

**KAN-YEN HSIEH 謝侃言, Ph.D.**

**Assistant Professor**

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### Contact Information

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### Education

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**Ph.D.**      **Sep., 2012 – Jun., 2019**

Graduate Institute of Natural Products, College of Pharmacy, Kaohsiung  
Medical University, Taiwan

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**M.S.**      **Sep., 2010 – Jun., 2012**

Graduate Institute of Natural Products, College of Pharmacy, Kaohsiung  
Medical University, Taiwan

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**B.S.**      **Sep., 2006 – Jun., 2010**

School of Pharmacy, College of Pharmacy, Kaohsiung Medical University,  
Taiwan

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## Academic Experiences

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**Assistant** Aug., 2024 – present

**Professor** School of Pharmacy, College of Pharmacy, Kaohsiung Medical University, Kaohsiung, Taiwan

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**Postdoctoral** Feb., 2020 – Dec., 2023

**Fellow** Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan

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**Visiting** Mar., 2014 – Mar., 2015

**Scholar** Natural Products Research Laboratories, Eshelman School of Pharmacy, University of North Carolina at Chapel Hill, NC, USA

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## Research Interests

We are searching for molecules that could serve as potential anticoagulant or anticancer drug candidates. The main task of my laboratory is to explore the mechanisms of protein targets related to cancer and coagulation disorders, with the aim of designing and developing macromolecular drugs. My research involves utilizing structural biology techniques, including cryo-electron microscopy (cryo-EM) and X-ray crystallography, to investigate protein structures and mechanisms of action. By reconstructing three-dimensional models of target proteins, we can obtain comprehensive structural information that can be used to design protein-based drugs and identify potential small molecule drugs.

## Honors and Awards

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- 2021 NSTC Postdoctoral Researcher Academic Research Award

(110 年度國科會博士後研究人員學術研究獎)

## Publications

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1. Shanshan Li<sup>†</sup>, **Kan-Yen Hsieh<sup>†</sup>**, Chiao-I Kuo, Tzu-Chi Lin, Szu-Hui Lee, Yi-Ru Chen, Chun-Hsiung Wang, Meng-Ru Ho, See-Yeun Ting, Kaiming Zhang & Chung-I Chang (2023, Nov). A 5+1 assemble-to-activate mechanism of the Lon proteolytic machine. *nature communications*, 14, 7340.

2. Hsiu-Jung Wang, Víctor M. Hernández-Rocamora, Chiao-I Kuo, **Kan-Yen Hsieh**, Szu-Hui Lee, Meng-Ru Ho, Zhijay Tu, Waldemar Vollmer, Chung-I Chang (2023, Oct). Structural basis for the hydrolytic activity of the transpeptidase-like protein DpaA to detach Braun's lipoprotein from peptidoglycan. *mBio*, 14(5), e01379-23.
3. Meng-Sheng Lee, **Kan-Yen Hsieh**, Chiao-I Kuo, Szu-Hui Lee, Shambhavi Garde, Manjula Reddy, Chung-I Chang (2022, Feb). Structural Basis for the Peptidoglycan-Editing Activity of YfiH. *mBio*, 13(1):e03646-21.
4. Shanshan Li<sup>†</sup>, **Kan-Yen Hsieh**<sup>†</sup>, Chiao-I Kuo, Shih-Chieh Su, Kai-Fa Huang, Kaiming Zhang, and Chung-I Chang (2021, Nov). Processive cleavage of substrate at individual proteolytic active sites of the Lon protease complex. *Science Advances*, 7(46), eabj9537.
5. Shanshan Li, **Kan-Yen Hsieh**, Chiao-I Kuo, Szu-Hui Lee, Grigore D. Pintilie, Kaiming Zhang, and Chung-I Chang (2021, Oct). Complete three-dimensional structures of the Lon protease translocating a protein substrate. *Science Advances*, 7(42), eabj7835.
6. Shanshan Li, **Kan-Yen Hsieh**, Shih-Chieh Su, Grigore D. Pintilie, Kaiming Zhang, Chung-I Chang (2021, Sep). Molecular basis for ATPase-powered substrate translocation by the Lon AAA+ protease. *Journal of Biological Chemistry*, 297(4), 101239.
7. **Kan-Yen Hsieh**, Ju-Ying Tsai, Ya-Han Lin, Fang-Rong Chang, Hui-Chun Wang and Chin-Chung Wu (2021, Feb). Golden berry 4 $\beta$ -hydroxywithanolide E prevents tumor necrosis factor  $\alpha$ -induced procoagulant activity with enhanced cytotoxicity against human lung cancer cells. *Scientific Reports*, 11(1), 4610.
8. Jizhen Li, Ling-Chu Chang, **Kan-Yen Hsieh**, Pei-Ling Hsu, Stephen J. Capuzzi, Ying-Chao Zhang, Kang-Po Li, Susan L. Morris-Natschke, Masuo Goto, Kuo-Hsiung Lee (2019, Jul). Design, synthesis and evaluation of antiproliferative activity of fluorinated betulinic acid. *Bioorganic & Medicinal Chemistry*, 27(13), 2871-2882.
9. **Kan-Yen Hsieh**, Chien-Kei Wei, and Chin-Chung Wu (2019, Jan). YC-1 Prevents Tumor-Associated Tissue Factor Expression and Procoagulant Activity in Hypoxic Conditions by Inhibiting p38/NF- $\kappa$ B Signaling Pathway. *International Journal of Molecular Sciences*, 20(2), 244.
10. Yu Zhao, Po-Yen Liu, **Kan-Yen Hsieh**, Pei-Ling Hsu, Masuo Goto, Susan L. Morris-

Natschke, Horng-Jyh Harnb, and Kuo-Hsiung Lee (2017, Oct). Design, synthesis and structure–activity relationships of ( $\pm$ )-isochaihulactone derivatives. *Medicinal Chemistry Communications*, 8(11), 2040-2049.

11. Cheng-Jie Yang, Zi-Long Song, Masuo Goto, Ying-Qian Liu, **Kan-Yen Hsieh**, Susan L. Morris-Natschke, Yong-Long Zhao, Jun-Xiang Zhang, and Kuo-Hsiung Lee (2017, Sep). Design, synthesis, and cytotoxic activity of novel 7-substituted camptothecin derivatives incorporating piperazinyl-sulfonylamidine moieties. *Bioorganic & Medicinal Chemistry Letters*, 27(17), 3959-3962.
12. Gao-Xiang Zhu, Pi-Le Cheng, Masuo Goto, Na Zhang, Susan L. Morris-Natschke, **Kan-Yen Hsieh**, Guan-Zhou Yang, Qian-Ru Yang, Ying-Qian Liu, Hai-Le Chen, Xiao-Shuai Zhang, and Kuo-Hsiung Lee (2017, Apr). Design, synthesis and potent cytotoxic activity of novel 7-(N-[(substituted-sulfonyl)piperazinyl]-methyl)-camptothecin derivatives. *Bioorganic & Medicinal Chemistry Letters*, 27(8),1750-1753.
13. Cheng-Jian Tan, Yu Zhao, Masuo Goto, **Kan-Yen Hsieh**, Xiao-Ming Yang, Susan L. Morris-Natschke, Li-Na Liu, Bao-Yu Zhao, and Kuo-Hsiung Lee (2016, May). Alkaloids from *Oxytropis ochrocephala* and antiproliferative activity of sophoridine derivatives against cancer cell lines. *Bioorganic & medicinal chemistry letters*, 26(5),1495-7.
14. Wei-Hua Yuan, Masuo Goto, **Kan-Yen Hsieh**, Bo Yuan, Yu Zhao, Susan. L Morris-Natschke, and Kuo-Hsiung Lee (2015, Dec). Selective cytotoxic eremophilane-type sesquiterpenes from *Penicillium citreonigrum*. *Journal of Asian natural products research*, 17(12),1239-44.
15. Sheng-Biao Wang, Xiao-Feng Wang, Bingjie Qin, Emika Ohkoshi, **Kan-Yen Hsieh**, Ernest Hamel, Mu-Tian Cui, Dong-Qing Zhu, Masuo Goto, Susan L. Morris-Natschke, Kuo-Hsiung Lee, and Lan Xie (2015, Sep). Optimization of N-aryl-6-methoxy-1,2,3,4-tetrahydroquinolines as tubulin polymerization inhibitors. *Bioorganic & medicinal chemistry*, 23(17), 5740–5747.
16. Yue-Hu Wang, Masuo Goto, Li-Ting Wang, **Kan-Yen Hsieh**, Susan L. Morris-Natschke, Gui-Hua Tang, Chun-Lin Long, and Kuo-Hsiung Lee (2014, Oct). Multidrug resistance-selective antiproliferative activity of Piper amide alkaloids and synthetic analogues.

***Bioorganic & medicinal chemistry letters***, 24(20), 4818–4821.