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Miniaturized metabolomics methods for enabling the study of biomass-restricted samples

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Curriculum vitae

Bingshu He was born on October 3rd, 1993, in Chifeng, China. After graduating from Ningcheng High School in Inner Mongolia in 2011, she was admitted to the Biology program at Minzu University of China in Beijing. In 2016, she began her master's studies in the group of Prof. Dr. Zeper Abliz under the supervision of Dr. Zhonghua Wang. During these three years, she focused on diabetic nephropathy metabolomics and drug metabolomics in animal models using liquid chromatography–mass spectrometry and air-flow-assisted desorption electrospray ionization mass spectrometry imaging. This research led to her first scientific publication in 2018, titled “A rapid, sensitive, and selective liquid chromatography–mass spectrometry method for simultaneous quantification of astragaloside IV and cycloastragenol in mouse plasma and its application to a pharmacokinetic study”. In 2019, she obtained her master's degree and was awarded the Outstanding Graduate Award of Beijing.

In September 2019, she began her PhD project under the supervision of Prof. Dr. Thomas Hankemeier, Dr. Rawi Ramautar, and Dr. Amy Harms at Leiden University. Between 2019 and 2023, she dedicated her research to developing micro-flow LC-MS and CE-MS methods for metabolomics studies in biomass-restricted samples.

List of publications

1. He, B.; Zhang, W.; Guled, F.; Harms, A.; Ramautar, R.; Hankemeier, T. Analytical Techniques for Biomass-Restricted Metabolomics: An Overview of the State-of-the-Art. *Microchemical Journal* 2021, 171, 106794.
2. He, B.; Di, X.; Guled, F.; Harder, A. V. E.; van den Maagdenberg, A. M. J. M.; Terwindt, G. M.; Krekels, E. H. J.; Kohler, I.; Harms, A.; Ramautar, R.; Hankemeier, T. Quantification of Endocannabinoids in Human Cerebrospinal Fluid Using a Novel Micro-Flow Liquid Chromatography-Mass Spectrometry Method. *Analytica Chimica Acta* 2022, 1210, 339888.
3. He, B.; Ramautar, R.; Beekman, M.; Slagboom, P. E.; Harms, A.; Hankemeier, T. A Micro-Flow Liquid Chromatography–Mass Spectrometry Method for the Quantification of Oxylipins in Volume-Limited Human Plasma. *ELECTROPHORESIS* 2024.
4. van Mever, M.; He, B.; van Veen, M.; Slaats, J.; Buijs, M. M.; Wieringa, J. E.; Hankemeier, T.; de Winter, P.; Ramautar, R. Capillary Electrophoresis–Mass Spectrometry for Creatinine Analysis in Residual Clinical Plasma Samples and Comparison with Gold Standard Assay. *ELECTROPHORESIS* 2024, 45 (15–16), 1316–1324.

Not part of this thesis

1. He, B.; Wang, Z.; Chen, L.; Zhou, Z.; Abliz, Z. A Rapid, Sensitive, and Selective Liquid Chromatography–Mass Spectrometry Method for Simultaneous Quantification of Astragaloside IV and Cycloastragenol in Mouse Plasma and Its Application to a Pharmacokinetic Study. *International Journal of Mass Spectrometry* 2018, 434, 130–135.
2. Wang, Z.; He, B.; Liu, Y.; Huo, M.; Fu, W.; Yang, C.; Wei, J.; Abliz, Z. In Situ Metabolomics in Nephrotoxicity of Aristolochic Acids Based on Air Flow-Assisted Desorption Electrospray Ionization Mass Spectrometry Imaging. *Acta Pharmaceutica Sinica B* 2020, 10 (6), 1083–1093.
3. Wang, Z.; Fu, W.; Huo, M.; He, B.; Liu, Y.; Tian, L.; Li, W.; Zhou, Z.; Wang, B.; Xia, J.; Chen, Y.; Wei, J.; Abliz, Z. Spatial-Resolved Metabolomics Reveals Tissue-Specific Metabolic Reprogramming in Diabetic Nephropathy by Using Mass Spectrometry Imaging. *Acta Pharmaceutica Sinica B* 2021, 11 (11), 3665–3677.

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