

〈教育セミナー〉

(21世紀を迎えてのアンチエイジング—髪を美しく保つために)

## 毛 成 長 と サ イ ト カ イ ン

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### Cytokines Involved in Hair Growth

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#### Abstract

Various reports provided evidence that some cytokines and growth factors are involved in hair growth and morphogenesis. Hair follicle growth was suppressed by the external addition of FGF-2, FGF-5, and TGF- $\beta$ , while such growth was stimulated by KGF, IGF-I, and HGF. In addition, expression of IGF-I, and TGF- $\beta$  in dermal papilla cells was found to be stimulated androgen-dependently. Recent studies using transgenic mice showed that various ligands, cell membrane receptors and intracellular signaling molecules are crucial in hair follicle morphogenesis.

**Key words:** cytokine, growth factor, hair growth, stem cell, hair cycle.