Composition and anti-inflammatory effect of hydrosol from Cinnamomum osmophloeum in RAW264.7 macrophages.

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ABSTRACT

Cinnamomum osmophloeum studies mostly focused on the use of extraction of organic solvent and the active ingredient used in anti-bacterial, anti-oxidant and anti-inflammatory, significantly less use of water to extract. The chemical composition of hydrosol of water extraction from C. osmophloeum was analyzed using high performance liquid chromatography. In the present study, analysis of chemical composition found that the constituent ratios of trans-cinnamaldehyde, Benzaldehyde and Cinnamyl acetate in hydrosol were 88.9%, 6.9% and 4.2%, respectively, suggesting that hydrosol may be a major trans-cinnamaldehyde. The anti-inflammatory activity of hydrosol in lipopolysaccharide-stimulated murine RAW 264.7 cells was evaluated. The hydrosol downregulated the production of proinflammatory cytokines, including COX-2 (Cyclooxygenase-2), NF-κB (nuclear factor- kappa B) and iNOS (inducible nitric oxide synthase) and interleukin-6 (IL-6). Results indicated that effectively at 1.064 mg/mL of hydrosol extracts from C. osmophloeum, NO (nitric oxide) was decreased by 84% and the IL-6 and IL-10 was decreased by 40% and 88%, respectively. On the other hand, the western blotting results showed that hydrosol extracts treatment at 1.064 mg/mL for 24 hr significantly reduced COX-2 (Cyclooxygenase-2), NF-κB (nuclear factor- kappa B) and iNOS (inducible nitric oxide synthase).

The present study suggested that purified component, hydrosol had strong anti-inflammatory effects on LPS-stimulated RAW264.7 macrophages through inhibiting NF-κB secretion levels reduced COX-2, iNOS and that NO and cytokines release.

Keywords: Cinnamomum osmophloeum, Anti-inflammatory, Cytokines, Hydrosol.

REFERENCES


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