

Press release

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Basic information

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Department of: Clinical Medicine

Main supervisor: Ove Wiborg & Megan C. Holmes

Title of dissertation: Translational assessment of cognitive impairments in depression models

Date for defence: 14th September 2018 at (time of day): 13.00 Place: Fysiologisk Auditorium A, Building 1162, Ole Worms Allé 4, 8000 Aarhus C

Press release (Danish)

Translationel evaluering af kognitiv svækkelse i depressionsmodeller

Etablering af en ny teknologisk platform til evaluering af kognitive funktioner hos rotter med stress-inducerede depressionssymptomer undersøges i et nyt kombineret ph.d.-projekt fra Aarhus Universitet, Health, og University of Edinburgh. Projektet er gennemført af Lena-Sophie Martis, der forsvarer det d. 14/09-2018.

Svækkelse af kognitive funktioner, såsom forringet hukommelse og indlæringssevne, forekommer ofte som alvorlige ledsagesymptomer ved en depression og varer ofte ved efter at de emotionelle symptomer er overvundet. Herved hæmmes den funktionelle rehabilitering og risikoen for tilbagefald øges. Ved udvikling af nye antidepressiva er det derfor vitalt at disse også besidder en prokognitiv effekt. I dette ph.d. projekt undersøges den prokognitive virkning i en veletableret translational kronisk mild stress rottemodel for depression kombineret med test for indlæringssevne, hvilket dermed til sammen udgør en ny teknologisk platform til screening af nye antidepressiva for både emotionelle og prokognitive virkning. Til test af indlæringssevnen anvendes en berøringsfølsom skærm som rotterne skal lære at håndtere. På skærmen visse forskellige symboler på samme tid og i forskellige bokse. Rotterne skal lære, at når et bestemt symbol befinder sig i en bestemt boks, kan den ved at trykke på symbolet med snuden opnå en belønning i form af en velmagende foder pellet. I ph.d. projektet er platformen optimeret med hensyn til valg af rottestamme og med hensyn til valg af sværhedsgraden af opgaver på den berøringsfølsomme skærm.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 14/09 kl. 13 i Fysiologisk Auditorium, Bygn 1162, Ole Worms Allé 4, Aarhus Universitet. Titlen på projektet er "Translationel evaluering af kognitiv svækkelse i depressionsmodeller". Yderligere oplysninger: Ph.d.-studerende Lena-Sophie Martis, e-mail: lena-sophie.martis@clin.au.dk, tlf. +4550655018.

Bedømmelsesudvalg:

Lecturer Dr Christopher Heath,
Translational Neuroscience Research Group, The Open University, England, UK

Professor Mathias V. Schmidt,
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Senior Lecturer Dr Emma Wood,
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Associate Professor Morten Skovgaard Jensen,

Institute for Biomedicine, Aarhus University, Denmark

Press release (English)

Translational assessment of cognitive impairments in depression models

Implementation of preclinical depression models and their evaluation with translational and standardized platforms was investigated in a joint PhD project of Aarhus University and the University of Edinburgh. The project was carried out by Lena-Sophie Martis, who is defending her dissertation on 14th September 2018.

Cognitive impairments, for example difficulties in learning, attention and memory, are neglected symptoms of depression. Even after remission from depression, cognitive symptoms can persist and continue to decrease quality of life and increase risk of relapse. For relieving the cognitive symptoms of depression, development and testing of pro-cognitive antidepressants is vital. In this PhD, I have defined such a drug testing platform by using a validated animal model of depression, the chronic mild stress (CMS) model, and evaluated the animals' cognitive performance using touchscreen tasks. The touchscreen operant platform for assessing cognitive performance in rats has been developed based on touchscreen tasks (CANTAB) for humans. Touchscreen testing includes a high standardization, objective readouts and minimization of experimenter's bias, which makes it a reliable tool for translating findings between animals and humans. Furthermore, stress has been identified as a risk factor for developing depression in humans. Consequently, stress was used to provoke depressive symptoms in animals. Specifically, rats were exposed to the CMS protocol eliciting mood symptoms of depression, such as a decreased interest in previously enjoyable behaviours. In this PhD project, different touchscreen tasks were used to assess various aspects of cognitive performance in stressed and depressive-like rats. Additionally, effect of rat strain and efficacy of drug treatment on cognitive performance was evaluated. This allowed optimisation of a preclinical drug testing platform for screening pro-cognitive antidepressant compounds of clinical relevance.

The defence is public and takes place on 14th September 2018 at 13.00 in the Fysiologisk Auditorium, Building 1162, Ole Worms Allé 4, Aarhus University. The title of the project is "Translational assessment of cognitive impairments in depression models". For more information, please contact PhD student Lena-Sophie Martis, email: lena-sophie.martis@clin.au.dk, Phone +45 50655018.

Assessment committee:

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