

Nypa fruticans wurmb Inhibits Melanogenesis via cAMP/PKA/CREB Signaling Pathway in B16 F10 Cells

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The Melanoma Research Coalition reported melanoma affects humans of various races. This study was conducted to confirm the inhibitory effect of melanogenesis in B16 F10 cells of *Nypa fruticans* Wurmb of ethyl acetate fraction (NEF). *Nypa fruticans* Wurmb is an important component of the East Asian mangrove vegetation. It belongs to Araceae family. Traditionally, *N. fruticans* was used to treat various diseases such as asthma, sore throat, liver disease, a pain reliever, and can also be used as sedative and carminative. The present study, the inhibitory effect on melanogenesis was determined by Western blotting and RT-qPCR. The level of expression of tyrosinase, TRP-1, and TRP-2 is regulated by microphthalmia-associated transcription factor (MITF) and cAMP, and cAMP affects the activity of protein kinase A (PKA). Activated PKA stimulates the phosphorylation of cAMP-reactive element-binding protein (CREB) in the nucleus, thereby increasing the amount of MITF expression and enhancing melanogenesis. Western blotting and RT-qPCR analysis showed that NEF treatment decreased the expression of tyrosinase. Similarly, TRP-1 and TRP-2 levels were decreased, which were decreased significantly at compared with the untreated control. Also, NEF attenuated the IBMX mediated increase in the intracellular cAMP level and the phosphorylation of PKA. In conclusion, NEF significantly inhibited the expressions of melanogenesis through cAMP/PKA/CREB signaling pathways.

Key words: cAMP/PKA signaling pathway, Melanogenesis, MITF, *Nypa fruticans*\ Wurmb

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