

Press release

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Basic information

Name: Johanne Hovgaard Egedal

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Department of: Biomedicine

Main supervisor: Martin Roelsgaard Jakobsen

Title of dissertation: Hyaluronic Acid is a Negative Regulator of Mucosal Fibroblast-Mediated Enhancement of HIV Infection

Date for defence: 03.12.20 at (time of day): 14:00 - 16:00 Place: Online (Zoom link: <https://aarhusuniversity.zoom.us/j/61303642878>)

Press release (Danish)

Virtuelt P.hd. forsvar - Johanne Hovgaard Egedal

På trods af udviklingen af effektiv behandling af HIV, findes der stadig tæt på 40 millioner mennesker, der lever med sygdommen og dens medfølgende konsekvenser og stigmatisering. Der er stadig ingen kur mod denne pandemi, hvorfor det er essentielt at fortsætte forskningen på dette område. Vi har derfor udført dette P.hd.-projekt med det formål at studere, hvordan HIV transmitteres gennem slimhinden ved seksuel ekponering, for at kortlægge hvordan HIV infektion initielt etableres. Med mere viden omkring netop det første møde mellem HIV og værten, håber vi på at kunne bidrage til at finde en måde, hvorpå infektion kan forhindres. Vi har undersøgt, hvordan cellerne i slimhinden samt komponenter af det omkringliggende bindevæv er involveret i HIV transmission. Vi fandt, at fibroblastceller fra slimhinden ligefrem øger HIV infektion af værtens CD4+ T celler, og at denne forøgning var signifikant forstærket, når mængden af hyaluronsyre på fibroblasterne blev reduceret. Denne viden kan være afgørende for det fremtidige arbejde med at finde en vaccine eller en måde at forhindre infektion på.

Dette er et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Johanne Hovgaard Egedal, der forsvarer det d. 3/12.

Bedømmelsesudvalg:

Marianne Jansson, Associate Professor, PhD, Department of Laboratory Medicine, Division of Medical Microbiology, Lund University, Lund, Sweden

Jan Rehwinkel, Associate Professor of Innate Immunology, PhD, MRC Human Immunology Unit, MRC Weatherall Institute of Molecular Medicine, University of Oxford, Oxford, UK

Chairman and moderator: Uffe Birk Jensen, Professor, MD, PhD, Department of Biomedicine, Department of Clinical Medicine, Aarhus University, Aarhus, Denmark

Press release (English)

Online PhD defense - Johanne Hovgaard Egedal

Despite the development of effective treatment of HIV, nearly 40 million people still suffer from the disease with its following consequences and stigmatization. With no cure available, it is crucial to continue research in the field, in order to understand the mechanisms of transmission and infection for the pandemic to come to an end. Therefore, this PhD project was conducted with the aim of studying mucosal HIV transmission and elucidating how infection is initially established, with the goal of contributing to how infection can be prevented. We investigated how cells of the mucosal tissue and components of the mucosal stroma play a role in HIV transmission. We found that mucosal

fibroblasts in fact increase the HIV infection of CD4+ T cells, and that this enhancement was even further augmented by depletion of hyaluronic acid on the fibroblasts. Such knowledge of how mucosal fibroblasts aid the transmission of HIV and how the composition of the mucosa affect fibroblast-mediated enhancement of HIV could be very important for future work in finding a vaccine or a way to prevent HIV infection.

The project was carried out by Johanne Hovgaard Egedal, who is defending her dissertation on 3/12.

The defence is public and takes place on 3/12-20 at 14:00 on Zoom. The title of the project is Hyaluronic Acid is a Negative Regulator of Mucosal Fibroblast-Mediated Enhancement of HIV Infection. For more information, please contact PhD student Johanne Hovgaard Egedal, email: jhe@biomed.au.dk, Phone +45 28152945.

Assessment committee:

Marianne Jansson, Associate Professor, PhD, Department of Laboratory Medicine, Division of Medical Microbiology, Lund University, Lund, Sweden

Jan Rehwinkel, Associate Professor of Innate Immunology, PhD, MRC Human Immunology Unit, MRC Weatherall Institute of Molecular Medicine, University of Oxford, Oxford, UK

Chairman and moderator: Uffe Birk Jensen, Professor, MD, PhD, Department of Biomedicine, Department of Clinical Medicine, Aarhus University, Aarhus, Denmark

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