Press release

Please fill in this form and return it to graduateschoolhealth@au.dk in Word format along with a portrait photo in JPEG format, if you would like it to accompany your press release, no later than three weeks prior to your defence.

Basic information

Name: Sidsel Rødgaard-Hansen Email: sidroe@rm.dk Phone: 28723177

Department of: Clinical Medicine

Main supervisor: Holger Jon Møller

Title of dissertation: Macrophage biomarkers in liver disease and the soluble mannose receptor

Date for defence: Torsdag den 18. maj 2017 kl. 14.00 at (time of day): 14.00 Place: Patologisk Auditorium

Press release (Danish)

Nyt Ph.D. projekt fra Aarhus Universitet omhandlende makrofag-biomarkører ved leversygdom og infektion

Projektets resultater kan bidrage til bedre diagnostik af sværhedgraden af leversygdom og til at vurdere effekten af livsstilsændringer ved leversygdom. Desuden er der i projektet fundet en helt ny makrofag-biomarkør og de indledende resultater tyder på, at denne kunne være relevant ved leversygdomme og infektionssygdomme . Projektet er gennemført af Sidsel Rødgaard-Hansen, der forsvarer det d. 18/5 2017

Makrofagerne udgør en central del af det medfødte immunforsvar. Makrofagerne findes i kroppens væv, men er ikke tilstedet i blodet. Det er derfor kun muligt at få adgang til makrofagerne ved at tage en vævsprøve, f.eks. fra leveren, hvilket er forbundet med ubehag og risiko for konplikationer. Makrofagerne udtrykker en række forskellige receptorer på deres overflade. Nogle af disse receptorer bliver kløvet af celleoverfladen og frigivet til blodstrømmen. Projektet handler om, hvorledes makrofag-receptorerne CD163 og mannose receptoren kan anvendes som biomarkør for makrofag-aktivering ved leversygdomme og infektionssygdomme.

Projektet resultater viser, at patienter med fremskreden leversygdom har et højt niveau af sCD163 sammenlignet med patienter med leversygdom i tidlig fase. Hos patienter med ikke-alkoholisk fedlever, som typsik skyldes overvægt og inaktiv livsstil, falder sCD163 efter livsstilsændring i form af øget fysisk aktivitet og vægttab.

Som en del af projektet er identificeret en helt ny makrofag-biomarkør, den soluble mannose receptor. Studiet dokumenterer, at mannos receptoren findes i blodet hos mennesker, og der er etableret en metode til måling af mannose receptoren. Mannose receptoren findes i høj koncentration hos patienter med alvorlige infektioner eller leversygdom. Mannose receptoren vil derfor potentielt kunne bruges som en markør til diagnosticering af leversygdom eller svære infektioner.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 18/5 kl. 14.00 i Patologisk Auditorium, Aarhus Universitetshospital, Nørrebrogade 44, 8000 Aarhus C. Titlen på projektet er "Macrophage biomarkers in liver disease and the soluble mannose receptor". Yderligere oplysninger: Ph.d.-studerende Sidsel Rødgaard-Hansen, e-mail: sidroe@rm.dk, tlf. 21588124.

Press release (English)

New Ph.D. project from Aarhus University on macrophage related biomarkers in liver disease and infectious disease

Findings from the project support the use of macrophage-specific sCD163 as a clinical biomarker of liver disease and points to the mannose receptor as an emerging marker of macrophage activity in liver disease and infectious disease. The project was carried out by Sidsel Rødgaard-Hansen , who is defending her dissertation on 18/5 2017.

The macrophages are a key part of the innate immune system. Macrophages are widespread throughout the body, but are not present in the blood stream and can only be obtained by tissue biopsy which is uncomfortable and carries a risk of complications. The macrophages express on their cell surface a number of different receptor. Some of these can be shed from the cell surface and released in to the circulation, where they can serve as biomarkers of macrophage activity. sCD163 and the mannose receptor are examples of such macropage derived biomarkers.

Results of the project show that sCD163 is increased in patients with advanced liver disease compared with patients with early-stage liver disease. In patients with non-alcoholic fatty liver disease, which is typiccaly caused by overweight and sedentary lifestyle, sCD163 decreases in response to lifestyle intervention.

As part of the project a new macophage-derived receptor, the soluble mannose receptor, was identified in human blood and a method was established for measuring the mannose receptor. High concentrations of the mannose receptor are found i patients with severe infections and liver disease. The mannose receptor may therefore hold potetial as a new biomarker of liver disease and severe infections.

The defence is public and takes place on 18/5 2017 kl. 14.00 in Patologisk Auditorium, Aarhus Universitetshospital, Nørrebrogade 44, 8000 Aarhus C. The title of the project is ”Macrophage biomarkers in liver disease and the soluble mannose receptor”. For more information, please contact PhD student Sidsel Rødgaard-Hansen, email: sidroe@rm.dk, Phone +45 21588124.

Permission

By sending in this form:

- I hereby grant permission to publish the above Danish and English press releases as well as any submitted photo.
- 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.