Jian-Lin Wu

Position: Associate Professor
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***Research Areas**:*

Study on cancer mechanism, drug and food analyses using integrated LC-MS-NMR analytical approach

***Teaching Modules**:*

Instrumental Analysis, Pharmaceutical Analysis, Experimental Pharmaceutical Analysis, Analytical Chemistry, Experimental Analytical Chemistry, Advances in Chinese Medicine Pharmaceutics, Modern Biotechnology, Experimental Fundamental Chemistry for Phamaceutics.

Personal profile

Dr. Jian-Lin Wu, Associate Professor, State Key Laboratory of Quality Research in Chinese Medicine, Macau University of Science and Technology. Dr. Wu obtained received his PhD degree from Department of Chemistry, Hong Kong Baptist University in 2009, and the research focused on drug metabolism and environmental analysis using mass spectrometry (MS). After that he worked as post-doctoral fellow in the Department of Pathology, Li Ka Shing Faculty of Medicine, The University of Hong Kong, and took part in the establishment of the Metabolomics and Advanced Analytical Laboratory. He engaged in the pathologic studies of microorganism in human by ultra-high performance liquid chromatography-mass spectrometry (UHPLC-MS) and liquid chromatography-mass spectrometry-nuclear magnetic resonance (LC-MS-NMR). In 2011, he joined the State Key Laboratory as Assistant Professor and established the Macau Center for MS and NMR Analysis, as well as the Center for Omics Technology and Innovative Drug Research. Now he dedicated to the study on cancer mechanism, drug and food analyses using MS based metabolomics, metabolic flux, peptidomics and proteomics. From 2017-Now, published over 70 SCI papers, including *Cell Res*, *Gastroenterology, J. Hepatol, PNAS, Anal Chem, J Hazard Mater, Anal Chim Acta, Cell Commun Signal, J Proteome Res, J Agric Food Chem, J Nat Prod* and *Food Res Int* et al.

Academic Qualifications

2005.11-2009.05 *PhD*, Department of Chemistry, Hong Kong Baptist University, Hong Kong

2002.09-2004.07 *ME,* Faculty of Engineer, Niigata University, Japan

Working Experiences

2018.06-Present *Associate Professor*, State Key Laboratory for Quality Research in Chinese Medicines, Macau University of Science and Technology

2017.01-2020.12 *Nanshan Distinguished Professor*, Guangzhou Medical University

2011.11-2018.06 *Assistant Professor*, State Key Laboratory for Quality Research in Chinese Medicines, Macau University of Science and Technology

2010.04-2011.11 *Postdoctoral fellow*, Department of Pathology, The University of Hong Kong

2004.11-2005.10 *Research Assistant*, Department of Chemistry, Hong Kong Baptist University

Publication:

Selected SCI papers (Since 2017)：(*Corresponding author; #co-first author)

1. Q. Li, W. Hu, W.X. Liu, L.Y. Zhao, D. Huang, X. Liu, H. Chan, Y. Zhang, J. Zeng, O.O. Coker, W. Kang, S.S.M. Ng, L. Zhang, S.H. Wong, T. Gin, M.V. Chan*, **J.L. Wu*** J. Yu*, W.K.K. Wu*. Streptococcus thermophilus inhibits colorectal tumorigenesis through secreting β-galactosidase. *Gastroenterology* **2021**, 160, 1179-1193. (Q1 top, 4/92).
2. K. Li#, **J.L. Wu#**, B.Qin, Z. Fan, Q. Tang, W. Lu, H. Zhang, F. Xing, M. Meng, S. Zou, W. Wei, H. Chen, J. Cai, H. Wang, H. Zhang, J. Cai, L. Fang, X. Bian, C. Chen, P. Lan, B. Ghesquière, L. Fang*, M.H. Lee*. ILF3 is a substrate of SPOP for regulating serine biosynthesis in colorectal cancer. *Cell Res.* **2020**, 30, 163. (#These authors contributed equally to this work). (Q1 top, 8/195).
3. Y. Ge, N. Li, Y. Fu, X. Yu, Y. Xiao, Z. Tang, J. Xiao, **J.L. Wu***, Zhi-hong Jiang*. Deciphering superior quality of Pu-erh tea from thousands of years' old trees based on chemical profile. *Food Chem.* **2021**, 358, 129602. (Q1 top, 7/144).
4. S. Chen, G. Huang, W. Liao, S. Gong, J.B. Xiao, J. Bai, W.L.W. Hsiao, N. Li*, **J.L. Wu***. Discovery of the bioactive peptides secreted by Bifidobacterium using integrated MCX coupled with LC-MS and feature-based molecular networking. *Food Chem.* **2021**, 347, 129008. (Q1 top, 7/144).
5. Y. Zhuo, Y. Zhang, M. Li, H. Wu, S. Gong, X. Hu, Y. Fu, X. Shen, B. Sun, **J.L. Wu***, N. Li*. Hepatotoxic Evaluation of Toosendanin via Biomarker Quantification and Pathway Mapping of Large-Scale Chemical Proteomics. *Food Chem Toxicol.* **2021**, 153, 112257. (Q1 top, 9/93).
6. Y. Luo, F. Gao, R. Chang, X. Zhang, J. Zhong, J. Wen*, **J.L. Wu***, T. Zhou*. Metabolomics based comprehensive investigation of Gardeniae Fructus induced hepatotoxicity. *Food Chem Toxicol.* **2021**, 153, 112250. (Q1 top, 9/93).
7. P. Zheng, X. Bian, Y. Zhai, C. Li, C. Hao, H. Huang, W. Luo, Z. Huang, C. Liao, M. Xue, N. Li, M.Q. Guo, B. Sun*, **J.L. Wu***. Metabolomics reveals a correlation between hydroxyeicosatetraenoic acids (HETEs) and allergic asthma: evidence from three years' immunotherapy. *Pediatr Allergy Immunol.* **2021**, doi.org/10.1111/pai.13569. (Q1 top, 5/129).
8. X. Hu, X. Bian, W.Y. Gu, B. Sun, X. Gao, **J.L. Wu***, Na Li*. Stand out from matrix: Ultra-sensitive LC−MS/MS method for determination of histamine in complex biological samples using derivatization and solid phase extraction. *Talanta* **2021**, 225, 122056.
9. M. Liu, N. Li*, Y. Zhang, Z. Zheng, Y. Zhuo, B. Sun, L.P. Bai, M. Zhang, M.Q. Guo, **J.L. Wu***. Characterization of Covalent Protein Modification by Triclosan in vivo and in vitro via Three-Dimensional Liquid Chromatography-Mass Spectrometry: New Insight into Its Adverse Effects. *Environ Int.* **2020**, 136, 105423. (Q1 top, 14/274).
10. M.Z. Zhu, N. Li, F. Zhou, J. Ouyang, D.M. Lu, W. Xu, J. Li, H.Y. Lin, Z. Zhang, J.B. Xiao, K.B. Wang, J.A. Huang, Z.H. Liu*, **J.L. Wu***. Microbial bioconversion of the chemical components in dark tea. *Food Chem.* **2020**, 312, 126043. (Q1 top, 7/144).
11. X. Bian, Y. Qian, B. Tan, K. Li, X. Hong, C.C. Wong, L. Fu, J. Zhang, N. Li*, **J.L. Wu***. In-depth Mapping

Carboxylic Acid Metabolome Reveals the Potential Biomarkers in Colorectal Cancer through Characteristic Fragment Ions and Metabolic Flux. *Anal Chim Acta* **2020**, 1128, 62-71.

12. M. Xue, P. Zheng, X. Bian, Z. Huang, H. Huang, Y. Zeng, H. Hu, Xiaoqing Liu, L. Zhou , B. Sun*, **J.L. Wu***, N. Zhong*. Exploration and correlation analysis of changes in Krebs von den Lungen-6 levels in COVID-19 patients with different types in China. *Biosci Trends.* **2020**, 14, 290-6.
13. **J.L. Wu**, F. Ji, H. Zhang, C. Hu, M.H. Wong, D. Hu, Z. Cai*. Formation of dioxins from triclosan with active chlorine: A potential risk assessment. *J Hazard Mater.* **2019**, 367,128-136. (Q1 top, 10/274).
14. M. Zhao*, X. Su, B. Nian, L. Chen, D. Zhang, S. Duan, L. Wang, X. Shi, B. Jiang, W. Jiang, C. Lv, D. Wang, Y. Shi, Y. Xiao, **J.L. Wu***, Y. Pan*, Y. Ma*. Integrated meta-omics approaches to understand the microbiome of spontaneous fermentation of traditional Chinese pu-erh tea. *mSystems* **2019**, 4, e00680-19.
15. M. Zhang, Y. Pan, D. Tang, R.G. Dorfman, L. Xu, Q. Zhou, L. Zhou, Y. Wang, Y. Li, Y. Yin, B. Kong, H. Friess, S. Zhao, **J.L. Wu***, L. Wang*, X. Zou*. Low levels of pyruvate induced by a positive feedback loop protects cholangiocarcinoma cells from apoptosis. *Cell Commun Signal.* **2019**, 17, 23.
16. L. Xu, L. Wang, L. Zhou, R.G. Dorfman, Y. Pan, D. Tang, Y. Wang, Y. Yin, C. Jiang, X.Zou, **J.L. Wu***, M. Zhang*. The SIRT2/cMYC Pathway Inhibits Peroxidation-Related Apoptosis In Cholangiocarcinoma Through Metabolic Reprogramming. *Neoplasia* **2019**, 21, 429-441.
17. Y. Ge, X. Bian, B. Sun, M. Zhao, Y. Ma, Y.P. Tang, N. Li*, **J.L. Wu***. Dynamic profiling of phenolic acids during Pu-erh tea fermentation using derivatization LC-MS approach. *J Agric Food Chem.* **2019**, 67, 4568-4577. (Q1 top, 5/58).
18. X. Yan, Y. Zhuo, X. Bian, J. Li, Y. Zhang, L. Ma, G. Lu, M.Q. Guo, **J.L. Wu***, N. Li*. Integrated Proteomics, Biological Functional Assessments, and Metabolomics Reveal Toosendanin-Induced Hepatic Energy Metabolic Disorders. *Chem Res Toxicol.* **2019**, 32, 668-680.
19. C. Luo, X. Bian, Q. Zhang, Z. Xia, B. Liu, Q. Chen, C. Ke, **J.L. Wu***, Y. Zhao* Shengui Sansheng San Ameliorates Cerebral Energy Deficiency Via Citrate Cycle after Ischemic Stroke. *Front Pharmacol.* **2019**, 10, 386.
20. Y. Zhang, X. Bian, J. Yang, H. Wu*, **J.L. Wu***, N. Li*. Metabolomics of Clinical Poisoning by Aconitum Alkaloids using derivatization LC-MS. *Front Pharmacol.* **2019** 10, 275.
21. C.X. Cai, X. Bian, X.Q. Liu, J.X. Wang, H.S. Hu, S.G. Zheng, B.Q. Sun*, **J.L. Wu***. Eicosanoids metabolized through LOX distinguish Asthma-COPD Overlap from COPD by metabolomics study. *Int J Chron Obstruct Pulmon Dis.* **2019**, 14, 1769-78.
22. X. Bian, N. Li*, B. Tan, B. Sun, M. Q. Guo, G. Huang, L. Fu, W.L.W. Hsiao, L. Liu*, **J.L. Wu***. Polarity-tuning Derivatization-LC-MS Approach for Probing Global Carboxyl-containing Metabolites in Colorectal Cancer. *Anal Chem.* **2018**, 90, 11210-5. (Q1 top, 8/83).
23. W.Y. Gu, M.X. Liu, B.Q Sun*, M.Q. Guo, **J.L. Wu***, N. Li*. Profiling of polyunsaturated fatty acids using off-line and on-line solid phase extraction-nano-liquid chromatography-quadrupole-time-of-flight mass spectrometry in human serum. *J Chromatogr A* **2018**, 1537, 141-6.
24. Y. Zhuo#, **J.L. Wu#**, X. Yan, M.Q. Guo, N. Liu, H. Zhou, L. Liu, N. Li. Strategy for Hepatotoxicity Prediction Induced by Drug Reactive Metabolites Using Human Liver Microsome and Online 2D-Nano-LC-MS Analysis. *Anal Chem.* **2017**, 89, 13167-75. (#These authors contributed equally to this work). (Q1 top, 8/83).

25. X. Bian, B. Sun, P. Zheng, N. Li*, **J.L. Wu***. Derivatization enhanced separation and sensitivity of long chain-free fatty acids: application to asthma using targeted and non-targeted liquid chromatography-mass spectrometry approach. *Anal Chim Acta* **2017**, 989, 59-70.

26. M.Z. Zhu, Na Li, Y.T. Wang, N. Liu, M.Q. Guo, H. Zhou, L. Liu* **J.L. Wu***. Acid/Salt/pH Gradient Improved Resolution and Sensitivity in Proteomics Study Using 2D SCX-RP LC-MS. *J Proteome Res.* **2017**, 16, 3470-5.

27. M. Zhu, N. Li, M. Zhao, W Yu, **J.L. Wu***. Metabolomic profiling delineate taste qualities of tea leaf pubescence. *Food Res Int.* **2017**, 94, 36-44. (Q1 top, 9/144).

28. Y. He, W. Liu, L. Chen, G. Lin, Q. Xiao, C. Gao, **J.L. Wu***, Z. Lin*. Facile synthesis of $Ti4^{+}$ -immobilized affinity silica nanoparticles for the highly selective enrichment of intact phosphoproteins. *J Sep Sci.* **2017**, 40, 1516-23.

29. J. Huang, D. Liu, Y. Wang, L. Liu, J. Li, J. Yuan, Z. Jiang, Z. Jiang, W.W. Hsiao, H. Liu, I. Khan, Y. Xie, **J.L. Wu**, Y. Xie, Y. Zhang, Y. Fu, J. Liao, W. Wang, H. Lai, A. Shi, J. Cai, L. Luo, R. Li, X. Yao, X. Fan, Q. Wu, Z. Liu, P. Yan, J. Lu, M. Yang, L. Wang, Y. Cao, H. Wei, E.L. Leung. Ginseng polysaccharides alter the gut microbiota and kynurenine/tryptophan ratio, potentiating the antitumour effect of antiprogrammed cell death 1/programmed cell death ligand 1 (anti-PD-1/PD-L1) immunotherapy. *Gut* **2021**, doi: 10.1136/gutjnl-2020-321031. (Q1 top, 3/92).

30. S. Fakhri, M. Tomas, E. Capanoglu, Y. Hussain, F. Abbaszadeh, B. Lu, X. Hu, J.L. Wu, L. Zou, A. Smeriglio, J. Simal-Gandara, H. Cao, J. Xiao, H. Khan. Antioxidant and anticancer potentials of edible flowers: where do we stand? *Crit Rev Food Sci Nutr.* **2021**, doi: 10.1080/10408398.2021.1931022. (Q1 top, 4/144).

31. W. Liao, I. Khan, G. Huang, S. Chen, L. Liu, W.K. Leong, X.A. Li, **J.L. Wu**, W.L.W. Hsiao*. Bifidobacterium animalis: the missing link for the cancer-preventive effect of Gynostemma pentaphyllum. *Gut Microbes* **2021**, 13, 1847629. (Q1 top, 11/137).

32. C. C. Wong , J. Xu, X. Bian, **J.L. Wu**, W. Kang, Y. Qian, W. Li, H. Chen, H. Gou, D. Liu , S. T. Y. Luk, Q. Zhou, F. Ji, L.S. Chan, S. Shirasawa , J.J. Sung, J. Yu. In Colorectal Cancer Cells with Mutant KRAS, SLC25A22-Mediated Glutaminolysis Reduces DNA Demethylation to Increase WNT Signaling, Stemness, and Drug Resistance. *Gastroenterology* **2020**, 159, 2163. (Q1 top, 4/92).

33. R. Zhao, O.O. Coker, **J.L. Wu**, Y. Zhou, L. Zhao, G. Nakatsu, X. Bian, H. Wei, A.W. Chan, J.J. Sung, F.K. Chan, E. El-Omar, J. Yu. Aspirin Reduces Colorectal Tumor Development in Mice and Gut Microbes Reduce Its Bioavailability and Chemopreventive Effects. *Gastroenterology* **2020**, 159, 969. (Q1 top, 4/92).

34. H. H. Choi, S. Zou, **J.L. Wu**, H. Wang, L. Phan, K. Li, P. Zhang, D. Chen, Q. Liu, B. Qin, TAT Nguyen, S.J. Yeung, L. Fang, M.H. Lee. EGF Relays Signals to COP1 and Facilitates FOXO4 Degradation to Promote Tumorigenesis. *Adv Sci.* **2020**, 7, 2000681. (Q1 top, 13/137).

35. W. Xu, X. Zhang, **J.L. Wu**, L. Fu, D. Liu, N. Wong, J. Yu. O-GlcNAc transferase promotes fatty liver-associated liver cancer through inducing palmitic acid and activating endoplasmic reticulum stress. *J Hepatol.* **2017**, 67, 310-20. (Q1 top, 2/92).

36. L. Fu, Y.R. Qin, X.Y. Ming, X. Zuo, Y.W. Diao, L.Y. Zhang, J. Ai, B.L. Liu, T.X. Huang, T.T. Cao, B.B. Tan, D. Xiang, C.M. Zeng, J. Gong, Q.C. Zhang, S.S. Dong, J. Chen, H. Liu, **J.L. Wu**, R.Z. Qi, D. Xie, L.D. Wang, X.Y. Guan. RNA editing of SLC22A3 drives early tumor invasion and metastasis in familial esophageal cancer. *PNAS* **2017**, 114, E4631-40.

Membership of Academic Associations and Community Service

1) Executive Committee Member of "Committee for Pharmaceutical Analytical Technology, China Medicinal Biotechnology Association";
2) Executive Committee Member of "Committee for Fundamental Immunity, Asia-Pacific Association of Medicine and Bio-Immunology";
3) Executive Committee Member of "The Specialty Committee on Immunology of Traditional Chinese Medicine of the World Federation of Chinese Medicine Societies";
4) Deputy Chairman of "Committee for Allergy Prevention and Control, Guangdong Preventive Medicine Association";
5) Committee Member of "Committee for Environmental Chemistry, Chinese Society for Environmental Sciences;
6) Committee Member of "Chinese Researching Hospital Society Allergic Medical Professional Committee";
7) Committee Member of "Macau International Consortium for Rheumatology Research".
8) Youth Editors, Journal of Analytical Testing
9) Youth Editors, Chinese Journal of Chromatography