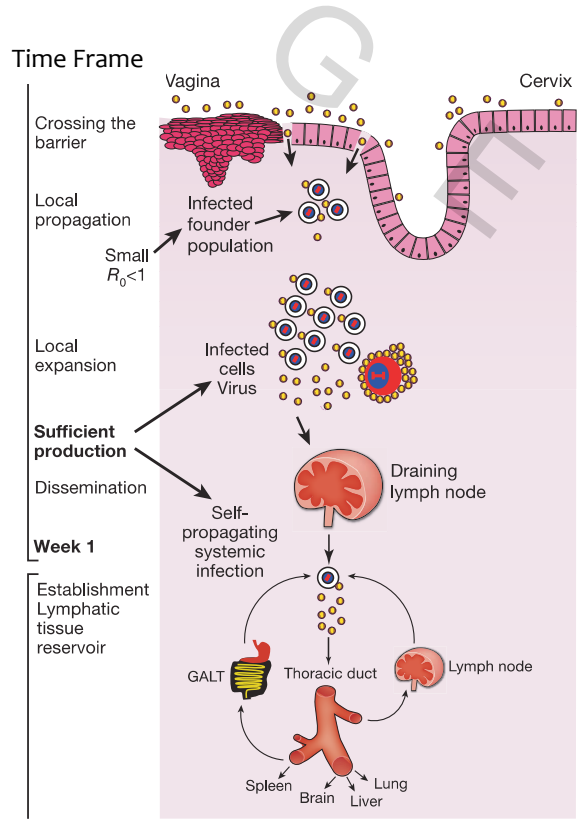
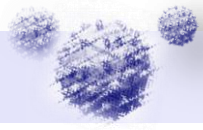


Resident memory CD4+ T cells in cervical tissue are highly permissive to HIV infection



1. Background and objectives.



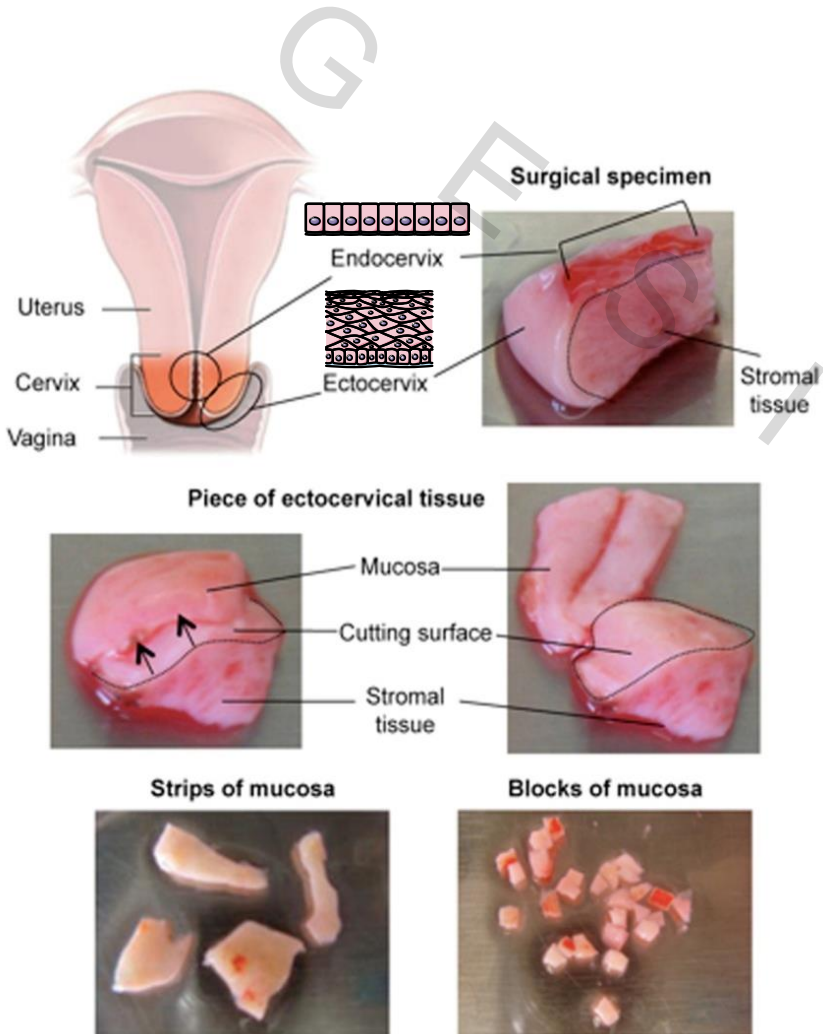
A. Haase, Nature 2010

- 1) HIV viral reservoirs are established very early during infection. Early ART controls viremia and limits the size of the reservoir, but it does not avoid its establishment.
- 2) $CD4^+$ T cells initially infected live long enough to be able to enter a resting state, thus establishing a viral reservoir.

A new population of resident memory T cells in peripheral tissue have been described (CD69).

To determine if resident memory T cells (T_{RM}) from the cervical tissue represent a viral reservoir

2. Methodology.



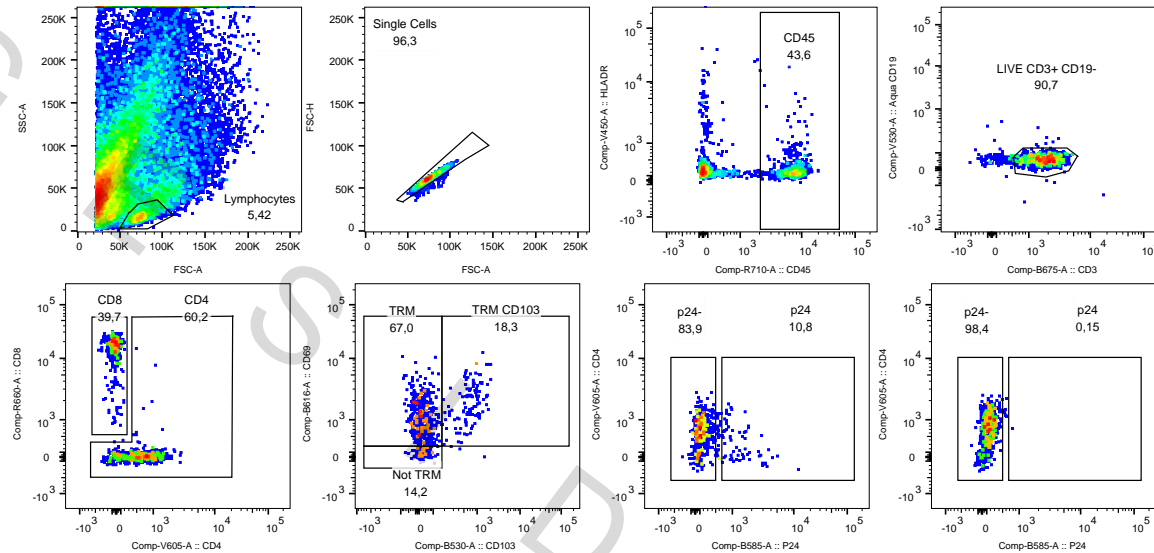
1) Cervicovaginal explant culture

- Infect cervical tissue blocks with HIV_{BAL}
- Change media every 3d (p24 ELISA)
- 7-12d PI: digest tissue and stain to determine p24 expression by flow and vDNA content in sorted subsets.

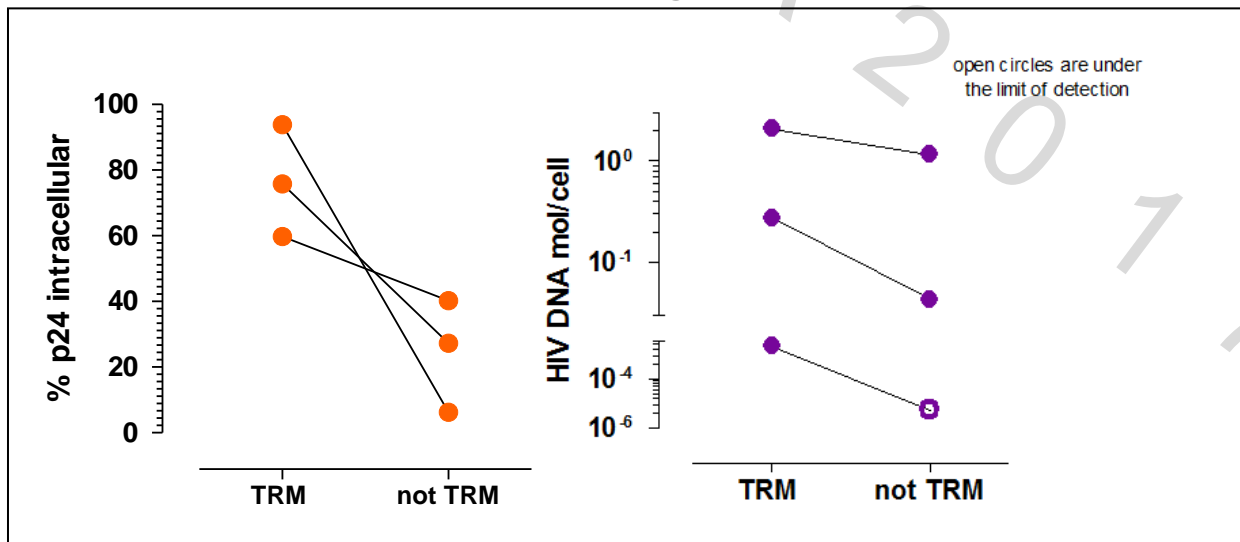
2) HIV patients undergoing hysterectomy

- Determine vDNA in blood and cervix from these ART-treated HIV+ woman

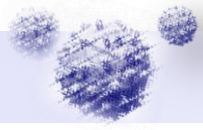
3. Results: Cervicovaginal explant culture



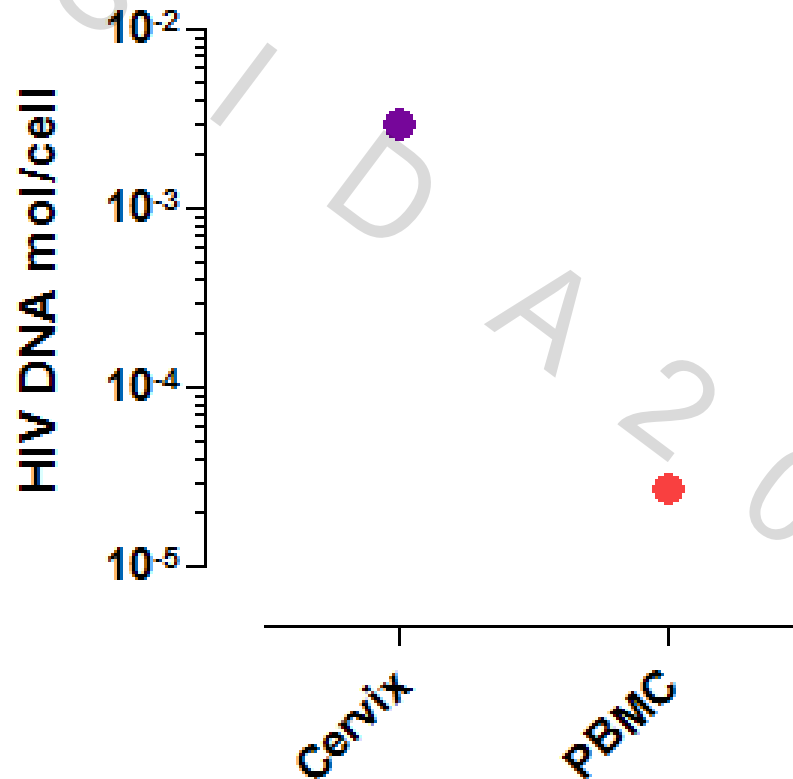
TRM are proportionally more infected: higher percentage within the p24 fraction and higher proviral DNA content



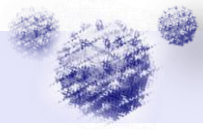
3. Results: ART-treated HIV⁺ woman



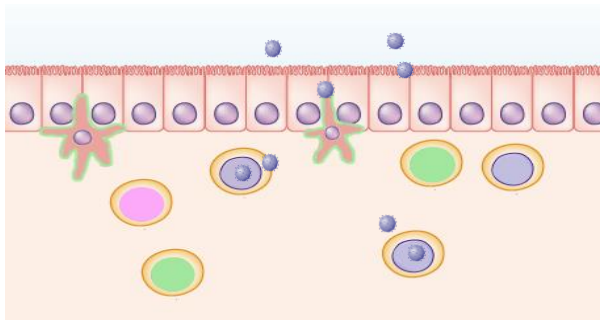
2 log more copies of proviral DNA in cervical CD4 T cells derived from cervix compared to blood



4. Conclusions and Discussion.



- $CD4^+ T_{RM}$ present in the mucosal tissue from the lower female genital tract are preferentially infected during *ex vivo* HIV infection.
- We confirm the existence of a critical viral reservoir in the female genital tract of an ART-treated HIV⁺ woman, which is higher compared to blood.



Thus, the contribution of $CD4^+ T_{RM}$ to the establishment of latently-infected cells in these tissues needs to be addressed.



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