

An Overview on Cosmetics: Cosmeceuticals

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Abstract- The word Cosmeceuticals comes from two words, cosmetic and pharmaceutical. As their name shows, they have both the features of beauty products and medicine. They are used to make people look good while also providing health benefits. They do not belong to the category of medicine or cosmetics. Like medicine, they also have active ingredients and things that make them helpful for treatment. Different types of cosmeceutical products can be found, like hair and skin treatments plus ones for nails. These are usually seen as a type of skincare product that come in forms such as lotion or creams. The word Cosmeceutical was first used by Raymond Reed, but Dr. Albert Kligman made it more well-known in the late 1970s. Cosmeceuticals are like a mix of medicine and makeup. They're put on skin to make you look better while also giving extra health benefits or stuff that helps your wellbeing. That means they are used directly on the skin as makeup, but also have ingredients that affect how our skin works. Nowadays, Cosmeceuticals are a mix of personal care items and medicine - they play an important part. They're also growing very fast in the business connected with skin health services. This review tries to understand law rules and shows the difference between drugs and cosmetics. There is no special category for Cosmeceuticals, so we need it sorted out. The paper is really trying to check if a skin care product that says it's good for the body works well. This paper is meant to share new information about the latest trend in beauty products industry called Cosmeceuticals.

Keywords: Cosmeceuticals, Skin Cosmeceuticals, Hydroxy Acids, Future Scope, herbs, skincare.

INTRODUCTION

After the introduction of Food, Drug and Cosmetic Act in 1938, skin care products that people use on their bodies became regulated. Divided into two groups: cosmetics and drugs. Drugs were for treatment or stopping diseases, but they also had different uses. They could be used to solve problems happening in the body and stop them from getting worse. This is instead of making a person feel better if you are not sick yet. The basic difference is that drugs change the way your body works while cosmetics just make you look different. Cosmetic companies didn't need to prove their products were safe or effective before they started selling them, but drug producers did have this requirement. In contrast, people believed makeup was a tool used for improving beauty and looks weren't needed when marking those items as being good quality safely so the word "cosmeceutical" is used to describe skin care products.

The word Cosmeceuticals was first used by Raymond Reed, who helped start the U.S Society of cosmetics in American Chemist in 1961. He really used the term to explain his work on helpful and smart beauty products. The word mentioned earlier was used by Dr. Albert Kligman in 1984 to talk about things that are good for looks and health too. So, the first record of makeup comes from a long time ago and is said to be associated with scientists' work on making people look better since ancient years up until nowadays where we can still learn more how medicine changed beauty over many centuries Egyptians, circa 4000 BC. The Food, Drug and Cosmetic Act says what cosmetics are by their purpose. It calls them 'things planned to be rubbed on skin'. spread, scattered or dropped on the human body to look better. Used for cleaning or decorating it in different ways. Encouraging good looks or changing how someone looks. Dr. Albert Klingman says "Cosmeceuticals are things you put on your skin, found in many different areas as tools for improving appearance. Stuff found somewhere among clean makeup (lipsticks and red colors) or pure medicines that affect muscle joints corticosteroids. They are both types of medication (like antibiotics), so they fall into the same group. Cosmeceuticals make you look better, but they do so by: Providing nutrients needed for good skin and healing damaged skin cells medically. The US Food and Drug Administration (FDA) say in the law about food, drugs and cosmetics. This is called the "Food, Drugs and Cosmetic Act."Product can be a medicine or beauty item, but "Cosmeceuticals" doesn't mean anything under the law". So the word Cosmeceuticals isn't accepted by a big food and drug law. Using make-up or beauty items can't change your skin completely. They are only meant to mask and temporarily hide it from sight. Cover and beautify. But a special care product will have strong ingredients that work powerfully to defend, fix and stop harm to the skin.

OBJECTIVES

- differentiate between the drugs and cosmetics;

- classify the cosmetics; and
- Asses the importance of cosmetics in body care.
- Make skin feel smooth & soft.
- Reduce transepidermal water losses thereby creating an environment for barrier repair.
- Provide an added skin benefits through a novel ingredient technology.

CLASSIFICATION OF COSMECEUTICALS

1. Photoaging Agent
2. Peeling agent – Hydroxyacids
3. Sebum regulator
4. Hair Growth Enhancer
5. Moisturizer
6. Botanical Extract
7. Topical Retinoid
8. Depigmentation Agent

Photoaging Agents

One of the main effects of aging is the decline in biological processes and the body's capacity to handle metabolic stress. Changes in the skin's appearance and functionality are the result of the intricate and ongoing process of aging. Both intrinsic (i.e., genetically determined) and extrinsic (i.e., environmental influences) pathways may lead to this process. Continuous long-term exposure to UV radiation, either manufactured or natural, with a wavelength of about 300–400 nm is thought to be the cause of photoaging in skin that is already aging.

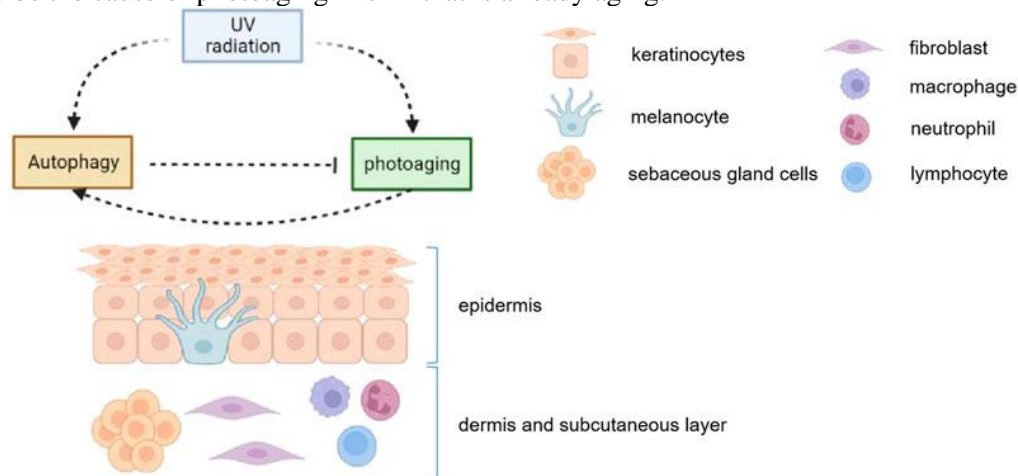


Figure 1 Photoaging process

Different parts of skin have many different color-giving elements that can connect with sunlight rays. These connections include thinking deeply, bending of light rays, taking in energy and moving through them. Slowly causing skin to age, UV light leads to a buildup of energy intake. The UV parts of light, such as UVA (320-400 nm) and UVB (280-320 nm), are linked to skin aging that's caused by sun exposure. This is from a time in 1 year when Gilchrist used tiny wavelength called nanometers for research concerned with smoother looking middle aged UVA light is divided into two parts: UVA-1 (340 - 400 nm) and UVA-2 (320– 349. UVA is more common (5.62% of sunlight) than UVB (0.151% of sunlight), and 35 to 50 percent UVA gets through the skin layer called dermis according to a study in 2012 by Battie and Verschoore. So, UVA plays a bigger role in making skin older because of sun damage.

Peeling Agent

Glycolic acid is part of the alpha hydroxy family. Typically found in food, it has been used for a long time to make skin look and feel fresh again. Lately, this substance has shown flexibility for peeling. Now it is widely used to treat many skin problems of outer layer and top dermis in various strengths from 15% up to 75%. This depends on the situation where it's applied. Most skin types and colors of people can do this, in almost any part on their body. We show our way of using glycolic acid along with skin changes looked at under the microscope. These changes are from treated skins which use both glycolic acid and trichloroacetic too, but different time periods were used for treatment or observation processes.

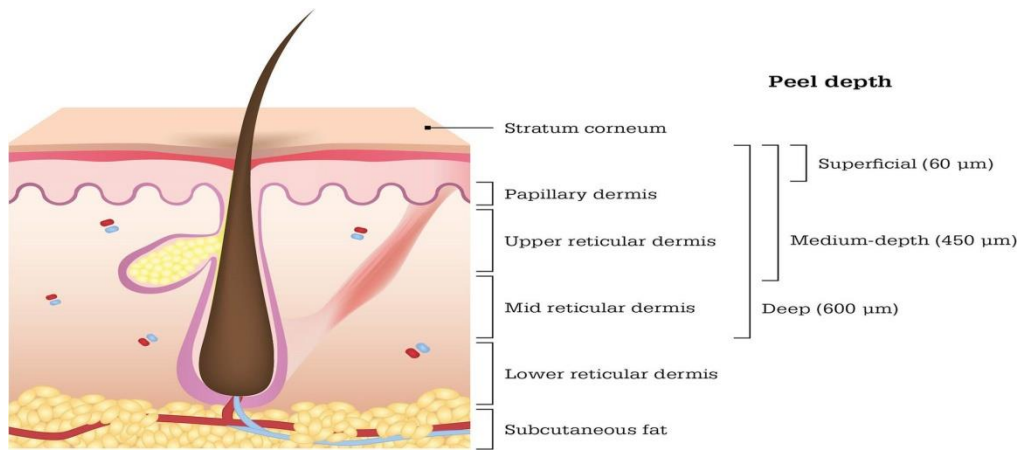


Figure 2 Peel depth

Skin doctors often use a method called chemical peels to treat many skin problems like bad pimples called acne, damage from sunburn or actinic keratosis. This also helps get rid of old scars on the body's surface layer. This method has also been used to refresh the skin on the face, neck, belly and hand. Agents for taking away layers can be split into three types: light, meaningful and deep. These are determined by how far they go in. They might be used by themselves or with other beauty treatments for making skin look better.

Sebum regulator

Sebum is a greasy, waxy thing made by your body's sebaceous glands. It comes from the stuff that helps keep you clean and oil-free! It covers, makes skin soft and safe. It's also the main element in what you may call your body's natural oils. So, what is sebum made up of? Note the wrong spacing and correct to: "What exactly is sebum made up of?" As a Harvard Medical School article says, "sebum is a complex mix of fats and other natural chemicals that guard against water leaving the skin". It gets more specific by saying sebum contains things like fatty acids (58%), waxes (27%) along with squalene too. If you have very greasy skin your body might be making more lipid-like this also includes a blend of sweat, old skin bits and very small parts from almost anything in the dust near you.

	SEBUM REGULATOR	SKIN LIGHTENER	MOISTURIZER
BRAND	AZELOGLICINA	ARBUTIN	GENENCARE
INCI	POTASSIUM AZELAOLYL DIGLYCINATE	ALPHA ARBUTIN	BETAINE
ACTION	TYROSINASE INHIBITOR; SEBUM REGULATOR; IMPROVES SKIN ELASTICITY; MOISTURIZER	COMPETITIVE TYROSINASE INHIBITOR	WATER BINDING; IMPROVES TIGHT JUNCTION IN STRATUM GRANULOSUM; REGULATES CELL WATER BALANCE
BENEFIT	REDUCES SEBUM FORMATION WITH SKIN BRIGHTENING EFFECT FOR A LUMINOUS APPEARANCE	SUPERIOR SKIN LIGHTENING ENHANCER FOR A PERFECT EVEN SKIN TONE	ALL NATURAL OSMOLYTES WITH MOISTURIZING, PROTECTIVE AND SENSORY BENEFITS

Figure 3 Sebum Regulator

Hair Growth Enhancer

By activating Akt and extracellular signal-regulated kinase (ERK), as well as by raising the ratio of BCl-2/Bax, minoxidil is believed to increase the lifespan of human dermal papillary cells (DPCs) or hair cells. Because of its proliferative and anti-apoptotic effects on DPCs, minoxidil may lengthen anagen and hence promote the growth of human hair. Adenosine triphosphate-sensitive potassium channels in vascular smooth muscle cells are opened by minoxidil when it is used as a vasodilator. Additionally, the vitality of hair follicles or cells may be enhanced by this vasodilation.

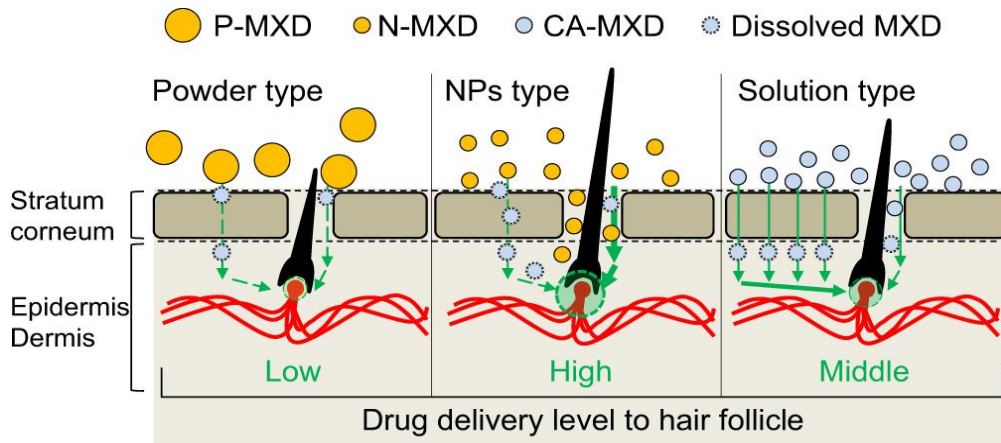


Figure 4 Hair Growth Enhancer

Moisturizer

The outermost layer of skin, or the layer that is visible from the outside, is called the epidermis. It can be further split into five layers, the topmost of which is referred to as the stratum corneum. The dead cells known as corneocytes that contain keratin are what make up this outer layer. These create "bricks" made of proteins. Varieties of substances, mostly lipids, are sandwiched in between and serve as the "mortar" that holds the "bricks" together. These lipids, which are mostly a combination of fatty acids, cholesterol, and ceramides, form a semi-permeable barrier to water and are crucial in enabling the skin to retain moisture. Moreover, the skin contains molecules known as natural moisturizing factors (NMFs) that help the epidermis retain water. There is some loss, though; this process is referred to as transepidermal water loss (TEWL). Diffusion and evaporation of the water cause this water loss to happen. We must take action to mitigate the effects of sunburn and dry skin because we have no control over them. High temperatures, wounds, or even just extremely dry environments can all increase TEWL, as can skin damage such as sunburn. Moisturizers can support and enable us to counteract this elevated TEWL. They use a variety of compounds to achieve that, but we can divide them into three main categories based on the ones that genuinely aid in the moisturizing process.

Botanical Extract

Liquid plant essence is captured by botanical extracts. Add these advantageous plant properties to your cosmetics and use to make the label more appealing. Water, glycerin, and plant extract are combined to create many botanical extracts. Shaving cream, lotion, shower gel, and shampoo can all be made with these water-soluble products. Botanical extracts are also available that are oil-soluble since they contain plant extract mixed with oil. In cosmetics like massage oil or solid lotion bars, the oil-soluble botanicals can be utilized.

S. No.	Name of the Plant	Common name	Part used	Active constituents Class	Uses
1	<i>Acacia concinna</i> DC.	<i>Shikakai</i>	Pods	Saponin, Sugars	Shampoo, Soaps
2	<i>Acorus calamus</i> Linn.	Sweet flag	Rhizome	Monoterpenes, Beta-asarone	Aromatic, Dusting powders, Skin lotions
3	<i>Allium sativum</i> Linn.	Garlic	Bulbs	Allicin and Adenosine	Skin healing
4	<i>Azadirachta indica</i> A. Juss.	Neem	Leaves	Limonoids, Tetrarotriterpenoids	Toothpastes, Soaps, Shampoo
5	<i>Cereus grandiflorus</i> Mill.	Cactus	Leaf	Saponins Saccharides	Moisturizing tightening of skin
6	<i>Cichorium intybus</i> Linn.	Chicory	Seed	Sesquiterpene lactones	Skin of blemishes
7	<i>Citrullus vulgaris</i> Schrad.	Water melon	Fruit	Saccharides, Carotenoids, Tannins	Sebum secretion
8	<i>Citrus medica</i> Linn.	Lemon	Fruit	Flavonoids Triterpenoids	Whitening, astringent depigmentation
9	<i>Crocus sativus</i> Linn.	Saffron	Stigma	Safranal, Carotenoid	Post bath massage
10	<i>Cucumis sativus</i> Linn.	Cucumber	Fruit	Cucurbitacins	Moisturizing
11	<i>Foeniculum vulgare</i> Mill	Fennel	Fruit	Saponins Saccharides Flavonoids	Deodorant

Figure 5 list of botanical plants

Topical Retinoid

Retinoids are often added to beauty products because they do a good job of controlling how fast cells grow and change in the top layer of skin. Retinoids, a kind of fat-friendly molecules. They have the power to go through cell walls easily and they can affect how our body works in this way. After getting into the cells, they attach to certain parts inside and help control genes that are needed for cell growth and change. Normally found in our skin, two important types of retinoids show up a lot: these are called retinol and retins which make most alarming part. Retinol is produced in the

small intestine via one of two mechanisms: Breaking down fat attached to retinol or turning carotenoids into energy. The change of retinol is the powerful form needs turning it into retinaldehyde. After that, this substance is converted again making a strong tretinoin useful for use. A cosmeceutical should be seen as a cream or lotion sold like makeup but with drug-like effects. Retinoids are a type of stuff that includes vitamin A (retinol) and other things made in nature or created by humans, which come from it. Retinoic acid changes into a less effective substance, 4-oxoretinoic acid. Alternatively it becomes retinoyl glucuronide while retinol transforms to becoming known as retinyl glucuronate. Vitamin A is found in the outermost layer of our skin. It's usually there as free and combined retinol, with an average amount of 1-2 millimoles per gram or less. Natural retinoids might work well when put on the skin, but they can cause trouble and don't stay good after being in sunlight. The change in genes because of skin creams with vitamin A happens after they connect to a molecular part called nuclear retinoic acid receptor or the protein that senses them. Many skin products have retinol and retinyl esters added to them. Retinoids from skincare products might help with aging skin, acne and color issues.

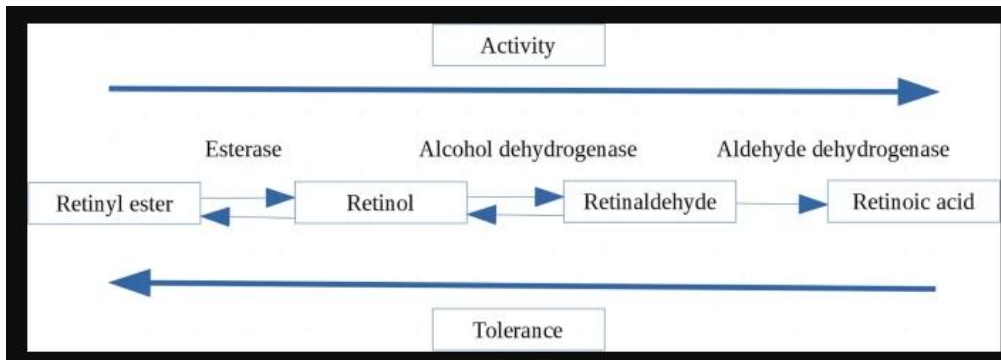


Figure 6 Activity of Retinoids

Depigmentation Agent

Melanin-reducing substances stop the process of color formation in cells, called melanogenesis. They aid places with too much pigment to recover and reduce excess darkness from their appearance. With regard to factors such as popularity, safety, and productiveness for cosmetic purposes, the most popular skin whitening agents are: There are some things like hydroquinone, kojic acid and others to help the sun spots look better. These include monobenzyl ether of hydroquinone as well as gentisic acid or azelaic acid along with licorice root too! Involve also substances found in vitamin C called retinoids from applying niacinamide for extra Cosmetic whitening medicines are sorted out depending on how they work. The best cure for an issue is a special three-part car, made of hydroquinone (HQ), tretinoin and fluocinolate acronide. Many ways are being used to treat uneven skin color, especially by stopping an important step for making melanin called tyrosinase. Tyrosine helps in forming this dark substance that can improve complexion or cause tanning on the surface of your body. Another step we can take is to control melanosomes by changing how they are built or passed on. Furthermore, the substances that lighten skin work through antioxidant or anti-inflammatory actions.

FUTURE SCOPE OF COSMECEUTICALS

The new research report we did on Cosmeceuticals Market (which includes things for hair and skin care, lip treatment, teeth whitening these amongst others) gives us understanding how the market is doing. Also it tells what's growing fastest in this field of products that help to both take care of our appearance & enhance it as well. This includes treatments with special substances aimed at This report gives the latest news on dangers in markets, how companies connect together and prices for cosmeceuticals. It also tells about things that are good chances to grow different groups of goods or services talked about inside it. Looking at past, current and future market data will help make good investment decisions by understanding the main factors that influence growth in Cosmeceuticals. The future of Cosmeceuticals Market information is based on what's happening now, chances for growth and thoughts by those who know the business. We completely study big company profiles, Cosmeceuticals worldwide and their uses in different parts of the world. This report gives information on buyers, sales path, raw materials and business sectors. The report says that the worldwide market for products which are use like cosmetics and skin care will increase a lot by 2018 - 2024.

CONCLUSION

Cosmetics give patients and their doctors both problems to face, as well as benefits. Lots of people worry about their skin getting wrinkly and old, because society makes being young and pretty a top priority. So they ask doctors for help on fixing that issue. Doctors have a big job to help patients understand what real improvement they might get and any possible side effects of these products. This is still their main duty in this area. Doctors care about helping patients pick

the best products out now. Many newest beauty-medicine things might be thrilling, but doctors are doing their job right in wanting to keep eyes on what's great today instead of future stuff. Some specialists suggest doctors pick one or two items where results have been good, and tell patients how to use these in their daily skin care. Always remind them that safe product can still cause redness, irritation or clogged pores if not used properly. As technology goes forward and special skin-care products become more complex, doctors have to keep learning about these items. They also must help patients understand what good points it has but also know about its dangers when using cosmeceuticals.

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