



UNIVERSITÄT ZU LÜBECK

The University of Lübeck stands for exceptional research and teaching. We are a modern foundation university with a focus on several core topics. As a life science university, we offer a range of courses from medicine, health sciences and psychology to mathematics, computer science, natural sciences and technology. Our motto is: "Focus on Life".

The **Institute of Neurobiology** (Director Prof. Dr. Henrik Oster) offers a

PhD Position on estrogen-mediated coupling in the central clock

starting on June 1, 2024 or later. The successful applicant will work in the group of **Dr. Violetta Pilorz** on a DFG-funded project. This unique opportunity will allow the successful candidate to investigate the complex interplay of female sex hormones, in particular estrogen and progesterone, on the neuronal network of the central clock in the mouse hypothalamus, known as the suprachiasmatic nucleus (SCN), and its dynamic response to external stimuli.

This 3-year position, with possibility for extension, offers an excellent opportunity to contribute to cutting-edge research in neurobiology and chronobiology, thereby deepening our understanding of the complex mechanisms governing circadian rhythms and hormone regulation in the mammalian brain. Our recent findings Pilorz et al. (2020) and Schlaeger et al. (2024) shed light on the potential of estrogen to strengthen SCN coupling via astrocytic gap junctions, potentially enhancing its resilience to environmental fluctuations. The counteracting role of progesterone on estrogen functionality prompts us to investigate the differential effects of estrogen and progesterone on SCN coupling. Our primary goal is to elucidate the signalling pathways of estrogen and progesterone that might influence changes in intercellular coupling mediated by neurons and astrocytes. To achieve this, we will take a multifaceted approach, using organotypic brain slices from the PER2::LUC mouse model and working with hypothalamic astrocyte and neuronal cells. We also aim to validate our findings obtained in vitro using in vivo experiments by comparing the effects of estrogen and progesterone on SCN neuronal coupling in ovariectomised females under varying light and dark stimuli.

Requirements

- hold a very good Master's degree in neuroscience, molecular biology, chronobiology, molecular life sciences or similar subject
- High motivation, solid organizational and strong teamwork skills, fluency in English and the willingness to work after office hours and at weekends



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- Experience in laboratory rodent experiments and knowledge of surgical procedures
- Possession of a Felasa certificate is an advantage but not a requirement

Payment will follow salary group E13 TV-L if conditions based on German Public service regulations are satisfied. A final job classification remains reserved.

The University of Lübeck is a modern and cosmopolitan employer. We welcome your application regardless of your age, gender, cultural and social background, religion, worldview, disability or sexual identity. We promote gender equality. In case of equal suitability, qualifications and professional performance, female applicants will be given preference. If you are an applicant with a severe disability, your application will be given preference in case of equal suitability.

Application and relevant materials

- Cover letter of max. 2 pages that specifies your research interests and its relation to the project
- Curriculum vitae highlighting the candidate's academic achievements, research and practical experience
- Contact details of two referees
- Master and bachelor degree certificates and transcripts

should be sent no later than **May 15, 2024** as a **single PDF** to violetta.pilorz@uni-luebeck.de.

For further information please contact Dr. Violetta Pilorz (violetta.pilorz@uni-luebeck.de, phone:+49 4513101 4306, <https://www.neurobio.uni-luebeck.de/neurobio.html>).