Name: Jarukitt Limwachiranon

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Current position: Lecturer

Education

2019	Ph.D. (Food Sciences), College of Biosystems Engineering and Food Science, Zhejiang University, China
2014	M.Sc. (Food Production Management), School of Biosciences, The University of Nottingham, UK
2013	B.Sc. (Food Science and Technology), Science Division, Mahidol University International College, Thailand

Research Interest and Expertise

- **Natural Product Research**: Extraction, purification, and identification of bioactive compounds from plants and fungi.
- **Fungal Biosynthesis**: Investigation of the biosynthesis of natural products in fungi, including enzyme characterization and pathway elucidation.

Research Experiences

- **Extraction of Bioactive Compounds**: Isolation of plant and fungal bioactives using liquid-liquid and liquid-solid extraction, with optimization via response surface methodology.
- **Separation and Purification**: Purification of plant phenolics and fungal epipolythiodioxopiperazines (ETPs) using flash chromatography and semi-preparative HPLC-UV.
- **Compound Identification**: Characterization of bioactive compounds through HPLC-UV and LC-QTOF-MS.
- **Molecular Biology Techniques**: Gene cloning, plasmid construction, transformation, and expression optimization.
- **Protein Analysis**: Protein expression analysis and purification.
- **Enzyme Characterization**: Identification and characterization of enzymes involved in ETP biosynthesis through gene deletion, mutagenesis, in vitro enzyme assays, and bioinformatics analysis.

Funding and Scholarship

2022 International Young Scientist Research Funding granted by National Natural Science Foundation of China (NSFC), 32250410279，*Research Title: Investigating the roles of fungal cytochrome P450 monooxygenases as versatile biocatalysts in ETP/DKP biosynthetic pathways,* ***400,000 RMB research funding****, China*

2020 Talented Postdoctoral International Exchange Program award granted by China Postdoctoral Science Foundation, *Research Title: Characterization of the enzymes of the allicin biosynthetic pathways, China*

2015 Zhejiang University Scholarship by Zhejiang University, China

2015 Chinese Government Scholarship by China Scholarship Council (CSC), China

Publications

International

1. Han, Y, Guo, Y, Zhang, N, Xu, F, **Limwachiranon, J**, Xiong, Z, X, L, Mao, X-M and Scharf, DH . Biosynthesis of iron-chelating terramides A-C and their role in *Aspergillus terreus* infection. *Commun Chem* **7**, 221 (2024). https://doi.org/10.1038/s42004-024-01311-2

2. **Limwachiranon J**, Xu F, Xu L, Xiong Z, Han Y, Guo Y, Zhang N and Scharf DH. Enzymatic Dimerization of Fungal Natural Products through Intermolecular Disulfide Bridges. Advanced Synthesis & Catalysis. (2024) 10.1002/adsc.202400671

3. Guo Y, Liu J, **Limwachiranon J**, Xu F, Xu L, Xiong Z, Zhang N, Ding G and Scharf DH. (2024) Reconstitution of the Early Stage of Chetomin Biosynthesis in Aspergillus fumigatus Leads to the Production of Epipolythiodioxopiperazines. Organic Letters, 26(21)

4. Yurasakpong, L., Suwannakhan, A., Kirisattayakul, W., Samrid, R., Iamsaard, S., **Limwachiranon, J.**, Khanthiyong, B., Tubbs, R.S., Iwanaga, J., & Chaiyamoon, A. (2023). Topographical study of scapular foramina and scapular nutrient foramina in dried skeletons. *Surgical and Radiologic Anatomy, 45, 563 - 570.*
5. Xiong, Z., Zhang, N., Xu, L., Deng, Z., **Limwachiranon, J.**, Guo, Y., Han, Y., Yang, W., & Scharf, D.H. (2023). Urease of Aspergillus fumigatus Is Required for Survival in Macrophages and Virulence. *Microbiology Spectrum, 11*.

6. Senarai, T., Pratipanawatr, T., Yurasakpong, L., Kruepunga, N., **Limwachiranon, J.**, Phanthong, P., Meemon, K., Yammine, K., & Suwannakhan, A. (2022). Cross-Sectional Area of the Tibial Nerve in Diabetic Peripheral Neuropathy Patients: A Systematic Review and Meta-Analysis of Ultrasonography Studies. *Medicina, 58*.
7. **Limwachiranon, J.**, Huang, H., Shi, Z., Li, L., & Luo, Z. (2018). Lotus flavonoids and phenolic acids: Health promotion and safe consumption dosages. *Comprehensive Reviews in Food Science and Food Safety, 17(2), 458–471.*
8. **Limwachiranon, J.**, Jiang, L., Huang, H., Sun, J., & Luo, Z. (2019). Improvement of phenolic compounds extraction from high-starch lotus (Nelumbo nucifera G.) seed kernels using glycerol: New insights to amylose/amylopectin – Phenolic relationships. *Food Chemistry, 274, 933-941.*
9. **Limwachiranon, J.**, Huang, H., Li, L., Duan, Z., & Luo, Z. (2019). Recovery of lotus (Nelumbo nucifera Gaertn.) seedpod flavonoids using polar macroporous resins: the updated understanding on adsorption/desorption mechanisms and the involved intermolecular attractions and bonding. *Food Chemistry, 125108.*
10. **Limwachiranon, J.**, Huang, H., Li, L., Lin, X., Zou, L., Liu, J., Zou, Y., Aalim, H., Duan, Z., & Luo, Z. (2019). Enhancing stability and bioaccessibility of chlorogenic acid using complexation with amylopectin: A comprehensive evaluation of complex formation, properties, and characteristics. *Food Chemistry, 125879.*
11. Li, D.†**, Limwachiranon, J**.†, Li, L., Xu, Y., Fu, M., & Luo, Z. (2019). Hydrogen peroxide accelerated the lignification process of bamboo shoots by activating the phenylpropanoid pathway and programmed cell death in postharvest storage. *Postharvest biology and technology, 153, 79-86.* ***Co-first author***
12. Huang, H., Belwal, T., Lin, X., **Limwachiranon, J.**, Zou, L., & Luo, Z. (2021). Novel bind-then-release model based on fluorescence spectroscopy analysis with molecular docking simulation: New insights to zero-order release of arbutin and coumaric acid. *Food Hydrocolloids, 112, 106356.*
13. Feng, S., Belwal, T., Li, L., **Limwachiranon, J.**, Liu, X., & Luo, Z. (2020). Phytosterols and their derivatives: Potential health-promoting uses against lipid metabolism and associated diseases, mechanism, and safety issues. *Comprehensive reviews in food science and food safety, 19 4, 1243-1267 .*
14. Jiang, L., Belwal, T., Huang, H., Ge, Z., **Limwachiranon, J.**, Zhao, Y., Li, L., Ren, G., & Luo, Z. (2019). Extraction and Characterization of Phenolic Compounds from Bamboo Shoot Shell Under Optimized Ultrasonic-Assisted Conditions: a Potential Source of Nutraceutical Compounds. *Food and Bioprocess Technology, 12, 1741 - 1755.*
15. Li, D., **Limwachiranon, J.**, Li, L., Xu, Y., Fu, M., & Luo, Z. (2019). Hydrogen peroxide accelerated the lignification process of bamboo shoots by activating the phenylpropanoid pathway and programmed cell death in postharvest storage. *Postharvest biology and technology, 153, 79-86.*

16. Li, D., **Limwachiranon, J.**, Li, L., Du, R., & Luo, Z. (2016). Involvement of energy metabolism to chilling tolerance induced by hydrogen sulfide in cold-stored banana fruit. *Food Chemistry, 208, 272–278.*
17. Feng, S., **Limwachiranon, J.**, Luo, Z., Shi, X., & Ru, Q. (2016). Preparation and purification of angiotensin-converting enzyme inhibitory peptides from hydrolysate of shrimp (Litopenaeus vannamei) shell waste. *International Journal of Food Science & Technology, 51(7), 1610–1617.*
18. Xu, Y., **Limwachiranon, J.**, Li, L., Ru, Q., & Luo, Z. (2016). Characterisation of volatile compounds of farmed soft-shelled turtle (Pelodiscus sinensis) by solid-phase microextraction and the influence of matrix pH on the release of volatiles. International *Journal of Food Science & Technology, 52(1), 275–281.*
19. Li, L., Ban, Z., **Limwachiranon, J.**, & Luo, Z. (2017). Proteomic studies on fruit ripening and senescence. *Critical Reviews in Plant Sciences, 36(2), 116–127.*
20. Lu, H., Li, L., **Limwachiranon, J.**, Xie, J., & Luo, Z. (2016). Effect of UV-C on ripening of tomato fruits in response to wound. *Scientia Horticulturae, 213, 104–109.*
21. Zeng, F., Ge, Z., **Limwachiranon, J.**, Li, L., Feng, S., Wang, Y., & Luo, Z. (2017). Antioxidant and tyrosinase inhibitory activity of Rosa roxburghiifruit and identification of main bioactive phytochemicals by UPLC-Triple-TOF/MS. *International Journal of Food Science & Technology, 52(4), 897–905.*
22. Huang, H., Ge, Z., **Limwachiranon, J.**, Li, L., Li, W., & Luo, Z. (2017). UV-C treatment affects browning and starch metabolism of minimally processed lily bulb. *Postharvest Biology and Technology, 128, 105–111*.
23. Huang, H., Wang, Z., Aalim, H., **Limwachiranon, J.**, Li, L., Duan, Z., Luo, Z. (2018). Green recovery of phenolic compounds from rice byproduct (rice bran) using glycerol based on viscosity, conductivity and density. International Journal of Food Science & Technology. doi:10.1111/ijfs.14026
24. Lu, H., Wu, W., **Limwachiranon, J.**, Yang, D., Xiao, G., Luo, Z., & Li, L. (2018). Effect of micro-perforated film packing on fatty acid-derived volatile metabolism of “red globe” table grapes. *Food and Bioprocess Technology, 11(10), 1807–1817.*
25. Li, D., Li, L., Ge, Z., **Limwachiranon, J.**, Ban, Z., Yang, D., & Luo, Z. (2017). Effects of hydrogen sulfide on yellowing and energy metabolism in broccoli. *Postharvest Biology and Technology, 129, 136–142.*
26. Li, D., Li, L., Xiao, G., **Limwachiranon, J.**, Xu, Y., Lu, H., Yang, D., & Luo, Z. (2018). Effects of elevated CO_2 on energy metabolism and γ-aminobutyric acid shunt pathway in postharvest strawberry fruit. *Food Chemistry, 265, 281–289.*

27. Wang, D., Li, L., Xu, Y., **Limwachiranon, J.**, Li, D., Ban, Z., & Luo, Z. (2017). Effect of exogenous nitro oxide on chilling tolerance, polyamine, proline, and γ-aminobutyric acid in bamboo shoots (Phyllostachys praecox f. prevernalis). *Journal of Agricultural and Food Chemistry, 65(28), 5607–5613.*
28. Li, D., Mou, W., Luo, Z., Li, L., **Limwachiranon, J.**, Mao, L., & Ying, T. (2016). Developmental and stress regulation on expression of a novel miRNA, Fan-miR73 and its target ABI5 in strawberry. *Scientific Reports, 6(1).*
29. Huang, H., Belwal, T., Jiang, L., Hu, J., **Limwachiranon, J.**, Li, L., Ren, G., Zhang, X., Luo, Z. (2019). Valorization of lotus byproduct (Receptaculum Nelumbinis) under green extraction condition. Food and Bioproducts Processing. doi:10.1016/j.fbp.2019.03.006
30. Li, L., Wu, Q., Wang, Y., Aghdam, M. S., Ban, Z., Zhang, X., Lu, H., Li, D., Yan, J., **Limwachiranon, J.**, & Luo, Z. (2019). Systematically quantitative proteomics and metabolite profiles offer insight into fruit ripening behavior in Fragaria × ananassa. *RSC Advances, 9(25), 14093–14108.*