

Chondrus ocellatus Holmes ethanol extract suppresses the atopic dermatitis in DNCB-induced BALB/c mice

Ga-Eun Woo¹, Min-Ji Kim², Mi Jeong Jo^{3,4}, Sook-Young Lee⁵ & Dong-Hyun Ahn^{1,2,*}

¹Department of Food Science and Technology, Pukyong National University, Busan 48513, Republic of Korea

²Institute of Food Science, Pukyong National University, Busan 48513, Republic of Korea

³Department of Microbiology, Pukyong National University, Busan 48513, Republic of Korea

⁴Industry-University Cooperation Foundation, Pukyong National University, Busan 48513, Republic of Korea

⁵Marine Bio Research Center, Chosun University, Wando 59146, Republic of Korea

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Atopic dermatitis (AD) is a common skin disease, and it is a chronically relapsing and inflammatory skin disease accompanied by itching. Many red algae are being actively conducted, studies on the physiological activity of *C. ocellatus* Holmes are rarely conducted. To investigate whether *Chondrus ocellatus* Holmes ethanol extract (COHEE) inhibits AD progression in animal models. COHEE significantly decreased Th cytokines in ConA-stimulated splenocytes in a dose-dependent manner. AD-like skin lesions were induced by 2,4-dinitrochlorobenzene (DNCB) in BALB/c mice, and COHEE was applied to DNCB-induced mice to study the effect of COHEE on AD. COHEE lowered the number of WBCs in the blood and the spleen weight of mice. COHEE significantly decreased the secretion of IL-4 and IL-5, whereas the level of IFN- γ was increased in splenocytes. In addition, the secretion of IgE and TNF- α was significantly suppressed in the serum, and the IL-10 was increased. In conclusion, the present study indicates that COHEE has an inhibitory effect on AD and is useful for drug development and treating AD.

Keywords: *Chondrus ocellatus* Holmes, Atopic dermatitis, T-lymphocytes, Cytokine, 2,4- dinitrochlorobenzene (DNCB)