

PROINFLAMMATORY AND ANTI-INFLAMMATORY CYTOKINES REGULATE THE EXPRESSION OF CD3 ζ -CHAIN IN HUMAN T LYMPHOCYTES

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Background: The CD3 ζ -chain is critically important in T lymphocyte activation, decreased expression of the ζ -chain has been reported in inflammatory, autoimmune and malignant diseases. ζ chain downregulation is common at sites of chronic inflammation. According to our earlier data TNF treatment of human T lymphocytes selectively downregulates CD3 ζ -chain expression in a dose dependent manner, and decreases the activation induced IL-2 synthesis. In the present study we investigated the effect of proinflammatory and anti-inflammatory cytokines on the regulation of CD3 ζ expression.

Materials and methods: Jurkat cells and peripheral blood mononuclear cells (PBMCs) were treated with 5, 15 or 40 ng/ml of TNF, 20 or 80 ng/ml IL-1, IL-4, IL-6, IL-8, IL-10, IL-13, IL-17 for 24 and 48 hours or left untreated. ζ -chain expression was measured by Western blot and by flow cytometry.

Results: according to our present data IL-6, IL-8, IL-10, IL-13, IL-17 decrease, while IL-1 and IL-4 do not alter the expression of the CD3 ζ chain.

Conclusion: Our present data indicate that both proinflammatory and anti-inflammatory cytokines may regulate T cell activation through regulating CD3 ζ -chain expression.