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Compartmentalized cAMP Signaling in COPD

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Don't cry because it is over, smile because it happened.

When I was 5 years old, a friend of my dad asked me what my dream was for the future. I answered seriously that I would like to help my mom in the padlock factory. Honestly, I am not sure if I really understood the meaning of “dream” at that moment, but that was my first dream, even though it did not come true. Then later on, I graduated from primary school, middle school, high school and finally entered Central China Normal University, which is one of the best universities for cultivating teachers. I believe if I did not come to the Netherlands, I would become a biology teacher in a high school since that was another dream I had when I was young. Although I am very fond of investigating the mechanisms behind a phenomenon, doing a PhD was never on my dream list. In February 2013, after finishing the experiments for my master research, I came to the Department of Molecular Pharmacology to do a master internship. After one year, I decided to join the collaborative PhD project between University of Groningen and University of Göttingen (later on moving to University of Hamburg), under the co-supervision of Prof. dr. Martina Schmidt and Prof. dr. Viacheslav O. Nikolaev. I cannot tell you more how amazing my PhD was because it was mixed 4 years with excitement, loneliness, patience, discussion, tears, happiness, relief, stress, pride.... But still I am very glad and proud that I did this PhD. Now it is time to give my special thanks to all of you, who supported me during my PhD.

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University of Göttingen

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University of Hamburg

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DCprime

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University of Groningen

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Haoxiao Zuo 左浩晓

Groningen, 2019

Curriculum Vitae

The author of this thesis was born in Laixi, Shandong Province, China, on January 19, 1989. After graduating from Laixi No.1 Senior High School, she started her Bachelor in Central China Normal University (CCNU), Wuhan, Hubei Province, China, in 2007. In 2011, she received her Bachelor degree in Biotechnology. Due to her excellent performance (research, internship, social activities) during her bachelor study, she was recommended for Master study in CCNU without taking the entrance examination. Under the supervision of Prof. MD. Xu Yang, she mainly focused on investigating the potential risk of plasticizer-induced oxidative stress in depression-like behavior using mouse model. After two years, she finished all the required courses and experiments in her projects for her Master. Then in 2013 she went to Department of Molecular Pharmacology, Rijksuniversiteit Groningen, the Netherlands, to do another internship. During her stay in Groningen, she was involved in exploring the role of cAMP compartmentalization in epithelial-to-mesenchymal transition (EMT) during cigarette smoke exposure. After receiving her master degree in 2014, she decided to come back to Groningen for her PhD study. By joining an Ubbo Emmius sandwich project, she did her PhD in the Department of Molecular Pharmacology, Groningen, the Netherlands, under the supervision of Prof. dr. Martina Schmidt and in the Institute of Experimental Cardiovascular Research, Hamburg, Germany, under the supervision of Prof. dr. Viacheslav O. Nikolaev. Her PhD topic focused on understanding the influence of cigarette smoke in cAMP compartmentalization in pulmonary diseases. The results of her PhD study are presented in this thesis.

List of publications

List of Publications

Zuo H, Cattani-Cavaliere I, Musheshe N, Nikolaev VO, Schmidt M. (2019). Phosphodiesterases as therapeutic targets for respiratory diseases. *Pharmacol Ther.* pii: S0163-7258(19)30015-4.

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Haoxiao Zuo, Lennard Ringnalda, Melissa van der Veen, Martina Schmidt. Epithelial-to-mesenchymal transition in human airway epithelial cells: Compartmentalized cyclic AMP signaling? 2018. European Respiratory Society (ERS) Lung Science Conference, Estoril, Portugal. (poster).

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Haoxiao Zuo. Cigarette smoke changes airway cAMP by upregulation of PDE3 and PDE4. 2017. Lund University Respiratory Network meeting, Lund, Sweden. (oral presentation).

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Prizes and Awards

International Trainee Scholarship award. 2017. American Thoracic Society International Congress.

Longfonds travel grant to American Thoracic Society International Congress, Washington, United States. 2017.

Netherlands Respiratory Society (NRS) travel grant to 5th International Meeting on Anchored cAMP Signaling Pathways, Zermatt, Switzerland. 2016.

Longfonds travel grant to American Thoracic Society International Congress, San Francisco, United States. 2016.

