

〈原 著〉

培養ヒト皮膚線維芽細胞のエラスチン生成に及ぼす 紫外線および活性酸素の影響

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Effect of Ultraviolet Rays and Reactive Oxygen Species on Elastin Production in Cultured Human Skin Fibroblasts

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Abstract

The accumulation of elastic fibers has been demonstrated in photoaging skin. This accumulation may possibly be induced by ultraviolet rays (UVB or UVA) or reactive oxygen species (ROS) generated by the xanthine-xanthine oxidase system, changes in elastin synthesis in cultured human skin fibroblasts following exposure to ultraviolet rays or ROS were studied. Elastin was measured by enzyme-linked immunosorbent assay using antiserum against bovine alpha-elastin. Total protein was determined by the Bradford method in cultured medium.

By single exposure of UVB, elastin production has a tendency to decrease dose dependence, but total protein did not change. By single and 5 times exposure of UVA, elastin production did not change. Although total protein did not change, elastin production was significantly stimulated following ROS exposure.

ROS thus appears closely related to the accumulation of elastic fibers observed in photoaging skin.

KEY WORDS

: Human skin fibroblasts, Elastin production, Ultraviolet rays, Reactive oxygen species