

Press release

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Basic information

Name: Kathrine Kjær Email: kkjaer@clin.au.dk Phone: -

Department of: Clinical Medicine

Main supervisor: Martin Tolstrup

Title of dissertation: "The HIV-1 Reservoir: Exploring Proviral Persistence and Transcription Dynamics"

Date for defence: September 3rd at (time of day): 14:00 CET Place: Aarhus Universitet, Institut for Odontologi og Oral Sundhed, Apollonia (1612-018E), Vennelyst Boulevard 9, 8000 Aarhus C

Press release (Danish)

Undersøgelse af romidepsins effektivitet i reaktivering af latent HIV-1 & monocytters rolle i viral persistens

En ny ph.d.-afhandling fra Aarhus Universitet, Health, kaster lys over udfordringerne ved at bekæmpe HIV-1, som forbliver en kronisk infektion trods livslang behandling med antiretroviral terapi. Nøglehindringen for at helbrede HIV-1 er et reservoir af hvilende, inficerede celler, der undgår immunsystemets opdagelse. Forskningsprojektet, udført af Kathrine Kjær, undersøger effektiviteten af lægemidlet romidepsin til at reaktivere hvilende vira, så de kan opdages og destrueres af immunsystemet, samt monocytters rolle i opretholdelsen af HIV-1 reservoir.

Projektet har udviklet nye tests baseret på digital droplet PCR-teknologi til at måle aktiveringen af individuelle hvilende virus. Disse tests gav et detaljeret indblik i, hvor mange hvilende vira der aktiveres af romidepsin og niveauet af viral aktivitet. Digital droplet PCR blev desuden brugt til at sammenligne stabiliteten af HIV-1 reservoir i monocytter og CD4+ T-celler over tid.

Resultaterne fra forskningsprojektet viser, at romidepsin kun aktiverer en lille del af de hvilende vira, hvilket forklarer lægemidlets begrænsede succes i kliniske forsøg. Selvom CD4+ T-celler fortsat er det primære reservoir, kan andre celler, såsom monocytter, muligvis også bidrage til vedligeholdelsen af HIV-1 infektionen. De indsigter, som denne forskning har bragt, bidrager til en bedre forståelse af de udfordringer, der er forbundet med at udrydde HIV-1

Forsvaret af ph.d.-projektet er offentligt og finder sted den 03/09 2024 kl. 14 i Apollonia (1612-018E), Aarhus Universitet, Vennelyst Boulevard 9, 8000 Aarhus C. Titlen på projektet er "The HIV-1 Reservoir: Exploring Proviral Persistence and Transcription Dynamics".

Yderligere oplysninger: Ph.d.-studerende Kathrine Kjær, e-mail: kkjaer@clin.au.dk

Bedømmelsesudvalg:

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Associate Professor Ward De Spiegelaere

Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium

Press release (English)

Investigation of the Efficacy of Romidepsin in Reactivating Latent HIV-1 & the Role of Monocytes in Viral Persistence

A new PhD dissertation from Aarhus University, Health, sheds light on the challenges of combating HIV-1, which remains a chronic infection despite lifelong treatment with antiretroviral therapy. The key obstacle to curing HIV-1 is a reservoir of latent, infected cells that evade detection by the immune system. The research project, conducted by Kathrine Kjær, investigates the efficacy of the drug romidepsin in reactivating latent viruses so they can be detected and destroyed by the immune system, as well as the role of monocytes in sustaining viral persistence.

The project has developed new tests based on digital droplet PCR technology to assess the activation of individual latent viruses. These tests revealed the extent of activation of individual proviruses by romidepsin and provided a detailed understanding of the overall viral activation. Additionally, digital droplet PCR was employed to evaluate the stability of the HIV-1 reservoir in monocytes and CD4+ T cells over time

The results of the research project demonstrate that romidepsin only activates a small fraction of latent viruses, which explains its limited success in clinical trials. Although CD4+ T cells remain the main reservoir, other cells such as monocytes may also contribute to the persistence of HIV-1 infection. This research offers valuable insights into the complexities of eradicating HIV-1.

The defence is public and takes place on 03/09 2024 at 14:00 CET in Apollonia (1612-018E), Aarhus Universitet, Vennelyst Boulevard 9, 8000 Aarhus C. The title of the project is "The HIV-1 Reservoir: Exploring Proviral Persistence and Transcription Dynamics". For more information, please contact PhD student Kathrine Kjær, email: kkjaer@clin.au.dk.

Assessment committee:

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