

Ethanollic extract of Red Sweet Pepper (*Capsicum annuum* L.) regulates the skin inflammation *in vitro* and *in vivo*

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ABSTRACT

Allergic inflammatory disease has been increased by abnormal lifestyle and food habits. Especially, prevalence of atopic dermatitis (AD) has been elevated and treatment of AD has not been unclear. Red sweet pepper (RSP), named as *Capsicum annuum* L, has been known as having pharmacological effects such as antioxidant, detoxification and antibacterial effects.

However, the beneficial effect of ethanollic extract of RSP on AD has not been partly examined yet. Therefore, the aim of this study was to investigate anti-inflammatory effects of RSP on AD *in vitro* and *in vivo* models. The treatment of RSP inhibited the secretion of inflammatory cytokine such as interleukin (IL)-6 and IL-8 in tumor necrosis factor (TNF)- α and interferon (IFN)- γ - stimulated human keratinocyte (HaCaT cell). Also, RSP extract regulated 2,4-dinitrofluorobenzene (DNFB)-induced AD-like skin lesions in BALB/c mice. Oral administration of RSP ameliorated DNFB-induced AD-like symptoms. In presented results indicated that RSP inhibited inflammatory cytokines in HaCaT cell and ameliorated AD-like skin lesion through suppression of symptom of DNFB-induced skin inflammation. Thus, RSP might be a potential therapeutic agent for AD.

Key words: Red sweet pepper, inflammation, cytokine, HaCaT cell, 2,4-dinitrofluorobenzene

This study was supported by grants from Namwon city.