

Comparative Analysis of skin type effect on intrinsic skin aging by in vivo harmonic generation microscopy

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1. Abstract

We recruited 21 subjects in Fitzpatrick skin types I&II and captured in vivo harmonic generation microscopy (HGM) images of skin on the sun-protected volar forearm. Through quantitative analysis, we found that the cellular and nuclear size of basal keratinocytes with Fitzpatrick skin types I&II increase with age with the same trend as with skin types III&IV. Our study indicates that the primary factor to determine the cellular and nuclear size of basal keratinocytes is age, rather than skin type.

2. Introduction and Methods

By using HGM in vivo, we observed morphological changes of keratinocytes related to intrinsic skin aging with subjects in Fitzpatrick skin types III&IV [1]. In this study, we aim to confirm whether the expression of the intrinsic skin aging changes with other skin types.

3. Results and Discussion

By using the image analysis software developed by National Cheng-Kung University, we analyzed the morphological parameters of 21 subjects in Fitzpatrick skin types I&II. A significant positive correlation was shown between age and cellular and nuclear size of basal keratinocytes. After comparing with our previous data in skin types III&IV, our result shows that the primary factor to affect the cellular and nuclear size of basal cell is age, rather than skin type. This project is sponsored by NHRI under NHRI-EX105-9936EI and MOST under MOST 103-2221-E-002-137-MY3.

References;

[1] Y.-H. Liao, S.-Y. Chen, S.-Y. Chou, P.-H. Wang, M.-R. Tsai, and C.-K. Sun, "Determination of chronological aging parameters in epidermal keratinocytes by in vivo harmonic generation microscopy", *Biomed. Opt. Express*, **4**(1), 77–88 (2013).