tumor formation in mice, immunohistochemistry, etc.
- **Bioinformatics Skills:** RNA-seq analysis, database construction, sequence alignment, methylation and mutation analysis, CNV detection, gene enrichment and survival analysis, tumor subtyping, PPI network analysis, immune cell infiltration, Seurat-based single-cell analysis, QTL mapping, XAI techniques (SHAP, LIME) etc.
- **Research Skills:** Proficient in visualization tools including PowerPoint, Photoshop, and Adobe Illustrator; skilled in LaTeX, Word, and Excel for academic writing and data processing; experienced in using EndNote for reference management with strong literature search and data organization abilities.

HONORS AND SCHOLARSHIP

- **TianJin Medical University Scholarship – Merit Student** 2021 - 2022
TianJin Medical University [🌐]
 - Ranked in the top 1% of students in TianJin Medical University.
- **TianJin Medical University Scholarship – First Prize** 2022 - 2023
TianJin Medical University [🌐]
 - Ranked in the top 5% of students in TianJin Medical University.
- **TianJin Medical University Scholarship – First Prize** 2023 - 2024
TianJin Medical University [🌐]
 - Ranked in the top 5% of students in TianJin Medical University.

LEADERSHIP, SOCIAL ENGAGEMENT, AND OTHER ACHIEVEMENTS

- **Teaching Assistant in Pathogenic Organisms** Apr. 2023- Jun. 2023
TianJin Medical University, College of Basic Medicine in association with Prof. Yongmei Li
- **Executive Member, Basic Medicine Student Association** Sep. 2021 - Jun. 2025
College of Basic Medicine, TianJin Medical University [🌐]
 - Executed a wide range of volunteer programs within the College of Life Sciences, including social practice, community outreach, and campus-wide events such as the university sports meeting and services for the visually impaired.
 - Led the recruitment and training of new volunteers, and designed engaging volunteer initiatives to enhance student union participation in public service.
- **Third Prize, International Forum on Basic Medical Sciences** Aug. 2024
National Demonstration Center for Experimental Education [🌐]
 - Led Tianjin Medical University's first participation in the Belt and Road International Track; responsible for experimental design, and delivered the entire presentation and defense in English as team leader.
- **Third Prize in the Chinese Mathematics Competitions** Dec. 2023
Chinese Mathematical Society [🌐]
- **Third prize, TianJin Chemistry competition** Oct. 2023
Tianjin Municipal Education Commission [🌐]
- **Third prize, TianJin biology experimental competition** Oct. 2024
Tianjin Municipal Education Commission [🌐]
- **Over 10 awards, Internet Innovation and Entrepreneurship Competition** 2022 - 2024
Ministry of Education of the People's Republic of China [🌐]
- **Over 3 awards, Challenge Cup National undergraduate entrepreneurship plan competition** 2023 - 2024
Ministry of Education of the People's Republic of China [🌐]
- **Over 3 awards, Tianjin medical university TMUSPIP** 2023 - 2024
TianJin Medical University [🌐]
 - Participated in TMUSPIP, Tianjin Medical University's social practice initiative, for three consecutive years as a project leader or core team member; each year successfully secured university-level funding and completed the project with approved final reports.