Jingyi Luo

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EDUCATION

Ph.D. candidate in Biomedical Sciences, The University of Hong Kong (HKU) *2022.09- Present*
Li Ka Shing Faculty of Medicine Grade: P
★ Full scholarship

M.S. in Chemistry, Tsinghua University (THU) *2019.09-2022.07*
Department of Chemistry, Chemical Biology Program Overall GPA: 3.88/4.00, Top 3
★ Full scholarship

B.Eng. in Polymer Materials and Engineering, Shanghai University (SHU) *2015.09-2019.07*
School of Materials Science and Engineering Overall GPA: 3.82/4.00, Top 1

B.A. Double degree in English, East China Normal University (ECNU) *2016.09-2018.12*
School of Foreign Languages *(Minor)*

ACADEMIC RESEARCH WORK

★ The University of Hong Kong *2022- now*

Advisor: Dr TI, Jeff Shih Chieh

1. **Tubulin code in paclitaxel resistance (Ongoing, NSFC Young Student Basic Research Program (PhD candidate)**
   - Employing an interdisciplinary approach adopting biochemistry, structural biology, and cell biology to systematically study the effects of different tubulin isotypes on microtubule stability and paclitaxel binding affinity
   - Establishing a cell-based model using CRISPR Cas9 technology to evaluate the biological functions and the response to paclitaxel treatment of mutations in specific tubulin isotypes
2. **Tubulin acetyltransferases access and modify the microtubule luminal K40 residue via anchors in taxane-binding pockets (Published, *Nature Structural & Molecular Biology*)**
   - Employing cryo-electron microscopy and single-molecule reconstitution assays to reveal the enzymatic mechanism for tubulin acetyltransferases to modify K40 in the lumen
   - Characterizations using recombinant tubulins mimicking pre- and post-acetylated K40 show the crosstalk between microtubule acetylation states and the cofactor acetyl-CoA in enzyme turnover

★ Tsinghua University *2019 - 2022*

Advisor: Dr Weidong XIE (State Key Laboratory of Chemical Oncogenomics)

1. **Dapagliflozin alleviates hepatic steatosis (Published, *European Journal of Pharmacology*)**
   - Constructing in vivo and in vitro NAFLD models to evaluate the effect of dapagliflozin on ameliorating lipid accumulation
   - Investigating the potential interaction between the drug effects and the AMPK/mTOR pathway and demonstrating that dapagliflozin could activate the pathway by promoting LKB1 phosphorylation and decreasing ATP level in vitro
2. **The potential effect of canagliflozin on liver cancer (Published, *International Journal of Molecular Sciences*)**
   - Constructing in vitro hypoxia models to evaluate the effect of canagliflozin on liver cancer including migration, angiogenesis and metabolism; Constructing HepG2 xenograft model in nude mice to evaluate drug effect
   - Conducting bioinformatics analysis to determine possible mechanisms of action of canagliflozin
   - Investigating the potential interaction between the drug effects and the AKT/mTOR/HIF-1α pathway
3. **Design, synthesis and anti-tumor evaluation of 1,2,4-triazol-3-one derivatives and pyridazinone derivatives as novel CXCR2 antagonists (Published, *European Journal of Medical Chemistry*)**
   - The compound with the best antagonistic effect was selected to evaluate their effects on cancer cell phenotypes (proliferation, apoptosis, clonogenesis, migration, EMT, autophagy and angiogenesis) and explore their potential mechanisms

4. **Canagliflozin attenuates lipotoxicity in cardiomyocytes and protects diabetic mouse hearts *(*Published, *iScience)***
    - Evaluating the protective effects of CAN in a high-fat diet/streptozotocin (HFD/STZ)-induced diabetic HF mouse model and in palmitic acid (PA)-induced HL-1 cell lipotoxicity

★ **Shanghai University** *2016 - 2019*

Advisor: Dr Xinyan SU (International Joint Laboratory of Biomimetic and Smart Polymers)

1. National Undergraduate Training Program for Innovation and Entrepreneurship (Nos. 201810280011)
    - Dendronized chitosan/silver nanocomposite hydrogels synthesis and their antibacterial properties investigation

HONORS & AWARDS

- The Best Poster Presentation Award in SBMS RPG Poster Presentation
- TEIJIN Scholarship
- Tsinghua Second-Class Scholarship
- Shanghai Scholarship (for top 1% undergraduate)
- Mecca Scholarship (5 awardees of 180 applicants)
- Ri Zhisheng Scholarship (10 awardees out of 270 applicants)
- Special-Class Academic Scholarship (for top 3% undergraduates)
- First-Class Academic Scholarship (for top 10% undergraduates)
- Shanghai University Outstanding College Graduate (for top 5% undergraduates)

PAPERS & PATENT

★ Papers

1. **Luo J.Y.#**, Lam W.H#., Yu D.Q., Chao V., Zopfi M.N., Khoo C.J., Zhao C., Yan S., Liu Z., Li Xiang., Zheng C.G., Zhai Y.L., Ti S.C., (2024). Tubulin acetyltransferases access and modify the microtubule luminal K40 residue via anchors in taxane-binding pockets. Nature Structural & Molecular Biology,32(2), 358–368.
2. **Luo J.Y.**, Sun P.B., Wang Y.Y., Chen Y., Niu Y.Y., Ding Y.P., Xu N.H., Zhang Y.O., Xie W.D., (2021). Dapagliflozin attenuates steatosis in livers of high-fat diet-induced mice and oleic acid-treated L02 cells via regulating AMPK/mTOR pathway. *European Journal of Pharmacology*, 907,174304.
3. Zhang X#., **Luo J.Y.#,** Li Q.Y., Xin Q.L., Ye L.Z., Zhu Q.Y., Shi Z.C., Zhan F., Chu B.Z., Liu Z.J., Jiang Y.Y., (2021) Design, synthesis and anti-tumor evaluation of 1,2,4-triazol-3-one derivatives and pyridazinone derivatives as novel CXCR2 antagonists. *European Journal of Medicinal Chemistry*, 226, 113812.
4. **Luo J.Y.,** Sun P.B., Zhang X., Lin G.L., Xin Q.L., Niu Y.Y., Chen Y., Xu N.H., Zhang Y.O., Xie W.D., (2021) Canagliflozin modulates hypoxia-induced metastasis, angiogenesis and glycolysis by decreasing HIF-1α protein synthesis via AKT/mTOR pathway. *International Journal of Molecular Sciences*, 22 (24), 13336.
5. Sun P.B.#, Wang Y.Y.#, Ding Y.P., **Luo J.Y.**, Zhong J., Xu N.H., Zhang Y.O., Xie W.D., (2021). Canagliflozin attenuates lipotoxicity in cardiomyocytes and protects diabetic mouse hearts by inhibiting the mTOR/HIF-1α pathway. *iScience*, 24(6), 102521.
6. **Luo J.Y.**, Sun P.B., Ding Y.P., Wang Y.Y., Xie W.D., (2021). Exhaled breath markers for disease diagnosis and detection technologies. *Progress in Modern Biomedicine*, 06, 1196-1200. *(In Chinese)*
7. Niu Y.Y., Chen Y., Sun P.B., Wang Y.Y., **Luo J.Y.**, Ding Y.P., Xie W.D., (2021). Intragastric and atomized administration of canagliflozin inhibit inflammatory cytokine storm in lipopolysaccharide-treated sepsis in mice: A potential COVID-19 treatment. *International immunopharmacology*, 96, 107773.

★ Patent

1. Li Wen, Feng Letian, **Luo Jingyi**, He Zhirui, Zhang Yu, Zhang Xiacong, Zhang Afang. Dendronized chitosan, dendronized chitosan-based hydrogels and their preparation methods. 2020, Chinese National Patent, CN108484797B.