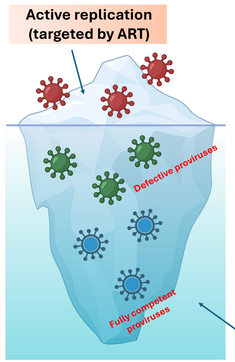
Three immunoregulatory signatures define non-productive HIV infection in CD4+ T memory stem cells

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1. Viral latency: The barrier to HIV eradication



Effective but incomplete: Current antiretroviral Therapy (ART) efficiently suppresses HIV replication but is not active against the HIV reservoir

The latent reservoir: A "submerged" pool of long-lived cells carrying integrated and non-productive proviruses throughout the body

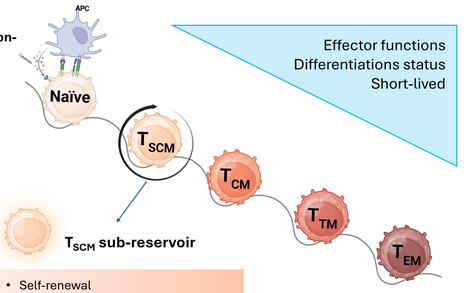
Invisible to treatment: because the cells of the reservoir are not actively producing new viruses, they are invisible to the immune system and unaffected by ART

The barrier to a cure: This persistent reservoir is the primary reason why the virus rebounds almost immediately if treatment is interrupted

Latent reservoir
Resistant to antiretroviral therapy (ART)

Latent reservoir:
- Made by cells harboring **non-productive proviruses**
- Invisible to immune system
- Invisible to ART
- No known marker
- 1 in a million CD4+
- Heterogeneous
- Early forming



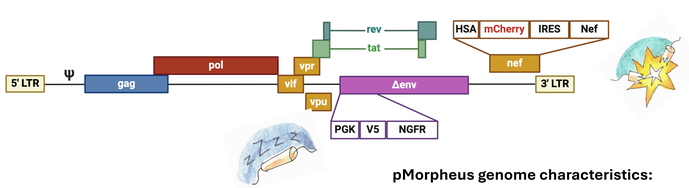


T_{SCM} sub-reservoir

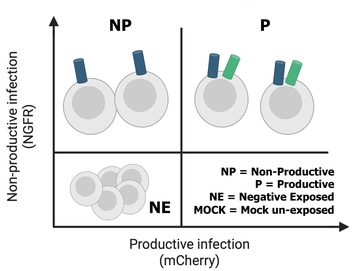
- Self-renewal
- Replenish more differentiated subsets
- Core of the latent reservoir

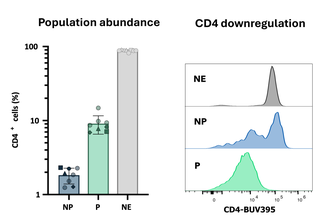
T_{SCM} = stem-cell memory
T_{CM} = central memory
T_{TM} = transitional memory
T_{EM} = effector memory

2. pMorpheus-V5 dual reporter virus

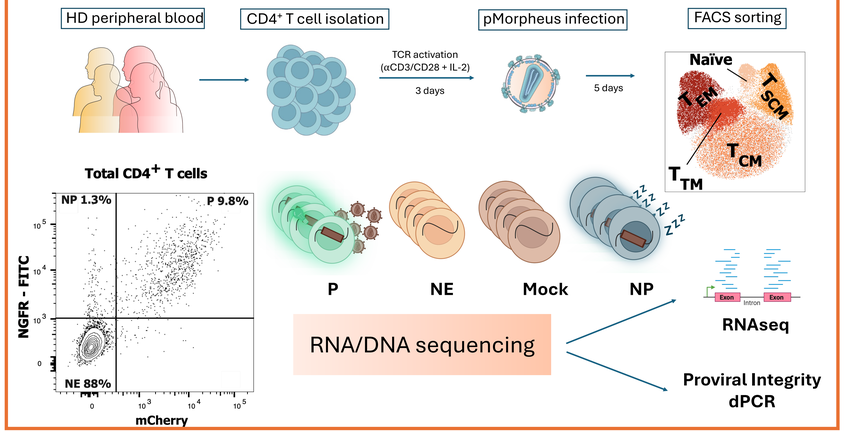


pMorpheus genome characteristics:
- Two reporter genes
- Single-round (Δenv)
- Presence of Nef

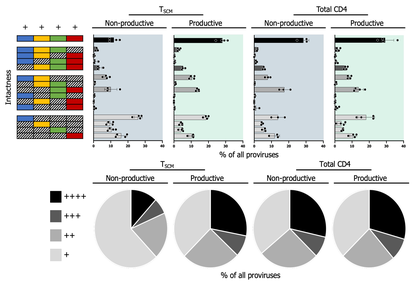


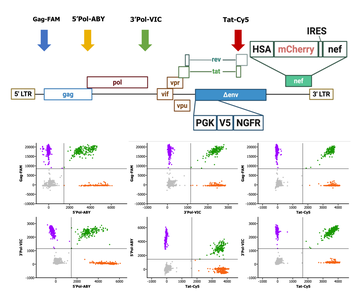


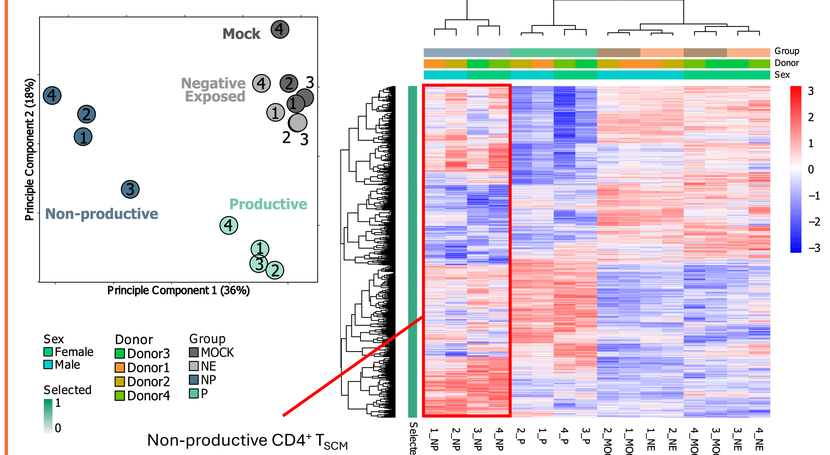
3. Isolating pure NP, P and NE populations



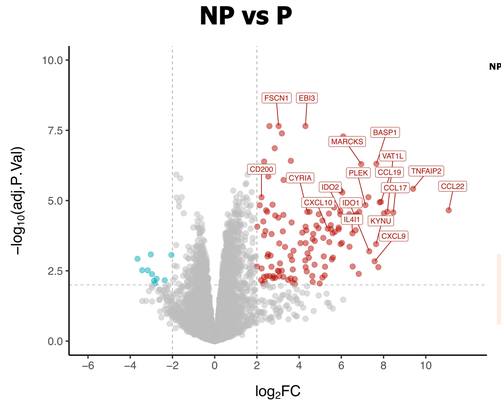
4. NP CD4+ T_{SCM} show a specific signature

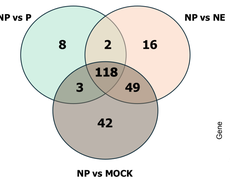




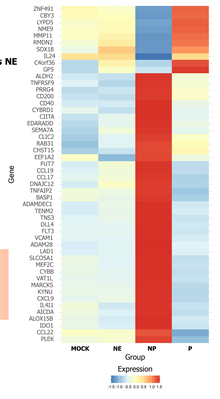


5. Transcriptomic signature of NP CD4+ T_{SCM}

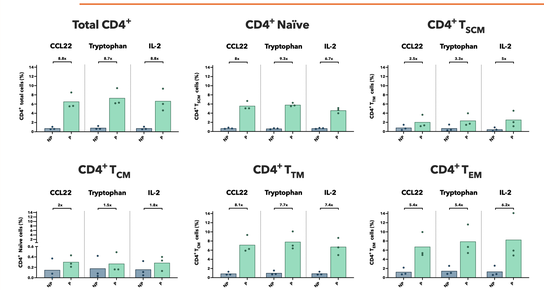


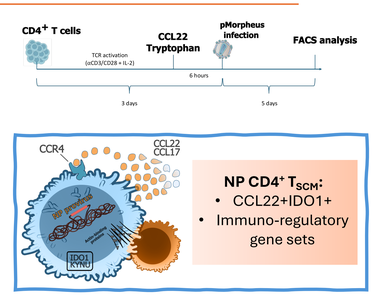


118 upregulated genes identifying NP CD4+ T_{SCM}



6. CCL22+IDO1+ enrichment in NP CD4+ T_{SCM}





NP CD4+ T_{SCM}:
- CCL22+IDO1+
- Immuno-regulatory gene sets

pMorpheus: 1R01AI179529

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