THE INHIBITORY EFFECT OF HELIANTHUS TUBEROSUS ETHANOL EXTRACT ON DFB-INDUCED ATOPIC DERMATITIS MICE MODEL

[1]YUN-MI KANG, [2]HYO-JUNG KIM, [3]MIN-GYUSEO, [4]HYO-JINAN, [5]KYU-YEONG LEE

Department of Pharmacology, College of Korean Medicine, Sang-ji University, Wonju-si, Gangwon-do 26339, South Korea

Abstract - Atopic dermatitis (AD) is a chronic inflammatory skin disease described as epidermal thickness with cutaneous hypersensitivity associated with increased serum IgE levels and infiltration of inflammatory cells. To care for AD without adverse effects, alternative therapeutic agents have been continually required. As a source of inulin, the tubers of Helianthus tuberosus L. (Jerusalem artichoke) have been used as a folk medicine for the treatment of diabetes and rheumatism with a variety of pharmacological activities. However, H. tuberosus (HT) has not yet been investigated for AD treatment. Therefore, this study was conducted to examine the inhibitory effect of HT on AD skin symptoms using NC/Ngamice model induced by Dfb (Dermatophagoides farina body) that contains house dust mite extract. The result showed that topical administration of HT attenuated AD skin symptoms. HT showed the significant reduction in dermatitis score and production of inflammatory mediators, including IL-6 and histamine in Dfb-induced AD mice. HT also decreased epidermal thickness and infiltration of mast cells in histological analysis. Moreover, HT restored the decreased filaggrin expression and inhibited the adhesion molecules, such as ICAM-1 and E-selectin in Dfb-induced AD mice. Taken together, these results suggest that HT has a potential therapeutic agent for skin inflammatory disease such as AD regulation of filaggrin and adhesion molecules. This work was supported by the National Research Foundation of Korea(NRF) grant funded by the Korea government(MSIP; Ministry of Science, ICT & Future Planning) (No. NRF-2018R1C1B5041014).

Keywords - atopic dermatitis, Helianthus tuberosus L., filaggrin, adhesion molecules