

マウスメラノーマ中のメラニン合成酵素と メラニン含量に及ぼすデルタ - トコトリエノールの効果

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Effect of Delta-Tocotrienol on Melanin Content and Enzymes for Melanin Synthesis in Mouse Melanoma Cells

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ABSTRACT: In the present study, we investigated the dose-dependent effect of δ -tocotrienol long term (48, 72 h) on the melanin content of cells treated with δ -tocotrienol, and whether cells treated with δ -tocotrienol for long a time show cytotoxicity. We also examined whether other enzymes responsible for melanin biosynthesis, tyrosinase-related protein-1 (TRP-1) and -2 (TRP-2), are involved in the decrease in melanin levels. Protein levels in cells treated with 25 or 50 μ M δ -tocotrienol for 48 h or 72 h were similar to those in control cells. Melanin content decreased by 44 (25 μ M δ -tocotrienol) to 50% (50 μ M) at 48 h, and by 14 to 21% at 72 h, compared to control levels. Tyrosinase activity, amounts of tyrosinase and TRP-1 decreased dependent on dose : by 50 (25 μ M δ -tocotrienol) to 75% (50 μ M), 20 to 45% and 42 to 82% at 48 h, and by 25 to 50%, 75 to 80% and 78 to 77% at 72 h, respectively. Although the amount of TRP-2 increased by 20% on treatment with 25 μ M δ -tocotrienol for 48 h, it decreased by 52% on treatment with 50 μ M δ -tocotrienol for 48 h. The amount of TRP-2 dose-dependently decreased by 55% and 75% on 72 h by treatment with 25 and 50 μ M δ -tocotrienol, respectively. From these findings, δ -tocotrienol at up to 50 μ M dose-dependently caused a reduction in melanin content by the decrease of TRP-1 and TRP-2 as well as tyrosinase, and no cytotoxicity.

抄録 50 μ M までのデルタ - トコトリエノールは、細胞毒性を示さず、濃度依存的にメラニン合成酵素（チロシナーゼ、チロシナーゼ関連タンパク 1、2）の減少によりメラニン含量低下を引き起こすことが示された。