Abstract Template

A new insight on beech bud extract and skin enzymatic desquamation

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I. Abstract Body (up to 250 words)

Epidermis is the most superficial tissue of the skin that plays a vital role as an effective barrier between internal and external environments [1]. This tissue is in a continuous renewal due to highly organized process of cell proliferation, differentiation, cornification and desquamation. Desquamation is linked to a loss of cohesion between superficial dead cells, the corneocytes. This cohesion is provided by specific cell junctions named corneodesmosomes where their enzymatic degradation leads to desquamation. Up to now, all these enzymatic mechanisms remain not completely understood [2]. Despite, it seems clear that the absence (or mutation) of any of these enzymes might induce epidermal barrier disruption [3].

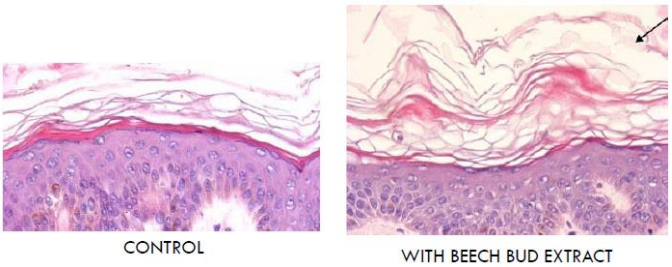
Beech bud extract has been shown boosting cell metabolism and hydrating the skin. The present study aimed: i) at evaluating the ability of this sustainably sourced cosmetic ingredient to modulate the epidermal desquamation and ii) at understanding its effect on enzymes linked to this process.

We have shown that, when applied topically on ex-vivo skin explants, the beech bud extract significantly reduces the cohesion between the epidermal most superficial cell layers. When applied onto keratinocytes cell cultures, the beech bud extract increased the gene expression of three enzymes (KLK5, KLK 7, CTSL 2) that are directly involved in the desquamation process [2,4].

Moreover, we have shown that the beech bud extract induces a significant decrease of stratum corneum cohesion, similar to glycolic acid 30% that was used as a reference, which confirms its pro-desquamation activity.

Taken together, these results suggest that the beech bud extract might promote the desquamation through the increase of desquamation enzymes gene expression. Accordingly, this beech bud extract appears as a valuable cosmetic ingredient towards skin revitalization and refinement of skin texture.

II. Image:



CONTROL

WITH BEECH BUD EXTRACT

III. Reference:

1. Abdayem R et al. The epidermal barrier, Annales de dermatologie et de vénérologie, 2018. Doi : 10.1016/j.annder.2017.12.001
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4. Bernard D. Analysis of proteins with caseinolytic activity in a human stratum corneum extract revealed a yet unidentified cysteine protease and identified the so-called "stratum corneum thiol protease" as cathepsin l2. J Invest Dermatol. 2003. 120; 4:592-600.

IV. Biography:

Chloé CLABAULT has completed her PharmD at the age of 25 years from Paris Descartes University and Masters in Cosmetology, Paris Sud University, France.
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