

Expression of cytochrome P450 (CYP) enzymes in human keratinocytes of Japanese

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Cytochrome P450 (CYP) enzymes are one of the most important for drug-metabolizing. It was reported that CYP enzymes are expressed in human skin keratinocytes. However, whether inter - individual variation of the expression level of each CYP gene in keratinocytes remains unknown. We here evaluated the expression levels of CYP enzymes using skin of Japanese women who underwent breast reconstruction surgery. Patients with comorbid skin diseases (such as psoriasis and atopic dermatitis), diabetes, or infectious diseases were excluded. Skin samples were collected from abdominal region of each subject during surgery, and the mRNA expression levels in keratinocytes were estimated by qPCR. The expression of CYP3A4 enzyme which essential for detoxification of xenobiotics and metabolism of most drugs were positively correlated with BMI in subject. Obesity is reported to influence the expression of CYP enzymes in liver. Our result suggests the possibility that the drug transfer to blood is different in obesity when using transdermal patches, for example of fentanyl which substrate of CYP3A4. We will examine another CYP enzymes, and clarify the relationship between CYP3A4 and other CYP enzymes.