

Press release

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Basic information

Name: Amanda Eskelund Email: ares@clin.au.dk Phone: +45 78471141

Department of: Clinical Medicine

Main supervisor: Gregers Wegener

Title of dissertation: "Characterization of tryptophan metabolites in depression and recovery"

Date for defence: September 5, 2017 at (time of day): 14:00 Place: Auditoriet, AUH Risskov, Indgang 30

Press release (Danish)

Ny viden om tryptofans ændrede metabolisme ved depression og behandling

Tryptofan er en vigtig aminosyre, der skal optages gennem kosten, hvor den kun forekommer sparsomt. Den er byggestenen for det vigtige signalstof i hjernen, serotonin, men giver også ophav til andre produkter, der kan påvirke hjernen ugunstigt. Dennes omsætning karakteriseres i depression og behandling ved primært at undersøge rottemodeller, men også blodprøver fra depressive patienter indgår i et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Amanda Eskelund, der forsvare det d. 5. september 2017.

På globalt plan lider millioner af mennesker af depression, som er en invaliderende sygdom for både de ramte, de pårørende og samfundet. Desværre er vores viden om årsagerne til at depression opstår yderst begrænset, hvilket også betyder, at den mest optimale behandling mod depression endnu ikke eksisterer.

Flere hypoteser findes, og nogle spænder fra at depression skyldes en nedsat mængde af serotonin, samt at depression er forbundet til stress eller inflammation. Disse hypoteser er forenet igennem nedbrydningen af tryptofan i kroppen. Omdannelsen af tryptofan påvirkes af både stress og inflammation i en sådan grad, at produktionen af potentielt skadelige produkter kan være øget. Dette projekt foreslår at balancen af tryptofans omsætning er forandret ved depression og undersøger, hvorvidt en blodprøve kan bruges som indikator for hjernens metabolisme. Endelig afdækker projektet også, hvordan tre forskellige typer af antidepressiva påvirker tryptofanomsætningen.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 5. september kl. 14 i auditoriet, indgang 30, Aarhus Universitets Hospital Risskov, Skovagervej 2, Risskov. Titlen på projektet er "Characterization of tryptophan metabolites in depression and recovery". Yderligere oplysninger kan fås ved henvendelse til: Ph.d.-studerende Amanda Eskelund, e-mail: ares@clin.au.dk, tlf. +45 78471141.

Bedømmelsesudvalg:

Formand:

Jørgen Bo Hasselstrøm, MSc, PhD

Institut for Retsmedicin - Retskemisk, Aarhus Universitet, Danmark

Bedømmere:

Sophie Erhardt, MSc, PhD

Department of Physiology and Pharmacology, Karolinska Institutet, Sverige

Jos Prickaerts, MSc, PhD

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Press release (English)

New knowledge regarding the metabolism of tryptophan in depression and recovery

Tryptophan is an essential amino acid, that has to be obtained from the diet where it is present in minute amounts. It is necessary for the body to produce serotonin, an important signal transmitter in the brain. However, metabolism of tryptophan additionally gives rise to a series of other products that could impact brain cells unfavourably. The potential role of tryptophan in depression is investigated primarily in a rat model but additionally by using blood samples obtained from depressed patients. The project was carried out by Amanda Eskelund, who is defending her dissertation on September 5, 2017.

Millions of people suffer from depression worldwide, a disease with devastating impacts to the inflicted and society at large. Unfortunately, our knowledge regarding the causes and biological mechanisms of depression are very limited, which perhaps explains why we still haven't found an optimal treatment.

Several hypotheses regarding depression exists, some include that the amounts of serotonin are reduced in the depressed brain and other signal molecules may be altered. Many depressed exhibit signs of stress and some demonstrate a state of inflammation. These hypotheses converge through tryptophan metabolism. Stress and inflammation can impact tryptophan metabolism in a way which increases potentially harmful products, but may additionally impact serotonin levels. The project suggests that tryptophan metabolism is altered in depression and investigates whether blood samples provide a good representative of the tryptophan metabolism occurring in the brain. Additionally, the effects of three different classes of antidepressants on tryptophan metabolism is characterized.

The defence is public and takes place on September 5, 2017 at 2 pm in the auditorium at Aarhus University Hospital Risskov, entrance 30, Skovagervej 2, Risskov. The title of the project is "Characterization of tryptophan metabolites in depression and recovery". For more information, please contact PhD student Amanda Eskelund, email: ares@clin.au.dk, Phone +45 7847 1141.

Assessment committee:

Chairman:

Jørgen Bo Hasselstrøm, MSc, PhD

Department of Forensic Medicine, Aarhus University, Denmark

Opponents:

Sophie Erhardt, MSc, PhD

Department of Physiology and Pharmacology, Karolinska Institute, Sweden

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Department of Psychiatry and Neuropsychology, Maastricht University, the Netherlands
name, title and place of employment of the three members of the committee

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