

A REVIEW ON COSMECEUTICALS

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ABSTRACT

Cosmeceuticals are cosmetic-pharmaceutical combination products intended to improve the health and beauty of the skin, hair, and other conditions, by providing a specific result, ranging from acne-control, anti-wrinkle effects, sun protection, dandruff control, hair growth and conditioning. Cosmeceuticals have medicinal benefits which affect the biological functioning of skin depending upon type of functional ingredients they contain. The cosmeceuticals are topical agents that are distributed across broad spectrum of materials, lying somewhere between pure cosmetics and pure drug. There are numerous herbs available naturally having different uses in cosmetic preparations for skincare, hair care and as antioxidants. This article focuses on importance of cosmeceuticals, the herbs used in them and their advantages and limitations and challenges.

Keywords: Cosmeceuticals, Herbs, Cosmetics, Drug, Skincare, Hair Care.

I. INTRODUCTION

After the implementation of Food, Drug, and Cosmetic Act of 1938, the world of topical skin care products was divided into two groups: cosmetics and drugs. Drugs were for the treatment or prevention of diseases, and it was required that safety and efficacy be established before sales and marketing could proceed. In discrepancy, cosmetics were viewed as agents to enhance the beauty of the skin or get better appearance of the skin, and safety and efficacy weren't needed to be demonstrated before deals and marketing of these products. At a fundamental level cosmetics are products which affect the appearance of the skin, while drugs affect the structure and function of the skin. Thus the term "cosmeceutical" is intended to describe skin care products that fall in between these categories.⁽¹⁾

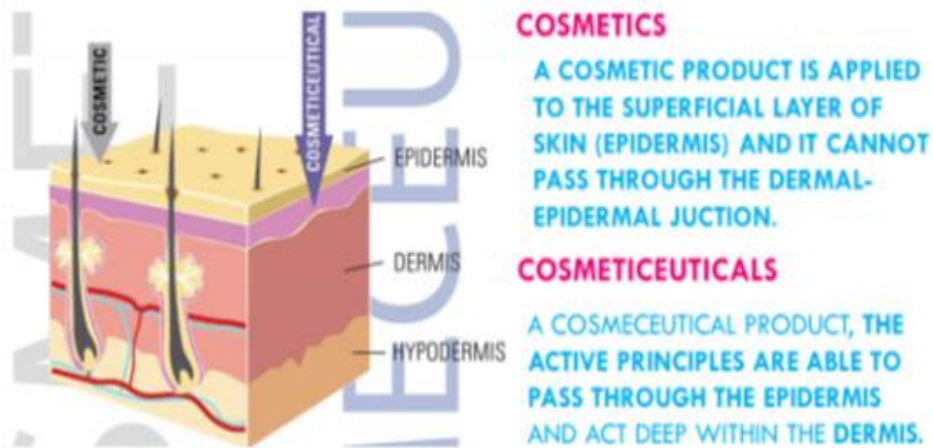
The term Cosmeceuticals was first used by Raymond Reed founding member of U.S Society of Cosmetics Chemist in 1961. He actually used the word to brief the active and wisdom grounded cosmetics. The above term was further used by Dr Albert Kligman in the year 1984 to refer the substances that have both cosmetic and therapeutic benefits² Tracing the origin of cosmetics, the first recorded use of cosmetics is attributed to Egyptians, circa 4000 BC.

The Food, Drug, and Cosmetic Act defines cosmetics by their intended use, as 'article intended to be rubbed, poured, sprinkled, or scattered on, introduced into, or else applied to clean up the human body, beautifying, promoting attractiveness, or altering the appearance.'³

Dr. Albert Klingman states that "The cosmeceuticals are topical agents distributed across a broad spectrum of materials lying somewhere among the pure cosmetics (lipsticks and rouges) and pure drugs (corticosteroids and antibiotics), they partake of both category". Cosmeceuticals improve the appearance, but they do so by delivering nutrients necessary for healthy skin and treats medically on impaired skin cells.

According to the United States Food and Drug Administration (FDA), the Food, Drugs, and Cosmetics Act; a product can be a drug, a cosmetic, or a combination of both, but the term "Cosmeceuticals" has no meaning under the law". So the term Cosmeceuticals isn't acknowledge by the Federal Food, Drug, and Cosmetic Act.

Use of cosmetics or beauty products will not cause the skin to change or heal; these products are just meant to cover and beautify. But a cosmeceutical product will have active ingredients which acts much lively to protect, heal and prevent damage to the skin.⁴



Difference between Cosmetics & Cosmeceuticals⁵

A cosmetic product can only be applied to the external face of the skin and so it can not directly treat a specific complaint. It can not pass through the dermal- epidermal joining, which is the area between the epidermis and dermis. Still, it can maintain, cover, clean, add scent to, and change the appearance of any area of the epidermis’ face that it’s applied to.

In discrepancy, cosmeceuticals are suitable to access the epidermis. The active principles are suitable to pass through the epidermis and act deep within the dermis. Although, due to its composition, a cosmeceuticals product is not classifiable as a drug, despite being formulated with highly active principles.

A product classified as a medicine is any substance or combination of substances that has the capability to cure or help a specific complaint. Its main purpose is to restore, correct or modify the physiological functions through pharmacological action..

Types of Cosmeceuticals⁶

Based on their function cosmeceuticals are classified as follows-

1. Skin-whitening and/or depigmenting cosmeceuticals
2. Moisturizing cosmeceuticals
3. Antiwrinklecosmeceuticals
4. Sunscreen cosmeceuticals
5. Anti-photo agingcosmeceuticals

Based on various products presently on the market-

1. Antioxidants
2. Growth factors
3. Peptides
4. Metals
5. Anti-inflammatories/botanicals,
6. Polysaccharides
7. Pigmentlightening agents.

List of Cosmeceutical Ingredient⁷

Sr.	Ingredient	Purported action	Sources	Marketed Preparation
1	Allatonin	Skin Smoothing	Comfrey (Fm. Boraginaceae)	Soft cleansing emulsion
2	Aloe vera	Softens skin	aloe vera (FmAsphodebceae)	Lotus herbal moisturizers

3	Alpha. hydroxy acids(AHA)	Exfoliates and improves circulation	Fruit acids (glycolic acid, lactic acid, citric acid, tartaric acid, pyruvic acid, maleic acid, etc.	Garnier anti wrinkle preparation
4	Arnica	Astringent & soothing	Arnica montana (Fm. Asteraceae)	Arnica herbal cream
5	Arjunolic extract	Antioxidant and anti-inflammatory	Terminalia arjuna (Fm. Combretaceae)	Himalaya Arjuna
6	Beta hydroxyl acids(BHA)	Antibacterial	Salicylic acid (Salix alba)	OxyMed shampoo
7	Beta-Carotene	Minimizes lipid peroxidation and cellular antioxidant	Carrots and tomatoes (Fm Umbelliferae, Solanaceae)	Environ body cream
8	Boswellia	Anti-inflammatory and anti aging	Boswellia serrata (Fm. Burseraceae)	Aroma silk boswellia anti-wrinkle cream
9	Calendula.	Soothes, softens skin, and promotes cell formation.	Calendula officinalis (Fm Asteraceae)	Weleda calendula paste
10	Centella	Skin conditioning agent increases collagen production, improves texture and integrity of skin, and reduces Appearance of stretch marks.	Centella asiatica (Fm. Mackinlayaceae)	Keratin complex
11	Coleus forskohlii oil	Antimicrobial aromatherapy/perfumer	Coleus sps.	Ayushneem plus
12	Coriander seed oil	Anti-inflammatory and anti-irritant, skin. lightening properties	Coriandrum sativa (Fm. Umbelliferae)	Tcc collagen complex
13	Cucumber Cools res	Refreshes, and tightens pores	Cucumis sativus (Fm Cucurbitaceae)	Eminence eye makeup remover
14	Dry extract from yarrow	Treatment of oily hair.	Achillea millefolium (Fm. Asteraceae)	Juniper yarrow moisturizer
15	Essential fatty acids	Smoothens, moisturizes and protects	Linolenic acids and arachidonic acid	Parachute hair oil
16	Furfuryladenine	Improves hydration and texture of skin	Plant growth hormone	kinerose lips treatment
17	Lupeol	Antioxidant and skin	Crataegus oxyacantha	Sea tonic

		conditioning treatment	(Fm.capparidaceae)	stretch mark removing cream
18	Ginkgo	Antioxidant that smoothes rejuvenates and promotes youthful appearance	Ginkgo bloba (Fm.Ginkgoaceae)	Embryo revitalizer cream
19	Green tea extract	Antioxidant	green teas (Camellia sinensis)	Alchemy conditioner
20	Horse chestnut extract	Supports blood circulation wound healing effect and anti inflammatory	Aesculushippocastanum (Fm.Hippocastanacea)	Sisley flower gel
21	Ivy	Stimulates circulation and helps other ingredients penetrate skin.	Hedera spp. (ivy family)	Pattern body wash
22	kinetin	Free radical scavenger and antioxidant	Plants and yeast	kinerase pro therapy
23	Licorice extract	Skin whitening properties, antioxidant, antimicrobial and anti inflammatory.	Glycyrrhizaglabra (Fm.fabaceae)	Liquorice balm
24	Neem oil limonoids	Antimicrobial	Azadirachta indica (Fm.Meliaceae)	Himalaya neem face wash
25	Oleanolic extract	Antioxidant, antifungal, improves texture and integrity of skin	Olive leaf	Trioxil an acne cream
26	Panthenol	Builds moisture and soothes irritation	Provitamin B5 (broccoli, calf's liver turnip greens)	Penaten baby cream
27	Pycnogenol	Anti-aging effect	Grape seed extract	Isotonix
28	Retinoic acid	Smoothes skin, promotes cell renewal and improves circulation to skin	Vitamin A (green leafy vegetables)	Renova cream
29	Sodium hyaluronate	Lubricant between skin tissues and maintains natural moisture	Natural protein	Pevoniabotanica
30	Rosemary extract	Antioxidant antimicrobial and Anti inflammatory	Rosemarinus officinalis	L'Oreal body conditioner
31	Tetrahydrocurcuminoids	antioxidant and anti aging	curcuma longa (Fm. zingiberaceae)	Life extension super curcumin
32	Turmeric oil	Antibacterial and anti-inflammatory	curcuma longa (Fm.zingiberaceae)	Vicco turmeric cream

33	Ursolic acid	Anti-inflammatory, collagen buildup	Rosemanusofficinalis (Fm.Lamiaceae)	Holy basil extract
34	Vitamin A	Anti-oxidant	Vitamin A,C,E (lemon, citrus fruits, oil from sunflower and safflower)	Everyuth peel
35	Witch hazel	Tones	Hamamelisvirginiana (FmHamamelidaceae)	Thayers skin toner

Herbal plants use in cosmeceuticals

Dry Skin Treatment

1. Coconut oil

Coconut oil comes from the fruit or seed of the coconut palm tree *Cocosnucifera*, family *Arecaceae* (palm family). The melting point of coconut oil is 24 to 25°C (75-76°F) and freezing start around 25°C and thus it can be used easily in both liquid and solid forms and is often used in cooking and baking. Copra oil is excellent as a skin moisturizer and softener.

A study shows that extra virgin coconut oil is effective as well as safe when used as a moisturizer, with absence of adverse reactions. A study found that copra oil helped prevent protein loss from the wet combing of hair when used for 14 hours⁹.



2. Sunflower Oil

It is the non-volatile oil indicated from sunflower seeds obtained from *Helianthus annuus* family *Asteraceae* also called *Compositae*. Sunflower oil contains lecithin, tocopherols, carotenoids and waxes. In cosmetics, it's smoothing properties and is considered noncomedogenic¹⁰.



3. Aloe

The botanical name of Aloe vera is *Aloe barbadensis miller*. It belongs to **Asphodelaceae (Liliaceae)** family, and is a shrubby or arborescent, perennial, xerophytic, succulent, pea- green color plant. It's an ingredient in many cosmetics because it heals moisturizes, and softens skin. Simply cut one among the aloe vera leaves to easily extract the soothing gel¹¹.



Anti-Aging Treatment

1. Golden Root

Rhodiolarosea (Roseroot, Aaron's rod), is a plant in the Crassulaceae family that grows in cold regions of the world. The Rhodiola root has long been utilized in the traditional medical systems in Europe and Asia to increase an organism's resistance to physical stress, currently; it's widely thought to have antioxidative properties¹².



2. Ginkgo Ginkgo

Ginkgo belongs to family Ginkgoaceae, which grows to an enormous size. It's best known, as a circulatory tonic, particularly for strengthening **the small** little capillaries to all the organs, but especially to the brain. The capillaries become more flexible and as a result more oxygen is delivered to the brain and eyes (to protect against degenerative eye diseases like macular degeneration), as important as we age. Ginkgo also protects the **systema nervosum** and fights oxidation¹⁴.



3. Carrot:

It is obtained from the plant *Daucuscarota* belonging to family Apiaceae, it's a valuable herb since ages as due to its richness in Vitamin A along with other essential Vitamins. Carrot seed oil is employed as anti-aging, revitalizing and rejuvenating agent. The carrot gets its characteristic and bright orange colour from β -carotene, and lesser amount of α -carotene and γ -carotene. α and β -carotenes are partly metabolized into vitamin A in humans¹⁵.



Dandruff Treatment

Ayurveda has numerous natural medications wherein **the foremost** common herbs include Neem, Kapoor (naphthalene), and Henna, Hirda, Behada, and Amalaki, Magic nut, Bringaraj, Rosary Pea, **calamus**, Cashmere tree and Mandor¹⁶.

1. Henna

Henna comes from the plant, *Lawsoniainermis* family Lythraceae, which contain a dye molecule called Lawsone, which when processed becomes Henna powder. Henna has a natural affinity with the proteins in our hair, making it able to "stain" the colour onto the hair shaft¹⁷.



Skin Protection

1. Green Tea

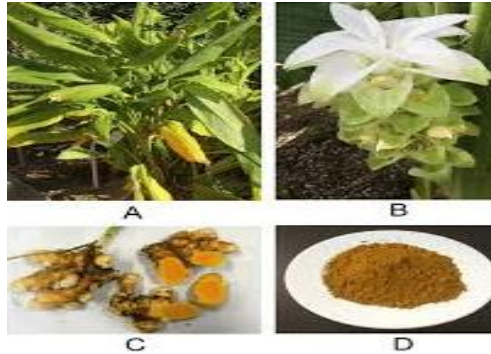
Green tea is tea made solely with the leaves of *Camellia sinensis* belonging to family Theaceae. Whether applied topically or consumed as a beverage or dietary supplement, tea is a premiere skin protectant¹⁸. It protects against direct damage to the cell and moderates inflammation, consistent with research from the Department of Dermatology, Columbia University, New York. Studies suggest that the catechins in tea are some 20 times stronger in their antioxidant powers than even vitamin E¹⁹. Men, women and youngsters need to position this super shield on their side against the ravaging effects of the sun²⁰.



2. Turmeric

Turmeric, *Curcuma longa* is a rhizomatous herbaceous perennial plant of the ginger family Zingiberaceae. Turmeric is used in many celebrations of Hindus²¹. Especially in Hindu wedding brides would rub with

turmeric on their bodies for glowing look. New born babies also rubbed with turmeric on their forehead for permanently lucky. Traditionally women apply turmeric on their cheeks to provide a natural golden glow²².



Hair Care

1. Amla

Amla is obtained from the plant *Emblica Officinalis*, Euphorbiaceae . Amla is rich in vitamin C , tannins and minerals like phosphorus, iron and calcium which provides nutrition to hair and also causes darkening of hair²³.



2. Hibiscus

Hibiscus consists of calcium, phosphorus, iron, vitamin B1, riboflavin, niacin and vitamin C , wont to stimulate thicker hair growth and prevents premature graying of hair²⁴.



3. Almond Oil

The almond oil is obtained from *Prunusdulcis*. The almond oil contains about 78% of fat. It amounts contains very small of super-unsaturated Omega-3 essential fatty acids²⁵.



4. Castor Oil

This oil is obtained from the seeds of *Ricinus communis* belonging to the family, Euphorbiaceae. It's used as an emollient, within the preparation of lipstick, hair oils, creams and lotions²⁶.



5. Eucalyptus Oil

Eucalyptus oil is the generic name for distilled oil from the leaf of *Eucalyptus*, a genus of the family Myrtaceae. Essential oil can help to get rid of dandruff, which successively can help to promote healthy growth of hair²⁶.



Current Cosmeceuticals Compounds Available²⁷

Bio-Peptide Eye Cream-

An HCG diet friendly mixture of varied peptides and glycosaminoglycans along with the lipolight reflecting technology.

Anti-Aging Eye Cream-

Powerful mixture of the anti-oxidants melatonin and idebenone in Glycine Soya Protein solution, designed to revive youthful texture to skin.

Bacopeptide Anti-Aging-

HCG diet friendly formulation of Bacopa Monnieri extract, acetyl dipeptide and gluconol-actone in cold cream .

Collagen Booster Lotion-

HCG diet friendly formula to enhance and restore skin matrix contains palmitoyl pentapeptide, glycine soya protein, kinetin and glycosaminoglycans.

Eye Wrinkle Gel-

HCG diet friendly formula designed to supply maximum moisture to support skin matrix contains Sodium Hyaluronate, DMAE, Acetyl D Glucosamine and glycine soya protein. Ask pharmacists to assist you decide which formulas are best for your skin care needs.

II. CONCLUSION

Pharmaceutical industry promises increasingly sophisticated formulations for cosmetics and skin-care, hair-care products. Cosmetic companies are finding ways to deliver small-dose ingredients that don't require medical regulations, which might result in production of cosmeceuticals that could help to improve body texture, nail, and hair growth. New challenges also will be presented to government regulatory agencies as more chemicals with true biological activity are invented and tested. Premarketing testing must also evolve to accurately assess efficacy and questions of safety with important implications for total body health. Cosmetics cannot penetrate the epidermis to access the deeper layers of the skin. So, while cosmetics may refresh your complexion for some hours, they can't create structural changes or deliver long-term results. A Cosmetic will effectively maintain your skin by providing somewhat temporary results.

Cosmeceuticals when applied to the skin the active ingredients are ready to reach the deeper dermal layers of skin to allow them to work on the skin and be able to make noticeable changes in the skin. Cosmeceutical products are scientifically developed to produce impressive, fast-acting and noticeable results to correct skin concerns to penetrate the skin's surface to push change on a cellular level and improve the skin in the long term.

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