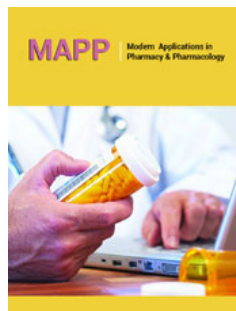


Evolution of Cosmeceutical: A Summary of Journey from General Cosmetic to Cure Skin Disease

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***Corresponding author:** Niharika,
Department of Pharmacy, Metro College of Health Sciences and Research, India

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Niharika* and Snehil Singh

¹Department of Pharmacy, Metro College of Health Sciences and Research, India

²Department of Pharmacy, IEC Group of Institutions, India

Abstract

The fastest-growing sector of the natural personal care market, “cosmeceuticals,” is currently a hot topic in the cosmetics industry. The skin care of the future will consist of cosmetics. They are the new cornerstone of skincare and the advancements made in the field of dermatological goods. All cosmeceuticals assert to contain functional substances with medicinal, disease-fighting, or therapeutic qualities. Cosmetic pharmaceutical hybrids known as cosmeceutical are used topically to enhance attractiveness by utilising components that have extra health-related functions or advantages. This means that although they are used topically as cosmetics, they contain substances that affect the biological function of the skin. Cosmeceuticals of today act as a bridge between personal care items and prescription drugs; also, the fastest-growing market segment for skin care products is cosmetics. This summary gives a layout of differentiation between cosmetic and cosmeceutical.

Keywords: Cosmeceuticals; Cosmetics; Therapeutic; Skin; Personal care

General Overview

Skin is a dynamic organ, which means it is constantly changing. Skin cells are continually renewed and exfoliated, and new skin cells will eventually take their place. Whether it's acne, rosacea, or other related problems, fine lines and wrinkles, age spots, broken capillaries, face discoloration, including melasma, and dry/oily or scaly skin, the majority of people have certain skin flaws that bother them. Tone, texture, and loudness reduction are some more concerns. To achieve a desirable outcome, a mix of therapy and operations is usually always required. Some intrinsic variables, like as inappropriate or insufficient skin care and excessive sun exposure, including artificial tanning, can be hastened by extrinsic factors. In the discipline of cosmetic dermatology, some common skin problems such as acne, rosacea, wrinkles, traumatic scars, age spots, and melasma are frequently seen with texture issues, such as dry patches, sun injury, facial redness and rough, dry skin [1].

There were numerous methods available to handle the issue in those situations. It is anticipated that a variety of products, treatment modalities, and combinations thereof will be required to achieve improvement; however, as no treatment can stop ageing, ongoing maintenance is required to maintain healthier and more attractive skin. Skin disorders like male pattern baldness, dandruff, and skin ageing were prevalent in prior decades. In general, cosmetics are asserted not to have any therapeutic effects and have been defined by the U.S. Federal Food, Drug, and Cosmetic Act (FD&C) as an article intended to be applied to the human body for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or function.” In contrast, a drug is defined by FD&C as an article intended for use in the diagnosis, cure, mitigation. treatment or prevention of disease, (or) intended to affect the structure or any function of the body.” Cosmetics are “articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to

the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance and articles intended for use as a component of any such article. Cosmeceuticals are a new breed of skin care products that are a hybrid between cosmetics and pharmaceuticals [2,3].

The term "cosmeceutical" was coined in 1961 by Raymond Reed, founding member of the U.S. Society "of Cosmetic Chemists. He originally conceived the word to describe "active" and science-based cosmetics. The word and concept were further popularized by Dr Albert Kligman in the late 1970's. with the development of prescription-strength tretinoin for the enhanced appearance of Ultra Violet (UV) damaged and wrinkled skin. A cosmeceutical is a cosmetic product whose active ingredient is meant to have a beneficial physiologic effect resulting from an enhanced pharmacologic action when compared with an inert cosmetic [4]. Dr. Albert Kligman of the University of Pennsylvania first used the word in 1984 to describe a hybrid class of products that fell in between cosmetics and pharmaceuticals. The field of cosmeceuticals has been growing practically exponentially, with to discoveries like alpha-hydroxy acids for exfoliation and skin regeneration, various topical vitamin C formulations, and an abundance of antioxidants, among others. The word "cosmeceutical," which described a new class of cosmetic goods that offered effects beyond simple cosmetic enhancement but didn't meet the criteria for a medicine or pharmaceutical, acquired increasing traction as it became more appropriate [5].

The registration process for cosmetics should ideally not be as involved as it is for pharmaceuticals. Naturally, in accordance with Good Clinical Practices [GCP], clinical studies with sufficient power should be necessary to show the cosmeceutical's intended activity for treating the specific minor skin disorder or "condition," and there must be a guarantee that safety requirements are ideal and that there are no expected side effects. This suggests that a subclass of medications (cosmeceuticals) are registered similarly to over-the-counter products in the United States. According to the famous legal dispute over the regulatory labelling of topical minoxidil for male pattern baldness, a product's pharmacological action rather than the condition it is meant to treat (normal versus diseased skin) defines whether it is a cosmetic or a drug [6]. The study and development of cosmetics, particularly the composite active ingredients, should be founded on their architectures, interacting mechanisms, and defined sources of supply most crucially, their effectiveness and safety on the targeted areas of the skin. Here, we examine a few cosmeceuticals from several functional categories, including significant attention is paid to their physiologically active constituents [7].

Clearly, A Product Must Fulfil Three Requirements in Order to be Classified as A Cosmeceutical

1. It must have active substances with scientific backing in amounts that have been physiological results and improve the appearance of human skin. The results decrease in wrinkles

and fine lines, a thickening of the epidermis, an increase elastin deposition is better, the collagen network is normal, and the natural elements that moisturize, balance skin tone, and get rid of pigment pimples or normalization of sebum secretion.

2. The formulation of a cosmeceutical should ensure that the active ingredient is fully absorbed. A product with adequate concentrations of effective ingredients will not work as a cosmeceutical if the formula does not ensure good penetration of those ingredients into the area where they are needed. In some cases, transdermal penetration has to be enhanced to position the active molecule where it is most needed [8].

3. A cosmeceutical shouldn't subject the user to any negative effects, despite the fact that one must understand that due to effective quantities of active components are employed, the probability of transient dermatitis reactions does rise. For this reason, only experienced skin care professionals should use cosmeceuticals. Therapists who can guide patients on how to use them properly, and preferably In department stores and other establishments, cosmeceuticals shouldn't be offered over-the-counter [9].

4. Ingredients used in cosmetic products should be categorized as follows:

- a. Those that are naturally found in the skin (e.g., chirally correct vitamins)
- b. Phytonutrients not normally found in skin but have physiological benefits (e.g., green tea polyphenols)
- c. Designed molecules (e.g., peptides not normally found in nature but that have physiological actions due to their cytokine activity)

The right distribution channel is crucial to the success of both pharmaceutical and cosmetic products. Integrating skin structure and function of formulation's primary ingredients (pharmaceuticals), its effectiveness in terms of the product's intended use (in cosmetics or pharmaceutical), as well as its safety [10].

Future Prospect

The desire to look attractive, youthful, toned, and healthy has become widely popular among people all over the world. Euromonitor International estimates that the global retail sales of cosmeceuticals based on natural materials reached US \$2.98 billion in 2015, with a 4% Compound Annual Growth Rate (CAGR) over the preceding five years. The cosmetic market is estimated to be worth about INR 356 billion, according to a study by Indian Cosmetic Sector Analysis. The Indian cosmetics and beauty market has consistently increased by 15% to 20% yearly. Although men are increasingly using cosmeceuticals, women continue to be the top consumers. The corporate dressing culture, which was prevalent in the west but is now rapidly advancing in the Asia-Pacific region as well, and media exposure with appealing and catchy advertising

by manufacturing businesses are the two main elements that have led to the rising trend in this industry. The enhanced consumer purchasing power also makes a significant contribution to this phenomena.

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