

Poster presentation

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## PI6-44. Investigating T cell immune responses in Cameroon, a country with broad HIV-1 genetic diversity

M Tongo\*<sup>1</sup>, E Ebong<sup>1</sup>, L Zembe<sup>2</sup>, E Mpoudi Ngole<sup>1</sup> and W Burgers<sup>2</sup>

Address: <sup>1</sup>Ministry of Research and Innovation, Institute of Medical Research and Studies of Medicinal Plants, YAOUNDE, Cameroon and <sup>2</sup>Institute of Infectious Diseases and Molecular Medicine, Cape Town, South Africa

\* Corresponding author

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### Background

HIV-1 diversity presents a challenge for the development of an effective HIV vaccine. Cameroon in central Africa, exhibits very broad HIV-1 genetic diversity. That makes it one of the few places in the world where vaccine efficacy can be tested against a broad range of subtypes and recombinants. The aim of the study is to assess cross-clade T cell responses in HIV-infected Cameroonians.

### Methods

PBMCs were obtained from 36 HIV-1 infected blood donors. T cell responses were determined using the IFN $\gamma$  ELISPOT assay using cryopreserved PBMC. Cells were stimulated with overlapping peptide pools derived from HIV-1 group M consensus Gag and Nef proteins. The first line assay used a pool-matrix screening approach, and this was followed by a confirmatory assay to identify single reactive peptides.

### Results

Thirty-six samples were tested in the IFN $\gamma$  ELISPOT assay; 32 (89%) responded to at least 1 peptide pool. The median magnitude response was 1995 spot forming units (SFU)/106 PBMC among the responders (range 130 to 12853). At the protein level the median response to Gag was 1083 SFU/106 PBMC, while the median response to Nef was 1070 SFU/106 PBMC. The median number of peptides recognized per individual was 5 (range 1 to 16) with no difference in number of peptides recognized in Gag and Nef ( $p = 0.1793$ ). Most of the reactive peptides targeted the conserved regions both in Gag and Nef. The

magnitude of the total response correlated inversely with CD4 count ( $r = -0.4026$   $p = 0.0165$ ), but no relationship with viral load was evident. At the protein level, there was no relationship between the Gag or Nef response and CD4 count or viral load.

### Conclusion

These data show that high magnitude T cell responses are detectable in HIV-1 infected Cameroonians using Group M peptide reagents, which likely reflects the broad HIV-1 genetic diversity in the population.