AARHUS UNIVERSITY

Press release

Please fill in this form and return it to graduateschoolhealth@au.dk in Word format no later than three weeks prior to your defence.

Basic information

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Department of: Biomedicine

Main supervisor: Per Brøndsted Höllsberg

Title of dissertation: Entry mechanisms of human herpesvirus 6A/B and their dependence on distinctive CD46 isoforms

Date for defence: 5th November 2021 at (time of day): 13.00 Place: Det blå auditorium (1266-222), Victor albeck bygningen, Vennelyst boulevard 4, 8000 Aarhus C.

Press release (Danish)

Hvordan kommer virus ind i vores celler?

Virus skal trænge ind i vores celler for at give infektion. Human herpesvirus 6A og 6B (HHV-6A/6B) er to tæt beslægtede virus, der inficerer os tidligt i livet, hvorefter de gemmer sig i kroppen. Et molekyle på overfladen af vores celler benævnt CD46 er receptoren for HHV-6A og i nogle tilfælde for HHV-6B. CD46 forekommer i forskellige varianter (isoformer) benævnt BC1, BC2,C1 og C2. I dette ph.d.-projekt blev de forskellige isoformer klonet og udtrykt i en celle, som havde fået fjernet CD46 via genetisk redigering. Herved kunne betydningen af de forskellige isoformer studeres. I ph.d.-projektet blev det vist, at isoformerne regulerer HHV-6A og HHV-6B infektionen forskelligt. BC-isoformerne fremmede infektion med HHV-6A, hvorimod en C-isoform fremmede HHV-6B infektionen. Endocytose er en måde hvorpå celler kan optage store molekyler og benyttes også ved optag af virus. En anden måde er ved en sammensmeltning mellem virus og cellen. Undersøgelse af disse mekanismer viste, at HHV-6B benytter forskellige måder at komme ind i cellen på afhængigt af hvilke isoformer af CD46 receptoren, der bliver udtrykt. Da udtrykket af isoformer er genetisk bestemt, indikerer resultaterne at forskellige individer har forskellig modtagelighed for infektion med HHV-6A og HHV-6B.

Et nyt ph.d.-projekt fra Aarhus Universitet, Health. Projektet er gennemført af Litten Sørensen Rossen, der forsvarer det d. 05/11-21

Forsvaret af ph.d.-projektet er offentligt og finder sted den 05/11 kl. 13.00 i det blå auditorium (1266-222), Aarhus Universitet, Vennelyst boulevard 4, Aarhus. Titlen på projektet er ”Entry mechanisms of human herpesvirus 6A/B and their dependence on distinctive CD46 isoforms”. Yderligere oplysninger: Ph.d.-studerende Litten Sørensen Rossen, e-mail: Lsr@biomed.au.dk, tlf. 53553018.

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Press release (English)
Human Herpesvirus 6A/6B entry into human cells

Viruses must enter our cells to cause infection. Human herpesviruses 6A and 6B (HHV-6A/6B) are two closely related viruses that infect us early in life, after which they hide in the body. A molecule expressed on our cells denoted CD46 is the receptor for HHV-6A and in some cases for HHV-6B. CD46 occurs in different variants (isoforms) denoted BC1, BC2, C1 and C2. In this PhD project, the various isoforms were cloned and individually expressed in a genetically modified human cell lacking CD46. In this way, the significance of the different isoforms could be investigated. In the PhD project, it was shown that the isoforms regulate the infection of HHV-6A and HHV-6B differently. The BC-isoforms promoted the HHV-6A infection, whereas the C-isoform promoted HHV-6B. Endocytosis is a way in which our cells can take up large molecules or viruses. Another way for viruses to enter our cells is by a fusion between the cell and virus. Examination of these processes showed that HHV-6B uses different ways of entering the cell depending on the isoforms. Since expression of isoforms is genetically determined, the results indicate that individuals may have different susceptibility towards HHV-6A and HHV-6B.

The project was carried out by Litten Sørensen Rossen, who is defending her dissertation on 05/11-21.

The defence is public and takes place on 05/11 at 13.00 in 1266-222, Aarhus University, Vennelyst boulevard 4, Aarhus C. The title of the project is "Entry mechanisms of human herpesvirus 6A/B and their dependence on distinctive CD46 isoforms". For more information, please contact PhD student Litten Sørensen Rossen, email: Lsr@biomed.au.dk, Phone +4553553018.

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