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Dermatocosmetics and their Role in Dermatology



Raluca Gabriela Tutuianu¹, Angela Caunii^{2,3} and Monica Butnariu^{1*}

¹University of Life Sciences "King Mihai I" from Timisoara, Timisoara, Romania

²"Victor Babes" University of Medicine and Pharmacy Timisoara, Romania

³Center for drug data analysis, cheminformatics, and the internet of medical things, "Victor Babes" University of Medicine and Pharmacy Timisoara, Timisoara, Romania

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*Corresponding author: Monica Butnariu, University of Life Sciences "King Mihai I" from Timisoara, Timisoara, Romania

Abstract

Mainly, the main actions pursued apply cosmetically and are: maintaining normal hydration, physiological lubrication to the skin, revitalizing the skin, increasing turgor, mineral and protein content. In the last period of time, it was possible to differentiate cosmetic preparation of biocosmetics with biological active substance, appropriate preparation of dermatological use and care realized a therapeutic cosmetic. Biological active substance (hormone, vitamin, enzyme, alkaloid, amino acid, antibiotic, antiseptic, astringent, deodorizing, photoprotective substance, fluorine compound) acts as an efficient adjuvant to revitalize the skin. Cosmeceuticals are used both for nutrition and for improving the appearance of the skin, especially in anti-aging products, and have also been documented as active agents in the treatment of various dermatological diseases. Cosmeceuticals are used to both nourish and improve the appearance of the skin, especially in anti-aging products, and have also been documented as active agents in the healing of various dermatological conditions.

Keywords: Cosmeceuticals; Cosmetic; Therapeutic cosmetics; Biological active substance

Introduction

Since the beginning of human existence, cosmetics have been very important in ensuring health and body hygiene, without minimizing their spiritual values. The origin of cosmetics is lost in the mists of time and is usually attributed to the ancient Egyptians, followed by the ancient Sumerians. The first documentary attestations of cosmetics appear in the Ebers Papyrus (1600 BC). Cosmetology as a science, through its two representative branches, integral cosmetology and decorative cosmetology, is today able to manage bioaesthetic problems and study individual means of maintaining the skin in perfect health and beauty for as long as possible [1]. In this context, ensuring pharmaceutical assistance to the population of our country involves the provision of competent services, in order to correctly carry out treatments not only with medicines, but also with other health products, including cosmetics. The concept of *cosmeceuticals* was created in 1961 by Raymond Reed, founder of the Society of Cosmetic Chemists in the United States of America, but was popularized by the American dermatologist Dr. Albert Kligman, from the University of Pennsylvania, in 1984, to define biologically active substances

(cosmetically active) that cannot be classified as cosmetics or as drugs [2,3]. Cosmetics and dermatology, although fundamentally different, pursue the same goal, namely to maintain the health and beauty of the skin. However, to reach this common point, different rules apply as they are different fields (beauty and medicine). The awareness that beauty begins with healthy skin rather than with successful makeup, which covers problematic skin, is also determined by the fact that patients are increasingly educated, more informed and more concerned about the ingredients in the products they use. The harmful effects of the environment in which we live and the methods we can apply to maintain our skin health for as long as possible [4].

Leaving aside skin types according to the classification that refers to the level of hydration (dry, oily, normal), skin types determined by phenotypic variations as a result of genetic inheritance, ethnic differences, environmental factors, climate, age, sex, lifestyle, diet, pollution. The skin is a metabolically and immunologically active organ (in the sense that it is a living organ, not just a protective organ) and is influenced by our lifestyle, the

substances that reach the skin. Some products that we currently use are created to act externally, but without entering the body, such as cosmetics (make-up, hair styling products, oral hygiene products). Cosmetics are used as adjuvants to maintain hygiene, mask imperfections and beautify the skin, in a word, maintaining the beautiful and healthy appearance of the skin. These products must fulfill their role by acting from the outside, without overcoming the skin barrier, without the product applied to the skin being absorbed into the circulation. The increasingly in-depth knowledge of the normal physiology of the skin (of how it works) has led to a revolution in dermatology and dermatocosmetics [5].

Classification of Cosmetic Products

Cosmetics are mainly classified by destination (targeted body area), function and degree of action. A detailed classification includes hygiene, makeup, skin and hair care products. The types of products used in cosmetics are diverse, but those that correspond to the purposes specified in the definition of a cosmetic product are represented in the European cosmetics industry by products for:

- i. Skin care, including sunscreen and other skin care products
- ii. Hair care, including shampoos, conditioners
- iii. Body care, including deodorants and a wide range of toiletries
- iv. Decorative products, including nail and eye care [6].

Cosmetic products contain cosmetic ingredients defined as "any substance or preparation of synthetic or natural origin used in the composition of a cosmetic product, with the exception of impurities in the raw materials used, technical auxiliary materials used in the preparation of the final product but not present in it, and materials used in quantities strictly necessary as solvents or carriers for perfumes or aromatic compositions" [7]. These technological and scientific innovations in terms of how the skin works, the deepening of some skin conditions and the way various ingredients act have led to changes in the way we now understand the skin and how the skin responds to environmental factors, drugs or ingredients in the cosmetic products we apply to the skin. Initially positioned as follow-up products for medical treatments and after-care for dermatological treatments, dermatocosmetics have evolved as stand-alone products that complement and amplify dermatological medical treatments. Dermatologists use these products for photoprotection, to treat inflammatory diseases such as rosacea, atopic dermatitis, psoriasis, seborrheic dermatitis [8].

Awareness of the long-term effect of pollution, the sun and the prolonged use of care products not adapted to the needs of the skin has led to an increasing need for products that counteract these effects on the skin. And these products not only have to counteract these shortcomings caused by lifestyle and the environment in which we live, but they also have to be safe for

long-term use [9]. Dermatocosmetics are becoming increasingly sought after, as more people discover that they have sensitive and reactive skin to regular cosmetics. Even though they may seem similar to regular cosmetic creams, dermatocosmetics must meet high requirements in terms of quality, efficiency, and tolerability, given that they are indicated to prevent or treat skin conditions, more than regular cosmetic creams [10].

Cosmetics Regulation

Cosmetics regulation is strictly governed in my country and in the EU by Regulation EC 1223/2009 and Law no. 178/2000. These require that any product be safe for human health, notified in the CPNP portal before being placed on the market and have a Safety Information File (SIF). The technological and scientific progress that supports the field of dermatocosmetics has determined the need for stricter guidelines than those for cosmetics, guidelines comparable to those used in the development of medicines, and this means, among other things, that dermatocosmetic products must achieve what they say they do (that they provide the degree of photoprotection that is indicated on the packaging, that they are suitable for children's skin and from what age, etc.) [11, 12].

To ensure the safety and efficacy of dermatocosmetic formulas, they are subject to strict regulations: preclinical in vitro tests, clinical in vivo tests: sensitization tests (irritative reactions) at maximum exposure, under medical supervision, tolerance tests under normal conditions of use under dermatological, ophthalmological or pediatric control as appropriate. Similarly, the ingredients of dermatocosmetic products are not chosen at random: the European Commission regulation on cosmetic products establishes mandatory requirements for these products that are placed on the market in the European Union (in Europe there are more than 1300 ingredients that are prohibited) [13,14]. These regulations are in line with scientific progress and discoveries in the field. The dose of each ingredient must also be precisely chosen. At an incorrect dosage, anything can be dangerous [15]. Just as a lack of sun affects our health, so too can excess sun exposure affect our health, even in the short term (dehydration, sunstroke). We must find a balance in everything and dermatocosmetics are no exception. That is why there are some regulations and clinical efficacy and safety studies are carried out before a dermatocosmetic product is put on the market [16]. The effectiveness of a dermatocosmetic must include credible and reproducible methods that follow scientifically validated methodologies in accordance with good medical practice and research guidelines. The diagram for testing a dermatocosmetic is complex and includes the study design (study model and what is being pursued), the selection of participants according to established criteria, according to the study design (inclusion and exclusion criteria), the initiation of the study, data collection and publication of the results [17].

It usually takes several years from the discovery of the active ingredient to the launch of a dermatocosmetic product on the market. Once on the market, dermatocosmetics are

further monitored, monitoring carried out by cosmetovigilance departments led by experts. This group of experts continuously monitors and reviews dermatocosmetics. Data is collected, adverse effects associated with the use of dermatocosmetics are analyzed and all this data is used to improve product formulas. Dermatocosmetics have become part of the dermatologist's arsenal when prescribing treatments for skin diseases. Creams containing medicine are intended only for medical use and under medical recommendation, but even so, these cream-medicines can be accompanied by skin side effects, such as drying of the skin, increased skin sensitivity to ultraviolet rays of the sun [18].

Sometimes, due to these aspects, adherence to drug treatment can be low and patients can quickly give up following the prescribed treatment. That is why dermatologists often use dermatocosmetics to increase adherence to treatment, to counteract some of the adverse effects that may accompany certain cream-medications, to improve the quality of life of patients, which can sometimes mean a reduced number of creams to apply, a reduced treatment application time, a pleasant texture of the products applied. For example, adherence to drug treatment in acne will increase when appropriate washing products are used that do not dry the skin additionally, which moisturizes dry skin, dryness caused by the topically applied drug [19]. The quality of life determined by the secondary comfort of using dermatocosmetic products in skin conditions is significantly increased, compliance with treatment will be better and results will appear faster. Sometimes they are very important, perhaps even indispensable, to increase the effectiveness of drugs or reduce adverse effects while increasing the quality of life of patients and improving the psychological state (atopic dermatitis, ichthyosis, acne, rosacea, psoriasis). Dermatologists generally prefer to recommend dermatocosmetic products over cosmetics, because those who come to the doctor are people with skin conditions who have different needs than those with normal, healthy skin [20].

Conclusion

Several synonymous terms can be used for the concept of cosmeceuticals, such as: "performance cosmetics", "functional cosmetics", "dermaceuticals", "active cosmetics", "phytocosmetics", "skinceuticals" and "nutricosmetics". Despite the widespread use of plant-based substances in cosmeceuticals, very few of these cosmeceuticals present scientific evidence of their efficacy. A recent report shows that published clinical studies have only been conducted on soy, green and black tea, pomegranate and dates for the extrinsic treatment of aging. Due to the lack of clinical and preclinical studies with natural substances in cosmeceuticals regarding their efficacy and safety of use, there is an urgent need for scientific validation of these preparations. Desirable characteristics of cosmeceuticals include efficacy, safety, optimal concentration, biologically active form, formulation, penetration capacity, stability, skin retention, innovation, patenting, skin metabolism and affordable manufacturing technology.

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