

## Anti-Allergic Asthma Properties of Brazilin through Inhibition of TH2 Responses in T Cells and in a Murine Model of Asthma

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### ABSTRACT

The aim of the study was to determine whether brazilin exhibits any anti-inflammatory effects that inhibit T helper cell type II (TH2) responses and whether it suppresses allergic inflammation reactions in a murine model of asthma. We found that brazilin inhibited phorbol myristate acetate (PMA) plus cAMP-induced IL-4 and IL-5 expression in EL-4 T cells with respect to both RNA and protein levels in a dose-dependent manner. After intratracheal instillation of brazilin in ovalbumin (OVA)-immunized mice, we found that brazilin-treated mice exhibited decreases in the release of IL-4, IL-5, IL-13, eotaxin-1, and TNF- $\alpha$  in bronchoalveolar lavage fluid (BALF), inhibited TH2 functioning by a decrease in IL-4 production, and the attenuation of the OVA-induced lung eosinophilia, and airway hyperresponsiveness and remodeling. These results suggest that brazilin exhibits an anti-TH2 reaction both in vitro and in vivo. Brazilin demonstrates therapeutic potential for allergic diseases. Keywords: brazilin, airway remodeling, allergic inflammation, GATA-3