

Press release

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Basic information

Name: Sidsel Dahl Andersen Email: sidselandersen@clin.au.dk Phone: 42245412

Department of: Clinical Medicine

Main supervisor: Peter Nejsum

Title of dissertation: Immunomodulatory effects of *Ascaris suum* products on cGAS-STING signaling

Date for defence: 10.11.2020 at (time of day): 14.00 Place: (1252-310) Jeppe Vontilius (Søauditorierne), Bartholins Allé 3, 8000 Aarhus

Press release (Danish)

Immunomodulatoriske effekter af *Ascaris suum* produkter på cGAS-STING signalering

Parasitiske orme er kendt som sande mestre i manipulation, hvor de er i stand til at sænke den inflammatoriske immune respons i værten for at sikre sin egen overlevelse. Der er dog stadig begrænset viden om de specifikke mekanismer og molekyler som ormene bruger til at modulere værtens immune forsvar. Dette studie har undersøgt de immune modulatoriske egenskaber af spoleorm, *Ascaris suum*, på den centrale signalvej i immune forsvaret kaldet "STING pathway". Signaleringsvejen er yderst vigtig for vores medfødte immune respons imod infektioner. Men overaktivering af STING signalering kan resultere i diverse kroniske inflammatoriske sygdomme, hvilke på nuværende tidspunkt har begrænsede behandlingsmuligheder. Vi har vist at *Ascaris suum* effektivt kan hæmme STING signalering ved at modulere signaleringsmolekyler i signalvejen og derved sænke den inflammatoriske respons. Dette studie indikerer at parasitiske orme kan være en helt ny terapeutisk strategi i behandling eller lindring af inflammatoriske sygdomme. Resultaterne er fra et nyt Ph.D.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Sidsel Dahl Andersen, der forsvare det d. 10/11-2020.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 10/11-2020 kl. 14.00. På grund af COVID-19 restriktioner er antallet af fysiske deltagere begrænset, og det er kun muligt at deltage efter aftale med den Ph.D. studerende. Det er også muligt at deltage virtuelt på Zoom, og link tilsendes gerne ved kontakt til Sidsel Dahl Andersen.

Titlen på projektet er "Immunomodulatory effects of *Ascaris suum* products on cGAS-STING signaling". Yderligere oplysninger: Ph.d.-studerende Sidsel Dahl Andersen, e-mail: sidselandersen@clin.au.dk, tlf. 42245412.

Bedømmelsesudvalg:

Associate Professor Tue Wenzel Kragstrup

Formand for bedømmer-komiteen og moderator ved forsvaret.

Institut for Biomedicin, Aarhus Universitet, DK

Lecturer Leonie Unterholzner

Division of Biomedical and Life Sciences, Faculty of Health and Medicine, Lancaster University, UK

Professor Birgitte Jyding Vennervald

Sektion, Parasitology and Aquatic Pathobiology, Københavns Universitet, DK

Press release (English)

Immunomodulatory effects of *Ascaris suum* products on cGAS-STING signaling

Parasitic worms are known to be true masters of host manipulation and can strongly suppress inflammatory immune responses in order to survive in the host. However, the knowledge of the specific mechanisms and molecules involved in immunomodulation by worms is limited. The focus of this study was to investigate the immunomodulatory ability of the giant roundworm, *Ascaris suum*, on the central immune pathway termed 'the STING pathway'. This pathway is a very important part of the innate immune response against infections, however overactive STING signalling has been linked to various chronic inflammatory disorders which currently have limited treatment options. We found that *Ascaris suum* effectively inhibit STING signalling by modulating signalling molecules in this pathway thereby decreasing the inflammatory response. These findings suggest that parasitic worms can hold a novel therapeutic potential for the treatment or ameliorating inflammatory disorders. The results are part of a new Ph.D. project from Aarhus University carried out by Sidsel Dahl Andersen, who is defending her dissertation on 10/11-2020.

The defence is public and takes place on 10/11-2020 at 14.00. Due to current COVID-19 restrictions, the number of participant at the physical defence is limited and participation is therefor only possible upon agreement with the PhD-student. Virtual participation on Zoom is also possible, and the link is readily available upon contact with Sidsel Dahl Andersen.

The title of the project is "Immunomodulatory effects of *Ascaris suum* products on cGAS-STING signaling". For more information, please contact PhD student Sidsel Dahl Andersen, email: sidselandersen@clin.au.dk, Phone +45 42245412

Assessment committee:

Associate Professor Tue Wenzel Kragstrup
Chairman of the committee and moderator of the defence
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