

Biological activities of *Rosa multiflora* Ethanol Extract as Cosmetic Material

Ha Neul Jo, , Hyun Woo Kim, Yangkang So, Byoung Wan Yoo,
Ji Hyo Kim and Tae Bum Lee*

Institute of Natural Cosmetic Industry for Namwon 55801, Jeollabuk-do, Korea

ABSTRACT

The *Rosa multiflora*, a well-known plant belonging to Rosacea, is widely used in orthodox medicine in worldwide. However, its biological activity as a functional ingredient for cosmetic products have not yet been studied. Accordingly, an investigation of the above mentioned attributes was performed on a 50% ethanol extract of *Rosa multiflora*. The antioxidant activities were determined by DPPH. Additionally, the contents of total phenols and flavonoids were analyzed. Also, the phenolic compounds were detected using HPLC. The melanogenesis regulatory effect was evaluated using melanin content and cellular tyrosinase activity in B16F10 melanoma cells. The elastase inhibitory activity assay was performed for anti-wrinkle effect. The antimicrobial activity was assessed using the disc diffusion assay. The DPPH radical scavenging ability, denoted by the SC₅₀ value was found to be 123.1 µg/ml, whereas that of positive control (ascorbic acid) was 27.5 µg/mL. The content of total polyphenol and flavonoid content were 202 mg/g and 86.77 mg/g, respectively. In addition, astragalin and gallic acid were identified in the extract. Also, the ethanol extract significantly inhibited α-MSH-induced melanogenesis in B16F10 cells. For anti-wrinkle effect, elastase inhibition activity of the ethanol extract was 53.2% at a concentration of 100 µg/ml. The antimicrobial activity of the extract against *S. aureus* and *E. coli* was observed to be 0.5 - 5%, and no significant activity was noted against *C. albicans*. Therefore, the ethanol extract of *Rosa multiflora* can be used effectively for development of functional cosmetic materials.

Key Words: *Rosa multiflora*, Antioxidant, Melanogenesis, Anti-wrinkle, Antimicrobial

[This work supported by Korea Institute of Planning and Evaluation for Technology in Food, Agriculture, Forestry and Fisheries(IPET) through Agri-Bio Industry Technology Development Program, funded by Ministry of Agriculture, Food and Rural Affairs(MAFRA)(317024-5)]