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Poster presentation

P17-18. ANRS lipo5 sequences induce in vitro cross-reactive CD4+ T cell response against clade B and C

FA Castelli*[1], N Szely[2], B Maillère[2] and HIV Vaccine Program[3]

Address: [1]Institute of Biology and Technologies (SIMOPRO), CEA, Gif sur yvette, France, [2]Commisariat à l'Energie Atomique (CEA), Gif sur Yvette, France and [3]ANRS, Paris, France

* Corresponding author

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Background

The Lipo5 lipopeptides included in the ANRS vaccine trials have been initially designed on the basis of the immunodominant CD8+ T cell epitopes but have been shown to induce both CD4+ and CD8+ T cell response in healthy vaccinees. In order to characterize the CD4+ T cell response specific for the Lipo5 sequences, we derived Lipo5 specific T cell lines using in vitro stimulation and characterized their specificity.

Methods

Specific CD4+ T cell responses were induced in vitro against Lipo5 peptides on 8 HLA unrelated naive donors. Purified CD4+ T cells were stimulated once a week during 4 weeks, by mature DC loaded with Lipo5 peptides. The CD4+ T cell response was revealed by IFN-γ ELISpots.

Results

All 8 donors developed an important specific CD4+ T cell response. Globally, we found a mean of 32 specific CD4+ precursors per twenty million of peripheral CD4+ T cells. Fifty seven per cent of the Lipo5-specific response was against Gag 253–284, 150 T cell lines being specific for this peptide. T cell response specific for Pol 325–355, Gag 17–35, Nef 116–154 and Nef 66–97 represented 21%, 11%, 6% and 5% of the Lipo5 specific response, respectively. In agreement with its binding capacity, we demonstrated that the strong immunogenicity of Gag 253–284 was due to its presentation by multiple HLA DR molecules. All the 51 specific CD4+ T cell lines, with the exception of two, were stimulated by the clade B and C consensus sequences.

Conclusion

In agreement with the observations made in vaccinees, Lipo5 sequences introduced in the ANRS vaccine elicit a strong CD4+ T cell response in vitro and contain multiple CD4 epitopes. We therefore confirmed the good immunogenicity of the Lipo5 peptides and demonstrated their capacity to elicit a multiepitopic CD4+ response cross reacting with clade B and C sequences.