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Séminaire / Seminar

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13 novembre / November 13 (12:00)

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A role for anti-HIV-specific antibodies in HIV control: What we know, what we don't know, what we need to know

HIV Envelope-specific antibodies able to mediate antibody dependent cellular cytotoxicity (ADCC) have been implicated in protection from HIV infection. However, Envelope-specific antibodies have the capacity to support ADCC of both HIV-infected and HIV-uninfected bystander cells. Lysis of HIV-infected cells by ADCC is desirable while lysis of uninfected healthy bystander cells contributes to CD4 T cells loss and pathogenesis. It is important that assays measuring ADCC activity distinguish between these two target cell types. In this seminar, I will describe the development of a novel ADCC assay and HIV infected target cells, which simultaneously quantify the killing activity of Envelope-specific antibodies on both HIV-infected and uninfected bystander cells. Using these tools, we show that Envelope-specific antibodies in HIV+ plasma mediate the ADCC of genuinely HIV-infected cells displaying Envelope in its native closed conformation, though these antibodies represent only a minority of all the anti-HIV Envelope-specific antibodies in HIV+ plasma. This assay can be used for the development of vaccine strategies aimed at evaluating the induction of Env-specific antibody responses capable of controlling HIV infection.