

## Anti-inflammatory effect of *Arctium minus* on LPS-stimulated RAW 264.7 cells

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*Arctium minus* (AM), commonly known as lesser burdock, is a dried fruit (seed) of *Arctium lappa* L. that belong to Asteraceae. It has been used traditionally as herbal medicine because of its anti-inflammatory effects, and it has been applied to treat various diseases like allergies, skin aging, hyperlipidemia and urinary stone. In this study, we investigated the inhibitory effects of AM on the production of pro-inflammatory cytokines in lipopolysaccharide (LPS)-stimulated RAW 264.7 cells. Pre-treatment of the RAW 264.7 cells with AM considerably inhibited and reduced production of Nitric Oxide (NO) and pro-inflammatory cytokines, such as interleukin (IL)-6 and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), and also shows suppression of nuclear factor-kappa B (NF- $\kappa$  B) translocation. In addition, AM treatment considerably reduced phosphorylation of mitogen-activated protein kinase (MAPK) in LPS-stimulated RAW 264.7 cells. Our results indicate that the AM has potential to inhibit inflammation through suppressing production of inflammatory mediators via both the NF- $\kappa$  B and MAPK signaling pathway. We therefore suggest that AM might be effective therapeutics for the treatment of various inflammatory diseases.

**Keywords :** *Arctium minus*, inflammation, LPS