AARHUS UNIVERSITY

Press release

Please fill in this form and return it to graduateschoolhealth@au.dk in Word format no later than three weeks prior to your defence.

Basic information

Name: Emil Rindom Email: er@biomad.au.dk Phone: 51537362

Department of: Biomedicine

Main supervisor: Assoc. Prof. Frank Vincenzo de Paoli, MD, PhD

Title of dissertation: "Mechanically induced anabolic signaling in skeletal muscle"

Date for defence: 12.12.2019 at (time of day): 13:00 Place: Jeppe Vontillius Aud., Søauditorierne, Bartholins Allé 3, 8000 Aarhus C

Press release (Danish)

Mekanisk aktiveret anabol signalering i skeletmuskulatur

Reguleringen af skeletmusklers størrelse er en kompleks proces bestående af forskelligartede udløsende faktorer og underliggende molekylære signaleringsmekanismer. Blandt kendte udløsende faktorer findes mekanisk belastning af skeletmusklen, der vides at igangsætte muskelvækst – en proces der er fordelagtig for musklens helbred, funktionalitet og den overordnede livskvalitet. Det er dog endnu ikke klart, hvorledes mekanisk belastning af musklen igangsætter dette adaptive respons. En bedre forståelse for reguleringen af muskelvækst vil bidrage til udviklingen af farmaceutiske eller terapeutiske interventioner, der kan genvinde, vedligeholde eller forøge muskelmasse og derved hjælpe i behandlingen af sygdomme karakteriseret med tab af muskelmasse.

Et nyt ph.d.-projekt fra Aarhus Universitet, Health, har undersøgt effekten af hhv. skeletmusklens excitation og mekanisk stress på molekylære biomarkører for muskelvækst i en serie af eksperimenter foretaget i gnavere. Resultaterne peger på, at mekanisk belastning i sig selv er nødvendig for igangsættelse af muskelvækst, men peger samtidig på en ny rolle for muskelexcitationen i denne proces. Projektet er gennemført af Emil Rindom, der forsvarer det d. 12. December 2019

Forsvaret af ph.d.-projektet er offentligt og finder sted den 12.12.2019 kl. 13:00 i Jeppe Vontillius auditorium, Søauditorierne, Aarhus Universitet, Bartholins Allé 3, 8000 Aarhus C. Titlen på projektet er ”Mechanically induced anabolic signaling in skeletal muscle”. Yderligere oplysninger: Ph.d.-studerende Emil Rindom, e-mail: er@biomed.au.dk, tlf. 51537362.

Bedømmelsesudvalg:

Professor, Niels Jessen, MD, PhD
Department of Clinical Medicine - SDCA-Steno Diabetes Center Aarhus, Aarhus University, Aarhus, Denmark

Professor, Håkan Westerblad, PhD
Department of Physiology & Pharmacology, Karolinska Institutet, Stockholm, Sweeden

Associate Professor, Julien Ochala, PhD
School of Basic and Medical Biosciences, Faculty of Life Sciences & Medicine, King's College London, London, Uk

Press release (English)

Mechanically induced anabolic signaling in skeletal muscle

Regulation of skeletal muscle mass is a complex process entailing diverse stimulatory cues and underlying molecular signaling events. Among known stimulatory cues, mechanical loading of skeletal muscle leads to accelerated muscle growth, which is beneficial for maintenance of muscle health, functionality, and quality of life. However, it is not yet clear how muscle loading initiates this adaptive response. A better understanding of the regulation of muscle growth will contribute to the development of pharmaceutical or therapeutic interventions that can restore, maintain, or increase muscle mass and thereby aid in the treatment of muscle wasting and sarcopenia.

A new PhD project from Aarhus University, Health, has investigated the effects of skeletal muscle excitation vs. mechanical stress on molecular biomarkers for skeletal muscle growth through a series of exclusion method experiments in rodent hind limb muscles. The results show that mechanical loading per se is necessary for the initiation of skeletal muscle growth, but concomitantly highlights a novel role for muscle excitation in this process. The project was carried out by Emil Rindom, who is defending his dissertation on 12th of december 2019.

The defence is public and takes place on 12.12.2019 at 1 PM in Jeppe Vontillius Aud., Lakeside Lecture Theatres, Aarhus University, Bartholins Allé, 8000 Aarhus C. The title of the project is "Mechanically induced anabolic signaling in skeletal muscle". For more information, please contact PhD student Emil Rindom, email: er@biomed.au.dk, Phone +45 5153 7362.

Assessment committee:

Professor, Niels Jessen, MD, PhD
Department of Clinical Medicine - SDCA-Steno Diabetes Center Aarhus, Aarhus University, Aarhus, Denmark

Professor, Håkan Westerblad, PhD
Department of Physiology & Pharmacology, Karolinska Institutet, Stockholm, Sweeden

Associate Professor, Julien Ochala, PhD
School of Basic and Medical Biosciences, Faculty of Life Sciences & Medicine, King's College London, London, Uk

Permission

By sending in this form:

- I hereby grant permission to publish the above Danish and English press releases.
- I confirm that I have been informed that any applicable inventions shall be treated confidentially and shall under no circumstances whatsoever be published, presented or mentioned prior to submission of a patent application, and that I have an obligation to inform my head of department and the university's Patents Committee if I believe I have made an invention in connection with my work. I also confirm that I am not aware that publication violates any other possible holders of a copyright.