

The Root from *Heracleum moellendorffii* Exerts Anti-Inflammatory Activity via the Inhibition of NF- κ B and MAPK Signaling Activation in LPS-Stimulated RAW264.7 Cells

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Although the roots of *Heracleum moellendorffii* (HM-R) have been long treated for inflammatory human diseases, scientific evidence for the anti-inflammatory activity of HM-R is not sufficient. In this study, we investigated anti-inflammatory activity and mechanism of action of HM-R in LPS-stimulated RAW264.7 cells. HM-R blocked LPS-induced NO and PGE2 production, but not HM-L. HM-R inhibited LPS-induced overexpression of iNOS, COX-2, IL-1 β and IL-6 in RAW264.7 cells. HM-R inhibited LPS-induced NF- κ B signaling activation through blocking I κ B- α degradation and p65 nuclear accumulation. In addition, HM-R inhibited MAPK signaling activation by attenuating the phosphorylation of ERK1/2, p38 and JNK. Furthermore, HM-R inhibited attenuated LPS-mediated overexpression of the osteoclast-specific factors such as NFATc1, cathepsin K, MCP-1 and TRAP. These results indicate that HM-R may exert anti-inflammatory activity by inhibiting NF- κ B and MAPK signaling activation. From these findings, HM-R has potential to be a candidate for the development of chemopreventive or therapeutic agents for the inflammation and inflammatory diseases.

Keywords: Anti-inflammation; *Heracleum moellendorffii*; Inflammatory diseases; Inflammatory response

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