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Skullcapflavone II attenuates Th2 cytokine production and mast cell histamine degranulation in ovalbumin-induced allergic rhinitis

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A llergic rhinitis is a common heterogeneous chronic upper airway disorder and is an IgE-mediated inflammation Characterized by one or more nasal symptoms such as sneezing, itching, nasal discharge, rhinorrhea, post nasal drainage and nasal blockage. In the present study, the effects of Skullcapflavone II (SCFII) on upper airway inflammation, Th2 cytokines, and NF-kb signaling in an ovalbumin (OVA)-induced allergic rhinitis (AR) murine model *in vivo* were investigated. OVAinduced AR mice increased nasal symptoms, eosinophils and mast cells infiltration into nasal cavity, OVA-specific IgE/ IgG1and histamine in serum, Th2 cytokines including IL-13 and GATA3, and NF-κB signaling in NALF and lung homogenate. Interestingly, treatment of SCFII reduced the levels of OVA-specific IgE/IgG1 and histamine in serum, of Th2 cytokines and of NF-κB signaling in the NALF and the lung homogenate, and histopathological changes in the nasal tissue and the lung. Also, dexamethasone suppressed such increases. The results of this study suggested that SCFII may ameliorate allergic inflammation of upper airway in AR mice model by blocking the Th2 cytokine production, the NF-κB signal pathway and the mast cell histamine release. Taken together, we suggest that SCFII may be used as a therapeutic agent for patients with Th2-mediated or mast cell-mediated allergic diseases.



Recent Publications

- 1. A O Eifan, S R Durham (2016) Pathogenesis of rhinitis. Clin Exp Allergy. 46(9):1139-1151.
- 2. D I Bernstein, G Schwartz, J A Bernstein (2016) Allergic Rhinitis: mechanisms and treatment. Immunol. Allergy. Clin. North Am. 36(2): 261-278.
- 3. B Sin, A Togias (2011) Pathophysiology of allergic and nonallergic rhinitis. Proc. Am. Thorac. Soc. 8(1): 106-114.
- 4. M van de Rijn, P D Mehlhop, A Judkins, M E Rothenberg, A D Luster, H C Oettgen (1998) A murine model of allergic rhinitis: Studies on the role of IgE in pathogenesis and analysis of the eosinophil influx elicited by allergen and eotaxin. J Allergy Clin. Immunol. 102: 65-74.
- 5. E O Meltzer, D A Bukstein (2011) The economic impact of allergic rhinitis and current guidelines for treatment. Ann Allergy Asthma Immunol. 106(2 Suppl): S12-16.

Biography

Eunjin Hyeon is student who is studying Medical Science in Chonbuk National University. She is particularly researching about allergic diseases such as asthma and rhinitis.

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