

Effects of N-acetylphytosphingosine on melanogenesis of B16F10 murine melanoma cells.

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The effects of N-acetylphytosphingosine(NAPS), one of the phytosphingosine derivatives, on melanogenesis of B16F10 mouse melanoma cell lines were investigated. We assessed the effect of NAPS on the depigmentation of B16F10 cells. The melanin content of cells was significantly reduced by NAPS. We examined the inhibitory effect of NAPS on tyrosinase activity using L-dopa as a substrate and the results showed that tyrosinase activity was inhibited in a dose-dependent manner. The mRNA level of tyrosinase as well as that of tyrosinase related protein-1 (TRP-1) and tyrosinase related protein-2 (TRP-2) genes were not affected by NAPS based on a reverse transcription-polymerase chain reaction (RT-PCR) assay. We also performed a Western blotting analysis using anti-tyrosinase antibody. It showed that there is no change in tyrosinase protein level after treatment of NAPS.

These results suggest that the depigmenting mechanism of NAPS in B16F10 melanoma cells involves inhibition of melanosomal tyrosinase activity, rather than the mRNA expression or protein level of tyrosinase.