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Exploration of the endocannabinoid system using metabolomics

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Curriculum vitae

Xinyu Di was born on Nov 14th, 1992 in the town of Changjiang, Rugao, China. After graduating from Rugao Senior High School in 2010, he got admitted to the major of Pharmacy at China Pharmaceutical University (CPU) in Nanjing. In 2014, he obtained his bachelor's degree and continued in the same university his master’s study in pharmacokinetics. During his master's study, he focused on preclinical pharmacokinetic studies of several small molecules. In October 2017, he started his PhD project under the supervision of Prof. Dr. Thomas Hankemeier, Dr. Isabelle Kohler and Dr. Elke H.J. Krekels at Leiden Academic Centre for Drug Research (LACDR). Between 2017 and 2022, he developed metabolomics platforms for the endocannabinoid system (ECS). With these platforms, he looked into the role of ECS in exercise and cardiometabolic health, explored the role of several enzymes in the ECS and evaluated drugs targeting these enzymes. Since February 2022, he has been working as a postdoc in the group of molecular physiology, led by Prof. Dr. Mario van der Stelt. During his postdoc, supported by the Metabolomics and Analytics Centre, he has been using metabolomics-based tools to look into the pathology of multiple sclerosis.

List of publications

Part of this thesis:

1. **Di X**, Driever WPF, van der Plas C, Harms A, Krekels EHJ, van der Stelt M, Isabelle Kohler, Hankemeier T. A platform for the analysis of metabolites in endocannabinoids - related pathways.
In preparation

2. He B*, **Di X***, Guled F, et al. Quantification of endocannabinoids in human cerebrospinal fluid using a novel micro-flow liquid chromatography-mass spectrometry method. Anal Chim Acta. 2022;1210.

3. **Di X***, Martinez-Tellez B*, Krekels EHJ, Jurado-Fasoli L, Osuna-Prieto FJ, Sanchez-Delgado G, Garcia-Lario JV, Hankemeier T, Rensen PCN, Ruiz JR[$], Kohler I[$]. Plasma levels of endocannabinoids and their analogues as potential markers of cardiometabolic risk in young adults.
Submitted

4. Jurado-Fasoli L*, **Di X***, Kohler I*, et al. Omega-6 and omega-3 oxylipins as potential markers of cardiometabolic risk in young adults. Obesity (Silver Spring). 2022;30(1):50-61.

5. Jurado-Fasoli L*, **Di X***, Sanchez-Delgado G, et al. Acute and long-term exercise differently modulate plasma levels of oxylipins, endocannabinoids, and their analogues in young sedentary adults: A sub-study and secondary analyses from the ACTIBATE randomized controlled-trial. EBioMedicine. 2022;85:104313.

*[$] Authors contributed equally

Not Part of this thesis:

1. van Esbroeck ACM, Kantae V, **Di X**, et al. Identification of α,β-hydrolase domain containing protein 6 as a diacylglycerol lipase in Neuro-2a cells. Front Mol Neurosci. 2019;12(November):286.

2. Osuna-Prieto FJ, Rubio-Lopez J, **Di X**, et al. Plasma Levels of Bile Acids Are Related to Cardiometabolic Risk Factors in Young Adults. J Clin Endocrinol Metab. 2022;107(3):715-723.

3. van Esbroeck ACM, Varga Z v., **Di X**, et al. Activity-based protein profiling of the human failing ischemic heart reveals alterations in hydrolase activities involving the endocannabinoid system. Pharmacol Res. 2020;151.

4. Ortiz-Alvarez L, Xu H, **Di X**, et al. Plasma Levels of Endocannabinoids and Their Analogues Are Related to Specific Fecal Bacterial Genera in Young Adults: Role in Gut Barrier Integrity. Nutrients. 2022;14(10).

5. Mock ED, Mustafa M, Gunduz-Cinar O, Cinar R, Petrie GN, Kantae V, **Di X**, et al. Discovery of a NAPE-PLD inhibitor that modulates emotional behavior in mice. Nat Chem Biol. 2020;16(6):667-675.

6. Zhou J, Mock ED, Martella A, Kantae V, **Di X**, et al. Structure-Activity Relationship Studies of α-Ketoamides as Inhibitors of the Phospholipase A and Acyltransferase Enzyme Family. J Med Chem. 2020;63(17):9340-9359.
7. Osuna-Prieto FJ, Martinez-Tellez B, Ortiz-Alvarez L, **Di X**, et al. Elevated plasma succinate levels are linked to higher cardiovascular disease risk factors in young adults. Cardiovasc Diabetol. 2021;20(1).
8. Zhou J, Mock ED, Martella A, Kantae V, **Di X**, et al. Activity-Based Protein Profiling Identifies α-Ketoamides as Inhibitors for Phospholipase A2 Group XVI. ACS Chem Biol. 2019;14(2):164-169.
9. Jurado-Fasoli L, Yang W, Kohler I, Dote-Montero M, Osuna-Prieto FJ, **Di X**, et al. Effect of Different Exercise Training Modalities on Fasting Levels of Oxylipins and Endocannabinoids in Middle-Aged Sedentary Adults: A Randomized Controlled Trial. Int J Sport Nutr Exerc Metab. 2022;32(4):275-284.
10. Vázquez-Lorente H, Jurado-Fasoli L, Kohler I, **Di X**, et al. Linoleic acid-derived oxylipins and isoprostanes plasma levels are influenced by 1,25-Dihydroxyvitamin D levels in middle-aged sedentary adults: The FIT-AGEING study. Exp Gerontol. 2022;169.
11. Xu H, Jurado-Fasoli L, Ortiz-Alvarez L, Kohler I, **Di X**, et al. Plasma Levels of Omega-3 and Omega-6 Derived Oxylipins Are Associated with Fecal Microbiota Composition in Young Adults. Nutrients. 2022;14(23):4991.

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