

〈一般論文〉

リノール酸レチノールの抗老化作用

井筒ゆき子*, 矢作 彰一, 岡野由利, 正木 仁

Antiaging Effects of Retinyl Linolate

Yukiko IZUTSU, Shoichi YAHAGI, Yuri OKANO, Hitoshi MASAKI

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Abstract

Skin aging accelerated by chronic UV exposure is defined as photo-aged skin. The appearance of photo-aged skin is characterized by deep wrinkles and by pigmented spots such as solar lentigos. To improve the symptoms of photo-aged skin, a substance which is active both on the reconstruction of the dermal extracellular matrix (ECM) and in the suppression of melanin production, is required. Retinoids are representative anti-wrinkling agents, and among them, retinol (which is vitamin A-alcohol) has been widely used as an anti-wrinkling agent. On the other hand, many studies have demonstrated the mechanisms involved in increased skin pigmentation induced by chronic UV exposure. It has been established that melanin production is regulated by interactions between melanocytes and keratinocytes, and to modulate the function of tyrosinase is the most direct approach to improve pigmented spots. Linoleic acid is an excellent candidate for an effective agent to treat pigmented spots because of its ability to promote the degradation of tyrosinase. In this study, we synthesized an ester of retinol and linoleic acid, retinyl linolate, and examined its effects on reconstruction of the ECM, including hyaluronic acid and type I collagen, and on melanin production. Retinyl linolate significantly stimulated hyaluronic acid and collagen synthesis and suppressed melanin production in a reconstructed epidermal equivalent which correlated with a reduction of tyrosinase activity. Thus, retinyl linolate is proposed as an effective anti-aging agent, which promotes the reconstruction of the ECM and suppresses melanin production.

Key words: retinol, linoleic acid, hyaluronic acid, collagen, tyrosinase.