

## Inhibitory effects of *Kirengeshoma koreana* Nakai on Melanogenesis in B16F10 melanoma cells

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### ABSTRACT

Kirengeshoma koreana Nakai (*K. koreana*) was Saxifragaceae and rare plants in Korea, which is classified as an Critically Endangered (CR) species in Korea. Therefore, most of the studies on it were ecological and taxonomic, and there are no studies on biological activity. In this study, we evaluated the whitening activity of *K. koreana* extract (KKE). Melanogenesis Inhibitory effects were demonstrated by western-blot and RT-PCR for the effects of KKE on MITF, tyrosinase, TRP-1 and TRP-2 in IBMX-treated B16F10 melanoma cells. IBMX were reported as melanin synthesis enhancers. It could increase intracellular melanin synthesis by activation of the microphthalmia-associated transcription factor (MITF) signaling pathway. KKE showed no cytotoxicity at B16F10. In addition, KKE effectively inhibited the protein and mRNA levels of MITF, tyrosinase, TRP-1 and TRP-2. In conclusion, KKE inhibited melanin synthesis by inhibiting the expression of MITF and its downstream pathways tyrosinase, TRP-1 and TRP-2. Therefore, it was confirmed that *K. koreana* is a valuable resource for functional cosmetic and biomaterials.

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