

Press release

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Basic information

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Department of: Biomedicine

Main supervisor: Ulf Simonsen

Title of dissertation: Transglutaminase 2 Conformation as a New Target to Treat Vascular Dysfunction in Aging and Diabetes

Date for defence: 16/09/2020 at (time of day): 13:00 Place: Vennelyst Blvd. 9. Tandlægeskolen, building 1613, room 049 (Aud. A). 8000 Aarhus, Denmark

Press release (Danish)

Transglutaminase 2 Conformation as a New Target to Treat Vascular Dysfunction in Aging and Diabetes

De fleste diabetespatienter, der er 65 år eller ældre, risikerer at dø af kardiovaskulær sygdom, til trods for nuværende behandling af deres diabetes. Et nyt internationalt ph.d.-projekt fra Aarhus Universitet, Health, studie undersøger det terapeutiske potentiale ved at ændre Transglutaminase 2, et skadeligt enzym involveret i arterial og hjerte øget stivhed. Ved at ændre Transglutaminases konformation med medicin har vi opdaget, at enzymet bliver gavnlig og beskytter hjerte og kredsløb. Projektet er en del af en joint PhD med Complutense University of Madrid, og er gennemført af Estéfano Pinilla, der forsvare ph.d. afhandlingen d. 16/9-2020.

Denne afhandling undersøger effekterne af den medicin som skaber ændringerne i konformationen af enzymet Transglutaminase 2 i det vaskulære kredsløb ved aldring og diabetes. Metoderne brugt i dette projekt inkluderer studier på det cellulære niveau og af langvarig behandling af diabetiske mus. Dertil undersøger denne afhandling også en vigtig mekanisme af vaskulær dilatation i nyrerne, hvilket potentielt kan være gavnlig ved diabetisk nyresygdom. Resultaterne af dette projekt kan anvendes i udviklingen af nye behandlingsmetoder for kardiovaskulær sygdom, især blandt den aldrende og diabetiske befolkning. Forsvaret af ph.d.-projektet er offentligt og finder sted den 16/9 kl. 13:00 i Auditorium A (rum 049), Tandlægeskolen (bygning 1613), Aarhus Universitet, Vennelyst Blvd. 9, 8000 Aarhus C. Titlen på projektet er "Transglutaminase 2 Conformation as a New Target to Treat Vascular Dysfunction in Aging and in Diabetes". Yderligere oplysninger: Ph.d.-studerende Estéfano Pinilla, e-mail: estefanopinilla@biomed.au.dk, tlf. +4550255722.

Bedømmelsesudvalg:

Professor Francisco Pérez Vizcaíno, Institut for farmakologi, Complutense Universitetet i Madrid, Spanien.

Professor Rhian Touyz, Institut for Kardiovaskulær og Medicinsk Videnskab, Glasgow Universitet, United Kingdom.

Lektor Jesper Nørregaard Bech, Institut for Klinisk Medicin - Klinik for nefrologi / hypertension, Aarhus Universitetshospital, Danmark

Press release (English)

Transglutaminase 2 Conformation as a New Target to Treat Vascular Dysfunction in Aging and Diabetes

Most diabetic patients age 65 or older die from some form of cardiovascular disease despite current treatments. A new international research project investigates the therapeutic potential of turning

Transglutaminase 2, a harmful enzyme involved in arterial and heart stiffening, into an ally to protect the vascular system by altering its conformation with drugs. The project was carried out as part of a joint PhD with Complutense University of Madrid (Spain) by Estéfano Pinilla, who is defending his dissertation on 16/9.

This dissertation investigates the effects of drugs that induce changes in the conformation of the enzyme Transglutaminase 2 in the vascular system during aging and diabetes. The methods used in this project include from studies at the cellular level to long-term treatment studies in diabetic mice. Additionally, as potential applications in diabetic kidney disease are expected, this dissertation also studies an important mechanism of vascular relaxation in the kidneys that might be impacted by the proposed treatment. The results of this project can be applied in the development of a new treatment for cardiovascular disease, particularly among the diabetic and aging population.

The defence is public and takes place on 16/9 at 13:00 in the Auditorium A (room 049), Tandlægeskolen (building 1613), Aarhus University, Vennelyst Blvd. 9, Aarhus C. The title of the project is "Transglutaminase 2 Conformation as a New Target to Treat Vascular Dysfunction in Aging in Diabetes". For more information, please contact PhD student Estéfano Pinilla, email: estefanopinilla@biomed.au.dk, Phone +45 50255722.

Assessment committee:

Professor Francisco Pérez Vizcaíno, Department of Pharmacology, Complutense University of Madrid, Spain.

Professor Rhian Touyz, Institute of Cardiovascular and Medical Sciences, University of Glasgow, United Kingdom

Associate Professor Jesper Nørregaard Bech, Department of Clinical Medicine- Clinic for nephrology/hypertension, Aarhus University Hospital, Denmark

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