

## Jian-Lin Wu



Position: Associate Professor  
Faculty: State Key Laboratory of Quality Research in Chinese Medicine,  
Macau Institute for Applied Research in Medicine and Health, Macau  
University of Science and Technology  
Email: [jlwu@must.edu.mo](mailto:jlwu@must.edu.mo)  
Telephone: (853) 8897-2406; Fax No.: (853) 2882-5886  
Mailing: H718C, Avenida Wai Long, Taipa, Macau  
Address: Macau University of Science and Technology

**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 Pharmaceutics.

**Research Areas:** Study on fatty acids synthesis and oxidation, energy metabolism as well as metabolic flux in allergic disease, respiratory diseases, cancer, TCMs and food using integrated LC-MS-NMR analytical approach

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 TCM, 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 of caboxylomics in cancer, rheumatic arthritis, allergic disease and total components analysis in TCM and tea using integrated LC, MS and NMR system. Until now, published over 60 SCI papers, including *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***

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

2004.10 *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

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:***

#### ***Recent 3 years SCI papers : (\*Corresponding author; #co-first author)***

1. **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**, 367,128-36.
2. 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**<sup>\*</sup>, L. Wang<sup>\*</sup>, X. Zou<sup>\*</sup>. Low levels of pyruvate induced by a positive feedback loop protects cholangiocarcinoma cells from apoptosis. *Cell Commun Signal.* **2019**, 17, 23.
3. Y. Ge, X. Bian, B. Sun, M. Zhao, Y. Ma, Y.P. Tang, N. Li<sup>\*</sup>, **J.L. Wu**<sup>\*</sup>. Dynamic profiling of phenolic acids during Pu-erh tea fermentation using derivatization LC-MS approach. *J Agric Food Chem.* **2019**, 67, 4568-4577.
4. X. Yan, Y. Zhuo, X. Bian, J. Li, Y. Zhang, L. Ma, G. Lu, M.Q. Guo, **J.L. Wu**<sup>\*</sup>, N. Li<sup>\*</sup>. Integrated Proteomics, Biological Functional Assessments, and Metabolomics Reveal Toosendanin-Induced Hepatic Energy Metabolic Disorders. *Chem Res Toxicol.* **2019**, 32, 668-80.
5. M. Zhang, L. Zhou, Y. Wang, R. Gregory Dorfman, D. Tang, L. Xu, Y. Pan, Q. Zhou, Y. Li, Y. Yin, S. Zhao, **J.L. Wu**<sup>\*</sup>, C. Yu<sup>\*</sup>. Faecalibacterium prausnitzii produces butyrate to decrease c-Myc-related metabolism and Th17 differentiation by inhibiting histone deacetylase 3. *Int Immunol.* **2019**, 31, 499.

6. 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.
7. Cheng Luo, Xiqing Bian, Qian Zhang, Zhenyan Xia, Bowen Liu, Qi Chen, Chien-Chih Ke, **J.L. Wu\***, Y. Zhao\* Shengui Sansheng San Ameliorates Cerebral Energy Deficiency Via Citrate Cycle after Ischemic Stroke. *Front Pharmacol.* **2019**, 10, 386.
8. 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.
9. 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, 429-41.
10. 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.
11. 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.
12. 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).
13. 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.
14. 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.
15. 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.

16. Y. He, W. Liu, L. Chen, G. Lin, Q. Xiao, C. Gao, **J.L. Wu\***, Z. Lin\*. Facile synthesis of Ti<sup>4+</sup> -immobilized affinity silica nanoparticles for the highly selective enrichment of intact phosphoproteins. *J Sep Sci.* **2017**, 40, 1516-23.
17. I. Khan, G. Huang, X.A. Li, W. Liao, W. K. Leong, W. Xia, X. Bian, **J.L. Wu**, W.L.W. Hsiao\*. Mushroom polysaccharides and jiaogulan saponins exert cancer preventive effects by shaping the gut microbiota and microenvironment in Apc<sup>Min/+</sup> mice. *Pharmacol Res.* **2019**, accepted.
18. G. Chen, M.Fan, B. Sun, **J.L. Wu**, N. Li, M. Guo. Advances in MS based strategies for Probing Ligand-Target Interactions: Focus on Soft Ionization Mass Spectrometric Techniques. *Front Chem.* **2019**, accepted.
19. M. Fan, G. Chen, B. Sun, **J.L. Wu**, N. Li, S.D. Sarker, L. Nahar, M. Guo. Screening for natural inhibitors of human topoisomerases from medicinal plants with bio-affinity ultrafiltration and LC-MS. *Phytochem Rev.* **2019** July 27. doi: 10.1007/s11101-019-09635-x.
20. M. Fan, Y. Tian, G. Chen, S.D. Sarker, L. Nahar, **J.L. Wu**, N. Li, M. Guo. Enrichment and analysis of quaternary alkaloids from *Zanthoxylum simulans* using weak cation exchange solid-phase extraction coupled with LC-MS. *Phytochem Anal.* **2019** Jul 17. doi: 10.1002/pca.2860.
21. X. Zong, X. Yan, **J.L. Wu**, Z. Liu, H. Zhou, N. Li, L. Liu. Potentially Cardiotoxic Diterpenoid Alkaloids from the Roots of *Aconitum carmichaelii*. *J Nat Prod.* **2019**, 82, 980-9.
22. G.L. Chen, M.X. Fan, **J.L. Wu**, N. Li, M.Q. Guo. Antioxidant and anti-inflammatory properties of flavonoids from lotus plumule. *Food Chem.* **2019**, 277, 706-712.
23. X.X. Fan, E.L.H. Leung, Y. Xie, Z.Q. Liu, Y.F. Zheng, X.J. Yao, L.L. Lu, **J.L. Wu**, J.X. He, Z.W. Yuan, J. Fu, C.L. Wei, J. Huang, D.K. Xiao, L.X. Luo, Z.B. Jiang, Y.L. Zhou, R.K.T. Kam and L. Liu\*. Suppression of lipogenesis via ROS- AMPK signaling for treating malignant and proliferative diseases. *Antioxid Redox Signal.* **2018**, 28, 339-57.
24. L.D. Ma, Y.T. Wang, J.R. Wang, **J.L. Wu**, X.S. Meng, P. Hu, X. Mu, Q.L. Liang, G.A. Luo. Design and fabrication of a liver-on-a-chip platform for convenient, highly efficient, and safe in situ perfusion culture of 3D hepatic spheroids. *Lab Chip.* **2018**, 18, 2547-62.
25. M.Z. Zhu, G.L. Chen, **J.L. Wu**, N. Li, Z.H. Liu, M.Q. Guo. Recent development in mass spectrometry and its hyphenated techniques for the analysis of medicinal plants. *Phytochem Anal.* **2018**, 29, 365-74.

26. Y. Liang, G.Y. Yan, **J.L. Wu**, X. Zong, Z. Liu, H. Zhou, L. Liu, N. Li. Qualitative and quantitative analysis of lipo-alkaloids and fatty acids in *Aconitum carmichaelii* using LC-MS and GC-MS. *Phytochem Anal.* **2018**, 29, 398-405.
27. G. Chen, **J.L. Wu**, N. Li, M.Q. Guo, Screening for anti-proliferative and anti-inflammatory components from *Rhamnus davurica Pall.* using bio-affinity ultrafiltration with multiple drug targets. *Anal Bioanal Chem.* **2018**, 410, 3587-95.
28. 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.
29. 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.
30. T.T. Cao, D. Xiang, B.L. Liu, T.X. Huang, B.B. Tan, C.M. Zeng, Z.Y. Wang, X.Y. Ming, L.Y. Zhang, G. Jin, F. Li, **J.L. Wu**, X.Y. Guan, D. Lu, L. Fu. FZD7 is a novel prognostic marker and promotes tumor metastasis via WNT and EMT signaling pathways in esophageal squamous cell carcinoma. *Oncotarget* **2017**, 8, 65957-68.
31. L. Huang, Y. Dong Y, **J.L. Wu**, P. Wang, H. Zhou, T. Li, L. Liu. Sinomenine-induced histamine release-like anaphylactoid reactions are blocked by tranilast via inhibiting NF- $\kappa$ B signaling. *Pharmacol Res.* **2017**, 125, 150-60.
32. X.X Zong, G. Yan, **J.L. Wu**, E.L Leung, H. Zhou, N. Li, L. Liu. New C19-Diterpenoid Alkaloids from the Parent Roots of *Aconitum carmichaelii*. *Tetrahedron Lett.* **2017**, 58, 1622.
33. X. Li, C.C. Wong, Z. Tang, **J.L. Wu**, S. Li, Y Qian, J. Xu, Z. Yang, Y. Shen, J. Yu, Z. Cai. Determination of amino acids in colon cancer cells by using UHPLC-MS/MS and [U- $^{13}$ C $_5$ ]-glutamine as the isotope tracer. *Talanta* **2017**, 162, 285-92.

### **Patent**

- I. **J.L. Wu**, N Li, L Liu, W.Y. Gu, X.Q. Bian. Method and Kit for Detecting Carboxyl-Containing Compound. *Australian Patent* 2018100592.
- II. **J.L. Wu**, N Li, L Liu, W.Y. Gu, X.Q. Bian. Method of determining histamine in a sample and kit for doing the same. *Australian Patent* 2017100545.
- III. G.A. LUO, L.D. Ma, Y.T Wang, J.R. Wang and **J.L. Wu** Microfluidic perfusion device,

system and fabrication method thereof. *Australian Patent* 2018100361.

IV. N. LI, **J.L. Wu**, L. Liu, Y. Zhuo and X. Yan. Methods for prediction of hepatotoxicity induced by compound reactive metabolites. *Australian Patent* 2018100121.

V. L. Leung, L Liu, X. Fan, **J.L. Wu**, Application of an alkaloid derived from Chinese herbal for treatment of cancer by inhibiting cholesterol synthesis and fatty acid oxidation. *US patent* US 2015/0307508 A1.

### ***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 “The Specialty Committee on Immunology of Traditional Chinese Medicine of the World Federation of Chinese Medicine Societies”;
- 3) Committee Member of “Committee for Environmental Chemistry, Chinese Society for Environmental Sciences”;
- 4) Committee Member of “Chinese Researching Hospital Society Allergic Medical Professional Committee”;
- 5) Committee Member of “Macau International Consortium for Rheumatology Research”.