

R-7. Suppression of nitric oxide and interleukin-6 production by methanol extract of *Sophora japonica* in macrophage cells

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Objectives:

Both nitric oxide (NO) and interleukin-6 (IL-6) have been thought to have a role in the pathogenesis of inflammatory periodontal disease as it does in other inflammatory diseases, and the inhibitors of NO and IL-6 production have been considered as potential anti-inflammatory agents. In this study, we evaluated methanol extract of *Sophora japonica* for inhibition of NO and IL-6 production in *Prevotella intermedia* LPS-induced mouse macrophages RAW264.7 cells.

Materials and methods:

Dried *Sophora japonica* was sliced, and extracted with 100% methanol. LPS from *P. intermedia* ATCC 25611 was prepared by the standard hot phenol-water method. NO production was assayed by measuring the accumulation of nitrite in culture supernatants and IL-6 was measured using mouse IL-6 ELISA kit. Western blot analysis of iNOS and analysis of reverse transcription (RT)-PCR products were carried out.

Results:

The methanol extract of *Sophora japonica* concentration-dependently reduced the production of NO and the expression of iNOS protein and mRNA in RAW264.7 cells treated with *P. intermedia* LPS. *Sophora japonica* also suppressed IL-6 production and the expression of IL-6 mRNA in RAW264.7 cells stimulated by *P. intermedia* LPS.

Conclusions:

The methanol extract of *Sophora japonica* showed potent inhibition of NO and IL-6 production without affecting cell viability. The inhibition of NO and IL-6 production by *Sophora japonica* may be useful in the therapy of inflammatory diseases such as periodontitis. This hypothesis, however, remains to be tested.