

Effects of *Lonicera japonica* Flos Extract on Allergic Dermatitis in Mice

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Purpose: *Lonicera japonica* flos (LJ) is widely used to treat respiratory infection, diabetes mellitus, and rheumatoid arthritis in Korean traditional medicine. The present study was conducted to evaluate the anti-allergic effect of LJ extract for allergic dermatitis (type I hypersensitivity).

Materials and Methods: Type I allergic dermatitis was induced by 2,4-dinitrofluorobenzene (DNFB) and ovalbumin in ICR mice. The dried flowers of *L. japonica* were boiled in 2L of distilled water at 80°C for 3 hours (3 times) and filtrated. LJ extract was prepared by lyophilizing the filtrate. LJ extract was administrated to the mice once a day orally for 7 days. Prednisolone and distilled water were used as a positive control and a negative control. After 7 days, 0.1% DNFB solution was applied on the surface of ear and the edematous change and scratching behavior were observed. Histologic changes of ear were evaluated. Serum IgE and TNF- α were measured by ELISA. IL-4 and IFN- γ mRNA expression were semi-quantified by RT-PCR.

Results: The thickness of ear, frequency of scratching behavior, and level of serum IgE in prednisolone and LJ extract treated mice were decreased in comparison of control group (the thickness of ear: $P < 0.05$; the frequency of scratching: $P < 0.01$). There was significant difference in LJ extract and prednisolone treated mice on histologic changes, as compared to control group, including the number and size of mast cell, inflammatory cell, TNF- α -immunoreactive cell, caspase-3-immunoreactive cell, and PARP-3-immunoreactive cell ($P < 0.01$). IL-4 and IFN- γ mRNA expression were decreased in mice treated with LJ extract and prednisolone, compared as control group ($P < 0.01$). However, there was no significant difference on the level of serum TNF- α .

Conclusions: These results suggest that LJ extract have anti-allergic effect in allergic skin disease by reducing IL-4 and IFN- γ production. Moreover, it is considered that LJ extract suppress inflammation and apoptosis related to allergic dermatitis.

Key words: 2,4-dinitrofluorobenzene, *Lonicera japonica*, allergic dermatitis, IL-4, IFN- γ , apoptosis

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