

〈シンポジウム〉

(抗老化化粧品のストラテジー—シミ対策化粧品のストラテジー—)

## 美白剤としての抗酸化剤

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### Whitening Effects of Antioxidants

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#### Abstract

Ultraviolet (UV) is a well-known inducer of the skin pigmentation. UV not only stimulates melanocytes directly and also induces the secretion on melanocyte-stimulating cytokines from keratinocytes. It has been acceptable that reactive oxygen species (ROS) contribute to the processes. In addition, intracellular defense system against ROS decreases with aging and UV irradiation. Thus, the increase of anti-oxidative ability in skin cells, keratinocytes and melanocytes, will be effective to inhibit the activation of melanocytes. In this review, we will introduce the role of ROS on melanin synthesis and will summarize our study for vitamin E, which is a typical lipophilic antioxidant. Intracellular glutathione level in melanocytes and keratinocytes increased by vitamin E treatment, whereas the tyrosinase activity decreased. This supports the notion that vitamin E is one of the candidates as a controlling agent for anti-oxidative ability and skin color.

**Key words:** vitamin E, glutathione, melanocyte, keratinocyte, ultraviolet.