

Zhang Wei



Position: Professor, PhD
Assistant Director of State Key Laboratory of Quality
Research in Chinese Medicines

Faculty: State Key Laboratory of Quality Research in
Chinese Medicine; Faculty of Chinese Medicine

Email: wzhang@must.edu.mo

Telephone: (853) 8897-2463

Office: H837B

Mailing: H837B, Macau University of Science and Address:
Technology, Avenida Wai Long, Taipa, Macau

Teaching Modules: Analytical chemistry (BP12203/ BPAZ0012); Analytical chemistry laboratory (BP12204); Fundamental chemistry laboratory (BP12103); Pharmacokinetics of Chinese medicines (ME1012); Instrumental analysis (ME1002); Individual studies in Chinese medicine (DCMSZ02); Pharmaceutical analysis

Dr. Wei Zhang obtained his PhD from China pharmaceutical university in 2008. He proceeded to his post-doctoral training at Department of pharmacology from Yale University School of Medicine during 2008-2012. In the Yale University, He has published several well-recognized research articles including identification of Chinese Medicine ingredients and their metabolites in patient plasma. He also joined the study of mechanism of PHY906 and published research article in the journal of Science Translational Medicine as a co-author, which has been reported by the Nature News & Comment and Science Daily News. In 2012, he moved to Macau university of science and technology as an assistant professor and was promoted to associate professor in 2017. In 2023, he was promoted to a full professor.

Dr. Zhang's major research interests and areas include: 1) phytochemical analysis and quality assessment of traditional Chinese medicines by modern instruments together with chemometric methods; 2) profiling of RNA/DNA modifications at single-base resolution, comprehensive

epitranscriptome mapping and development of mechanism-based combination therapy for overcoming nucleotide analogs resistance; 3) nanoporous materials for active compounds screening in traditional Chinese medicine and cancer therapy.

Dr. Zhang has published more than 110 research articles in SCI journals including Analytical Chemistry, Environment International, Journal of Pharmaceutical Analysis, Food Chemistry, Advanced Functional Materials, Advanced Energy Materials and Science Translational Medicine, and his H-index is 23 (Web of Science, 2023). He has already been granted 6 international patents and 1 Chinese patent. Since 2014, Dr. Zhang achieved the Bank of China Excellent Research Award (2014 and 2023), Zhongzhu Awards for Life Science Recognizing First Prize in Research (2016 and 2018) and Zhongzhu Awards for Life Science Recognizing second Prize in Research (2017). As principal investigator, Dr. Zhang has obtained more than 10 research grants including FDCT Key R & D research project (PI of the third subproject on “Integrated multi-omics technology and quality marker theory for quality control of four Chinese herbal medicines”), FDCT- NSFC and FDCT-GDST Joint Fund. As a coinvestigator, he also participated in various research projects of national natural science foundation of china, special fund for research on national major research instrument, national institutes of health (NIH) funding and open project of the state key laboratory of natural medicines.

Academic Qualifications:

2000.7 **B.S.** China pharmaceutical university, Nanjing, China

2008.7 **PhD.** China pharmaceutical university, Nanjing, China

Working Experiences

2024/8 -Present Professor, State Key Laboratory for Quality Research in Chinese Medicines, Macau University of Science and Technology

2017/8 -2024/7 Associate professor, State Key Laboratory for Quality Research in Chinese Medicines, Macau University of Science and Technology

2012/8-2017/7 Assistant Professor, State Key Laboratory for Quality Research in Chinese Medicines, Macau University of Science and Technology

2011/8-2012/8 Manager of core lab of Yale Cancer Center, School of Medicine, Yale University

2012/1-2012/8 Associate Research Scientists, School of Medicine, Yale University

2008/8-2011/12 Post-Doctoral Associate, School of Medicine, Yale University

Selected articles published in the recent past years: (* Corresponding author)

1. R. Wang, G. Huang, S. Li, H. Huang, G. Zhu, L. Wang, J. Yang, S. Yang*, Z. Jiang*, **W. Zhang***. Blueberry extract for the treatment of ischaemic stroke through regulating the gut microbiota and kynurenine metabolism. *Phytotherapy Research*, 38(2024) 4792-4814. (IF 2023: 6.1, Q1)
2. Z. Li*, Q. Cao, H. Chen, J. Yang, Z. Wang, X. Qu, Y. Yao, Z. Zhou, **W. Zhang**, Dual Phytochemical/Activity-Guided Optimal Preparation and Bioactive Material Basis of *Orthosiphon stamineus* Benth. (Shen Tea) against Nonalcoholic Fatty Liver Disease, *Journal of Agricultural and Food Chemistry*, 72(2024) 18561-72. (IF 2023: 5.7, Q1)
3. J. Liu, T. Xu, J. Ding, H. Wen, J. Meng, Q. Liu, X. Liu, **W. Zhang**, G.-Y. Zhu, Z.-H. Jiang*, J. Gao*, L.-P. Bai*, Discovery of anti-melanogenic components in persimmon (*Diospyros kaki*) leaf using LC-MS/MS-MN, AlphaFold2-enabled virtual screening and biological validation, *Food Chemistry*, 455(2024) 139814. (IF 2023: 8.5, Q1)
4. L. Fu, C.-C. Wang, W. Tian, Z. Liu, M.-Y. Bao, J. Liu, **W. Zhang**, L.-P. Bai*, Z.-H. Jiang*, G.-Y. Zhu*, NMR-Guided Isolation of Anti-inflammatory Carabranolides from the Fruits of *Carpesium abrotanoides* L., *Journal of Natural Products*, 87(2024) 1786-97. (IF 2023: 3.2, Q2)
5. L. Fu, W. Tian, M.-Y. Bao, Z. Liu, W.-J. Ren, J. Liu, **W. Zhang**, Z. Zhang, J. Gao, L.-P. Bai*, Z.-H. Jiang*, G.-Y. Zhu*, Cevanine-type alkaloids from the bulbs of *Fritillaria unibracteata* var. *wabuensis* and their antifibrotic activities in vitro, *Phytochemistry*, 220(2024) 114018. (IF 2023: 3.3, Q1)
6. F.-L. Chen, D.-L. Liu, W.-J. Ren, H.-M. Xiong, L.-P. Bai, **W. Zhang**, C. Hon, Z.-H. Jiang*, G.-Y. Zhu*, Atrachinenins D-S, novel meroterpenoids with geranyl hydroquinone moiety from *Atractylodes chinensis* by the LC/MS-based molecular decoy and targeted isolation, *Bioorganic Chemistry*, 144(2024) 107111. (IF 2023: 4.5, Q1)
7. Z.-R. Lin, M.-Y. Bao, H.-M. Xiong, D. Cao, L.-P. Bai, **W. Zhang**, C.-Y. Chen, Z.-H. Jiang*, G.-Y. Zhu*, Boswellianols A-I, Structurally Diverse Diterpenoids from the Oleo-Gum Resin of *Boswellia carterii* and Their TGF- β Inhibition Activity, *Plants*, 13(2024) 1074. (IF 2023: 4.0, Q1)
8. L. Zeng, C. Zhang, M. Yang, J. Sun, J. Lu, H. Zhang, J. Qin, **W. Zhang**, Z. Jiang*, Unveiling the Diversity and Modifications of Short Peptides in *Buthus martensii* Scorpion Venom through Liquid Chromatography-High Resolution Mass Spectrometry, *Toxins*, 16(2024) 155. (IF 2023: 3.9, Q1)

9. L. Yang, C. Zi, Y. Li, J. Huang, Z. Gu, C. Wang, J.M. Hu*, Z. Jiang*, **W. Zhang***, An in-depth investigation of molecular interaction in zeaxanthin/corn silk glycan complexes and its positive role in hypoglycemic activity, *Food Chem*, 438(2024) 137986. (IF 2022: 8.8, Q1)
10. Y. Wang, F. Yu, Q. Liu, C. Wang, G. Zhu, L. Bai, S. Shi, Y. Zhao*, Z. Jiang*, **W. Zhang***, A novel and sensitive dual signaling ratiometric electrochemical aptasensor based on nanoporous gold for determination of Ochratoxin A, *Food Chem*, 432(2024) 137192. (IF 2022: 8.8, Q1)
11. M. Zhou, Z. Yang, T. Yin, Y. Zhao, C.Y. Wang, G.Y. Zhu, L.P. Bai, Z.H. Jiang*, **W. Zhang***, Functionalized Fe-Doped Carbon Dots Exhibiting Dual Glutathione Consumption to Amplify Ferroptosis for Enhanced Cancer Therapy, *ACS Appl Mater Interfaces*, 15(2023) 53228-41. (IF 2022: 9.5, Q1)
12. H.Y. Lyu, M.Y. Bao, C.C. Io, H.M. Xiong, F.L. Chen, L.P. Bai, **W. Zhang**, Z.H. Jiang*, G.Y. Zhu*, Sesquiterpenoids from the roots of *Aucklandia costus* and their anti-inflammatory activities, *Fitoterapia*, 169(2023) 105604. (IF 2022: 3.4, Q2)
13. Q.B. Liu, J. Liu, J.G. Lu, M.R. Yang, **W. Zhang**, W.J. Li, Z.M. Qian, Z.H. Jiang*, L.P. Bai*, Quantitative (1)H NMR with global spectral deconvolution approach for quality assessment of natural and cultured *Cordyceps sinensis*, *J Pharm Biomed Anal*, 235(2023) 115603. (IF 2022: 3.4, Q1)
14. W.J. Ren, C.C. Io, R. Jiang, K.F. Ng, J.Z. Liu, L.P. Bai, **W. Zhang**, Z.H. Jiang, Y.H. Liu*, G.Y. Zhu*, Di- and Triterpenoids from the Rhizomes of *Isodon amethystoides* and Their Anti-inflammatory Activities, *J Nat Prod*, 86(2023) 1230-9. (IF 2022: 5.1, Q1)
15. C.H. Deng, T.Q. Li, **W. Zhang**, Q. Zhao, Y. Wang*, Targeting Inflammasome Activation in Viral Infection: A Therapeutic Solution?, *Viruses*, 15(2023). (IF 2022: 4.7, Q1)
16. H.M. Xiong, H.Y. Li, Z.R. Lin, X.M. Liu, L.P. Bai, **W. Zhang**, Z.H. Jiang*, G.Y. Zhu*, Chemical Constituents from the Fruits of *Amomum kravanh* and Their Role in Activating Alcohol Dehydrogenase, *Molecules*, 28(2023). (IF 2022: 4.6, Q1)
17. H.X. Zhang, J.F. Qin, J.F. Sun, Y. Pan, T.M. Yan, C.Y. Wang, L.P. Bai, G.Y. Zhu, Z.H. Jiang*, **W. Zhang*** Selective Chemical Labeling Strategy for Oligonucleotides Determination: A First Application to Full-Range Profiling of Transfer RNA Modifications, *Anal Chem*, 95(2023) 686-94. (IF 2022: 7.4, Q1)
18. Q.H. Liu, Y.D. Zhang, Z.W. Ma, Z.M. Qian, Z.H. Jiang, **W. Zhang***, L. Wang*, Fractional extraction and structural characterization of glycogen particles from the whole cultivated caterpillar fungus *Ophiocordyceps sinensis*, *Int J Biol Macromol*, 229(2023) 507-14. (IF 2022: 8.2, Q1)

19. H.X. Zhang, D. Yu, J.F. Sun, L. Zeng, C.Y. Wang, L.P. Bai, G.Y. Zhu, Z.H. Jiang*, **W. Zhang***, An integrated approach to evaluate acetamiprid-induced oxidative damage to tRNA in human cells based on oxidized nucleotide and tRNA profiling, *Environ Int*, 178(2023) 108038. **(IF 2022: 11.8, Q1)**
20. S. Yan, Y. Wang, Y. Gu, M. Zhou, L. Su, T. Yin, **W. Zhang***, Y. Yue*, Baicalin suppresses colorectal cancer cell proliferation, potentially via ARRDC4: Bioinformatics and experimental analysis, *Arabian Journal of Chemistry*, 16(2023). **(IF 2022: 6.0, Q2)**
21. Q.-H. Liu, J.-Q. Li, J.-W. Tang, Y.-D. Zhang, M.-Y. Zhou, **W. Zhang***, L. Wang*, Identification of antidiabetic constituents in *Polygonatum odoratum* (Mill.) Druce by UPLC-Orbitrap-MS, network pharmacology and molecular docking, *Arabian Journal of Chemistry*, 16(2023). **(IF 2022: 6.0, Q2)**
22. T. Yin, Y. Yu, Q. Liu, G. Zhu, L. Bai, **W. Zhang***, Z. Jiang*, ¹³C-NMR-based MixONat strategy coupled with 2D NMR for rapid dereplication and identification of new secondary metabolites from *Aloe vera*, *Journal of Food Composition and Analysis*, 115(2023). **(IF 2021: 4.520, Q2)**
23. X.J. Wu, D. Cao, F.L. Chen, R.S. Shen, J. Gao, L.P. Bai, **W. Zhang**, Z.H. Jiang*, G.Y. Zhu*, Chlorfortunones A and B, Two Sesquiterpenoid Dimers, Possessing Dispiro[4,2,5,2]pentadecane-6,10,14-tren Moiety from *Chloranthus fortunei*, *ACS Omega*, 7(2022) 35063-8. **(IF 2021: 4.132, Q2)**
24. M. Zhang, L.B. Bai, L.F. Yau, T.T. Tong, **W. Zhang***, Z.H. Jiang*, Identification of Cannabidivarin Metabolites in Different Mouse Organs Using Ultra-Performance Liquid Chromatography Coupled to a Quadrupole Time-of-Flight Mass Spectrometer, *Cannabis Cannabinoid Res*, (2022). **(IF 2021: 4.786, Q2)**
25. Z. Li*, B. Qu, X. Wu, H. Chen, J. Wang, L. Zhou, X. Wu, **W. Zhang**, Methodology improvement for network pharmacology to correct the deviation of deduced medicinal constituents and mechanism: Xian-Ling-Gu-Bao as an example, *J Ethnopharmacol*, 289(2022) 115058. **(IF 2021: 5.195, Q1)**
26. Y. Wu, J. Liu, H. Hao, L. Hu, X. Zhang, L. Luo, J. Zeng, **W. Zhang**, I. Nam Wong, R. Huang*, A new polysaccharide from *Caulerpa chemnitzia* induces molecular shifts of immunomodulation on macrophages RAW264.7, *Food Chem X*, 14(2022) 100313. **(IF 2021: 6.443, Q2)**
27. L. Kong, J. Meng, W. Tian, J. Liu, X. Hu, Z.H. Jiang, **W. Zhang**, Y. Li*, L.P. Bai*, I(2)-Catalyzed Carbonylation of alpha-Methylene Ketones to Synthesize 1,2-Diaryl Diketones and Antiviral Quinoxalines in One Pot, *ACS Omega*, 7(2022) 1380-94. **(IF 2021: 4.132, Q2)**
28. H. Zhang, Y. Li, Z. Li, C.W. Lam, P. Zhu, C. Wang, H. Zhou*, **W. Zhang***, MTBSTFA derivatization-LC-MS/MS approach for the quantitative analysis of endogenous nucleotides in human colorectal

- carcinoma cells, *J Pharm Anal*, 12(2022) 77-86. (IF 2021: 14.026, Q1)
29. R.S. Shen, D. Cao, F.L. Chen, X.J. Wu, J. Gao, L.P. Bai, **W. Zhang**, Z.H. Jiang*, G.Y. Zhu*, New Monoterpene-Conjugated Phenolic Constituents from Nutmeg and Their Autophagy Modulating Activities, *J Agric Food Chem*, 70(2022) 9684-93. (IF 2021: 5.895, Q1)
30. L.B. Bai, L.F. Yau, T.T. Tong, W.H. Chan, **W. Zhang***, Z.H. Jiang*, Improvement of tissue-specific distribution and biotransformation potential of nicotinamide mononucleotide in combination with ginsenosides or resveratrol, *Pharmacol Res Perspect*, 10(2022) e00986. (IF 2021: 2.963, Q3)
31. X. Chen, W. Li, J. Chen, X. Zhang, **W. Zhang**, X. Duan, B. Lei*, R. Huang*, Transcriptomics Integrated with Metabolomics Reveals 2-Methoxy-1, 4-Naphthoquinone-Based Carbon Dots Induced Molecular Shifts in *Penicillium italicum*, *J Fungi (Basel)*, 8(2022). (IF 2021: 5.724, Q1)
32. M. Zhou, X. Wu, Y. Li, H. Zhang, Q. Liu, L. Song, C. Wang, B.Y.K. Law, Z. Jiang, **W. Zhang***, Atomic zinc sites with hierarchical porous carbon for high-throughput chemical screening with high loading capacity and stability, *Pharmacol Res*, 178(2022) 106154. (IF 2021: 10.334, Q3)
33. Q.B. Liu, J.G. Lu, Z.H. Jiang*, **W. Zhang**, W.J. Li, Z.M. Qian, L.P. Bai*, In situ Chemical Profiling and Imaging of Cultured and Natural *Cordyceps sinensis* by TOF-SIMS, *Front Chem*, 10(2022) 862007. (IF 2021: 5.545, Q1)
34. J. Liu, J. Meng, R. Li, H. Jiang, L. Fu, T. Xu, G.Y. Zhu, **W. Zhang**, J. Gao, Z.H. Jiang*, Z.F. Yang*, L.P. Bai*, Integrated network pharmacology analysis, molecular docking, LC-MS analysis and bioassays revealed the potential active ingredients and underlying mechanism of *Scutellariae radix* for COVID-19, *Front Plant Sci*, 13(2022) 988655. (IF 2021: 6.627, Q1)
35. R. Wang, J. Ren, S. Li, X. Bai, W. Guo, S. Yang*, Q. Wu*, **W. Zhang***, Efficacy evaluation of Buyang Huanwu Decoction in the treatment of ischemic stroke in the recovery period: A systematic review of randomized controlled trials, *Front Pharmacol*, 13(2022) 975816. (IF 2021: 5.988, Q1)
36. T.P. Yin, Y. Yu, Q.H. Liu, M.Y. Zhou, G.Y. Zhu, L.P. Bai, **W. Zhang***, Z.H. Jiang*, 2D NMR-based MatchNat Dereplication Strategy Enables Explosive Discovery of Novel Diterpenoid Alkaloids†, *Chinese Journal of Chemistry*, 40(2022) 2169-78. (IF 2021: 5.560, Q1)
37. Y. Wang, X. Wu, J. Sun, C. Wang, G. Zhu, L.-P. Bai, Z.-H. Jiang*, **W. Zhang***, Stripping voltammetric determination of cadmium and lead ions based on a bismuth oxide surface-decorated nanoporous bismuth electrode, *Electrochemistry Communications*, 136(2022). (IF 2021: 5.443, Q2)
38. F.-L. Chen, D.-L. Liu, J. Fu, L. Fu, J. Gao, L.-P. Bai, **W. Zhang**, Z.-H. Jiang*, G.-Y. Zhu*,

- Atrachinenynes A–D, four diacetylenic derivatives with unprecedented skeletons from the rhizomes of *Atractylodes chinensis*, *New Journal of Chemistry*, 46(2022) 15530-7. (IF 2021: 3.925, Q2)
39. M. Zhou, Y. Li, C. Huang, C. Wang, Q. Liu, Q. Deng, H. Zhang, T. Yin, G. Zhu, C. Wang, Y. Zhao*, **W. Zhang***, Oriented Layered Graphene Oxide Pad Favoring High Loading Capacity and Stability for High-Throughput Chemical Screening, *Advanced Materials Technologies*, 7(2022). (IF 2021: 8.856, Q1)
40. P. Zhu, W. Luo, J. Qian, C. Meng, W. Shan, Z. Xu, **W. Zhang**, X. Liu*, Y. Ling*, GSH/ROS Dual-Responsive Supramolecular Nanoparticles Based on Pillar[6]arene and Betulinic Acid Prodrug for Chemo-Chemodynamic Combination Therapy, *Molecules*, 26(2021). (IF 2020: 4.411, Q1)
41. K. Chen, J. Qu, H. Chen, J. Wang, H. Hua, J. Li, L. Zhou, **W. Zhang***, Z. Li*, Investigating the medicinal potential, material basis and mechanism of *Polygoni Orientalis Fructus* based on multi-technology integrated network pharmacology, *Phytomedicine*, 91(2021) 153685. (IF 2020: 5.340, Q1)
42. T. Yin, J. Lu, Q. Liu, G. Zhu, **W. Zhang***, Z. Jiang*, Validated Quantitative (1)H NMR Method for Simultaneous Quantification of Indole Alkaloids in *Uncaria rhynchophylla*, *ACS Omega*, 6(2021) 31810-7. (IF 2020: 3.512, Q2)
43. C.R. Wang, H.W. Chen, Y. Li, M.Y. Zhou, V.K. Wong, Z.H. Jiang*, **W. Zhang***, Network Pharmacology Exploration Reveals Anti-Apoptosis as a Common Therapeutic Mechanism for Non-Alcoholic Fatty Liver Disease Treated with Blueberry Leaf Polyphenols, *Nutrients*, 13(2021). (IF 2020: 5.717, Q1)
44. T. Yin, H. Zhang, **W. Zhang***, Z. Jiang*, Chemistry and biological activities of hetisine-type diterpenoid alkaloids, *RSC Adv*, 11(2021) 36023-33. (IF 2020: 3.361, Q2)
45. C.Y. Wang, J.G. Lu, D.X. Chen, J.R. Wang, K.S. Che, M. Zhong, **W. Zhang***, Z.H. Jiang*, Comprehensive chemical study on different organs of cultivated and wild *Sarcandra glabra* using ultra-high performance liquid chromatography time-of-flight mass spectrometry (UHPLC-TOF-MS), *Chin J Nat Med*, 19(2021) 391-400. (IF 2020: 3.000, Q1)
46. W. Zhang, C. Peng, X. Shen, Y. Yuan, **W. Zhang**, C. Yang*, M. Yao*, A Bioactive Compound from *Sanguisorba officinalis* L. Inhibits Cell Proliferation and Induces Cell Death in 5-Fluorouracil-Sensitive/Resistant Colorectal Cancer Cells, *Molecules*, 26(2021). (IF 2020: 4.411, Q1)
47. Y. Li, W. Luo, H. Zhang, C. Wang, C. Yu, Z. Jiang*, **W. Zhang***, Antitumor Mechanism of Hydroxycamptothecin via the Metabolic Perturbation of Ribonucleotide and Deoxyribonucleotide in Human Colorectal Carcinoma Cells, *Molecules*, 26(2021). (IF 2020: 4.411, Q1)
48. P. Zhu, J. Qian, Z. Xu, C. Meng, W. Zhu, F. Ran, **W. Zhang***, Y. Zhang*, Y. Ling*, Overview of

- piperlongumine analogues and their therapeutic potential, *Eur J Med Chem*, 220(2021) 113471. (IF 2020: 6.514, Q1)
49. Z. Li*, B. Qu, L. Zhou, H. Chen, J. Wang, **W. Zhang**, C. Chen*, A New Strategy to Investigate the Efficacy Markers Underlying the Medicinal Potentials of *Orthosiphon stamineus* Benth, *Front Pharmacol*, 12(2021) 748684. (IF 2020: 6.514, Q1)
50. Y. Li, H.X. Zhang, W.D. Luo, C.W.K. Lam, C.Y. Wang, L.P. Bai, V.K.W. Wong, **W. Zhang***, Z.H. Jiang*, Profiling Ribonucleotide and Deoxyribonucleotide Pools Perturbed by Remdesivir in Human Bronchial Epithelial Cells, *Front Pharmacol*, 12(2021) 647280. (IF 2020: 5.810, Q1)
51. X. Wu, **W. Zhang**, N. Wu, S.S. Pang, Y. Ding, G. He*, Structural Evolution upon Delithiation/Lithiation in Prelithiated Foil Anodes: A Case Study of AgLi Alloys with High Li Utilization and Marginal Volume Variation, *Advanced Energy Materials*, 11(2021). (IF 2020: 29.368, Q1)
52. J.-G. Lu, C.-Y. Wang, D.-X. Chen, J.-R. Wang, K.-S. Che, M. Zhong, **W. Zhang***, Z.-H. Jiang*, Ultra-high-performance liquid chromatograph with triple-quadrupole mass spectrometer quantitation of twelve phenolic components in different parts of *Sarcandra glabra*, *World Journal of Traditional Chinese Medicine*, 7(2021). (IF 2022: 4.4, Q3)
53. S. Yan, Y. Yue, L. Zeng, L. Su, M. Hao, **W. Zhang***, X. Wang*, Preparation of Graphene Oxide-Embedded Hydrogel as a Novel Sensor Platform for Antioxidant Activity Evaluation of *Scutellaria baicalensis*, *Front Chem*, 9(2021) 675346. (IF 2020: 5.221, Q1)
54. F.L. Chen, D.L. Liu, J. Fu, J. Yang, L.P. Bai, **W. Zhang**, Z.H. Jiang*, G.Y. Zhu*, (\pm)-Atrachinenins A—C, Three Pairs of Caged C27 Meroterpenoids from the Rhizomes of *Atractylodes chinensis*, *Chinese Journal of Chemistry*, 40(2021) 460-6. (IF 2020: 6.000, Q1)
55. Y. Li, J. Guo, H. Zhang, C.W.K. Lam, W. Luo, H. Zhou*, **W. Zhang***, Protective Effect of Thymidine on DNA Damage Induced by Hydrogen Peroxide in Human Hepatocellular Cancer Cells, *ACS Omega*, 5(2020) 21796-804. (IF 2020: 2.870, Q2)
56. Y. Li, Y. Chen, H. Zhang, C.W.K. Lam, Z. Li, C. Wang, Y. Zhao*, **W. Zhang***, Z. Jiang*, Immobilization of cell membrane onto a glucose-Zn-based porous coordination polymer and its application to rapid screening of potentially active compounds from *Vaccinium corymbosum* L. leaves, *Mikrochim Acta*, 187(2020) 630. (IF 2020: 6.232, Q1)
57. H.X. Zhang, Y. Li, Z. Li, C.W.K. Lam, H.W. Chen, W.D. Luo, C.Y. Wang, Z.H. Jiang, Z.Y. Du, **W. Zhang***, Rapid and sensitive determination of four bisphosphonates in rat plasma after MTBSTFA

- derivatization using liquid chromatography-mass spectrometry, *J Pharm Biomed Anal*, 190(2020) 113579. (IF 2019: 3.209, Q2)
58. P. Zhu, J. Qian, Z. Xu, C. Meng, J. Liu, W. Shan, W. Zhu, Y. Wang, Y. Yang, **W. Zhang**, Y. Zhang*, Y. Ling*, Piperlonguminine and Piperine Analogues as TrxR Inhibitors that Promote ROS and Autophagy and Regulate p38 and Akt/mTOR Signaling, *J Nat Prod*, 83(2020) 3041-9. (IF 2019: 3.779, Q1)
59. R. Ma, Y.L. Chen, Y. Shen, H. Wang, **W. Zhang***, S.S. Pang, J. Huang*, Y. Han, Y. Zhao*, Anodic SnO(2) porous nanostructures with rich grain boundaries for efficient CO(2) electroreduction to formate, *RSC Adv*, 10(2020) 22828-35. (IF 2019: 3.119 Q2)
60. C.W. Chen, N. Tsao, **W. Zhang**, Z.F. Chang*, NME3 Regulates Mitochondria to Reduce ROS-Mediated Genome Instability, *Int J Mol Sci*, 21(2020). (IF 2019: 4.556 Q2)
61. D. Li, B. Lv, D. Wang, D. Xu, S. Qin, Y. Zhang, J. Chen, **W. Zhang**, Z. Zhang*, F. Xu*, Network Pharmacology and Bioactive Equivalence Assessment Integrated Strategy Driven Q-markers Discovery for Da-Cheng-Qi Decoction to Attenuate Intestinal Obstruction, *Phytomedicine*, 72(2020) 153236. (IF 2019: 4.268 Q2)
62. C. Peng, W. Zhang, X. Shen, Y. Yuan, Y. Li, **W. Zhang***, M. Yao*, Post-transcriptional regulation activity through alternative splicing involved in the effects of Aloe vera on the Wnt/beta-catenin and Notch pathways in colorectal cancer cells, *J Pharmacol Sci*, 143(2020) 148-55. (IF 2019: 2.835 Q2)
63. Z. Li, H. Chen, H. Zhang, Y. Li, C. Wang, L. Bai, **W. Zhang***, Z. Jiang*, Similarity and Specificity of Traditional Chinese Medicine Formulas for Management of Coronavirus Disease 2019 and Rheumatoid Arthritis, *ACS Omega*, 5(2020) 30519-30. (IF 2019: 2.870 Q2)
64. Z. Li, H. Zhang, Y. Li, H. Chen, C. Wang, V.K.W. Wong, Z. Jiang, **W. Zhang***, Phytotherapy using blueberry leaf polyphenols to alleviate non-alcoholic fatty liver disease through improving mitochondrial function and oxidative defense, *Phytomedicine*, 69(2020) 153209. (IF 2019: 4.268 Q1)
65. Y. Su, T. Wang, Y. Su, M. Li, J. Zhou*, **W. Zhang**, W. Wang*, A neutrophil membrane-functionalized black phosphorus riding inflammatory signal for positive feedback and multimode cancer therapy, *Materials Horizons*, 7(2020) 574-85. (IF 2019: 12.319 Q1)
66. X. Wu, **W. Zhang***, N. Wu, S.S. Pang, G. He*, Y. Ding, Exploration of Nanoporous CuBi Binary Alloy for Potassium Storage, *Advanced Functional Materials*, 30(2020). (IF 2019: 16.836 Q1)
67. T. Zhao, J. Gu, H. Zhang, Z. Wang, W. Zhang, Y. Zhao, Y. Zheng, **W. Zhang**, H. Zhou, G. Zhang, Q. Sun, E. Zhou*, Z. Liu*, Y. Xu*, Sodium Butyrate-Modulated Mitochondrial Function in High-Insulin

- Induced HepG2 Cell Dysfunction, *Oxid Med Cell Longev*, 2020(2020) 1904609. **(IF 2019: 5.076 Q1)**
68. Z. Cao, T. Zhou, X. Ma, Y. Shen, Q. Deng, **W. Zhang***, Y. Zhao*, Hydrogen Production from Urea Sewage on NiFe-Based Porous Electrocatalysts, *ACS Sustainable Chemistry & Engineering*, (2020). **(IF 2019: 7.632 Q1)**
69. C. Peng, W. Zhang, C. Dai, W. Li, X. Shen, Y. Yuan, L. Yan, **W. Zhang***, M. Yao*, Study of the aqueous extract of Aloe vera and its two active components on the Wnt/beta-catenin and Notch signaling pathways in colorectal cancer cells, *J Ethnopharmacol*, 243(2019) 112092. **(IF 2018: 3.414 Q1)**
70. Z. Li, H.X. Zhang, Y. Li, C.W.K. Lam, C.Y. Wang, W.J. Zhang, V.K.W. Wong, S.S. Pang, M.C. Yao*, **W. Zhang***, Method for Quantification of Ribonucleotides and Deoxyribonucleotides in Human Cells Using (Trimethylsilyl)diazomethane Derivatization Followed by Liquid Chromatography-Tandem Mass Spectrometry, *Anal Chem*, 91(2019) 1019-26. **(IF 2018: 6.350 Q1)**
71. V.K.W. Wong, C. Qiu, S.W. Xu, B.Y.K. Law, W. Zeng, H. Wang, F. Michelangeli, I. Dias, Y.Q. Qu, T.W. Chan, Y. Han, N. Zhang, S.W.F. Mok, X. Chen, L. Yu, H. Pan, S. Hamdoun, T. Efferth, W.J. Yu, **W. Zhang***, Z. Li, Y. Xie, R. Luo, Q. Jiang, L. Liu*, Ca(2+) signalling plays a role in celastrol-mediated suppression of synovial fibroblasts of rheumatoid arthritis patients and experimental arthritis in rats, *Br J Pharmacol*, 176(2019) 2922-44. **(IF 2018: 6.583 Q1)**
72. Z. Li, Y. Li, H.X. Zhang, J.R. Guo, C.W.K. Lam, C.Y. Wang, **W. Zhang***, Mitochondria-Mediated Pathogenesis and Therapeutics for Non-Alcoholic Fatty Liver Disease, *Mol Nutr Food Res*, 63(2019) e1900043. **(IF 2018: 5.309 Q1)**
73. X. Wu, Y. Chen, Z. Xing, C.W.K. Lam, S.S. Pang, **W. Zhang***, Z. Ju*, Advanced Carbon-Based Anodes for Potassium-Ion Batteries, *Advanced Energy Materials*, 9(2019). **(IF 2018: 25.245 Q1)**
74. X. Wu, C.W.K. Lam, N. Wu, S.-S. Pang, Z. Xing, **W. Zhang***, Z. Ju*, Multiple templates fabrication of hierarchical porous carbon for enhanced rate capability in potassium-ion batteries, *Materials Today Energy*, 11(2019) 182-91. **(IF 2018: 9.3 Q1)**
75. Z. Cao, T. Zhou, Y.L. Chen, J. Liu, D. Wang, **W. Zhang***, S.S. Pang, Y. Zhao*, A Trimodal Porous Cobalt-Based Electrocatalyst for Enhanced Oxygen Evolution, *Advanced Materials Interfaces*, 6(2019). **(IF 2018: 4.713 Q1)**
76. L. Zheng, C. Qian-Qian, C.W.K. Lam, G. Jian-Ru, W.-J. Zhang, W. Cai-Yun, V.K.W. Wong, Y. Mei-Cun*, **W. Zhang***, Investigation into perturbed nucleoside metabolism and cell cycle for elucidating the cytotoxicity effect of resveratrol on human lung adenocarcinoma epithelial cells, *Chinese journal of*

- natural medicines, 17(2019) 608-15. **(IF 2018: 2.014 Q1)**
77. J. Guo, Y. Li, C.W.K. Lam, C. Wang, M. Yao*, **W. Zhang***, ZH-1 enhances the anticancer activity of gemcitabine via deoxyribonucleotide synthesis and apoptotic pathway against A549 cells, *Food Chem Toxicol*, 119(2018) 222-30. **(IF 2017: 3.775 Q1)**
 78. Q. Zhang, J. He, R. Guo, Y. Zhao, W. Zhang*, **W. Zhang**, S.S. Pang, Y. Ding*, Assembling Highly Coordinated Pt Sites on Nanoporous Gold for Efficient Oxygen Electroreduction, *ACS Appl Mater Interfaces*, 10(2018) 39705-12. **(IF 2017: 8.097 Q1)**
 79. W. Zhang, J. He, S. Liu, W. Niu, P. Liu, Y. Zhao, F. Pang, W. Xi, M. Chen, **W. Zhang**, S.S. Pang, Y. Ding*, Atomic origins of high electrochemical CO(2) reduction efficiency on nanoporous gold, *Nanoscale*, 10(2018) 8372-6. **(IF 2017: 7.233 Q1)**
 80. M.P. Liu, W. Li, C. Dai, C.W. Kei Lam, Z. Li, J.F. Chen, Z.G. Chen, **W. Zhang***, M.C. Yao*, Aqueous extract of *Sanguisorba officinalis* blocks the Wnt/beta-catenin signaling pathway in colorectal cancer cells, *RSC Adv*, 8(2018) 10197-206. **(IF 2017: 2.936 Q1)**
 81. X. Ling, Y. Xiang, F. Chen, Q. Tang, **W. Zhang***, X. Tan*, Intestinal absorption differences of major bioactive compounds of Gegenqinlian Decoction between normal and bacterial diarrheal mini-pigs in vitro and in situ, *J Chromatogr B Analyt Technol Biomed Life Sci*, 1083(2018) 93-101. **(IF 2017: 2.441 Q2)**
 82. Q.Q. Zhang, W.Q. Huang, Y.Q. Gao, Z.D. Han, **W. Zhang**, Z.J. Zhang*, F.G. Xu*, Metabolomics Reveals the Efficacy of Caspase Inhibition for Saikosaponin D-Induced Hepatotoxicity, *Front Pharmacol*, 9(2018) 732. **(IF 2017: 3.831 Q1)**
 83. X.M. Dai, D.N. Cui, J. Wang, **W. Zhang**, Z.J. Zhang*, F.G. Xu*, Systems Pharmacology Based Strategy for Q-Markers Discovery of HuangQin Decoction to Attenuate Intestinal Damage, *Front Pharmacol*, 9(2018) 236. **(IF 2017: 3.831 Q1)**
 84. C. Dai, M.-p. Liu, W.-j. Zhang, C.W.K. Lam, J.-r. Guo, W. Li, J. Wu, J.-f. Chen, Z.-g. Chen, **W. Zhang***, A material-basis study of Aloe vera on the wnt/ β -catenin signaling pathway using a knockin/knockout method with high-speed countercurrent chromatography, *RSC advances*, 7(2017) 38819-29. **(IF 2016: 2.936 Q1)**
 85. J. Chen, S. Li, M. Liu, C.W.K. Lam, Z. Li, X. Xu, Z. Chen, **W. Zhang***, M. Yao*, Bioconcentration and metabolism of emodin in zebrafish eleutheroembryos, *Frontiers in Pharmacology*, 8(2017) 453. **(IF 2016: 4.4 Q1)**

86. J.-R. Guo, Q.-Q. Chen, C.W.K. Lam, C.-Y. Wang, V.K.W. Wong, Z.-F. Chang, **W. Zhang***, Profiling ribonucleotide and deoxyribonucleotide pools perturbed by gemcitabine in human non-small cell lung cancer cells, *Scientific Reports*, 6(2016) 37250. (IF 2015: 5.228 Q2)
87. N. Tsao, M.-H. Lee, **W. Zhang**, Y.-C. Cheng, Z.-F. Chang*, The contribution of CMP kinase to the efficiency of DNA repair, *Cell Cycle*, 14(2015) 354-63. (IF 2015: 3.952 Q2)
88. C.M. Sánchez, J.M.P. Martín, J.-S. Jin, A. Davalos, **W. Zhang**, G. de la Pena, J. Martinez-Botas, S. Rodriguez-Acebes, Y. Suarez, M.J. Hazen*, Disruption of the mevalonate pathway induces dNTP depletion and DNA damage, *Biochimica et Biophysica Acta (BBA)-Molecular and Cell Biology of Lipids*, 1851(2015) 1240-53. (IF 2015:4.779, Q2)
89. J. Guo, Q. Chen, C. Wang, H. Qiu, B. Liu, Z.-H. Jiang, **W. Zhang***, Comparison of two exploratory data analysis methods for classification of *Phyllanthus* chemical fingerprint: unsupervised vs. supervised pattern recognition technologies, *Analytical and bioanalytical chemistry*, 407(2015) 1389-401. (IF 2015:3.125, Q1)
90. J. Guo, Q. Chen, C.W.K. Lam, C. Wang, V.K.W. Wong, F. Xu, Z. Jiang, **W. Zhang***, Application of artificial neural network to investigate the effects of 5-fluorouracil on ribonucleotides and deoxyribonucleotides in HepG2 cells, *Scientific Reports*, 5(2015) 16861. (IF 2015:5.228, Q2)
91. H. Fan[#], **W. Zhang[#]**, J. Wang, M. Lv, P. Zhang, Z. Zhang, F. Xu, HPLC–MS/MS method for the determination of four lignans from *Phyllanthus urinaria* L. in rat plasma and its application, *Bioanalysis*, 7(2015) 701-12. (IF 2015:2.813, Q4)
92. **W. Zhang***, J. Guo, B. Xiang, H. Fan, F. Xu, Improving the detection sensitivity of chromatography by stochastic resonance, *Analyst*, 139(2014) 2099-107. (IF 2014:4.107, Q2)
93. **W. Zhang***, J. Guo, H. Qiu, C. Wang, Q.Q. Chen, B. Liu, Quantitation of kudinoside A, kudinoside D and kudinoside F in human plasma using a high performance liquid chromatography–electrospray ionization tandem mass spectrometric method, *Journal of Chromatography B*, 972(2014) 1-5. (IF 2014:2.729, Q2)
94. **W. Zhang**, S. Tan, E. Paintsil, G.E. Dutschman, E.A. Gullen, E. Chu, Y.-C. Cheng*, Analysis of deoxyribonucleotide pools in human cancer cell lines using a liquid chromatography coupled with tandem mass spectrometry technique, *Biochemical pharmacology*, 82(2011) 411-7. (IF 2011:4.576, Q1)
95. **W. Zhang**, M.W. Saif, G.E. Dutschman, X. Li, W. Lam, S. Bussom, Z. Jiang, M. Ye, E. Chu, Y.-C. Cheng, Identification of chemicals and their metabolites from PHY906, a Chinese medicine formulation,

in the plasma of a patient treated with irinotecan and PHY906 using liquid chromatography/tandem mass spectrometry (LC/MS/MS), *Journal of Chromatography A*, 1217 (2010) 5785-5793. (IF 2010: 3.858, Q2)

96. W. Lam, S. Bussom, F. Guan, Z. Jiang, **W. Zhang**, E.A. Gullen, S.-H. Liu, Y.-C. Cheng, The Four-Herb Chinese Medicine PHY906 Reduces Chemotherapy-Induced Gastrointestinal Toxicity, *Science Translational Medicine*, 2 (2010). (IF 2010: 14.41, Q1)

Book Chapter Publication

Wing Lam , Scott Bussom , Zaoli Jiang , **Wei Zhang** , Fulan Guan , Shwu-Huey Liu , and Yung-Chi Cheng , “Inflammation, Oxidative Stress and Cancer: Dietary Approaches for Cancer Prevention” CRC press, INC.,(ISBN 9781466503700), Chapter Number 29, ”PHY906,a cancer adjuvant therapy,differentially affects inflammation of different tissues”

Patents

1. Composition for preventing and treating non-alcoholic fatty liver disease , Australian Innovation Patent No: 2014100434 (first inventor).
2. Use of karanjin in anti-cancer treatment, Australian Innovation Patent No: 2014101242 (first inventor).
3. Method for using artificial neural network to predict effects of nucleoside analogues , Australian Innovation Patent No: 2015100975 (first inventor).
4. Method of treating or preventing liver injury induced by acetaminophen , Australian Innovation Patent No: 2015101749 (first inventor).
5. Synergistic combination of a Phyllanthus Amarus extract and 5-Fluorouracil for treatment of subject with cancer, Australian Innovation Patent No: 2016101447 (first inventor).
6. Treatment of non-small cell lung cancer and pharmaceutical composition for treatment, Australian Innovation Patent No: 2018100431 (first inventor).
7. A composition of aloe vera extract and its application 一种含芦荟提取物的组合物及其应用, Chinese Patent No. ZL202010693083.2 (first inventor).
8. A method for producing composite material and its application 一种复合材料及其制备方法和应用 Chinese Patent Application Publication No. 116763759 A (first inventor).
9. A method for producing corn silk glucan and its application 一种玉米须葡聚糖及其制备方法和应用 Chinese Patent Application Publication No. 116535539 A (first inventor).
10. A method for producing nanoporous bismuth and its application 一种纳米多孔铋及其制

备方法及其应用 Chinese Patent Application Publication No. 114226709 A (first inventor).

11. A method for producing porous carbon and its application in ligand fishing 一种多孔碳载体及其制备方法和在配体垂钓中的应用 Chinese Patent Application Publication No. 114236023 A (first inventor).

Research Projects

1. 2024-2027 The development and application of an innovative platform for the analysis of mitochondrial mRNA modifications based on the magnetic carbon-based nanomaterials and chemical labeling, Macao Science and Technology Development Fund (project number 0054/2024/RIA1), MOP 1,733,600.00, PI
2. 2023-2026 Development of Next-Generation Anti-Aging Products Based on Synergistic Enhancement Techniques with Edible TCMs, FDCT Key R & D research project (project number 0001/2023/AKP, PI: Professor JIANG Zhi-Hong), MOP 11,916,000.00, Co-PI. (PI of the third subproject on “Development of NMN delivery system”)
3. 2022-2024 Research on Quality Evaluation and Product Development of Cultivated Cordyceps Sinensis, FDCT-GDST Joint Fund (project number 0040/2021/AGJ), MOP 865,000, PI.
4. 2020-2023 Study on multi-dimensional quality control of six Chinese herbal medicines by combining artificial intelligence and multi-omics technologies, FDCT Key R & D research project (project number 0023/2019/AKP, PI: Professor JIANG Zhi-Hong), MOP 8,000,000.00, Co-PI. (PI of the third subproject on “Integrated multi-omics technology and quality marker theory for quality control of four Chinese herbal medicines”)
5. 2019-2022 Synergistic antitumor activity of 5-fluorouracil in colorectal cancer based on the targeted-regulation of nucleotide metabolism, Macao Science and Technology Development Fund (project number 0077/2019/A2), MOP 1,434,400.00, PI
6. 2018-2021 Integrative patterns of efficient components recognition of Aloe based on Wnt/ β -Catenin Signaling Pathway, Macao Science and Technology Development Fund (project number 0052/2018/A2), MOP 1,112,100.00, PI
7. 2018-2021 Reduction of CO₂ into Energy Products through Electro- and Photo-Catalysts Using Nanoporous Functional Materials, FDCT-MOST Joint Fund (FDCT project number 002/2017/ AFJ) MOP 1,772,100, PI

8. 2016-2018 Using nucleotide metabolomics to investigate the impacts of tonic Chinese Herbs on DNA damage and Repair, Macao Science and Technology Development Fund (project number 006/2015/A1), MOP 2,820,000, PI
9. 2013-2015 The Profiling of Bioactive Compounds of Phyllanthus urinaria and Mechanism of Toxicity Reducing and Efficacy enhancing in Combination with Nucleoside Analogues, Macao Science and Technology Development Fund (project number 091/2012/A3) MOP 1,963,000, PI
10. 2013-2015 Metabolism and pharmacokinetics of Phyllanthus urinaria in the mouse, open project of Guangxi Key Laboratory of Traditional Chinese Medicine Quality Standards (project number Guizhongzhongkai201301) , PI
11. 2012-2014 Metabolomic study of Huang Qin decoction to decrease chemotherapy toxicities, open project of the State Key Laboratory of Natural Medicines (project number SKLNMKF201220), RMB 40,000, PI
12. 2013-2013 In-depth study on the metabolism process of flavonoids in Huangqin decoction, Macao Foundation (#0272), MOP 98,000, Principal Investigator, PI
13. 2014-2016 Huangqin Decoction Attenuates CPT-11-Induced Gastrointestinal Toxicity by Regulating Brain-gut axis of tryptophan metabolism National Natural Science Foundation of China(project number 81307949) RMB 230,000,Co-I
14. 2019-2023 Living single-cell analyzer based on light beam control and manipulation, Special Fund for Research on National Major Research Instrument (project number 61827819), RMB 7,769,600,Co-I

Membership and community services:

1. Member of the Macau Laboratory Technologist Association (MLTA, Macao)
2. Member of the Association for Promotion of Science & Technology of Macau
3. Executive Council Member of the Board of Specialty Committee of Immunology of Traditional Chinese Medicine of the World Federation of Chinese Medicine Societies

Academic Awards:

1. Bank of China (BOC, Macau Branch) Excellent Research Award 2014 中銀(澳門)學術研究優秀獎 2014

2. Zhongzhu Awards for Life Science Recognizing First Prize in Research 中珠醫療生命科學科研一等獎 2016
3. Zhongzhu Awards for Life Science Recognizing second Prize in Research 中珠醫療生命科學科研二等獎 2017
4. Zhongzhu Awards for Life Science Recognizing First Prize in Research 中珠醫療生命科學科研一等獎 2018
5. Bank of China (BOC, Macau Branch) Excellent Research Award 2023 中銀(澳門)學術研究優秀獎 2023