Synopsis of Original Research Paper

Monitoring of endogenous retinoic acid levels in the skin to elucidate the anti-aging role of retinoic acid

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It has been noted that retinoic acid (RA) is effective for the anti-aging action in the skin. Topical treatment with RA on the skin improves tension and elasticity by decreasing wrinkles, however, its mechanism has not been fully determined. The one of impediments in this research field is that we cannot visualize endogenous RA level in the skin. Since RA is not a molecule but a compound, it is impossible to establish a mouse model by delete directly RA. Thus, we aimed to determine key molecule(s) associated with RA signaling in the skin and then attempted to establish mice in which we can visualize endogenous RA level by making use of the molecule(s). Targeting vector was designed and homologous recombination was performed in zygotes. As a result, chimera mice were delivered. This mouse model will be a powerful tool to analyze anti-aging actions of RA as well as effects of other anti-aging products on the skin.