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Protein kinase C (PKC)ε and human CD4 T cell proliferation

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T-lymphocytes contain up to eight different PKC isotypes and PKCθ has become the most interesting isotype for T-cell activation, proliferation, and transforming growth factor (TGF)-1β signalling [1]. However, It has been suggested that also PKCε may have a role in inflammation and immune-mediated disorders [2]. Thus, we have analyzed the ability of PKCε to control human CD4+ T cell proliferation and their sensitivity to TGF-1β. We demonstrate a nonredundant role of PKCε in CD4+ T cell proliferation triggered in vitro by CD3 stimulation. PKCε sustains NF-kB and, consequently, IL-2 receptor chains transcription and CD25 cell surface expression levels. Moreover, PKCε silencing potentiates the inhibitory effects of TGF-1β, affecting Smad2 phosphorylation levels. Finally, assuming that PKCε could be involved in CD4+ T cell mediated-autoimmune diseases, we have isolated CD4 T cells from Hashimoto Thyroiditis (HT) patients an autoimmune disorder characterized by reduced serum concentration of TGF-1β and TReg cell subsets with defective suppressive functions [3,4]. In HT CD4+ T cells we found a significant increase of PKCε expression, accounting for their decreased sensitivity to TGF-1β. The potentially new roles of PKCε in the pathophysiology of HT and Th/Treg polarization are discussed.

References

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