

Chapter 10

Cosmeceuticals: Safety, Efficacy and Potential Benefits

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ABSTRACT

Cosmeceuticals are topical cosmetic-pharmaceutical hybrids used to maintain and improve appearance and beauty of the skin. The strong demand from the consumers to constantly look youthful and flawless has driven the research and development as well as sale volume of cosmeceuticals. Present studies show that many cosmetic products, which were assumed to be inert in the past, may modulate dermatological structure or function. The key players of cosmeceuticals are anti-aging therapy along with bleaching agent, sunscreen, and hair cosmeceuticals. This book chapter aims to explore the safety, toxicity and efficacy of these cosmeceuticals. Challenges and possible advancement potentials would be discussed. As patients are increasingly seeking advice from physicians and pharmacists regarding cosmeceuticals, the authors hope to provide health care professional and pharmaceutical scientists a resource that would aid to educate patients in using evidence-based cosmeceuticals to enhance their appearance and alleviate dermatological problems.

INTRODUCTION

The desire to be beautiful is an intrinsic nature of all human beings. Aesthetics is a branch of philosophy regarding appreciation of beauty (Gaut & Lopes, 2005): given a choice or even an opportunity, everyone wants to be aesthetically pleasing to oneself or in the eye of others. Physical attractiveness by itself, directly or indirectly influences self-confidence, success, power, happiness and satisfaction in life. Aesthetic needs had been included in Maslow's expanded hierarchy of needs, which is the need for oneself to be appreciative and to seek for beauty (Maslow & Frager, 1987).

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In this respect, cosmetics are present in almost every society and civilization on earth across human history. Cosmetics spans across of human history, and is present in almost every society on earth. Cosmetics is derived from a Greek word, Kosmos which means “order” (Oumeish, 2001). In rough term, cosmetics is a field to restore order aesthetically. There are various means in cosmetics which include covering up, masking, camouflaging and concealing.

The Egyptians were among the first civilization to recognize the beneficial effects of cosmetics. The Ebers Papyrus, a medical papyrus of herbal knowledge written c. 1550 BC, have documented some cosmeceutical products. The Egyptian formulated a cosmeceutical consisted of honey and milk that claimed to alleviate skin conditions, while another formulation was made from equal portion of rush oil, frankincense, balantine oil, and wax claiming to “expel wrinkles from the face” (Ali & Finlayson, 2013; Oumeish, 2001). Back in Roman time, Galen was both a cosmetic scientist and a physician by profession. Cold emulsion consisted of olive oil and beeswax was invented by Galen for his patients to keep skin healthy.

In this book chapter the authors will carefully analyze the safety, toxicity and efficacy of the cosmeceuticals ingredients used. Challenges and possible advancement potentials of cosmeceuticals would be discussed.

BACKGROUND

Pharmaceuticals are drugs or drug(s)-containing products that prevent, mitigate, treat disease and /or affect the anatomy or physiological functions of the body. ‘Cosmeceuticals’ is a deliberate portmanteau of these two terms. ‘Cosmeceuticals’ are intended to connote drug-like benefits and perceptions from an otherwise cosmetic product (Oricha, 2010). Applied on the skin as usual cosmetic does, these cosmeceutical products are fortified with natural ingredients that could improve the skin’s biological function just like pharmaceuticals. Essentially, cosmeceuticals bridge the gap between drugs and cosmetics.

Dr Albert M. Kligman coined the word “cosmeceuticals” in an address to Society of Cosmetic Chemists in 1984. (Kligman, 2005). Now, the term cosmeceutical was used to refer to skin products from simple moisturisers (as they themselves have effects on skin hydration) to prescription retinoids and almost everything in between. However, in most circumstances, the term cosmeceutical is solely reserved for enhanced moisturisers with active ingredients that provide substantial benefits to the skin.

Even till today, the cosmeceutical category is still considered not well defined thus ambiguous for pharmaceutical regulation and control. The term ‘cosmeceuticals’ is not recognized by US Food and Drug Administration (FDA) under the Federal Food, Drug and Cosmetic Act although being widely used in pharmaceutical and cosmetic markets (Draelos, 2009). Awareness of establishing quality control, industry standards and regulations in cosmetics or cosmeceuticals were recently initiated. To prove the significance of beneficial skin effect of a cosmeceuticals can be difficult if not impossible, compared to clinical trials of drugs of other route of administrations: there are simply no placebos to begin with as anything that is applied to the skin will have an effect in some ways on top of the baseline placebo effect (Sommerfeld, 2007)

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