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Moderating solar ultraviolet radiation's destructive effects using herbal compounds in shampoo's compound

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Abstract

One of the most important and highly influential factors in lacking vitality and fragility of hair is the aging of hair strands which occurs as a result of various factors such as overusing chemicals, air pollution and poor nutrition, though the factor that cosmetic industry researchers give full consideration is solar ultraviolet radiation. Scalp overexposure to solar ultraviolet radiation can lead to weathering, decrease in function of melanocytes and decrease in production of hair in scalp. Free radicals produced by this radiation destroy collagen tissue of the scalp. Hair follicles are surrounded by collagen which guarantees their stability and strength. If this is damaged, the hair strand will lose its stability. Ultraviolet radiation activates porphyrins produced by propionibacterium in pilosebaceous channel, and so leads to oxidative damage damage to scalp tissue and micro inflammation in follicles; so hair structure's health would be affected. There are glucomannan that is a mannose rich polysaccharide and gibberellin that is a type of growth hormone in the compound of herbal extracts used in Cepigène anti hair loss shampoo's compound (patent number 74078) which become connected to receptors of fibroblast growth factor of scalp and stimulate collagen synthesis. Also compounds like Epigallocatechine-3-gallate, Epigallocatechin , Epicatechin, Epicatechin-3-gallate hinder activation of MAPk (Mitogen-activated protein kinases) by ultraviolet radiation, ERK1/2 (Extracellular-signal-regulated kinases) phosphorylation and attenuate function of nuclear transcription factors p53, c-Jun, c-fos, so they hinder negative effects of ultraviolet radiation. In this study, 20 men who were exposed to sunlight every day because of their job (these people did not use safety helmet), were experimented. On the first day of experiment, clinical three-dimensional pictures were taken of subjects' hair and becoming opaque and ascending of hair cuticle scales were clearly observable. After using Cepigène shampoo for 3 weeks, pictures were taken of their hair again. Study of these clinical pictures showed a 70% improvement in the structure of hair shaft.

Biography

Ahmadi has got a PhD in Clinical Biochemistry from University of Tarbiyat Modarres, Iran. He also has got a diploma in Pharmacology. Dr. Ahmadi is a faculty member of Pharmacy School of Iran's Azad University, Pharmaceutical Sciences' Unit. Also, he is a faculty member of Iran's research center of Cosmetic and Sanitary Products.