

Effect of PhytoCellTec™ Malus Domestica on Human Hair Follicle

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Introduction

Effect of Malus Domestica stem cell culture extract on the lifespan of human hair follicles.

Hair follicles represent a natural coculture model of epidermal and melanocyte stem cells and differentiated cells.

Hair grows in cycles: Starting with anagen (growth) phase, the hair follicle and its shaft pass through catagen (regressing) phase, telogen (quiescent) phase and finally exogen (shedding) phase.

Test products

- Malus Domestica stem cell culture extract 0.2 %.

Biological Model

Hair bulbs micro dissected from human skin fragments.

Assay

Human hair follicles in anagen phase were isolated from skin fragments.

Hair bulbs were cultivated in a growth medium containing or not (control) the test compound 0.2 % Malus Domestica stem cell culture extract, were they elongated until about day 14.

Then, they gradually became senescent due to the lack of blood circulation. They started the necrosis process. The hair follicle growth was monitored during 20 days with length measurements and photographs were taken.

Test parameter

- Raw data processed: Statistical analyzer PRISM® software (Graph Pad Software).
- Intergroup comparisons: Performed by variance analysis (ANOVA) with multiple comparison test of Dunnett.

Result

At a concentration of 0.2 % Malus Domestica stem cell culture extract slightly but clearly postponed senescence induced necrosis. Follicles kept in the presence of the extract continued to elongate until day 18, whereas the control follicles started to shrink after day 14.

Malus Domestica stem cell culture extract slowed down hair follicle regression by 50 % compared to the control.

Growth of Hair Follicle



Day 0



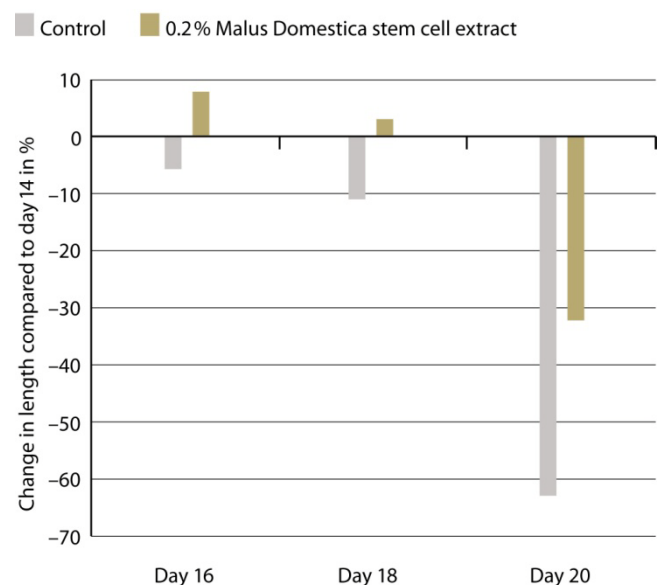
Day 4



Day 7

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Length of Hair Follicle



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