

Administration of IL-12 prevents mite Der p 1 allergen-IgE antibody production and airway eosinophil infiltration in an animal model of airway inflammation

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摘要

Abstract

The aim of the present study was to examine the in vivo effect of interleukin (IL)-12 on a murine model of asthma induced by Dermatophagoides pteronyssinus-derived Der p 1 allergen. C57BL/6 mice immunized with Der p 1 allergen adsorbed to alum/pertussis toxin developed a T-helper type 2 (Th2)-dominant immune response characterized by the presence of IgE antibody, airway eosinophil infiltration and increased production of Th2 cytokine. Intraperitoneal injection of IL-12 (1 or 0.1 microg per day) for 5 days (day -1 to +3) simultaneously with each immunization, inhibited the production of IgE and IgG1 antigen-specific antibodies, whereas production of IgG2a was strongly enhanced. In addition, mice receiving both doses of IL-12 showed a strong inhibition of IL-5 but up-regulation of IFN-gamma production by spleen cells stimulated with antigen. Administration of IL-12 also prevented antigen-induced eosinophil infiltration into the bronchoalveolar area in a dose-dependent manner and the primary inflammatory mediator serotonin in bronchoalveolar lavage (BAL) fluids was also reduced significantly. Taken together, the data indicate that IL-12 has a potent immunomodulatory effect on house-dust-mite-induced allergic disorders and may be used as an efficient agent for immunotherapy.