

## Press release

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### Basic information

Name: Anni Winckelmann    Email: [anniw@clin.au.dk](mailto:anniw@clin.au.dk) Phone:

Department of: Clinical Medicine

Main supervisor: Associate Professor Martin Tolstrup

Title of dissertation: Genetic Characterization of HIV-1 During Curative Strategies

Date for defence: Tuesday May 22<sup>nd</sup> 2018 at (time of day): 10 am Place: Eduard Biermann Auditoriet, Søauditorierne (building 1252-204), Bartholins Allé 3, 8000 Aarhus C

Press release (Danish)

Behandling af HIV-smittede med histondeacetylasehæmmere (HDACis) inducerer en bred reaktivering af latent virus.

En infektion med HIV-1 resulterer i en kronisk sygdom, på grund af et vedblivende reservoir af latent inficerede celler, hvilket nødvendiggør livslang kombinations antiretroviral behandling. En foreslået fremgangsmåde til at kurere HIV-1 omfatter lægemiddel-induceret reaktivering af latent inficerede celler, efterfulgt af immunsystemets eliminering af de reaktiverede celler. Kliniske forsøg med histondeacetylasehæmmere (HDACis) har vist at disse lægemidler er i stand til at omvende HIV-1 latens. Det er imidlertid uvist, om HDACis inducerer en begrænset eller bred reaktivering af det virale reservoir.

Dette ph.d.-projekt er baseret på sekventering af virus fra HIV-smittede deltagere i tre kliniske studier med HDACis og karakterisering af den inducerede reaktivering af latent virus. De tre HDACis vorinostat, panobinostat og romidepsin inducerede bred aktivering af det virale reservoir, hvilket gør dem til gode kandidater til yderligere forsøg med HDACis i kombination med andre interventioner. Dette er blandt hovedresultaterne i et nyt ph.d.-projekt fra Aarhus Universitet, Health, som kan bidrage med viden til at udvikle fremtidige strategier på vejen mod en kur mod HIV-1. Projektet er gennemført af læge og ph.d.-studerende Anni Winckelmann, der forsvarede det tirsdag d. 22. maj. Projektet er et samarbejde mellem Infektionsmedicinsk Afdeling, Aarhus Universitetshospital og Centre for Virus Research, WIMR, the University of Sydney, Australien.

Forsvaret af ph.d.-projektet er offentligt og finder sted tirsdag den 22. maj kl. 10 i Eduard Biermann Auditoriet, Aarhus Universitet, Bartholins Allé 3, 8000 Aarhus C. Titlen på projektet er "Genetic Characterization of HIV-1 During Curative Strategies". Yderligere oplysninger: Ph.d.-studerende Anni Winckelmann, e-mail: [anniw@clin.au.dk](mailto:anniw@clin.au.dk).

Bedømmelsesudvalg:

Associate Professor, Line Reinert - Formand for komiteen og moderator ved forsvaret

Institut for Biomedicin

Aarhus Universitet, Danmark

Associate Professor, Philippe Lemey

Rega Institute, Clinical and Epidemiological Virology

KU Leuven, Belgium.

Professor Jan Albert

Department of Microbiology, Tumor and Cell Biology

Karolinska Institutet, Stockholm, Sweden

Press release (English)

## Histone deacetylase inhibitors induce a broad reactivation of latent virus in HIV-infected individuals

An infection with HIV-1 results in a chronic disease, due to persistence of a small reservoir of latently infected cells, which necessitates life-long antiretroviral therapy. One approach to cure HIV-1 comprises drug-induced reactivation of latently infected cells, followed by elimination of the reactivated cells by the immune system. Clinical trials with histone deacetylase inhibitors (HDACis) have shown that these drugs are capable of reversing HIV-1 latency. However, it is unknown whether the HDACis induce a limited or a broad reactivation of the viral reservoir.

This PhD project is based on sequencing of viruses from HIV-infected participants in three clinical studies with HDACis and characterisation of the induced reactivation of latent viruses. The HDACis vorinostat, panobinostat and romidepsin induced broad activation of proviruses, which make them good candidates for further trials of HDACis in combination with other interventions. These are among the main findings in a new PhD project from Aarhus University, Health, which may inform future strategies on the path towards a cure for HIV-1 infection. The project was carried out by MD and PhD student Anni Winckelmann, who is defending her dissertation on Tuesday May 22nd. The project is a collaboration between the Department of Infectious, Aarhus University Hospital and Centre for Virus Research, WIMR, the University of Sydney, Australia.

The defence is public and takes place on Tuesday May 22nd at 10 am in the Eduard Biermann Auditorium, Aarhus University, Bartholins Allé 3, 8000 Aarhus C. The title of the project is "Genetic Characterization of HIV-1 During Curative Strategies". For more information, please contact PhD student Anni Winckelmann, email: [anniw@clin.au.dk](mailto:anniw@clin.au.dk).

Assessment committee:

Associate Professor, Line Reinert - Chairman of the committee and moderator of the defence  
Department of Biomedicine  
Aarhus University, Denmark

Associate Professor, Philippe Lemey  
Rega Institute, Clinical and Epidemiological Virology  
KU Leuven, Belgium.

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