ASHBi
DISTINGUISHED SEMINAR

Rejuvenation of CD8+ T cell responses in long term treated people living with HIV-1

Lecturer: **Victor Appay PhD**

Director, INSERM

Research Director, ImmunoConcept Laboratory, University of Bordeaux

Date: Thursday, 18 April 2024

Time: 15:00 - 16:00

Venue: Conference Room / Zoom
Hybrid
B1F, Faculty of Medicine Bldg. B

Register here

Eligibility: Academic Researchers and Students

HIV-1 establishes chronic infection, exhausting cellular immune defences and necessitating life-long antiretroviral treatment (ART). The functional and regenerative capabilities of HIV-specific CD8+ T cells after very long-term ART are unknown. Here, we characterized the phenotypic and transcriptomic properties of HIV-1-specific CD8+ T cells isolated over a median time period of 25 years from aging individuals infected early during the pandemic and subsequently treated with ART. Counterintuitively, we found that long-term therapeutic suppression of viral replication was associated with rejuvenated HIV-1-specific CD8+ T cell populations in the face of immune senescence. Tracking individual transcriptomes within our single-cell datasets revealed a process of clonal succession, with the emergence of new clonotypes displaying gene expression signatures of early differentiation and stemness, which have been associated with natural control of HIV-1. The resilience of the immune system under such extreme circumstances, as demonstrated here, could have broad implications for the development of therapeutic interventions and vaccines, potentially extending beyond the confines of HIV-1.

Hosted by Institute for the Advanced Study of Human Biology (WPI-ASHBi)

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