

Inhibitory Effects on Melanogenesis of *Scrophularia koraiensis* Nakai in Melanocytes

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Scrophularia koraiensis Nakai (*S. koraiensis*) has used its roots as traditional herbal medicine. Some research is reported to be effective in allergic inflammation and osteoporosis. In a present study, we conducted to investigate the bioactivity of the ethanol extract of *S. koraiensis* (ESK) on the inhibition of melanogenesis and the apoptosis of melanocytes. We analyzed Harpagoside of ESK by using LCMS and HPLC-PDA and investigated the regulation of ESK on reactive oxygen species. Also, the expressions of melanin synthesis-related factors and apoptosis-related factors were confirmed. As a result, the quantification results of quercetin and rutin in ESK were 77.2 and 7.4 mg/g. IC₅₀ on DPPH and ABTS radical scavenging activity is 33.1 and 9.5 ug/mL. ESK attenuated not only the expression of tyrosinase, TYRP-1, TYRP-2, and MITF in melanogenesis. It is thought that ESK may be effective in the inhibition of melanogenesis through MAPK cell signaling pathway in melanocytes. These study results suggest that ESK has the ability to inhibit melanin production and induce apoptosis.

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