

AESTHETIC AND COSMETIC DERMATOLOGY (LASERS SEPARATE CATEGORY)

A THERMAL SPRING WATER, A COSMETIC INGREDIENT OF POTENTIAL INTEREST IN THE FRAME OF SKIN AGEING EXPOSOME

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Introduction: The major environmental factors that influence skin ageing have been recently regrouped in the so-called skin ageing exposome which includes sun radiations, air pollution, tobacco smoke, nutrition, and other factors such as temperature, stress and lack of sleep.

Objective: Skin ageing is clinically well characterized and results from the cumulative effects of chronological ageing and environmental factors. Skin undergoes histological modifications as a result of an altered balance between keratinocyte proliferation and differentiation. Vichy Thermal Spring Water (VTSW) being characterized by a very high minerality and a specific ionic composition, its effects on human keratinocytes grown in vitro has been characterized.

Materials and Methods: Human keratinocytes were grown in vitro in the presence or absence of VTSW, and a full genome gene expression profile was established. In parallel, the effect of VTSW on the in vitro expression of keratinocyte late differentiation markers was studied by immunofluorescence, in comparison with Ca²⁺.

Results: In the presence of 50% of VTSW, the expression of numerous genes is modulated: a functional analysis with biological functions enrichment algorithm highlights 79 genes differentially expressed and mainly clustered in functional groups, which cover main processes involved in skin homeostasis, specifically with respect to dermal-epidermal junction, epidermal cohesion and communication, keratinocyte proliferation-differentiation balance, antioxidant mechanisms and DNA repair.

Conclusions: This work suggests that Vichy Thermal Spring Water could be considered as an ingredient of potential interest to address some of the deleterious effects of skin ageing exposome.