

〈一般論文〉

テープストリッピングにより非侵襲的に調製された
ヒト皮膚角層細胞の生化学成分の分析

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**Analysis of Biochemical Components of Human Skin Corneocytes Prepared
Non-invasively by Tape-stripping**

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Abstract

In order to analyze various biochemical components in human skin corneocytes, a simple and easy method to isolate corneocytes prepared by tape-stripping non-invasively was established. The method includes detachment of corneocytes from adhesive tape by xylene, washing with ethanol and centrifugation to collect the cells. Merits of the method are that it is possible to analyze with only a very small area of adhesive tape; the whole corneocytes can be isolated; and the remaining samples after extraction can also be used for analysis.

Using this method, some biochemical components were evaluated (e.g., amino acids, keratin proteins, cornified envelope glutamyl-lysine cross-link). Keratins extracted from corneocytes of various body regions or ages were analyzed in SDS-polyacrylamide gel electrophoresis. Electrophoretic patterns of keratins were classified into some groups in different body regions. The measurement of ϵ -(γ -glutamyl) lysine bond cross-link was conducted by the chemical method (cyanoethylation of lysine). Percentage of cross-link in cornified envelope prepared from human forearm skin had a tendency to decrease with age. In other biochemical components, DNA in flaky skin, some enzymatic activities and S-S bond could also be detected or measured.

This non-invasive sampling method and analysis can be useful ways to evaluate the skin biochemically not only in cosmetology but also in pathological skin research and transdermal absorption research.

Key words: corneocyte, tape-stripping, cornified envelope cross-link, glutamyl-lysine bond, keratin.