Yi Li

yil056@ucsd.edu · (+86) 150-5059-0898 · https://www.yil056.com
Dept. of NanoEngineering, University of California, San Diego · CA 92093

EDUCATION

University of California, San Diego — *La Jolla, CA*
M.S. in NanoEngineering — Jun, 2022 (expected)

- GPA: 3.90/4.00
- Foci: Molecular & nanomaterials
- Relevant courses: Advanced BioPhotonics, Intermolecular & Surface Forces

China Pharmaceutical University — *Jiangsu, China*
B.S. in Pharmacy, Honors Research Program — Sep, 2016–Jun, 2020

- GPA: 3.73/4.00
- Thesis: "*Applying a drug-delivery-drug strategy to overcome multi-drug resistance (MDR) in non-small cell lung cancer (NSCLC)*"
- Foci: Nano-delivery, drug combinations

University of Strathclyde — *Glasgow, UK*
International Students Exchange Program — Jul–Aug, 2018

- Relevant courses: Immunology, molecular biology, pharmaceutical analysis

PUBLICATIONS

1. Lyu, Y., Xiao, Q., **Li, Y.**, Wu, Y., He, W., & Yin, L. (2019). "Locked" cancer cells are more sensitive to chemotherapy. *Bioengineering & Translational Medicine*, *4*(2), e10130.
2. Li, D., Yu, Z., Wang, T., **Li, Y**., Chen, X., & Wu, L. (2020). The role of the novel LincRNA uc002jit.1 in NF-kB-mediated DNA damage repair in acute myeloid leukemia cells. *Experimental Cell Research*, *391*(2), 111985.
3. **Li, Y**., Lyu, Y., Teng, C., He, W. (2020). Co-delivery of hydrophobic and hydrophilic drugs via a hybrid nanocrystal formulation. (Submitted to *International Journal of Pharmaceutics*, under peer review).
4. Xiao, Q., Li X., Wu, Z., **Li, Y.**, Xu C., Chen Z., He, W. (2020). Biological drug and drug delivery mediated immunotherapy (*Acta Pharmaceutica Sinica B*, accepted article).
5. **Li, Y**., He, W. (2020). Comparative efficacy and safety of current drugs against COVID-19: A systematic review and network meta-analysis. (Submitted to *Frontiers of Pharmacology*, under peer review)
6. Wang, H., Dai, Sen., Zhang, J., **Li, Y**., Gan,Y., Lu,T., Zhu Y., Wu, J., Lin, N., Tang, F., Luo, J. (2020). Analysis of mutations in six Chinese families with autosomal dominant polycystic kidney disease (*American Journal of Translational Research*, accepted article.)
7. **Li, Y**., Jiang, Z., Sun,Y., Wang, S., Ruan, J. (2020). Identification of candidate genes associated with bone metastasis in non-small-cell lung cancer based on epithelial-mesenchymal transition (Submitted to *Clinica Chimica Acta*, under peer review)

RESEARCH EXPERIENCE

Research Assistant | China Pharmaceutical University — *Jiangsu, China*
Advisor: Prof. Lifang Yin, *Key Laboratory for Druggability of Biopharmaceuticals* — Apr, 2017–Jul, 2020

Independent Projects

- Designed and fabricated nanoparticles for efficient MDR-reversal and enhanced apoptosis in lung cancers.
- Engineered a drug co-delivery system with tunable hydrophobicity via a hybrid nanocrystal formulation.
- Optimized crystallization by modeling the process in MATLAB; increased drug loading by 12% compared to that achieved in previous studies.
- Constructed an *in vitro* pharmacokinetic model and established protocols for measuring drug release rates.
- Evaluated apoptosis induction in resistant A549 cells, with statistically significant difference observed

between the mixture (10.3%) and the nanocrystal formulations (25.1%).
- Proposed a potential MDR-reversal mechanism and tested hypotheses by analyzing correlations between mitochondrial ROS levels and the activity of the drug efflux protein.

Collaborations
- Studied the self-assembly of rod-shaped nanoparticles (NPs) and non-lysosomal endocytosis of NPs, in order to improve the delivery efficiency of acid-intolerant drugs.
- Investigated caveolin-mediated pathways to find ways of designing NPs capable of evading lysosomal capture.
- Conducted *in vitro* studies including WB assays and cellular uptake and distribution studies via LCSM.
- Built an *in vivo* subcutaneous tumor model to test the efficacy of NPs drug release.
- Induced local hyperthermia and intratumorally injected NPs to locate the tumor microenvironment.
- Helped with data analysis, drawing figures, and writing articles.

Visiting Student | Peking University *Beijing, China*
Advisor: Prof. Wanliang Lu, *State Key Laboratory of Natural and Biomimetic Drugs* Jul–Aug, 2019
- Investigated the Slug gene regulator using databases such as TargetScan to identify TNBC-related pathways.
- Edited and amplified the target gene using CRISPR-Cas9 and PCR, and tested gene expression in *E.coli.*
- Synthesized functional miRNA liposomes via the solid-phase method to treat TNBC by silencing the Slug gene.

Visiting Student | Fujian Medical University *Fujian, China*
Advisor: Prof. Changxi Yu, *Provincial Drug Target Discovery Center* Feb, 2020–Present
- Screened potential leukemia target genes and predicted their mechanisms by searching the TCGA database for new target discovery.
- Explored DNA damage repair by LincRNA and proposed an application in acute myeloid leukemia cells.
- Evaluated the efficacy and safety of 14 drug interventions against COVID-19 via a hidden Markov model.
- Collaborated with clinicians to collect data on kidney disease cases and studied the relationship between autosome mutations and disease occurrence.

PROFESSIONAL DEVELOPMENT

Student Speaker | NanoEngineering Graduate Student Seminar, UC San Diego Nov, 2020
- Exhibited a poster and gave a presentation on biomimetic materials for drug delivery.

Student Attendee | 4th CASNN Conference, Zhejiang, China Aug, 2019
- Helped prepare slides and posters on nanoplatforms for dual-targeting of TME and cancer cells.
- Interpreted materials for non-professional audiences at nanomedicine branch venue.

Project Leader | National College Students' Innovation and Entrepreneurship Program Oct, 2018–Jun, 2019
- Led a collaboration of five students to study on pulmonary hypertension (PAH) treatments.
- Utilized a drug combination strategy based on a baicalein-p53 gene complex for combined therapies.
- Wrote research proposals and applied for funds from *National Natural Science Foundation of China.*

Teaching Assistant | Learning Strategies Center, China Pharmaceutical University Oct, 2017–Jun, 2018
- Answered students' questions on chemistry and advanced mathematics problems.
- Helped faculty members prepare chemistry equipment for experiments and complete administrative tasks.
- Organized seminars on interesting topics in chemistry for first-year college students.

Medical Service Assistant | National Hospice Service Program, Provincial Hospital Jan–Mar, 2017
- Assisted physicians with palliative treatment of patients with advanced illness.

SKILLS AND INTERESTS

- **Programming**: Hugo, R, MATLAB, Python, GitHub
- **Software**: ChemDraw, Stata, SPSS, Origin, Photoshop, Cinema 4D, 3DS Max, DesignExpert, LaTeX
- **Language**: Mandarin (native), Cantonese (native), English (proficient), Japanese (fluent)
- **Interests**: Piano, UAV racing, LEGO design, Kendo