

〈原 著〉

プロシアニジン B-2 の育毛活性

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Hair-Growing Activity of Procyanidin B-2

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Abstract

For the purpose of finding active compounds and developing hair-growing agents which really possess measurable curing effects on male pattern baldness, we mapped out a strategy to find materials which directly affect the hair follicles and promote hair epithelial cell growth. We assembled a collection of more than one thousand plant extracts, one of which, in methanol extract from grape seeds, we found to possess growth-promoting activity of about 150% relative to controls. In an attempt to identify these active compounds, we repeated the purification process of our grape seed extract using column chromatography and hair epithelial cell growth-promoting assays. Finally, we identified the active compounds as proanthocyanidins. We also found that proanthocyanidins possess anagen phase inducing hair-growing activity in C3H mouse model. We isolated procyanidin B-2 of high purity from apples and found that it possesses growth-promoting activity on hair epithelial cells at a very high rate of 300% relative to controls. After confirming the safety of topical application of procyanidin B-2 by numerous toxicological studies on procyanidin B-2, we conducted a placebo-controlled 6-month clinical trial in double-blind fashion. Nineteen men in the procyanidin B-2 group and 10 men in the placebo control group were subjected to analyses. The increase in number of total hairs in the designated scalp area of procyanidin B-2 group subjects after the 6-month trial was significantly greater than that of the placebo control group subjects ($p < 0.005$, two-sample t -test). The increase in number of terminal hairs, which are defined as hairs more than $60 \mu\text{m}$ in diameter, in the designated area of the procyanidin B-2 group subjects after the 6-month trial was significantly greater than that of the placebo control group subjects ($p < 0.02$, two-sample t -test). No adverse side effects were observed in either group. The clinical test has confirmed that topical procyanidin B-2 is safe and effective for treating male pattern baldness.

Key words: apple, grape seeds, hair growth, male pattern baldness, proanthocyanidins.