

## A New Approach to Cosmetology with Human Skin Maintained in SCID Mice

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Normal human organs and tissues (skin, thyroid gland, lung, liver, stomach and intestinal mucosa, endometrium, bone marrow cells, etc.) were well maintained for long periods (> 2 years) over several mouse generations in the T and B cell function deficient SCID (severe combined immunodeficient) mice improved by the selective inbreeding of homozygous (*scid/scid*) male and female mice which showed undetectable serum IgG and IgM (< 1µg/mL), while it was difficult to maintain these human tissues in nude mice and also in leaky SCID mice.

Transplanted human organs and tissues were stably maintained morphologically and functionally, providing an invaluable experimental system for the *in vivo* study of human organs and tissues. For example, daily exposure to large dose (>7.5 x 10<sup>5</sup> J/m<sup>2</sup>) of ultraviolet light B (UVB) for long periods (~2 years) induced actinic keratosis in normal human skin. Consequently, the use of SCID technology maintaining human skin enables us to study on the *in vivo* influence of cosmetics and allergic agents, protection from environmental toxic agents, and experimental therapy of human skin diseases.