

〈原 著〉

## 水溶性高分子のマウスにおける発毛促進効果

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### Acceleration of Hair Regrowth in Mice with Topical Water-Soluble Polymer

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#### Abstract

Although the shaved backs of C 3 H mice have been used for evaluating hair growth promoting agents, it is not an appropriate model for investigating hair regrowth (the conversion of the hair follicle from the telogen to anagen phases), since spontaneous hair regeneration with depilation often occurs. A method which does not induce spontaneous regrowth of hair in the telogen phase has been developed. Briefly, the dorsal areas of C 3 H mice aged 8 weeks were lightly clipped with electric clipper equipped with a ceramic edge, so that the hair remained in the telogen phase until the age of 14 weeks. Using this system, the acceleration effects of test materials were evaluated. The test solutions were applied on the left half of the clipped areas once a day for 6 weeks and the hair growth was observed. Then, the acceleration of hair regrowth by the test solutions was estimated in comparison with the non-treated site (right half) as a control. Although water or 70% ethanol showed no effect in this system, the solutions of water soluble polymers such as cellulose derivatives, alginate derivatives, chitosan, and polyvinylalcohol were found to have high accelerating effects on hair regrowth. Sugars alone did not accelerate the hair regrowth, but they enhanced the effects of the water soluble polymers when added to the solution.

**Key words:** acceleration of hair regrowth, new screening system, water-soluble polymer, sugar.