

Skin-brain connection and the concept of **neurocosmetics**

The skin, the body's largest organ—complex and dynamic—is in direct connection with the central nervous system, receiving, analyzing, and transmitting information about the environment (1). It acts as a protective barrier against external stressors, such as environmental pollution and ultraviolet radiation, and with the involvement of cutaneous immune cells, maintains the balance between pro-inflammatory and anti-inflammatory responses while combating infectious agents. Furthermore, it plays a role in maintaining hydroelectric balance by limiting water loss and contributes to the synthesis of vitamin D induced by solar radiation (2). These functions are regulated by the presence of a cutaneous neuro-immuno-endocrine system that not only acts locally but also, through the abundant network of nerve endings and blood vessels, allows for remote regulation of other organs, including the brain. In response to various stimuli, both the nerve endings in the skin and cutaneous cells, including keratinocytes, melanocytes, and fibroblasts, produce and secrete neurotransmitters, hormones, neuropeptides, cytokines, and neurotrophins, previously considered exclusive to the central nervous system (3).



This connection between the skin and the central nervous system forms the basis of the concept known as **neurocosmetics**, a psychobiological approach that explores and integrates knowledge from neuroscience to enhance the efficacy of medicated skin care treatments, both in normal situations—by reducing symptoms of stress and aging—and in pathological conditions, such as in patients with hypersensitive skin or psoriasis (4, 5). When a product is applied, the nerve endings receive sensory information about the product's texture, fragrance, or application, which triggers and transmits a series of signals to the central nervous system, generating emotional responses that significantly impact skin quality, not only in terms of texture and appearance but also in physiology, enhancing its barrier function (6). In this context, the traditional concept of cosmetics has been surpassed in recent years by the concept of neurocosmetics, products with a more holistic mode of action, capable of stimulating the skin-brain connection, acting both externally and internally within the body (4).

LETI PHARMA, through its **LETISR** product line for the care and prevention of facial redness (erythema due to erythrosis, couperose, and/or subtype 1 rosacea), embraces the concept of neurocosmetics by incorporating active ingredients that help reduce neurosensory

hyperreactivity in the cutaneous nerves due to the overproduction and release of neuropeptides typical of sensitive and redness-prone skin. This leads to reduced stimulation of the central nervous system, thereby decreasing sensations of burning, tingling, skin tightness, and itching. LETISR products contain ingredients that reduce the formation of new blood vessels from existing ones (angiogenesis) and vasodilation (erythema, telangiectasia), lowering local temperature and improving facial redness.



LETISR

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