

## Press release

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### Basic information

Name: Sandra Tillmann      Email: [sti@clin.au.dk](mailto:sti@clin.au.dk) Phone: 78471122

Department of: Clinical Medicine

Main supervisor: Gregers Wegener

Title of dissertation: Impact of gut microbiota modulation on host behavior and metabolism

Date for defence: 21/01/2019 at (time of day): 14:00 Place: Mødelokale 2, Studenterhusfonden, Fredrik Nielsens Vej 2-4, 8000 Aarhus C

Press release (Danish)

Effekten af tarm-mikrobiota-modulation på værtens adfærd og metabolisme

Den menneskelige mave-tarmkanal er vært for billioner af mikrobielle celler, der samlet betegnes som tarm-mikrobiota (TM). Studier har påvist et forhold mellem TM og psykiske sygdomme, herunder depression. Indførelsen af gavnlige bakterier gennem probiotika eller fækaltransplantation kan være en potentiel behandlingsstrategi for deprimerede patienter. I dette ph.d.-projekt anvendte vi en dyremodel for depression (Flinders Sensitive Line-rotter) for at belyse effekten af TM-modulation på affektiv adfærd og metabolisme. Vores studier viste, at de depressiv-lignende rotter havde en anden TM-sammensætning i forhold til deres sunde kontroller. Probiotika påvirkede den angstlignende adfærd, neurotransmittere og one-carbon-metabolisme, som er en vigtig pathway involveret i methyleringsprocesser. Disse resultater bidrager til vores nuværende forståelse af tarmhjerneaksen ved depression og kan være af betydning for fremtidige terapeutiske mål. Projektet er gennemført af Sandra Tillmann, der forsvarede det d. 21/01/19.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 21/01/19 kl. 14 i Mødelokale 2, Studenterhusfonden, Fredrik Nielsens Vej 2-4, 8000 Aarhus C. Titlen på projektet er "Effekten af tarm-mikrobiota-modulation på værtens adfærd og metabolisme". Yderligere oplysninger: Ph.d.-studerende Sandra Tillmann, e-mail: [sti@clin.au.dk](mailto:sti@clin.au.dk), tlf. 78471122.

Bedømmelsesudvalg:

Associate Professor Jane A. Foster, Department of Psychiatry & Behavioural Neurosciences, McMaster University, Hamilton, Ontario, Canada

Professor David A. Slattery, Department of Psychiatry, Psychosomatic Medicine and Psychotherapy, University Hospital Frankfurt, Frankfurt, Germany

Professor Søren Dinesen Østergaard (chairman), Department of Affective Disorders, Aarhus University Hospital, Risskov, Denmark

Press release (English)

Impact of gut microbiota modulation on host behavior and metabolism

The human gastrointestinal tract hosts trillions of microbial cells, collectively termed the gut microbiota (GM). Several studies have identified a relationship between the GM and psychiatric diseases, including depression. The introduction of beneficial bacteria through probiotics or fecal transplantation may be a potential treatment strategy for depressed patients. In this PhD project, we used an animal model of depression (Flinders Sensitive Line rats) to shed more light on the effects of GM modulation on affective behavior and metabolism. Our studies showed that the depressive-like

rats had a different GM composition compared to their healthy controls. Probiotics affected anxiety-like behavior, neurotransmitters and one-carbon metabolism, an important pathway involved in methylation processes. These results contribute to our current understanding of the gut-brain axis in depression and may be of value for future therapeutic targets. The project was carried out by Sandra Tillmann, who is defending her dissertation on 21/01/19.

The defence is public and takes place on 21/01/19 at 14:00 in Mødelokale 2, Studenterhusfonden, Fredrik Nielsens Vej 2-4, 8000 Aarhus C. The title of the project is "Impact of gut microbiota modulation on host behavior and metabolism". For more information, please contact PhD student Sandra Tillmann, email: sti@clin.au.dk, Phone +45 78471122.

Assessment committee:

Associate Professor Jane A. Foster, Department of Psychiatry & Behavioural Neurosciences, McMaster University, Hamilton, Ontario, Canada

Professor David A. Slattery, Department of Psychiatry, Psychosomatic Medicine and Psychotherapy, University Hospital Frankfurt, Frankfurt, Germany

Professor Søren Dinesen Østergaard (chairman), Department of Affective Disorders, Aarhus University Hospital, Risskov, Denmark

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