



Puerarin inhibits iNOS, COX-2 and CRP expression *via* suppression of NF- κ B activation in LPS-induced RAW264.7 macrophage cells

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Abstract:

Puerarin (7,4'-dihydroxy-8-C-glucosylisoflavone) is the most abundant isoflavone-C-glucoside extracted from *Radix puerariae*, and it has been used for various medicinal purposes in traditional oriental medicine for thousands of years. In the present study, the ability of the puerarin to modulate inducible nitric oxide synthase (iNOS), cyclooxygenase-2 (COX-2) and C reactive protein (CRP) expression and induce changes in the nuclear factor κ B (NF- κ B) pathway in RAW264.7 macrophage cells was examined. The protein and mRNA levels of lipopolysaccharide (LPS)-induced iNOS, COX-2 and CRP were determined in RAW264.7 macrophage cells. Inhibitor κ B (I- κ B) phosphorylation and p65NF- κ B expression in RAW264.7 macrophage cells were also detected under our experimental conditions. The results indicated that puerarin inhibited the expression of LPS-induced iNOS, COX-2 and CRP proteins and also suppressed their mRNAs from RT-PCR experiments in RAW264.7 cells. Subsequently, we determined that the inhibition of iNOS, COX-2 and CRP expression was due to a dose-dependent inhibition of phosphorylation and degradation of I- κ B, which resulted in the reduction of p65NF- κ B nuclear translocation. These data suggested that the effect of puerarin-mediated inhibition of LPS-induced iNOS, COX-2 and CRP expression is attributed to suppressed NF- κ B activation at the transcriptional level.

Key words:

puerarin, inducible nitric oxide synthase, cyclooxygenase-2, C reactive protein, nuclear factor- κ B, lipopolysaccharide
