CHIMERIC PROTEINS FROM SCHISTOSOMA MANSONI IN MURINE MODEL FOR ALLERGY

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Helminths derived molecules, particularly *Schistosoma mansoni*, show potential in modulating allergy, one of the most prevalent chronic diseases worldwide. *S. mansoni* infection activates immune mechanisms similar to allergic responses, including IgE production and eosinophil recruitment, while promoting Th1 polarization and IL-10 production, which may control atopy. Our work evaluates the immunomodulatory potential of chimeric proteins from *S. mansoni* elastase (Q1, Q2) in a murine allergy model induced by *Blomia tropicalis*. AJ mice were divided into groups: non-allergic group, Negative Control, and four allergic groups: Positive Control (untreated), Q1-treated, Q2-treated, and dexamethasone-treated. Allergy was induced by intraperitoneal injections of *B. tropicalis* extract (BtE), followed by intranasal challenges over one week. Mice were then treated. Serum IgE, IgA, and IgG2a levels were analyzed, along with bronchoalveolar lavage (BAL) and lungs. Splenocytes were cultured with BtE and either Q1 or Q2. Cytokine production was assessed by ELISA, splenocyte proliferation by MTT, and cell populations by flow cytometry. BAL cells underwent total and differential counting, and peroxidase levels were measured in lungs and BAL. No significant differences in antibody levels were observed. In Q1-treated mice lung, eosinophils and neutrophils were increased, while macrophages and lymphocytes were decreased, suggesting worse allergic conditions. IL-5 was reduced in BAL but increased in lung homogenates. Q2-treated mice had more macrophages and less IFN-γ in BAL than positive control, along with lower IL-5 levels, indicating inflammation control. Lung IL-4 and IL-13 levels were lower in control groups. In splenocyte cultures, Q2 increased CD4+ cells, with higher IFN-γ production, suggesting Th1 stimulation, crucial for Th1/Th2 balance and immune tolerance. Finally, peroxidase levels indicated improved allergic conditions. These findings point Q2 as a promising allergy treatment.

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