

The anti allergy and anti-inflammatory effect of imperatorin in vivo and in vitro

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Imperatorin, the dietary furanocoumarin, is abundant in citrus fruits, umbelliferous vegetables, and in some herbal medicines such as *Angelica tenuissima*. As an effective component extracted from traditional Chinese medicines, imperatorin has been extensively studied and shown potent pharmacological activities. However, the mechanism that accounts for the anti-allergy and anti-inflammatory effects of the imperatorin is still not fully understood.

The aim of the present study is to elucidate whether and how imperatorin modulates the allergic reactions in vivo, and inflammatory reaction in vitro. In this study, we showed that imperatorin significantly decreased compound 48/80-induced systemic anaphylaxis, paw oedema, and histamine release from preparation of rat peritoneal mast cells. Also, imperatorin inhibited the expression of inflammatory cytokine in PMA plus A23187-stimulated human mast cells (HMC-1). In addition, we showed that anti-inflammatory mechanism of imperatorin is through suppression of nuclear factor- κ B activation and I κ B- α degradation.

These results provided new insight into the pharmacological actions of imperatorin as a potential molecule for therapy of inflammatory allergic diseases.

Key words: Imperatorin Allergic reactions; Inflammation; Cytokine; Nuclear factor- κ B