



Anti-inflammatory effect of *Lithospermi Radix* and suppression of iNOS and TNF-alpha production

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The purpose of this study was to confirm the effect of *Lithospermi Radix* (LR, root of *Lithospermum erythrorhizon* Siebold. et Zuccarinii) on the chronic inflammatory diseases including atopic dermatitis. LR has been used to treat various conditions, such as septic shock, eczema, and burns. In this study, the effect of LR on lipopolysaccharide (LPS) and recombinant interferon-gamma (rIFN- γ)-induced production of nitric oxide (NO) and tumor necrosis factor (TNF)-alpha were examined using mouse peritoneal macrophages. At 0.01-1 mg/ml, LR inhibited the LPS/ rIFN- γ -induced expression of inducible nitric oxide synthase (iNOS) and TNF-alpha release. To clarify the mechanism involved, the effect of LR on the activation of nuclear factor (NF)-kappaB was examined. the LPS/ rIFN- γ induced activation of NF-kappaB was almost completely blocked by LR at 1 mg/ml without cytotoxicity. These findings demonstrate that the inhibition of the LPS/ rIFN- γ induced production of NO and TNF-alpha by LR is due to the inhibition of NF-kappaB activation.

Keywords : *Lithospermi radix*, nitric oxide, peritoneal macrophages, tumor necrosis factor-kappaB, anti-inflammatory effects