

真皮成分とフリーラジカル

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Dermal Components and Free Radicals

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Abstract

Skin is always exposed to ultraviolet ray and/or oxygen stress, and is suggested to be frequently generated the reactive oxygen species (ROS). The characteristic changes of extracellular matrix observed in photoaging skin dermis are the marked increase of glycosaminoglycans and elastin, and the decrease of collagen. This paper was stated the effect of ROS in the quantitative and qualitative changes of collagen and elastin. When the cultured human dermal fibroblasts were exposed to ROS generated by xanthine-xanthine oxidase system, collagen synthesis was decreased and elastin synthesis was increased. Extracellular matrix were enzymatically digested by matrix metaroproteinase family. Collagenase activity was measured by the method of Nagai used synthetic substance, and was increased by ROS. These results corresponded with the quantitative changes of collagen and elastin observed in photoaging skin. It is also well known that ROS is promote the crosslinking or degeneration of collagen. Histological and biological changes in photoaging skin are suggested to result from the ROS puls ultra-violet ray.