

**PHENOTYPIC AND FUNCTIONAL
CHARACTERIZATION OF DENDRITIC
CELLS GENERATED FROM
MONOCYTES OF HIV- INFECTED
PATIENTS IN THE PRESENCE
OF GM-CSF AND INTERFERON- α .**

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BACKGROUND

In HIV- seronegative controls :

- GM-CSF/IFN- α combination
→ differentiation of monocytes into dendritic cells *in vitro*
- Low expression of CD4, CXCR4 and DC-SIGN
- Production of IL-12, IL-10, and TNF- α after maturation by SAC or CD40L
- Antigen presentation and induction of HIV-lipopeptides specific primary immune response

The present study was aimed at characterizing the phenotype and function of cells generated following culture of monocytes of HIV-infected patients in the presence of GM-CSF and Interferon- α . This cytokine combination could be used in the setting of adjuvant cytokine therapy in trials of therapeutic immunizations in HIV infection

PATIENTS

Patients under HAART

Viral load ≤ 50 copies/ml ≥ 1 year

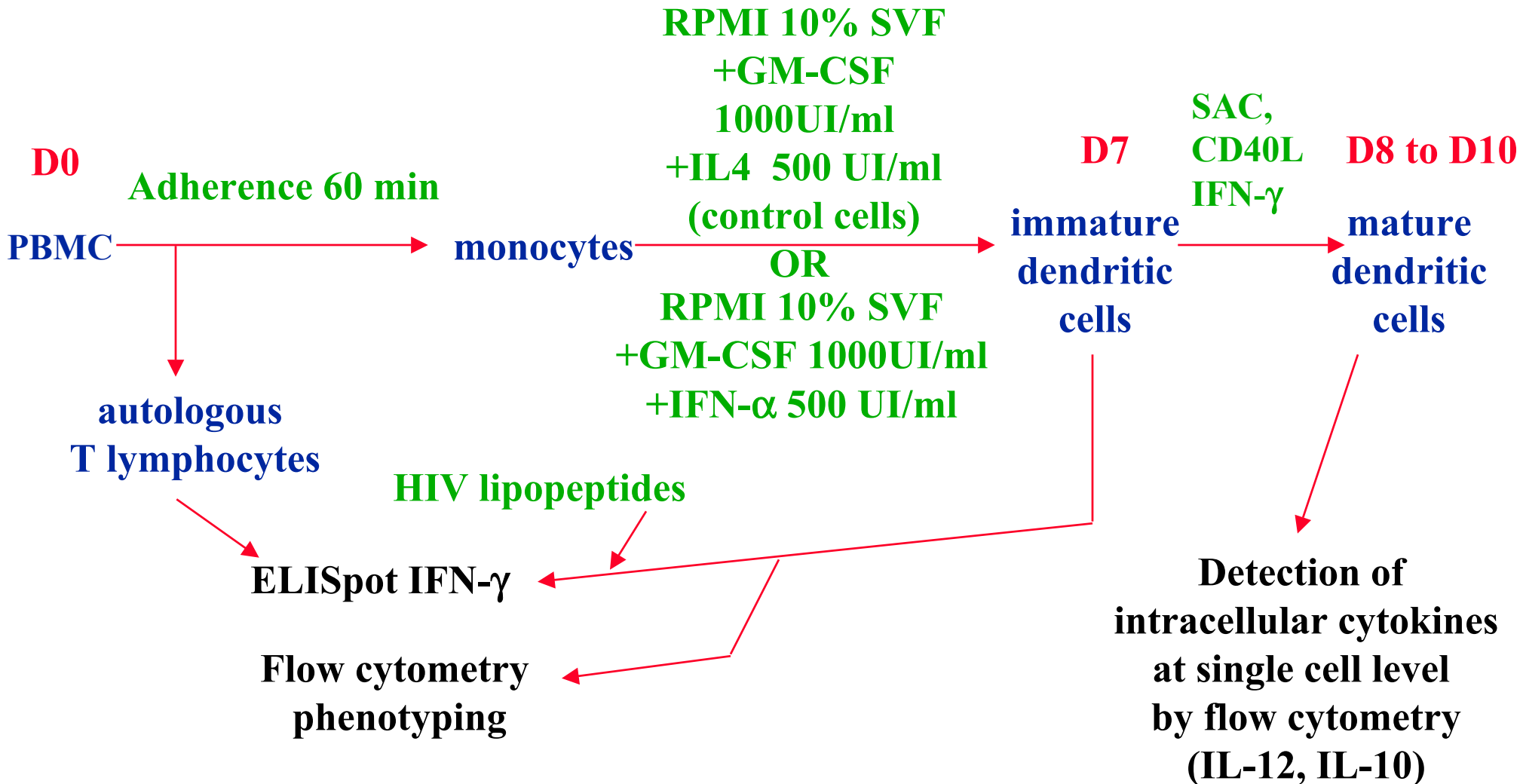
CD4 cell count $\geq 500/\text{mm}^3$

9 patients :

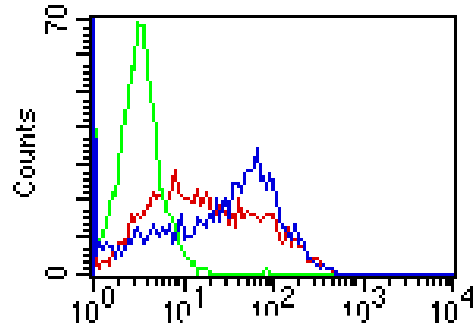
Median CD4 cell count : $708/\text{mm}^3$

Median time with Viral Load < 50 copies : 14 months

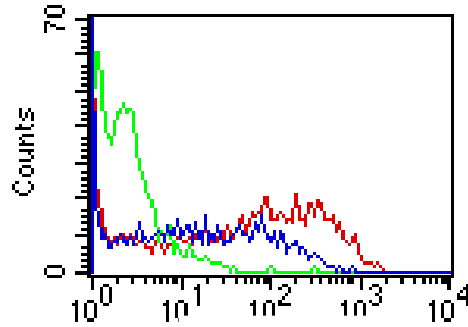
MATERIALS AND METHODS



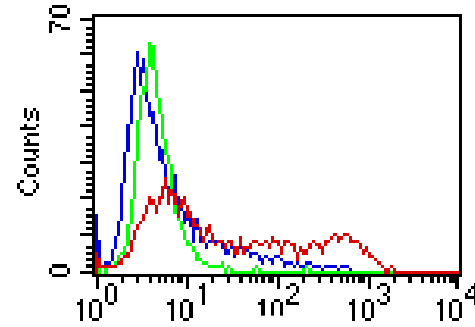
Phenotype at day 7 of culture



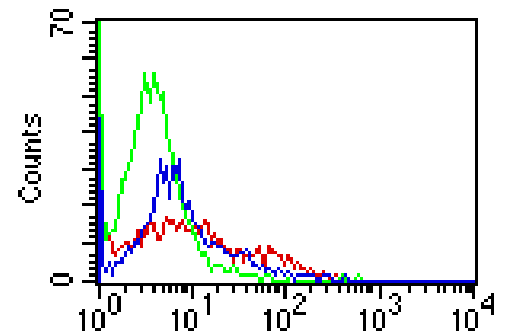
CD14



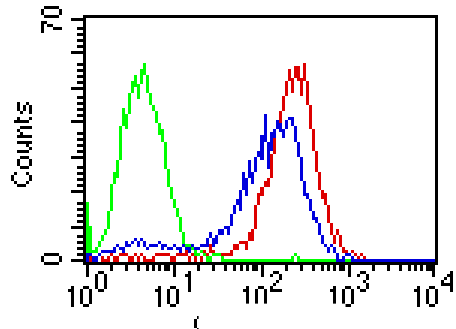
CD16



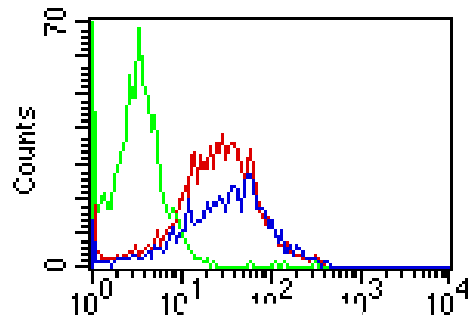
CD1a



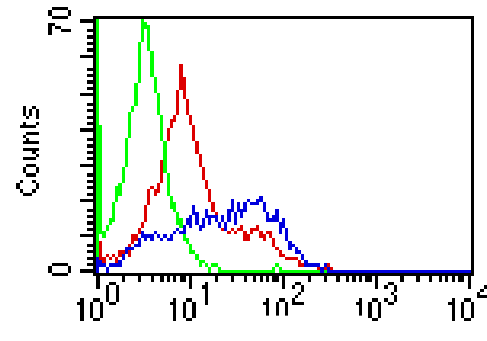
CD83



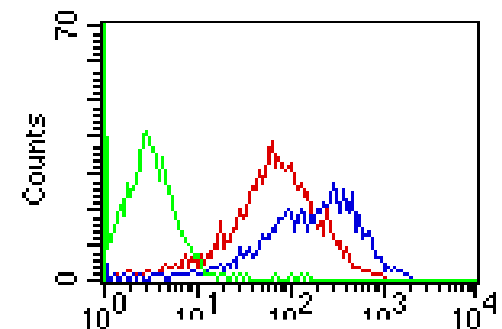
CD40



CD86



CD80



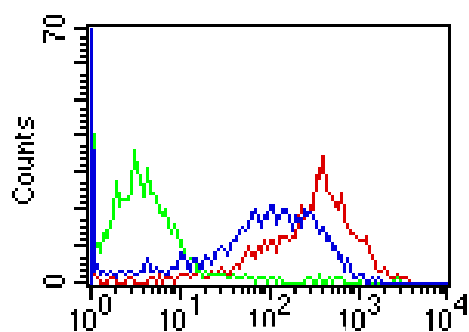
HLA DR

GM-CSF/IFN- α

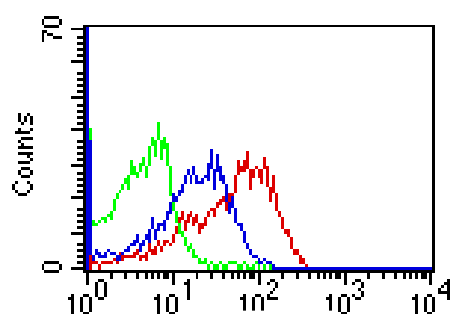
GM-CSG+IF/IL-4

Isotypic Control

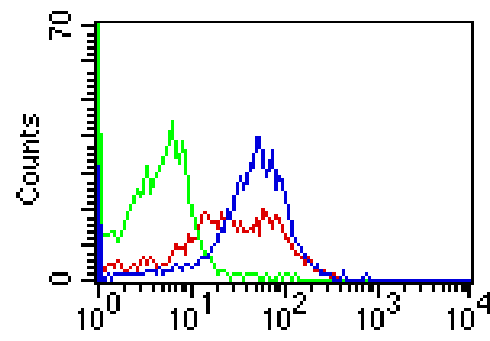
Phenotype at day 7 of culture



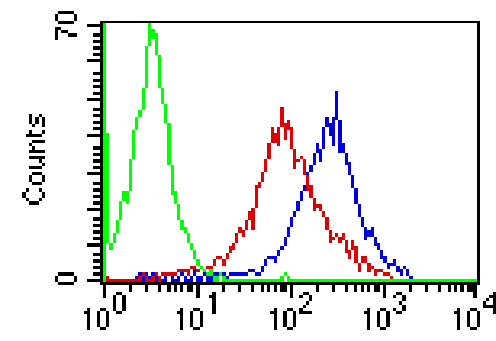
CD11c



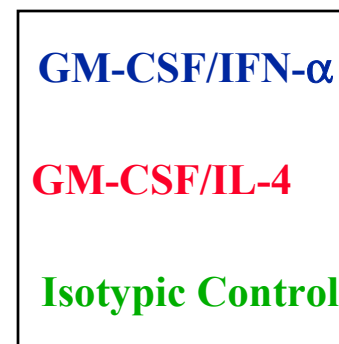
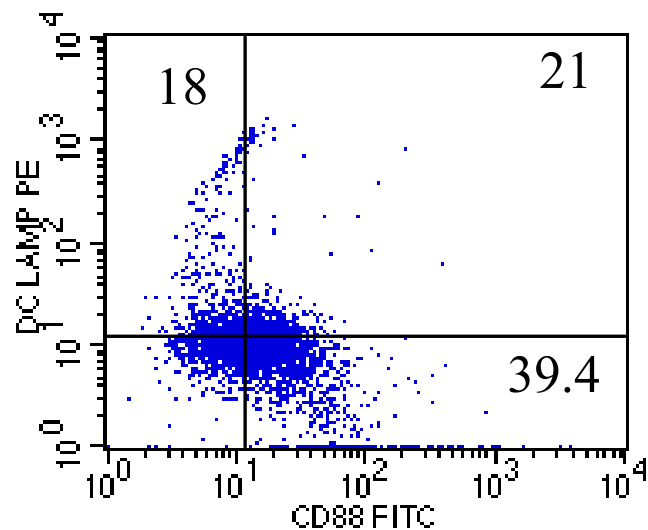
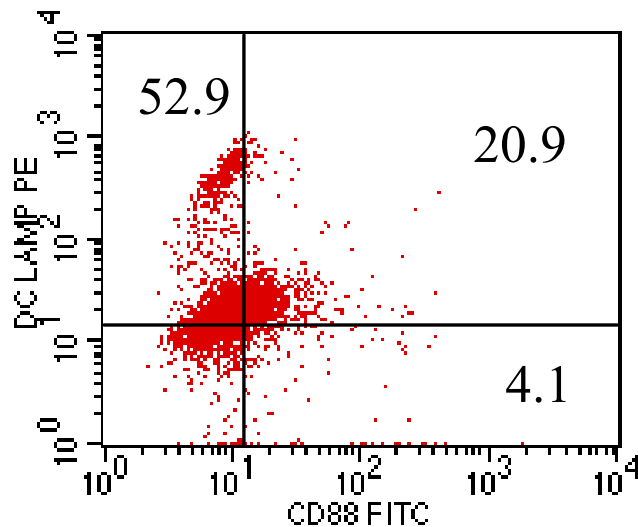
CD33



CD95



HLA ABC

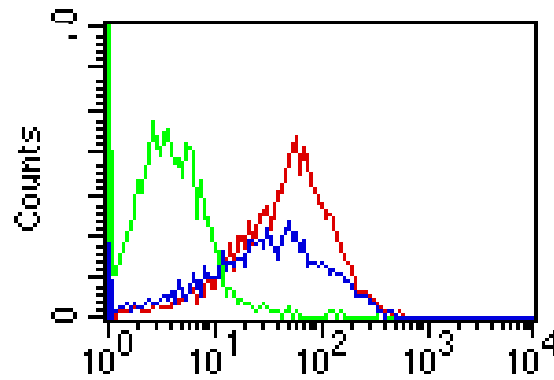


Expression of HIV receptors following 7 days of culture

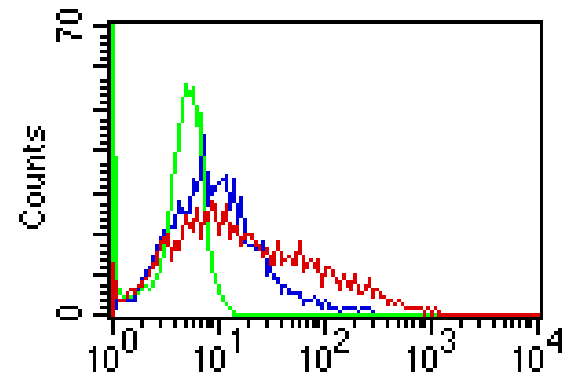
GM-CSF/IFN- α

GM-CSF/IL-4

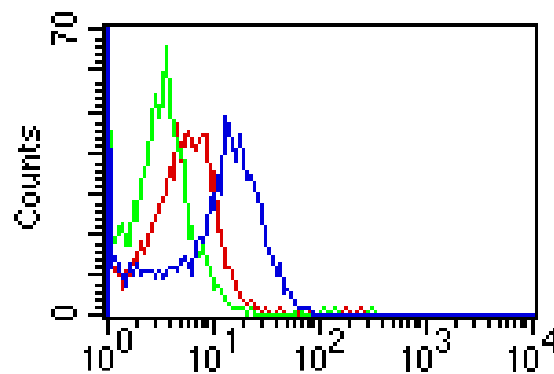
Isotypic Control



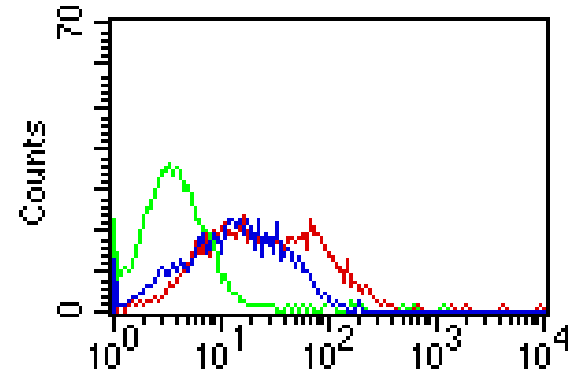
CD4



CXCR4



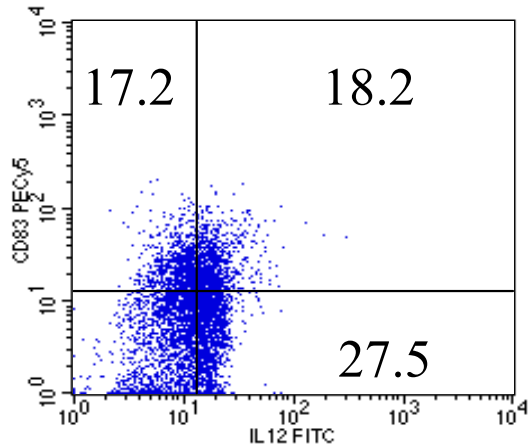
CCR5



DC-SIGN

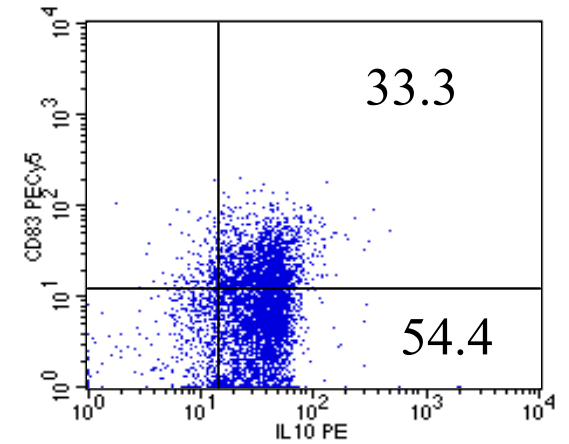
CYTOKINE PRODUCTION BY DC STIMULATED BY CD40L AND IFN- γ

CD83

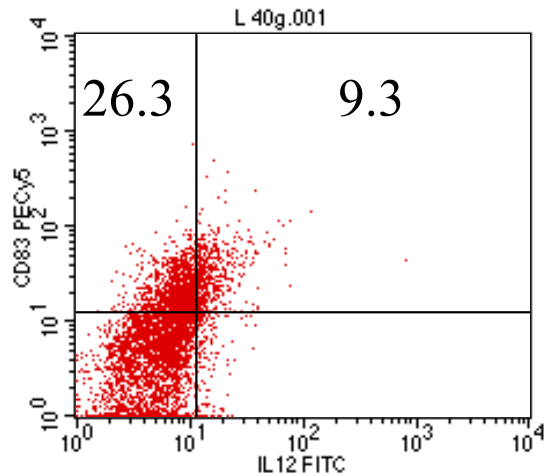


GM-CSF/IFN- α

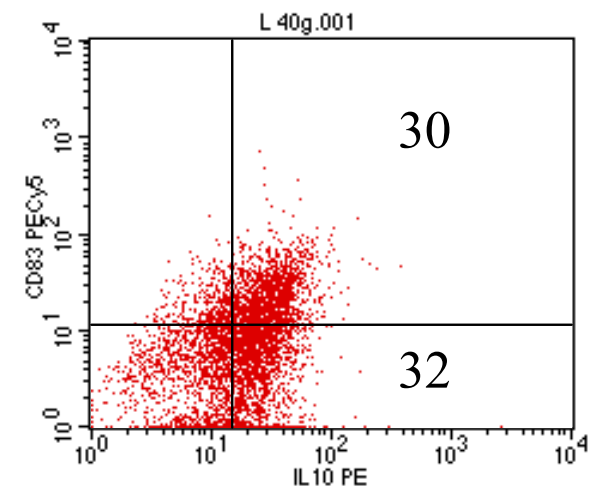
IL-12



IL-10

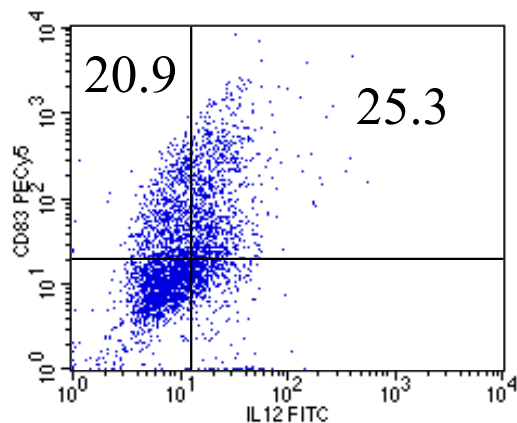


GM-CSF/IL-4

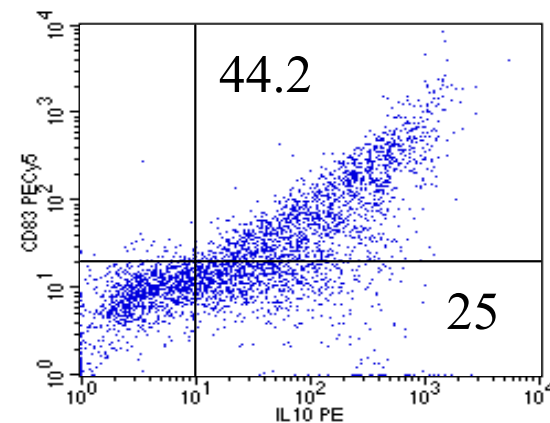


CYTOKINE PRODUCTION BY DC STIMULATED BY SAC

CD83

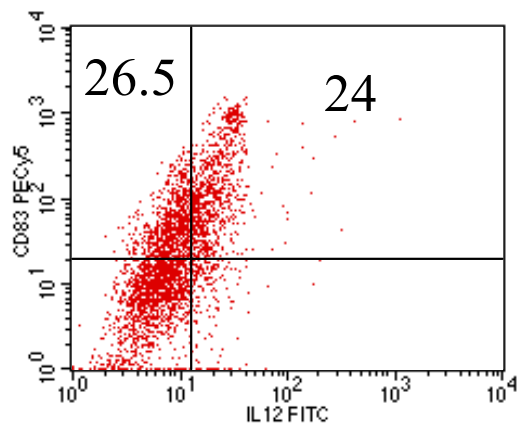


GM-CSF/IFN- α

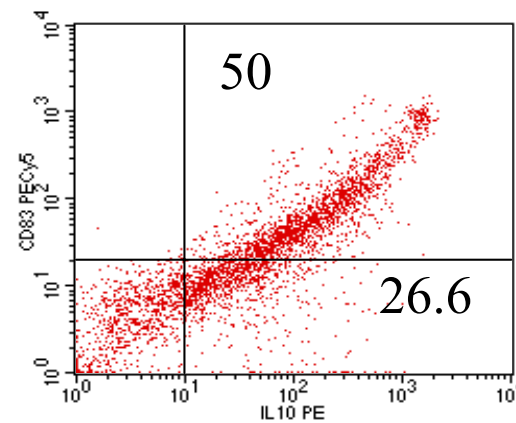


IL-12

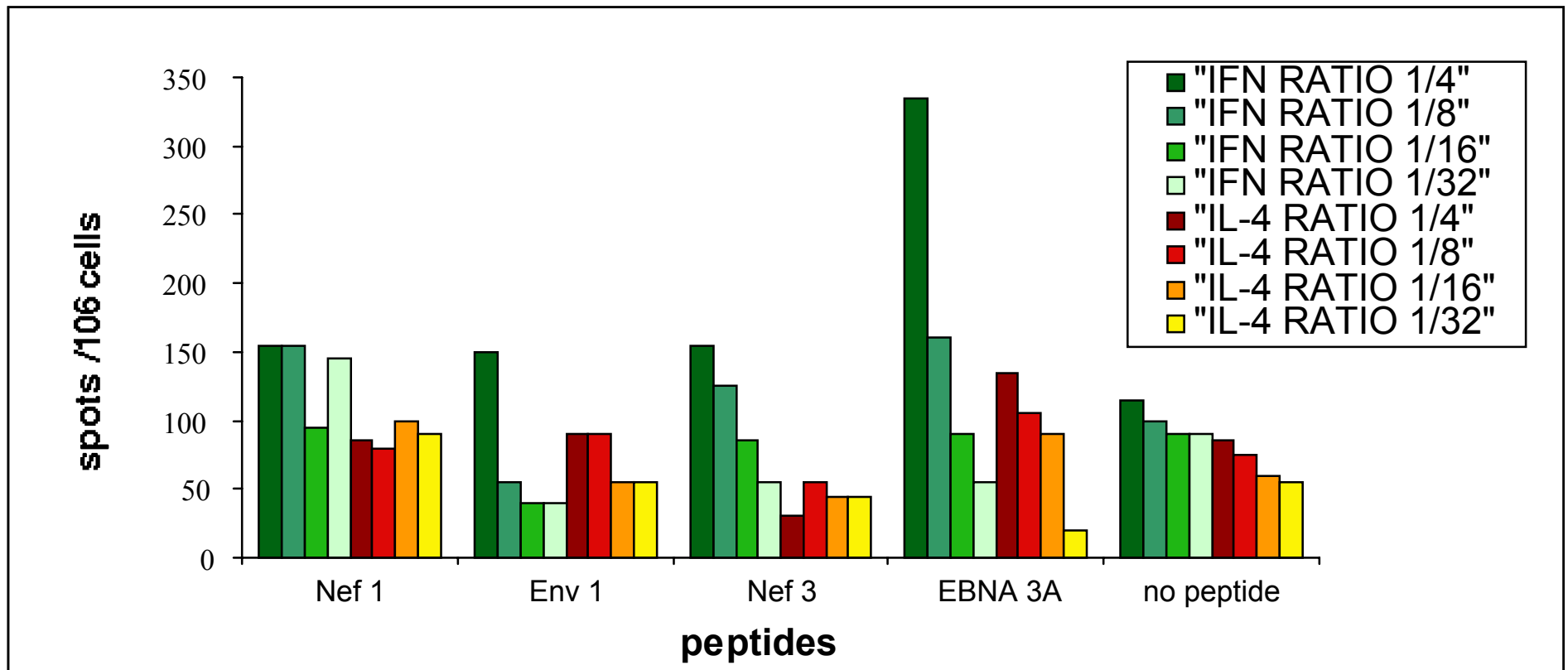
IL-10



GM-CSF/IL-4



ELISPOT IFN γ : SPECIFIC CD8 T CELL RESPONSES INDUCED BY RELEVANT HLA CLASS I HIV- LIPOPEPTIDES-PULSED DENDRITIC CELLS



CONCLUSIONS

Dendritic cells generated by differentiation of monocytes from HIV-infected patients in the presence of GM-CSF/IFN- α *in vitro*

- Expressed weakly CD1a, CD4, CXCR4 and DC-SIGN
- Maintained expression of CD14 and CD16
- Were functional and produced IL-10 and IL-12 following stimulation by SAC or CD40L
- However, the ability of these DC to present HIV peptides and to induce of a HIV-specific immune response remains to be demonstrated