Pressemeddelelse, Ph.d.-forsvar Maria Hønholt Christensen

Herpesvirus angriber effektivt de første timer
Forkølelsessår udvikler sig hurtigt, når herpesvirus kommer i kontakt med hudens celler. Et nyt ph.d.-projekt har udredt, hvordan herpesvirus angriber immuncellers medfødte immunforsvar i løbet af kun seks timer og derefter har fri bane til at skabe en infektion.

Seks timer. Så lang tid tager det virusset Herpes simplex virus 1 at indlede en rigtig god infektion. Det viser et nyt ph.d.-projekt fra Aarhus Universitets Institut for Biomedicin.

For at kunne bide sig effektivt fast, må Herpes simplex virus 1 først afvæbne værtscellernes medfødte immunforsvar. Det gør den ved at udtrykke proteinet ICP27, der hæmmer STING signalsomet i cellen, der egentlig skulle aktivere immunforsvaret.

"Det betyder med andre ord, at herpesvirusset spænder ben for kommunikationen i cellens immunforsvar i løbet af infektionens allerførste timer," siger molekylær mediciner og ph.d.-studerende Maria Hønholt Christensen. "På denne måde nedsættes cellens dannelse af antivirale proteiner på et tidligt tidspunkt, og det giver virusset bedre betingelser for at etablere en infektion."

Dette ph.d.-projekt har identificeret Herpes simplex virus 1 proteinet, ICP27, som en effektiv inhibitor af det antivirale type I interferon respons. Projektet har udredt hvordan ICP27 binder til STING signalsomet, så immunreaktioner nedstrøms for STING hæmmes.
Hermed medvirker Ph.d.-projektet til forståelsen af det komplekse samspil mellem herpesvirus og det medfødte immunforsvar.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 25. april kl. 15 i Læsesalen i Bartholinbygningen, Aarhus Universitet. Titlen på projektet er "Studies on activation and evasion of intracellular pattern recognition receptors by herpesviruses". Yderligere oplysninger ved henvendelse til ph.d.-studerende Maria Hønholt Christensen,
e-mail: maria.christensen@biomed.au.dk, tlf 40545821.

Effective attacks by herpesviruses during the first hours of infection
The development of cold sore happens rapidly when herpesvirus comes into contact with the cells. A new PhD project elucidates how herpesviruses target the innate immune response during the first hours of infection and facilitate the establishment of infection.

Six hours. That is the time span from infection by Herpes simplex virus 1 to efficient targeting of the innate immune system. This is shown by a new PhD project from Department of Biomedicine at Aarhus University.

Herpes simplex virus 1 disarms pathways belonging to the cellular innate immune system. One mechanism is by the expression of the protein ICP27, which inhibits the STING signal some of host cells and thus the antiviral response.

"In other words; Herpes simplex virus 1 obstructs the communication between the proteins of the immune system during the very first hours of infection," says Maria Hønholt Christensen. "It is by this mechanism possible to dampen the expression of antiviral proteins at an early time point and improve the conditions for infection."

The PhD project has identified the Herpes simplex virus 1 protein ICP27, as an efficient inhibitor of antiviral type I interferons. The project has clarified how ICP27 targets the STING signal some and tone down STING-dependent pathways.
The PhD project contributes hereby to the insight in the complex interplay between herpesviruses and the innate immune system.

The defence of the PhD project is public and takes place the at the 25th of April at 3 PM, in "Læsesalen" in the Bartholin Building, Aarhus University. The title of the project is: "Studies on activation and evasion of intracellular pattern recognition receptors by herpesviruses". For more information, please contact PhD student Maria Hønholt Christensen, e-mail: maria.christensen@biomed.au.dk, Phone 40545821.