

Dr. Ying ZHENG

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Institute of Chinese Medical Sciences
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Head
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Education

- B.Sc., Beijing Medical University
- M.Phil., The Chinese University of Hong Kong
- Ph.D, The Chinese University of Hong Kong
- Visiting Fellow, University of Cambridge

Teaching

Ph.D Course: Advanced Pharmaceutics (CMED 8002)

M.Sc. Courses: Pharmaceutical Science (CMED 7010)

Biostatistics (CMED 7018)

B.Sc. Course: Pharmaceutics (HSCI 3010)

Research

Google scholar: H-index 49, total citation over 8,000

https://scholar.google.com/citations?hl=en&user=0BQq7zkAAAAJ&view_op=list_works&sortby=pubdate

Research Interests - Pharmaceutics

- Formulation study and prodrug development on poorly-water soluble APIs (BCS II & IV), e.g. nanocrystals, nanoemulsions, solid dispersion etc. for oral, topical and injection routes;
- Topical delivery of poorly-water soluble drugs to treat skin and lung diseases;
- Develop zebrafish visual model with fluorescent technology (e.g. FRET) to study transport, circulation, elimination, immunogenicity, toxicity, bioactivity (e.g. cancer, PD)

Representative publications in five years (* corresponding author):

1. Chang Liu, Xidong Tian, Zhenping Wang, JCW Mak, Shirui Mao, **TM Liu***, **Ying Zheng***, Hydrogen-induced disruption of the airway mucus barrier enhances nebulized RNA delivery to reverse pulmonary fibrosis, *Science Advances* 2025, 11 (16), eadt2752
2. Yumin Luo, Run Han, Zhenyu Ren, Nana Ai, S Yu, SMY Lee, Wei Ge, **Ying Chen***, **Ying Zheng***, Flavor compound geraniol induces inhibited nutrient utilization and developmental toxicity on embryonic–larval zebrafish, *Food Frontiers* 2025, 6 (1), 374-387.
3. Y Han, L Xi, F Leng, C Xu, **Y Zheng***, Topical delivery of microRNA-125b by framework nucleic acids for psoriasis treatment, *International Journal of Nanomedicine*, 2024, 2625-2638.
4. Y Han, M Wang, Y Chen, D Ouyang, **Y Zheng***, **Y Hu***, Profiling patent compounds in lipid nanoparticle formulations of siRNA, *Molecular Therapy Nucleic Acids* 2024, 35 (4) 102362.
5. R Han, Z Ren, Q Wang, H Zha, E Wang, M Wu, **Y Zheng***, **JH Lu***, Synthetic Biomimetic Liposomes Harness Efferocytosis Machinery for Highly Efficient Macrophages-Targeted Drug Delivery to Alleviate Inflammation, *Advanced Science* 2024, 11 (29), 2308325.
6. C Liu, X Quan, X Tian, Y Zhao, HF Li, JCW Mak, Z Wang, S Mao, **Y Zheng***, Inhaled macrophage apoptotic bodies-engineered microparticle enabling construction of pro-regenerative microenvironment to fight hypoxic lung injury in mice. *ACS nano* 2024, 18 (20), 13361-13376.
7. E Wang, R Han, M Wu, Y He, Y Cheng, J Lu, **Y Zheng***, Size-dependent macrophage-targeting of mannose-modified rosiglitazone liposomes to alleviate inflammatory bowel disease, *Chinese Chemical Letters* 2024, 35 (1), 108361.
8. M Xu, H Zha, J Chen, SMY Lee, Q Wang, R Wang, **Y Zheng***, “Ice and Fire” Supramolecular Cell-Conjugation Drug Delivery Platform for Deep Tumor Ablation and Boosted Antitumor Immunity, *Advanced Materials* 2023, 35 (51), 2305287.
9. Chang Liu, Long Xi, Yihan Liu, Judith Choi Wo Mak, Shirui Mao, Zhenping Wang, and **Ying Zheng***. An Inhalable Hybrid Biomimetic Nanoplatfrom for Sequential Drug Release and Remodeling Lung Immune Homeostasis in Acute Lung Injury Treatment, *ACS Nano*, 2023, 17, 12, 11626–11644.
10. Yaxin Cheng, Jinsong Tao, Yaqi Zhang, Long Xi, Run Han, Meng Xu, Simon Ming-Yuen Lee, Wei Ge, **Yong Gan***, and **Ying Zheng***. Shape and Shear Stress Impact on the Toxicity of Mesoporous Silica Nanoparticles: In Vitro and In Vivo Evidence. *Mol. Pharmaceutics* 2023, 20, 6, 3187–3201.
11. Run Han, Zhuyifan Ye, Yunsen Zhang, Yaxin Cheng, **Ying Zheng***, **Defang Ouyang***. Predicting liposome formulations by the integrated machine learning and molecular modeling approaches. *Asian Journal of Pharmaceutical Sciences*, 2023, 18(3), 100811.
12. Long Xi, Yunfeng Han, Chang Liu, Yihan Liu, Zhenping Wang, Ruibing Wang, **Ying Zheng***. Sonodynamic therapy by phase-transition nanodroplets for reducing epidermal hyperplasia in psoriasis, *Journal of Controlled Release*, 2022, 350: 435-447.

13. Jinsong Tao, Zhengjie Wei, Yaxin Cheng, Meng Xu, Qiuxia Li, Simon Ming-Yuen Lee, Wei Ge, Kathy Qian Luo, Xueqing Wang, **Ying Zheng***. Apoptosis-Sensing Xenograft Zebrafish Tumor Model for Anticancer Evaluation of Redox-Responsive Cross-Linked Pluronic Micelles. *ACS Applied Materials & Interfaces*, 2022, 14(35): 39775-39786.
14. Yuan He, Chang Liu, Run Han, Yingmin Liang, Judith ChoiWo Mak, Yinghao Zhu, Haifeng Li, **Ying Zheng***. Reducing systemic absorption and macrophages clearance of genistein by lipid-coated nanocrystals for pulmonary delivery, *Chinese Chemical Letters*, 2023, 34 (1), 107484.
15. Meng Xu, Haidong Zha, Run Han, Yaxin Cheng, Jiamao Chen, Ludan Yue, **Ruibing Wang,* and Ying Zheng***. Cyclodextrin-Derived ROS-Generating Nanomedicine with pH-Modulated Degradability to Enhance Tumor Ferroptosis Therapy and Chemotherapy. *Small* 2022, 18, 2200330.
16. Meng Xu, Jinsong Tao, Zhengjie Wei, Qian Cheng, Hongmei Yang, Simon Ming-Yuen Lee, Kathy Qian Luo, Wei Ge, **Ruibing Wang*, Ying Zheng***. Visualization of host-guest interactions driven bioorthogonal homing effects at the single cell level in vivo. *Nano Today* 2022, 43, 101450.
17. Long Xi, Zibei Lin, Fen Qiu, Shaokui Chen, Ping Li, Xin Chen, Zhenping Wang, **Ying Zheng***. Enhanced uptake and anti-maturation effect of celastrol-loaded mannosylated liposomes on dendritic cells for psoriasis treatment. *Acta Pharmaceutica Sinica B* 2022 Jan;12(1):339-352.
18. Jinsong Tao¹, Zhengjie Wei¹, Meng Xu, Long Xi, Yaxin Chen, Simon Ming-Yuen Lee, Wei Ge, **Ying Zheng***. Particle Integrity and Size Effect on the Journey of Polymeric Nanocarriers in Zebrafish Model and the Correlation with Mice. *Small*, 2021, 17, 2103584.
19. Zibei Lin, Long Xi, Shaokui Chen, Jinsong Tao, Yan Wang, Xin Chen, Ping Li, Zhenping Wang, and **Ying Zheng***. Uptake and Trafficking of Different Sized PLGA Nanoparticles by Dendritic Cells in Imiquimod-induced Psoriasis-like Mice Model. *Acta Pharmaceutica Sinica B*, 11(4), April 2021, 1047-1055.
20. Jinsong Tao, Zhengjie Wei, Yuan He, Xingyang Yan, Simon Ming-Yuen Lee, Xueqing Wang, Wei Ge, **Ying Zheng***, Toward understanding the prolonged circulation and elimination mechanism of crosslinked polymeric micelles in zebrafish model. *Biomaterials*, October 2020, 256:120180.
21. Yuan He, Zhuyifan Ye, Xinyang Liu, Zhengjie Wei, Fen Qiu, Hai-Feng Li, **Ying Zheng***, **Defang Ouyang***. Can machine learning predict drug nanocrystals? *Journal of Controlled Release*, 10 June 2020, 322: 274-285.
22. Yuan He, Yingmin Liang , Judith Choi Wo Mak, Yonghong Liao, Ting Li, Ru Yan, Hai-Feng Li, **Ying Zheng***. Size effect of curcumin nanocrystals on dissolution, airway mucosa penetration, lung tissue distribution and absorption by pulmonary delivery. *Colloids and Surfaces B: Biointerfaces* February 2020, 186:110703.
23. Tongkai Chen, Bing He, Jingsong Tao, Yuan He, Hailiang Deng, Xueqing Wang, **Ying Zheng***. Application of Förster Resonance Energy Transfer (FRET) technique to elucidate intracellular and In Vivo biofate of nanomedicines. *Advanced drug delivery reviews*, 2019 Mar;143:177-205 (Invited Review).
24. Yuan He, Yingmin Liang, RunHan, Wan-Liang Lu, **Judith Choi Wo Mak***, **YingZheng***. Rational particle design to overcome pulmonary barriers for obstructive lung diseases therapy. *Journal of Controlled Release*, 2019 Nov;314:48-61 (Review).

25. Jinsong Tao, Shing Fung Chow, **Ying Zheng***. Application of flash nanoprecipitation to fabricate poorly water-soluble drug nanoparticles. *Acta Pharmaceutica Sinica B*, 2019 Jan;9:4-18 (Invited review).
26. Zhengzheng Zhou, **Mónica Calatayud***, Julia Contreras-García, Liang Li, Henry HY Tong, **Ying Zheng***. X-ray Diffraction and Theoretical Calculation-Supported Formation of Polymorphic Cocrystals Discovered through Thermal Methods: A Case Study. *Journal of Pharmaceutical Sciences*, 2019 Oct;108:3340-3347.
27. Ye Li, Xiaoning Song, Xiang Yi, Ruibing Wang, Simon Ming-Yuen Lee, **Xueqing Wang***, **Ying Zheng***. Zebrafish: a visual model to evaluate the biofate of transferrin receptor-targeted 7peptide-decorated coumarin 6 micelles. *ACS Applied Materials & Interfaces*, 2017 Nov 8;9(44):39048-39058.
28. Tongkai Chen, Ye Li, Chuwen Li, Xiang Yi, Ruibing Wang, Simon Ming-Yuen Lee, **Ying Zheng***. Pluronic P85/F68 Micelles of Baicalein Could Interfere with Mitochondria to Overcome MRP2-Mediated Efflux and Offer Improved Anti-Parkinsonian Activity. *Molecular Pharmaceutics*. 2017 Oct 2;14(10):3331-3342.
29. Tongkai Chen, Jian Li, Ting Chen, **Changquan Calvin Sun***, **Ying Zheng***. Tablets of Multi-Unit Pellet System for Controlled Drug Delivery. *J Control Release*. 2017 Jul 31;262:222-231 (Review).
30. Lin Sun, Zeyu Liu, Lun Wang, Dongmei Cun, Henry HY Tong, Ru Yan, Xin Chen, Ruibing Wang, **Ying Zheng***. Enhanced topical penetration, system exposure and anti-psoriasis activity of two particle-sized, curcumin-loaded PLGA nanoparticles in hydrogel. *Journal of Controlled Release*. 2017 May; 254:44-54.
31. Zhengzheng Zhou, Hok Man Chan, Herman H.-Y. Sung, Henry H. Y. Tong & **Ying Zheng***. Identification of New Cocrystal Systems with Stoichiometric Diversity of Salicylic Acid Using Thermal Methods. *Pharmaceutical Research* 2016, 33: 1030–1039.
32. Zhengzheng Zhou, Wanying Li, Wei-Jhe Sun, Tongbu Lu, Henry H. Y. Tong, **Changquan Calvin Sun***, **Ying Zheng***. Resveratrol Cocrystals with Enhanced Solubility and Tableability. *Int. J. Pharm.*, 2016; 509(1-2):391-9.

Book chapters

Zhao Y, Zhou J, Liao YH, **Zheng Y**. 2016. Inhaled traditional Chinese medicine for respiratory diseases. *Advances in Pulmonary Drug Delivery*. CRC press.

Chow, AHL, Tong, HY, & **Zheng, Y**. 2007. Stability Assessment and Formulation Characterization, In Shayne C. Gad (Ed). *Handbook of Pharmaceutical Biotechnology*. (pp. 371-416). USA: John Wiley & Sons.

Research Projects

- FDCT: Apoptotic cell membrane fused lipid nanoparticles with precise targeting ability for the treatment of inflammatory diseases (2024-2027)
- University of Macau: Development of Dendritic Cell-Based Antigen-Specific PLGA Nanoparticles for Inducing Immune Tolerance to Treat Autoimmune Diseases (2026-2027)

- University of Macau: An Inhalable Hybrid Biomimetic Nanocarrier for ameliorating the Lung Hyper-Inflammatory Microenvironment in ARDS Treatment (2024-2025)
- FDCT: “Development of New Immunomodulatory Small Molecule Tetrandrine from Chinese Medicine to Treat Psoriasis by Topical Route” (2021-2024).
- FDCT: “International Standard Research and Development of Selected Chinese Medicines” (2020-2022) Co-PI.
- University of Macau: “Inhalable Functional Nanocrystals of Poorly Water-soluble Active Components in Chinese Medicine for Chronic Obstructive Pulmonary Disease Therapy” (2020 - 2021).
- University of Macau: “Establishment of in-vivo quantification method of drugs as released and non-released forms after delivery of sustained-release nanocarriers and study on their relationship with pharmacodynamics” (2017 - 2020).
- University of Macau: “Purification, *in vivo* antidepressant disorder activity, transport and pharmacokinetic evaluations of inulin-type fructooligosaccharides in *Morinda officinalis* after oral administration” (2017 - 2019).
- University of Macau: “Development of Novel Targeted Nanoparticles with Immunosuppressive Chinese Medicine to Inhibit Skin Immune-response for Topical Therapy of Psoriasis” (2014 - 2017).
- University of Macau: “Novel Nanoparticle Development of Active Components in Herbal Medicines and Their Permeations across Blood-Brain Barrier on Cell Monolayers, Zebrafish and Rat Models” (2013 - 2016).
- FDCT: “Topical delivery of Chinese medicine to inhibit skin immune-response for psoriasis” (2018-2021).
- FDCT: “Solid State Characterization of Poorly Water-soluble Active Components in Chinese Medicine” (2014-2016).
- 國家自然科學基金海外及港澳合作基金: “細胞和斑馬魚模型評價納米製劑的跨膜轉運機理和體內過程” (No. 81528021, 2016 - 2017).
- ERASMUS MUNDUS, ERUASICAT: Advanced Education European-Asiatic Exchange Program in Materials Science and Catalysis. (No. 552067-EM-1-2014-1-ES-ERA MUNDUS-EMA22, 2014 - 2018, Academic coordinator of UM).
- FDCT:” Study on Nanosuspension Drug Delivery System of Active Components in Chinese Medicine” (2011-2015)
- FDCT:” Formulation Development of Lipophilic Bioactive Components from Chinese Medicine” (2008-2011).

Professional Services

Editorial board member of *Asian Journal of Pharmaceutical Science*

Editorial advisory board member of *Pharmaceutical Research*

Add-hoc reviewers of several international referred journals

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