

Press release

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Basic information

Name: Mads Engel Hauberg Email: hauberg@biomed.au.dk Phone: -

Department of: Biomedicine

Main supervisor: Anders Børglum

Title of dissertation: Understanding the Human Brain and Schizophrenia Through Gene Regulation

Date for defence: 1st of February at (time of day): 1:00 PM Place: Lille Anatomisk Auditorium, Building 1231, room 424, Aarhus Universitet, Wilhelm Meyers Allé 3, 8000 Aarhus C.

Press release (Danish)

Hvordan kan man forstå den menneskelige hjerne og skizofreni gennem regulering af gener?

Skizofreni og psykiatriske lidelser generelt set er hyppigt forekommende alvorlige sygdomme, men kun ganske lidt vides om deres opståen. Dette hænger til dels sammen med vores ufuldstændige forståelse af den menneskelige hjernes funktion og herunder hvilken rolle at regulering af gener spiller i såvel den raske som den syge hjerne. Denne afhandling berørte disse emner som følger:

Først blev betydningen af mikroRNA i skizofreni belyst ved at undersøge hvilke mikroRNA, der regulerede gener associeret med skizofreni. I en yderligere undersøgelse blev det belyst hvilke skizofreni-associerede genetiske varianter, der muligvis påvirkede funktionen af mikroRNA.

Et andet sæt af eksperimenter belyste den transkriptionelle regulering af gener i den menneskelige hjerne ved at undersøge hvilke dele af DNAet, der var karakteriseret ved at have en åben (aktiv) kromatinstruktur og hvilke der havde en lukket (inaktiv) struktur. Eksperimenterne blev udført i forskellige hjerneceller i forskellige hjerneregioner i prøver fra afdøde mennesker og belyste funktionelle og regulatoriske forskelle mellem hjerneceller og hjerneregioner foruden at indikere hvilke, der spiller en rolle i forskellige neuropsykiatriske sygdomme.

Dette ph.d.-projekt fra Aarhus Universitet, Health er gennemført af Mads Engel Hauberg, der forsvarede det d. 1/2 2018.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 1. februar kl. 13:00 i Lille Anatomisk Auditorium, Bygning 1231, lokale 424, Aarhus Universitet, Wilhelm Meyers Allé 3, 8000 Aarhus C. Titlen på projektet er "Understanding the Human Brain and Schizophrenia Through Gene Regulation". Yderligere oplysninger: Ph.d.-studerende Mads Engel Hauberg, e-mail: hauberg@biomed.au.dk.

Bedømmelsesudvalg:

Professor Jakob Skou Pedersen, Department of Molecular Medicine (MOMA), Department of Clinical Medicine, Aarhus University, Denmark

Professor Gerome Breen, SGDP Centre, Inst. of Psychiatry, Denmark Hill, United Kingdom

Professor Albin Sandelin, Computational and RNA Biology Section, Department of Biology, University of Copenhagen, Denmark

Press release (English)

Understanding the Human Brain and Schizophrenia Through Gene Regulation

Schizophrenia and psychiatric disorders in general are common and debilitating traits with poorly understood etiology. This is in part explained by our incomplete understanding of the human brain including the role of gene regulation in both the normal and the diseased brain. This thesis touched upon those subjects as follows:

First, the role of microRNAs as regulators of schizophrenia was investigated by examining which microRNAs are regulators of schizophrenia risk genes. In a related experiment, schizophrenia risk variants predicted to affect microRNA function were identified.

In a further set of experiments, the transcriptional regulation of genes in the human brain was studied by identifying regions of open (active) chromatin and regions of closed (inactive) chromatin. This was done in a range of brain cells types and regions using adult human post mortem brain samples. These analyses were used both to gain basic knowledge about gene regulation as well as to elucidate gene regulation in schizophrenia and other neuropsychiatric traits.

The project was carried out by Mads Engel Hauberg, who is defending his dissertation on the 1st of February 2018.

The defence is public and takes place on the 1st of February 2018 at 1pm in Lille Anatomisk Auditorium, Building 1231, room 424, Aarhus Universitet, Wilhelm Meyers Allé 3, 8000 Aarhus C. The title of the project is "Understanding the Human Brain and Schizophrenia Through Gene Regulation". For more information, please contact PhD student Mads Engel Hauberg, email: hauberg@biomed.au.dk.

Assessment committee:

Professor Jakob Skou Pedersen, Department of Molecular Medicine (MOMA), Department of Clinical Medicine, Aarhus University, Denmark

Professor Gerome Breen, SGDP Centre, Inst. of Psychiatry, Denmark Hill, United Kingdom

Professor Albin Sandelin, Computational and RNA Biology Section, Department of Biology, University of Copenhagen, Denmark

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