日本香粧品学会誌　Vol. 35, No. 1, pp. 7–12 (2011)

〈一般論文〉

加齢に伴う表皮ターンオーバー遅延とエストロゲン応答性の関連性

村上祐子*, 田中　浩, 中田　悟

Relationship between Slow Epidermal Turnover Caused by Aging and Estrogen Responsiveness

Yuhko MURAKAMI*, Hiroshi TANAKA, Satoru NAKATA

(Accepted: November 9, 2010)

Abstract

Epidermal turnover gradually slows down with age. Estrogen stimulates keratinocyte proliferation, so it is considered to affect epidermal turnover. Estrogen responsive finger protein (EFP) is known to be involved in estrogen-dependent cell proliferation of the endometrium. Therefore, we investigated the relationship between slow epidermal turnover caused by aging and estrogen responsiveness focusing on EFP. The expression of *EFP* mRNA increased in estrogen-stimulated human keratinocyte cell line, HaCaT. On the other hand, in senescence-induced HaCaT by glyoxal, *EFP* mRNA expression and protein level decreased, and estrogen-induced enhancement of *EFP* mRNA expression was not observed. Also, estrogen-induced promotion of cell proliferation was not observed by senescence. Moreover, we examined effects of aging on *EFP* transcription factors: CREB-binding protein, a substantial homolog of p300 (CBP/p300) and steroid receptor coactivator-1 (SRC-1). As a result, mRNA expressions of these *EFP* transcription factors reduced in senescence-induced HaCaT by glyoxal. On the basis of these results, estrogen-dependent *EFP* mRNA expression in epidermal keratinocyte is considered to be reduced by aging, following the decrease of its transcription factors. Consequently, it is indicated that reduced estrogen responsiveness may cause the inhibition of keratinocyte proliferation. These are suggested as a new mechanism of slow epidermal turnover with age.

Key words: EFP, turnover, estrogen, aging, keratinocyte.