ABSTRACT BOOK
ABSTRACTS

24TH WORLD CONGRESS
OF DERMATOLOGY
MILAN 2019

A new ERA for global Dermatology
10 – 15 JUNE 2019
MILAN, ITALY

HAIR DISORDERS

INTEREST OF PANAX GINSENG AND ALBIZIA JULIBRISSIN EXTRACTS TO PREVENT AGE-RELATED HAIR DENSITY REDUCTION

V Mengeaud [1] - M Leveque [2] - S Bessou Touya [2] - N Castex Rizzi [2]

Pierre Fabre Dermocosmetique, Medical Affairs Department, Lavaur, France [1] - Pierre Fabre Dermocosmetique, Pharmacology Department, Toulouse, France [2]

Introduction: Hair aging is characterized by hair whitening, hair thinning and hair density reduction leading to a global loss of hair volume. Oxidative stress is one of the key molecular mechanism that induces cellular senescence and dysregulates cellular functions with age. It seems important, to prevent age-related hair density reduction, to protect hair follicle's (HF) cells against oxidative stress and to promote the anagen phase of the HF.

Objective: The aim of this study was to evaluate the effect of Ginseng and Albizia extracts and their association on Human Dermal Papilla Cells' (HDPCs) response to oxidative stress and on the expression of key factors of anagen's maintenance. Melatonin secretion was also investigated for its anti-oxidant and anti-apoptotic activities.

Methods: Anti-oxidant activity was evaluated according to an oxygen radical scavenging absorbance capacity (ORAC) assay and the measurement of sulfiredoxin-1 (SRXN1) gene expression in HDPCs following a H_2O_2 stress. Melatonin and VEGF protein expression levels were measured in HDPCs culture supernatants (ELISA assays). HDPCs' senescence was evaluated following a H_2O_2 stress by measuring the expression of the gene encoding p21 protein (CDKN1A). The gene expression of the pro-apoptotic factor BAX and of the Fibroblast Growth Factor 5 (FGF5), which are two inhibitors of hair growth, was also studied.

Results: We found that Ginseng extract displayed anti-oxidant activities with a significant ORAC score (5798 TE) and the inhibition of H_2O_2-induced SRXN1 gene expression (-76%). Albizia extract enhanced Melatonin (+159%) and VEGF (+15%) expression. The association of Ginseng and Albizia extracts protected HDPC's from H_2O_2-induced cellular senescence (-60% of CDKN1A expression) and inhibited BAX (RQ=0.47) and FGF5 (RQ=0.44) gene expression. ▯

Conclusion: The results of this study indicate that Ginseng and Albizia extracts are good candidates for the prevention of age-related hair density reduction and should be associated.

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