

Maidenhair shampoo and hair lotion: Dermatopharmacological and dermatotoxicological evaluation

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Background and Aims: Melanogenesis, the process of synthesizing melanin, is controlled by a variety of molecular pathways, including signaling through the melanocortin type 1 receptor (MC1R). Binding of α -melanocyte stimulating hormone (α -MSH) to MC1 Receptor leading to an increase in the activity of enzymes involved in the production of melanin pigments. The present study was designed to explore the stimulation of melanogenesis and anti- graying effects of *Adiantum capillus-veneris* (Maidenhair) and Melitane (a biomimetic peptide agonist of α -MSH) in their lotions.

Methods: Dermatotoxicological Effects of shampoo and hair lotion was studied by RBC (Red Blood Cell), Zein, Skin Drize and human patch tests. For studying of dermatopharmacological Effects of hair lotions, containing A) Propylene glycolic extract of maidenhair B) Melitane C) Maidenhair and Melitane D) Benchmark (Phyto), a half head test method was used with 60 men in 4 groups with gray, white and black hairs. The application of shampoo and lotion was made according to the test, one half with 2.5 g shampoo and then 4 ml lotion containing active matter and the other half with control shampoo and lotion without active matter. The application was continued for 3 months, one time in a day. White hair was counted prior and 3 months after lotion application, using a shablon.

Results: White hair average for lotion containing Melitane considerably is decreased in comparison with control lotion. This effect is not seen for Maidenhair lotion. Based on results of dermatotoxicological tests, all lotion was without side effects for eye and skin and all shampoo was mild irritant (similar to other mild shampoo in the market).

Conclusions: These findings confirm that Melitane is a melanogenesis stimulator and exhibits anti-graying property. But the products were made just by Maidenhair extract had no anti- graying effect.

Keywords: Shampoo; Lotion; *Adiantum capillus-veneris*; Hair graying