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Hair Growth Activities of Hair Tonic and Hair Mask Preparations Containing Caffeine in Marmot Test Animals

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ABSTRACT

Caffeine is a natural stimulant that has antioxidant and phosphodiesterase inhibitory activity. Caffeine penetrates quickly into hair follicles within 20 minutes after being applied with topical preparations. The study aims to determine the activity of hair tonic (0.001% caffeine) and hair mask (0.2% caffeine) containing caffeine in stimulating hair growth in guinea pigs. The research design used is laboratory experimental research. The hair tonic and hair mask obtained were tested for stability including organoleptic testing, homogeneity, viscosity, pH test, spreadability test, accelerated stability test, primary irritation test, and hair growth activity testing on guinea pig test animals. The results of the one-way ANOVA statistical test for the pH test, spreadability test, and viscosity test obtained a p-value > 0.05, indicating that there were no significant differences. Organoleptic and homogeneity tests showed no changes before and after the forced conditions. Testing the hair tonic activity of caffeine on male guinea pig hair growth was carried out by measuring 10 strands of guinea pig hair using a caliper and counting the number of hair strands on the guinea pig on day 21. The average hair length data obtained was calculated and statistical analysis was carried out and compared with the control. From the research, it was obtained that the hair tonic caffeine preparation with a concentration of 0.001% with an average hair length of 18.294 mm and an average number of strands of 1523 strands had high effectiveness in stimulating hair growth compared to the caffeine hair mask preparation with a concentration of 0.2% with an average hair length is 16,888 mm and the average number of strands is 1503 strands.

Keywords: Cosmetic, Hair Loss, Marmot, Irritation Test