

Inhibitory Effects of The Flower from *Abeliophyllum distichum* cv. Okhwang 1 on Melanogenesis in B16 F10 Cells

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Abeliophyllum distichum Nakai (*A. distichum*), endemic species of Korea, is classified according to the petals and calyx colors. Recently, *A. distichum* cv. Okhwang 1, which has the golden flower, designated the first official cultivar improved from *A. distichum* species. The study on the chloroplast genome of *A. distichum* cv. Okhwang 1 have been reported, but no studies on bioactivity such as antioxidant, anti-inflammatory, and anti-cancer have been progressed. This study was conducted to evaluate the inhibition on melanogenesis of the flower from *A. distichum* cv. Okhwang 1 (FAO). Antioxidant activity was measured using DPPH and ABTS radical scavenging assays. Inhibition effects on melanogenesis of FAO were confirmed by expression of tyrosinase-related proteins and mRNAs using immunoblotting and RT-qPCR. Tyrosinase is an enzyme that regulates both stimulation and inhibition of melanogenesis. Stimulated MITF in cellular levels increases the expressions of tyrosinase, TRP-1, and TRP-2 to induce melanogenesis. As a result, FAO inhibited the expression of MITF, followed by down-regulated tyrosinase, TRP-1, and TRP-2, which lead to inhibit melanin overproduction. In conclusion, these results indicated that FAO reduced reactive oxygen species (ROS) and markedly inhibited the expression of melanin-related factors. The present study suggested providing that FAO has the potential for development as a functional cosmetic material derived from natural.

Key words: *Abeliophyllum distichum*, Melanogenesis, ROS, Tyrosinase

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