Platycodon grandiflorum alleviates DNCB-induced atopy-like dermatitis in NC/Nga mice.

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Platycodon grandiflorum (PG) has long been used as a traditional oriental medicine for respiratory disorder. Although PG has been suggested to have multiple biological activity including anti-inflammatory and anti-allergy effects, its effect on atopic dermatitis (AD) is unclear. Therefore, we examined the therapeutic effect of crude extract from PG root on AD-like skin lesions induced by 1-chloro-2,4-dinitro benzene (DNCB) in NC/Nga mice. Therapeutic effect of PG in AD-like skin lesions was assessed by measuring skin severity scores and epithermal thickness, serum total immunoglobulin (Ig) E, histopathological findings for inflammatory cells including mast cells, macrophage and T cells, and mRNA expression of various cytokines related to the inflammatory and allergic response. Oral treatment of PG suppressed AD-like skin lesions on the assessment of skin severity and epithermal thickness in the DNCB-treated NC/Nga mice. This alleviation was further correlated with the reduction of elevated serum total IgE or cytokine mRNA in the PG-treated group compared with vehicle-treated positive group. In addition, infiltrated inflammatory cells were decreased on skin lesion compared with vehicle-treated group.

These results suggest that PG may have a potential therapeutic effect for AD via the inhibition of
both inflammatory and allergic reaction.