

REVIEW on PhD Thesis
PhD Student Brindusa Georgiana Marinescu (Dumitriu),,
PhD Thesis Supervisor Natalia ROSOIU

Research on "in vitro" processes modulation by certain natural compounds
in the algorithm of skin tissue functionality

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Brindusa Georgiana DUMITRIU¹, Laura OLARIU¹,
Natalia ROSOIU²

¹ SC Biotehnos SA

² "Ovidius" University, Faculty of Medicine, Department of Biochemistry,
Constanta, Romania; Academy of Romanian Scientists, 54 Splaiul
Independentei 050094, Bucharest, Romania

Objectives and purpose of the work

In the area of modern cosmetics, the main objective is the development of therapeutic strategies to bring major benefits for the skin tissue status by targeted action of the active ingredients at gene or cellular receptor level, detaching it from the cleaning effect and apparent beauty characteristic so far for this type of products. In this context, this research aim was to highlight the dermo-epidermal mechanisms controlling the functionality of skin tissue homeostasis and the modulation of these processes by the specific plant origin compounds with pharmacological activity.

One of the main objectives of these studies focused on **defining the main cellular processes according to the therapeutic target**, as follows: at the epidermis level, the first layer of skin with barrier function against the external environmental aggression (keratinocytes) - inflammation, oxidative stress the initiation of apoptosis under UV radiation impact; at the dermis level, the region responsible for the appearance of wrinkles (fibroblasts) – the proliferative status, extracellular matrix protein synthesis, molecular expression of the type $\alpha 1\beta 1$ and $\alpha 2\beta 2$ integrins; vascular endothelium level, with a major role in skin homeostasis by providing oxygen, nutrients and hormones (human endothelial cells) - inflammation, angiogenesis.

Another objective was **to develop the therapeutic strategies** differentiated according to the previously defined specificity of the target mechanism, based on the