Retrovirology

Poster presentation

Activation and Maturation of Human Dendritic Cells by Extracellular Tax Protein of HTLV-I

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HTLV-1-associated myelopathy/tropical spastic paraparesis (HAM/TSP) is characterized by the generation of an intense cytotoxic T cell (CTL) response directed against oncoprotein Tax. Previous studies have suggested that Tax may be available for immune recognition by dendritic cells (DCs). In this study, we have shown that purified Tax protein efficiently bound and localized to the cell membrane of monocyte-derived dendritic cells (MDDCs) and was internalized within a few hours. After uptake, Tax-induced expression of DC activation markers MHC class I and II, and costimulatory molecules as well as the DC maturation marker, CD83. Tax has also promoted the production of major immune-directing cytokines IL-12, TNF-α, and proinflammatory chemokines MIP-1α, MIP-1β, and RANTES. The inhibitors of NF-κB have abrogated Tax-induced secretion of cytokines/chemokines indicating a role for NF-κB signaling in Tax-mediated immune response. Finally, Tax enhanced the allogenic and antigen-specific T cell proliferation capability of MDDCs. These results have indicated that extracellular Tax may selectively target MDDCs, be taken up by these cells and promote their maturation and antigen-presenting functions, driving a Th1-type immune response.