

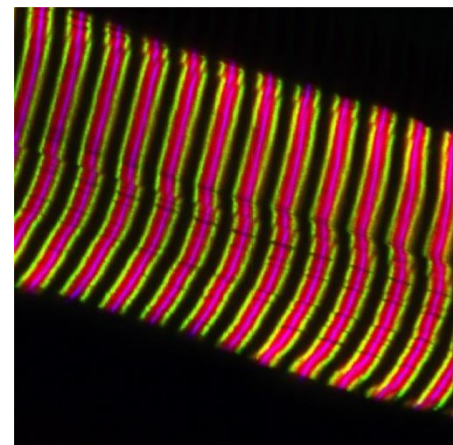
How do muscle clocks regulate metabolic health?

Background

To be prepared for alternating metabolic demands occurring over the 24-hour day, the body preserves information on time in muscle through a circadian-clock mechanism. Interestingly, experimental circadian misalignment modifies muscle clocks and leads to disturbed energy metabolism. What is happening?

The project

You will aim to identify what causes the muscle metabolic disruption when there is a circadian misalignment. The overall hypothesis of your project is that myosin (major energy/ATP consumer in muscle) is the trigger. To test this hypothesis, you will use various mouse models in which the circadian clock has been disrupted. You will then isolate muscle fibres and run a series of experiments including immunohistochemistry, advanced imaging and gliding assays. The studies will be carried out in collaboration with Prof Karyn Esser from the University of Florida.



At the end of this project, you should be able to: (1) handle/process muscle tissue; (2) master state-of-the-art molecular/cell biology techniques; (3) apply unique microscopic techniques; (4) generate and analyze large sets of data; and (5) synthesize the findings by writing a publishable scientific paper. These will help you to become an independent scientist and critical thinker.

The candidate

The project is suitable for a Master thesis in Human Biology, Human Physiology and Molecular Biomedicine. Note that an animal experimental course is NOT needed to participate in this project as mouse muscles have already been harvested and ready to be analyzed.

Place of project and contact information

You will become a member of [the Xlab at the Department of Biomedical Sciences](#) located on the 2nd floor of the Maersk Tower. For more information, please contact Associate Professor Julien Ochala (Julien.ochala@sund.ku.dk).