

Title: What's new in real science based dermocosmetics?

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Our increased knowledge of normal skin physiology has led to a subtle revolution in cosmetic science. Originally designed for enhancing personal appearance through direct application to the skin, cosmetics now play a new role in dermatology by supporting the management of various skin disorders. This evolving role is driven by scientific and technological advancements that have changed our understanding of normal skin physiology and how cosmetics can physically and biologically modify its appearance. Advanced techniques for investigating skin responsiveness to different stimuli have ushered in a new era of cosmetic and dermocosmetic development, taking into account the robust understanding of skin physiology and its diverse responses to environmental insults.

Specifically, the review discusses the development of cosmetics based on the exposome and the mechanisms of pruritus for anti-itch cosmetics. It also covers the repositioning of bioactive compounds for anti-aging cosmetics, pharmaceutical compounds for skin whitening and fighting alopecia, natural products and synthetic compounds repurposed for cosmetics, and targeting epidermal proteolysis for innovative cosmeceuticals. Additionally, it explores topics such as Bakuchiol, skin fragility, telomerase and telomere modulation in skin senescence and aging, and the skin microbiome's role from the food industry to cosmeceuticals.

To differentiate products by enhancing consumers' sensory satisfaction, it is necessary to introduce and validate sensory science in the cosmetics industry, which has traditionally focused on formulation technology. Therefore, the ultimate goal is to develop a quantitative technique for evaluating the emotional aspects of cosmetics using a neurosensory platform. This involves the utilization of functional magnetic resonance imaging (fMRI), functional near-infrared spectroscopy (fNIRS), portable fNIRS, and electroencephalography (EEG) to quantify emotional and efficacy responses in cosmetics. Ultimately, a neurosensory platform for cosmetics has been constructed, incorporating objective sensory indicators based on neuroscience and replacing the subjective sensory evaluation methods used in the past.