



POSTER PRESENTATION

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# Modulation of the immune response in HTLV-1-infections by SM29 antigen in vitro is dependent of IL-10, TGF- $\beta$ and CTLA-4

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The HTLV-1 is the causal agent of HTLV-1-associated Myelopathy/Tropical Spastic Paraparesis (HAM/TSP). The immune response in HTLV-1 infection is polarized to the Th1-type, and previous data from our group had demonstrated that the use of *Schistosoma* antigens to cell cultures in HTLV-1 infection resulted in down-modulation of Th1/inflammatory response. The aim of this study was to evaluate whether the modulation of inflammatory response by *S. mansoni* antigens depends upon the presence of IL-10, TGF- $\beta$  and CTLA-4. The antibodies anti-IL-10, anti-TGF- $\beta$  and anti-CTLA-4 with or without the *S. mansoni* antigen Sm29 were added to the PBMC cultures of HTLV-1- infected individuals and the levels of cytokines in the supernatants were measured using ELISA sandwich method. Compared to the levels of cytokine in non stimulated cultures (1.073 pg/ml, median values), the levels of IFN- $\gamma$  production (552 pg/ml, 1.002 pg/ml and 548 pg/ml, respectively;  $p < 0.05$ ). On the other hand, the levels of IL-10 were increased by the presence of Sm29 (it passed from 26 pg/ml to 102 pg/ml;  $p = 0.02$ ), however when anti-TGF- $\beta$  and anti-CTLA-4 were added to the cultures there was a reduction in the levels of IL-10 (19 pg/ml and 23 pg/ml, respectively;  $p < 0.05$ ). The regulation of IFN- $\gamma$  production by Sm29 antigen in HTLV-1-infected individuals is dependent on IL-10, TGF- $\beta$  and CTLA-4. Also the levels of IL-10 were affected by the neutralization of TGF- $\beta$  and CTLA-4.

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