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ABSTRACT BOOK

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Inhibitory effect of isosorbide on IL-13 production in human PBMCs

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Background: Isosorbide dinitrate (ISDN), as a nitric oxide donor, is one of the most effective and broadly used drugs in treatment of many ischemic heart diseases such as angina pectoris. Anti-inflammatory effects of isosorbide have also been reported.Interleukin-13 (IL-13) (a T-helper type 2 cytokine) is a mediator of airway inflammation and increases in immediate-type allergic diseases such as asthma. In the present study the isosorbide effect on IL-13 secretion in human peripheral blood mononuclear cells (PBMCs) has been evaluated in vitro. **Methods:** Human PBMCs were cultured in complete RPMI medium. Then the cells at the exponential growth phase were incubated with different concentrations of isosorbide (0.0004 -0.4 mM) for 24 hours. Afterward the level of IL-13 secreted in the cell culture supernatants was measured with the enzyme-linked immunosorbent assay (ELISA) standard kits. **Results:** Isosorbide dinitrate significantly decreased the IL-13 production in hPBMCs dose-dependently. **Conclusion:** The results of this study indicate that isosorbide down-regulates the production of IL-13 in human PBMCs. Thus, the anti-inflammatory properties of isosorbide may be partly due to its inhibitory effects on IL-13 production. Therefore isosorbide may be useful in alleviating the IL-13- induced respiratory inflammation in related diseases such as chronic obstructive pulmonary disease (COPD) and asthma. So isosorbide along with its chronic long-term usage in cardiac problems might have potential implication in treatment of airway inflammatory disorders.

Keywords: PBMCs, Isosorbide, IL-13

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The efficacy of Zataria multiflora and Lemon shell essential oils on immune system function in rabbits

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Background: Little is known about the influence of Zataria multiflora and Lemon shell essential oils (EOs) on the monocytic/macrophagic system, one of the primary cellular effectors of the immune response and cell-mediated immunity against pathogen attacks. We investigated the effects of Zataria multiflora and Lemon shell EOs on the function of immune system using animal model.**Methods:** Rabbits were divided into 3 groups of 5 rabbits. Groups 1, 2 and 3 were administrated subcutaneously by Z. multiflora, Lemon shell EOs and normal saline, 6 times with 6 days of interval. Five days after the last injection of the EOs, Candida antigens were injected subcutaneously to all animals. Phagocytosis and killing assays and lymphocyte transformation test (LTT) were carried out on blood samples. **Results:** Lymphocytic responses were significantly stimulated with C. albicans antigen (mean: 619.3±12.1) and Concanavalin-A (mean: 712.3±10.7) mitogen in rabbits injected subcutaneously by Z. multiflora EO when