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## Anti-allergic effects of *Arctium lappa L*. and its bioactive compound, oleamide, regulating FccRImediated signaling

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A nallergy is a hypersensitivity disorder of the immune system. *Arctium lappa L.*, known as a Burdock, is a popular edible vegetable but its anti-allergic potential remains unknown. In this study, the anti-allergic effect of *A. lappa* extracts was determined using Sprague-Dawley rats, ICR mice, and RBL-2H3 mast-like cells. Among fractions extracted with several solvents, EtOH fraction of *A. lappa* (ALE) at 100 µg/ml showed the maximal inhibitory effect on  $\beta$ -hexosaminidase release and the high cell viability in RBL-2H3 cells. Administration of ALE (100 mg/kg) highly suppressed the passive cutaneous anaphylaxis (PCA) induced by anti-DNP-specific IgE insult in rats, and attenuated the compound 48/80-induced systemic allergic reaction, anaphylaxis, and histamine release in mice. In order to identify the active compound from ALE with anti-allergic action, we subsequently performed further fractionation with determining  $\beta$ -hexosaminidase assay in every sub-fractions and its main active component was identified as an oleamide. Oleamide attenuated the secretion of histamine and  $\beta$ -hexosaminidase, and the production of allergic-related cytokines such as IL-4 and TNF- $\alpha$  in RBL-2H3 cells treated with compound 48/80 or A23187/PMA. In addition, oleamide administration suppressed FccRI-tyrosine kinase Lyn-mediated pathway. The anti-allergic effect of ALE and its bioactive component oleamide may have beneficial effects in the treatment of human allergic diseases.

## Biography

Eun-Hwa Sohn has completed her PhD from Sungkyungkwan University. She has researched pharmacological effects of natural substances and their mechanisms on inflammation. She works at the Department of Herbal Medicine Resource as a Chair in Kangwon National University. She is on the editorial board of *Korean Journal of Plant Resources*. She has over 100 publications including a book, book chapters and peer reviewed articles.

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