# Sleep and circadian rhythms: the effects of ketamine, caffeine and anthracyclines

Wang, Y.

# Acknowledgement

First of all, I would like to thank my promotor Prof. Joke Meijer and my supervisor Dr. Tom de Boer for their mentorship. I would like to express my sincere appreciations to Joke who offer the position and led me into this field, the opportunity you provided me is the start of this incredible journey. A special thanks goes to Tom for the continuous support throughout my Ph.D. study, and for your patience, motivation, and immense knowledge. With all the help, support and encouragement from you, I am not only learning the knowledge but also learning how to do a better researcher. In addition to my advisors, I would like to thank Stephan for his insightful comments, encouragement, and thought-provoking questions. Your inquiries have pushed me to broaden my research from various perspectives.

My deepest appreciation goes to my paranymphs, Anneke and Rick, for the delightful experiences we shared in the lab, in Berlin, and in Zurich. Anneke, a special thanks to you for providing the lab coffee over these years and for the Dutch translation. My sincere thanks also go to my office-mates, Mayke and Robin, for all the help from both work and life and for all the fun we have had in the last four and half years. To my fellow labmates in the NFS family, I am grateful for your presence. Felix, thank you for the technical support you have provided me. Jos, your Dutch humor has always brought a smile to my face. Nicolette, thank you for the wonderful times we've had and for teaching me new techniques. Esther, Laura, Anouk, Pablo, Floor, and Nate, it has been a pleasure sharing moments with all of you!

I must thank my dear friends, Mingqi and Yang, for cherishing the moments we've shared, facing the challenges together, and providing me with unwavering emotional support. Thank my friends Ningning, Xu, Wenjing and Xiaofei you were always there with a word of encouragement or a listening ear. Throughout these five years, I have had the pleasure of meeting incredible individuals, including Yiyi, Yuanyuan, Jeremy, Di, Chengcheng, Mingqi, Xuefeng, Xiaowu, and many more. Your presence has been a source of joy, and I cherish every moment spent with you.

Lastly, but certainly not least, I would like to express my deepest appreciation to my mom, my aunts, and my entire family for their unconditional love and unwavering support. You knew this would be a long journey, yet you continuously encouraged and stood by me.

# List of publications

1. **Yumeng Wang**, Tom Deboer. Long-Term Effect of a Single Dose of Caffeine on Sleep, the Sleep EEG and Neuronal Activity in the Peduncular Part of the Lateral Hypothalamus under Constant Dark Conditions. Clocks & Sleep 2022, 4(2), 260-276.

2. **Yumeng Wang**, Sabina Y van der Zanden, Suzanne van Leerdam, Mayke M H Tersteeg, Anneke Kastelein, Stephan Michel, Jacques Neefjes, Johanna H Meijer, Tom Deboer. Induction of Fatigue by Specific Anthracycline Cancer Drugs through Disruption of the Circadian Pacemaker. Cancers (Basel) 2022;14(10).

3. **Yumeng Wang**, Marije Melgers, Johanna H Meijer, Tom Deboer. Comparison of sleep deprivation and a low dose of ketamine on sleep and the electroencephalogram of Brown Norway rats. J Sleep Res. 2023 Feb 20:e13863.

4. **Yumeng Wang**, Anouk W. van Beurden, Mayke M.H. Tersteeg, Stephan Michel, Anneke Kastelein, Jacques Neefjes, Jos H.T. Rohling, Johanna H. Meijer, Tom Deboer. Internal circadian misallignment in a mouse model of chemotherapy induced fatigue. (submitted)

5. **Yumeng Wang**, Tom Deboer. Hypnotic effects of melatonin depend on the environmental lighting conditions in the rat. (submitted)

6. Yanhui Li, **Yumeng Wang**, Chengluan Xuan, Yang Li, Lianhua Piao, Jicheng Li, Hua Zhao. Role of the lateral habenula in pain-associated depression. Frontiers in Behavioral Neuroscience. 2017; 11:31.

7. Jingdian Zhang, **Yumeng Wang**, Xiaofeng Liu, Ruben Dagda&Ying Zhang. How AMPK and PKA interplay to regulate mitochondrial function and survival in models of ischemia and diabetes. Oxidative Medicine and Cellular Longevity .2017.

8. Jingdian Zhang, Jiachun Feng, Di Ma, Feng Wang, **Yumeng Wang**, Chunxiao Li, Xu Wang, Xiang Yin, Ming Zhang, Ruben K Dagda, Ying Zhang. Neuroprotective Mitochondrial Remodeling by AKAP121/PKA Protects HT22 Cell from Glutamate-Induced Oxidative Stress. Mol Neurobiol.2019;56(8):5586-5607.

# Curriculum Vitae

Yumeng Wang was born in Heilongjiang, China, on the 21st of March, 1993. In 2011, she started her studies in the School of Life Sciences at the Northeast Agricultural University. During the last year of her bachelor's study, she visited different labs and was inspired by the firing of neurons then she decided to study neuroscience. In 2015, she obtained her bachelor's degree in Science. The same year she began her master's study, she studied Neurophysiology in the Department of Physiology, Norman Bethune Medical College at Jilin University. In 2017, she did an internship at the State Key Laboratory of Medical Neurobiology, Fudan University, which was the first time she learned how to record and analyze electroencephalogram. In the same year, she obtained a China National Scholarship, the highest-ranking scholarship for outstanding students in China. In 2018, she got her master's degree. In October 2018, she started her Ph.D. study in the lab of Neurophysiology under the Department of Cell and Chemical biology at Leiden University Medical Center in the Netherlands under the supervision of Tom de Boer and Joke Meijer. Her Ph.D. projects mainly focus on the effects of pharmacology treatments on sleep and circadian rhythms.